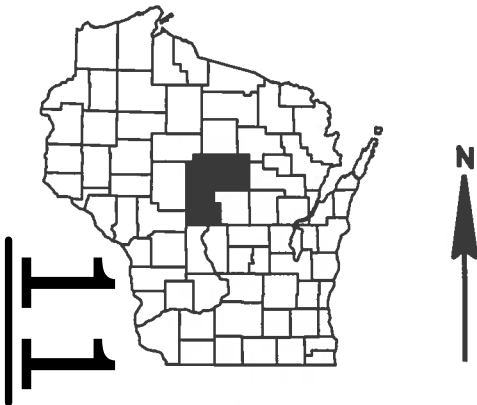


ORDER OF SHEETS

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

TOTAL SHEETS = 40



DESIGN DESIGNATION

| | | |
|--------------|---|-----|
| A.A.D.T. | = | N/A |
| A.A.D.T. | = | N/A |
| D.H.V. | = | N/A |
| D.D. | = | N/A |
| T. | = | N/A |
| DESIGN SPEED | = | N/A |
| ESALS | = | N/A |

CONVENTIONAL SYMBOLS

PLAN

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

PROFILE

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

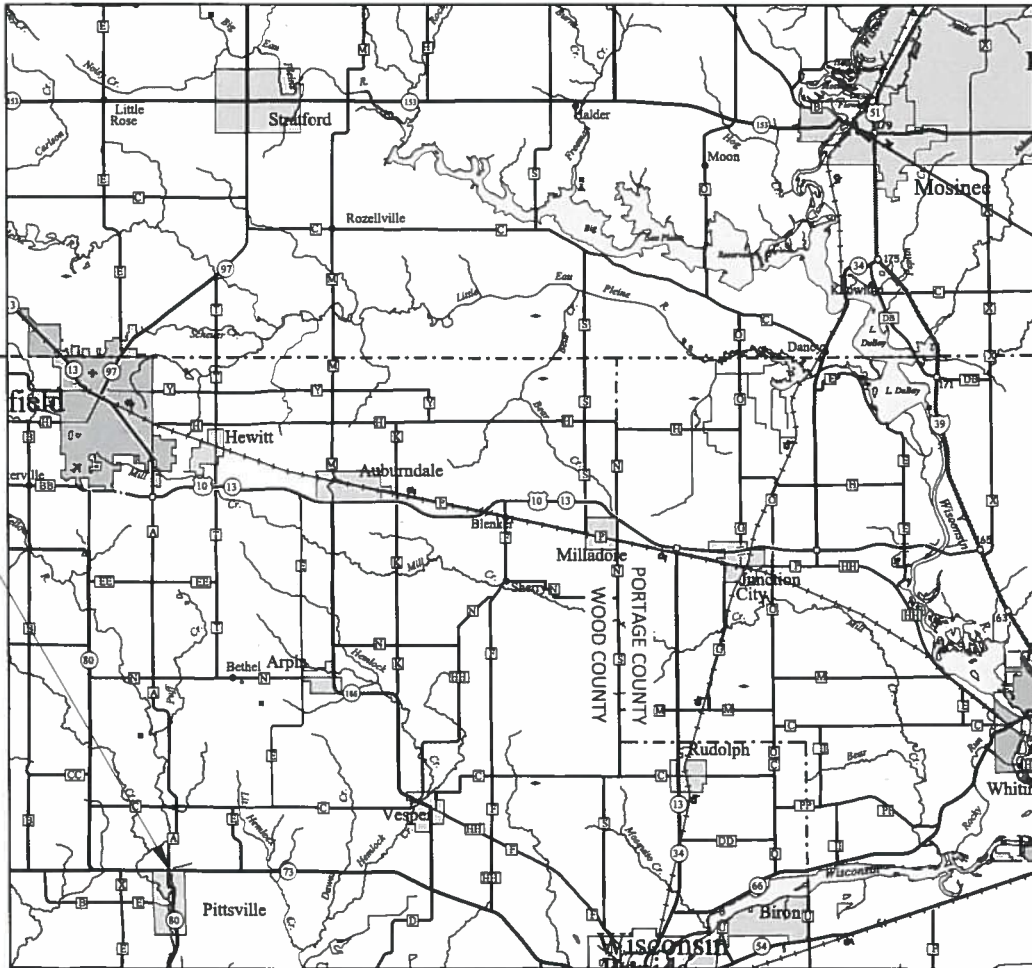
REGIONWIDE BRIDGE REPAIR

B-37-0097 AND B-71-0002

VAR HWY
NORTH CENTRAL REGION WIDE

STATE PROJECT NUMBER

1009-47-63



LAYOUT
SCALE 0 6 MI

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MARATHON AND WOOD COUNTIES, 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 12B.

STATE PROJECT

1009-47-63

FEDERAL PROJECT

PROJECT

CONTRACT

ORIGINAL PLANS PREPARED BY

AECOM



3/26/24

(Date)

Kelly J. Wolf

(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---------------------|-----------------|
| Surveyor | AECOM |
| Designer | AECOM |
| Project Manager | WENDY ARNESON |
| Regional Examiner | FRED SCHUNKE |
| Regional Supervisor | ELIZABETH NEMEC |

APPROVED FOR THE DEPARTMENT

Digitally signed by Wendy Arneson
Contact Info: WisDOT Project Manager
Date: 2024.04.10 09:44:49 -0700

Wendy Arneson

(Signature)

E

GENERAL NOTES

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

DISTURBED AREAS AS THE RESULT OF GRADING AT THE ENDS OF STRUCTURE B-71-0002 SHALL BE RESTORED WITH SEED AND EROSION MAT AS SHOWN IN THE PLANS. DO NOT MULCH OR FERTILIZE GRADED AREAS ALONG CAT CREEK.

RESTORATION AND EROSION CONTROL FOR TEMPORARY CONSTRUCTION ACCESSES AT B-37-0097 AND B-71-0002 SHALL BE IN ACCORDANCE WITH THE TEMPORARY CONSTRUCTION ACCESS BID ITEMS PROVIDED IN THE SPECIAL PROVISIONS.

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

WISDNR

BRAD BETTHAUSER (WOOD COUNTY)
910 STATE HIGHWAY 54
BLACK RIVER FALLS, WI 54615-5450
PHONE: (715) 213-9064
EMAIL: BRADLEY.BETTHAUSER@WISCONSIN.GOV

JIM DOPERALSKI (MARATHON COUNTY)
2984 SHAWANO AVE
GREEN BAY, WI 54313
PHONE: (920) 412-0165
EMAIL: JAMES.DOPERALSKI@WISCONSIN.GOV

UTILITIES CONTACTS

COMMUNICATION LINE

BUG TUSSEL
DUSTIN TEAFF
1262 CAMBER CT
DE PERE, WI 54115
PHONE: (920) 254-3539
EMAIL: DUSTIN.TEAFF@KESEXCAVATING.COM

EVERSTREAM
JOE HINES
324 E WISCONSIN AVENUE, SUITE 730
MILWAUKEE, WI 53202
PHONE: (847) 525-3511
EMAIL: JHINES@EVERSTREAM.NET

NSIGHT TELSOURCES
RICK VINCENT
470 SECURITY BOULEVARD
GREEN BAY, WI 54313
PHONE: (920) 617-7316
EMAIL: RICK.VINCENT@NSIGHT.COM

TDS TELECOM
ROD HEINZ
211 W 3RD ST
NECEDAH, WI 54646
PHONE: (608) 664-4971 (OFFICE)
PHONE: (608) 225-7090 (CELL)
EMAIL: ROD.HEINZ@TDSTELECOM.COM

ELECTRICITY

ALLIANT ENERGY
TRUDI BAKKEN
2710 JEFFERSON STREE
WISCONSIN RAPIDS, WI 54495
PHONE: (715) 424-7048 (OFFICE)
PHONE: (715) 460-4121 (MOBILE)
EMAIL: TRUDIBAKKEN@ALLIANTENERGY.COM

WISCONSIN PUBLIC SERVICE CORPORATION
JESSE PATTEN
P.O. BOX 1166
WAUSAU, WI 54402-1166
PHONE: (715) 848-7405 (OFFICE)
PHONE: (715) 573-0349 (MOBILE)
EMAIL: JESSE.PATTEN@WISCONSINPUBLICSERVICE.COM

GAS/PETROLEUM

WE ENERGIES
LARRY KOCH
1921 8TH STREET SOUTH
WISCONSIN RAPIDS, WI 54494
PHONE: (715) 421-7249 (OFFICE)
PHONE: (715) 421-9293 (MOBILE)

WISCONSIN PUBLIC SERVICE CORPORATION
TYLER DAHLSTROM
1700 SHERMAN ST
WAUSAU, WI 54402
PHONE: (715) 848-7387 (OFFICE)
PHONE: (715) 432-9212 (CELL)
EMAIL: TYLER.DAHLSTROM@WISCONSINPUBLICSERVICE.COM

SEWER

MOSINEE MUNICIPAL WATER AND SEWER UTILITY
KEVIN BREIT
225 MAIN STREET
MOSINEE, WI 54455
PHONE: (715) 693-3840
EMAIL: PUBLICWORKS@MOSINEE.WI.US

RUNOFF COEFFICIENT TABLE

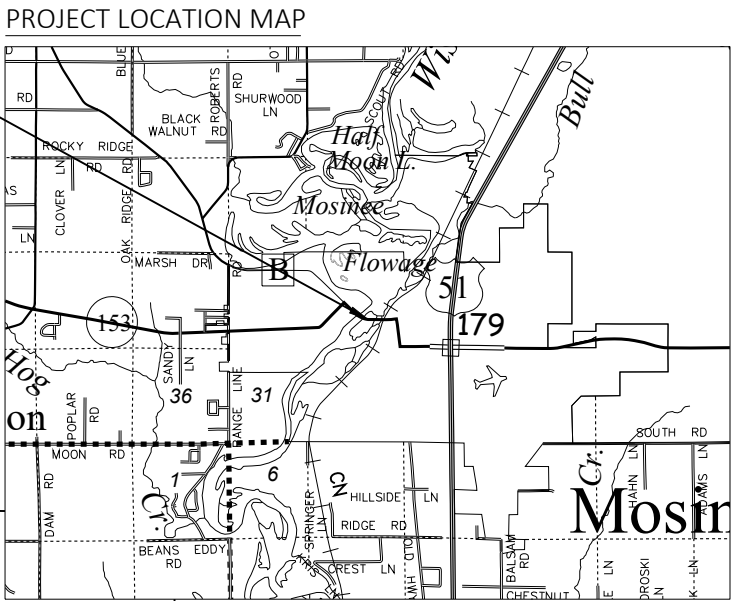
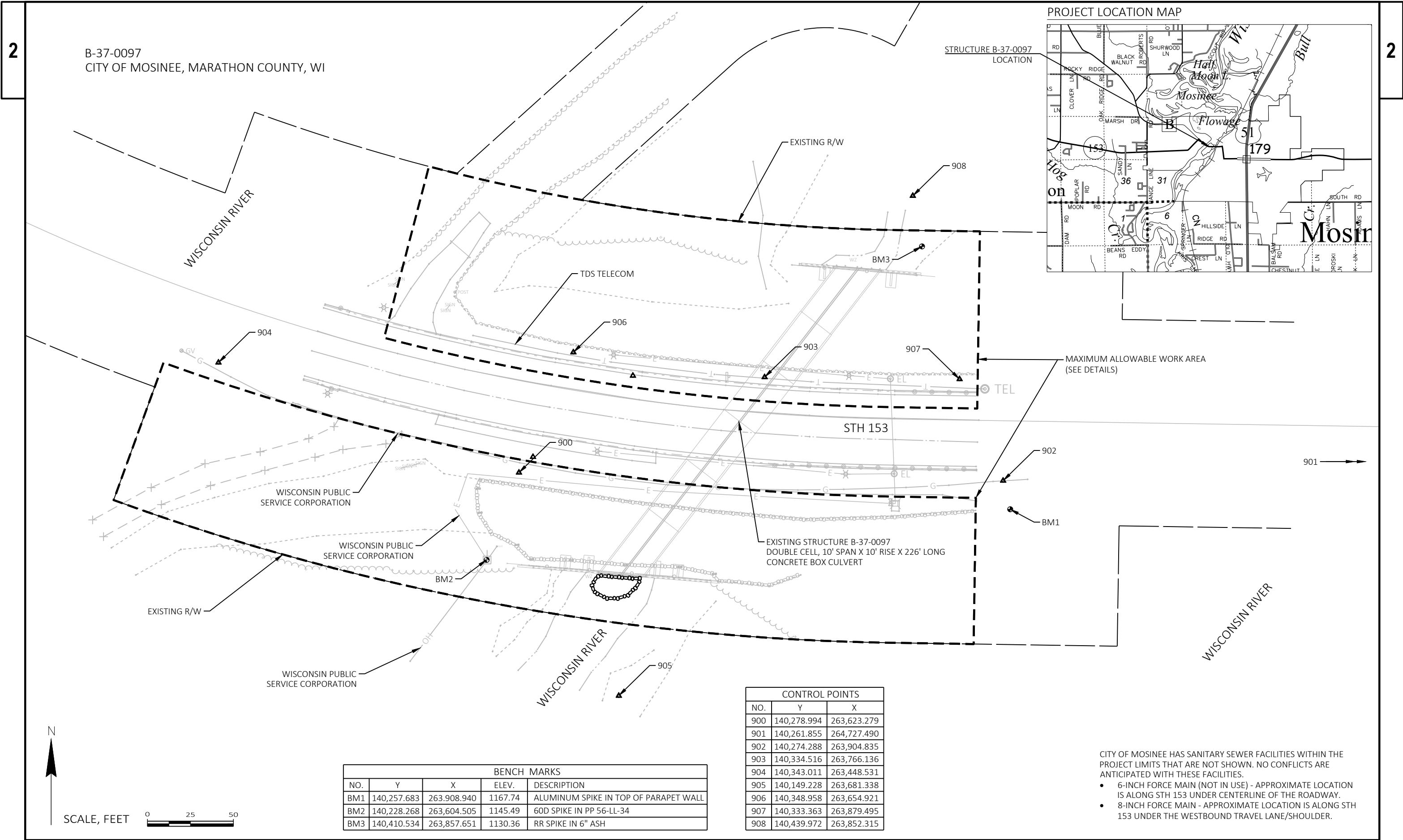
| | HYDROLOGIC SOIL GROUP | | | | | | | | | | | |
|-------------------------|-----------------------|-----|----------|-----------------------|-----|----------|-----------------------|-----|----------|-----------------------|-----|----------|
| | A | | | B | | | C | | | D | | |
| | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | |
| LAND USE: | 0-2 | 2-6 | 6 & OVER | 0-2 | 2-6 | 6 & OVER | 0-2 | 2-6 | 6 & OVER | 0-2 | 2-6 | 6 & OVER |
| ROW CROPS | .08 | .16 | .22 | .12 | .20 | .27 | .15 | .24 | .33 | .19 | .28 | .38 |
| | .22 | .30 | .38 | .26 | .34 | .44 | .30 | .37 | .50 | .34 | .41 | .56 |
| MEDIAN STRIP-TURF | .19 | .20 | .24 | .19 | .22 | .26 | .20 | .23 | .30 | .20 | .25 | .30 |
| | .24 | .26 | .30 | .25 | .28 | .33 | .26 | .30 | .37 | .27 | .32 | .40 |
| SIDE SLOPE-TURF | | | .25 | | | .27 | | | .28 | | | .30 |
| | | | .32 | | | .34 | | | .36 | | | .38 |
| PAVEMENT: | | | | | | | | | | | | |
| ASPHALT | .70 - .95 | | | | | | | | | | | |
| CONCRETE | .80 - .95 | | | | | | | | | | | |
| BRICK | .70 - .80 | | | | | | | | | | | |
| DRIVES, WALKS | .75 - .85 | | | | | | | | | | | |
| ROOFS | .75 - .95 | | | | | | | | | | | |
| GRAVEL ROADS, SHOULDERS | .40 - .60 | | | | | | | | | | | |

TOTAL PROJECT AREA = 2.68 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.68 ACRES

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com



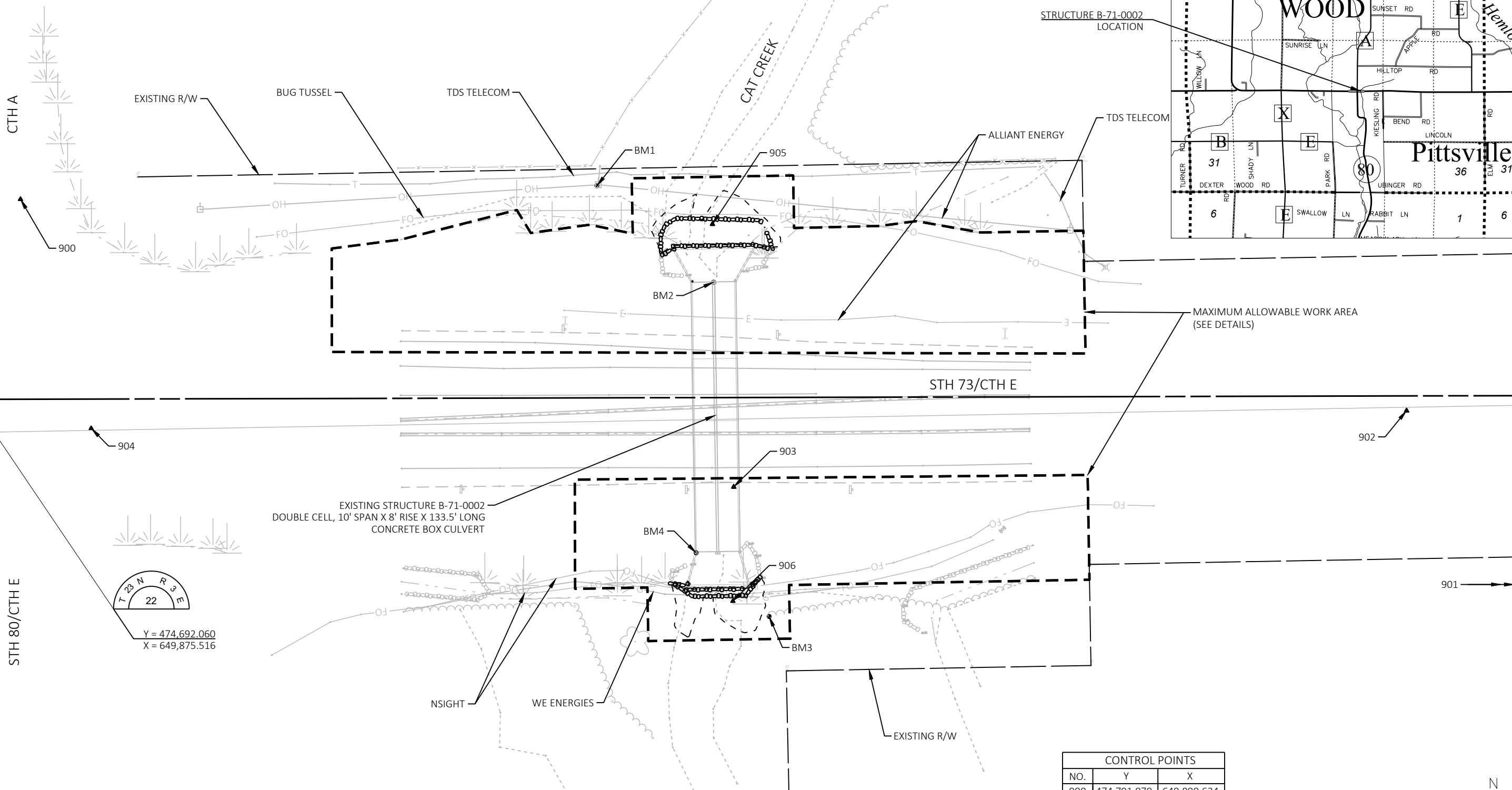
| CONTROL POINTS | | |
|----------------|-------------|-------------|
| NO. | Y | X |
| 900 | 140,278.994 | 263,623.279 |
| 901 | 140,261.855 | 264,727.490 |
| 902 | 140,274.288 | 263,904.835 |
| 903 | 140,334.516 | 263,766.136 |
| 904 | 140,343.011 | 263,448.531 |
| 905 | 140,149.228 | 263,681.338 |
| 906 | 140,348.958 | 263,654.921 |
| 907 | 140,333.363 | 263,879.495 |
| 908 | 140,439.972 | 263,852.315 |

| BENCH MARKS | | | | |
|-------------|-------------|-------------|---------|---------------------------------------|
| NO. | Y | X | ELEV. | DESCRIPTION |
| BM1 | 140,257.683 | 263,908.940 | 1167.74 | ALUMINUM SPIKE IN TOP OF PARAPET WALL |
| BM2 | 140,228.268 | 263,604.505 | 1145.49 | 60D SPIKE IN PP 56-LL-34 |
| BM3 | 140,410.534 | 263,857.651 | 1130.36 | RR SPIKE IN 6" ASH |

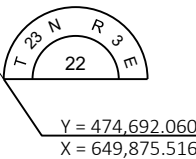
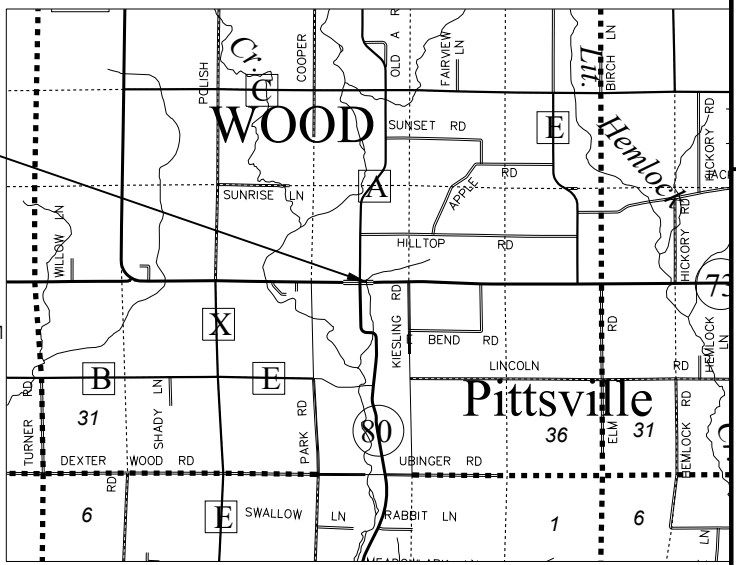
CITY OF MOSINEE HAS SANITARY SEWER FACILITIES WITHIN THE PROJECT LIMITS THAT ARE NOT SHOWN. NO CONFLICTS ARE ANTICIPATED WITH THESE FACILITIES.

- 6-INCH FORCE MAIN (NOT IN USE) - APPROXIMATE LOCATION IS ALONG STH 153 UNDER CENTERLINE OF THE ROADWAY.
- 8-INCH FORCE MAIN - APPROXIMATE LOCATION IS ALONG STH 153 UNDER THE WESTBOUND TRAVEL LANE/SHOULDER.

B-71-0002
CITY OF PITTSVILLE, WOOD COUNTY, WI



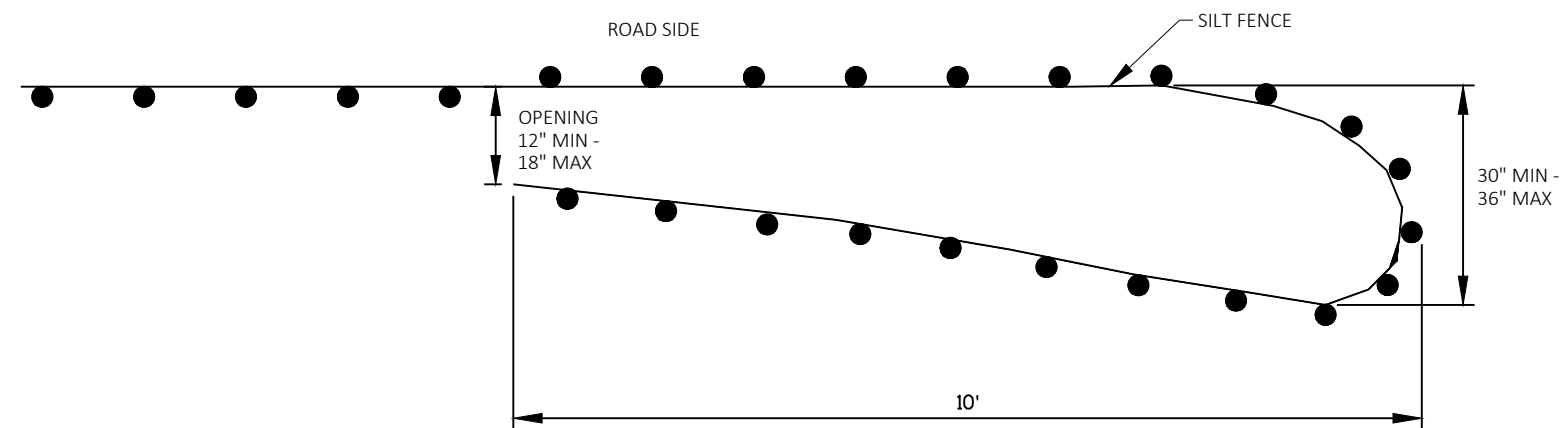
PROJECT LOCATION MAP



| BENCH MARKS | | | | |
|-------------|-------------|-------------|---------|---|
| NO. | Y | X | ELEV. | DESCRIPTION |
| BM1 | 474,797.676 | 650,184.826 | 1020.95 | RR SPIKE IN PP 23-3-22 29/2 |
| BM2 | 474,750.037 | 650,242.560 | 1025.59 | CHISELED SQUARE IN TOP (NORTH) CENTER OF CONCRETE BOX CULVERT |
| BM3 | 474,584.646 | 650,270.052 | 1019.70 | RR SPIKE IN 10" BOX ELDER |
| BM4 | 474,616.131 | 650,233.908 | 1024.80 | ALUMINUM DISK IN TOP OF SW WING WALL |

| CONTROL POINTS | | |
|----------------|-------------|-------------|
| NO. | Y | X |
| 900 | 474,791.079 | 649,899.634 |
| 901 | 474,629.621 | 651,200.844 |
| 902 | 474,686.466 | 650,585.475 |
| 903 | 474,648.755 | 650,252.548 |
| 904 | 474,677.656 | 649,934.610 |
| 905 | 474,778.743 | 650,242.001 |
| 906 | 474,592.243 | 650,252.105 |

SCALE, FEET 0 25 50

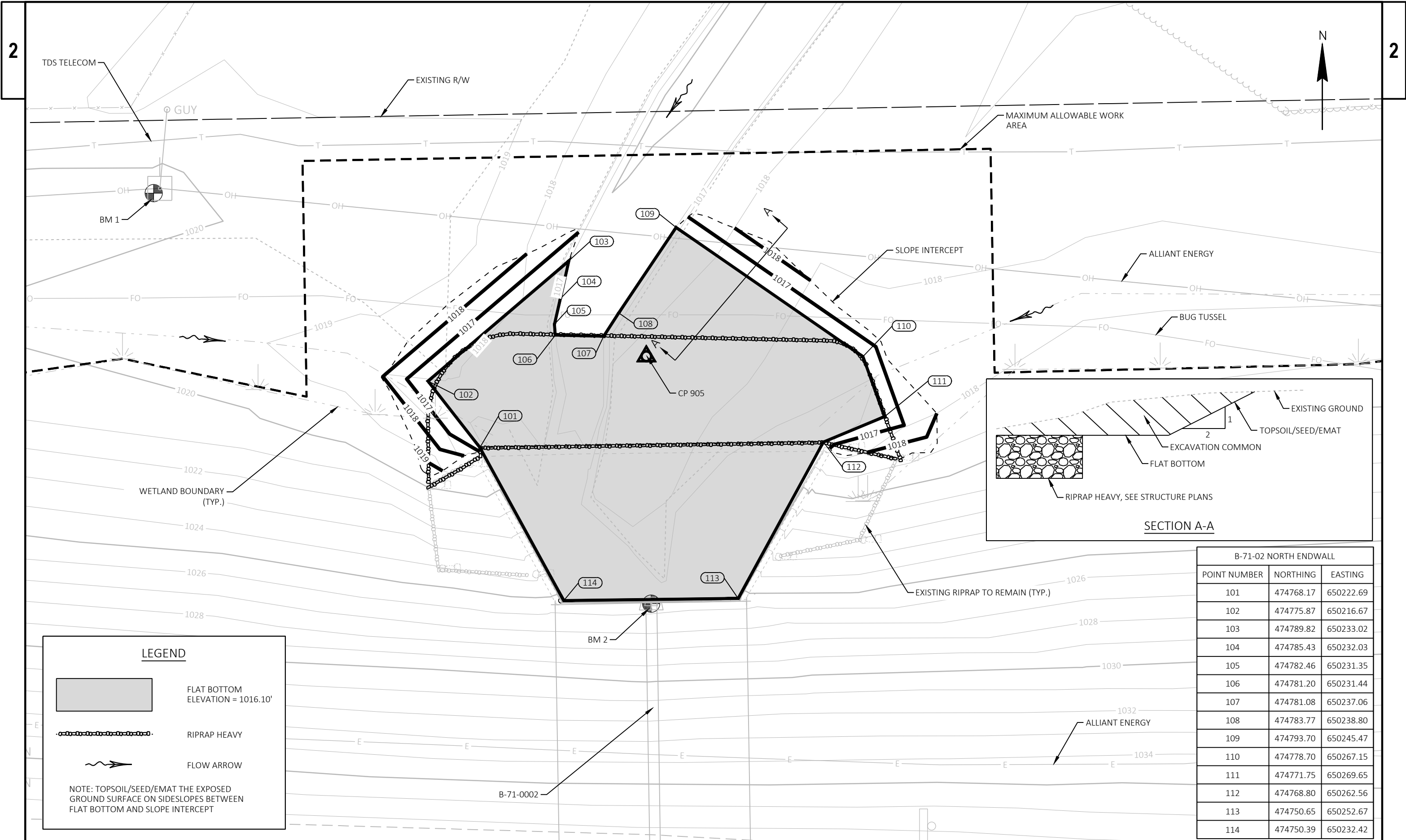


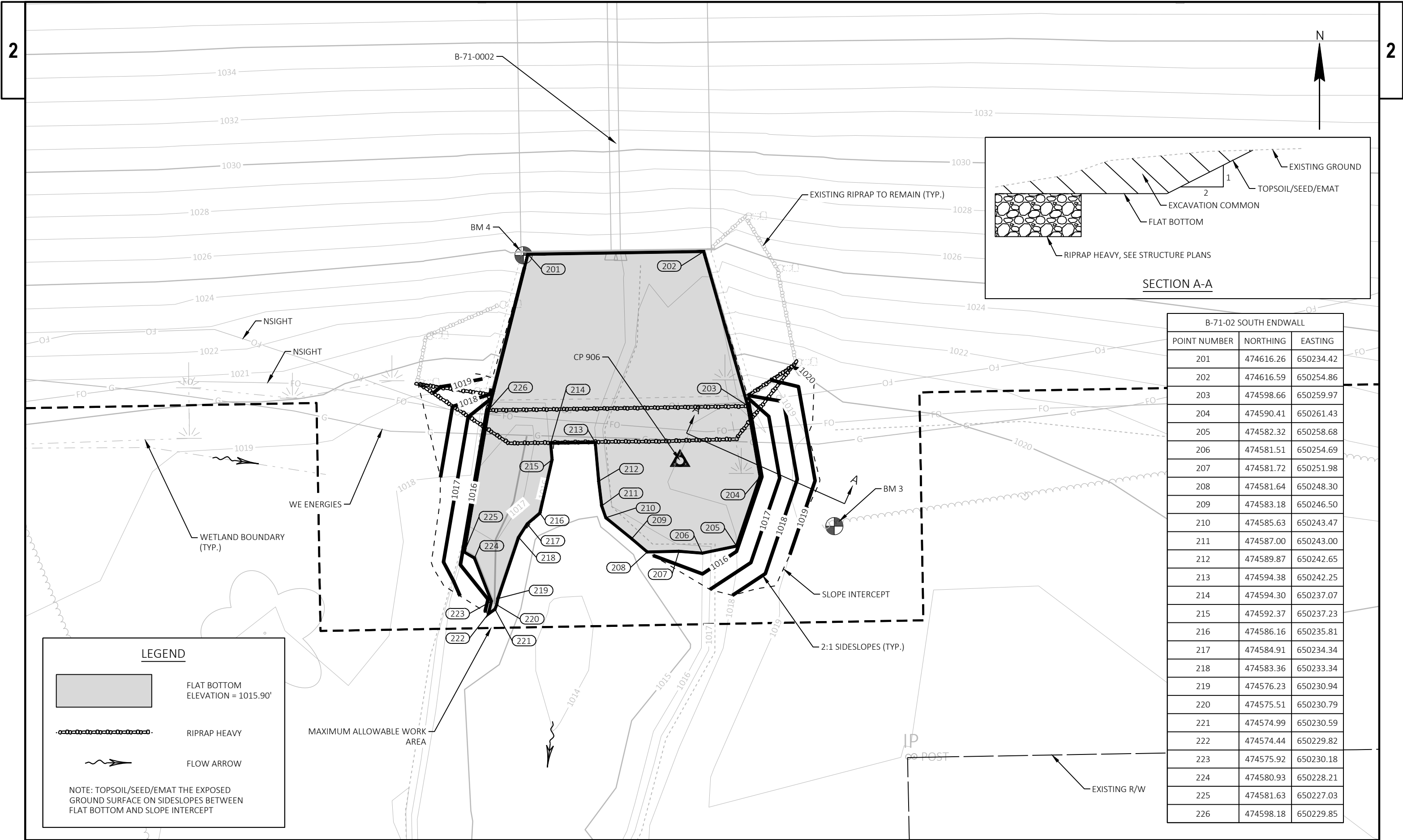
PLAN VIEW

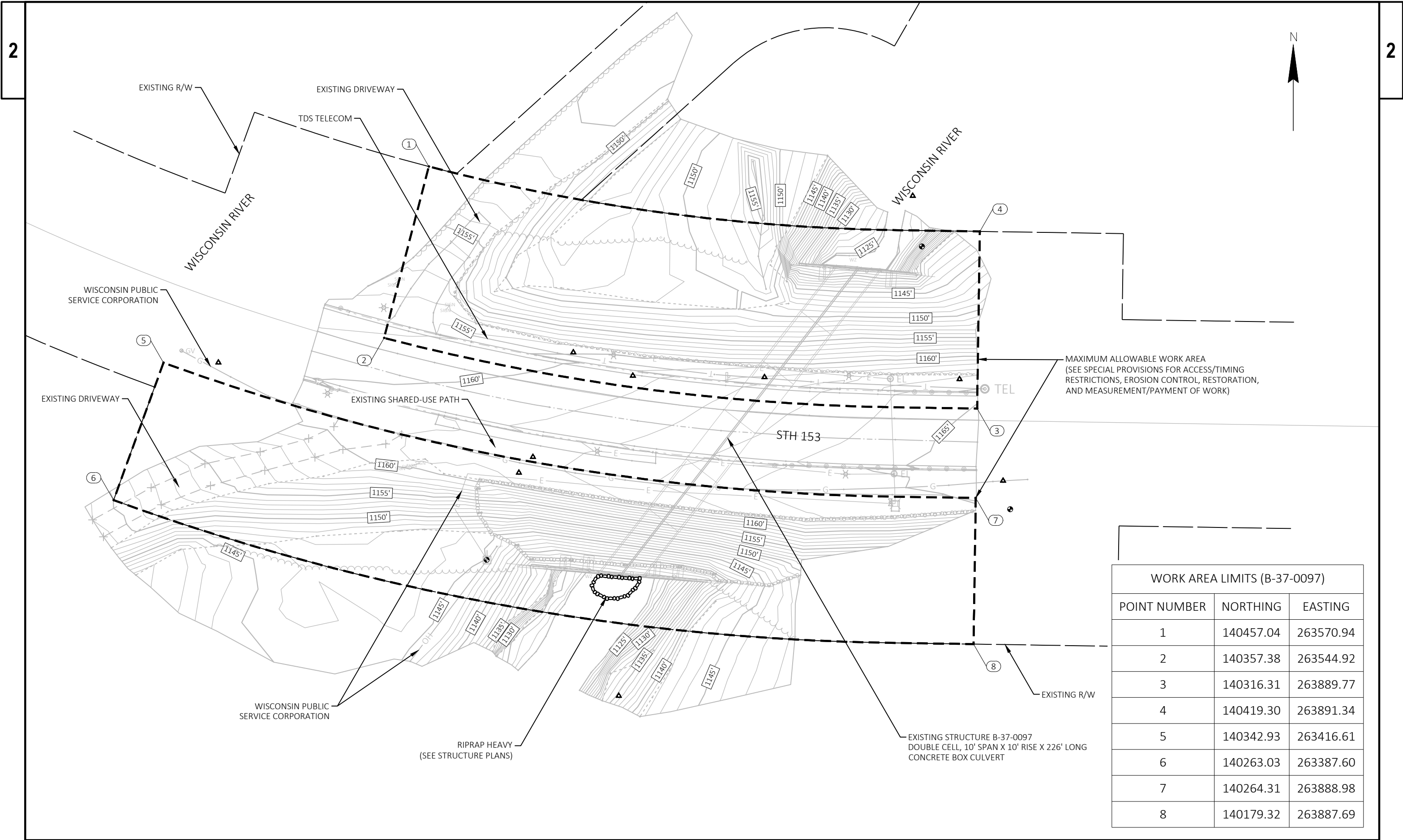
GENERAL NOTES:

- SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND. AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.
- SEE TEMPORARY CONSTRUCTION ACCESS SPECIAL PROVISIONS FOR MEASUREMENT AND PAYMENT FOR SILT FENCE INCLUDING TEMPORARY SMALL ANIMAL TURNAROUNDS.

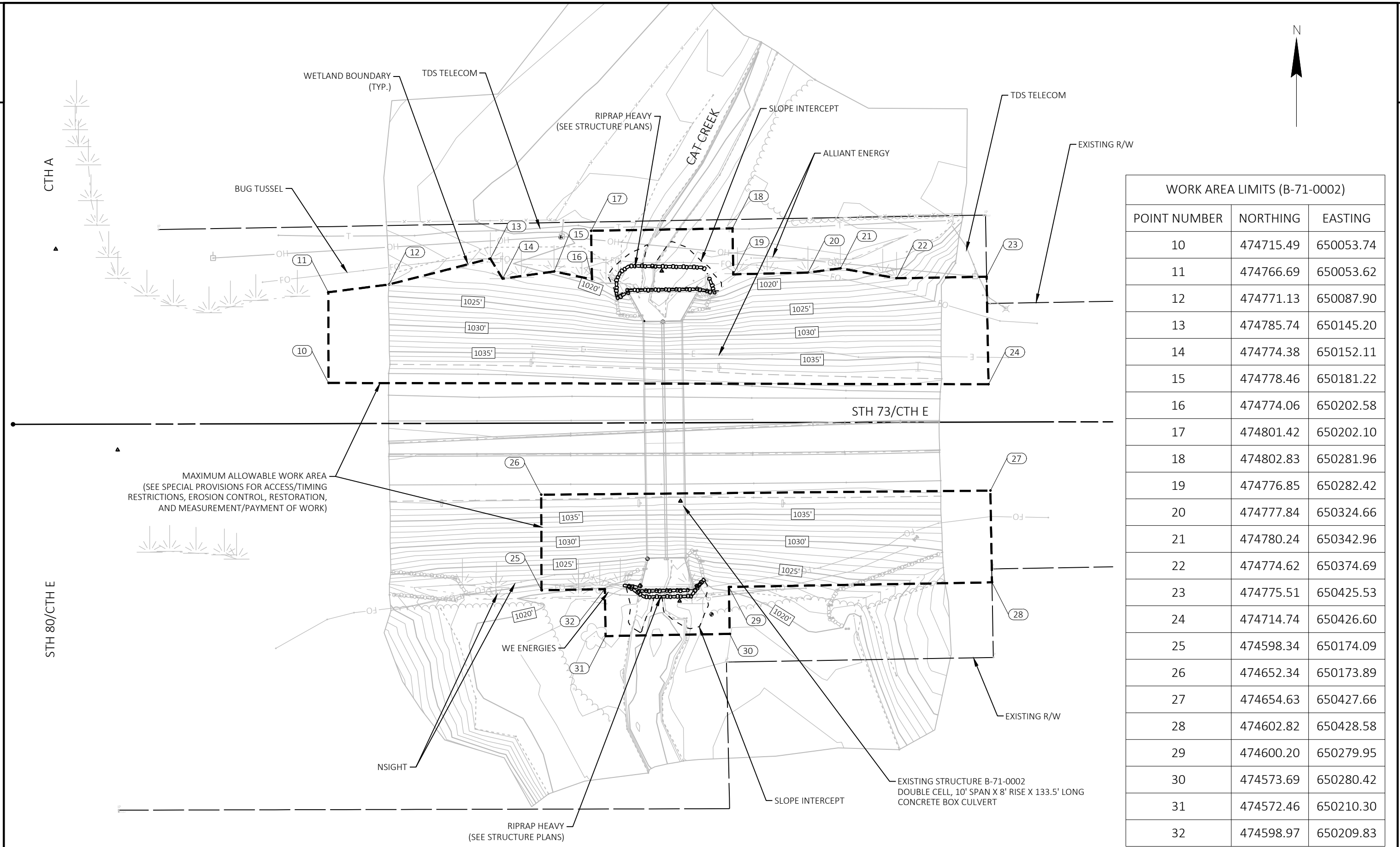
TEMPORARY SMALL ANIMAL TURN-AROUND







| WORK AREA LIMITS (B-37-0097) | | |
|------------------------------|-----------|-----------|
| POINT NUMBER | NORTHING | EASTING |
| 1 | 140457.04 | 263570.94 |
| 2 | 140357.38 | 263544.92 |
| 3 | 140316.31 | 263889.77 |
| 4 | 140419.30 | 263891.34 |
| 5 | 140342.93 | 263416.61 |
| 6 | 140263.03 | 263387.60 |
| 7 | 140264.31 | 263888.98 |
| 8 | 140179.32 | 263887.69 |



2








2



NOTES:

- MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES.
- MAINTAIN ACCESS ALONG PATH AT ALL TIMES.

LEGEND

| | |
|---|-----------------------------|
|  | TRAFFIC CONTROL DRUM |
|  | SIGN ON PERMANENT SUPPORT |
|  | SIGN ON TEMPORARY SUPPORT |
|  | MAXIMUM ALLOWABLE WORK AREA |
|  | DIRECTION OF TRAFFIC |

PROJECT NO: 1009-47-63

HWY: VAR HWY

COUNTY: NORTH CENTRAL REGION WIDE

TRAFFIC CONTROL: B-37-0097

SHEET

| |
|---|
| E |
|---|

FILE NAME : C:\ONEDRIVE\AECOM\60662126 - NCR CULVERT REPAIRS - GENERAL\900_CAD_GIS\910_CAD\10094763\SHEETS\PLAN\025100_TC.DWG
LAYOUT NAME - 01

PLOT DATE : 4/25/2024 9:34 AM

PLOT BY : WOLF, KELLY

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

Estimate Of Quantities

| 1009-47-63 | | | | | |
|------------|------------|--|------|-----------|-----------|
| Line | Item | Item Description | Unit | Total | Qty |
| 0002 | 205.0100 | Excavation Common | CY | 111.000 | 111.000 |
| 0004 | 213.0100 | Finishing Roadway (project) 01. 1009-47-63 | EACH | 1.000 | 1.000 |
| 0006 | 312.0110 | Select Crushed Material | TON | 4.000 | 4.000 |
| 0008 | 502.4204 | Adhesive Anchors No. 4 Bar | EACH | 2,137.000 | 2,137.000 |
| 0010 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 2,540.000 | 2,540.000 |
| 0012 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 8,520.000 | 8,520.000 |
| 0014 | 509.1500 | Concrete Surface Repair | SF | 26.000 | 26.000 |
| 0016 | 606.0700 | Grouted Riprap Heavy | CY | 100.000 | 100.000 |
| 0018 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0020 | 625.0100 | Topsoil | SY | 80.000 | 80.000 |
| 0022 | 628.2027 | Erosion Mat Class II Type C | SY | 80.000 | 80.000 |
| 0024 | 630.0110 | Seeding Mixture No. 10 | LB | 1.200 | 1.200 |
| 0026 | 630.0500 | Seed Water | MGAL | 1.000 | 1.000 |
| 0028 | 642.5001 | Field Office Type B 01. B-37-0097 | EACH | 1.000 | 1.000 |
| 0030 | 642.5001 | Field Office Type B 02. B-71-0002 | EACH | 1.000 | 1.000 |
| 0032 | 643.0300 | Traffic Control Drums | DAY | 4,799.000 | 4,799.000 |
| 0034 | 643.0420 | Traffic Control Barricades Type III | DAY | 67.000 | 67.000 |
| 0036 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 134.000 | 134.000 |
| 0038 | 643.0900 | Traffic Control Signs | DAY | 916.000 | 916.000 |
| 0040 | 643.1000 | Traffic Control Signs Fixed Message | SF | 72.000 | 72.000 |
| 0042 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0044 | 645.0120 | Geotextile Type HR | SY | 130.000 | 130.000 |
| 0046 | 999.2000.S | Installing and Maintaining Bird Deterrent System (station) 01. B-37-0097 | EACH | 1.000 | 1.000 |
| 0048 | 999.2000.S | Installing and Maintaining Bird Deterrent System (station) 02. B-71-0002 | EACH | 1.000 | 1.000 |
| 0050 | SPV.0035 | Special 01. Concrete Culvert Overlay | CY | 185.000 | 185.000 |
| 0052 | SPV.0060 | Special 01. Filling Voids and Sealing Vertical Culvert Joints | EACH | 1.000 | 1.000 |
| 0054 | SPV.0060 | Special 02. Temporary Stream Diversion B-37-0097 | EACH | 1.000 | 1.000 |
| 0056 | SPV.0060 | Special 03. Temporary Stream Diversion B-71-0002 | EACH | 1.000 | 1.000 |
| 0058 | SPV.0060 | Special 04. Temporary Construction Access (B-37-0097) | EACH | 1.000 | 1.000 |
| 0060 | SPV.0060 | Special 05. Temporary Construction Access (B-71-0002) | EACH | 1.000 | 1.000 |
| 0062 | SPV.0060 | Special 06. Construction Staking Project 1009-47-63 | EACH | 1.000 | 1.000 |
| 0064 | SPV.0180 | Special 01. Concrete Culvert Preparation | SY | 913.000 | 913.000 |

3

| EARTHWORK & RESTORATION | | | | | | | | |
|-------------------------|---------|---------------|--|-----------------------------|--|---|-------------------------------------|-----------|
| CATEGORY | ROADWAY | LOCATION | 205.0100 EXCAVATION COMMON (CY) | 625.0100 TOPSOIL (SY) | 628.2027 EROSION MAT CLASS II TYPE C (SY) | 630.0110 SEEDING MIXTURE NO. 10 (LB) | 630.0500 SEED WATER (MGAL) | COMMENTS |
| 0010 | STH 73 | B-71-0002 | 67 | 33 | 33 | 0.5 | 0.4 | NORTH END |
| 0010 | STH 73 | B-71-0002 | 44 | 33 | 33 | 0.5 | 0.4 | SOUTH END |
| 0010 | | UNDISTRIBUTED | --- | 14 | 14 | 0.2 | 0.2 | |
| CAT 0010 TOTALS | | | 111 | 80 | 80 | 1.2 | 1.0 | |

| FIELD OFFICE | | | | |
|-----------------|---------|-----------|---|---|
| CATEGORY | ROADWAY | LOCATION | 642.5001.01 FIELD OFFICE TYPE B B-37-0097 (EACH) | 642.5001.02 FIELD OFFICE TYPE B B-71-0002 (EACH) |
| 0010 | STH 153 | B-37-0097 | 1 | --- |
| 0010 | STH 73 | B-71-0002 | --- | 1 |
| CAT 0010 TOTALS | | | 1 | 1 |

3

| TRAFFIC CONTROL | | | | | | | | | | | | | |
|-----------------|----------------------------------|------|-----------------|--------------------|-----------------|--------------------|-----------------|------------------|-----------------|--------|-----------------|-----------------------------------|----------|
| | | | 643.0300 | | 643.0420 | | 643.0705 | | 643.0900 | | 643.1000 | | COMMENTS |
| | | | TRAFFIC CONTROL | | TRAFFIC CONTROL | | TRAFFIC CONTROL | | TRAFFIC CONTROL | | TRAFFIC CONTROL | | |
| | | | DRUMS | | BARRICADES | | WARNING LIGHTS | | SIGNS | | SIGNS | | |
| CATEGORY | LOCATION | DAYS | NO. | TYPE III (DAYS) | TYPE III NO. | TYPE III (DAYS) | TYPE A NO. | TYPE A (DAYS) | NO. | (DAYS) | SIGNS (SF) | | |
| 0010 | STH 153 (7-DAY ADVANCED WARNING) | 7 | --- | --- | --- | --- | --- | --- | --- | --- | 36 | G20-57B (EASTBOUND AND WESTBOUND) | |
| 0010 | STH 153 | 76 | 27 | 2,052 | --- | --- | --- | --- | 5 | 380 | --- | | |
| 0010 | STH 73 (7-DAY ADVANCED WARNING) | 7 | --- | --- | --- | --- | --- | --- | --- | --- | 36 | G20-57B (EASTBOUND AND WESTBOUND) | |
| 0010 | STH 73 | 67 | 41 | 2,747 | 1 | 67 | 2 | 134 | 8 | 536 | --- | | |
| CAT 0010 TOTALS | | | | 4,799 | | 67 | | 134 | | 916 | 72 | | |

| INSTALLING AND MAINTAINING BIRD DETERRENT SYSTEM | | | | |
|--|---------|-----------|------------------------------------|------------------------------------|
| CATEGORY | ROADWAY | STATION | 999.2000.01 B-37-0097 (EACH) | 999.2000.02 B-71-0002 (EACH) |
| 0010 | STH 153 | B-37-0097 | 1 | --- |
| 0010 | STH 73 | B-71-0002 | --- | 1 |
| CAT 0010 TOTALS | | | 1 | 1 |

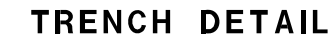
| TEMPORARY CONSTRUCTION ACCESS | | | | |
|-------------------------------|---------|-----------|------------------------------------|------------------------------------|
| CATEGORY | ROADWAY | LOCATION | SPV.0060.04 B-37-0097 (EACH) | SPV.0060.05 B-71-0002 (EACH) |
| 0010 | STH 153 | B-37-0097 | 1 | --- |
| 0010 | STH 73 | B-71-0002 | --- | 1 |
| CAT 0010 TOTALS | | | 1 | 1 |

Standard Detail Drawing List

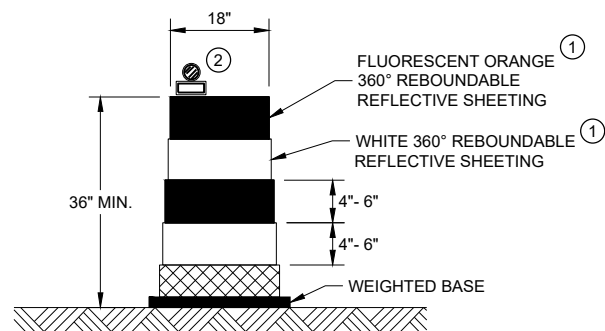
| | |
|-----------|--|
| 08E09-06 | SILT FENCE |
| 15C11-10B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15C12-09A | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION |
| 15C12-09B | TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE |
| 15D21-07A | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 15D28-04 | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY |
| 15D51-01 | TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY |



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

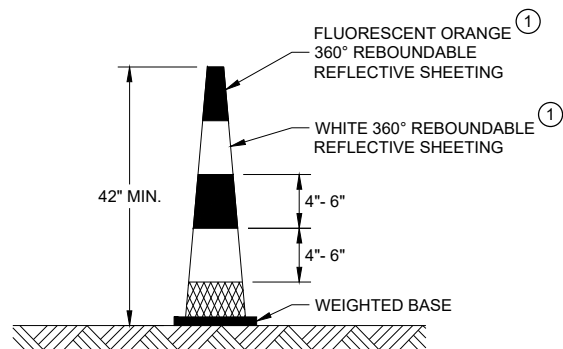


| | |
|--|---|
| SILT FENCE | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED <u>4-29-05</u> DATE | <u>/S/ Beth Canestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER |



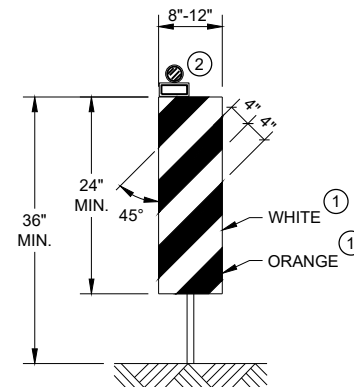
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



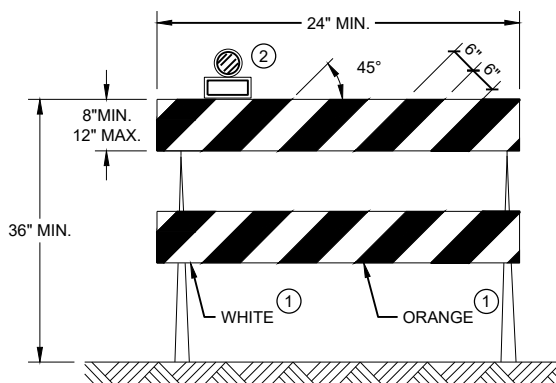
42" CONE

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



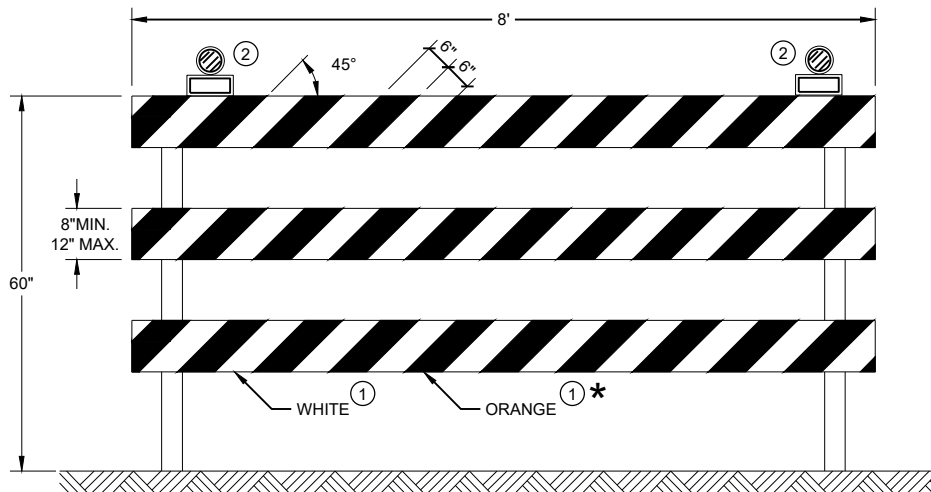
VERTICAL PANEL

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 DATE | /S/ Andrew Heidtke 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

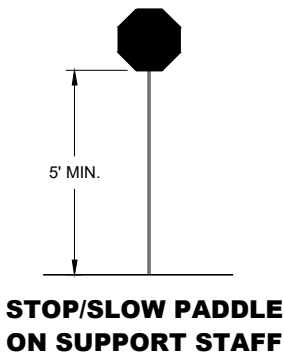
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- 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.

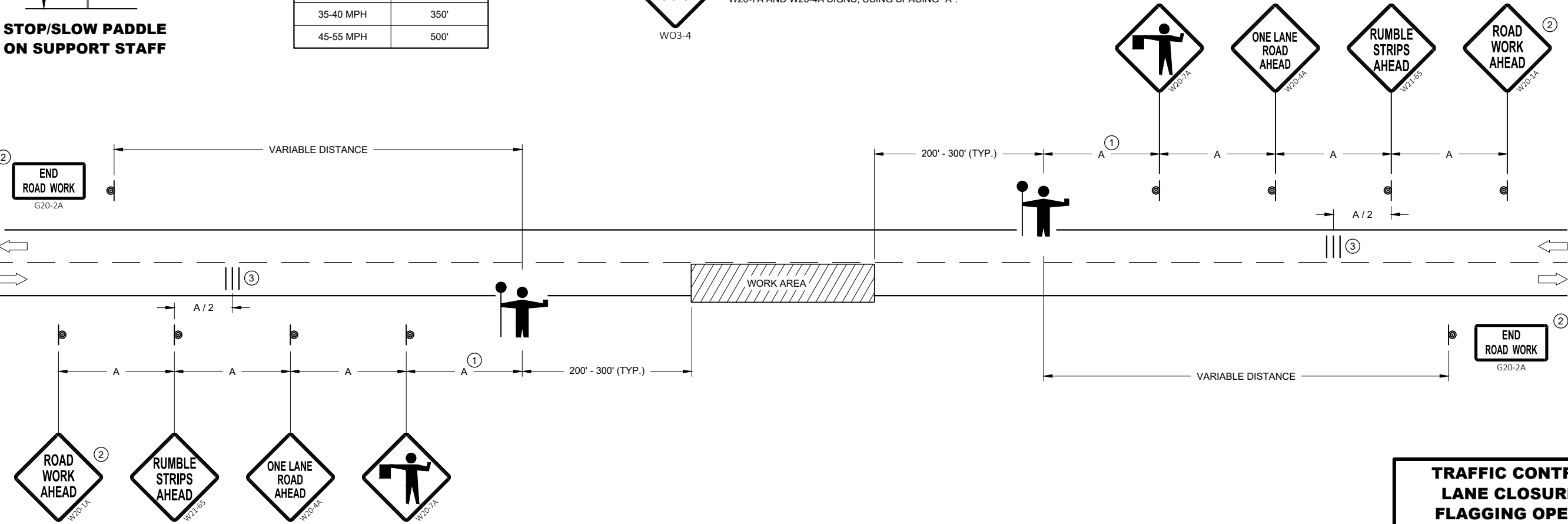


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| 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".



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

GENERAL NOTES

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL CONE 42-INCH
-  TRAFFIC CONTROL DRUM
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

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

IF THE AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD) STOPS WORKING, 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.

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.

- ① SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ② IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE WO3-4 SIGNS WITH W20-7A SIGNS.

TEMPORARY PORTABLE RUMBLE STRIPS

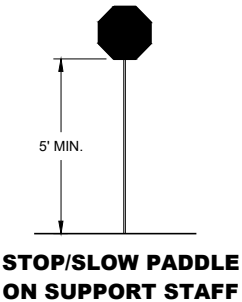
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

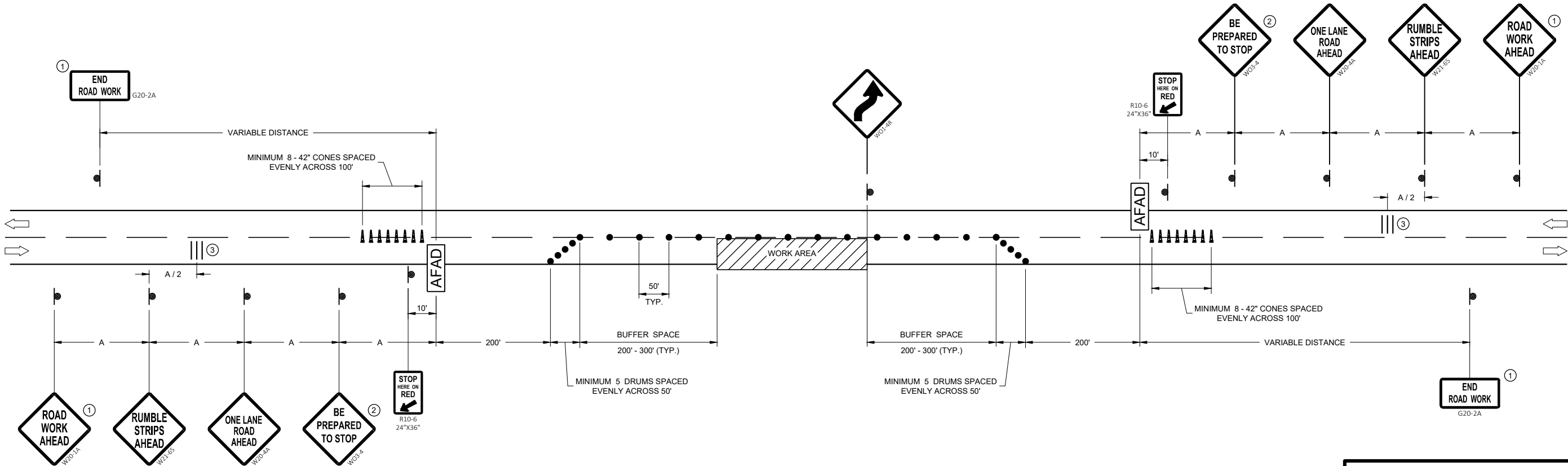
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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

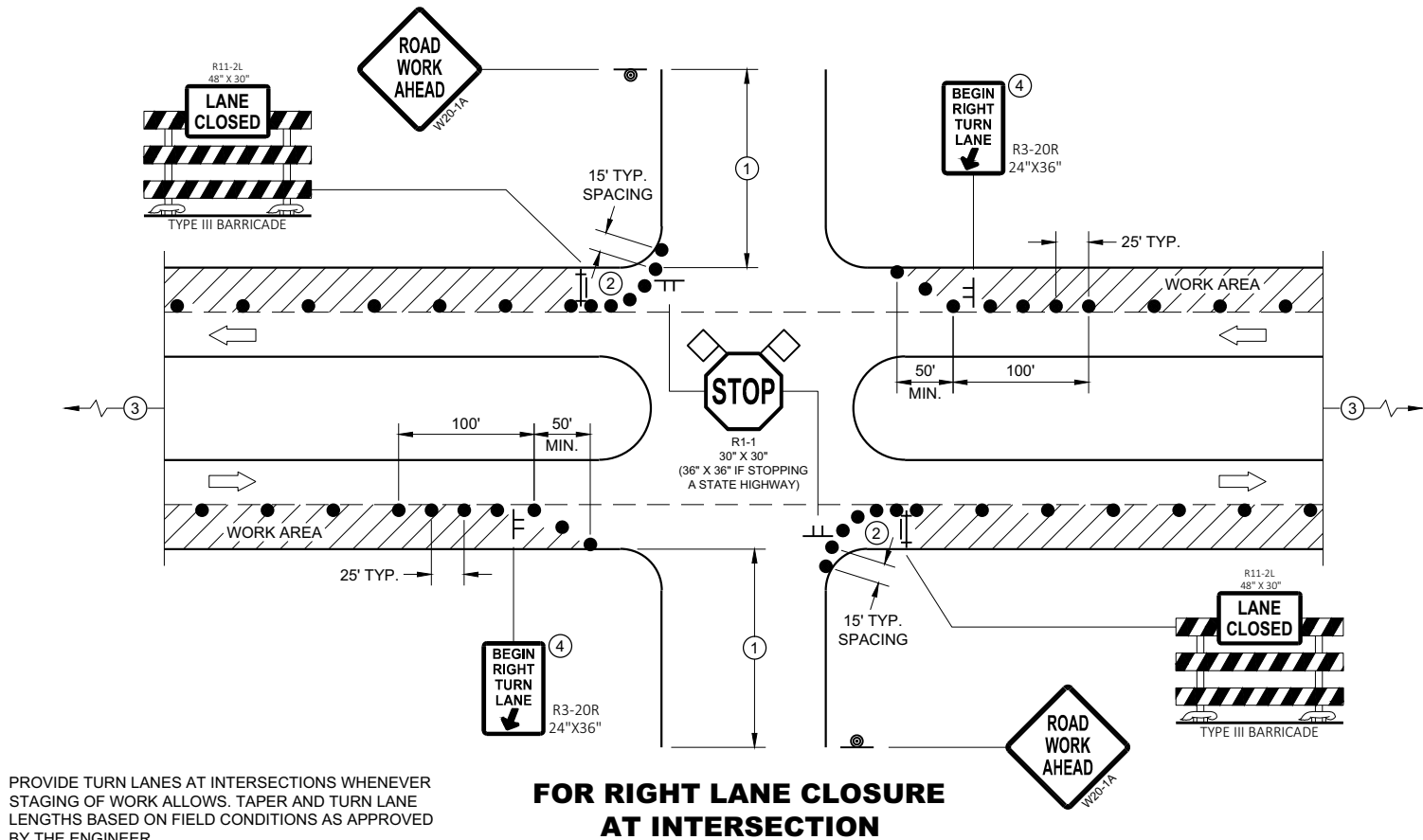


TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

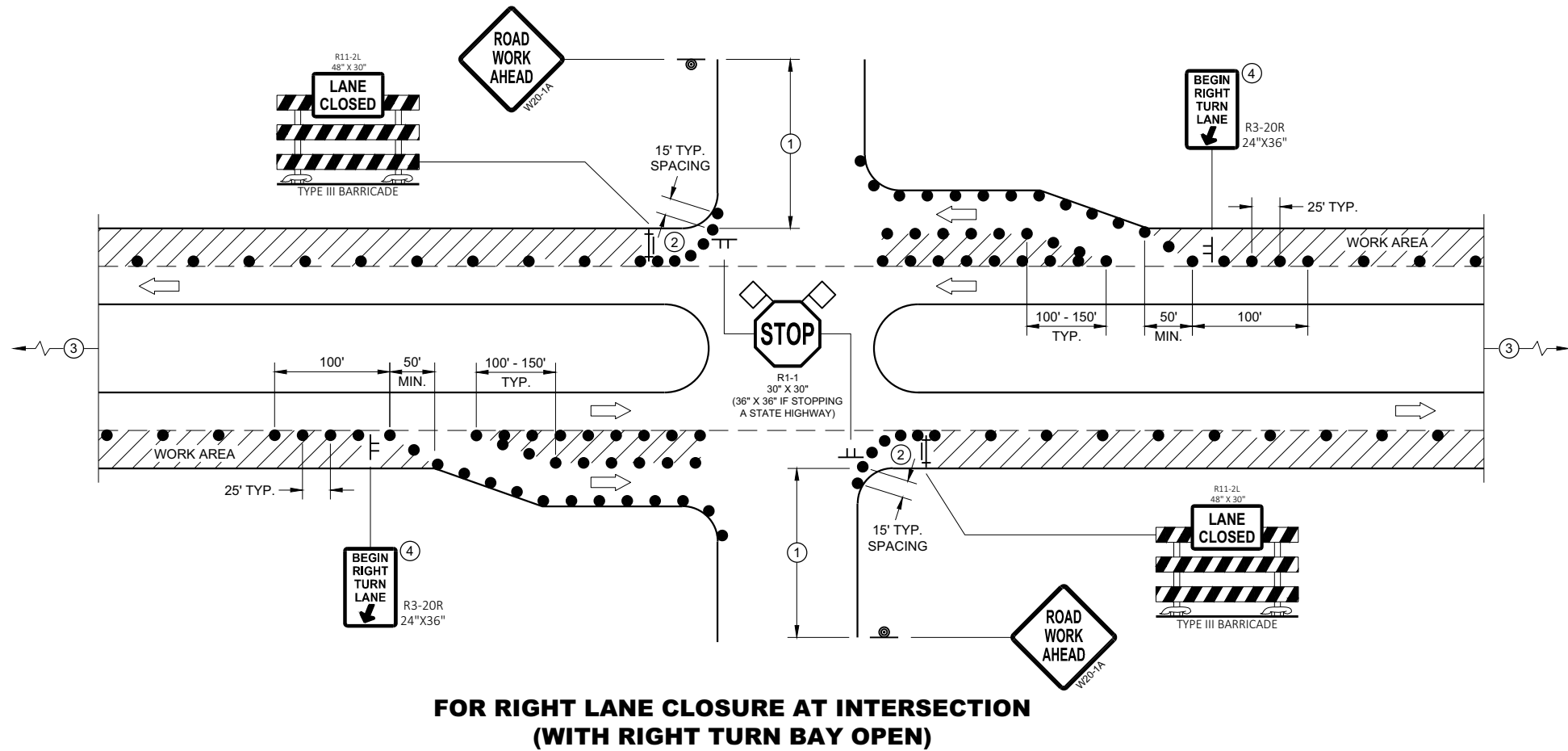
APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" MAY BE USED IF APPROVED BY THE DISTRICT TRAFFIC UNIT.
- "WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.
- SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.
- BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.
- CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.
 - ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
 - ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
 - ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.







LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

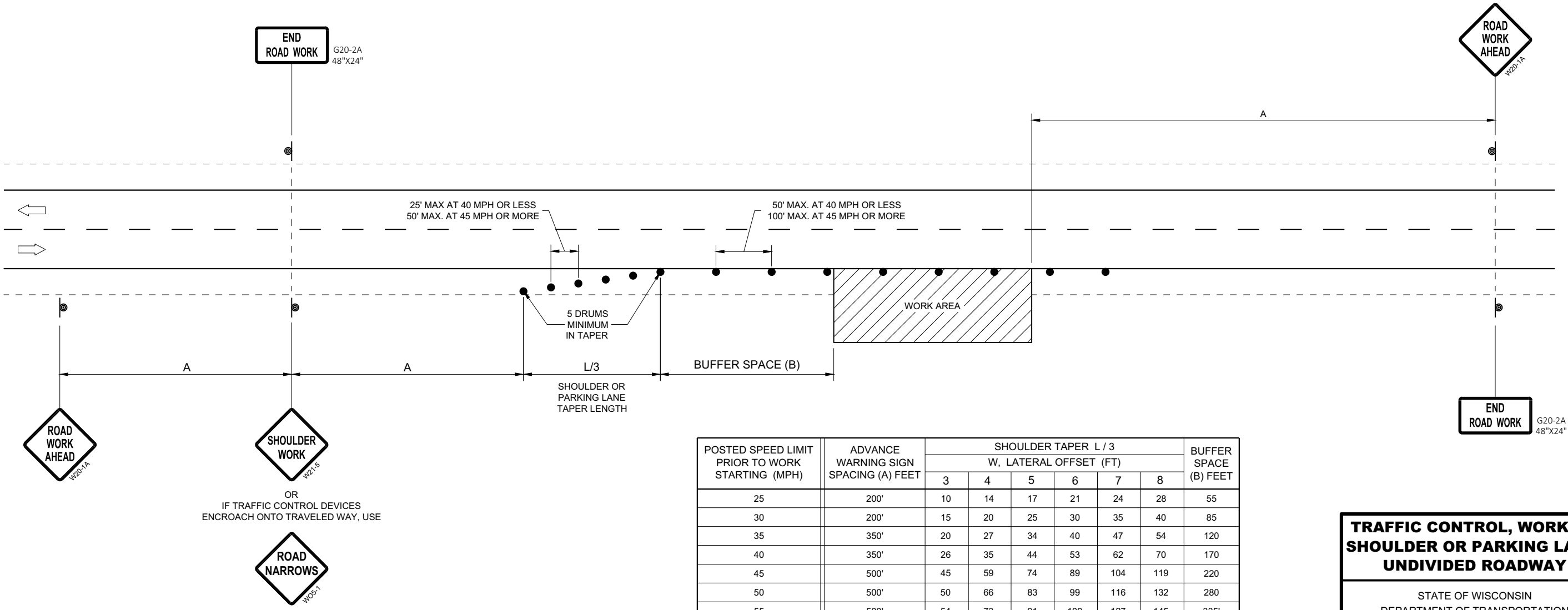
W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

6

SDD 15D28 - 04

SDD 15D28 - 04



| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | ADVANCE WARNING SIGN SPACING (A) FEET | SHOULDER TAPER L / 3 | | | | | | BUFFER SPACE (B) FEET |
|---|---|------------------------|----|----|-----|-----|-----|-----------------------------|
| | | W, LATERAL OFFSET (FT) | | | | | | |
| | | 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


LEGEND


- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

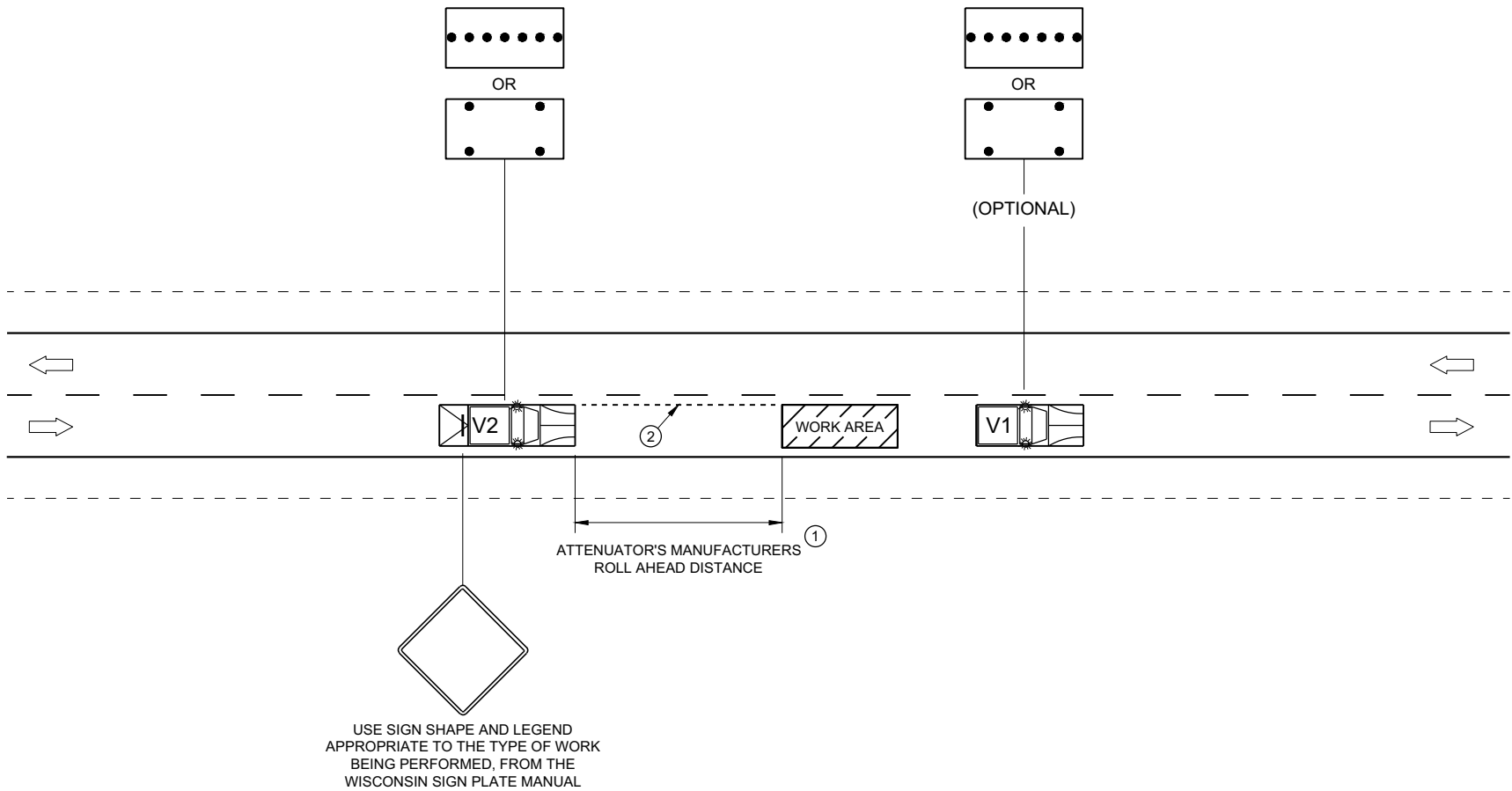
| POSTED SPEED PRIOR TO WORK STARTING (MPH) | DECISION SIGHT DISTANCE (D) |
|--|--------------------------------|
| 0 - 25 | 550' |
| 30 | 550' |
| 35 | 700' |
| 40 | 700' |
| 45 | 900' |
| 50 | 900' |
| 55 | 1200' |

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- ①

DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, 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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ②

ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.

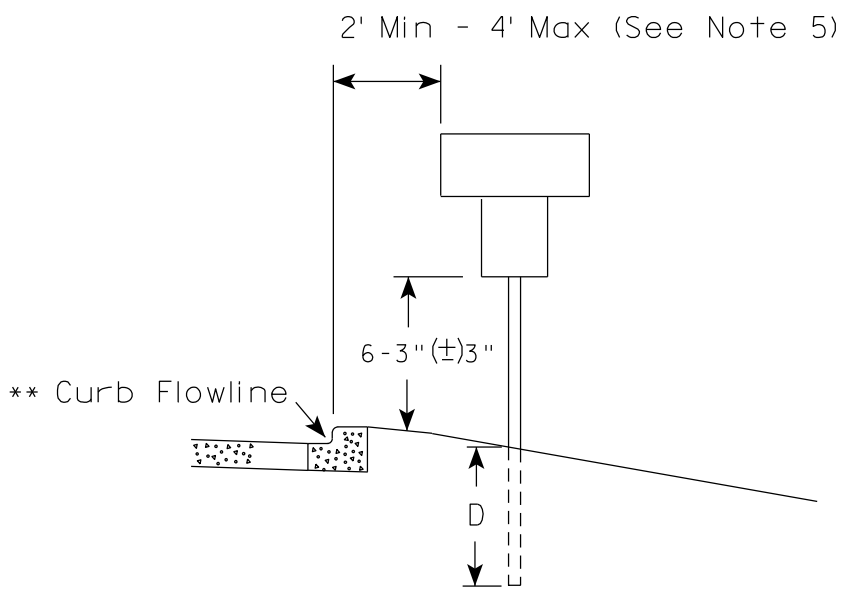
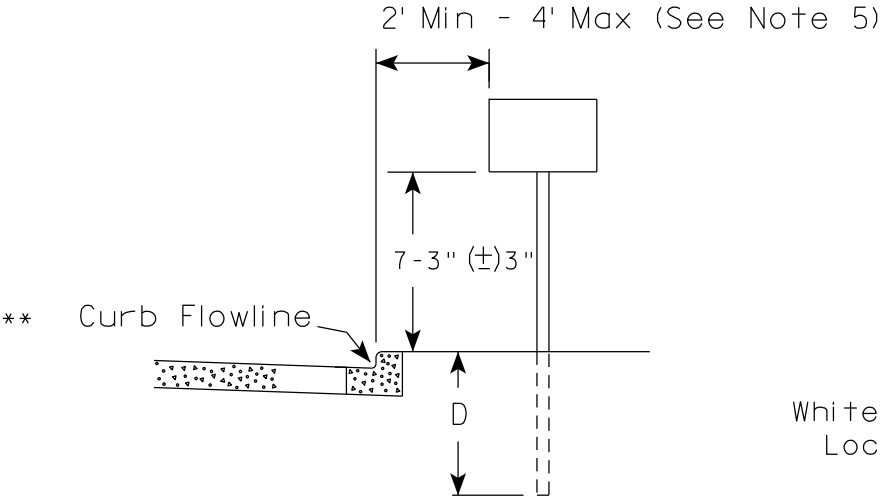


TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

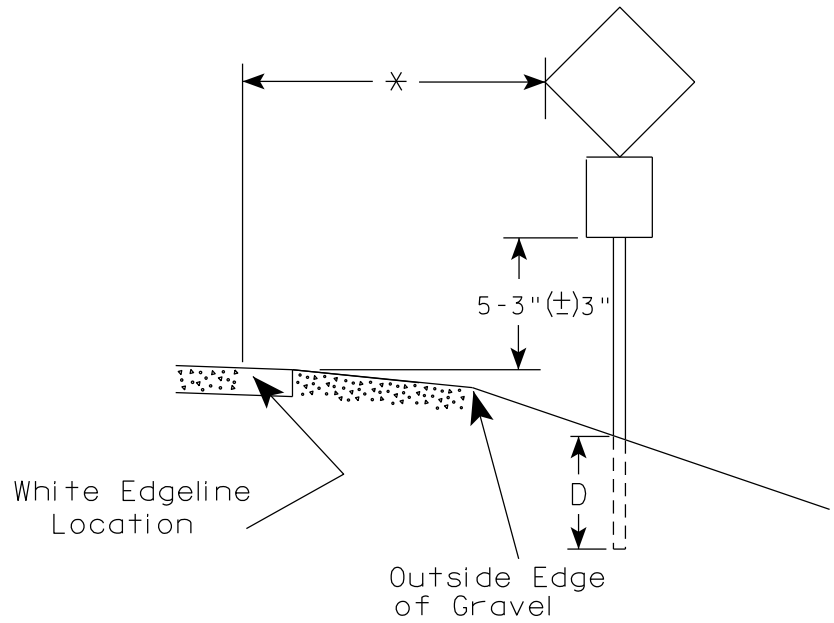
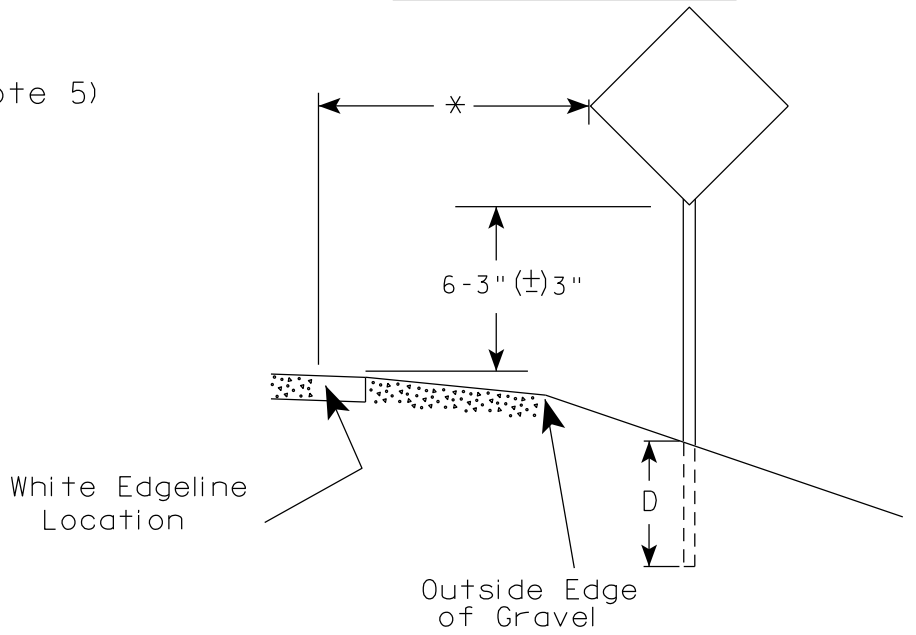
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

URBAN AREA



RURAL AREA (See Note 2)



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

GENERAL NOTES


1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 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 
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:

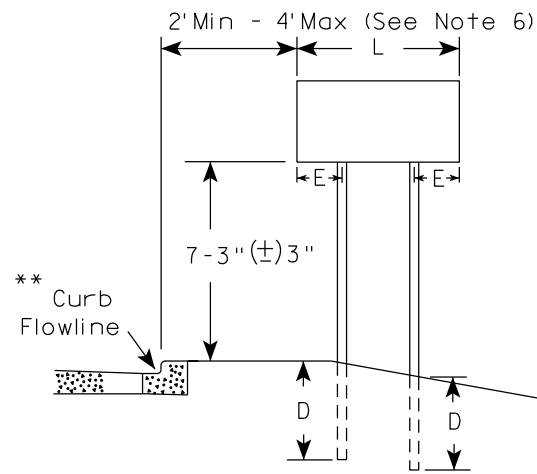
HWY:

COUNTY:

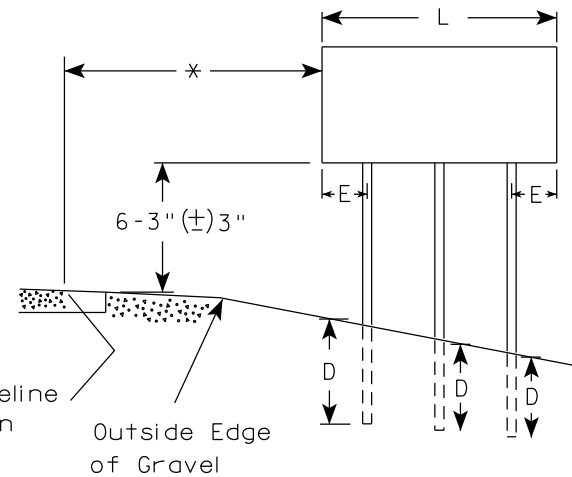
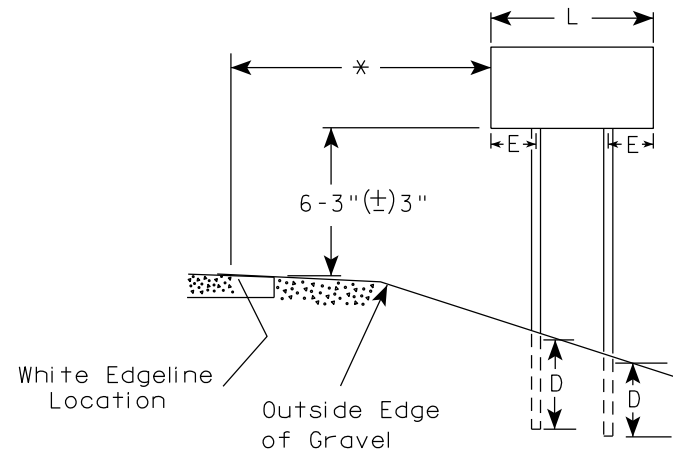
SHEET NO:

E

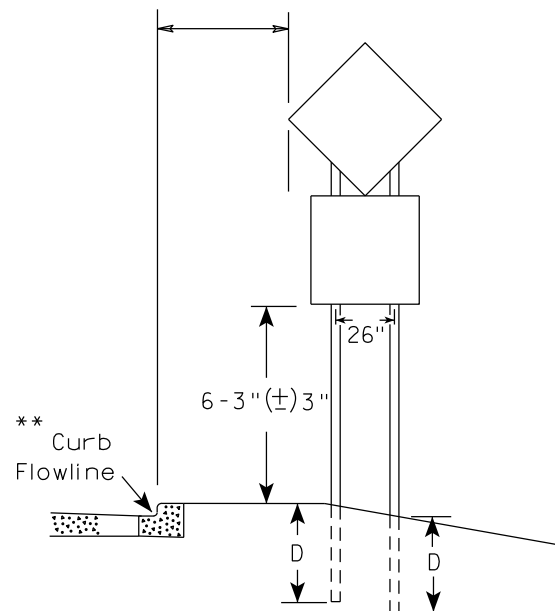
URBAN AREA



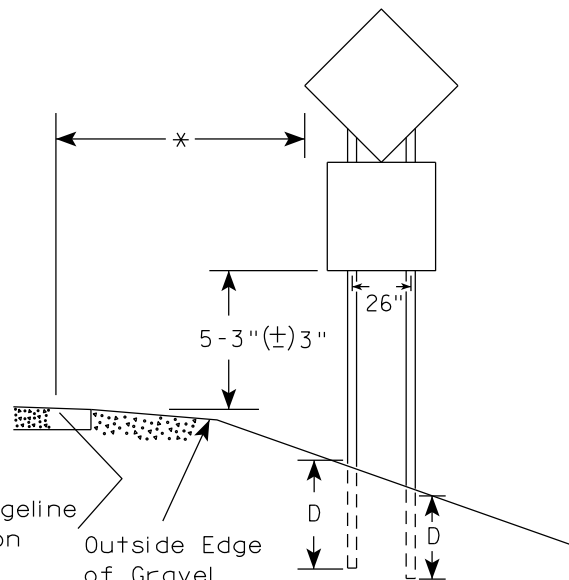
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

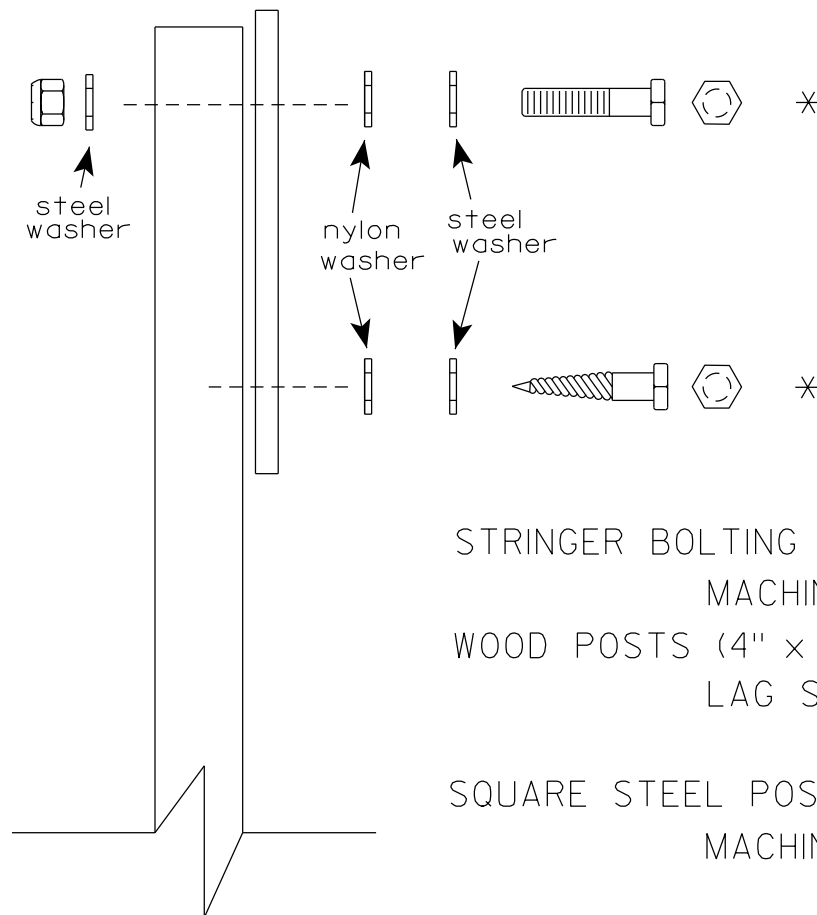
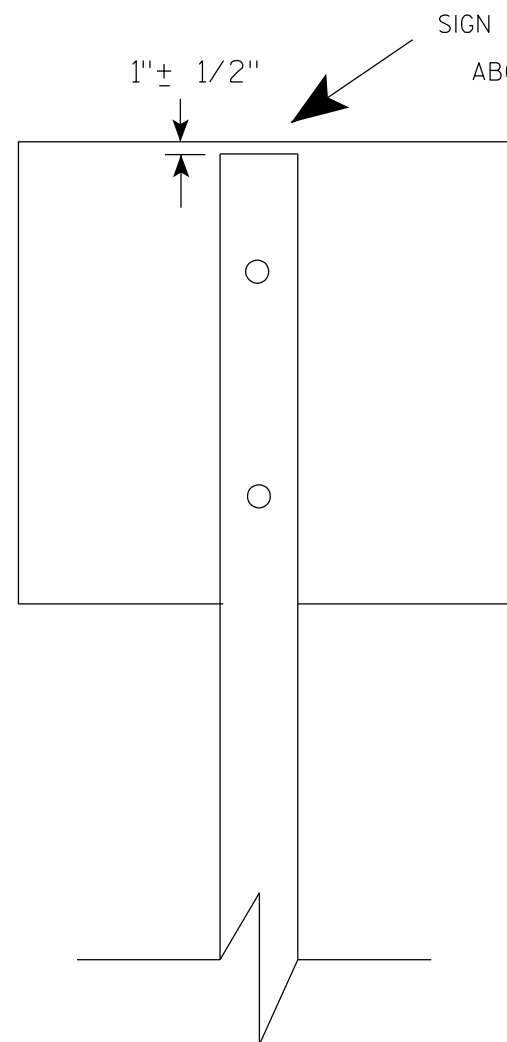
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

4" x 10" x 10 GA. ———→
STEEL PLATE (CUT
AS SHOWN) WELDED
TO ALL FOUR CORNERS
OF TELESPAR TUBE

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

2 1/2" TELES PAR TUBE

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELES PAR TUBE

4"

2 1/2"

10"

3 1/2"

16"

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

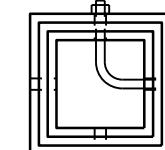
Side View (Left):

- Overall height dimension: LENGTH SHOWN ON MISC. Q'TYS
- Top section: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Telescope pieces: TELESCOPE PIECES FLUSH AT TOP
- Dimensions from ground line: 36" (total height), 18" (upper section), 12" (lower section).
- Ground line with downward arrow 'A'.

Top View (Right):

- Sign: SIGN (indicated by a bracket)
- Sign mounting: SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- Post section: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Hole specifications: ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
- Anchor bolt: $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT (indicated by a bracket)
- Dimension: 1" (distance from corner to anchor bolt)
- Ground line with downward arrow 'A'.
- Anchor bolt: $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
- Soil stabilizing sleeve: $2\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Post section: $2\frac{1}{4}$ " SQUARE X 36"

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

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:

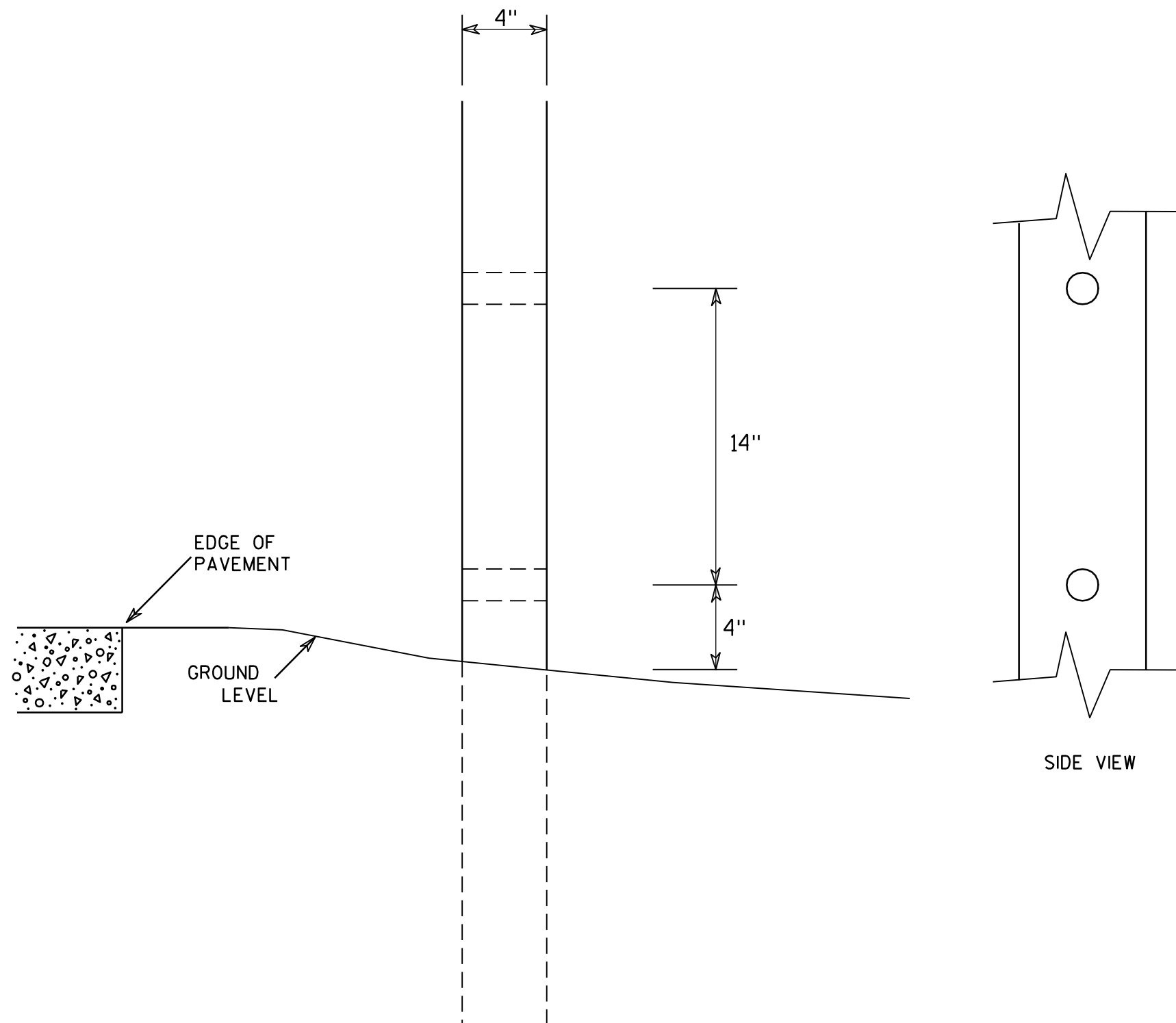
HWY:

COUNTY:

SHEET NO:

T

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

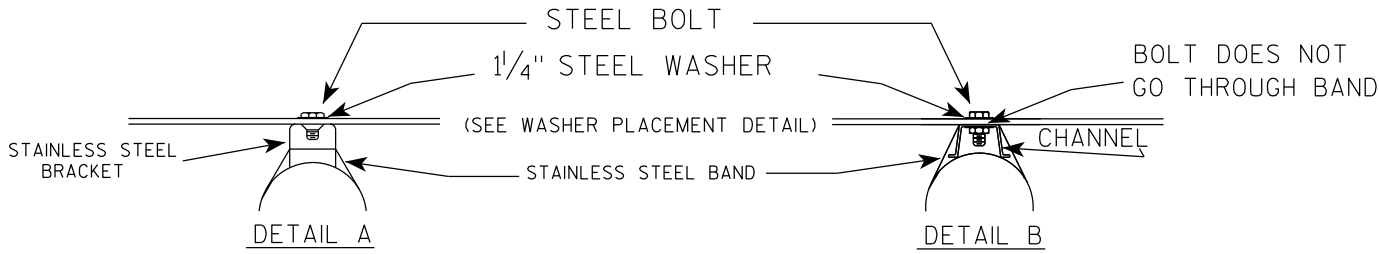
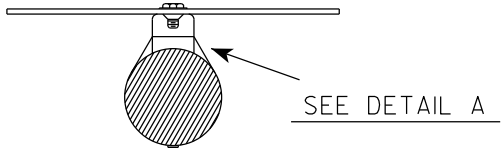
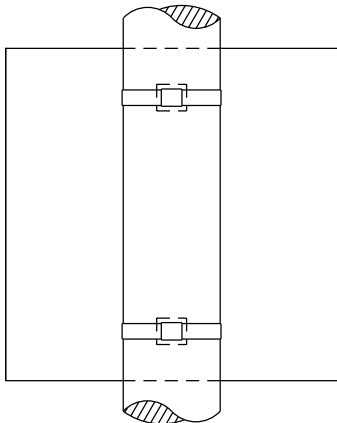
COUNTY:

SHEET NO:

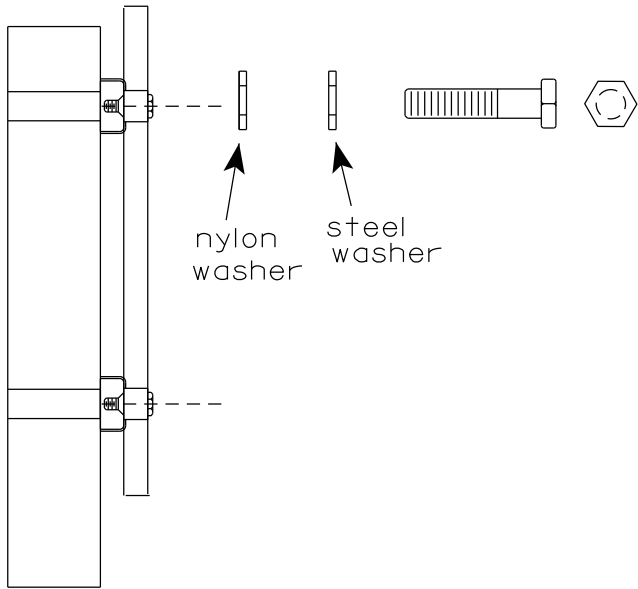
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

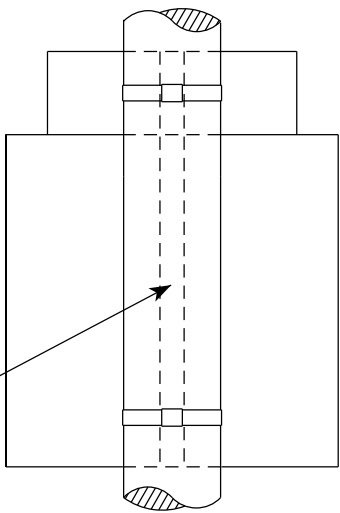


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

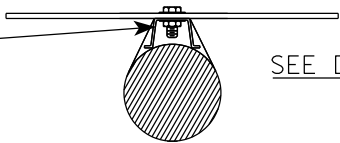
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 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

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

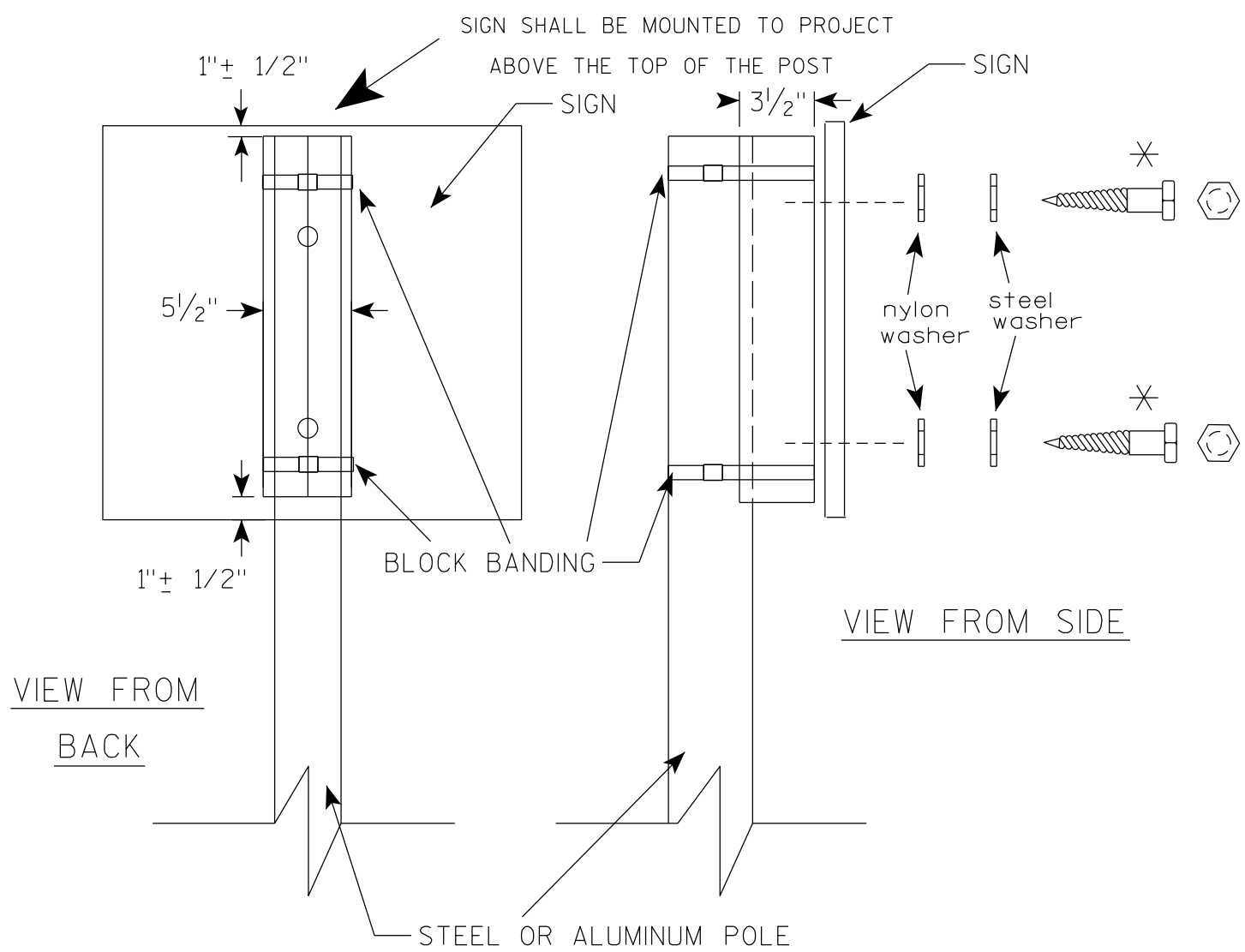


STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

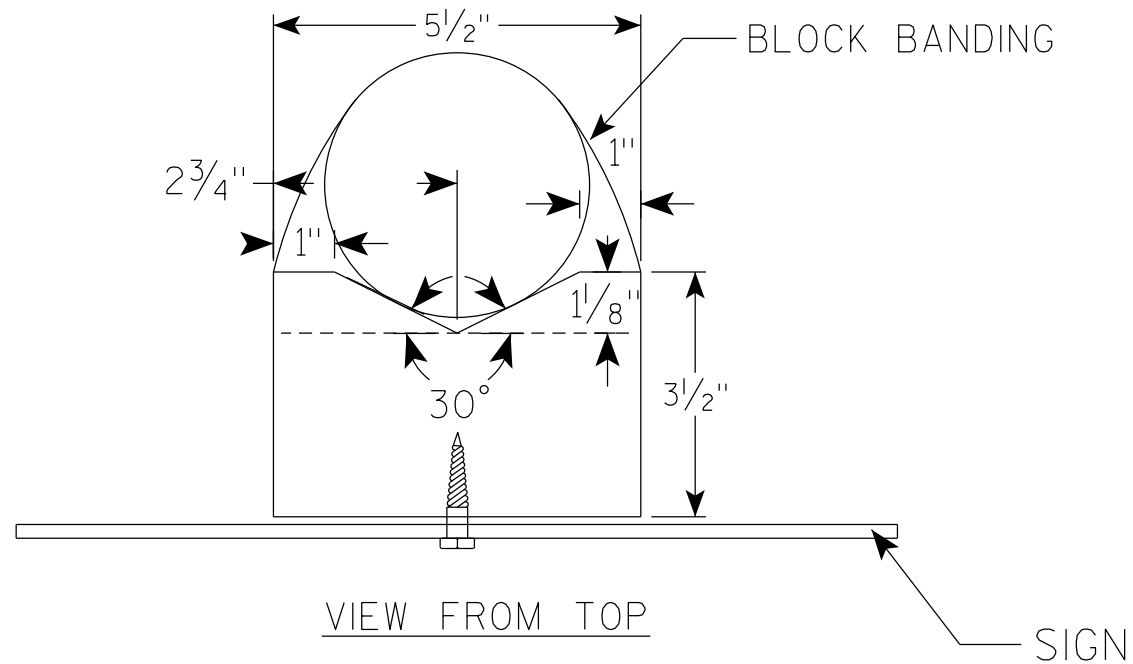
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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:

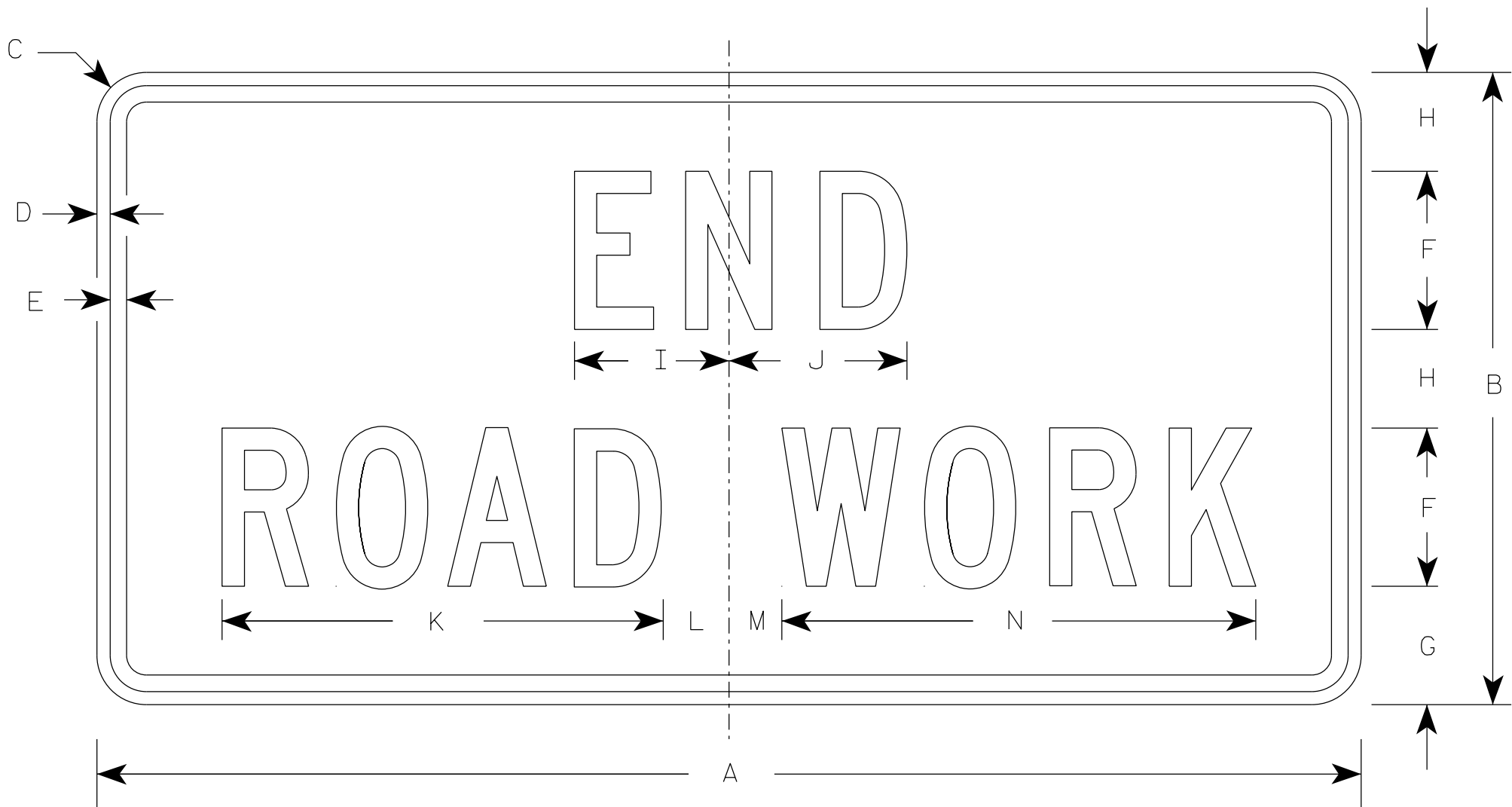
E

NOTES

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

Background - Orange

Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-2A

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

PROJECT NO:

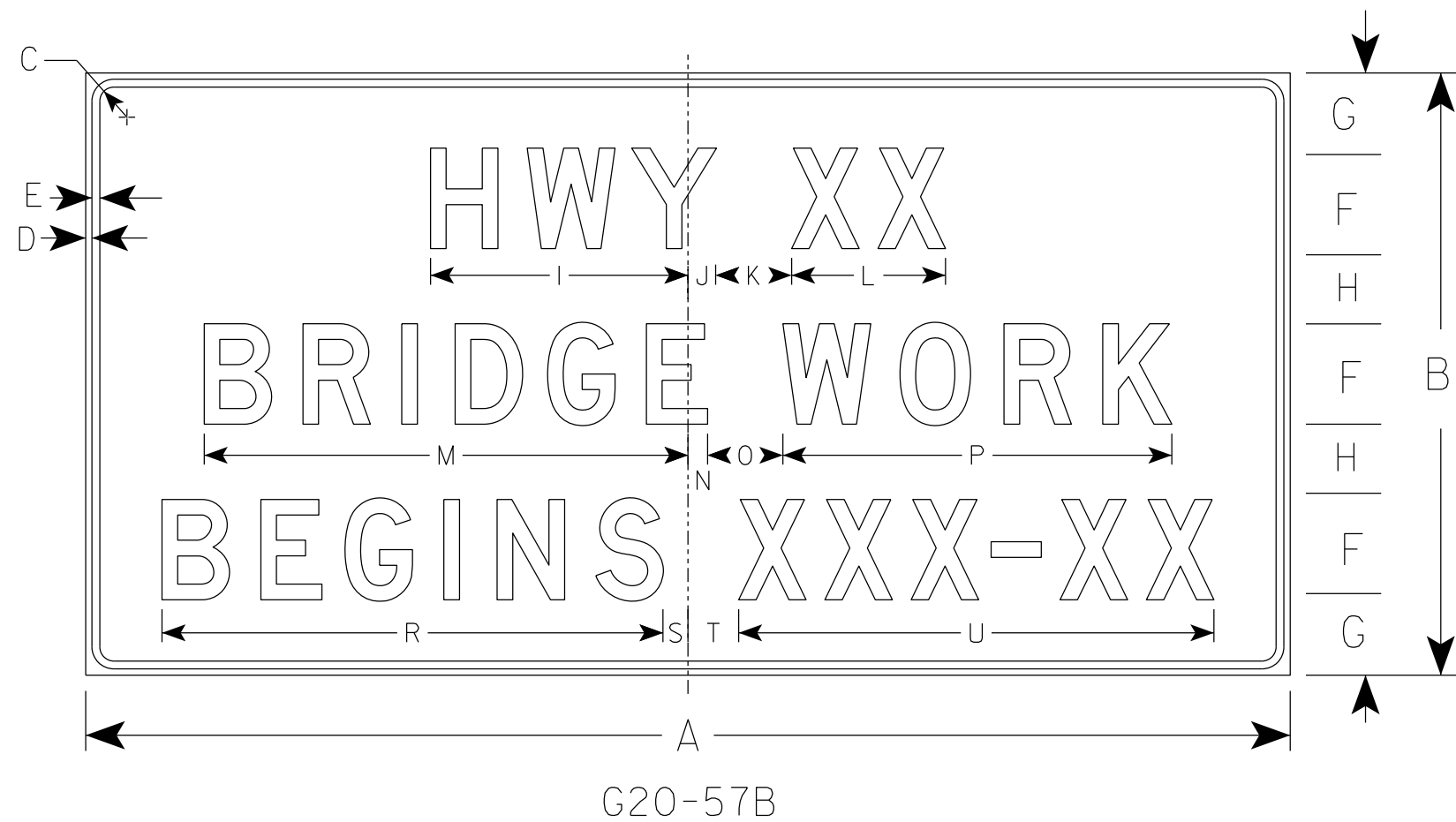
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D
- 4. Substitute appropriate numeral and 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 sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|-------|---|--------|--------|-------|---|--------|---|--------|-------|-------|--------|---|---|---|---|------|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 72 | 36 | 1 1/8 | 1/2 | 5/8 | 6 | 5 | 4 | 15 5/8 | 1 5/8 | 5 | 9 1/4 | 29 1/8 | 7/8 | 5 | 23 1/4 | | 29 7/8 | 1 3/4 | 3 1/4 | 28 1/2 | | | | | 18.0 | |
| 4 | 96 | 48 | 2 1/4 | 3/4 | 1 | 8 | 6 1/2 | 5 1/2 | 20 5/8 | 2 1/4 | 6 | 12 1/4 | 38 1/2 | 1 1/2 | 6 | 31 | | 39 1/4 | 2 | 4 | 37 7/8 | | | | | 32.0 | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

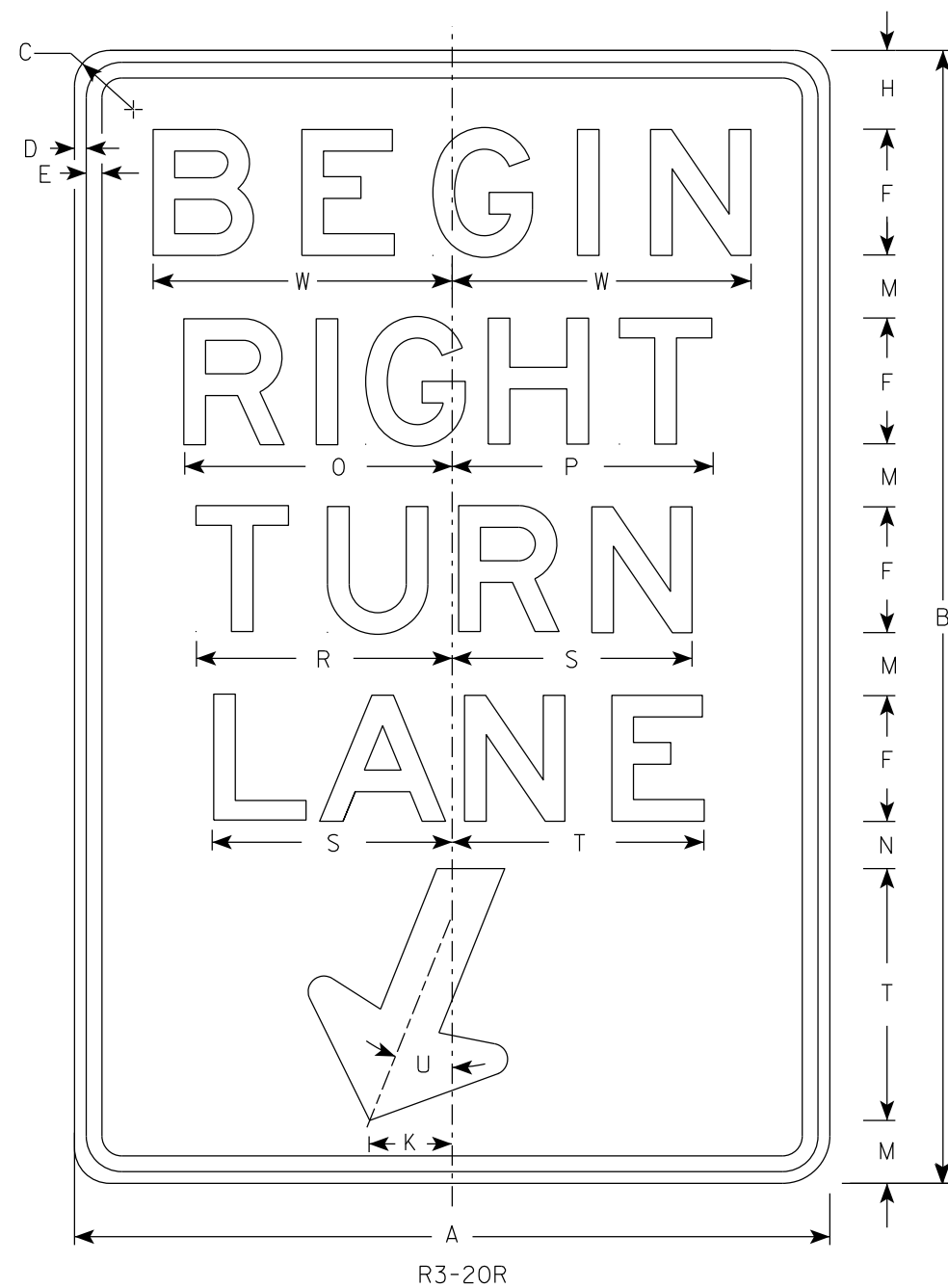
STANDARD SIGN
G20-57B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57B.1

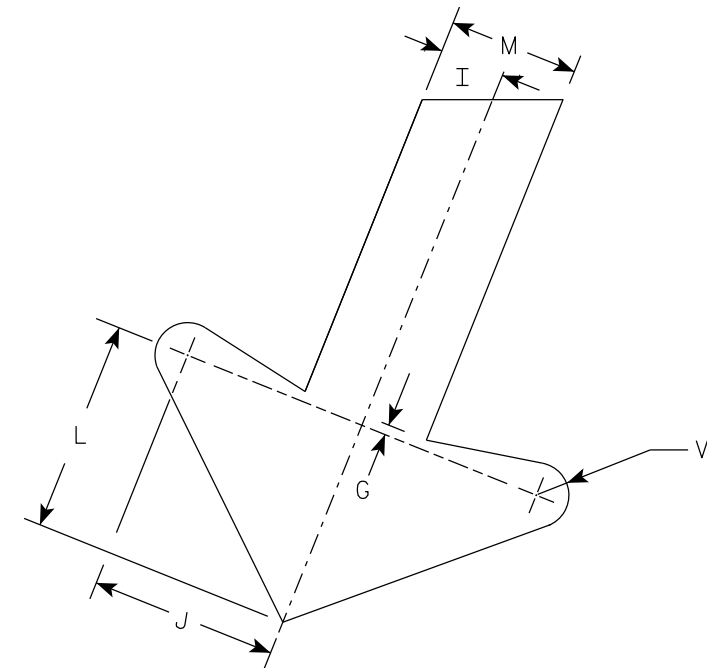
7



R3-20R

NOTES

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

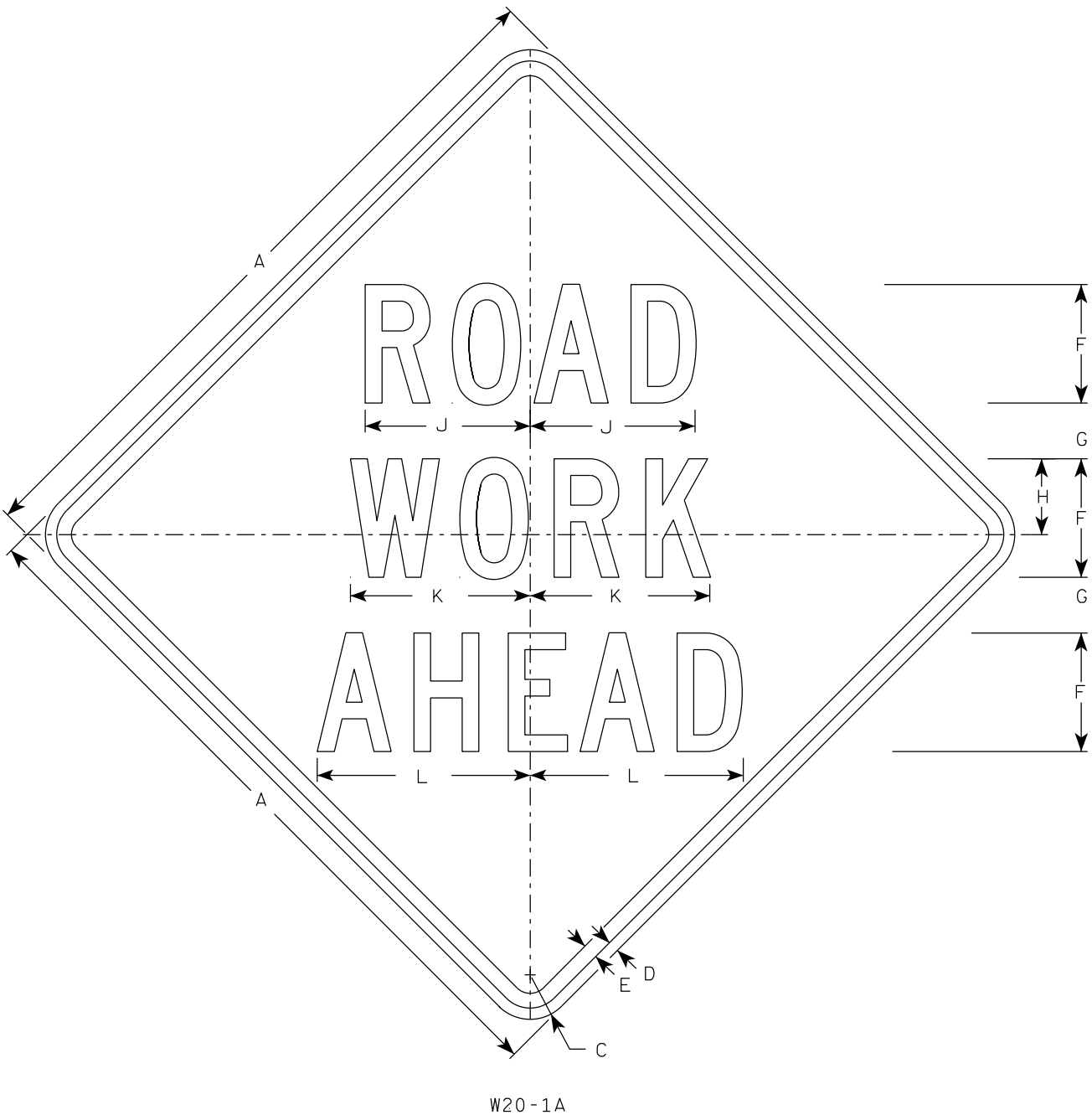


ARROW DETAIL

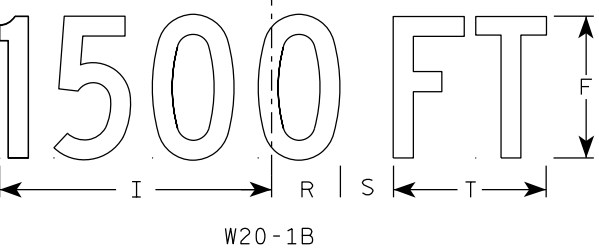
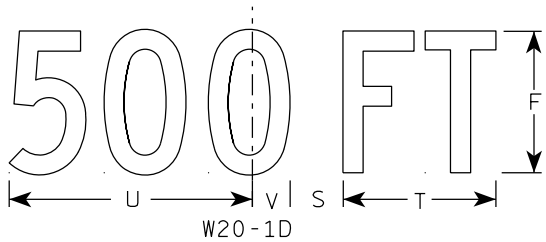
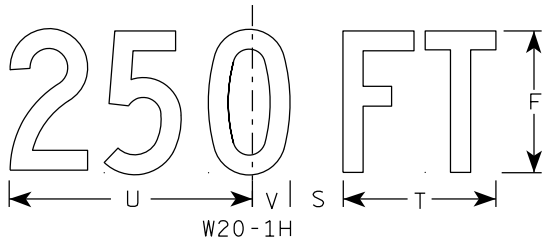
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|-----|-------|-------|-------|-------|-------|---|-------|--------|--------|---|--------|--------|----|-----|-----|--------|---|---|---|-----------------|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

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

7

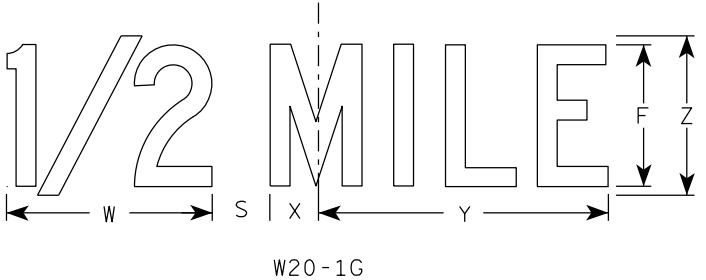


W20-1A

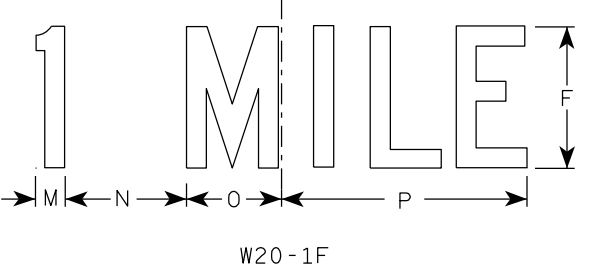


W20-1B

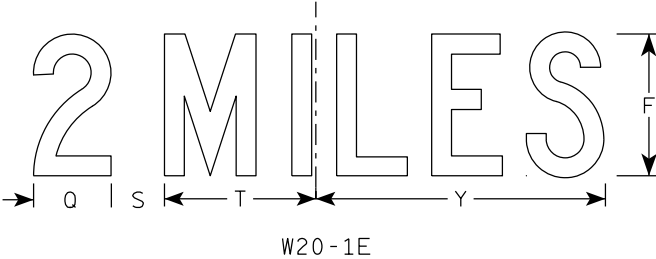
- NOTES
- 1. Sign is Type II - Type F Reflective
 - 2. Color:
 - Background - Orange
 - Message - Black
 - 3. Message Series - C
 - 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



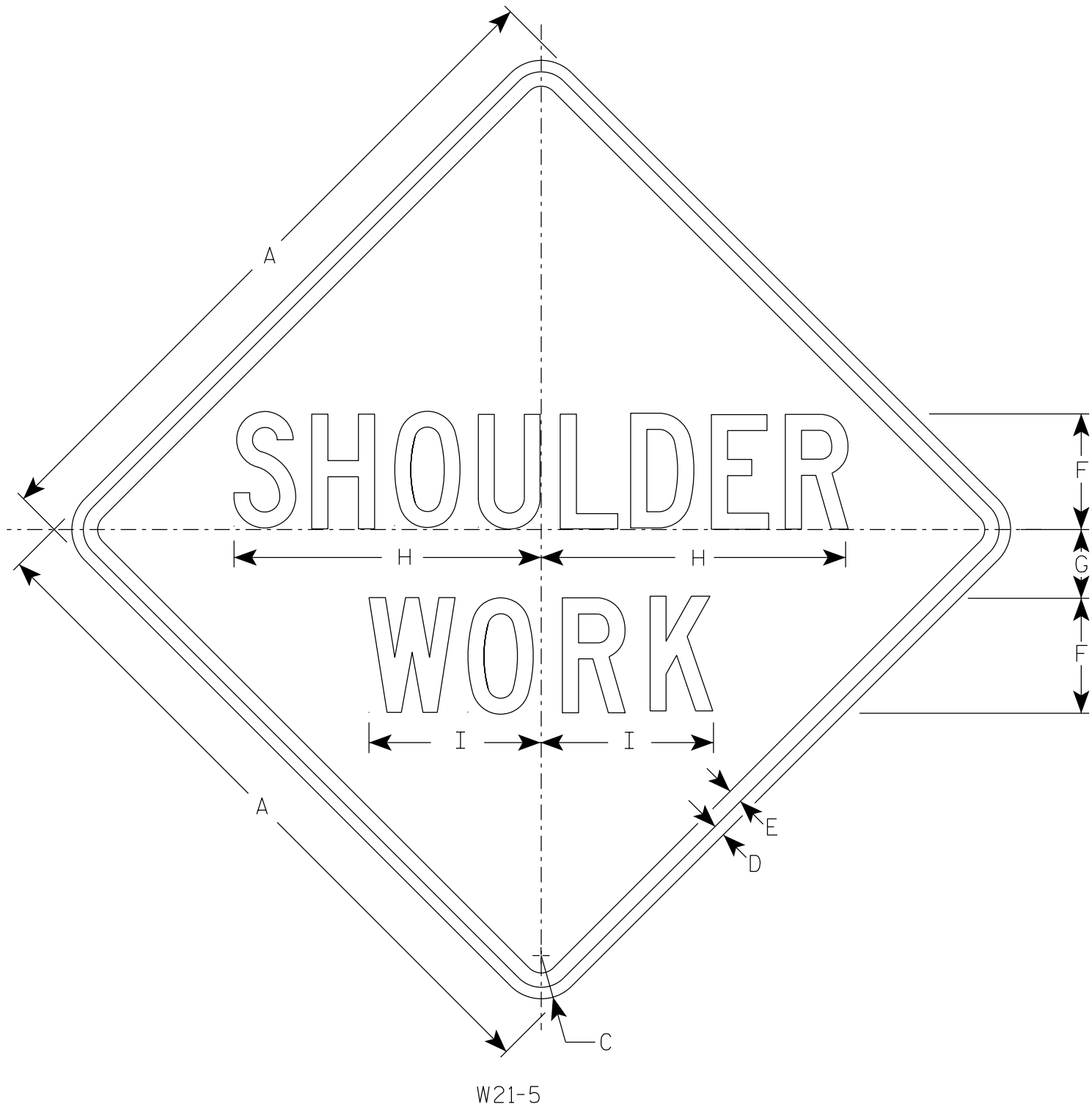
W20-1F



W20-1E

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

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - 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 sq. ft. |
|------|----|---|-------|-----|-----|---|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 36 | | 2 1/4 | 5/8 | 3/4 | 6 | 3 1/2 | 16 | 9 | | | | | | | | | | | | | | | | | | 9.0 |
| 2S | 48 | | 3 | 3/4 | 1 | 8 | 5 | 21 3/8 | 11 1/4 | | | | | | | | | | | | | | | | | | 16.0 |
| 2M | 48 | | 3 | 3/4 | 1 | 8 | 5 | 21 3/8 | 11 1/4 | | | | | | | | | | | | | | | | | | 16.0 |
| 3 | 48 | | 3 | 3/4 | 1 | 8 | 5 | 21 3/8 | 11 1/4 | | | | | | | | | | | | | | | | | | 16.0 |
| 4 | 48 | | 3 | 3/4 | 1 | 8 | 5 | 21 3/8 | 11 1/4 | | | | | | | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 3 | 3/4 | 1 | 8 | 5 | 21 3/8 | 11 1/4 | | | | | | | | | | | | | | | | | | 16.0 |

STANDARD SIGN

W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/11/2024 PLATE NO. W21-5.7

PROJECT NO:

HWY:

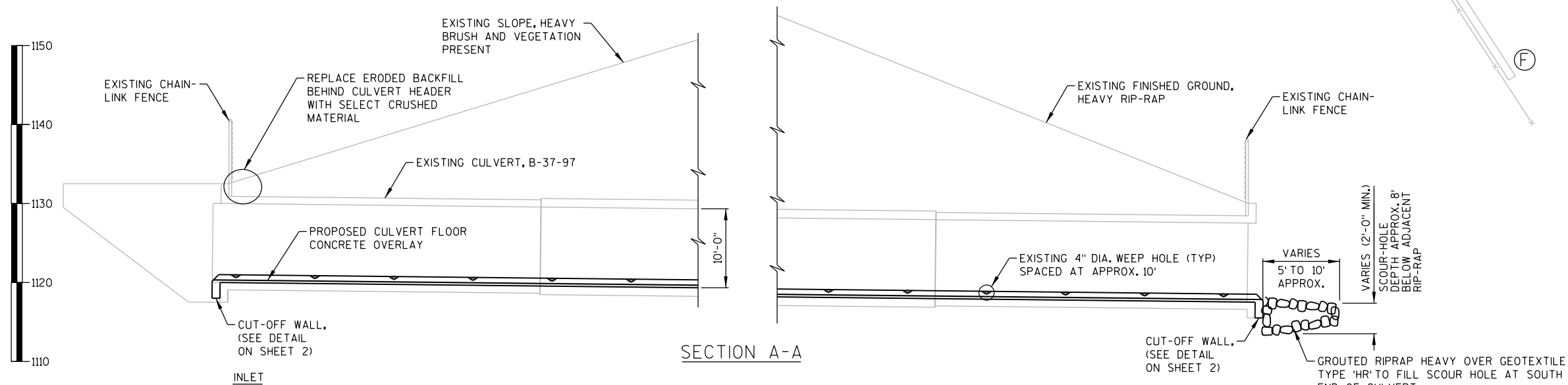
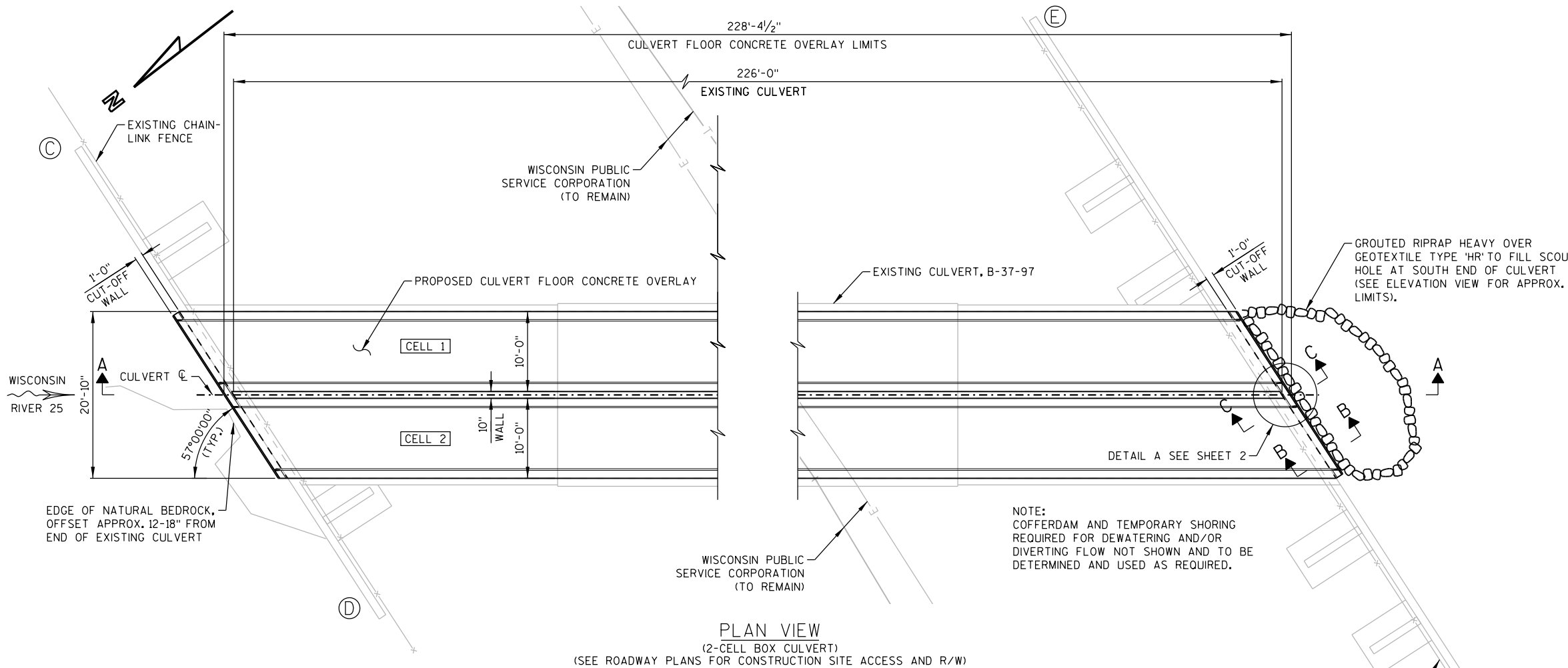
COUNTY:

SHEET NO:

E

PRINTER DRIVER: C:\ProgramData\Bentley\CONNECT Edition\Configuration\WorkSpaces\WisDOT Bridge\Plotdrv\AE.PDF, 11 x 17, plot
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PLOT DATE: 4/30/2024
PLOT TIME: 4:24:23 PM
BATCH PRINT SHEET 1 OF 1

8



DESIGN DATA

LIVE LOAD:

INVENTORY RATING: HS-20 (FROM HSI9/30/2020)
OPERATING RATING: HS-33 (FROM HSI9/30/2020)
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 190 KIPS (FROM HSI9/30/2020)

EARTH LOAD:

DESIGNED FOR 16 FT. OF FILL.

MATERIAL PROPERTIES:

CONCRETE MASONRY OVERLAY CULVERT FLOOR — f'_c = 3,000 PSI
WELDED STEEL WIRE REINFORCEMENT — f_y = 65,000 PSI
BAR STEEL REINFORCEMENT — f_y = 60,000 PSI

LEGEND

- (X) - EXISTING WING LETTER
[CELL X] - EXISTING CELL NUMBER

LIST OF DRAWINGS

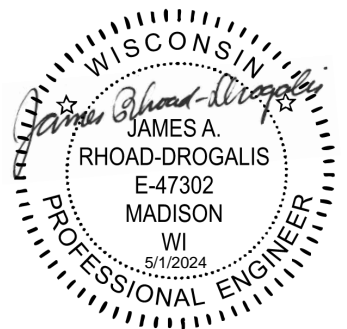
1. GENERAL PLAN & ELEVATION
2. GENERAL NOTES & QUANTITIES

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
JAMES RHOAD-DROGALIS (608) 828-8166

STATE PROJECT NUMBER

1009-47-63



| NO. | DATE | REVISION | BY |
|--|--------------------|-------------------|--------------|
| AECOM | | | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| ACCEPTED | <i>[Signature]</i> | SDR | 05/06/24 |
| CHIEF STRUCTURES DESIGN ENGINEER DATE | | | |
| STRUCTURE B-37-97 | | | |
| STH 153 - MAIN ST OVER WISCONSIN RIVER 25 | | | |
| COUNTY | MARATHON | TOWN/CITY/VILLAGE | MOSINEE |
| DESIGN SPEC. REHABILITATION N/A | | | |
| DESIGNED BY | MEQ | DESIGN CK'D. | JRD |
| DRAWN BY | MEQ | PLANS CK'D. | JRD |
| GENERAL PLAN & ELEVATION | | | SHEET 1 OF 2 |

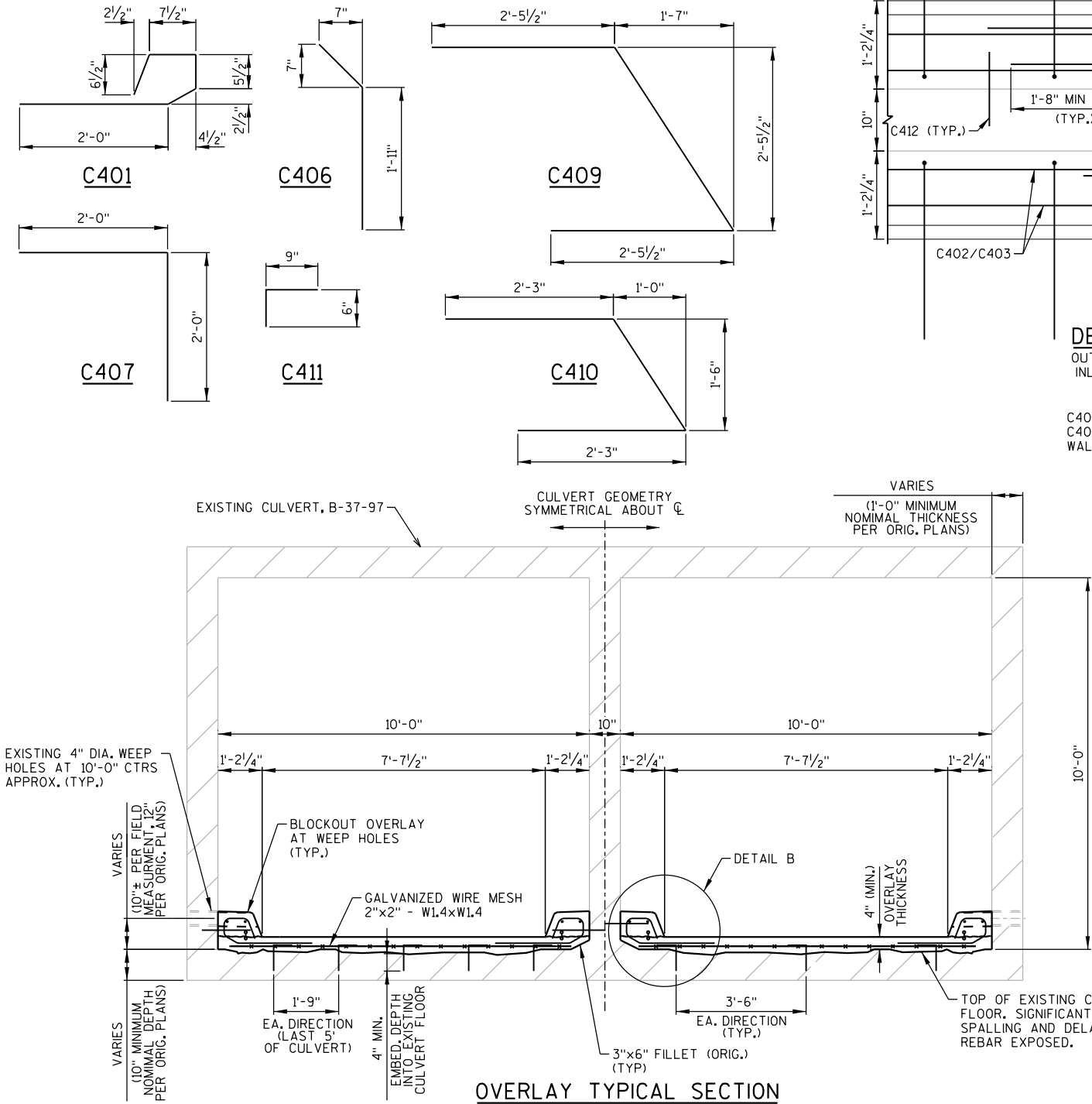
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PLOT DATE: 4/30/2024
PLOT TIME: 3:06:16 PM
BATCH PRINT SHEET 1 OF 1

BILL OF BARS

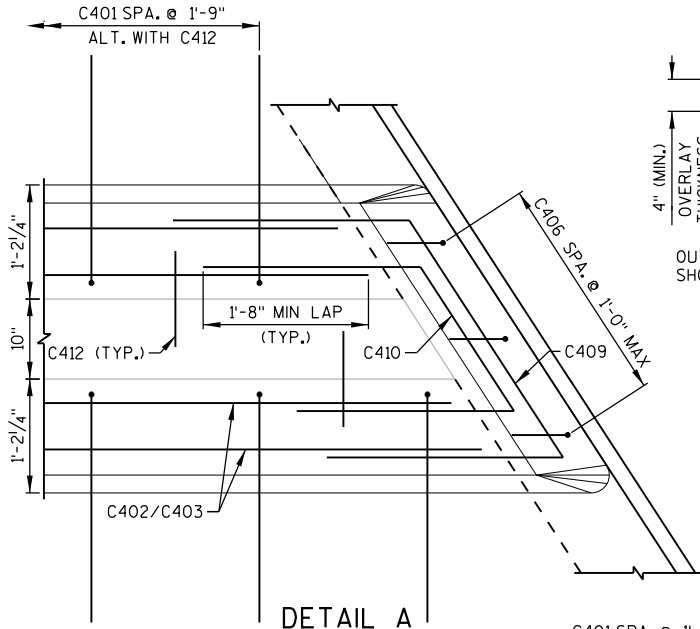
| MARK | NO. REQ'D | LENGTH | BENT | BAR SERIES | LOCATION |
|-------------|-----------|--------|------|------------|----------------------------|
| COATED BARS | | | | | TOTAL WEIGHT = 4,850 LBS |
| C401 | 520 | 3 - 10 | X | | CURB VERT. |
| C402 | 20 | 40 - 0 | | | CURB-INTERIOR WALLS HORIZ. |
| C403 | 4 | 37 - 7 | | | CURB-INTERIOR WALLS HORIZ. |
| C404 | 88 | 9 - 3 | | | CURB-EXTERIOR WALLS HORIZ. |
| C405 | 8 | 3 - 8 | | | CURB-EXTERIOR WALLS HORIZ. |
| C406 | 10 | 2 - 7 | X | | CUT-OFF WALL VERT. |
| C407 | 112 | 3 - 11 | X | | CUT-OFF WALL VERT. |
| C408 | 12 | 24 - 6 | | | CUT-OFF WALL HORIZ. |
| C409 | 2 | 7 - 8 | X | | CURB-INTERIOR WALLS HORIZ. |
| C410 | 2 | 6 - 1 | X | | CURB-INTERIOR WALLS HORIZ. |
| C411 | 456 | 1 - 2 | X | | FLOOR ANCHOR VERT. |
| C412 | 528 | 3 - 6 | | | CURB ANCHOR HORIZ. |
| C413 | 56 | 5 - 4 | | | CUT-OFF WALL ANCHOR HORIZ. |

ADHESIVE ANCHORS



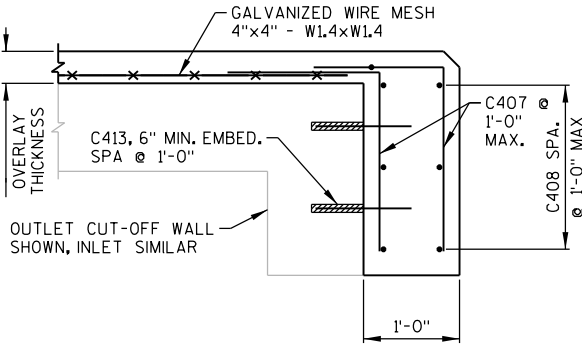
BID ITEMS

| BID ITEM NUMBER | BID ITEM | UNIT | TOTALS |
|-----------------|--|------|--------|
| 312.0110 | SELECT CRUSHED MATERIAL | TON | 4 |
| 502.4204 | ADHESIVE ANCHORS NO. 4 BAR | EACH | 1,040 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 1,450 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 4,850 |
| 509.1500 | CONCRETE SURFACE REPAIR | SF | 6 |
| 606.0700 | GROUTED RIPRAP HEAVY | CY | 40 |
| 645.0120 | GEOTEXTILE TYPE HR | SY | 40 |
| SPV.0035.01 | CONCRETE CULVERT OVERLAY | CY | 100 |
| SPV.0060.02 | TEMPORARY STREAM DIVERSION B-37-0097 | EACH | 1 |
| SPV.0180.01 | CONCRETE CULVERT PREPARATION | SY | 503 |

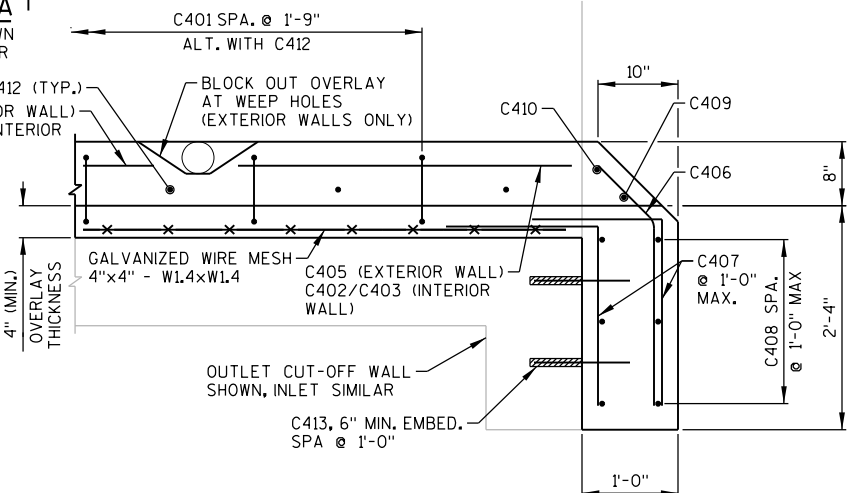


DETAIL A

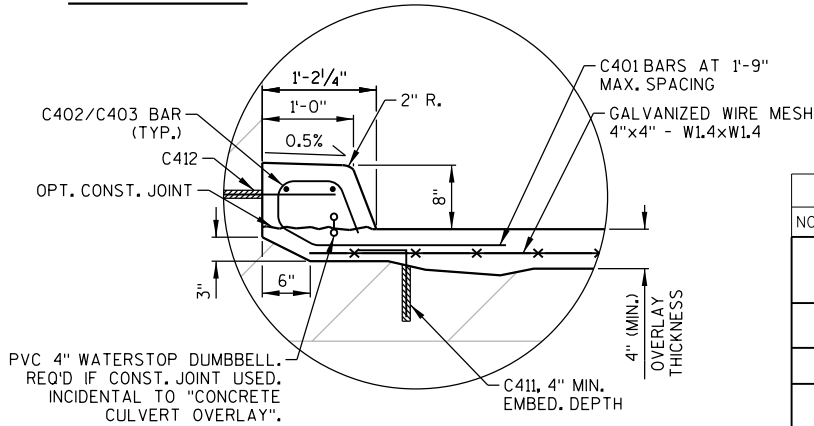
OUTLET SHOWN
INLET SIMILAR



SECTION B-B



SECTION C-C



DETAIL B

(TYPICAL)

STATE PROJECT NUMBER

1009-47-63

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND SURVEY DATA.

THE EXISTING STRUCTURE (B-37-97) IS A DOUBLE CELL, 10' SPAN x 10' RISE x 226' LONG, CONCRETE BOX CULVERT, TO REMAIN IN PLACE.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 1/2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

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

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

REMOVE SILT AND DEBRIS FROM CONCRETE FLOOR AND CLEAN THE SURFACE USING WATERBLASTING ACCORDING TO THE BID ITEM "CONCRETE CULVERT PREPARATION" PRIOR TO PLACING THE CONCRETE OVERLAY. SEE ROADWAY PLANS FOR ADDITIONAL INFORMATION.

PRIOR TO PLACING REBAR, ENSURE THAT ALL EXPOSED REBAR IN EXISTING CULVERT FLOOR IS SECURE. CUT AND REMOVE ANY ISOLATED BARS EXTENDING ABOVE THE TOP MAT OF REINFORCEMENT, AS DIRECTED BY THE ENGINEER.

THE AVERAGE OVERLAY THICKNESS IS BASED ON MINIMUM OVERLAY THICKNESS PLUS 1-INCH TO ACCOUNT FOR VARIATIONS IN THE CULVERT FLOOR SURFACE.

THE CONCRETE OVERLAY AND CHAMFERS SHALL NOT OBSTRUCT THE WEEP HOLES.

ANY EXCAVATION REQUIRED TO COMPLETE THE CUT-OFF WALL CONSTRUCTION TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE CULVERT PREPARATION".

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

"CONCRETE SURFACE REPAIR" IN CULVERT IS ESTIMATED TO BE 6 S.F. "CONCRETE SURFACE REPAIR" AREAS SHOWN IN THE QUANTITIES TABLE ARE BASED ON THE BRIDGE INSPECTION REPORT AND ARE APPROXIMATE. EXACT AREAS OF REPAIR SHALL BE DETERMINED BY THE PROJECT ENGINEER.

APPLY SELECT CRUSHED MATERIAL TO FILL IN VOIDS BEHIND THE CULVERT NORTH HEADWALL, AS DIRECTED BY THE ENGINEER.

PLACE GROUTED HEAVY RIPRAP TO FILL IN SCOUR HOLE AT CULVERT OUTLET, AS DIRECTED BY THE ENGINEER.

GALVANIZED WIRE MESH 2"x2" - W1.4xW1.4 PAID FOR UNDER BID ITEM "BAR STEEL REINFORCEMENT HS STRUCTURES" AT LOCATIONS SHOWN ON PLANS.

CONSTRUCTION STAGING

ONE CELL CAN BE CLOSED DURING CONSTRUCTION PER STAGE.

ONE CELL MUST REMAIN OPEN AT ALL TIMES DURING CONSTRUCTION. ALL WORK ASSOCIATED WITH EACH STAGE OF THE WATER DIVERSION SHALL BE COMPLETED AND PAID PER THE ITEM "TEMPORARY STREAM DIVERSION, B-37-0097".

| NO. | DATE | REVISION | BY |
|--|------|----------------|--------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-37-97 | | | |
| DRAWN BY: MEO | | PLANS CKD: JRD | |
| GENERAL NOTES & QUANTITIES | | | SHEET 2 OF 2 |

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PLOT DATE: 5/1/2024
PLOT TIME: 8:38:32 AM
BATCH PRINT SHEET 1 OF 1

8

DESIGN DATA

LIVE LOAD:

INVENTORY RATING: HS-20 (FROM HSI 5/8/2015)
OPERATING RATING: HS-33 (FROM HSI 5/8/2015)
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 190 KIPS (FROM HSI 5/8/2015)

EARTH LOAD:

DESIGNED FOR 13 FT. OF FILL.

MATERIAL PROPERTIES:

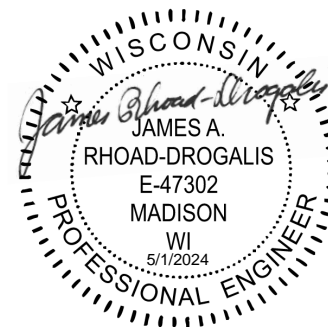
CONCRETE MASONRY OVERLAY CULVERT FLOOR — f'_c = 3,000 PSI
WELDED STEEL WIRE REINFORCEMENT — f_y = 65,000 PSI
BAR STEEL REINFORCEMENT — f_y = 60,000 PSI

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. GENERAL NOTES & QUANTITIES
3. CULVERT DETAILS

LEGEND

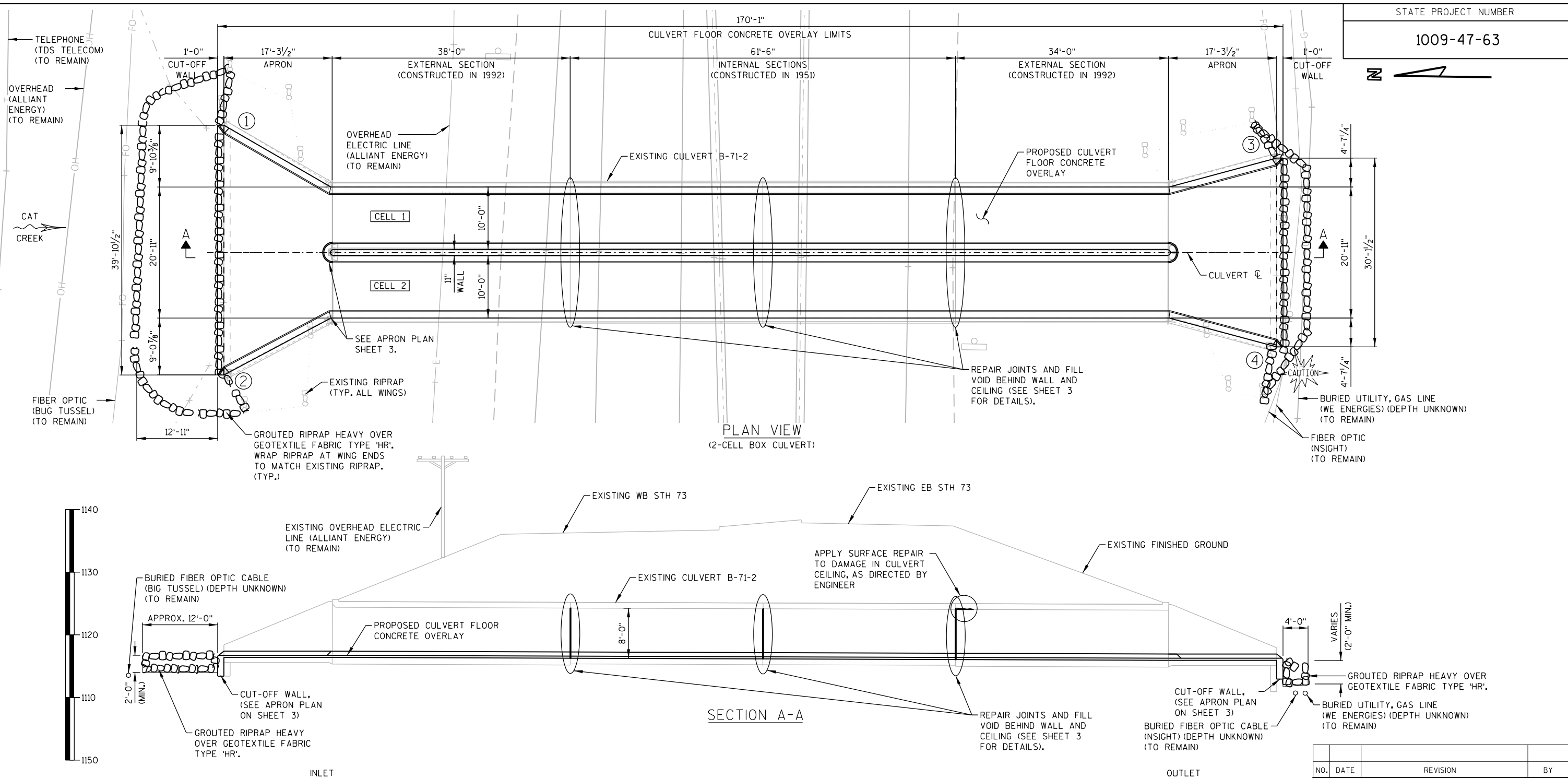
- (X) - EXISTING WING NUMBER
[CELL X] - EXISTING CELL NUMBER



STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK (608) 261-0261
CONSULTANT:
JAMES RHOAD-DROGALIS (608) 828-8166

| | | | |
|--|---|-------------------|------------------|
| NO. | DATE | REVISION | BY |
| AECOM | | | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| ACCEPTED | [Signature] SDR CHIEF STRUCTURES DESIGN ENGINEER | | 05/06/24 DATE |
| STRUCTURE B-71-2 | | | |
| 73-N LIMIT RD OVER CAT CREEK | | | |
| COUNTY | WOOD | TOWN/CITY/VILLAGE | PITTSVILLE |
| DESIGN SPEC. REHABILITATION N/A | | | |
| DESIGNED BY | MEQ | DESIGN CK'D. | JRD |
| DRAWN BY | MEQ | PLANS CK'D. | JRD |
| GENERAL PLAN & ELEVATION | | | SHEET 1 OF 3 |



STATE PROJECT NUMBER

1009-47-63



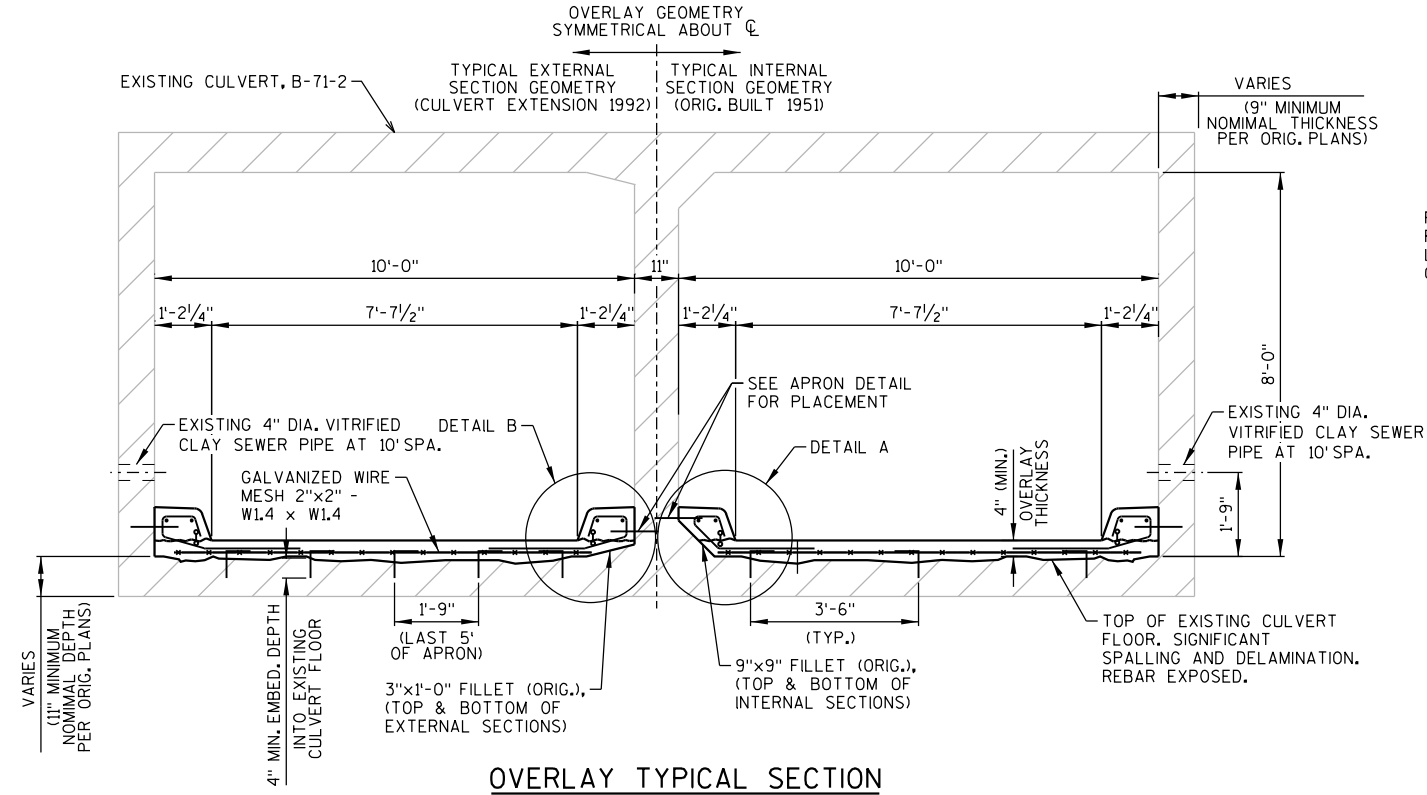
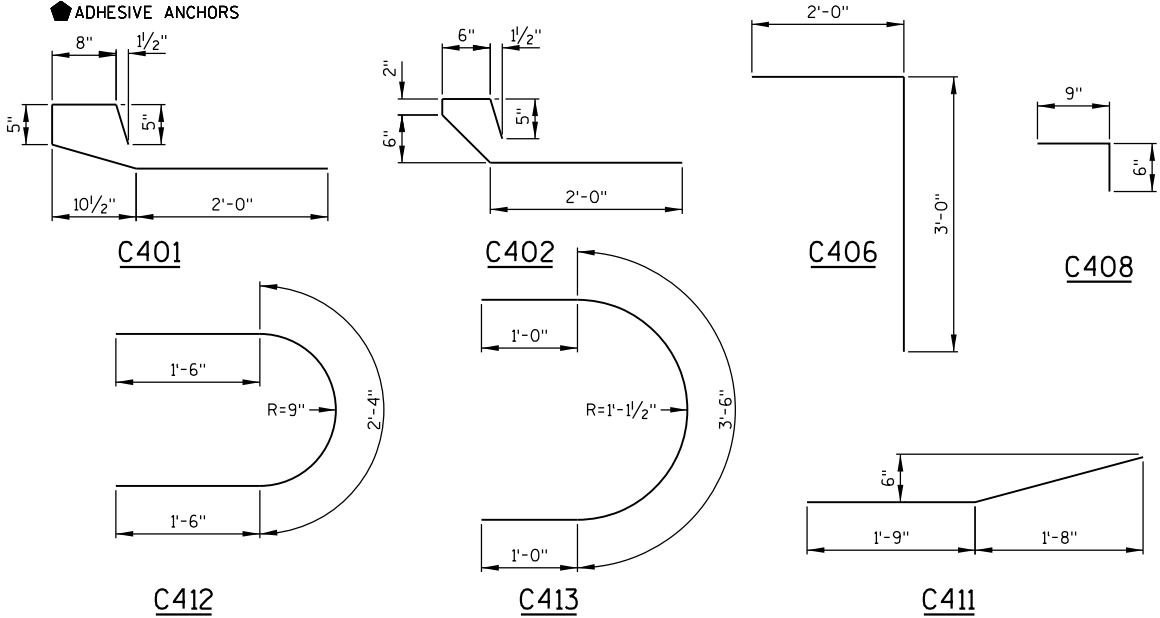
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PLOT DATE: 5/1/2024
PLOT TIME: 11:24:27 AM
BATCH PRINT SHEET 1 OF 1

BILL OF BARS

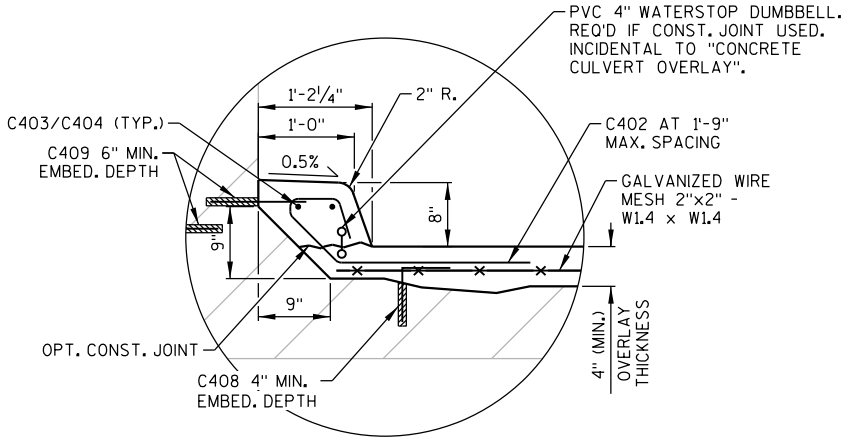
| MARK | NO. REQ'D | LENGTH | BENT | BAR SERIES | LOCATION |
|-------------|-----------|---------|------|------------|--|
| COATED BARS | | | | | TOTAL WEIGHT = 3,670 LBS |
| C401 | 353 | 4 - 2 | X | | CURB-EXTERIOR WALLS EXTERNAL SECTION VERT. |
| C402 | 74 | 3 - 6 | X | | CURB-INTERIOR WALL INTERNAL SECTION VERT. |
| C403 | 24 | 40 - 0 | | | CURB HORIZ. |
| C404 | 8 | 19 - 0 | | | CURB HORIZ. |
| C405 | 4 | 19 - 7 | | | APRON (INLET) HORIZ. |
| C406 | 144 | 4 - 11 | X | | CUT-OFF WALL VERT. |
| C407 | 8 | 39 - 6 | | | CUT-OFF WALL (INLET) HORIZ. |
| C408 | 507 | 1 - 2 | X | | FLOOR ANCHOR VERT. |
| C409 | 368 | 1 - 0 | | | CURB ANCHOR HORIZ. |
| C410 | 222 | 1 - 0 | | | CUT-OFF WALL ANCHOR HORIZ. |
| C411 | 8 | 3 - 6 | X | | CURB AT APRON CONNECTION HORIZ. |
| C412 | 2 | 5 - 4 | X | | CENTER CULVERT WALL INLET/OUTLET HORIZ. |
| C413 | 2 | 5 - 6 | X | | CENTER CULVERT WALL INLET/OUTLET HORIZ. |
| C414 | 4 | 17 - 6 | | | APRON (OUTLET) HORIZ. |
| C415 | 8 | 29 - 10 | | | CUT-OFF WALL (OUTLET) HORIZ. |

ADHESIVE ANCHORS



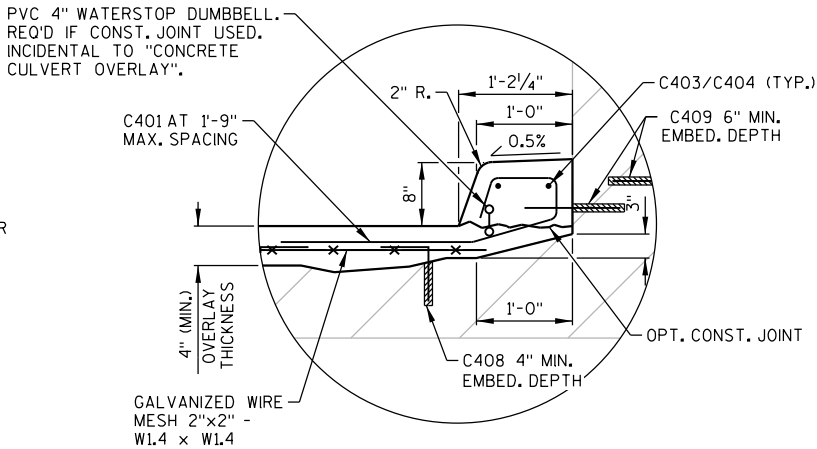
BID ITEMS

| BID ITEM NUMBER | BID ITEM | UNIT | TOTALS |
|-----------------|---|------|--------|
| 502.4204 | ADHESIVE ANCHORS NO. 4 BAR | EACH | 1,097 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 1,090 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 3,670 |
| 509.1500 | CONCRETE SURFACE REPAIR | SF | 20 |
| 606.0700 | GROUTED RIPRAP HEAVY | CY | 60 |
| 645.0120 | GEOTEXTILE TYPE HR | SY | 90 |
| SPV.0035.01 | CONCRETE CULVERT OVERLAY | CY | 85 |
| SPV.0060.01 | FILLING VOIDS AND SEALING VERTICAL CULVERT JOINTS | EACH | 1 |
| SPV.0060.03 | TEMPORARY STREAM DIVERSION, B-71-0002 | EACH | 1 |
| SPV.0180.01 | CONCRETE CULVERT PREPARATION | SY | 410 |



DETAIL A

(INTERNAL SECTIONS)



DETAIL B

(EXTERNAL SECTIONS)

STATE PROJECT NUMBER

1009-47-63

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS AND SURVEY DATA.

THE EXISTING STRUCTURE (B-71-2) IS A DOUBLE CELL, 10' SPAN x 8' RISE x 133'-6" LONG, CONCRETE BOX CULVERT, TO REMAIN IN PLACE.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 1 1/2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

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

THE FIRST DIGIT OF A THREE DIGIT BAR MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

REMOVE SILT AND DEBRIS FROM CONCRETE FLOOR AND CLEAN THE SURFACE USING WATERBLASTING ACCORDING TO THE BID ITEM "CONCRETE CULVERT PREPARATION" PRIOR TO PLACING THE CONCRETE OVERLAY. SEE ROADWAY PLANS FOR ADDITIONAL INFORMATION.

PRIOR TO PLACING REBAR, ENSURE THAT ALL EXPOSED REBAR IN EXISTING CULVERT FLOOR IS SECURE. CUT AND REMOVE ANY ISOLATED BARS EXTENDING ABOVE THE TOP MAT OF REINFORCEMENT, AS DIRECTED BY THE ENGINEER.

THE AVERAGE OVERLAY THICKNESS IS BASED ON MINIMUM OVERLAY THICKNESS PLUS 1-INCH TO ACCOUNT FOR VARIATIONS IN THE CULVERT FLOOR SURFACE.

THE CONCRETE OVERLAY AND CHAMFERS SHALL NOT OBSTRUCT THE WEEP HOLES.

ANY EXCAVATION REQUIRED TO COMPLETE THE CUT-OFF WALL CONSTRUCTION TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE CULVERT PREPARATION".

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

"CONCRETE SURFACE REPAIR" IN CULVERT IS ESTIMATED TO BE 20 S.F. "CONCRETE SURFACE REPAIR" AREAS SHOWN IN THE QUANTITIES TABLE ARE BASED ON THE BRIDGE INSPECTION REPORT AND ARE APPROXIMATE. EXACT AREAS OF REPAIR SHALL BE DETERMINED BY THE PROJECT ENGINEER.

FILL VOIDS BEHIND WALL, REPAIR EXTERIOR CULVERT WALL JOINTS, AND SEAL THEM AT LOCATIONS INDICATED ON THE PLANS PER BID ITEM "FILLING VOIDS AND SEALING VERTICAL CULVERT JOINTS".

GALVANIZED WIRE MESH 2"x2" - W1.4xW1.4 PAID FOR UNDER BID ITEM "BAR STEEL REINFORCEMENT HS STRUCTURES" AT LOCATIONS SHOWN ON PLANS.

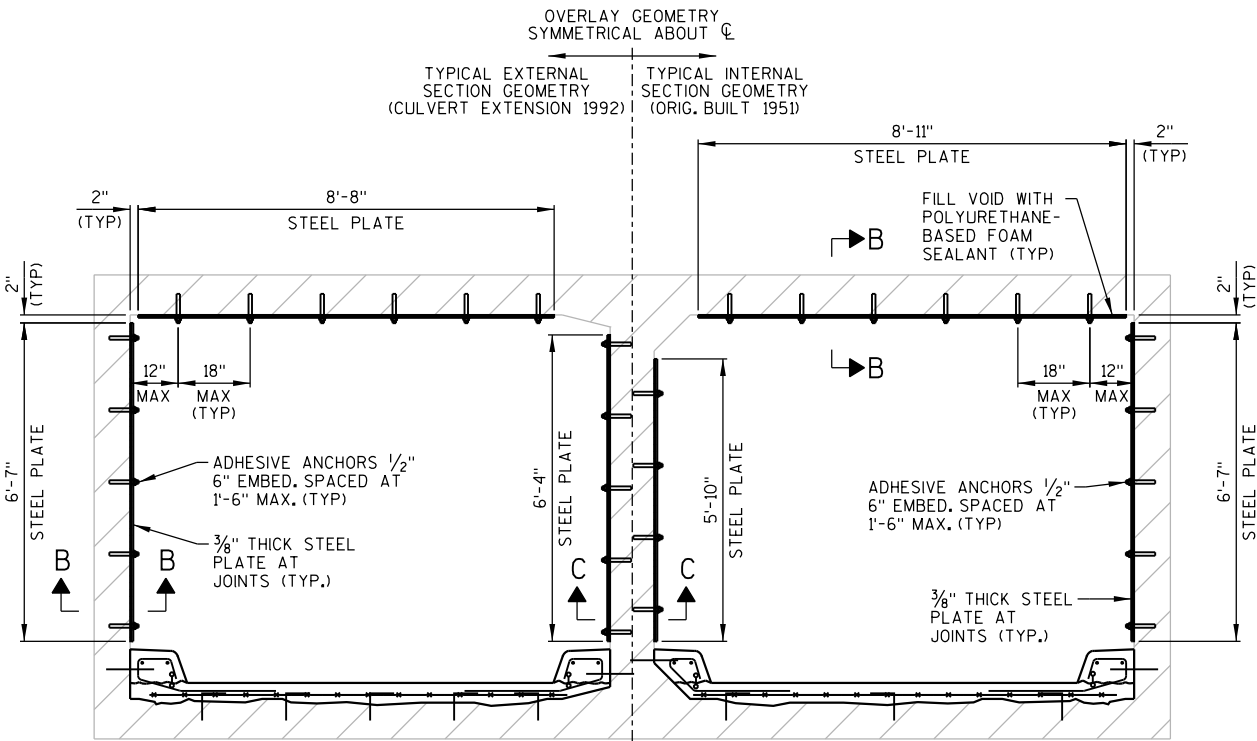
CONSTRUCTION STAGING

ONE CELL CAN BE CLOSED DURING CONSTRUCTION PER STAGE.

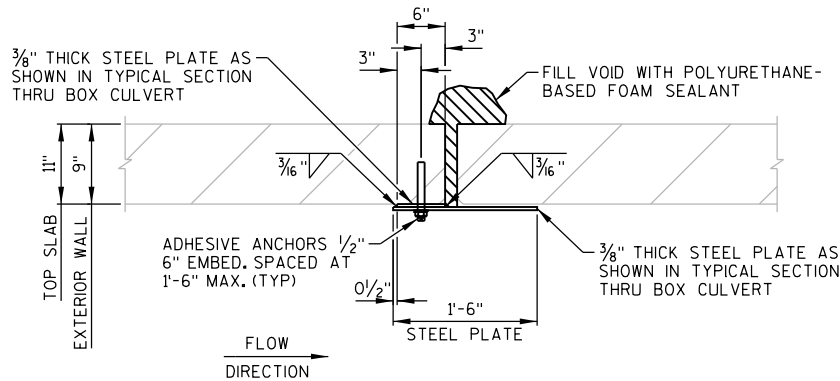
ONE CELL MUST REMAIN OPEN AT ALL TIMES DURING CONSTRUCTION. ALL WORK ASSOCIATED WITH EACH STAGE OF THE WATER DIVERSION SHALL BE COMPLETED AND PAID PER THE ITEM "TEMPORARY STREAM DIVERSION, B-71-0002".

| NO. | DATE | REVISION | BY |
|--|------|-----------------|--------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-71-2 | | | |
| DRAWN BY: MEO | | PLANS CK'D: JRD | |
| GENERAL NOTES & QUANTITIES | | | SHEET 2 OF 3 |

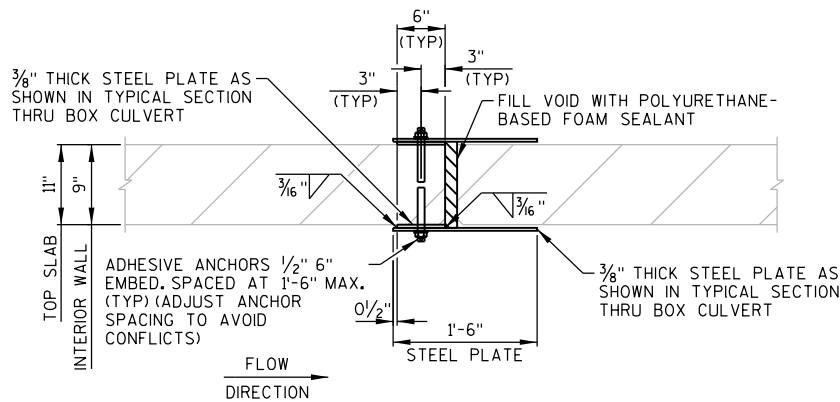
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PLOT DATE: 5/1/2024
PLOT TIME: 8:32:35 AM
BATCH PRINT SHEET 1 OF 1



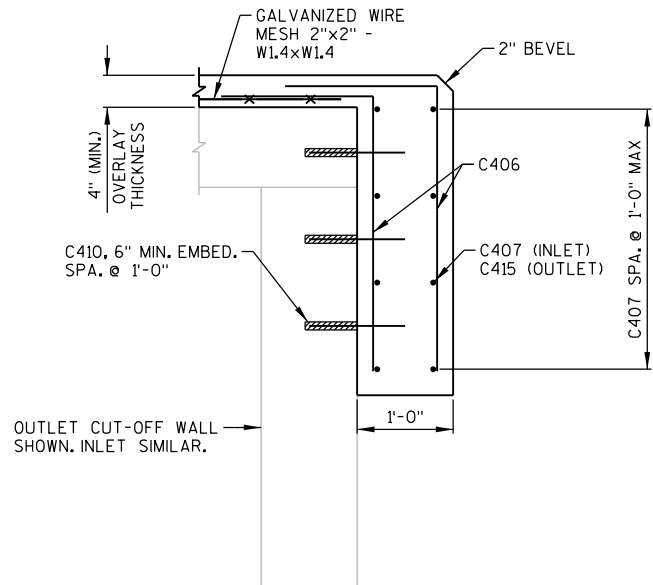
TYPICAL SECTION THRU BOX CULVERT JOINT REPAIR



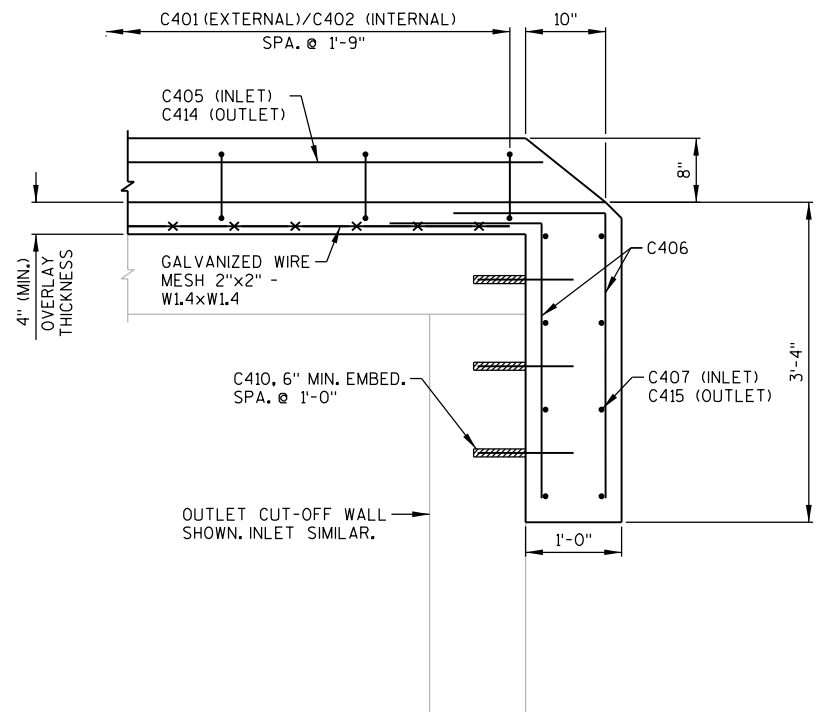
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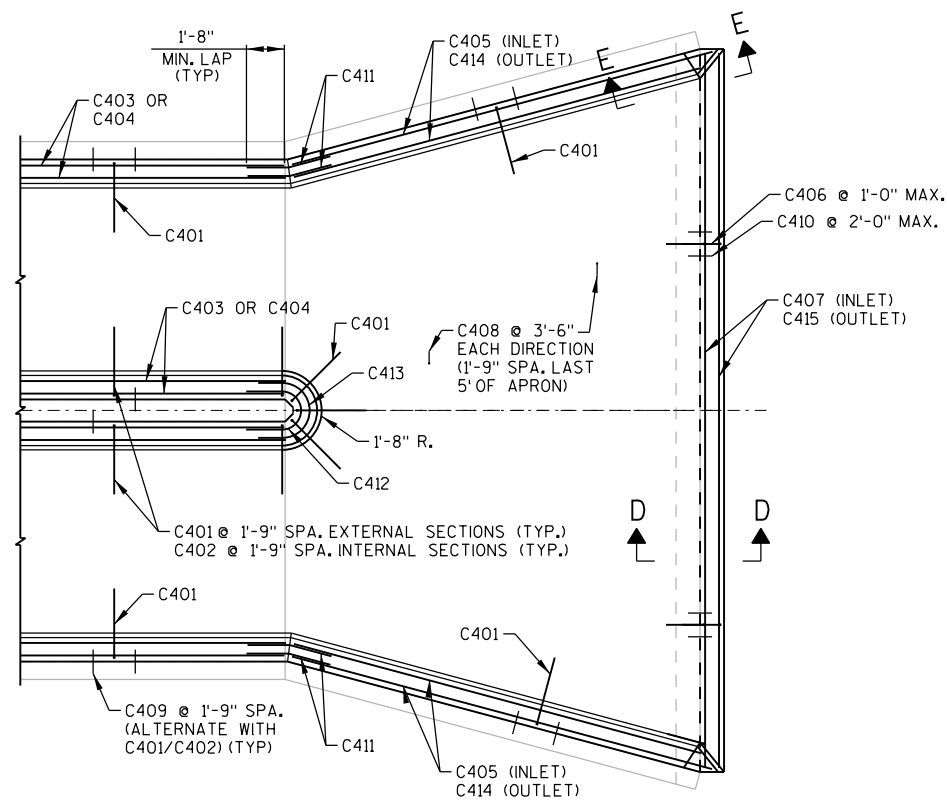
SECTION C-C



SECTION D-D



SECTION E-E



APRON DETAIL

(OUTLET APRON SHOWN. INLET APRON SIMILAR)

| NO. | DATE | REVISION | BY |
|--|------|-----------------|--------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-71-2 | | | |
| DRAWN BY: MEO | | PLANS CK'D: JRD | |
| CULVERT DETAILS | | | SHEET 3 OF 3 |



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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