WKE

PROJECT ID: 3080-04-70

WITH: N/A

COUNTY: WAUKESHA

May 10, 2022

ORDER OF SHEETS

TOTAL SHEETS = 268

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3080-04-70	WISC 2022390	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

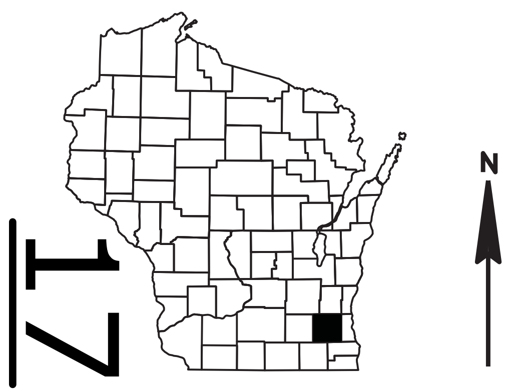
SUNSET DRIVE

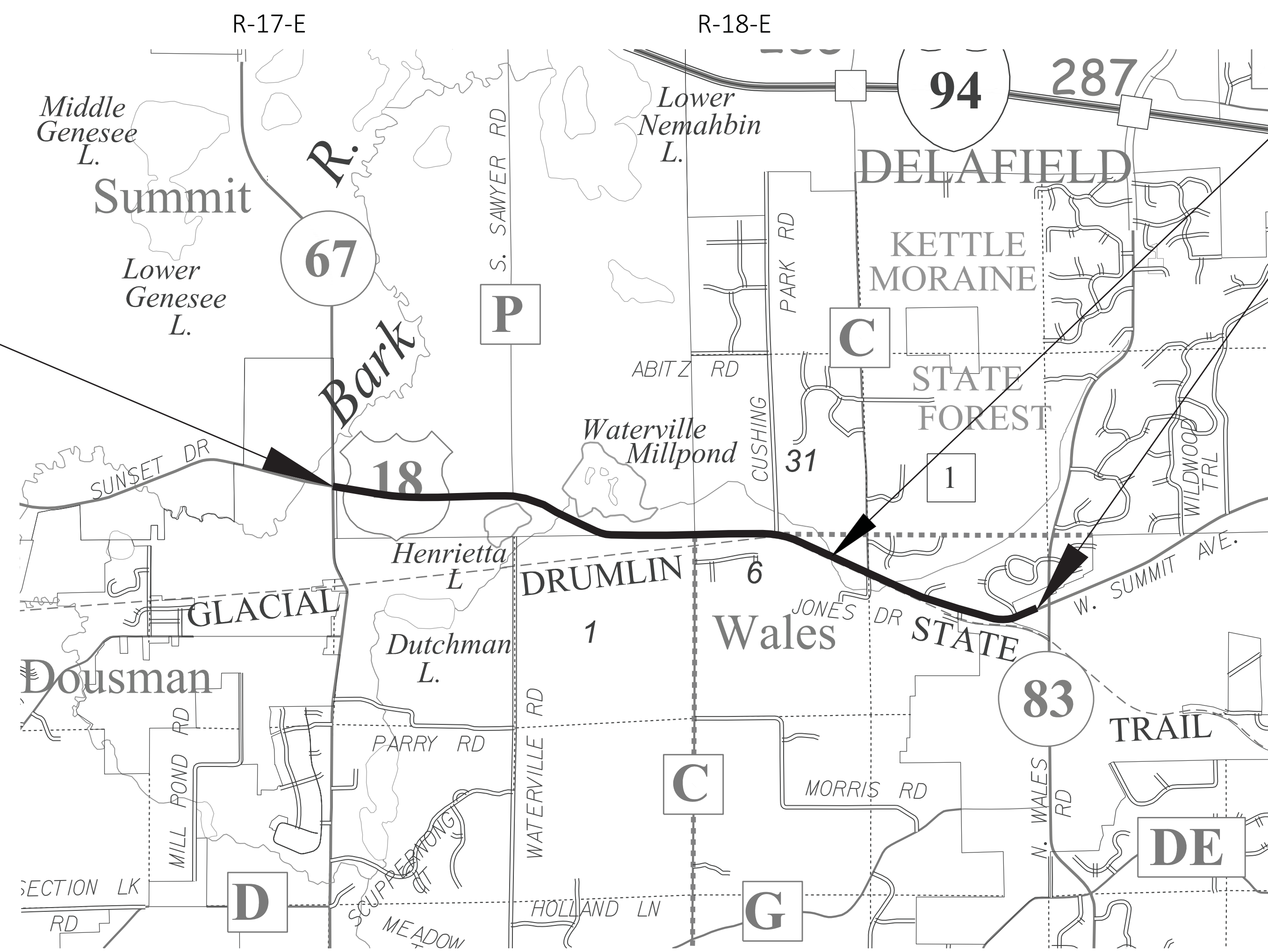
STH 67 TO MORAINE VIEW DRIVE

USH 18

WAUKESHA COUNTY

STATE PROJECT NUMBER
3080-04-70





LAYOUT

SCALE 0 — 1 MI

TOTAL NET LENGTH OF CENTERLINE = 3.885 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WAUKESHA 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 NAVD88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

DESIGN DESIGNATION

A.A.D.T.	2025	=	13,100
A.A.D.T.	2045	=	14,700
D.H.V.		=	2.7%
D.D.		=	59/41
T.		=	8.1%
DESIGN SPEED		=	45/55 MPH
ESALS		=	1,700,000

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS
PROPERTY LINE
LOT LINE
LIMITED HIGHWAY EASEMENT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE
SLOPE INTERCEPT
REFERENCE LINE (300'EB')
EXISTING CULVERT
PROPOSED CULVERT (Box or Pipe)
COMBUSTIBLE FLUIDS (CAUTION)
MARSH AREA
WOODED OR SHRUB AREA

PROFILE

GRADE LINE
ORIGINAL GROUND
MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
SPECIAL DITCH (LABEL)
GRADE ELEVATION (95.36)
CULVERT (Profile View)

UTILITIES

ELECTRIC — E —
FIBER OPTIC — FO —
GAS — G —
SANITARY SEWER — SAN —
STORM SEWER — SS —
TELEPHONE — T —
WATER — W —
UTILITY PEDESTAL
POWER POLE
TELEPHONE POLE

ORIGINAL PLANS PREPARED BY

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity

WISCONSIN
SUSAN M. COOK
E-23367
MENOMONEE FALLS, WI
PROFESSIONAL ENGINEER

1/28/22 (Date) Susan Cook (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WisDOT
Designer	BLOOM COMPANIES, LLC
Project Manager	GARY METZER
Regional Examiner	
Regional Supervisor	

APPROVED FOR THE DEPARTMENT

DATE: 1/28/2022 Gary Metzer (Signature)

E

GENERAL NOTES

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

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF CONSTRUCTION. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOTA MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

MISCELLANEOUS REMOVAL ITEMS SHALL BE REMOVED TO AN EXISTING JOINT, SAWCUT, OR EQUIVALENT, WHERE SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN THE FLOODPLAIN OR WETLAND AREAS.

ALL OPENINGS OF HOLES BELOW EXISTING GRADE RESULTING FROM REMOVALS, SUCH AS GUARDRAIL ,SHALL BE BACKFILLED WITH BACKFILL SLURRY.

CURB AND GUTTER ELEVATIONS ARE GIVEN TO THE FLANGE LINE, CURB AND GUTTER RADII ARE MEASURED TO THE FACE OF CURB LINE

ALL ASPHALTIC OVERLAY SURFACE LAYERS SHALL MATCH AT THE FLANGES OF THE CONCRETE CURB AND GUTTERS. DO NOT OVERLAY ANY FLANGES.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

THE LOCATION OF PROPOSED SIGNS AS SHOWN ON THE PLANS ARE APPROXIMATE. THE EXACT NUMBER OF SIGNS AND SIGN LOCATIONS ARE TO BE APPROVED BY THE ENGINEER IN THE FIELD.
.
DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED TOPSOIL, SEED, FERTILIZER AND MULCH OR AS DIRECTED BY THE ENGINEER WITHIN 5 DAYS AFTER GRADING WORK IS COMPLETED. IF GRADED AREAS ARE LEFT EXPOSED FOR LONGER THAN 14 DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH WITHIN 5 DAYS.

COORDINATE WITH SOUTHEASTERN REGIONAL PLANNING COMMISSION (SEWRPC) FOR THE PERPETUATION OR SECTION CORNER MONUMENTS. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH SEWRPC AND THE WISDOT PROJECT MANAGER THROUGHOUT THE PERPETUATION PROCESS. THE CONTRACTOR WILL CONTACT SEWRPC AT(262) 953-4289 AT LEAST TWO WEEKS BEFORE STARTING CONSTRUCTION OPERATIONS. THE SEWRPC REPRESENTATIVE WILL MAKE THE DETERMINATION OF THE EXTENT OF THE WORK INVOLVED WITH THE SECTION CORNER MONUMENTS BASED ON INSPECTION DURING CONSTRUCTION.

ABBREVIATIONS

B.	BARN
B.P.	BREAK POINT
COR.	CORNER
C.S.C.P.	CORRUGATED STEEL CULVERT PIPE
DRWY	DRIVEWAY

HMA PAVEMENT

ALL HMA PAVEMENT TO BE CONSTRUCTED WITH THE FOLLOWING LAYERS:

TOTAL PAVEMENT LAYER THICKNESS	BID ITEMS				
	LAYER DEPTH	GRADATION	TRAFFIC	BINDER	DESIGATION
4-INCH	1 3/4-INCH UPPER LAYER	4	MT	58-28	S
	2 1/4-INCH LOWER LAYER	3	MT	58-28	S
5-INCH	2 1/4-INCH UPPER LAYER	4	MT	58-28	S
	2 3/4-INCH LOWER LAYER	3	MT	58-28	S

UTILITIES

EVERSTREAM - COMMUNICATION LINE

SHAD GARCIA
324 E. WISCONSIN AVENUE, SUITE 730
MILWAUKEE, WI 53202
(414) 522-6685
sgarcia@everstream.net

LUMEN/CENTURYLINK - COMMUNICATION LINE

JAMES WINTER
224 INDUSTRIAL DRIVE
NORTH PRAIRIE, WI 53153
(262) 392-5210 (M) (262) 720-4936
james.winter@lumen.com

LUMEN/LEVEL 3 COMMUNICATIONS LLC - COMMUNICATION LINE

BRAHIM GADDOUR
3235 INTERTECH DR, SUITE 600
BROOKFIELD, WI 53045
(414) 908-1027 (M) (414) 704-1026
brahim.gaddour@lumen.com

PAE TEC COMMUNICATIONS, LLC - COMMUNICATION LINE

ERIC BECKER
314 N. DANZ AVENUE
GREEN BAY, WI 54302
(920) 461-9825
eric.becker@windstream.com

SPECTRUM COMMUNICATIONS - COMMUNICATION LINE

NEAL LONG
1320 N. DR MARTIN LUTHER LING JR DRIVE
MILWAUKEE, WI 53212
(414) 277-4271 (M) (414) 430-7189
neal.long@charter.com

SPRINT COMMUNICATIONS CO LP - COMMUNICATION LINE

JACK JELINEK
849 EARL STREET
ST. PAUL, MN 55106
(715) 245-0491
jjelinek@mi-tech.us

DAN HILLIARD
(612) 217-3626
dan.j.hilliard@t-mobile.com

VERIZON BUSINESS - COMMUNICATION LINE

RJ CICATELLO
2400 N GLENVILLE
RICHARDSON, TX 75082
PH: (920) 627-2050
randy.cicatello@verizon.com

VILLAGE OF WALES UTILITIES - SEWER

GAIL TAMEZ
MUNICIPAL ROAD
P.O. BOX 47
WALES, WI 53183
(262) 968-3968
walesclerk@bizwi.rr.com

WE ENERGIES - GAS AND PETROLEUM

KELLY JAECK
S13 W33800 STH 18
DELAFIELD, WI 53018
(262) 968-5721 (M) (414) 588-7349
kelly.jaeck@we-energies.com

WE ENERGIES - ELECTRICITY

ERIC KICKHAVER
500 S 116TH STREET
WEST ALLIS, WI 53214
(414) 944-5917 (M) (414)588-7472
eric.kickhaver@we-energies.com

WISDOT - STREET LIGHTING

ERIC PEREA
141 NW BARSTOW STREET
WAUKESHA, WI 53188
(262) 547-5422
eric.perea@dot.wi.gov

WISDOT - WISCONSIN SIGNAL

MATTHEW COWAP
141 NW BARSTOW STREET
WAUKESHA, WI 53188
(262) 521-4404
matthew.cowap@dot.wi.gov

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

OTHER CONTACTS

KETTLE MORAINE SCHOOL DISTRICT - COMMUNICATION LINE

BOB BOYD
563 AJ ALLEN CIRCLE
WALES, WI 53183
(262) 968-6300
boydb@kmsd.edu

JOEL MIKULSKY
PO BOX 11064
GREEN BAY, WI 54307
(920) 301-7900 EXT. 1001
(M) (920) 676-0494
jmikulsky@mcewi.com

WISDOT CONTACT

GARY METZER
WISDOT SOUTHEAST REGION
141 NW BARSTOW STREET
WAUKESHA, WI 53188
(262) 548-5685
gary.metzer@dot.wi.gov

DESIGN CONSULTANT

JAKE BONDHUS
BLOOM COMPANIES
10501 W. RESEARCH DR., SUITE 100
MILWAUKEE, WI 53226
(414) 292-4534
jbondhus@bloomcos.com

WDNR LIAISION

CRAIG WEBSTER
WI DEPARTMENT OF NATURAL RESOURCES
DNR SERVICE CENTER
141 NW BARSTOW ROOM 180
WAUKESHA, WI 53188
(262) 574-2141
craig.webster@wisconsin.gov

VILLAGE OF DOUSMAN

JOE KITELINGER
UTILITIES SUPERINTENDENT
118 S. MAIN STREET
DOUSMAN, WI 53118
(262) 965-3302 (M) (920) 912-1036
joe.kitelinger@villageofdousman.com

VILLAGE OF SUMMIT

JACK RILEY
VILLAGE PRESIDENT
37100 DELAFIELD ROAD
SUMMIT, WI 53066
(262) 567-2757
president@summitvillage.org

VILLAGE OF WALES

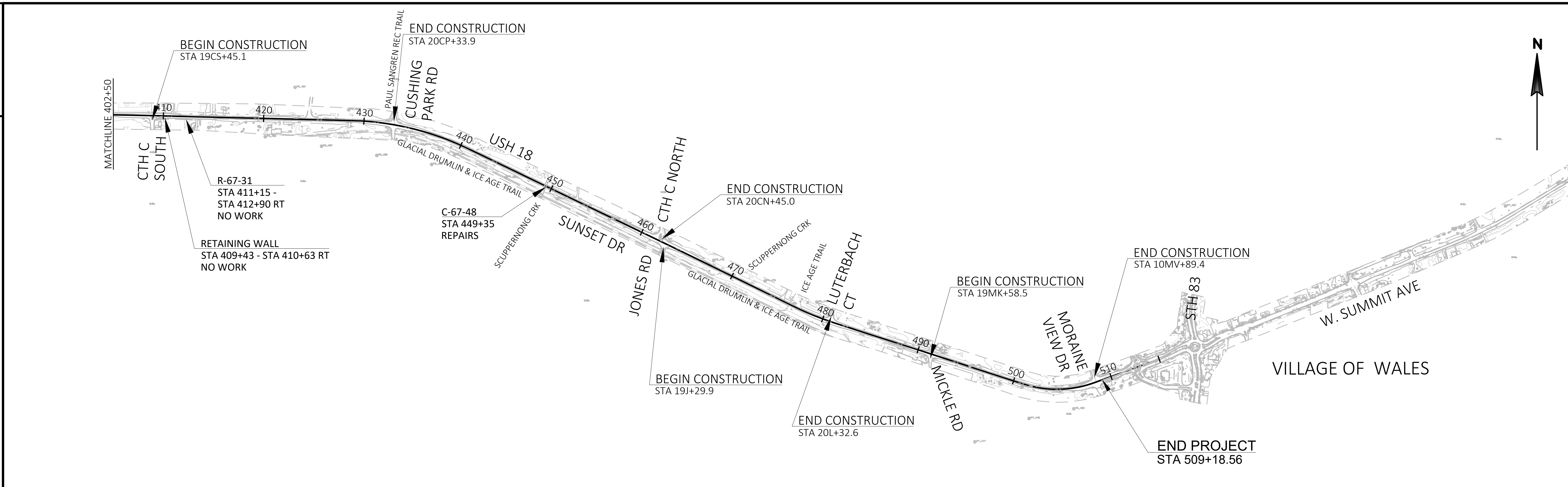
THERESA FITZSIMMONS
DEPARTMENT OF PUBLIC WORKS
129 WEST MAIN STREET
WALES, WI 53183
(262) 968-3968
walesclerkr@bizwi.rr.com

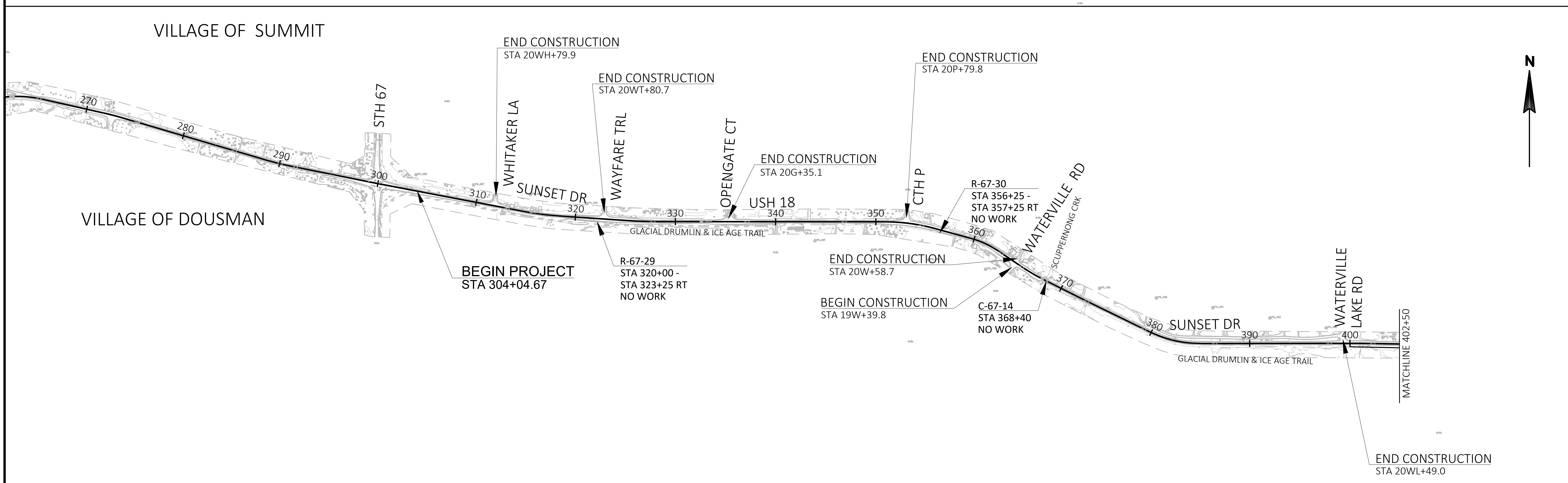
SOUTHEASTERN WI REGIONAL PLANNING COMMISION

ATTN: ROB MERRY
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
(262) 953-4289 (M) (920) 912-1036
(F) (262) 547-1103
rmerry@sewrpc.org

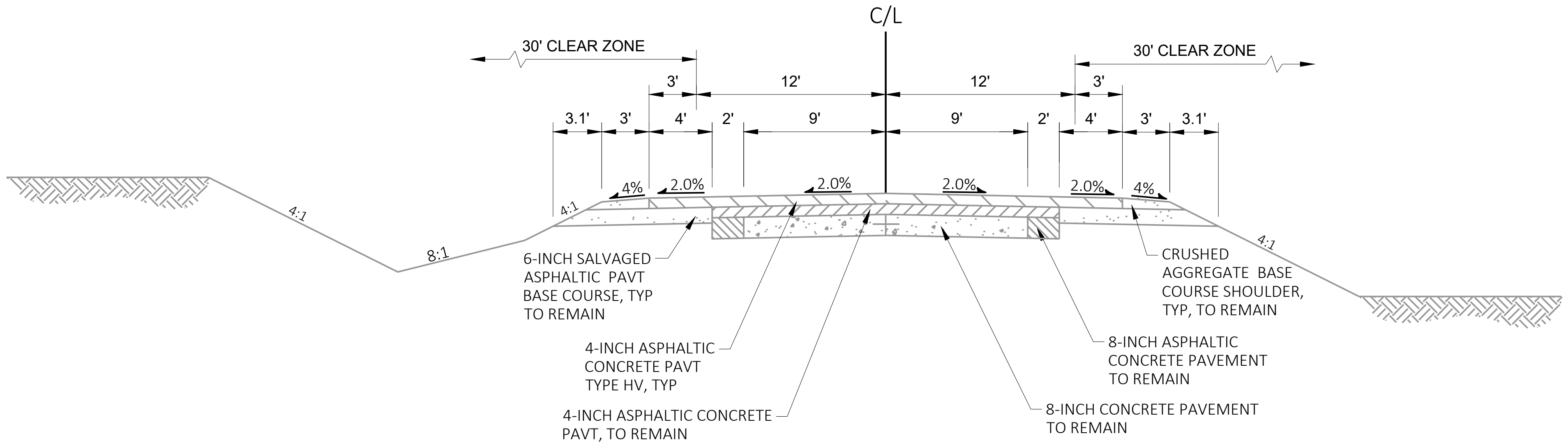
SECTION 2 ORDER OF SHEETS

2





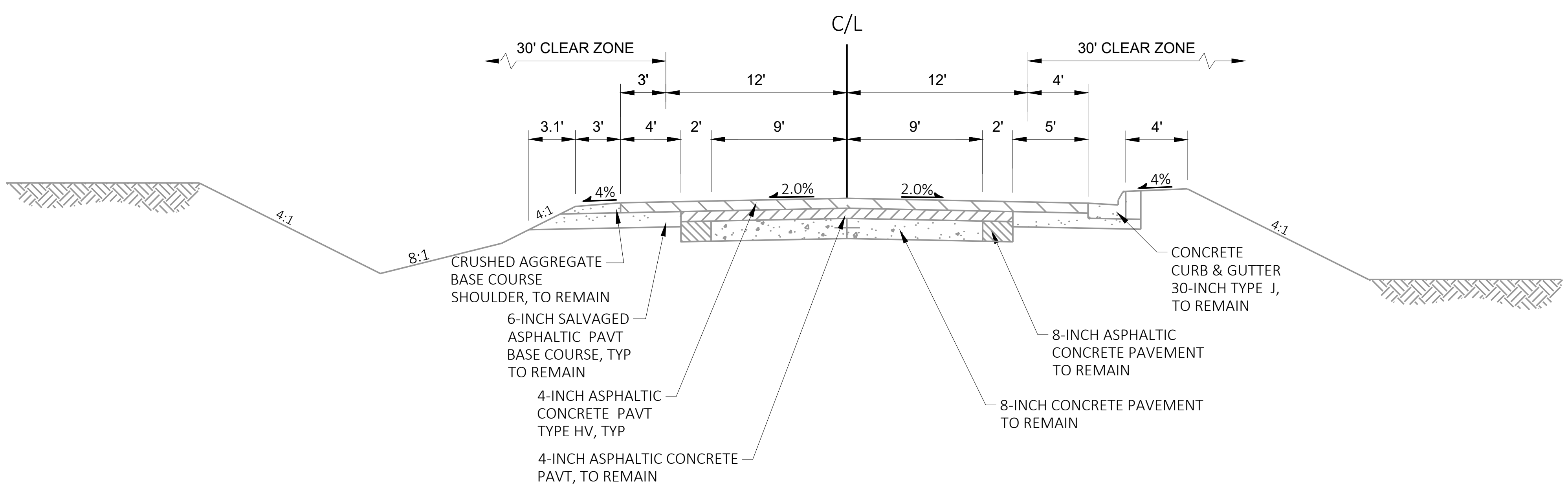
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 3	E



TYPICAL EXISTING SECTION
USH 18

STA 309+50 TO STA 311+25
STA 312+57 TO STA 314+50
STA 327+00 TO STA 329+51
STA 331+48 TO STA 334+62
STA 340+23 TO STA 347+99
*STA 368+02 TO STA 370+53
STA 417+00 TOSTA 424+00
STA 440+00 TO STA 455+45
STA 474+00 TO STA 480+15
STA 481+45 TO STA 487+01
*STA 491+95 TO STA 506+78

* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.



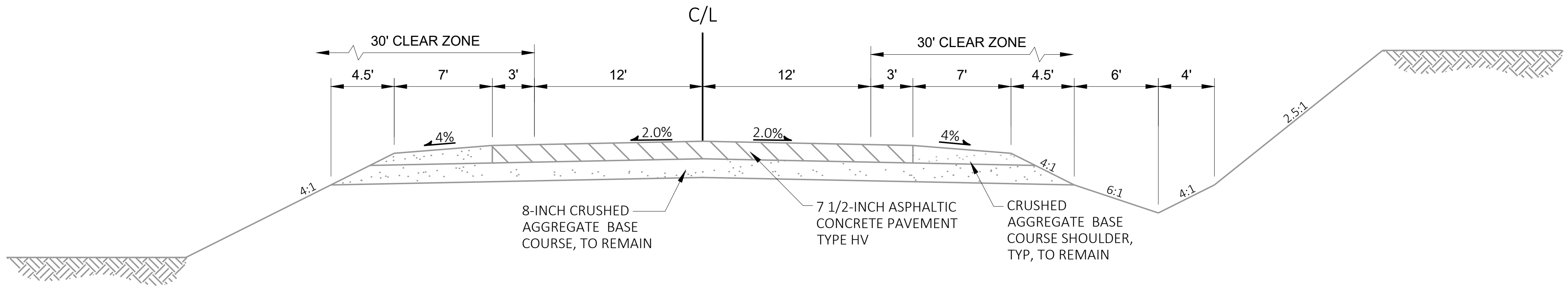
TYPICAL EXISTING SECTION
USH 18

STA 304+05 TO STA 309+50
STA 329+51 TO STA 331+48
STA 339+51 TO STA 340+23
* STA 347+99 TO STA 352+37
*STA 353+67 TO STA 361+03
*STA 367+00 TO STA 368+02
*STA 487+01 TO STA 491+95 (MICKLE RD)

EXISTING R/W DIMENSIONS

LEFT SIDE R/W: VARIES 33-' 80' NOR 60'
RIGHT SIDE R/W: VARIES 33-' 60' NOR 33'
(DIMENSIONS FROM ROADWAY R/L)

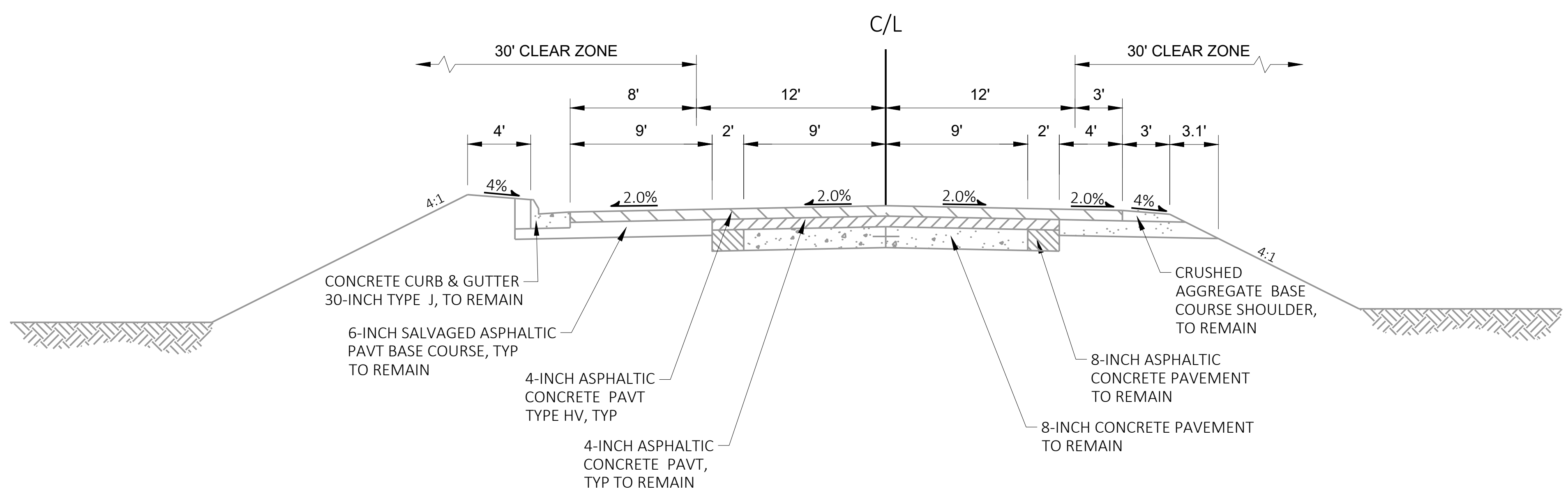
2



TYPICAL EXISTING SECTION
USH 18

STA 314+50 TO STA 319+37
STA 323+84 TO STA 327+00
STA 414+98 TO STA 417+00
STA 424+00 TO STA 432+42
STA 433+68 TO STA 440+00
STA 455+45 TO STA 458+50
STA 463+04 TO STA 474+00

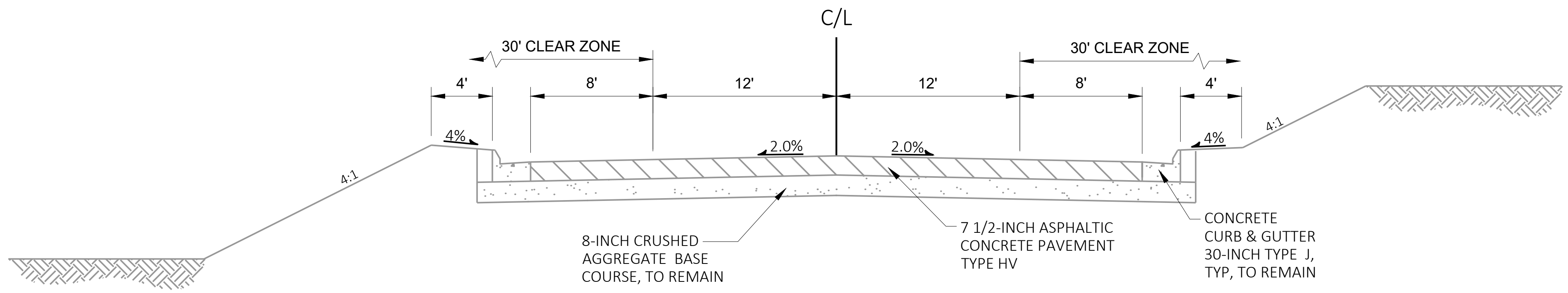
* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.



TYPICAL EXISTING SECTION
USH 18

STA 311+25 TO STA 312+57 (WHITATAKER LA)
*STA 370+53 TO STA 372+01
*STA 372+77 TO STA 395+00
STA 480+15 TO STA 481+45 (LUTTERBACH CT)
*STA 506+78 TO STA 506+89

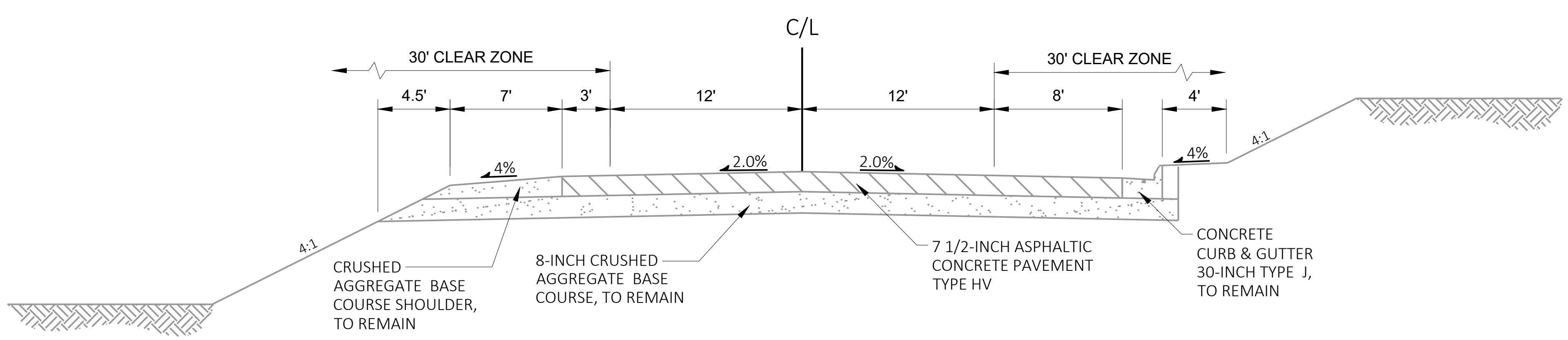
2



TYPICAL EXISTING SECTION
USH 18

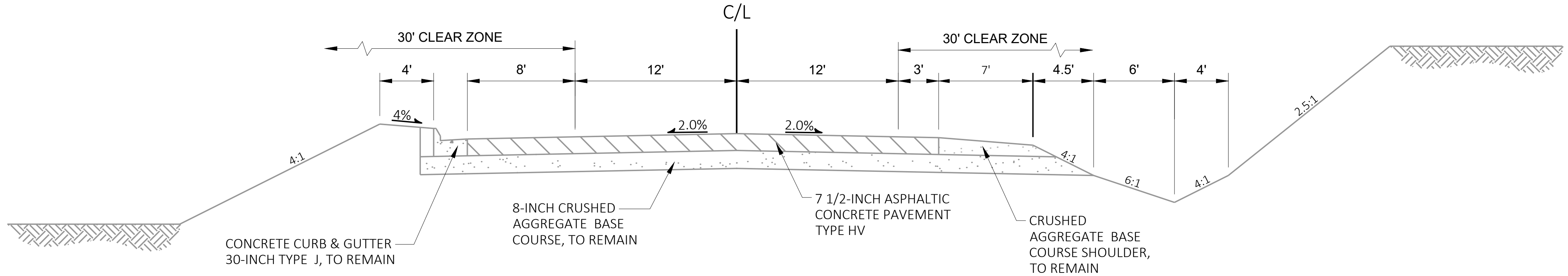
STA 320+32 TO STA 323+60 (WAYFARE TRL)
STA 408+33 TO STA 411+49 (CTH C SOUTH)
STA 432+42 TO STA 433+53 (CUSHING PARK RD)
STA 461+89 TO STA 462+84 (CTH C NORTH)

* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.



TYPICAL EXISTING SECTION
USH 18

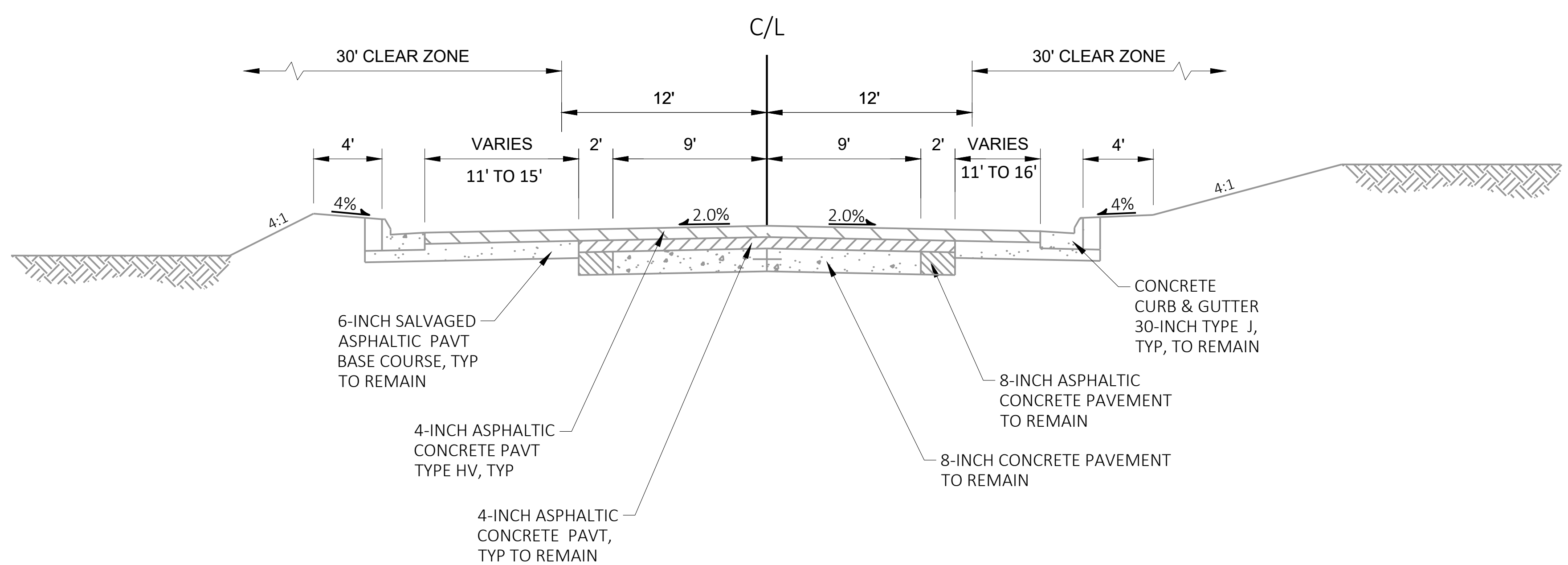
STA 319+37 TO STA 320+32
STA 323+60 TO STA 323+84
STA 411+49 TO STA 414+98
STA 462+84 TO STA 463+04



TYPICAL EXISTING SECTION
USH 18

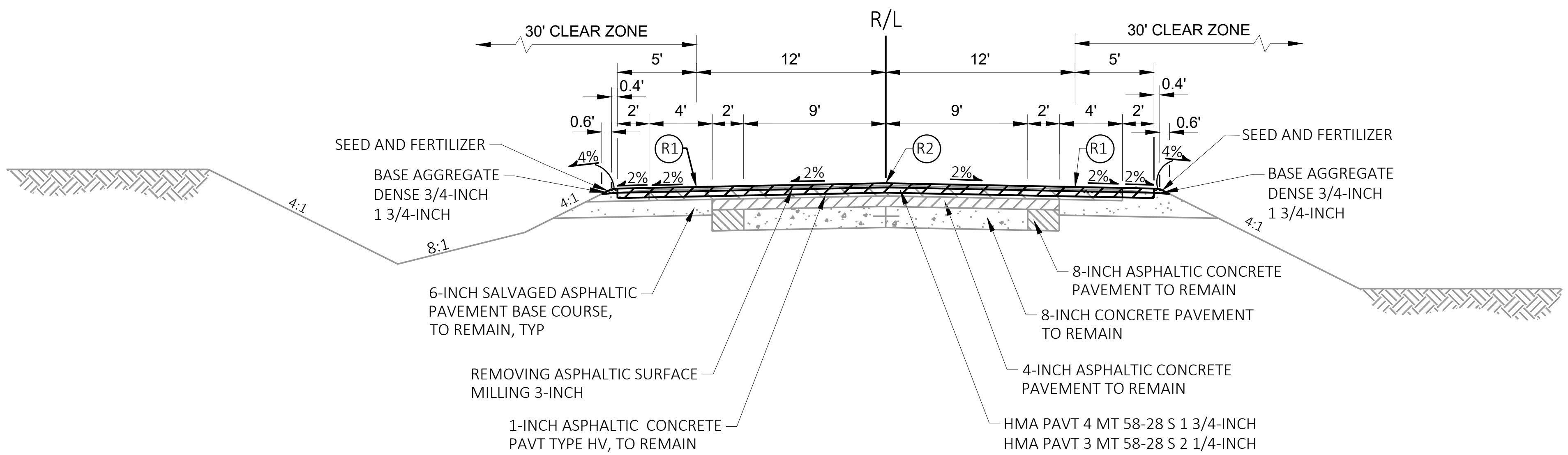
STA 395+00 TO STA 408+33 (WATERVILLE LAKE RD)
STA 433+53 TO STA 433+68
STA 458+50 TO STA 461+89

* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.



TYPICAL EXISTING SECTION
USH 18

STA 334+62 TO STA 339+51 (OPEN GATE CT)
*STA 352+37 TO STA 353+67 (CTH P)
*STA 361+03 TO STA 367+00 (WATERVILLE RD)
*STA 372+01 TO STA 372+77
*STA 506+89 TO STA 509+19 (MORIANE VIEW DR)

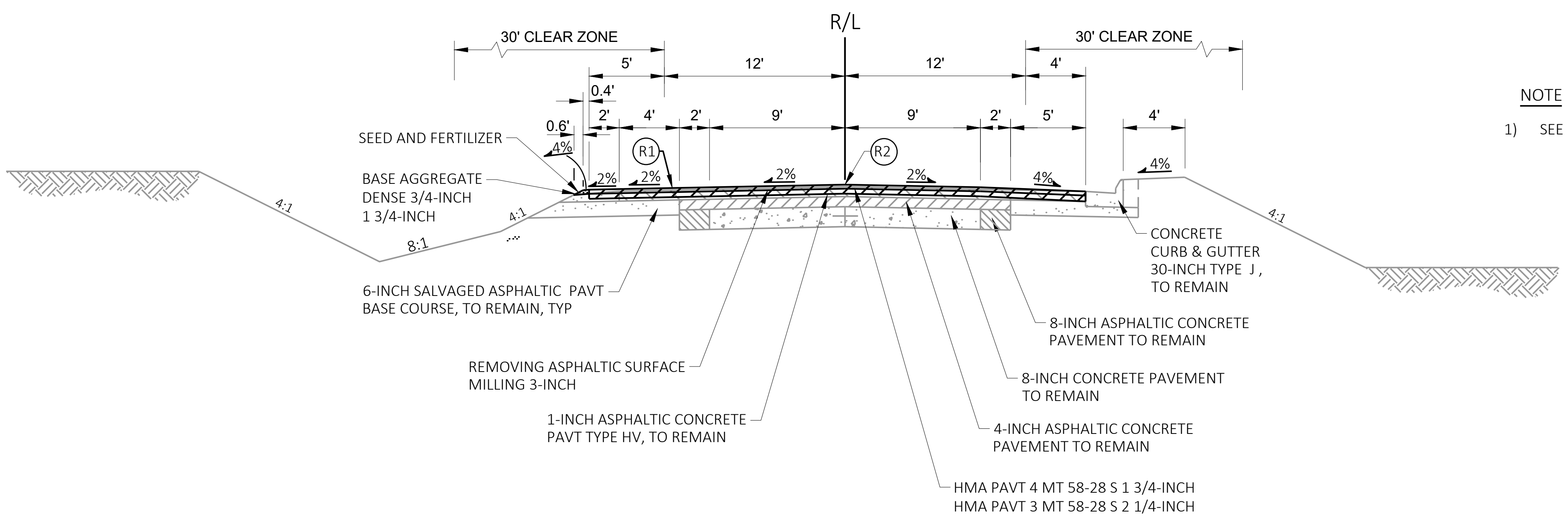


TYPICAL FINISHED SECTION
USH 18

STA 309+50 TO STA 311+25
STA 312+57 TO STA 314+50
STA 327+00 TO STA 329+51
STA 331+48 TO STA 334+62
STA 340+23 TO STA 347+99
*STA 368+02 TO STA 370+53

STA 417+00 TOSTA 424+00
STA 440+00 TO STA 455+45
STA 474+00 TO STA 480+15
STA 481+45 TO STA 487+01
*STA 491+95 TO STA 506+78

* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.



NOTE

1) SEE CONSTRUCTION DETAILS FOR VARIABLE DEPTH MILLING

TYPICAL FINISHED SECTION
USH 18

STA 304+05 TO STA 309+50
STA 329+51 TO STA 331+48
STA 339+51 TO STA 340+23
*STA 347+99 TO STA 352+37
*STA 353+67 TO STA 361+03
*STA 367+00 TO STA 368+02
*STA 487+01 TO STA 491+95 (MICKLE RD)

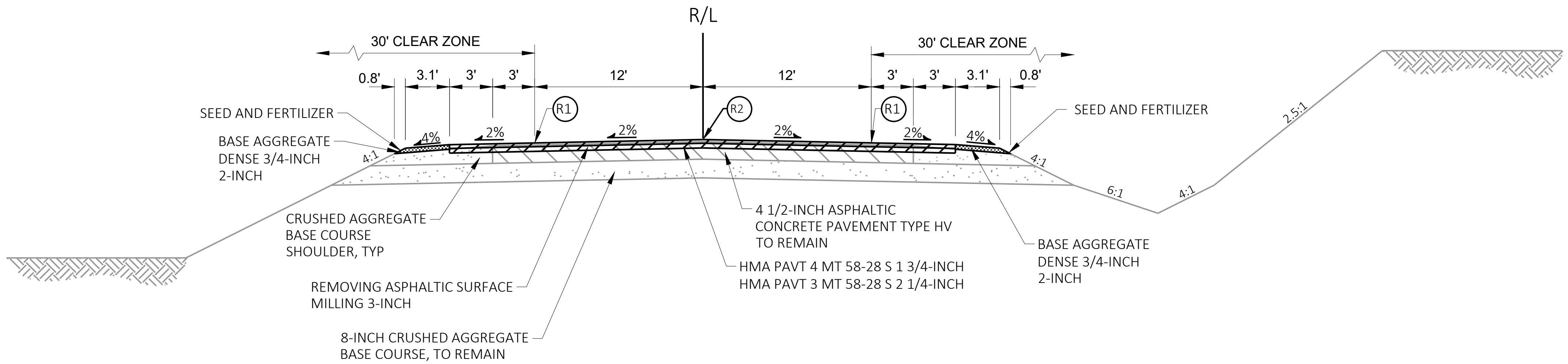
EXISTING R/W DIMENSIONS

LEFT SIDE R/W: VARIES 33-' 80' NOR 60'
RIGHT SIDE R/W: VARIES 33-' 60' NOR 33'
(DIMENSIONS FROM ROADWAY R/L)

LEGEND

(R1) ASPHALTIC SHOULDER RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL
(R2) ASPHALTIC CENTERLINE RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL

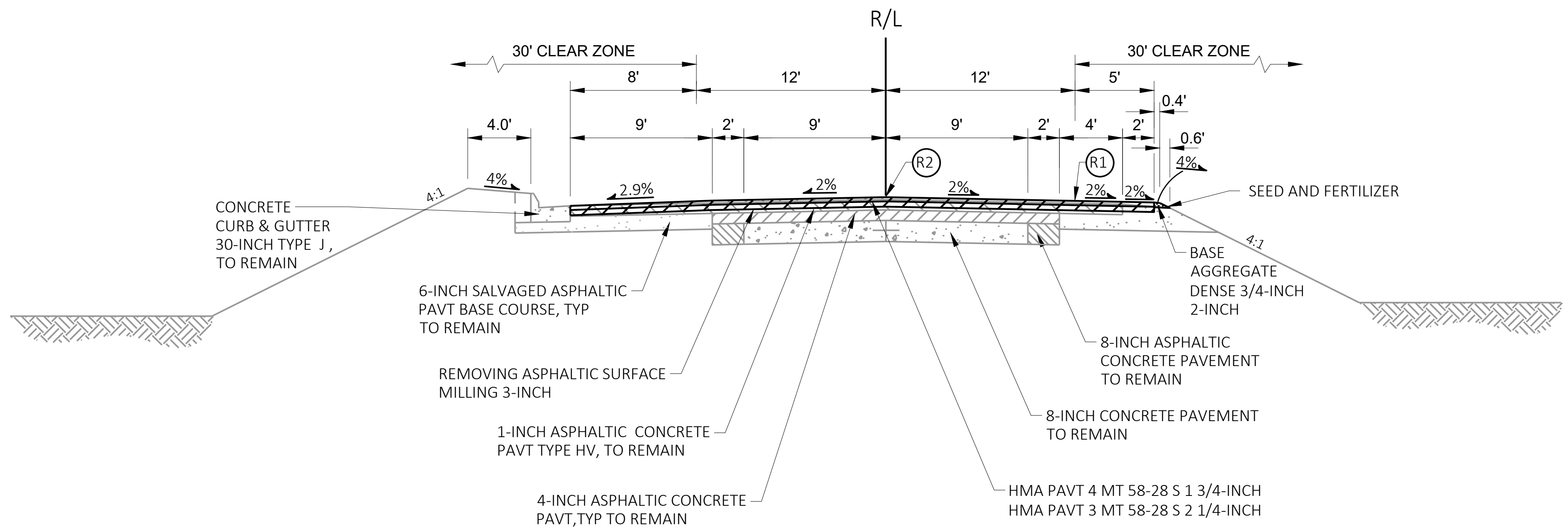
2



TYPICAL FINISHED SECTION
USH 18

STA 314+50 TO STA 319+37
STA 323+84 TO STA 327+00
STA 414+98 TO STA 417+00
STA 424+00 TO STA 432+42
STA 433+68 TO STA 440+00
STA 455+45 TO STA 458+50
STA 463+04 TO STA 474+00

* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.



NOTE

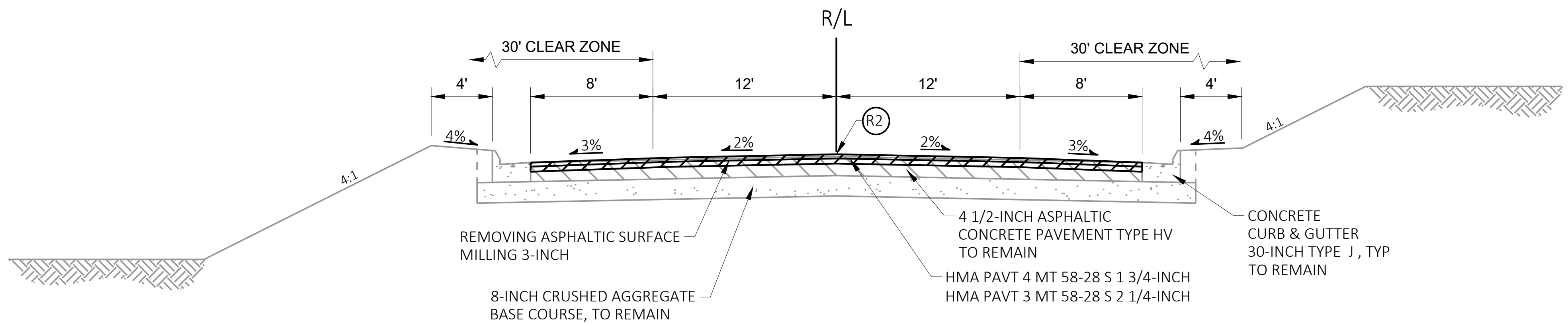
1) SEE CONSTRUCTION DETAILS FOR VARIABLE DEPTH MILLING

TYPICAL FINISHED SECTION
USH 18

STA 311+25 TO STA 312+57 (WHITATAKER LA)
*STA 370+53 TO STA 372+01
*STA 372+77 TO STA 395+00
STA 480+15 TO STA 481+45 (LUTTERBACH CT)
*STA 506+78 TO STA 506+89

LEGEND

R1 ASPHALTIC SHOULDER RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL
R2 ASPHALTIC CENTERLINE RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL



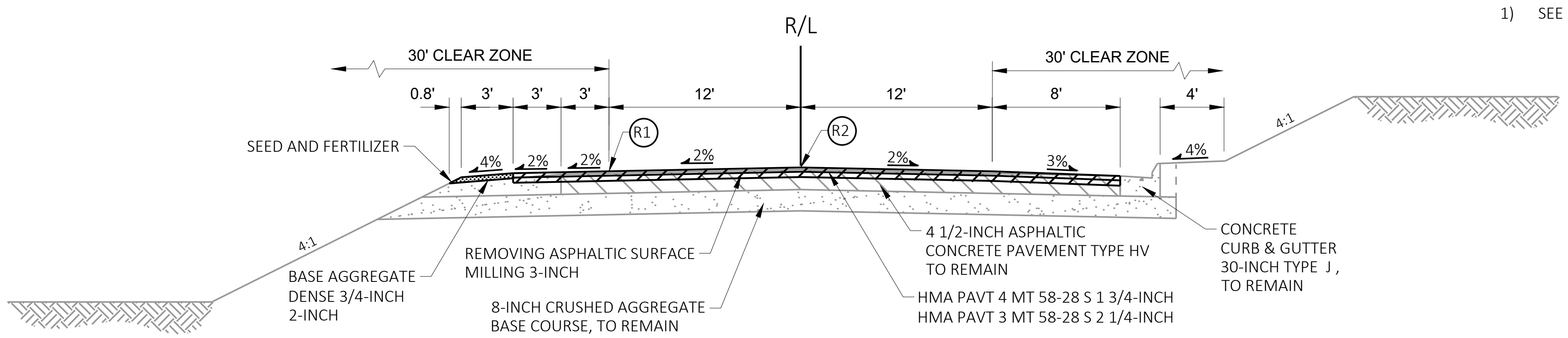
TYPICAL FINISHED SECTION
USH 18

STA 320+32 TO STA 323+60 (WAYFARE TRL)
STA 408+33 TO STA 411+49 (CTH C SOUTH)
STA 432+42 TO STA 433+53 (CUSHING PARK RD)
STA 461+89 TO STA 462+84 (CTH C NORTH)

* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.

NOTE

1) SEE CONSTRUCTION DETAILS FOR VARIABLE DEPTH MILLING

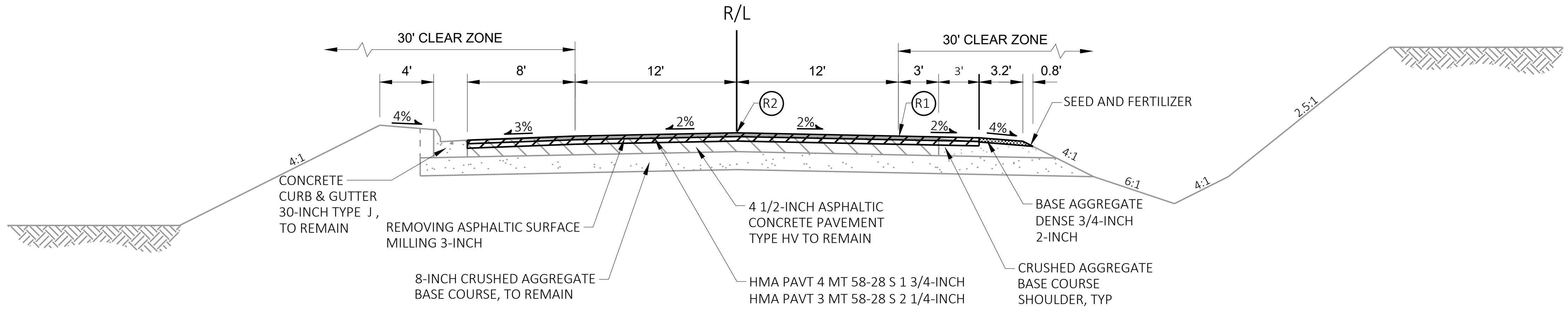


TYPICAL FINISHED SECTION
USH 18

STA 319+37 TO STA 320+32
STA 323+60 TO STA 323+84
STA 411+49 TO STA 414+98
STA 462+84 TO STA 463+04

LEGEND

R1 ASPHALTIC SHOULDER RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL
R2 ASPHALTIC CENTERLINE RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL



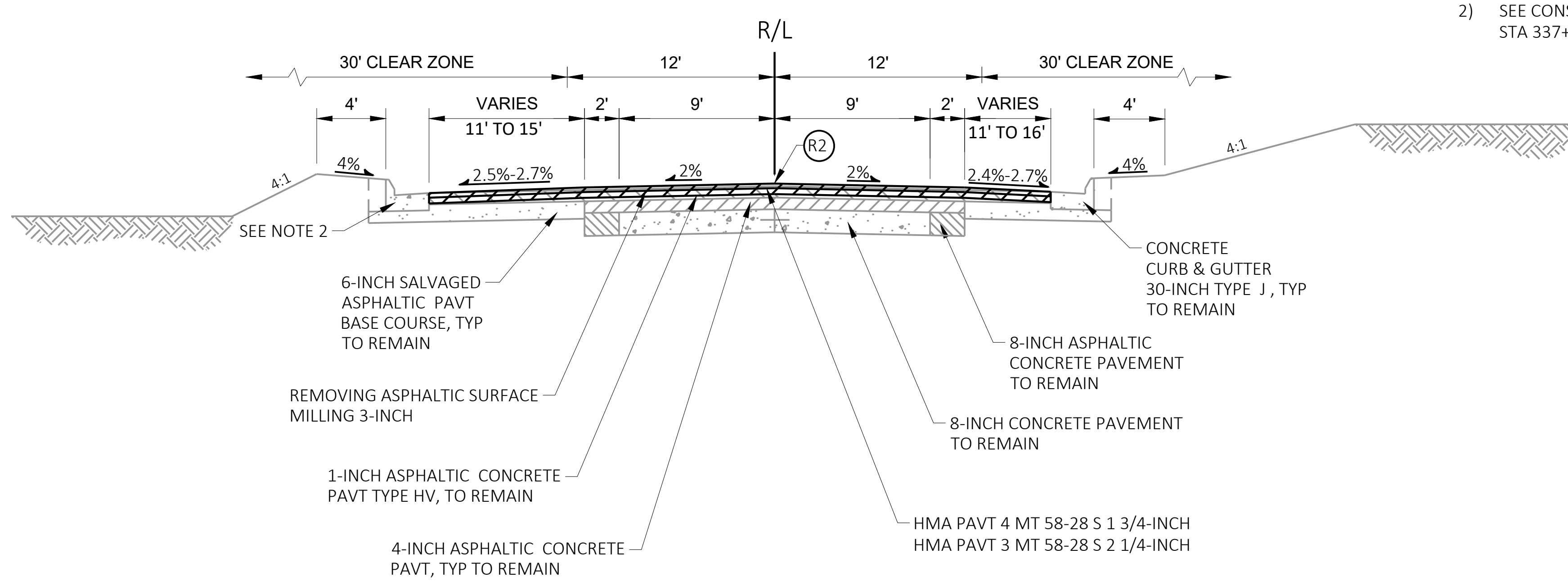
TYPICAL FINISHED SECTION
USH 18

STA 395+00 TO STA 408+33 (WATERVILLE LAKE RD)
STA 433+53 TO STA 433+68
STA 458+50 TO STA 461+89

* WHERE POSTED SPEED LIMIT IS 45 MPH OR LESS, THE MINIMUM CLEAR ZONE IS 1.5' BEHIND FACE OF CURB.

NOTES

1) SEE CONSTRUCTION DETAILS FOR VARIABLE DEPTH MILLING.
2) SEE CONSTRUCTION DETAIL FOR OPEN GATE DECELERATION EXTENSION STA 337+17 TO STA 339+12 LT.



TYPICAL FINISHED SECTION
USH 18

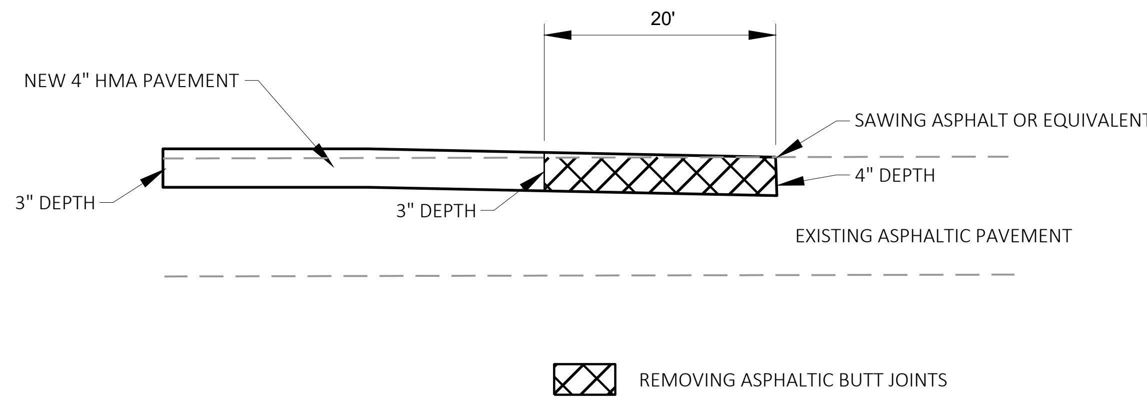
STA 334+62 TO STA 339+51 (OPEN GATE CT)
*STA 352+37 TO STA 353+67 (CTH P)
*STA 361+03 TO STA 367+00 (WATERVILLE RD)
*STA 372+01 TO STA 372+77
*STA 506+89 TO STA 509+19 (MORIANE VIEW DR)

LEGEND

- R1 ASPHALTIC SHOULDER RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL
- R2 ASPHALTIC CENTERLINE RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL

2

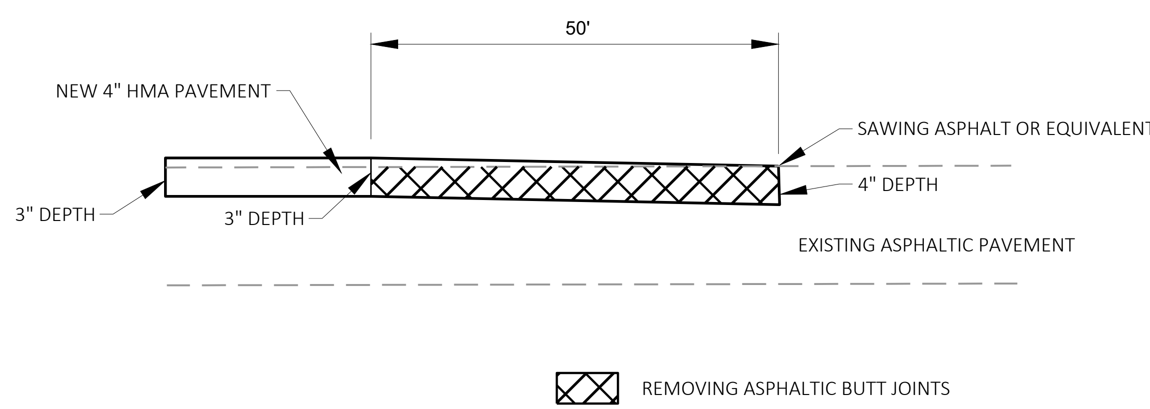
2



SIDEROAD BUTT JOINT DETAIL

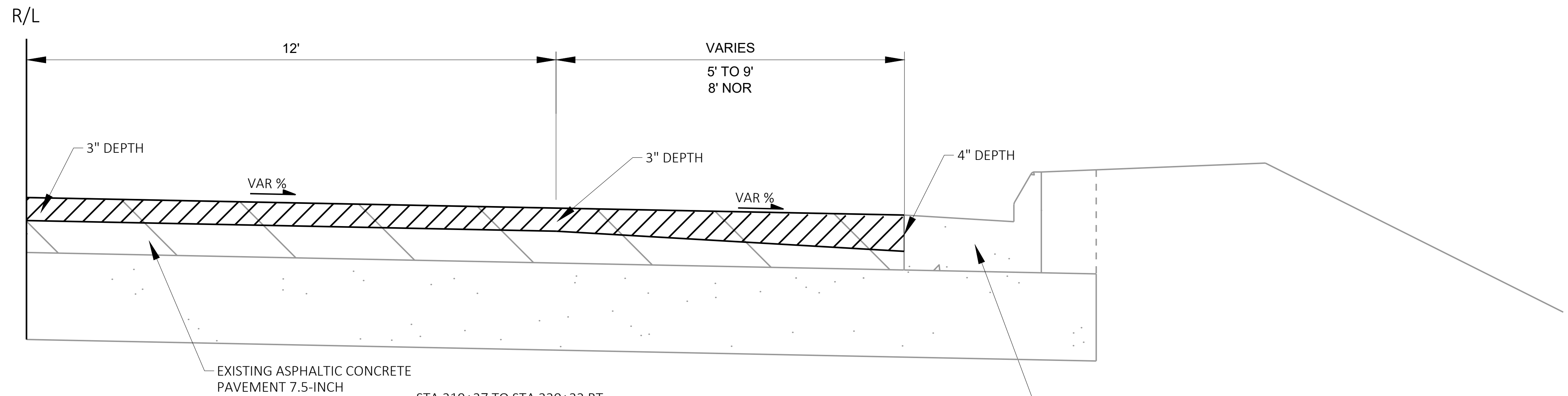
STA 20WH+80
STA 20WT+81
STA 10G+35
STA 20P+80
STA 19W+40
STA 20W+59
STA 20WL+49

STA 19CS+45
STA 20CP+34
STA 20CN+45
STA 19CN+30
STA20L+33
STA 19MK+59
STA 10MV+62



MAINLINE BUTT JOINT DETAIL

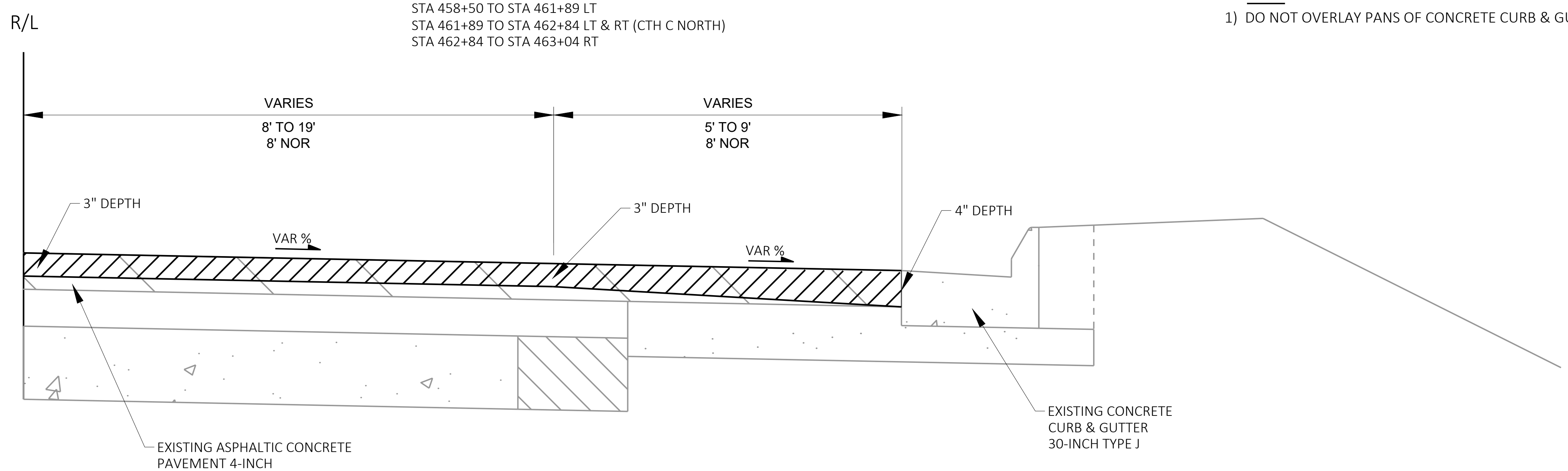
STA 304+05
STA 509+19



STA 319+37 TO STA 320+32 RT
STA 320+32 TO STA 323+61 LT & RT (WAYFARE TRL)
STA 323+61 TO STA 323+84 RT
STA 367+00 TO STA 368+31 LT & RT
STA 395+00 TO STA 408+33 LT (WATERVILLE LAKE RD)
STA 408+33 TO STA 411+49 LT & RT (CTH C SOUTH)
STA 411+49 TO STA 414+99 RT
STA 432+42 TO STA 433+52 LT & RT (CUSHING PARK RD)
STA 433+52 TO STA 433+67 LT
STA 458+50 TO STA 461+89 LT
STA 461+89 TO STA 462+84 LT & RT (CTH C NORTH)
STA 462+84 TO STA 463+04 RT

NOTE

1) DO NOT OVERLAY PANS OF CONCRETE CURB & GUTTER.

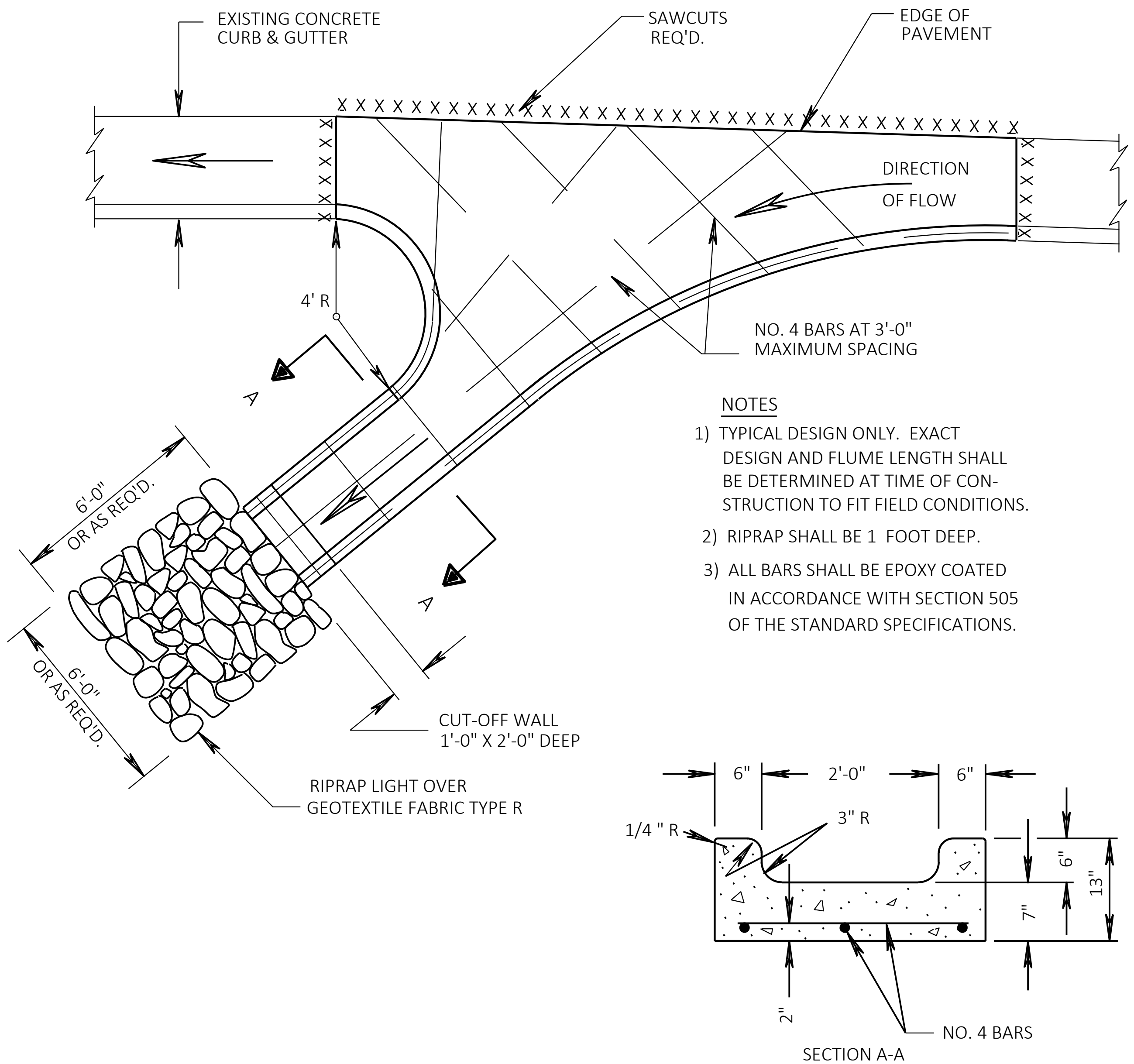


STA 304+05 TO STA 309+50 LT & RT
STA 309+50 TO STA 310+50 LT
STA 311+25 TO STA 312+52 LT (WHITAKER LA)
STA 329+51 TO STA 331+48 RT
STA 334+62 TO STA 339+51 LT & RT (OPEN GATE CT)
STA 339+51 TO STA 340+23 RT
STA 347+99 TO STA 352+37 RT
STA 352+37 TO STA 353+69 LT & RT (CTH P)
STA 353+61 TO STA 361+03 RT

STA 361+03 TO STA 367+00 LT & RT (WATERVILLE RD)
STA 370+53 TO STA 372+01 LT
STA 372+01 TO STA 372+77 LT & RT
STA 372+77 TO STA 395+00 LT
STA 480+15 TO STA 481+45 LT (LUTERBACH CT)
STA 487+01 TO STA 491+95 RT (MICKLE RD)
STA 506+78 TO STA 506+89 LT
STA 506+89 TO STA 509+02 LT & RT (MORAINE VIEW DR)
STA 509+02 TO STA 509+19 LT

REMOVING ASPHALTIC SURFACE ALONG CURB & GUTTER DETAIL

2

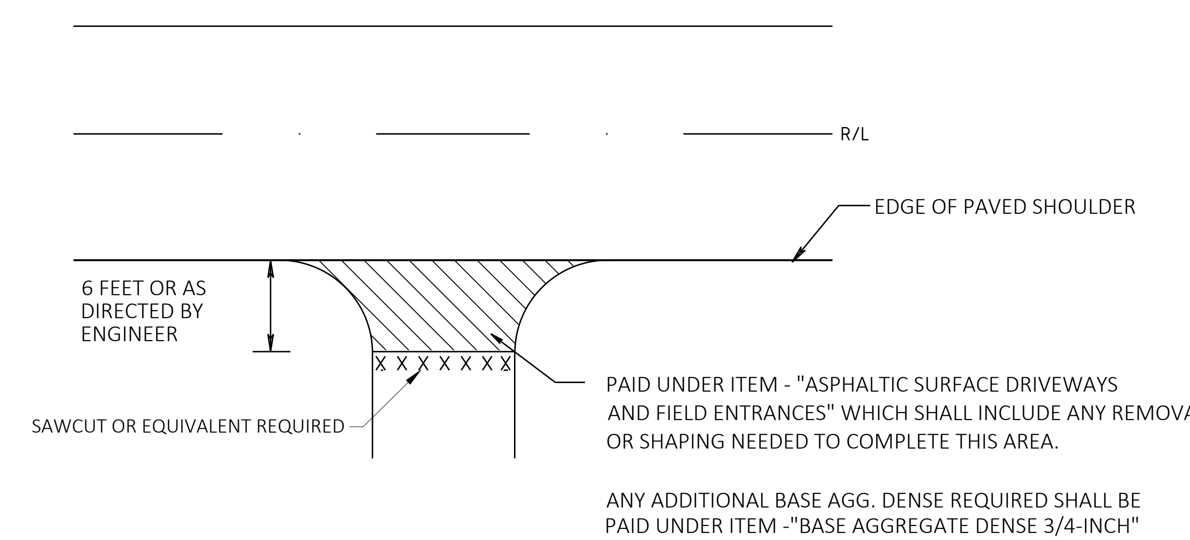


NOTES

1) TYPICAL DESIGN ONLY. EXACT DESIGN AND FLUME LENGTH SHALL BE DETERMINED AT TIME OF CONSTRUCTION TO FIT FIELD CONDITIONS.
2) RIPRAP SHALL BE 1 FOOT DEEP.
3) ALL BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS.

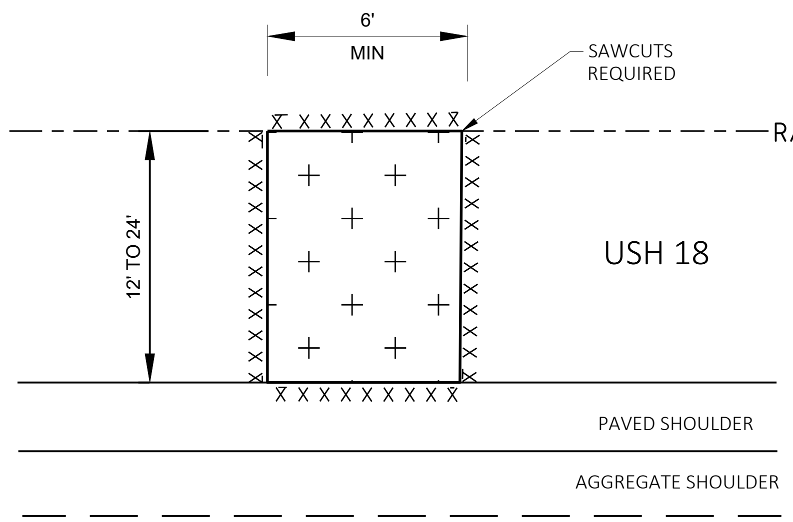
CONCRETE SURFACE DRAIN DETAIL

STA 309+54 RT
STA 320+27 LT
STA 339+62 LT
STA 340+27 RT
STA 367+11 LT
STA 371+98 RT
STA 411+54 LT
STA 432+37 RT
STA 462+88 LT
STA 506+70 LT
STA 20P+64 RT



RURAL DRIVEWAY HMA OVERLAY LIMIT DETAIL

2



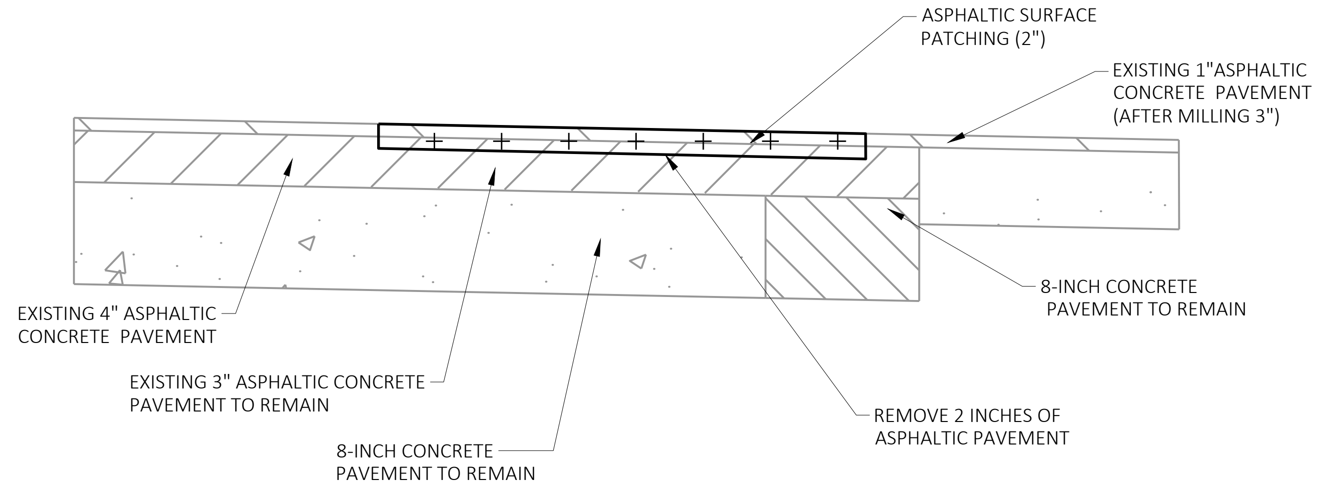
PLAN VIEW

NOTES

1) ASPHALTIC SURFACE PATCHING TO BE COMPLETED AFTER REMOVING ASPHALTIC SURFACE MILLING 3 INCHES.

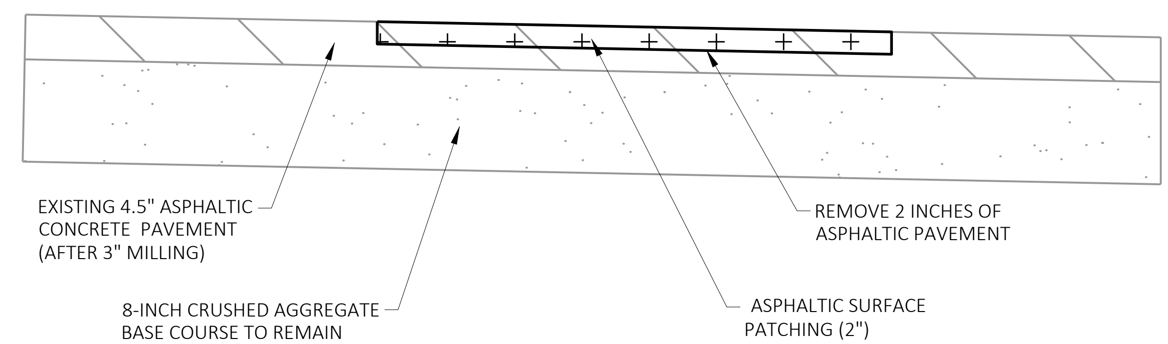
2) REMOVE AND PAVE ASPHALTIC SURFACE PATCHES IN THE SAME DAY.

3) ASPHALTIC SAWCUTS REQUIRED AT BASE PATCHING LOCATIONS.



LANE SURFACE PATCH

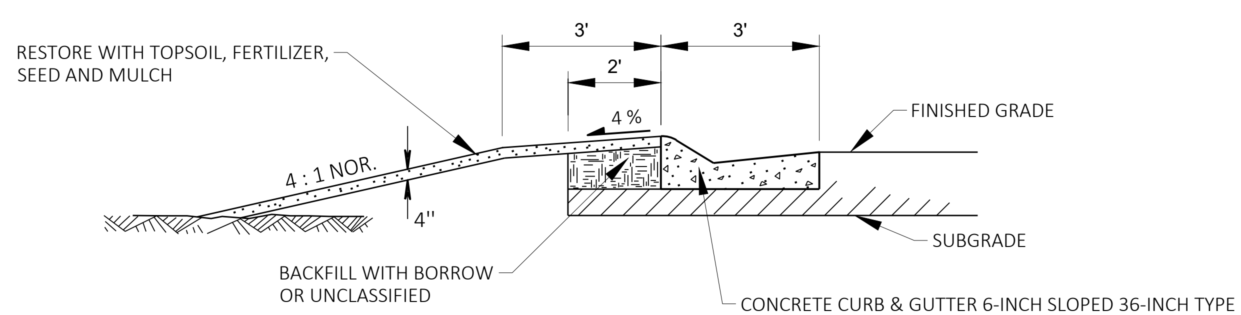
AT ASPHALT OVER CONCRETE LOCATIONS



LANE SURFACE PATCH

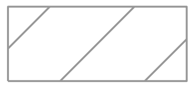
AT FULL DEPTH ASPHALT LOCATIONS

ASPHALTIC SURFACE PATCHING DETAIL

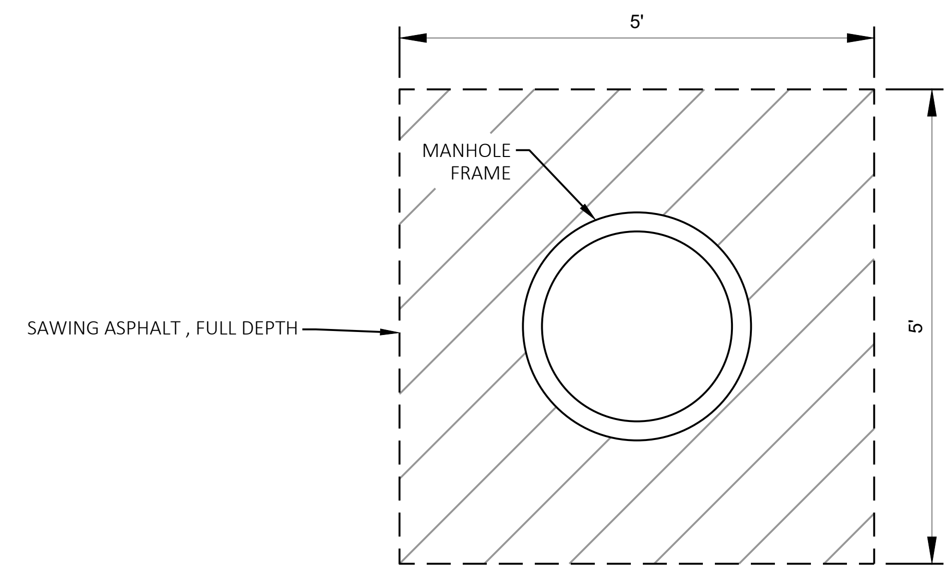


BERM DETAIL BEHIND 36-INCH MOUNTABLE CURB & GUTTER

AT MORAINE VIEW DRIVE INTERSECTION WITH USH 18



REMOVING ASPHALTIC SURFACE

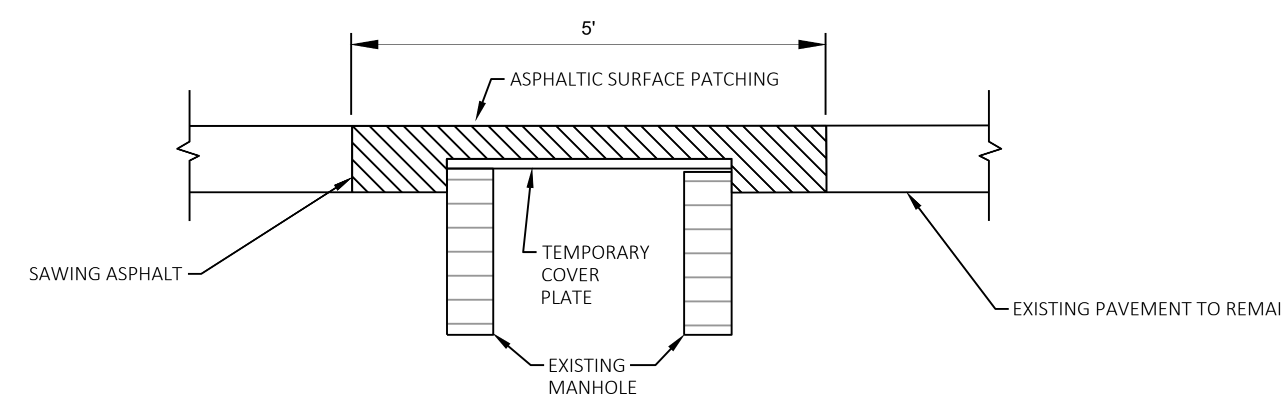


PLAN VIEW

STEP 1

PRIOR TO REMOVING ASPHALTIC SURFACE PARTIAL DEPTH
- SAWING ASPHALT
- REMOVE MANHOLE COVER
- FURNISH AND INSTALL TEMPORARY COVER PLATE
- BACKFILL USING ASPHALT SURFACE PATCHING

MANHOLE LOCATION (APPROXIMATE)
- STA 354+03, 18' RT

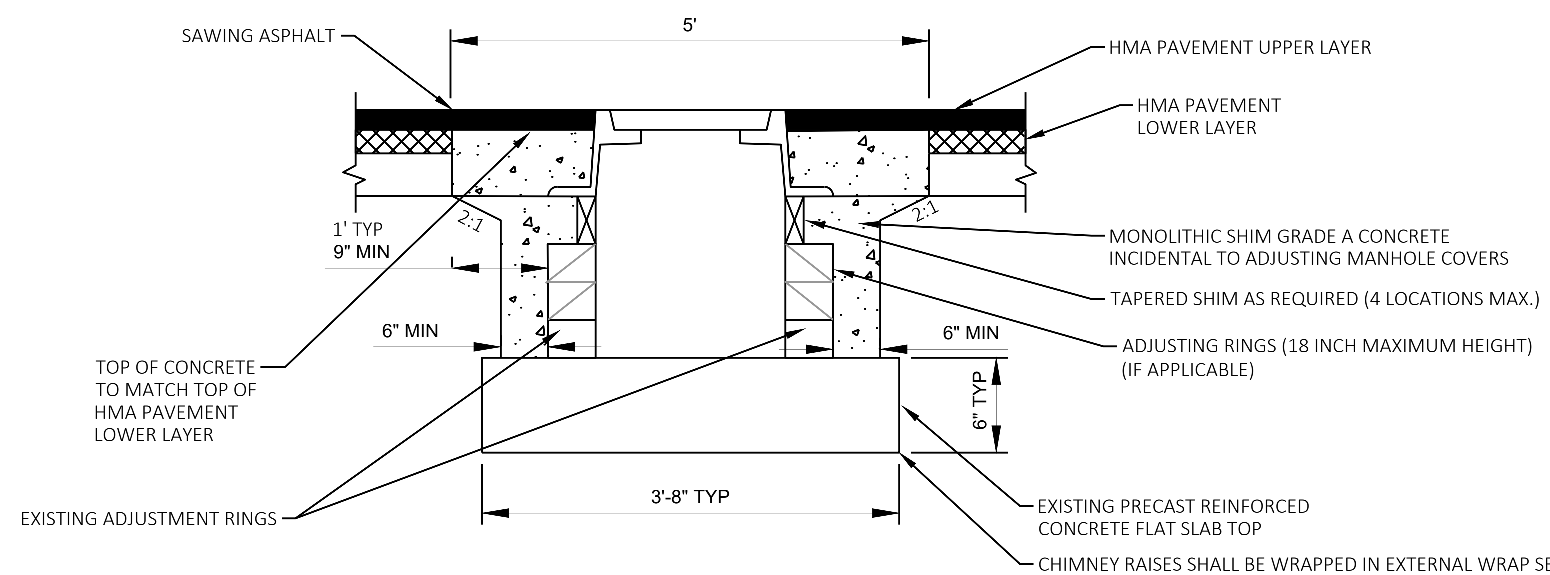


STEP 2

AFTER PAVING LOWER LAYER:

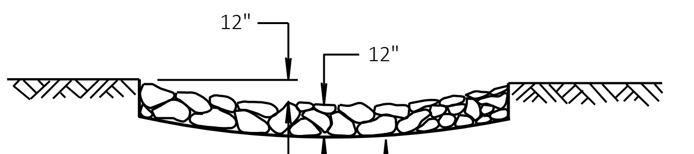
- EXCAVATE AND REMOVE TEMPORARY COVER PLATE
- ADJUST AND REINSTALL MANHOLE FRAME OR INSTALL NEW CASTING. ENGINEER IN FIELD TO DETERMINE CONDITION OF EXISTING FRAME.
- AND COVER USING MONOLITHIC CONCRETE SHIM

ALL WORK EXCEPT REMOVING ASPHALTIC SURFACE, ASPHALT SURFACE PATCHING, SAWING ASPHALT AND INSTALLATION AND REMOVAL OF COVER PLATE TEMPORARY IS INCLUDED IN THE COST OF ADJUSTING MANHOLE COVERS.

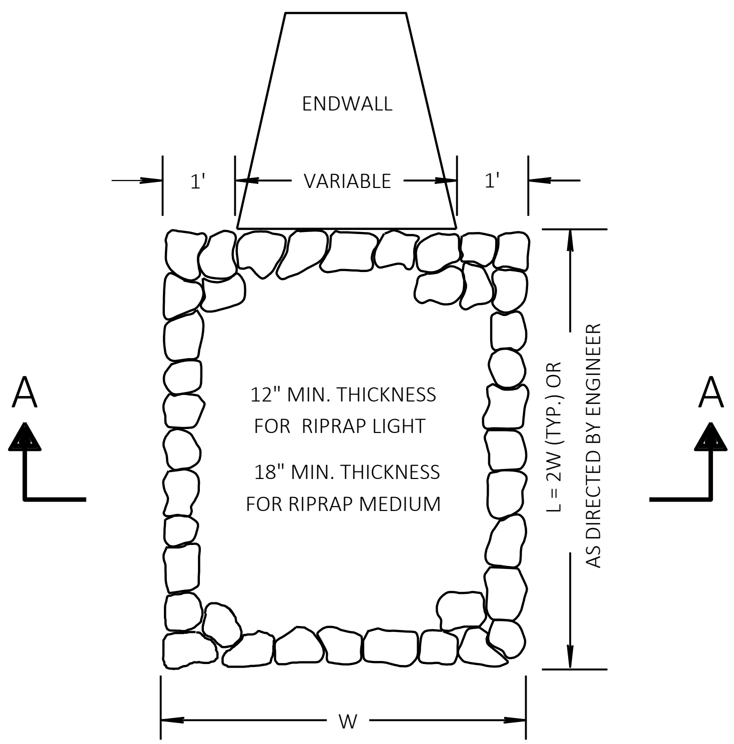


ADJUSTING MANHOLE COVERS DETAIL

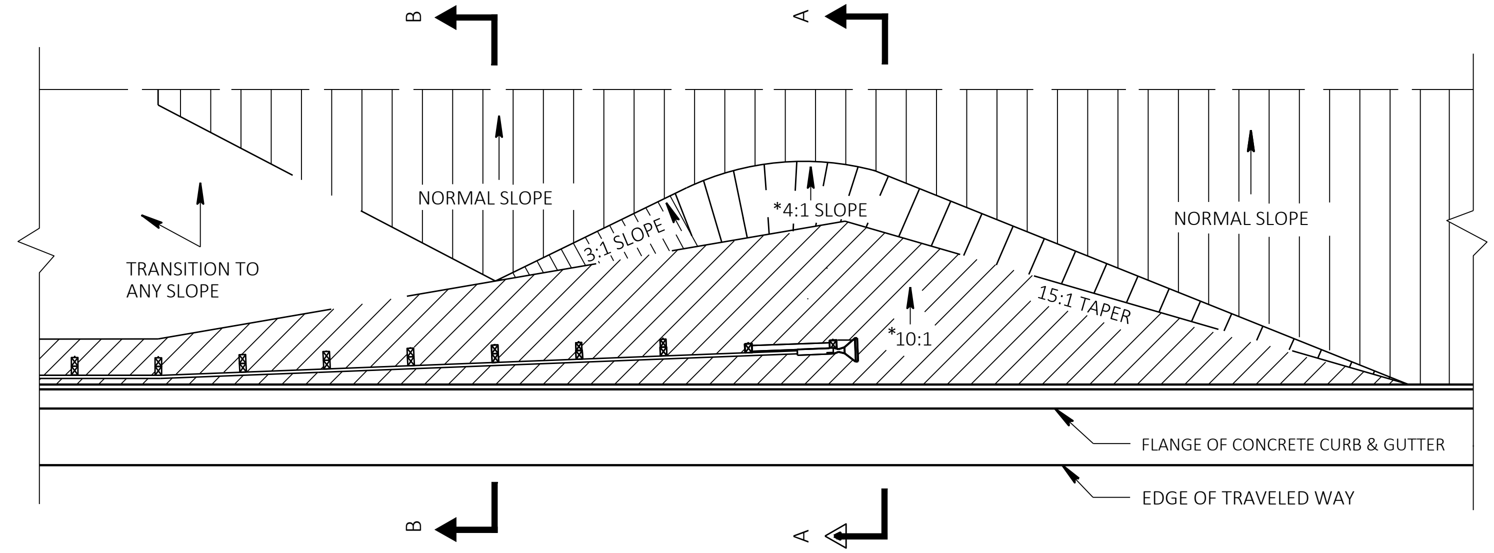
STA 354+03 RT



SECTION A-A

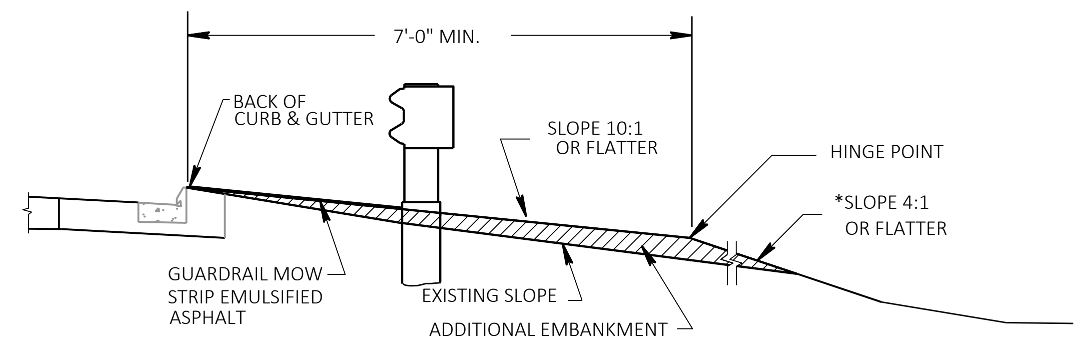


RIPRAP TREATMENT AT CULVERTS DETAIL

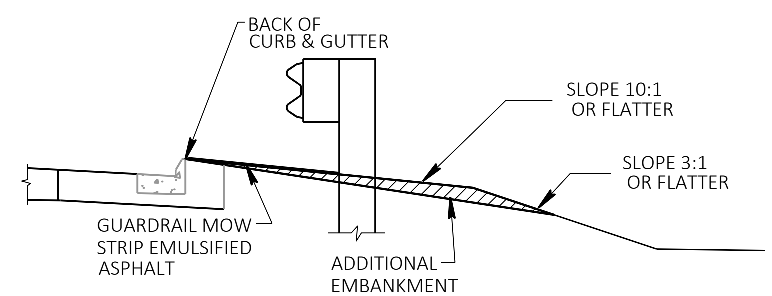


PLAN VIEW

*A 3:1 MAXIMUM SLOPE MAY BE USED FOR INSTALLATIONS ON EXISTING HIGHWAYS.



SECTION A-A



SECTION B-B

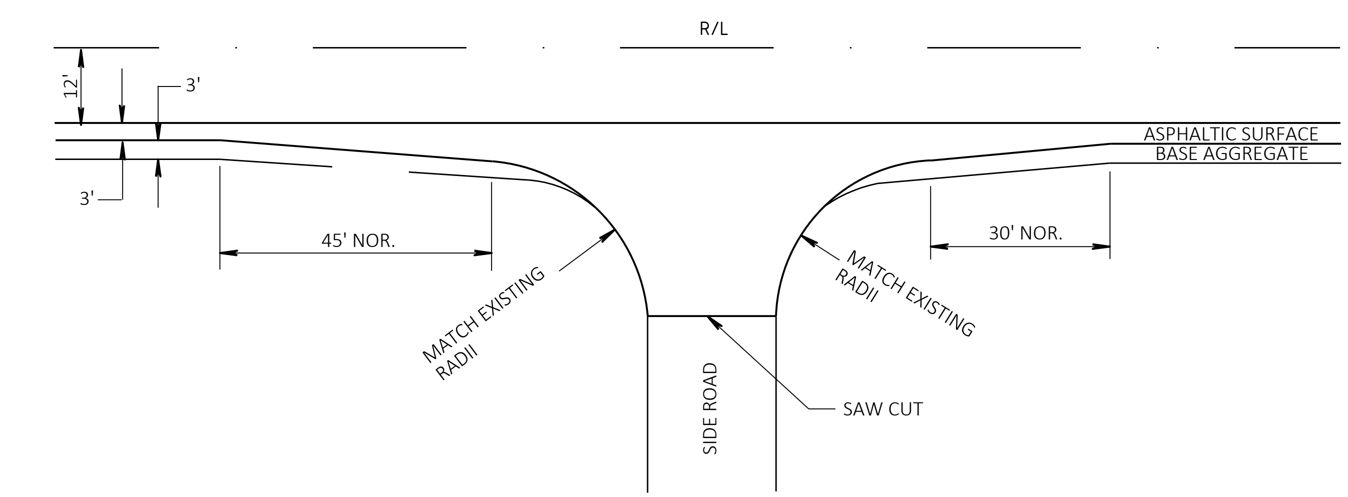
NOTE

1) THE GUARDRAIL REPLACES EXISTING BEAM GUARD, MINIMAL EMBANKMENT MATERIAL IS EXPECTED TO BE REQUIRED.

FILL AREA AT BEAM GUARD DETAIL

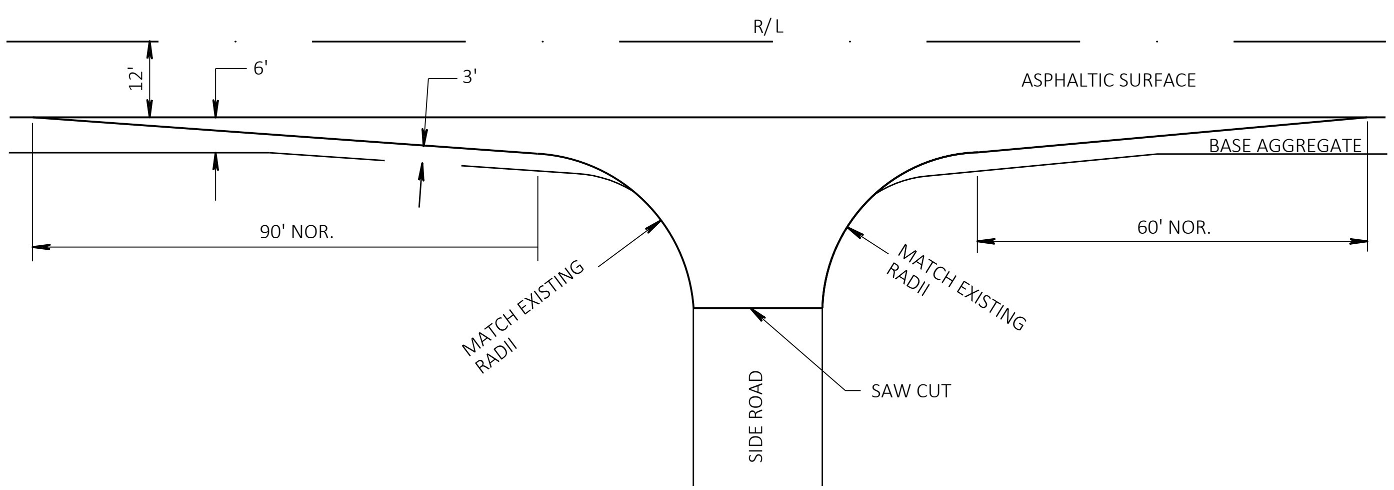
STA 356+33 RT
STA 368+36 LT
STA 368+61 RT
STA 411+77 RT

2



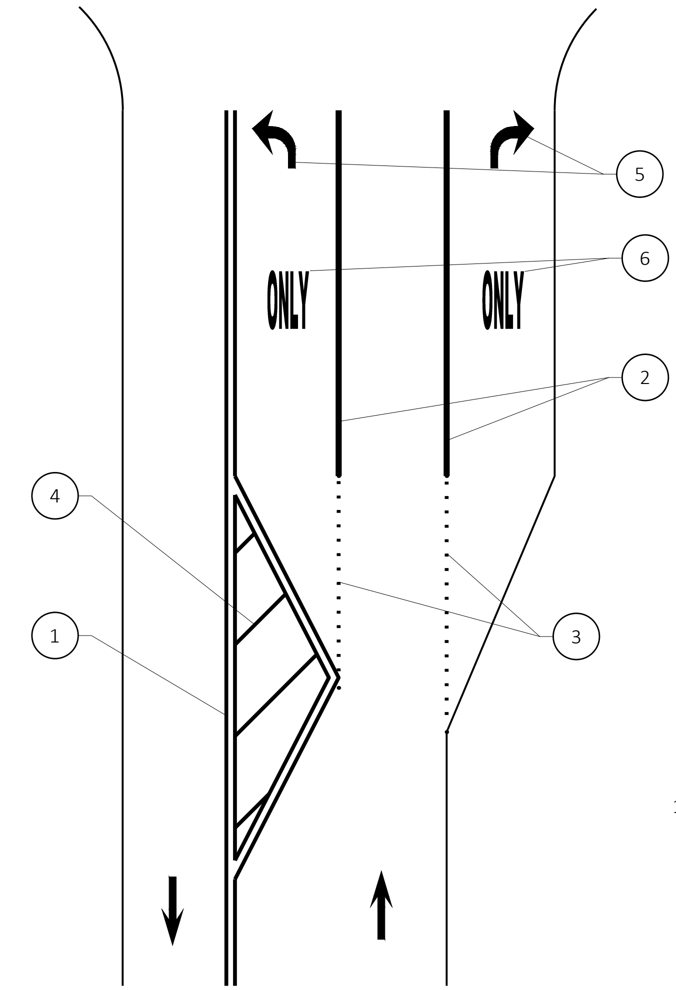
SIDE ROAD DETAIL, SPECIAL DETAIL

(ASPHALTIC SHOULDERS)



SIDE ROAD DETAIL, SPECIAL DETAIL

(BASE AGGREGATE SHOULDERS)



NOTE

1) IF SIGNALIZED ADD STOP BAR

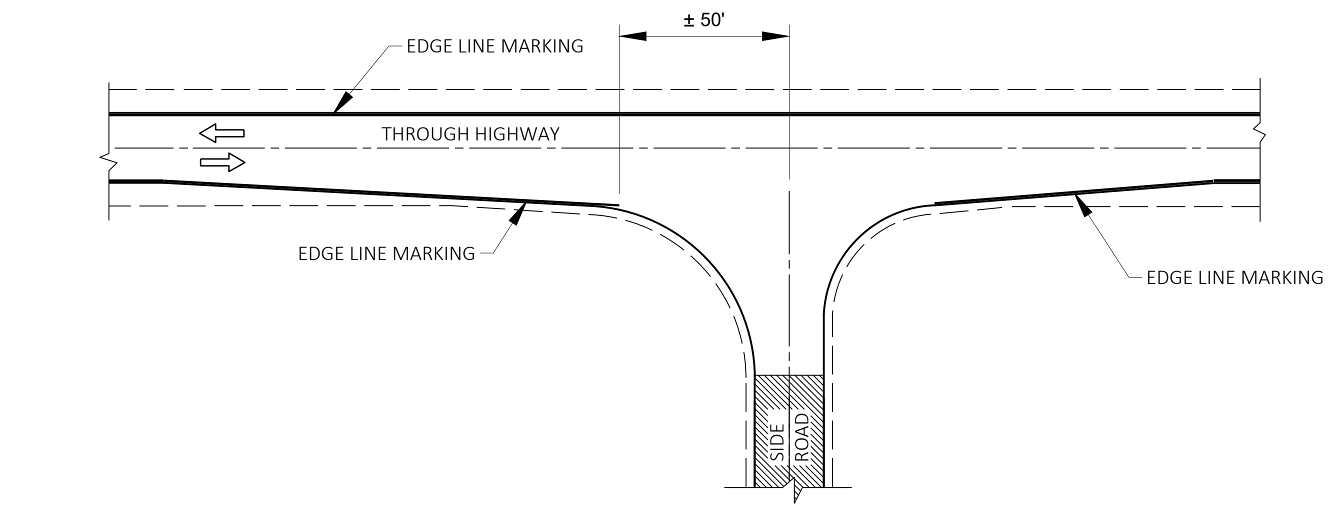
LEGEND

1 PAVEMENT MARKING 4" DOUBLE YELLOW
2 PAVEMENT MARKING 8" CHANNELIZING WHITE
3 PAVEMENT MARKING 8" WHITE (3' LINE, 9' SPACE)
4 PAVEMENT MARKING 12" DIAGONAL YELLOW
5 PAVEMENT MARKING TYPE 2 ARROW
6 PAVEMENT MARKING WORDS

TYPICAL ARROW/ONLY LANE USE MARKINGS
FOR PAINTED CENTERLINE APPLICATION DETAIL

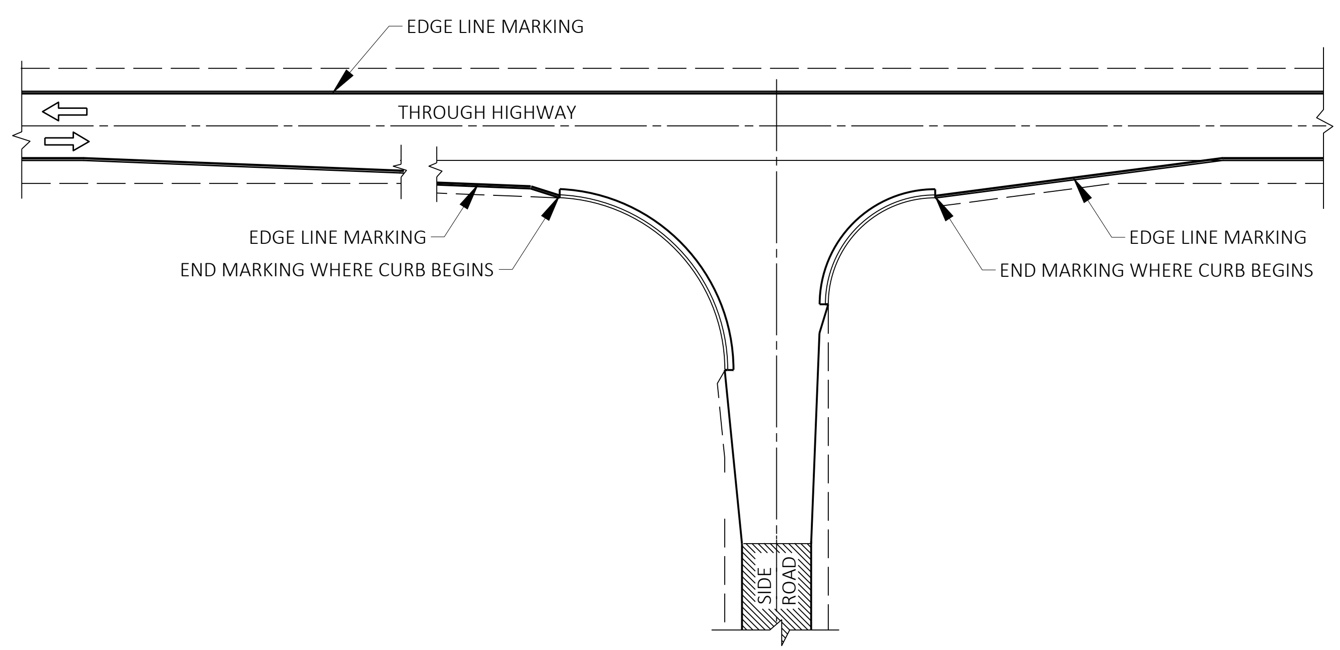
2

2



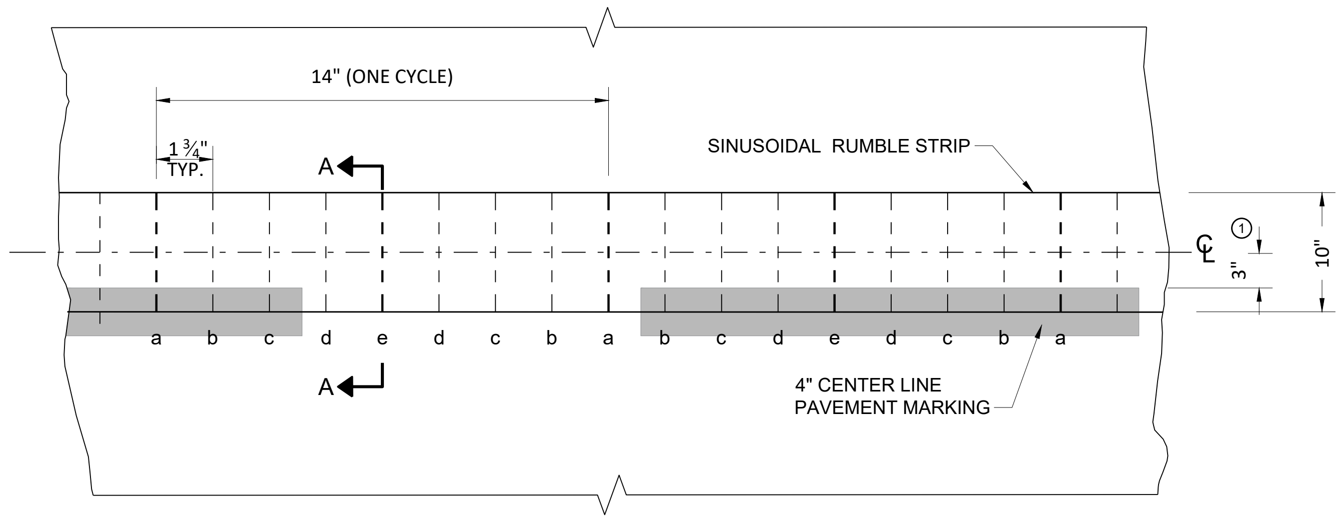
MINOR INTERSECTION WITHOUT CURBS DETAIL

(TYPICAL MARKING)

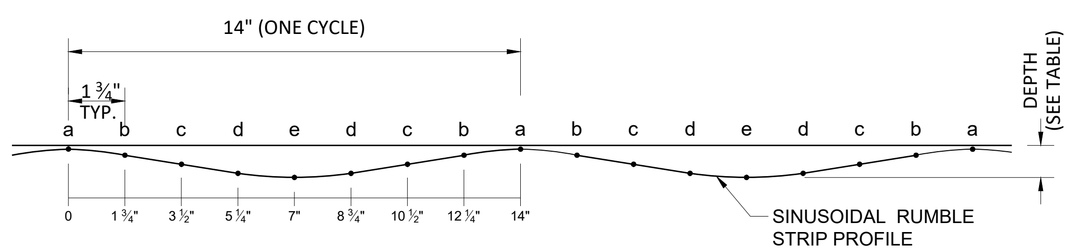


MINOR INTERSECTION WITH CURBS DETAIL

(TYPICAL MARKING)

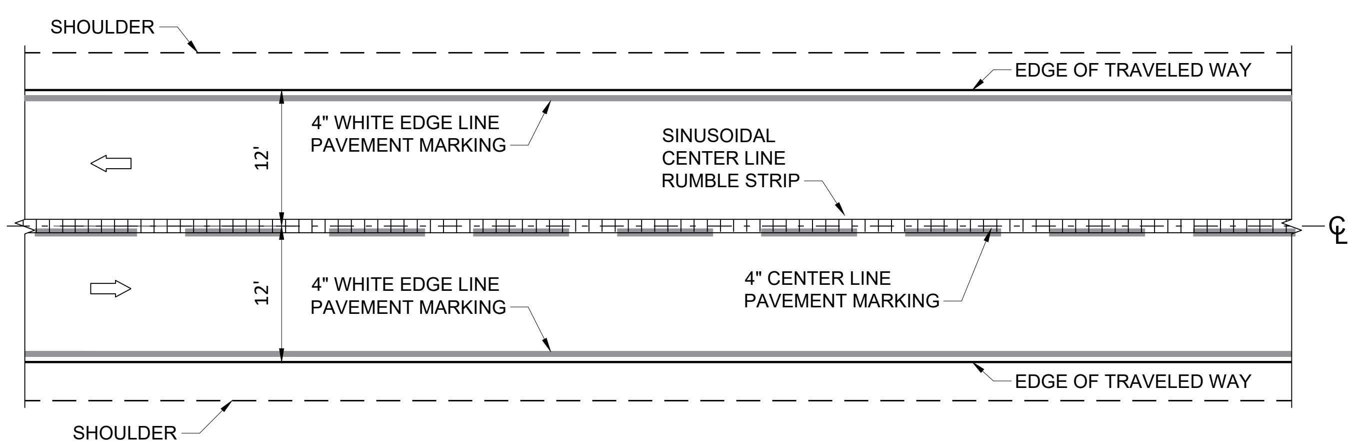


PLAN VIEW
SINUSOIDAL CENTER LINE RUMBLE STRIPS



LOCATION	DEPTH (INCHES)
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"

PROFILE VIEW
SINUSOIDAL SHOULDER RUMBLE STRIPS



SINUSOIDAL CENTER LINE RUMBLE STRIPS,
2-LANE ASPHALTIC ROADWAY

GENERAL NOTES

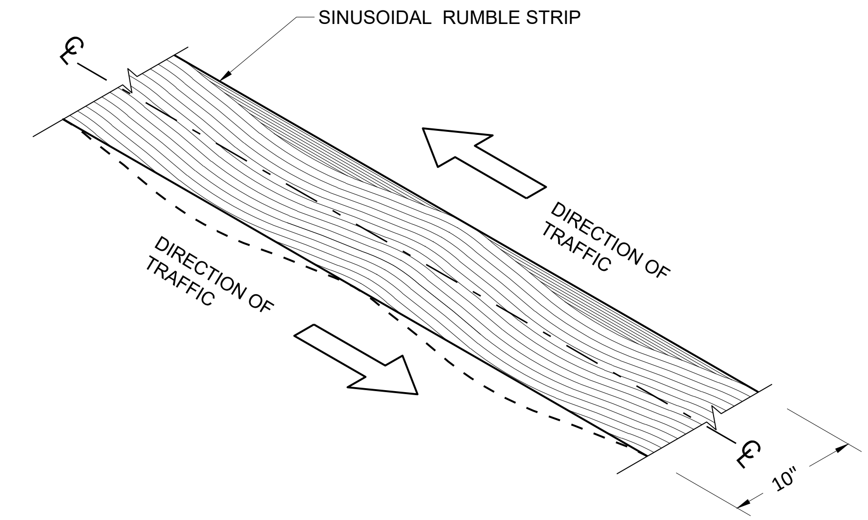
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

GAP SINUSOIDAL RUMBLE STRIPS AT INTERSECTIONS, BRIDGE AND APPROACH SLABS, RAILROADS, DRIVEWAYS, PASSING AND CLIMBING LANES, AND OTHER MISCELLANEOUS CROSSINGS

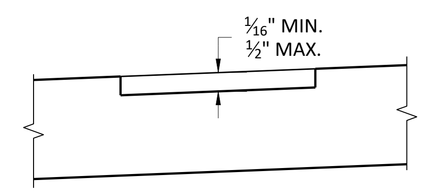
SHOULDER RUMBLE STRIPS MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.

TEMPORARY PAVEMENT MARKINGS ARE TYPICALLY PLACED PRIOR TO RUMBLE STRIP INSTALLATION. PERMANENT MARKINGS ARE INSTALLED AFTER RUMBLE STRIP INSTALLATION.

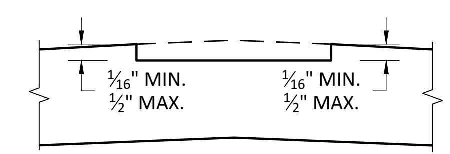
(1) REFER TO SDD 15C8 - SHEET "a" LONGITUDINAL MARKINGS (MAINLINE).



ISOMETRIC

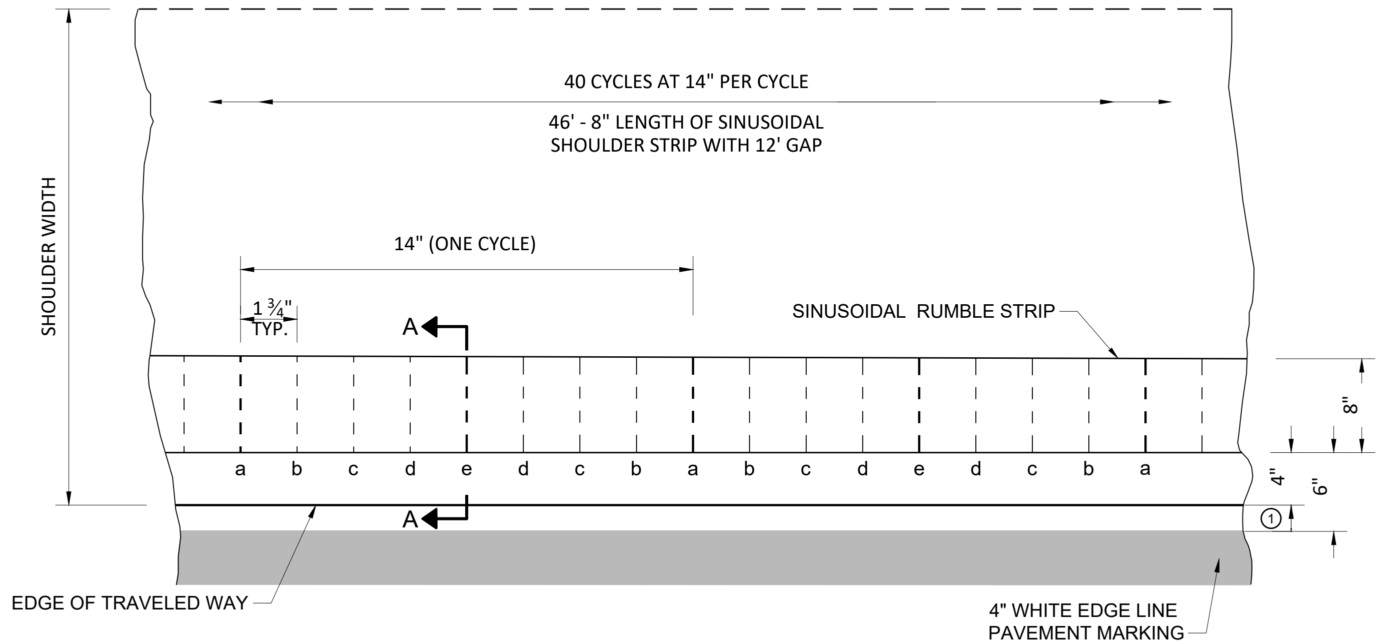


SECTION A - A
SUPERELEVATED ROADWAY

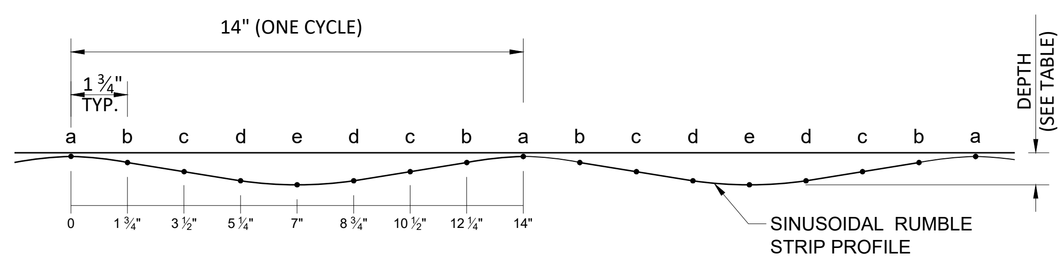


SECTION A - A
CROWNED ROADWAY

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 20	E

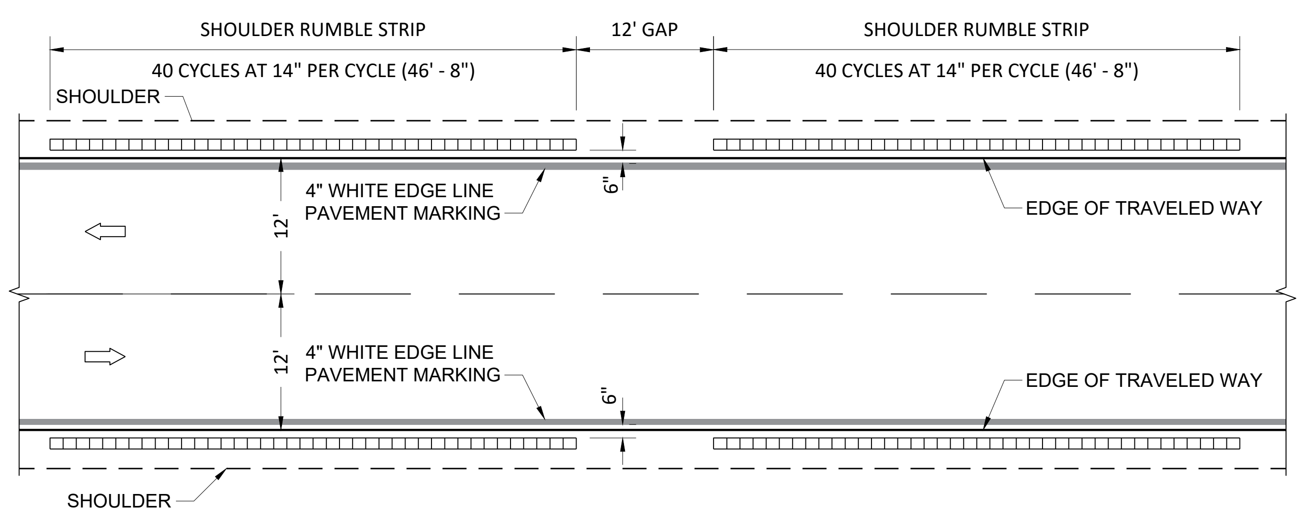


PLAN VIEW
SINUSOIDAL SHOULDER RUMBLE STRIPS



LOCATION	DEPTH (INCHES)
a	$\frac{1}{16}$"
b	$\frac{5}{32}$"
c	$\frac{9}{32}$"
d	$\frac{7}{16}$"
e	$\frac{1}{2}$"

PROFILE VIEW
SINUSOIDAL SHOULDER RUMBLE STRIPS



TYPE 1
SINUSOIDAL SHOULDER RUMBLE STRIPS,
2-LANE ASPHALTIC ROADWAY

GENERAL NOTES

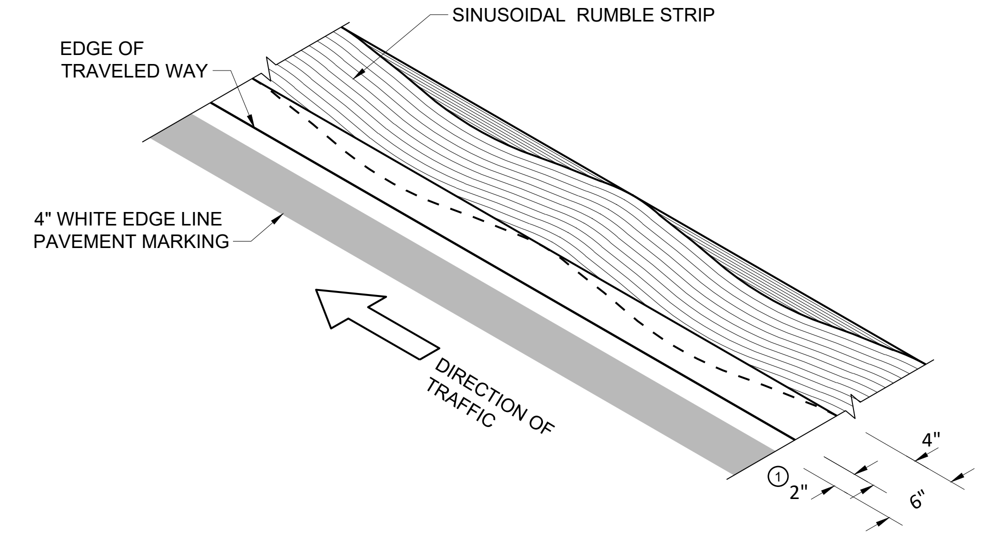
DETAILS OF CONSTRUCTION NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

GAP SINUSOIDAL RUMBLE STRIPS AT INTERSECTIONS, BRIDGE AND APPROACH SLABS, RAILROADS, DRIVEWAYS, PASSING AND CLIMBING LANES, AND OTHER MISCELLANEOUS CROSSINGS

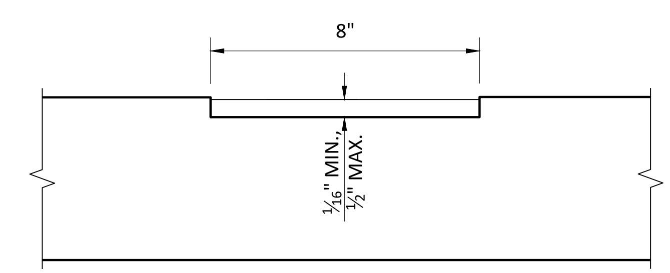
SHOULDER RUMBLE STRIPS MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.

TEMPORARY PAVEMENT MARKINGS ARE TYPICALLY PLACED PRIOR TO RUMBLE STRIP INSTALLATION. PERMANENT MARKINGS ARE INSTALLED AFTER RUMBLE STRIP INSTALLATION.

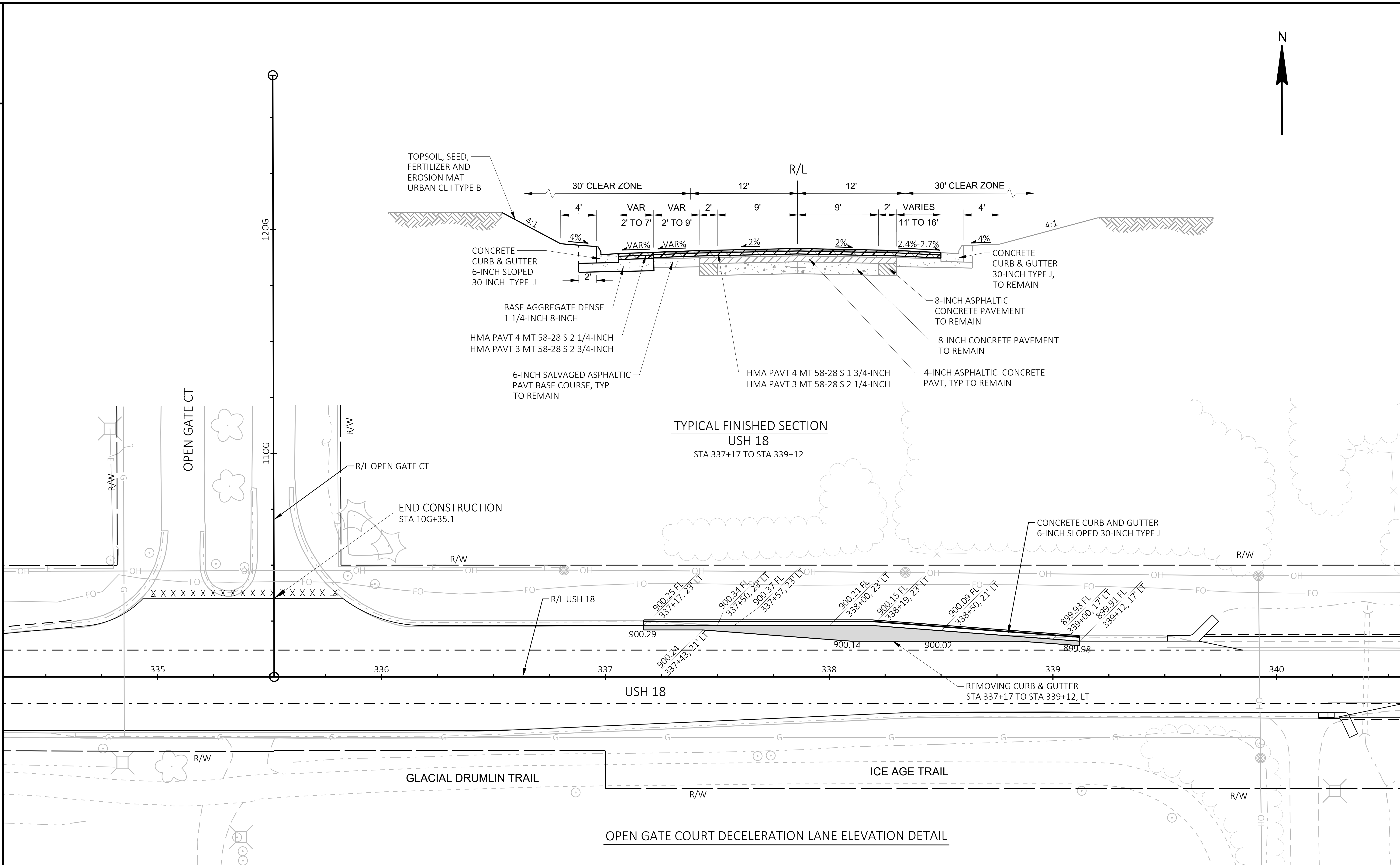
(1) REFER TO SDD 15C8 - SHEET "a" LONGITUDINAL MARKINGS (MAINLINE).



ISOMETRIC

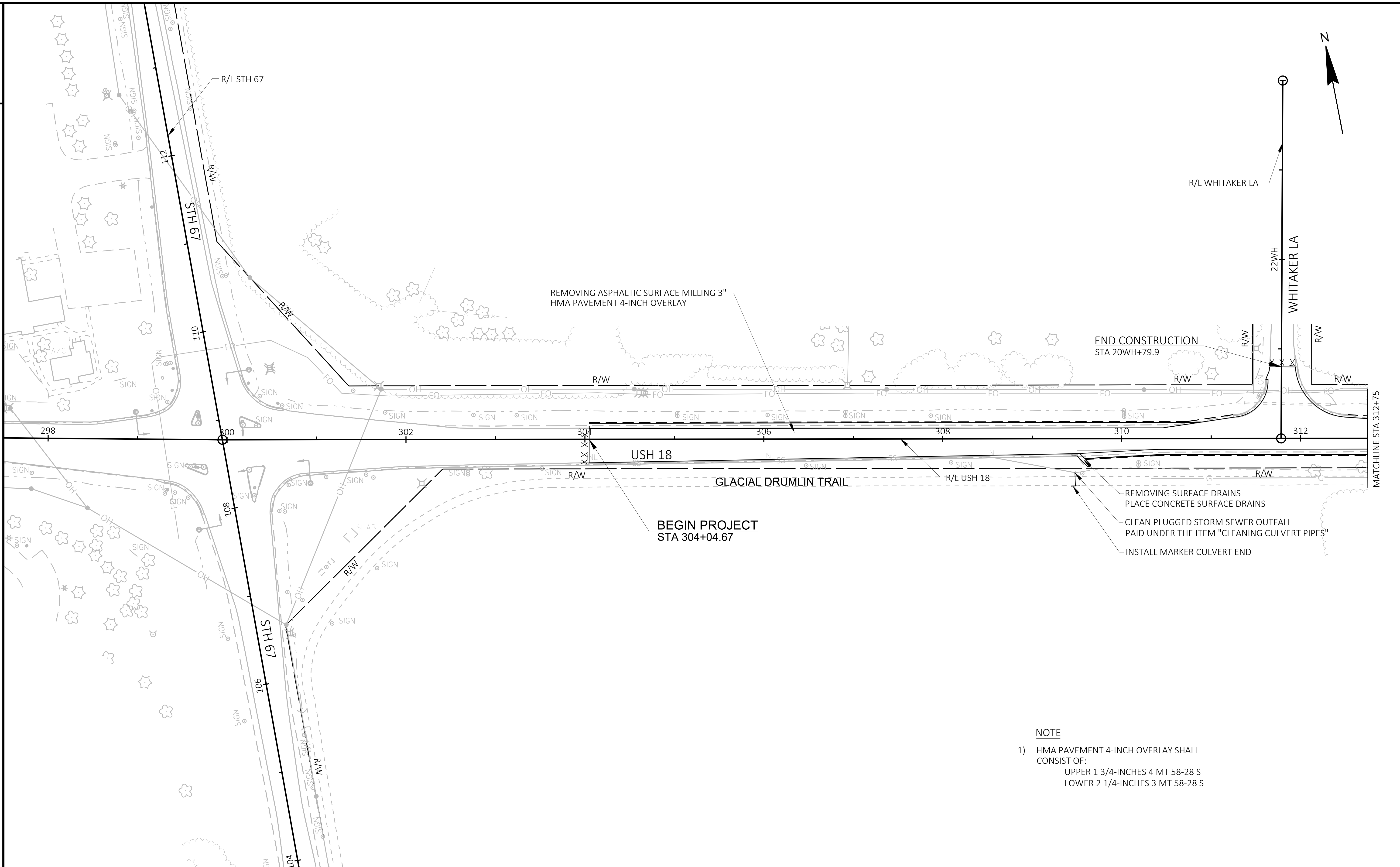


SECTION A - A



OPEN GATE COURT DECELERATION LANE ELEVATION DETAIL

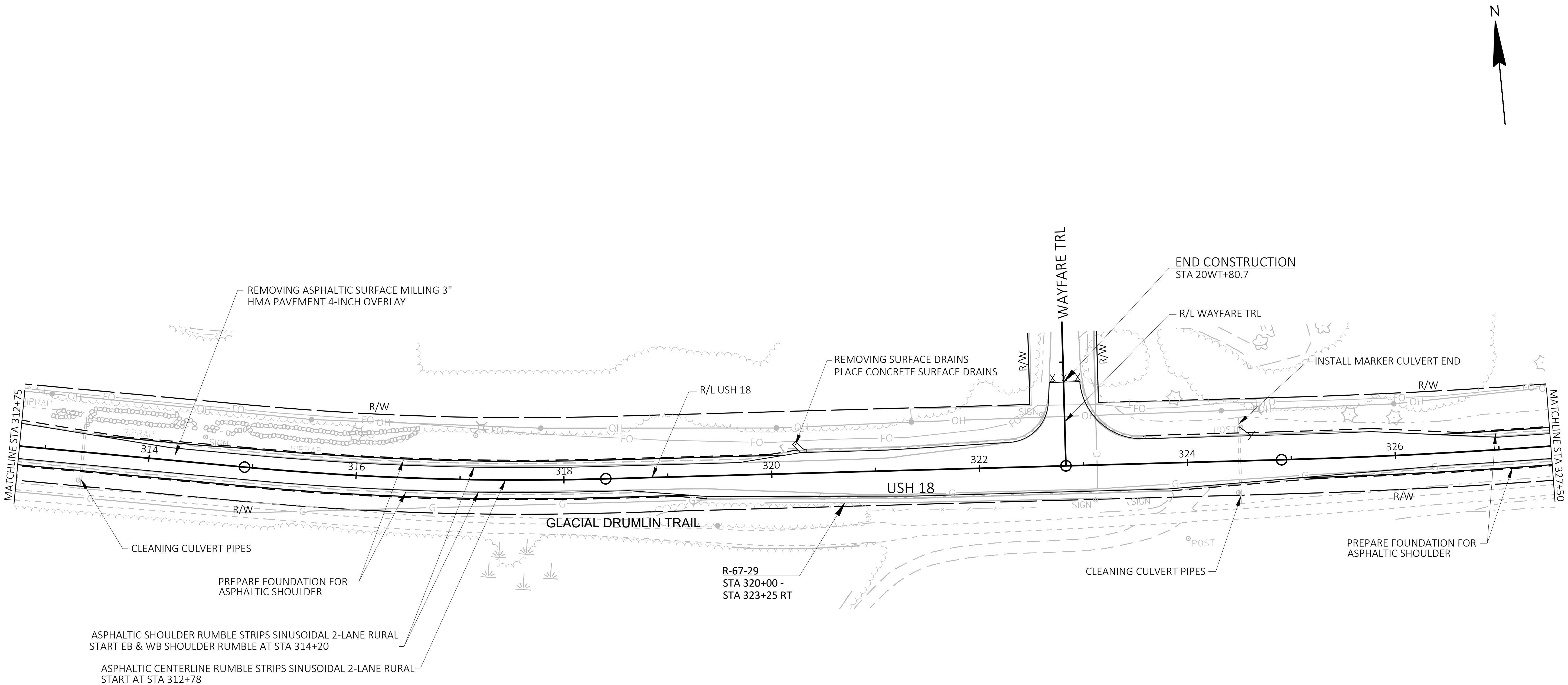
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 22	E



NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
   UPPER 1 3/4-INCHES 4 MT 58-28 S
   LOWER 2 1/4-INCHES 3 MT 58-28 S

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 23	E

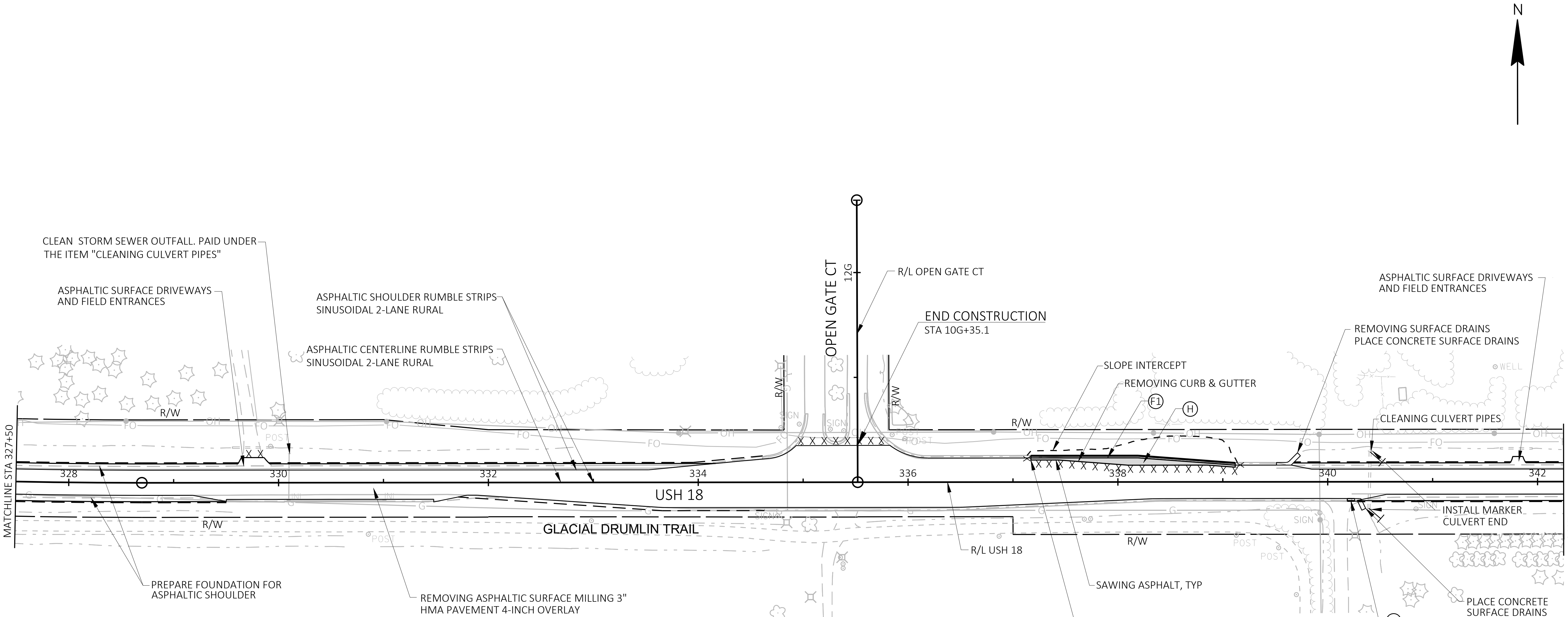


NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 24	E

2



2

NOTE

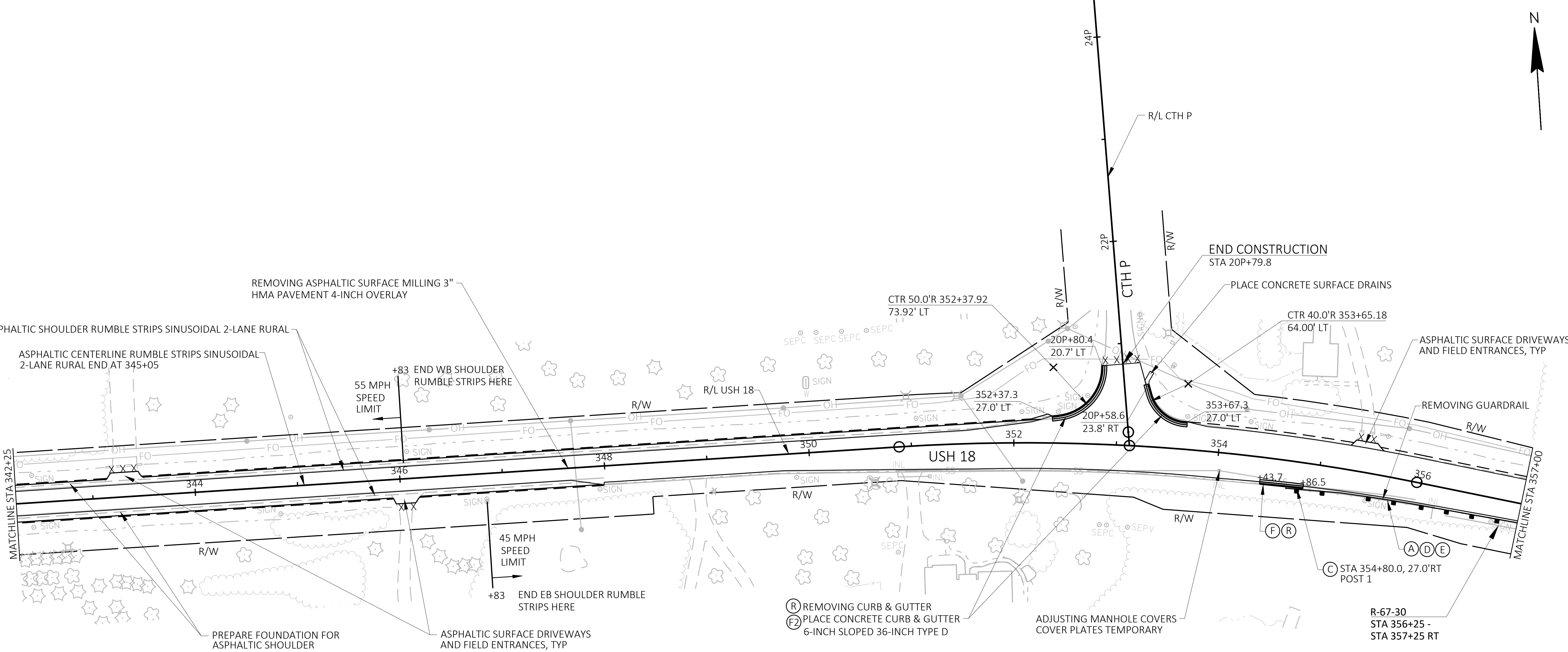
1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
   UPPER 1 3/4-INCHES 4 MT 58-28 S
   LOWER 2 1/4-INCHES 3 MT 58-28 S

2) ASPHALTIC WEDGING REQUIRED TO ADJUST CROSS SLOPE OF ROADWAY TO MATCH FLANGE ELEVATIONS AT DECELERATION LANE.

LEGEND

F CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE J
F1 CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J
H HMA PAVEMENT 3 MT 58-28 S 2 1/4 INCHES
HMA PAVEMENT 4 MT 58-28 S 2 3/4 INCHES
BASE AGGREGATE DENSE 1 1/4-INCH 8 INCHES

2



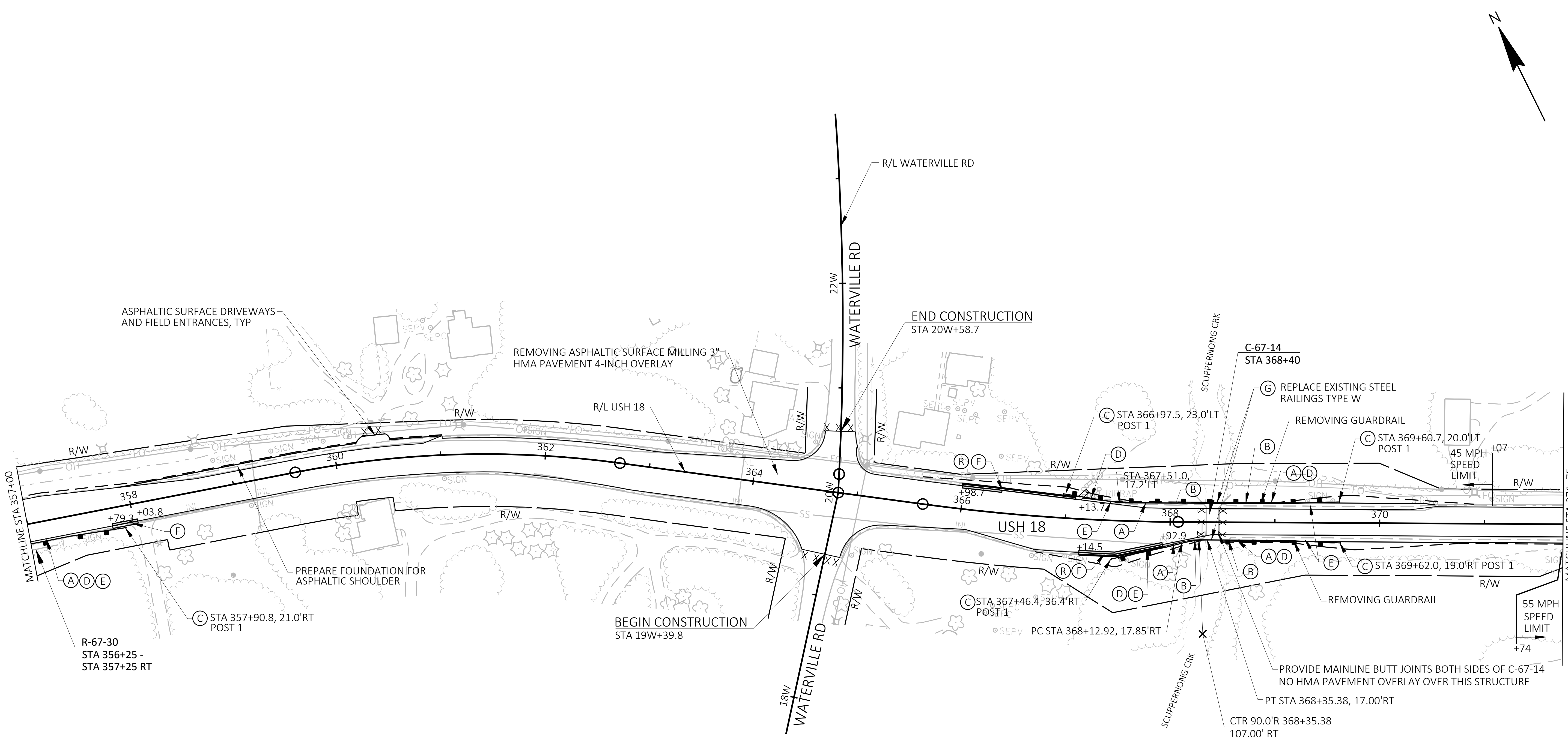
NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

LEGEND

- (A) MGS GUARDRAIL 3
- (C) MGS GUARDRAIL TERMINAL EAT
- (D) BARRIER SYSTEM GRADING SHAPING FINISHING
- (E) GUARDRAIL MOW STRIP ASPHALT
- (F) CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE J PROVIDE 30 FEET OF FLATTENED CURB HEAD IN FRONT OF EAT
- (R) REMOVING CURB & GUTTER

2



NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

LEGEND

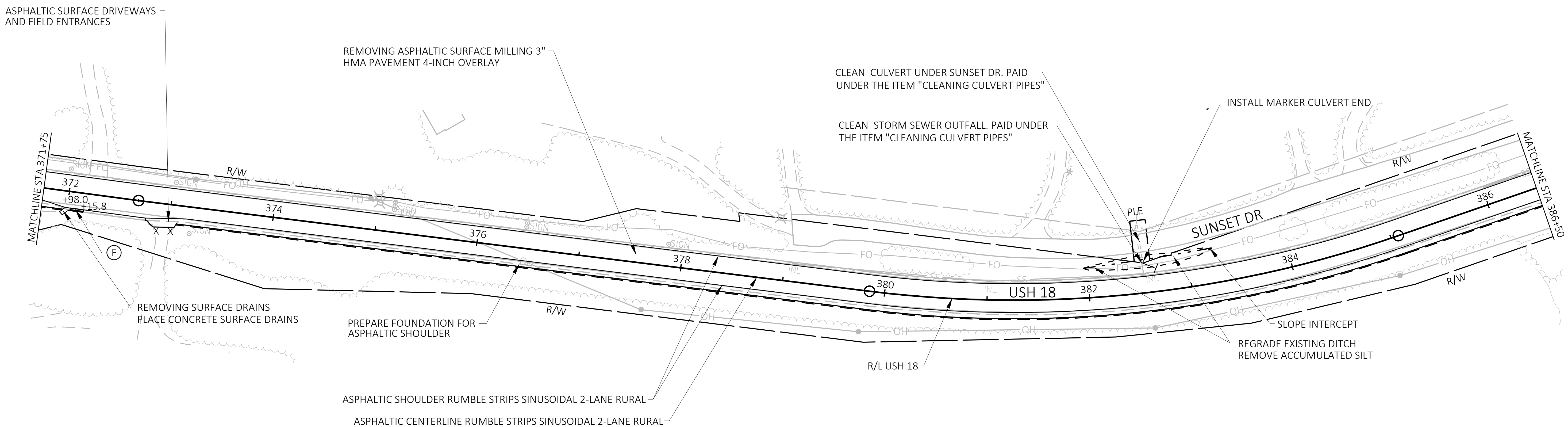
- (A) MGS GUARDRAIL 3
- (B) MGS THRIE BEAM TRANSITION
- (C) MGS GUARDRAIL TERMINAL EAT
- (D) BARRIER SYSTEM GRADING SHAPING FINISHING
- (E) GUARDRAIL MOW STRIP EMULSIFIED ASPHALT
- (F) CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE J PROVIDE 30 FEET OF FLATTENED CURB HEAD IN FRONT OF EAT
- (G) RAILING STEEL TYPE W
- (R) REMOVING CURB & GUTTER

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 27	E

2

2

2



NOTE

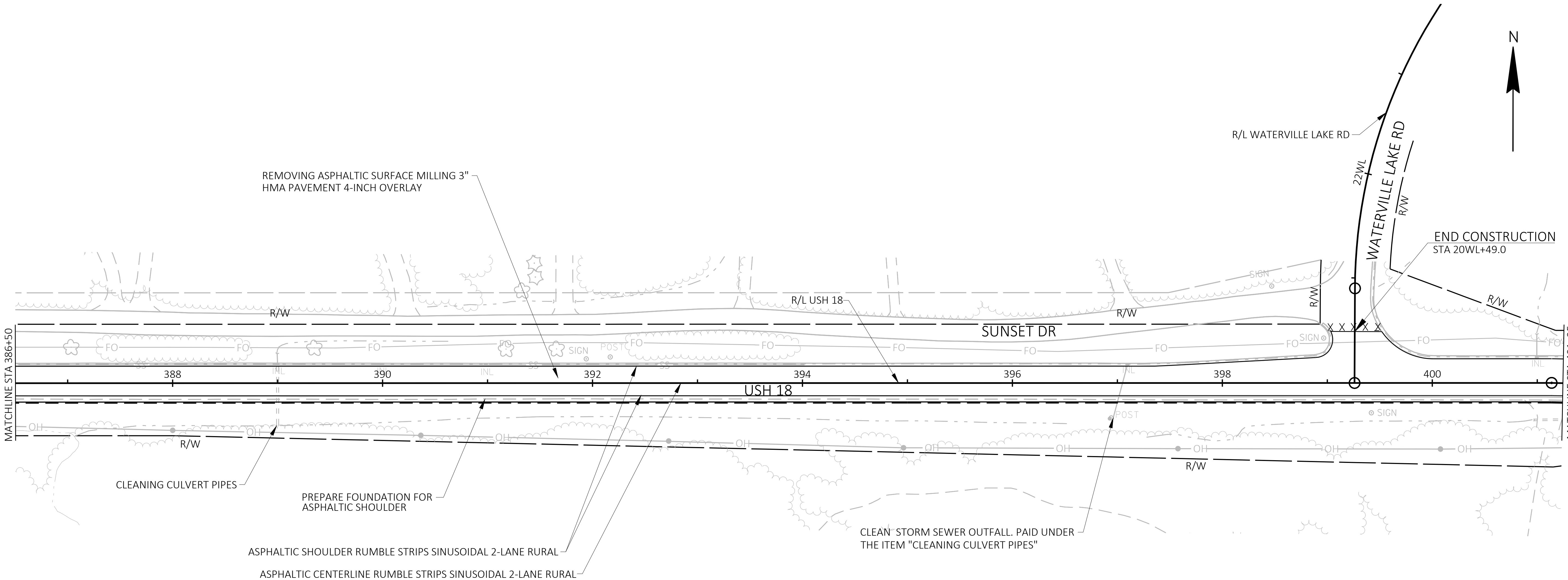
1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
   UPPER 1 3/4-INCHES 4 MT 58-28 S
   LOWER 2 1/4-INCHES 3 MT 58-28 S

LEGEND

(F) CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 28	E

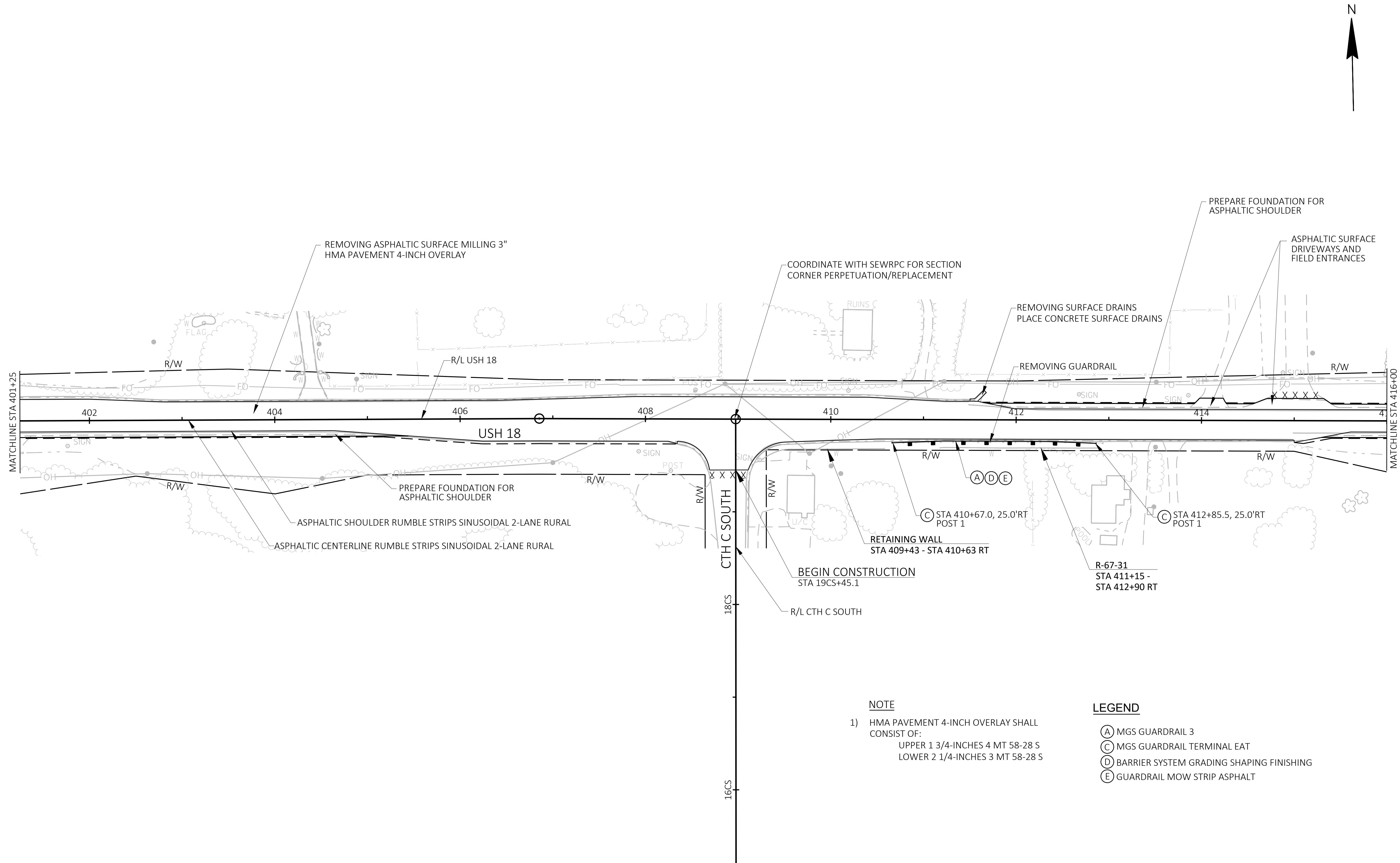
2



NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
   UPPER 1 3/4-INCHES 4 MT 58-28 S
   LOWER 2 1/4-INCHES 3 MT 58-28 S

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 29	E

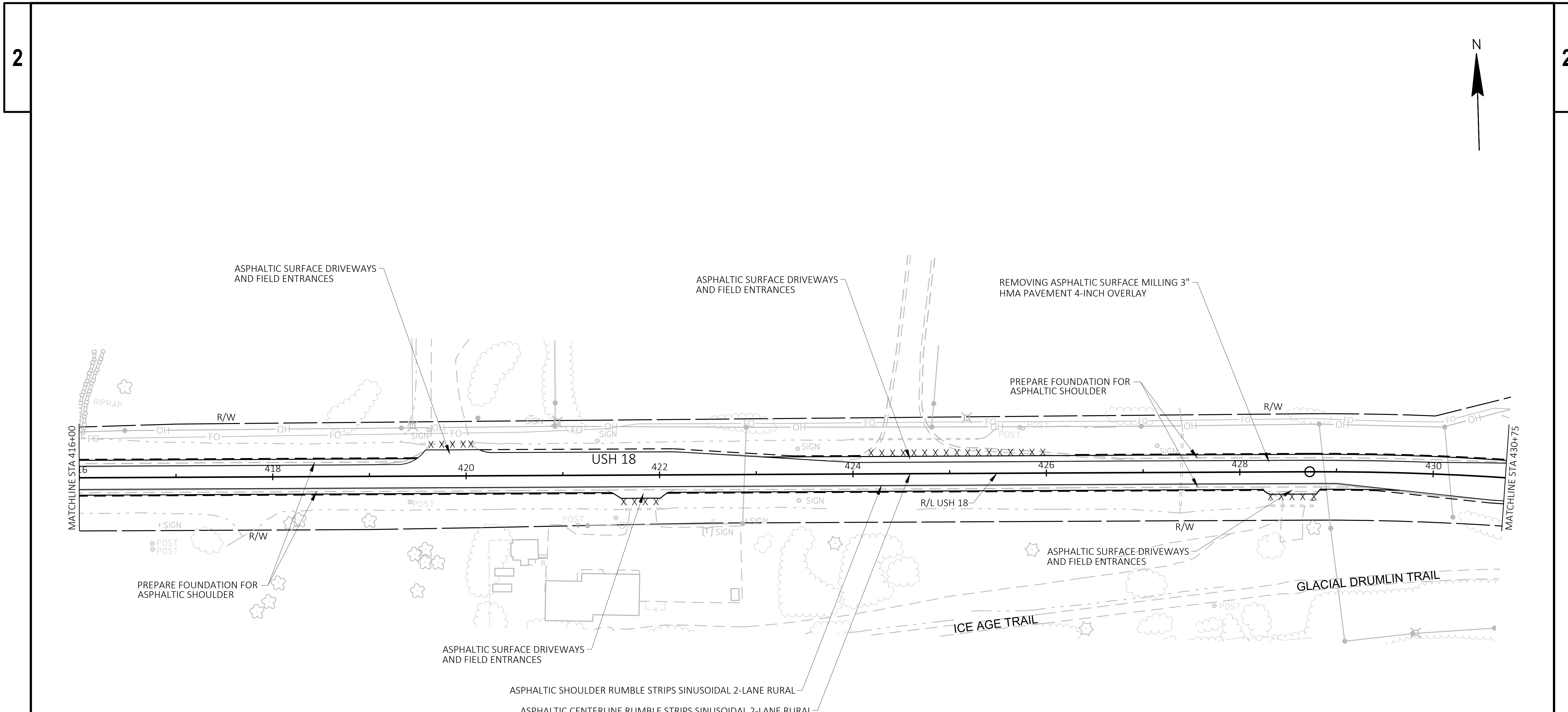


NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

LEGEND

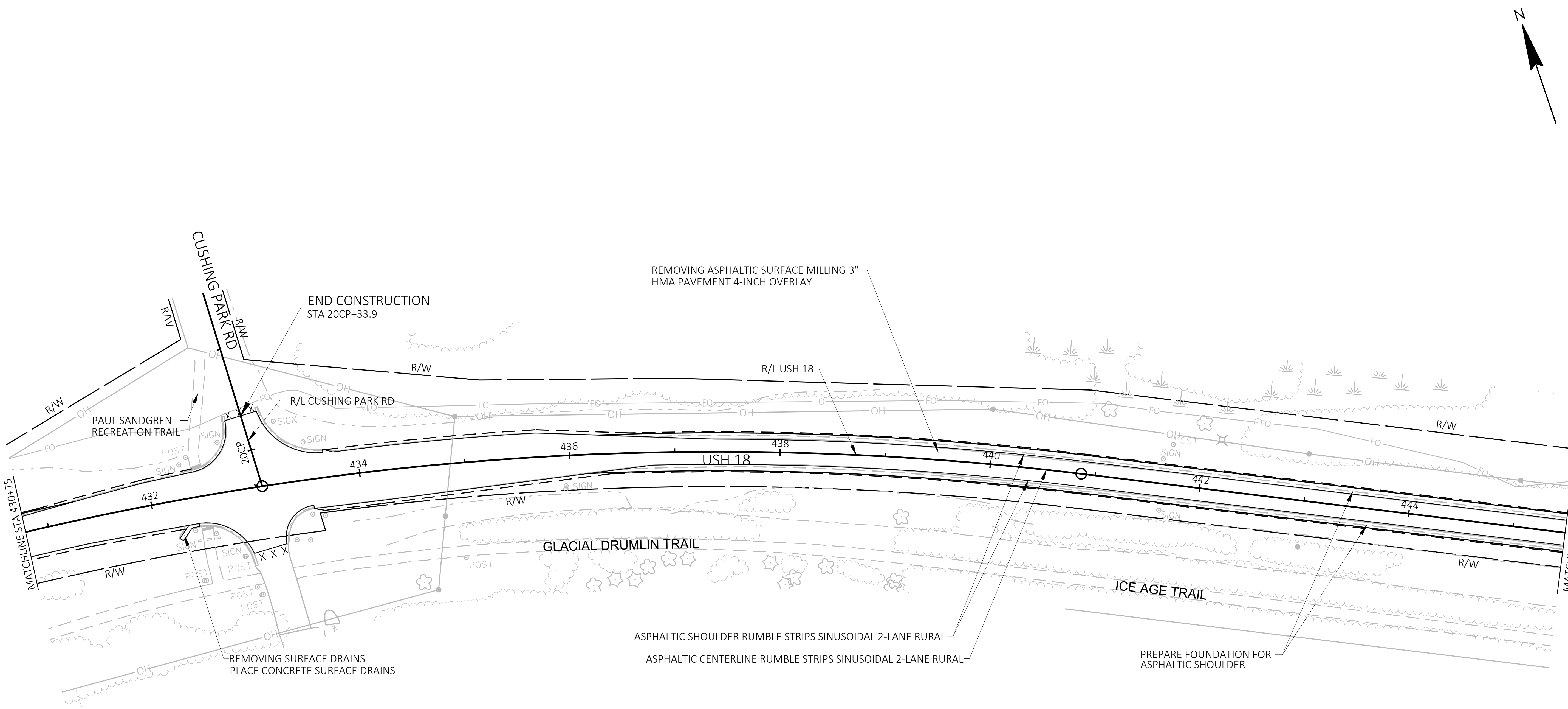
- (A) MGS GUARDRAIL 3
- (C) MGS GUARDRAIL TERMINAL EAT
- (D) BARRIER SYSTEM GRADING SHAPING FINISHING
- (E) GUARDRAIL MOW STRIP ASPHALT



NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
   UPPER 1 3/4-INCHES 4 MT 58-28 S
   LOWER 2 1/4-INCHES 3 MT 58-28 S

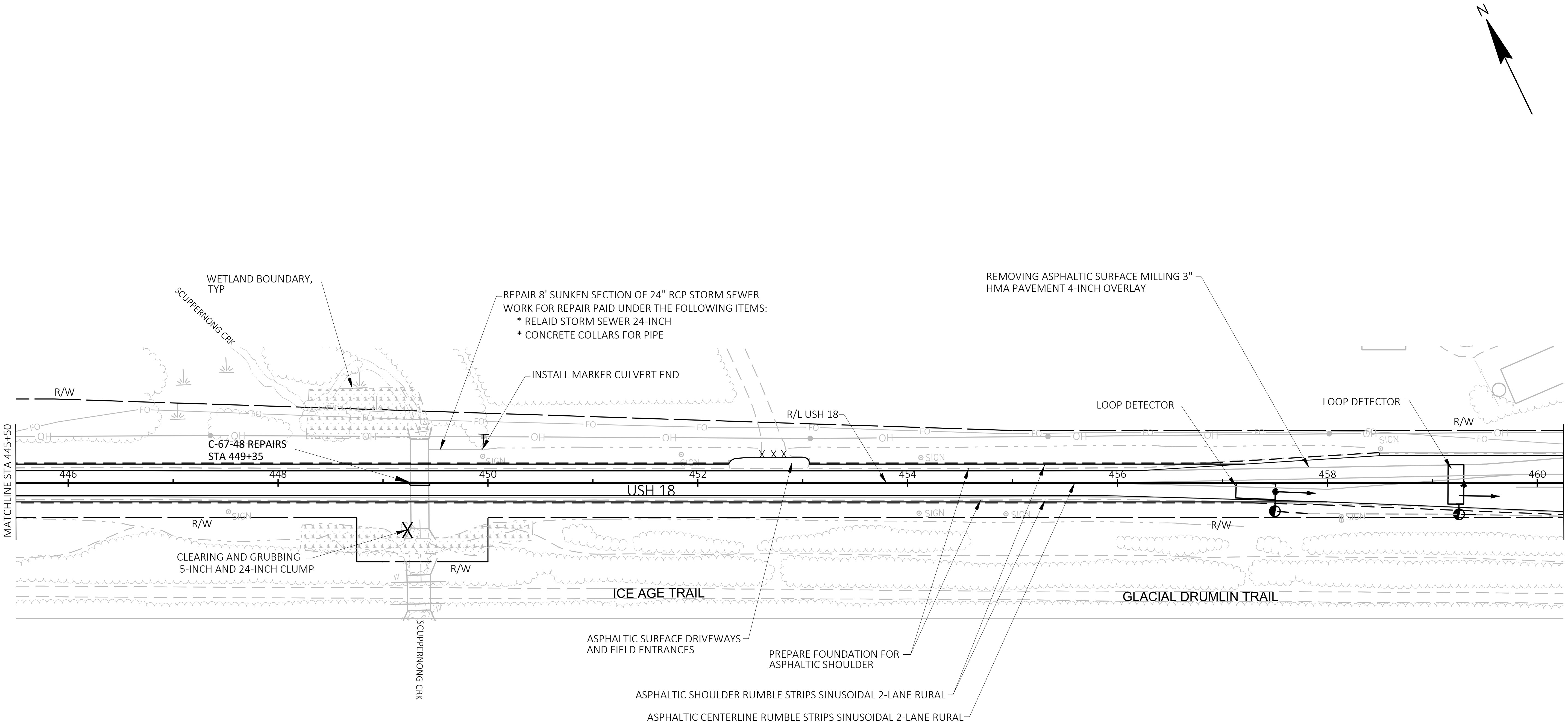
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 31	E



NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
   UPPER 1 3/4-INCHES 4 MT 58-28 S
   LOWER 2 1/4-INCHES 3 MT 58-28 S

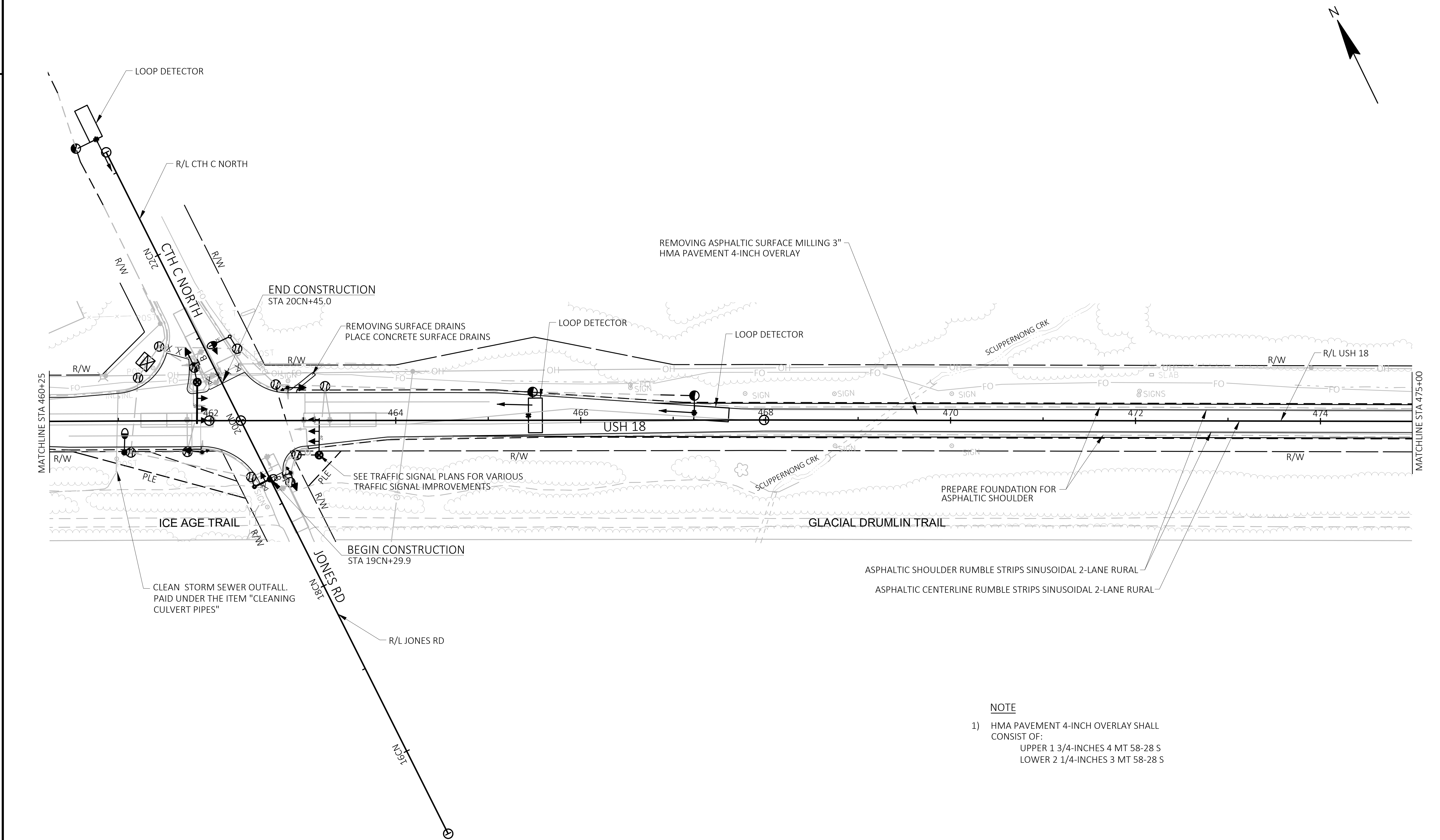
2



NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 33	E

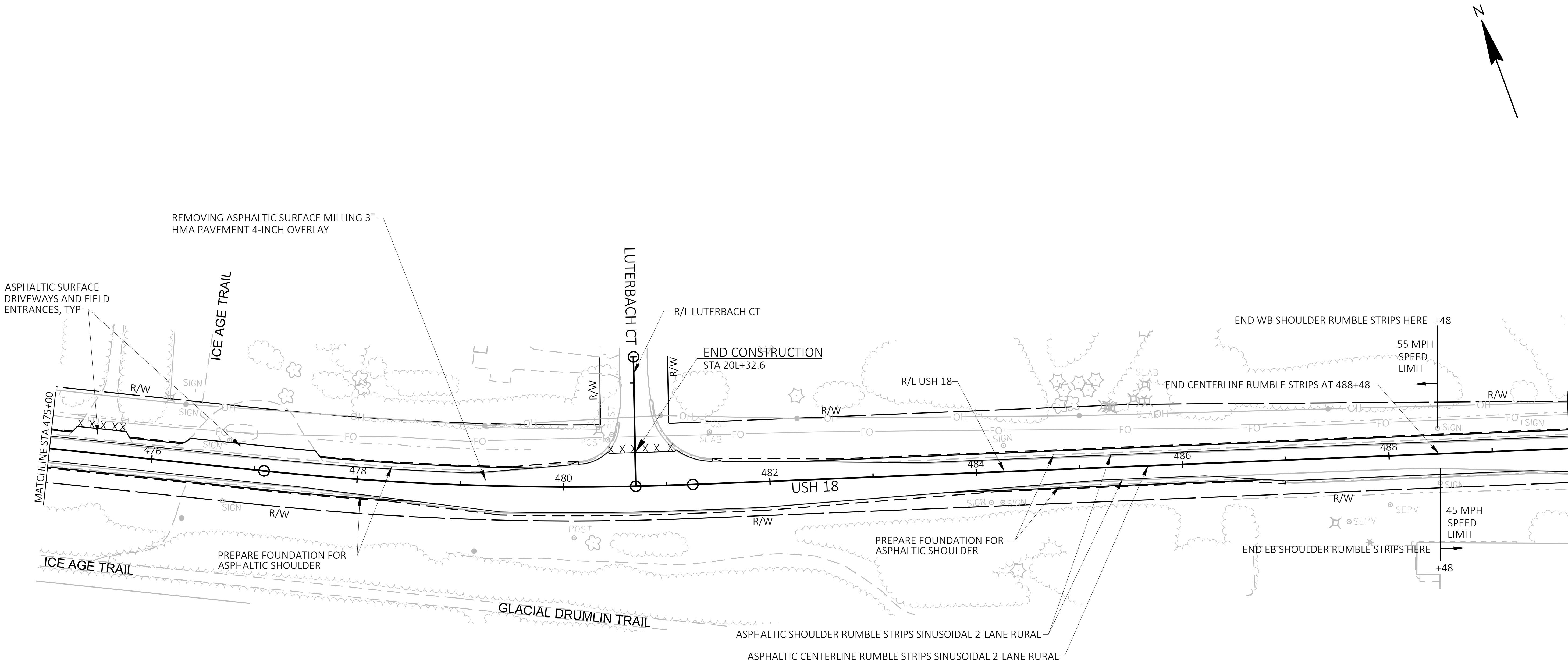


NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

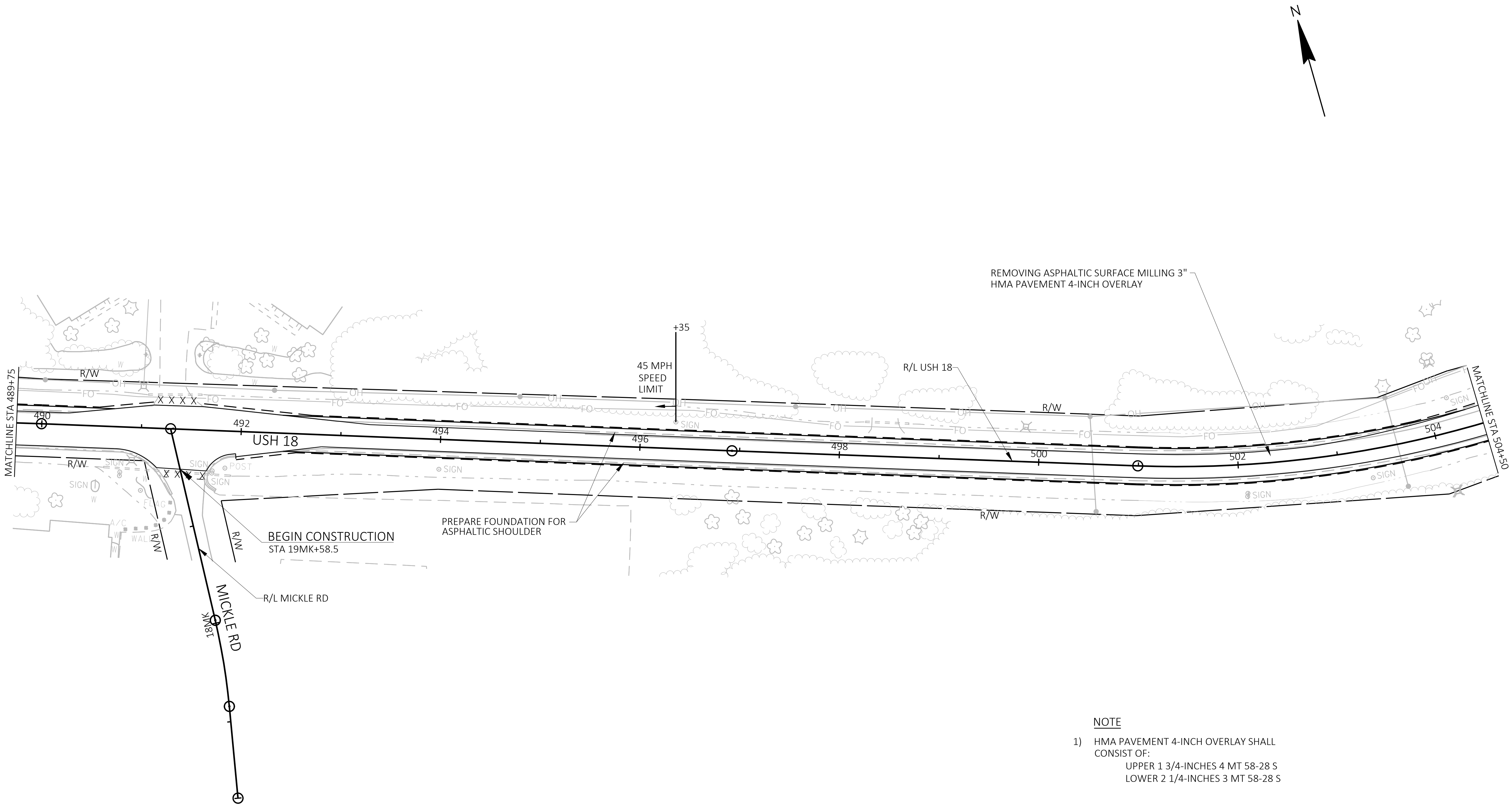
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 34	E

2



NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

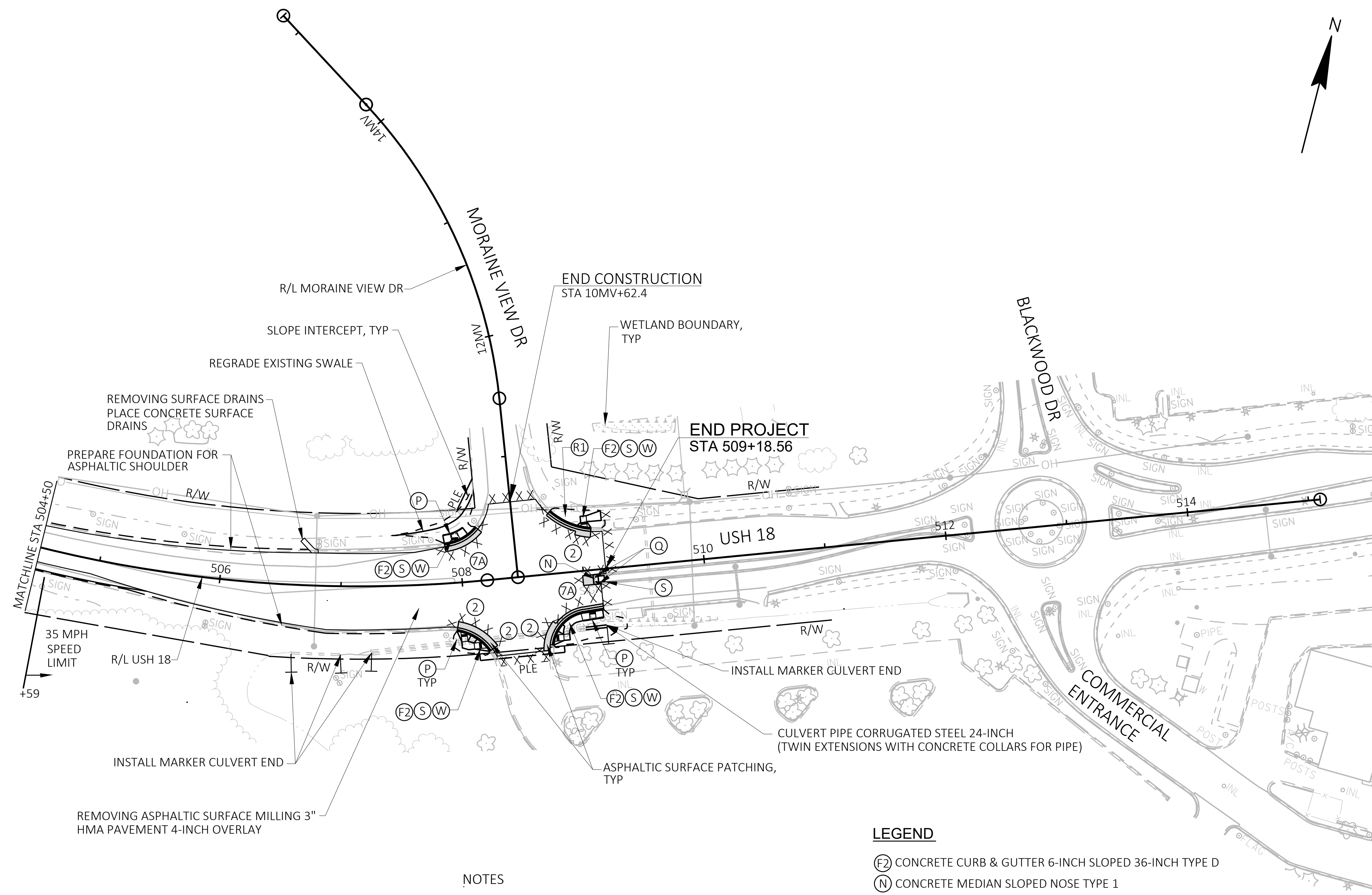


NOTE

1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
UPPER 1 3/4-INCHES 4 MT 58-28 S
LOWER 2 1/4-INCHES 3 MT 58-28 S

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 36	E

2



2

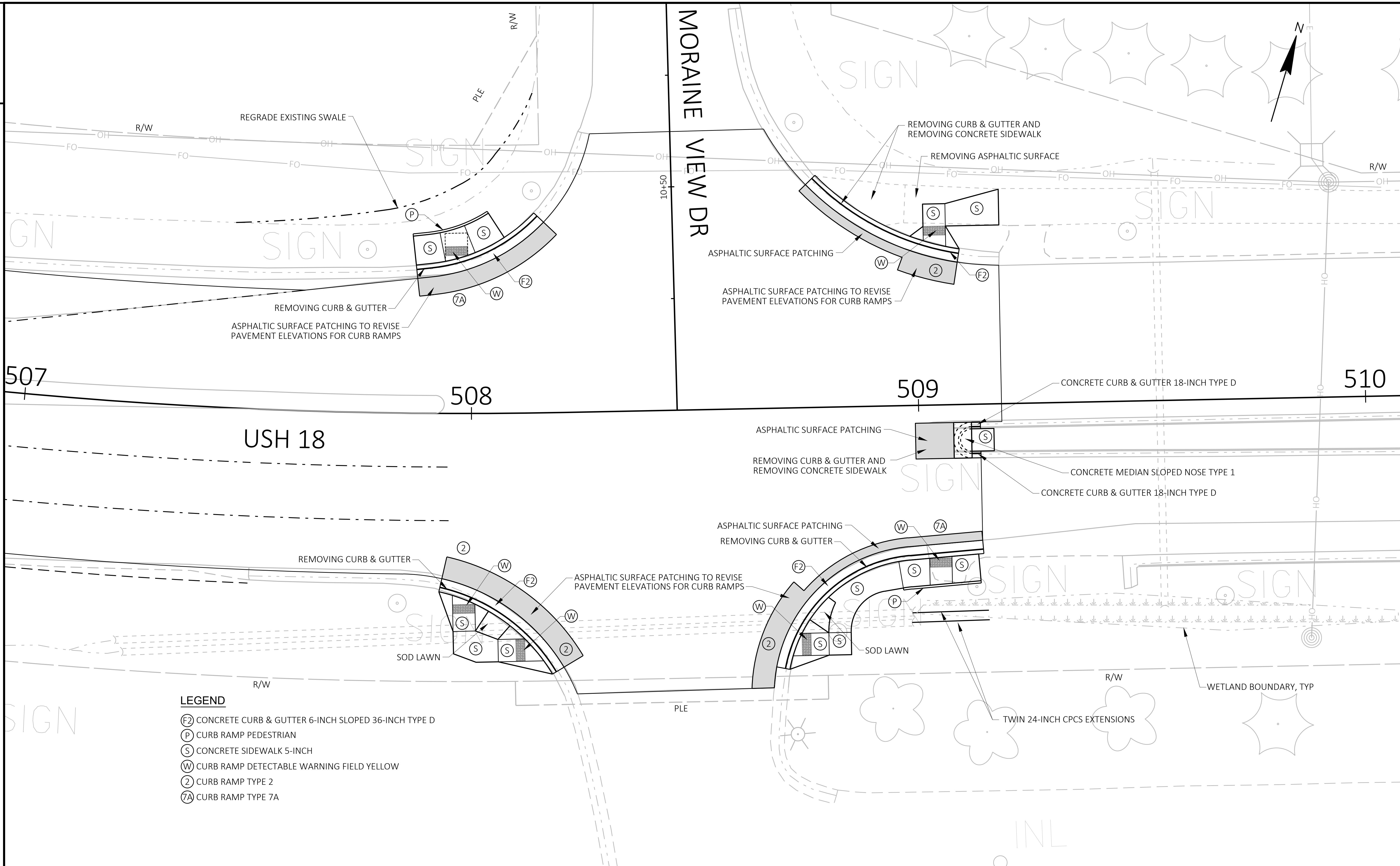
LEGEND

- (F2) CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D
- (N) CONCRETE MEDIAN SLOPED NOSE TYPE 1
- (P) CONCRETE CURB PEDESTRIAN
- (Q) CONCRETE CURB & GUTTER 18-INCH TYPE D
- (R1) REMOVING CONCRETE SIDEWALK
- (S) CONCRETE SIDEWALK 5-INCH
- (W) CURB RAMP DETECTABLE WARNING FIELD YELLOW
- (2) CURB RAMP TYPE 2
- (7A) CURB RAMP TYPE 7A

NOTES

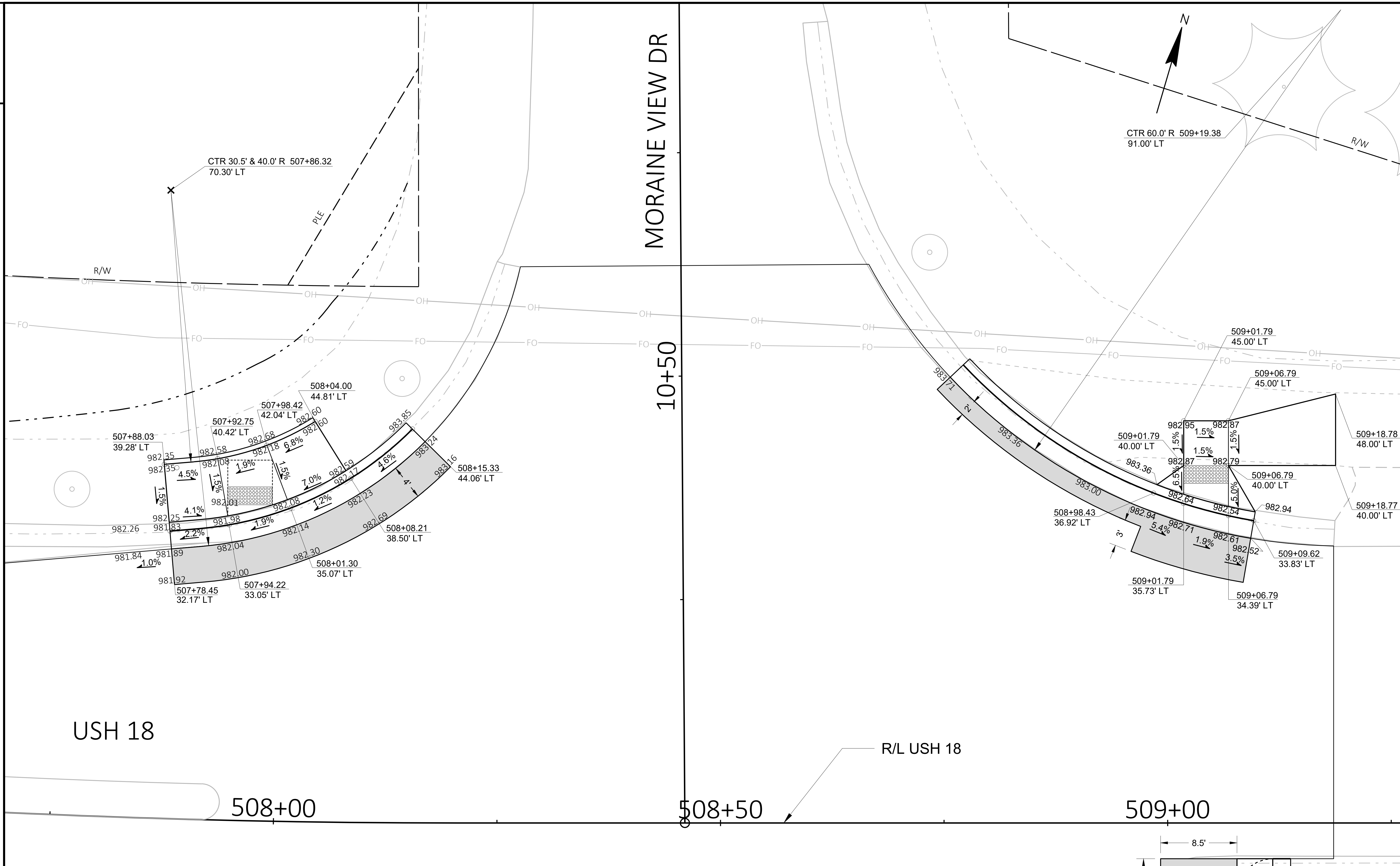
1) HMA PAVEMENT 4-INCH OVERLAY SHALL CONSIST OF:
   UPPER 1 3/4-INCHES 4 MT 58-28 S
   LOWER 2 1/4-INCHES 3 MT 58-28 S

2) SEE CURB RAMP DETAILS FOR STA/OFFSET INFORMATION ON THE MEDIAN SLOPED NOSE



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CURB RAMP DETAILS	SHEET 38	E

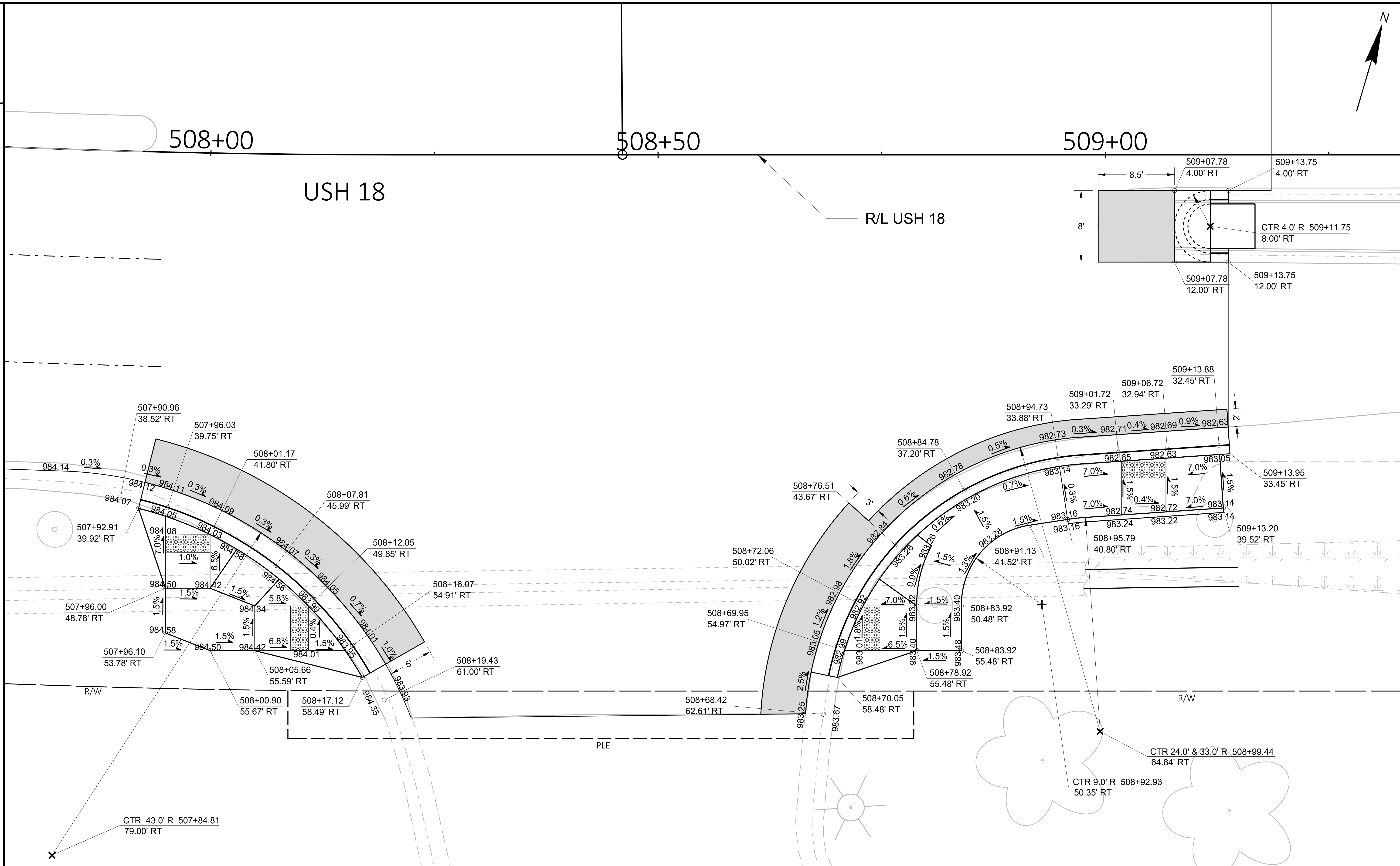
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021211-CR.DWG
LAYOUT NAME - curb
PLOT DATE : 1/31/2022 3:04 PM
PLOT BY : SUSAN COOK
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CURB RAMP DETAILS	SHEET 39	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021212-CR.DWG
LAYOUT NAME - N elev
PLOT DATE : 1/31/2022 3:04 PM
PLOT BY : SUSAN COOK
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

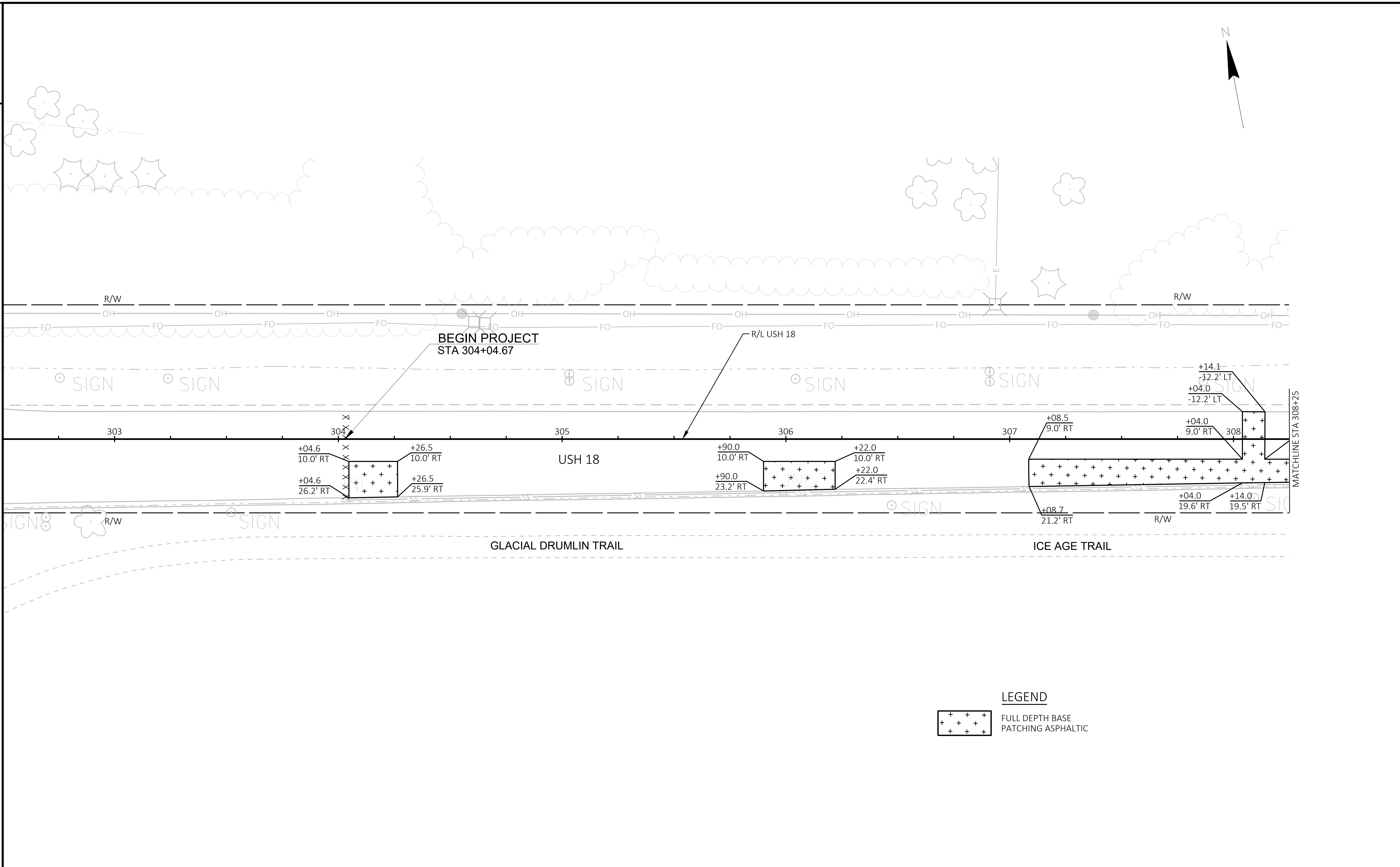
2



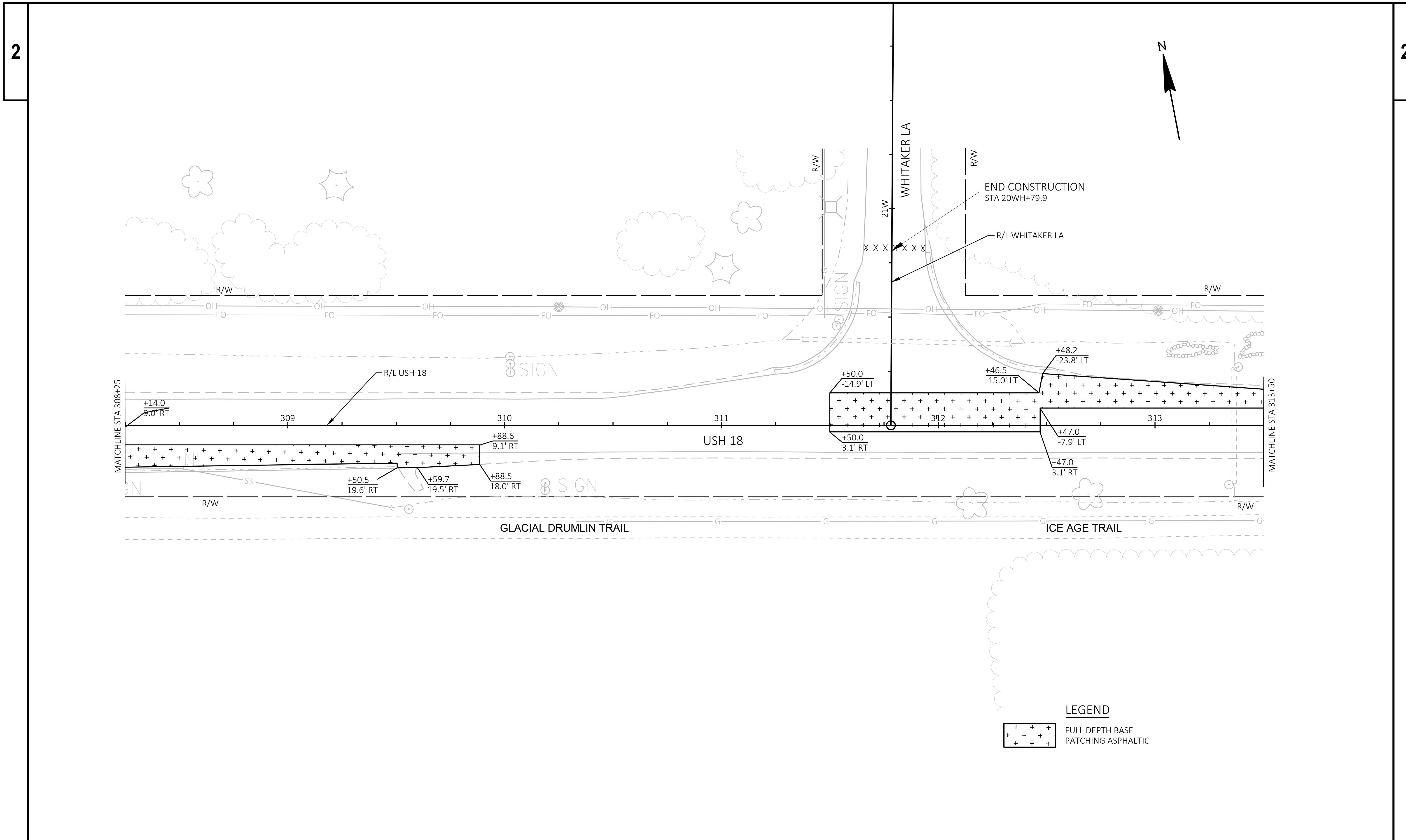
2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CURB RAMP DETAILS	SHEET 40	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021212-CR.DWG
LAYOUT NAME - S elev
PLOT DATE : 1/31/2022 3:04 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

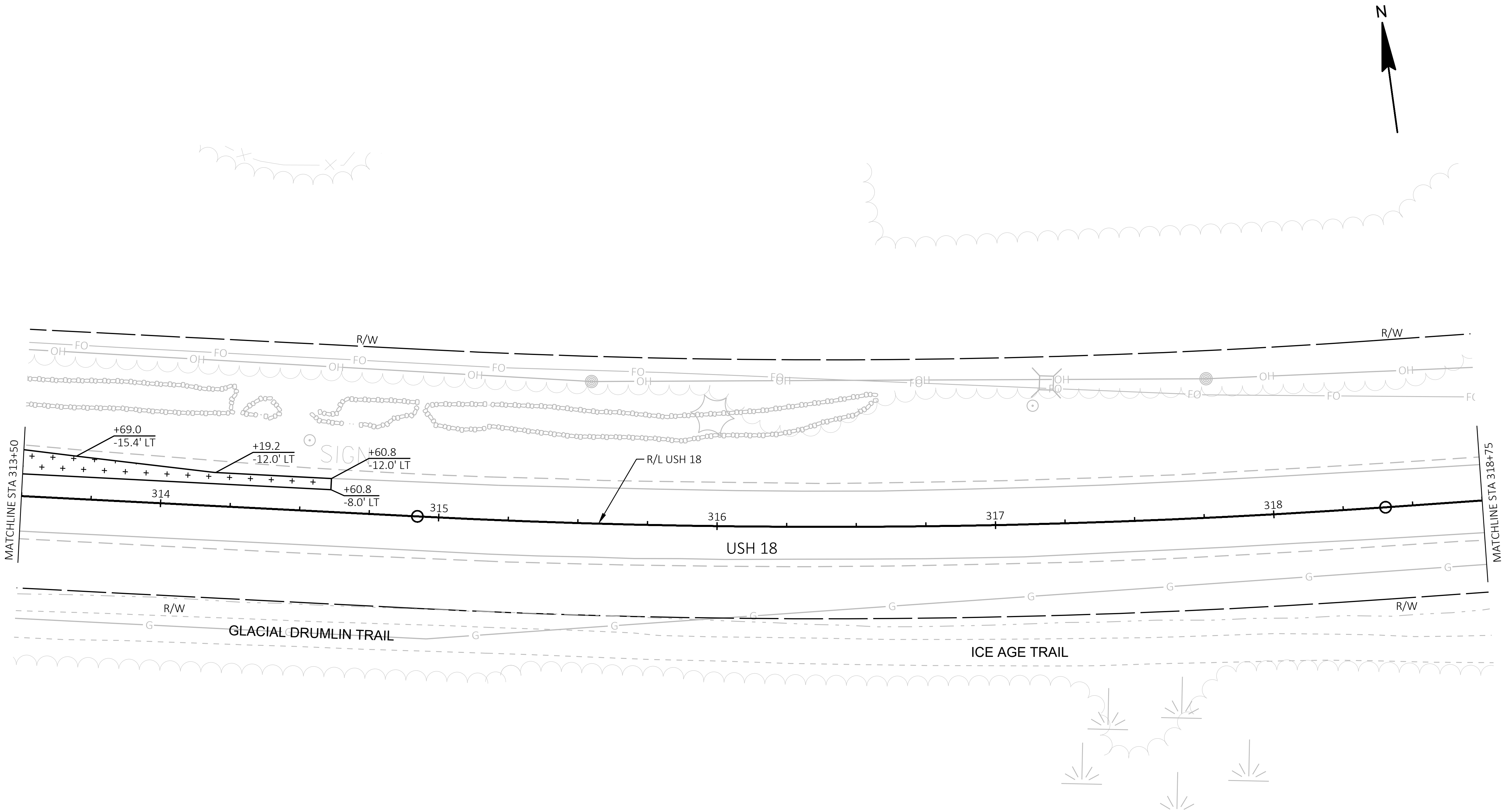


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 41	E



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 42	E

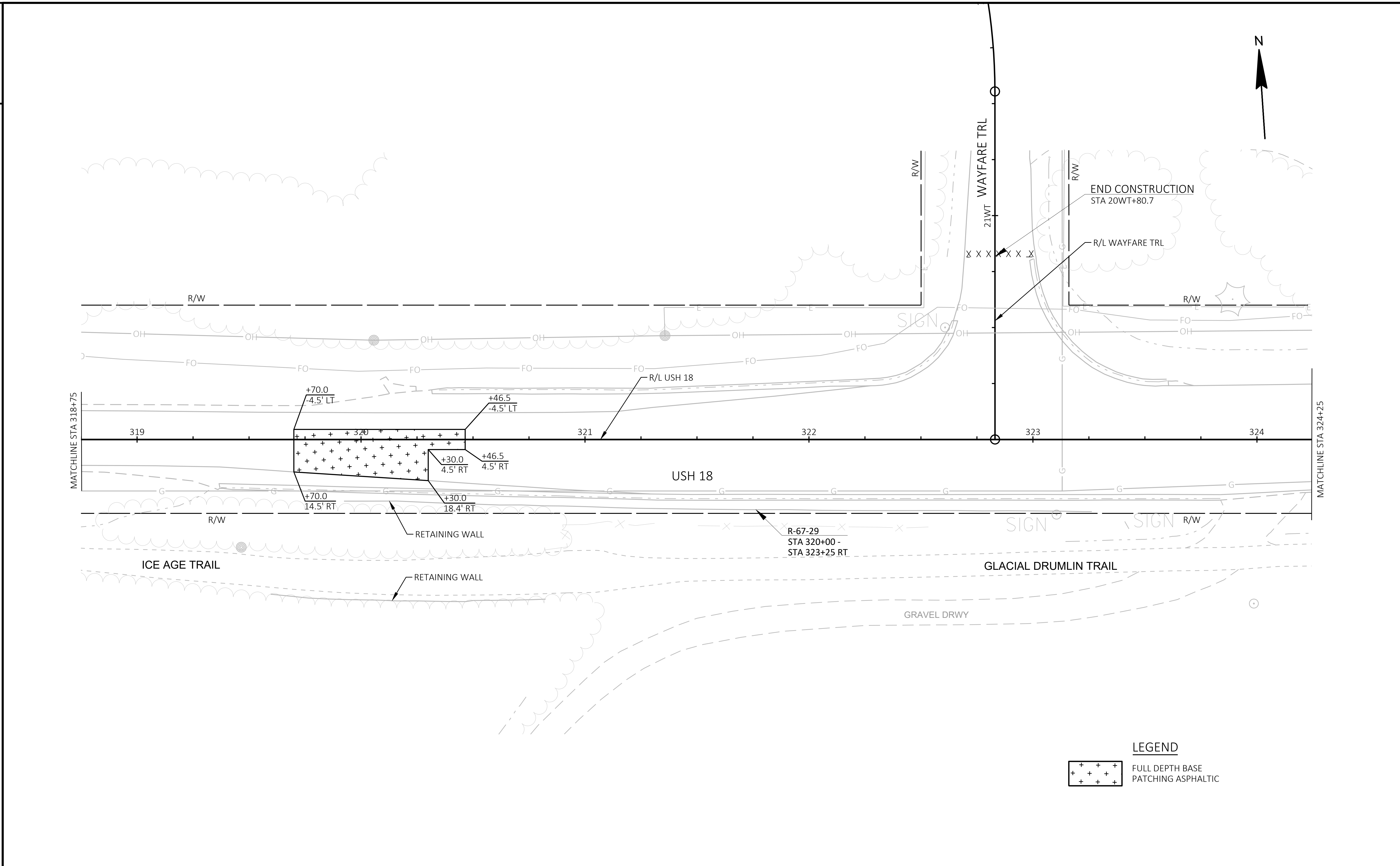
2



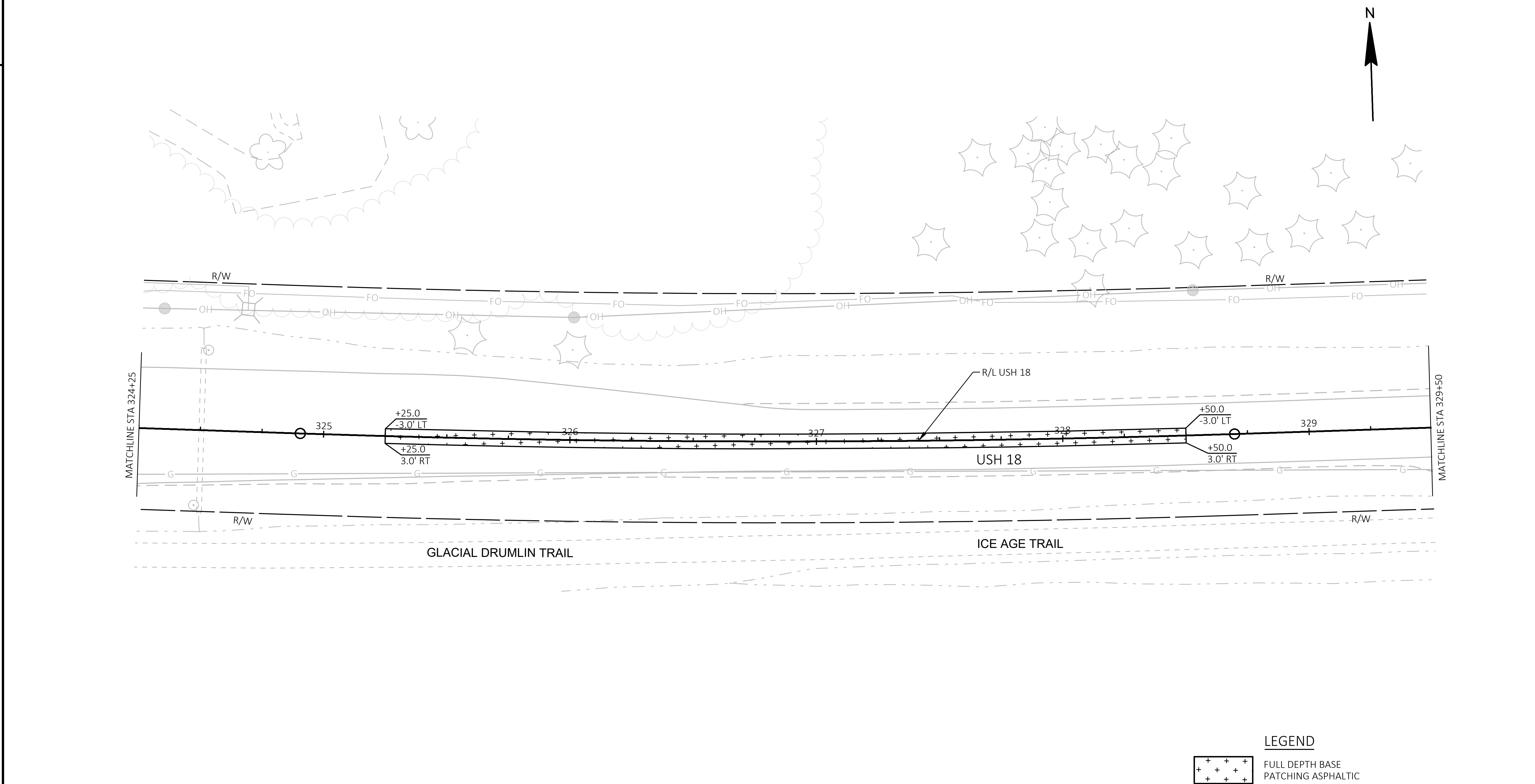
LEGEND

FULL DEPTH BASE PATCHING ASPHALTIC

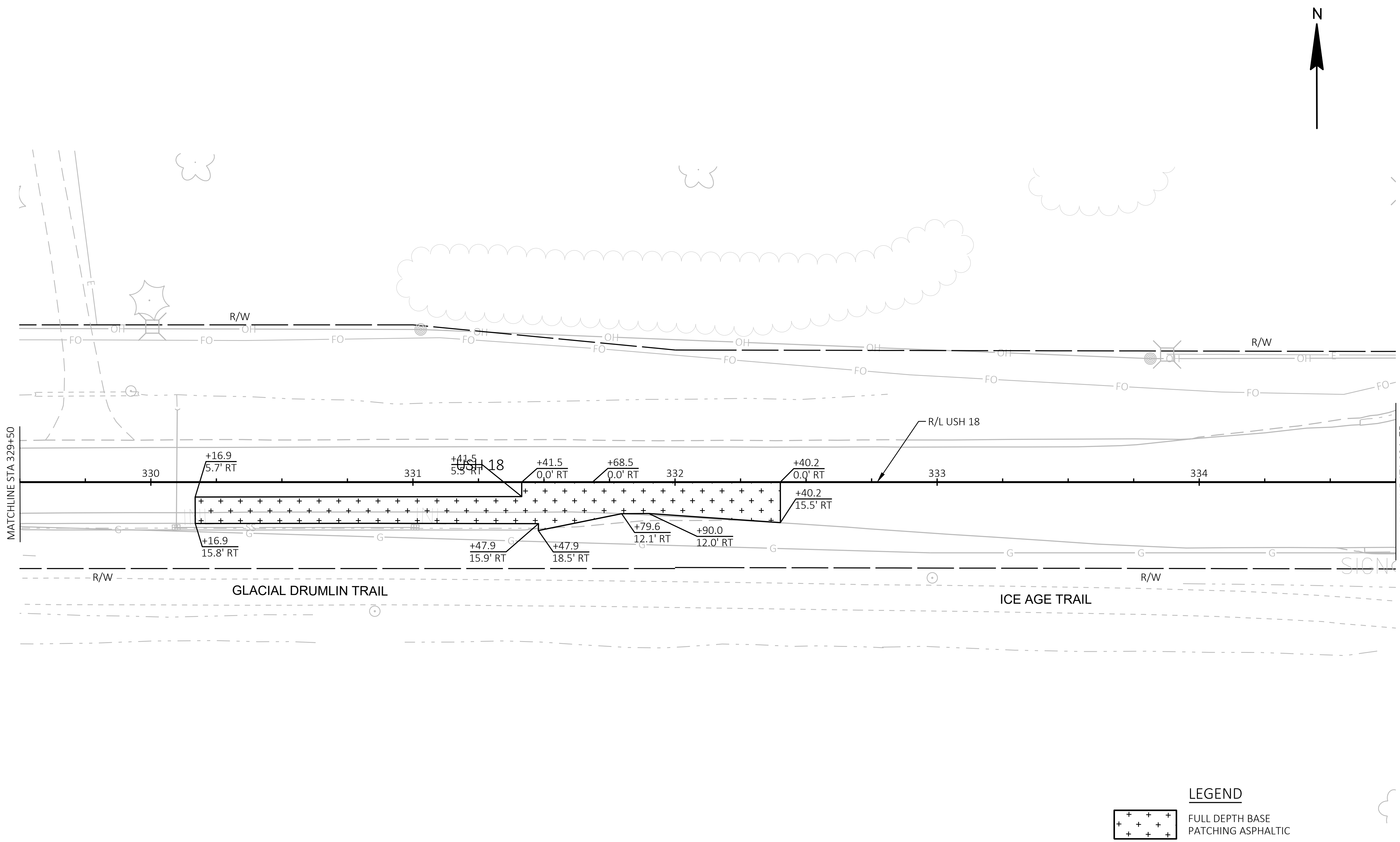
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 43	E



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 44	E

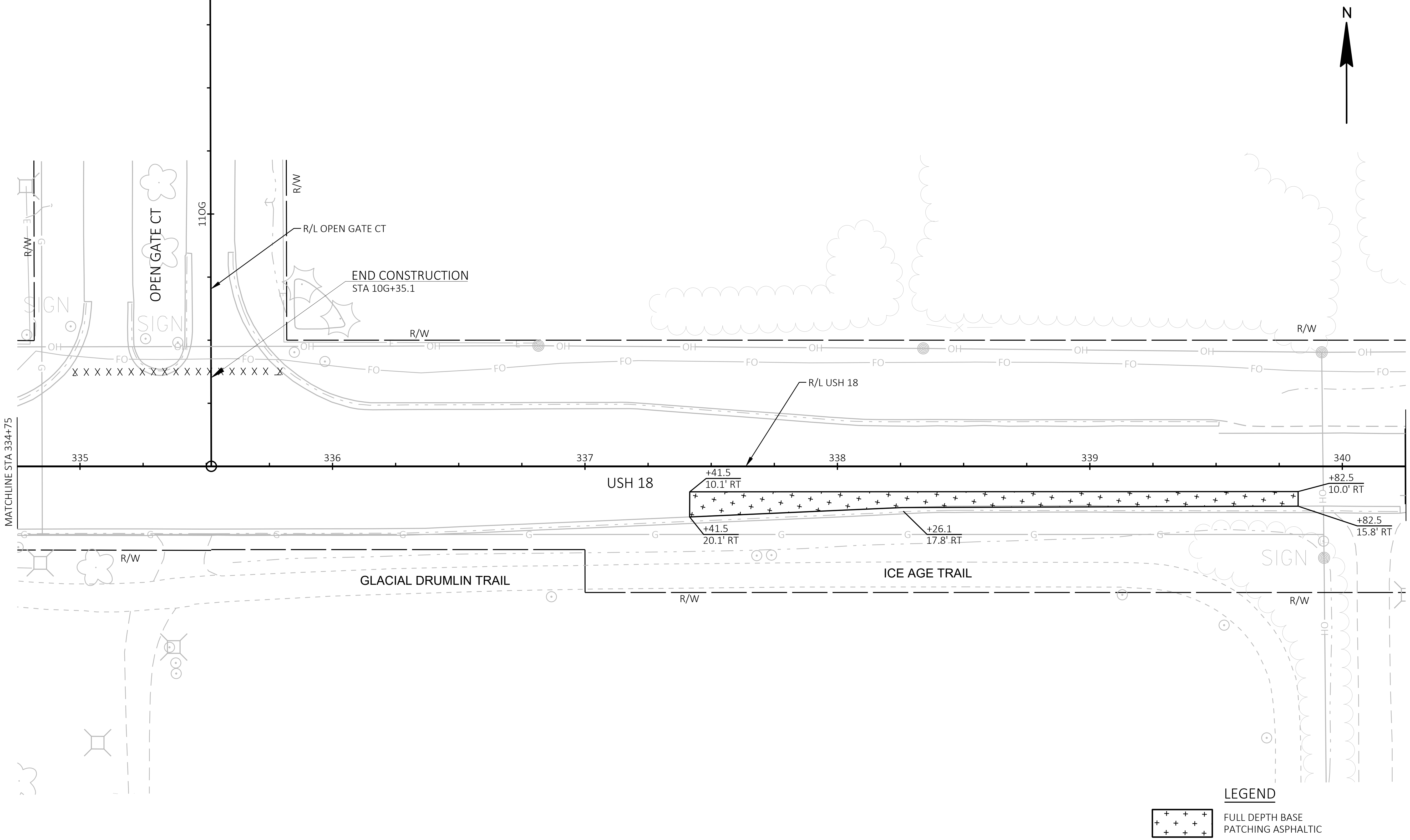


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 45	E



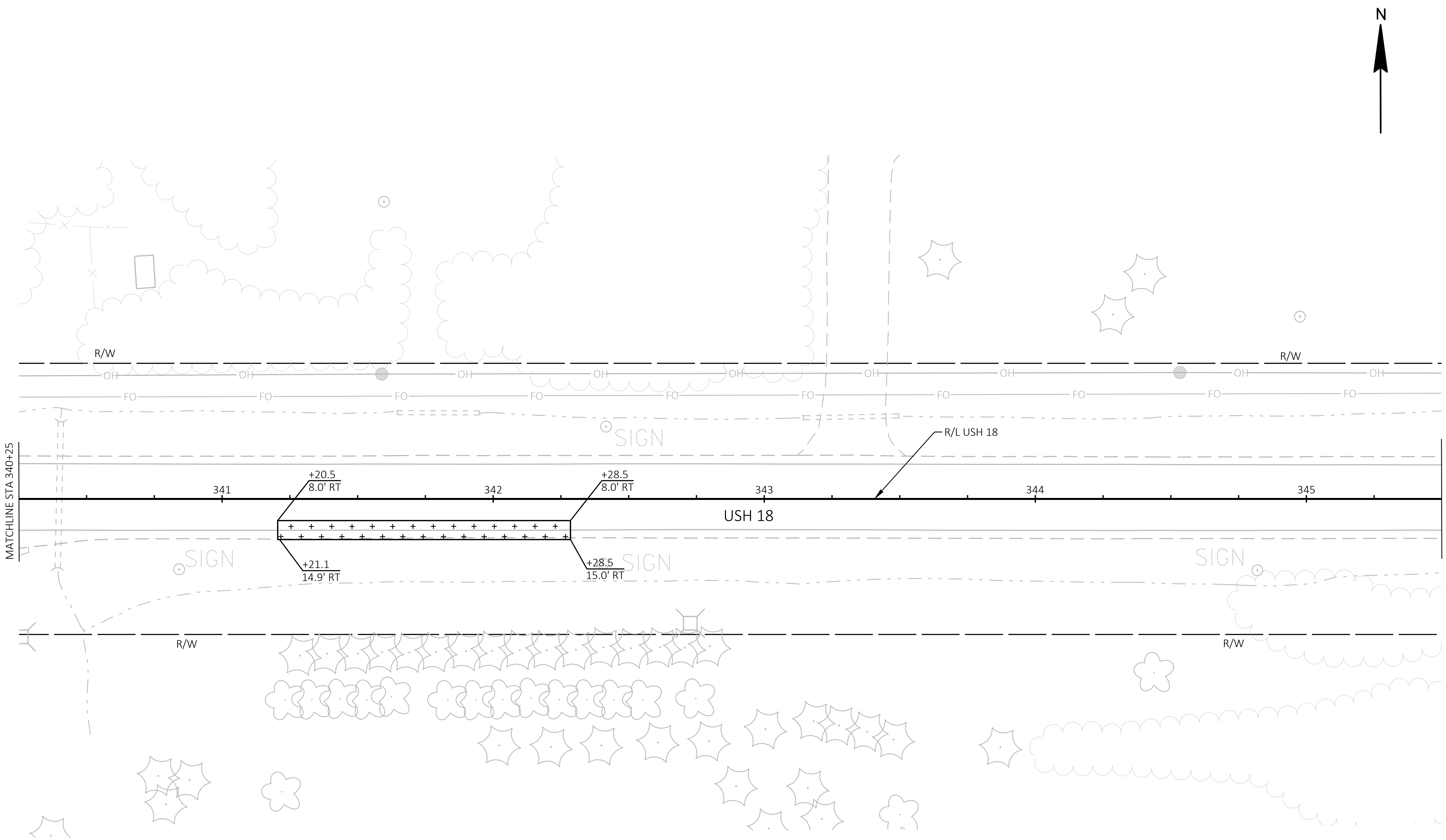
2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 46	E



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 47	E

2

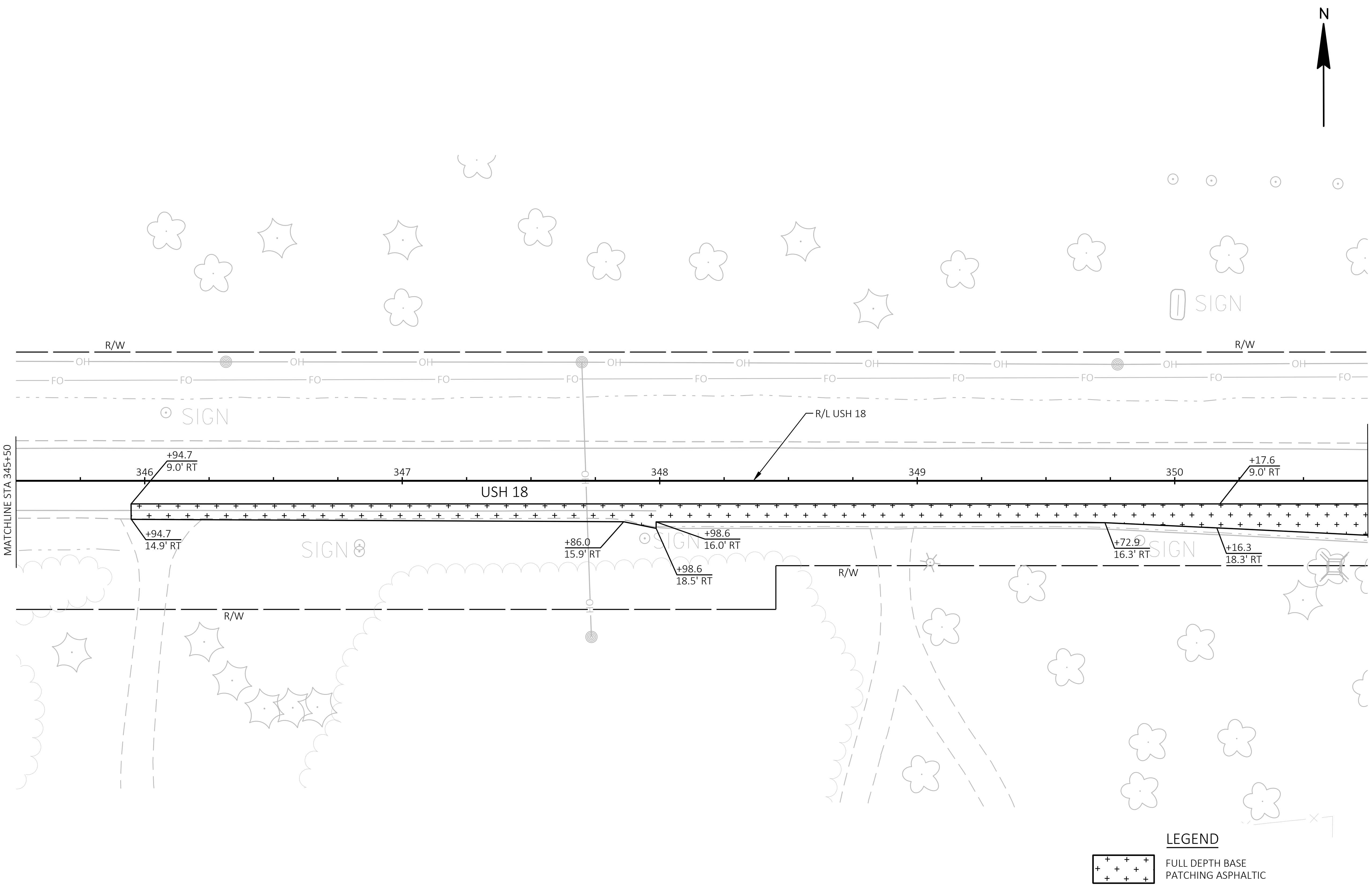


LEGEND

FULL DEPTH BASE PATCHING ASPHALTIC

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 48	E

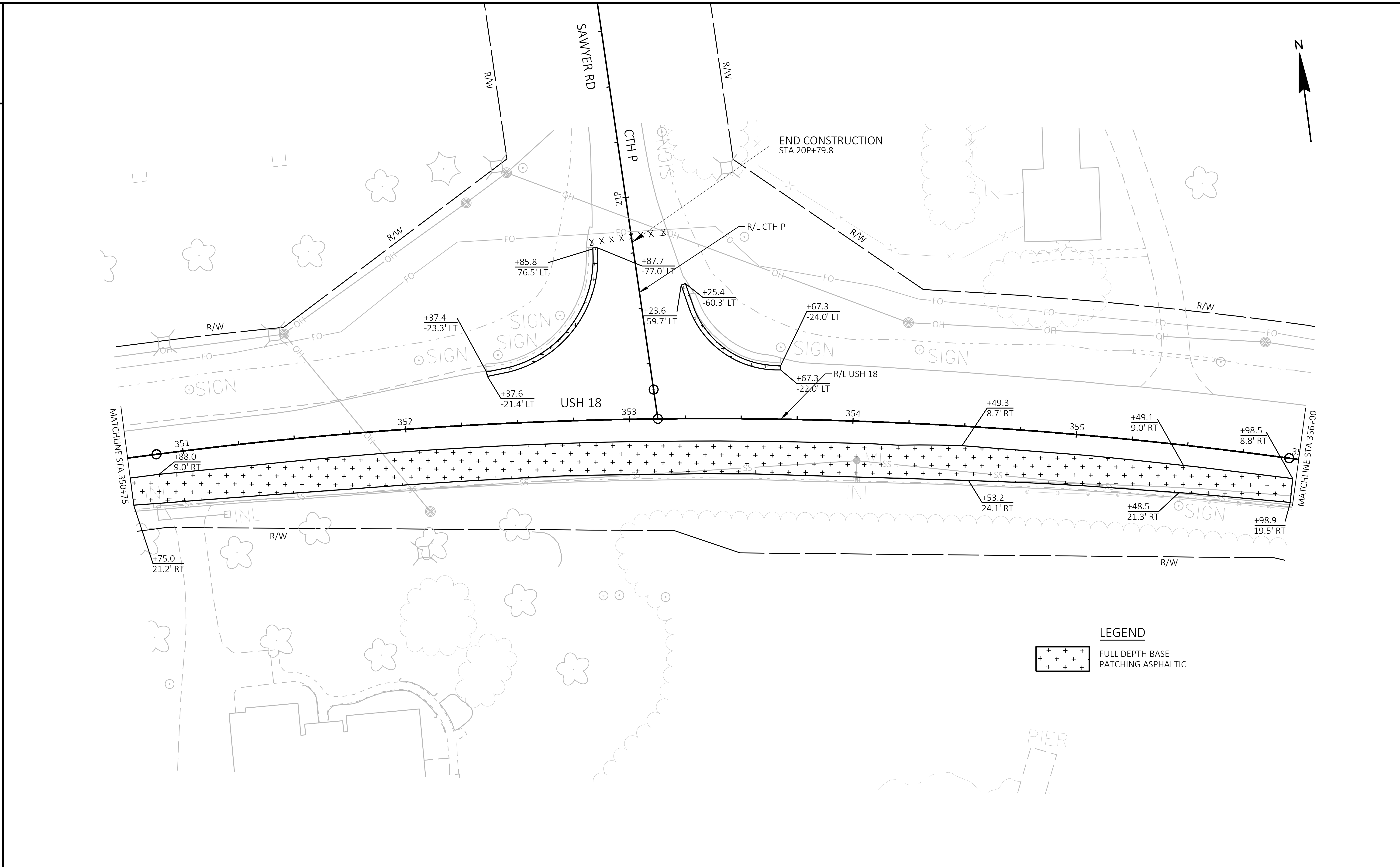
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 08
PLOT DATE : 1/29/2022 2:42 PM
PLOT BY : SUSAN COOK
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 49	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 09
PLOT DATE : 1/29/2022 2:42 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT WISDOT/CADDS SHEET 42

2

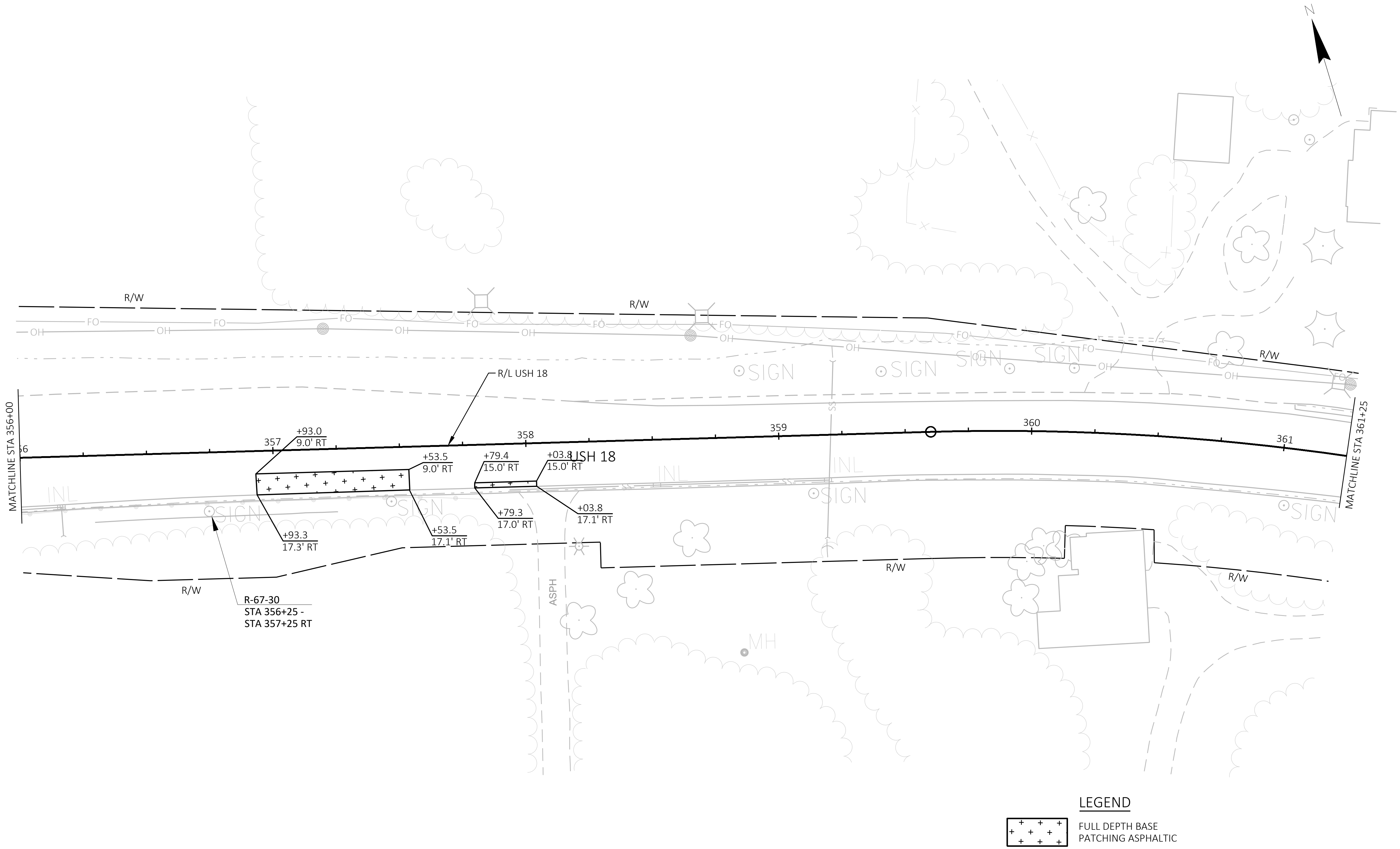


2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 50	E

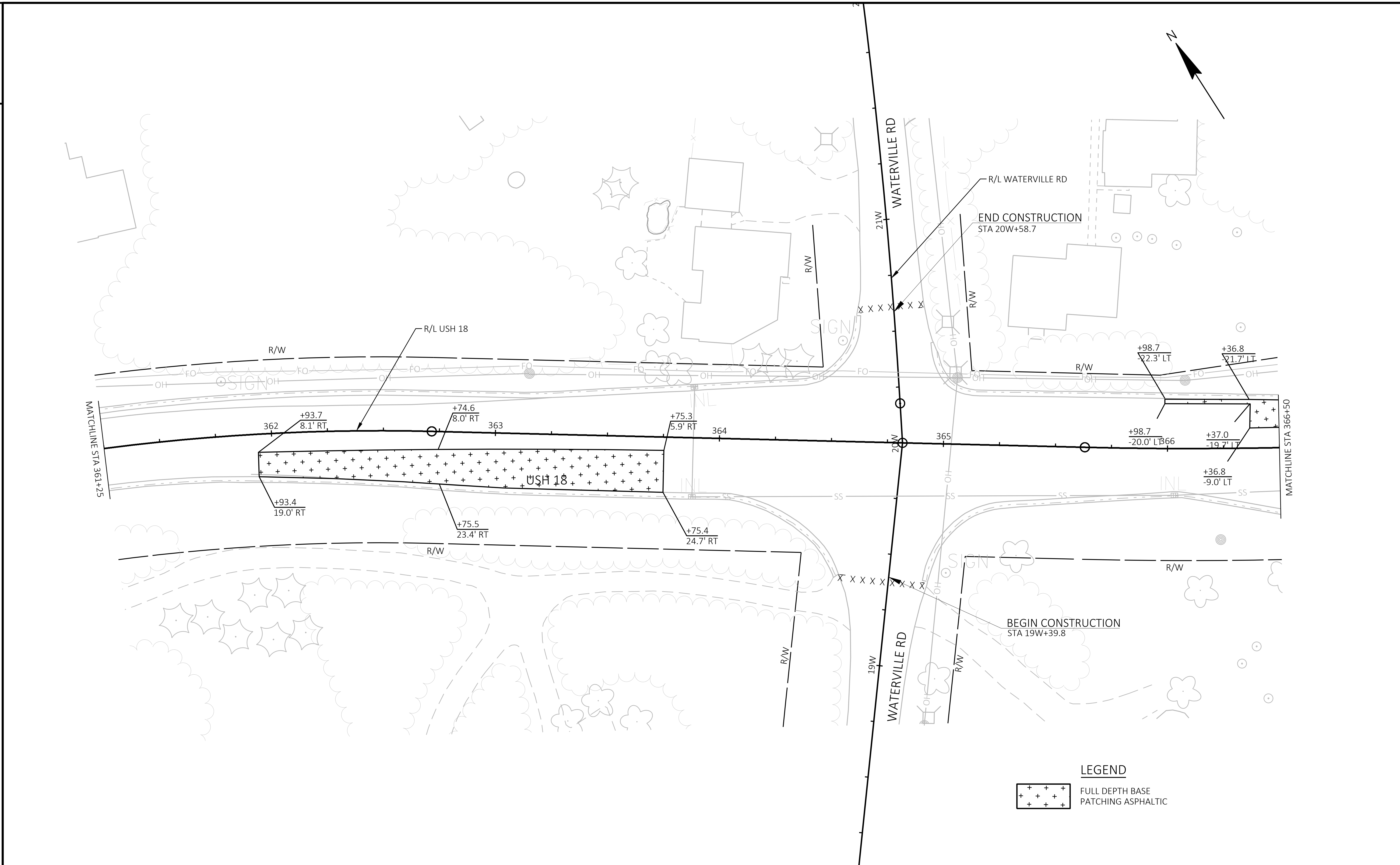
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 10
PLOT DATE : 1/29/2022 2:43 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 51	E

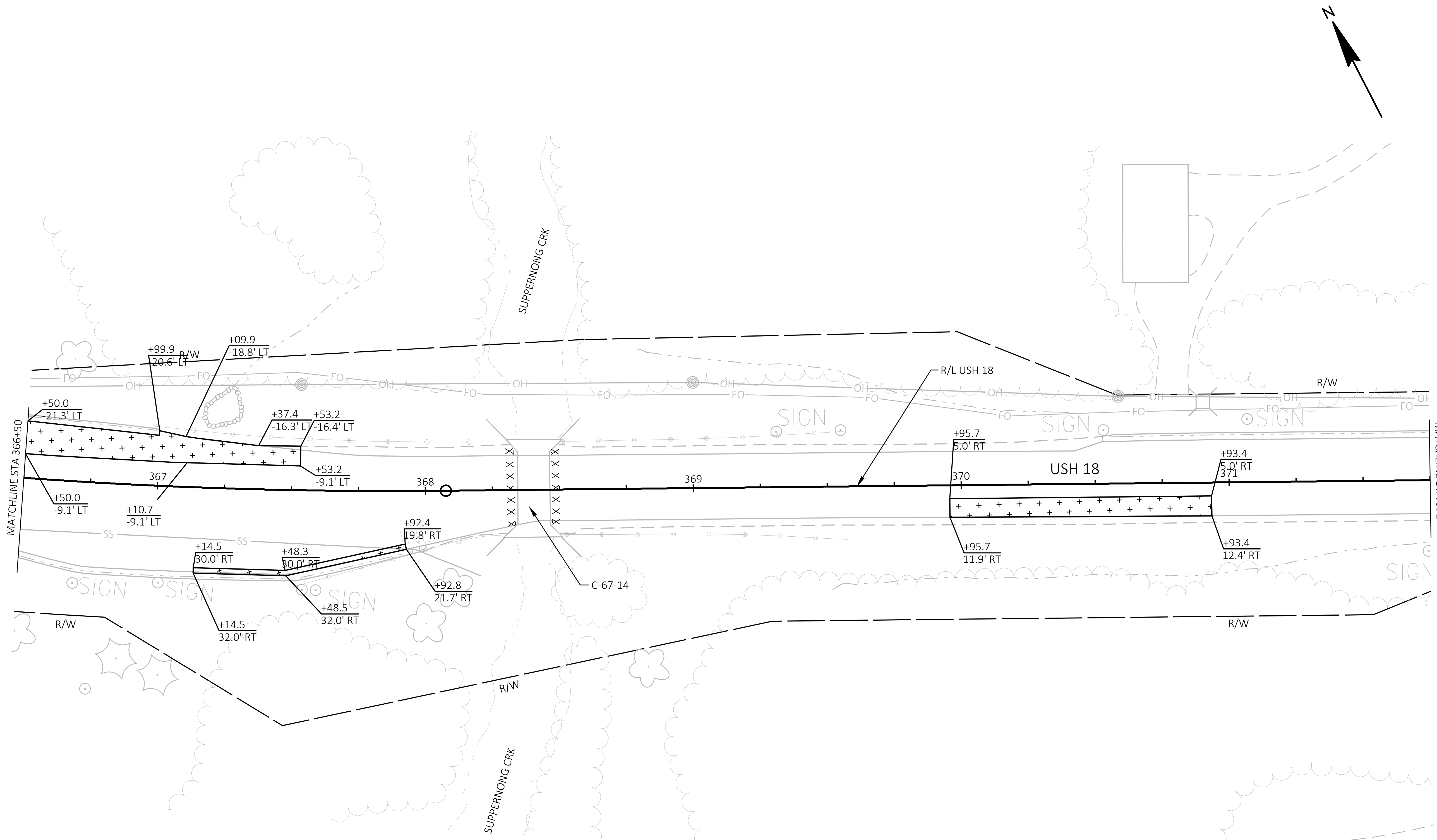
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 11
PLOT DATE : 1/29/2022 2:43 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 52	E

2

2

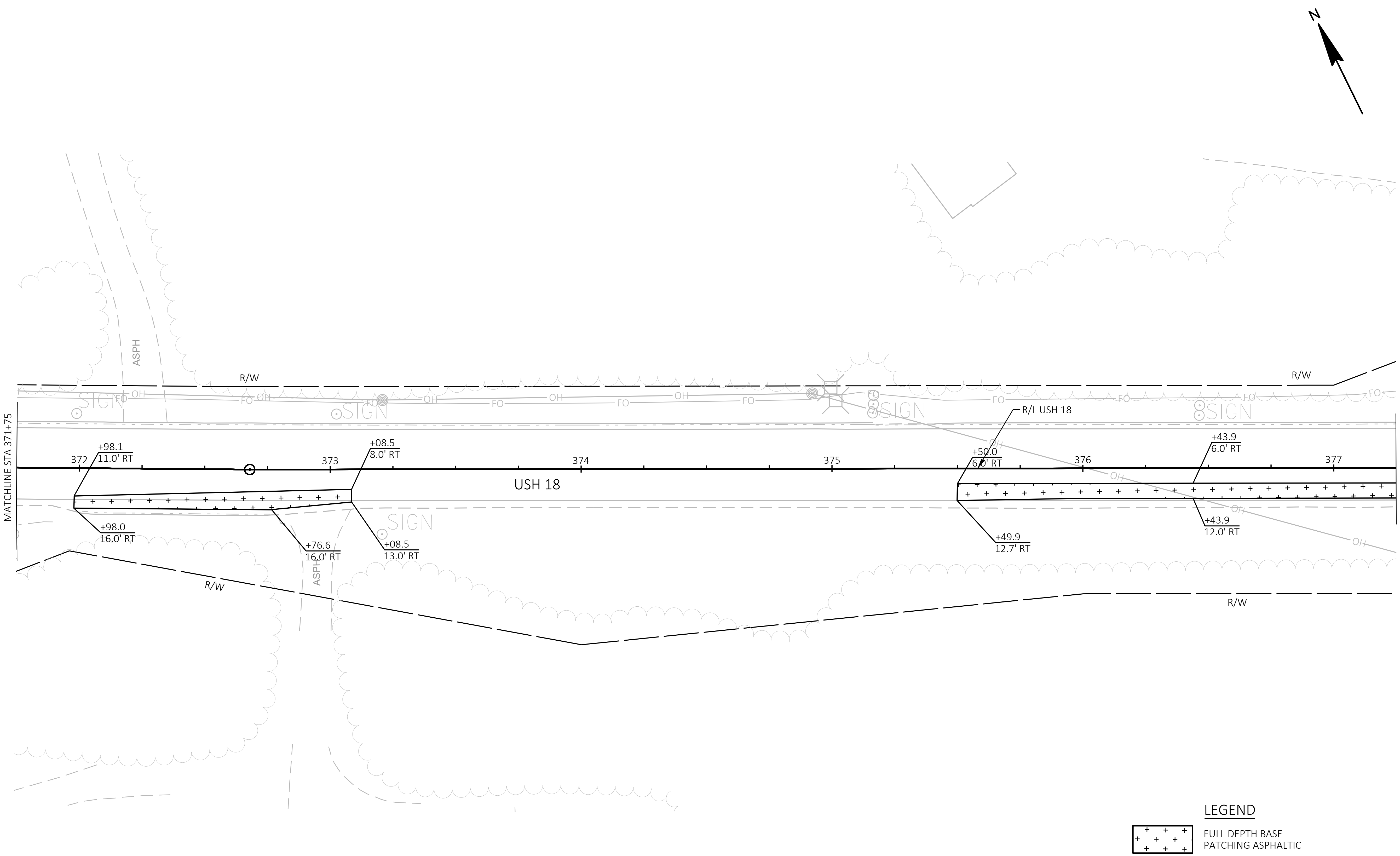


LEGEND

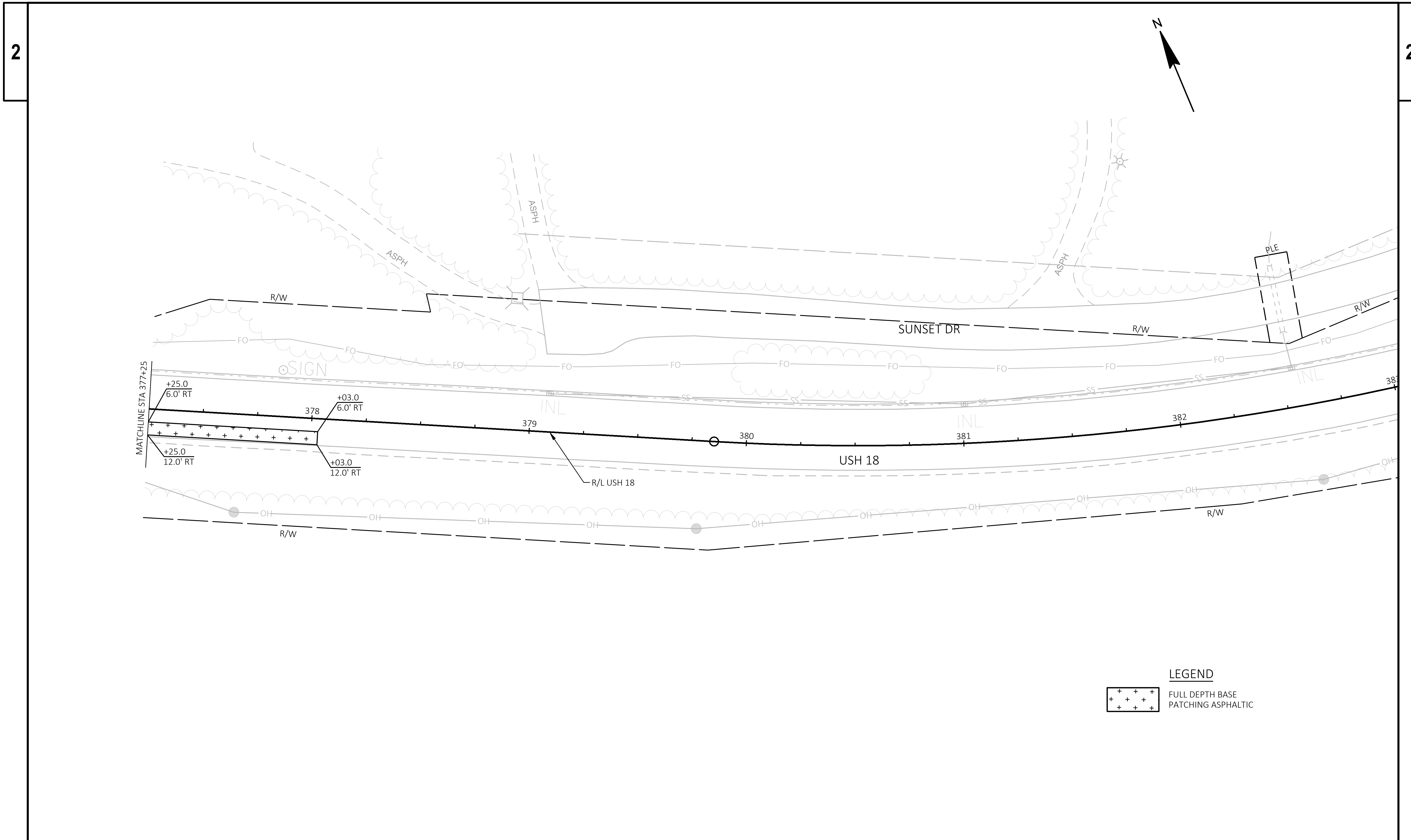
FULL DEPTH BASE PATCHING ASPHALTIC

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 53	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 13
PLOT DATE : 1/29/2022 2:43 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

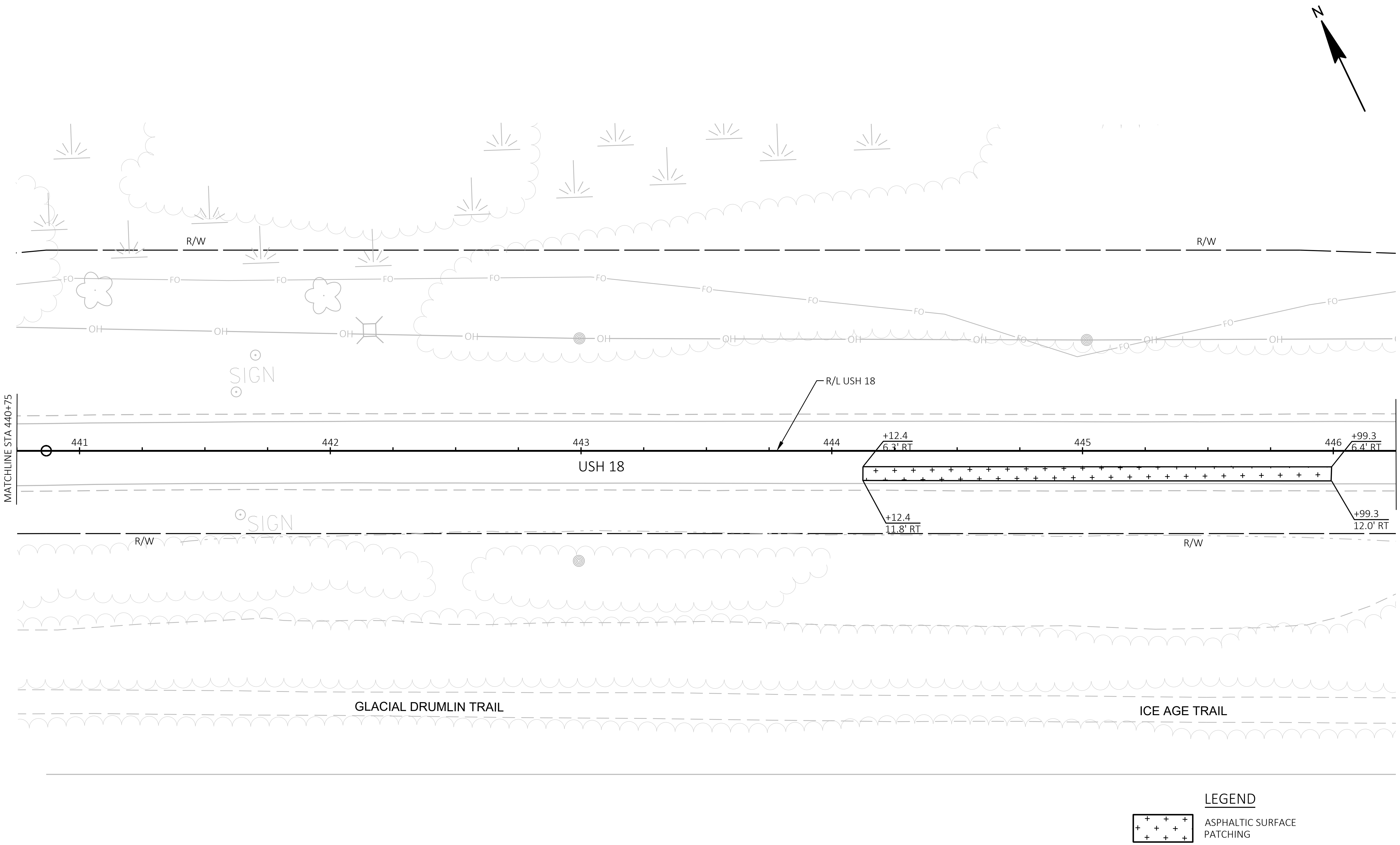


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 54	E



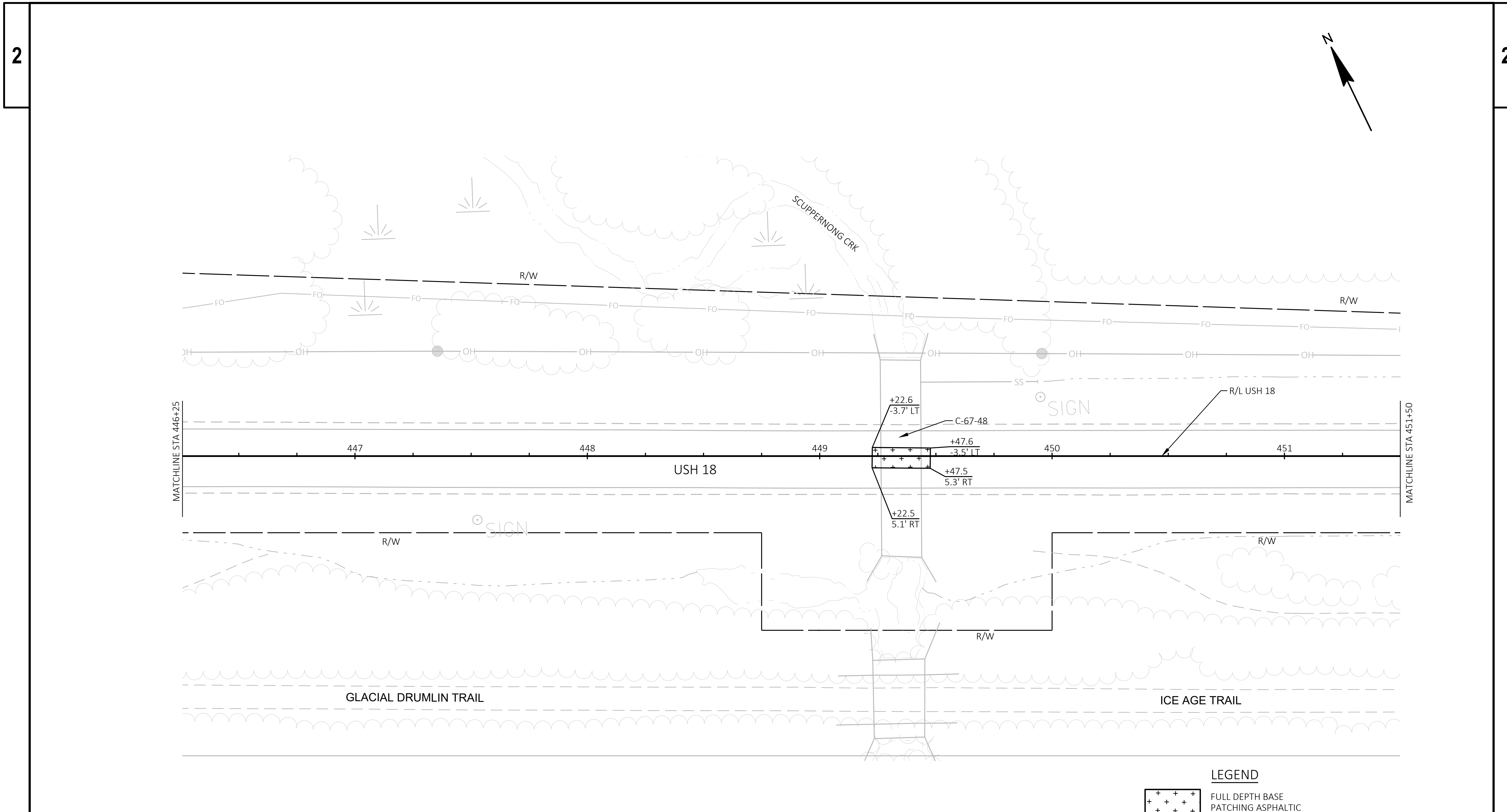
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 55	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 15
PLOT DATE : 1/29/2022 2:44 PM
PLOT BY : SUSAN COOK
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 56 E

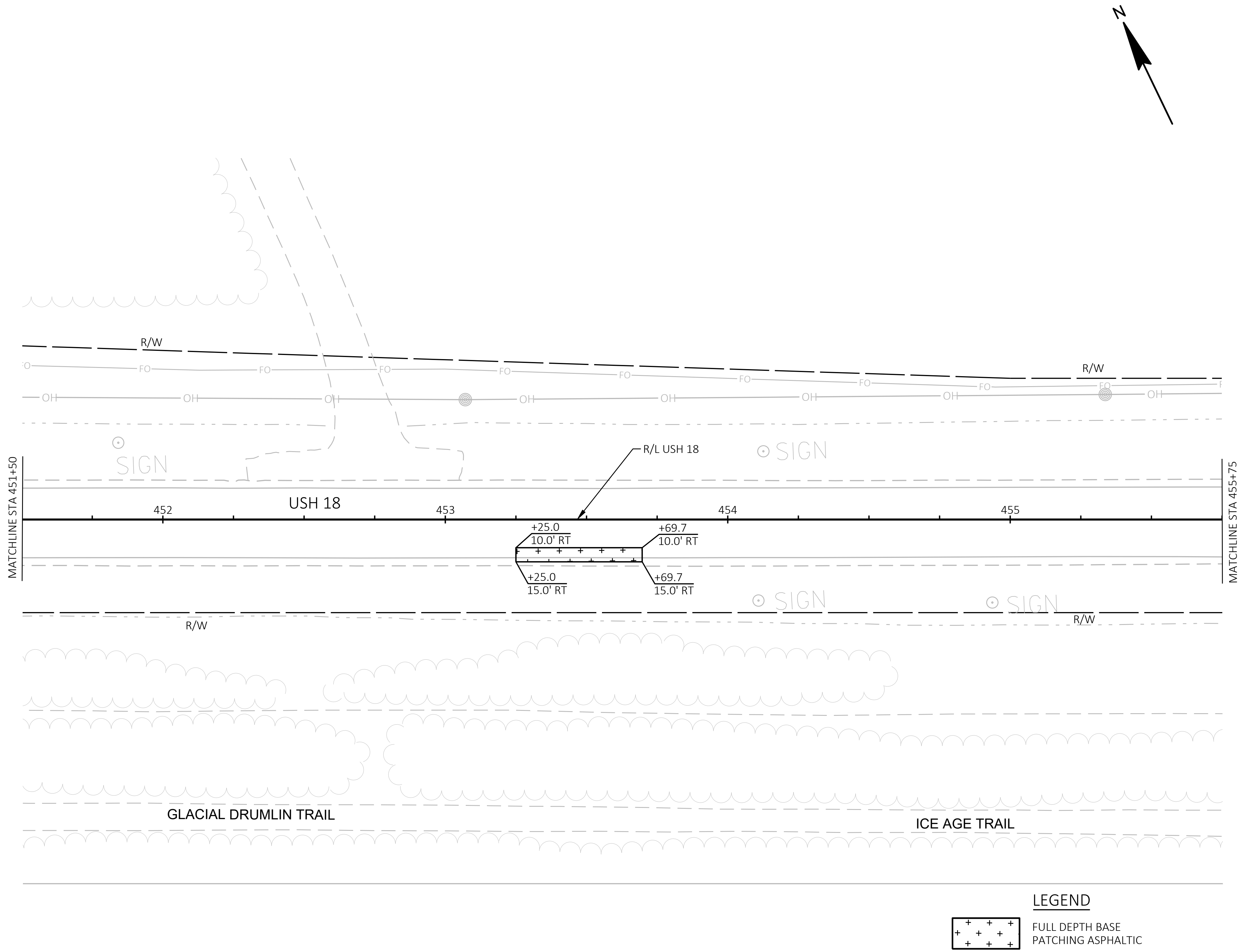
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 27
PLOT DATE : 1/29/2022 2:44 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 57	E

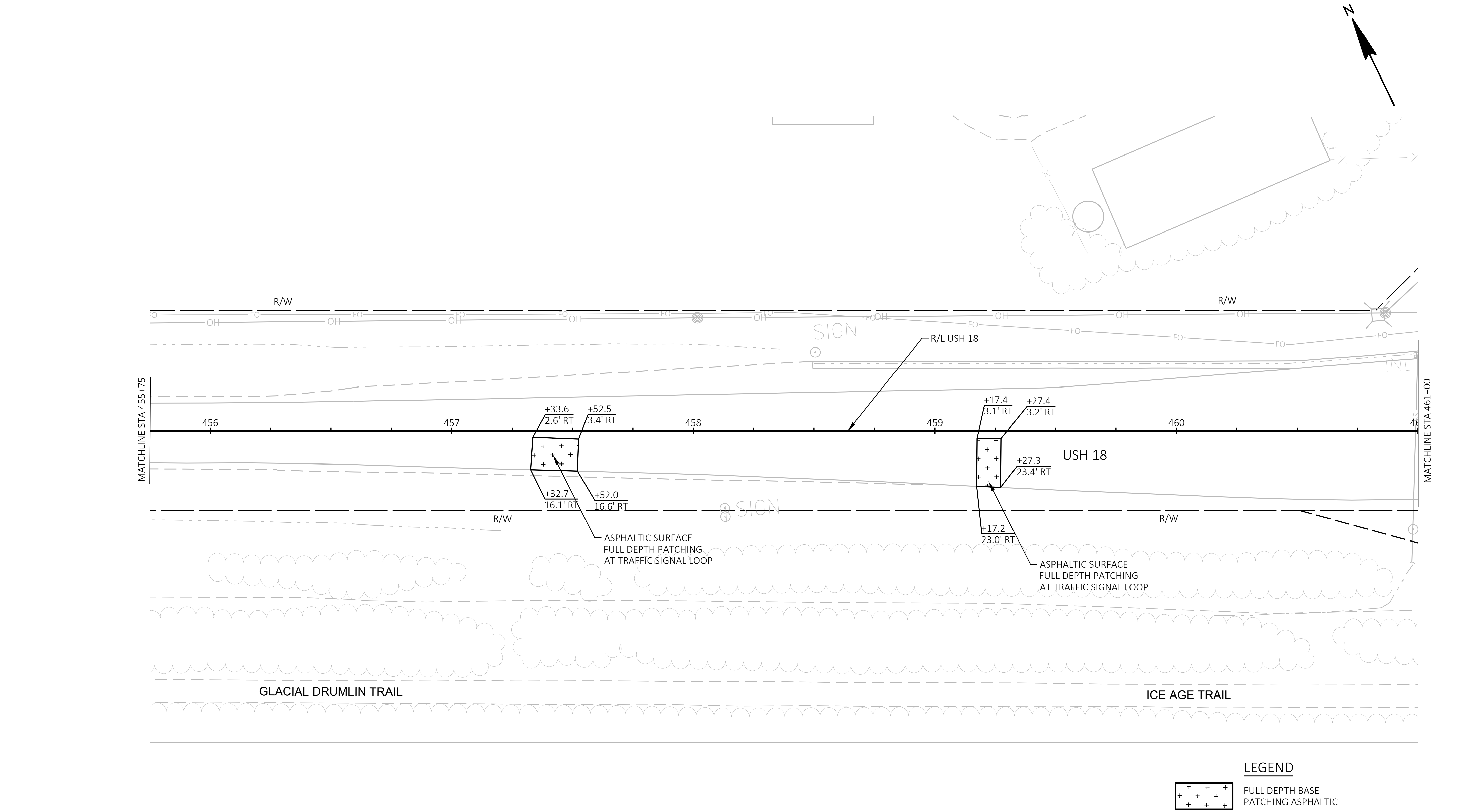
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 28
PLOT DATE : 1/29/2022 2:44 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

2

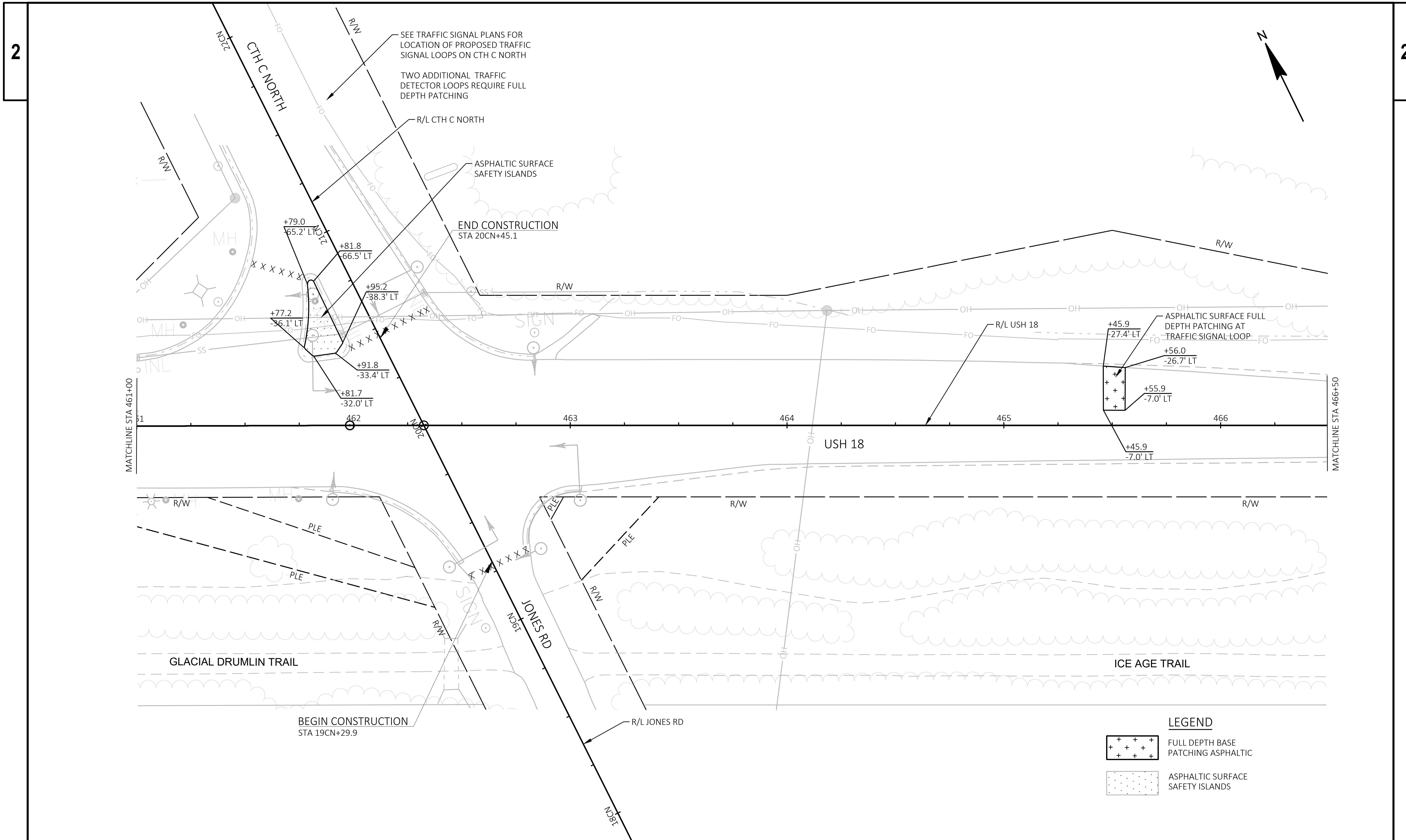


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPALTIC SURFACE PATCHING SHEETS	SHEET 58	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 29
PLOT DATE : 1/29/2022 2:44 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42

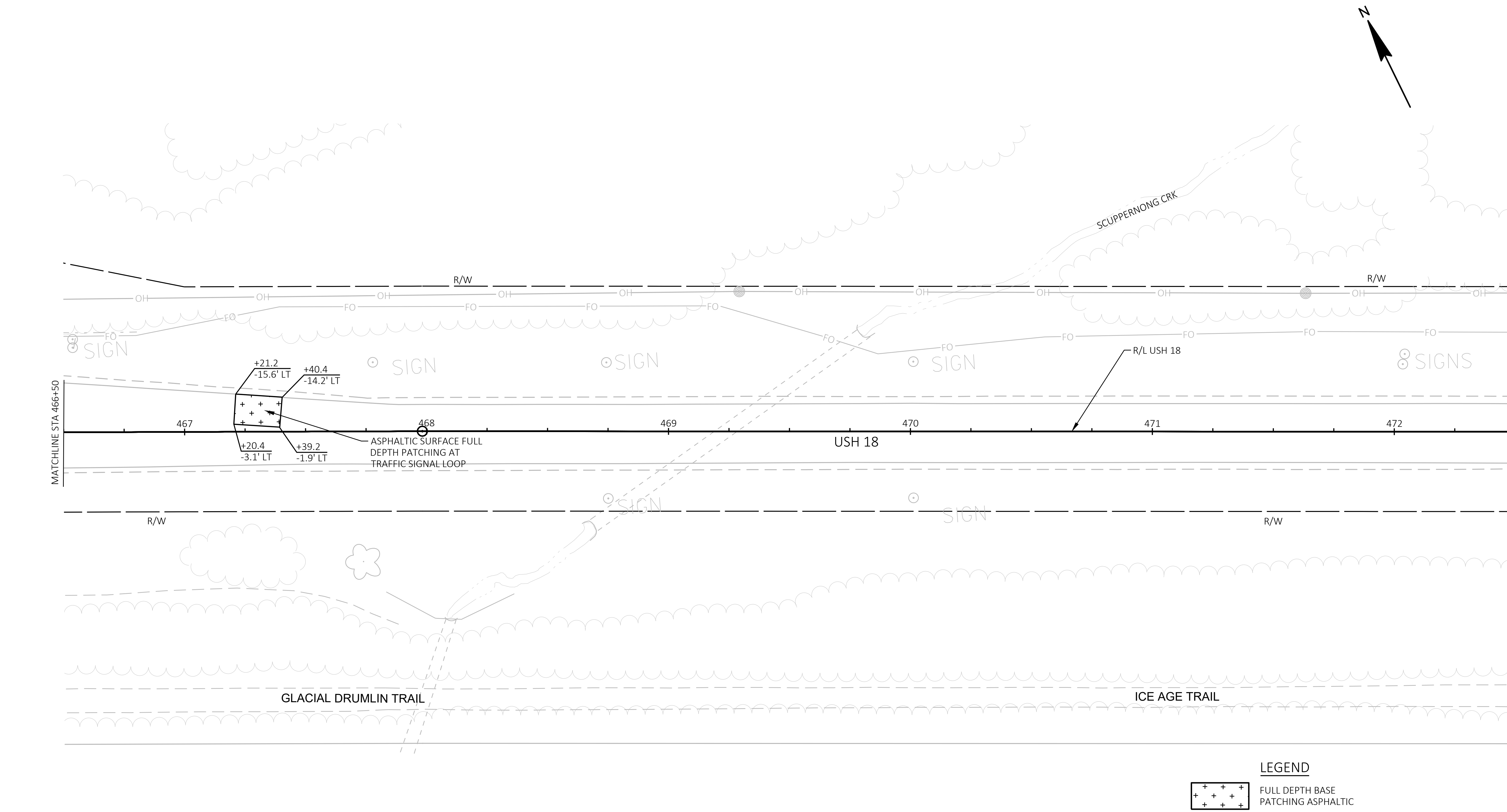


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPALTIC SURFACE PATCHING SHEETS	SHEET 59	E

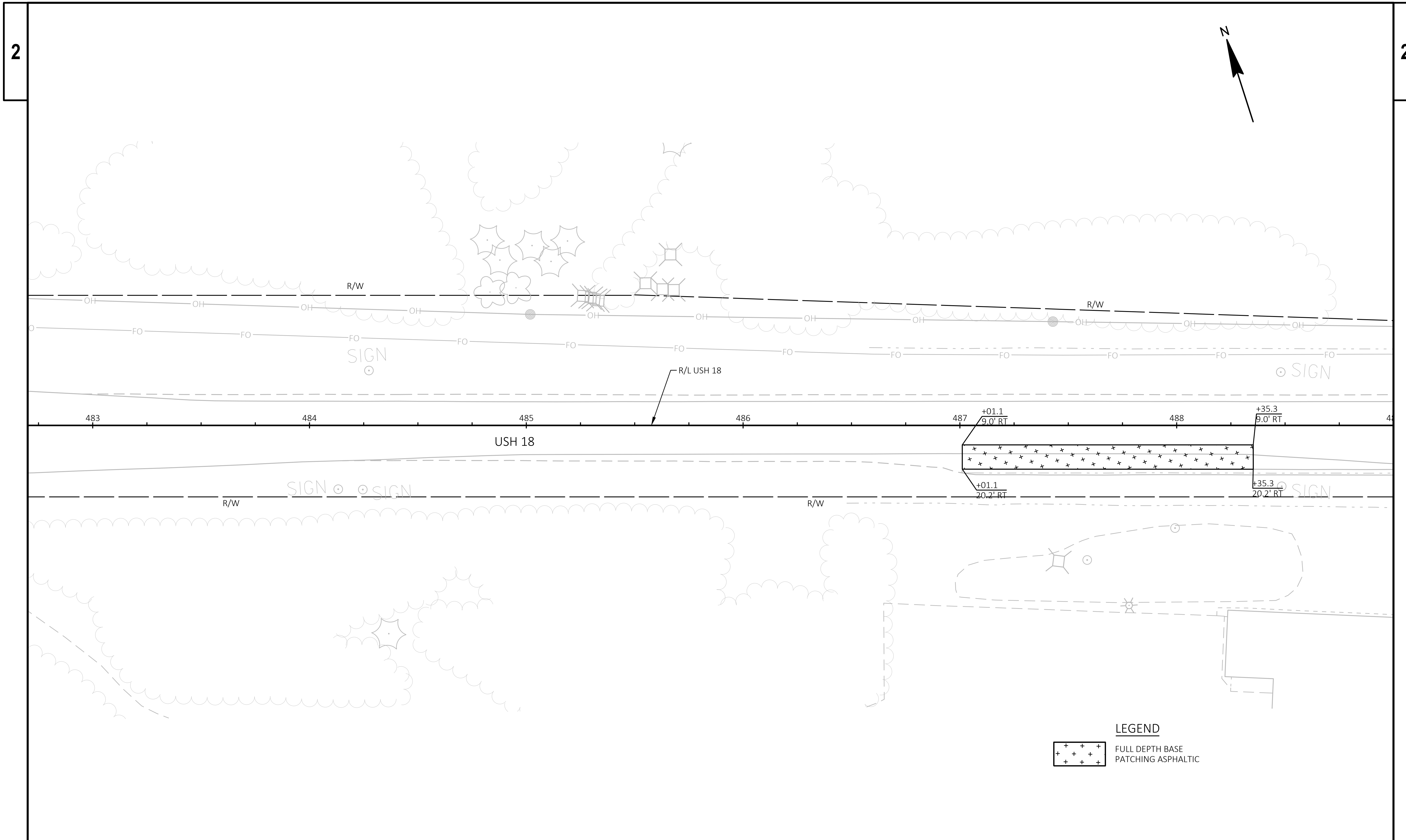


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPALTIC SURFACE PATCHING SHEETS	SHEET 60	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 31
PLOT DATE : 1/29/2022 2:45 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



N
SCUPPERNONG CRK
R/W
OH
FO
SIGN
SIGNS
R/L USH 18
+21.2
-15.6' LT
+40.4
-14.2' LT
+20.4
-3.1' LT
+39.2
-1.9' LT
ASPHALTIC SURFACE FULL DEPTH PATCHING AT TRAFFIC SIGNAL LOOP
MATCHLINE STA 466+50
467
468
469
470
471
472
USH 18
GLACIAL DRUMLIN TRAIL
ICE AGE TRAIL
LEGEND
FULL DEPTH BASE PATCHING ASPHALTIC

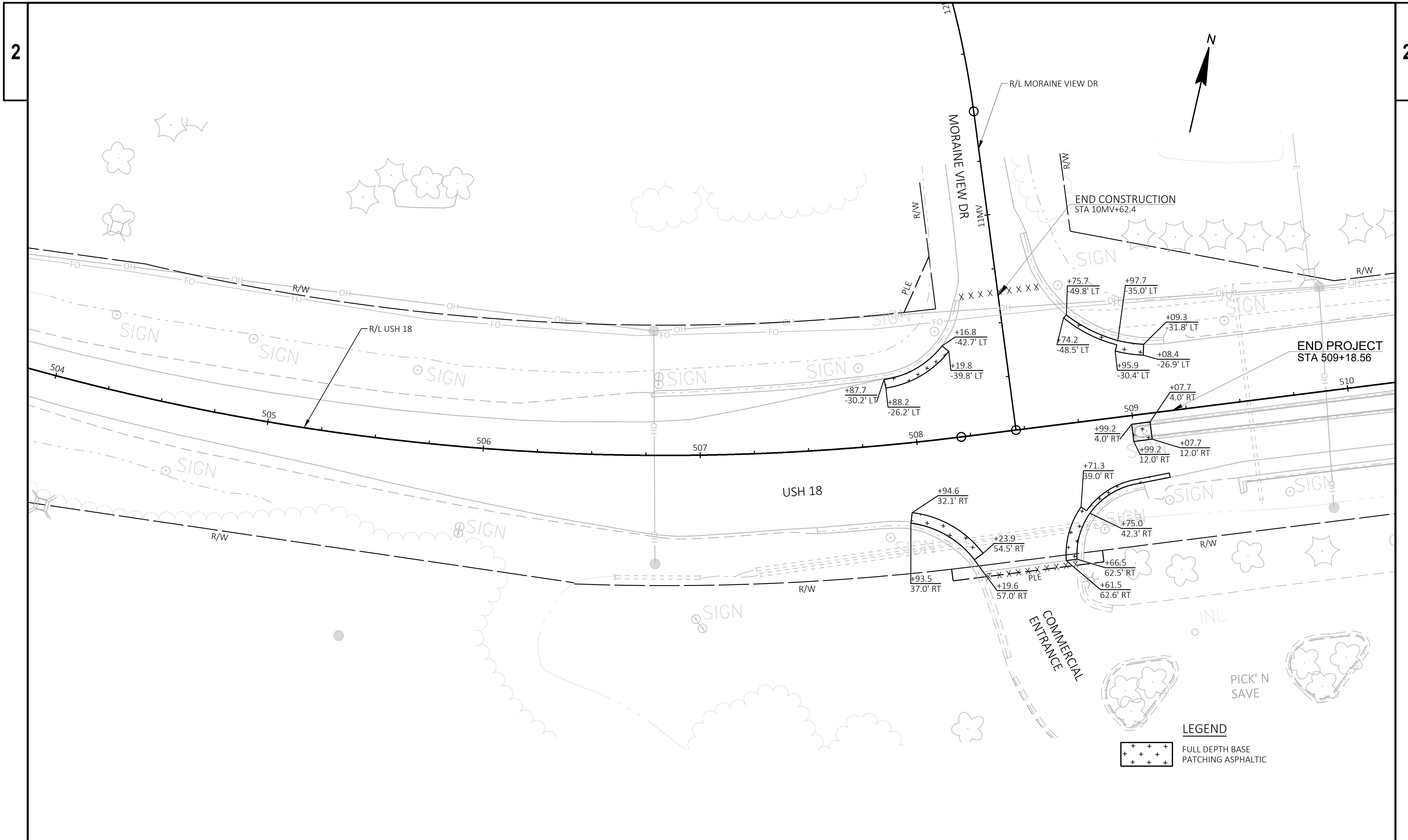


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ASPHALTIC SURFACE PATCHING SHEETS	SHEET 62	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\021401-JD.DWG
LAYOUT NAME - 35

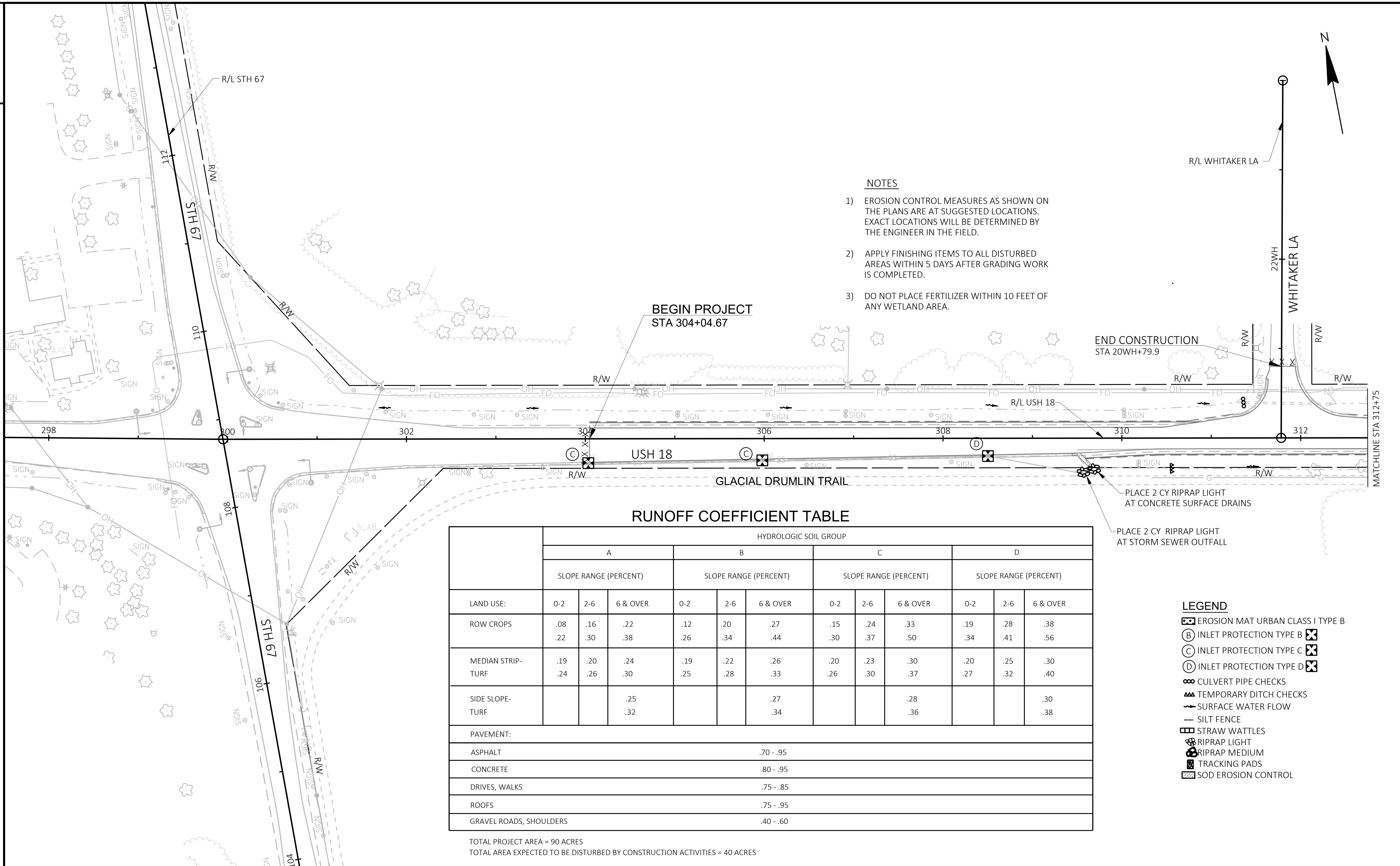
PLOT DATE : 1/29/2022 2:45 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42



2
R/L MORAINE VIEW DR
MORAINE VIEW DR
END CONSTRUCTION
STA 10MV+62.4
R/L USH 18
USH 18
END PROJECT
STA 509+18.56
COMMERCIAL ENTRANCE
PICK' N SAVE
+75.7 -49.8' LT
+97.7 -35.0' LT
+09.3 -31.8' LT
+74.2 -48.5' LT
+08.4 -26.9' LT
+95.9 -30.4' LT
+16.8 -42.7' LT
+19.8 -39.8' LT
+87.7 -30.2' LT
+88.2 -26.2' LT
+07.7 4.0' RT
+99.2 4.0' RT
+99.2 12.0' RT
+07.7 12.0' RT
+71.3 39.0' RT
+94.6 32.1' RT
+75.0 42.3' RT
+23.9 54.5' RT
+66.5 62.5' RT
+61.5 62.6' RT
+93.5 37.0' RT
+19.6 57.0' RT
LEGEND
FULL DEPTH BASE PATCHING ASPHALTIC

2



NOTES

1) EROSION CONTROL MEASURES AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

2) APPLY FINISHING ITEMS TO ALL DISTURBED AREAS WITHIN 5 DAYS AFTER GRADING WORK IS COMPLETED.

3) DO NOT PLACE FERTILIZER WITHIN 10 FEET OF ANY WETLAND AREA.

RUNOFF COEFFICIENT TABLE

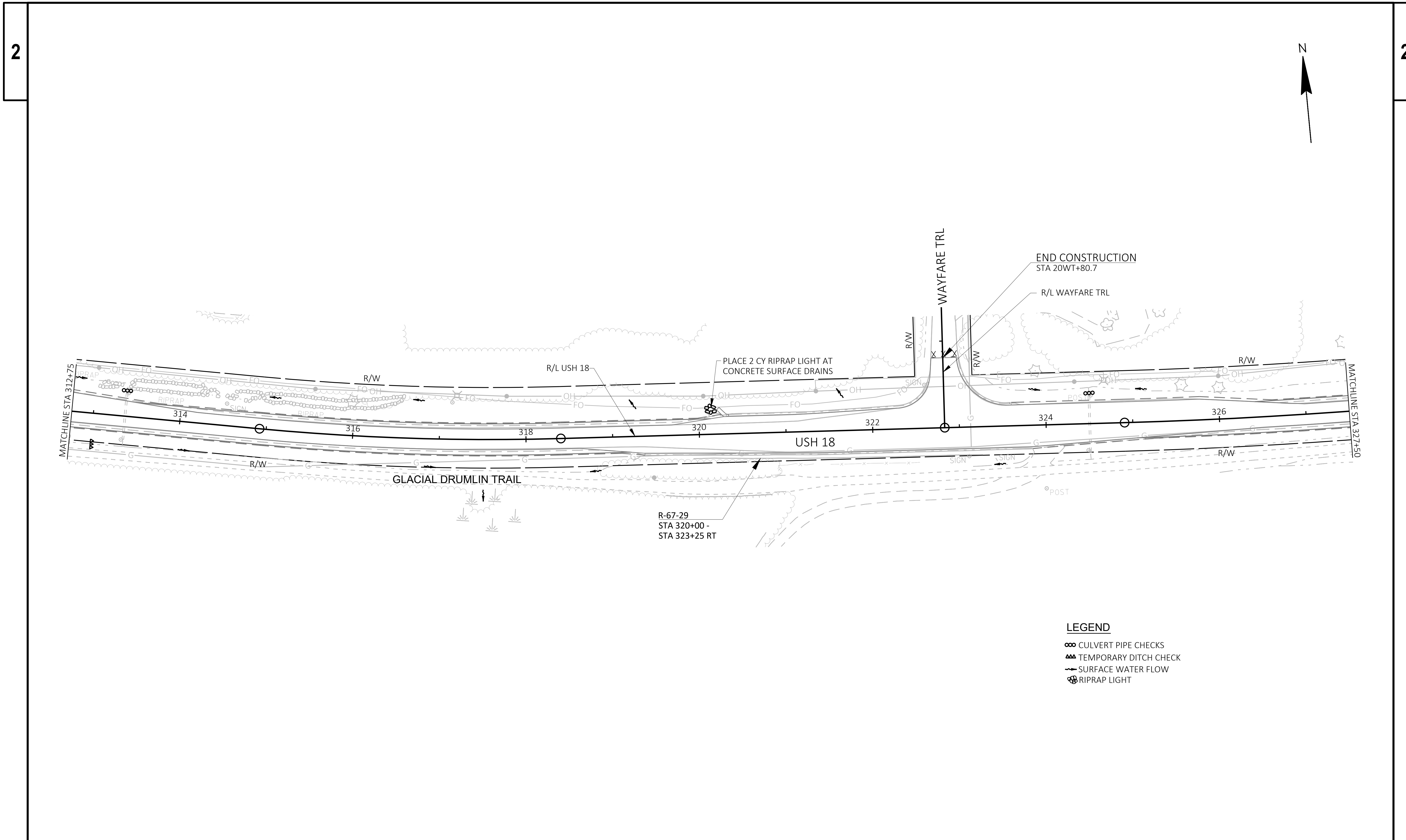
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = 90 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 40 ACRES

LEGEND

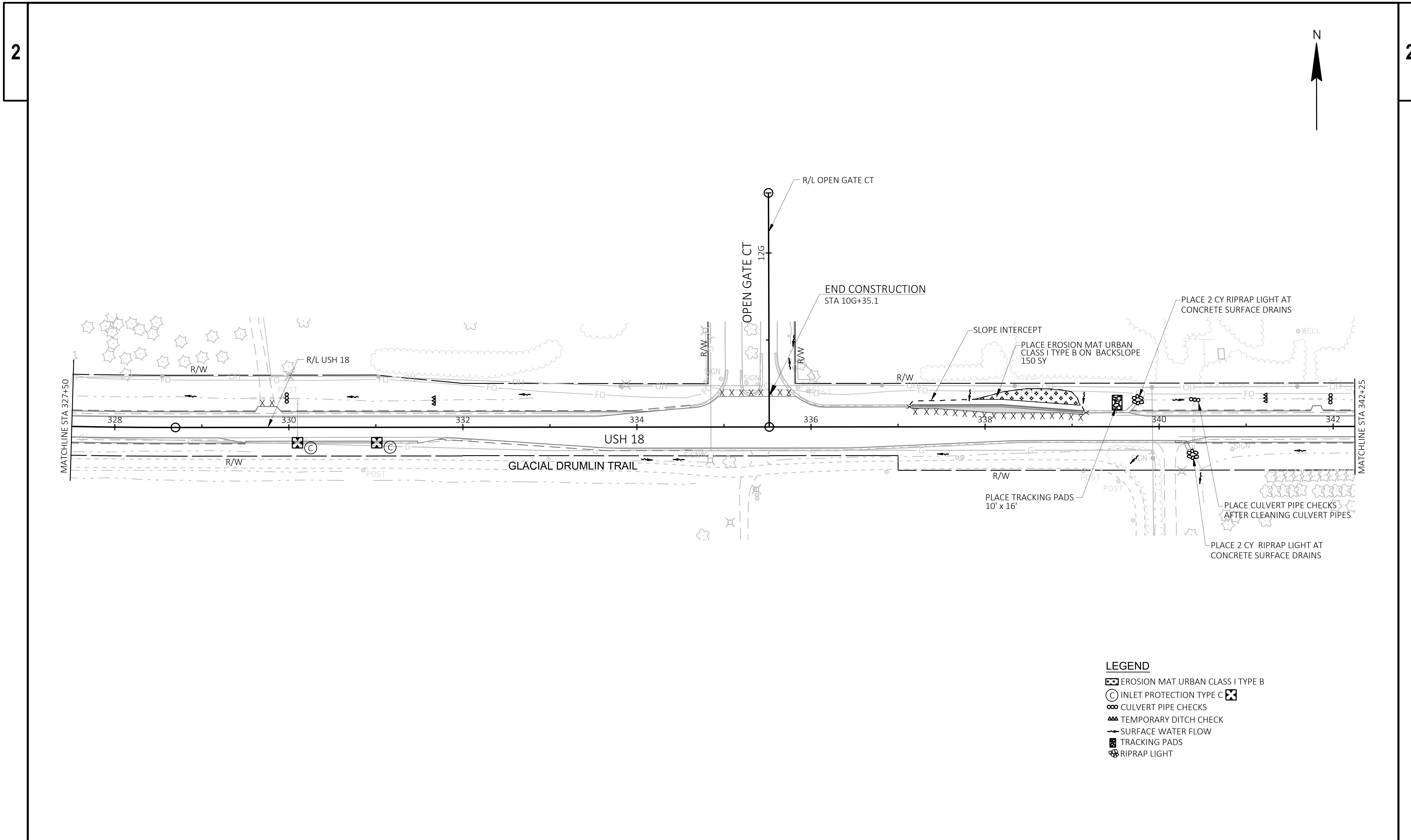
- EROSION MAT URBAN CLASS I TYPE B
- (B) INLET PROTECTION TYPE B
- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D
- CULVERT PIPE CHECKS
- TEMPORARY DITCH CHECKS
- SURFACE WATER FLOW
- SILT FENCE
- STRAW WATTLES
- RIPRAP LIGHT
- RIPRAP MEDIUM
- TRACKING PADS
- SOD EROSION CONTROL

2



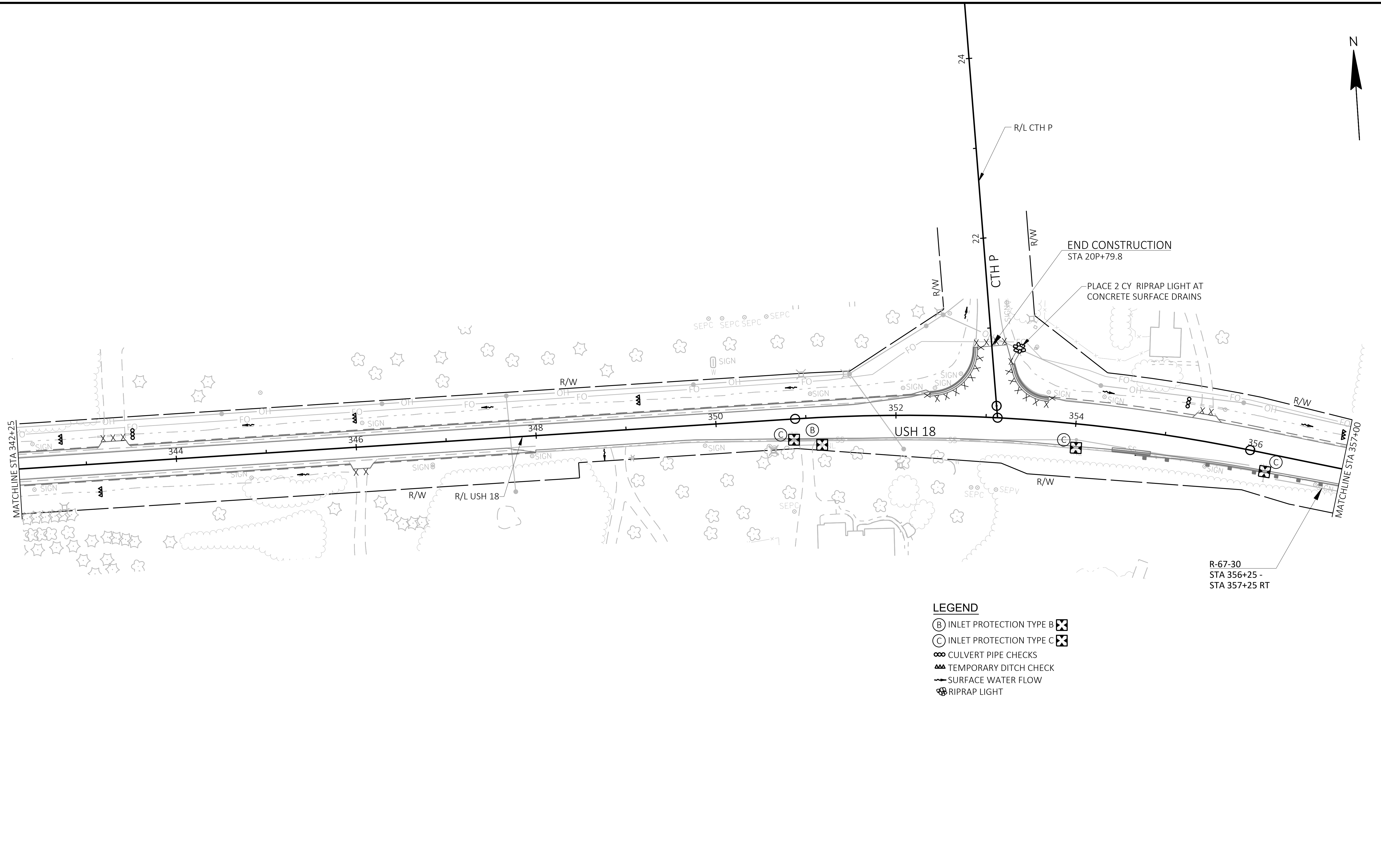
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 65	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 02
PLOT DATE : 1/31/2022 3:33 PM
PLOT BY : SUSAN COOK
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



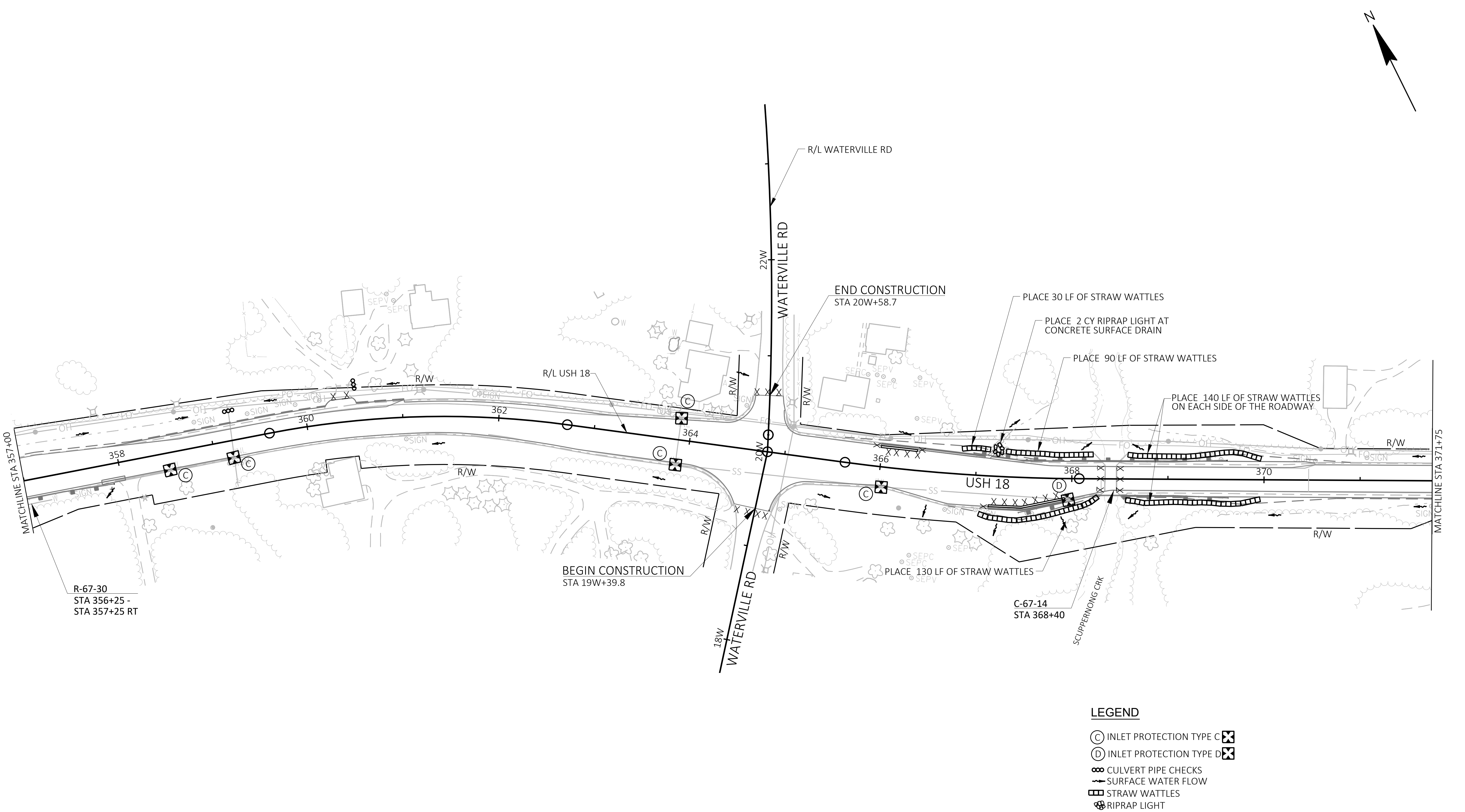
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 66	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 03
PLOT DATE : 1/31/2022 3:34 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:100 FT WISDOT/CADDS SHEET 42

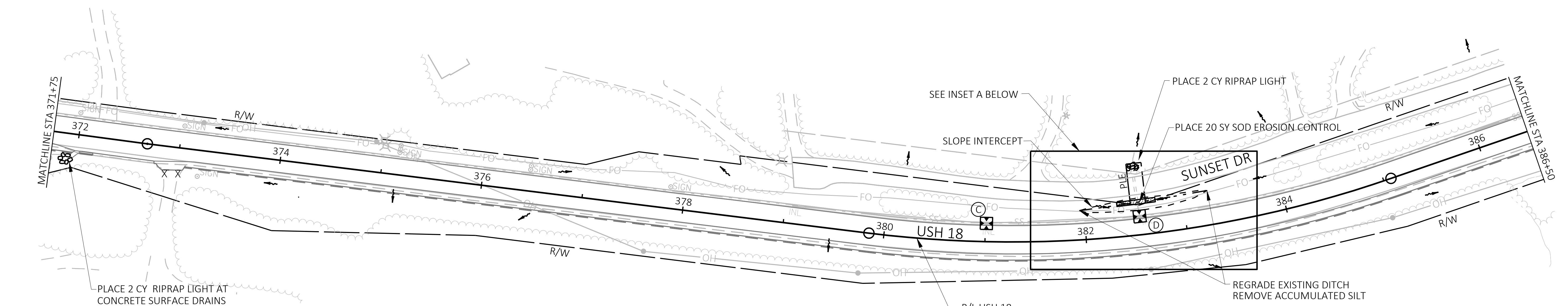


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 67	E

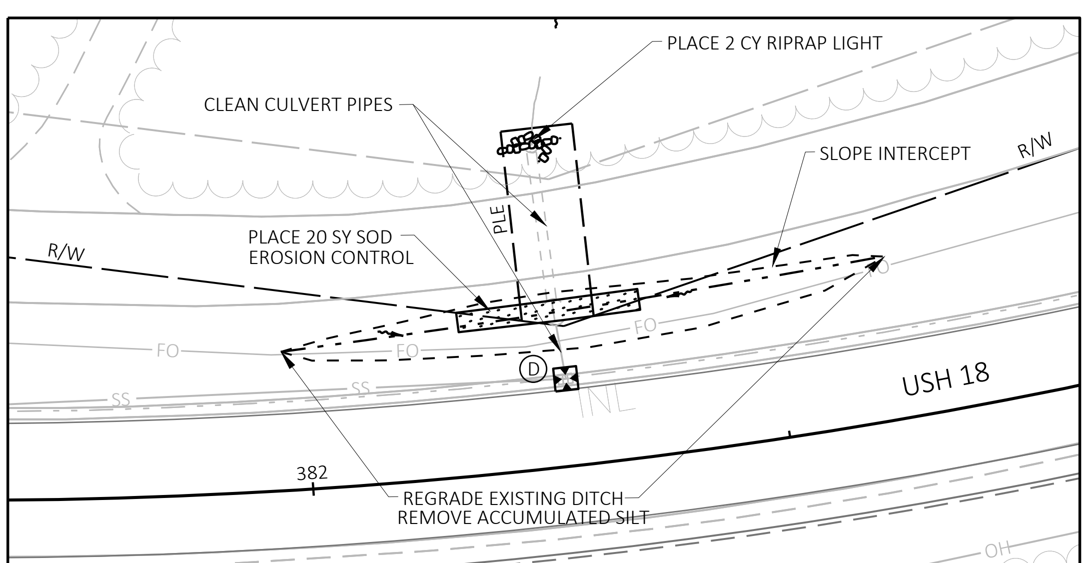
2



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 68	E



INSET A 1' = 40'



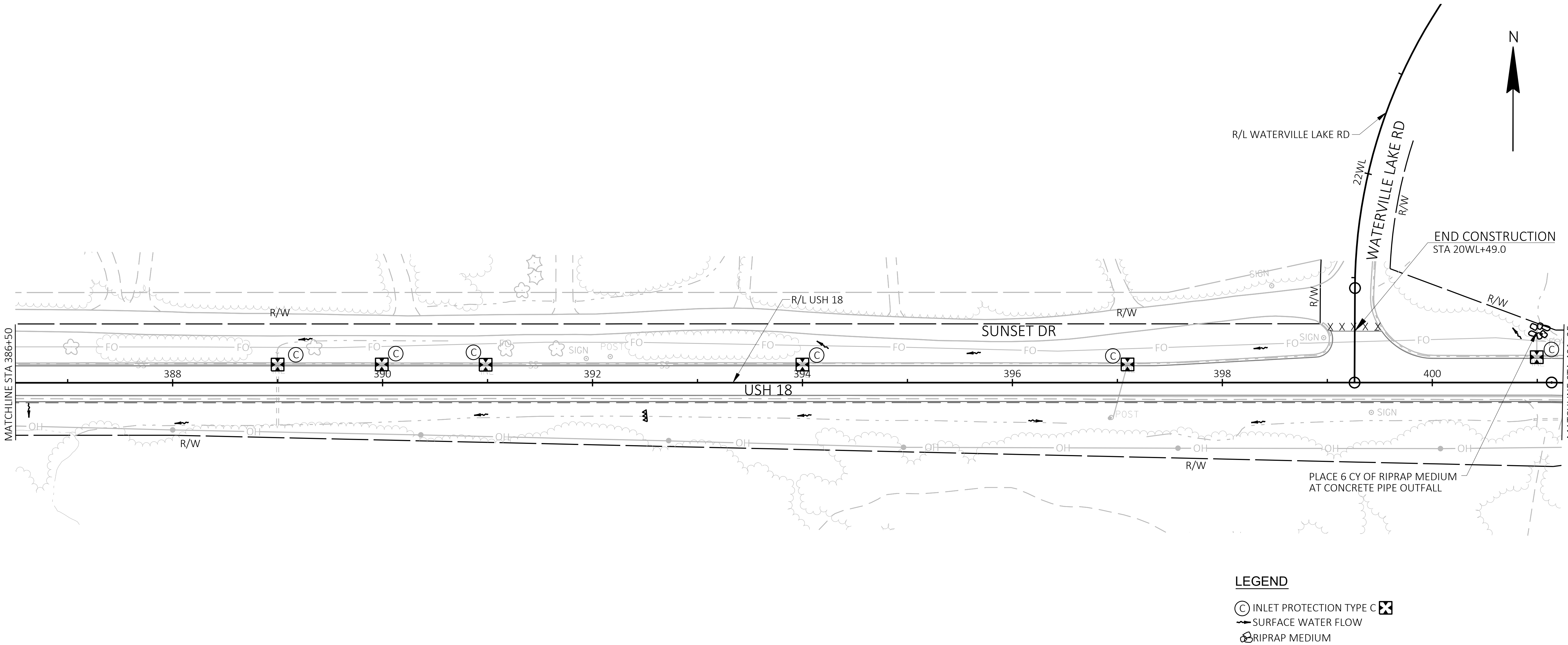
LEGEND

- (C) INLET PROTECTION TYPE C
- (D) INLET PROTECTION TYPE D
- SURFACE WATER FLOW
- RIPRAP LIGHT
- SOD EROSION CONTROL

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 69	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 06
PLOT DATE : 1/31/2022 3:35 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

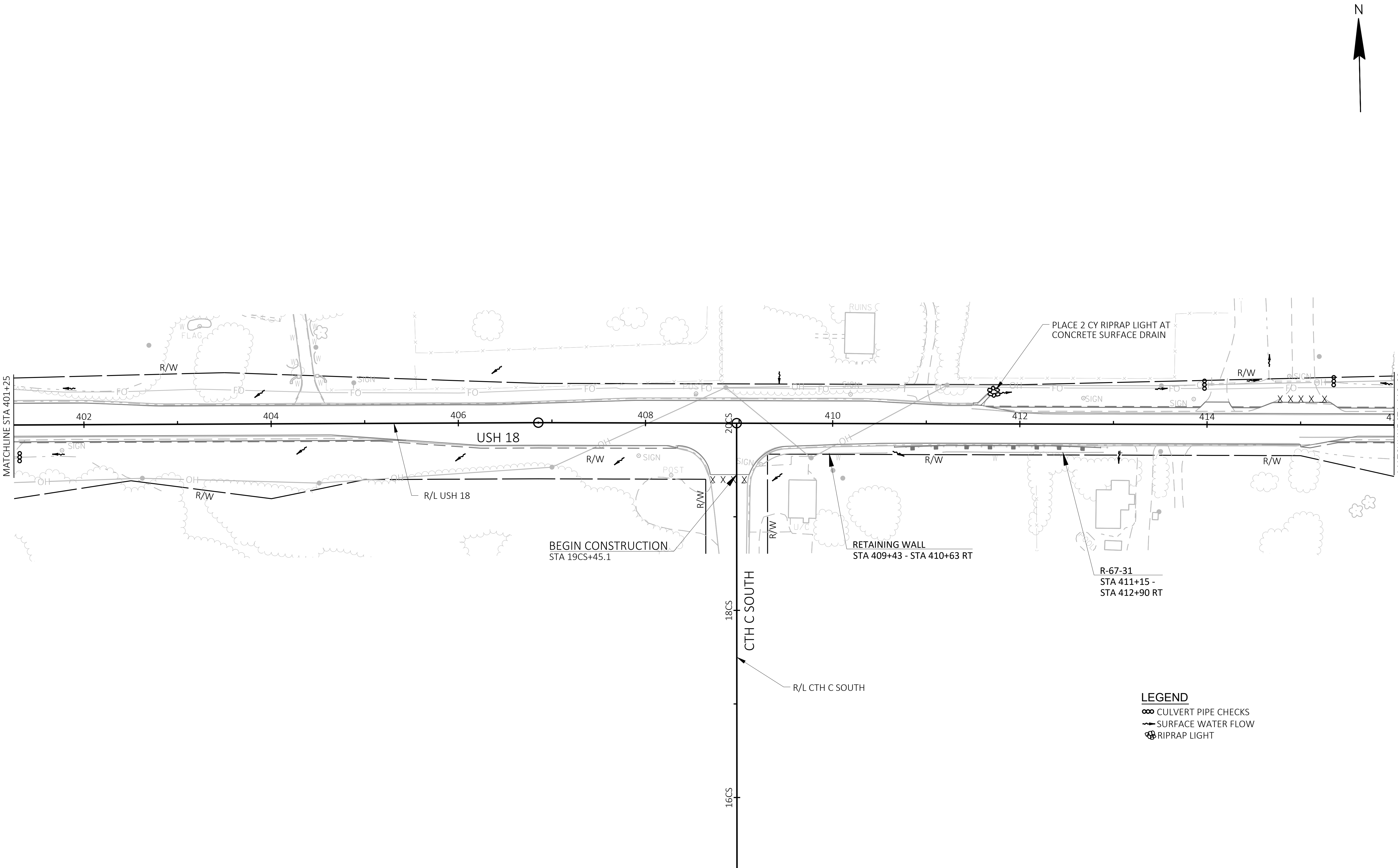
2



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 70	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 07
PLOT DATE : 1/31/2022 3:35 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

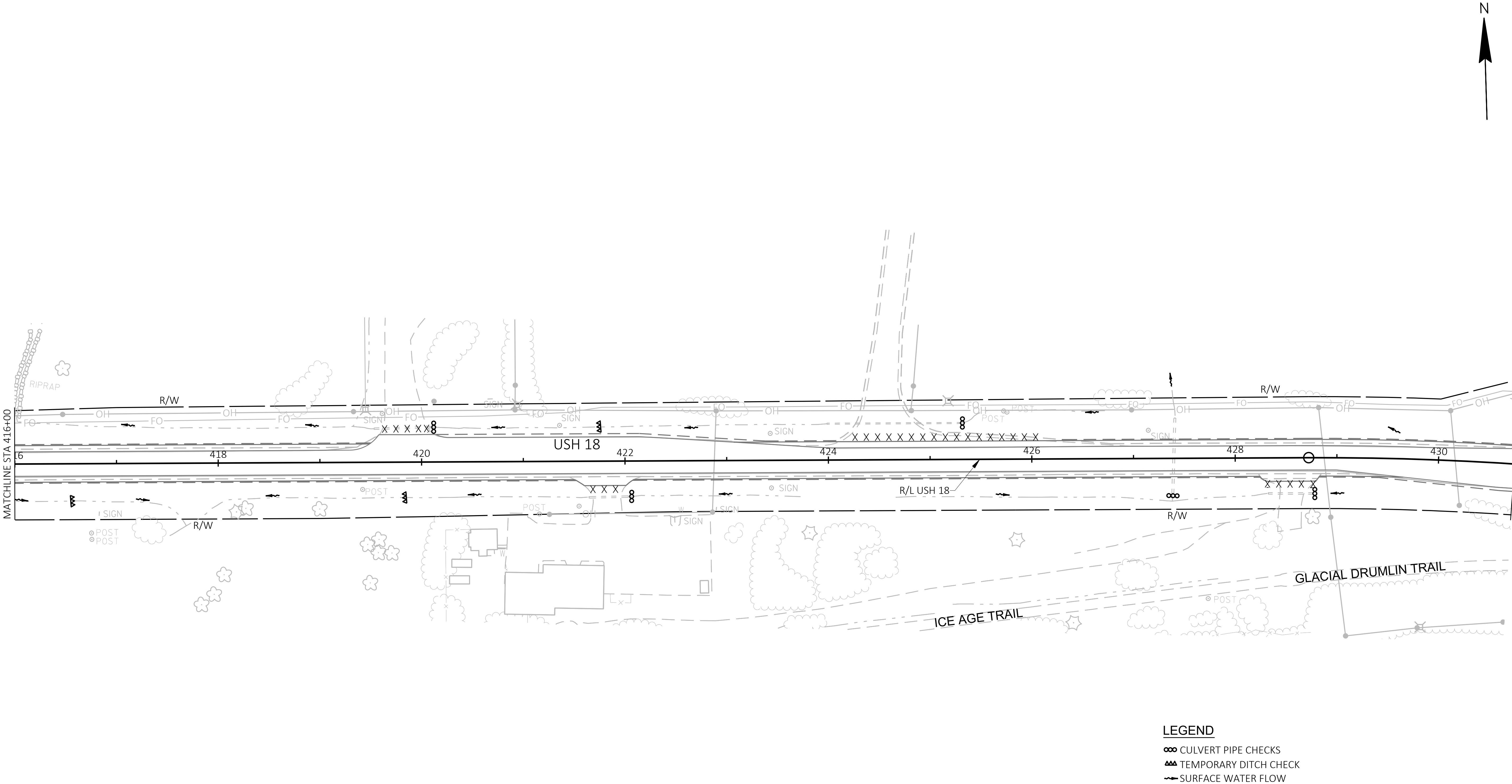
2



2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 71	E

2

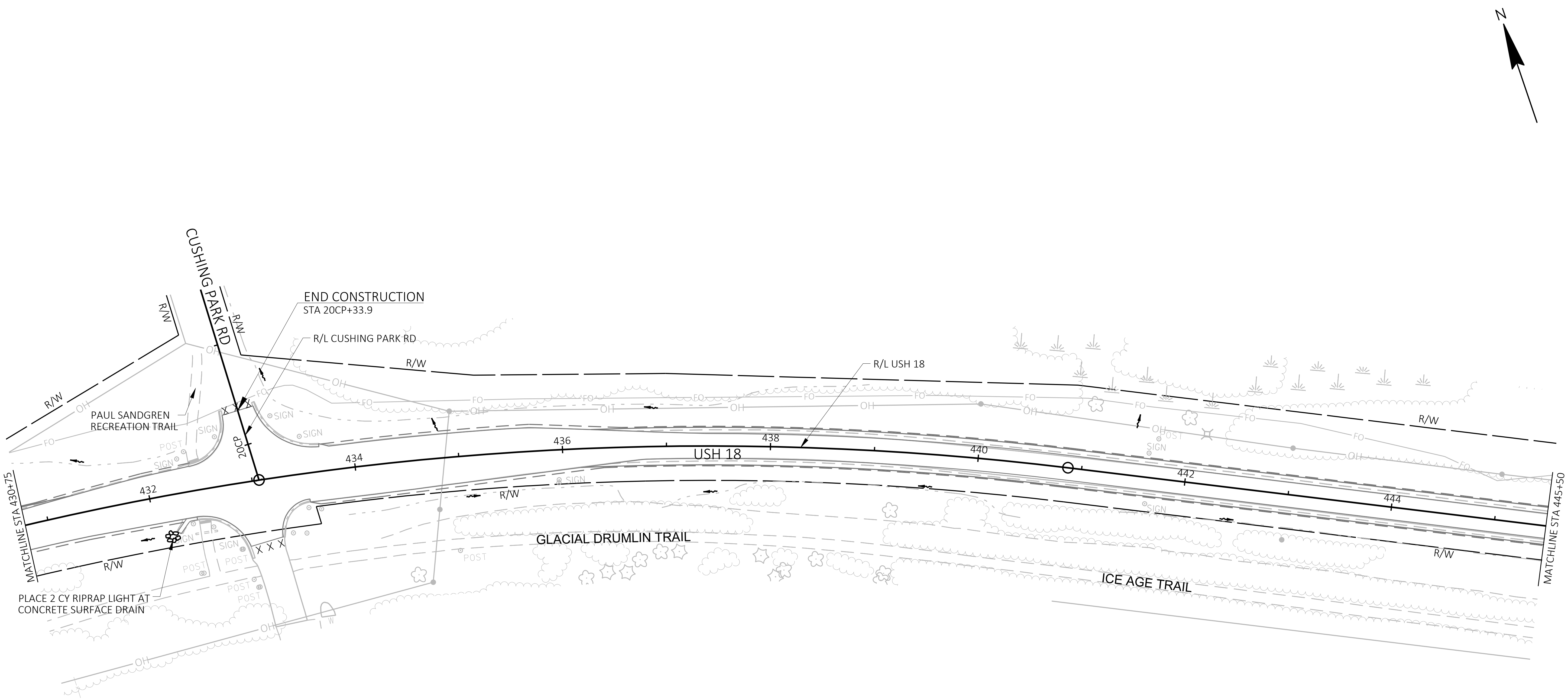


2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 72	E

2

2



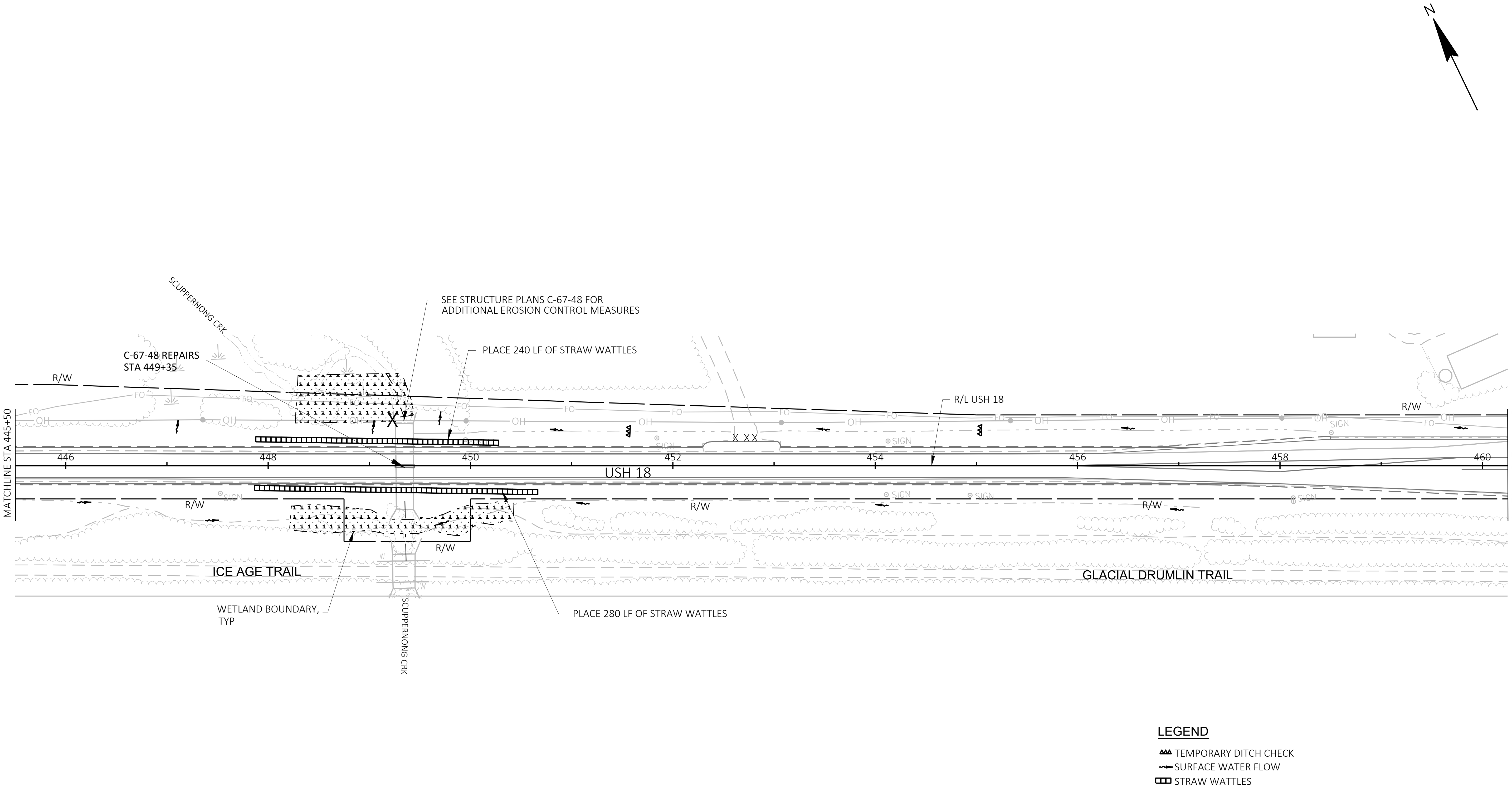
LEGEND

SURFACE WATER FLOW

RIPRAP LIGHT

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 73	E

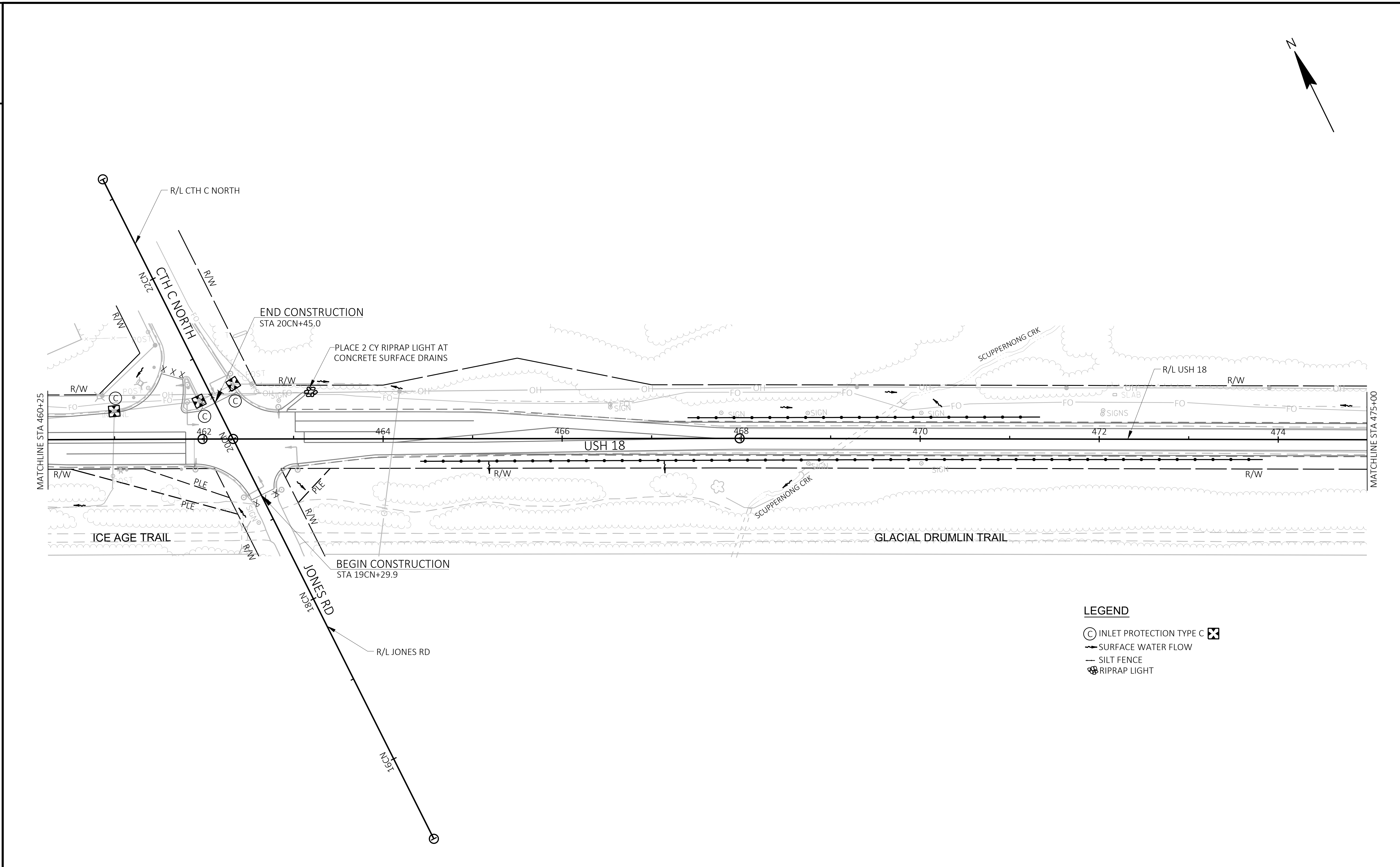
2



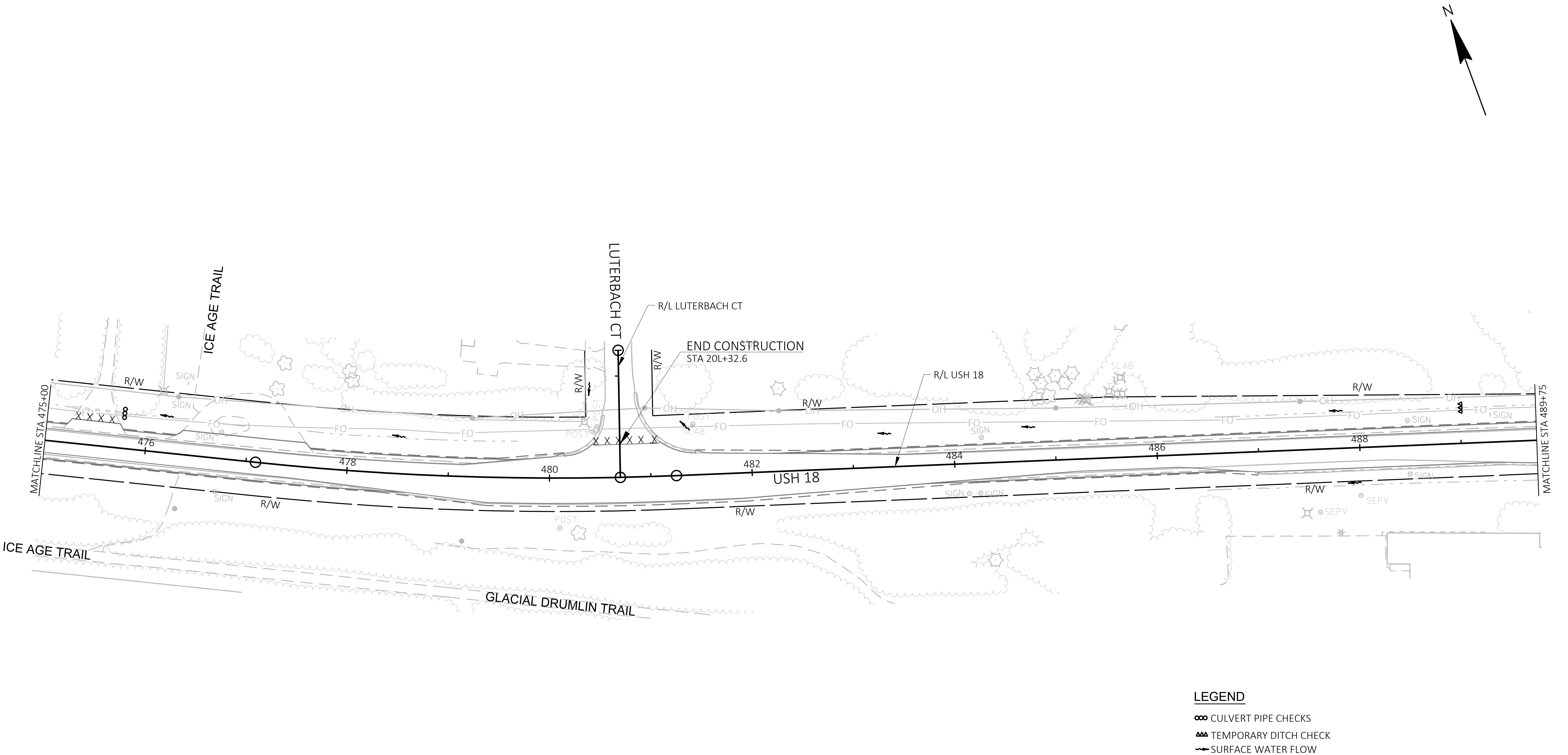
2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 74	E

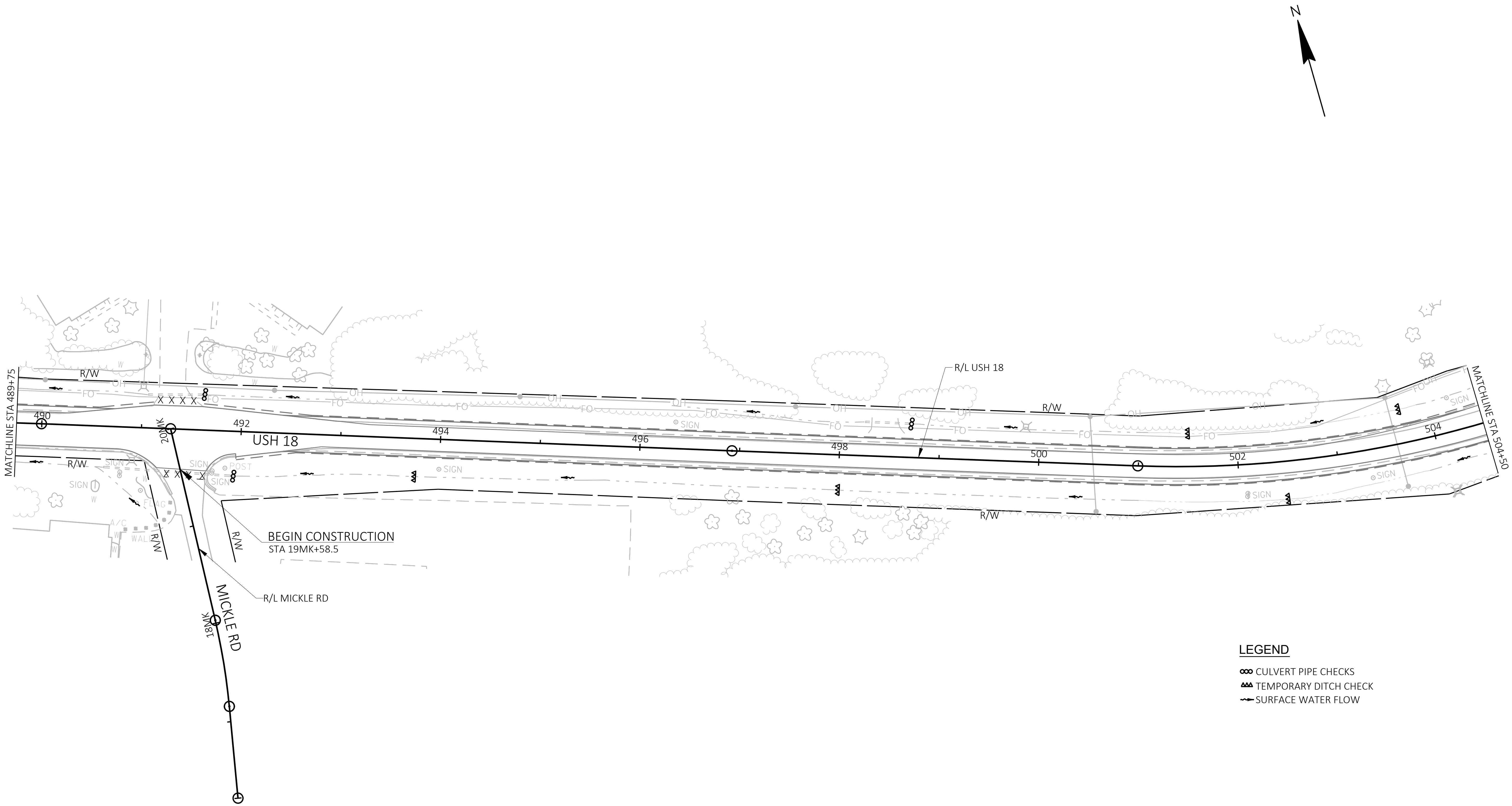
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 011
PLOT DATE : 1/31/2022 3:37 PM
PLOT BY : SUSAN COOK
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



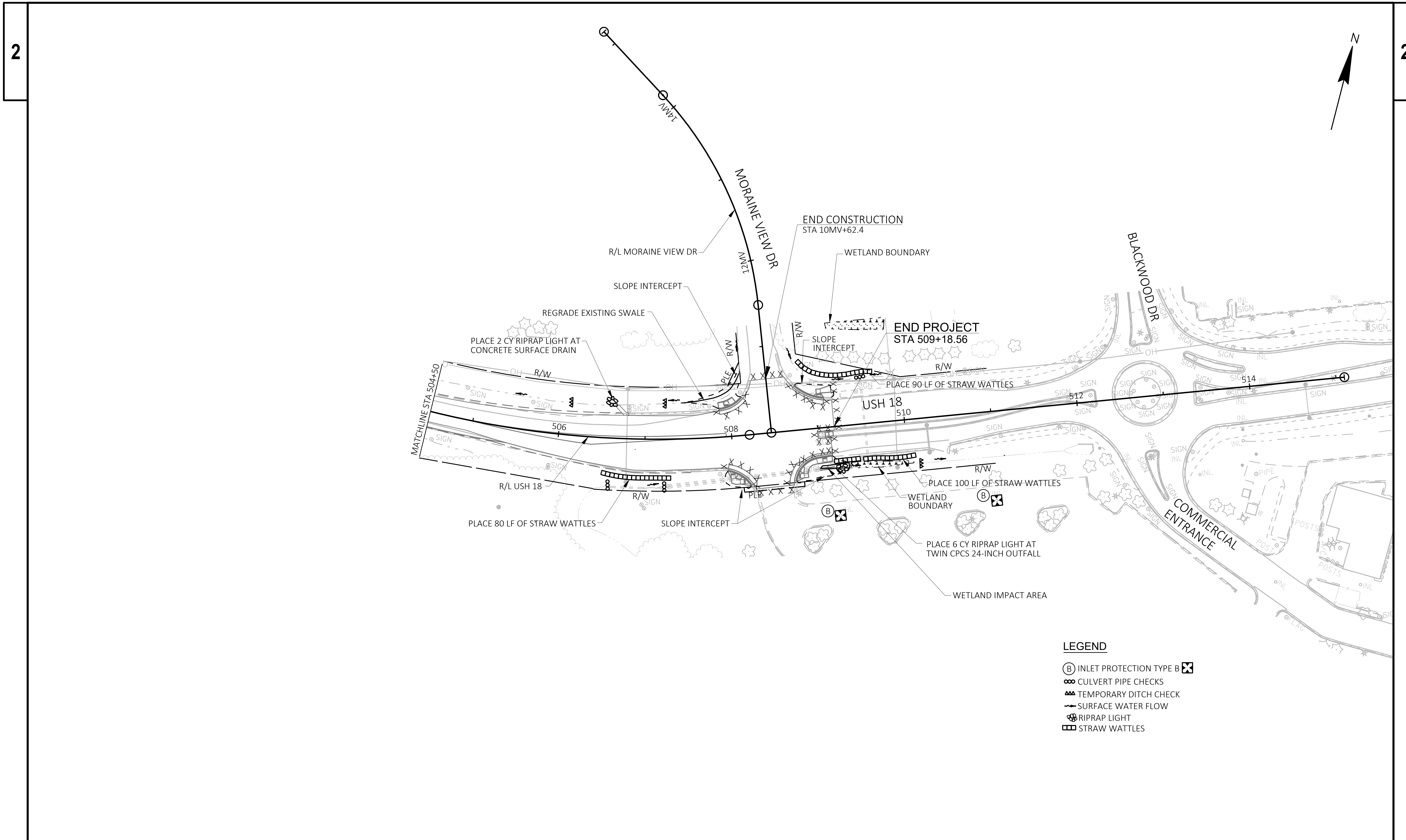
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 75	E



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 76	E

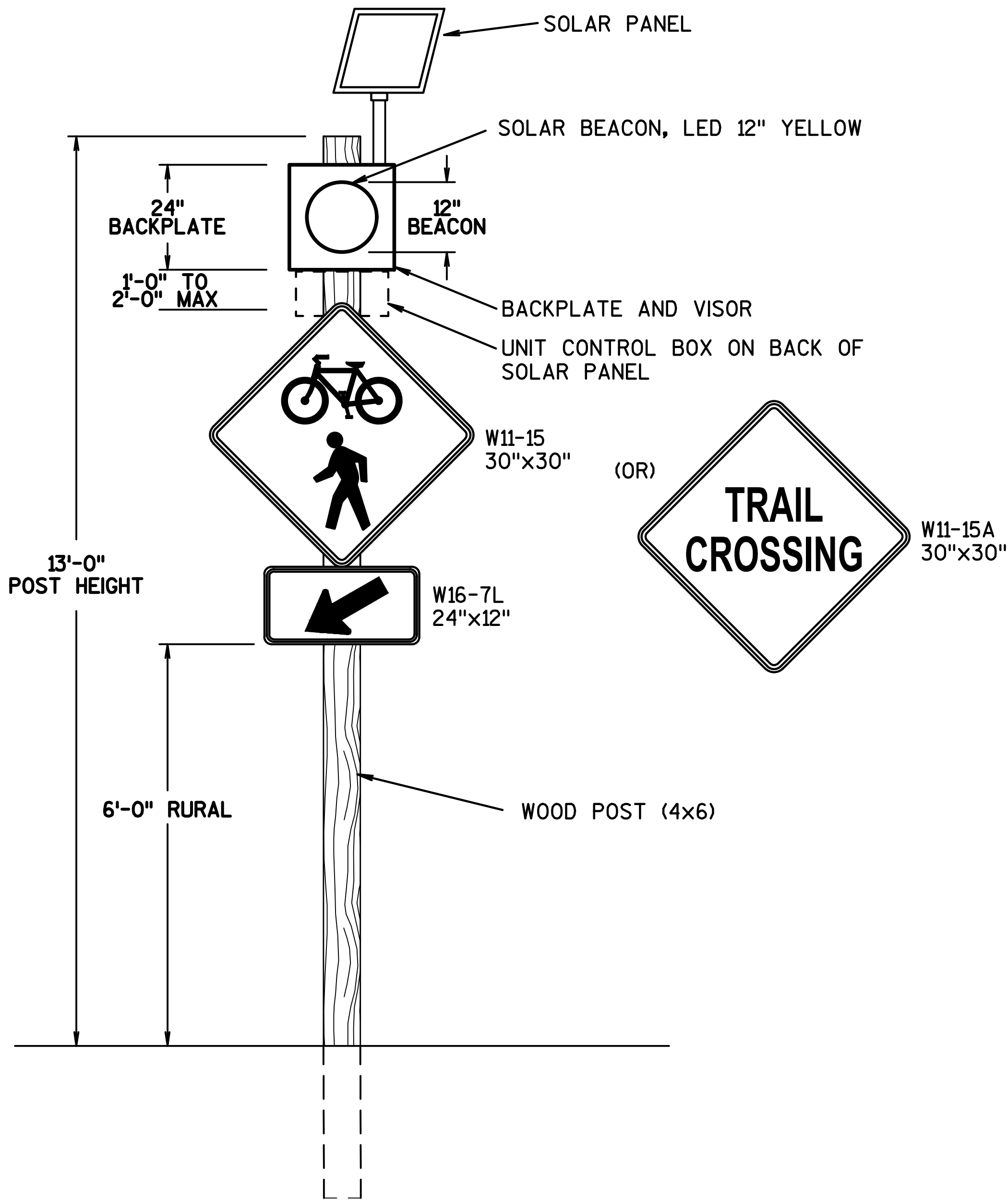


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 77	E

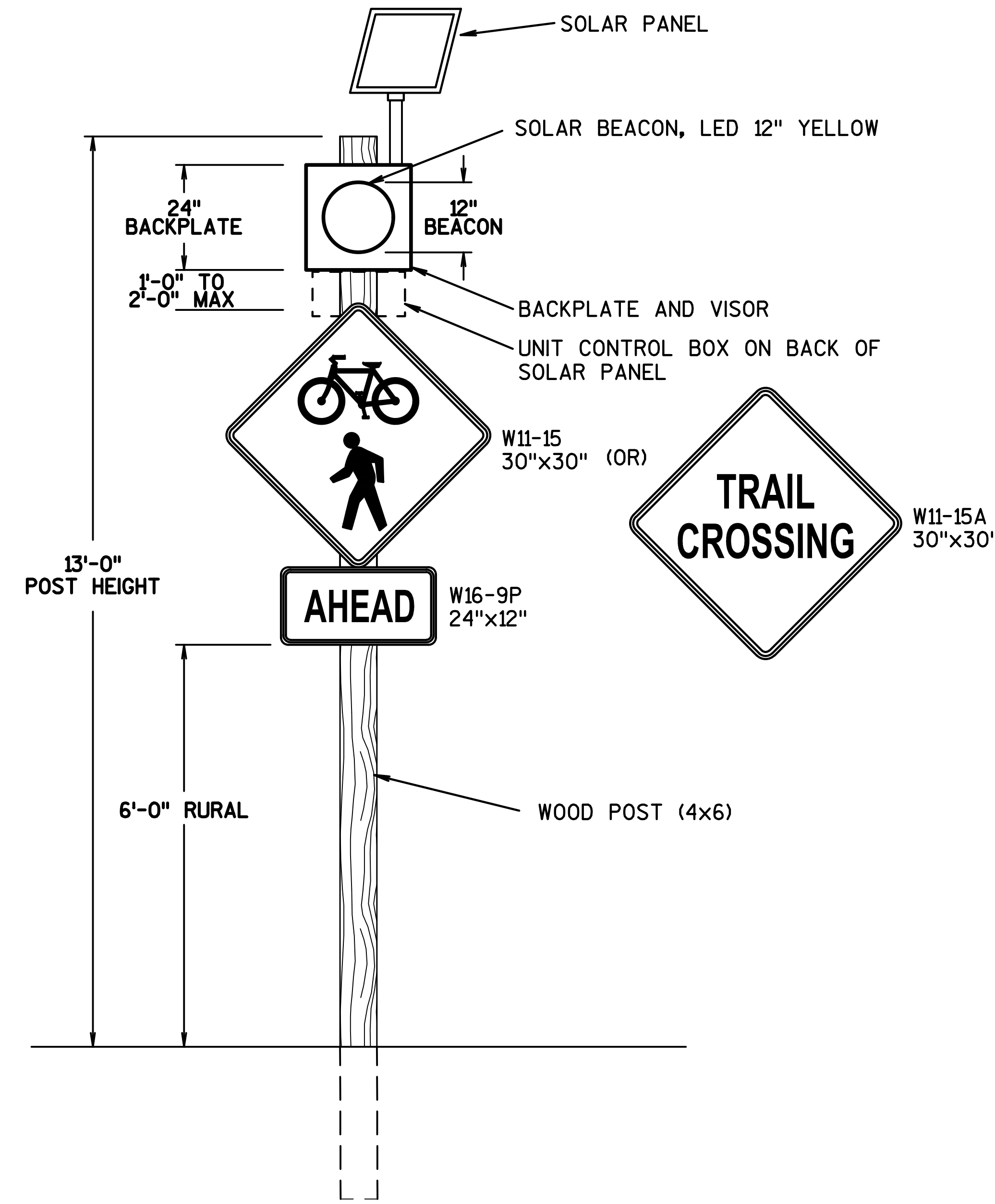


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	EROSION CONTROL PLANS	SHEET 78	E

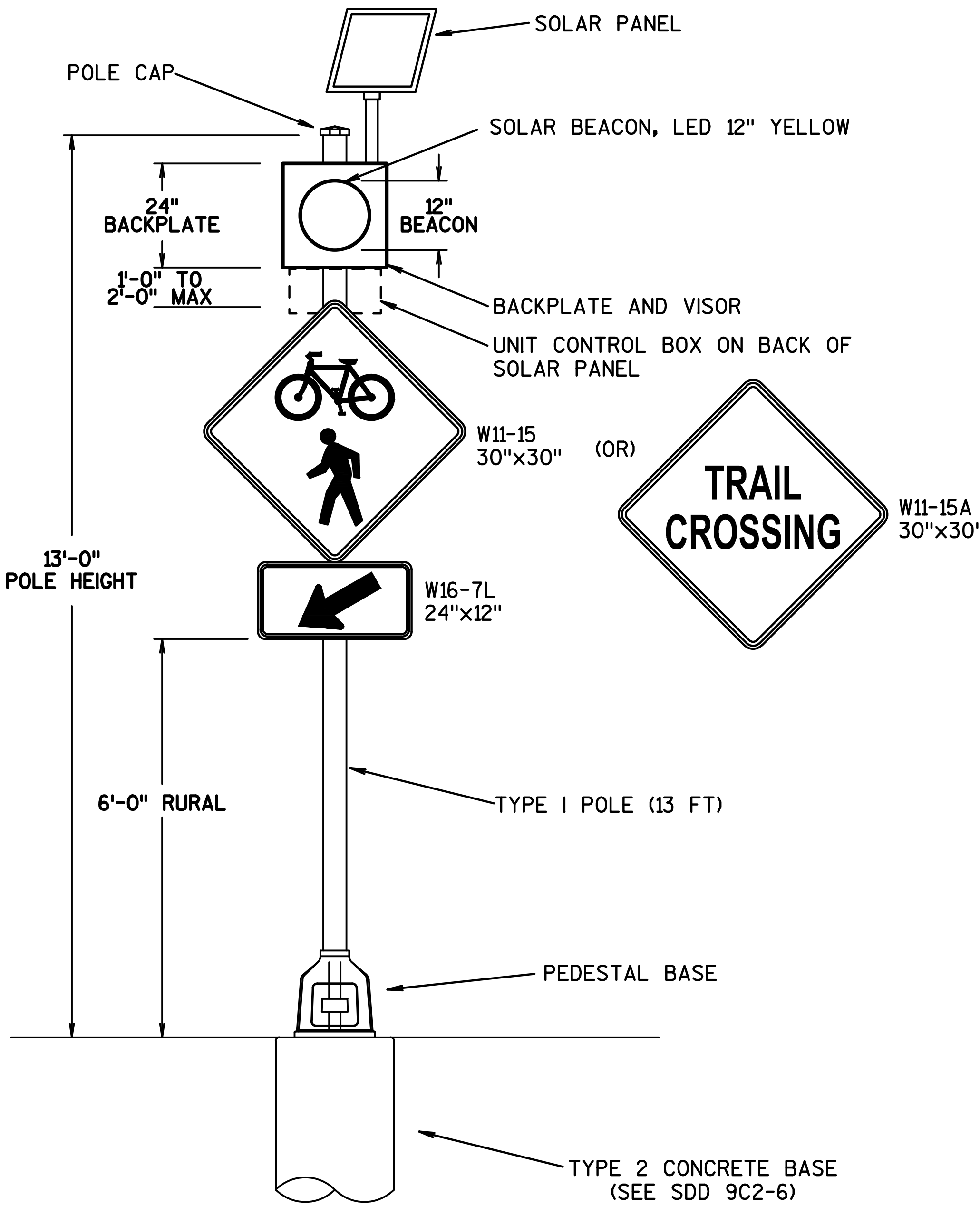
FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 015
PLOT DATE : 1/31/2022 3:38 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42



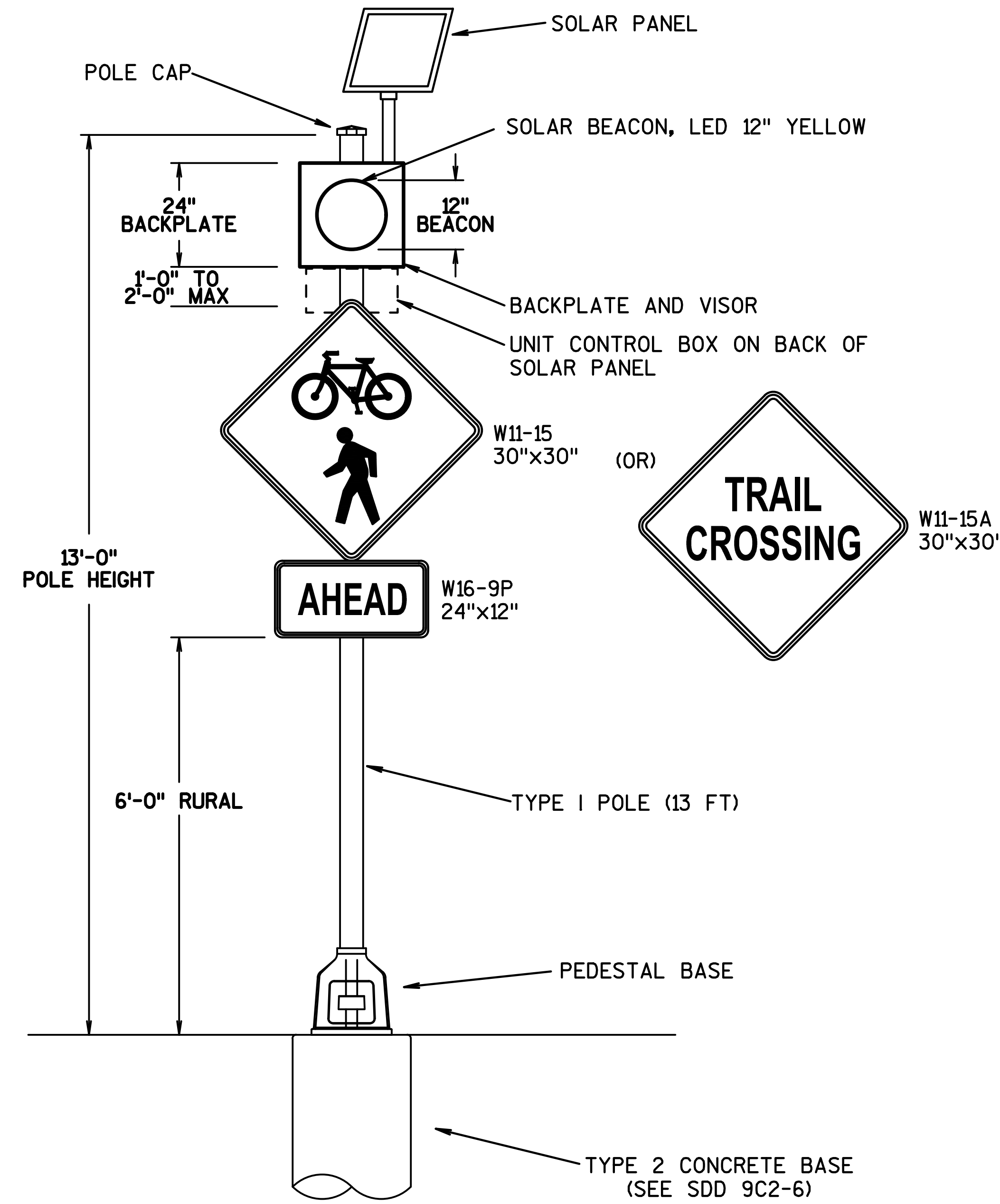
13' SOLAR BEACON ASSEMBLY
CROSSROAD WARNING SIGN APPLICATION



13' SOLAR BEACON ASSEMBLY
CROSSROAD WARNING SIGN APPLICATION



13' SOLAR BEACON ASSEMBLY
CROSSROAD WARNING SIGN APPLICATION



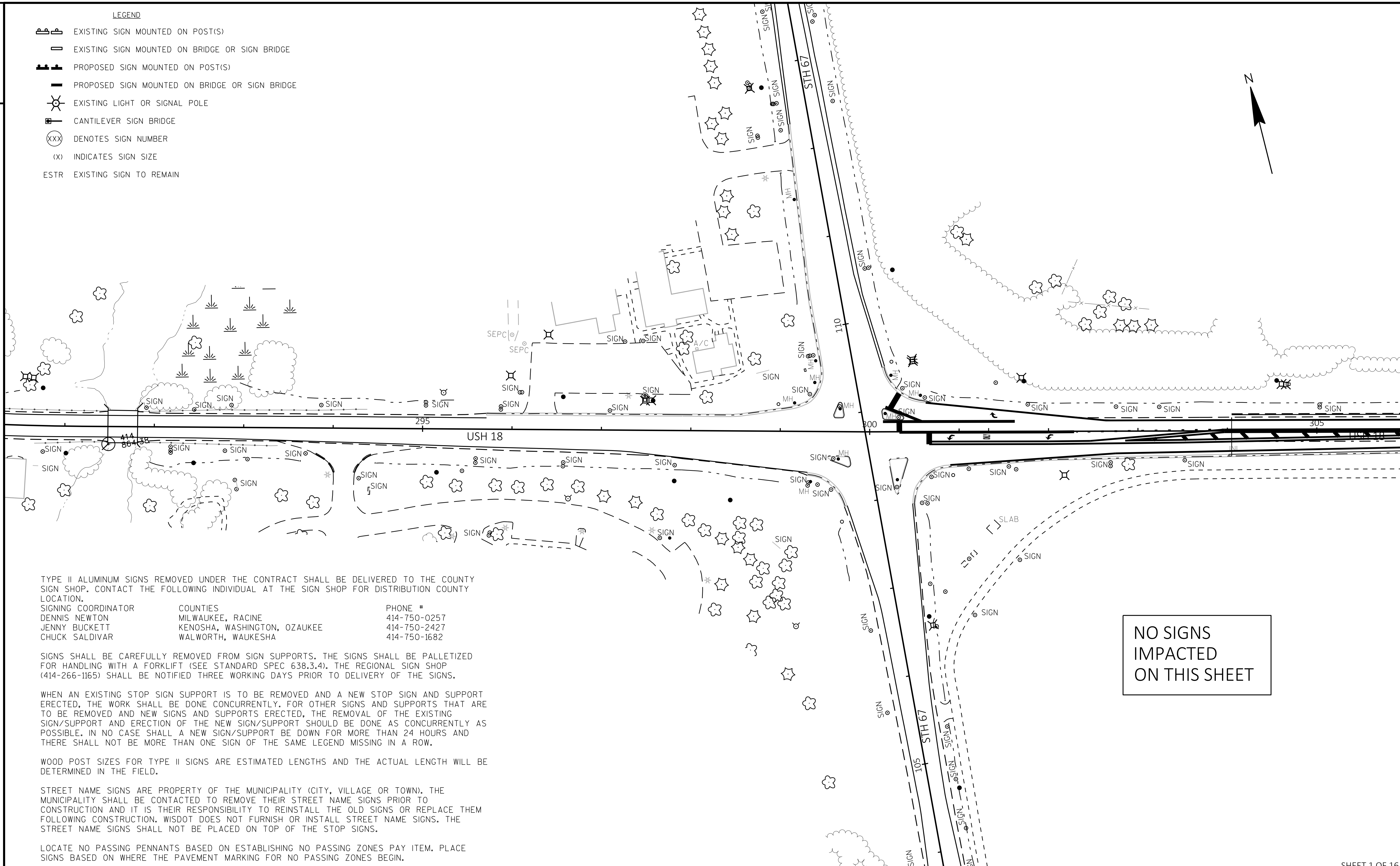
13' SOLAR BEACON ASSEMBLY
CROSSROAD WARNING SIGN APPLICATION

PROJECT NO:3080-04-70	HWY:USH 18	COUNTY:WAUKESHA	SOLAR BEACON ASSEMBLY - CROSSROAD WARNING	SHEET 80	E

2

LEGEND

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



TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.

SIGNING COORDINATOR	COUNTIES	PHONE #
DENNIS NEWTON	MILWAUKEE, RACINE	414-750-0257
JENNY BUCKETT	KENOSHA, WASHINGTON, OZAUKEE	414-750-2427
CHUCK SALDIVAR	WALWORTH, WAUKESHA	414-750-1682

SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

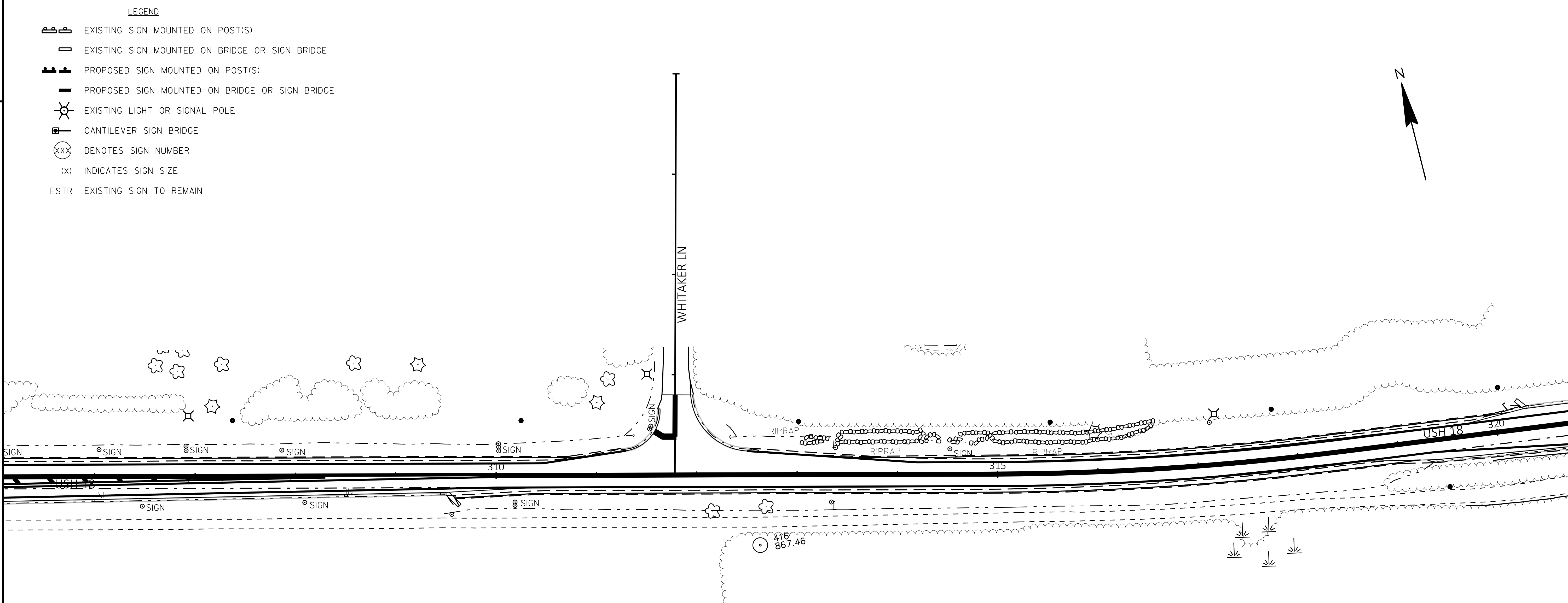
WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POST SIZES FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

STREET NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.

2



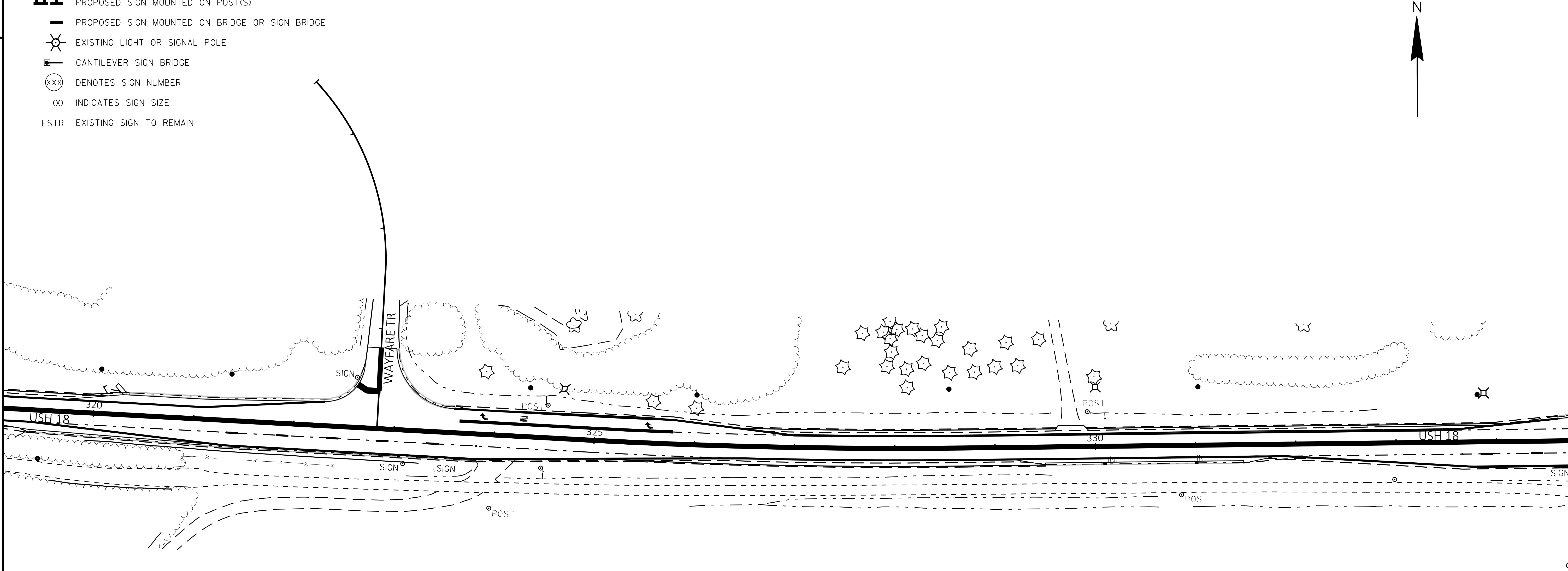
NO SIGNS IMPACTED ON THIS SHEET

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 82	E

2

LEGEND

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



NO SIGNS IMPACTED ON THIS SHEET

SHEET 3 OF 16

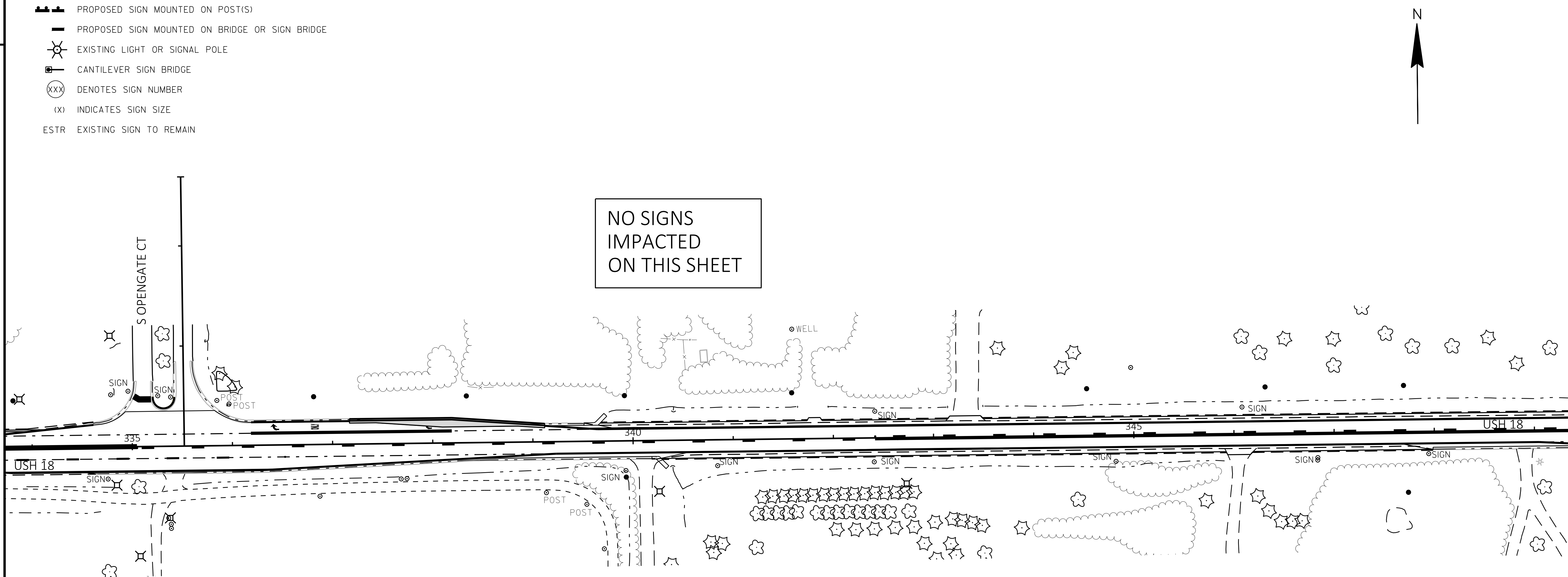
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 83	E

FILE NAME : N:\PDS\C3D\CAD\30800400\SIGN\023201_PS_18.DWG
LAYOUT NAME - 023203_PS
PLOT DATE : 1/27/2022 1:50 PM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

LEGEND

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



SHEET 4 OF 16

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 84	E

2

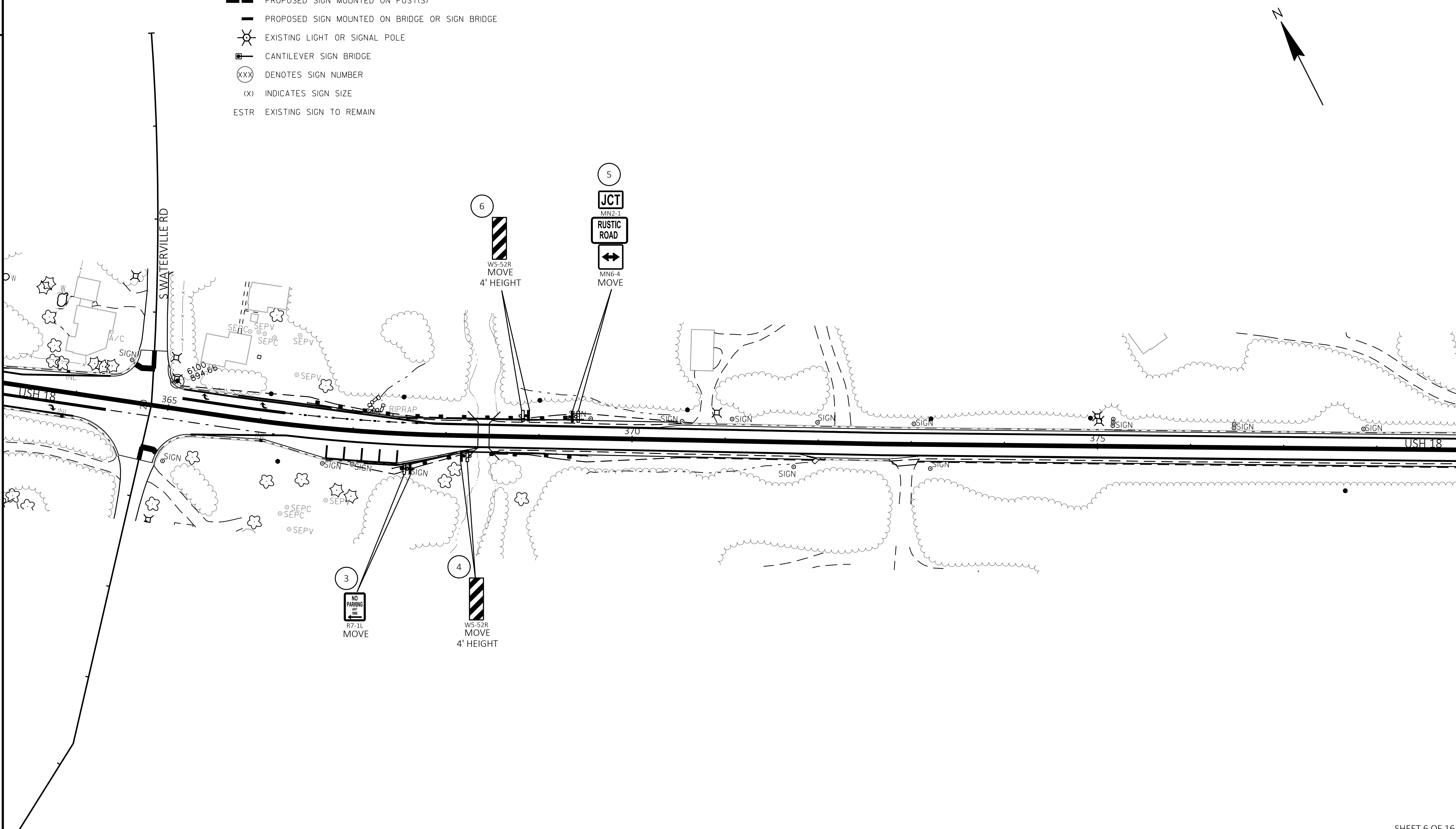
SHEET 5 OF 16

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 85	E

2

LEGEND

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



SHEET 6 OF 16

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 86	E

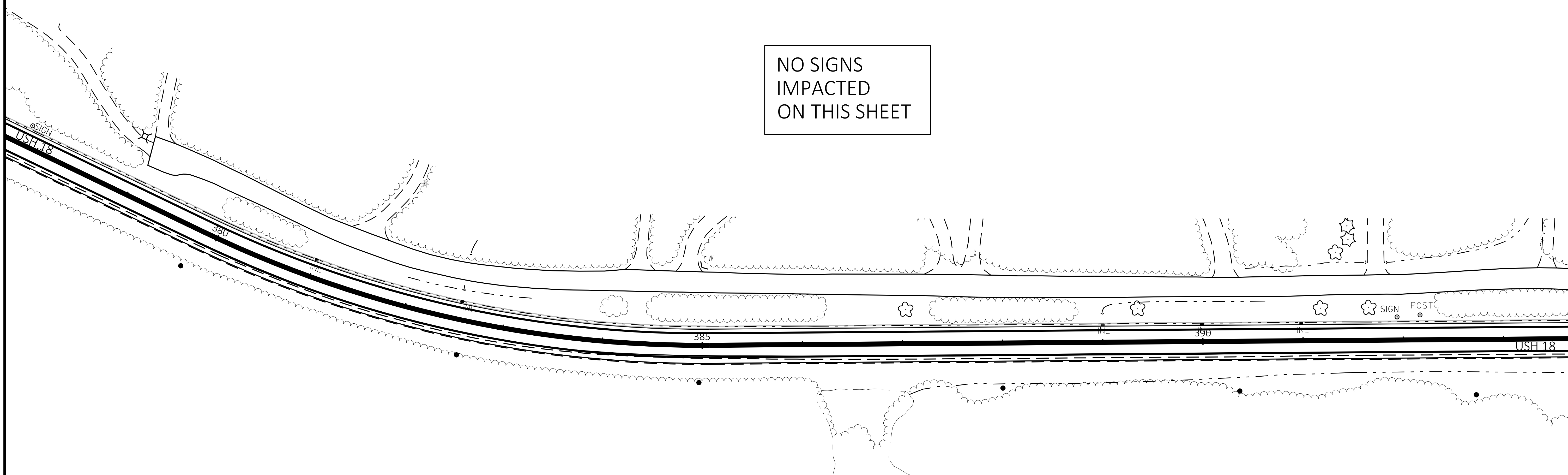
FILE NAME : N:\PDS\C3D\CAD\30800400\SIGN\023201_PS_18.DWG
LAYOUT NAME - 023206_PS
PLOT DATE : 1/27/2022 1:51 PM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

LEGEND

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

N

NO SIGNS IMPACTED ON THIS SHEET



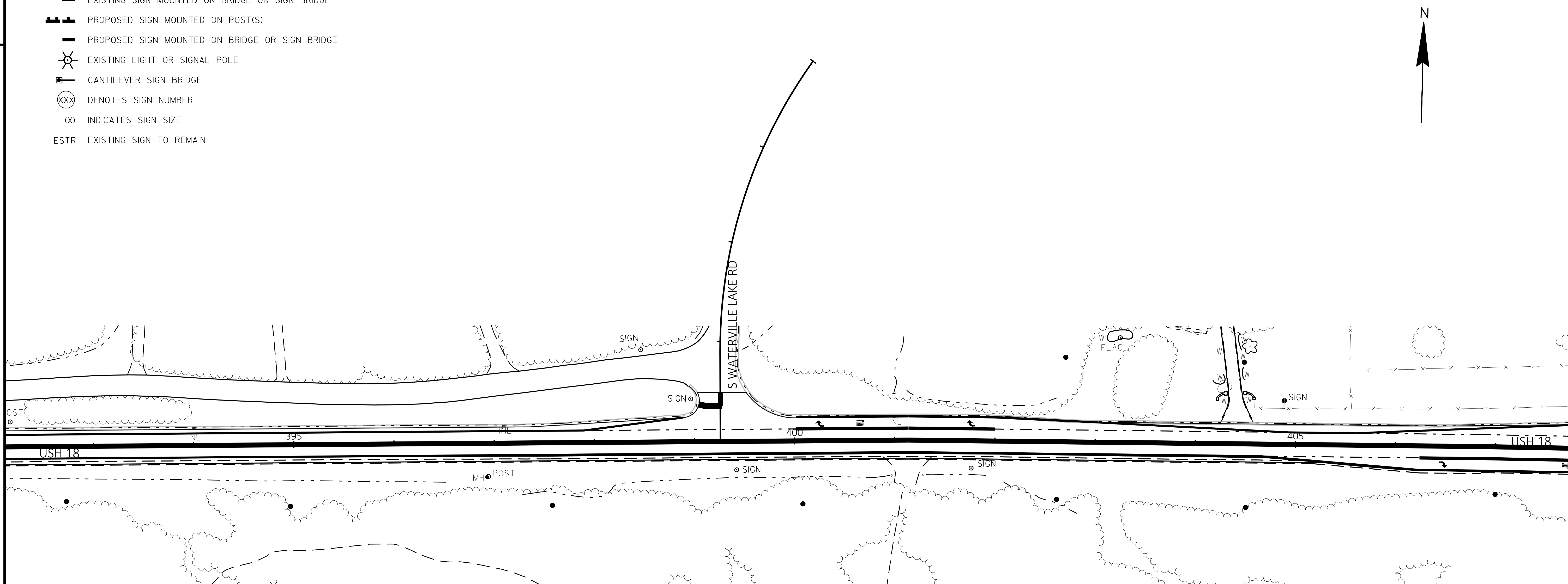
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 87	E

FILE NAME : N:\PDS\C3D\CAD\30800400\SIGN\023201_PS_18.DWG
LAYOUT NAME - 023207_PS
PLOT DATE : 1/27/2022 1:52 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

LEGEND

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



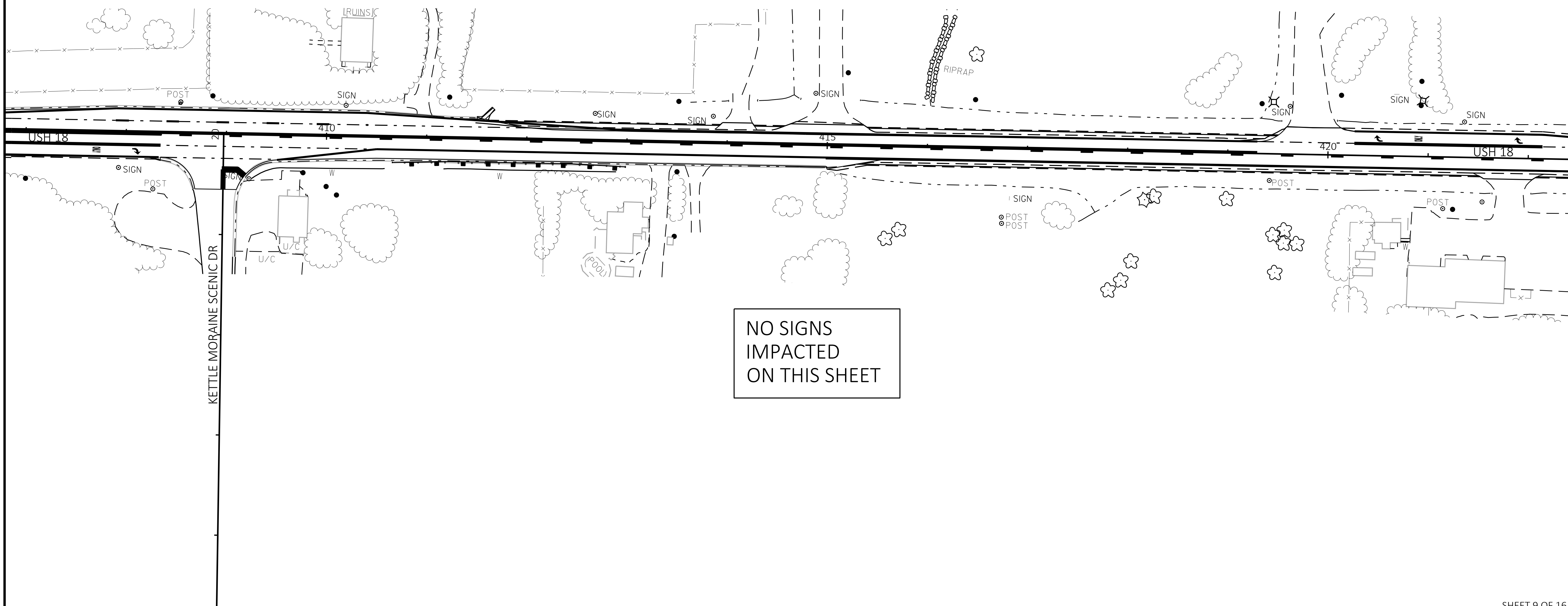
NO SIGNS IMPACTED ON THIS SHEET

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 88 E

2

LEGEND

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



NO SIGNS IMPACTED ON THIS SHEET

SHEET 9 OF 16

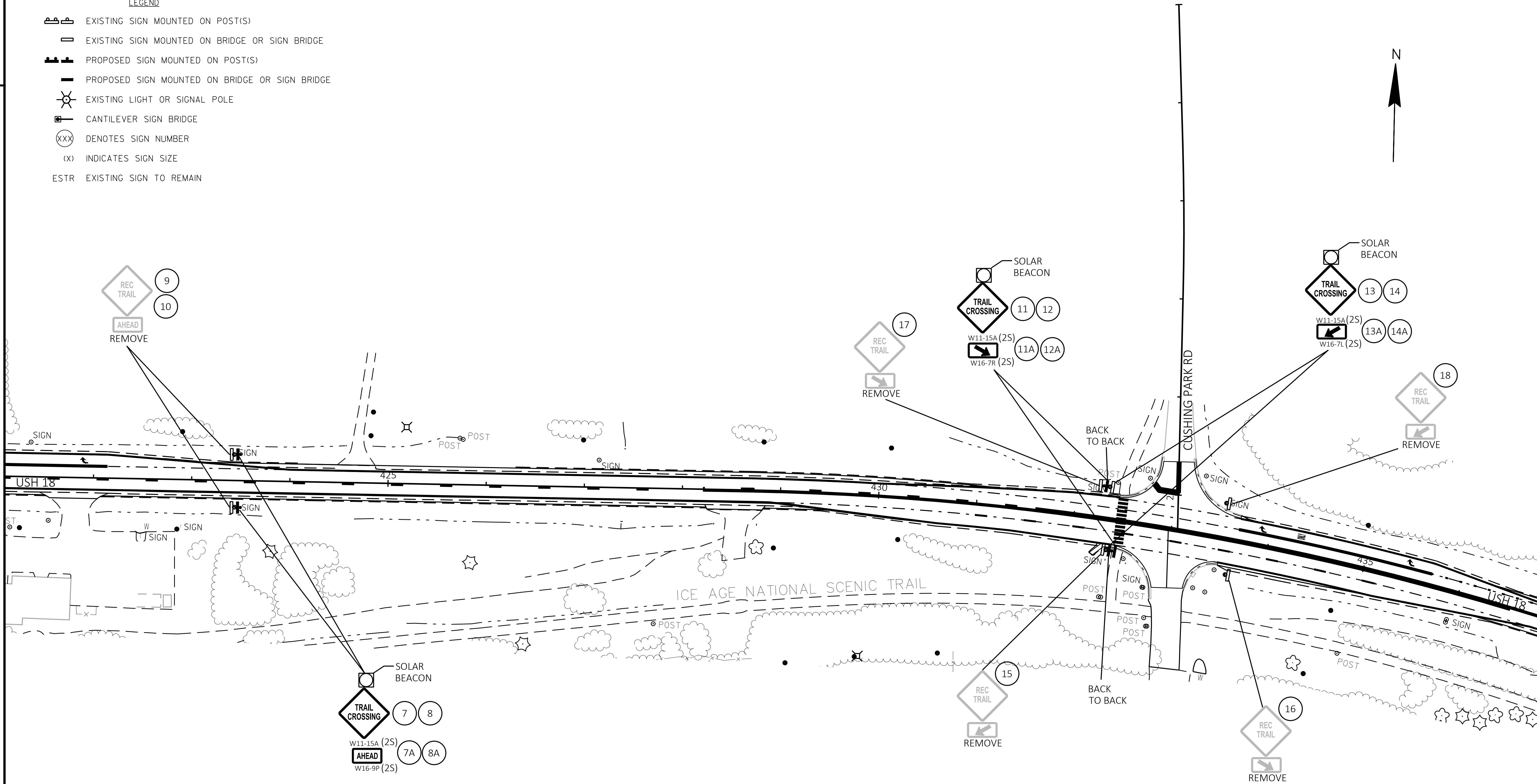
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 89	E

FILE NAME : N:\PDS\C3D\CAD\30800400\SIGN\023201_PS_18.DWG
LAYOUT NAME - 023209_PS
PLOT DATE : 1/27/2022 1:53 PM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

LEGEND

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



SHEET 10 OF 16

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 90	E

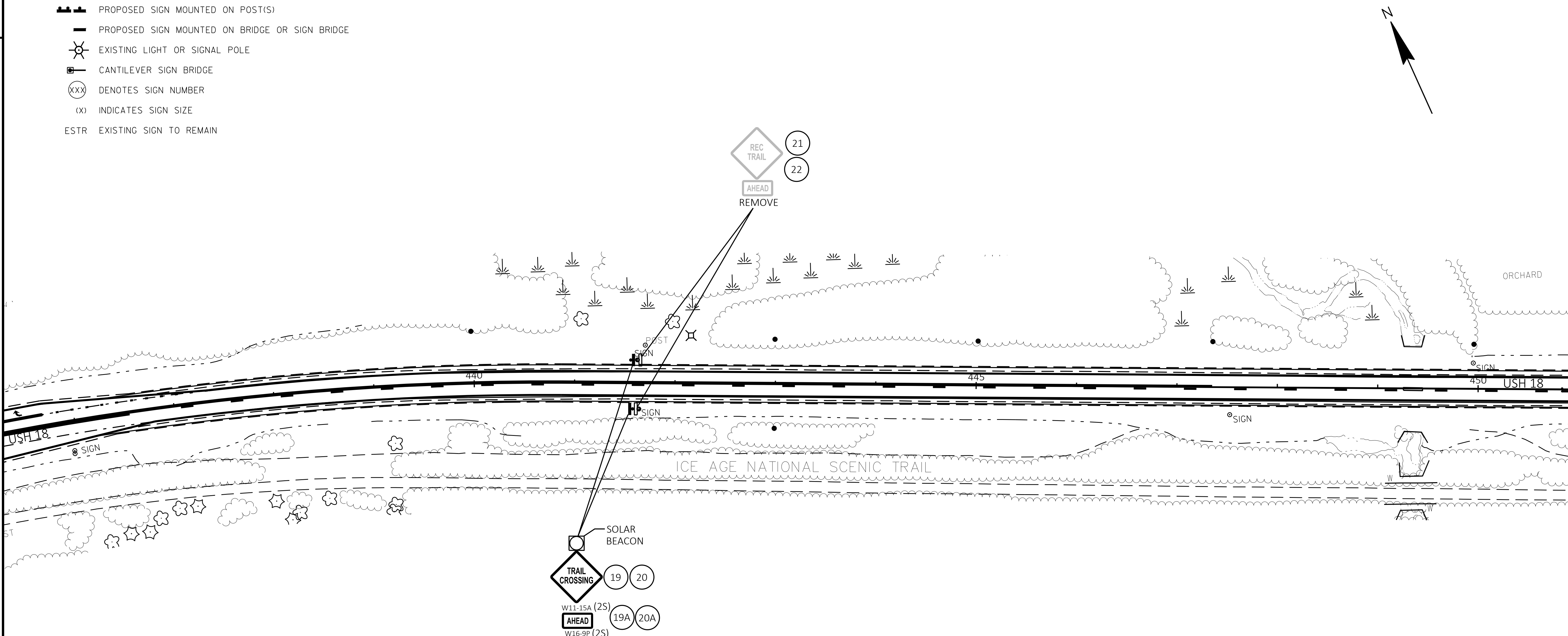
FILE NAME : N:\PDS\C3D\CAD\30800400\SIGN\023201_PS_18.DWG
LAYOUT NAME - 023210_PS
PLOT DATE : 1/27/2022 1:53 PM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

2

LEGEND

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



SHEET 11 OF 16

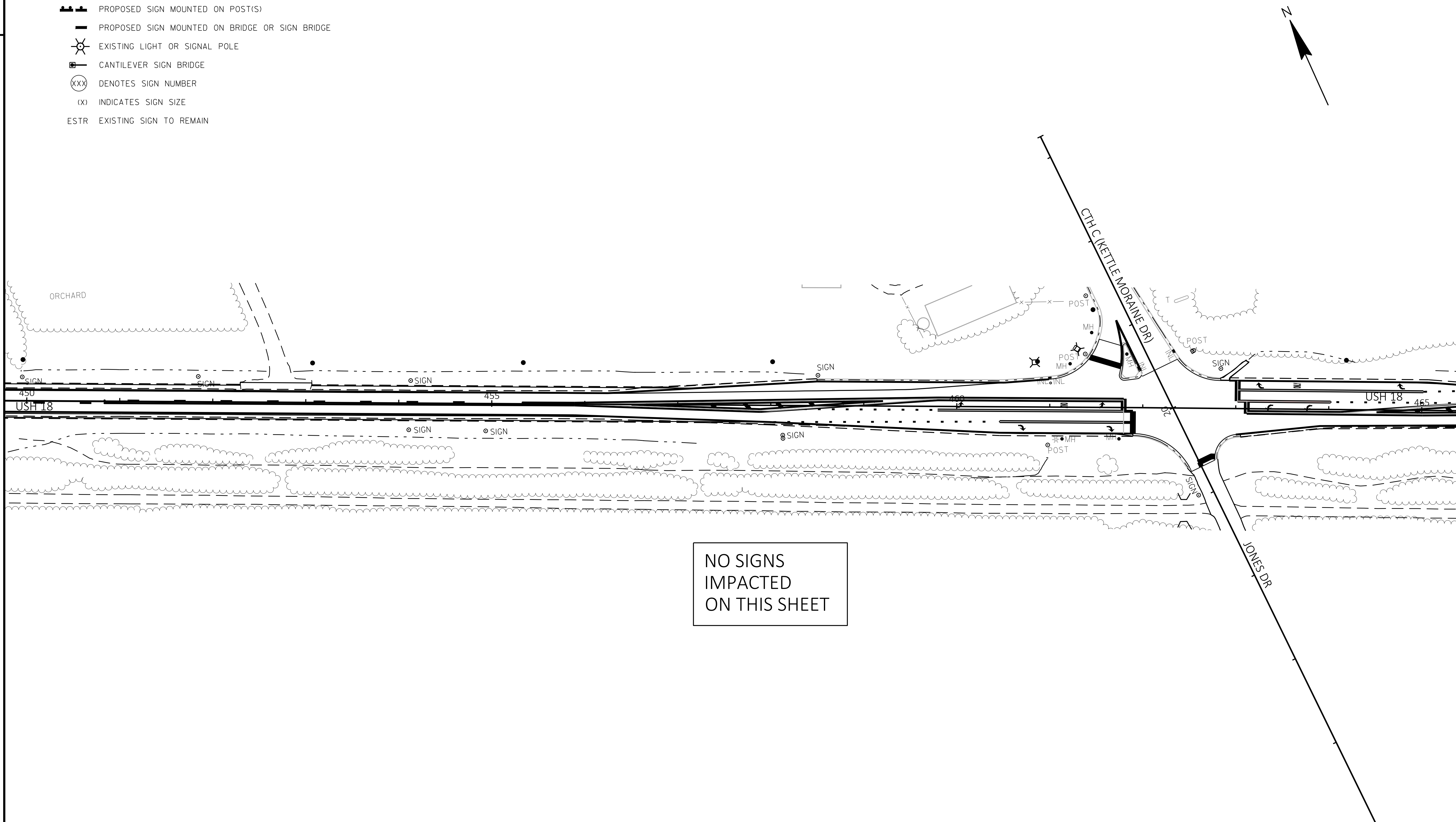
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 91	E

FILE NAME : N:\PDS\C3D\CAD\30800400\SIGN\023201_PS_18.DWG
LAYOUT NAME - 023211_PS
PLOT DATE : 1/27/2022 1:53 PM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

2

LEGEND

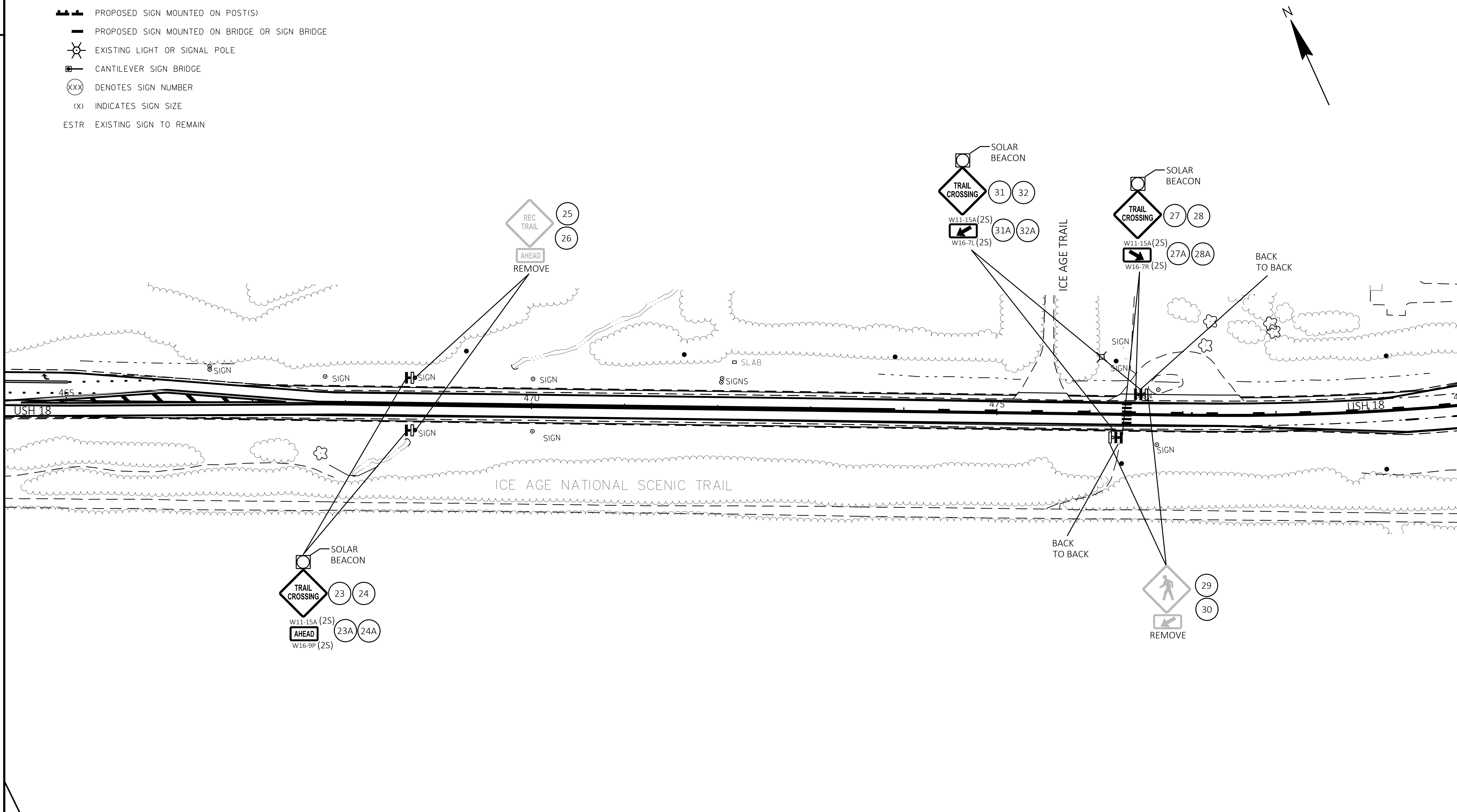
- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- CANTILEVER SIGN BRIDGE
- XXX DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE
- ESTR EXISTING SIGN TO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



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 92	E

LEGEND

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



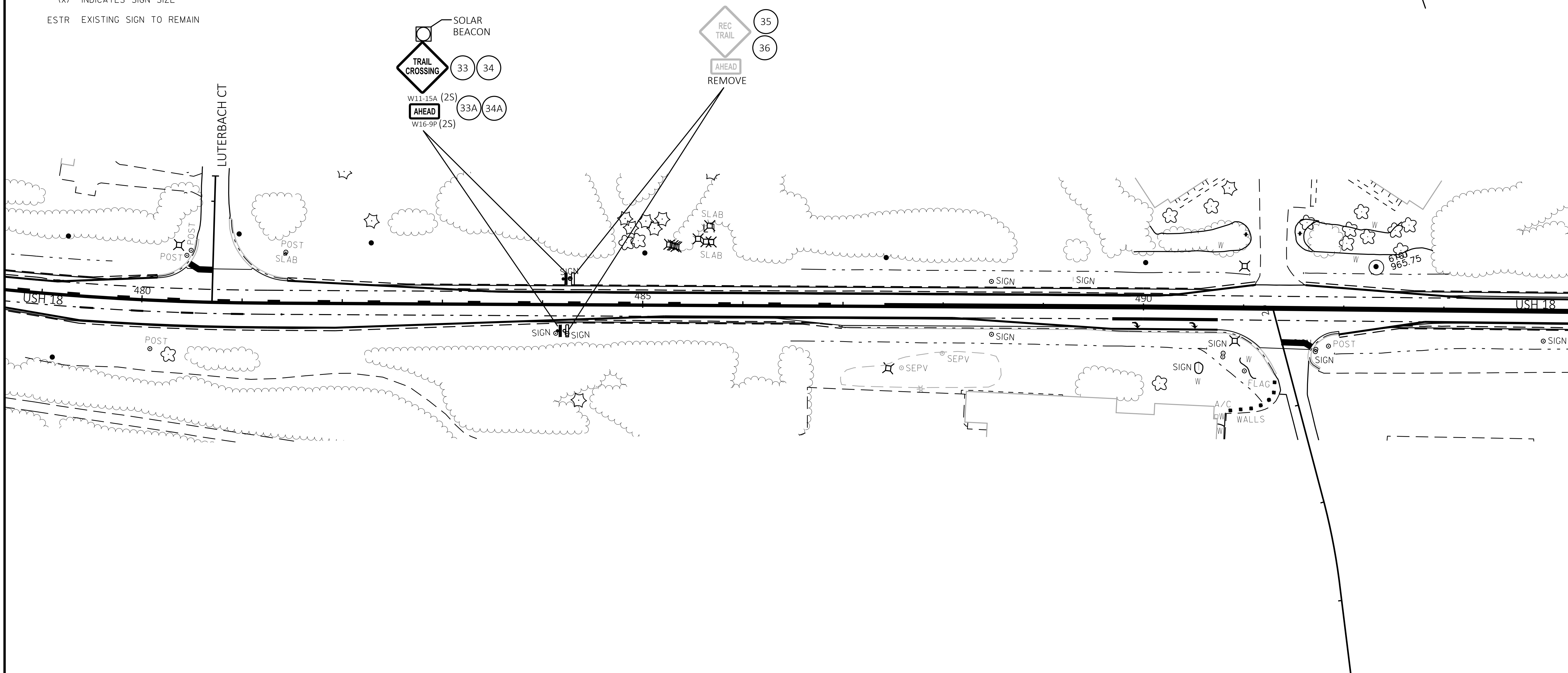
SHEET 13 OF 16

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 93	E

2

LEGEND

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



2

SHEET 14 OF 16

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 94	E

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

PROPOSED SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

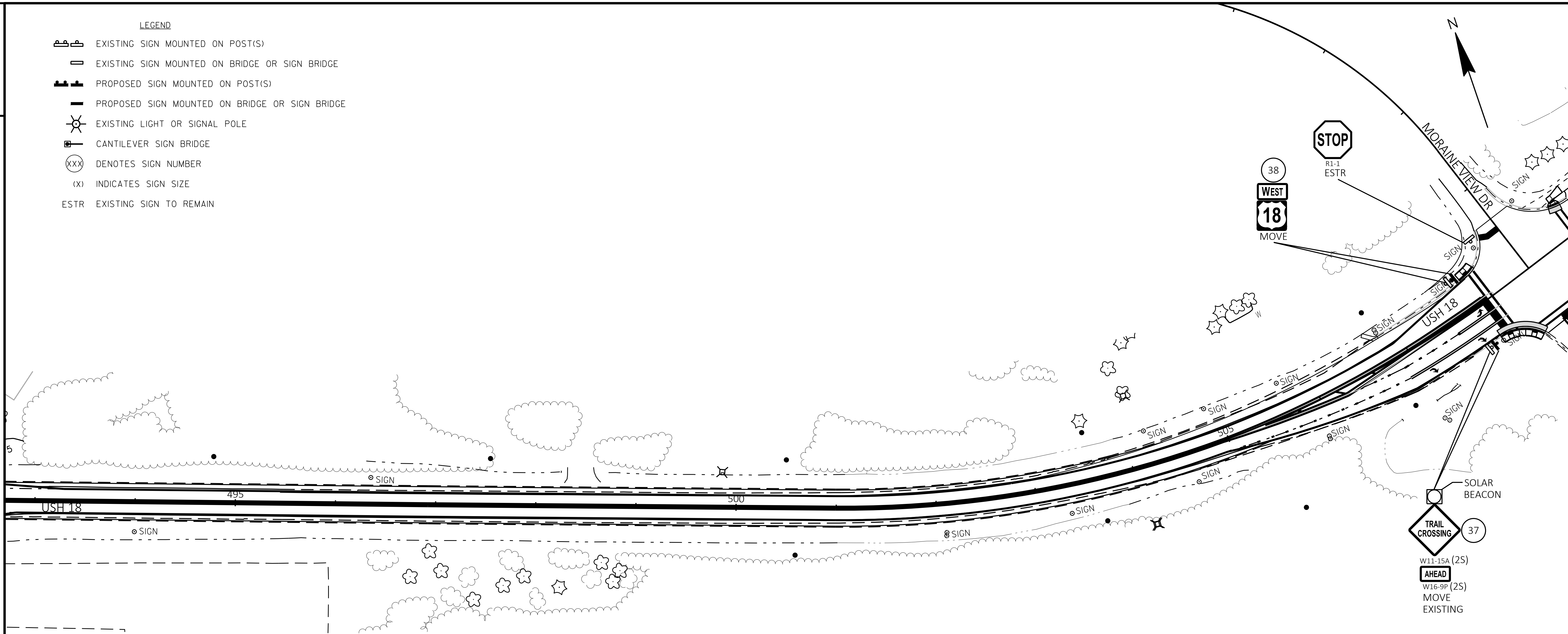
EXISTING LIGHT OR SIGNAL POLE

CANTILEVER SIGN BRIDGE

(XXX) DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

ESTR EXISTING SIGN TO REMAIN



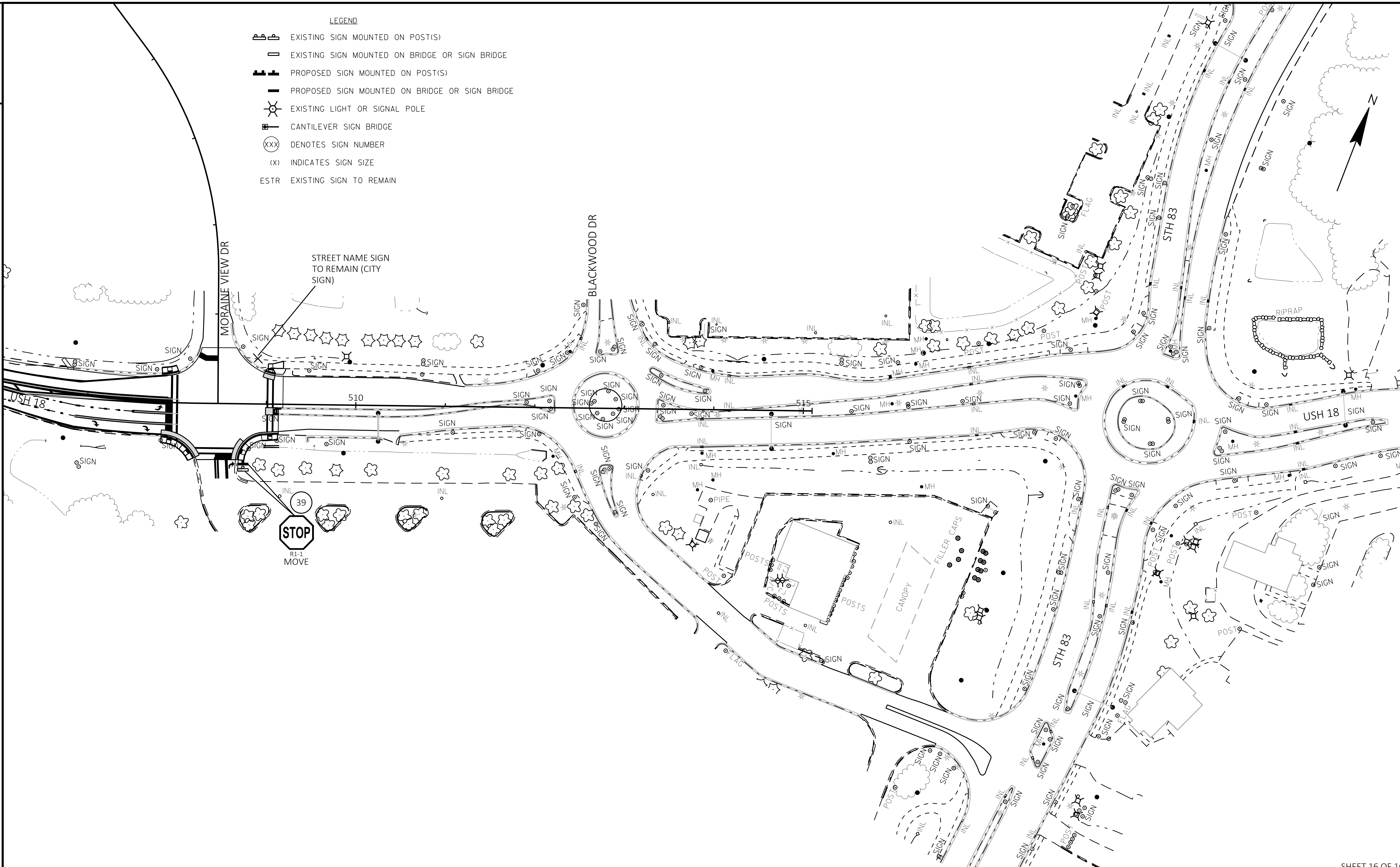
2

SHEET 15 OF 16

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 95	E

LEGEND

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

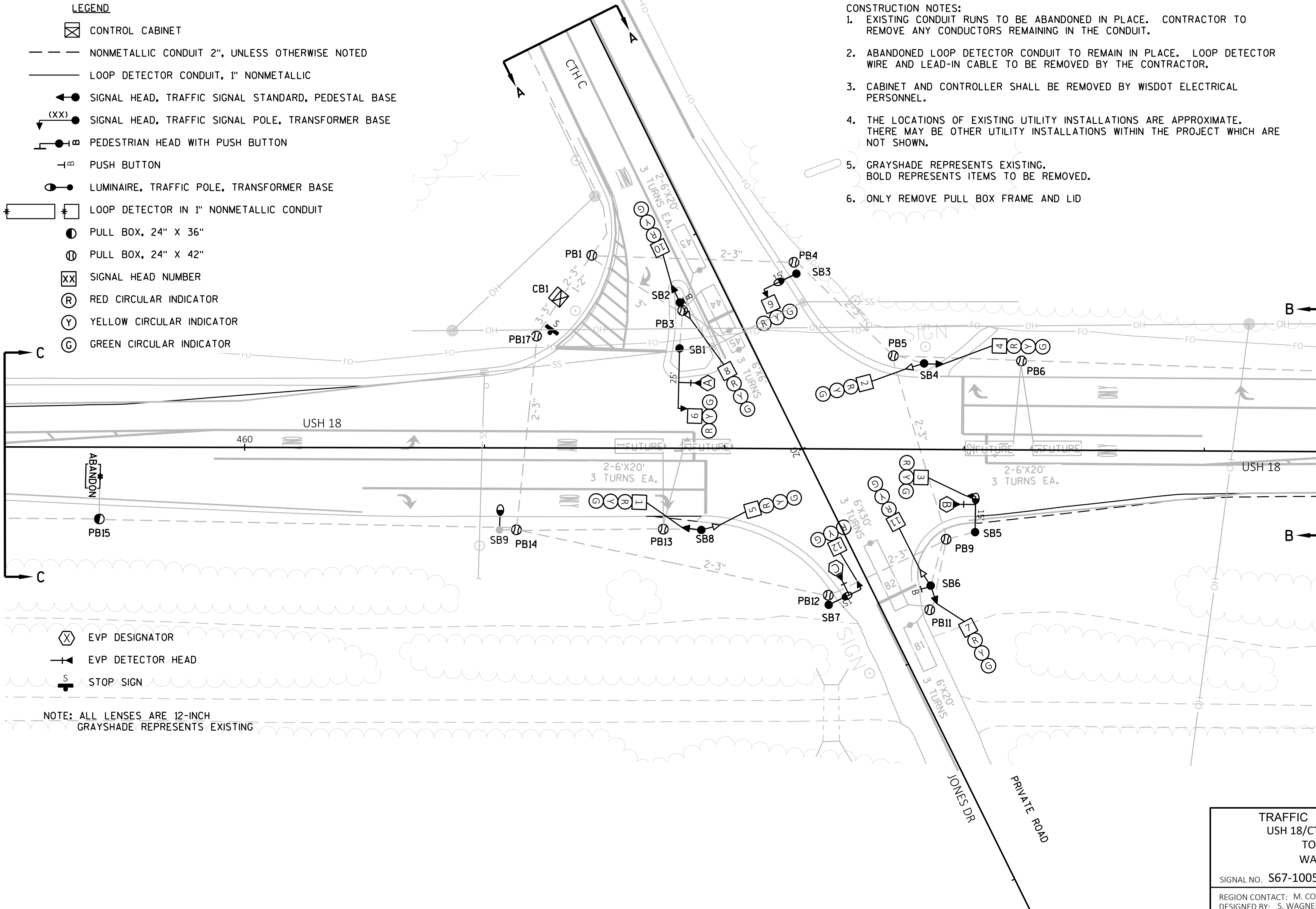


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	PERMANENT SIGNING PLAN	SHEET 96 E

FILE NAME : N:\PDS\C3D\CAD\30800400\SIGN\023201_PS_18.DWG
LAYOUT NAME - 023216_PS
PLOT DATE : 1/27/2022 1:55 PM
PLOT BY : WAGNER, SCOTT H
PLOT NAME :
PLOT SCALE : 1 IN:100 FT
WISDOT/CADDS SHEET 42

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- Y YELLOW CIRCULAR INDICATOR
- G GREEN CIRCULAR INDICATOR



- X EVP DESIGNATOR
- EVP DETECTOR HEAD
- S STOP SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
2. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
3. CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.
4. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
5. GRAYSHADE REPRESENTS EXISTING. BOLD REPRESENTS ITEMS TO BE REMOVED.
6. ONLY REMOVE PULL BOX FRAME AND LID

N

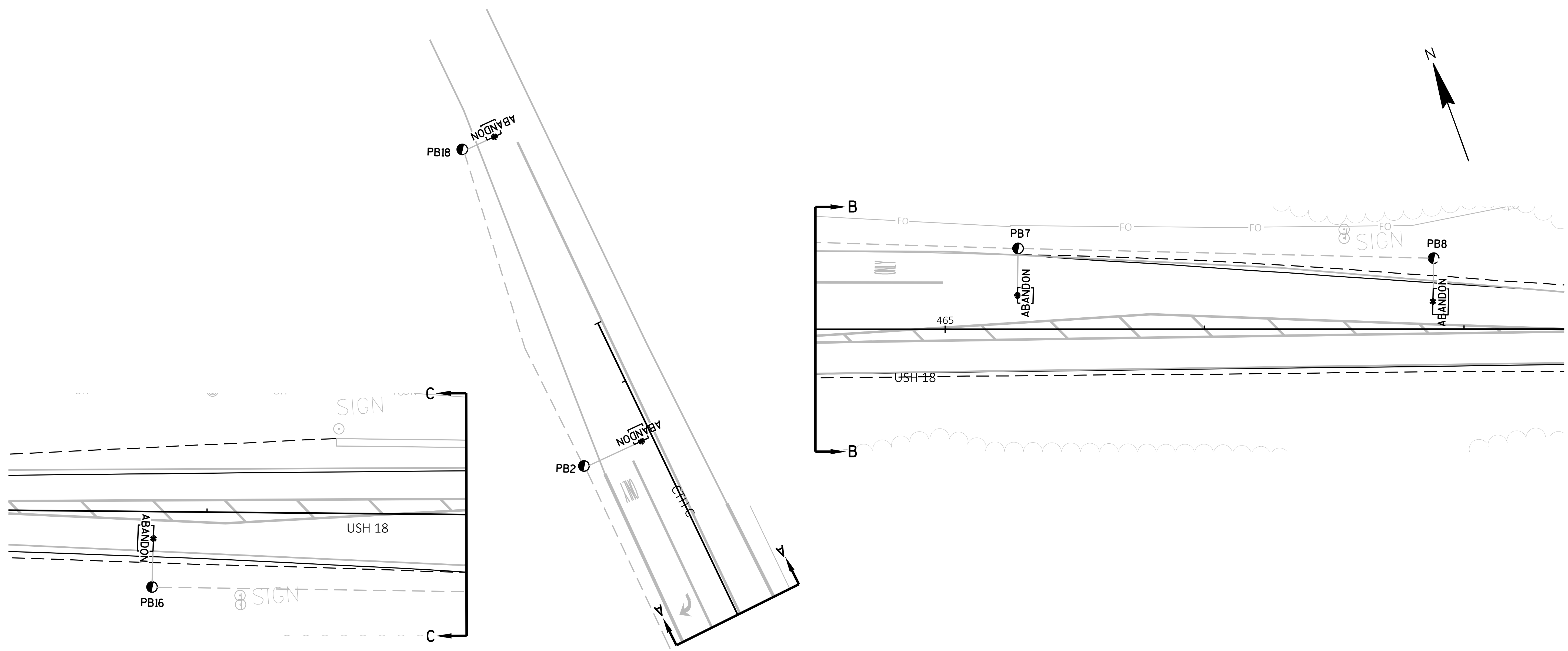
TRAFFIC CONTROL SIGNAL
USH 18/CTH C & CTH C/JONES DR
TOWN OF GENESEE
WAUKESHA COUNTY

SIGNAL NO. S67-1005

REGION CONTACT: M. COWAP
DESIGNED BY: S. WAGNER
REVISED BY:

PAGE 1 OF 2

2



2

TRAFFIC CONTROL SIGNAL
USH 18/CTH C & CTH C/JONES DR
TOWN OF GENESEE
WAUKESHA COUNTY

SIGNAL NO. S67-1005

REGION CONTACT: M. COWAP
DESIGNED BY: S. WAGNER
REVISED BY:

PAGE 2 OF 2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 98	E

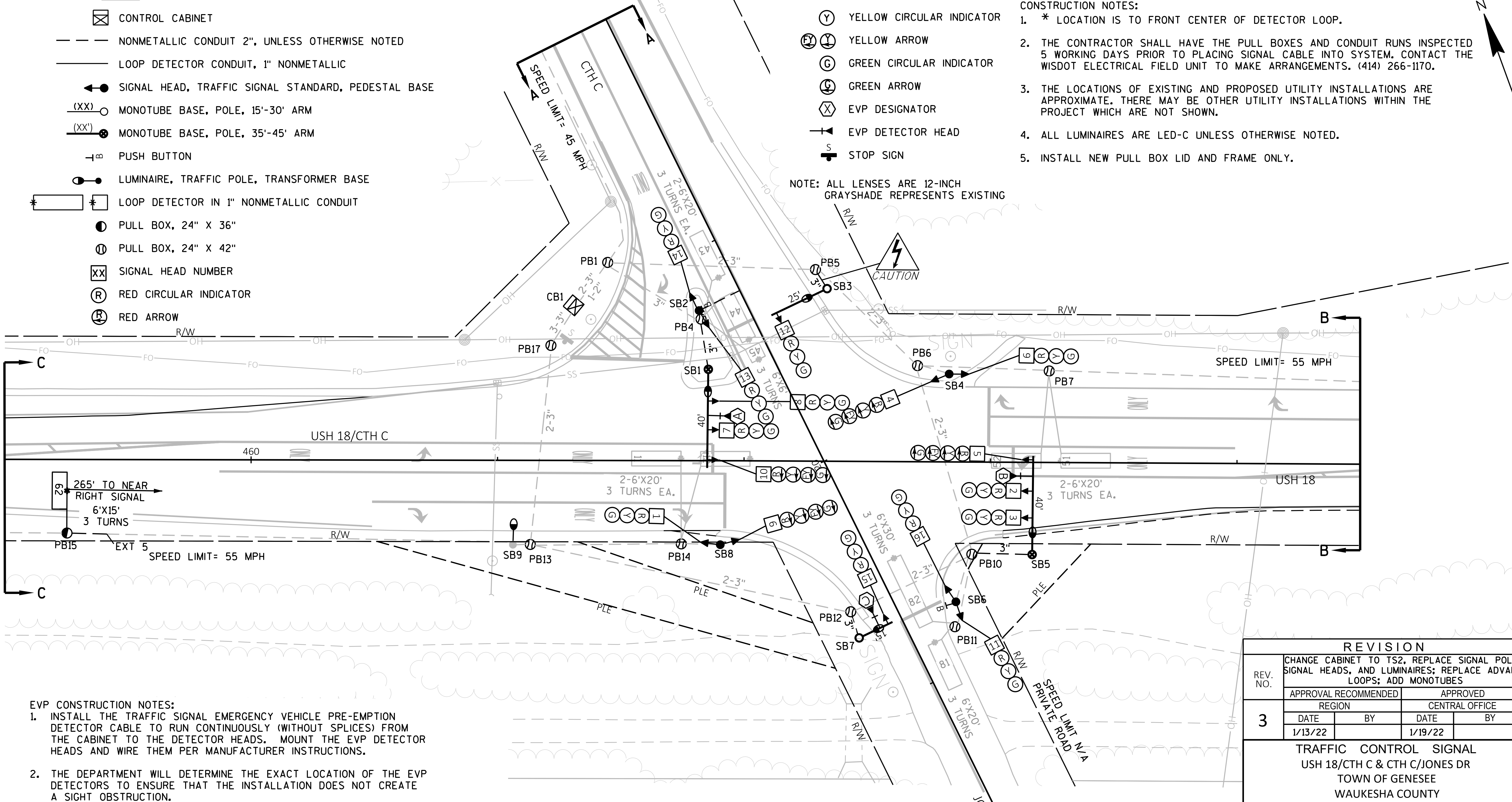
LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX') MONOTUBE BASE, POLE, 35'-45' ARM
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- XX SIGNAL HEAD NUMBER
- R RED CIRCULAR INDICATOR
- R RED ARROW
- Y YELLOW CIRCULAR INDICATOR
- FY Y YELLOW ARROW
- G GREEN CIRCULAR INDICATOR
- G GREEN ARROW
- X EVP DESIGNATOR
- EVP DETECTOR HEAD
- S STOP SIGN

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.
5. INSTALL NEW PULL BOX LID AND FRAME ONLY.



EVP CONSTRUCTION NOTES:

1. INSTALL THE TRAFFIC SIGNAL EMERGENCY VEHICLE PRE-EMPTION DETECTOR CABLE TO RUN CONTINUOUSLY (WITHOUT SPLICES) FROM THE CABINET TO THE DETECTOR HEADS. MOUNT THE EVP DETECTOR HEADS AND WIRE THEM PER MANUFACTURER INSTRUCTIONS.
2. THE DEPARTMENT WILL DETERMINE THE EXACT LOCATION OF THE EVP DETECTORS TO ENSURE THAT THE INSTALLATION DOES NOT CREATE A SIGHT OBSTRUCTION.
3. ALL EVP DETECTOR CABLE SHALL BE ROUTED THROUGH EXISTING SIGNAL BASES, PULL BOXES, AND CONDUIT AS INDICATED. PROVIDE ENOUGH CABLE TO ALLOW 10 FEET OF SLACK IN THE CABINET, IN EACH PULL BOX, AND IN THE SIGNAL POLE HANDHOLE.
4. FOR A CABINET THAT IS NOT OPERATING THE SIGNAL, CABINET WIRING WILL BE DONE BY THE CONTRACTOR. IF THE CABINET IS OPERATING THE SIGNAL, THE CABINET WIRING WILL BE DONE BY THE DEPARTMENT. THE CONTRACTOR SHALL INSTALL AND TERMINATE THE EVP CABLE AS DESCRIBED AND SHALL LABEL EACH CABLE AS NOTED ON THE PLAN SHEETS (I.E. EVP A-B-C-D).

MONOTUBE STRUCTURE NUMBERS
SB1 = S67-1487-01
SB3 = S67-1487-02
SB5 = S67-1487-03
SB7 = S67-1487-04

CHANGE CONTROLLER TO ECONOLITE; ADD CELL MODEM; UPDATE EVP OPERATION.
12/11/19

FIELD REVIEW; MOVE SB9; PB6, PB9, PB13, PB11 ARE 42"; SB1 HAS 25' ARM; EB LEFT TURN STOP LINE MOVED BACK
2/15/12

INITIAL INSTALLATION
2007

REVISION				
REV. NO.	CHANGE CABINET TO TS2, REPLACE SIGNAL POLES, SIGNAL HEADS, AND LUMINAIRES; REPLACE ADVANCE LOOPS; ADD MONOTUBES			
	APPROVAL RECOMMENDED		APPROVED	
	REGION		CENTRAL OFFICE	
	DATE	BY	DATE	BY
3	1/13/22		1/19/22	

TRAFFIC CONTROL SIGNAL
USH 18/CTH C & CTH C/JONES DR
TOWN OF GENESEE
WAUKESHA COUNTY

SIGNAL NO. S67-1005
CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 6/27/07 — MITZI M. DOBERSEK, REGION TRAFFIC ENGINEER

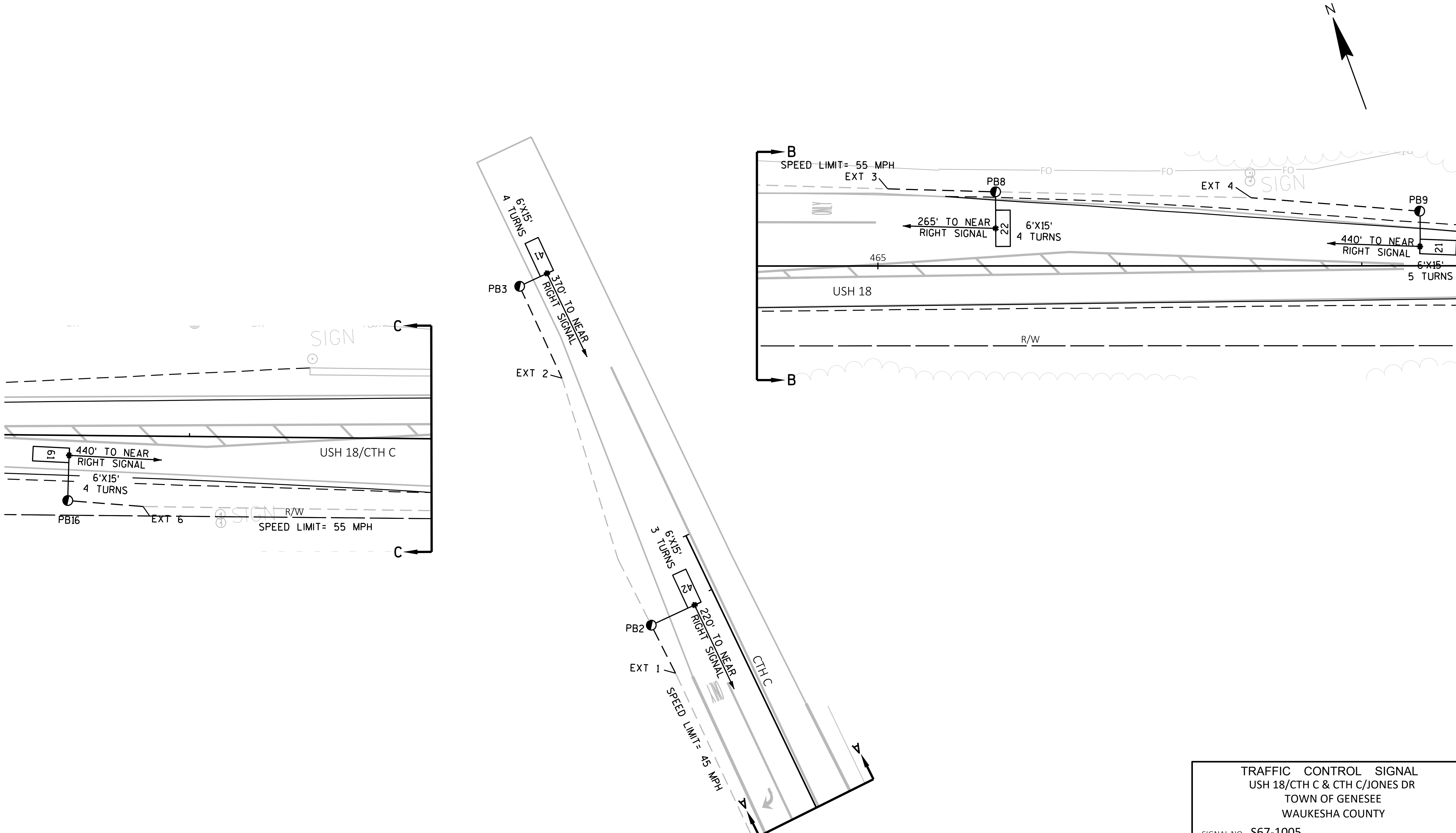
APPROVED
DATE 7/02/07 — BALU AMAMTHANARAYANAN, STATE TRAFFIC ENGINEER

REGION CONTACT: M. COWAP
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 1 OF 3

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 99	E

2



2

TRAFFIC CONTROL SIGNAL
USH 18/CTH C & CTH C/JONES DR
TOWN OF GENESEE
WAUKESHA COUNTY

SIGNAL NO. S67-1005

REGION CONTACT: M. COWAP
DESIGNED BY:
REVISED BY: S. WAGNER

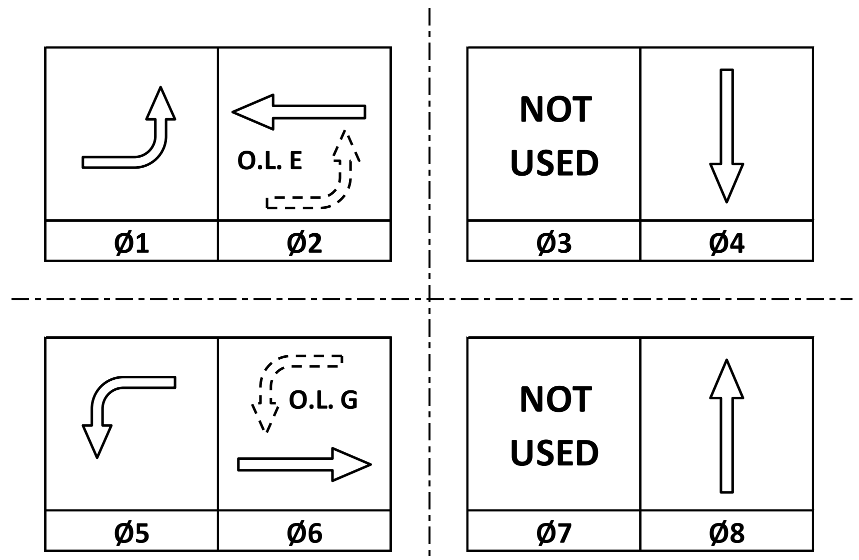
PAGE 2 OF 3

2

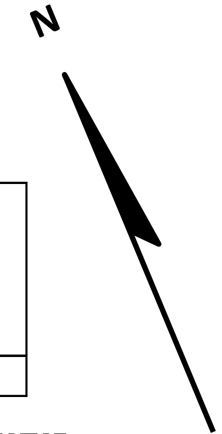
	HEAD NUMBERS	FLASH
Ø1	4,5	R←
Ø2	6,7,8	R
Ø3		
Ø4	14,15,16	R
Ø5	9,10	R←
Ø6	1,2,3	R
Ø7		
Ø8	11,12,13	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE	4,5	-
OLF		
OLG	9,10	-
OLH		

RING 1

RING 2



BARRIER



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3				
4		8		X
5		2		X
6	X	2	MIN	X
7				
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	X

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS-

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	X
HARDWIRE	
OTHER	
CONFIRMATION LIGHTS	
LIFT BRIDGE	
QUEUE DETECTION	

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C
MOVEMENT			
PHASE	2+5	6+1	4+8

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4+8 OR 8+4, CONTROLLER SHALL RETURN TO PHASES 4+8.

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21	41	43	45	51	61	81
CALLED PHASE	1	2	4	4	4	5	6	8
CALL OPTION	X	X		X	X	X	X	X
DELAY TIME	X				X	X		X
EXTENTION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME			X					
USE ADDED INITIAL		X					X	
CROSS SWITCH PHASE	2					6		

19	17	23	21	27	25	31	29	DETECTOR INPUT
								PLAN LOOP DETECTOR*(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	22	42	44		52	62	82
CALLED PHASE	1	2	4	4		5	6	8
CALL OPTION	X	X		X		X	X	X
DELAY TIME	X			X		X		X
EXTENTION OPTION	X	X	X	X		X	X	X
EXTEND TIME			X					
USE ADDED INITIAL		X					X	
CROSS SWITCH PHASE	2					6		

20	18	24	22	28	26	32	30	DETECTOR INPUT
								PLAN LOOP DETECTOR*(S)
								CALLED PHASE
								CALL OPTION
								DELAY TIME
								EXTENTION OPTION
								EXTEND TIME
								USE ADDED INITIAL
								CROSS SWITCH PHASE

GENERAL NOTES:

1. PHASE 5 ONLY TIMES DURING EVP EVENTS. AT ALL OTHER TIMES IT IS OMITTED.

2 PUSH BUTTONS ARE INSTALLED TO ACCOMMODATE BICYCLES ON SB2 AND SB6. THE BUTTON ON SB2 CALLS PHASE 4. THE BUTTON ON SB6 CALLS PHASE 8.

USH 18/CTH C & CTH C/JONES RD
TOWN OF GENESEE
WAUKESHA COUNTY
SIGNAL NO: S67-1005 CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE
DATE: JANUARY 2022 PAGE NUMBER: 3 OF 3

2

PROJECT ID:	3080-04-70
INTERSECTION:	USH 18/CTH C & CTH C/JONES DR

	BLK - black	RED - red	GRN - green
Signal Wire Color Coding	WHT - white	BLU - blue	ORG - orange

CB1 TO	AWG14 # OF CONDUCTORS	HEAD NO.	SIGNAL INDICATION WIRE COLOR									PED BUTTON	FUTURE APS
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING YELLOW>	D/WALK	WALK		
SB1	15	7	RED	ORG	GRN								
		8	RED	ORG	GRN								
		10				RED/BLK	ORG/BLK	GRN/BLK	WHT/BLK				
SB2	12	13	RED	ORG	GRN								
		14	RED/BLK	ORG/BLK	GRN/BLK								
		B										BLK/WHT	
SB3	12	12	RED	ORG	GRN								
SB4	12	4				RED	ORG	GRN	WHT/BLK				
		6	RED/BLK	ORG/BLK	GRN/BLK								
SB5	12	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
		5				RED/BLK	ORG/BLK	GRN/BLK	WHT/BLK				
SB6	12	11	RED	ORG	GRN								
		16	RED/BLK	ORG/BLK	GRN/BLK								
		B										BLK/WHT	
SB7	12	15	RED	ORG	GRN								
SB8	12	1	RED	ORG	GRN								
		9				RED/BLK	ORG/BLK	GRN/BLK	WHT/BLK				

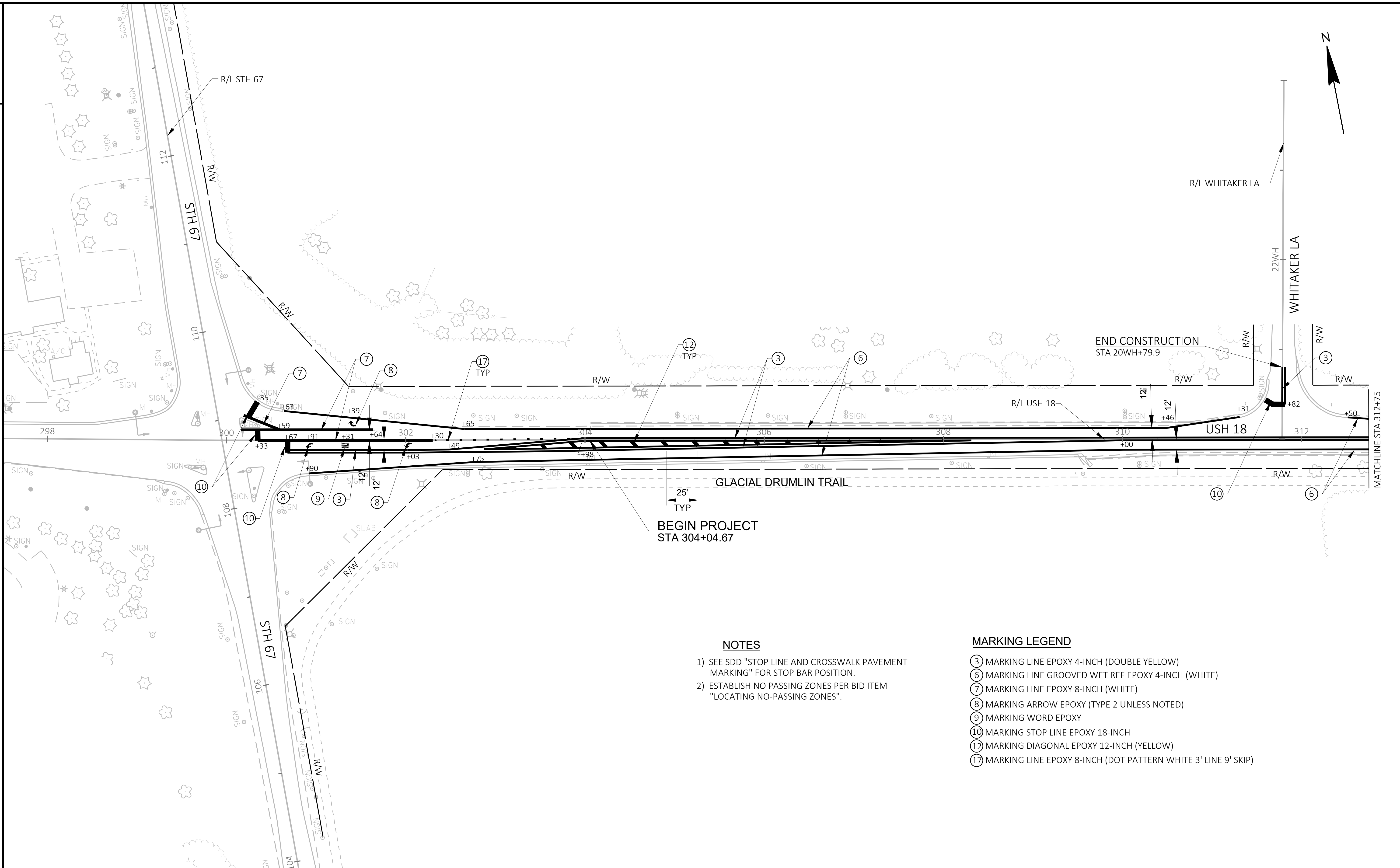
Equipment Grounding Conductor 10 AWG Green XLP	
From	To
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	CB1

Pull Box Bonding Jumper 10 AWG Green XLP	
From	To
PB1	CB1
PB5	SB3
PB6	SB4
PB10	SB9
PB12	SB7
PB14	SB8
PB13	SB8
PB17	CB1

Lighting UF 2-10 AWG Grounded	
From	To
CB1	SB3
SB3	SB5
SB5	SB7
CB1	SB9

Emergency Vehicle Preemption	
From	To
CB1	HEAD A (SB1)
CB1	HEAD B (SB5)
CB1	HEAD C (SB7

*Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications
*Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.
*At the signal bases, connect one terminal from the pedestrian push buttons to the color indicated in the chart. Connect the other terminal to the grounded conductor.
*Reconnect the grounding conductors wherever the circuit has been interrupted to ensure the grounding circuit is complete.



NOTES

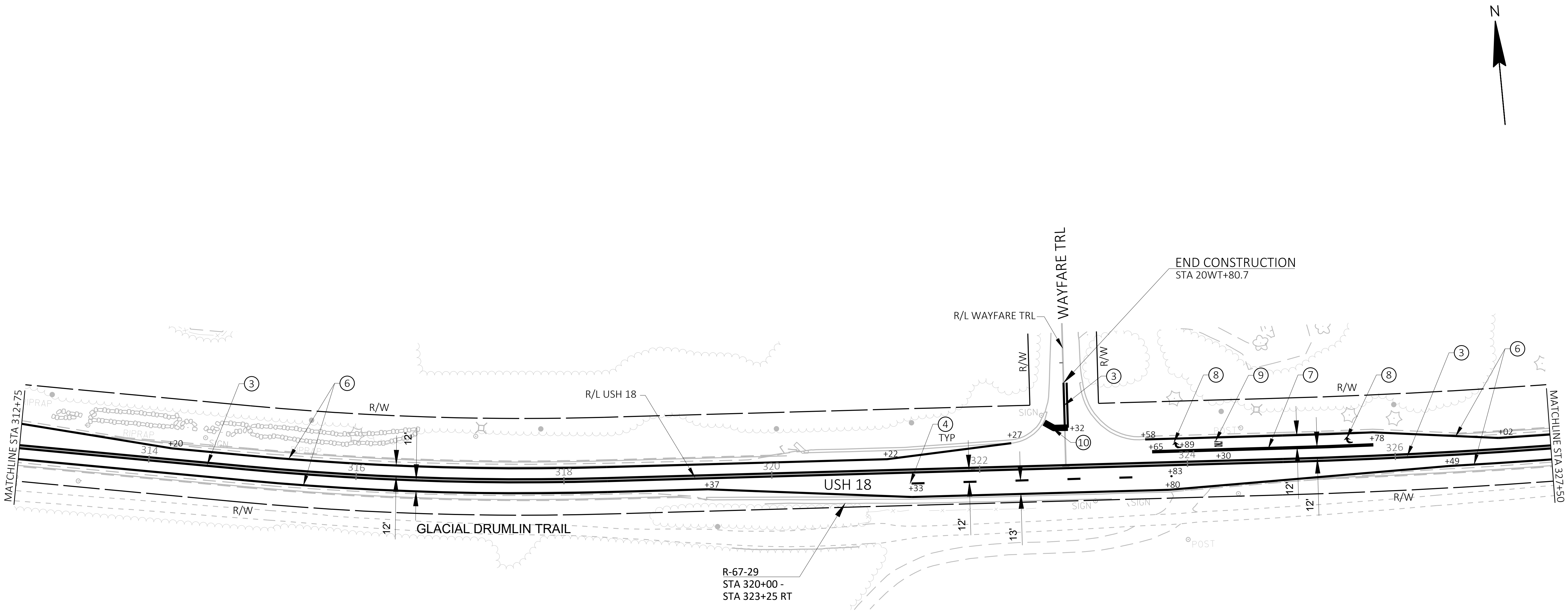
1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

(3) MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
(6) MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
(7) MARKING LINE EPOXY 8-INCH (WHITE)
(8) MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
(9) MARKING WORD EPOXY
(10) MARKING STOP LINE EPOXY 18-INCH
(12) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
(17) MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE 3' LINE 9' SKIP)

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	MARKING PLANS	SHEET 103	E

2



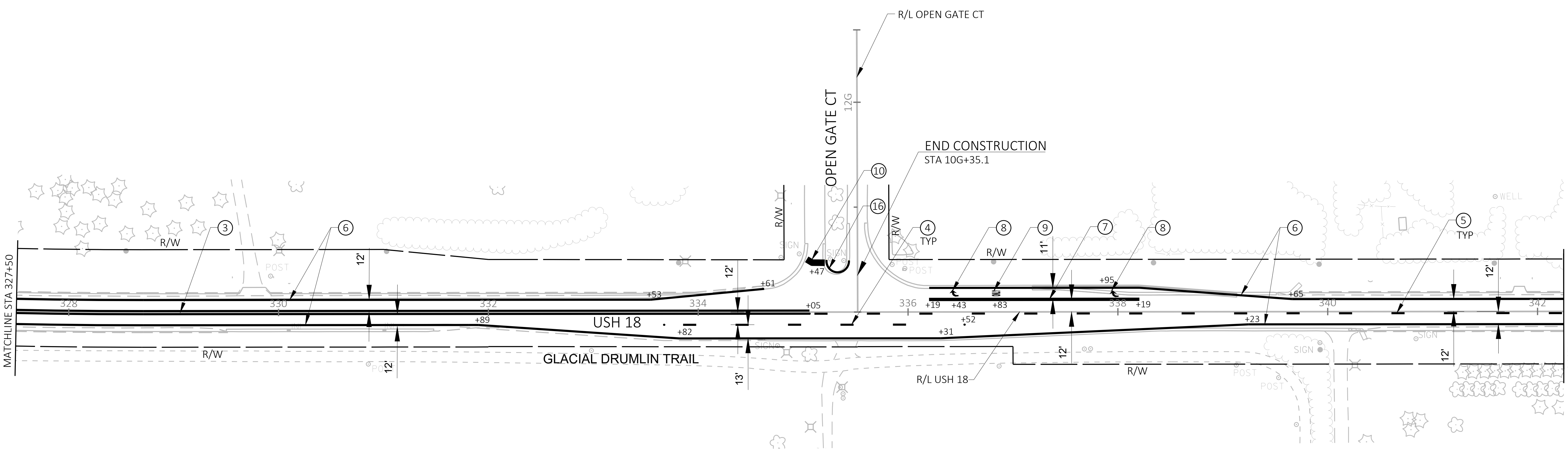
NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

- 3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 4 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
- 6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- 7 MARKING LINE EPOXY 8-INCH (WHITE)
- 8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
- 9 MARKING WORD EPOXY
- 10 MARKING STOP LINE EPOXY 18-INCH

2



NOTES

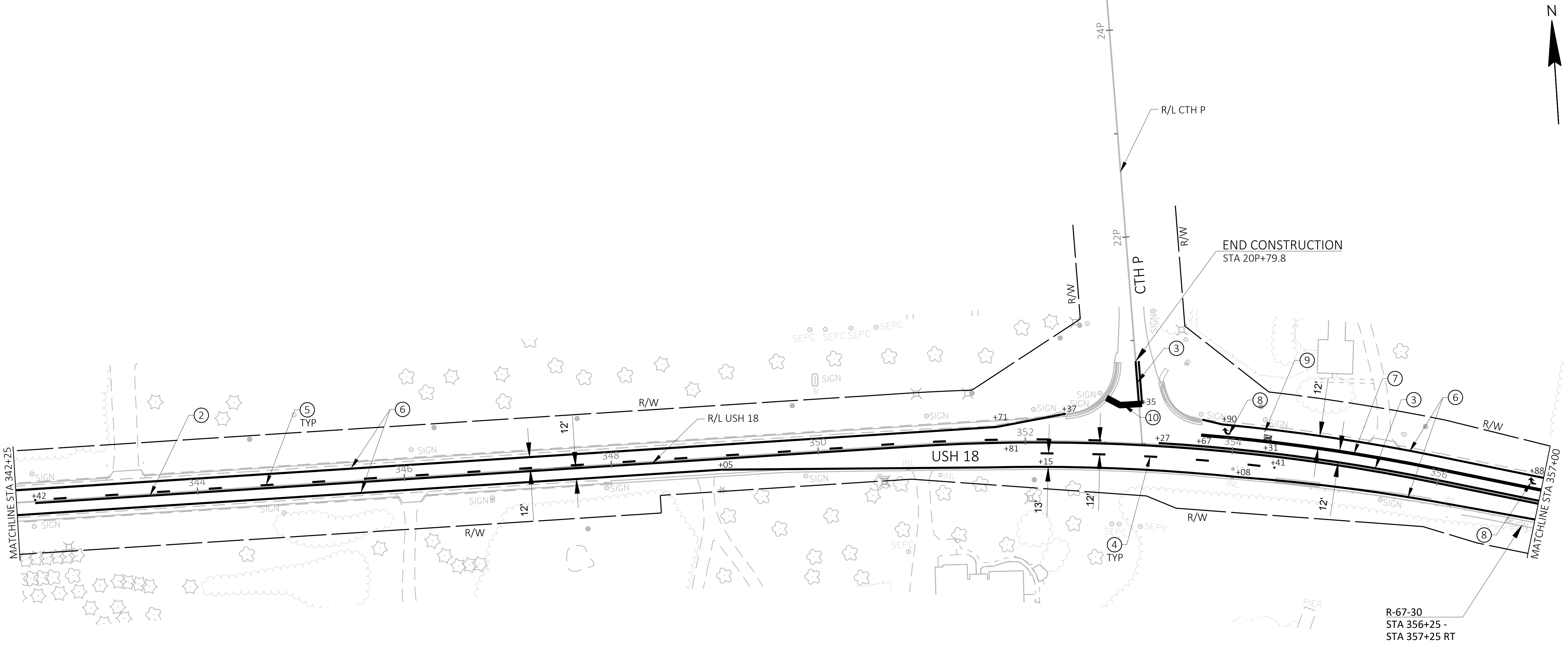
1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

1 MARKING LINE EPOXY 4-INCH (WHITE)
2 MARKING LINE EPOXY 4-INCH (YELLOW)
3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
4 MARKING LINE EPOXY 4-INCH (DASHED WHITE 12.5' LINE 37.5' SKIP)
5 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
7 MARKING LINE EPOXY 8-INCH (WHITE)
8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
9 MARKING WORD EPOXY
10 MARKING STOP LINE EPOXY 18-INCH
16 MARKING ISLAND NOSE EPOXY

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	MARKING PLANS	SHEET 105	E

2



MARKING LEGEND

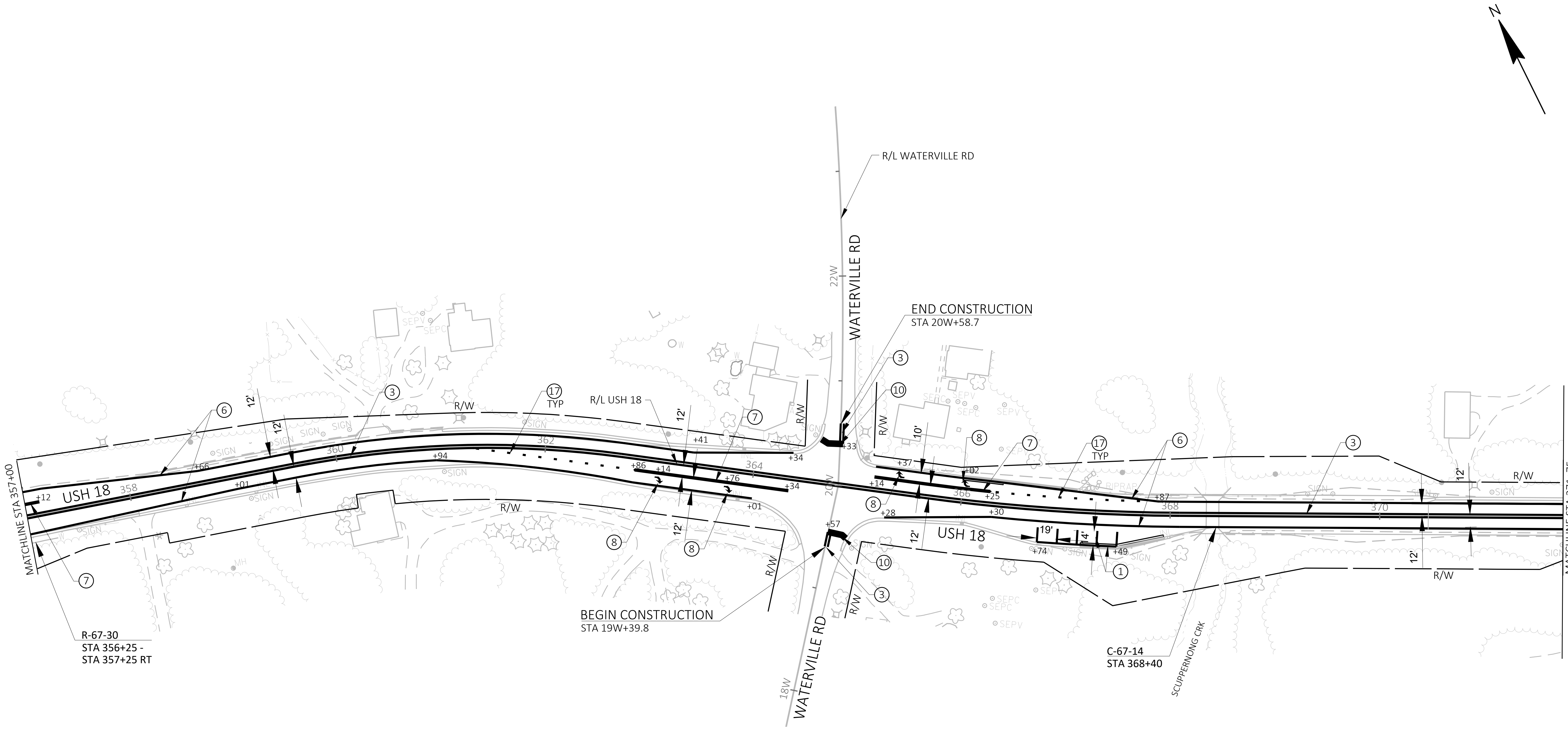
2 MARKING LINE EPOXY 4-INCH (YELLOW)
3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
4 MARKING LINE EPOXY 4-INCH (DASHED WHITE 12.5' LINE 37.5' SKIP)
5 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
7 MARKING LINE EPOXY 8-INCH (WHITE)
8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
9 MARKING WORD EPOXY
10 MARKING STOP LINE EPOXY 18-INCH

NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

2

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	MARKING PLANS	SHEET 106	E

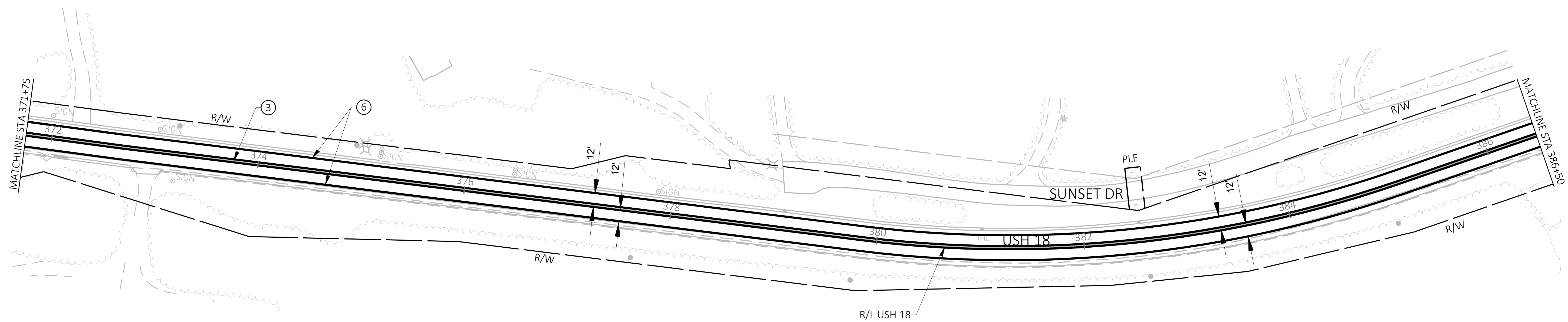


NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

1 MARKING LINE EPOXY 4-INCH (WHITE)
3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
7 MARKING LINE EPOXY 8-INCH (WHITE)
8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
10 MARKING STOP LINE EPOXY 18-INCH
17 MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE 3' LINE 9' SKIP)



NOTES

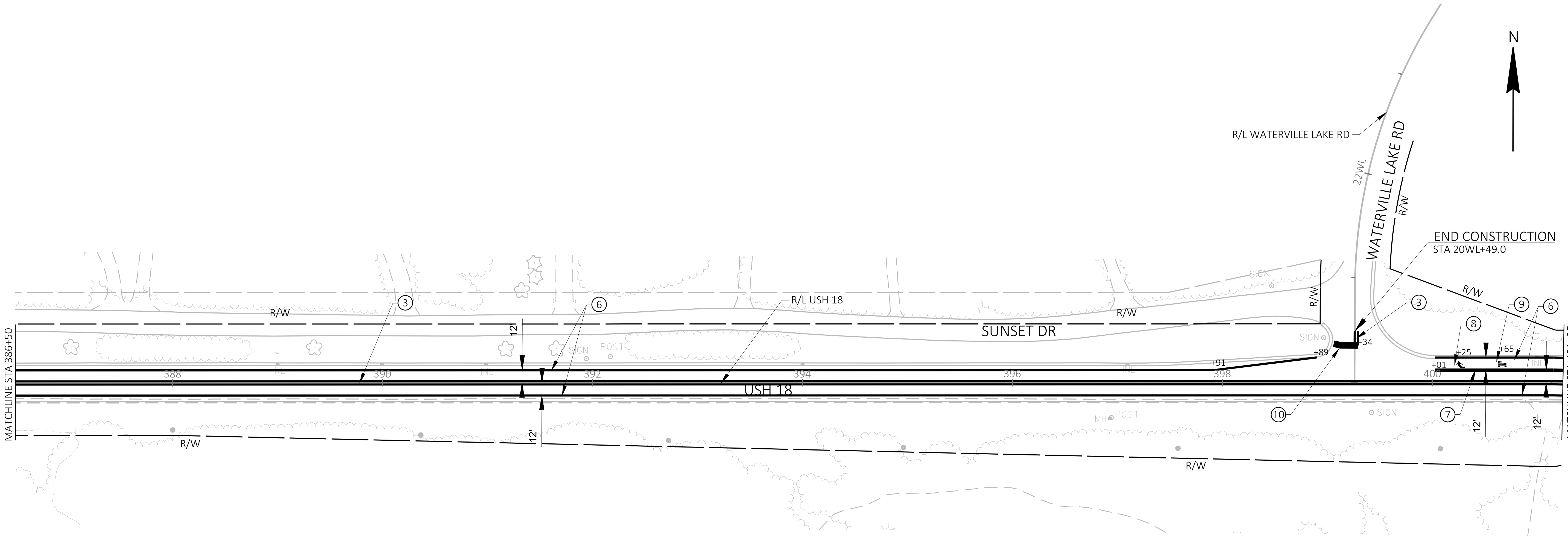
1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	MARKING PLANS	SHEET 108	E

2



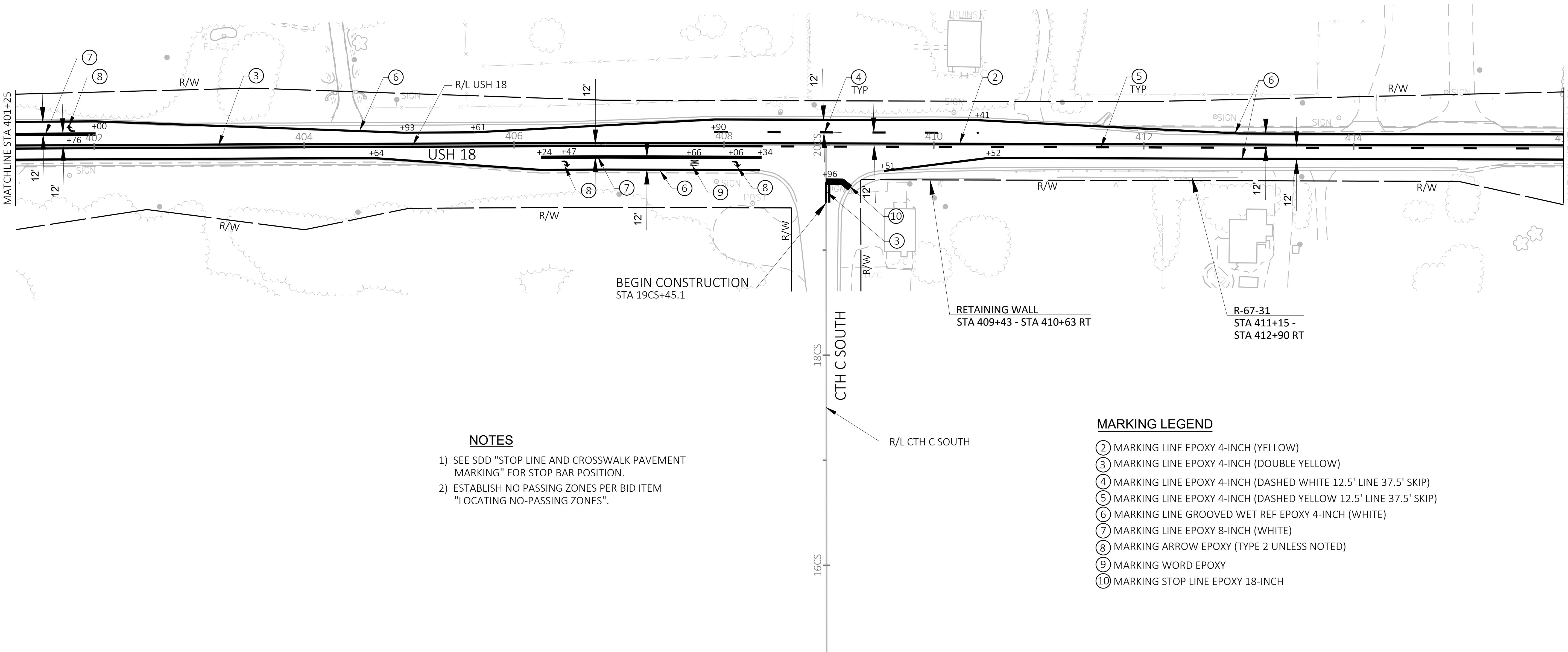
NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
7 MARKING LINE EPOXY 8-INCH (WHITE)
8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
9 MARKING WORD EPOXY
10 MARKING STOP LINE EPOXY 18-INCH

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	MARKING PLANS	SHEET 109	E

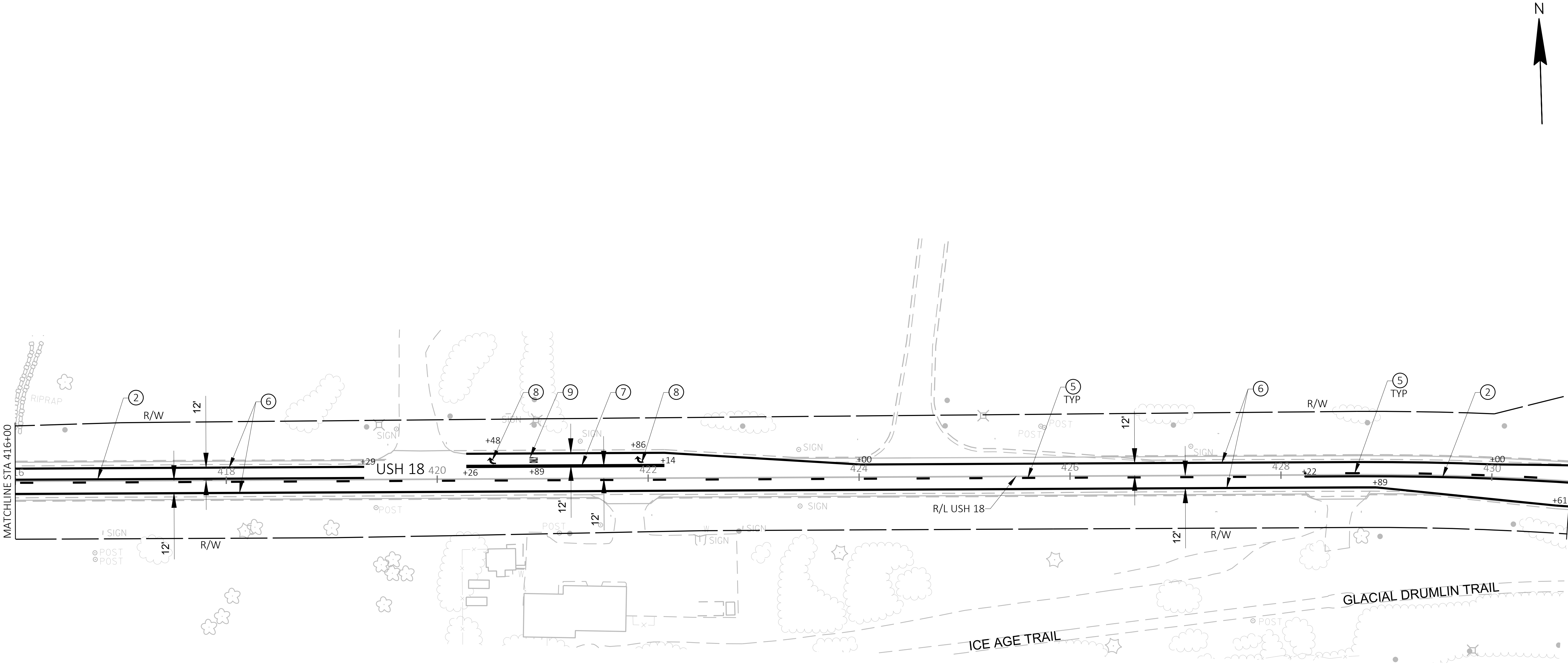


NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

2 MARKING LINE EPOXY 4-INCH (YELLOW)
3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
4 MARKING LINE EPOXY 4-INCH (DASHED WHITE 12.5' LINE 37.5' SKIP)
5 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
7 MARKING LINE EPOXY 8-INCH (WHITE)
8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
9 MARKING WORD EPOXY
10 MARKING STOP LINE EPOXY 18-INCH

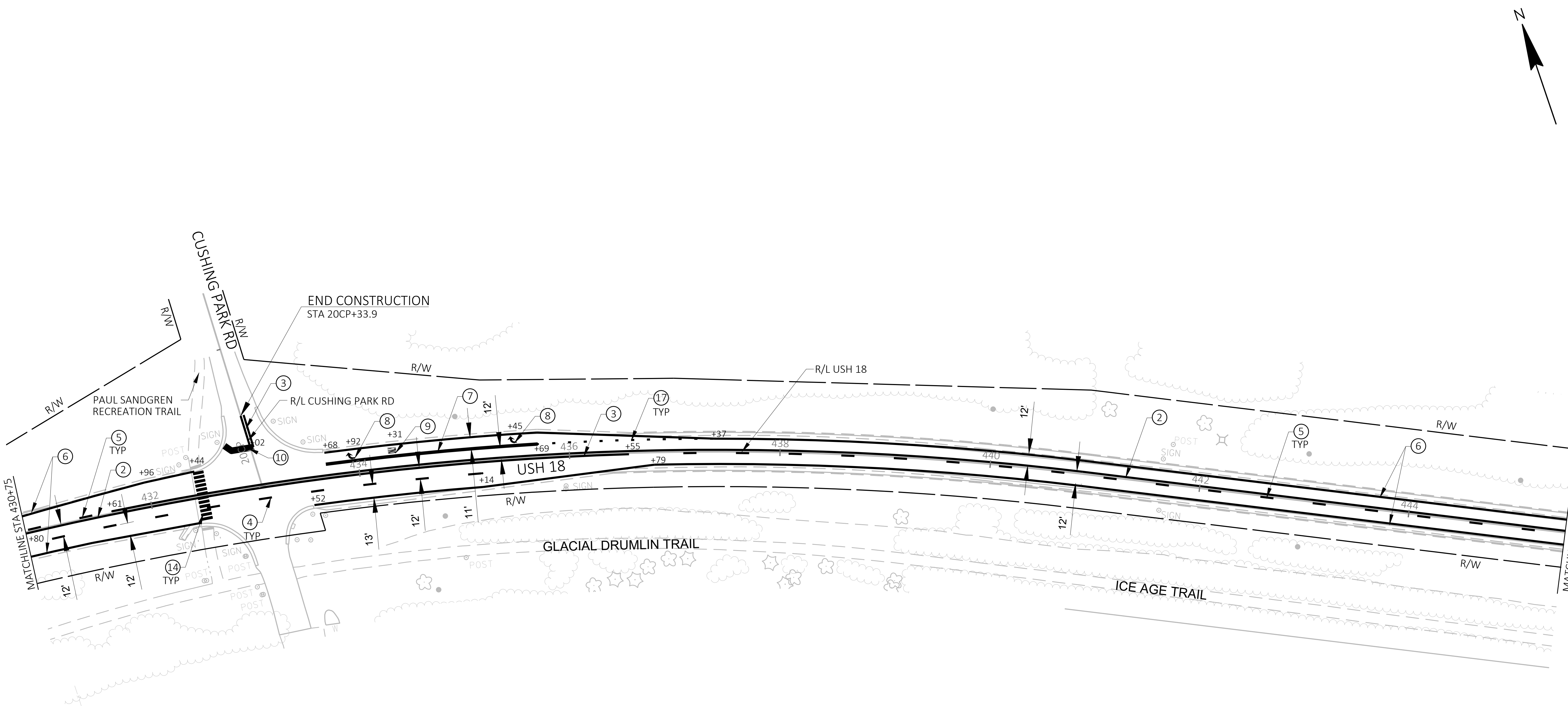


NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

- 2 MARKING LINE EPOXY 4-INCH (YELLOW)
- 5 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
- 6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- 7 MARKING LINE EPOXY 8-INCH (WHITE)
- 8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
- 9 MARKING WORD EPOXY



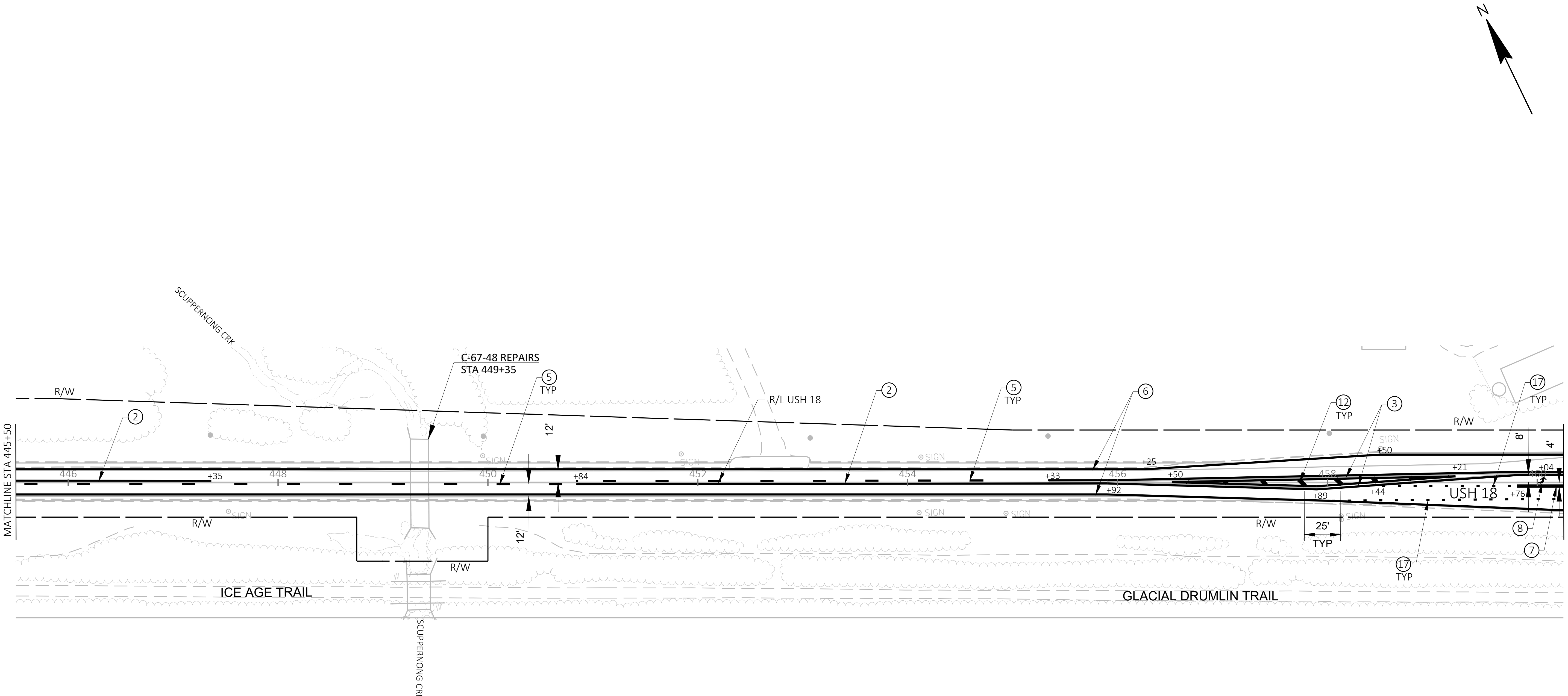
NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

- 2 MARKING LINE EPOXY 4-INCH (YELLOW)
- 3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 4 MARKING LINE EPOXY 4-INCH (DASHED WHITE 12.5' LINE 37.5' SKIP)
- 5 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
- 6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- 7 MARKING LINE EPOXY 8-INCH (WHITE)
- 8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
- 9 MARKING WORD EPOXY
- 10 MARKING STOP LINE EPOXY 18-INCH
- 14 MARKING CROSSWALK EPOXY LADDER PATTERN 24-INCH
- 17 MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE 3' LINE 9' SKIP)

2

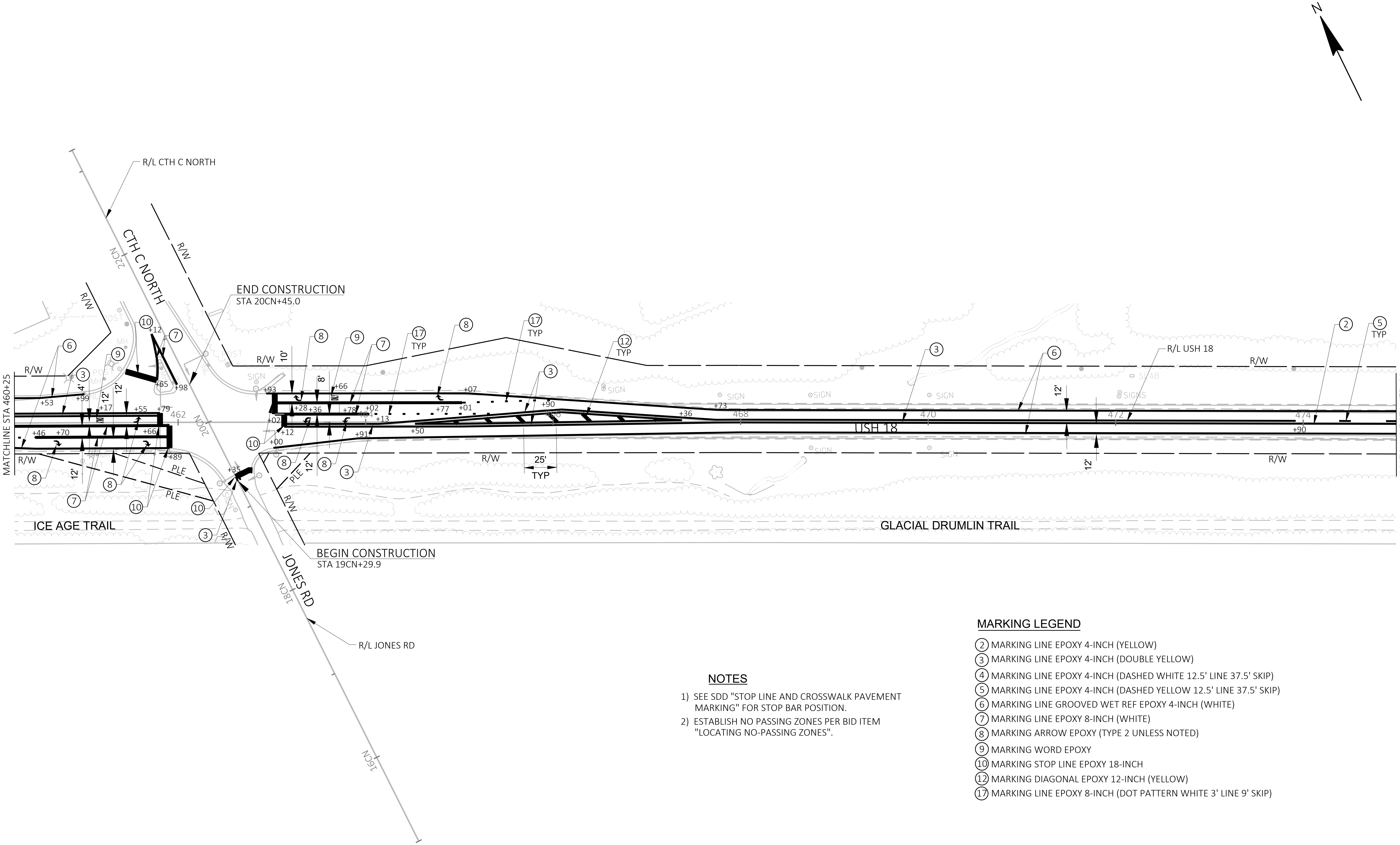


NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

2 MARKING LINE EPOXY 4-INCH (YELLOW)
3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
5 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
7 MARKING LINE EPOXY 8-INCH (WHITE)
8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
12 MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
17 MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE 3' LINE 9' SKIP)

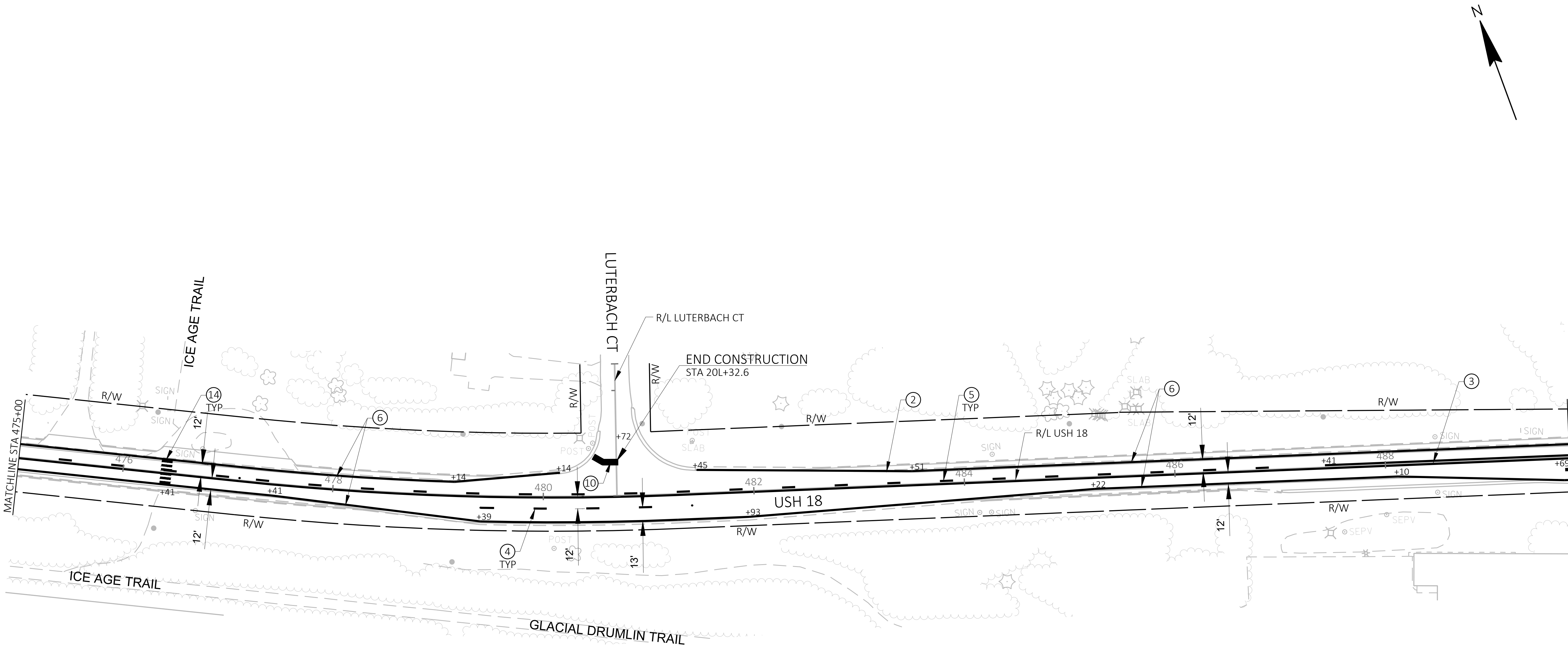


MARKING LEGEND

2 MARKING LINE EPOXY 4-INCH (YELLOW)
3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
4 MARKING LINE EPOXY 4-INCH (DASHED WHITE 12.5' LINE 37.5' SKIP)
5 MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
7 MARKING LINE EPOXY 8-INCH (WHITE)
8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
9 MARKING WORD EPOXY
10 MARKING STOP LINE EPOXY 18-INCH
12 MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
17 MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE 3' LINE 9' SKIP)

NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

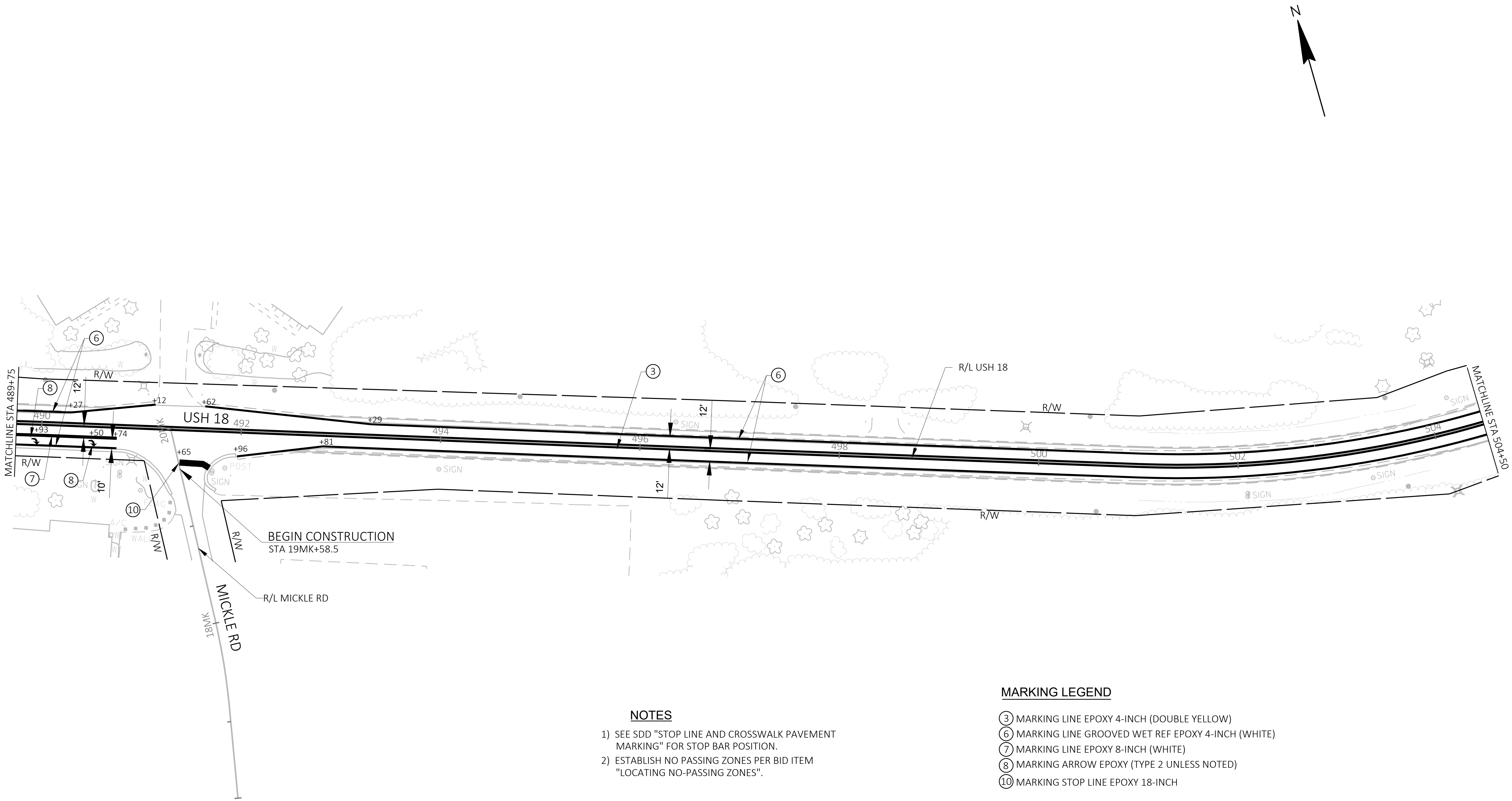


NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

- (2) MARKING LINE EPOXY 4-INCH (YELLOW)
- (3) MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- (4) MARKING LINE EPOXY 4-INCH (DASHED WHITE 12.5' LINE 37.5' SKIP)
- (5) MARKING LINE EPOXY 4-INCH (DASHED YELLOW 12.5' LINE 37.5' SKIP)
- (6) MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- (10) MARKING STOP LINE EPOXY 18-INCH
- (14) MARKING CROSSWALK EPOXY LADDER PATTERN 24-INCH



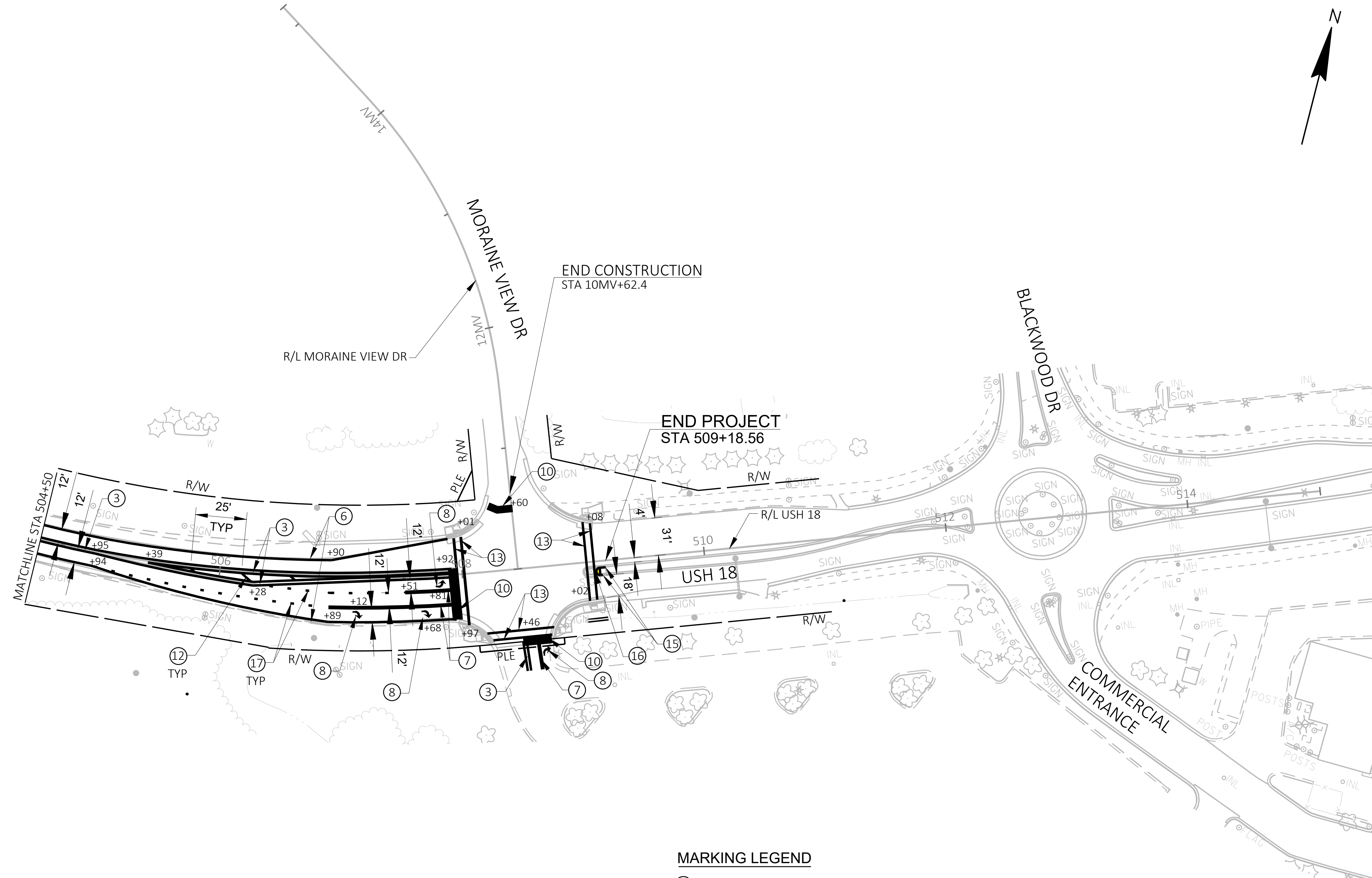
NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".

MARKING LEGEND

- 3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- 7 MARKING LINE EPOXY 8-INCH (WHITE)
- 8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
- 10 MARKING STOP LINE EPOXY 18-INCH

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	MARKING PLANS	SHEET 116	E

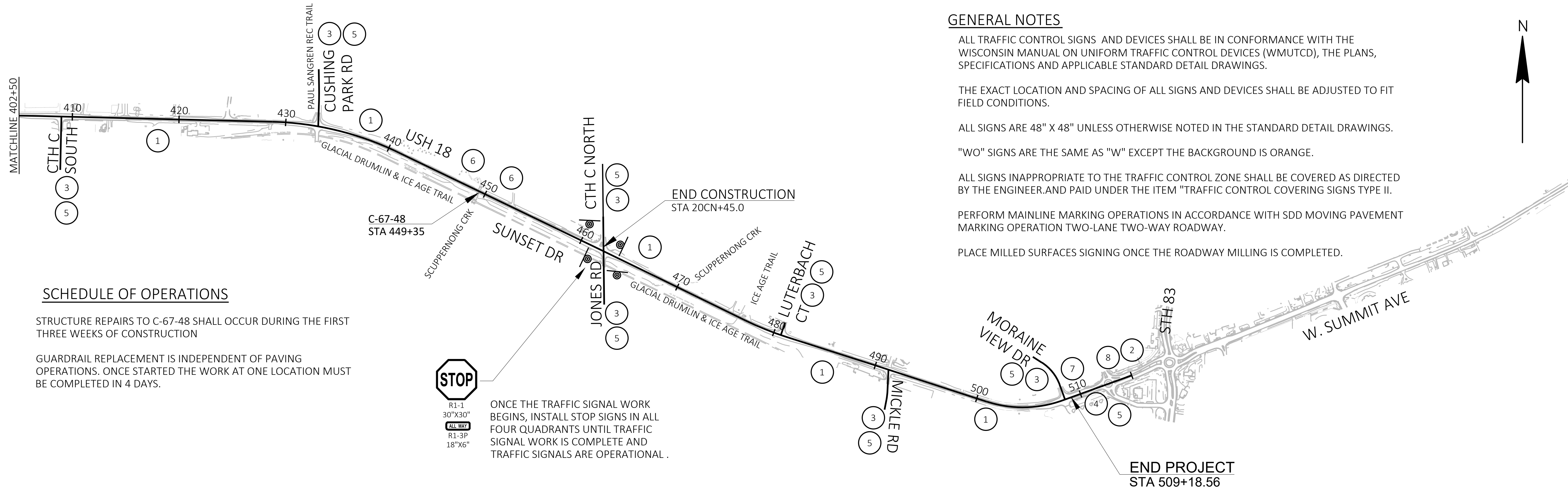


MARKING LEGEND

- 3 MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- 6 MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
- 7 MARKING LINE EPOXY 8-INCH (WHITE)
- 8 MARKING ARROW EPOXY (TYPE 2 UNLESS NOTED)
- 10 MARKING STOP LINE EPOXY 18-INCH
- 12 MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
- 13 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH
- 15 MARKING CURB EPOXY
- 16 MARKING ISLAND NOSE EPOXY
- 17 MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE 3' LINE 9' SKIP)

NOTES

1) SEE SDD "STOP LINE AND CROSSWALK PAVEMENT MARKING" FOR STOP BAR POSITION.
2) ESTABLISH NO PASSING ZONES PER BID ITEM "LOCATING NO-PASSING ZONES".



GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD), THE PLANS, SPECIFICATIONS AND APPLICABLE STANDARD DETAIL DRAWINGS.

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED IN THE STANDARD DETAIL DRAWINGS.

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

ALL SIGNS INAPPROPRIATE TO THE TRAFFIC CONTROL ZONE SHALL BE COVERED AS DIRECTED BY THE ENGINEER.AND PAID UNDER THE ITEM "TRAFFIC CONTROL COVERING SIGNS TYPE II.

PERFORM MAINLINE MARKING OPERATIONS IN ACCORDANCE WITH SDD MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY.

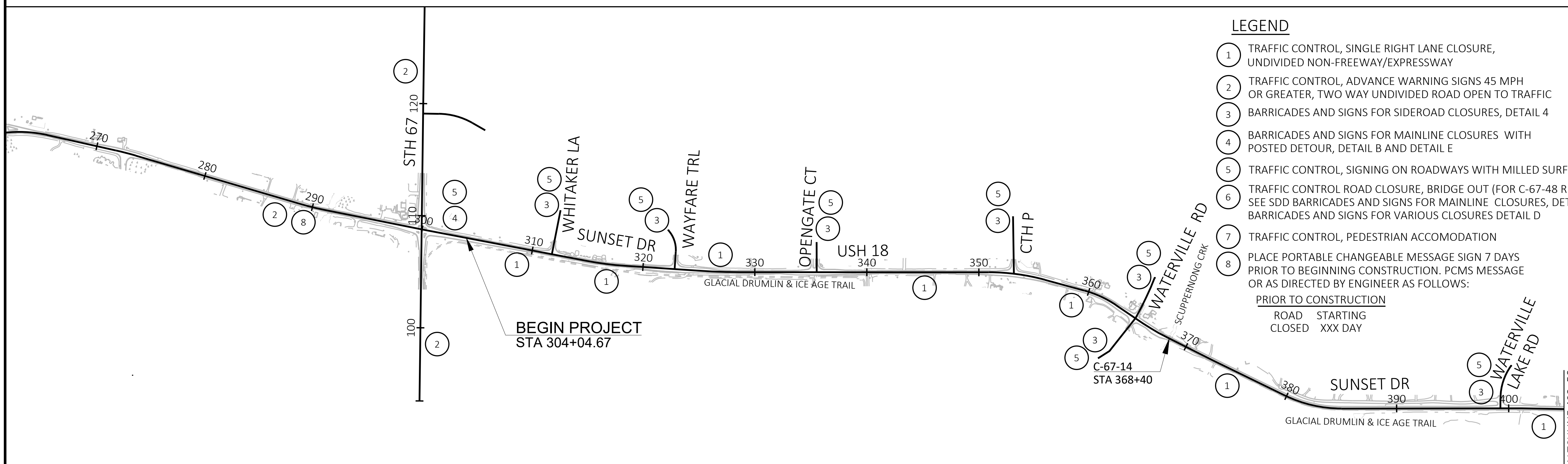
PLACE MILLED SURFACES SIGNING ONCE THE ROADWAY MILLING IS COMPLETED.

SCHEDULE OF OPERATIONS

STRUCTURE REPAIRS TO C-67-48 SHALL OCCUR DURING THE FIRST THREE WEEKS OF CONSTRUCTION

GUARDRAIL REPLACEMENT IS INDEPENDENT OF PAVING OPERATIONS. ONCE STARTED THE WORK AT ONE LOCATION MUST BE COMPLETED IN 4 DAYS.

ONCE THE TRAFFIC SIGNAL WORK BEGINS, INSTALL STOP SIGNS IN ALL FOUR QUADRANTS UNTIL TRAFFIC SIGNAL WORK IS COMPLETE AND TRAFFIC SIGNALS ARE OPERATIONAL .

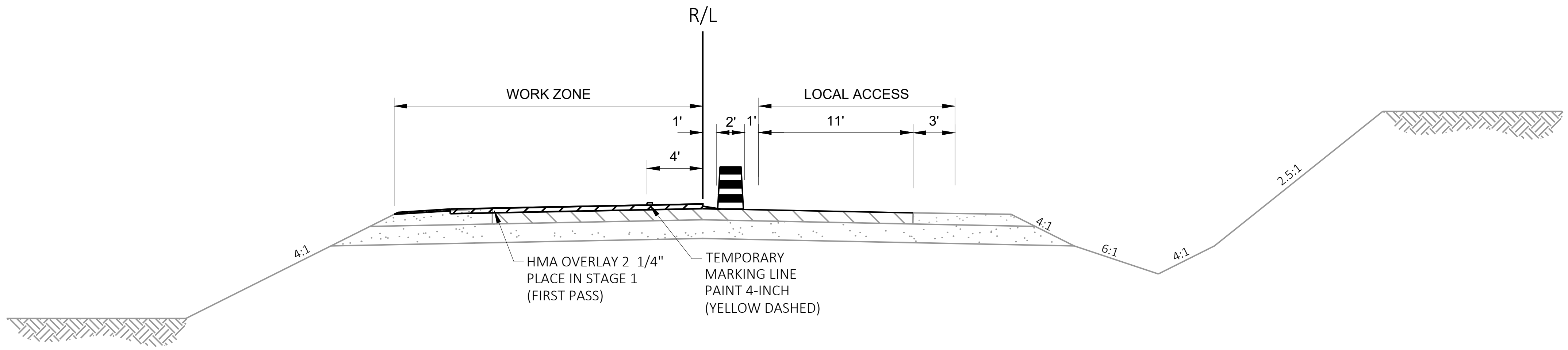


LEGEND

1. TRAFFIC CONTROL, SINGLE RIGHT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY
2. TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
3. BARRICADES AND SIGNS FOR SIDEROAD CLOSURES, DETAIL 4
4. BARRICADES AND SIGNS FOR MAINLINE CLOSURES WITH POSTED DETOUR, DETAIL B AND DETAIL E
5. TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
6. TRAFFIC CONTROL ROAD CLOSURE, BRIDGE OUT (FOR C-67-48 REPAIRS); SEE SDD BARRICADES AND SIGNS FOR MAINLINE CLOSURES, DETAIL C AND BARRICADES AND SIGNS FOR VARIOUS CLOSURES DETAIL D
7. TRAFFIC CONTROL, PEDESTRIAN ACCOMODATION
8. PLACE PORTABLE CHANGEABLE MESSAGE SIGN 7 DAYS PRIOR TO BEGINNING CONSTRUCTION. PCMS MESSAGE OR AS DIRECTED BY ENGINEER AS FOLLOWS:

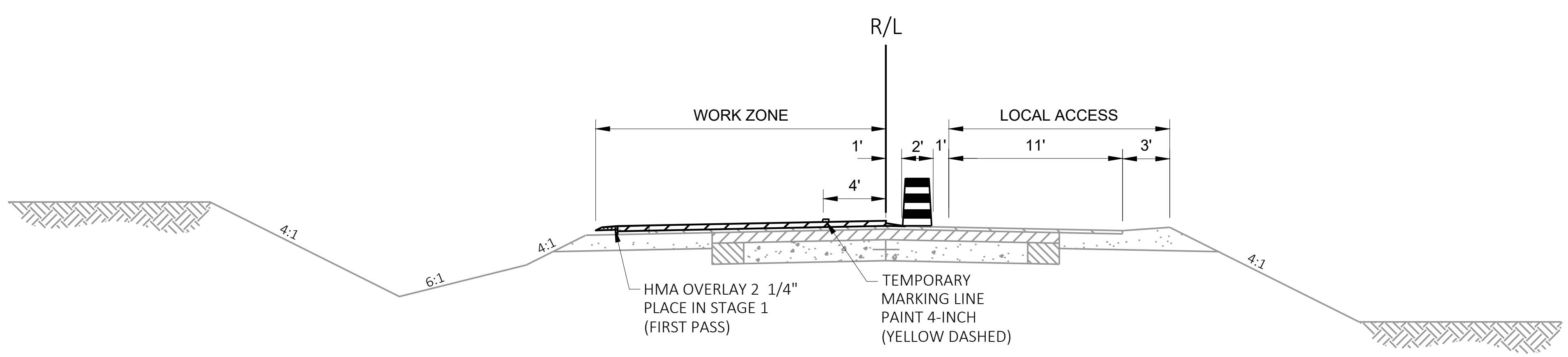
PRIOR TO CONSTRUCTION

ROAD	STARTING
CLOSED	XXX DAY



TYPICAL SECTION STAGE 1

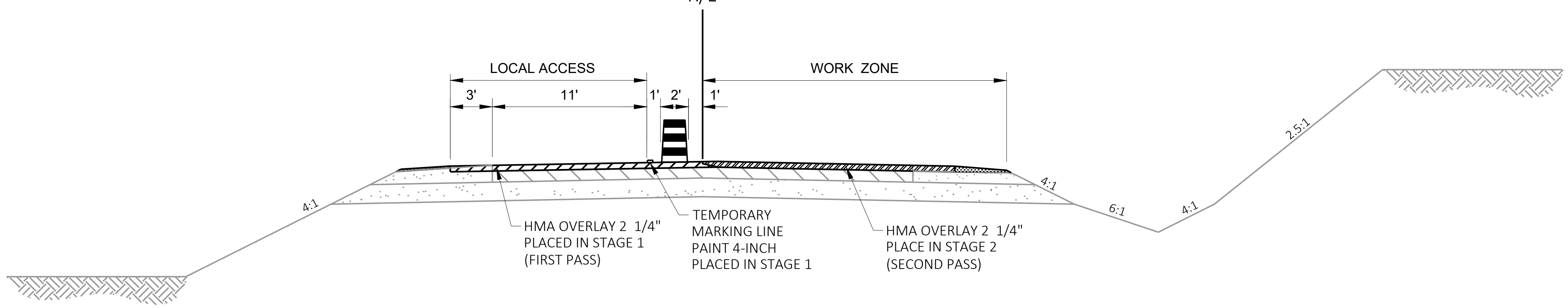
USH 18



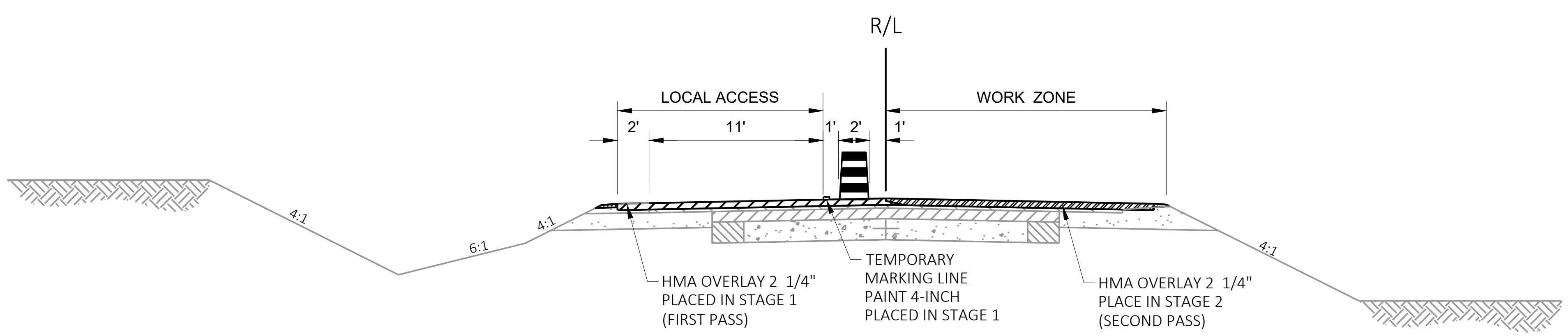
TYPICAL SECTION STAGE 1

USH 18

2

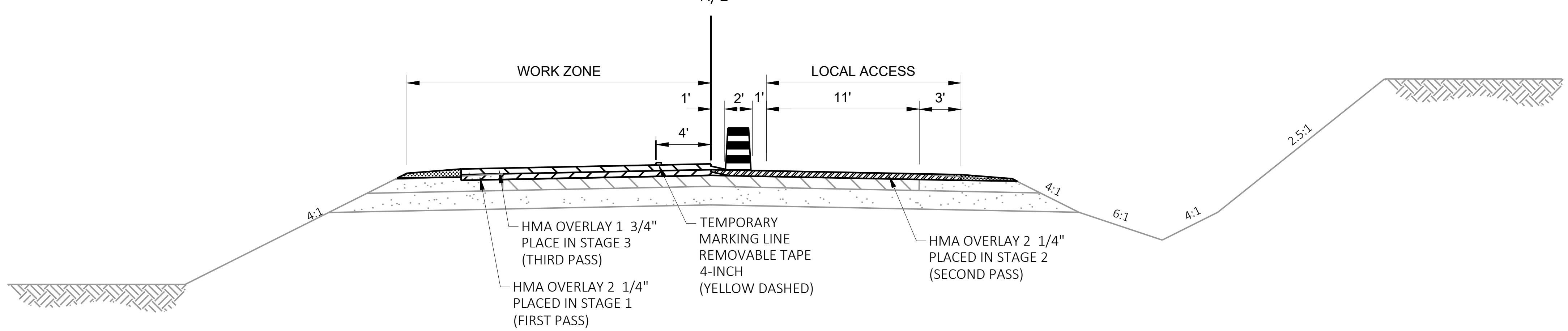


TYPICAL SECTION STAGE 2
USH 18

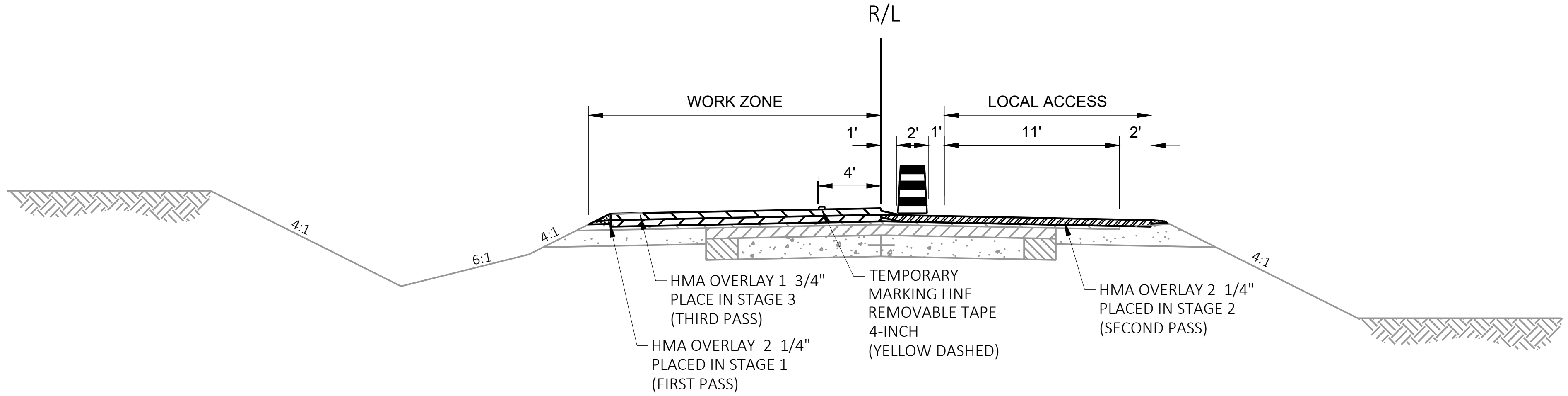


TYPICAL SECTION STAGE 2
USH 18

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	TYPICAL STAGING SECTIONS - STAGE 2	SHEET 120	E



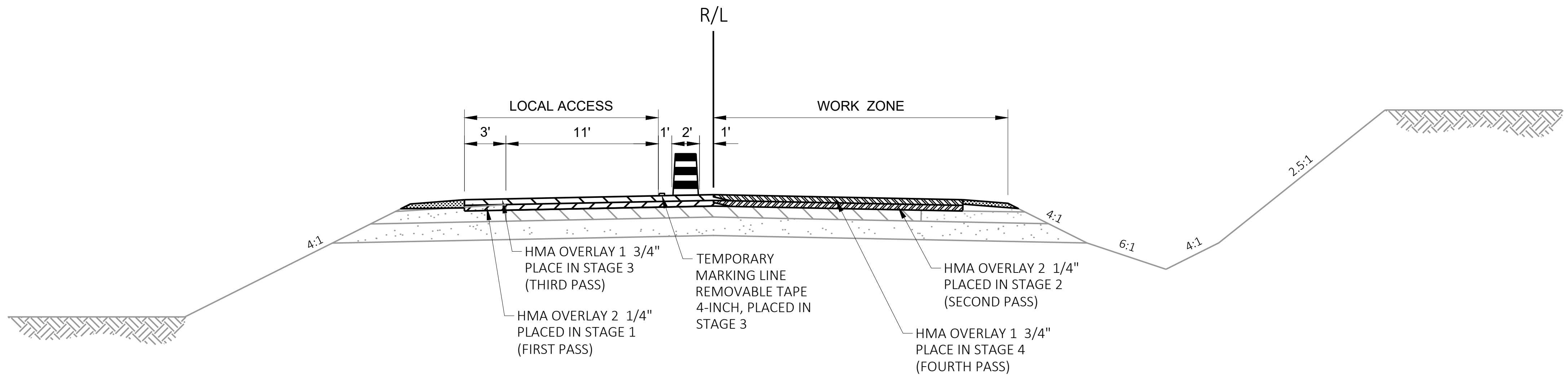
TYPICAL SECTION STAGE 3
USH 18



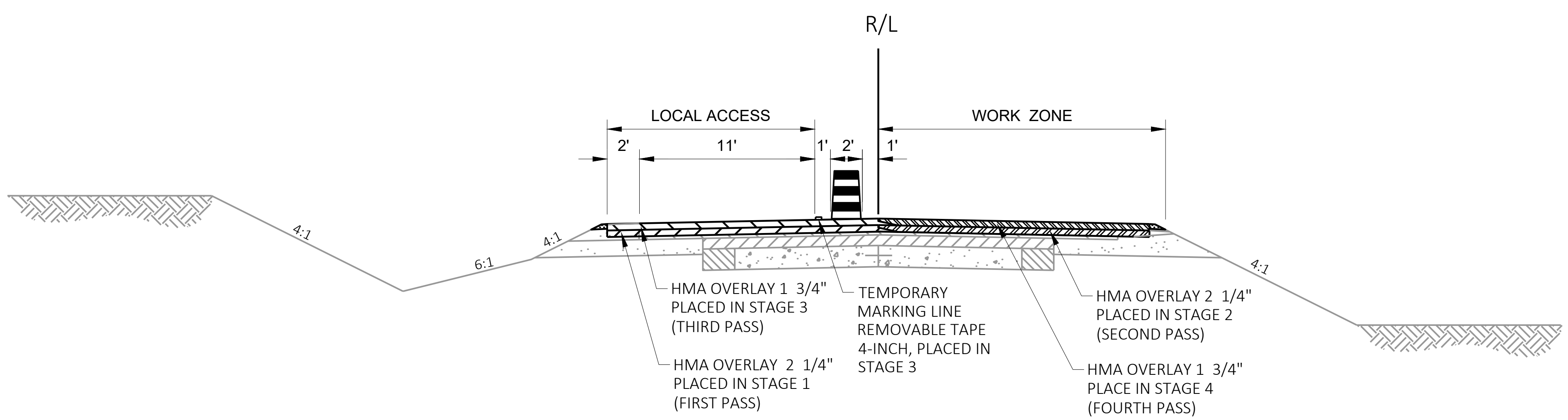
TYPICAL SECTION STAGE 3
USH 18

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	TYPICAL STAGING SECTIONS - STAGE 3	SHEET 121	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\026204-TC.DWG
LAYOUT NAME - Stage 3
PLOT DATE : 1/26/2022 4:54 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

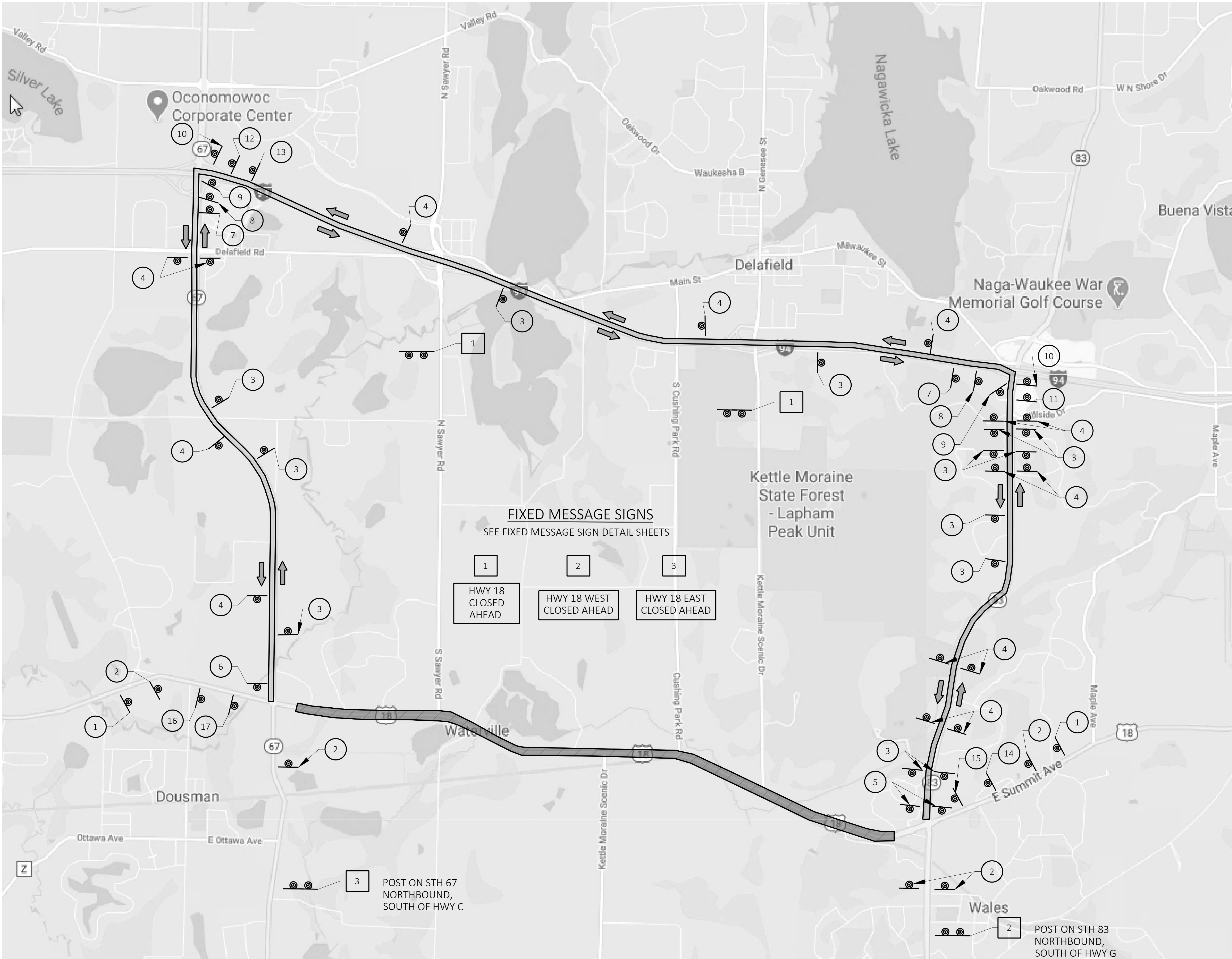


TYPICAL SECTION STAGE 4
USH 18



TYPICAL SECTION STAGE 4
USH 18

2



GENERAL NOTES FOR DETOUR SIGNING

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

ALL SIGNS INAPPROPRIATE TO THE TRAFFIC CONTROL ZONE SHALL BE COVERED AS SPECIFIED IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER. PAID UNDER THE ITEM "TRAFFIC CONTROL COVERING SIGNS TYPE II"

THE ERECTION AND PLACEMENT OF SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

DETOUR SIGNING SHALL BE PERFORMED BY THE CONTRACTOR

N

2

NOTES

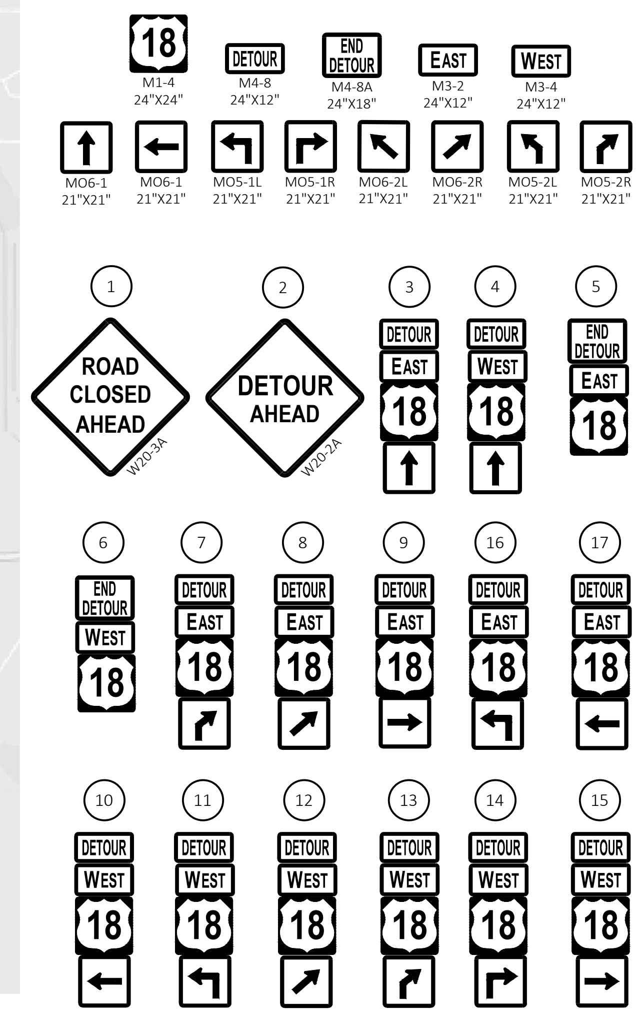
1) USE SIZE 5 SIGNS ON FREEWAY.
2) USE SIZE 3 SIGNS ON RAMPS AND HIGHWAYS.
3) FOR SIGN ASSEMBLIES PLACED ON DIVIDED HIGHWAYS, EXCEPT FOR DIRECTIONAL ARROWS, PLACE ASSEMBLIES ON BOTH LEFT AND RIGHT SHOULDERS.

LEGEND

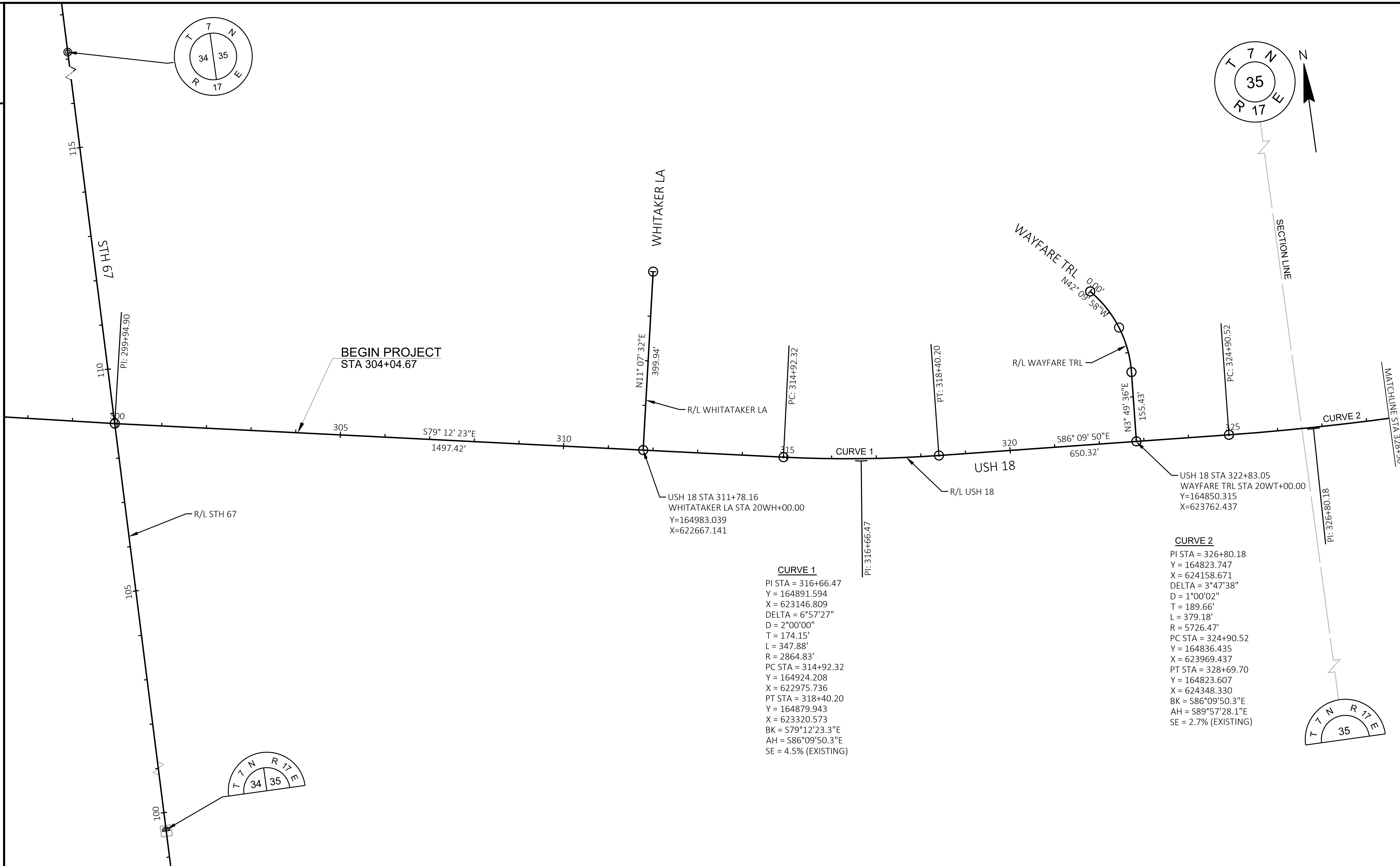
PROPOSED SIGN AND SIGN SUPPORT

DETOUR ROUTE

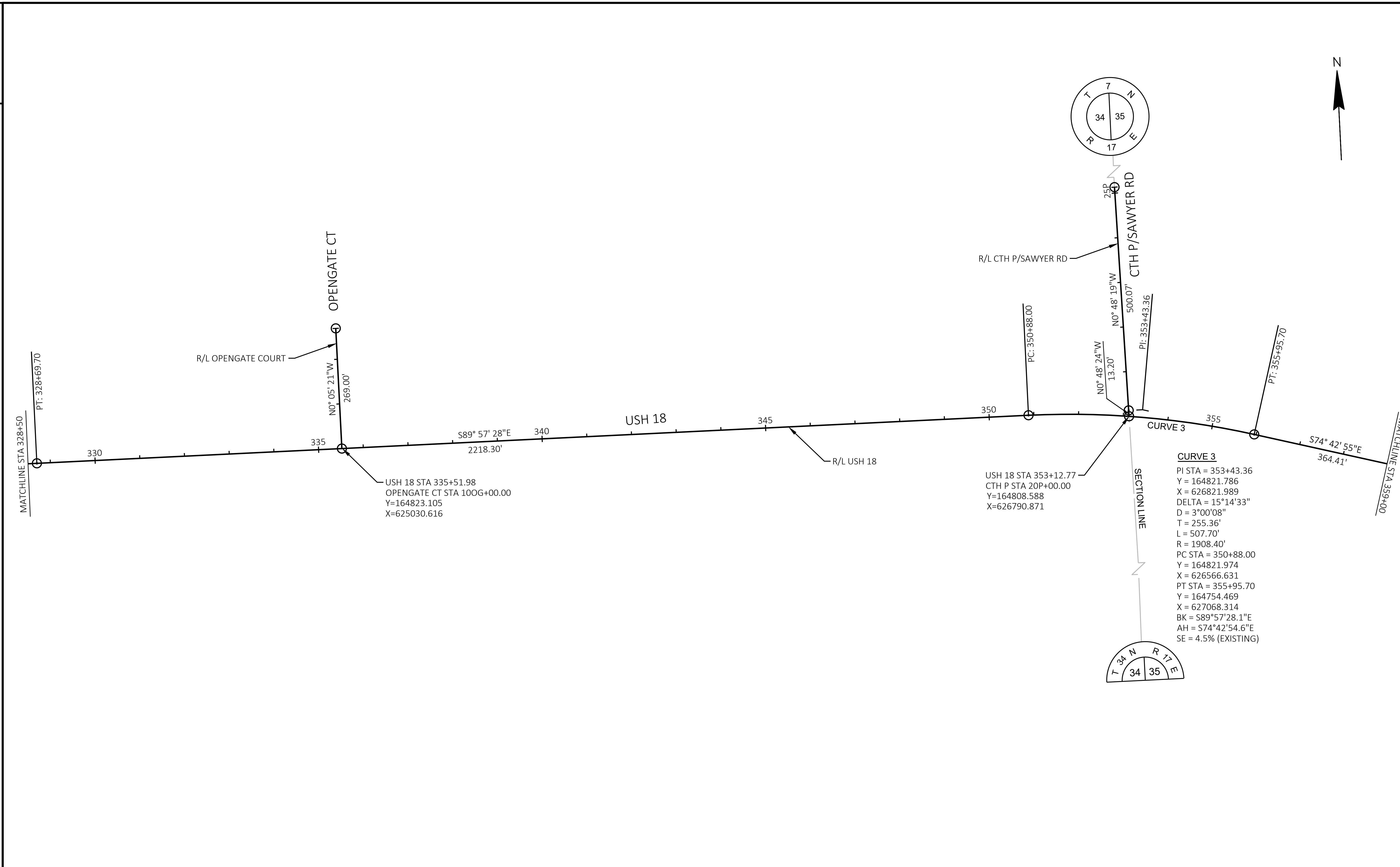
WORK ZONE



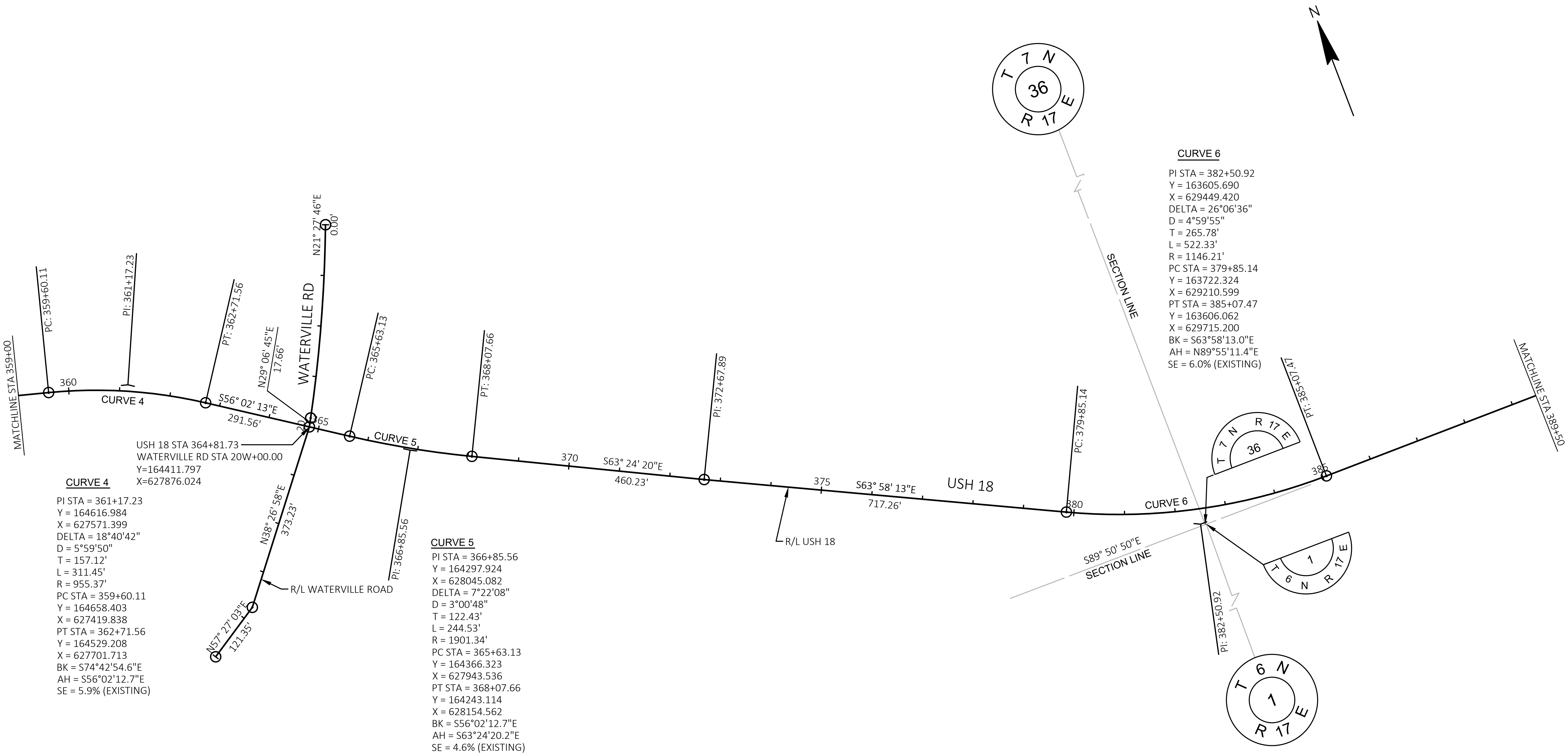
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	TRAFFIC CONTROL DETOUR	SHEET 123	E



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT PLANS	SHEET 124	E



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT PLANS	SHEET 125	E



CURVE 4

PI STA = 361+17.23
Y = 164616.984
X = 627571.399
DELTA = 18°40'42"
D = 5°59'50"
T = 157.12'
L = 311.45'
R = 955.37'
PC STA = 359+60.11
Y = 164658.403
X = 627419.838
PT STA = 362+71.56
Y = 164529.208
X = 627701.713
BK = S74°42'54.6"E
AH = S56°02'12.7"E
SE = 5.9% (EXISTING)

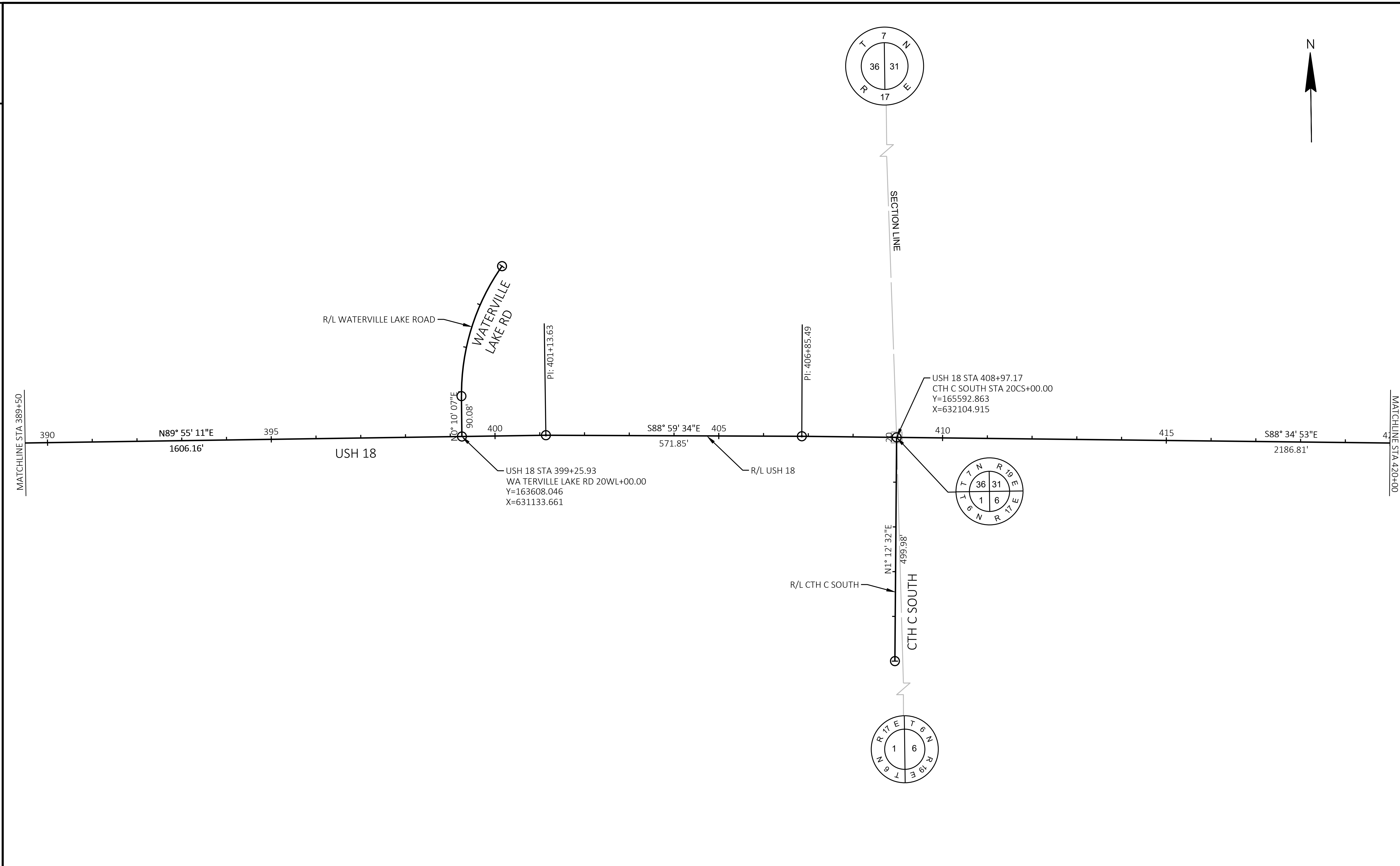
CURVE 5

PI STA = 366+85.56
Y = 164297.924
X = 628045.082
DELTA = 7°22'08"
D = 3°00'48"
T = 122.43'
L = 244.53'
R = 1901.34'
PC STA = 365+63.13
Y = 164366.323
X = 627943.536
PT STA = 368+07.66
Y = 164243.114
X = 628154.562
BK = S56°02'12.7"E
AH = S63°24'20.2"E
SE = 4.6% (EXISTING)

CURVE 6

PI STA = 382+50.92
Y = 163605.690
X = 629449.420
DELTA = 26°06'36"
D = 4°59'55"
T = 265.78'
L = 522.33'
R = 1146.21'
PC STA = 379+85.14
Y = 163722.324
X = 629210.599
PT STA = 385+07.47
Y = 163606.062
X = 629715.200
BK = S63°58'13.0"E
AH = N89°55'11.4"E
SE = 6.0% (EXISTING)

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT PLANS	SHEET 126	E

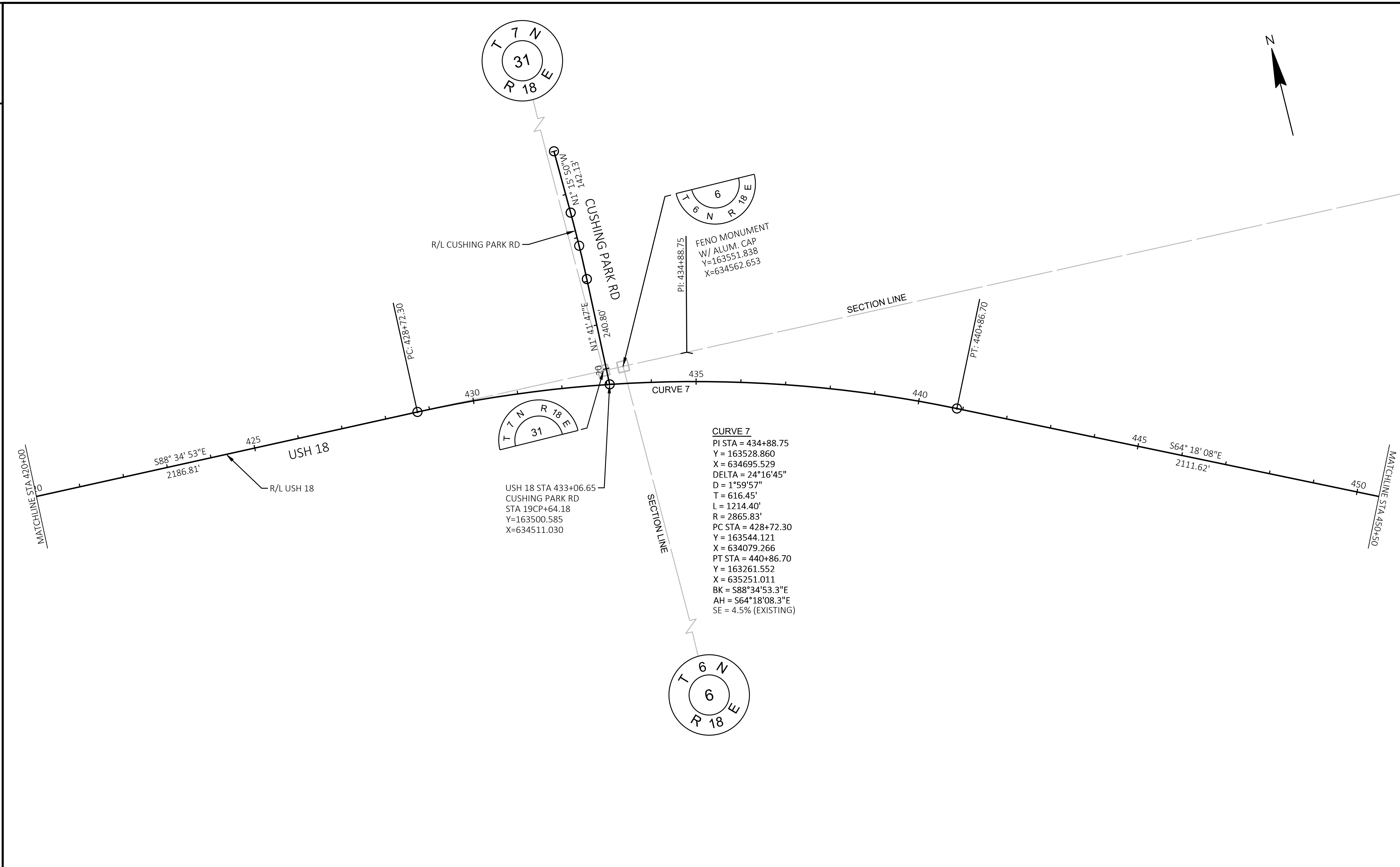


PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT PLANS	SHEET 127	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\027201-AD.DWG
LAYOUT NAME - 04

PLOT DATE : 1/27/2022 4:13 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:200 FT

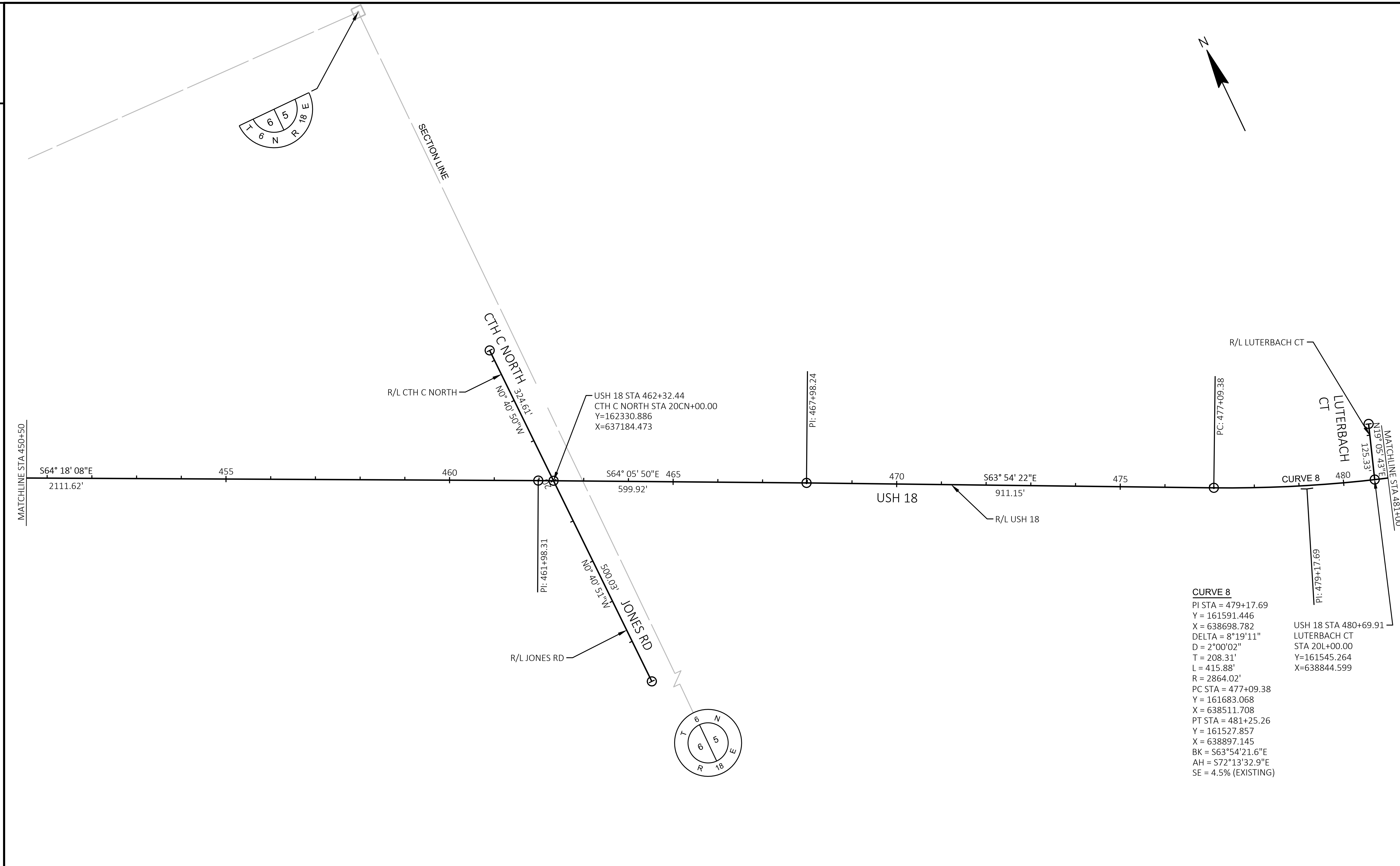
WISDOT/CADDS SHEET 42



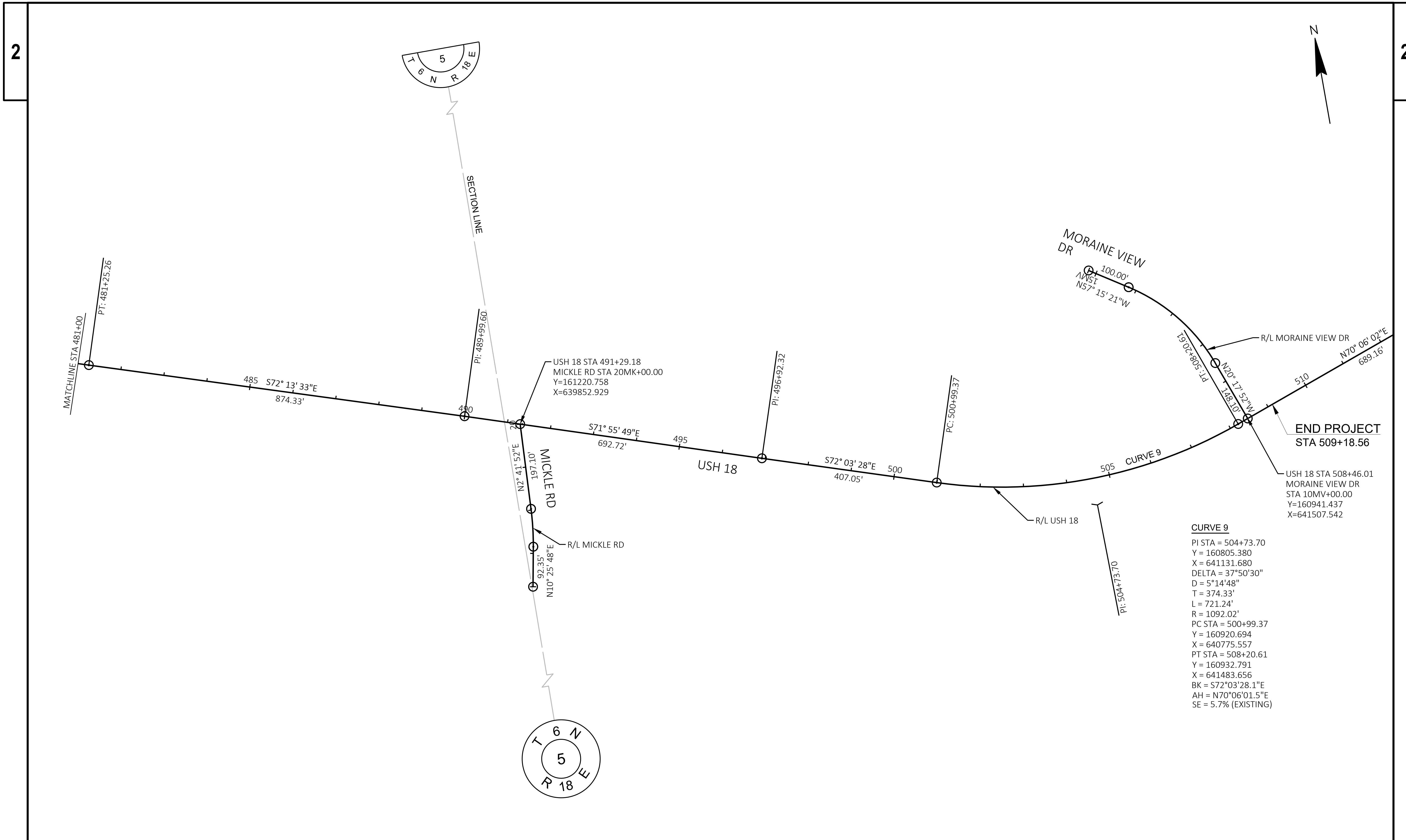
2

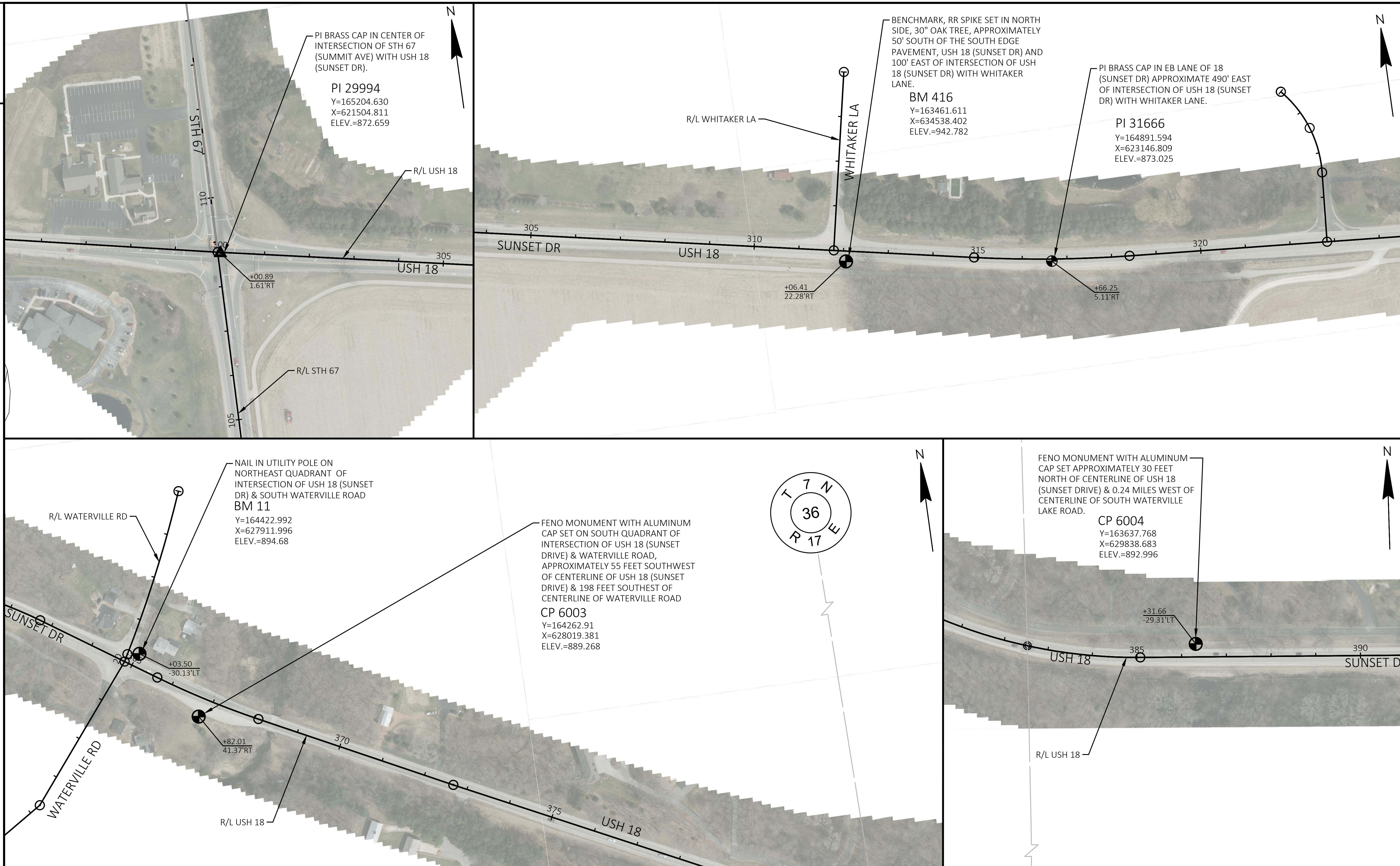
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT PLANS	SHEET 128	E

2



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT PLANS	SHEET 129	E

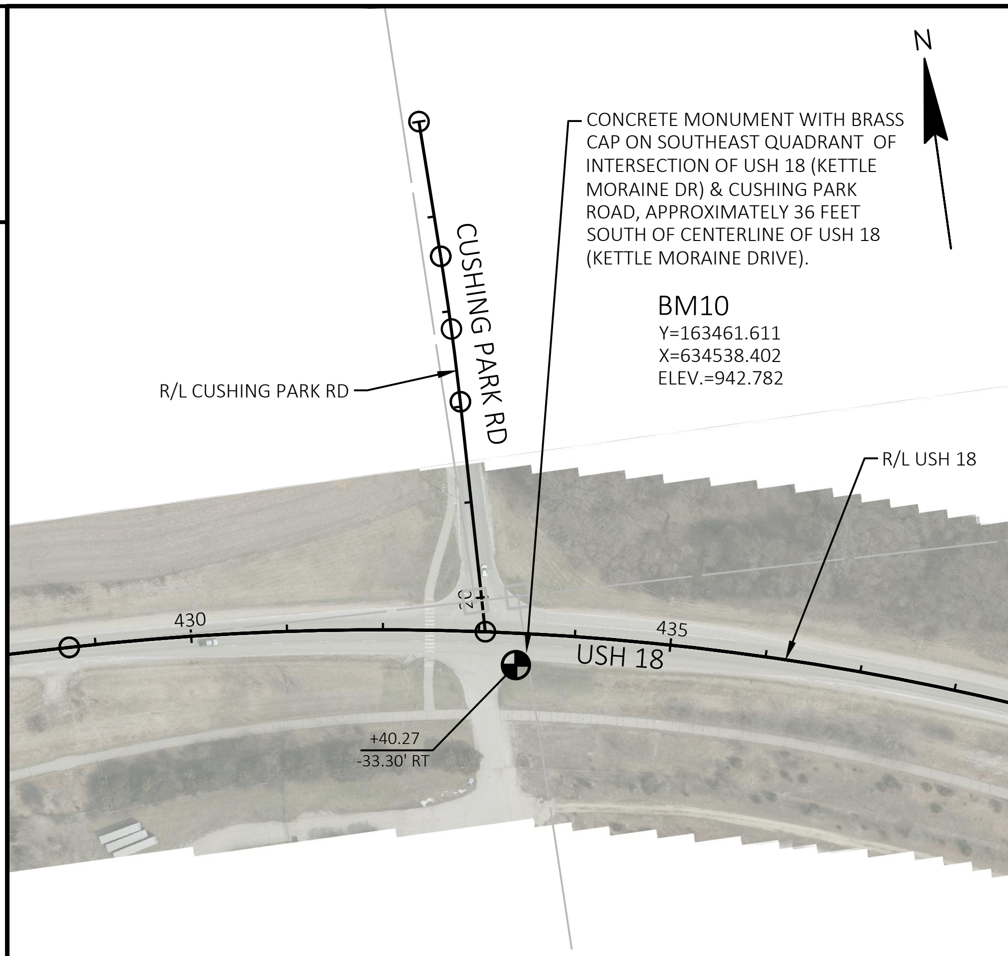

2
N
5
T 6 N R 18 E
SECTION LINE
MATCHLINE STA 481+00
PT: 481+25.26
485
S72° 13' 33"E
874.33'
PI: 489+99.60
490
USH 18 STA 491+29.18
MICKLE RD STA 20MK+00.00
Y=161220.758
X=639852.929
S71° 55' 49"E
692.72'
495
USH 18
PI: 496+92.32
S72° 03' 28"E
407.05'
500
PC: 500+99.37
MICKLE RD
N2° 41' 52"E
197.10'
R/L MICKLE RD
92.35'
N10° 25' 48"E
R/L USH 18
505
CURVE 9
PI: 504+73.70
MORAINE VIEW DR
100.00'
N57° 15' 21"W
R/L MORAINE VIEW DR
PT: 508+20.61
N20° 17' 52"W
148.10'
510
N70° 06' 02"E
689.16'
END PROJECT
STA 509+18.56
USH 18 STA 508+46.01
MORAINE VIEW DR
STA 10MV+00.00
Y=160941.437
X=641507.542
CURVE 9
PI STA = 504+73.70
Y = 160805.380
X = 641131.680
DELTA = 37°50'30"
D = 5°14'48"
T = 374.33'
L = 721.24'
R = 1092.02'
PC STA = 500+99.37
Y = 160920.694
X = 640775.557
PT STA = 508+20.61
Y = 160932.791
X = 641483.656
BK = S72°03'28.1"E
AH = N70°06'01.5"E
SE = 5.7% (EXISTING)
T 6 N
5
R 18 E

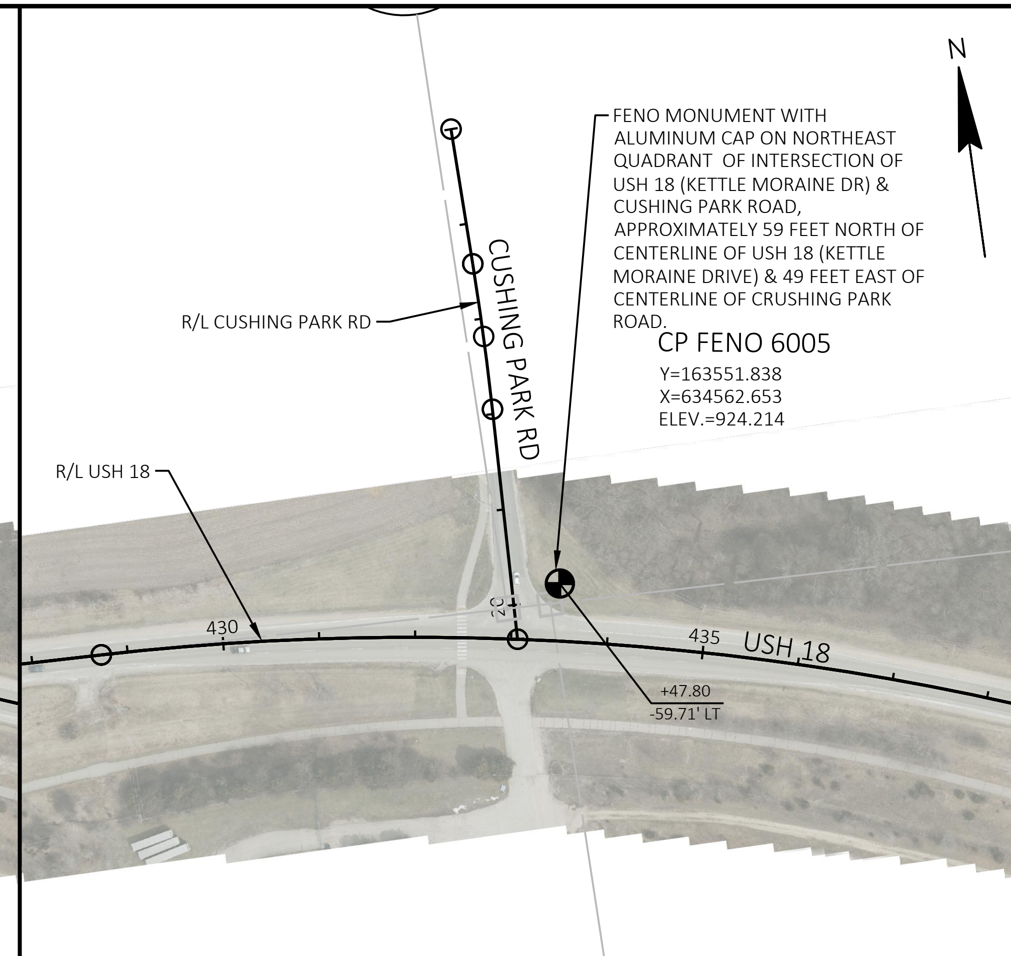


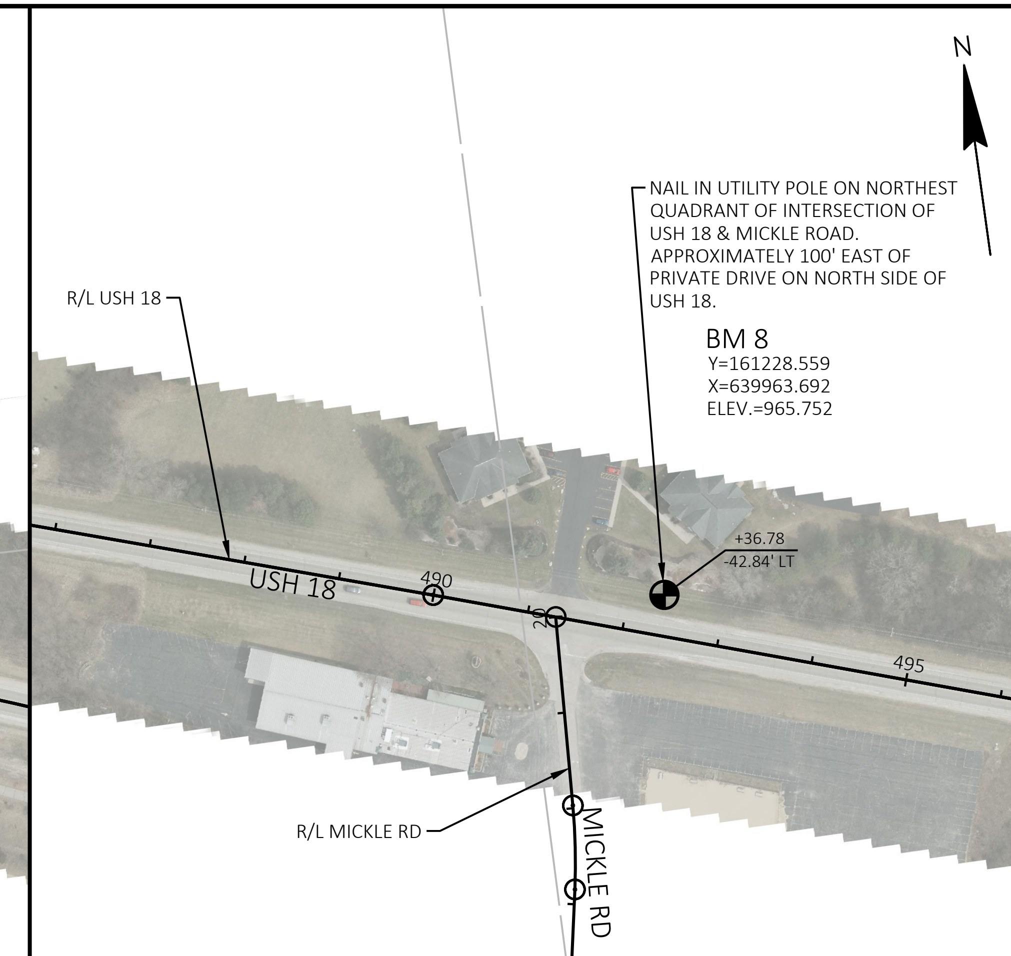
PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT TIES	SHEET 131	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\027202-AD.DWG
LAYOUT NAME - 01
PLOT DATE : 1/27/2022 4:15 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 42

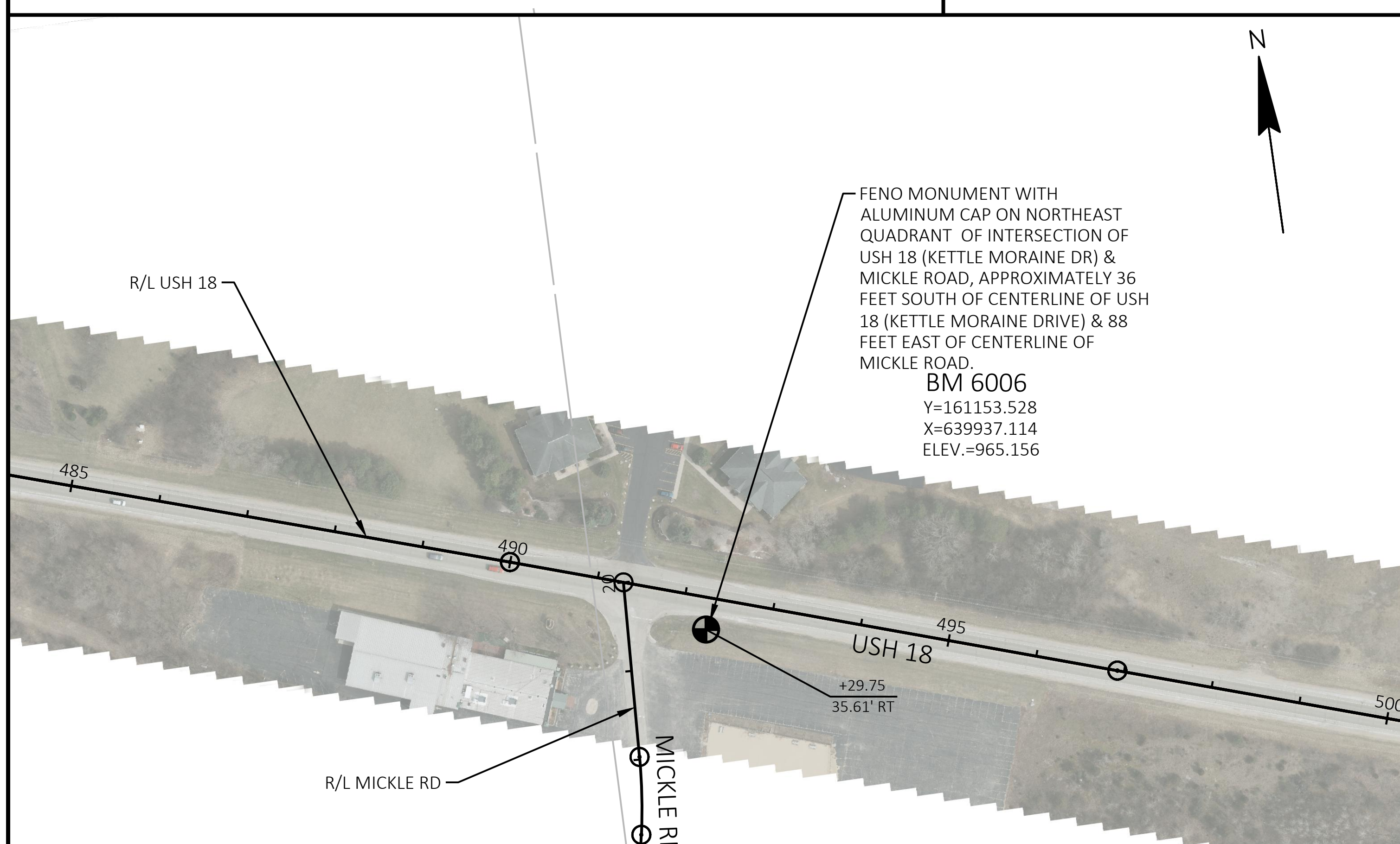
2

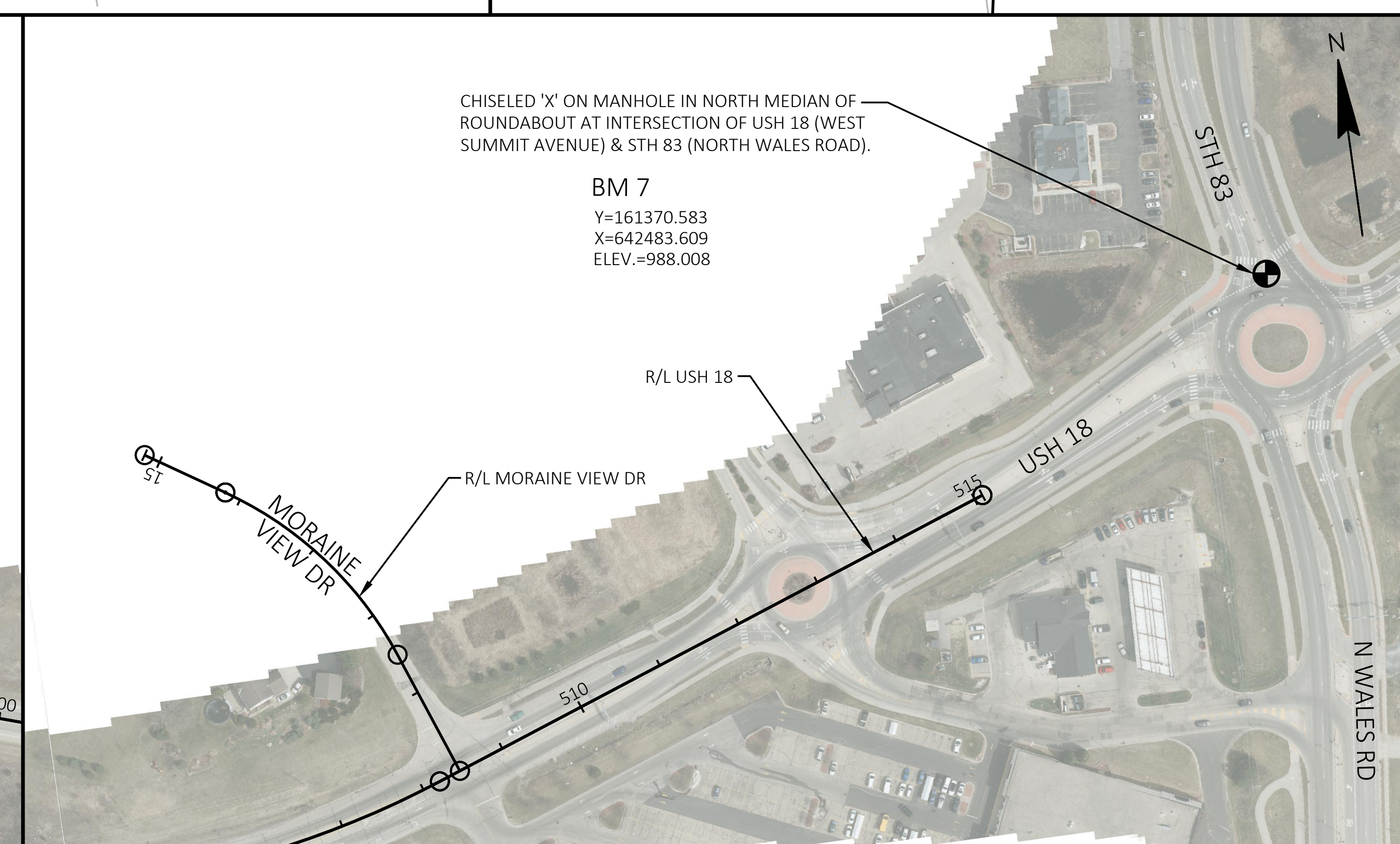






2





PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	ALIGNMENT TIES	SHEET 132	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\SHEETSPLAN\027202-AD.DWG
LAYOUT NAME - 02
PLOT DATE : 1/27/2022 4:15 PM PLOT BY : SUSAN COOK PLOT NAME : PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 42

Estimate Of Quantities

Line	Item	Item Description	Unit	Total	Qty 3080-04-70
0002	201.0120	Clearing	ID	17.000	17.000
0004	201.0220	Grubbing	ID	17.000	17.000
0006	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. C-67-48	EACH	1.000	1.000
0008	204.0110	Removing Asphaltic Surface	SY	57.000	57.000
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,126.000	1,126.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	92,305.000	92,305.000
0014	204.0150	Removing Curb & Gutter	LF	804.000	804.000
0016	204.0155	Removing Concrete Sidewalk	SY	24.000	24.000
0018	204.0165	Removing Guardrail	LF	1,110.000	1,110.000
0020	204.0190	Removing Surface Drains	EACH	9.000	9.000
0022	204.0195	Removing Concrete Bases	EACH	8.000	8.000
0024	204.9060.S	Removing (item description) 01. Pull Box Rims and Covers	EACH	17.000	17.000
0026	204.9060.S	Removing (item description) 02. Traffic Signals (USH 18/CTH C & CTH C/Jones Dr)	EACH	1.000	1.000
0028	204.9060.S	Removing (item description) 03. Loop Detector Wire & Lead-In Cable (USH 18/CTH C & CTH C/Jones Dr)	EACH	1.000	1.000
0030	204.9165.S	Removing (item description) 01. Loose Concrete	SF	50.000	50.000
0032	205.0100	Excavation Common	CY	130.000	130.000
0034	206.2000	Excavation for Structures Culverts (structure) 01. C-67-48	LS	1.000	1.000
0036	206.5000	Cofferdams (structure) 01. C-67-48	LS	1.000	1.000
0038	210.1500	Backfill Structure Type A	TON	11.000	11.000
0040	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	243.000	243.000
0042	213.0100	Finishing Roadway (project) 01. 3080-04-70	EACH	1.000	1.000
0044	305.0110	Base Aggregate Dense 3/4-Inch	TON	920.000	920.000
0046	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	160.000	160.000
0048	416.1010	Concrete Surface Drains	CY	10.000	10.000
0050	455.0605	Tack Coat	GAL	13,270.000	13,270.000
0052	460.2000	Incentive Density HMA Pavement	DOL	13,240.000	13,240.000
0054	460.6223	HMA Pavement 3 MT 58-28 S	TON	11,660.000	11,660.000
0056	460.6224	HMA Pavement 4 MT 58-28 S	TON	9,110.000	9,110.000
0058	465.0110	Asphaltic Surface Patching	TON	600.000	600.000
0060	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	100.000	100.000
0062	465.0305	Asphaltic Surface Safety Islands	TON	1.000	1.000
0064	502.4204	Adhesive Anchors No. 4 Bar	EACH	64.000	64.000
0066	502.4205	Adhesive Anchors No. 5 Bar	EACH	12.000	12.000
0068	504.0100	Concrete Masonry Culverts	CY	3.000	3.000
0070	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	464.000	464.000
0072	509.1500	Concrete Surface Repair	SF	5.000	5.000
0074	513.7051	Railing Steel Type W	LF	100.000	100.000
0076	516.0500	Rubberized Membrane Waterproofing	SY	15.000	15.000
0078	520.8000	Concrete Collars for Pipe	EACH	3.000	3.000
0080	520.8700	Cleaning Culvert Pipes	EACH	10.000	10.000
0082	521.3124	Culvert Pipe Corrugated Steel 24-Inch	LF	34.000	34.000
0084	601.0407	Concrete Curb & Gutter 18-Inch Type D	LF	4.000	4.000
0086	601.0415	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	LF	208.000	208.000
0088	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	295.000	295.000
0090	601.0576	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type J	LF	265.000	265.000
0092	601.0600	Concrete Curb Pedestrian	LF	35.000	35.000
0094	602.0410	Concrete Sidewalk 5-Inch	SF	824.000	824.000
0096	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	60.000	60.000

				3080-04-70	
Line	Item	Item Description	Unit	Total	Qty
0098	606.0100	Riprap Light	CY	32.000	32.000
0100	606.0200	Riprap Medium	CY	6.000	6.000
0102	608.0124	Relaid Storm Sewer 24-Inch	LF	8.000	8.000
0104	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000
0106	611.8120.S	Cover Plates Temporary	EACH	1.000	1.000
0108	614.0010	Barrier System Grading Shaping Finishing	EACH	8.000	8.000
0110	614.0397	Guardrail Mow Strip Emulsified Asphalt	SY	438.000	438.000
0112	614.2300	MGS Guardrail 3	LF	462.500	462.500
0114	614.2500	MGS Thrie Beam Transition	LF	25.000	25.000
0116	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
0118	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3080-04-70	EACH	1.000	1.000
0120	619.1000	Mobilization	EACH	1.000	1.000
0122	620.0300	Concrete Median Sloped Nose	SF	32.000	32.000
0124	624.0100	Water	MGAL	3.000	3.000
0126	625.0105	Topsoil	CY	600.000	600.000
0128	627.0200	Mulching	SY	5,200.000	5,200.000
0130	628.1104	Erosion Bales	EACH	50.000	50.000
0132	628.1504	Silt Fence	LF	2,000.000	2,000.000
0134	628.1520	Silt Fence Maintenance	LF	1,000.000	1,000.000
0136	628.1905	Mobilizations Erosion Control	EACH	8.000	8.000
0138	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0140	628.2008	Erosion Mat Urban Class I Type B	SY	180.000	180.000
0142	628.7010	Inlet Protection Type B	EACH	5.000	5.000
0144	628.7015	Inlet Protection Type C	EACH	26.000	26.000
0146	628.7020	Inlet Protection Type D	EACH	5.000	5.000
0148	628.7504	Temporary Ditch Checks	LF	300.000	300.000
0150	628.7555	Culvert Pipe Checks	EACH	31.000	31.000
0152	628.7560	Tracking Pads	EACH	1.000	1.000
0154	628.7570	Rock Bags	EACH	165.000	165.000
0156	629.0210	Fertilizer Type B	CWT	3.600	3.600
0158	630.0120	Seeding Mixture No. 20	LB	155.000	155.000
0160	630.0500	Seed Water	MGAL	109.000	109.000
0162	631.0300	Sod Water	MGAL	5.000	5.000
0164	631.1000	Sod Lawn	SY	10.000	10.000
0166	631.1100	Sod Erosion Control	SY	24.000	24.000
0168	633.5200	Markers Culvert End	EACH	11.000	11.000
0170	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	20.000	20.000
0172	637.2210	Signs Type II Reflective H	SF	40.000	40.000
0174	637.2230	Signs Type II Reflective F	SF	132.000	132.000
0176	638.2102	Moving Signs Type II	EACH	14.000	14.000
0178	638.2602	Removing Signs Type II	EACH	18.000	18.000
0180	638.3000	Removing Small Sign Supports	EACH	28.000	28.000
0182	642.5201	Field Office Type C	EACH	1.000	1.000
0184	643.0300	Traffic Control Drums	DAY	25,000.000	25,000.000
0186	643.0410	Traffic Control Barricades Type II	DAY	100.000	100.000
0188	643.0420	Traffic Control Barricades Type III	DAY	5,400.000	5,400.000
0190	643.0705	Traffic Control Warning Lights Type A	DAY	8,600.000	8,600.000
0192	643.0715	Traffic Control Warning Lights Type C	DAY	5,100.000	5,100.000
0194	643.0900	Traffic Control Signs	DAY	37,200.000	37,200.000

				3080-04-70	
Line	Item	Item Description	Unit	Total	Qty
0196	643.0910	Traffic Control Covering Signs Type I	EACH	2.000	2.000
0198	643.0920	Traffic Control Covering Signs Type II	EACH	13.000	13.000
0200	643.1000	Traffic Control Signs Fixed Message	SF	38.000	38.000
0202	643.1050	Traffic Control Signs PCMS	DAY	40.000	40.000
0204	643.5000	Traffic Control	EACH	1.000	1.000
0206	645.0120	Geotextile Type HR	SY	20.000	20.000
0208	645.0130	Geotextile Type R	SY	280.000	280.000
0210	646.1020	Marking Line Epoxy 4-Inch	LF	38,200.000	38,200.000
0212	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	40,000.000	40,000.000
0214	646.3020	Marking Line Epoxy 8-Inch	LF	3,560.000	3,560.000
0216	646.4505	Marking Line Same Day Paint 4-Inch	LF	2,900.000	2,900.000
0218	646.5020	Marking Arrow Epoxy	EACH	35.000	35.000
0220	646.5120	Marking Word Epoxy	EACH	11.000	11.000
0222	646.6120	Marking Stop Line Epoxy 18-Inch	LF	550.000	550.000
0224	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	2,500.000	2,500.000
0226	646.6468	Cold Weather Marking Epoxy 8-Inch	LF	210.000	210.000
0228	646.7120	Marking Diagonal Epoxy 12-Inch	LF	270.000	270.000
0230	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	390.000	390.000
0232	646.7520	Marking Crosswalk Epoxy Block Style 24-Inch	LF	190.000	190.000
0234	646.8120	Marking Curb Epoxy	LF	10.000	10.000
0236	646.8220	Marking Island Nose Epoxy	EACH	2.000	2.000
0238	648.0100	Locating No-Passing Zones	MI	3.880	3.880
0240	649.0105	Temporary Marking Line Paint 4-Inch	LF	2,900.000	2,900.000
0242	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	2,900.000	2,900.000
0244	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	808.000	808.000
0246	650.8000	Construction Staking Resurfacing Reference	LF	20,514.000	20,514.000
0248	650.8500	Construction Staking Electrical Installations (project) 01. 3080-04-70 Signals	LS	1.000	1.000
0250	650.9000	Construction Staking Curb Ramps	EACH	6.000	6.000
0252	650.9910	Construction Staking Supplemental Control (project) 01. 3080-04-70	LS	1.000	1.000
0254	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	233.000	233.000
0256	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	65.000	65.000
0258	652.0700.S	Install Conduit into Existing Item	EACH	10.000	10.000
0260	652.0800	Conduit Loop Detector	LF	397.000	397.000
0262	654.0101	Concrete Bases Type 1	EACH	4.000	4.000
0264	654.0110	Concrete Bases Type 10	EACH	2.000	2.000
0266	654.0120	Concrete Bases Type 10-Special	EACH	2.000	2.000
0268	655.0230	Cable Traffic Signal 5-14 AWG	LF	114.000	114.000
0270	655.0240	Cable Traffic Signal 7-14 AWG	LF	44.000	44.000
0272	655.0260	Cable Traffic Signal 12-14 AWG	LF	2,501.000	2,501.000
0274	655.0320	Cable Type UF 2-10 AWG Grounded	LF	663.000	663.000
0276	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	2,161.000	2,161.000
0278	655.0610	Electrical Wire Lighting 12 AWG	LF	576.000	576.000
0280	655.0700	Loop Detector Lead In Cable	LF	2,471.000	2,471.000
0282	655.0800	Loop Detector Wire	LF	1,517.000	1,517.000
0284	655.0900	Traffic Signal EVP Detector Cable	LF	956.000	956.000
0286	657.0100	Pedestal Bases	EACH	4.000	4.000
0288	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	2.000	2.000
0290	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	2.000	2.000
0292	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	1.000	1.000

Line	Item	Item Description	Unit	Total	3080-04-70 Qty
0294	658.0173	Traffic Signal Face 3S 12-Inch	EACH	12.000	12.000
0296	658.0174	Traffic Signal Face 4S 12-Inch	EACH	4.000	4.000
0298	658.0500	Pedestrian Push Buttons	EACH	2.000	2.000
0300	658.5069	Signal Mounting Hardware (location) 01. USH 18/CTH C & CTH C/Jones Dr	LS	1.000	1.000
0302	659.1125	Luminaires Utility LED C	EACH	5.000	5.000
0304	690.0150	Sawing Asphalt	LF	10,200.000	10,200.000
0306	690.0250	Sawing Concrete	LF	30.000	30.000
0308	740.0440	Incentive IRI Ride	DOL	18,380.000	18,380.000
0310	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,000.000	1,000.000
0312	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	1,320.000	1,320.000
0314	SPV.0035	Special 01. Backfill Slurry	CY	40.000	40.000
0316	SPV.0060	Special 01. Section Corner Monuments Special	EACH	1.000	1.000
0318	SPV.0060	Special 02. Flashing Beacon Systems USH 18 EB prior to Cushing Park Rd Trail (RT)	EACH	1.000	1.000
0320	SPV.0060	Special 03. Flashing Beacon Systems USH 18 EB prior to Cushing Park Rd Trail (LT)	EACH	1.000	1.000
0322	SPV.0060	Special 04. Flashing Beacon Systems USH 18 EB at Cushing Park Rd Trail Back To Back (RT)	EACH	1.000	1.000
0324	SPV.0060	Special 05. Flashing Beacon Systems USH 18 WB at Cushing Park Rd Trail Back To Back (RT)	EACH	1.000	1.000
0326	SPV.0060	Special 06. Flashing Beacon Systems USH 18 WB prior to Cushing Park Rd Trail (RT)	EACH	1.000	1.000
0328	SPV.0060	Special 07. Flashing Beacon Systems USH 18 WB prior to Cushing Park Rd Trail (LT)	EACH	1.000	1.000
0330	SPV.0060	Special 08. Flashing Beacon System USH 18 EB prior to Ice Age Trail (RT)	EACH	1.000	1.000
0332	SPV.0060	Special 09. Flashing Beacon Systems USH 18 EB prior to Ice Age Trail (LT)	EACH	1.000	1.000
0334	SPV.0060	Special 10. Flashing Beacon Systems USH 18 EB at Ice Age Trail Back To Back (RT)	EACH	1.000	1.000
0336	SPV.0060	Special 11. Flashing Beacon Systems USH 18 WB at Ice Age Trail Back To Back (RT)	EACH	1.000	1.000
0338	SPV.0060	Special 12. Flashing Beacon Systems USH 18 WB prior to Ice Age Trail (RT)	EACH	1.000	1.000
0340	SPV.0060	Special 13. Flashing Beacon Systems USH 18 WB prior to Ice Age Trail (LT)	EACH	1.000	1.000
0342	SPV.0060	Special 14. Pull Box and Rim Covers	EACH	17.000	17.000
0344	SPV.0060	Special 16. Install Poles Type 10	EACH	2.000	2.000
0346	SPV.0060	Special 17. Install Poles Type 10 Special	EACH	2.000	2.000
0348	SPV.0060	Special 18. Install Monotube Arms 15-FT	EACH	1.000	1.000
0350	SPV.0060	Special 19. Install Monotube Arms 25-FT	EACH	1.000	1.000
0352	SPV.0060	Special 20. Install Monotube Arms 40-FT Type 9/10 Spec Pole	EACH	2.000	2.000
0354	SPV.0060	Special 22. Install Luminaire Arms Steel 15-FT	EACH	2.000	2.000
0356	SPV.0060	Special 23. Transport and Install State Furnished Traffic Signal Cabinet	EACH	1.000	1.000
0358	SPV.0060	Special 24. Transport Traffic Signal and Intersection Lighting Materials	EACH	1.000	1.000
0360	SPV.0060	Special 25. Transport and Install State Furnished EVP Detector Heads	EACH	1.000	1.000
0362	SPV.0090	Special 01. Straw Wattles	LF	1,500.000	1,500.000
0364	SPV.0090	Special 02. Asphaltic Centerline Rumble Strips Sinusoidal 2-Lane Rural	LF	10,320.000	10,320.000
0366	SPV.0090	Special 03. Asphaltic Shoulder Rumble Strips Sinusoidal 2-Lane Rural	LF	14,430.000	14,430.000
0368	SPV.0090	Special 05. Wide Crack Repair	LF	22.000	22.000

3

201- CLEARING & GRUBBING ITEMS

CATEGORY	STATION	OFFSET	LOCATION	201.0120 CLEARING ID	201.0220 GRUBBING ID	REMARKS
0010	449+20	41' RT	USH 18	5	5	SW CORNER C-67-48
0010	449+22	46' RT	USH 18	12	12	SW CORNER C-67-48
			TOTAL 0010	17	17	

211- SHOULDER FOUNDATION ITEM

CATEGORY	STATION	TO	STATION	LOCATION	211.0400 PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	9
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	5
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	4
0010	335+52	-	353+13	OPEN GATE CT - CTH P	5
0010	353+13	-	364+82	CTH P - WATERVILLE RD	7
0010	364+82	-	399+26	WATERVILLE RD - WATERVILLE LAKE RD	32
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	9
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	36
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	53
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	39
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	11
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	31
0010	508+46	-	509+19	MORAINE VIEW DR - END	--
				TOTAL 0010	243

3

204-REMOVAL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY	204.0165 REMOVING GUARDRAIL LF	204.0190 REMOVING SURFACE DRAINS EACH	REMARKS
0010	304+02	-	509+19	USH 18	--	--	92,305	--	--	--	--	ENTIRE PROJECT
0010	304+02	-	304+52	USH 18	--	233	--	--	--	--	--	
0010	337+17	-	339+12	USH 18	--	--	--	195	--	--	3	DECELERATION LANE
0010	354+00	-	354+06	USH 18	3	--	--	--	--	--	--	17' RT MH
0010	354+40	-	358+05	USH 18	--	--	--	68	--	360	--	RT
0010	365+99	-	369+58	USH 18	--	--	--	114	--	261	1	LT
0010	367+14	-	369+58	USH 18	--	--	--	81	--	200	--	RT
0010	372+01	-	372+16	USH 18	--	--	--	14	--	--	1	RT
0010	410+66	-	412+95	USH 18	--	--	--	--	--	229	1	RT
0010	432+10	-	433+11	USH 18, DRWY RT	--	73	--	--	--	--	1	RT SIDE
0010	462+82	-	463+12	USH 18	--	--	--	--	--	--	1	LT
0010	506+65	-	506+85	USH 18	--	--	--	--	--	--	1	LT
0010	507+89	-	508+66	USH 18 & PARKING LOT	18	48	--	158	15	--	--	RT SIDE
0010	508+69	-	509+19	USH 18	--	251	--	37	9	50	--	
0010	20WH+70	-	20WH+80	WHITAKER LA	--	32	--	--	--	10	--	
0010	20WT+71	-	20WT+81	WAYFARE TRL	--	33	--	--	--	--	--	
0010	10G+25	-	10G+35	OPEN GATE CT	--	100	--	--	--	--	--	
0010	20P+70	-	20P+80	CTH P	--	39	--	137	--	--	--	RT SIDE
0010	20W+49	-	20W+59	WATERVILLE RD NORTH	--	33	--	--	--	--	--	
0010	19W+30	-	19W+40	WATERVILLE RD SOUTH	--	42	--	--	--	--	--	
0010	368+25	-	368+57	C-67-14, USH 18	--	60	--	--	--	--	--	OMIT STRUCTURE
0010	20WL+39	-	20WL+49	WATERVILLE LAKE RD	--	54	--	--	--	--	--	
0010	19CS+35	-	19CS+45	CTH C SOUTH	--	47	--	--	--	--	--	
0010	20CP+24	-	20CP+34	CUSHING PARK RD	--	34	--	--	--	--	--	
0010	20CN+35	-	20CN+45	CTH C NORTH	39	49	--	--	--	--	--	TRIANGLE ISLAND
0010	20CN+85	-	21CN+01	CTH C NORTH RT TURN	--	28	--	--	--	--	--	
0010	19CN+20	-	19CN+30	JONES DR	--	31	--	--	--	--	--	
0010	20L+23	-	20L+33	LUTERBACH CT	--	72	--	--	--	--	--	
0010	19MK+48	-	19MK+58	MICKLE RD	--	56	--	--	--	--	--	
0010	10MV+52	-	10MV+62	MORAINE VIEW DR	--	43	--	--	--	--	--	
				TOTAL 0010	57	1,126	92,305	804	24	1,110	9	

3

EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1) CUT (2)	EBS EXCAVATION (3)	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	205.0500 MARSH EXCAVATION (6)	205.0200 ROCK EXCAVATION (7)	REDUCED MARSH IN FILL (8) FACTOR 1.00	REDUCED EBS IN FILL (9) FACTOR 1.00	EXPANDED MARSH BACKFILL (10) FACTOR 1.00	EXPANDED EBS BACKFILL (11) FACTOR 1.00	EXPANDED ROCK (12) FACTOR 1.00	UNEXPANDED FILL	EXPANDED FILL (13) FACTOR 1.00	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW
1	337+17 TO 339+12	USH 18	130	0	0	130	0	0	0	0	0	0	0	0	0	130	130	0
DIVISION 1 SUBTOTAL			130	0	0	130	0	0	0	0	0	0	0	0	0	130	130	0
GRAND TOTAL			130	0	0	130	0	0	0	0	0	0	0	0	0	130	130	0
TOTAL COMMON EXC			130															

NOTES:
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(6) MARSH EXCAVATION - TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL. ITEM NUMBER 205.0500
(7) ROCK EXCAVATION ITEM NUMBER 205.0200
(8) REDUCED MARSH IN FILL - EXCAVATED MARSH MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. MARSH IN FILL REDUCTION FACTOR = X.1X
(9) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USUABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = X.2X
(10) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. MARSH BACKFILL FACTOR = X.3X. ITEM NUMBER 208.1100
(11) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. EBS BACKFILL FACTOR = X.4X. ITEM NUMBER 208.1100
(12) EXPANDED ROCK FACTOR = X.5X
(13) EXPANDED FILL FACTOR = X.6X
DEPENDING ON SELECTIONS: EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR
OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR
OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR
OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * 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.
(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

213-FINISHING ITEM

CATEGORY	STATION	TO	STATION	LOCATION	213.0100.01 FINISHING ROADWAY (PROJECT) (01. 3080-04-70) EACH
0010	304+05	-	509+19	USH 18	1
				TOTAL 0010	1

SPV.0035.01-BACKFILL SLURRY

CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	SPV.0035.01 SPECIAL (01. BACKFILL SLURRY) CY	REMARKS
0010	354+71	-	357+91	RT	USH 18	10	FILL POST HOLES
0010	366+98	-	369+61	LT	USH 18	8	FILL POST HOLES
0010	367+46	-	369+62	RT	USH 18	7	FILL POST HOLES
0010	410+67	-	412+86	RT	USH 18	7	FILL POST HOLES
	UNDISTRIBUTED					8	
					TOTAL 0010	40	

305 - BASE AGGREGATE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	23	--
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	24	--
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	31	--
0010	335+52	-	353+13	OPEN GATE CT - CTH P	80	76
0010	353+13	-	364+82	CTH P - WATERVILLE RD	28	18
0010	364+82	-	399+26	WATERVILLE RD - WATERVILLE LAKE RD	55	26
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	33	--
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	124	--
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	185	--
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	157	--
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	26	--
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	113	15
0010	508+46	-	509+19	MORAINE VIEW DR - END	--	6
	UNDISTRIBUTED				40	20
				TOTAL 0010	920	160

3

465-ASPHALTIC SURFACE PATCHING

CATEGORY	STATION	TO	STATION	LOCATION	* 455.0605 TACK COAT GAL	465.0110 ASPHALTIC SURFACE PATCHING TON	* 690.0150 SAWING ASPHALT LF
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	27	44	1,386
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	39	63	857
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	36	57	1,143
0010	335+52	-	353+13	OPEN GATE CT - CTH P	40	64	1,477
0010	353+13	-	364+82	CTH P - WATERVILLE RD	26	42	581
0010	364+82	-	399+26	WATERVILLE RD - WATERVILLE LAKE RD	33	53	1,348
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	--	--	--
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	--	--	--
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	15	24	676
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	7	11	208
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	12	19	291
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	2	4	157
0010	508+46	-	509+19	MORAINE VIEW DR - END	3	5	266
0010	20P+10	-	20P+80	CTH P	2	4	137
0010	UNDISTRIBUTED				17	211	273
				TOTAL 0010	260	600	8,800

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

520-CLEANING PIPE ITEMS

CATEGORY	STATION	OFFSET	LOCATION	520.8700 CLEANING CULVERT PIPES EACH	633.5200 MARKERS CULVERT END EACH	REMARKS
0010	309+46	38' RT	USH 18	1	1	18" STORM OUTFALL
0010	313+36	27' RT	USH 18	1	--	18" CULVERT OUTFALL
0010	324+50	34' RT	USH 18	1	1	24" CULVERT OUTFALL, MARKER NORTH SIDE
0010	330+10	28' LT	USH 18	1	--	18" STORM OUTFALL
0010	340+40	28' LT	USH 18	1	2	28" X 20" STORM OUTFALL
0010	382+55	29' LT	USH 18	1	1	18" STORM OUTFALL
0010	382+55	36' LT	SUNSET DR	1	--	18" STORM OUTFALL
0010	389+00	28' LT	USH 18	1	1	24" STORM OUTFALL
0010	396+96	33' RT	USH 18	1	--	24" STORM OUTFALL
0010	449+95	32' LT	USH 18	--	1	
0010	460+98	54' RT	USH 18	1	--	24" STORM OUTFALL
0010	506+62	56' RT	USH 18	--	1	
0010	506+99	57' RT	USH 18	--	1	
0011	507+25	55' RT	USH 18	--	1	
0012	509+15	47' RT	USH 18	--	1	
			TOTAL 0010	10	11	

3

465- HMA PAVEMENT ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	* 455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28 TON	460.6224 HMA PAVEMENT 4 MT 58-28 S TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0305 ASPHALTIC SURFACE SAFETY ISLANDS TON	REMARKS
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	491	442	344	--	--	
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	722	649	505	--	--	
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	821	739	575	4	--	DRWY 329+75 LT
0010	335+52	-	353+13	OPEN GATE CT - CTH P	1,131	973	797	10	--	DRWY 341+77 LT, 343+34 LT &346+06 RT
0010	353+13	-	364+82	CTH P - WATERVILLE RD	793	713	555	8	--	DRWY 355+40 LT & 360+40 LT
0010	364+82	-	399+26	WATERVILLE RD - WATERVILLE LAKE RD	1,929	1,736	1,350	4	--	DRWY 372+95 RT
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	663	597	464	--	--	
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	1,519	1,367	1,063	23	--	DRWY 414+10 LT & 415+03 LT
0010					--	--	--	14	--	DRWY 420+80 RT & 428+55 RT
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	1,885	1,696	1,320	11	1	DRWY 452+72 LT
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	1,156	1,040	809	27	--	DRWY 475+51 LT & 476+99 LT
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	663	597	464	--	--	
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	1,132	1,018	792	--	--	
0010	508+46	-	509+19	MORAINE VIEW DR - END	104	93	73	--	--	
				TOTALS 0010	13,010	11,660	9,110	100	1	

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

520-STORM SEWER ITEMS

CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	520.8000 CONCRETE COLLARS FOR PIPE EACH	521.3124 CULVERT PIPE CORRUGATED STEEL 24-INCH LF	608.0124 RELAID STORM SEWER 24-INCH LF	REMARKS
0010	449+43	-	449+51	32.0 'LT	USH 18	1	--	8	REINSTALL IN PLACE REPAIRING FAULTED JOINT
0010	508+98	-	509+15	46.0' RT	USH 18	1	17	--	EXTEND AT EXISTING SLOPE
0010	508+98	-	509+15	48.3'RT	USH 18	1	17	--	EXTEND AT EXISTING SLOPE
					TOTAL 0010	3	34	8	

3

465-RUMBLE STRIP ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	OFFSET	SPV.0090.02 SPECIAL (02. ASPHALTIC CENTERLINE RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL) LF	SPV.0090.03 SPECIAL (03. ASPHALTIC SHOULDER RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL) LF
0010	312+80	-	314+20	USH 18	R/L	140	--
0010	314+20	-	318+70	USH 18	R/L LT RT	450	900
0010	318+70	-	319+80	USH 18	R/L, LT	110	110
0010	319+80	-	320+70	USH 18	R/L	90	--
0010	324+90	-	325+90	USH 18	R/L	100	--
0010	325+90	-	326+80	USH 18	R/L LT RT	90	180
0010	326+80	-	329+30	USH 18	R/L LT RT	250	500
0010	329+30	-	330+10	USH 18	R/L	80	--
0010	330+10	-	333+50	USH 18	R/L LT	340	340
0010	337+50	-	340+00	USH 18	R/L	250	--
0010	340+00	-	340+80	USH 18	R/L LT	80	80
0010	340+80	-	342+90	USH 18	R/L LT RT	210	420
0010	342+90	-	343+70	USH 18	R/L RT	80	80
0010	343+70	-	345+70	USH 18	R/L LT RT	200	400
0010	345+70	-	346+00	USH 18	R/L, LT	30	30
0010	346+00	-	346+40	USH 18	R/L	40	--
0010	371+40	-	373+30	USH 18	R/L	190	--
0010	373+30	-	397+20	USH 18	R/L, RT	2,390	2,390
0010	397+20	-	401+30	USH 18	RT	--	410
0010	401+30	-	404+60	USH 18	R/L, RT	330	330
0010	404+60	-	406+90	USH 18	R/L	230	--
0010	411+00	-	415+60	USH 18	R/L	460	--
0010	415+60	-	418+80	USH 18	R/L, RT, LT	320	640
0010	418+80	-	419+30	USH 18	RT, LT	--	100
0010	419+30	-	421+20	USH 18	RT	--	190
0010	422+40	-	425+60	USH 18	RT	--	320
0010	425+60	-	428+00	USH 18	R/L, RT	240	240
0010	435+20	-	437+00	USH 18	R/L	180	--
0010	437+00	-	452+10	USH 18	R/L LT RT	1,510	3,020
0010	452+10	-	453+30	USH 18	R/L, RT	120	120
0010	453+30	-	456+30	USH 18	R/L LT RT	300	600
0010	468+00	-	474+90	USH 18	R/L LT RT	690	1,380
0010	474+90	-	478+10	USH 18	R/L, RT	320	320
0010	478+10	-	483+50	USH 18	RT	--	540
0010	483+50	-	486+40	USH 18	R/L, RT, LT	290	580
0010	486+40	-	488+50	USH 18	R/L LT	210	210
					TOTAL 0010	10,320	14,430

611 - ADJUSTING MANHOLE ITEMS

CATEGORY	STATION	OFFSET	LOCATION	611.8110 ADJUSTING MANHOLE COVERS EACH	611.8120.S COVER PLATES TEMPORARY EACH	REMARKS
0010	354+03	17' RT	USH 18	1	1	ADJUST UP 1 INCH
			TOTAL 0010	1	1	

606-RIP RAP ITEM

CATEGORY	STATION	OFFSET	LOCATION	606.0100 RIPRAP LIGHT CY	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY	* 645.0130 GEOTEXTILE TYPE R SY	REMARKS
0010	309+58	38' RT	USH 18	2	--	--	7	
	309+69	34' RT	USH 18	2	--	--	7	
	320+14	29' LT	USH 18	2	--	--	7	
	339+76	31' LT	USH 18	2	--	--	7	
	340+39	32' RT	USH 18	2	--	--	7	
	367+22	28' LT	USH 18	2	--	--	7	
	371+90	25' RT	USH 18	2	--	--	7	
	382+53	67' LT	USH 18	2	--	--	7	EAST SIDE OF SUNSET DR
	401+00	49' LT	USH 18	--	6	20	--	
	411+70	34' LT	USH 18	2	--	--	7	
	432+21	39' RT	USH 18	2	--	--	7	
	463+16	54' LT	USH 18	2	--	--	7	
	506+61	40' LT	USH 18	2	--	--	7	
	509+18	47' RT	USH 18	6	--	--	20	
0010	21P+75	31' RT	CTH P	2	--	--	7	
			TOTAL 0010	32	6	20	111	

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

618-HAUL ROAD ITEM

CATEGORY	STATION	TO	STATION	LOCATION	618.0100.01 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) (01. 3080-04-70) EACH	REMARKS
0010	304+05	-	509+19	ENTIRE PROJECT	1	
				TOTAL 0010	1	

619-MOBILIZATION

CATEGORY	STATION	TO	STATION	LOCATION	619.1000 MOBILIZATION EACH	REMARKS
0010	304+05	-	509+19	USH 18	1	
				TOTAL 0010	1	

642-FIELD OFFICE

CATEGORY	STATION	TO	STATION	LOCATION	642.5201 FIELD OFFICE TYPE C EACH
0010	304+05	-	509+19	USH 18	1
				TOTAL 0010	1

3

3

601-CONCRETE ITEMS

CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	416.1010 CONCRETE SURFACE DRAINS CY	601.0407 CONCRETE CURB & GUTTER 18-INCH TYPE D LF	601.0415 CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J LF	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	601.0576 CONCRETE CURB & GUTTER 4-INCH SLOPED 30-INCH TYPE J LF	601.0600 CONCRETE CURB PEDESTRIAN LF	602.0410 CONCRETE SIDEWALK 5-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF	* 645.0130 GEOTEXTILE FABRIC TYPE R SY	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.9000 CONSTRUCTION STAKING CURB RAMPS EACH
0010	309+44	-	309+64	29' RT	USH 18	1.1	--	--	--	--	--	--	--	--	15	--	--
0010	320+21	-	320+34	31' LT	USH 18	0.7	--	--	--	--	--	--	--	--	13	--	--
0010	337+17	-	339+12	17' - 23' RT	USH 18	0.0	--	195	--	--	--	--	--	--	--	195	--
0010	339+51	-	339+74	27' LT	USH 18	1.0	--	--	--	--	--	--	--	--	17	--	--
0010	340+19	-	340+35	29' RT	USH 18	0.9		--	--	7	--	--	--	--	17	7	--
0010	20+31	-	20+80	18' LT	CTH P	0.0	--	--	79	--	--	--	--	--	--	79	--
0010	20P+58	-	20P+16	21' RT	CTH P	--	--	--	59	--	--	--	--	--	--	59	--
0010	20P+58	-	20P+71	30' RT	CTH P	0.6	--	--	--	--	--	--	--	--	10	--	--
0010	354+43	-	354+86	24' RT	USH 18	--	--	--	--	43	--	--	--	--	--	43	--
0010	357+79	-	358+04	17' RT	USH 18	--	--	--	--	25	--	--	--	--	--	25	--
0010	365+99	-	367+09	19' - 22' LT	USH 18	0.0	--	--	--	109	--	--	--	--	--	109	--
0010	367+09	-	367+14	18.5' LT	USH 18	0.6	--	--	--	--	--	--	--	--	12	--	--
0010	367+14	-	367+93	22' - 32' RT	USH 18	--	--	--	--	81	--	--	--	--	--	81	--
0010	371+93		372+03	16' RT	USH 18	0.6	--	--	--	--	--	--	--	--	--	--	--
0010	372+03	-	372+16	16' RT	USH 18	--	--	13	--	--	--	--	--	--	8	13	--
0010	411+50	-	411+58	20' LT	USH 18	0.9	--	--	--	--	--	--	--	--	16	--	--
0010	432+32	-	432+42	25' RT	USH 18	1.1	--	--	--	--	--	--	--	--	17	--	--
0010	462+83	-	462+93	30' LT	USH 18	1.7	--	--	--	--	--	--	--	--	30	--	--
0010	506+60	-	506+80	27' LT	USH 18	0.8	--	--	--	--	--	--	--	--	13	--	--
0010	507+83	-	508+19	64' RT - 46' LT	USH 18	--	--	--	63	--	18	333	30	--	--	81	3
0010	508+66	-	509+19	63' RT - 48' LT	USH 18	--	--	--	95	--	17	441	30	--	--	112	3
0010	509+08	-	509+12	4' TO 12' RT	USH 18	--	--	--	--	--	--	25	--	32	--	--	--
0010	509+12	-	509+14	5' & 11' RT	USH 18	--	4	--	--	--	--	--	--	--	--	4	--
0010	509+12	-	509+17	5.5' - 10.5' RT	USH 18	--	--	--	--	--	--	25	--	--	--	--	--
					TOTAL 0010	10.0	4	208	295	265	35	824	60	32	169	808	6

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

628-EROSION CONTROL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0105 TOPSOIL CY	627.0200 MULCHING SY	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7010 INLET PROTECTION TYPE B EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7020 INLET PROTECTION TYPE D EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	628.7560 TRACKING PADS EACH	628.7570 ROCK BAGS EACH	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	631.1000 SOD LAWN SY	631.1100 SOD EROSION CONTROL SY	SPV.0090.01 SPECIAL (01. STRAW WATTLES) LF
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	19	172	--	--	--	1	--	--	--	2	1	12	1	--	6	0.1	5	--	--	--
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	27	246	--	--	--	--	--	--	--	--	--	12	1	--	6	0.2	7	--	--	--
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	27	282	--	--	--	1	1	--	--	2	--	12	2	--	6	0.2	8	--	--	--
0010	335+52	-	353+13	OPEN GATE CT - CTH P	60	541	--	--	--	--	1	150	1	1	--	60	3	1	18	0.3	15	--	--	--
0010	353+13	-	364+82	CTH P - WATERVILLE RD	29	260	--	--	--	1	--	--	--	6	1	12	3	--	12	0.2	7	--	--	--
0010	364+82	-	399+26	WATERVILLE RD - WATERVILLE LAKE RD	85	765	--	--	--	1	--	--	--	7	2	12	--	--	--	0.8	21	--	20	510
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	24	216	--	--	--	--	--	--	--	1	--	--	1	--	6	0.1	6	--	--	--
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	60	536	--	--	--	1	1	--	--	--	--	36	6	--	30	0.3	14	--	--	--
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	72	650	--	--	--	1	--	--	--	2	--	24	--	--	--	0.4	18	--	--	520
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	51	458	--	1,510	750	--	--	--	--	1	--	--	1	--	6	0.3	12	--	--	--
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	21	186	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	5	--	--	--
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	42	382	--	--	--	1	1	--	--	--	--	84	3	--	18	0.2	10	3	--	80
0010	508+46	-	509+19	MORAINE VIEW DR - END	2	16	--	--	--	--	--	--	2	--	--	24	5	--	30	0.0	1	--	--	190
0100	UNDISTRIBUTED				81	491	50	490	250	1	--	30	2	4	1	12	5	--	27	0.3	28	7	4	200
				TOTAL 0010	600	5,200	50	2,000	1,000	8	4	180	5	26	5	300	31	1	165	3.6	155	10	24	1,500

3

614-GUARDRAIL ITEMS

CATEGORY	STATION	TO	STATION	OFFSET	LOCATION	513.7051 RAILING STEEL TYPE W LF	** EXCAVATION COMMON CY	** BORROW CY	** TOPSOIL SY	** FERTILIZER TYPE B CWT	** SEEDING LB	** MULCHING SY	614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING EACH	614.0397 GUARDRAIL MOW STRIP EMULSIFIED ASPHALT SY	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
0010	354+71	-	355+25	27.1' -23.6' RT	USH 18	--	--	--	71	0.04	1.92	71	1	24	--	--	1
0010	355+25	-	357+38	23.6' - 19.0' RT	USH 18	--	--	--	--	--	--	--	--	94	212.5	--	--
0010	357+38	-	357+91	19.0' - 21.0' RT	USH 18	--	--	--	71	0.04	1.92	71	1	24	--	--	1
0010	366+98	-	367+51	23.0' -17.2' LT	USH 18	--	--	--	60	0.04	1.63	60	1	24	--	--	1
0010	367+51	-	368+01	17.2' - 18.0' LT	USH 18	--	--	--	--	--	--	--	--	22	50.0	--	--
0010	368+01	-	368+08	18.0' LT	USH 18	--	--	--	--	--	--	--	--	3	--	6.3	--
0010	368+08	-	368+70	18.0' LT	USH 18	62.5	--	--	--	--	--	--	--	11	--	--	--
0010	368+70	-	368+77	18.0' LT	USH 18	--	--	--	--	--	--	--	--	11	25.0	--	--
0010	368+77	-	369+08	18.0' LT	USH 18	--	--	--	--	--	--	--	--	17	--	6.3	--
0010	369+08	-	369+61	18.0' - 20.0' LT	USH 18	--	--	--	50	0.03	1.36	50	1	24	--	--	1
0010	367+46	-	367+97	36.4' - 24.0' RT	USH 18	--	--	--	47	0.02	1.02	47	1	24	--	--	1
0010	367+97	-	368+21	24.0' - 17.7' RT	USH 18	--	--	--	--	--	--	--	--	11	25.0	--	--
0010	368+21	-	368+28	17.7' - 17.0' RT	USH 18	--	--	--	--	--	--	--	--	3	--	6.3	--
0010	368+28	-	368+66	17.0' RT	USH 18	37.5	--	--	--	--	--	--	--	6	--	--	--
0010	368+66	-	368+72	17.0' RT	USH 18	--	--	--	--	--	--	--	--	3	--	6.3	--
0010	368+72	-	369+09	17.0' RT	USH 18	--	--	--	--	--	--	--	--	17	37.5	--	--
0010	369+09	-	369+62	17.0' - 19.1' RT	USH 18	--	--	--	64	0.03	1.39	64	1	24	--	--	1
0010	410+67	-	411+20	25.0' - 23.0' RT	USH 18	--	--	--	49	0.03	1.32	49	1	24	--	--	1
0010	411+20	-	412+33	23.0' RT	USH 18	--	--	--	--	--	--	--	--	50	112.5	--	--
0010	412+33	-	412+86	23.0' - 25.0' RT	USH 18	--	--	--	49	0.03	1.32	49	1	24	--	--	1
					TOTAL 0010	100.0	0	0	462	0.3	11.9	462	8	438	462.5	25	8

** FOR INFORMATIONAL PURPOSES ONLY

631 - WATER ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	624.0100 WATER MGAL	630.0500 SEED WATER MGAL	631.0300 SOD WATER MGAL
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	0.02	4	--
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	0.02	6	--
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	0.03	6	--
0010	335+52	-	353+13	OPEN GATE CT - CTH P	0.16	12	--
0010	353+13	-	364+82	CTH P - WATERVILLE RD	0.05	6	--
0010	364+82	-	399+26	WATERVILLE RD - WATERVILLE LAKE RD	0.08	17	1
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	0.03	5	--
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	0.12	12	--
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	0.19	15	--
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	0.16	10	--
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	0.03	4	--
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	0.13	9	1
0010	508+46	-	509+19	MORAINE VIEW DR - END	0.01	1	1
0100	UNDISTRIBUTED				1.00	2	2
				TOTAL 0010	3.00	109	5

643-TRAFFIC CONTROL ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0410 TRAFFIC CONTROL BARRICADES TYPE II DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	2,025	--	972	1,377	405	3,807	14
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	2,025	--	243	486	405	1,134	--
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	2,025	--	243	486	405	1,134	--
0010	335+52	-	353+13	OPEN GATE CT - CTH P	2,025	--	243	486	405	1,134	--
0010	353+13	-	364+82	CTH P - WATERVILLE RD	2,025	--	243	486	405	1,134	--
0010	364+82	-	399+26	VATERVILLE RD - WATERVILLE LAKE RD	2,025	--	324	648	405	1,539	--
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	2,025	--	243	486	405	1,134	--
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	2,025	--	243	486	405	1,134	--
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	2,025	--	453	486	405	1,708	--
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	2,025	--	324	648	405	1,788	--
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	2,025	--	243	486	405	1,134	--
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	2,025	--	243	486	405	1,134	--
0010	508+46	-	509+19	MORAINE VIEW DR - END	--	81	1,134	1,134	--	2,025	14
				DETOUR	--	--	--	--	--	14,013	--
				UNDISTRIBUTED	700	19	249	419	240	3,248	12
				TOTAL 0010	25,000	100	5,400	8,600	5,100	37,200	40

643-TRAFFIC CONTROL

CATEGORY	STATION	TO	STATION	LOCATION	643.5000 TRAFFIC CONTROL EACH
0010	304+05	-	509+19	USH 18	1
				TOTAL 0010	1

643-TC FIXED MESSAGE SIGN ITEM

CATEGORY	NEAREST CROSS STREET	LOCATION	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	REMARKS
0010	SOUTH OF I 94	CTH P SOUTHBOUND	9	HWY 18 CLOSED AHEAD
0010	SOUTH OF I 94	CTH C SOUTHBOUND	9	HWY 18 CLOSED AHEAD
0010	SOUTH OF HWY C	STH 83 NORTHBOUND	10	HWY 18 EAST CLOSED AHEAD
0010	SOUTH OF HWY G	STH 67 NORTHBOUND	10	HWY 18 WEST CLOSED AHEAD
		TOTAL 0010	38	

643 - TC COVERING SIGNS ITEM

CATEGORY	STATION TO STATION	LOCATION	** NUMBER OF CYCLES	** NUMBER OF SIGNS	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE I EACH	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	REMARKS
0010	SB STH 67 500 FT SOUTH OF I 94	STH 67	1	3	--	1	ALT / 94 /ARROW
0010	SB STH 67 500 FT NORTH OF DELAFIELD RD	STH 67	1	4	--	1	ALT /EAST/ 94 /ARROW
0010	SB STH 67 400 FT SOUTH OF DELAFIELD RD	STH 67	1	3	--	1	ALT / 94 / USE LT LANE
0010	SB STH 67 400 FT NORTH OF USH 18	STH 67	1	4	--	1	ALT /EAST/ 94 /LT ARROW
0010	SB STH 67 400 FT NORTH OF USH 18	STH 67	1	3	--	1	EAST/ 18 /LT ARROW
0010	SB STH 67 NW CORNER OF USH 18	STH 67	1	4	--	1	ALT /EAST/ 94 /LT ARROW
0010	SB STH 67 NW CORNER OF USH 18	STH 67	1	3	--	1	EAST/ 18 /LT ARROW
0010	NB STH 67 SE CORNER OF USH 18	STH 67	1	3	--	1	EAST/ 18 /RT ARROW
0010	SB CTH C NORTH 300 FT NORTH OF USH 18	CTH C NORTH	1	4	--	1	ALT /EAST/ 94 /ARROW
0010	SB CTH C NORTH 300 FT NORTH OF USH 18	CTH C NORTH	1	4	--	1	ALT /WEST/ 94 /ARROW
0010	SB STH 83 200 FT SOUTH HERITAGE DR	STH 83	1	3	--	1	ALT / 94 /ARROW
0010	SB STH 83 200 FT SOUTH MARY CT	STH 83	1	3	--	1	ALT / 94 /ARROW
0010	SB STH 83 200 FT NORTH OF USH 18	STH 83	1	4	--	1	ALT /WEST/ 94 /RT ARROW
0010	SB STH 83 APPROACH TO USH 18	STH 83	1	1	1	--	OVERHEAD SIGN BRIDGE WEST 18
0010	NB STH 83 APPROACH TO USH 18	STH 83	1	1	1	--	OVERHEAD SIGN BRIDGE WEST 18
		TOTAL 0010			2	13	

** FOR INFORMATION ONLY

649 - TEMPORARY MARKING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	646.4505 MARKING LINE SAME DAY PAINT 4-INCH LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH LF	649.0150 TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH LF	REMARKS
0010	304+05	-	509+19	USH 18	--	2,900	2,900	STAGE 1 FOR PAINT, STAGE 3 FOR TAPE
0010	304+05	-	509+19	USH 18	2,900	--	--	IF NEEDED
				TOTAL 0010	2,900	2,900	2,900	

646- MARKING LINE ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	646.1040 MARKING LINE GROOVED WET REF EPOXY 4-INCH LF	646.3020 MARKING LINE EPOXY 8-INCH LF	646.5020 MARKING ARROW EPOXY EACH	646.5120 MARKING WORD EPOXY EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH LF	646.6464 COLD WEATHER MARKING EPOXY 4-INCH LF	646.6468 COLD WEATHER MARKING EPOXY 8-INCH LF	646.7120 MARKING DIAGONAL EPOXY 12-INCH LF	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH LF	646.7520 MARKING CROSSWALK EPOXY LADDER PATTERN 24-INCH LF	646.8120 MARKING CURB EPOXY LF	646.8220 MARKING ISLAND NOSE EPOXY EACH	648.0100 LOCATING NO-PASSING ZONES MI
0010	304+05	-	311+78	BEGIN - WHITATAKER LA	4,010	2,163	428	3	1	68	--	--	83	--	--	--	--	0.15
0010	311+78	-	322+83	WHITATAKER LA - WAYFARE TRL	2,326	2,082	--	--	--	37	--	--	--	--	--	--	--	0.21
0010	322+83	-	335+52	WAYFARE TRL - OPEN GATE CT	2,499	2,316	213	2	1	--	--	--	--	--	--	--	--	0.24
0010	335+52	-	353+13	OPEN GATE CT - CTH P	1,689	3,426	201	2	1	36	--	--	--	--	--	--	1	0.33
0010	353+13	-	364+82	CTH P - WATERVILLE RD	2,357	2,158	534	4	1	22	--	--	--	--	--	--	--	0.22
0010	364+82	-	399+26	WATERVILLE RD - WATERVILLE LAKE RD	7,099	6,725	151	2	--	42	--	--	--	--	--	--	--	0.65
0010	399+26	-	408+97	WATERVILLE LAKE RD - CTH C SOUTH	1,891	1,801	408	4	2	--	--	--	--	--	--	--	--	0.18
0010	408+97	-	433+07	CTH C SOUTH - CUSHING PARK RD	2,241	4,543	188	2	1	54	--	--	--	--	120	--	--	0.46
0010	433+07	-	462+32	CUSHING PARK RD - CTH C NORTH	4,598	5,254	697	6	2	73	--	--	90	--	--	--	--	0.55
0010	462+32	-	482+91	CTH C NORTH - LUTERBACH CT	3,679	3,495	364	4	1	81	--	--	62	--	60	--	--	0.39
0010	482+91	-	491+29	LUTERBACH CT - MICKLE DR	1,631	1,973	106	2	--	--	--	--	--	--	--	--	--	0.16
0010	491+29	-	508+46	MICKLE DR - MORAINE VIEW DR	3,947	3,230	224	3	--	94	--	--	27	140	--	--	--	0.33
0010	508+46	-	509+19	MORAINE VIEW DR - END	48	--	24	1	--	24	--	--	--	232	--	10	1	0.01
				UNDISTRIBUTED	186	834	22	--	1	19	2,500	210	8	18	10	--	--	--
				TOTAL 0010	38,200	40,000	3,560	35	11	550	2,500	210	270	390	190	10	2	3.88

3

650-CONSTRUCTION STAKING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF	650.8500.01 CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS (PROJECT) (01. 3080-04-70 SIGNALS) LS	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 3080-04-70) LS
0010	304+05	-	509+19	USH 18	20,514	1	1
				TOTAL 0010	20,514	1	1

SPV.0060 SECTION CORNER ITEM

CATEGORY	STATION	OFFSET	LOCATION	* SPV.0060.01 SPECIAL (01. SECTION CORNER MOUMENTS SPECIAL) EACH
0010	408+97	1'LT	USH 18 & CTH C SOUTH	1
			TOTAL 0010	1

690- SAWING ITEMS

CATEGORY	STATION	LOCATION	* 690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF	REMARKS
0010	329+75 LT	USH 18	22	--	DRIVEWAY
0010	337+12 TO 339+17 LT	USH 18	193	5	EXTEND LANE
0010	340+19 TO 340+26 RT	USH 18	28	3	DRIVEWAY
0010	343+42 LT	USH 18	27	--	DRIVEWAY
0010	346+04 RT	USH 18	19	--	DRIVEWAY
0010	20P+25 TP 20P+80 LT/RT	CTH P	138	--	CURB RETURNS CTH P
0010	354+44 TO 354+87 RT	USH 18	43	5	REMOVING CURB & GUTTER
0010	355+41 LT	USH 18	21	--	DRIVEWAY
0010	357+79 TO 358+04 RT	USH 18	25	5	REMOVING CURB & GUTTER
0010	360+40 RT	USH 18	23	--	DRIVEWAY
0010	365+99 TO367+14 LT	USH 18	115	5	REMOVING CURB & GUTTER
0010	367+15 TO 367+93 RT	USH 18	88	5	REMOVING CURB & GUTTER
0010	368+35	USH 18	26	--	STRUCTURE C-67-14
0010	368+46	USH 18	24	--	STRUCTURE C-67-14
0010	372+98 TO 372+16 RT	USH 18	18	2	REMOVING CURB & GUTTER
0010	72+95 RT	USH 18	20	--	DRIVEWAY
0010	414+11 LT	USH 18	25	--	DRIVEWAY
0010	415+01 LT	USH 18	62	--	DRIVEWAY
0010	419+86 LT	USH 18	56	--	DRIVEWAY
0010	421+80 RT	USH 18	41	--	DRIVEWAY
0010	424+56 LT	USH 18	214	--	DRIVEWAY
0010	428+55 RT	USH 18	49	--	DRIVEWAY
0010	452+73 LT	USH 18	28	--	DRIVEWAY
0010	475+49 LT	USH 18	48	--	DRIVEWAY
0010	491+31 LT	USH 18	47	--	DRIVEWAY
		TOTAL 0010	1,400	30	

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

3

TYPE II PERMANENT SIGNING 3080-04-70

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP [EA]	634.0618 POSTS WOOD 4" X 6" X 18' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
1	W1-6							1		1	1		
2	J3-1	CTH P (ARROW RIGHT)						1		1	1		
3	R7-1L							1		1	1		
4	W5-52R							1		1	1		4 FOOT MOUNTING HEIGHT
5	NONE	RUSTIC ROAD SIGN						1		1	1		
6	W5-52R							1		1	1		4 FOOT MOUNTING HEIGHT
7	W16-15A (2S)		30	X	30		6.250				1		SEE SEPARATE QTYS FOR BEACON ASSEMBLY
7A	W16-9P (2S)		24	X	12		2.000					7	
8	W16-15A (2S)		30	X	30		6.250				1		SEE SEPARATE QTYS FOR BEACON ASSEMBLY
8A	W16-9P (2S)		24	X	12		2.000					8	
9	W11-15A								1	1			INCLUDES REMOVAL OF W16-9P
10	W11-15A								1	1			INCLUDES REMOVAL OF W16-9P
11	W11-15A(2S)		30	X	30		6.250				1		SEE SEPARATE QTYS FOR BEACON ASSEMBLY
11A	W16-7R(2S)		24	X	12		2.000					11	
12	W11-15A(2S)		30	X	30		6.250				1		SEE SEPARATE QTYS FOR BEACON ASSEMBLY
12A	W16-7R(2S)		24	X	12		2.000					12	
13	W11-15A(2S)		30	X	30		6.250					11	SEE SEPARATE QTYS FOR BEACON ASSEMBLY. BACK TO BACK ASSEMBLY
13A	W16-7L (2S)		24	X	12		2.000					13	
14	W11-15A(2S)		30	X	30		6.250					12	SEE SEPARATE QTYS FOR BEACON ASSEMBLY. BACK TO BACK ASSEMBLY
14A	W16-7L (2S)		24	X	12		2.000					14	
15	W11-15A								1	1			INCLUDES REMOVAL OF W16-7L
16	W11-15A								1	1			INCLUDES REMOVAL OF W16-7R
17	W11-15A								1	1			INCLUDES REMOVAL OF W16-7R
18	W11-15A								1	1			INCLUDES REMOVAL OF W16-7L
19	W11-15A(2S)		30	X	30		6.250				1		SEE SEPARATE QTYS FOR BEACON ASSEMBLY
19A	W16-9P (2S)		24	X	12		2.000					19	
20	W11-15A(2S)		30	X	30		6.250				1		SEE SEPARATE QTYS FOR BEACON ASSEMBLY
20A	W16-9P (2S)		24	X	12		2.000					20	
21	W11-15A								1	1			INCLUDES REMOVAL OF W16-9P
22	W11-15A								1	1			INCLUDES REMOVAL OF W16-9P
23	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY, THIS ONE IS MOUNTED ON TYPE 1 POLE
23A	W16-9P (2S)		24	X	12		2.000					23	
24	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY, THIS ONE IS MOUNTED ON TYPE 1 POLE
24A	W16-9P (2S)		24	X	12		2.000					24	
25	W11-2								1	1			INCLUDES REMOVAL OF W16-9P
26	W11-2								1	1			INCLUDES REMOVAL OF W16-9P
27	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY, THIS ONE IS MOUNTED ON TYPE 1 POLE
27A	W16-7R(2S)		24	X	12		2.000					27	
28	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY, THIS ONE IS MOUNTED ON TYPE 1 POLE
28A	W16-7R(2S)		24	X	12		2.000					28	
29	W11-2								1	1			INCLUDES REMOVAL OF W16-7L
30	W11-2								1	1			INCLUDES REMOVAL OF W16-7L

SHEET: 1 OF 2

3

TYPE II PERMANENT SIGNING 3080-04-70

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W [IN.]	x	H [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP [EA]	634.0618 POSTS WOOD 4" X 6" X 18' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
31	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY . THIS ONE IS MOUNTED ON TYPE 1 POLE BACK TO BACK WITH # 27
31A	W16-7L (2S)		24	X	12		2.000					31	
32	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY . THIS ONE IS MOUNTED ON TYPE 1 POLE BACK TO BACK WITH # 28
32A	W16-7L (2S)		24	X	12		2.000					32	
33	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY, THIS ONE IS MOUNTED ON TYPE 1 POLE
33A	W16-9P (2S)		24	X	12		2.000					33	
34	W11-15A(2S)		30	X	30		6.250						SEE SEPARATE QTYS FOR BEACON ASSEMBLY, THIS ONE IS MOUNTED ON TYPE 1 POLE
34A	W16-9P (2S)		24	X	12		2.000					34	
35	W11-2								1	1			INCLUDES REMOVAL OF W16-9P
36	W11-2								1	1			INCLUDES REMOVAL OF W16-9P
37	W11-2							1		1	1		INCLUDES MOVING THE W16-9P
38	J4-1	WEST 18						1		1	1		
39	R1-1							1		1	1		
		UNDISTRIBUTED				40.000		5	4	5	5		
		TOTALS				40.000	132.000	14	18	28	20		

SHEET: 2 OF 2

USH 18/CTH C & CTH C/JONES DR
WAUKESHA COUNTY
CATEGORY 0010
S67-1005

STATE FURNISHED MATERIALS SUMMARY

EACH	DESCRIPTION
1	TRAFFIC SIGNAL CONTROLLER, FULLY ACTUATED, 8 PHASE
1	TRAFFIC SIGNAL CABINET
2	POLES TYPE 10
2	POLES TYPE 10 SPECIAL
1	MONOTUBE ARMS 15-FT
1	MONOTUBE ARMS 25-FT
1	MONOTUBE ARMS 40-FT TYPE 9/10 SPEC POLE
4	LUMINAIRE ARMS 15-FT
4	EVP DETECTOR HEADS

STATE FURNISHED FOR INFORMATION ONLY

SIGNAL BASE NO.	POLES TYPE 10 EACH	POLES TYPE 10 SPECIAL EACH	MONOTUBE ARMS 15-FT EACH	MONOTUBE ARMS 25-FT EACH	MONOTUBE ARMS 40-FT TYPE 9/10 SPEC POLE EACH	LUMINAIRE ARMS STEEL 15-FT EACH
SB1	--	1	--	--	--	1
SB3	1	--	--	1	--	1
SB5	--	1	--	--	1	1
SB7	1	--	1	--	--	1
TOTAL	2	2	1	1	1	4

REMOVING CONCRETE BASES

SIGNAL BASE NO.	204.0195 REMOVING CONCRETE BASES EACH
SB1	1
SB2	1
SB3	1
SB4	1
SB5	1
SB6	1
SB7	1
SB8	1
TOTAL	8

REMOVING TRAFFIC SIGNALS

LOCATION	204.9060.S.02 REMOVING TRAFFIC SIGNALS L.S.
USH18/CTH C & CTH C/JONES DR	1
TOTAL	1

REMOVING LOOP DETECTOR WIRE AND LEAD-IN CABLE

LOCATION	204.9060.S.03 REMOVING LOOP DETECTOR WIRE AND LEAD-IN CABLE L.S.
USH 18/CTH C & CTH C/JONES DR	1
TOTAL	1

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH L.F.
EXT 1	PB2	22	
EXT 2	PB3	42	
PB4	SB1		21
PB5	SB3		9
PB10	SB5		24
PB12	SB7		11
EXT 3	PB8	45	
EXT 4	PB9	70	
PB13	SB9	7	
EXT 5	PB15	16	
EXT 6	PB16	31	
	TOTAL	233	65

INSTALL CONDUIT INTO EXISTING ITEM

LOCATION	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH
USH 18/CTH C & CTH C/JONES DR	10
TOTAL	10

USH 18/CTH C & CTH C/JONES DR
WAUKESHA COUNTY
CATEGORY 0010
S67-1005

TRAFFIC DETECTOR LOOPS

LOOP NO.	HOME RUN PB	LOCATION** ^	SIZE (FT)x(FT)	NO. OF TURNS	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR L.F.	655.0700 LOOP DETECTOR LEAD IN CABLE L.F.	655.0800 LOOP DETECTOR WIRE L.F.
21	PB9	467+24.1, 8.0' LT	6'X15'	5	9F15-4B LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	67	631	335
22	PB8	465+48.7, 15.6' LT	6'X15'	4	9F15-4B LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	58	455	232
41	PB3	460+29.3, 398.3' LT	6'x15'	4	9F15-4B LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	60	378	240
42	PB2	460+92.2, 262.0' LT	6'x15'	3	9F15-4B LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	76	228	228
61	PB16	457+50.4, 8.3' RT	6'x15'	4	9F15-4B LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	74	477	296
62	PB15	459+25.4, 12.7' RT	6'x15'	3	9F15-4B LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	62	302	186
					TOTAL	397	2471	1517

** LOCATION IS TO FRONT CENTER OF DETECTOR LOOP
^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

PULL BOXES

PULL BOX NO.	LOCATION^	SPV.0060.14 PULL BOX RIMS AND COVERS EACH
PB1	461+44.5, 80.3' LT	1
PB2	460+74.4, 253.5' LT	1
PB3	460+18.1, 392.8' LT	1
PB4	461+82.4, 57.4' LT	1
PB5	462+28.6, 77.7' LT	1
PB6	462+70.9, 38.8' LT	1
PB7	463+23.6, 37.1' LT	1
PB8	465+48.7, 30.6' LT	1
PB9	467+23.9, 22.6' LT	1
PB10	462+92.6, 37.4' RT	1
PB11	462+85.9, 66.8' RT	1
PB12	462+43.6, 61.0' RT	1
PB13	461+13.3, 34.1' RT	1
PB14	461+74.6, 33.8' RT	1
PB15	459+25.4, 29.8' RT	1
PB16	457+49.9, 27.0' RT	1
PB17	461+21.5, 46.6' LT	1
	TOTAL	17

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

REMOVING PULL BOXES

PULL BOX NO.	204.9060.S.01 REMOVING PULL BOX RIMS AND COVERS EACH
PB1	1
PB2	1
PB3	1
PB4	1
PB5	1
PB6	1
PB7	1
PB8	1
PB9	1
PB10	1
PB11	1
PB12	1
PB13	1
PB14	1
PB15	1
PB16	1
PB17	1
TOTAL	17

USH 18/CTH C & CTH C/JONES DR
WAUKESHA COUNTY
CATEGORY 0010
S67-1005

CONCRETE BASES

SIGNAL BASE NO.	LOCATION^	654.0101 CONCRETE BASES TYPE 1 EACH	654.0110 CONCRETE BASES TYPE 10 EACH	654.0120 CONCRETE BASES TYPE 10 SPECIAL EACH
SB1	461+85.4, 37.0' LT	--		1
SB2	461+81.3, 60.7' LT	1	--	--
SB3	462+33.3, 70.0' LT	--	1	--
SB4	462+83.0, 35.8' LT	1	--	--
SB5	463+17.1, 37.4' RT	--		1
SB6	462+86.2, 56.7' RT	1	--	--
SB7	462+47.1, 71.6' RT	--	1	--
SB8	461+90.4, 64.1' RT	1	--	--
	TOTAL	4	2	2

^ FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

TRAFFIC SIGNAL CABLE AND WIRE

FROM	TO	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG L.F.	655.0320 CABLE TYPE UF 2-10 AWG GROUNDED L.F.
CB1	SB1	130	--
CB1	SB2	113	--
CB1	SB3	158	--
CB1	SB4	234	--
CB1	SB5	342	--
CB1	SB6	338	--
CB1	SB7	303	--
CB1	SB8	236	--
CB1	SB9	150	--
		--	
CB1	SB3	--	158
SB3	SB5	--	226
SB5	SB7	--	129
		--	
CB1	SB9	--	150
	TOTAL	2004*	663

* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

TRAFFIC SIGNAL CABLE AND WIRE

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG L.F.
CB1	SB1	328
SB1	SB2	44
SB2	SB3	197
SB3	SB4	118
SB4	SB5	156
SB5	SB6	68
SB6	SB7	125
SB7	SB8	277
SB8	SB9	124
SB9	CB1	150
PB1	CB1	45
PB5	SB3	29
PB6	SB4	32
PB10	SB9	246
PB12	SB7	31
PB14	SB8	36
PB13	SB8	113
PB17	CB1	42
	TOTAL	2161

TRAFFIC SIGNAL CABLE AND WIRE

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG L.F.	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG L.F.	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG L.F.
SB1	HEAD 7	--	--	70
SB1	HEAD 8		--	70
SB1	HEAD 10		--	71
SB2	HEAD 13	19	--	
SB2	HEAD 14	19		
SB3	HEAD 12		--	50
SB4	HEAD 4	--	22	
SB4	HEAD 6	19	--	
SB5	HEAD 2	--	--	65
SB5	HEAD 3	--	--	65
SB5	HEAD 5	--	--	66
SB6	HEAD 11	19	--	
SB6	HEAD 16	19	--	
SB7	HEAD 15	--	--	40
SB8	HEAD 1	19	--	
SB8	HEAD 9	--	22	
	TOTAL	114	44	497*

* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

USH 18/CTH C & CTH C/JONES DR
WAUKESHA COUNTY
CATEGORY 0010
S67-1005

3

TRAFFIC SIGNAL CABLE AND WIRE

FROM	TO	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG L.F.
SB1	LUMIN	144
SB3	LUMIN	144
SB5	LUMIN	144
SB7	LUMIN	144
	TOTAL	576

TRAFFIC SIGNAL EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE L.F.
CB1	SB1 (HEAD A)	200
CB1	SB5 (HEAD B)	408
CB1	SB7 (HEAD C)	348
	TOTAL	956

POLES (CONTRACTOR FURNISHED)

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EACH	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0610 LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH	659.1125 LUMINAIRES UTILITY LED C EACH
SB2	1	1	--	--	1	--
SB4	1	--	1	--	--	--
SB6	1	1	--	--	1	--
SB8	1	--	1	--	--	--
SB9	--	--	--	1	--	1
TOTAL	4	2	2	1	2	1*

* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

POLES (STATE FURNISHED)

SIGNAL BASE NO.	SPV.0060.16 INSTALL POLES TYPE 10 EACH	SPV.0060.17 INSTALL POLES TYPE 10 SPECIAL EACH	SPV.0060.18 INSTALL MONOTUBE ARMS 15-FT EACH	SPV.0060.19 INSTALL MONOTUBE ARMS 25-FT EACH	SPV.0060.20 INSTALL MONOTUBE ARMS 40-FT TYPE 9/10 SPEC POLE EACH	SPV.0060.22 INSTALL LUMINAIRE ARMS STEEL 15-FT EACH	659.1125 LUMINAIRES UTILITY LED C EACH
SB1	--	1	--	--	1	--	1
SB3	1	--	--	1	--	1	1
SB5	--	1	--	--	1	--	1
SB7	1	--	1		--	1	1
TOTAL	2	2	1	1	2	2	4*

* ADDITIONAL QUANTITY SHOWN ELSEWHERE ON PLAN

USH 18/CTH C & CTH C/JONES DR
WAUKESHA COUNTY
CATEGORY 0010
S67-1005

FACES

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EACH	658.0174 TRAFFIC SIGNAL FACE 4S 12-INCH EACH
1	SB8	1	--
2	SB5	1	--
3	SB5	1	--
4	SB4	--	1
5	SB5	--	1
6	SB4	1	--
7	SB1	1	--
8	SB1	1	--
9	SB8	--	1
10	SB1	--	1
11	SB6	1	--
12	SB3	1	--
13	SB2	1	--
14	SB2	1	--
15	SB7	1	--
16	SB6	1	--
	TOTAL	12	4

SIGNAL MOUNTING HARDWARE

LOCATION	658.5069.01 SIGNAL MOUNTING HARDWARE L.S.
USH 18/CTH C & CTH C/JONES DR	1
TOTAL	1

TRANSPORT AND INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET

LOCATION	SPV.0060.23 TRANSPORT AND INSTALL STATE FURNISHED TRAFFIC SIGNAL CABINET EACH
USH 18/CTH C & CTH C/JONES DR	1
TOTAL	1

TRANSPORT TRAFFIC SIGNAL AND INTERSECTION LIGHTING MATERIALS

LOCATION	SPV.0060.24 TRANSPORT TRAFFIC SIGNAL AND INTERSECTION LIGHTING MATERIALS EACH
USH 18/CTH C & CTH C/JONES DR	1
TOTAL	1

TRANSPORT AND INSTALL STATE FURNISHED EVP DETECTOR HEADS

LOCATION	SPV.0060.25 TRANSPORT AND INSTALL STATE FURNISHED EVP DETECTOR HEADS EACH
USH 18/CTH C & CTH C/JONES DR	1
TOTAL	1

3

Beacons - MISC QUANTITIES					3080-04-70 USH 18									
LOCATION		Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	Flashing Beacon system	
		USH 18 EB PRIOR TO CUSHING PARK ROAD TRAIL CROSSING (RIGHT)	USH 18 EB PRIOR TO CUSHING PARK ROAD TRAIL CROSSING (LEFT)	USH 18 EB AT CUSHING PARK ROAD TRAIL CROSING BACK TO BACK (RIGHT)	USH 18 WB AT CUSHING PARK ROAD TRAIL CROSING BACK TO BACK (RIGHT)	USH 18 WB PRIOR TO CUSHING PARK ROAD TRAIL CROSING (RIGHT)	USH 18 WB PRIOR TO CUSHING PARK ROAD TRAIL CROSING (LEFT)	USH 18 EB PRIOR TO ICE AGE TRAIL CROSSING (RIGHT)	USH 18 EB PRIOR TO ICE AGE TRAIL CROSSING (LEFT)	USH 18 EB AT ICE AGE TRAIL CROSING BACK TO BACK (RIGHT)	USH 18 WB AT ICE AGE TRAIL CROSSING BACK TO BACK (RIGHT)	USH 18 WB PRIOR TO ICE AGE TRAIL CROSING (RIGHT)	USH 18 WB PRIOR TO ICE AGE TRAIL CROSING (LEFT)	
		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
		SPV.0060.02	SPV.0060.03	SPV.0060.04	SPV.0060.05	SPV.0060.06	SPV.0060.07	SPV.0060.08	SPV.0060.09	SPV.0060.10	SPV.0060.11	SPV.0060.12	SPV.0060.13	
USH 18 EB PRIOR TO CUSHING PARK ROAD TRAIL CROSSING		1												
USH 18 EB PRIOR TO CUSHING PARK ROAD TRAIL CROSSING			1											
USH 18 EB AT CUSHING PARK ROAD TRAIL CROSSING				1										
USH 18 WB AT CUSHING PARK TRAIL CROSSING					1									
USH 18 WB PRIOR TO CUSHING PARK ROAD TRAIL CROSSING						1								
USH 18 WB PRIOR TO CUSHING PARK ROAD TRAIL CROSSING							1							
USH 18 EB PRIOR TO ICE AGE TRAIL CROSSING								1						
USH 18 EB PRIOR TO ICE AGE TRAIL CROSSING									1					
USH 18 EB AT ICE AGE TRAIL CROSSING										1				
USH 18 WB AT ICE AGE TRAIL CROSSING											1			
USH 18 WB PRIOR TO ICE AGE TRAIL CROSSING												1		
USH 18 WB PRIOR TO ICE AGE TRAIL CROSSING													1	

3

3

SHEET: 1 OF 1

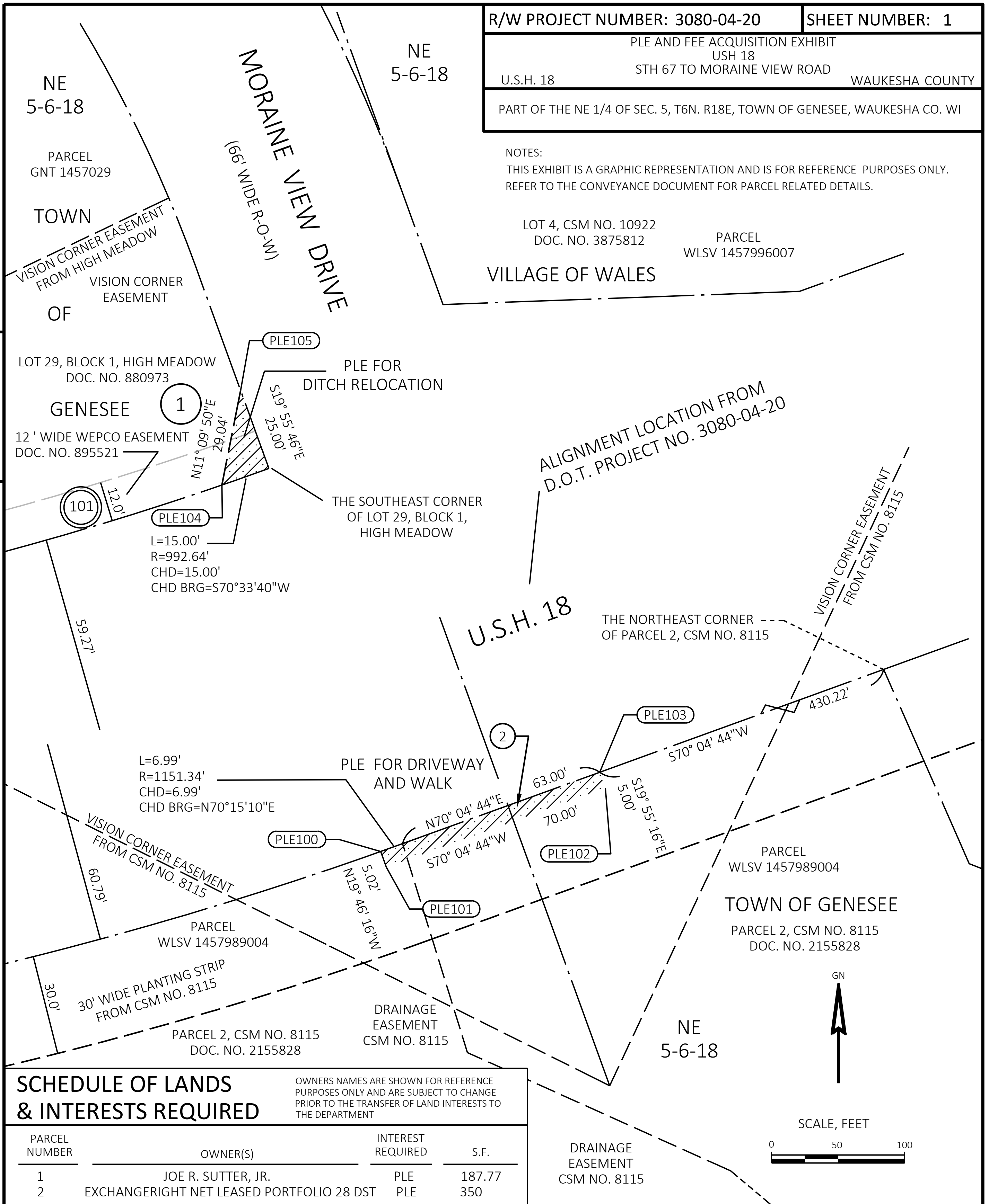
4

R/W PROJECT NUMBER: 3080-04-20	SHEET NUMBER: 1

PLE AND FEE ACQUISITION EXHIBIT
USH 18
STH 67 TO MORAINE VIEW ROAD
U.S.H. 18 WAUKESHA COUNTY

PART OF THE NE 1/4 OF SEC. 5, T6N. R18E, TOWN OF GENESEE, WAUKESHA CO. WI

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	S.F.
1	JOE R. SUTTER, JR.	PLE	187.77
2	EXCHANGERIGHT NET LEASED PORTFOLIO 28 DST	PLE	350

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED
101	WE ENERGIES-ELECTRIC	ROR

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION
REGION AND CITY REGION OFFICE

SIGNATURE: ______________ DATE: ________

PRINT NAME:

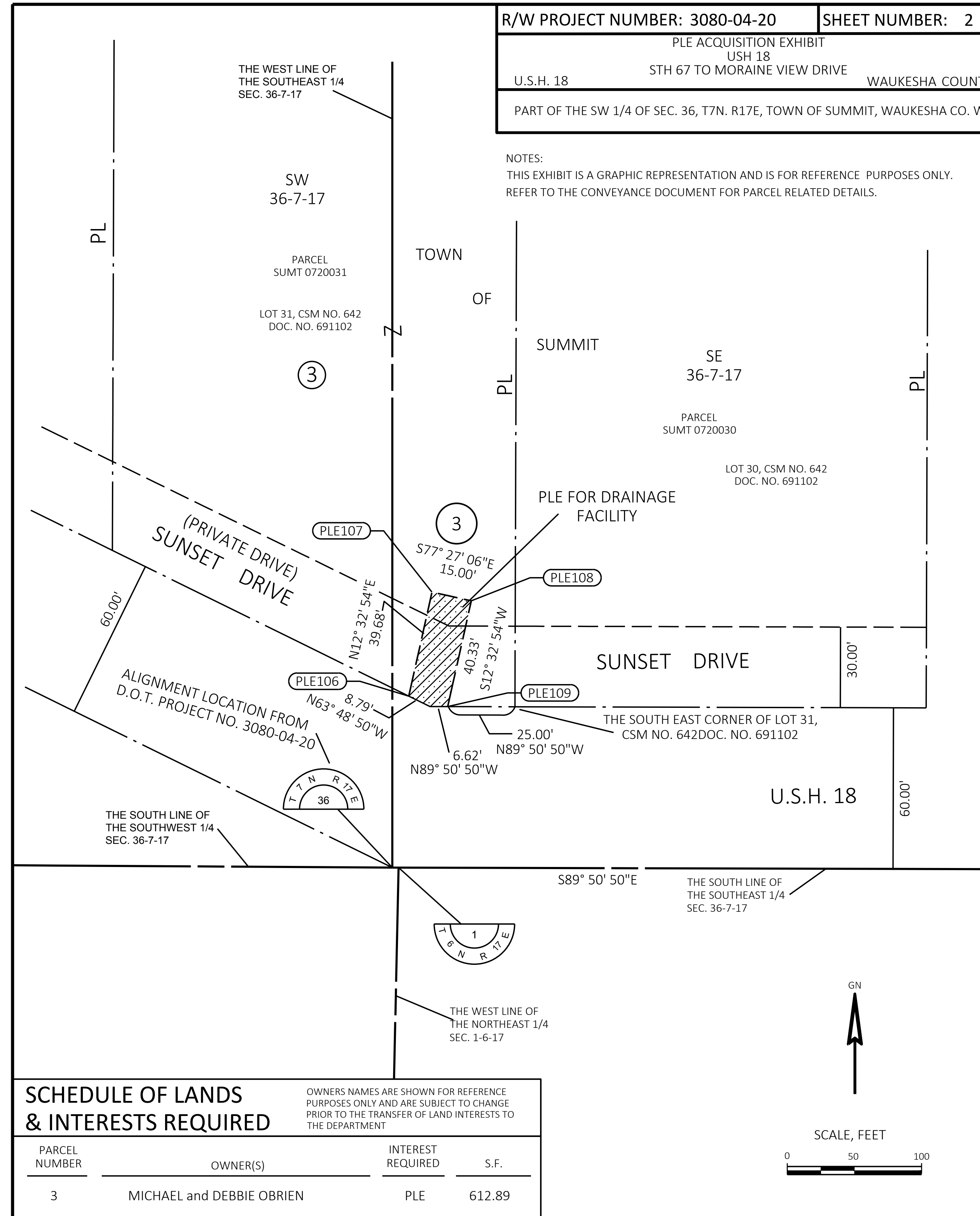
FILE NAME : 040401_RP.DWG PLOT DATE : 10/7/2021 12:40 PM R/W PROJECT: R/W PROJ NO

R/W PROJECT NUMBER: 3080-04-20	SHEET NUMBER: 2

PLE ACQUISITION EXHIBIT
USH 18
STH 67 TO MORAINE VIEW DRIVE
U.S.H. 18 WAUKESHA COUNTY

PART OF THE SW 1/4 OF SEC. 36, T7N. R17E, TOWN OF SUMMIT, WAUKESHA CO. WI

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY.
REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	S.F.
3	MICHAEL and DEBBIE OBRIEN	PLE	612.89

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED

THIS MAP IS APPROVED FOR THE DEPARTMENT OF TRANSPORTATION
REGION AND CITY REGION OFFICE

SIGNATURE: ______________ DATE: ________

PRINT NAME:

4

FILE NAME : 040401_RP.DWG PLOT DATE : 10/7/2021 12:40 PM R/W PROJECT: R/W PROJ NO

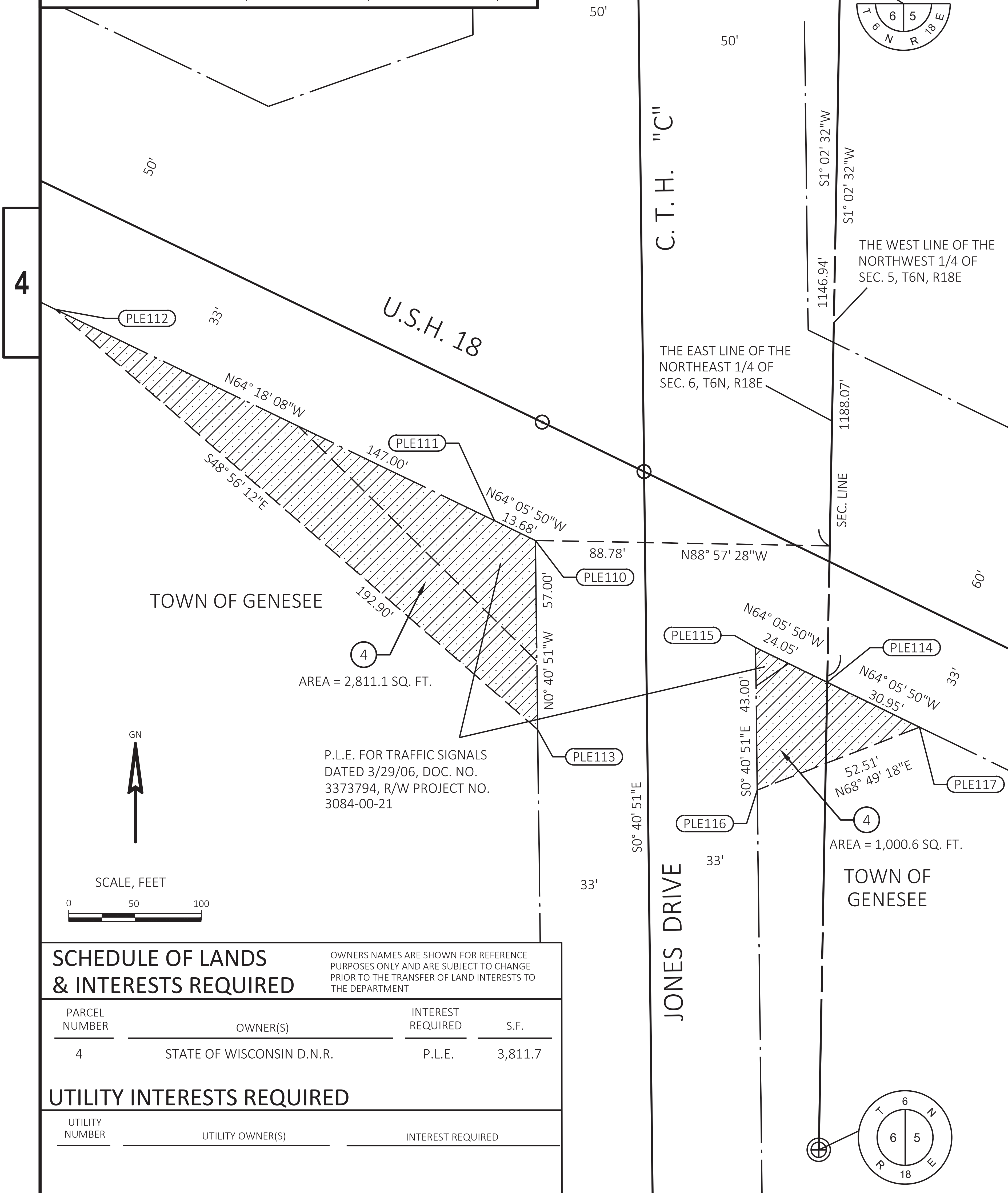
R/W PROJECT NUMBER: 3080-04-20	SHEET NUMBER: 3

RIGHT OF WAY EXHIBIT
USH 18
STH 67 TO MORAINE VIEW DRIVE

U.S.H. 18 WAUKESHA COUNTY

PART OF THE NORTHEAST 1/4 OF SEC. 6 AND THE NORTHWEST 1/4 OF SEC. 5
TOWN 6 NORTH RANGE 18 EAST, TOWN OF GENESEE, WAUKESHA COUNTY, WI

NOTES:
THIS EXHIBIT IS A GRAPHIC REPRESENTATION AND IS FOR REFERENCE PURPOSES ONLY. REFER TO THE CONVEYANCE DOCUMENT FOR PARCEL RELATED DETAILS.



SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	S.F.
4	STATE OF WISCONSIN D.N.R.	P.L.E.	3,811.7

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNER(S)	INTEREST REQUIRED

Standard Detail Drawing List

08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-06	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D05-20A	CURB RAMPS TYPES 1 AND 1-A
08D05-20B	CURB RAMPS TYPES 2 AND 3
08D05-20C	CURB RAMPS TYPES 4A AND 4A1
08D05-20D	CURB RAMPS TYPE 4B AND 4B1
08D05-20E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-20F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-20G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
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
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C11-10	CONCRETE BASE TYPE 10
09C15-01	CONCRETE BASE TYPE 10 SPECIAL
09D02-03	SIGNAL CONTROL CABINET
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09E07-06	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-09E	TYPE 10 POLE 15'-30' MONOTUBE ARM
09E08-09F	TYPE 10 SPECIAL POLE 35' MONOTUBE ARM
09E08-09G	TYPE 10 SPECIAL POLE 40' MONOTUBE ARM
09E08-09K	GENERAL NOTES,HARDWARE DETAILS FOR TYPE 9/10,9/10 SPECIAL,12 & 13 POLES W/MONOTUBE ARMS
09F10-04	LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
10A18-05A	LUMINAIRE ARMS, SINGLE MEMBER 6-INCH CLAMP
11B02-02	CONCRETE MEDIAN NOSE
12A04-03	STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES & OVERHEAD SIGN SUPPORTS & TRAFFIC SIGNALS
13C19-03	HMA LONGITUDINAL JOINTS
14B28-04A	GUARDRAIL MOW STRIP
14B28-04B	GUARDRAIL MOW STRIP
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)

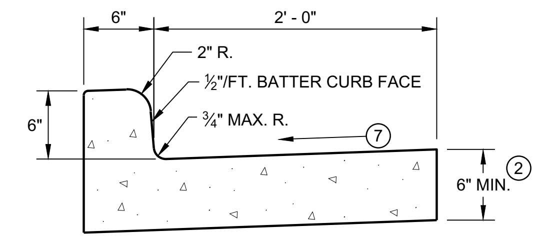
6

Standard Detail Drawing List

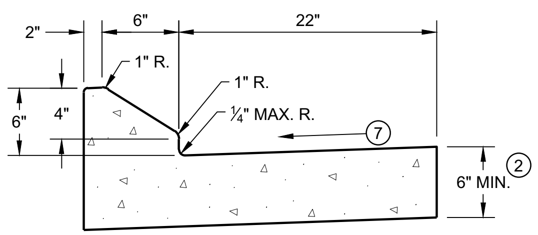
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C18-05A	MEDIAN ISLAND MARKING PAVEMENT MARKINGS
15C18-05B	MEDIAN ISLAND MARKING MEDIAN ISLAND NOSE
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-06B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15C35-04B	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15C35-04C	PAVEMENT MARKING AND SIGNING (CLIMBING LANE & PASSING LANE)
15C36-01	PARKING STALL MARKING
15D20-05A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-06A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D43-02	TRAFFIC CONTROL, SHORT DURATION MOBILE OPERATIONS
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS

6

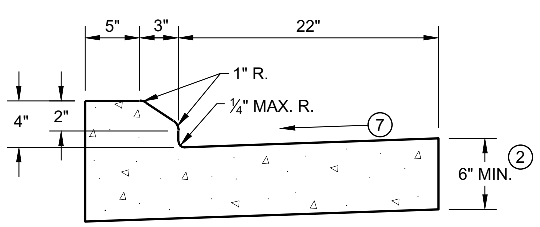
CONCRETE CURB AND GUTTER 30"



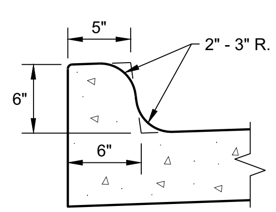
TYPES A(1) & D



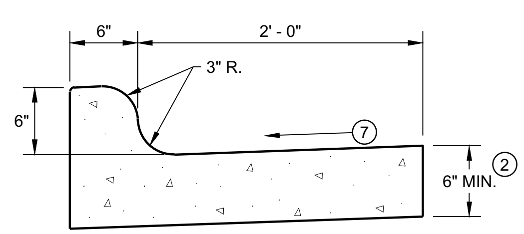
6" SLOPED CURB TYPES G(1) & J



4" SLOPED CURB TYPES G(1) & J

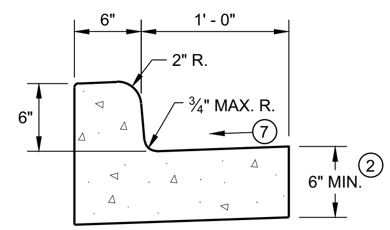


TYPES K(1) & L
(OPTIONAL CURB SHAPE)



TYPES K(1) & L

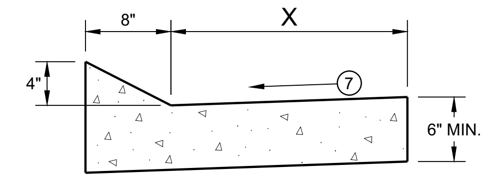
CONCRETE CURB AND GUTTER 30"



TYPES A(1) & D

CONCRETE CURB AND GUTTER 18"

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



TYPES TBT & TBTT(1)

CONCRETE CURB AND GUTTER

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.

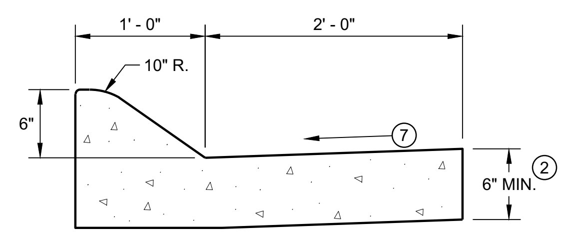
(5) UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

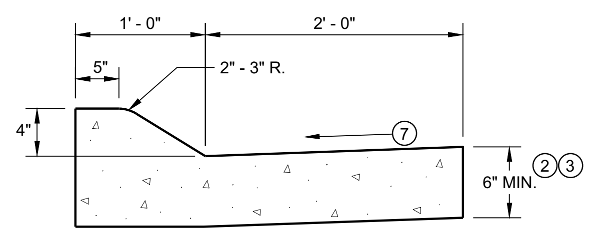
(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(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



6" SLOPED CURB TYPES A(1) & D

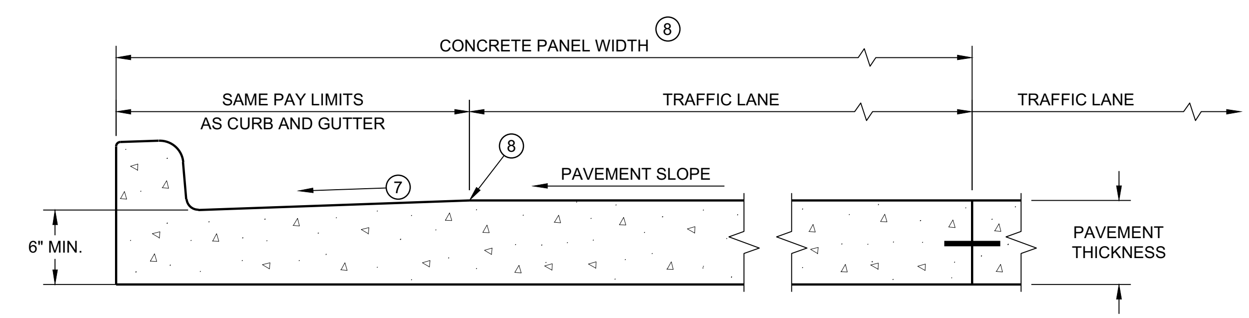


4" SLOPED CURB TYPES A(1) & D

CONCRETE CURB AND GUTTER 36"

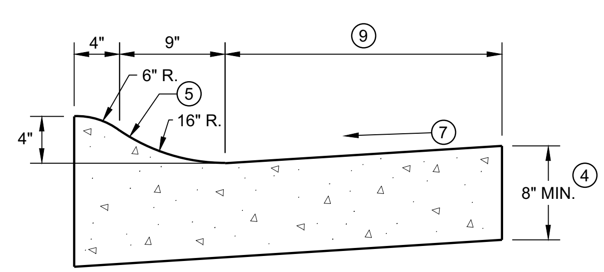
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

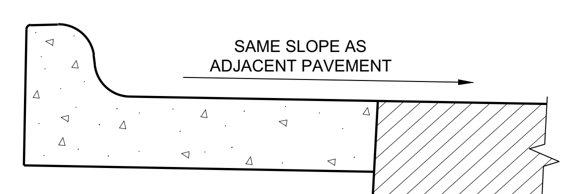


PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



4" SLOPED CURB TYPES R(1) & T

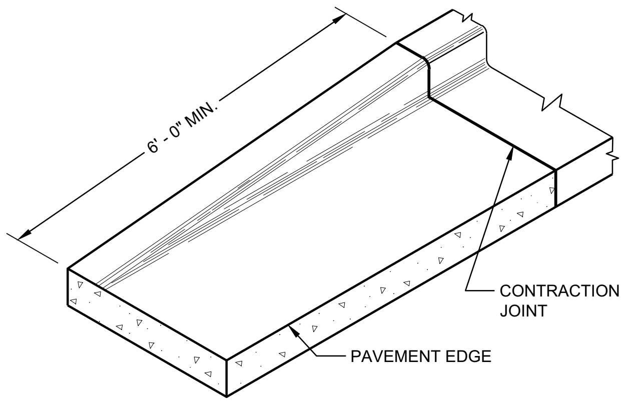


REVERSE SLOPE GUTTER(6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

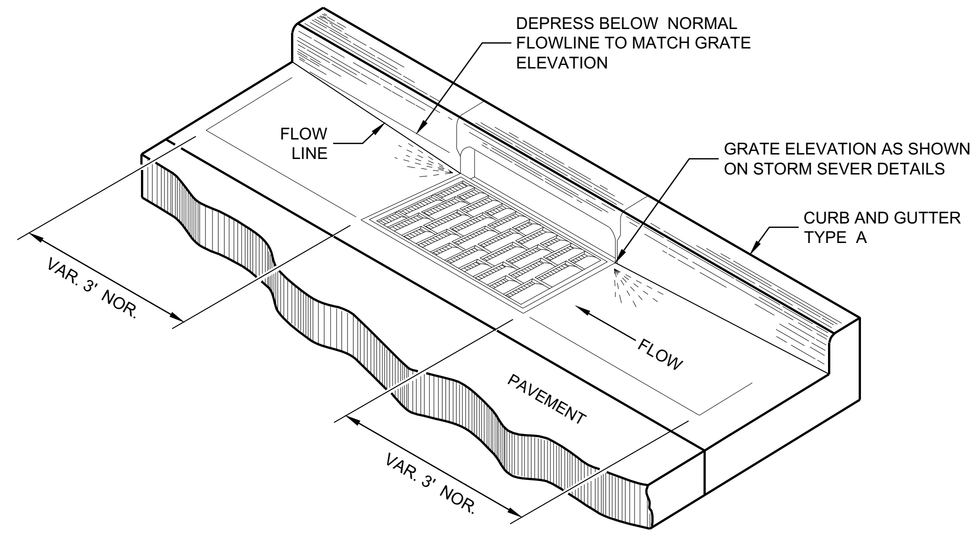
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D01 - 22a
6



END SECTIONCURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS

(TYPICAL H INLET COVER SHOWN)

GENERAL NOTES

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

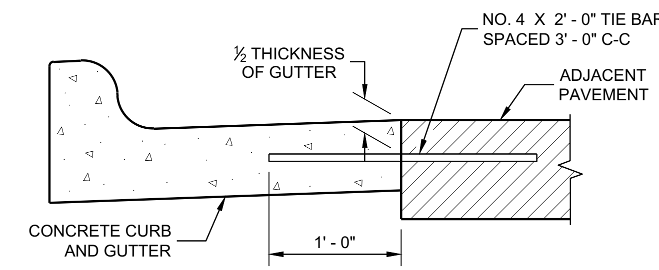
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

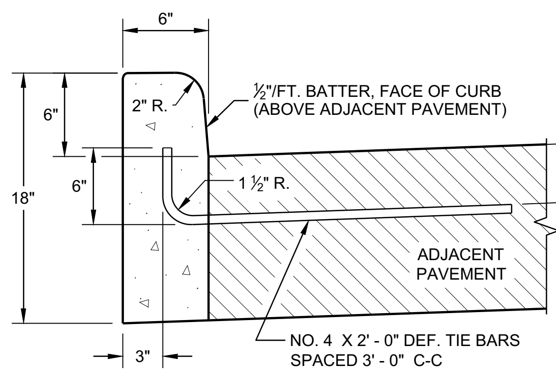
1 TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.

2 THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

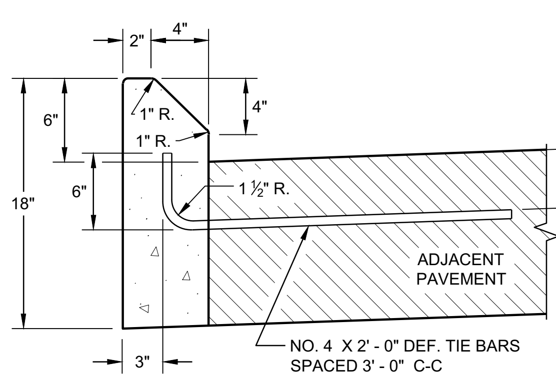
9 REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION (1)

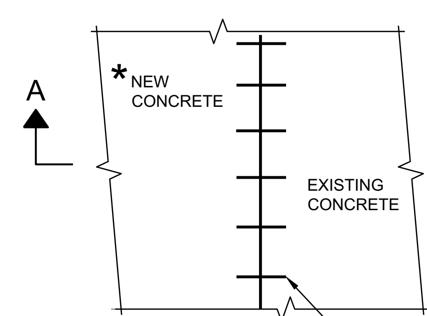


TYPES A (1) & D



TYPES G (1) & J

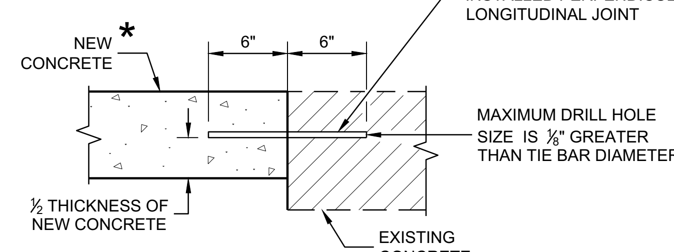
CONCRETE CURB



* NEW CURB AND GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

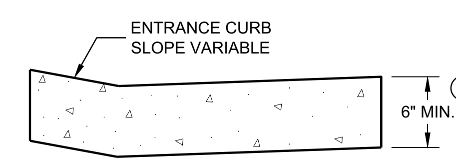
PLAN VIEW

NO. 6 TIE BARS SPACED 2' - 6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT



SECTION A - A

TIE BARS DRILLED
INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

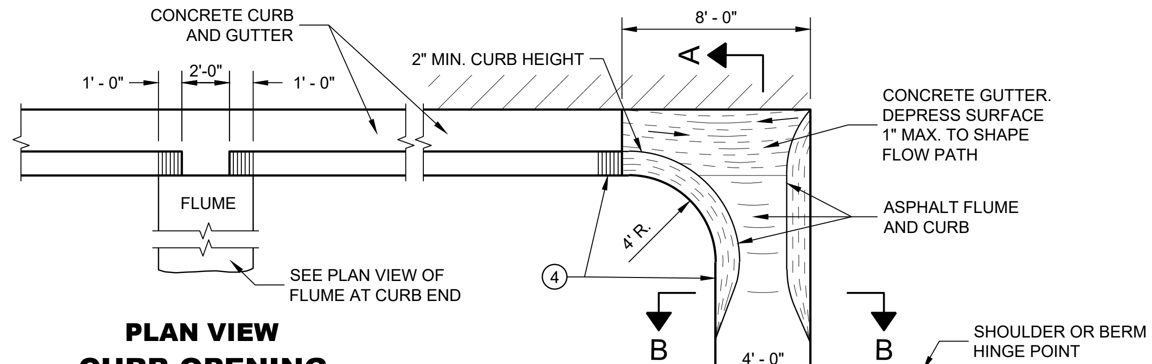
February 2021 — /S/ Rodnery Taylor

DATE — ROADWAY STANDARDS DEVE ENGINEER

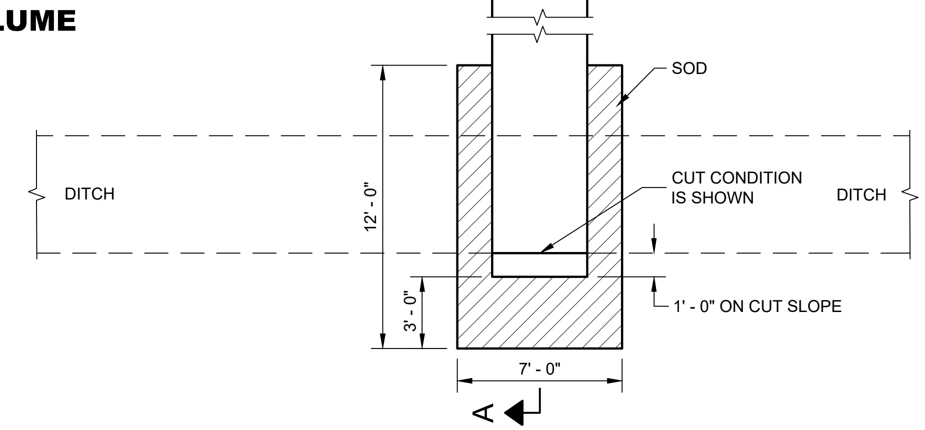
FHWA

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

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING FOR FLUME



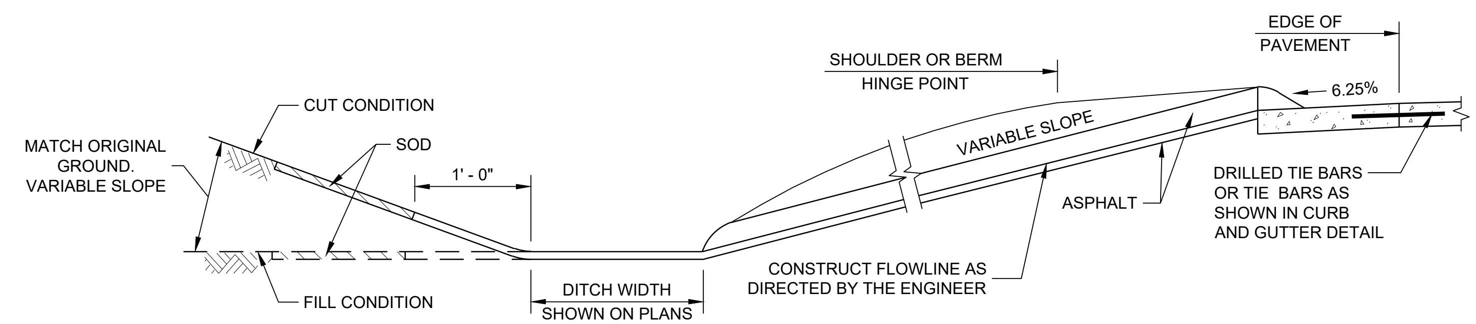
PLAN VIEW
FLUME AT CURB END

GENERAL NOTES

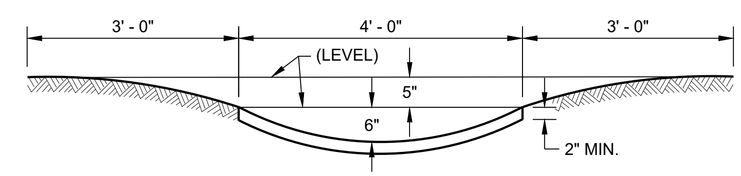
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

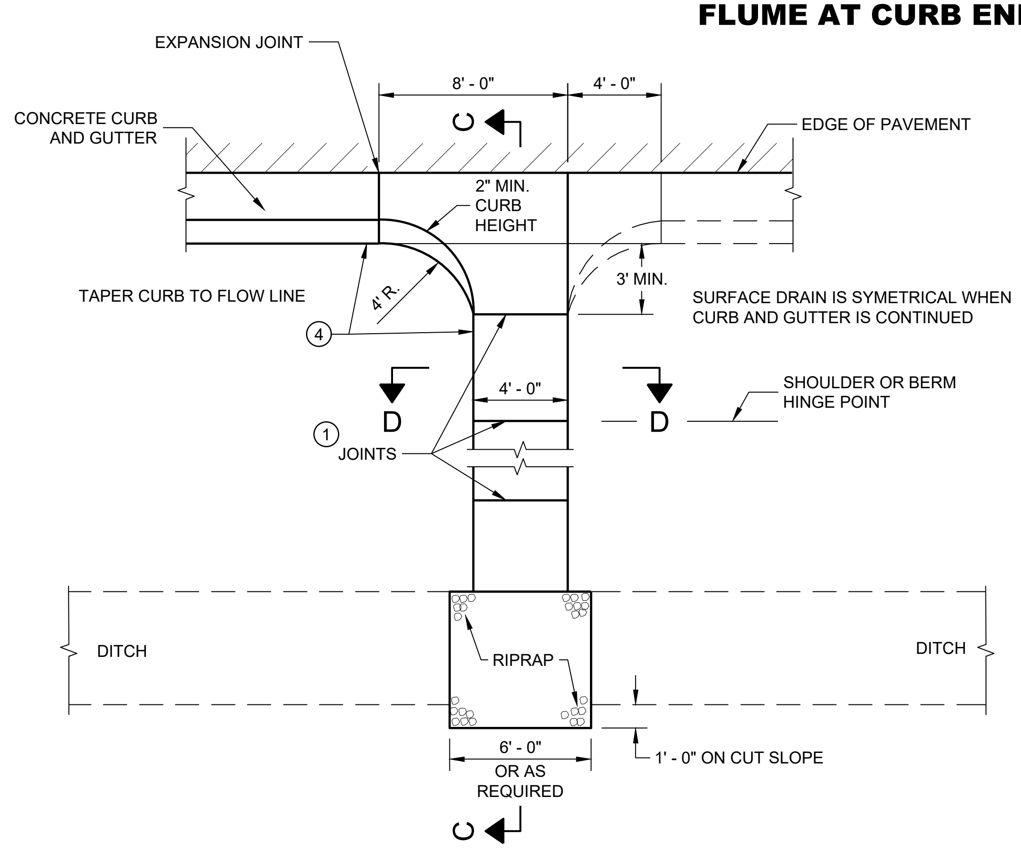
1. JOINTS SHALL BE ⅛" TO ¼" WIDE BY 1½" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
2. GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
3. CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
4. 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.



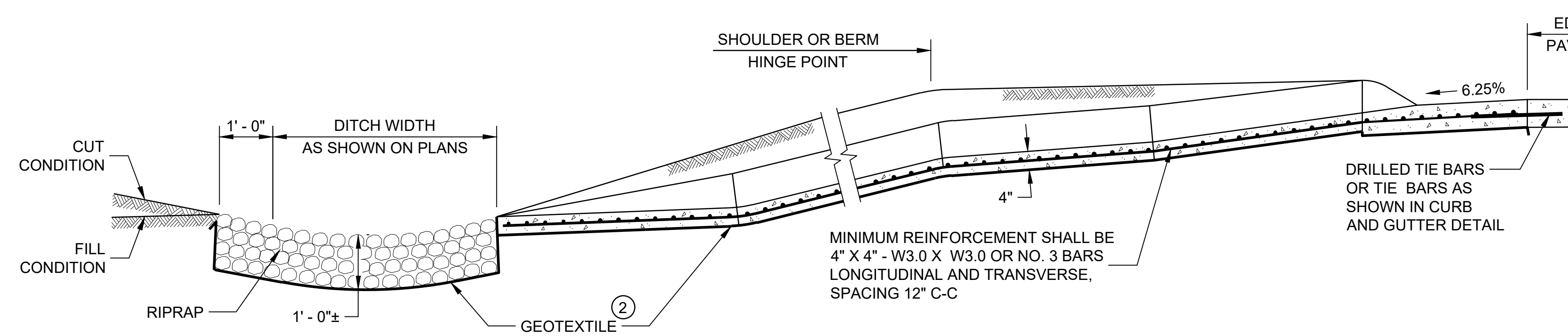
SECTION A - A



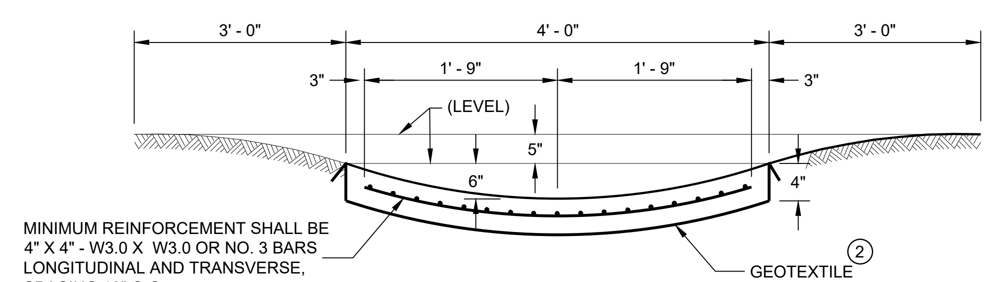
SECTION B - B



PLAN VIEW
CONCRETE SURFACE DRAIN



SECTION C - C



SECTION D - D

6

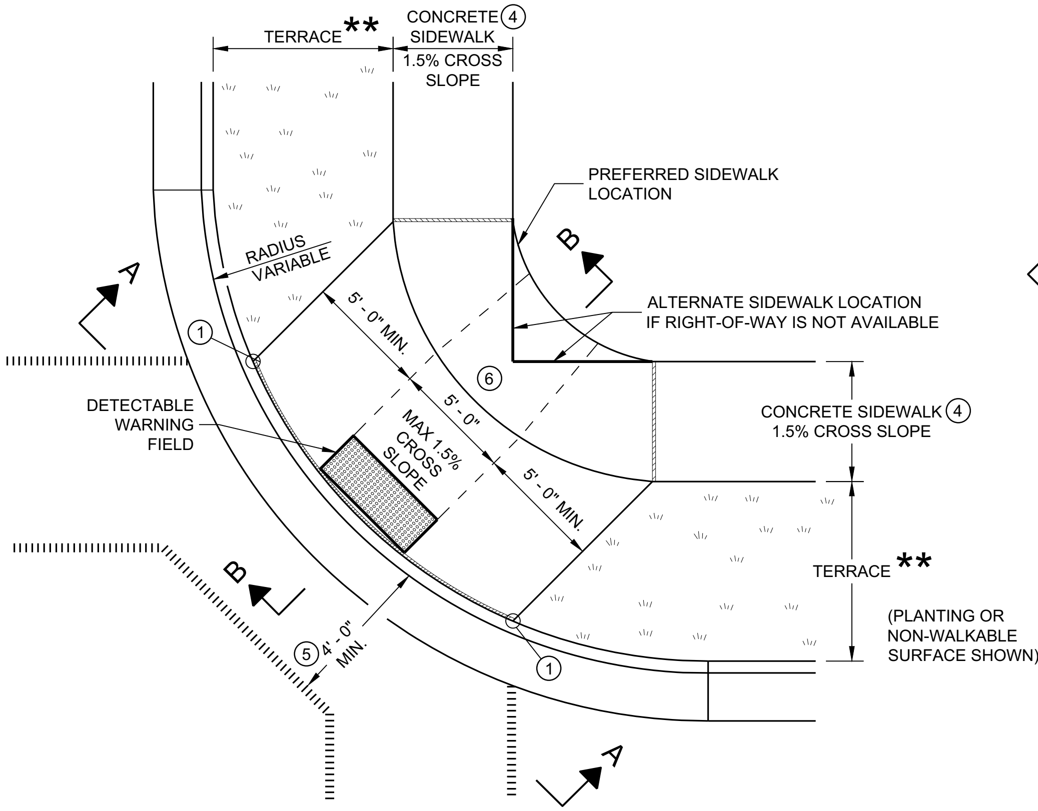
6

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

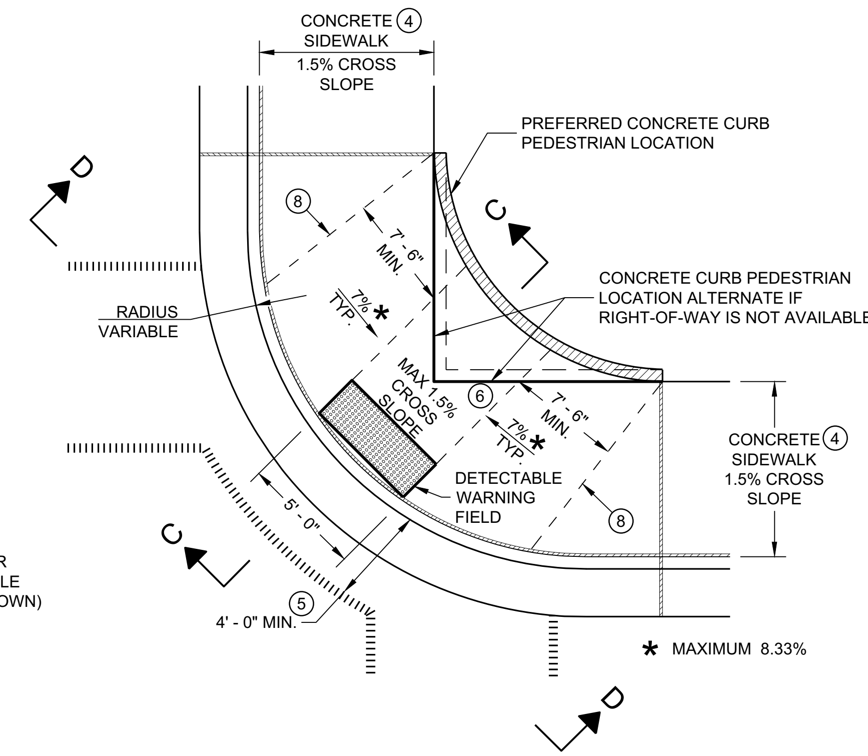
SDD 08D04 - 06



PLAN VIEW

CURB RAMP TYPE 1

(CENTER OF CORNER RADIUS)



PLAN VIEW

CURB RAMP TYPE 1 - A

(NO TERRACE)

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.

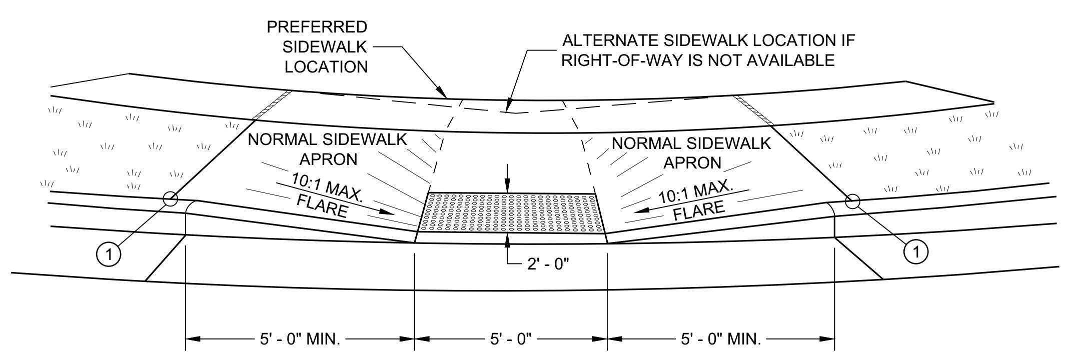
DETECTABLE WARNING FILED SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE 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.
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. PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.



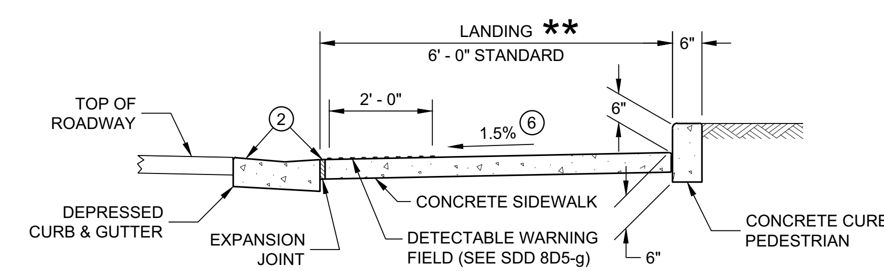
VIEW A - A FOR TYPE 1

LEGEND

1/2" EXPANSION JOINT SIDEWALK

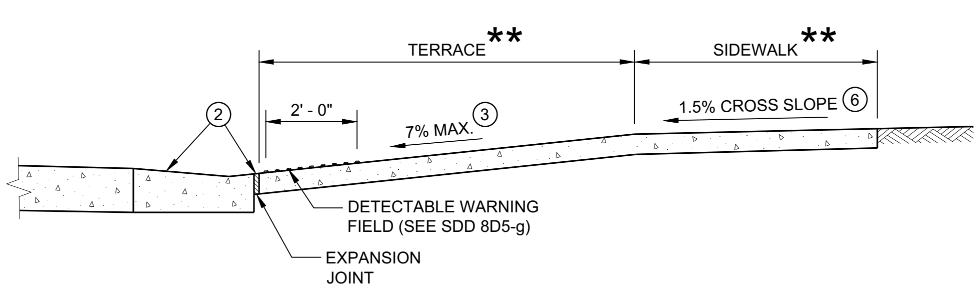
CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

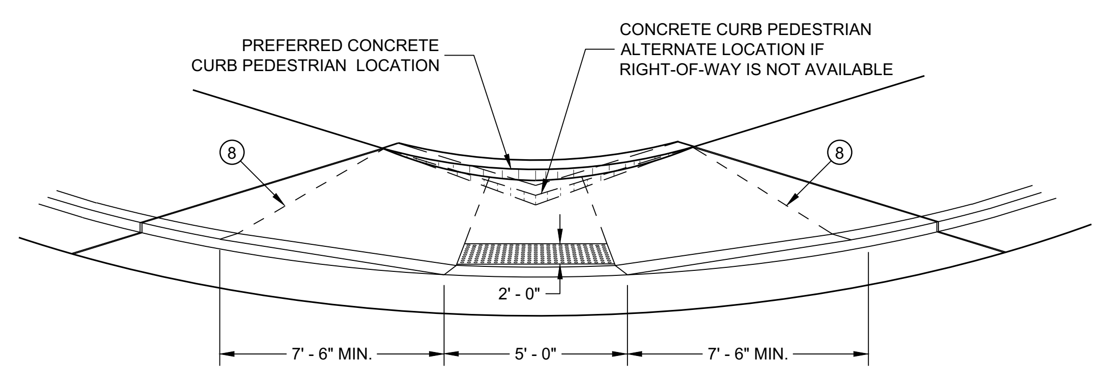


SECTION C - C FOR TYPE 1 - A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B - B FOR TYPE 1



VIEW D - D FOR TYPE 1 - A

CURB RAMPS TYPE 1 AND 1-A

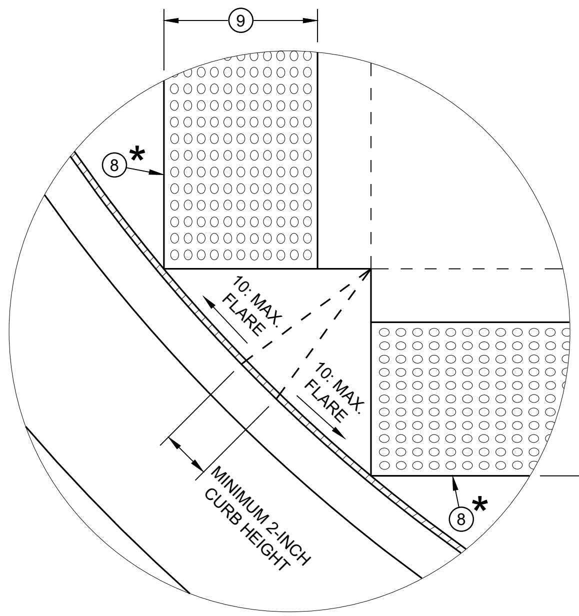
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATI

6

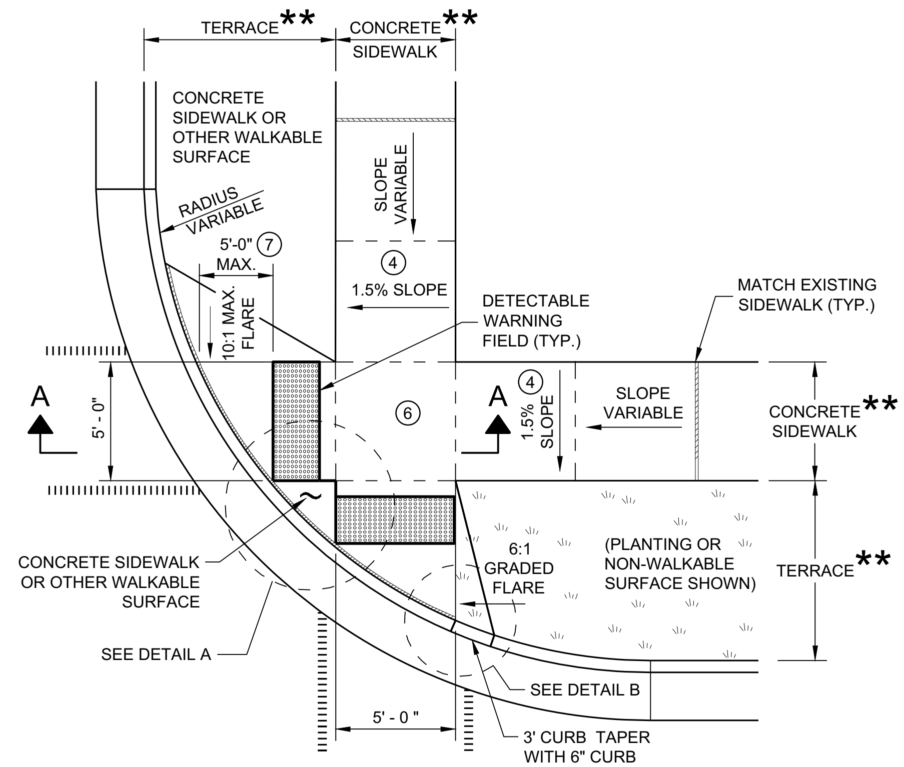
6

SDD 08D05 - 20a

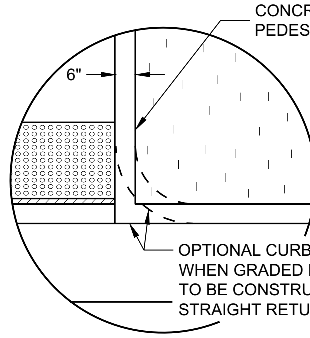
SDD 08D05 - 20a



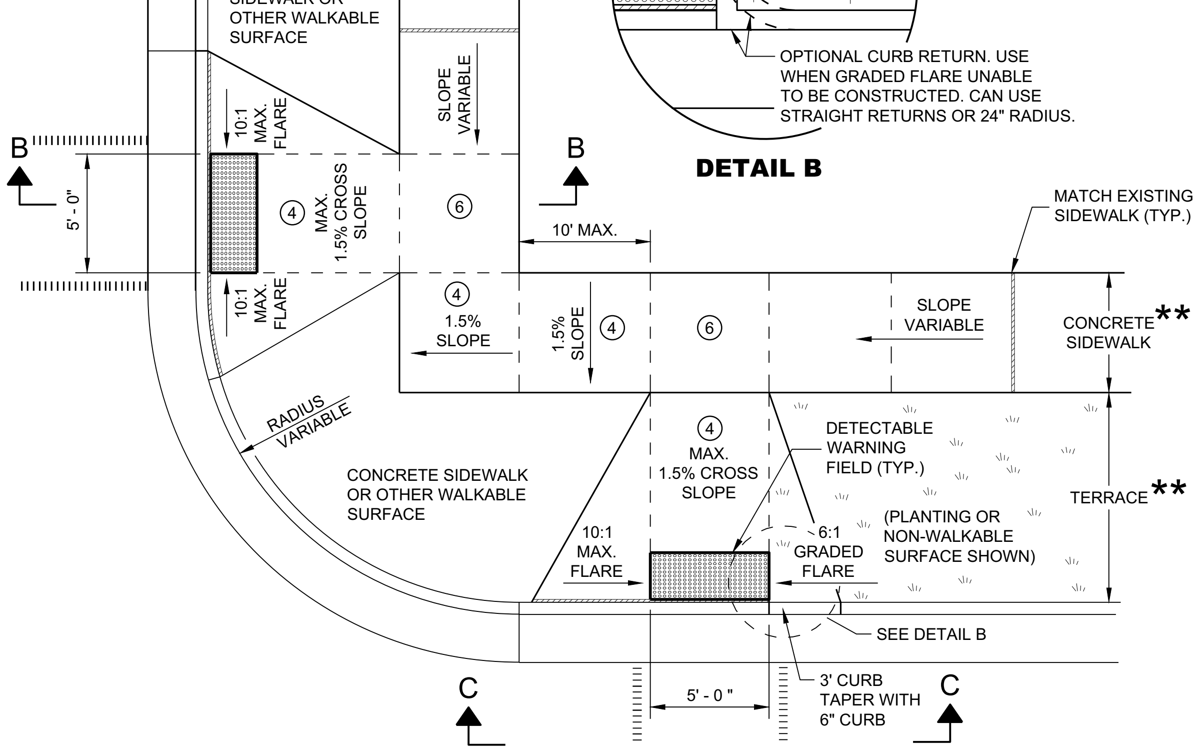
DETAIL A



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



DETAIL B



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

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 ¼ - 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 (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.

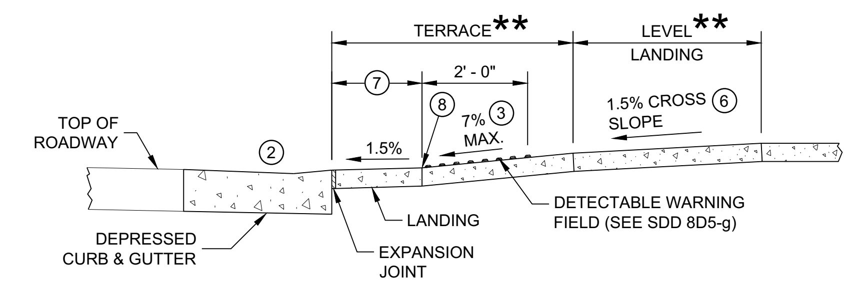
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN 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.

(9) 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.



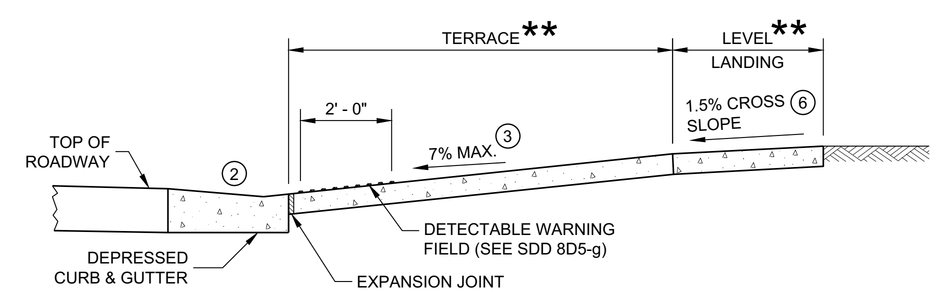
SECTION A - A FOR TYPE 2

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

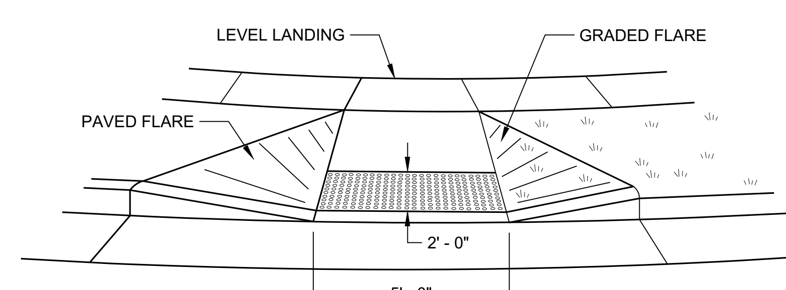
** WIDTH SHOWN ELSEWHERE IN THE PLANS

LEGEND

- ½" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



SECTION B - B FOR TYPE 3



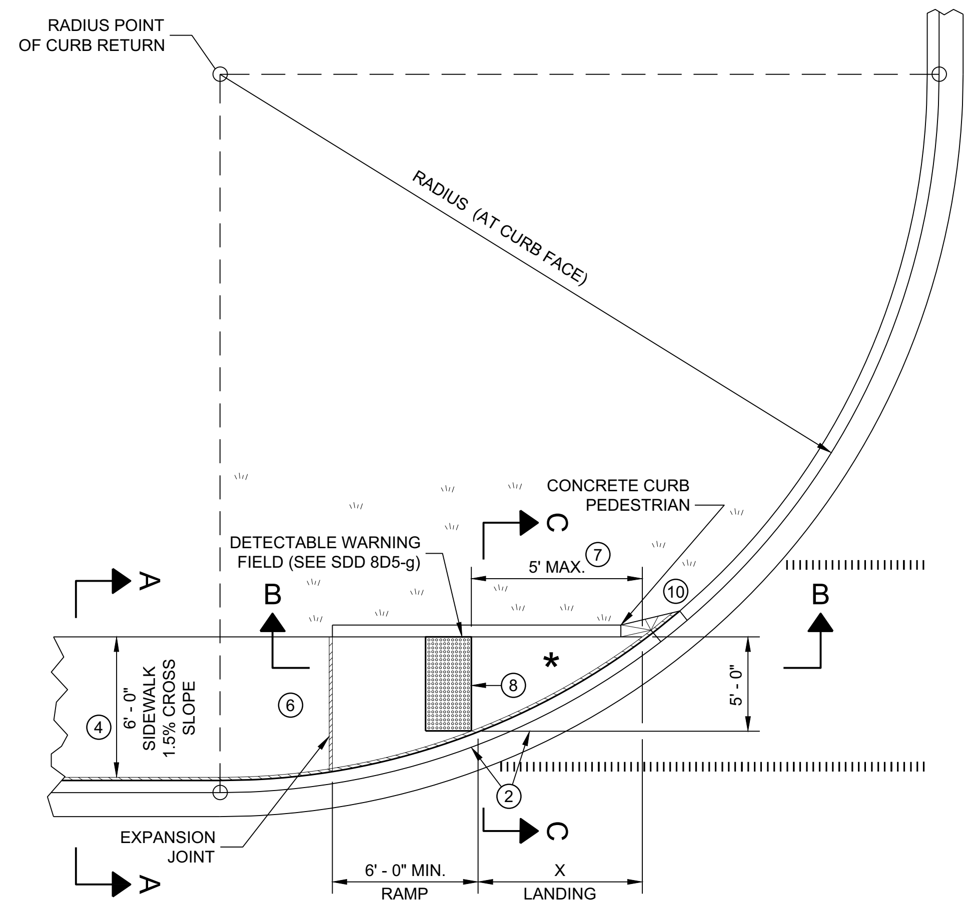
VIEW C - C FOR TYPE 3

CURB RAMPS TYPE 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D05 - 20b

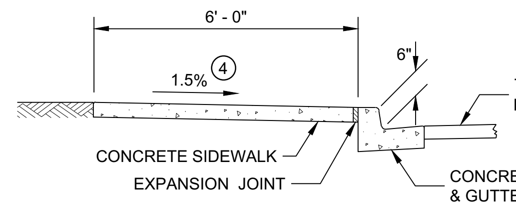
6



PLAN VIEW
CURB RAMP TYPE 4A

RADIUS (AT CURB FACE)	X
10 FEET	4' - 7"
15 FEET	6' - 5 ½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A

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 ¼ - 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.

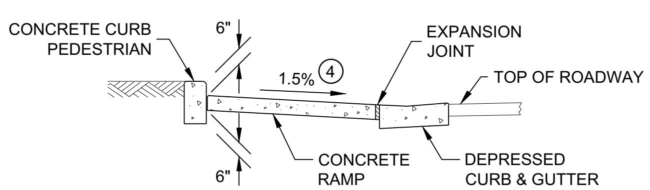
7 WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

10 INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

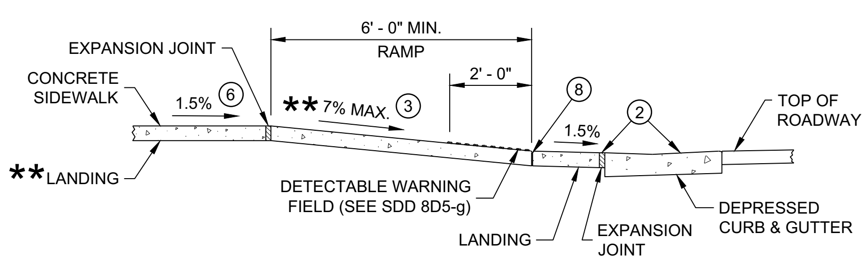
LEGEND

½" EXPANSION JOINT SIDEWALK
CONTRACTION JOINT SIDEWALK
PAVEMENT MARKING CROSSWALK (WHITE)



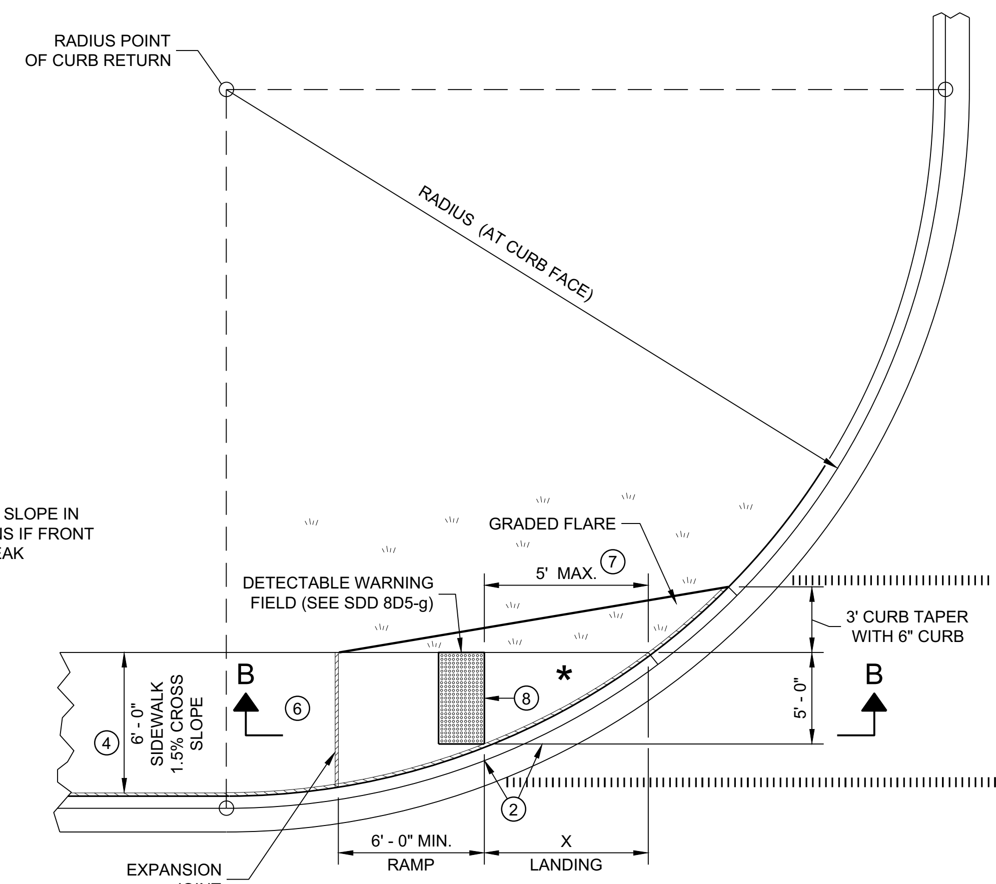
SECTION C - C FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK

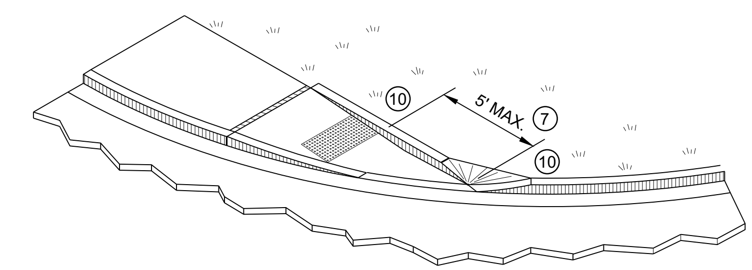


** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

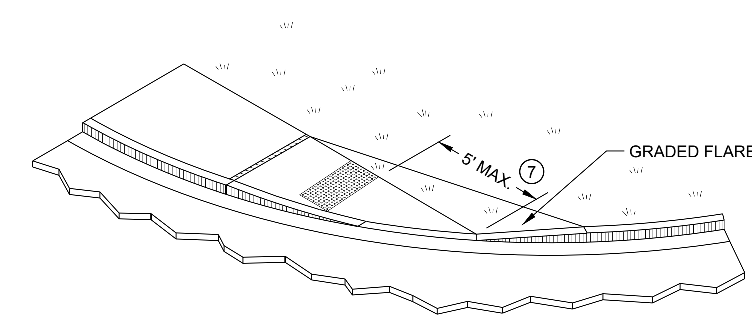
SECTION B - B FOR TYPE 4A AND TYPE 4A1



PLAN VIEW
CURB RAMP TYPE 4A1



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

6

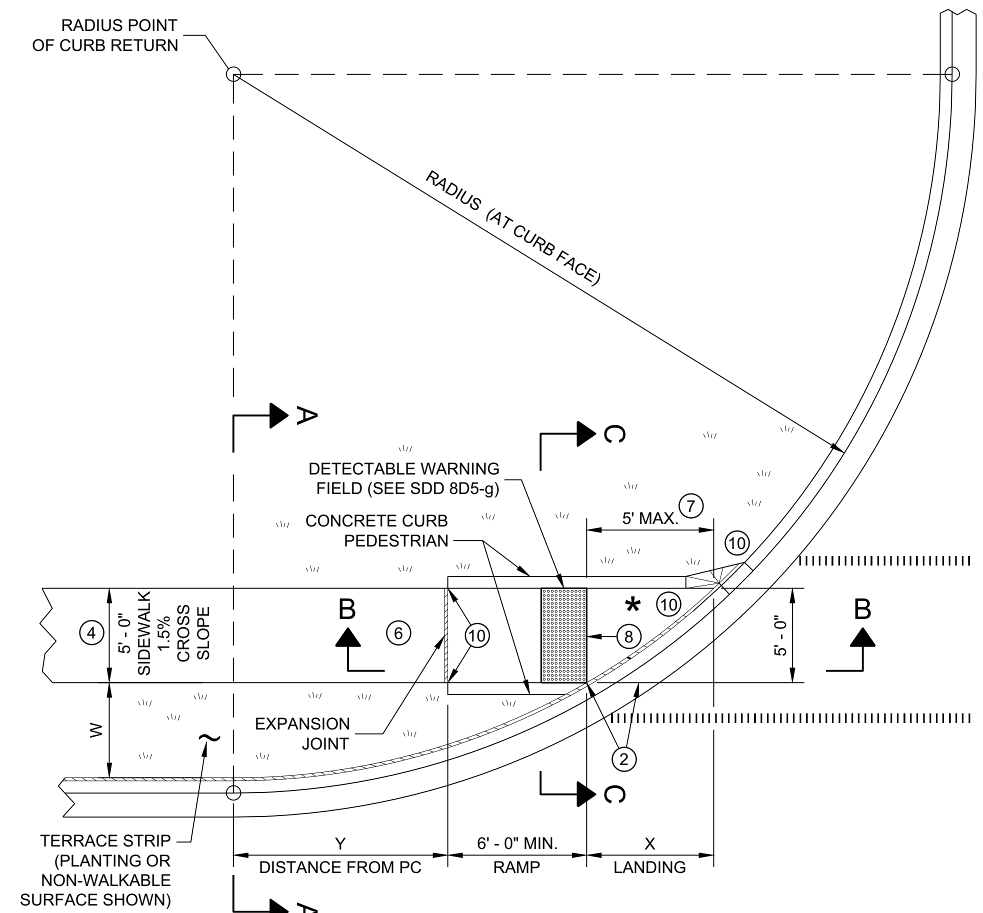
6

CURB RAMPS
TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

SDD 08D05 - 20c

SDD 08D05 - 20c



PLAN VIEW

CURB RAMP TYPE 4B

RADIUS (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 ¼"	7' - 2 ½"	0' - 10 ¾"	7' - 7 ¼"
20 FEET	5' - 9 ¾"	3' - 6 ½"	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 ¼"	10' - 9"
30 FEET			6' - 9 ¼"	7' - 11 ¼"	6' - 0 ¼"	9' - 8"	5' - 5"	11' - 1 ¾"	4' - 10 ¾"	12' - 5 ¾"	4' - 5 ½"	13' - 7 ¾"	4' - 0 ¾"	14' - 8 ½"	3' - 8 ½"	15' - 8 ¼"
40 FEET									6' - 1 ¾"	15' - 8 ½"	5' - 8"	17' - 2"	5' - 3"	18' - 5 ¾"	4' - 10 ¾"	19' - 8 ¼"
50 FEET															5' - 10 ¼"	23' - 2"

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

LEGEND

½" 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.

(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 ¼ - 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.

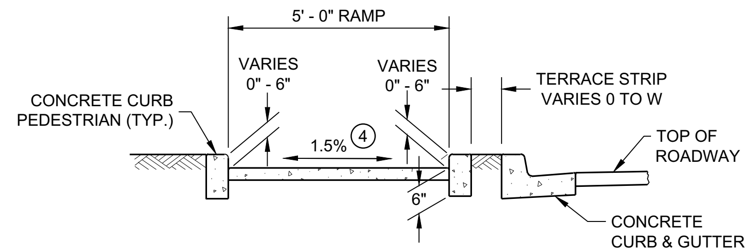
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.

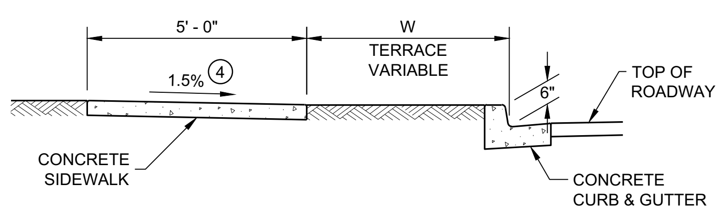
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

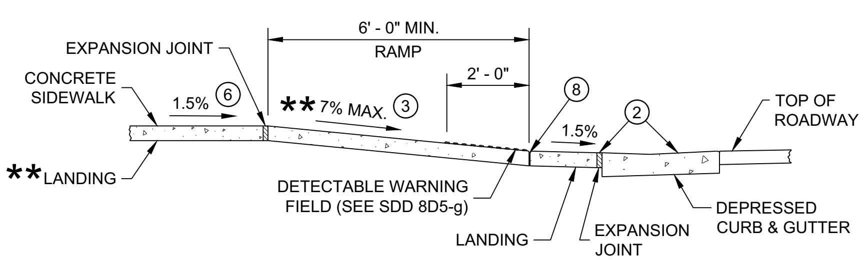


SECTION C - C FOR TYPE 4B



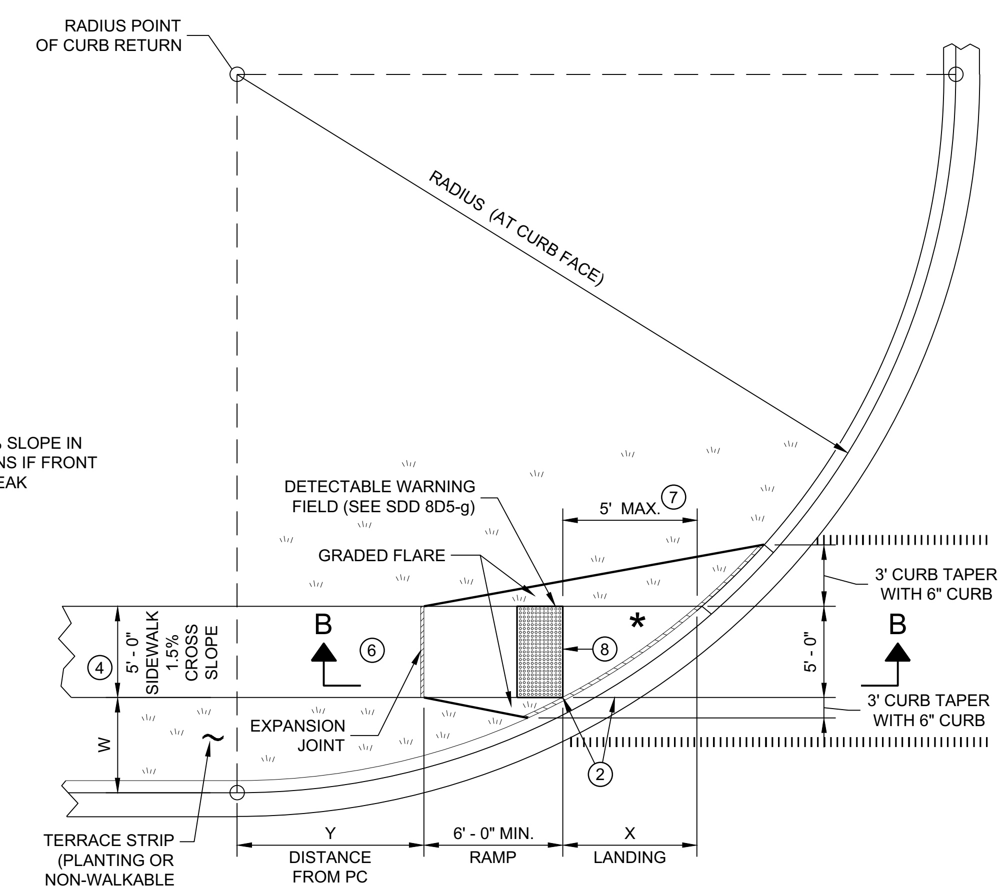
SECTION A - A FOR TYPE 4B

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IF FRONT OF GRADE BREAK



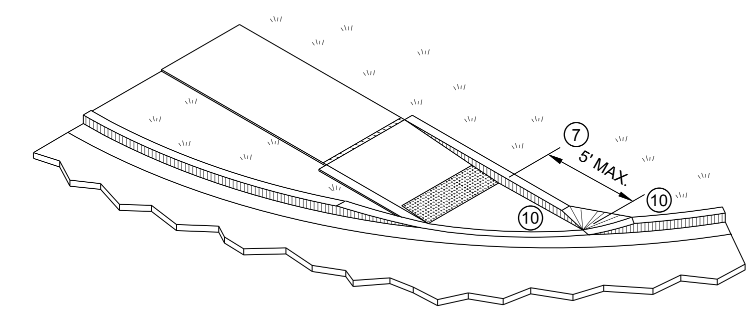
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

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

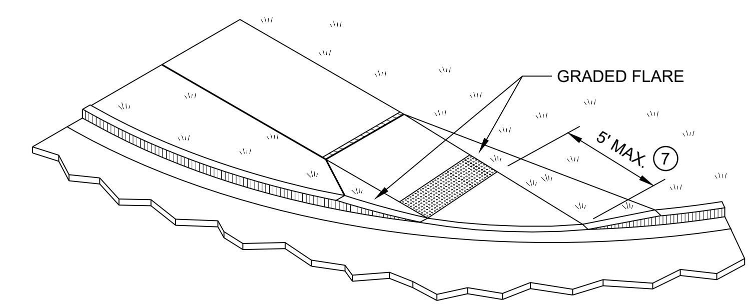


PLAN VIEW

CURB RAMP TYPE 4B1



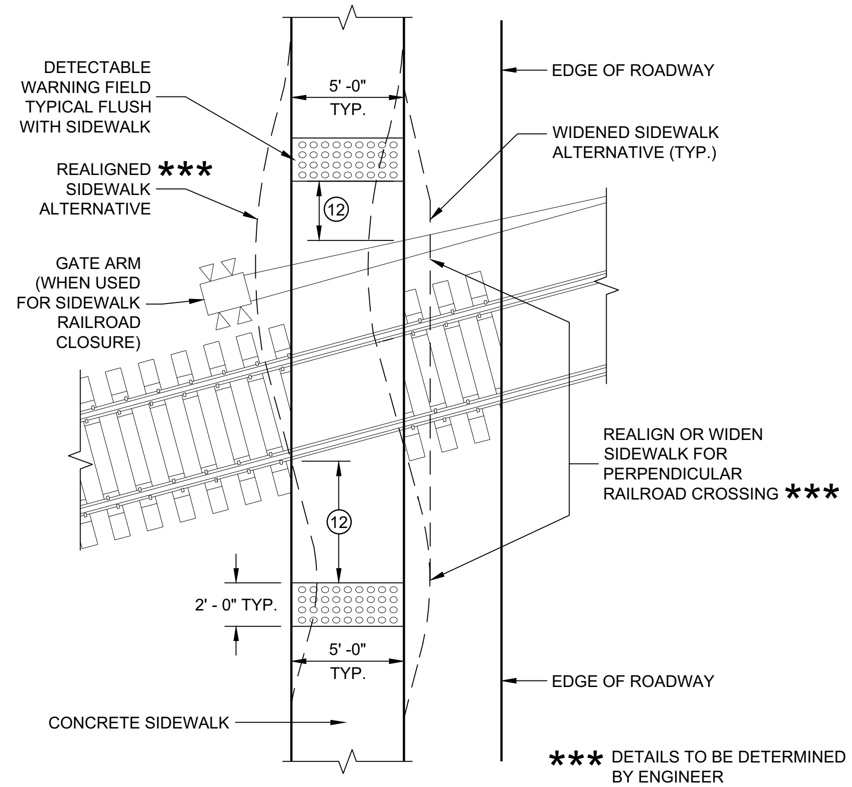
ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

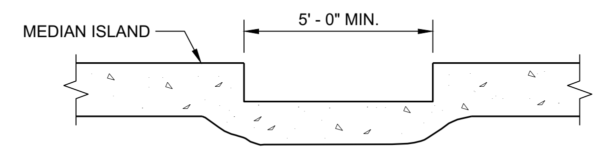
CURB RAMPS
TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

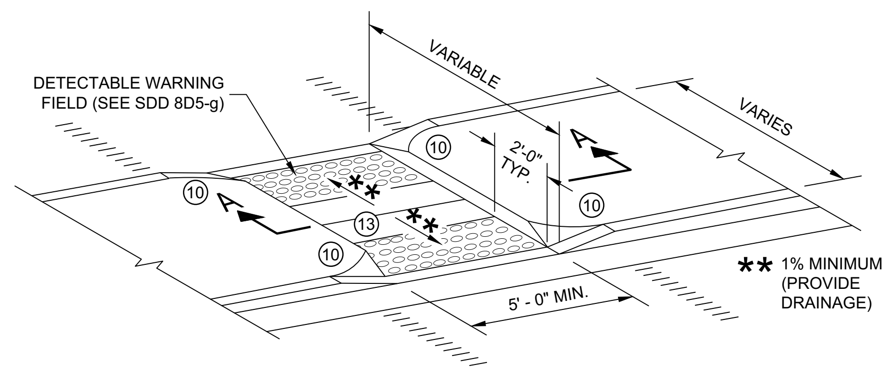


CURB RAMP TYPE 8

DETECTABLE WARNINGS AT RAILROAD CROSSING



SECTION A - A FOR TYPE 5



CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING

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 ¼ - 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.

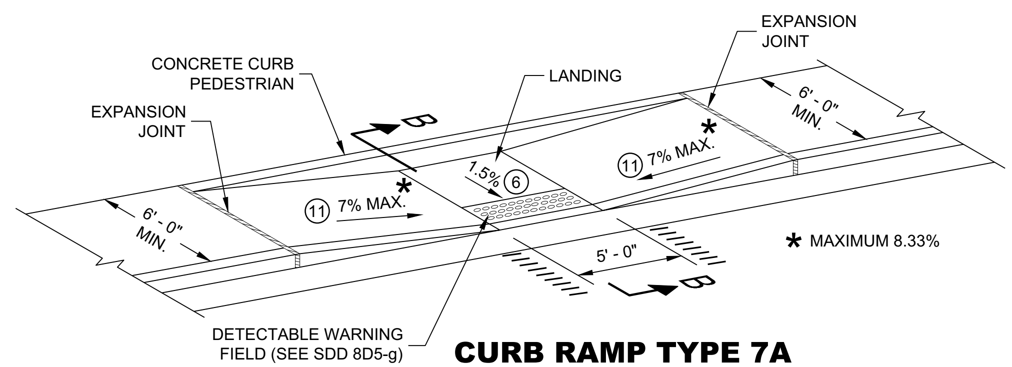
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(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. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET 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.

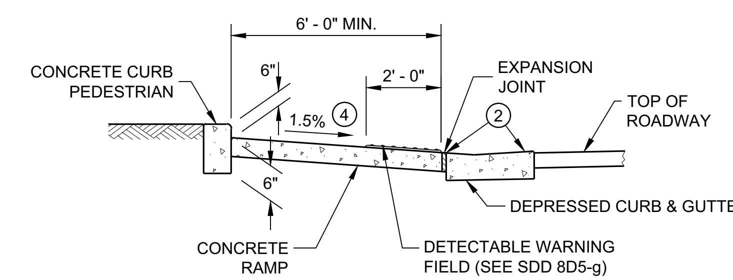
LEGEND

(symbol)	½" EXPANSION JOINT SIDEWALK
– – – –	CONTRACTION JOINT FIELD LOCATED
(symbol)	PAVEMENT MARKING CROSSWALK (WHITE)

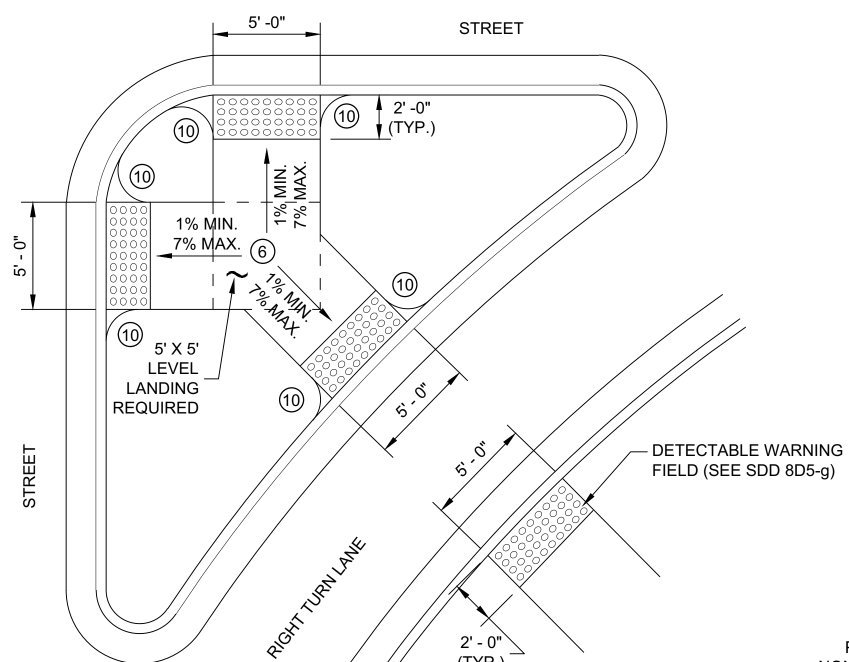


CURB RAMP TYPE 7A

MID BLOCK CROSSING



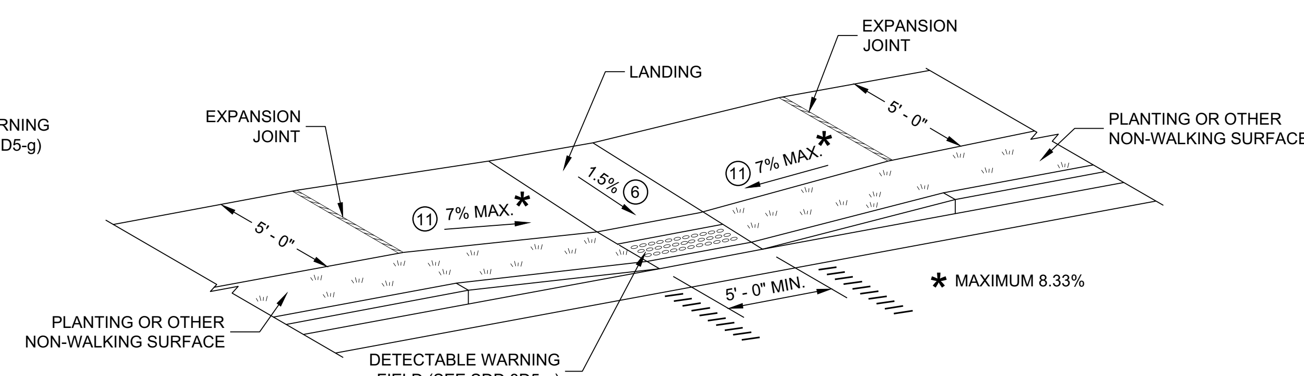
SECTION B - B FOR TYPE 7A



CURB RAMP TYPE 6

DETECTABLE WARNING AT ISLANDS

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



CURB RAMP TYPE 7B

MID BLOCK CROSSING

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

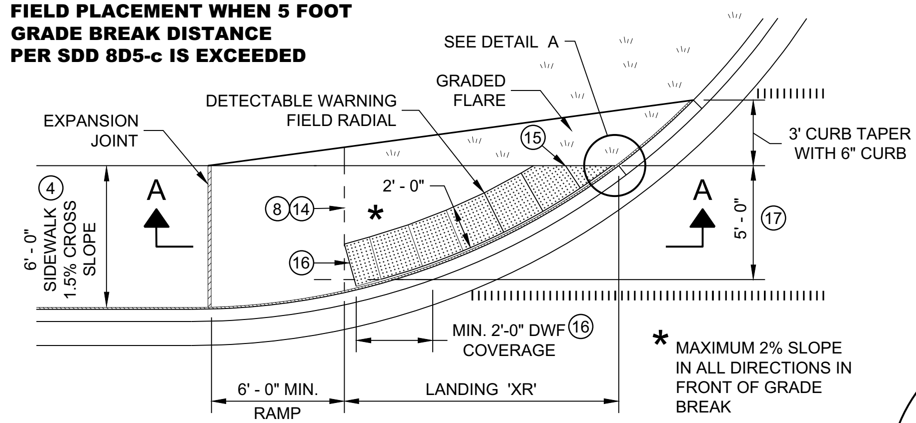
CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATI

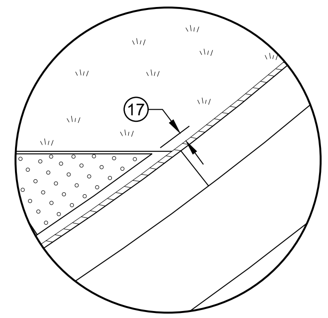
6

SDD 08D05 - 20e

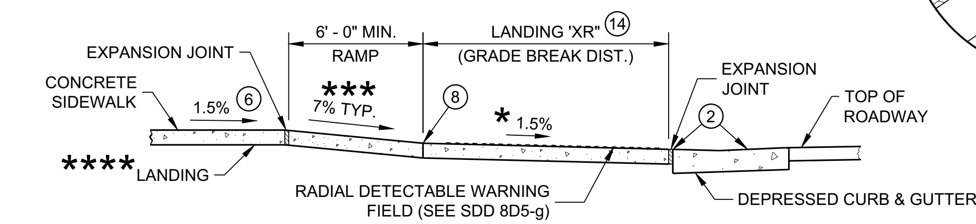
RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-c IS EXCEEDED



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



DETAIL A



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

*** MAXIMUM 8.33%

SECTION A - A FOR TYPE 4A1

LEGEND

½" 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 FILED ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AD 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 ¼ - 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.

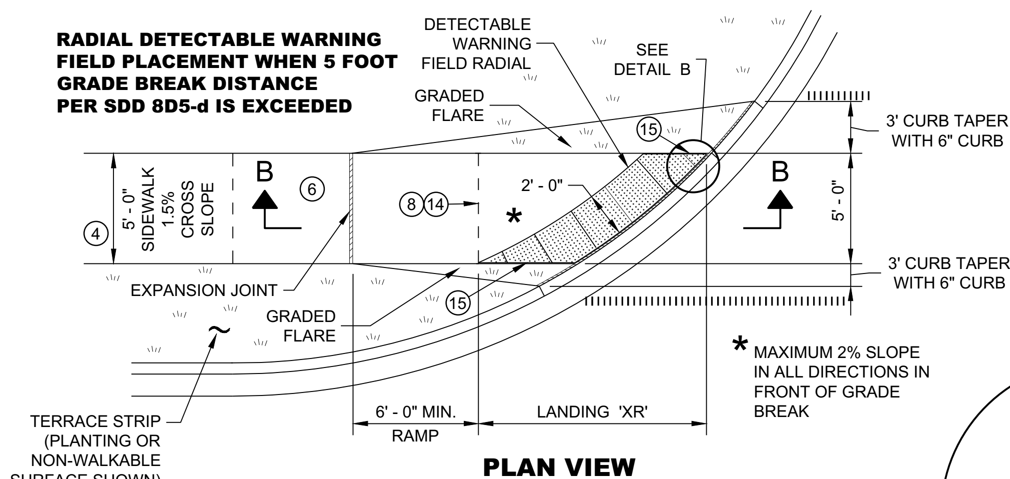
15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

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.

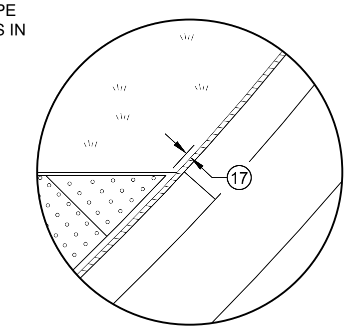
17 A MAXIMUM 3 INCH CONCRETE BORDER WITH IS ALLOWABLE IN FROM OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

6

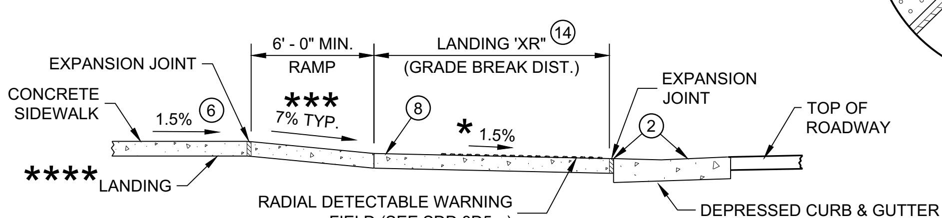
RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-d IS EXCEEDED



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



DETAIL B

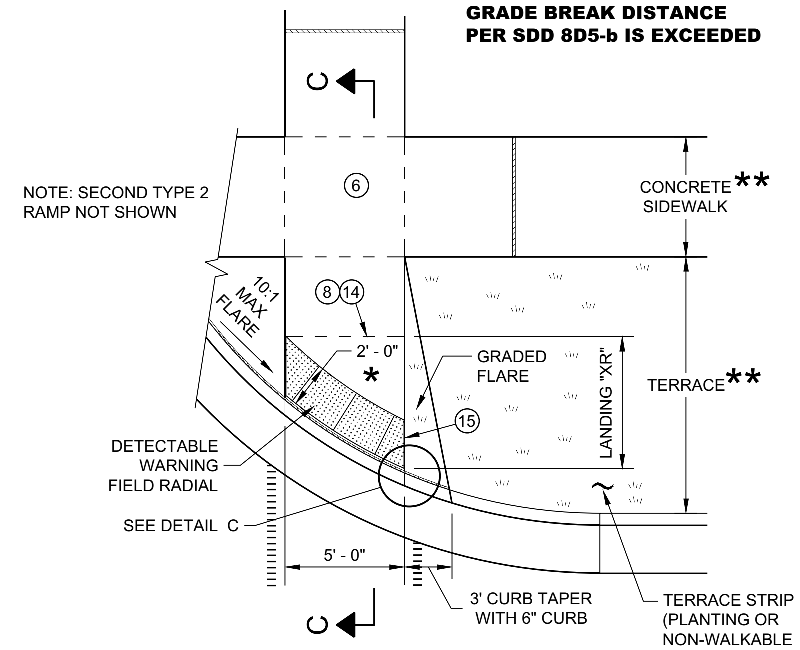


**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

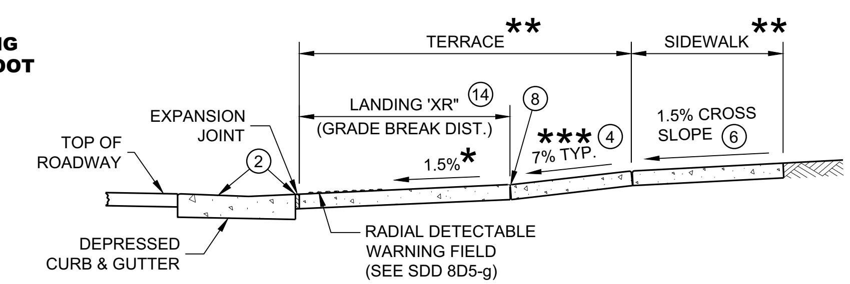
*** MAXIMUM 8.33%

SECTION B - B FOR TYPE 4B1

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)

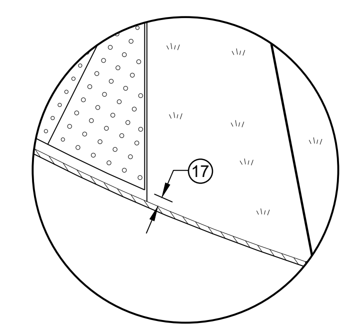


SECTION C - C FOR TYPE 2

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

** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** MAXIMUM 8.33%



DETAIL C

6

CURB RAMPS
RADIAL DETECTABLE WARNING
FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

SDD 08D05 - 20f

SDD 08D05 - 20f

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.

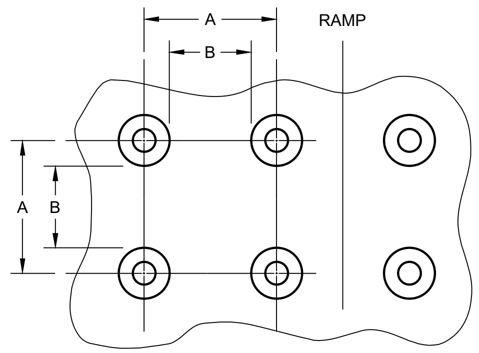
REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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.

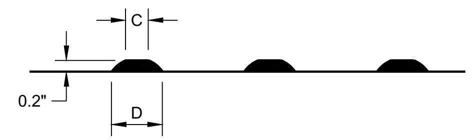
(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN ⅛" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

	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.

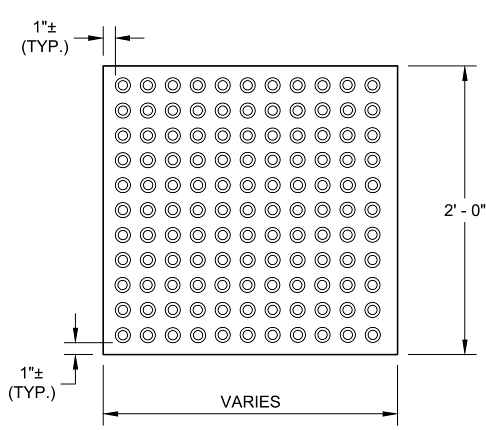


PLAN VIEW

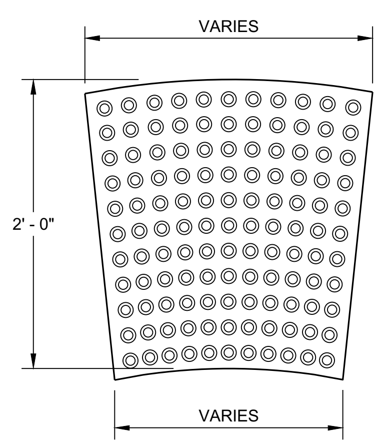


ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

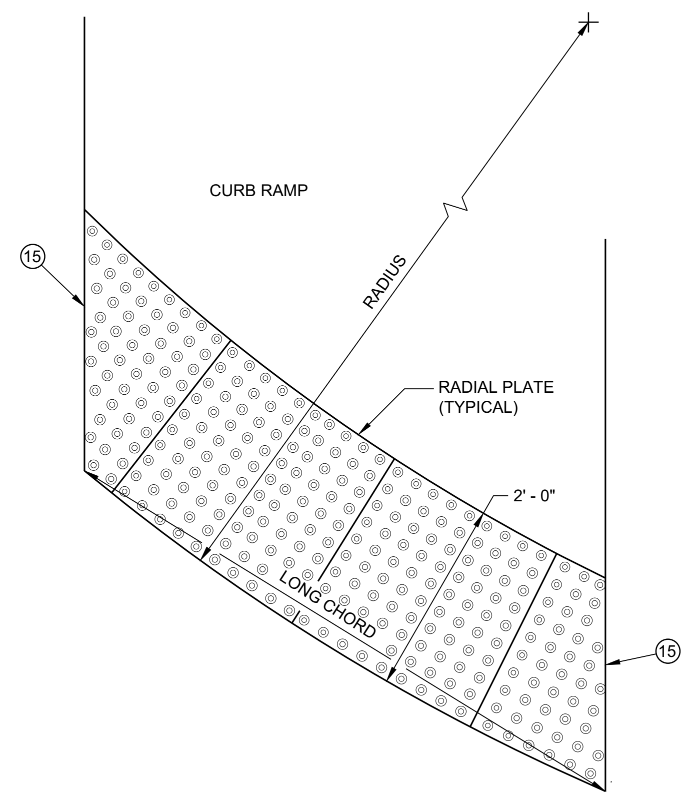


RECTANGULAR PLATES

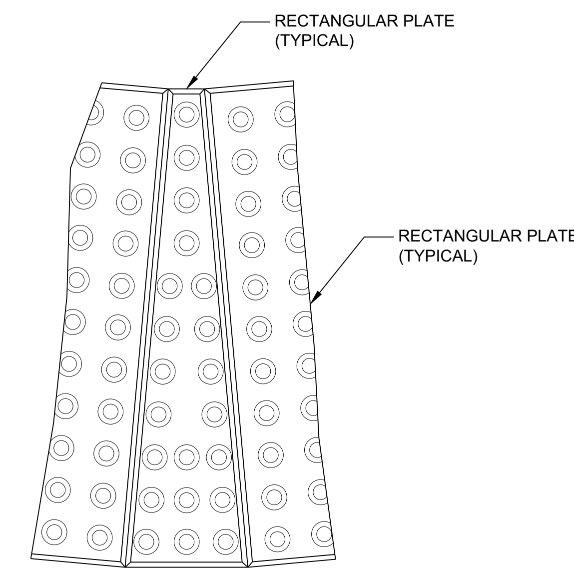


RADIAL PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



PLAN VIEW
RADIAL DETECTABLE WARNING FIELD ATTRIBUTES



PLAN VIEW
RADIAL WEDGE PLATE CONNECTION DETAIL

6

6

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

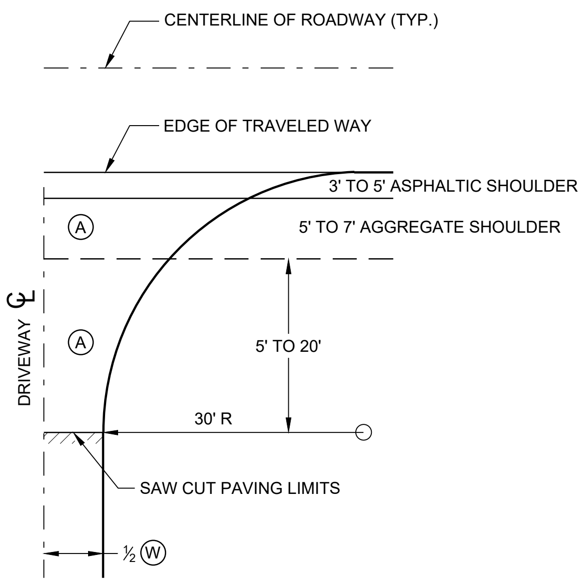
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

SDD 08D05 - 20g

GENERAL NOTES

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



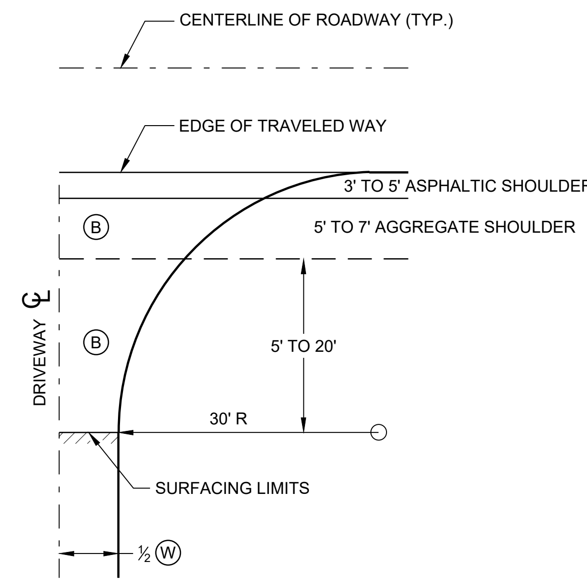
PLAN VIEW

HALF SECTION

(A) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)

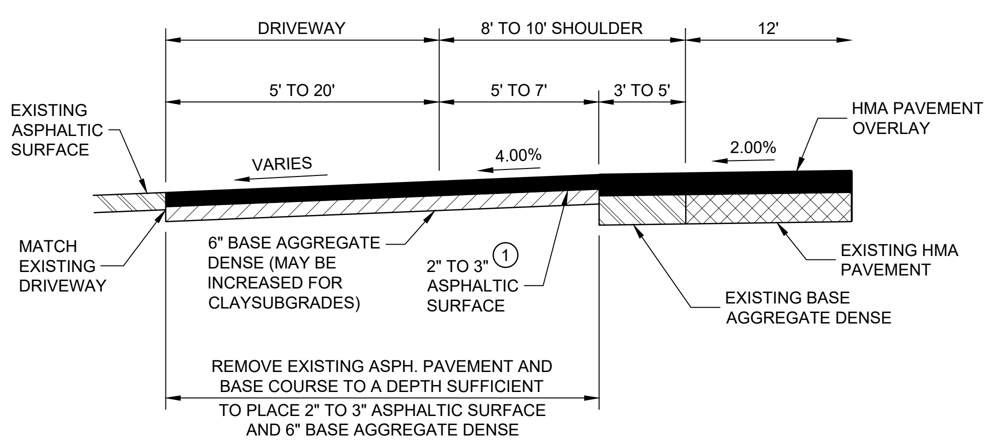
(B) : PAID FOR AS BASE AGGREGATE DENSE 1 ¼" (TON)

(W) : DRIVEWAY WIDTH 16' MIN. - 24' MAX.



PLAN VIEW

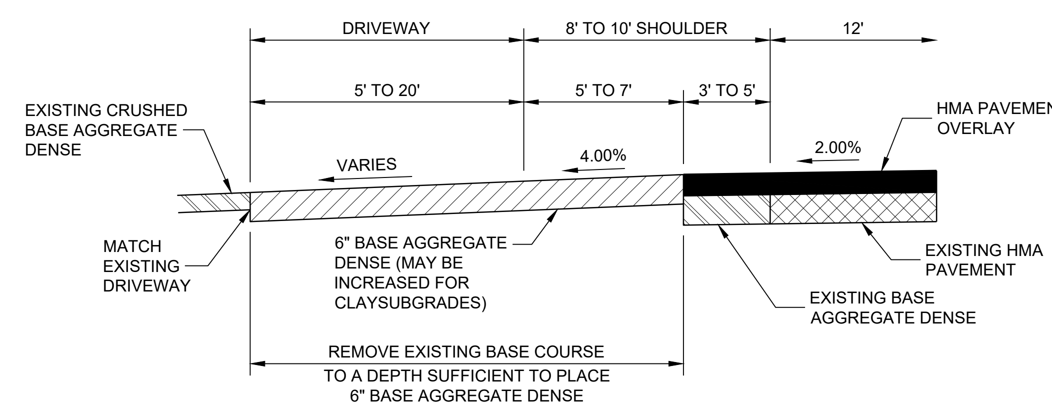
HALF SECTION



PROFILE VIEW

RURAL ENTRANCE
WITH ASPHALTIC SURFACE

RESURFACING PROJECTS



PROFILE VIEW

RURAL ENTRANCE
WITH AGGREGATE SURFACE

6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

DRIVEWAYS WITHOUT CURB AND GUTTER RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

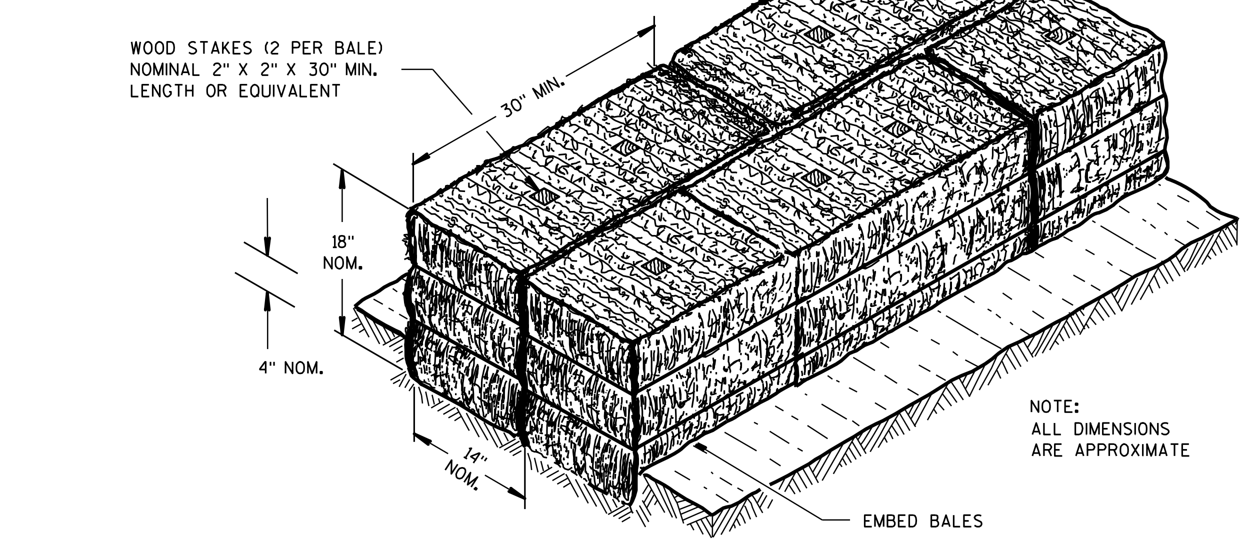
December 2016 — DATE

/S/ Rodney Taylor — ROADWAY STANDARDS DEVELOPMENT ENGINEER

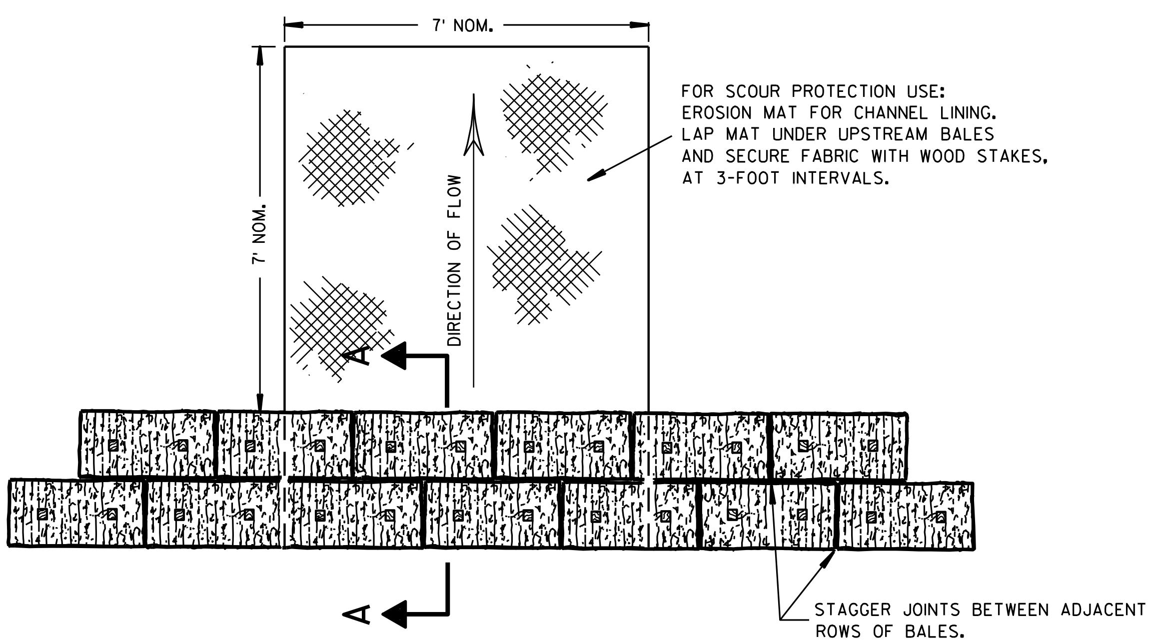
FHWA

6

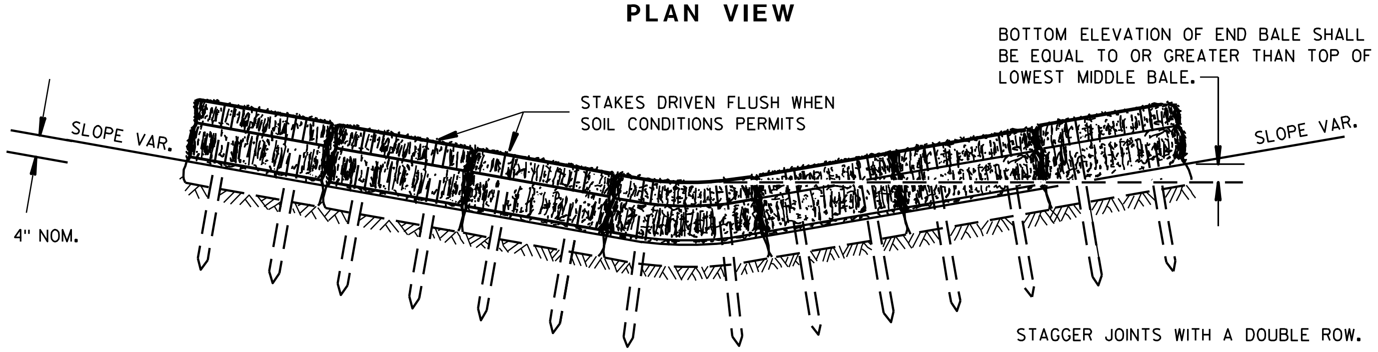
SDD 08D22 - 01



SECTION A-A



PLAN VIEW



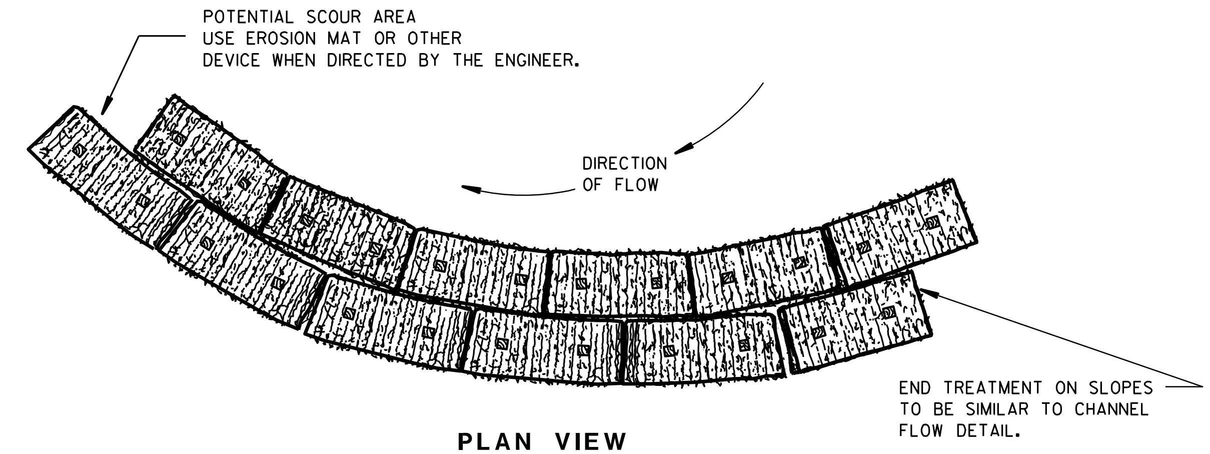
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

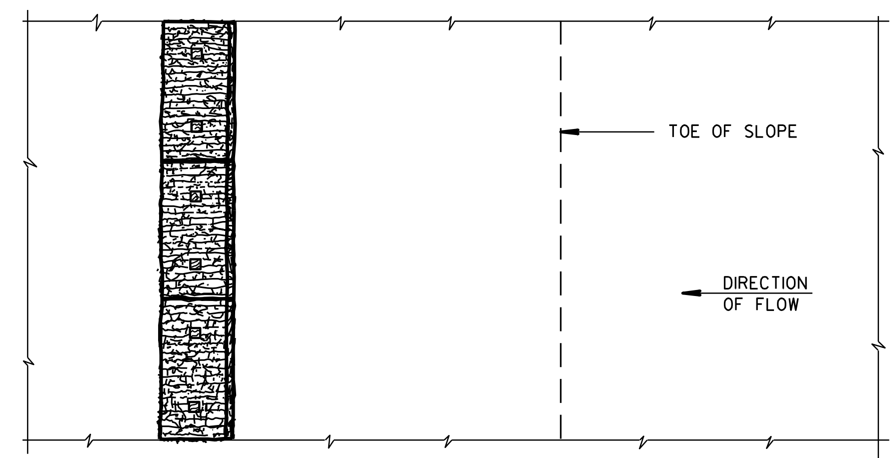
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

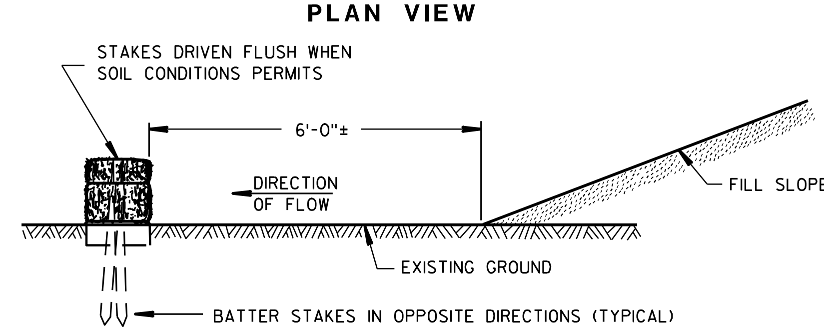


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 6/04/02 DATE   /S/ Beth Cann[illegible] CHIEF ROADWAY DEVELOP[illegible] [illegible]INEER FHWA

6

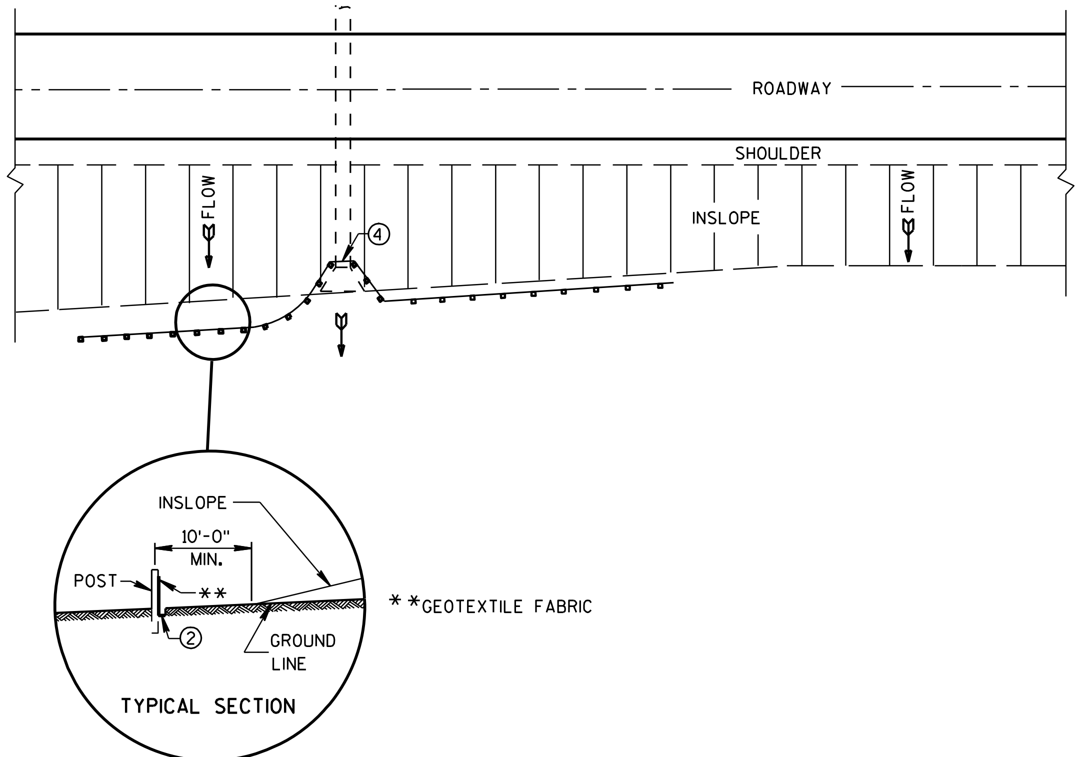
S.D.D. 8 E 8-3

6

GENERAL NOTES

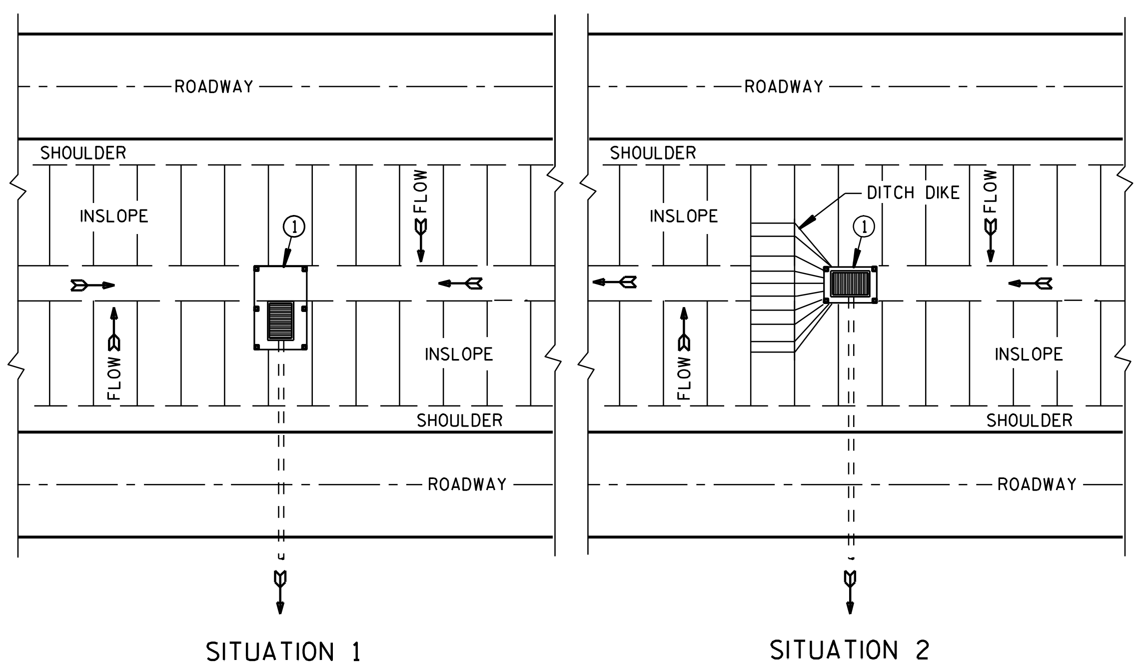
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" 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.



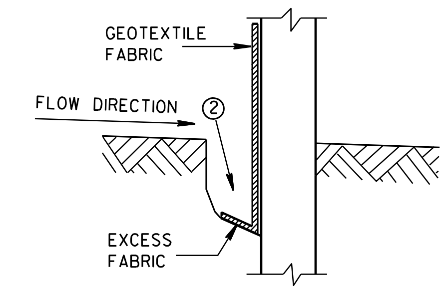
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



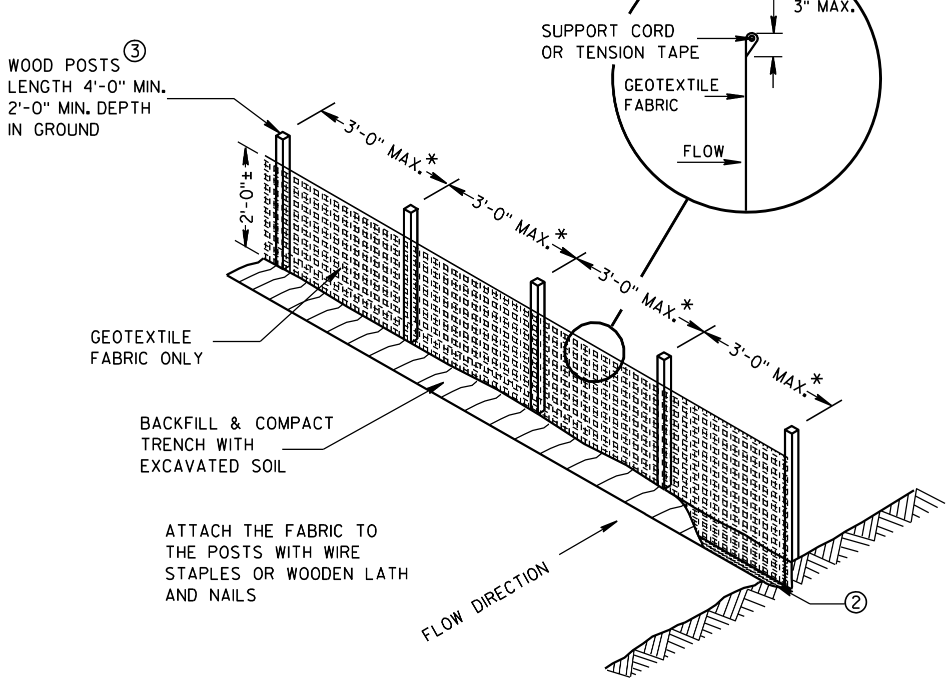
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



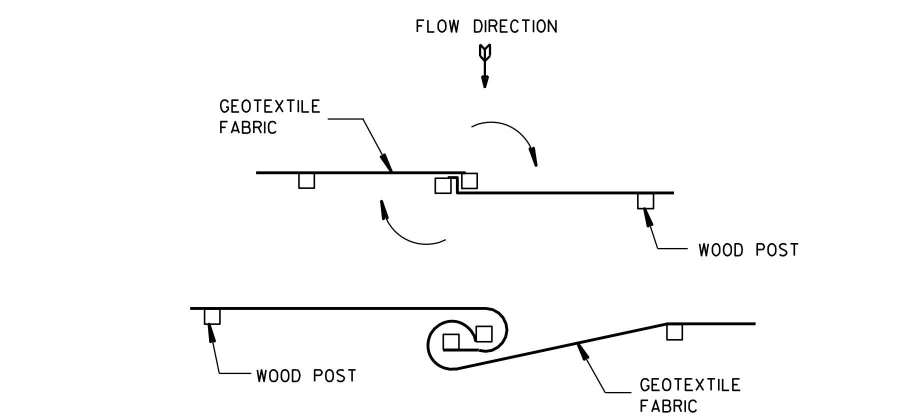
TRENCH DETAIL

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

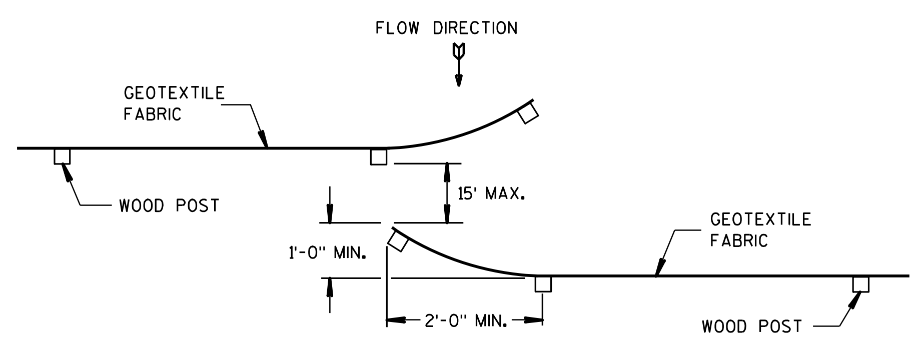


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

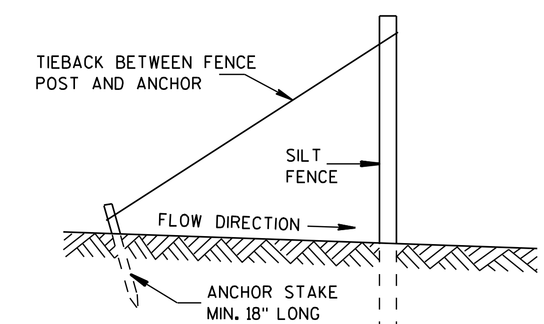


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

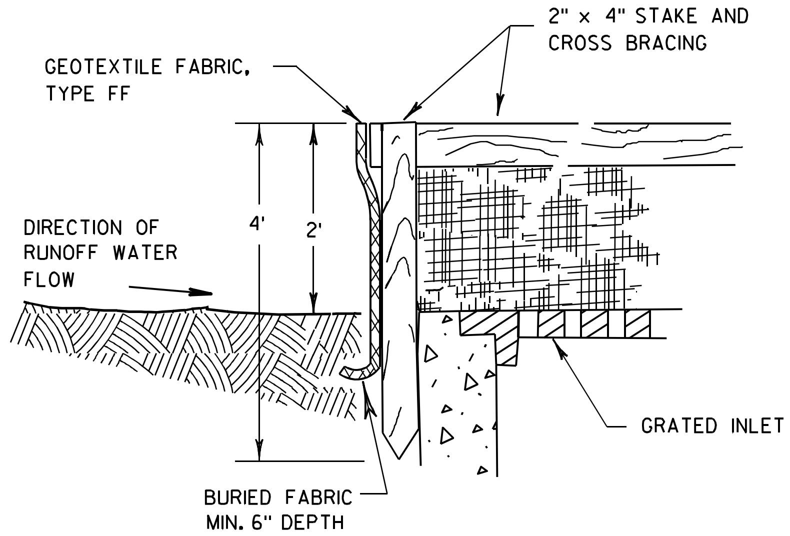
(WHEN REQUIRED BY THE ENGINEER)

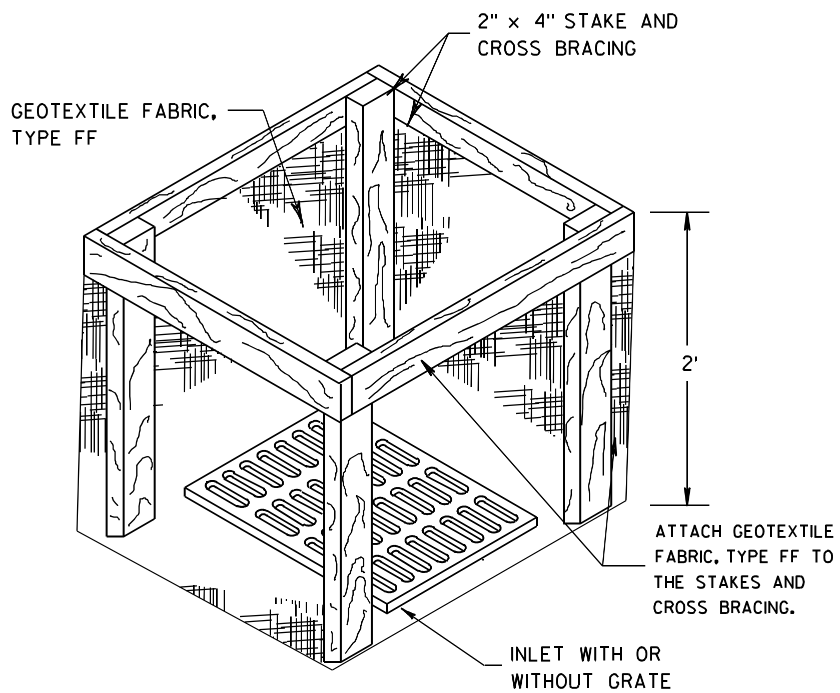
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Cann... CHIEF ROADWAY DEVELOP... ...INEER
FHWA	

6

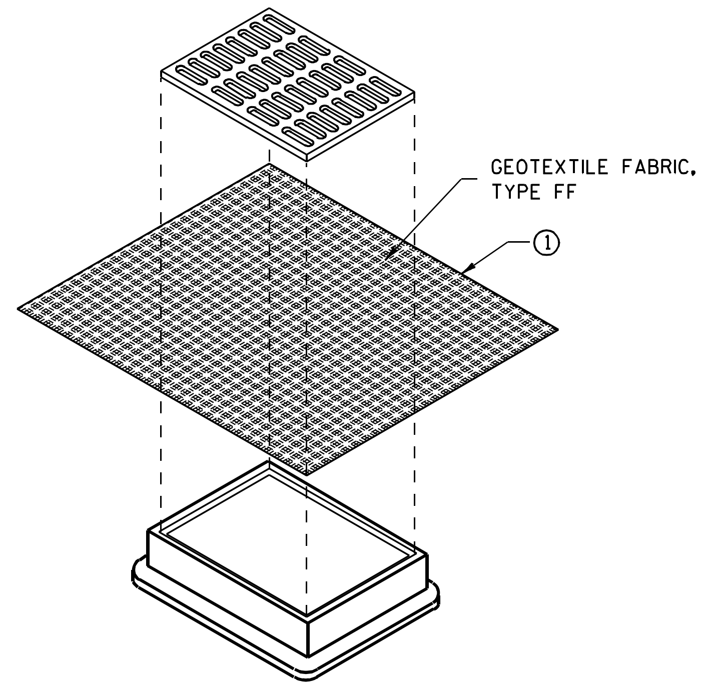
S.D.D. 8 E 9-6

S.D.D. 8 E 9-6



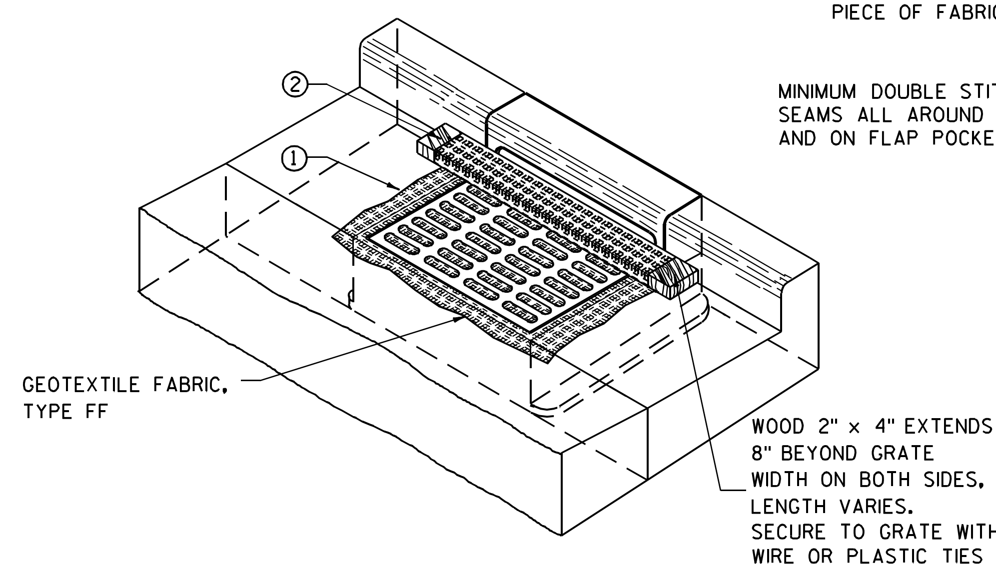


INLET PROTECTION, TYPE A

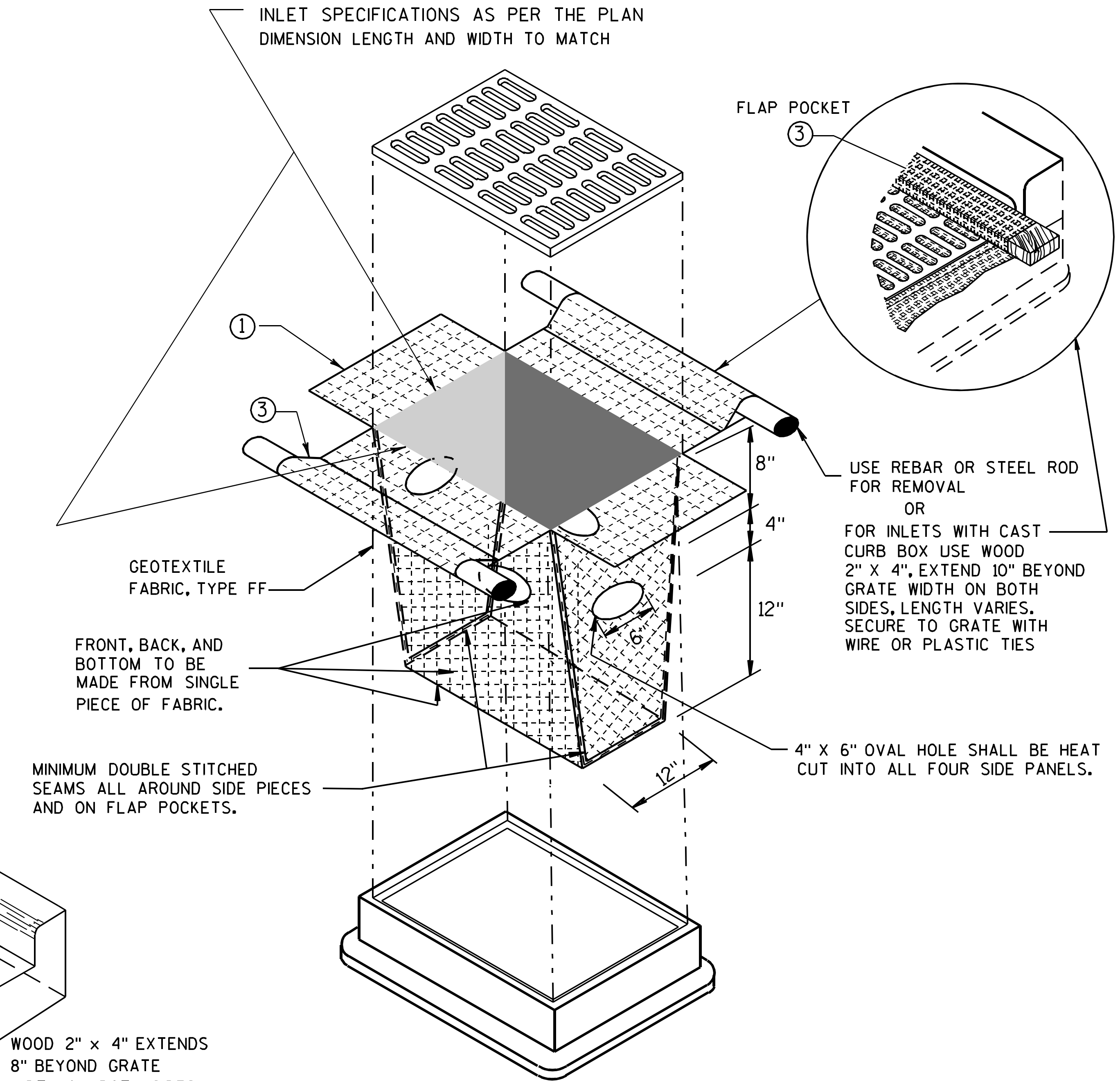


INLET PROTECTION, TYPE B (WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

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.

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 A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

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

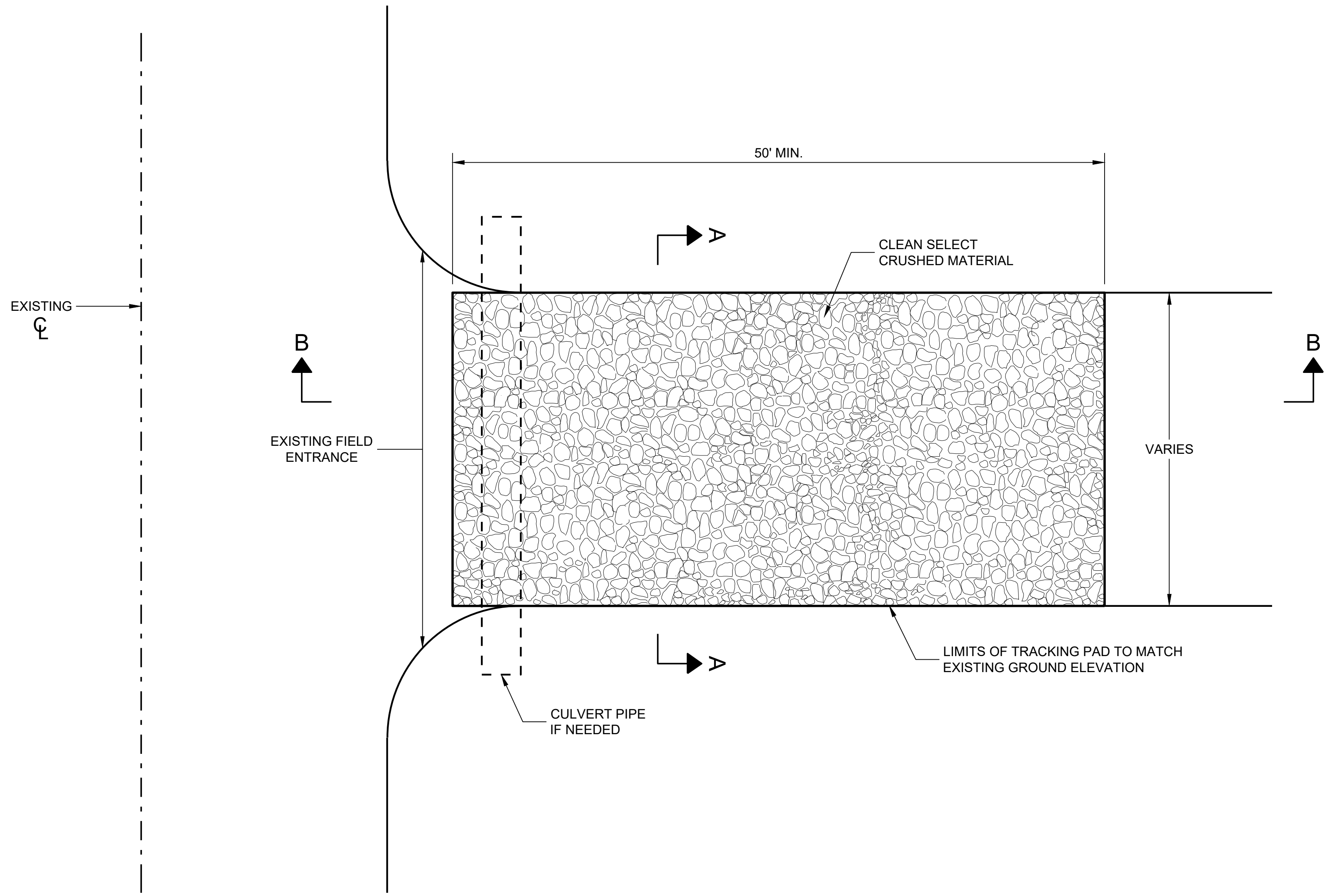
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

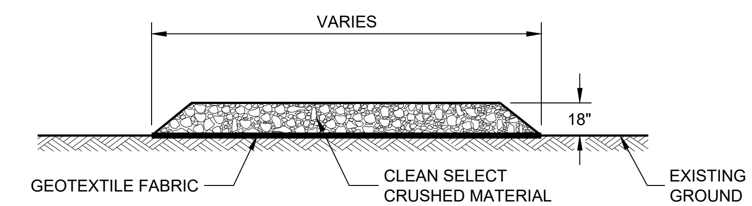
TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

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

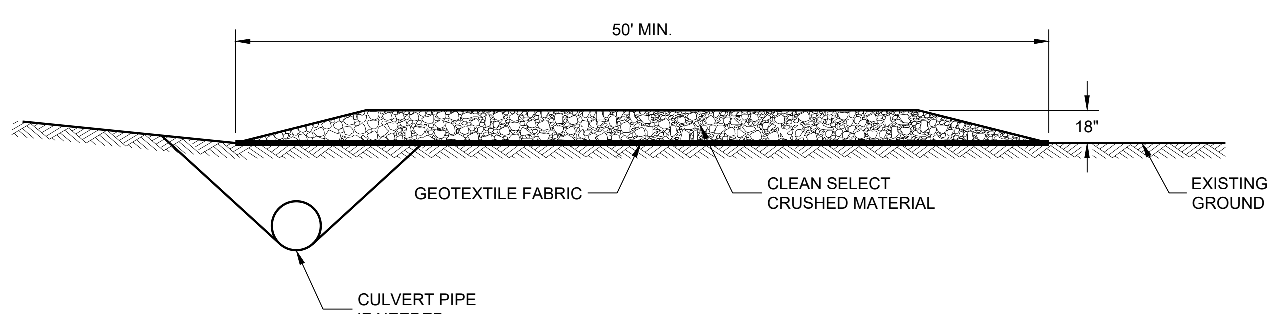
CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

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





SECTION A - A



SECTION B - B

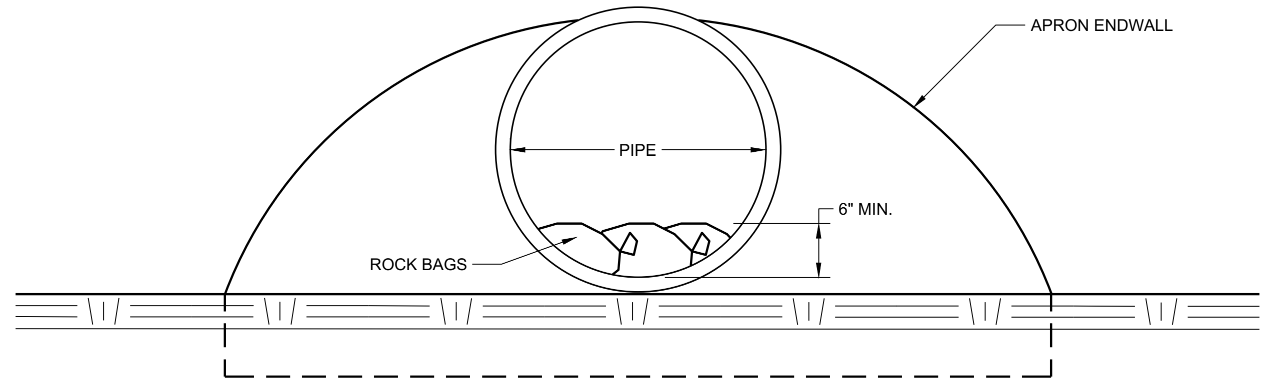
TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

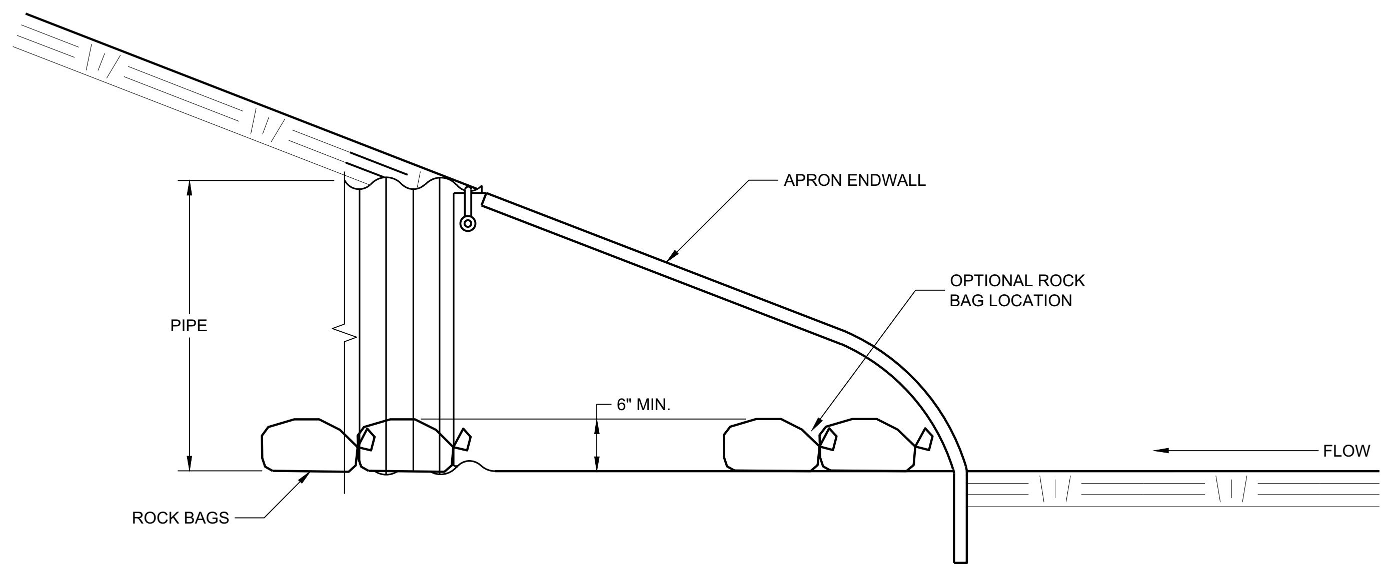
APPROVED
3/24/2011 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

SDD 08E14 - 01



END VIEW



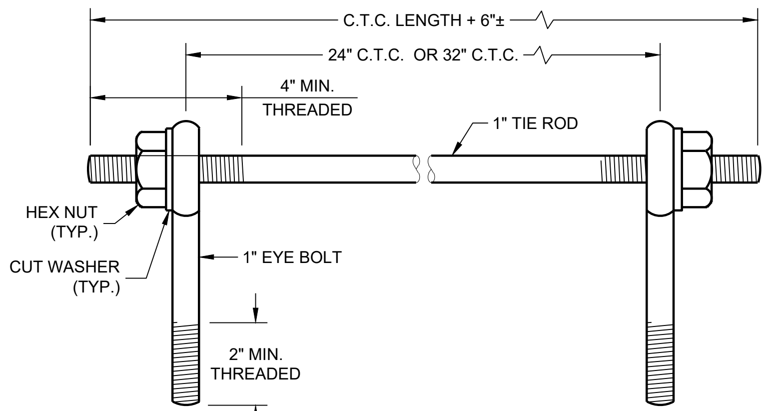
SIDE VIEW

CULVERT PIPE CHECK

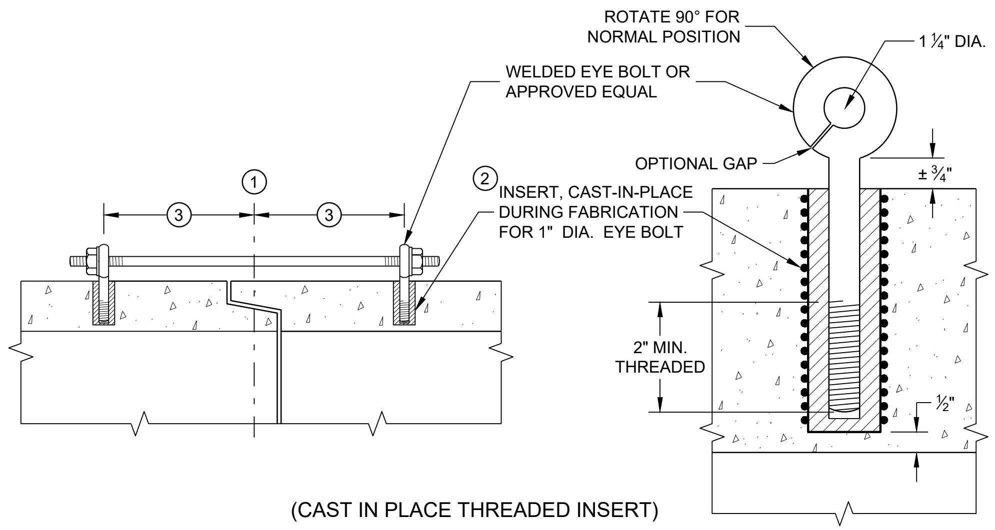
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI
FHWA	

6



EYE BOLTS AND TIE ROD



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

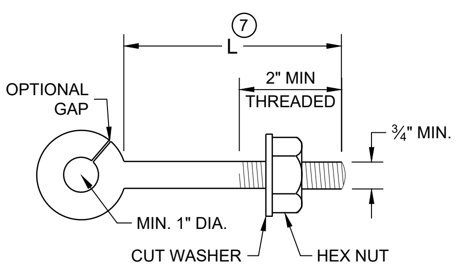
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

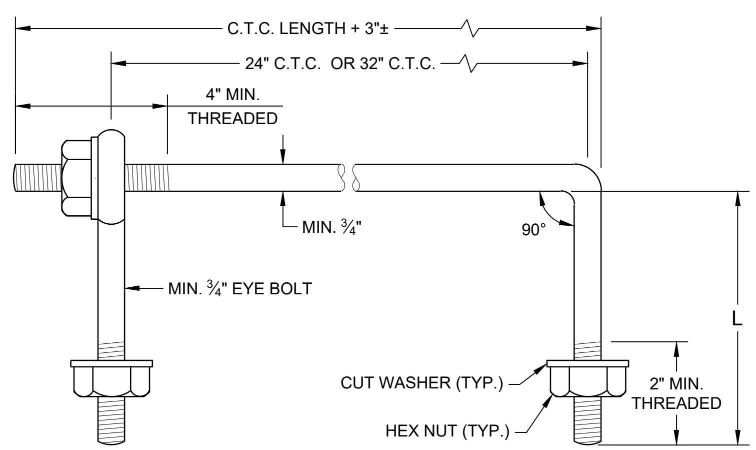
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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 ½ INCH OF THE INNER SURFACE OF THE PIPE.
7. EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

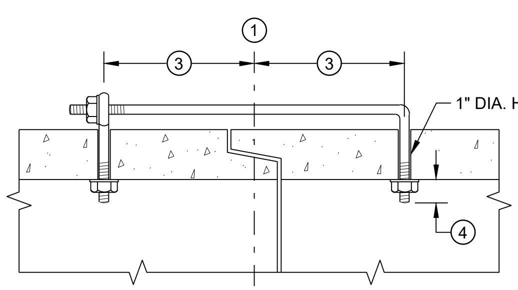


EYE BOLT 7

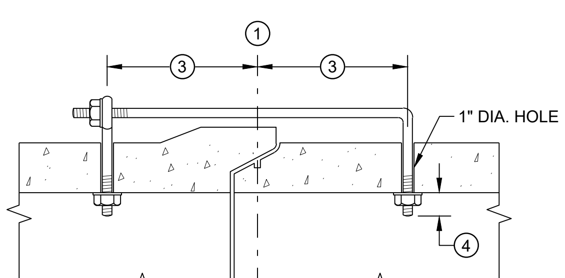
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD



(TONGUE AND GROOVE PIPE)



(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

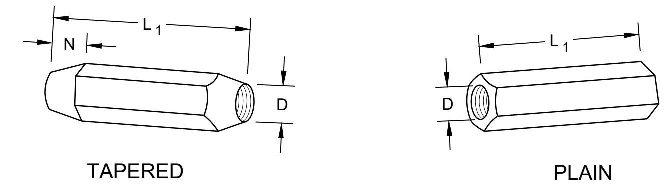
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

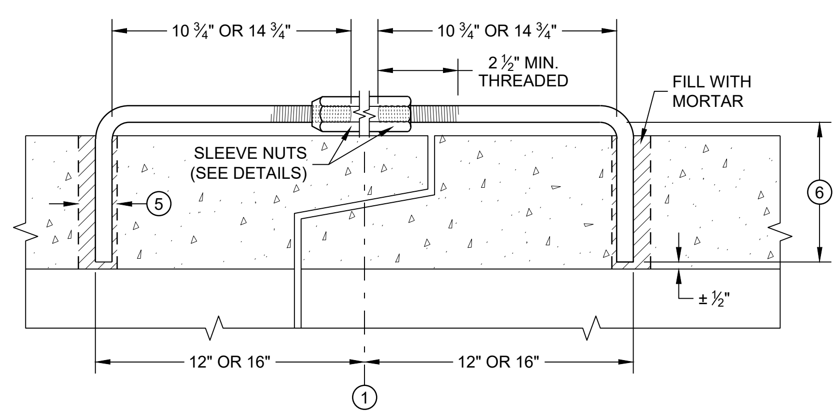
PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 7/16

DIMENSIONS SHOWN ARE IN INCHES



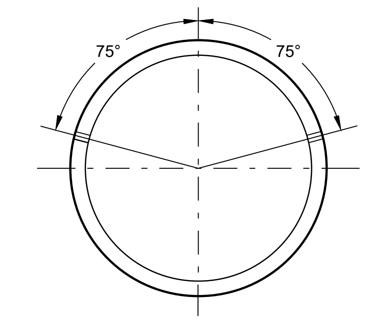
RIGHT AND LEFT THREADS

SLEEVE NUTS



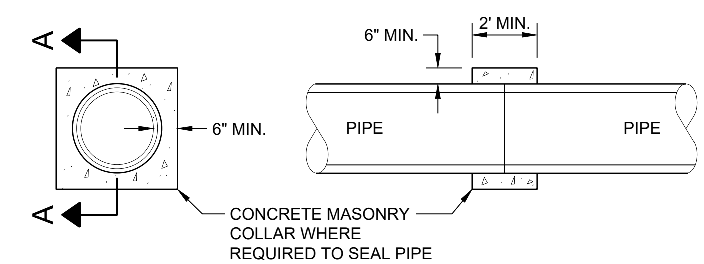
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FO CONCRETE PIPE AND CONCRETE COLLAR DETAIL

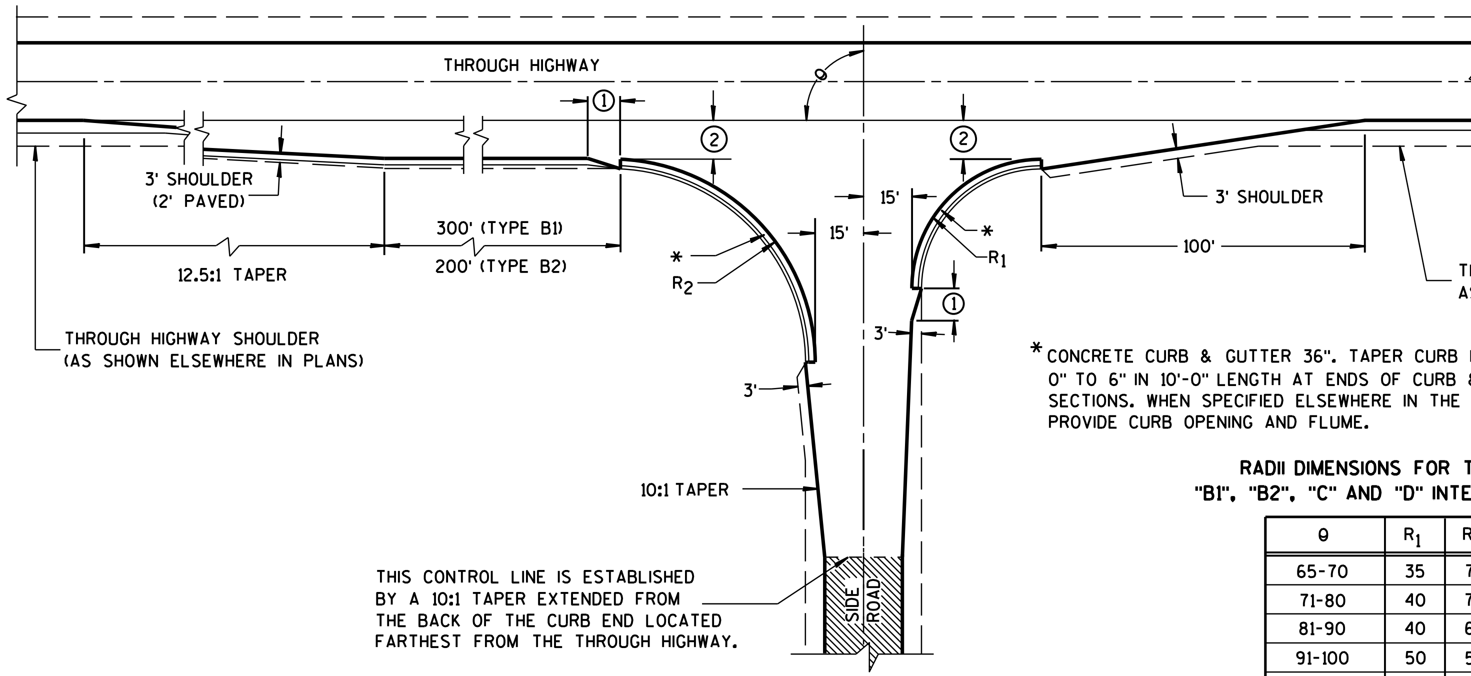
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 08F04 - 08

SDD 08F04 - 08

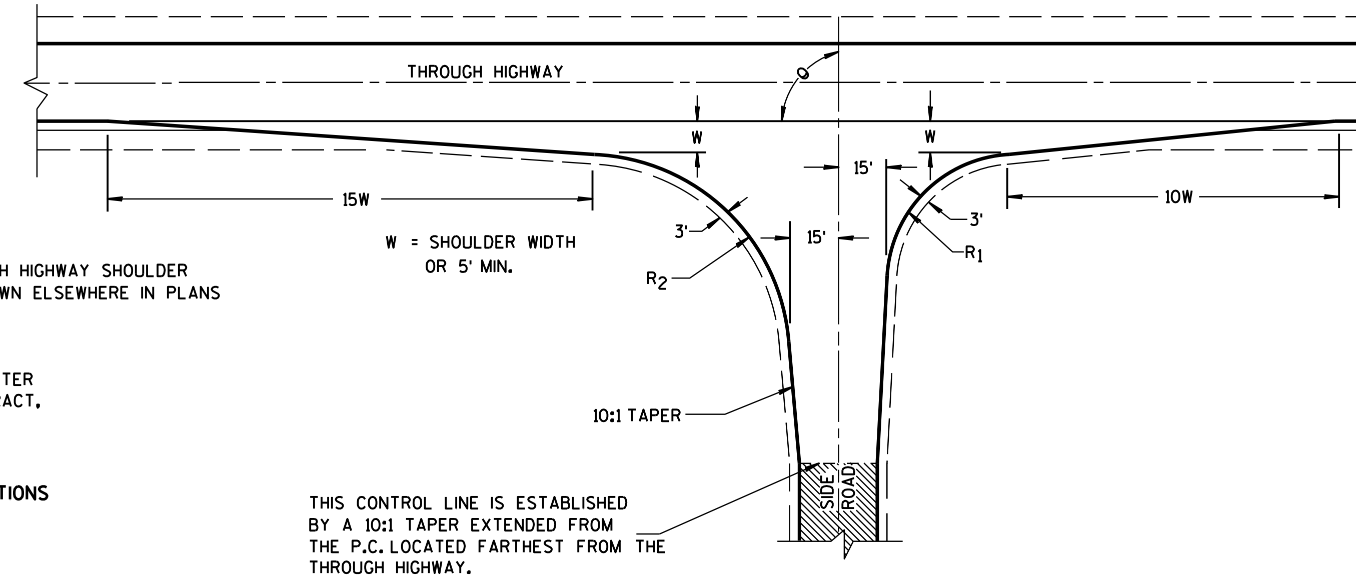


TYPE "B1" AND "B2"

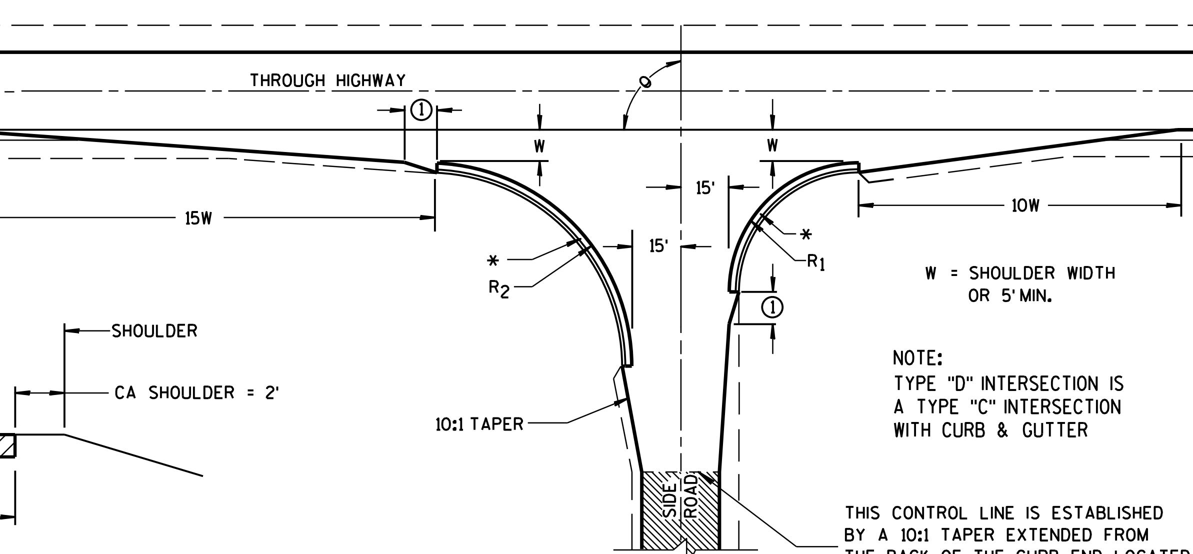
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

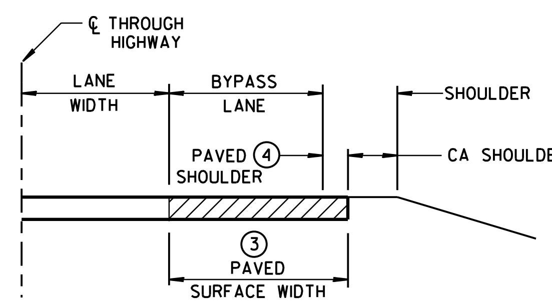
1 10-FT TYPICAL.

2 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

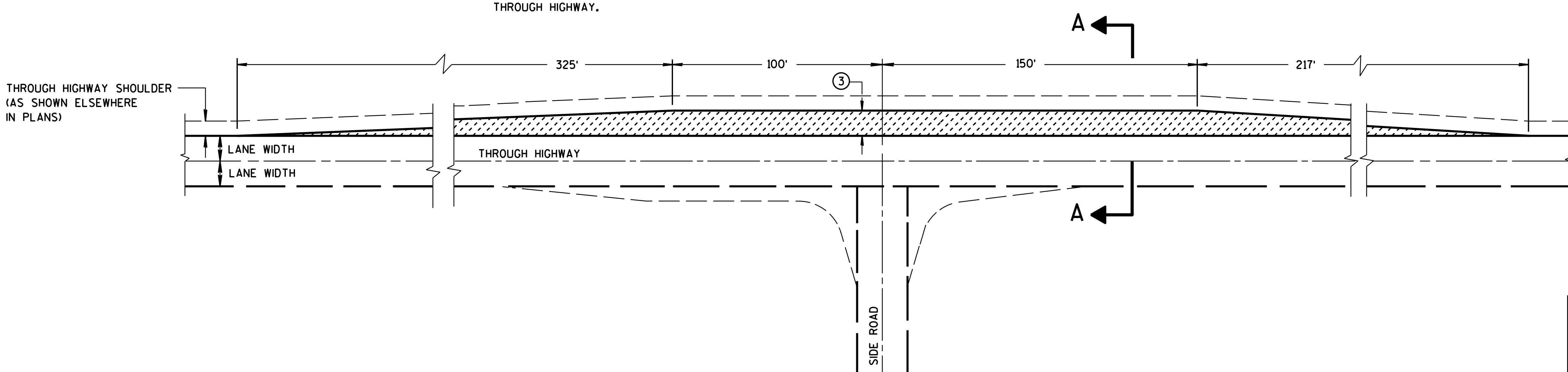
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

3 BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

4 BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



TEE INTERSECTION BYPASS LANE DETAIL

6

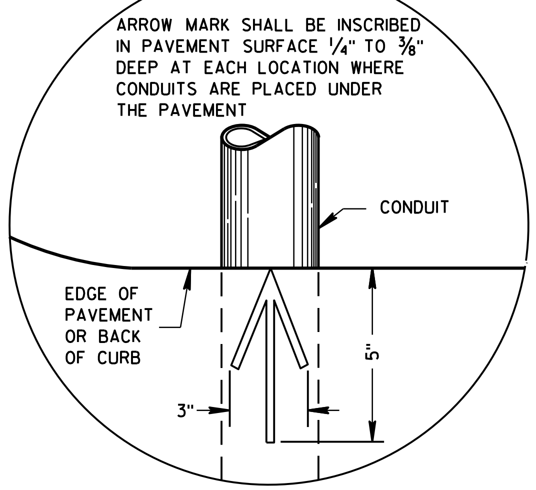
6

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO[RTATION]

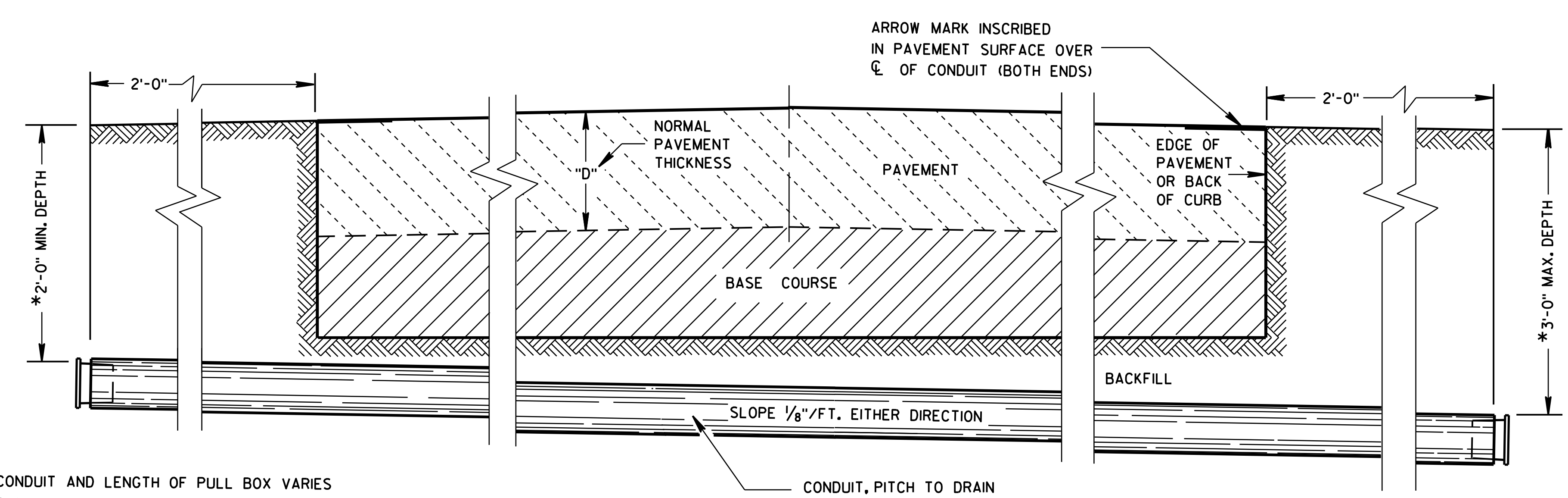
S.D.D. 9 A 1-13a

S.D.D. 9 A 1-13a



PLAN VIEW

ARROW MARK



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

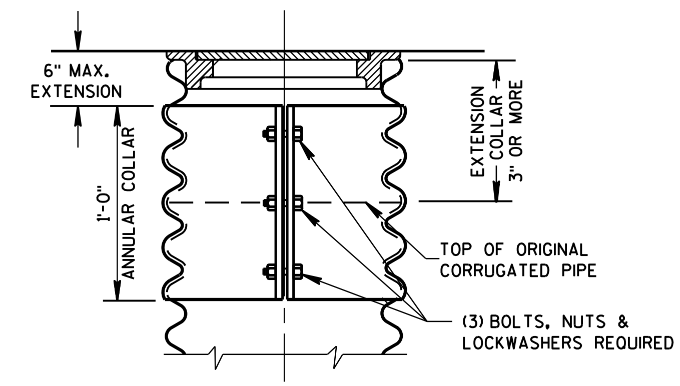
CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

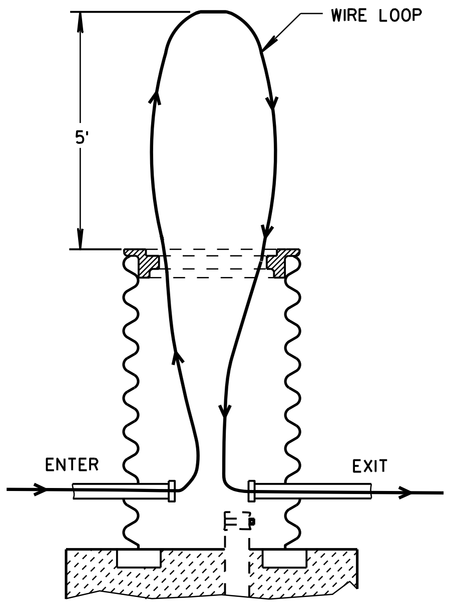
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
		WEIGHT IN POUNDS *								
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

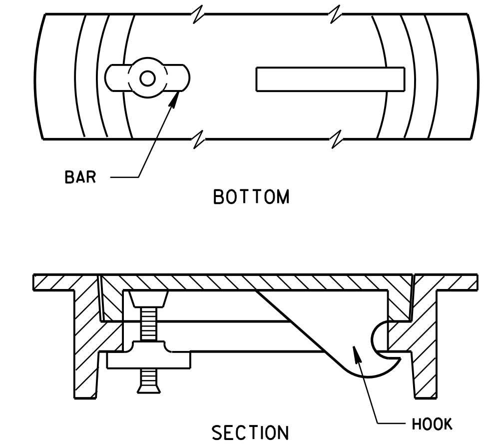
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

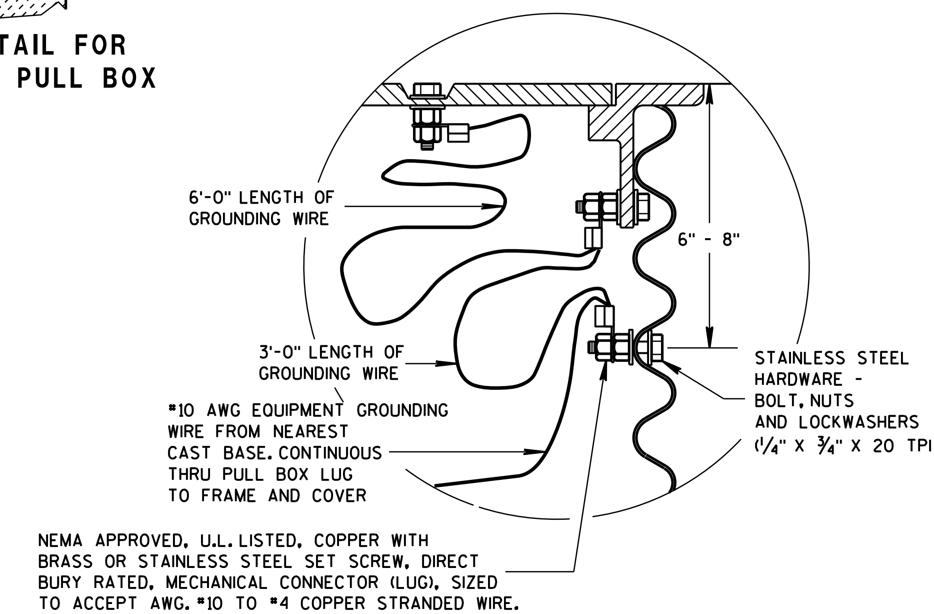


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX

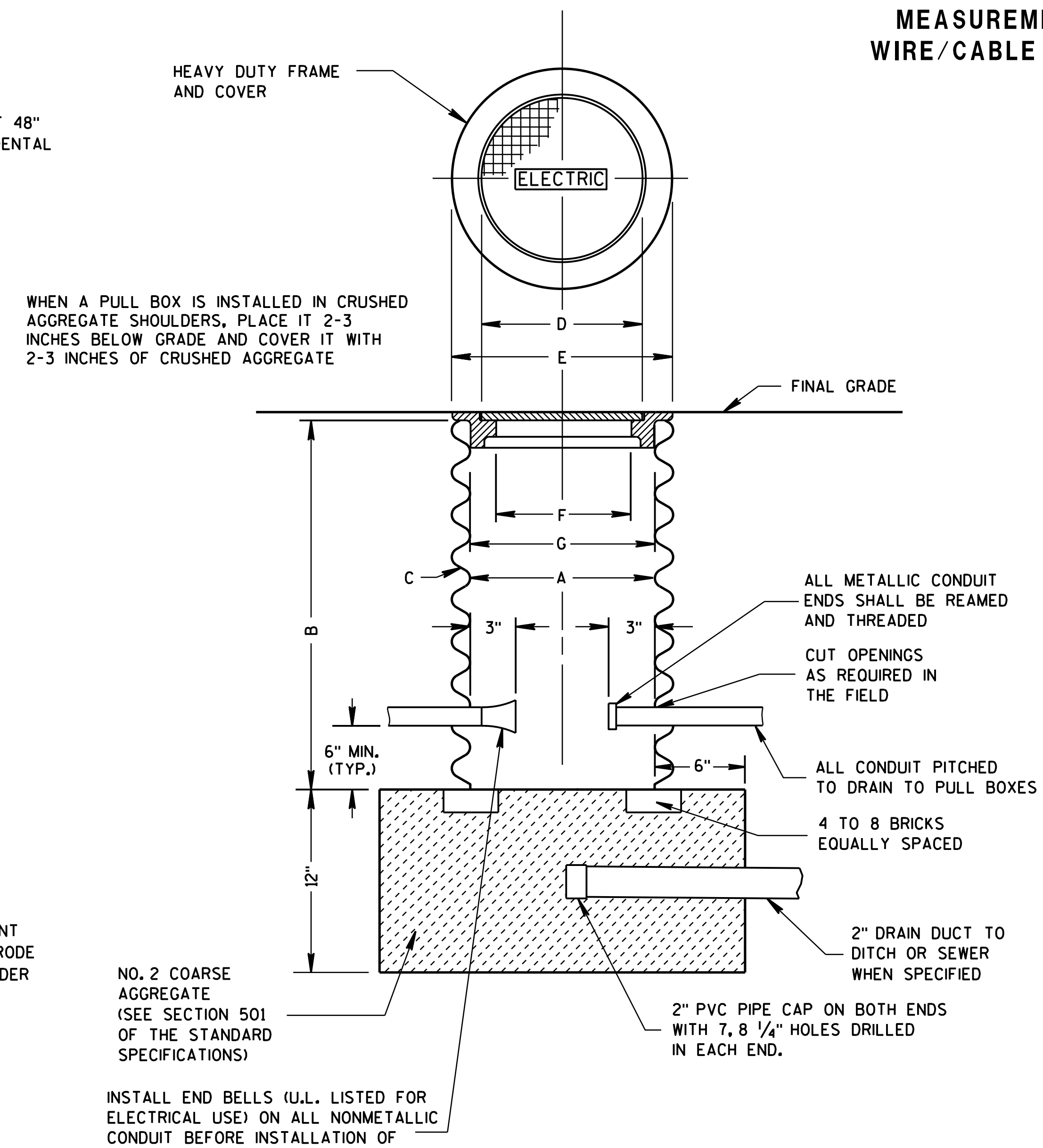


ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

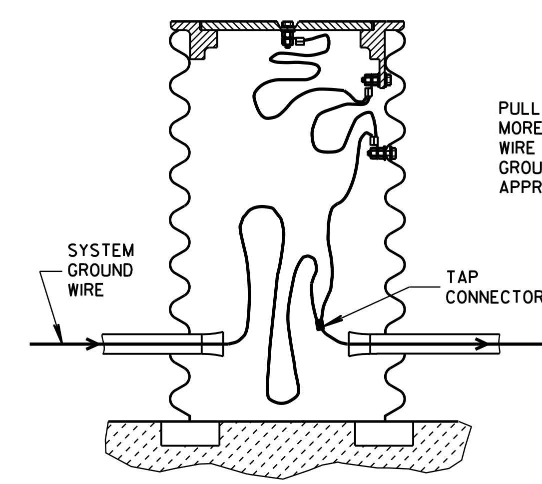
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.



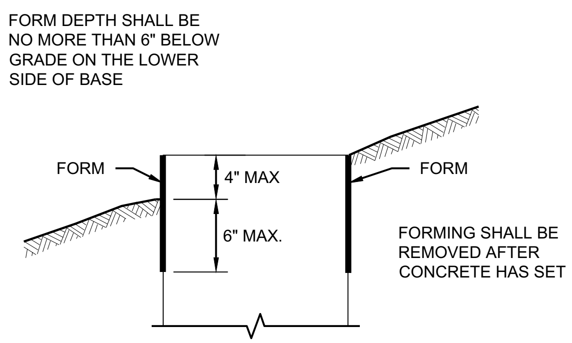
PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWINGSHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN A THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FRO FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2, TYPE 5 AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER ALL BASE TYPES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH"L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

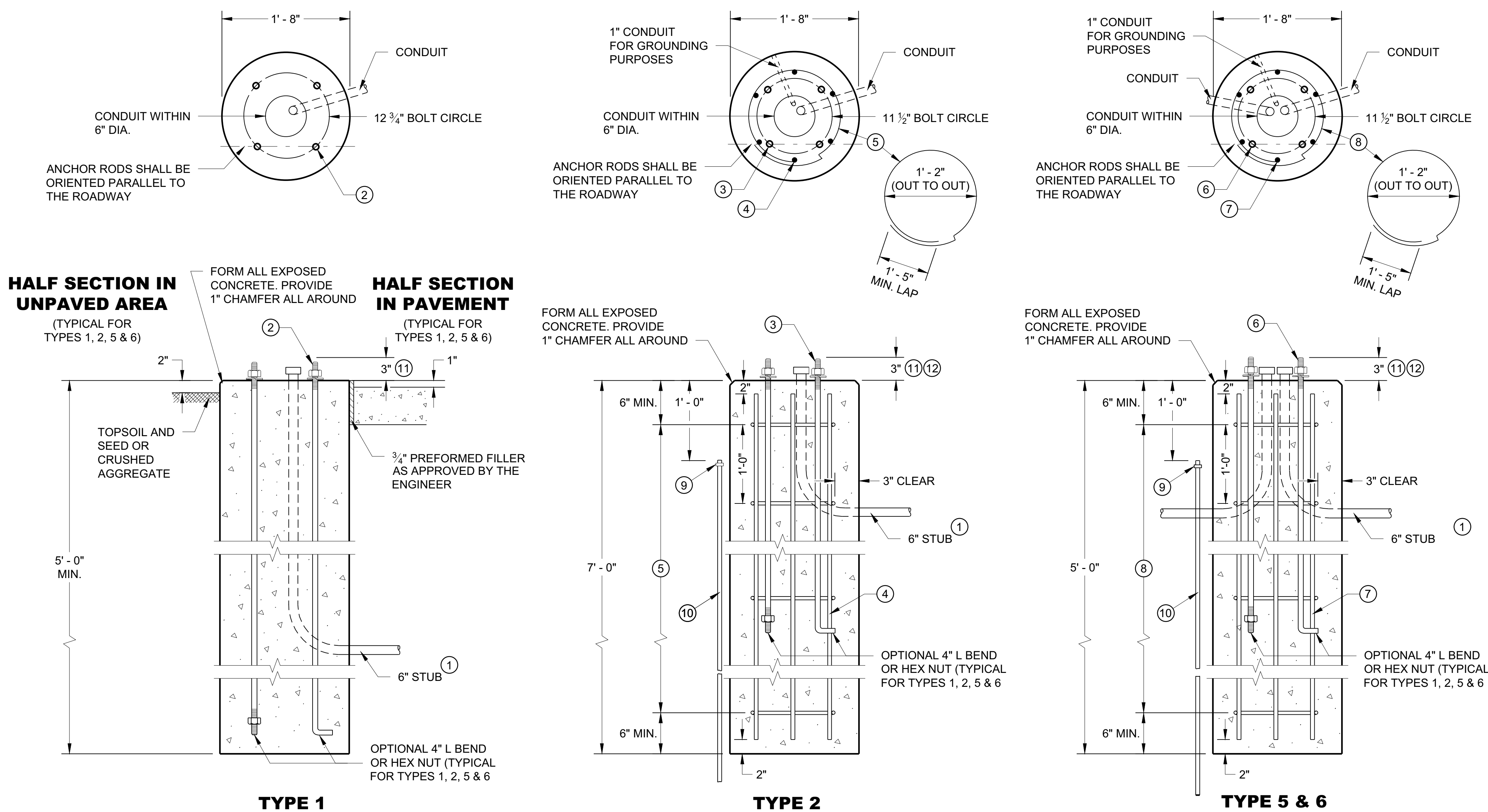
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

1. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
2. (4) 1" DIA. X 3' - 6" ANCHOR RODS.
3. (4) 1" DIA. X 5' - 0" ANCHOR RODS.
4. (6) NO. 6 X 6' - 8" BAR STEEL REINFORCEMENT.
5. (7) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
6. (4) 1" DIA. X 3' - 6" ANCHOR RODS.
7. (6) NO. 4 X 4' - 8" BAR STEEL REINFORCEMENT.
8. (5) NO. 4 X 5' - 1" BAR STELL REINFORCEMENT @ 1' - 0" C -C.
9. EXOTHERMIC CONNECTION TO EUIPMENT GROUNDING CONDUCTOR
10. ⅝" DIA. X 8' -0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
11. ANY ANCHOR ROD PROJECTION SHORTER THAN 2 ¾" OR LONGER THAN 3 ¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.
12. FOR NON - BREAKAWAY INSTALLATIONS, 4 ½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

6



CONCRETE BASES

6

CONCRETE BASES
TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL ENGI
FHWA

SDD 09C02 - 09

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO $4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

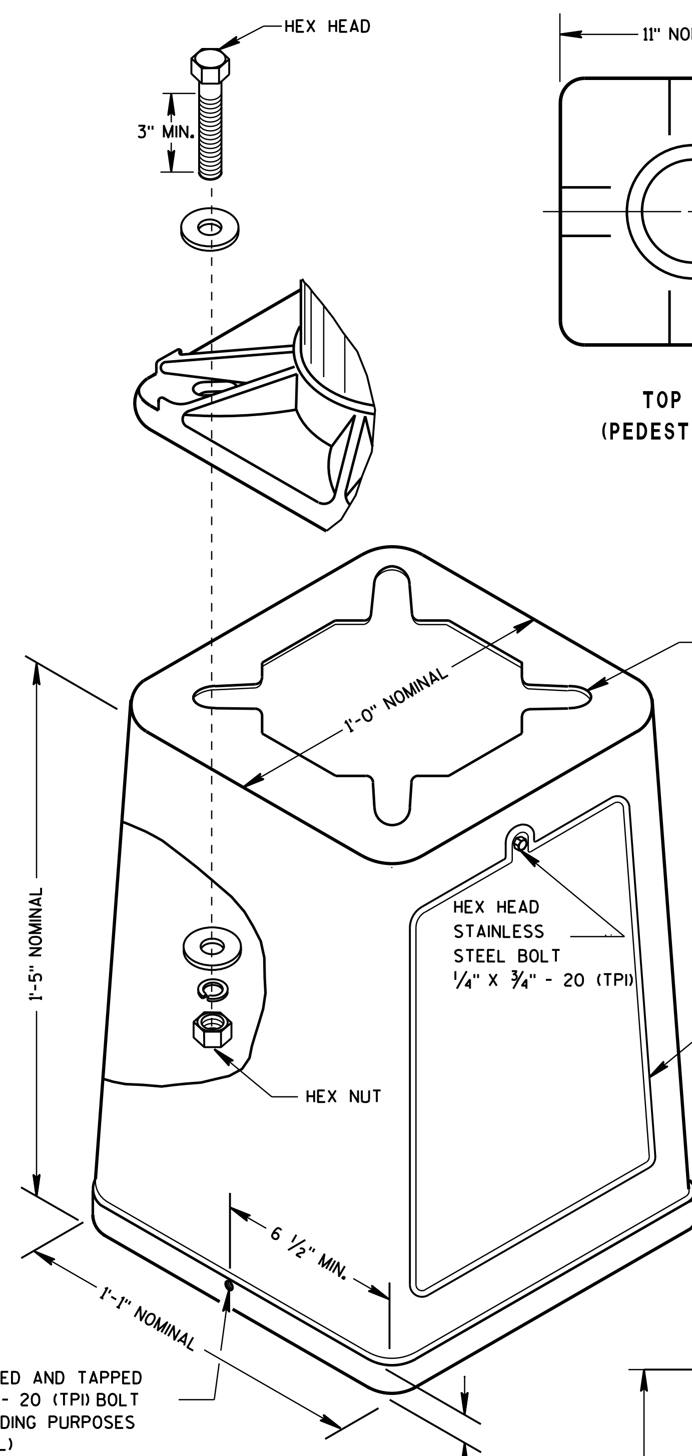
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

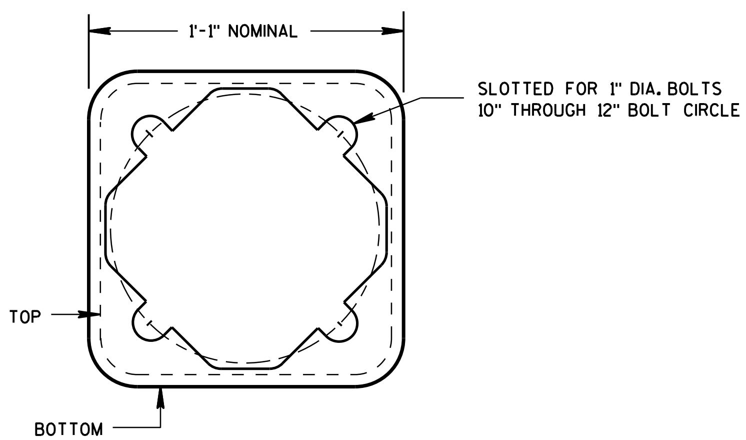
PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



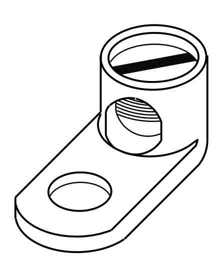
ISOMETRIC VIEW



BOTTOM VIEW
(TRANSFORMER BASE)

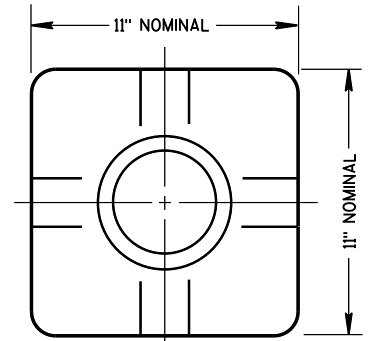
TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES

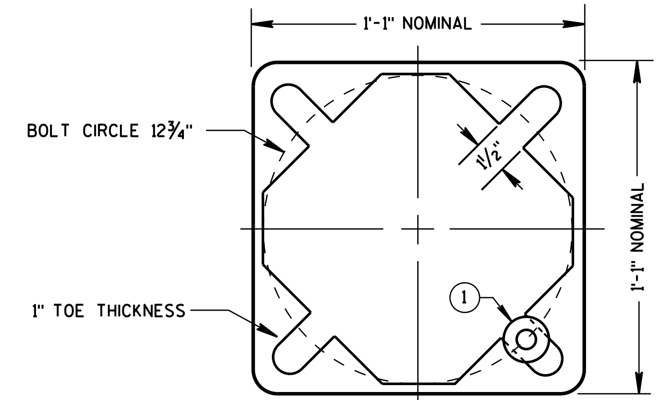


TYPICAL MECHANICAL CONNECTOR LUG

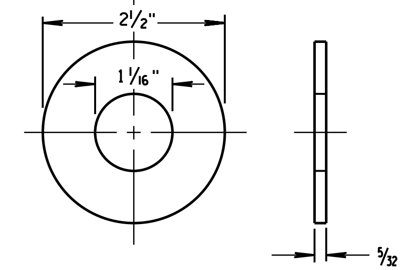
TO BE FURNISHED WITH EACH BASE



TOP VIEW
(PEDESTAL BASE)

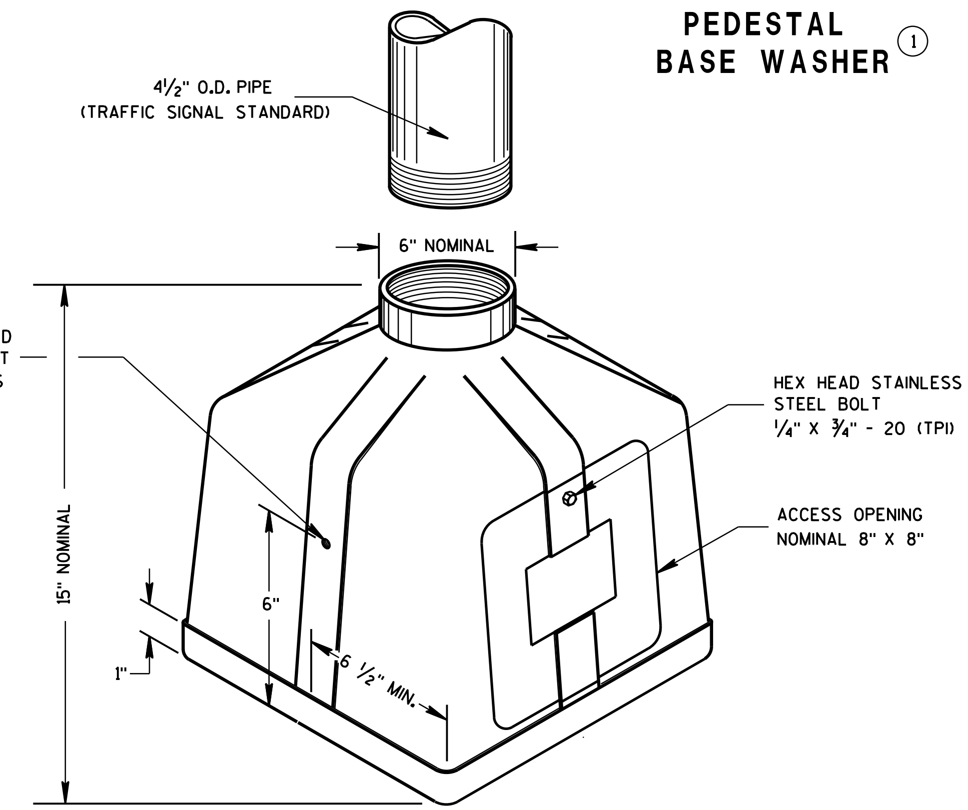


BOTTOM VIEW
(PEDESTAL BASE)

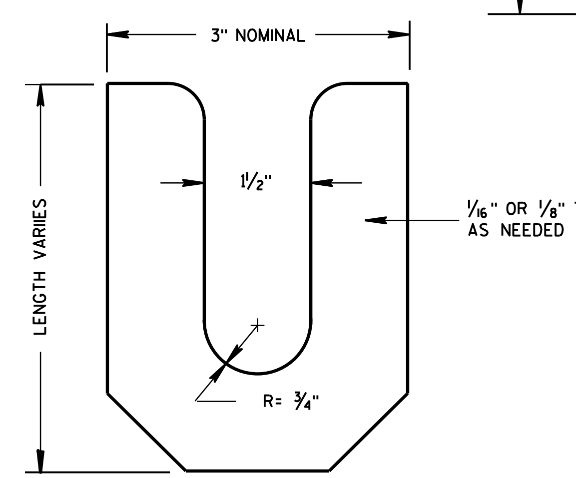


ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER 1



ISOMETRIC VIEW
PEDESTAL BASE



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED Sept. 2014 — /S/ Ahmet Demirbilek DATE — STATE ELECTRICAL FHWA

GENERAL NOTES

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

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 TIMES THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

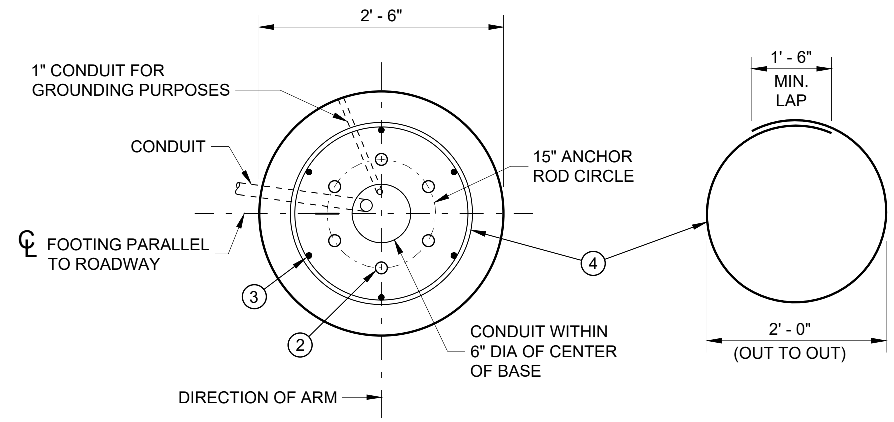
THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

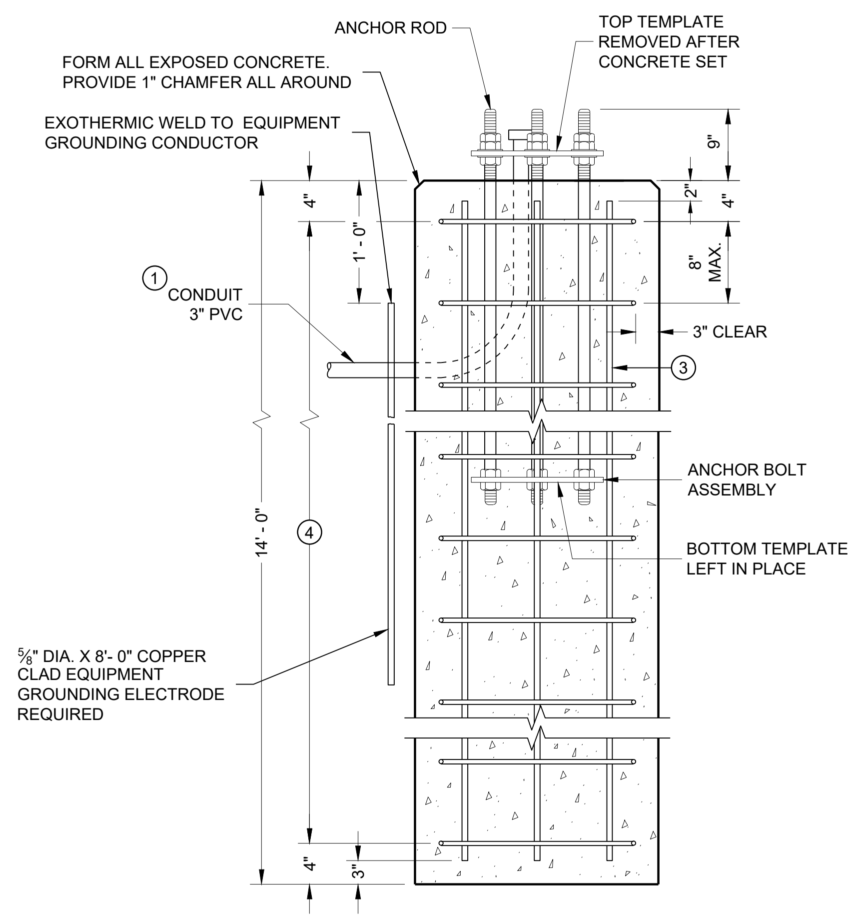
THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN A THE ENTRANCE OF THE BASE.

1. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER RUN) EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
2. (6) 1 ½ DIA. X 4' - 4" ANCHOR RODS
3. (6) NO. 6 X 13' - 7" BAR STEEL REINFORCEMENT.
4. (21) NO. 5 X 7'-10" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

CONCRETE MASONRY..fc = 3,500 p.s.i
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60......................fy = 60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE ....fy = 55,000 p.s.i.
WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION)
TEMPLATES, ASTM A709, GRADE 36..fy = 36,000 p.s.i.

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122

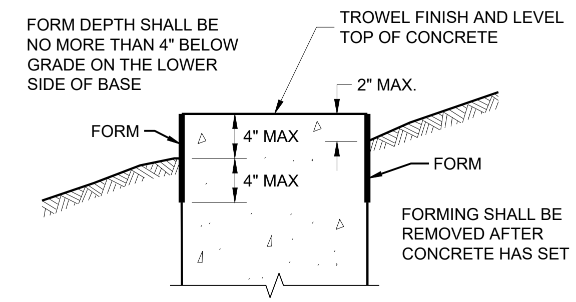




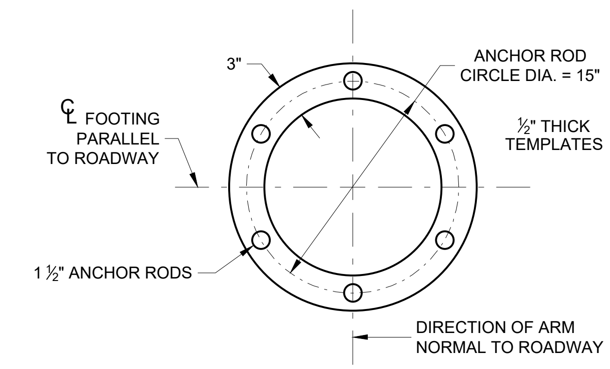
CONCRETE BASE, TYPE 10

(FOR TYPE 9, TYPE 10 AND OVER HEIGHT (OH) POLES)

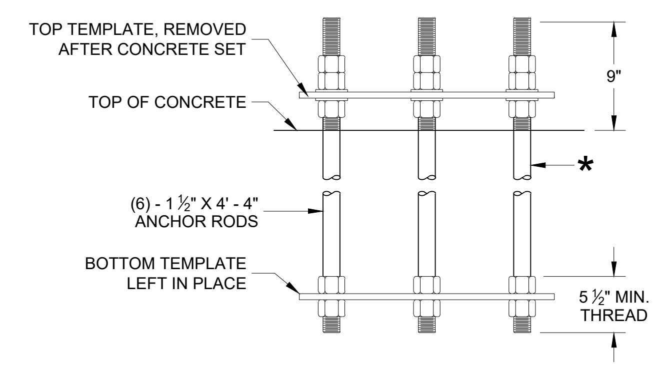
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE SDD 9C13 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.



FORMING DETAIL



TOP AND BOTTOM TEMPLATE



ANCHOR ROD ASSEMBLY DETAILS

* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 ½" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

CONCRETE BASE TYPE 10

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2017 — DATE
/S/ Ahmet Demerbilek — WIND LOADED STRUCTL PROGRAM LEADER
FHWA

6

6

SDD 09C11 - 10

SDD 09C11 - 10

GENERAL NOTES

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

THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

ANY DAMAGE TO THE CONCRETE BASE AND ANCHOR RODS DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE ENGINEER'S DIRECTION, AT THE EXPENSE OF THE CONTRACTOR.

THE REINFORCEMENT AND ANCHOR RODS SHALL BE ADEQUATELY SUPPORTED IN THE PROPER POSITIONS SO NO MOVEMENT OCCURS DURING CONCRETE PLACEMENT.

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR RODS STICK OUT ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

FORM ALL EXPOSED CONCRETE CORNERS WITH 1" CHAMFER ALL AROUND. TOP OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 TIMES THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 ½" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

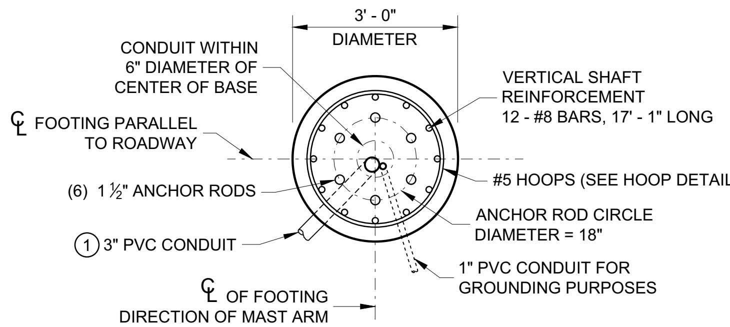
A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

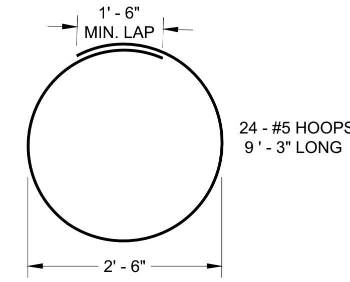
THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN A THE ENTRANCE OF THE BASE.

1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER RUN) EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.

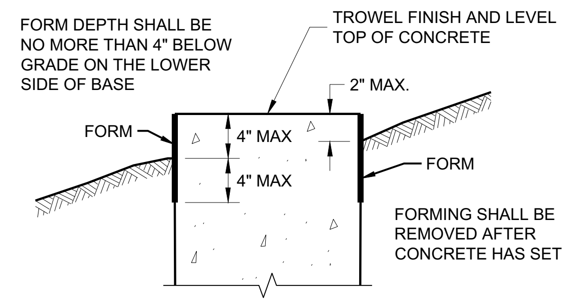
CONCRETE MASONRY...fc = 3,500 p.s.i
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60......................fy = 60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE ....fy = 55,000 p.s.i.
WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION)
TEMPLATES, ASTM A709, GRADE 36...fy = 36,000 p.s.i.



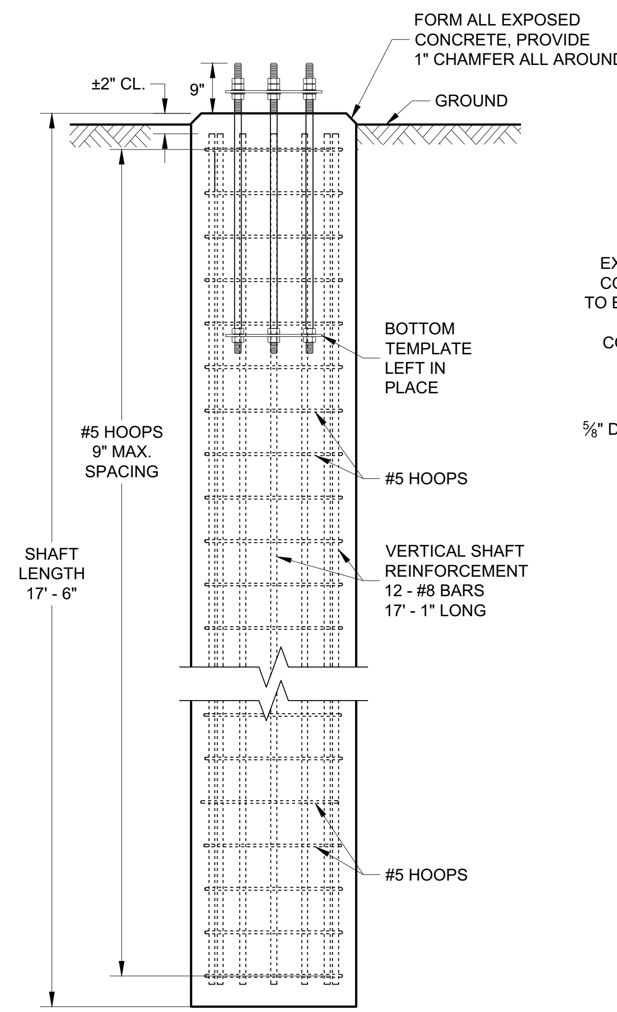
PLAN VIEW



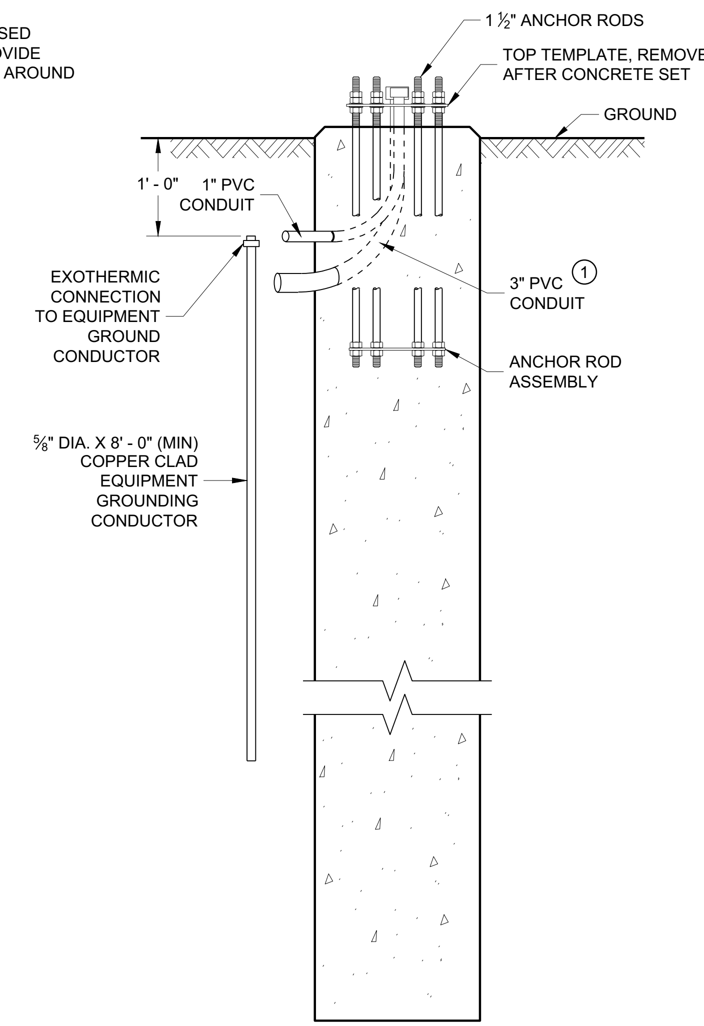
HOOP DETAIL



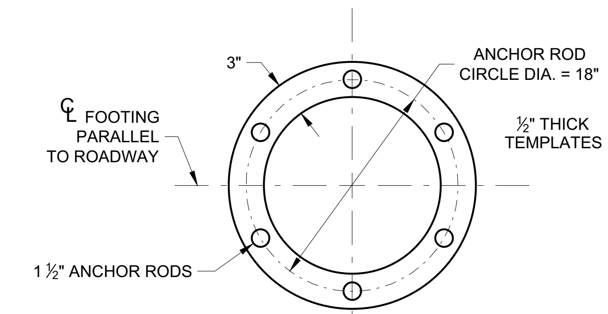
FORMING DETAIL



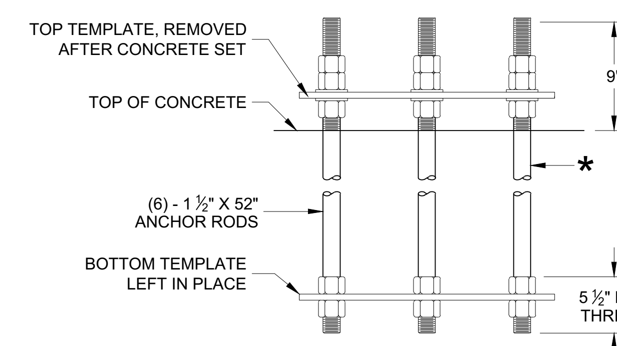
ELEVATION VIEW
(CONDUITS NOT SHOWN ON THIS VIEW FOR CLARITY)



SIDE VIEW
(HOOPS AND VERTICAL SHAFT REINFORCEMENT NOT SHOWN ON THIS VIEW FOR CLARITY)



TOP AND BOTTOM TEMPLATE



ANCHOR ROD ASSEMBLY DETAILS

* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 ½" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

CONCRETE BASE, TYPE 10 SPECIAL
(FOR TYPE 9 SPECIAL AND TYPE 10 SPECIAL POLES)

CONCRETE = 4.6 CUBIC YARD
H.S. REINFORCEMENT = 779 LBS.

FOR USE WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.

CONCRETE BASE TYPE 10 SPECIAL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Alex Crabtree WIND LOADED STRUCTL PROGRAM LEADER
FHWA	

6

SDD 09C15 - 01

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.

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

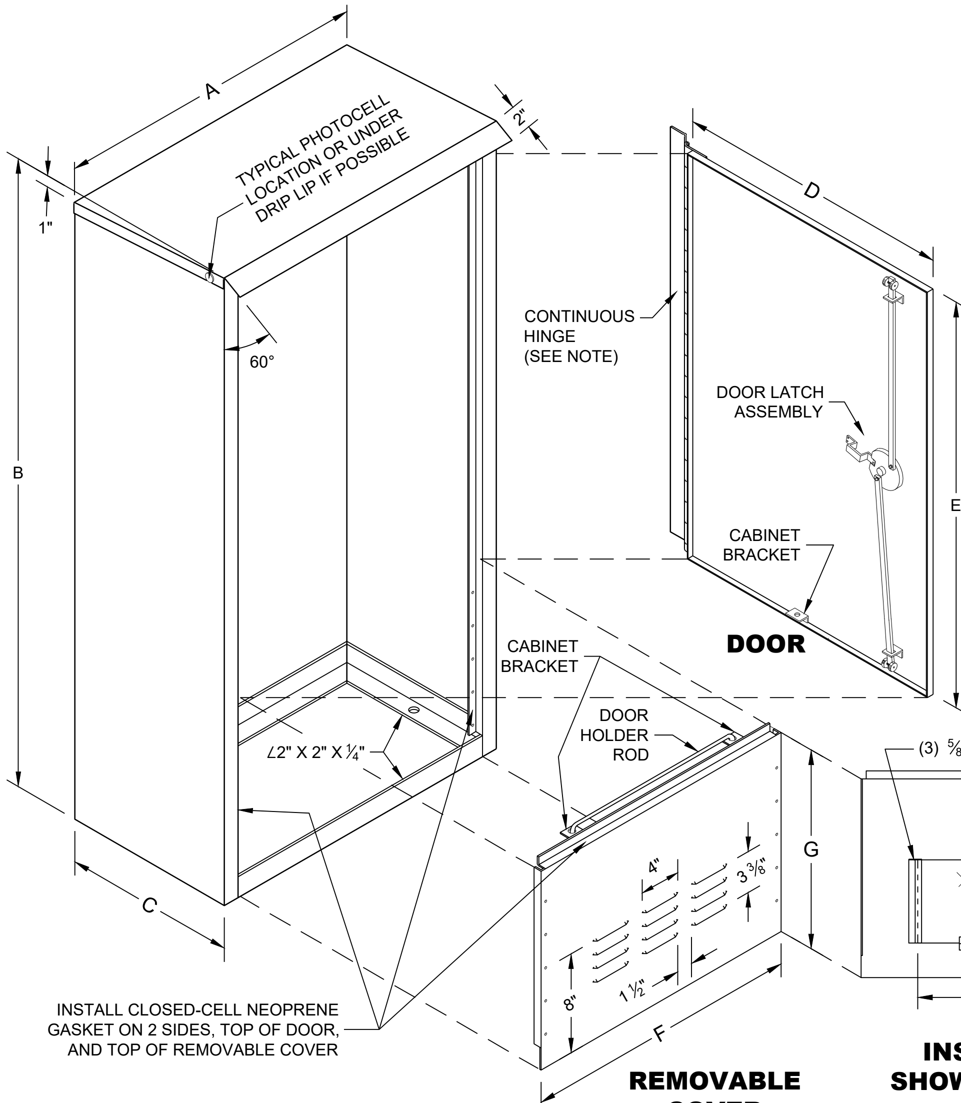
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH ¼" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH ¼" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

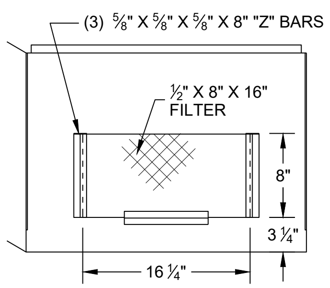
A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH - NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.

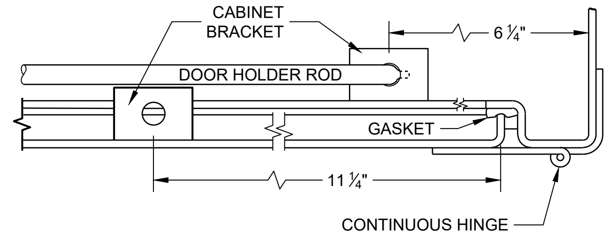


DOOR

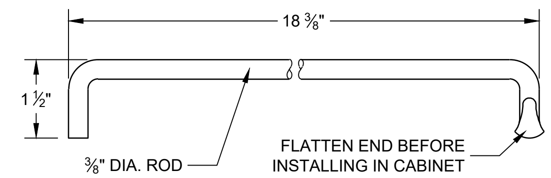
REMOVABLE COVER



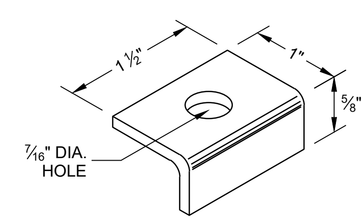
INSIDE VIEW SHOWING FILTER



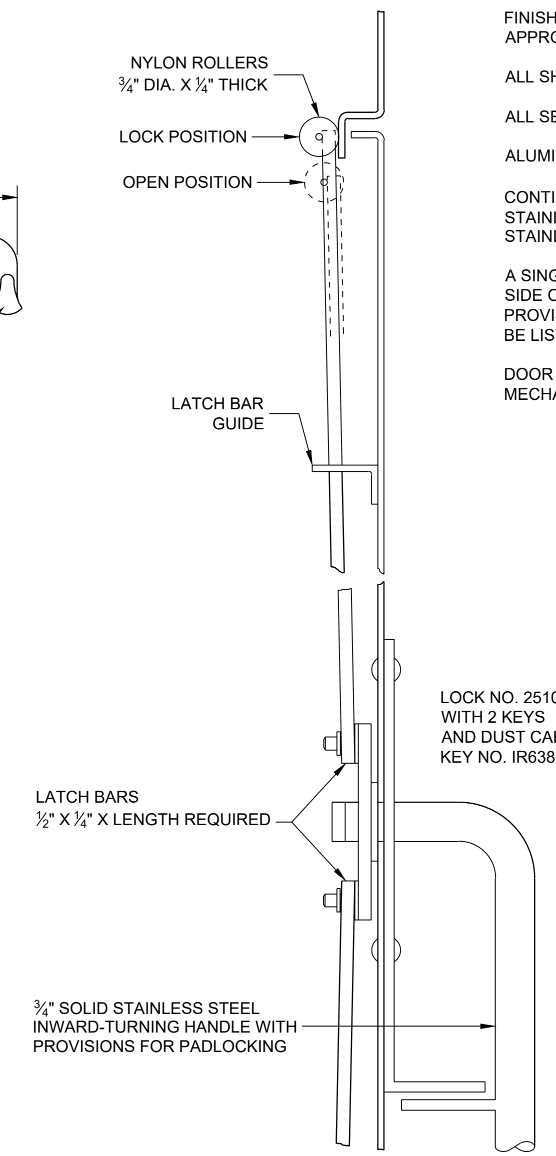
HINGE AND DOOR HOLDER



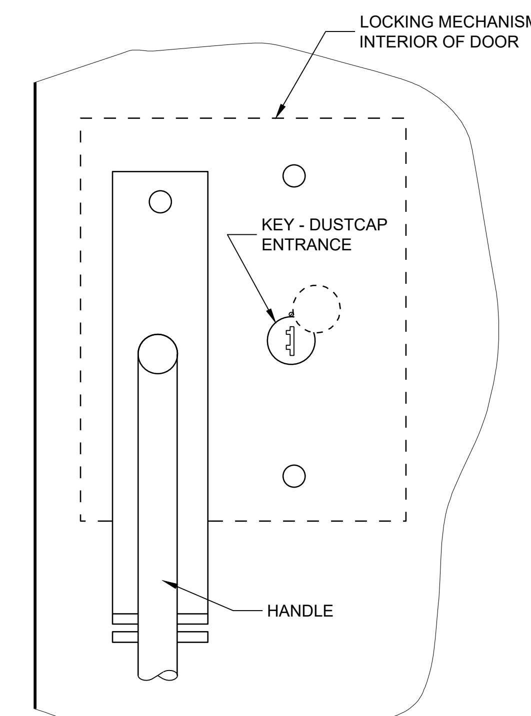
HOLDER ROD



CABINET BRACKET

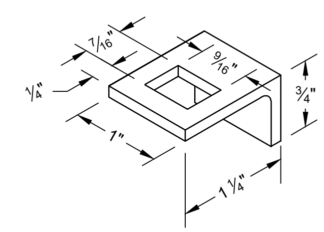


SIDE VIEW

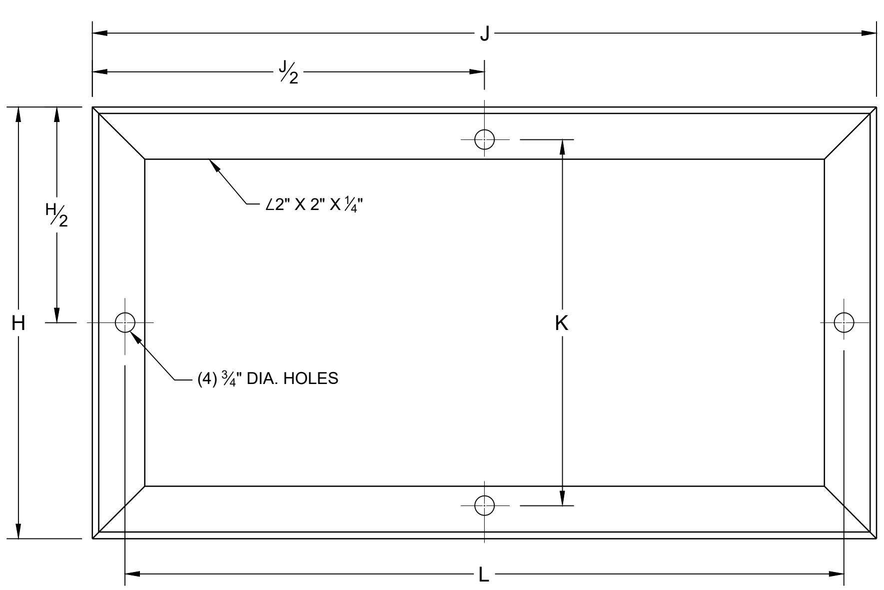


FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16½	16½	24
D	26½	34¾	33¾
E	38¾	38¾	38¾
F	26½	34¾	33¾
G	19	19	25
H	16½	16½	24
H/2	8¼	8¼	12
J	30	38	38
J/2	15	19	19
K	13¾	13¾	21¼
L	27½	35½	35½

SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

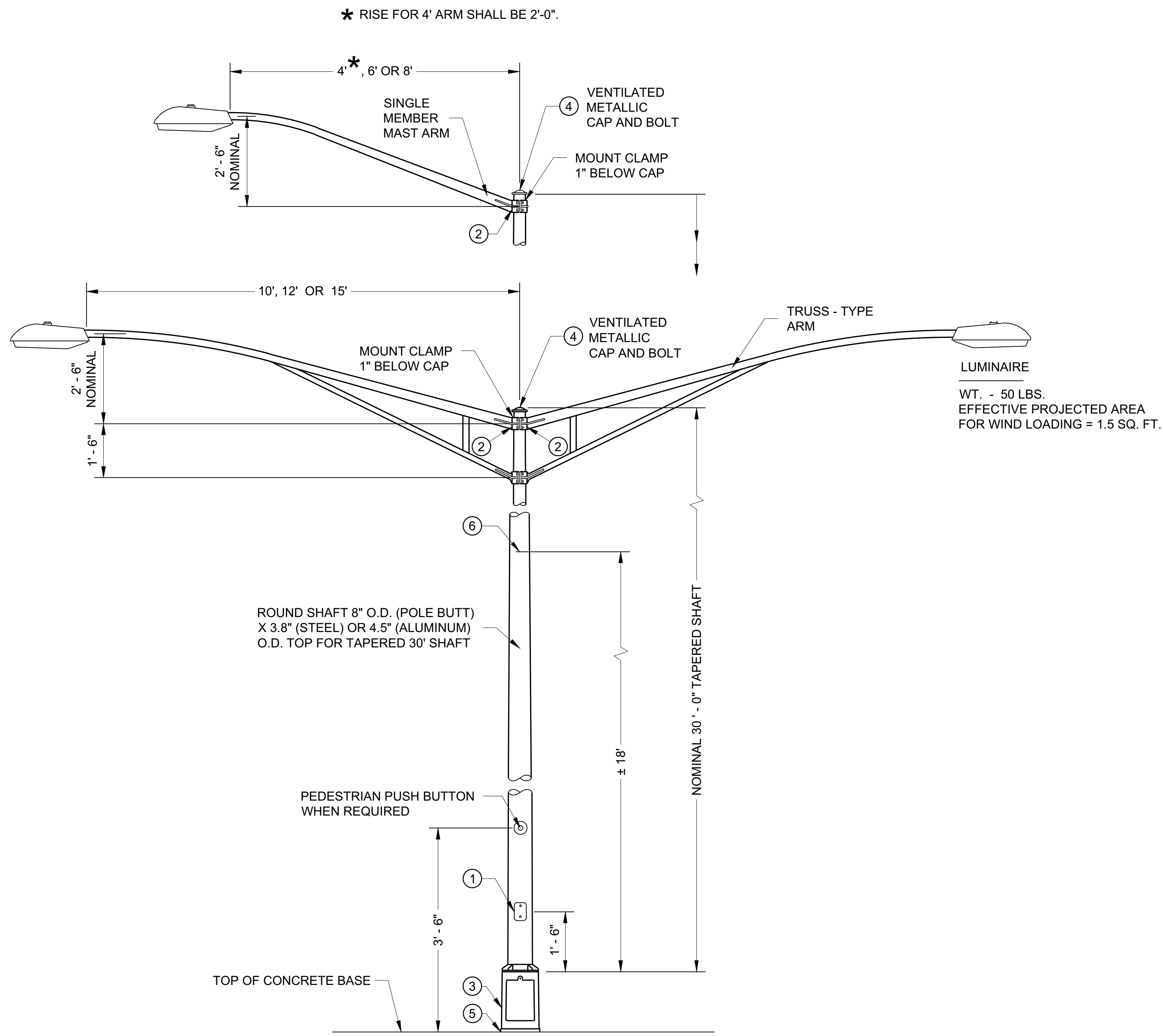
September 2014 — DATE

/S/ Ahmet Demerbilek — STATE ELECTRICAL ENGI

FHWA

6

SDD 09D02 - 03



TYPE 5 POLE MOUNTING CONFIGURATION

(MAXIMUM LOAD)

LIGHTING ONLY

GENERAL NOTES

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

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

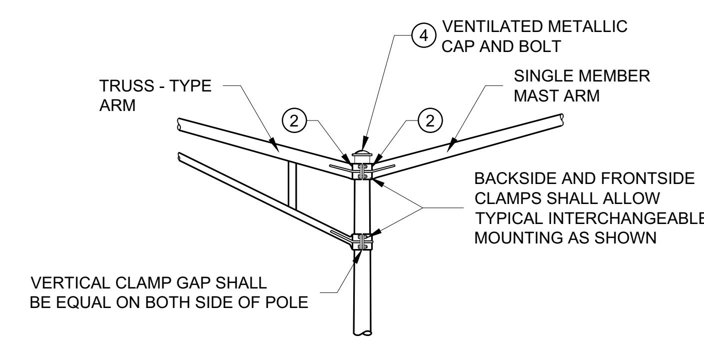
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

1. 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
2. GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
3. CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
4. FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
5. SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
6. INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.

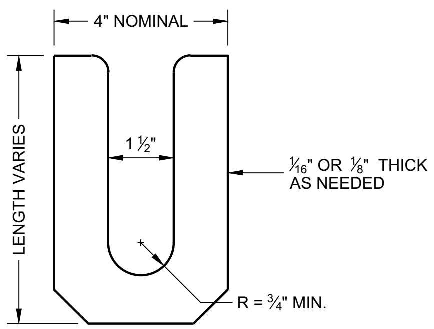


INTERCHANGEABLE MOUNTING DETAIL

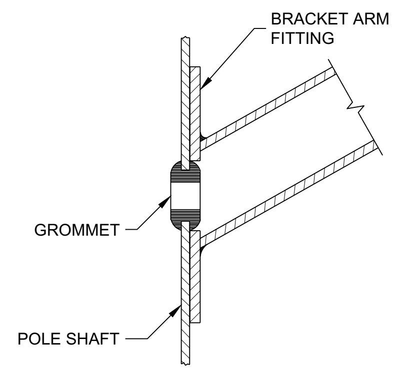
POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATI

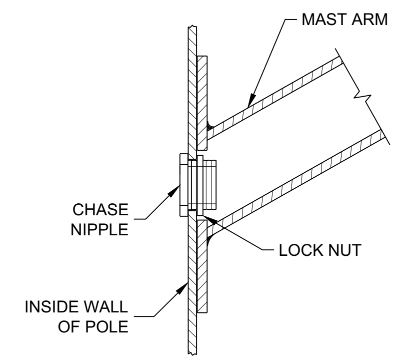
6
SDD 09E01 - 15d



LEVELING SHIM (1)
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

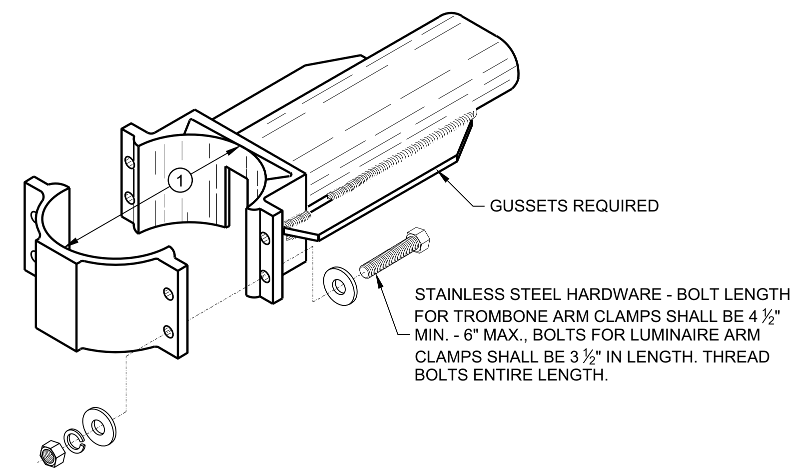
(1) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(2) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

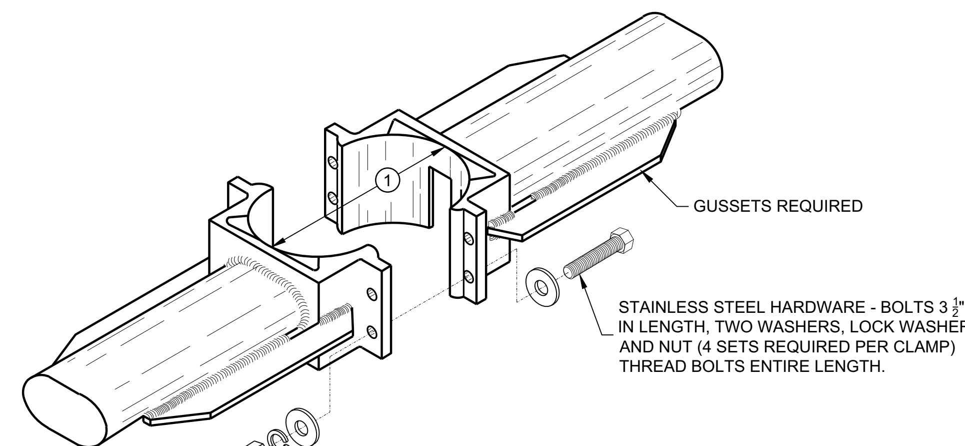
(3) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(4) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

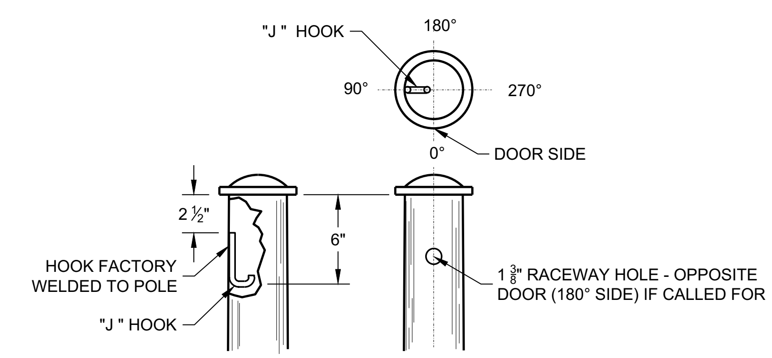
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



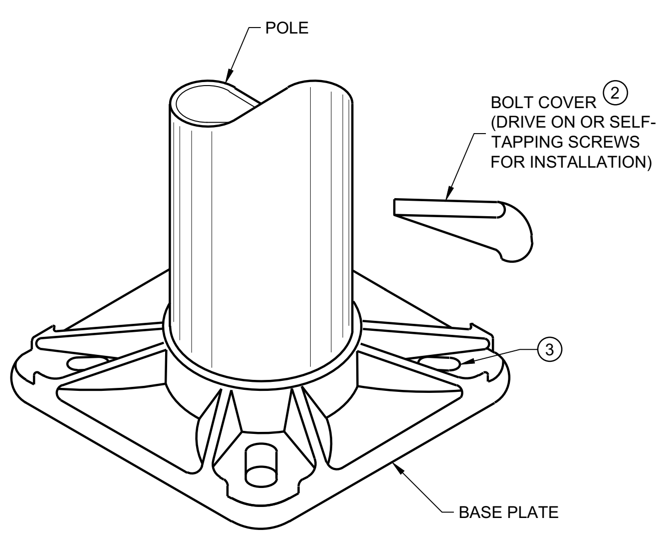
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



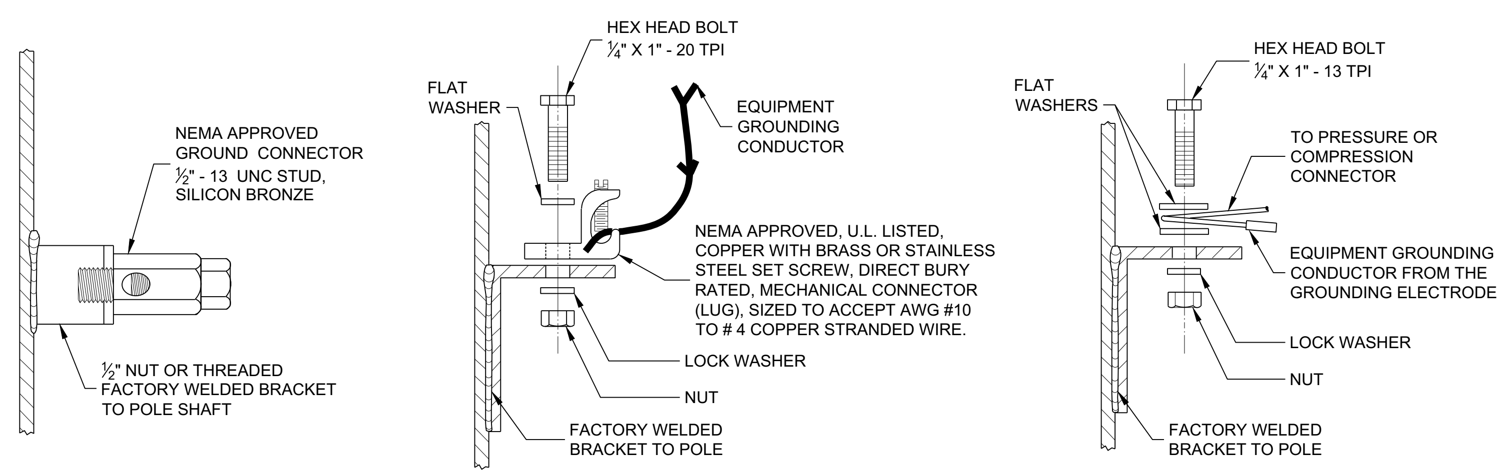
TYPICAL "J" HOOK LOCATION

6

6



BASE PLATE

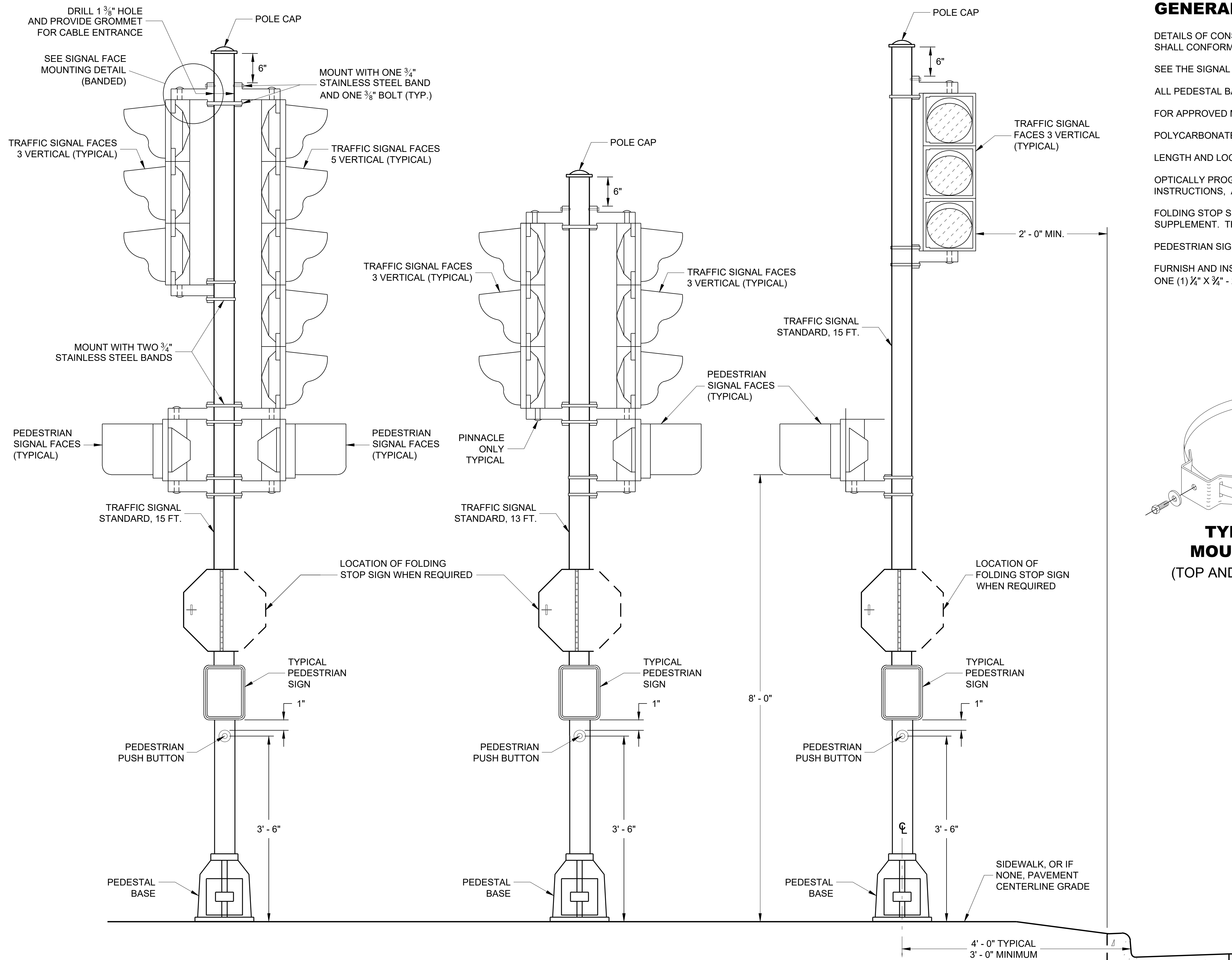


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

HARDWARE DETAILS FOR POLE MOUNTING
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED November 2018 /S/ Ahmet Demirbilek DATE STATE ELECTRICAL ENGI
FHWA

SDD 09A01 - 15g

SDD 09A01 - 15g



TRAFFIC SIGNAL STANDARD - 15 FT.

TRAFFIC SIGNAL STANDARD - 13 FT.

TRAFFIC SIGNAL TANDARD - 15 FT.
3M MOUNTING (TYPICAL)

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

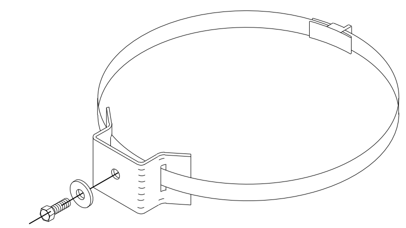
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

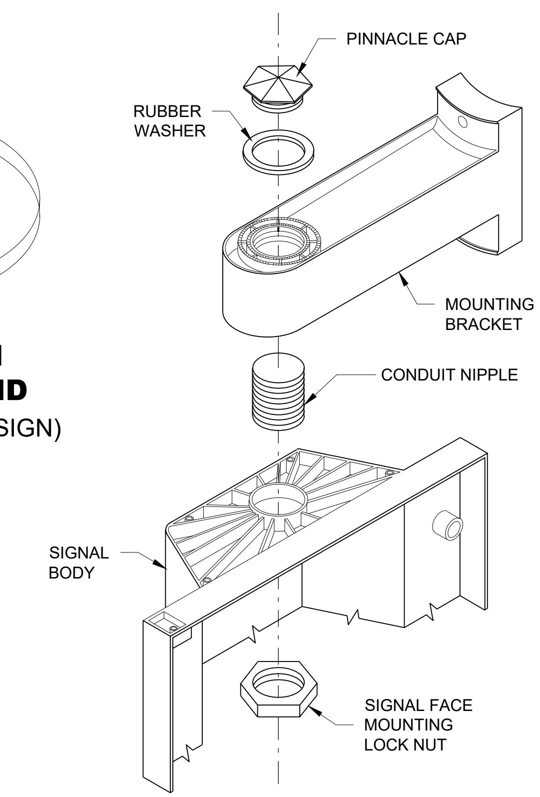
FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)

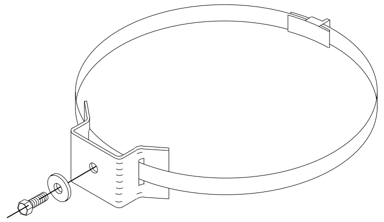


SIGNAL FACE MOUNTING DETAIL (BANDED)

TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.

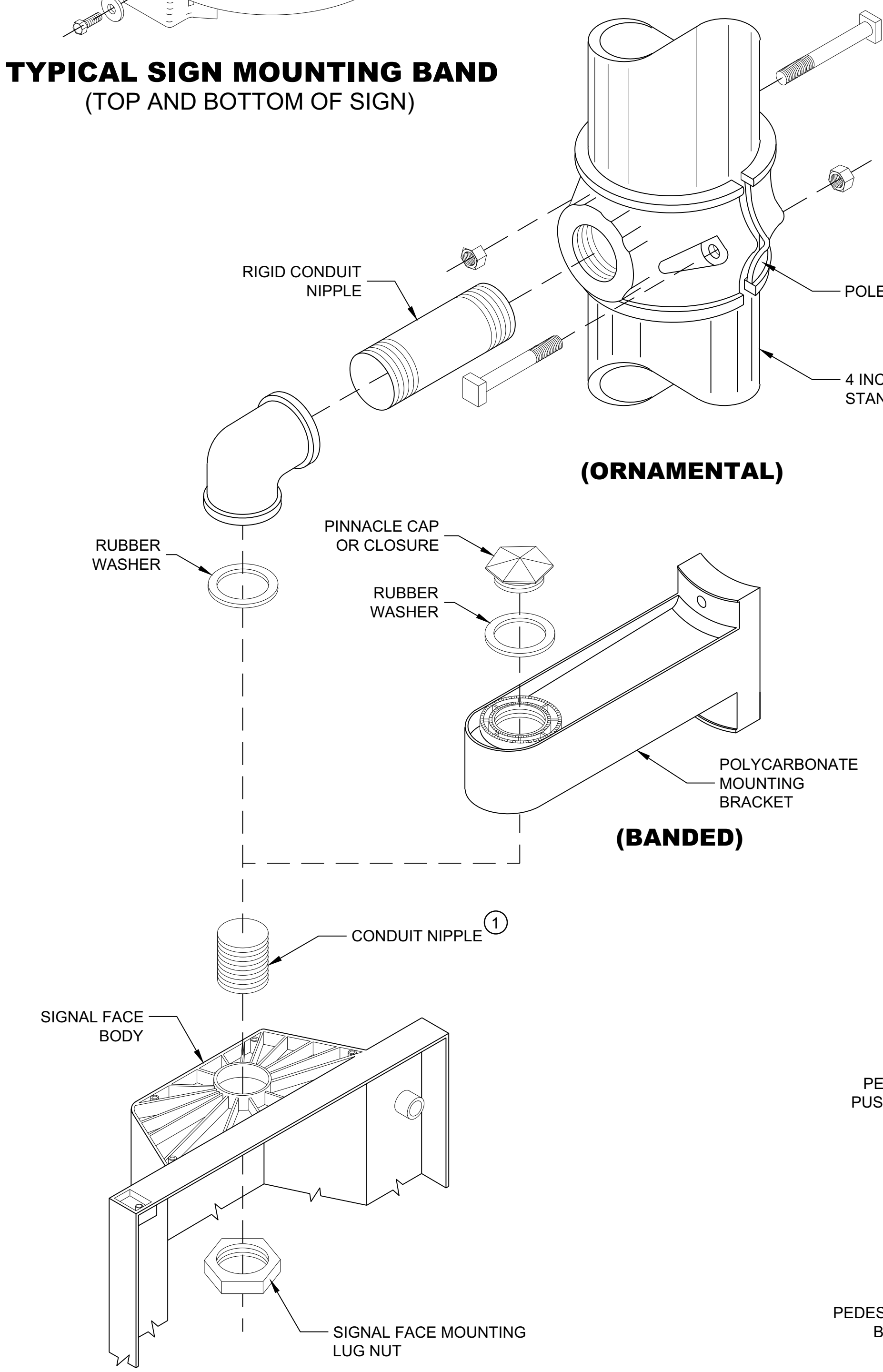
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI
FHWA

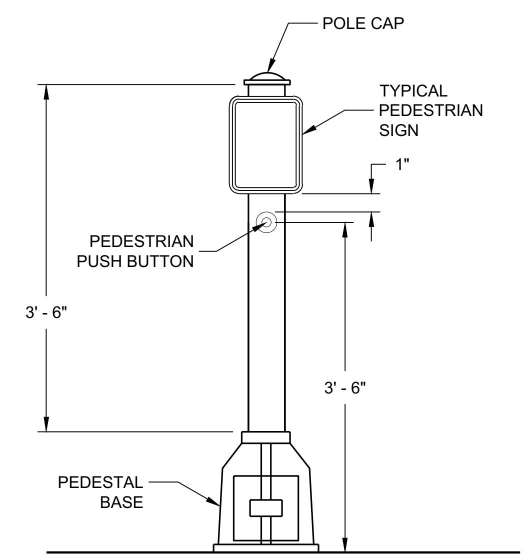


TYPICAL SIGN MOUNTING BAND

(TOP AND BOTTOM OF SIGN)



SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS, UNLESS APPROVED BY THE ENGINEER IN THE FIELD.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

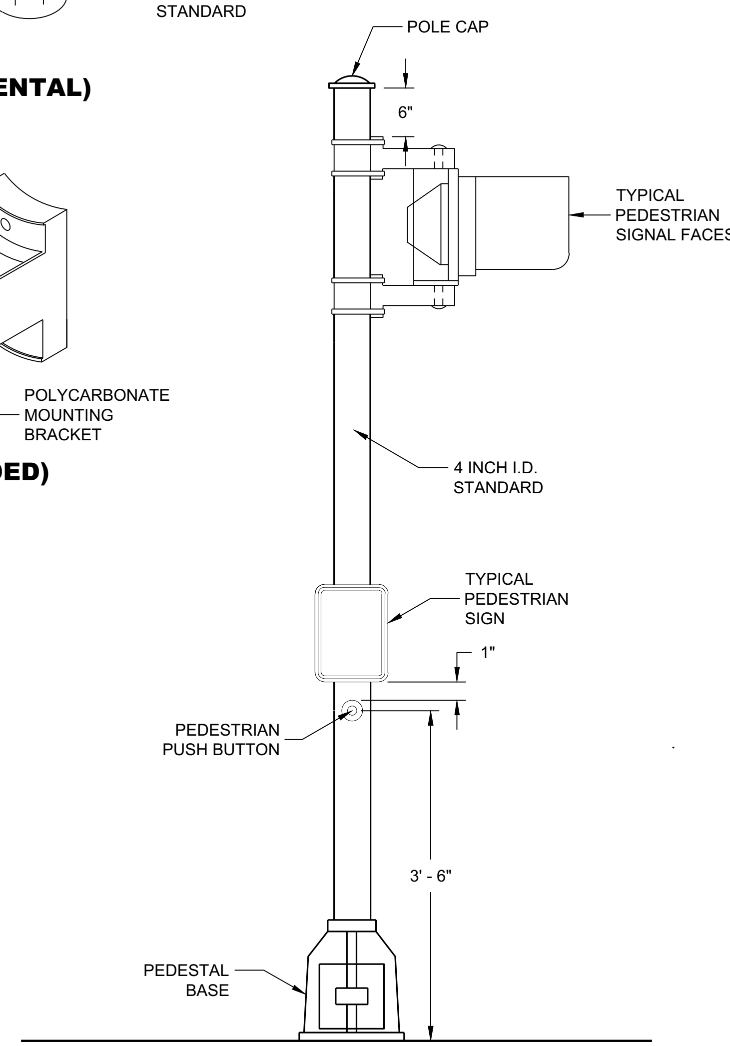
LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE REGION TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

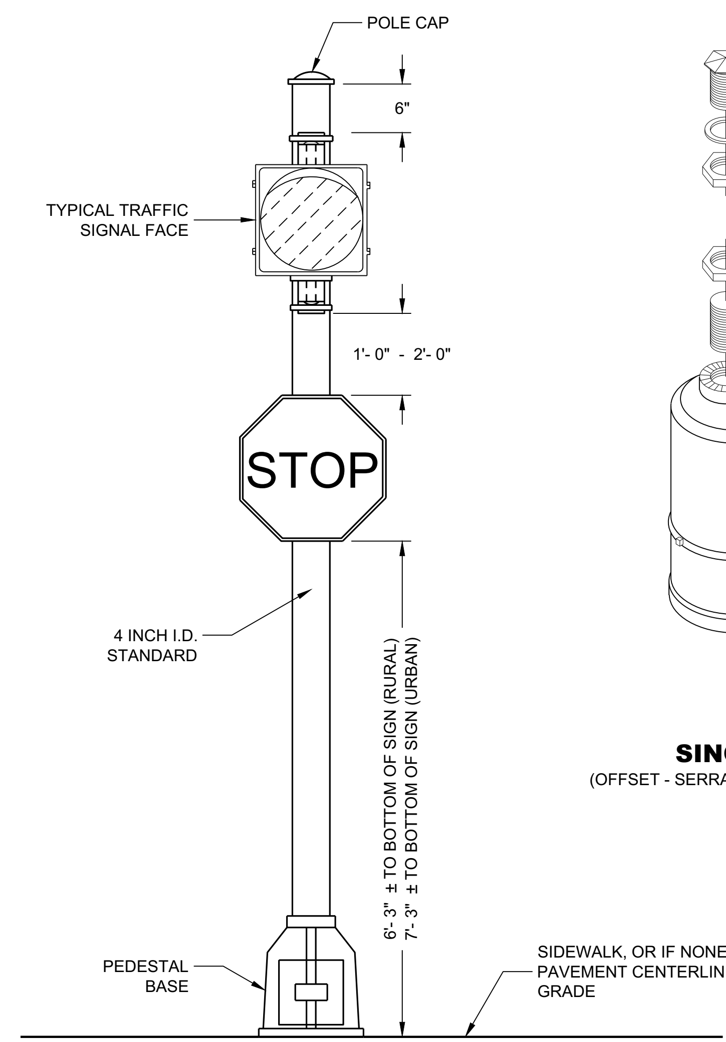
FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

1. USE 1 ½" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 ½" OPENING IN SIGNAL FACESAND BRACKET ENDS.



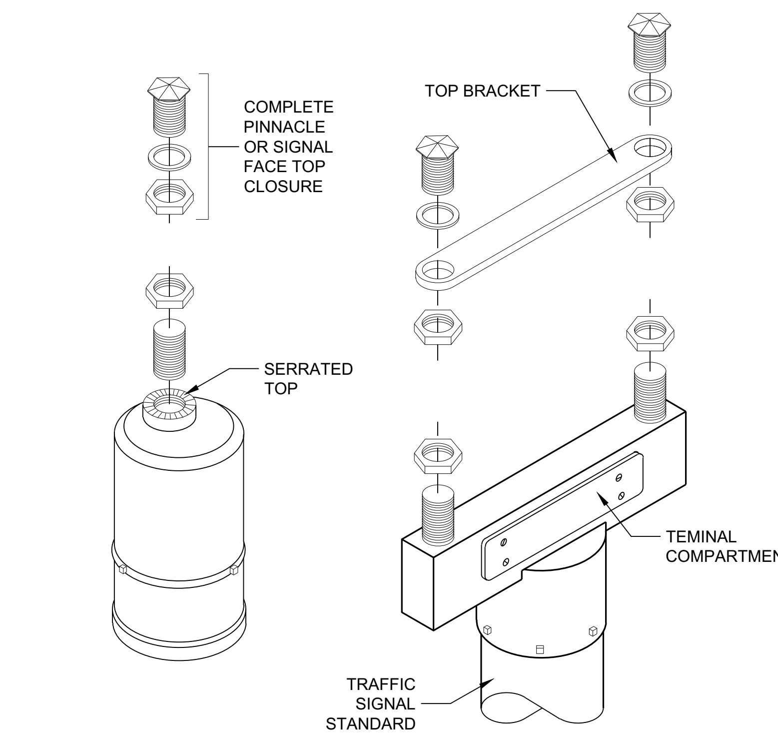
PEDESTRIAN FACE STANDARD - 10 FT.

(WALK - DON'T WALK)



STANDARD FLASHER

10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED

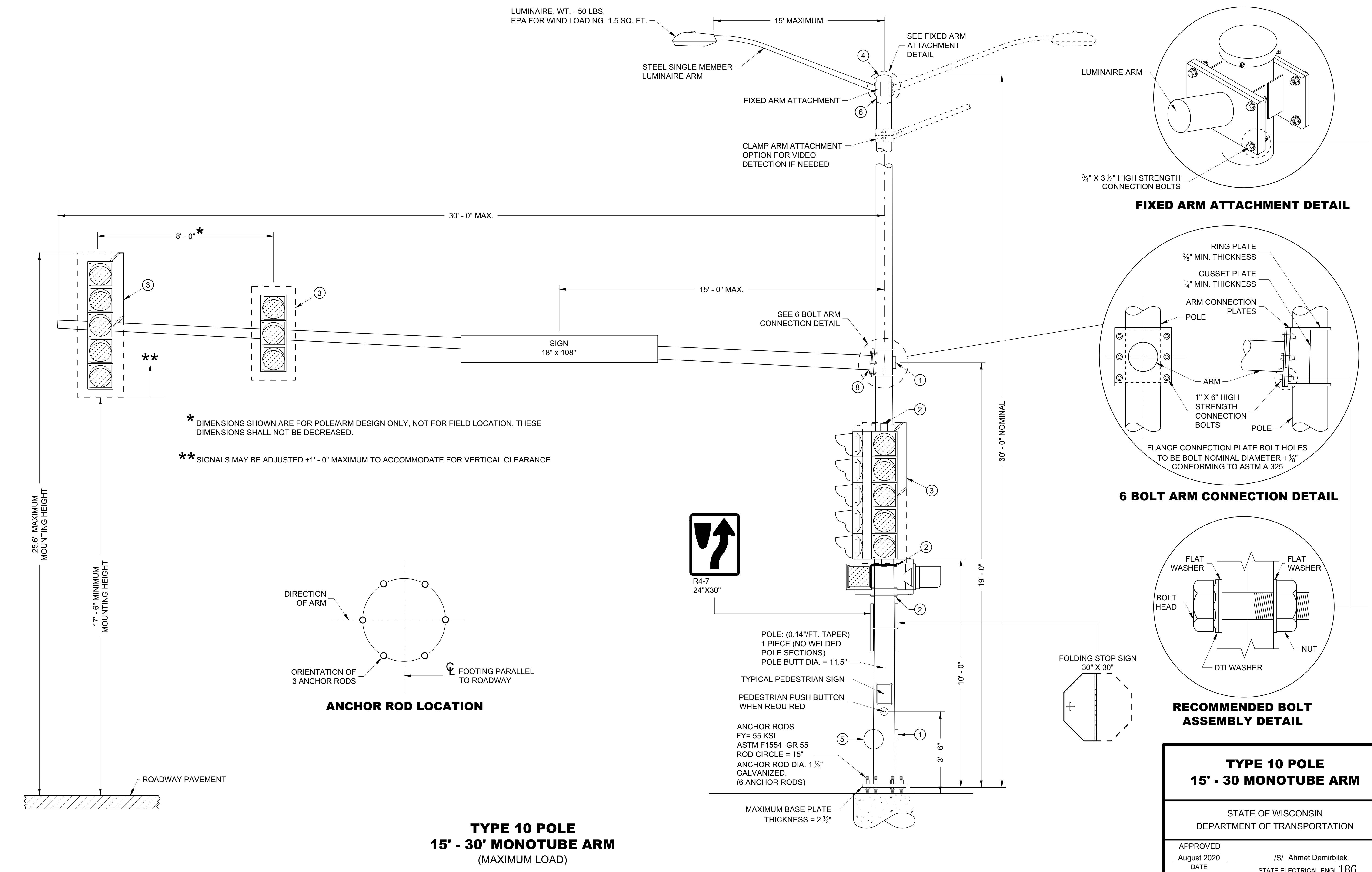


SINGLE
(OFFSET - SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED November 2018 /S/ Ahmet Demirbilek DATE STATE ELECTRICAL ENGI FHWA



TYPE 10 POLE
15' - 30' MONOTUBE ARM
(MAXIMUM LOAD)

TYPE 10 POLE
15' - 30' MONOTUBE ARM

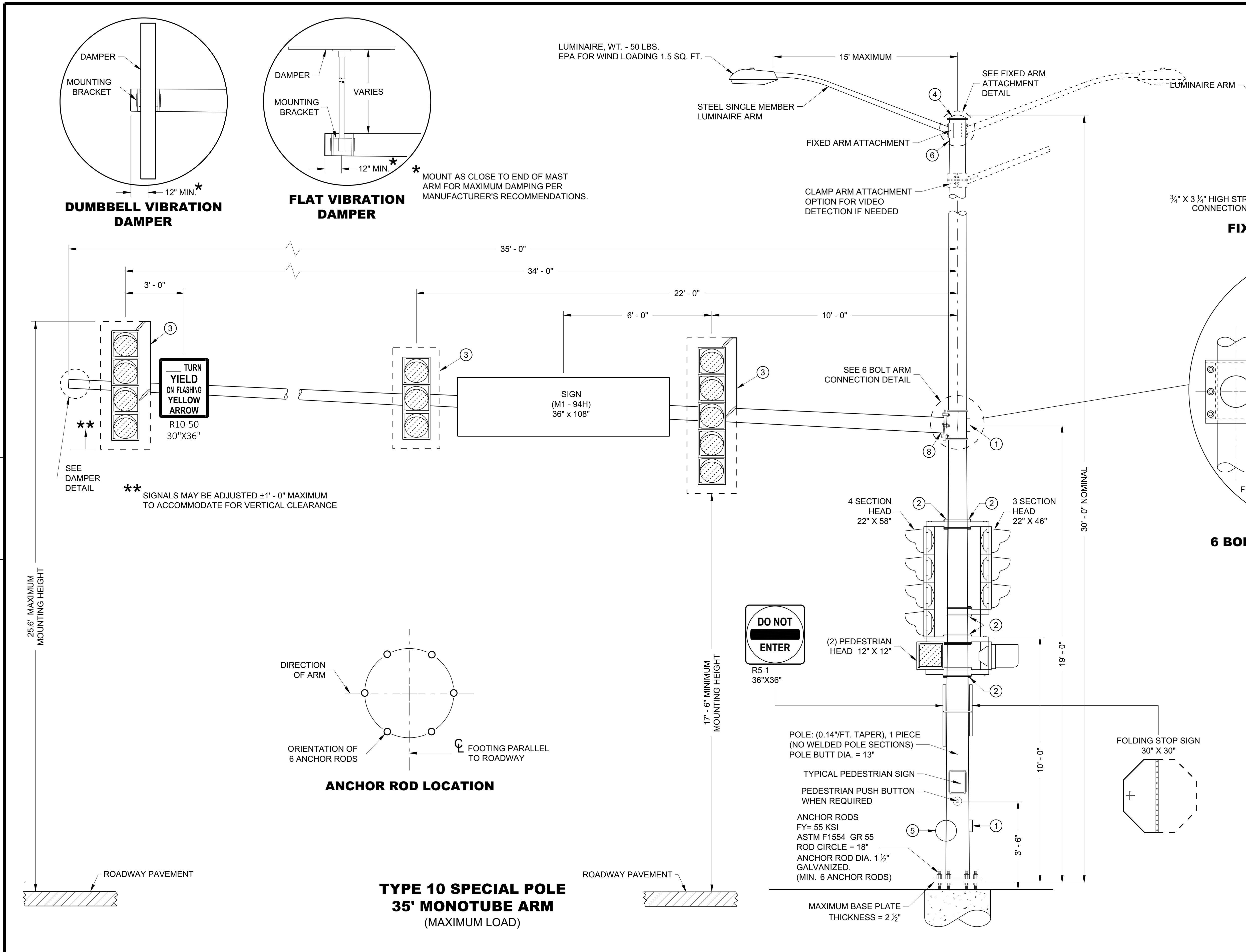
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI

FHWA

6

SDD 09E08 - 09e



TYPE 10 SPECIAL POLE
35' MONOTUBE ARM

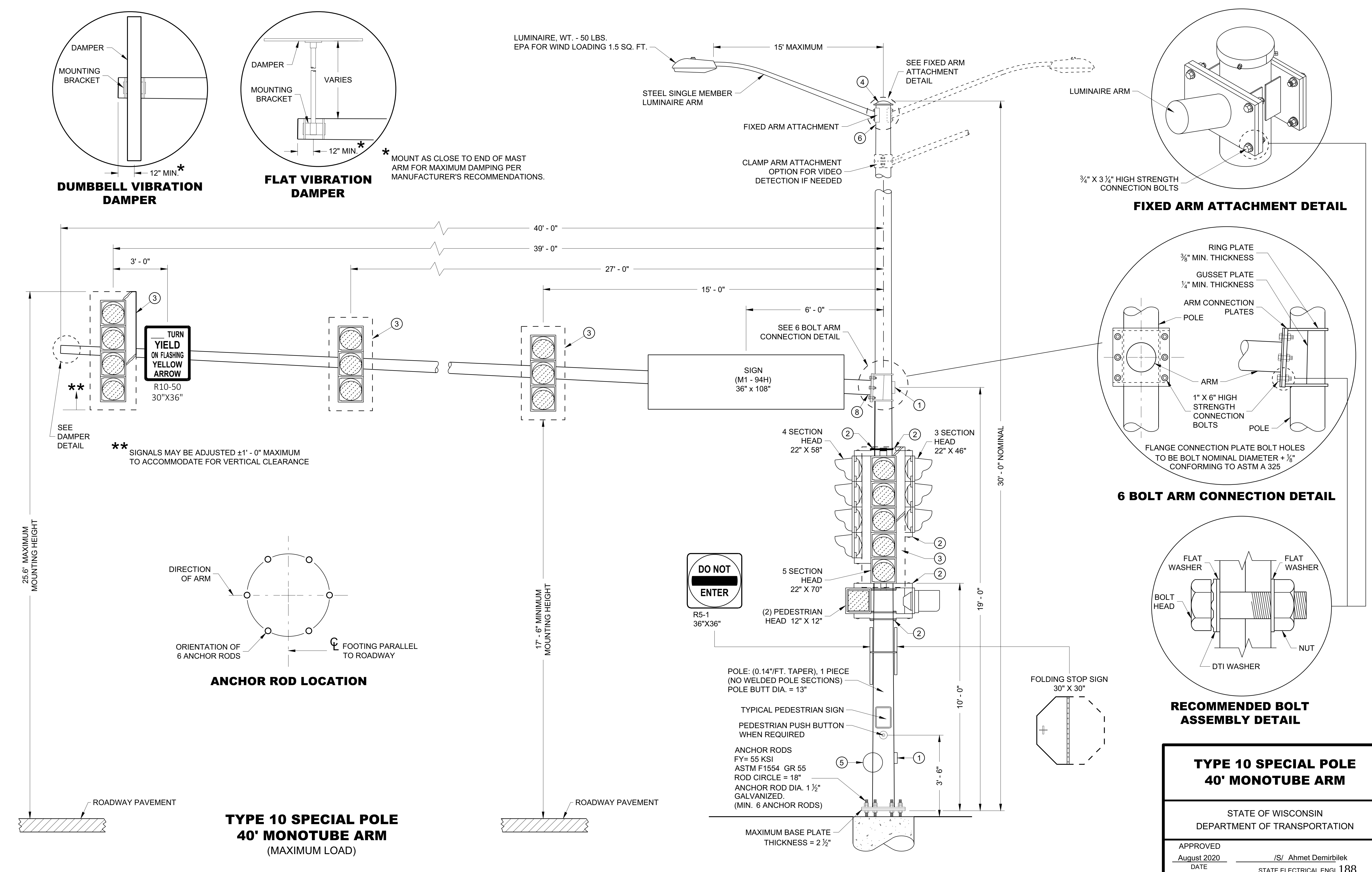
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

August 2020 — /S/ Ahmet Demirbilek

DATE — STATE ELECTRICAL ENGI

FHWA



6

6

TYPE 10 SPECIAL POLE
40' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI
FHWA

SDD 09E08 - 09g

SDD 09E08 - 09g

GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15 FOOT TO 30 FOOT.

POLE TYPES 9 SPECIAL AND 10 SPECIAL ARE FOR ARM LENGTHS 35 FOOT, 40 FOOT, AND 45 FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35 FOOT TO 55 FOOT.

MONOTUBE POLES AND ARMS SHALL BE GALVANIZED STEEL.

RING STIFFENED BUILT UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3% ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATION SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNAL 2015 1ST EDITION (INCLUDING INTERIM REVISIONS)" AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR THE LIGHTING STRUCTURES AS FOLLOWS:

CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.

CATEGORY II FATIGUE LOADS OF TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 SPECIAL AND TYPE 10 SPECIAL STRUCTURES. IN LIEU OF DESIGNING FOR GALLOPING, A VIBRATION DAMPER MITIGATION DEVICE IS REQUIRED TO BE SUPPLIED AND INSTALLED AT THE END OF THE MAST ARM.

CATEGORY II FATIGUE FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE12 AND TYPE 13 STRUCTURES.

115 MPH (700 YEAR MRI BASIC WIND SPEED).

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH 3/4" STAINLESS STEEL BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL 1/2" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

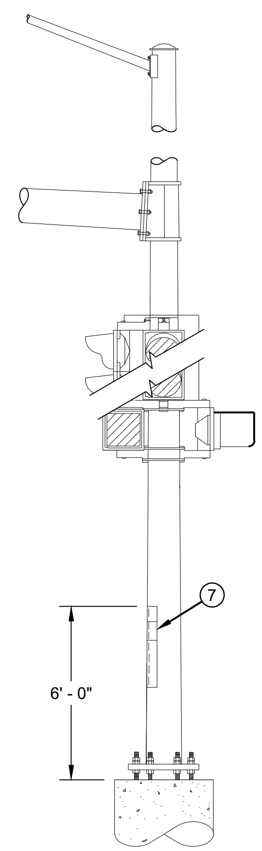
SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR A S DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEAD AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

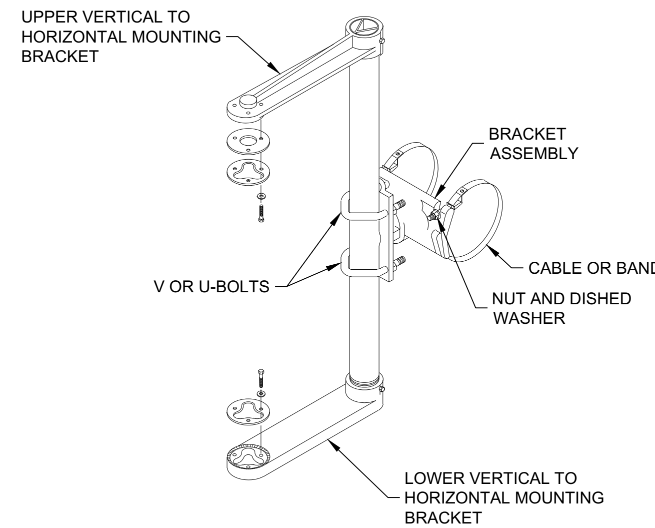
1. DESIGN FOR MAXIMUM ALLOWABLE HAND HOLE WITH COVER ASSEMBLY WITH TWO 1/4" X 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.
2. SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING (SEE SPECIFICATION SECTION 658).
3. SECURELY MOUNT BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
4. THE TOP OF THE POLE SHAFT AND THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.
5. FACTORY WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HAND HOLD, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR 1/4" X 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.
6. FACTORY WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.
7. INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

   STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

   MOUNTING HEIGHT SHALL BE 6' - 0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.
8. FACTORY DRILLED 1/2" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

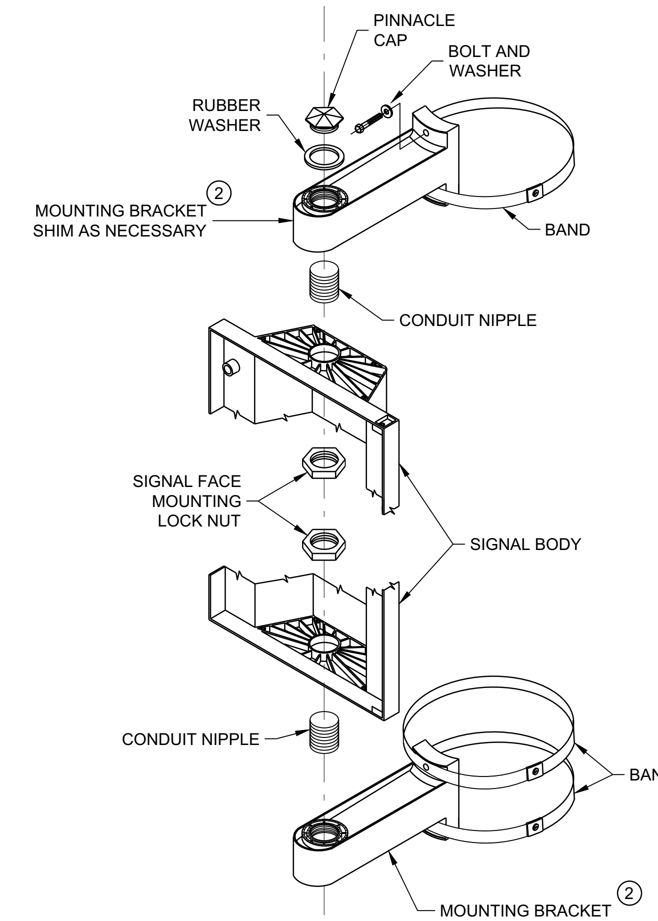


STRUCTURAL IDENTIFICATION PLAQUE PLACEMENT

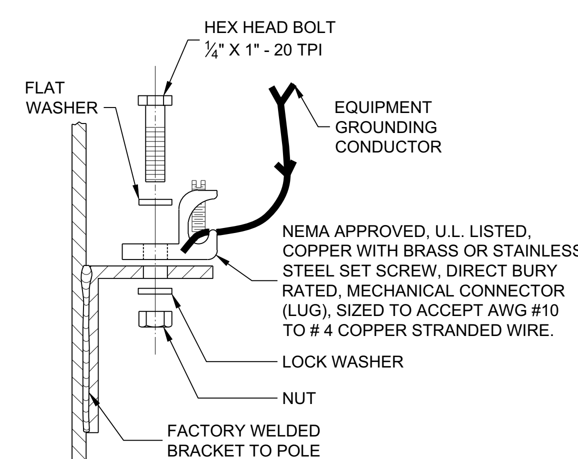


SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANFACTURER'S RECOMMENDATION)

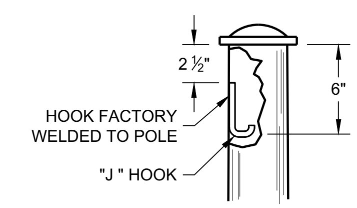


SIGNAL FACE VERTICAL MOUNTING DETAIL



TYPICAL GROUNDING CONNECTIONS 5

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



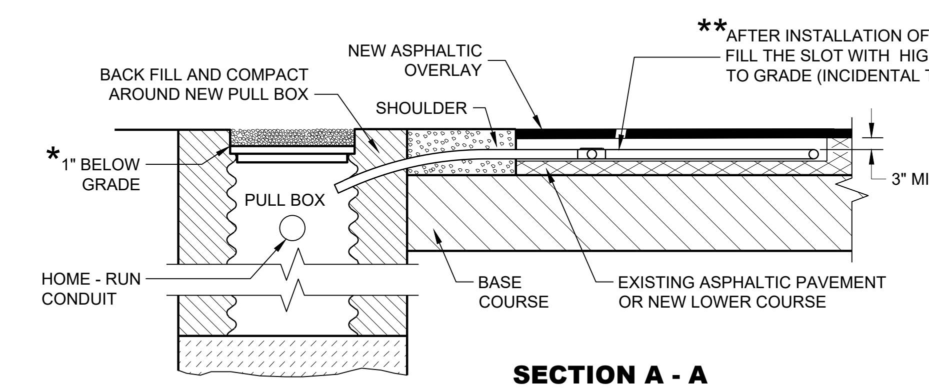
TYPICAL "J" HOOK WIRE SUPPORT 6

GENERAL NOTES AND HARDWARE FOR TYPES 9,10, 9/10 SPECIAL, 12 AND 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL ENGINEER

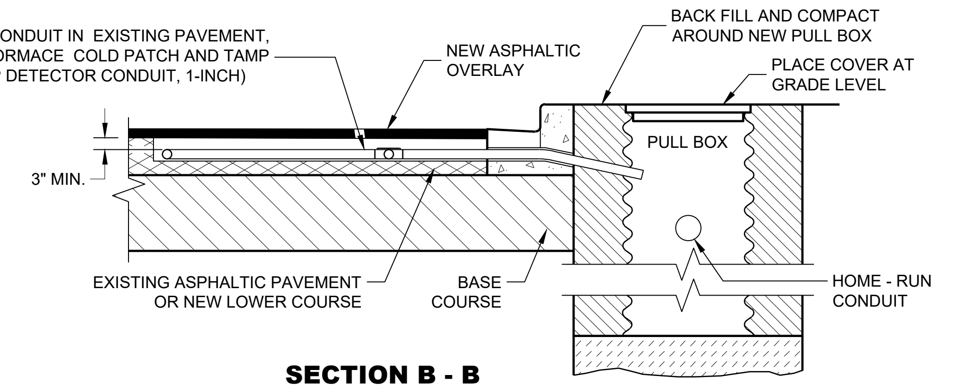
FHWA



SECTION A - A
NO CURB AND GUTTER

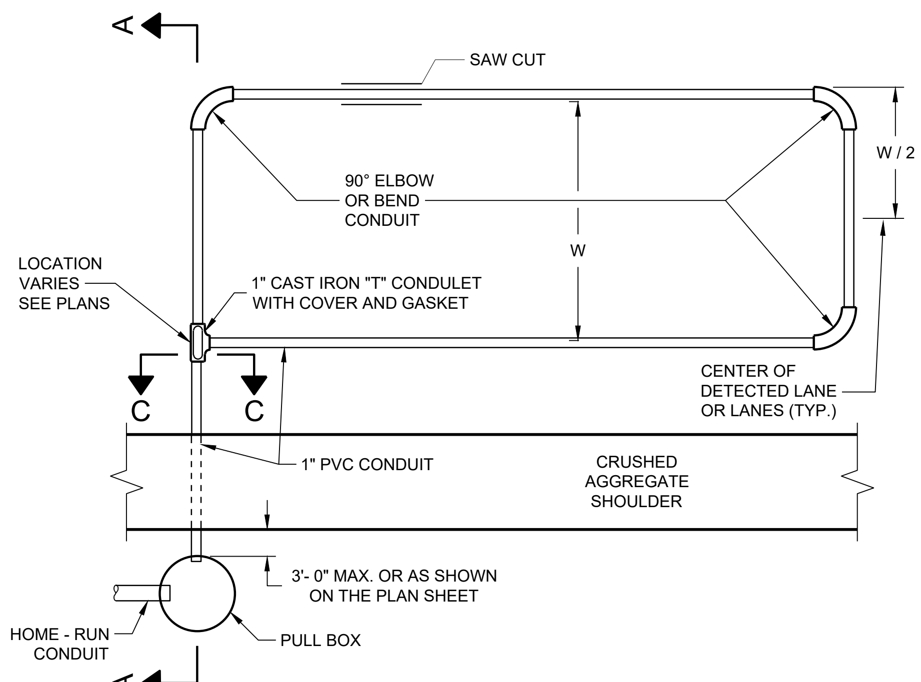
LOOP DETECTOR INSTALLATION DETAIL

* RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

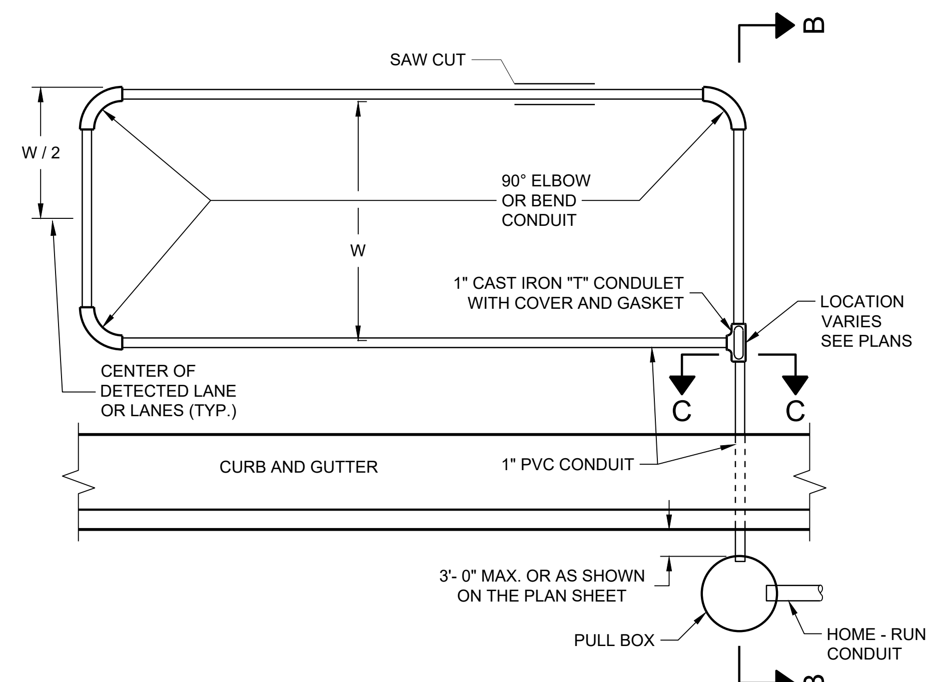


SECTION B - B
CURB AND GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READING TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE NON-SPLICED, CONTINUOUS LENGTH.

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY ½ INCH. IF THE CONDUIT MUST BE PLACED IN THE BASE COURSE, DO NOT PLACE THE TAR OR EPOXY SEALANT IN THE SLOT.

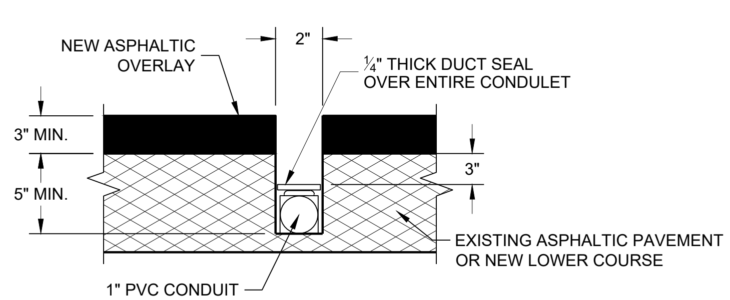
ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.

** AFTER THE HIGH PERFORMANCE COLD PATCH HAS BEEN TAMPED, SEAL THE SLOT/HIGH PERFORMANCE COLD PATCH/PAVEMENT OPENING WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN APPROVAL BY THE PROJECT ENGINEER.

6

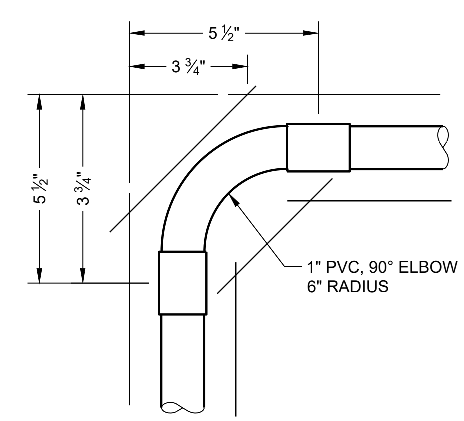
6



SIDE VIEW
SECTION C - C

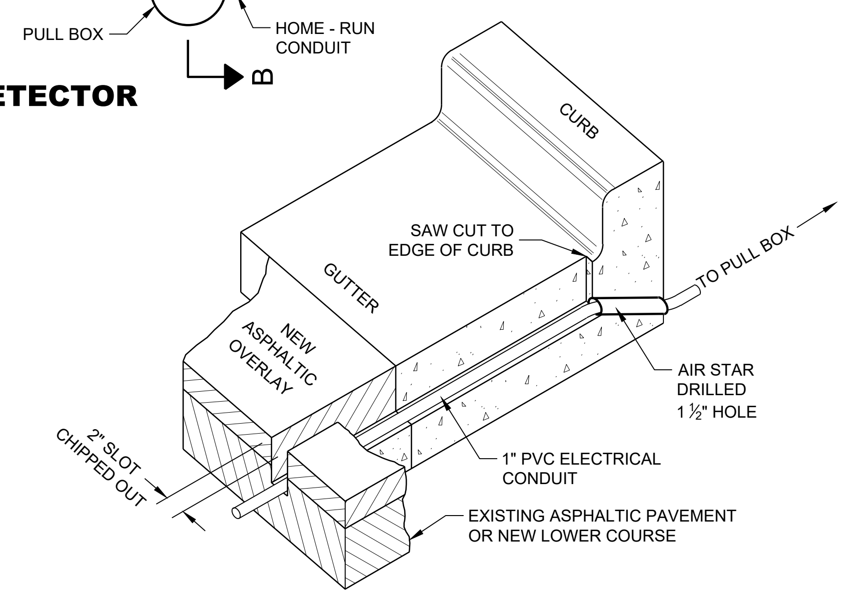
IF PAVEMENT IS LESS THAN 4 INCHES THICK, CONDUIT SHALL BE PLACED IN BASE COURSE.

LOOP DETECTOR SLOT DETAIL



TOP VIEW

CORNER SAW SLOT DETAIL



ISOMETRIC VIEW

TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

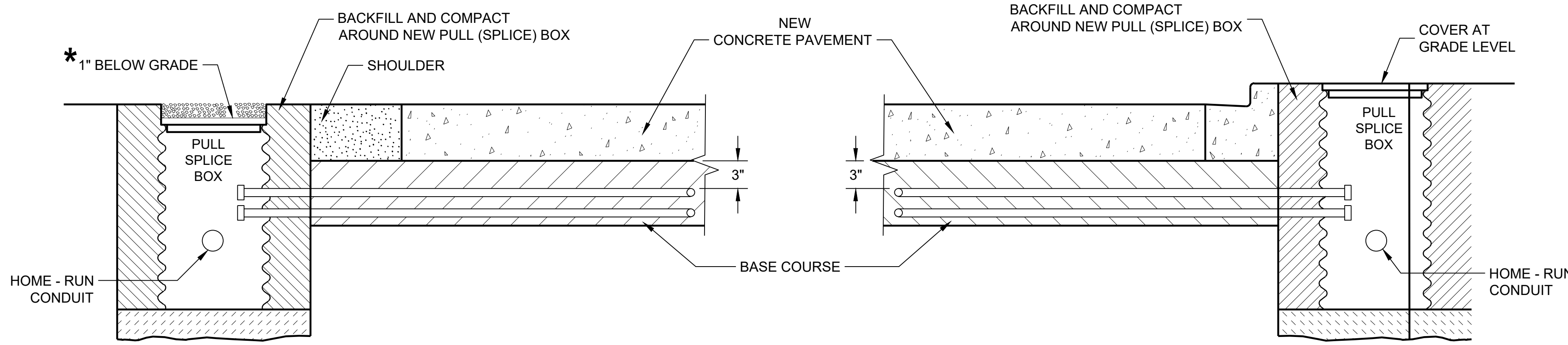
LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2014 — /S/ Ahmet Demirbilek
DATE — STATE ELECTRICAL ENGI
FHWA

SDD 09F10 - 04

SDD 09F10 - 04



SECTION A - A
NO CURB AND GUTTER

* RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

SECTION B - B
CURB AND GUTTER

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READING TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

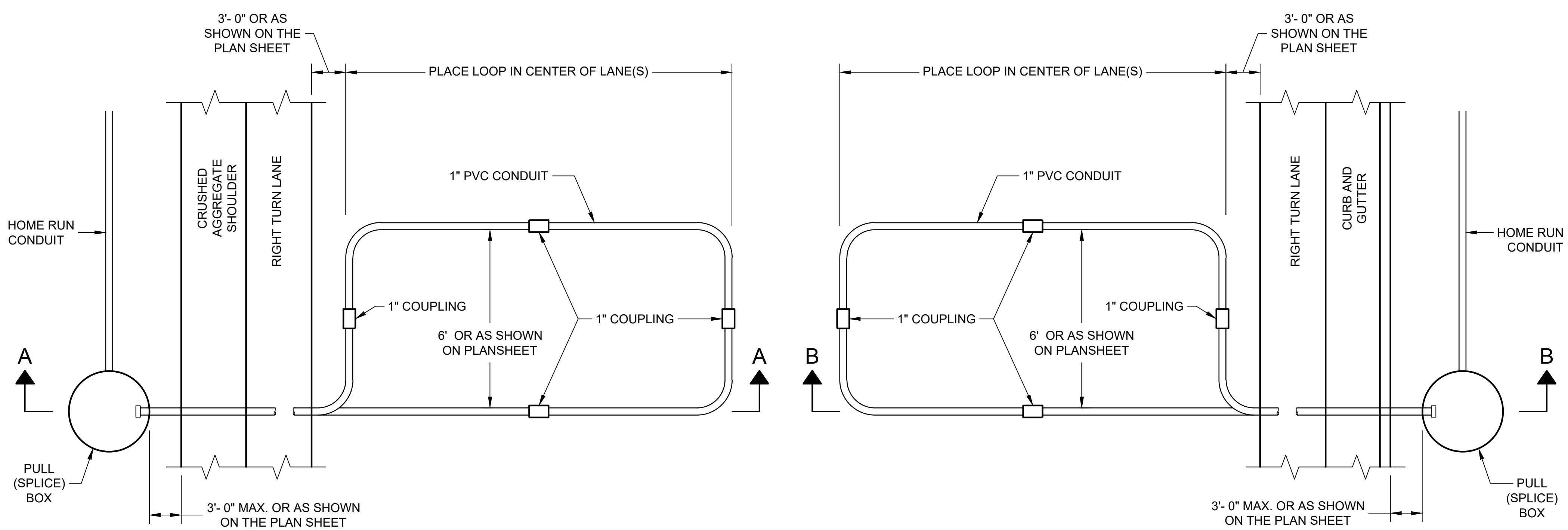
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE NON-SPLICED, CONTINUOUS LENGTH.

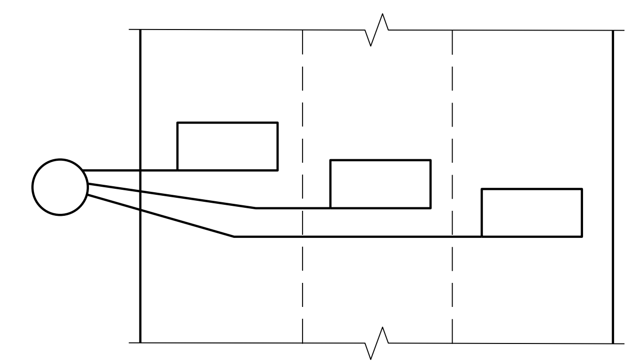
PROTECTION OF THE CONDUIT IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.

6



TYPICAL PLAN LOOP DETECTOR
WITH 24" PULL (SPLICE) BOX



MULTI-LANE
INSTALLATION

6

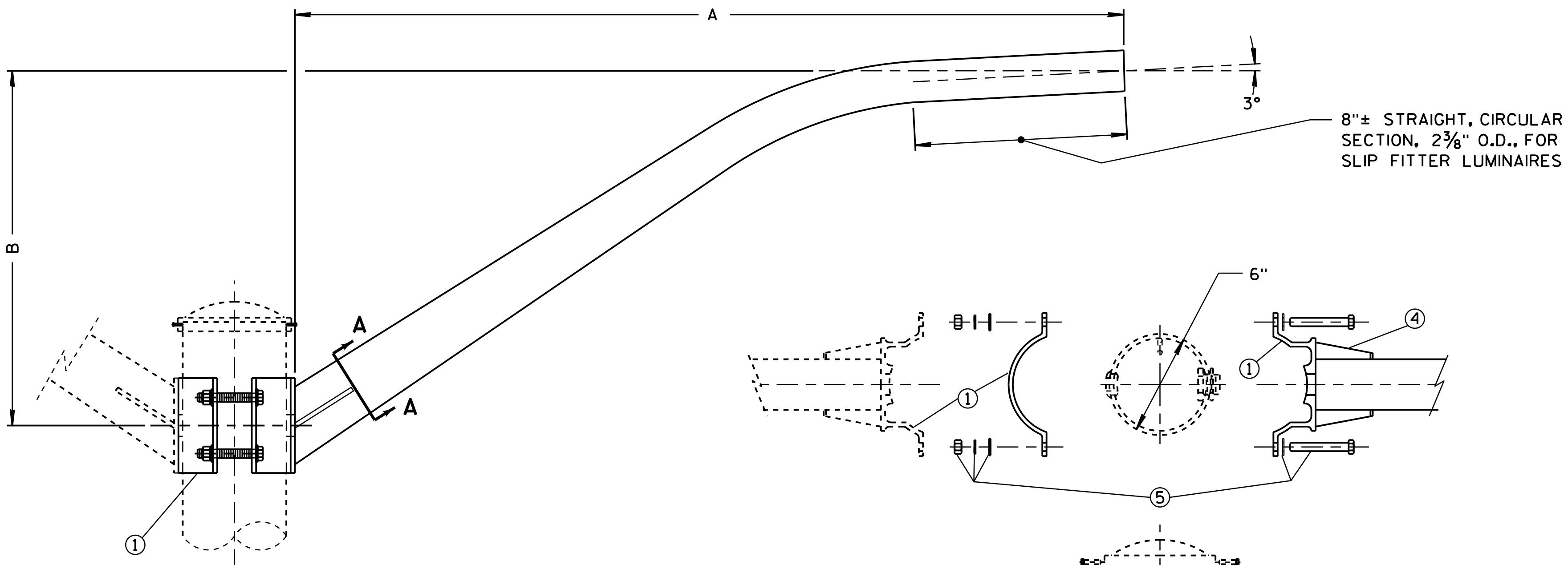
LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI
FHWA

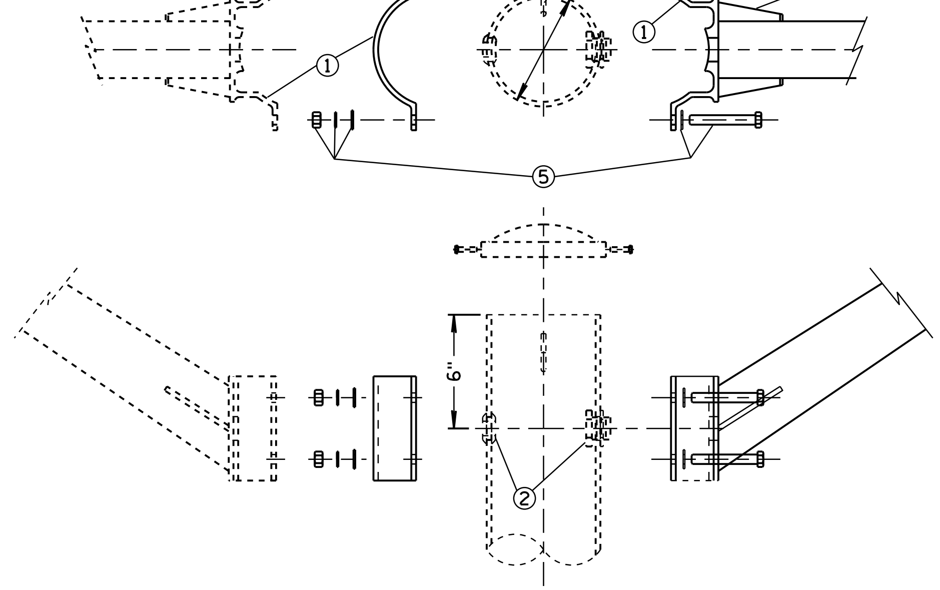
SDD 09F15 - 04b

SDD 09F15 - 04b



LUMINAIRE ARMS, SINGLE MEMBER, 6-INCH CLAMP - FOR POLES, TYPE 7, A OR E

VARIOUS LENGTHS (SEE TABLE)



CLAMP ASSEMBLY

SINGLE MEMBER CLAMP SHOWN

GENERAL NOTES

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

ARMS AND CLAMP EXTRUSIONS SHALL BE CONSTRUCTED OF NATURAL FINISH 6063-T6 ALUMINUM.

HEAT TREATMENT OF WELDS IN STRUCTURAL AREAS IS REQUIRED.

ALL THREADED FASTENER COMPONENTS SHALL BE STAINLESS STEEL. NUTS SHALL BE HEX NUTS. BOLTS SHALL BE HEX HEAD. ALL THREADED SURFACES SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.

LUMINAIRE LOADING FOR DESIGN CALCULATION SHALL BE 50 LBS. IN WEIGHT AND 1.5 SQ. FT. FOR E.P.A..

① CLAMPS SHALL BE EXTRUDED ALUMINUM.

② RACE WAY: 1⅜" FIELD DRILLED HOLE WITH 1" CHASE NIPPLE AND NUT (OR NEOPRENE GROMMET) PER EACH REQUIRED LUMINAIRE ARM. PROVIDE 1½" HOLE IN CLAMP EXTRUSION TO CONTINUE RACEWAY.

③ STIFFENER

④ GUSSETS REQUIRED.

⑤ CLAMP BOLT ASSEMBLY (BOLT - ½"-13 UNC, 2 EACH - FLAT WASHER, LOCK WASHER, NUT) - 4 EACH PER CLAMP.

TYPE	DIM. A NOMINAL ARM LENGTH (FT)	DIM. B APPROX. RISE (FT)
SINGLE MEMBER	4.0	2.0
SINGLE MEMBER	8.0	3.0
SINGLE MEMBER	10.0	3.0
SINGLE MEMBER	15.0	3.0

LUMINAIRE ARMS, SINGLE MEMBER 6-INCH CLAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 10 A 18-5a

6

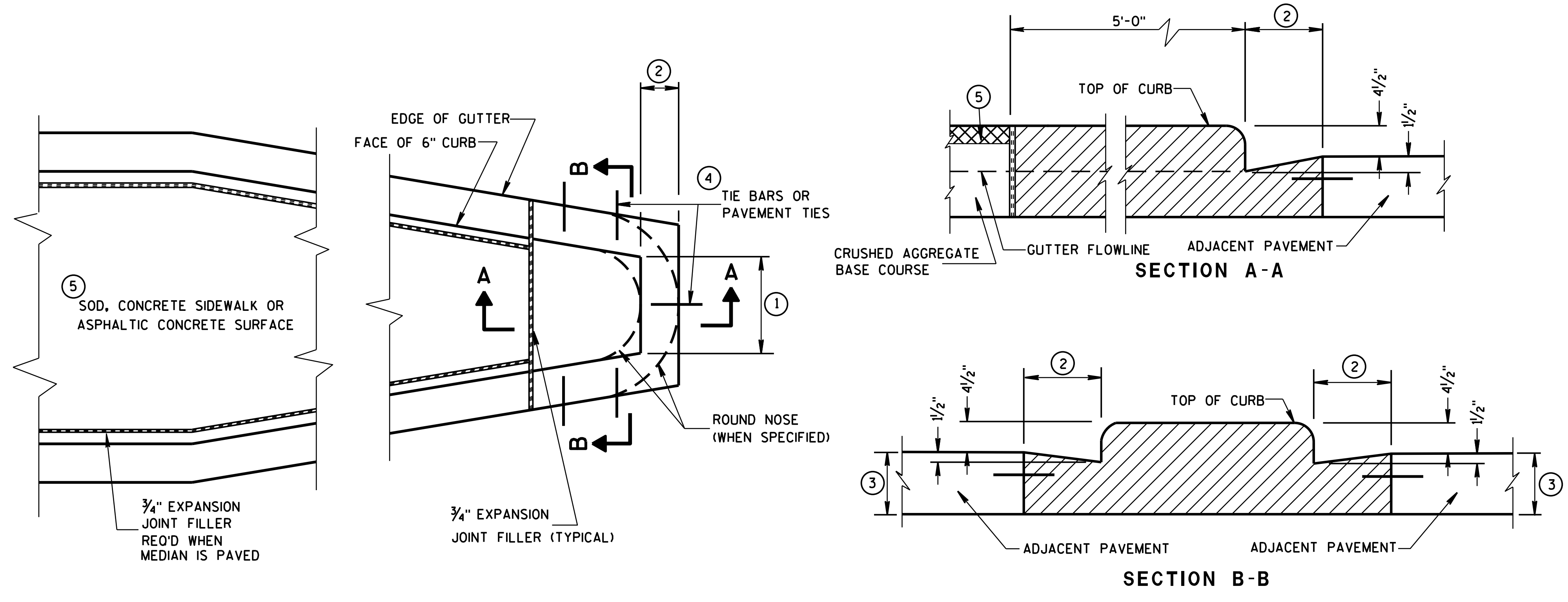
S.D.D. 10 A 18-5a

GENERAL NOTES

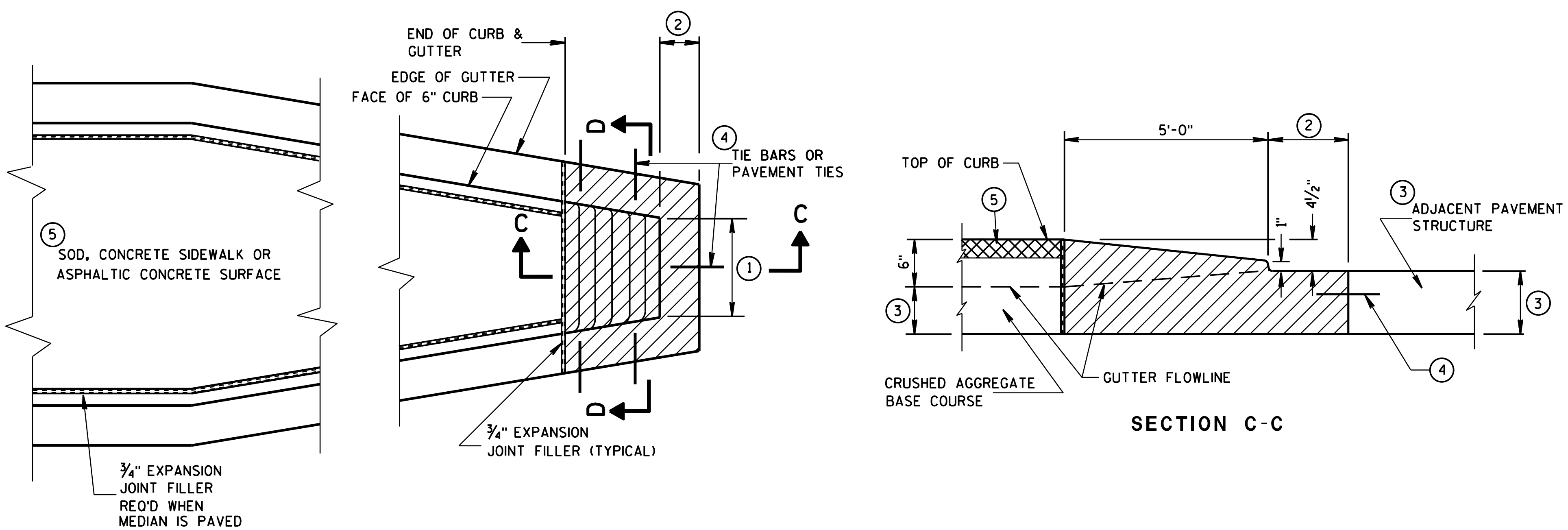
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

1. SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
2. WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
3. DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
   (1) NEW OR EXISTING CONCRETE PAVEMENT.
   (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
   (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.
4. TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

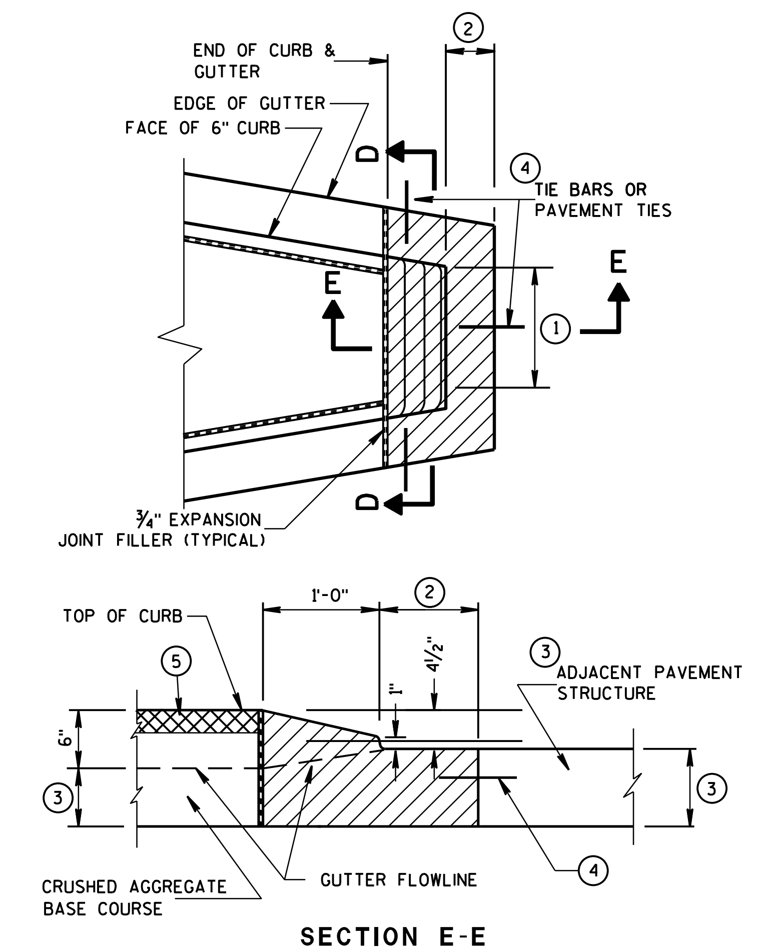
   PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.
5. SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



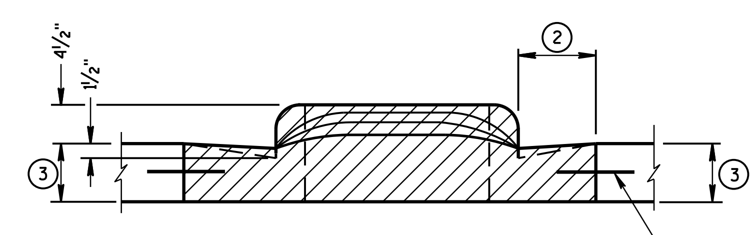
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



SECTION D-D

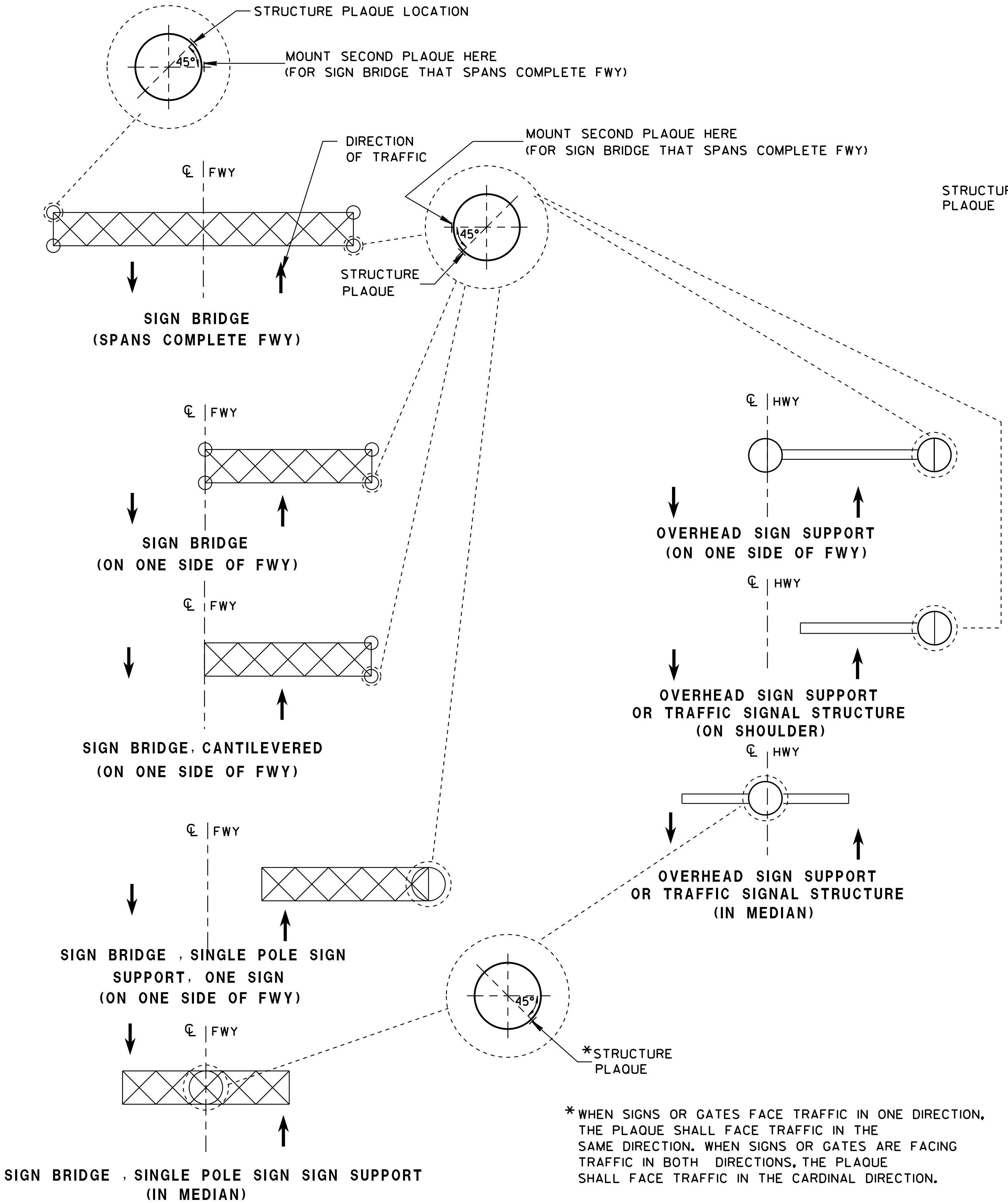
CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/8/2006 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

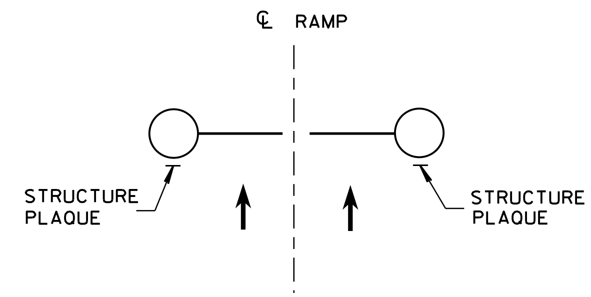
6

S.D.D. 11 B 2-2

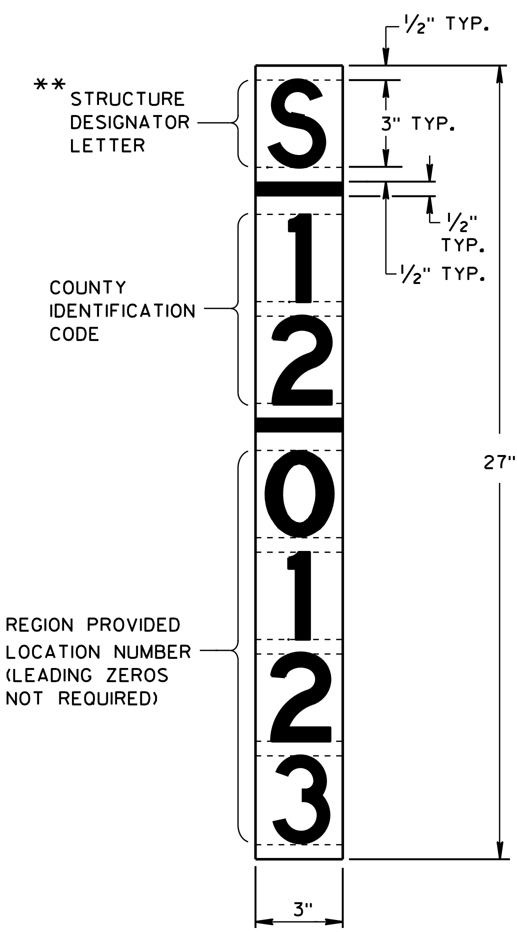


*WHEN SIGNS OR GATES FACE TRAFFIC IN ONE DIRECTION, THE PLAQUE SHALL FACE TRAFFIC IN THE SAME DIRECTION. WHEN SIGNS OR GATES ARE FACING TRAFFIC IN BOTH DIRECTIONS, THE PLAQUE SHALL FACE TRAFFIC IN THE CARDINAL DIRECTION.

LOCATION OF RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT & TRAFFIC SIGNAL STRUCTURE PLAQUES



RAMP GATE (ACROSS FWY ON-RAMP)



** LETTER "G" UTILIZED FOR RAMP GATES. LETTER "S" UTILIZED FOR SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, AND TRAFFIC SIGNALS.

RAMP GATE, SIGN BRIDGE, OVERHEAD SIGN SUPPORT AND TRAFFIC SIGNAL STRUCTURE PLAQUE FOR SIGN BRIDGES AND OVERHEAD SIGN SUPPORT WHICH ARE NOT STRUCTURE MOUNTED

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

IF THE PROPOSED SIGN BRIDGE OR OVERHEAD SIGN SUPPORT IS REPLACING AN EXISTING SIGN BRIDGE OR OVERHEAD SIGN SUPPORT, A NEW IDENTIFICATION PLAQUE WILL BE REQUIRED.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS; FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

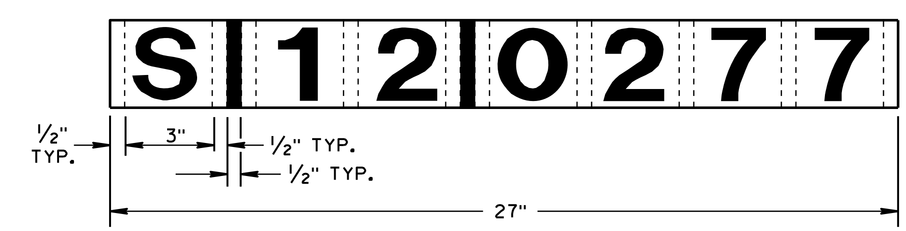
FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, ½" WIDE, SELF-ADHESIVE

CHARACTERS:- BLACK, SELF ADHESIVE, SERIES "D", SIZE AS SHOWN.

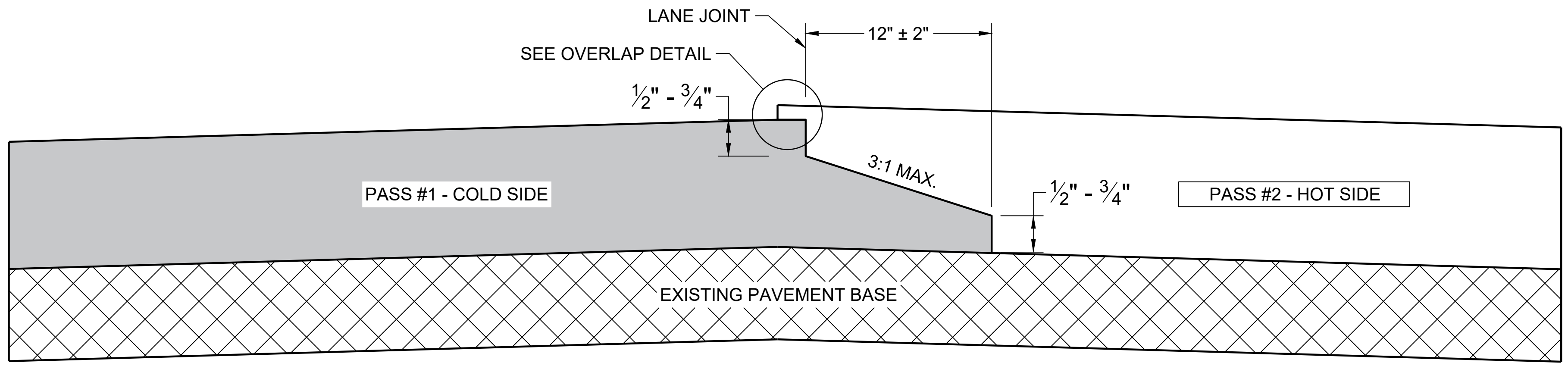
FOR SIGN BRIDGES, STRUCTURE MOUNTED, THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY AS SHOWN ON THE DRAWING. THE STRUCTURE PLAQUE SHALL BE MOUNTED HORIZONTALLY TO THE BACK OF THE SIGN, BETWEEN THE ALUMINUM EXTRUSIONS, NEAR THE TOP LEFT HAND CORNER OF THE SIGN. THE BASE MATERIAL SHALL BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE ALUMINUM SURFACE. PRIOR TO ADHERING THE MATERIAL, THE ALUMINUM SURFACE SHALL BE SMOOTH, CLEAN AND DRY.

WHERE SIGN BRIDGE ILLUMINATION IS PROVIDED, THE STRUCTURE MUST ALSO HAVE A SIGN BRIDGE CIRCUIT PLAQUE AS SHOWN IN THE ELECTRICAL DETAILS.

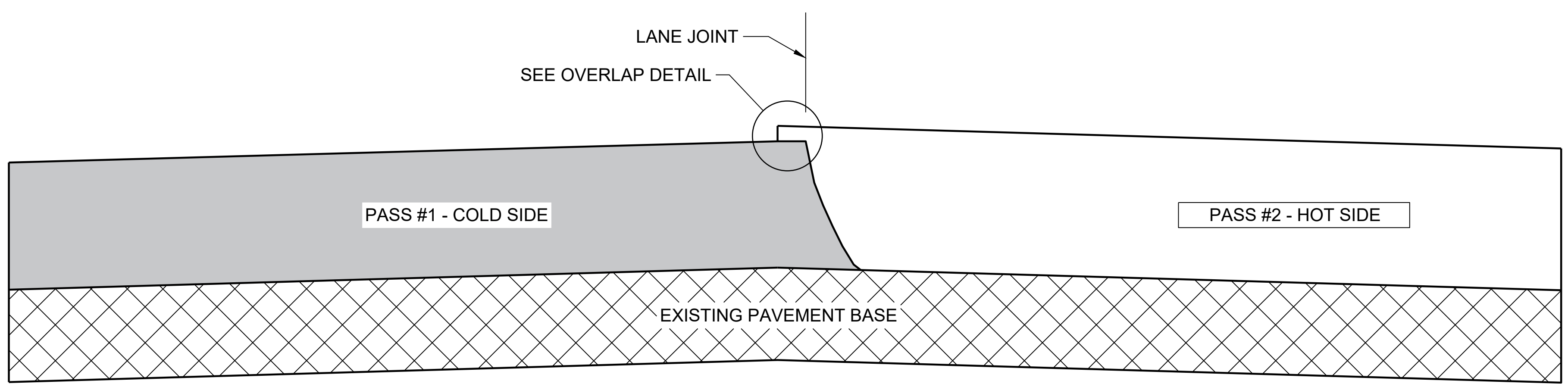


IDENTIFICATION PLAQUE FOR SIGN BRIDGE, STRUCTURE MOUNTED

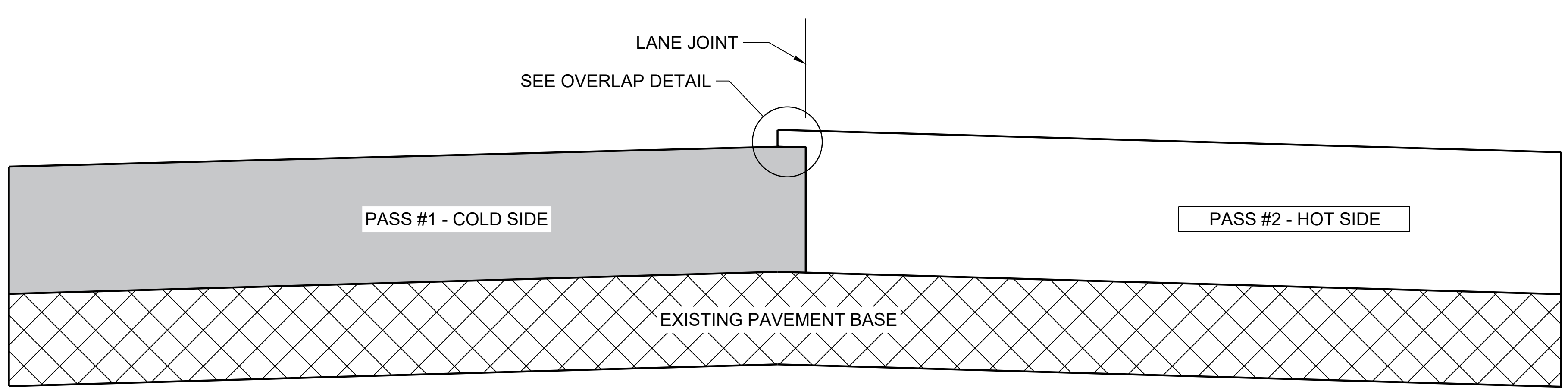
STRUCTURE IDENTIFICATION PLAQUES, RAMP GATES, SIGN BRIDGES, OVERHEAD SIGN SUPPORTS, & TRAFFIC SIGNALS
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 12/4/2012 DATE /S/ Travis Feltes STATE TRAFFIC ENGINEER SIGN FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

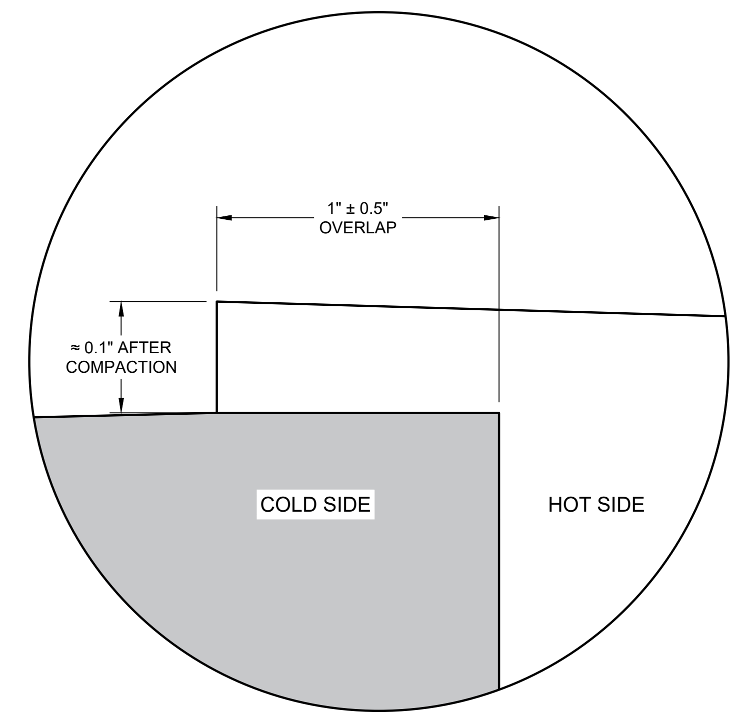
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

SDD 13C19 - 03

SDD 13C19 - 03

HMA LONGITUDINAL JOINTS

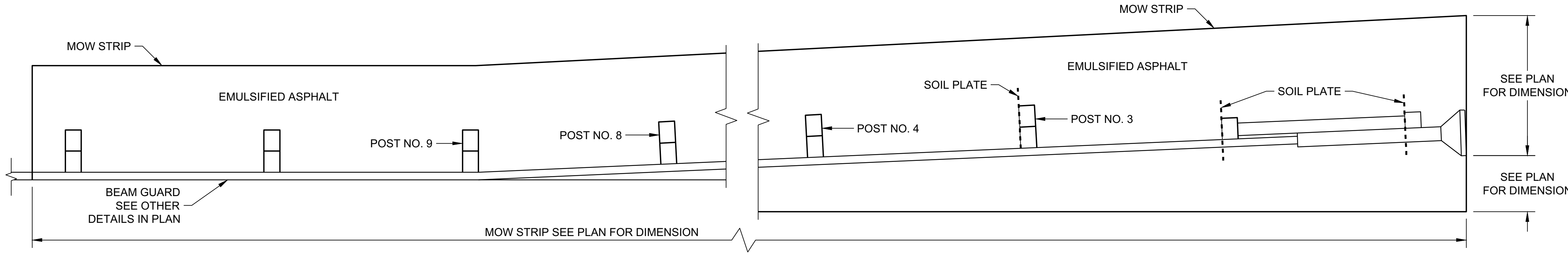
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

November 2020 — DATE

/S/ Steven Hefel — HMA PAVEMENT ENGIN

FHWA

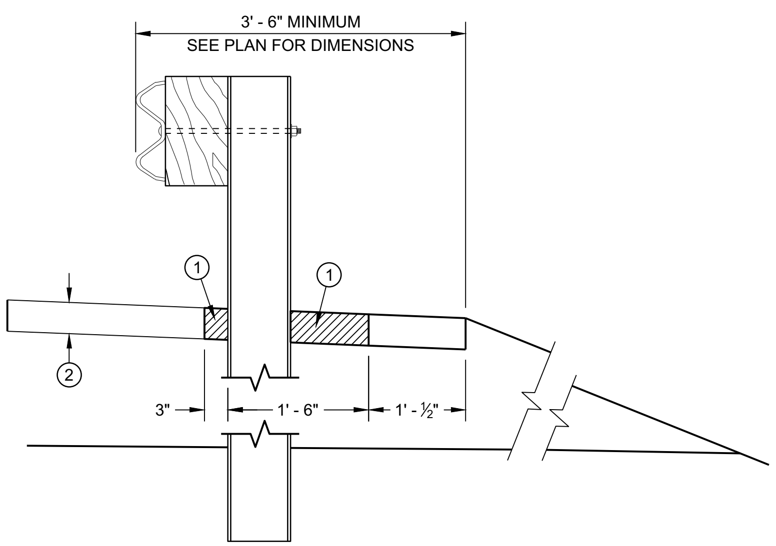


GENERAL NOTES

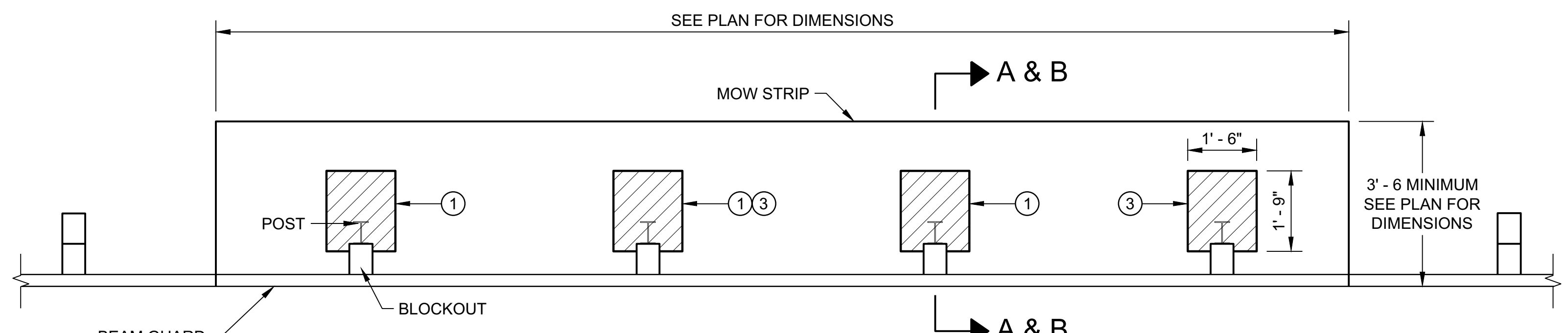
ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

1. CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
2. DEPTH OF MOW STRIP:
   ASPHALT - 4"
   CONCRETE - 4"
   EMULSIFIED ASPHALT - 1" OR LESS
3. FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)

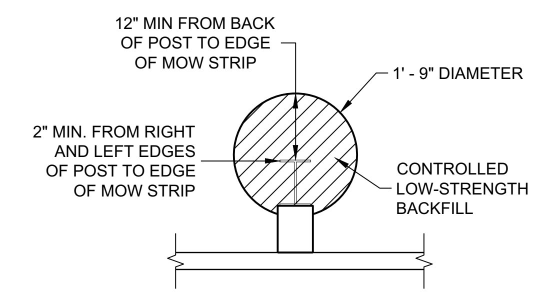
PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL



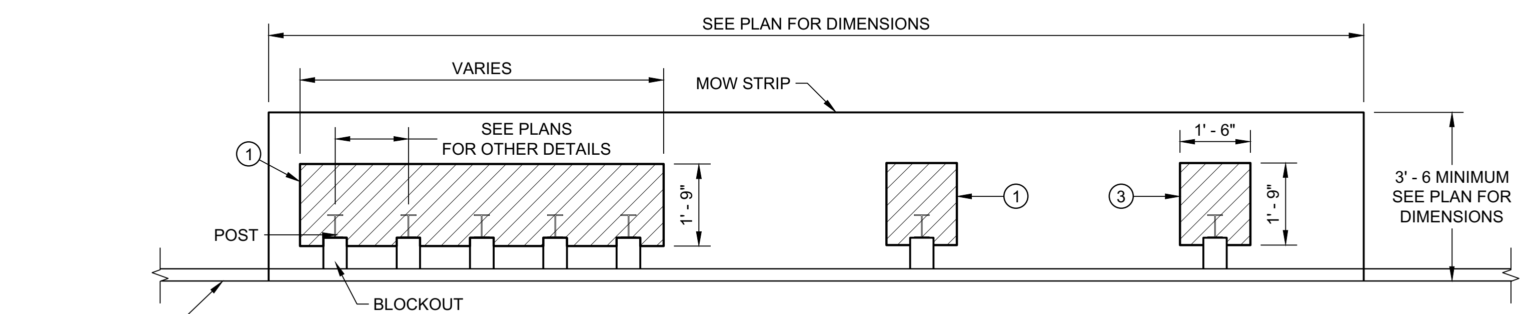
SECTION A - A



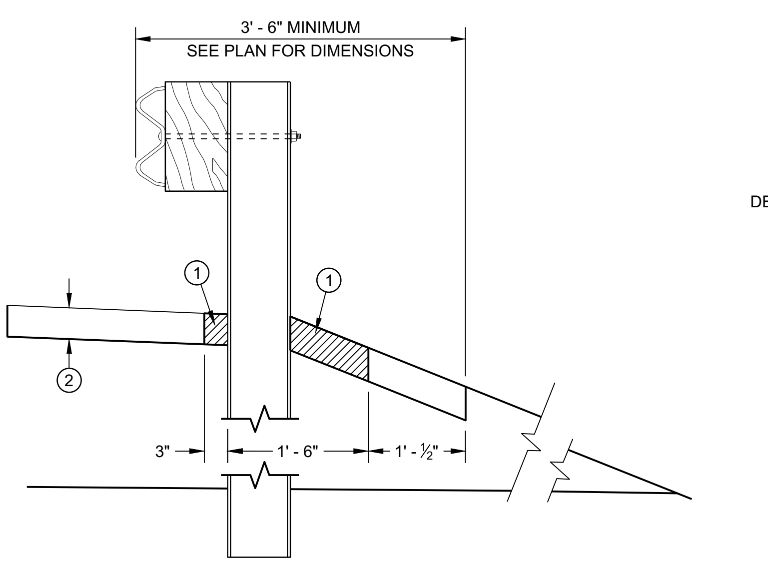
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



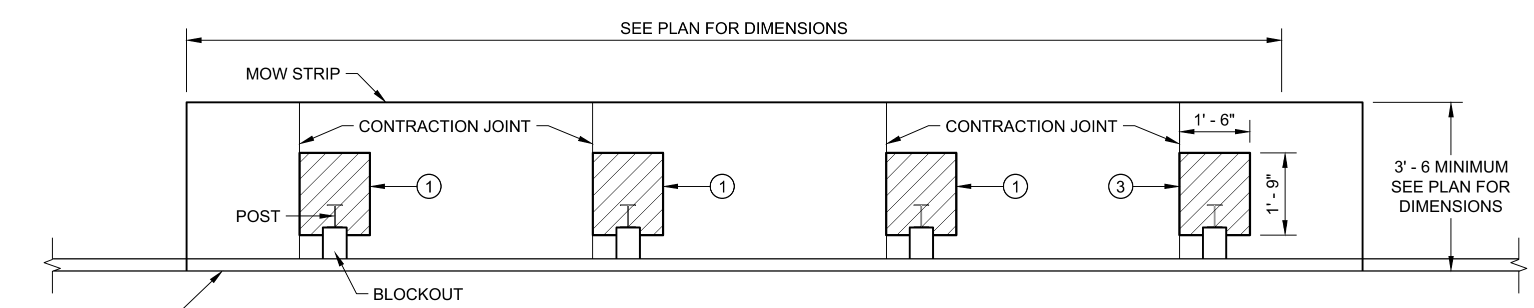
ALTERNATIVE HMA MOW STRIP DESIGN



PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT



SECTION B - B



PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP

GUARDRAIL MOW STRIP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT 196

6

6

SDD 14B28 - 04a

SDD 14B28 - 04a

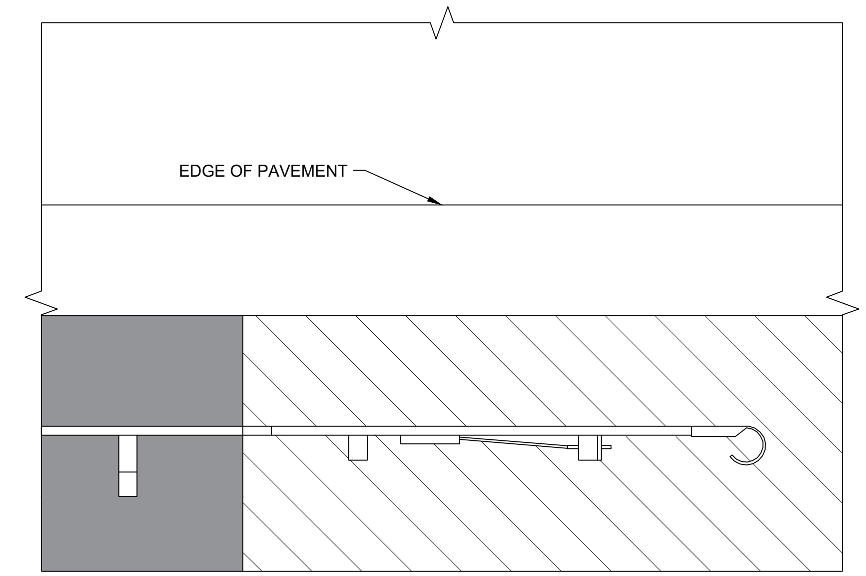
LEGEND

CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

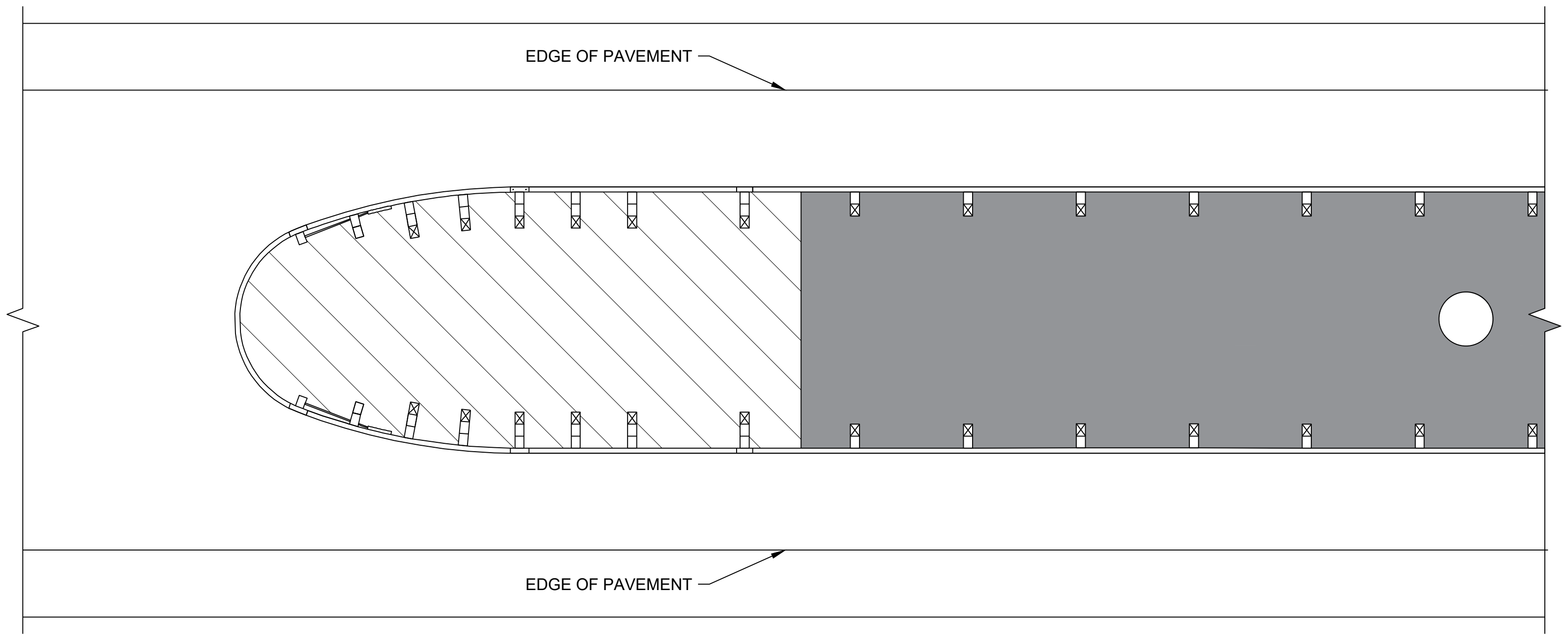
EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

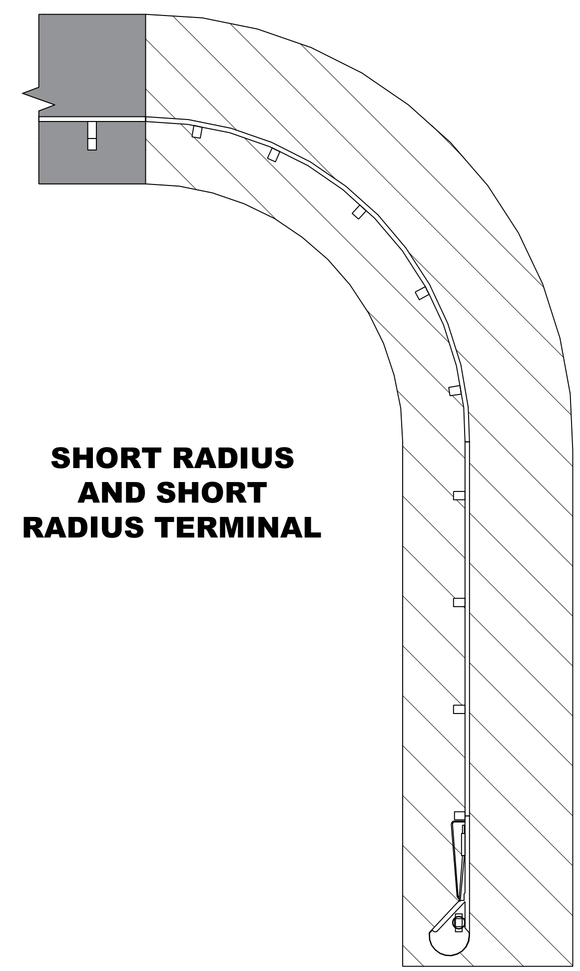
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



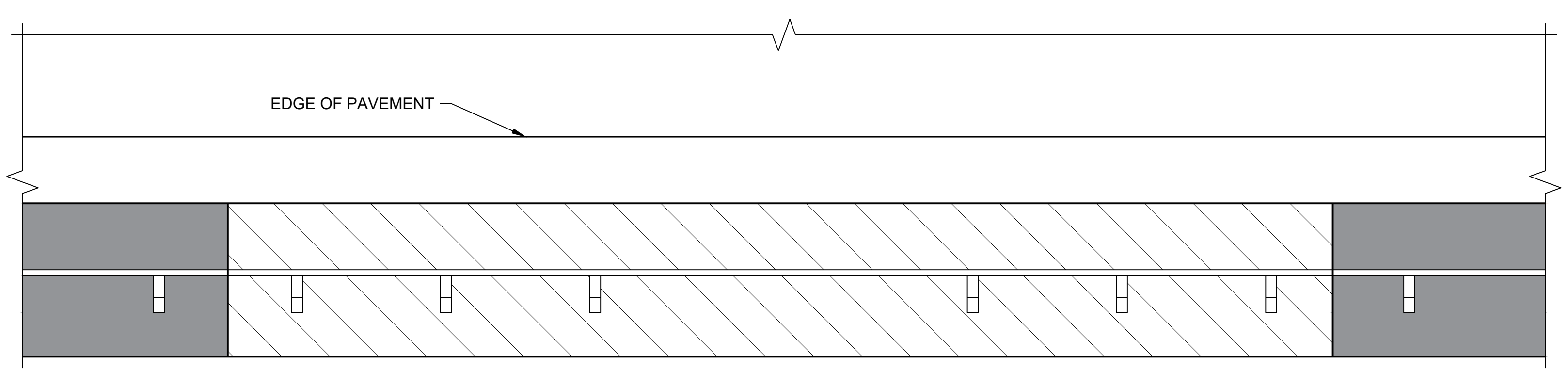
TYPE 2 TERMINAL



THRIE BEAM BULLNOSE

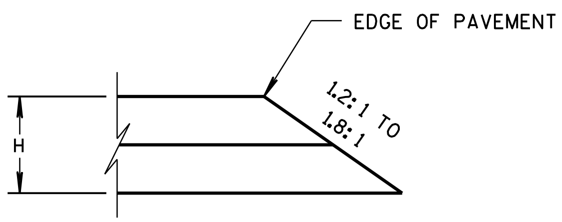


SHORT RADIUS AND SHORT RADIUS TERMINAL



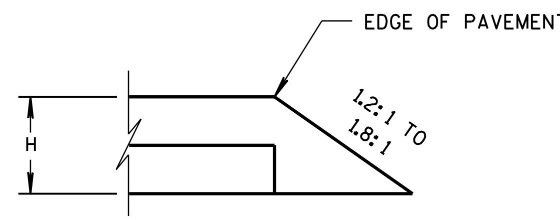
LONG - SPAN

GUARDRAIL MOW STRIP	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVE ENGINEER
FHWA	



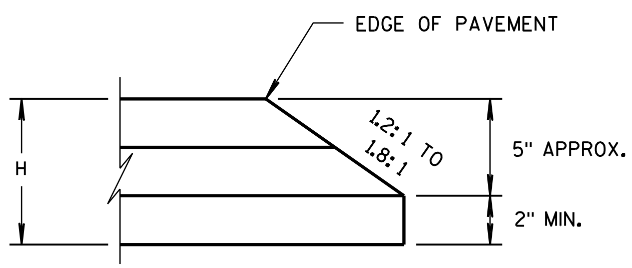
CONSTRUCTED WITH FINAL TWO LAYERS

FOR H 5" OR LESS



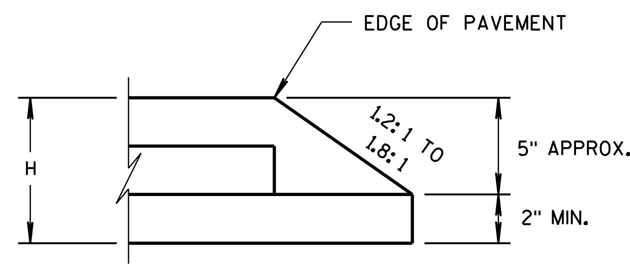
CONSTRUCTED WITH FINAL LAYER

FOR H 5" OR LESS



CONSTRUCTED WITH FINAL TWO LAYERS

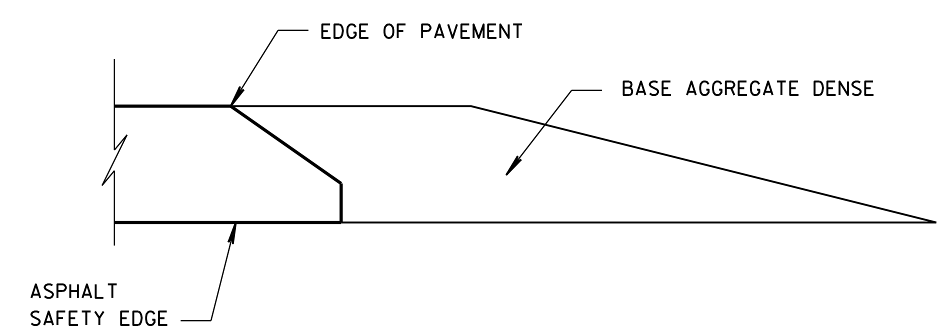
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER

FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

6

SAFETY EDGE SM

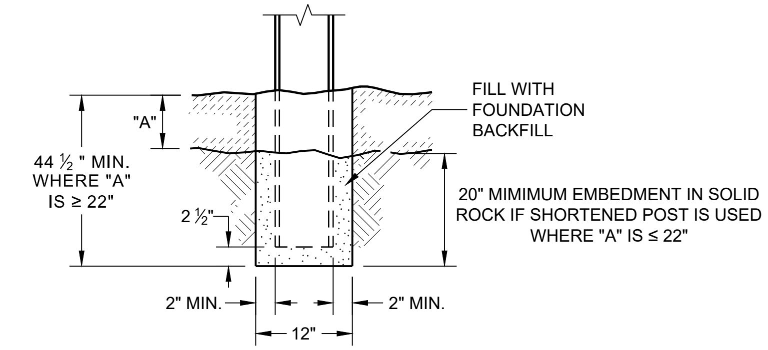
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

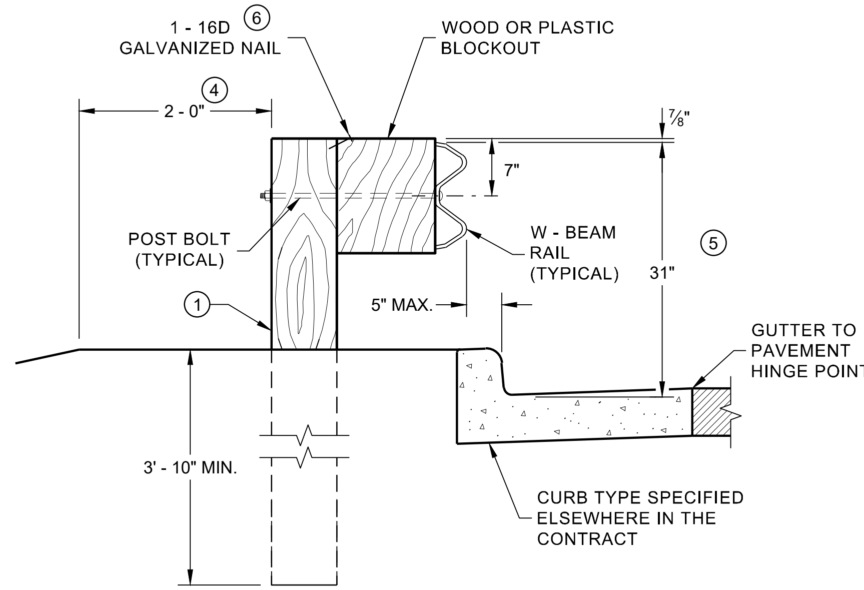
S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

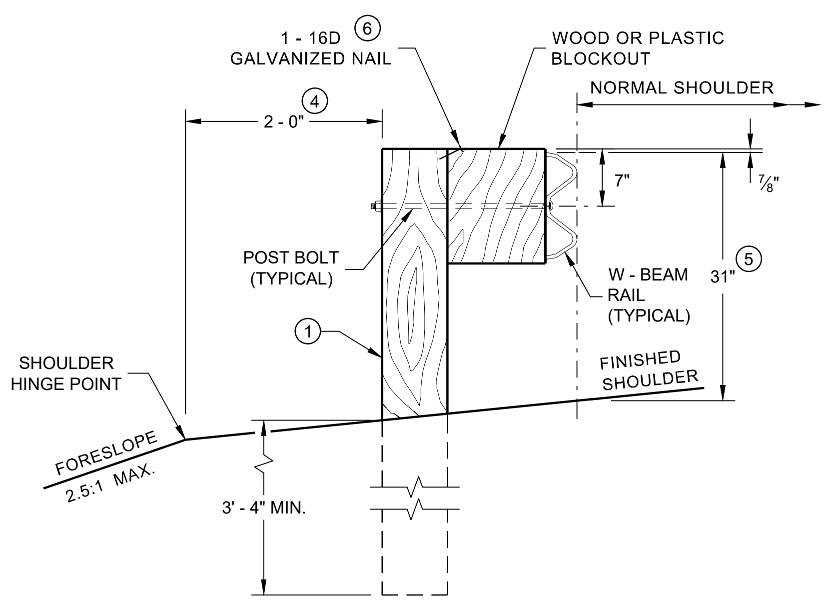
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".
6. WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
7. TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



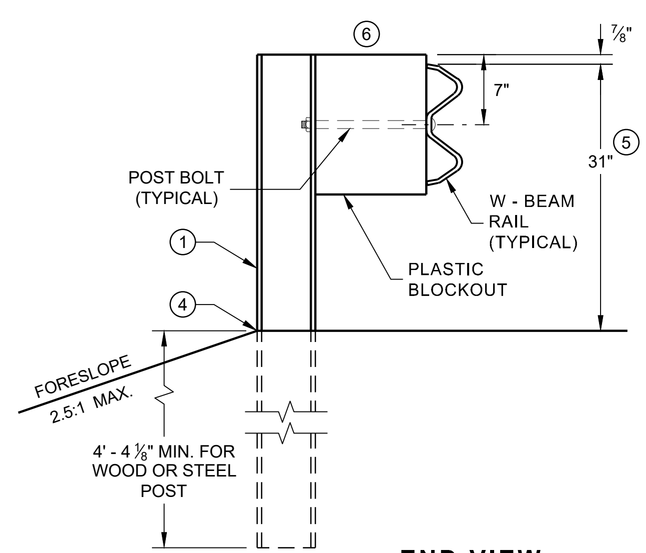
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



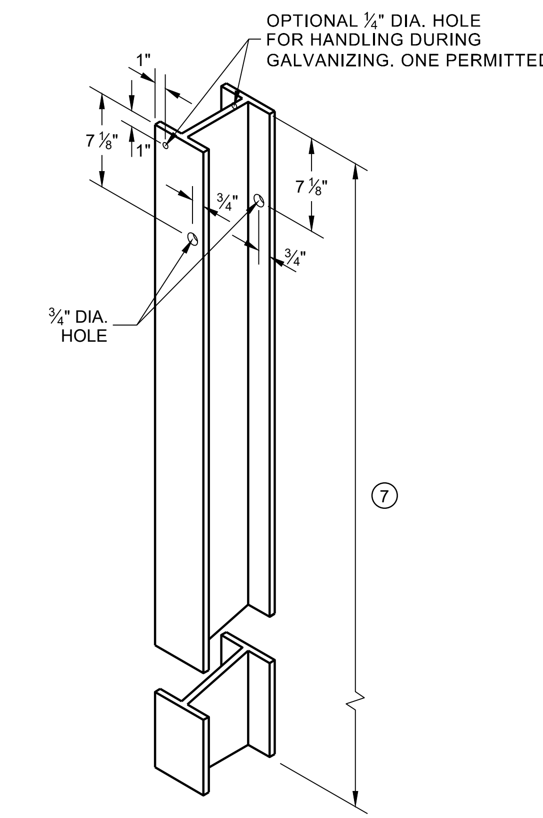
END VIEW
LOCATED ALONG A CURBED ROADWAY



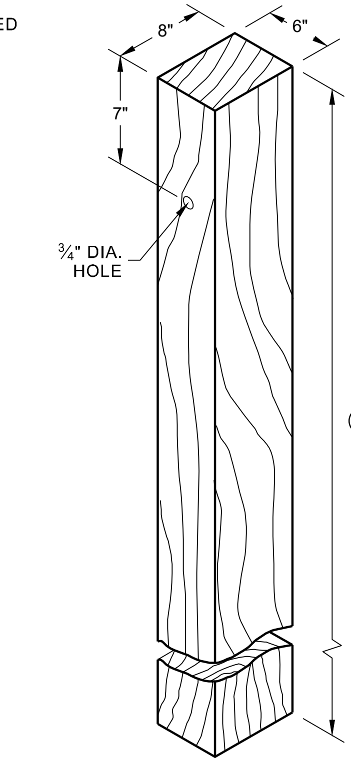
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



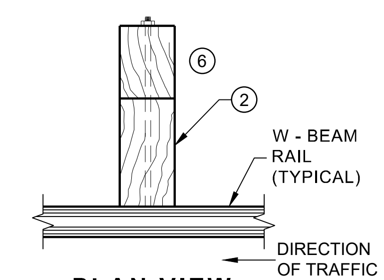
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



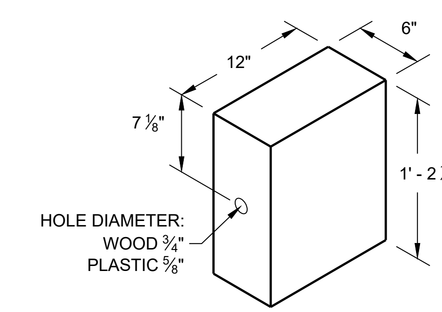
STEEL POST & HOLE PUNCHING DETAIL
(W 6 X 9) ①



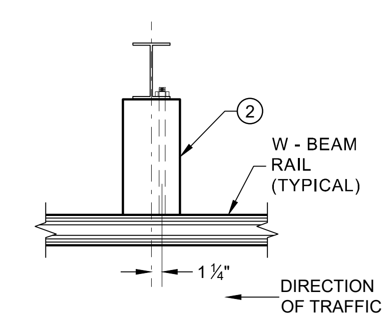
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR PLASTIC BLOCKOUT ②



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

6

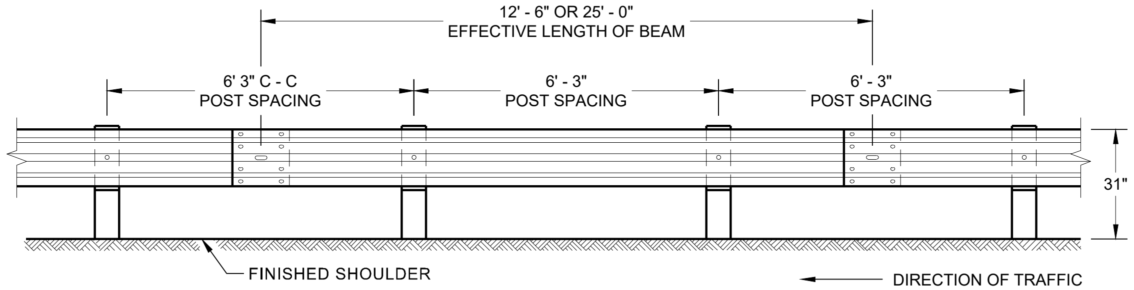
6

SDD 14B42 - 07a

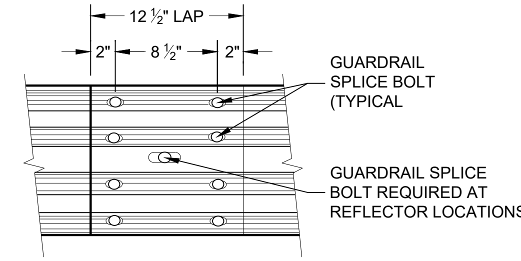
SDD 14B42 - 07a

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATI



FRONT VIEW
POST SPACING STANDARD INSTALLATION



FRONT VIEW
MID-SPAN BEAM SPLICE

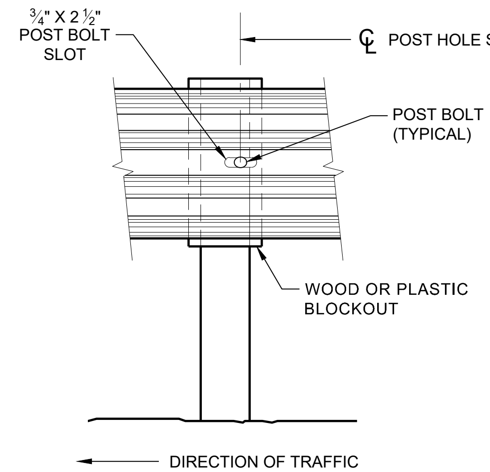
GENERAL NOTES

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

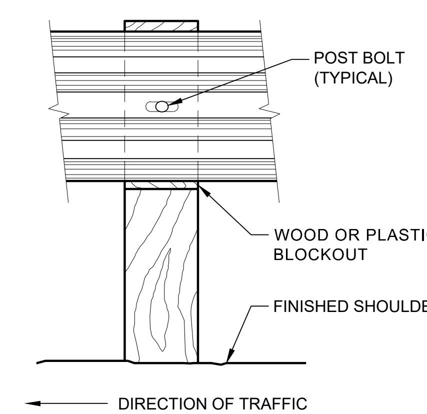
(9) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A $\frac{5}{8}$" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

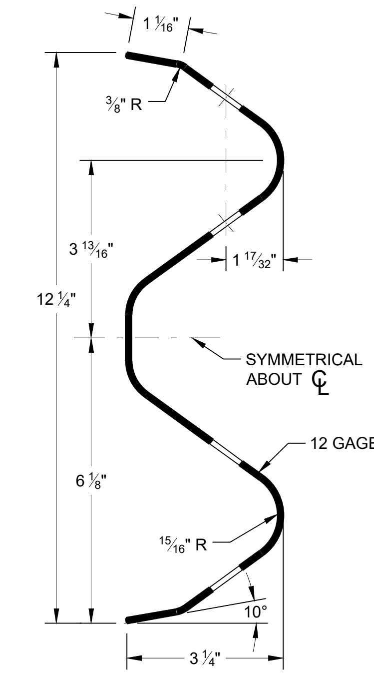
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



FRONT VIEW AT STEEL POST

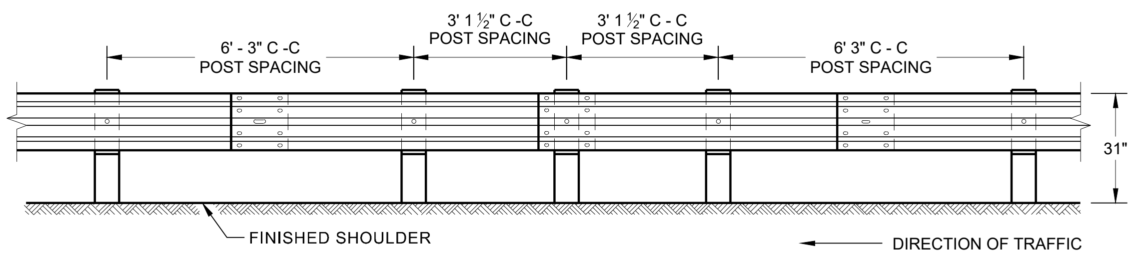


FRONT VIEW AT WOOD POST

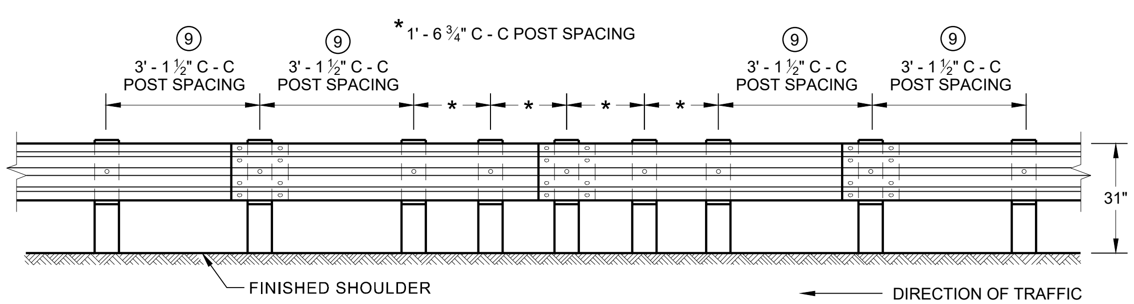


SECTION THRU W-BEAM RAIL

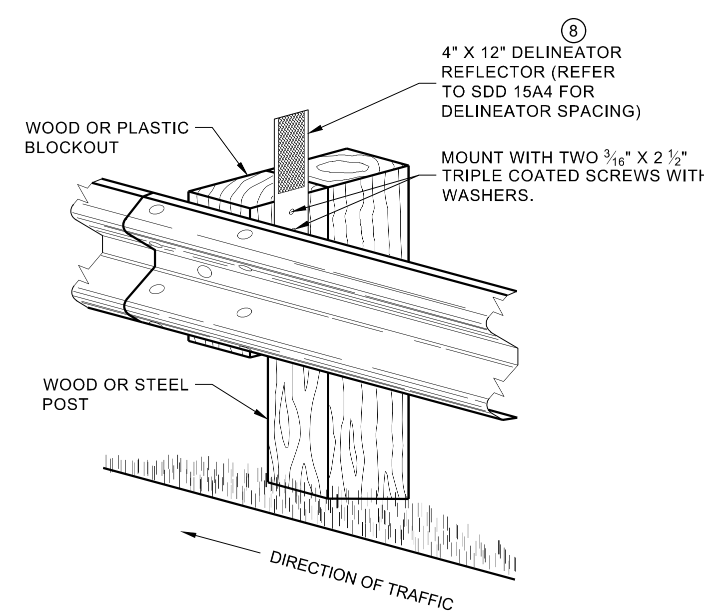
6



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



FRONT VIEW
QUARTER POST SPACING (QS)



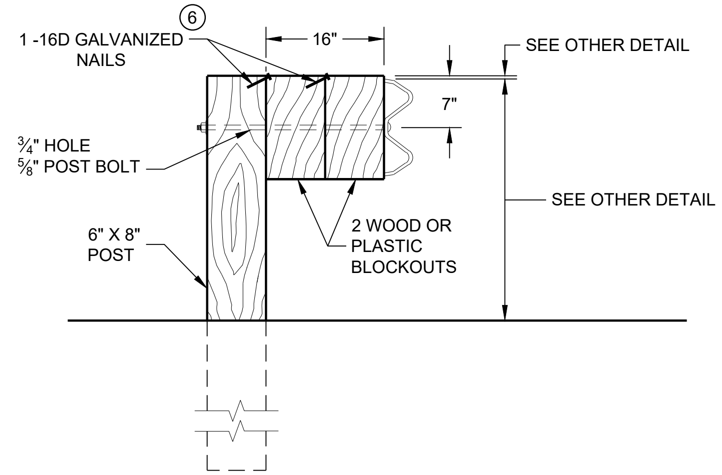
ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATI 200

SDD 14B42 - 07b

SDD 14B42 - 07b

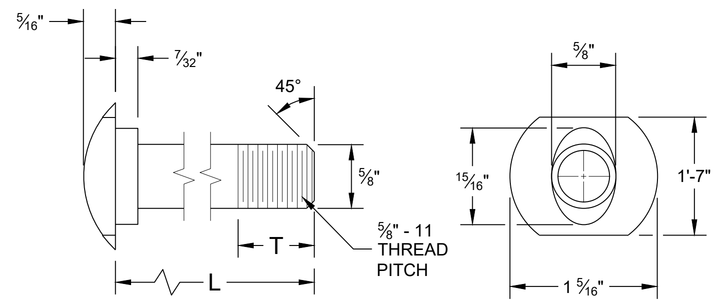


DETAIL FOR 16" BLOCKOUT DEPTH

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

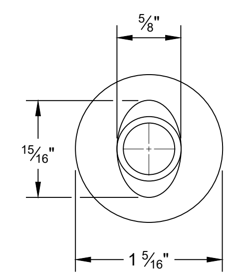
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

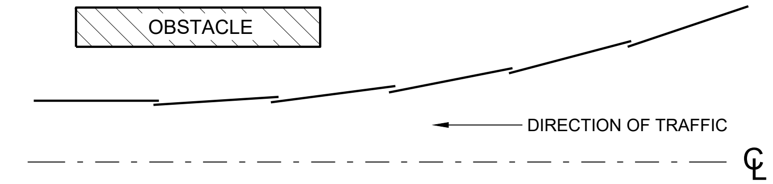


POST BOLT TABLE

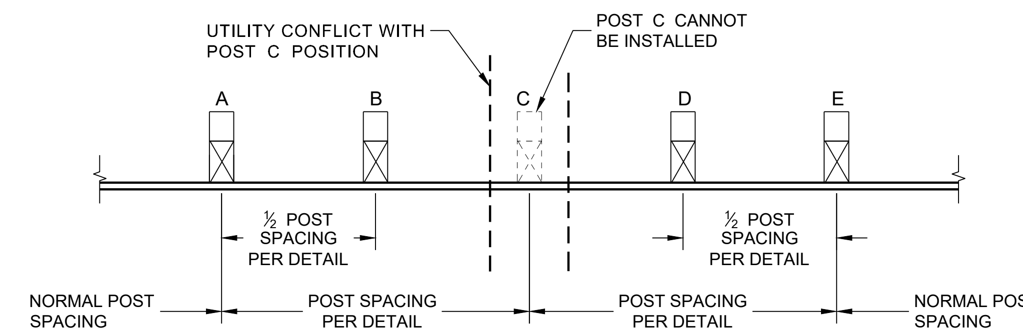
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



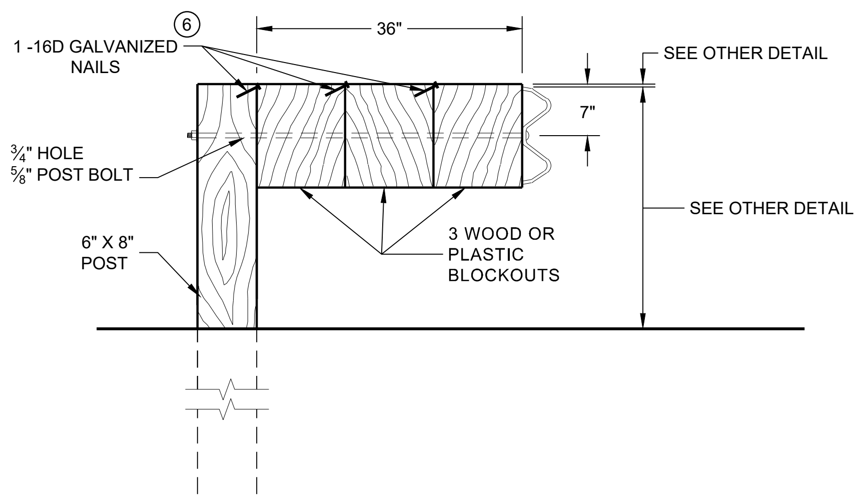
ALTERNATE BOLT HEAD



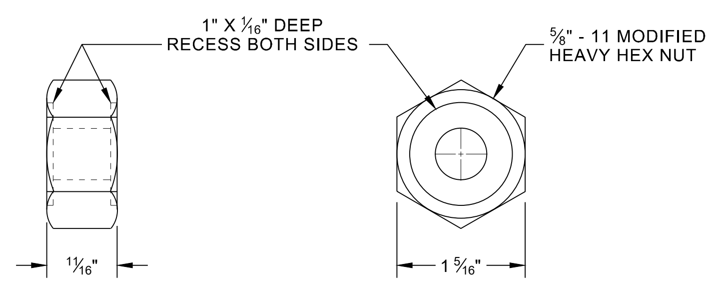
PLAN VIEW
BEAM LAPPING DETAIL



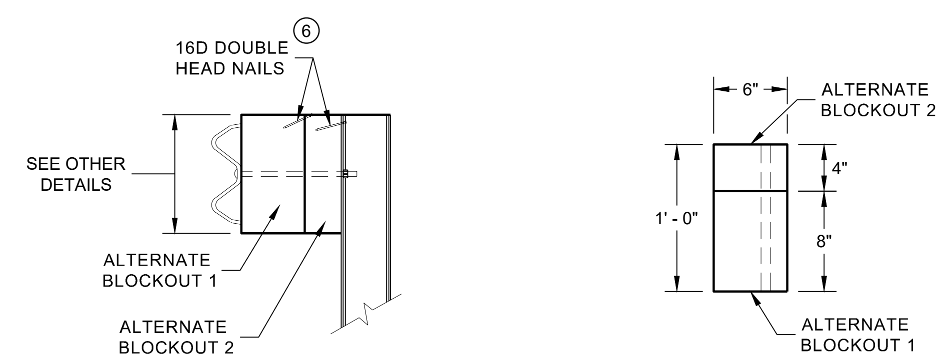
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

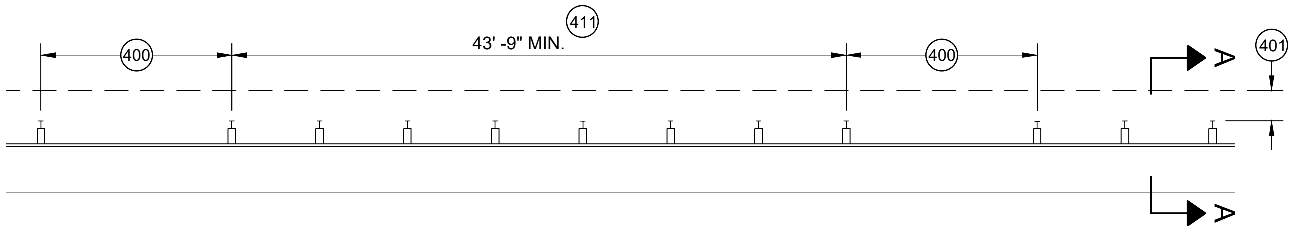
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

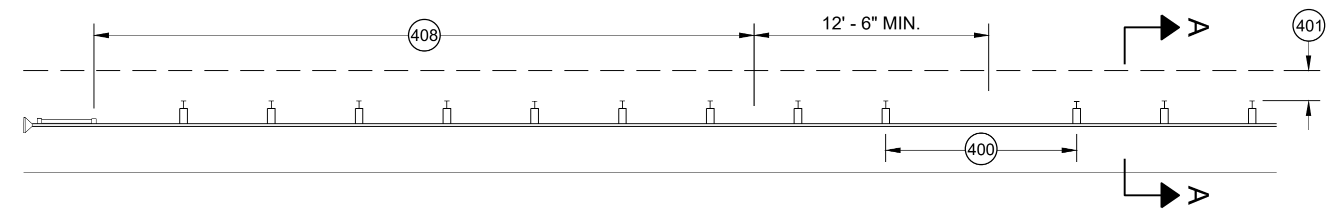
6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

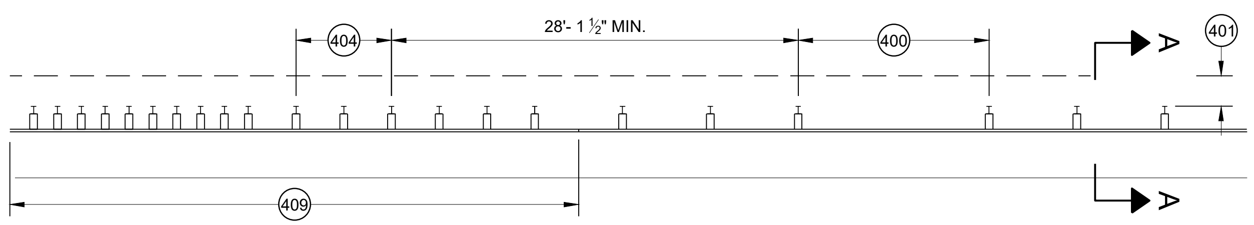
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA1 201



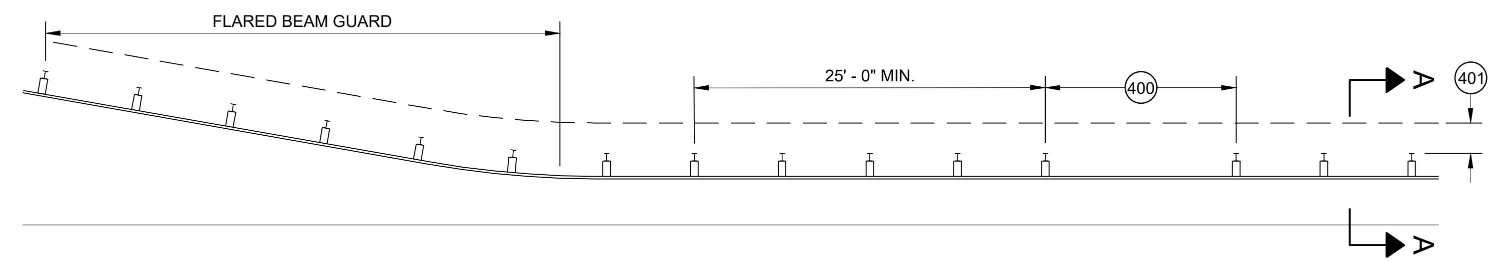
MISSING POST IN MGS GUARDRAIL



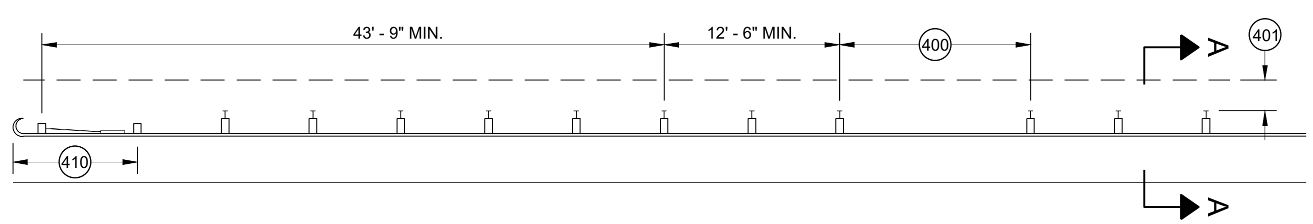
MISSING POST IN MGS GUARDRAIL NEAR EAT



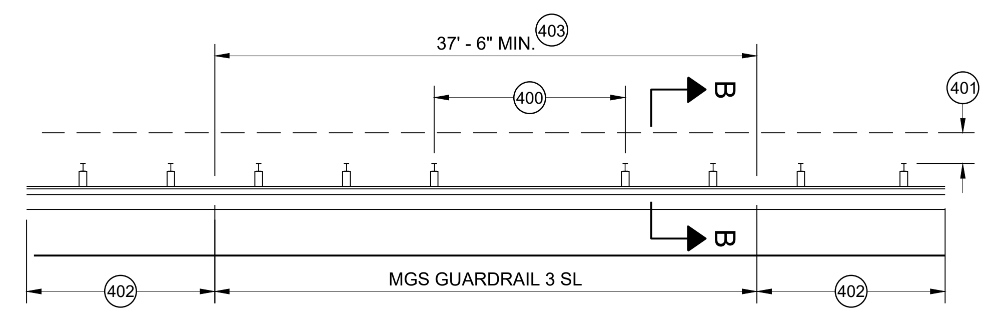
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

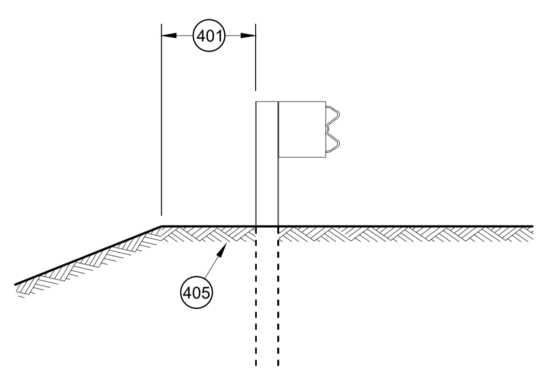


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

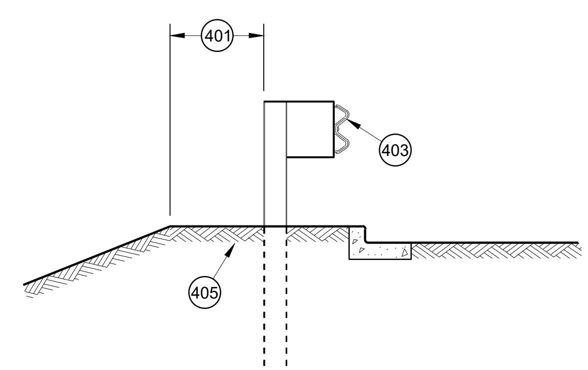


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL) 407

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



SECTION A - A 406



SECTION B - B 406

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

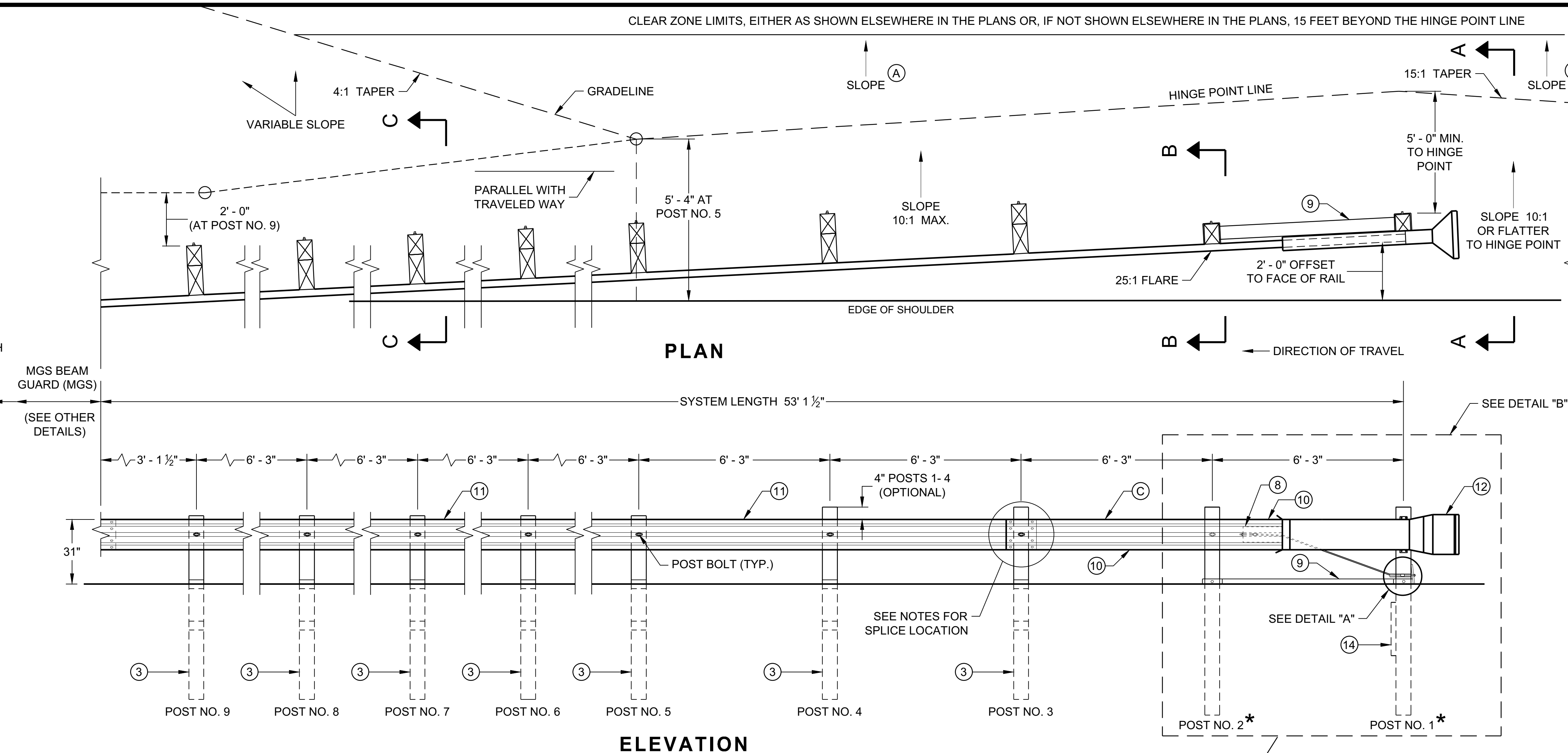
SEE SDD 14B42 FOR MORE INFORMATION.

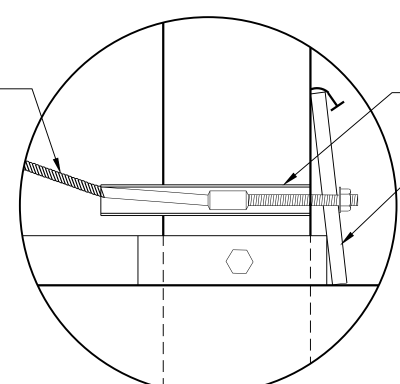
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

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

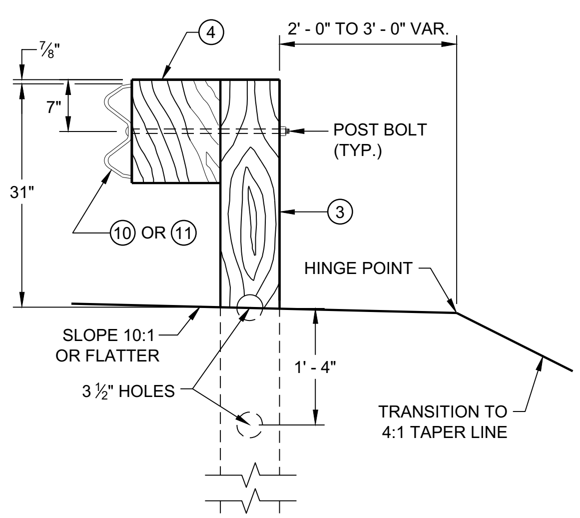
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

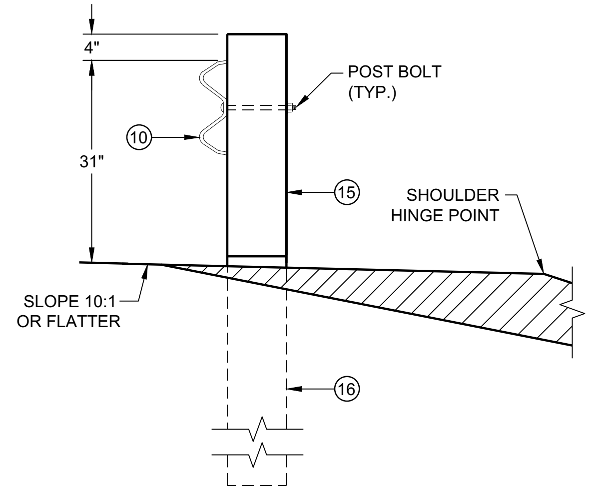




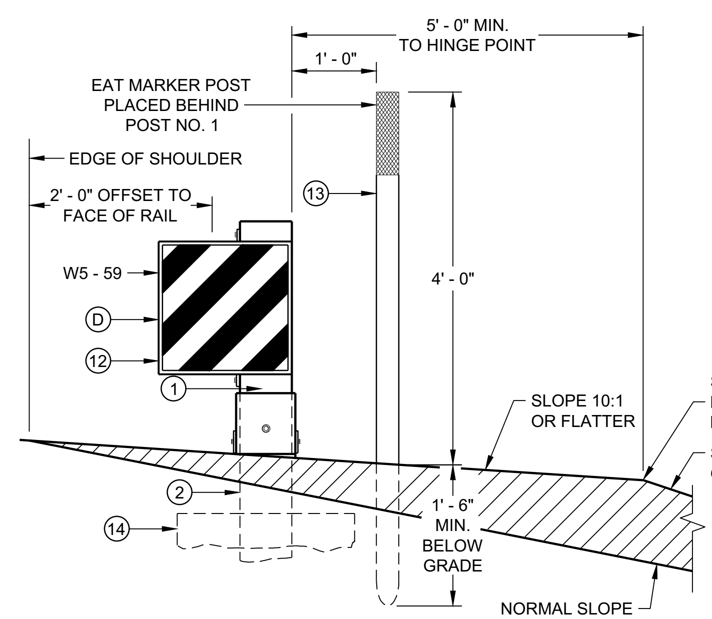
DETAIL "A" (E)



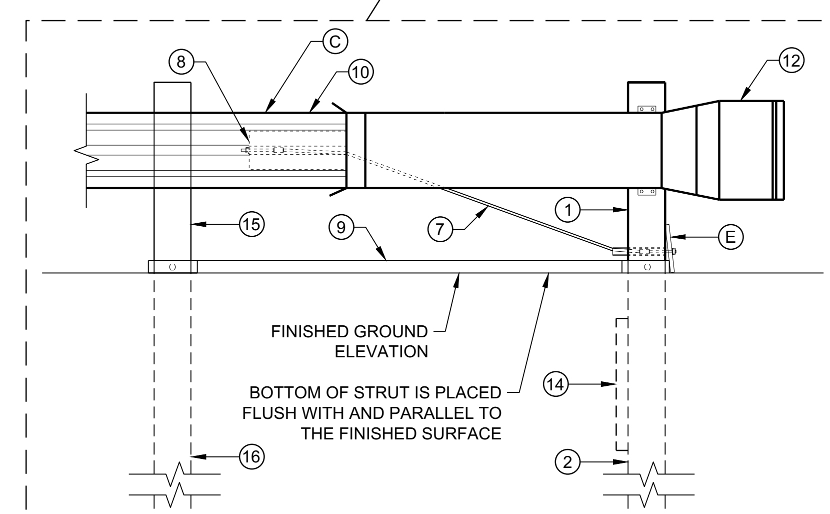
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

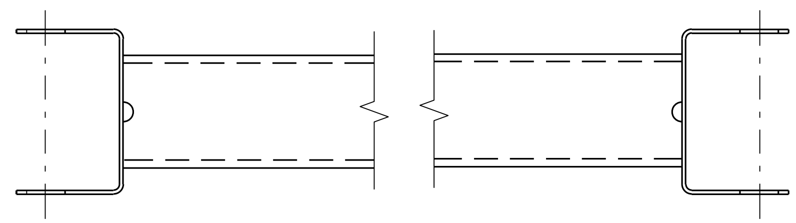
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

SDD 14B44 - 04a

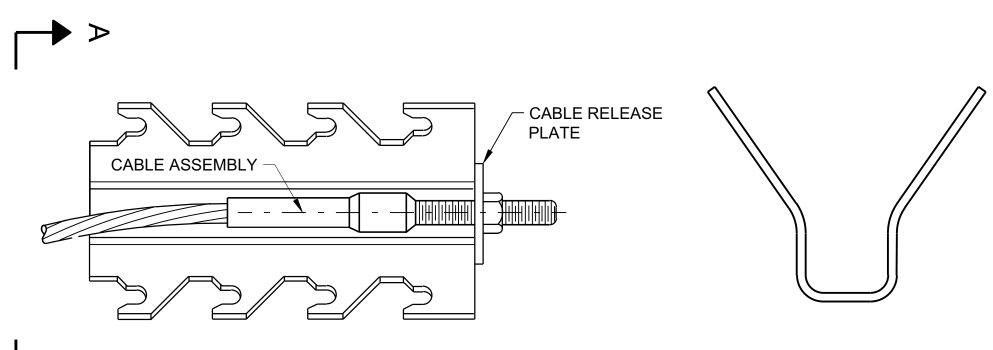
6

BILL OF MATERIALS

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



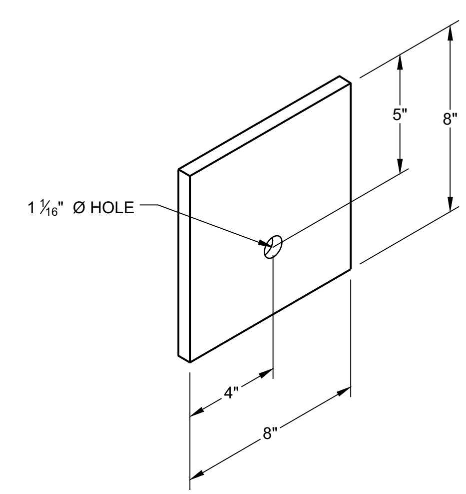
GENERIC GROUND STRUT 9 E



FRONT VIEW

SECTION A - A

GENERIC ANCHOR CABLE BOX 9 E

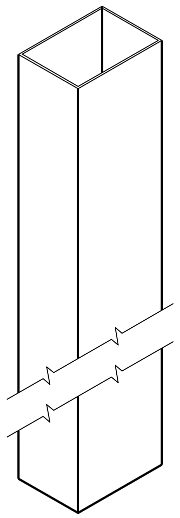


BEARING PLATE 6 E

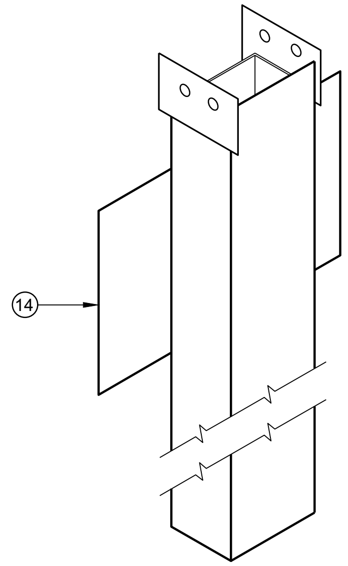
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

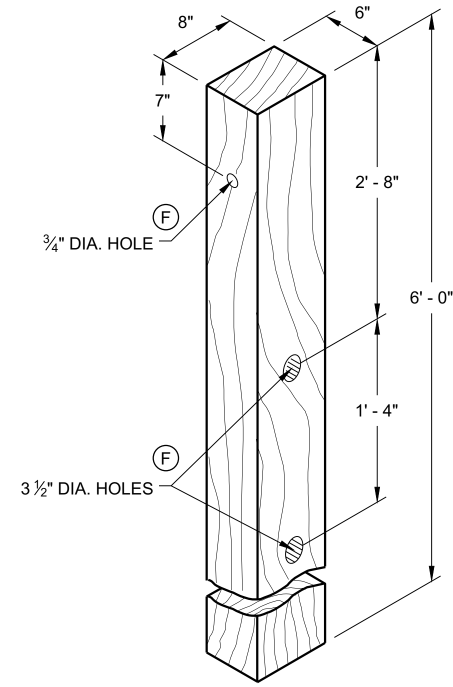
6
SDD 14B44 - 04b



UPPER POST NO. 1 ① Ⓔ

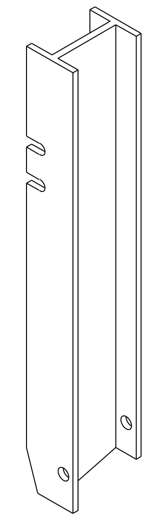


LOWER POST NO. 1 ② Ⓔ

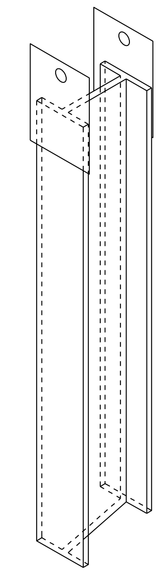


WOOD CRT POST ③ Ⓔ

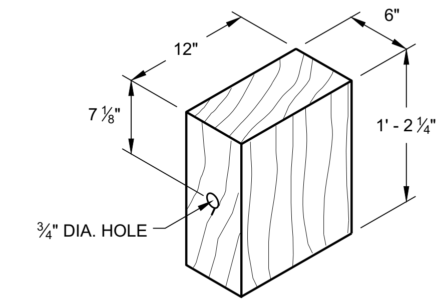
POSTS NUMBER 3-9



UPPER POST NO. 2 ⑮ Ⓔ



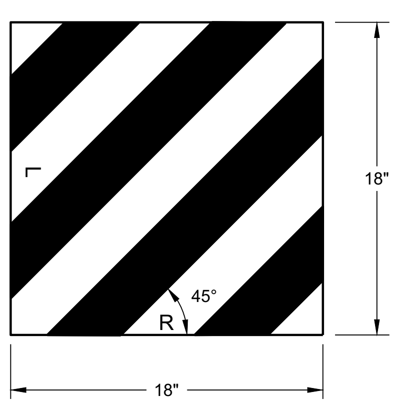
LOWER POST NO. 2 ⑯ Ⓔ



WOOD BLOCKOUT ④

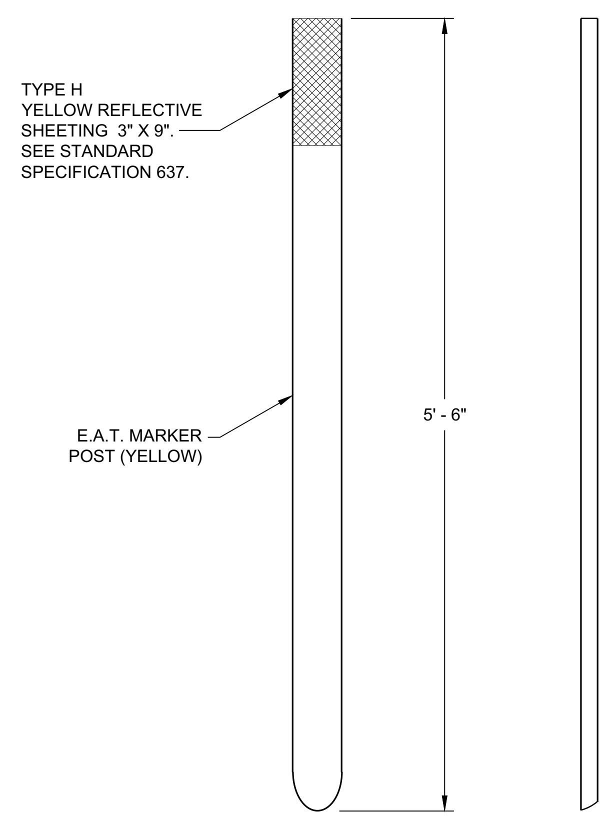
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

6



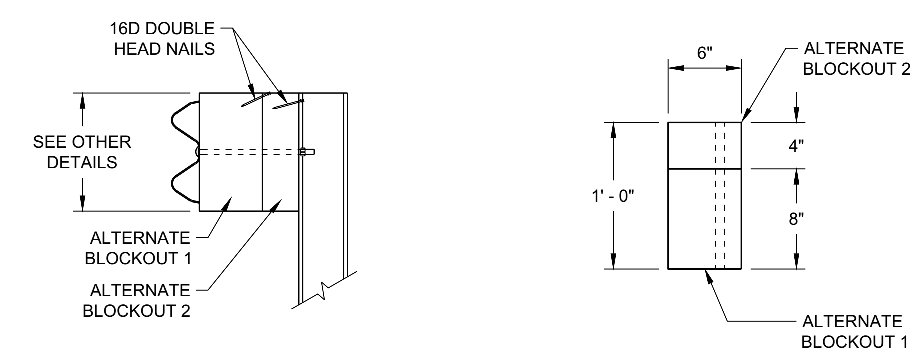
W5 - 59

REFLECTIVE SHEETING DETAIL Ⓔ



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST ⑬



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

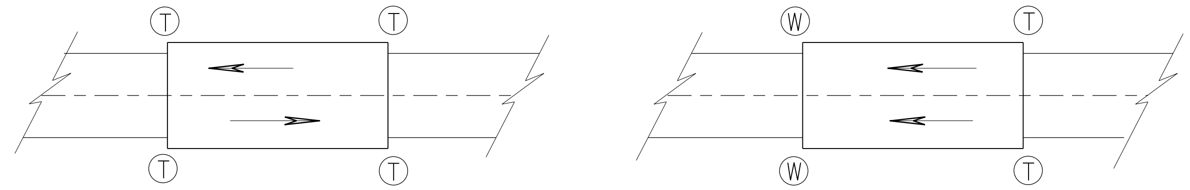
APPROVED

7/2018 — DATE

/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR

FHWA

SDD 14B44 - 04c



(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

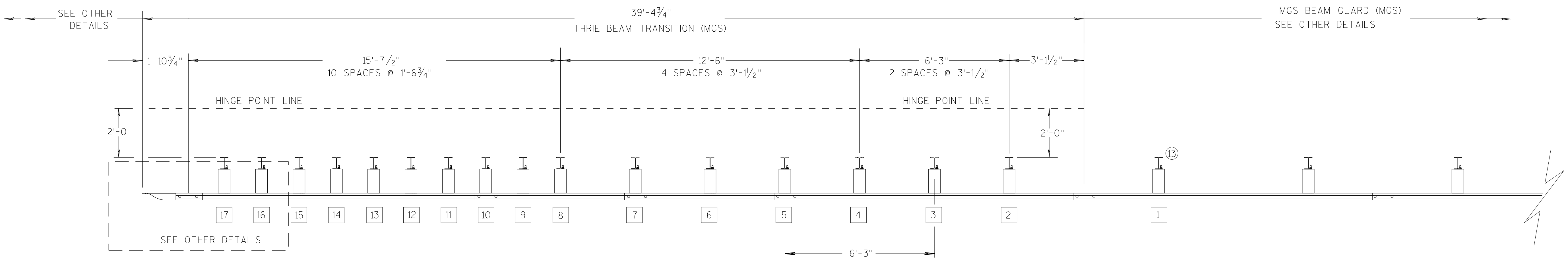
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

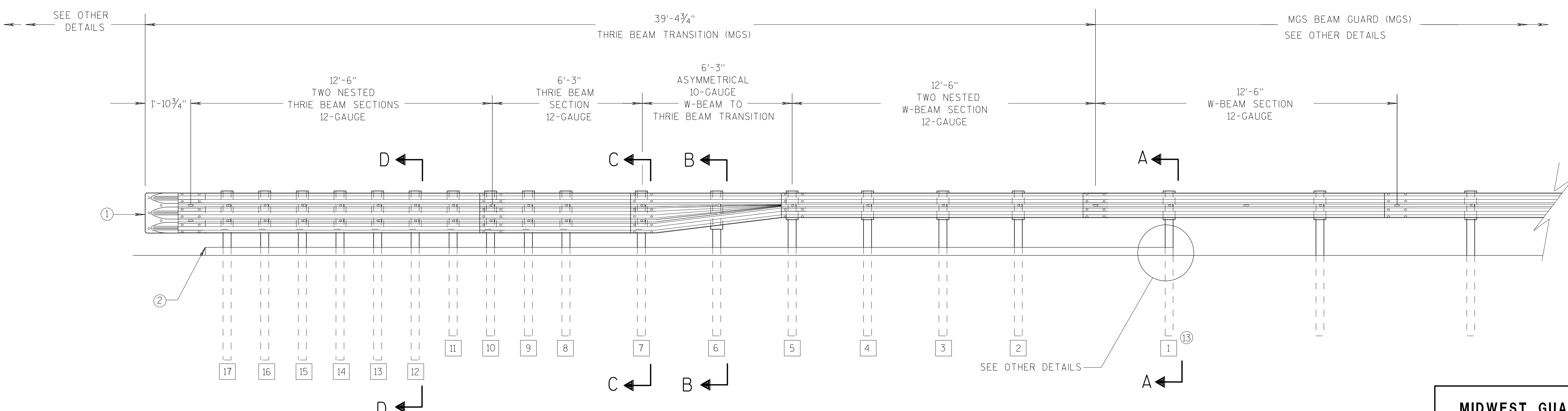
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPOR

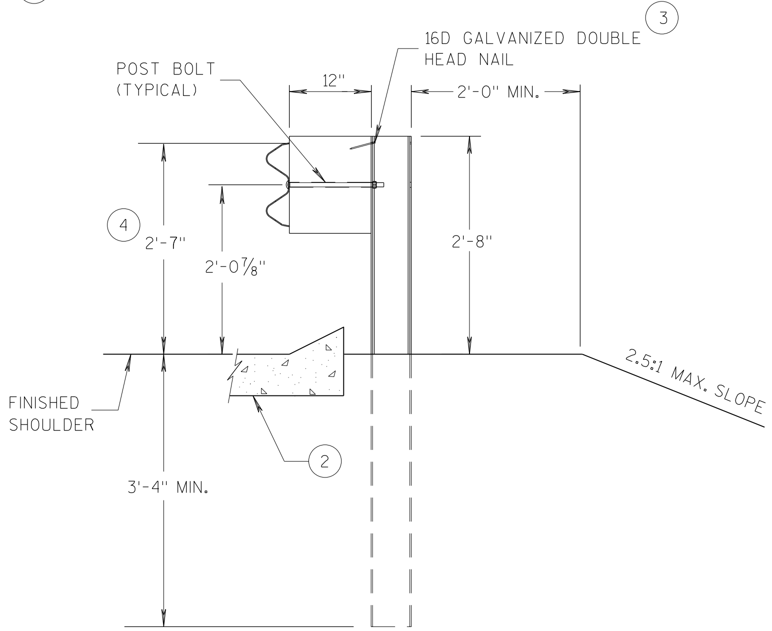
GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

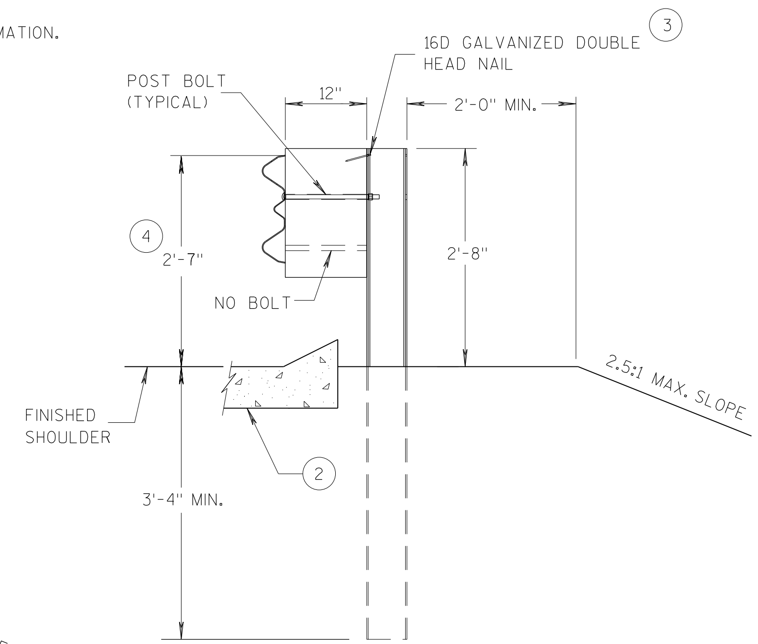
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



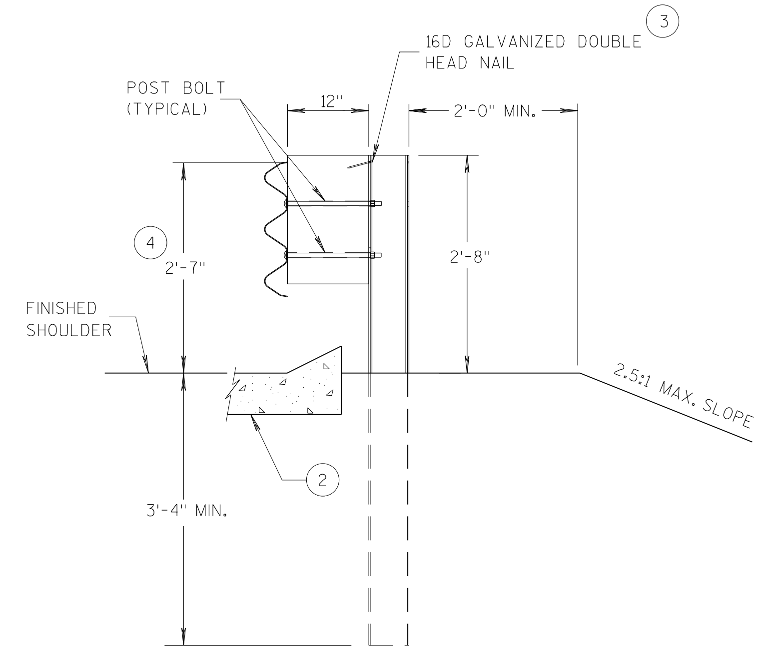
SECTION A-A (13)

POSTS 1-5



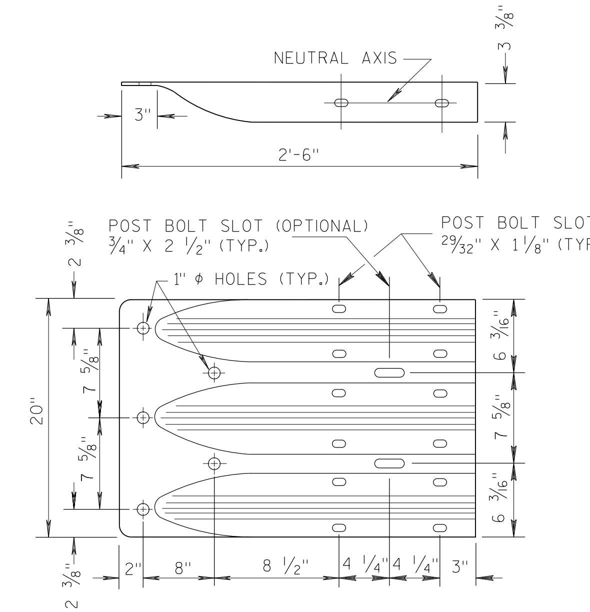
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM
TERMINAL CONNECTOR

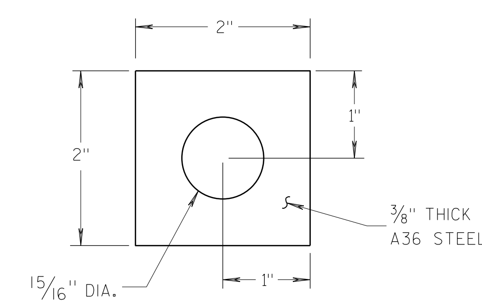
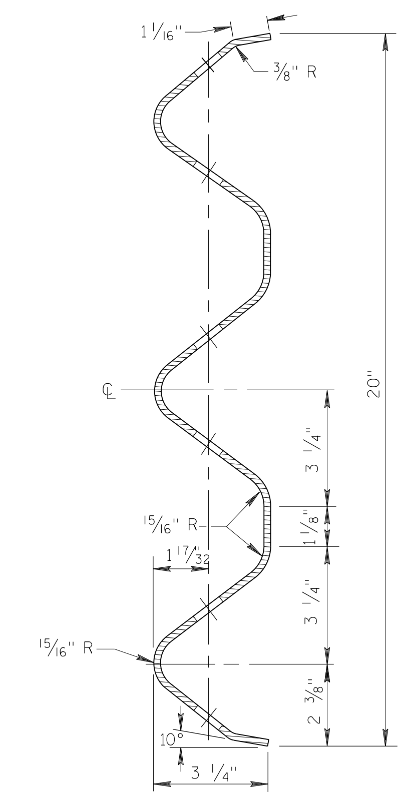
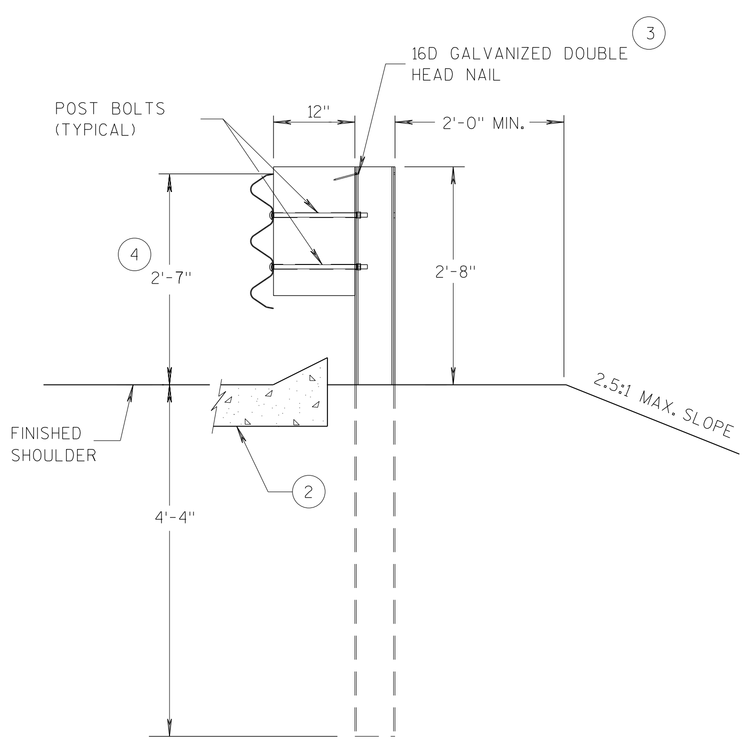


PLATE WASHER DETAIL

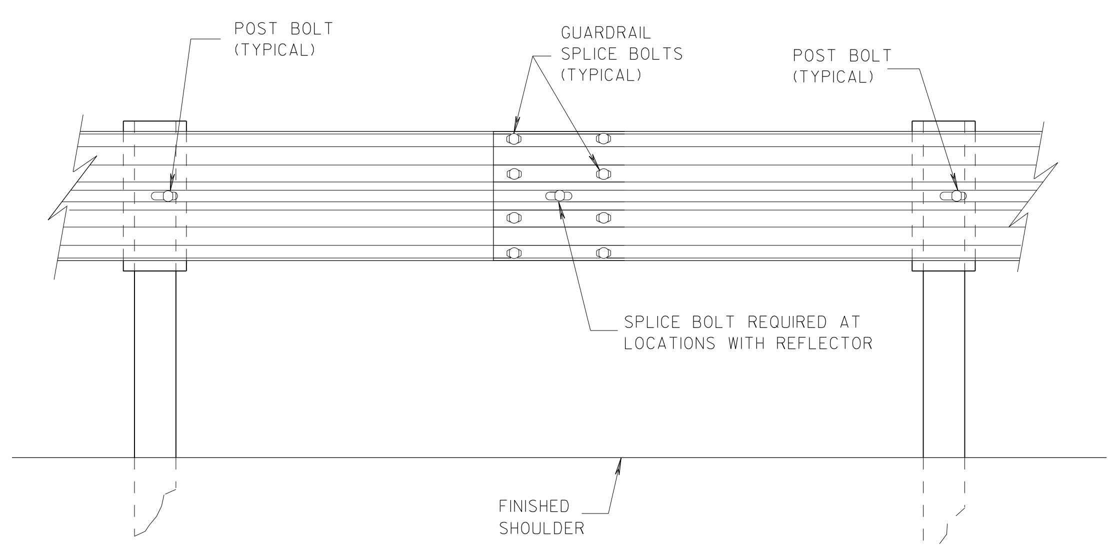


SECTION THRU THRIE
BEAM RAIL ELEMENT



SECTION D-D

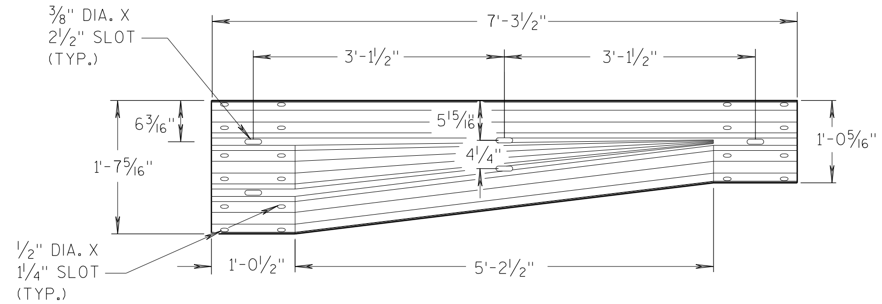
POSTS 12-17



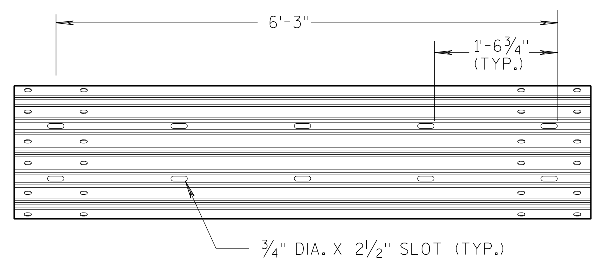
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

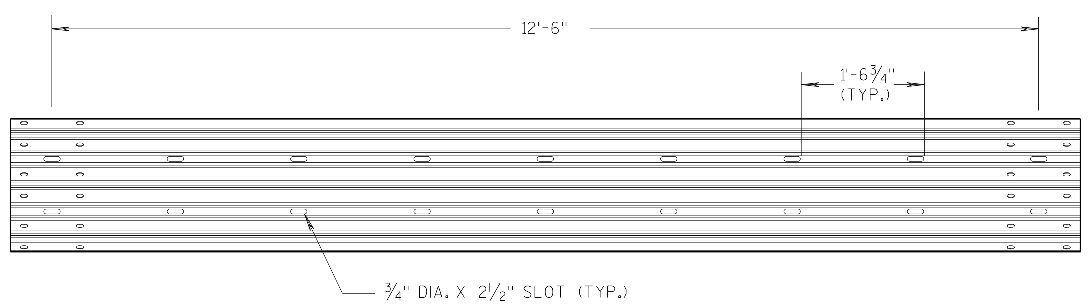
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR



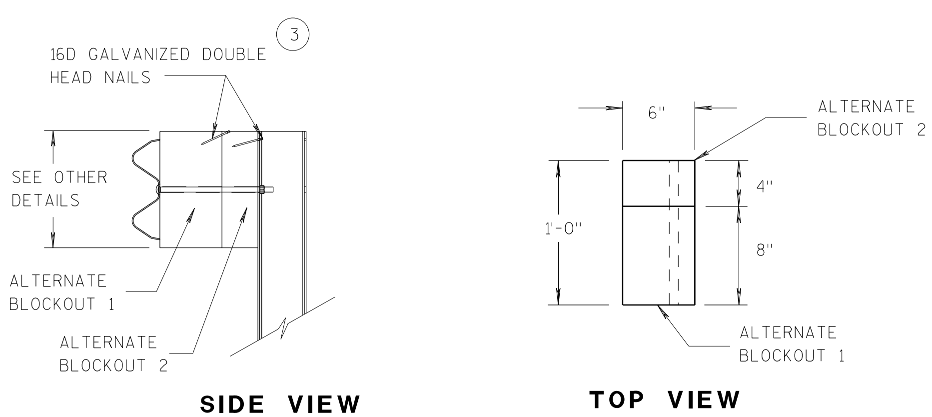
W-BEAM TO THRIE BEAM TRANSITION SECTION



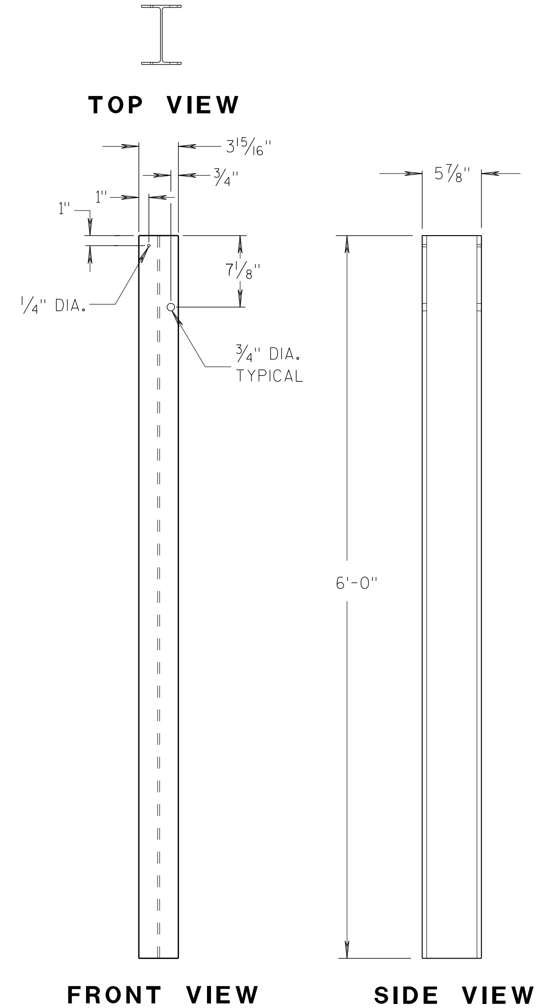
6'-3" THRIE BEAM SECTION



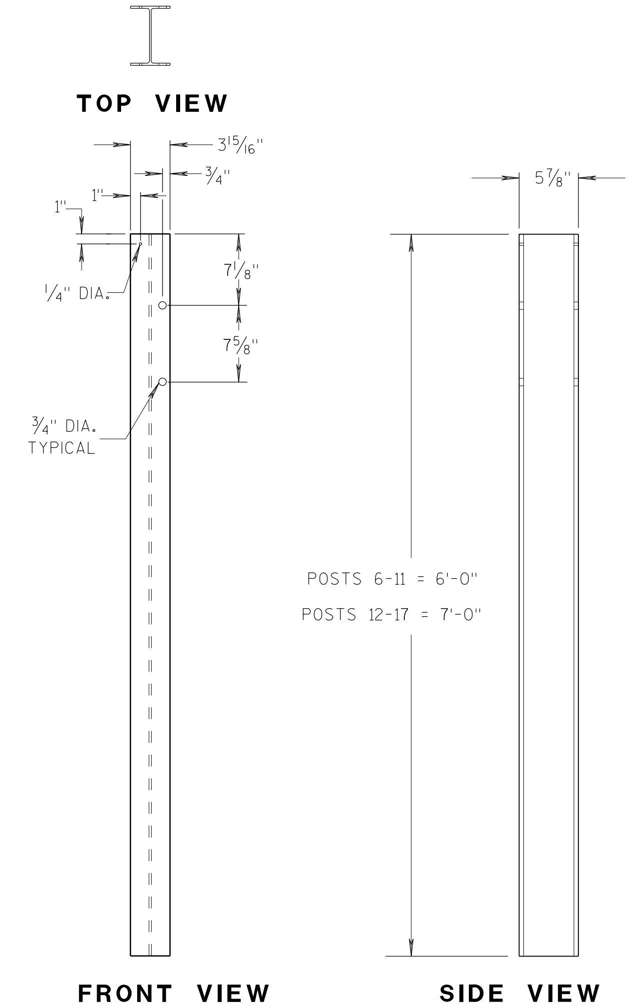
12'-6" THRIE BEAM SECTION



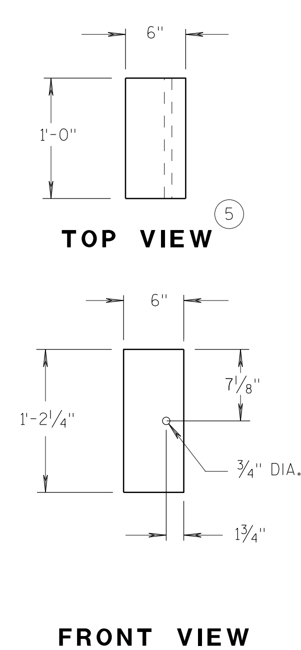
ALTERNATE WOOD BLOCKOUT DETAIL



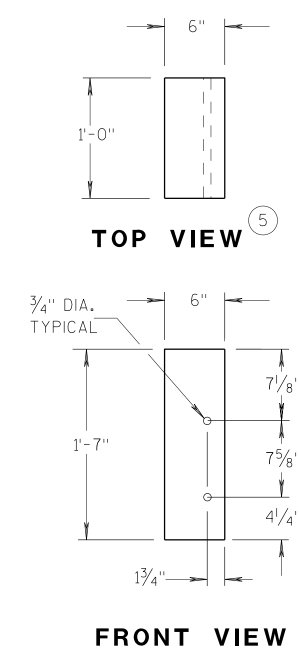
STEEL POSTS 1-5 (13)



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

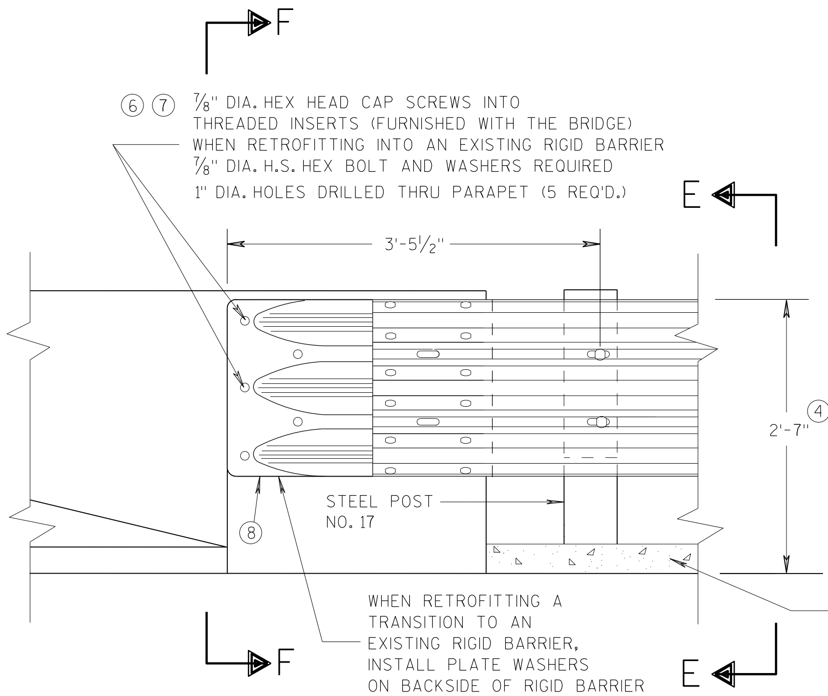
(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

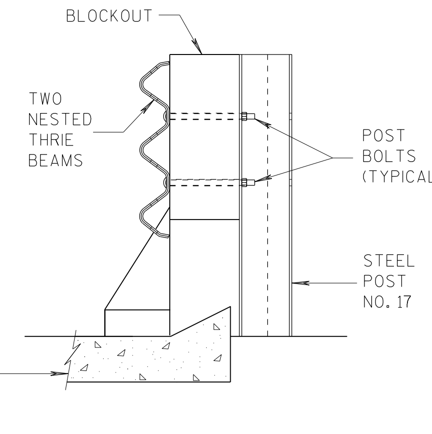
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



FRONT VIEW



SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

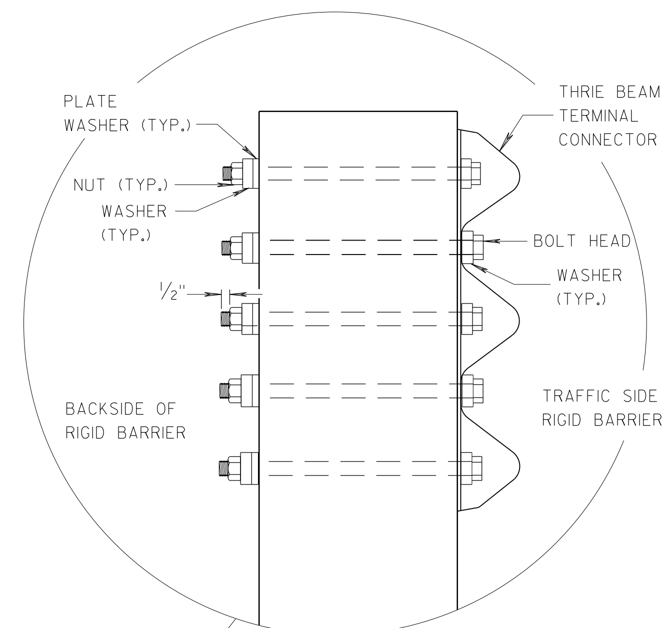
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

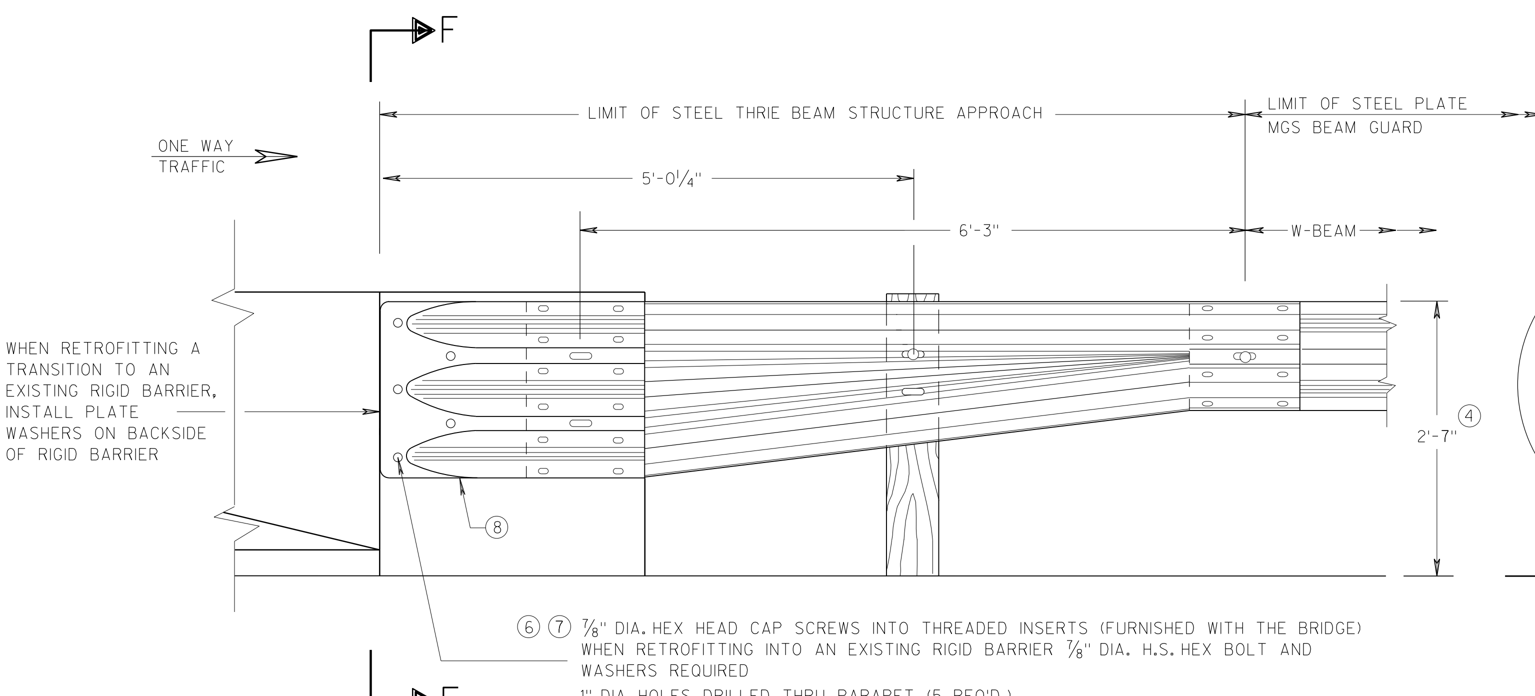
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

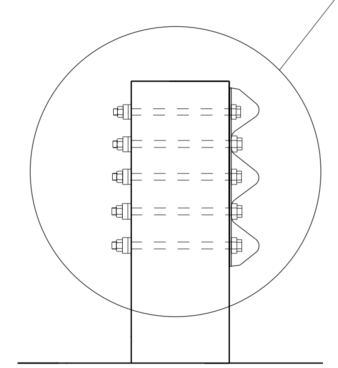
⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

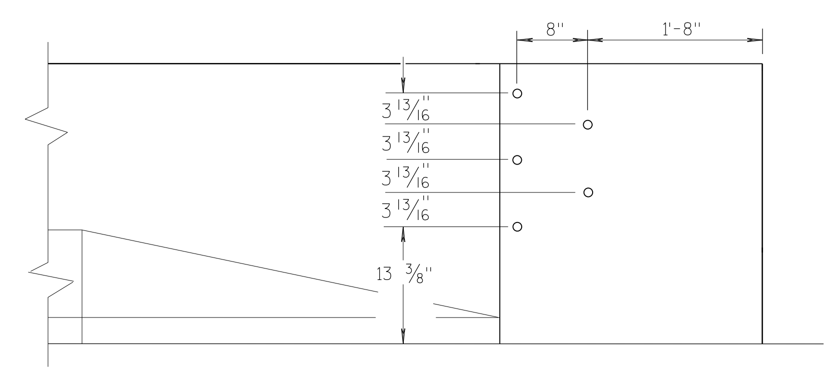
⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".







SECTION F-F



DRILL HOLE LOCATION

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

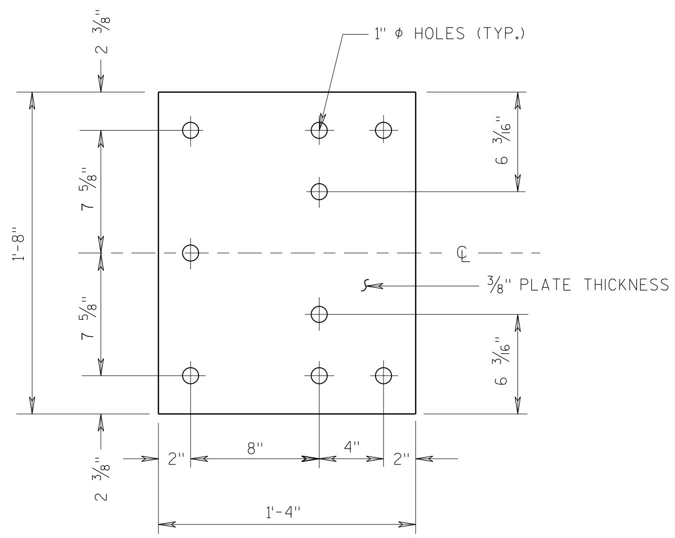
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED 07/2018 DATE /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR FHWA

6

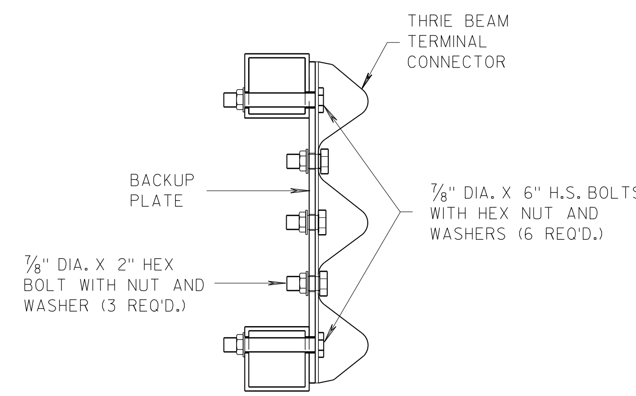
6

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

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



BACK-UP PLATE DETAIL

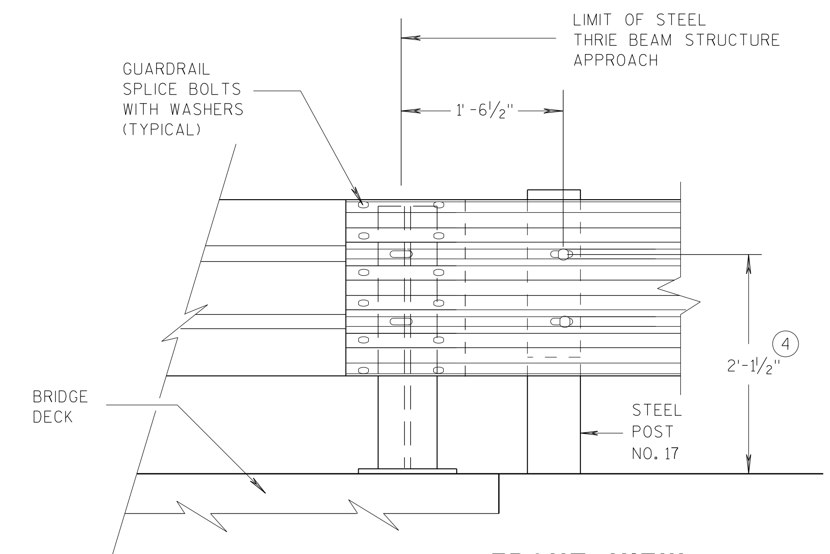


SECTION J-J

GENERAL NOTES

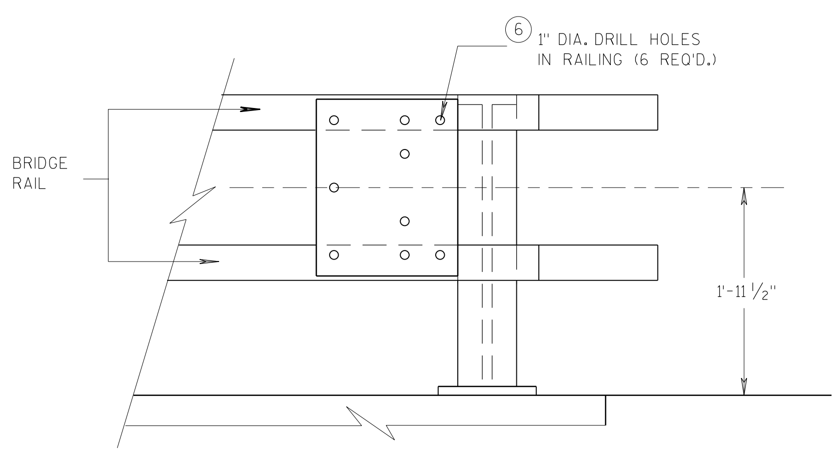
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

(6) DRILLING HOLES THROUGH THE PARPRET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

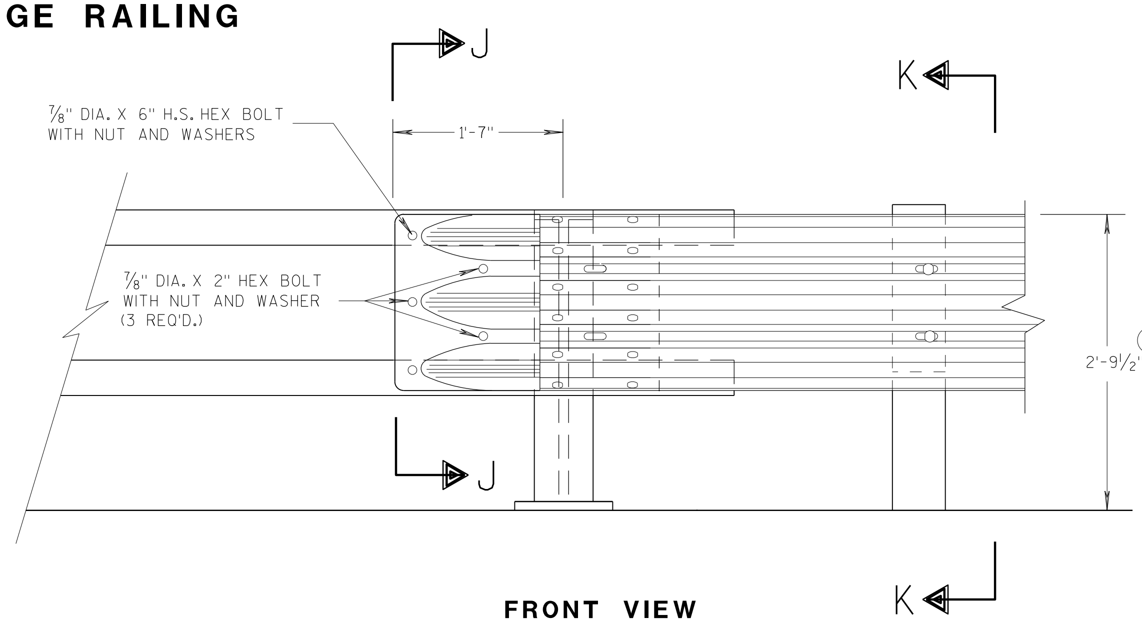


FRONT VIEW

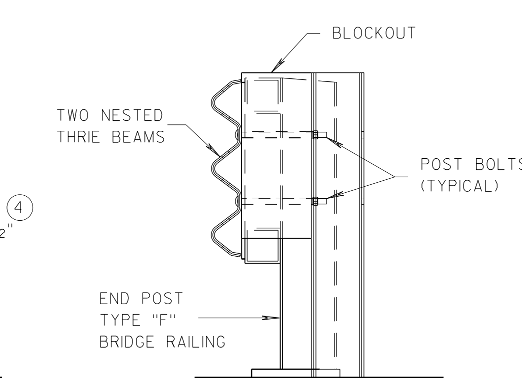
THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW



SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

6

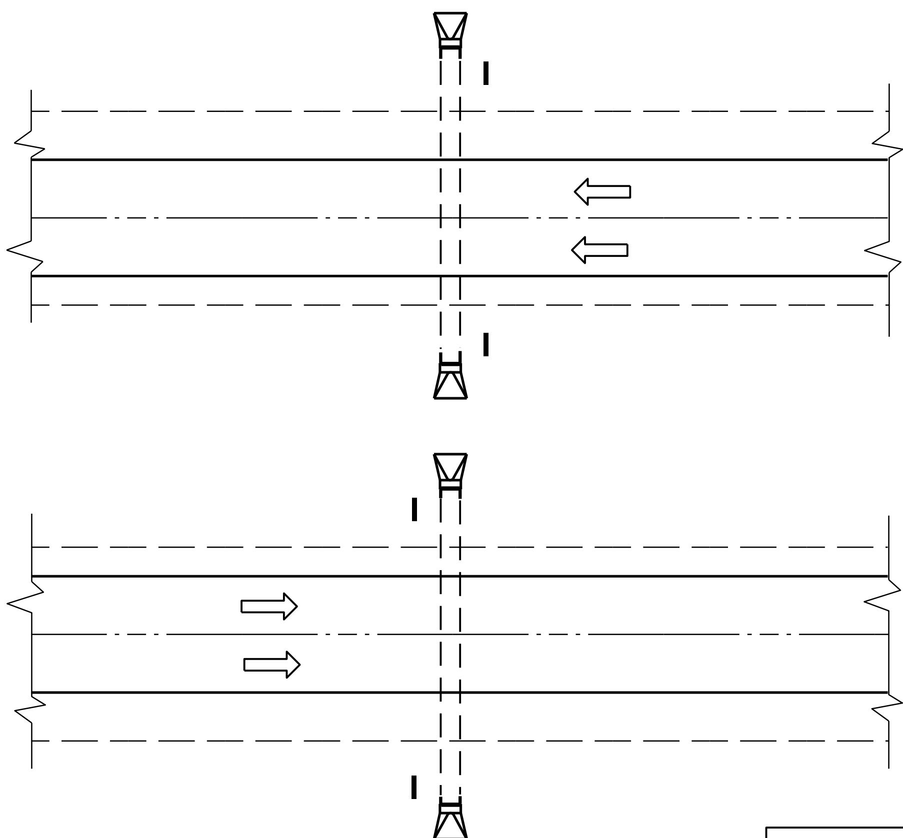
6

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor 210 ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

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

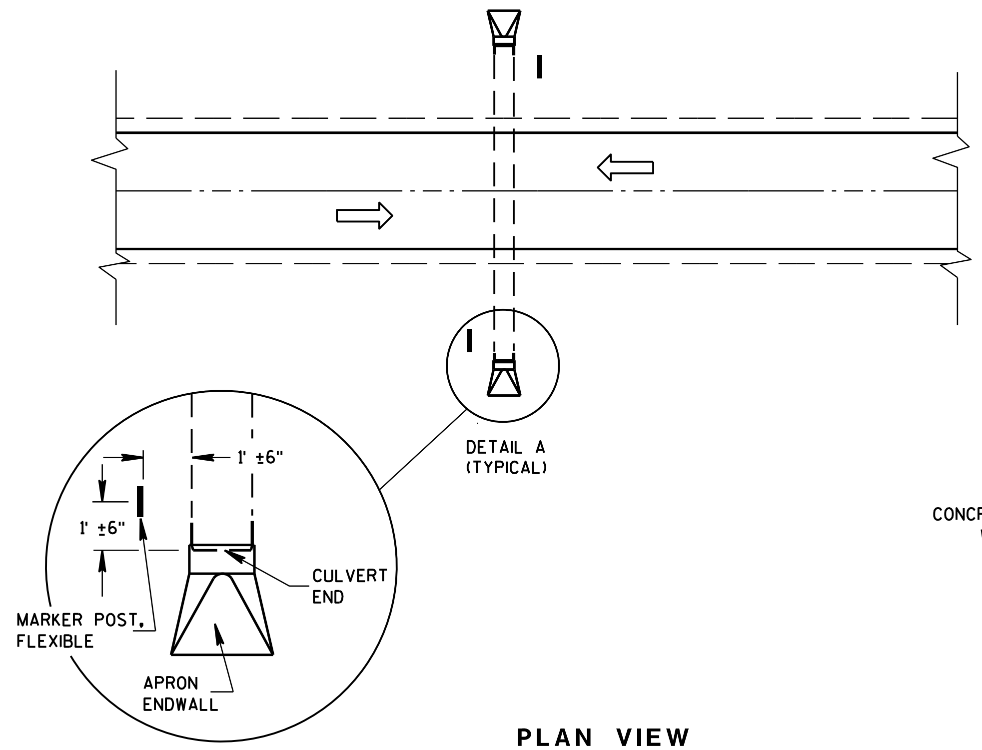
GENERAL NOTES

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

DIVIDED HIGHWAY

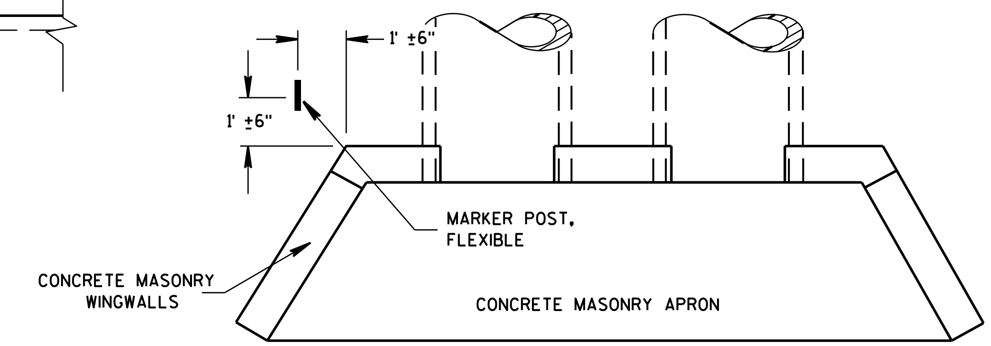


DETAIL A
(TYPICAL)

PLAN VIEW

UNDIVIDED HIGHWAY

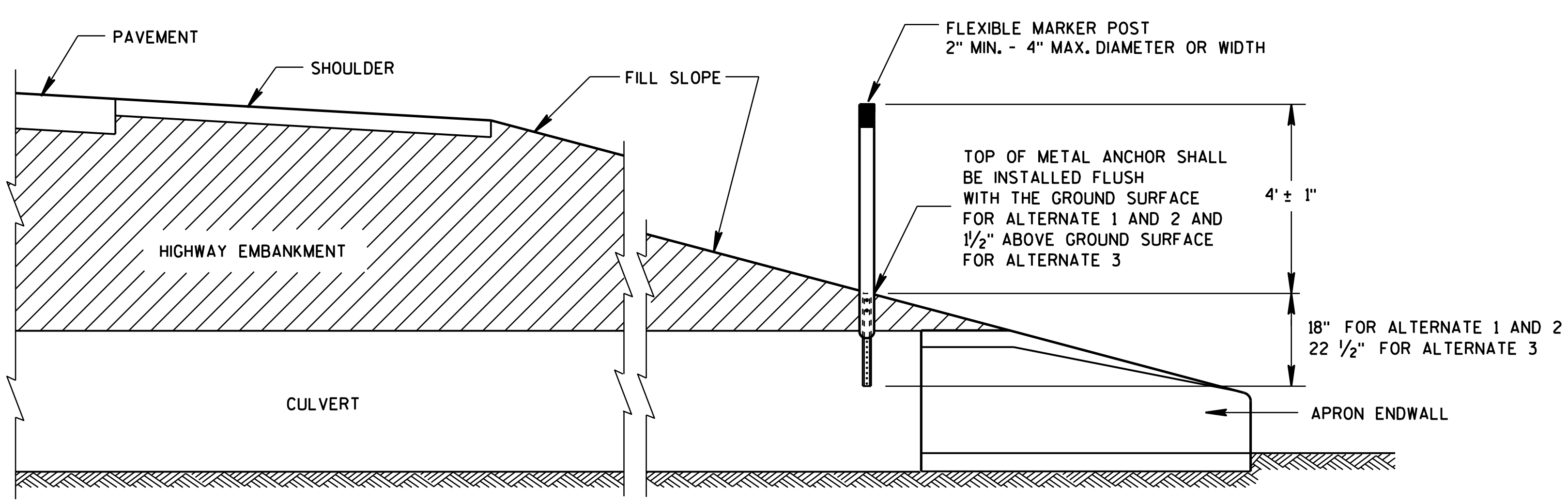
I	MARKER POST, FLEXIBLE
⇨	DIRECTION OF TRAFFIC FLOW



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

6

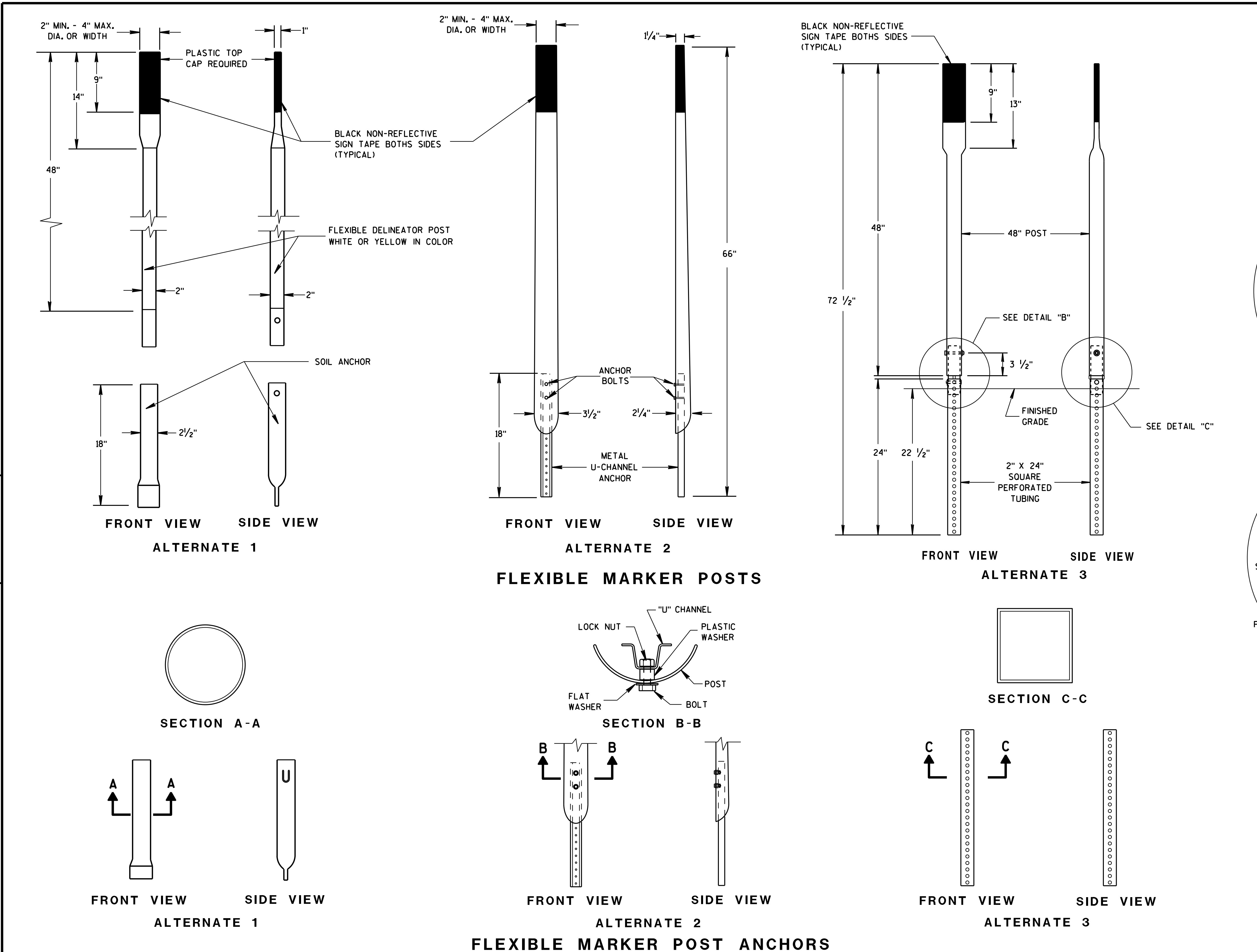
6

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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



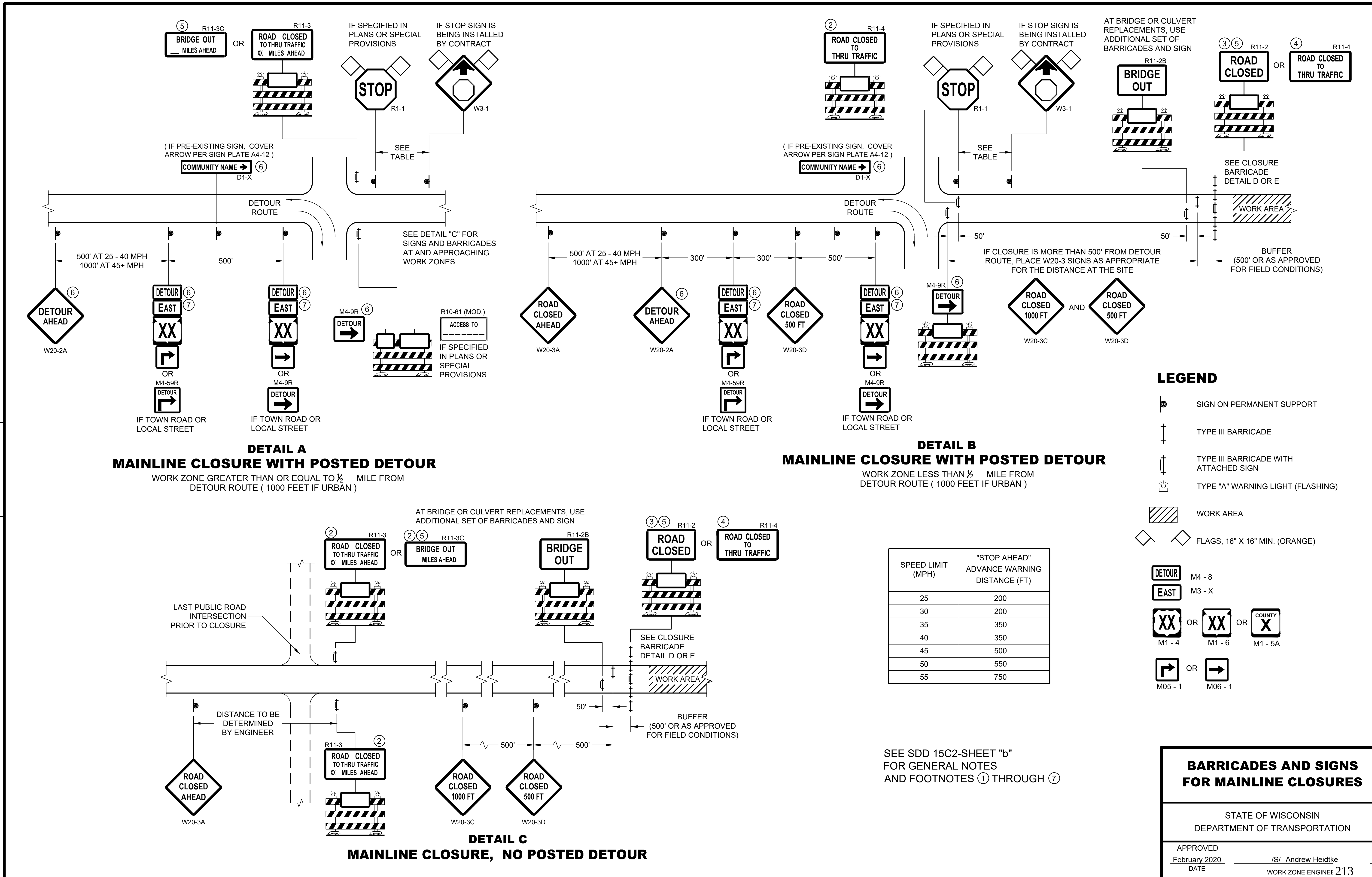
FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/1/2012	/S/ Travis Feltes
DATE	STATE TRAFFIC ENGINEER

FHWA



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

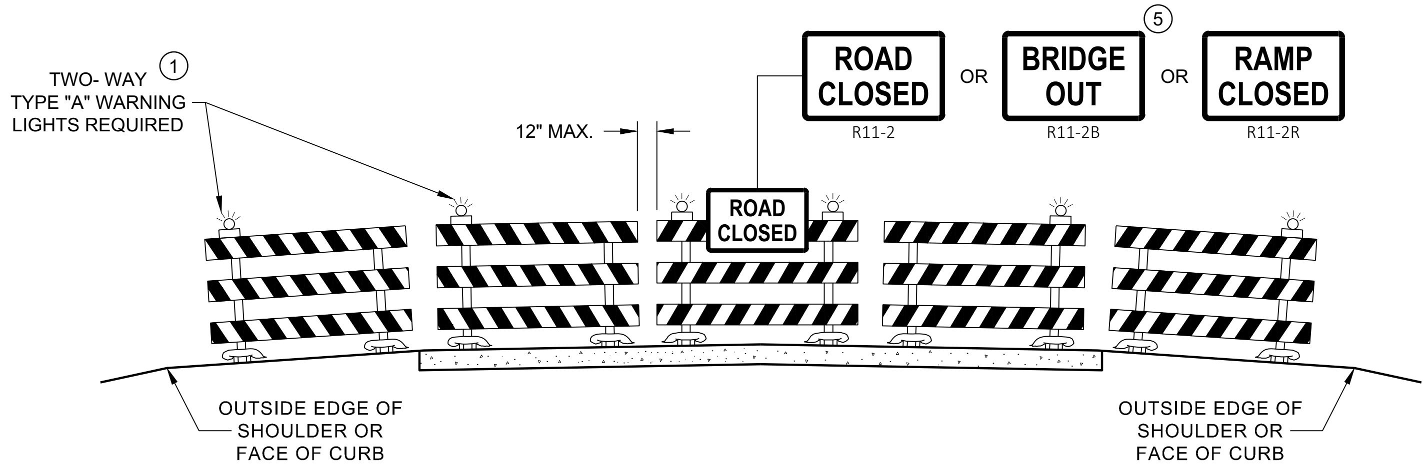
SEE SDD 15C2-SHEET "b" FOR GENERAL NOTES AND FOOTNOTES 1 THROUGH 7

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

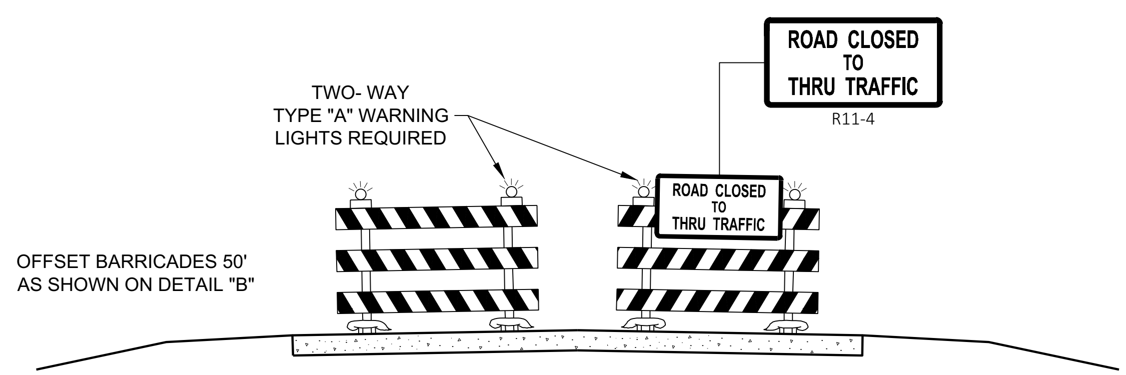
SDD 15C02 - 08a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
SDD 15C02 - 08b

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

LEGEND

SIGN ON PERMANENT SUPPORT

WORK AREA

DETOUR M4 - 8

EAST M3 - X

XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A

M05 - 1 OR M06 - 1 OR M06 - 1

GENERAL NOTES

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

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

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

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

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

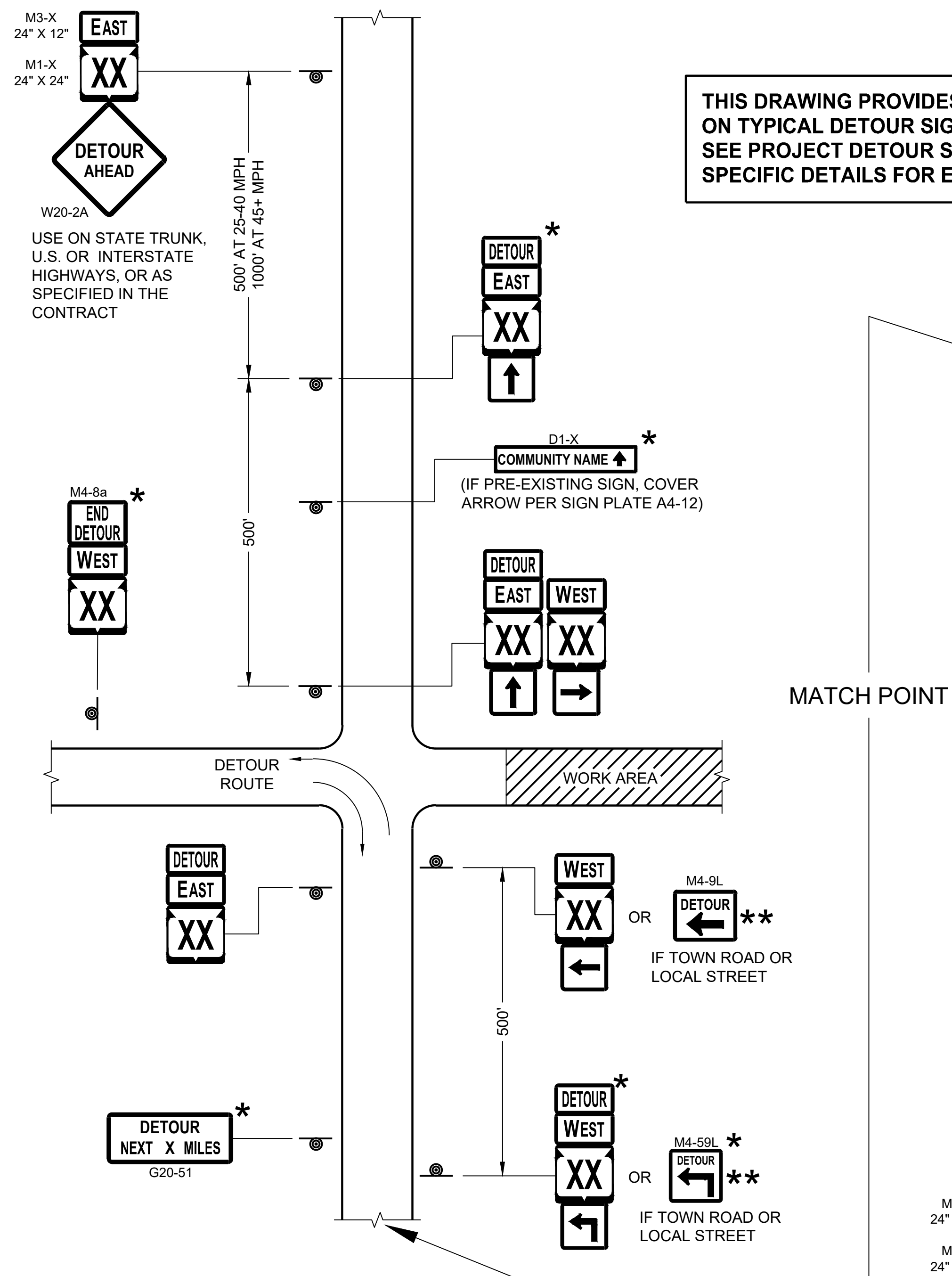
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

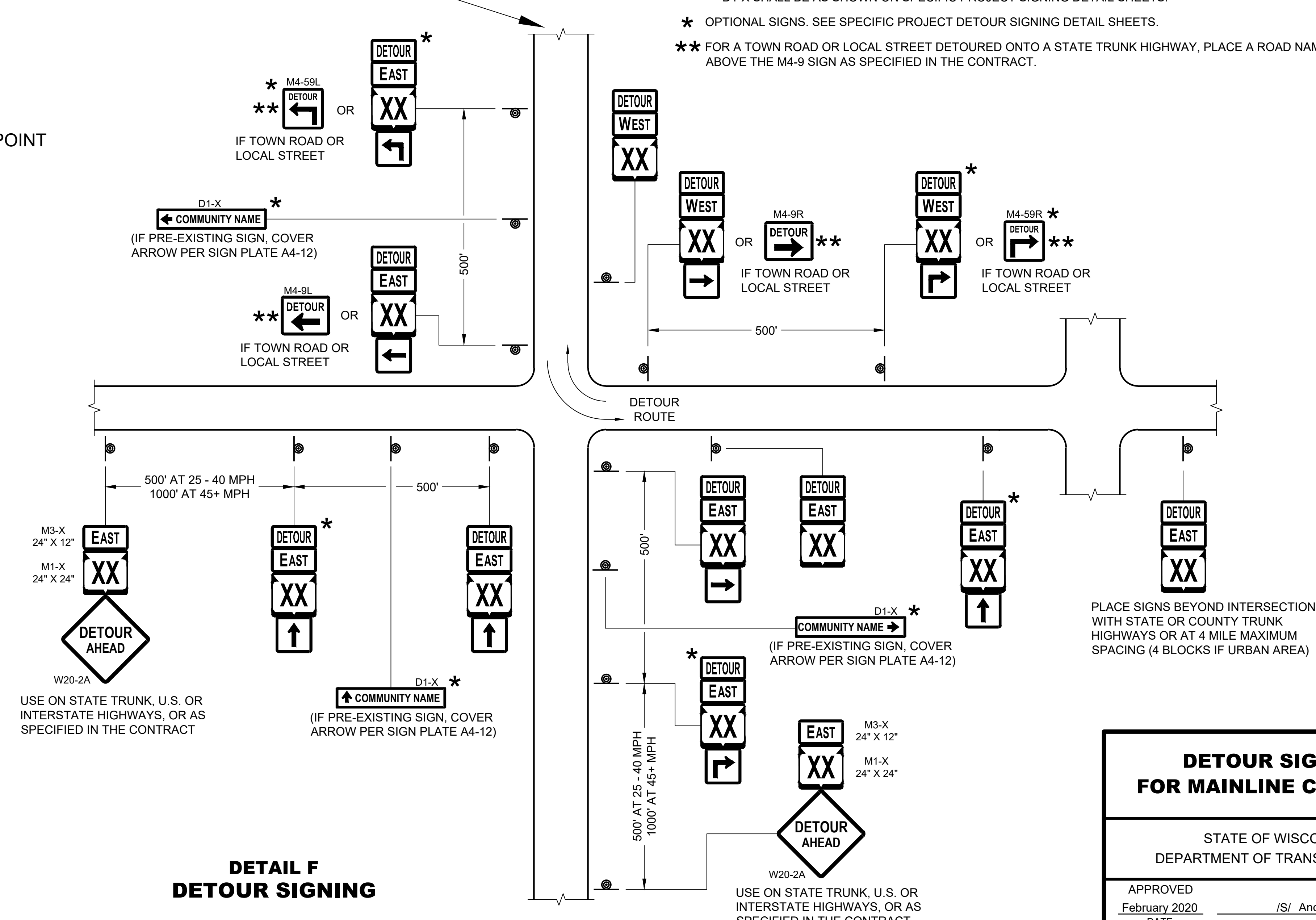
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



MATCH POINT



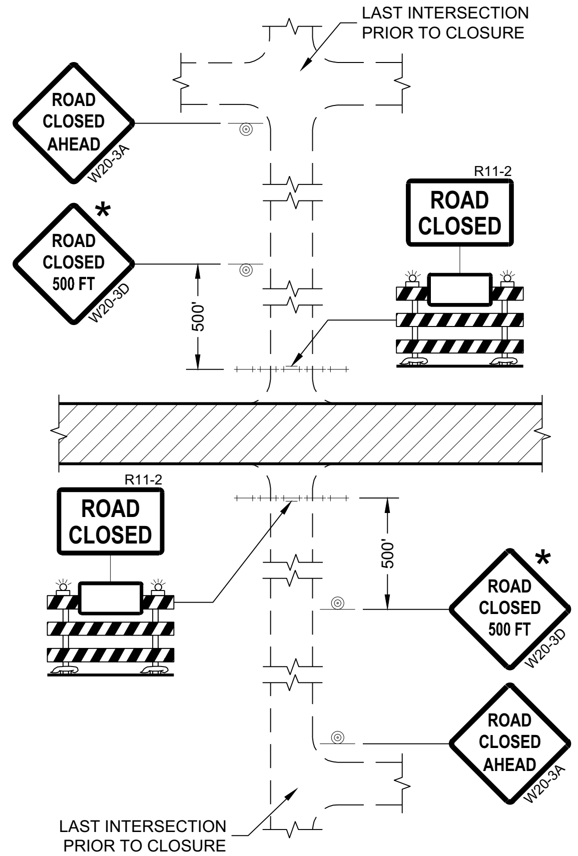
SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

DETAIL F
DETOUR SIGNING

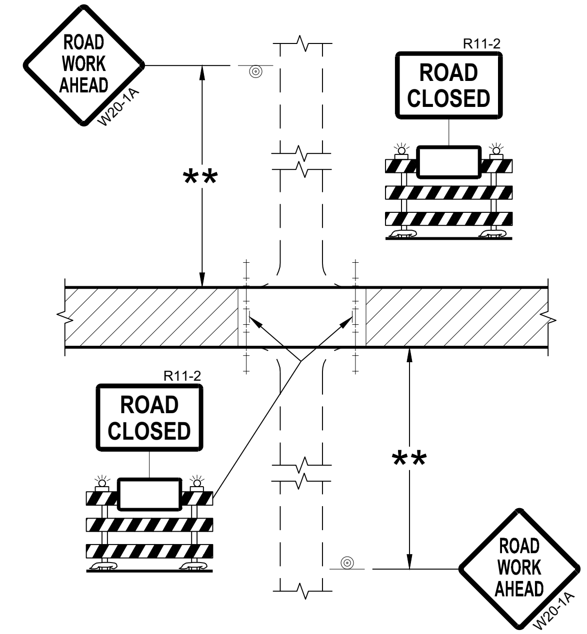
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

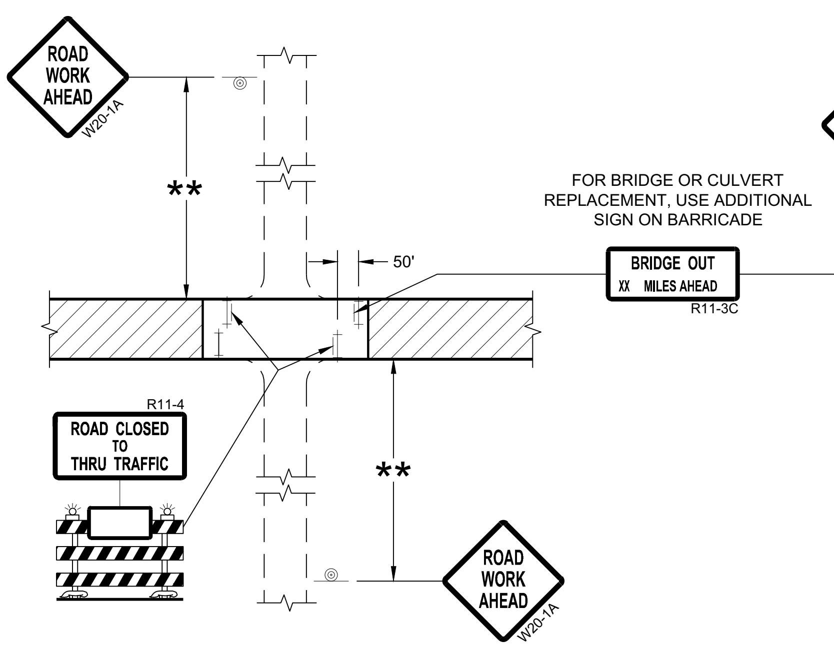
APPROVED
February 2020 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA



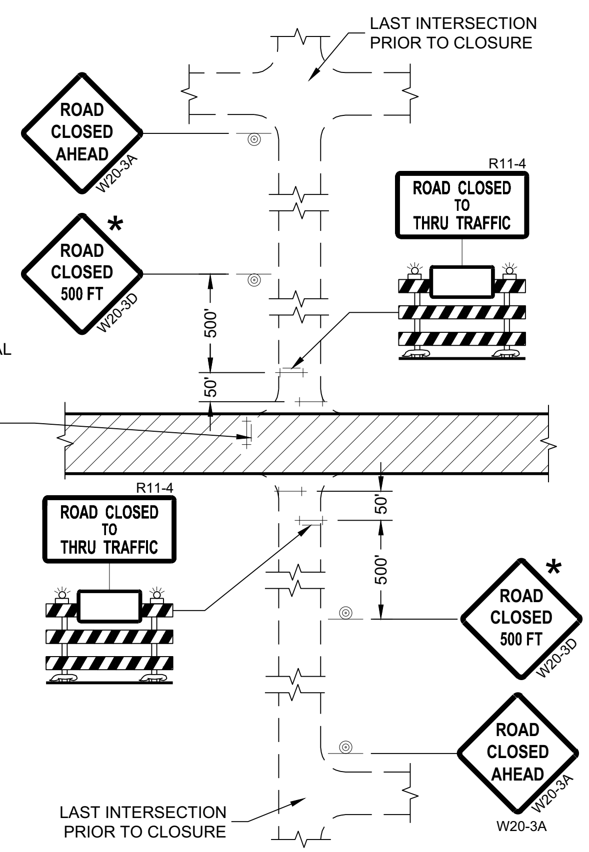
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

* OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.

** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

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

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

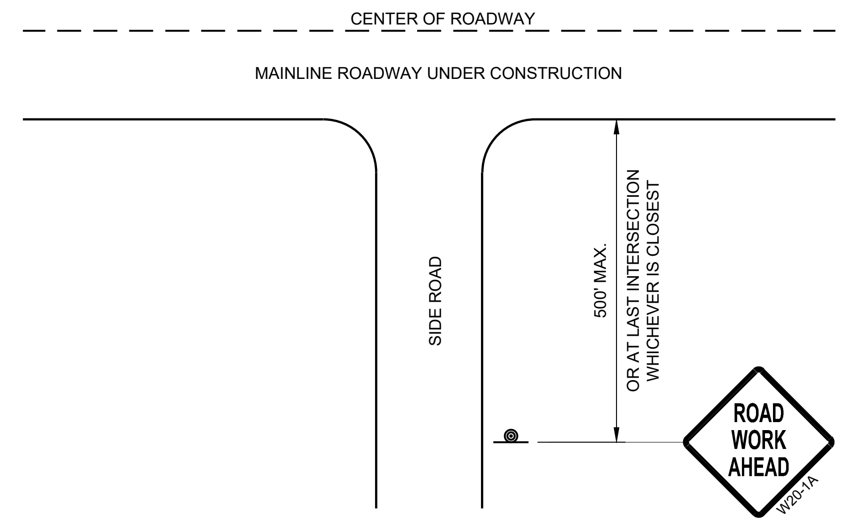
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS

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



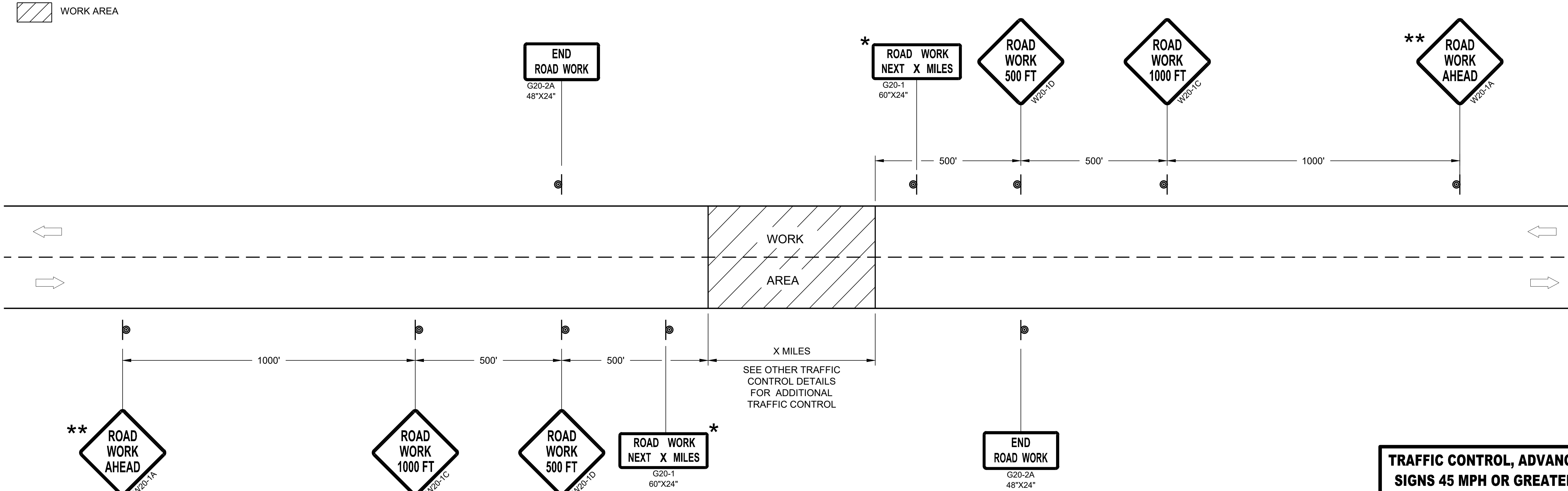
TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

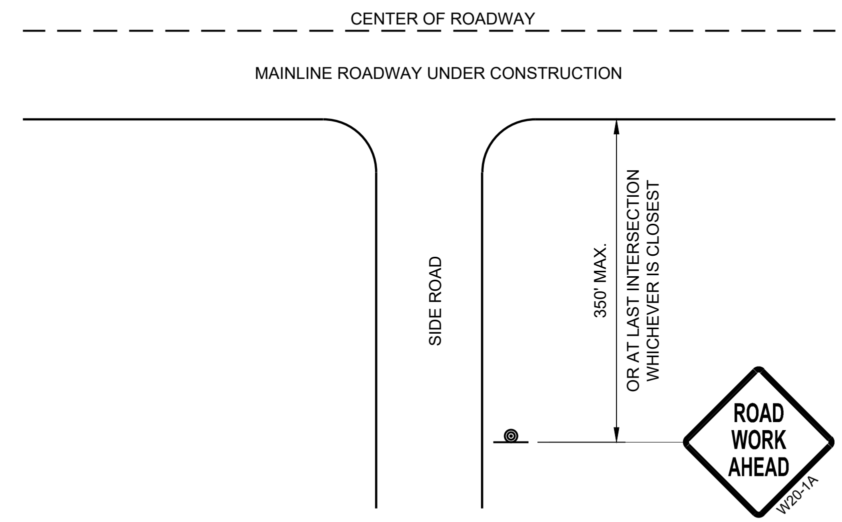
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

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

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

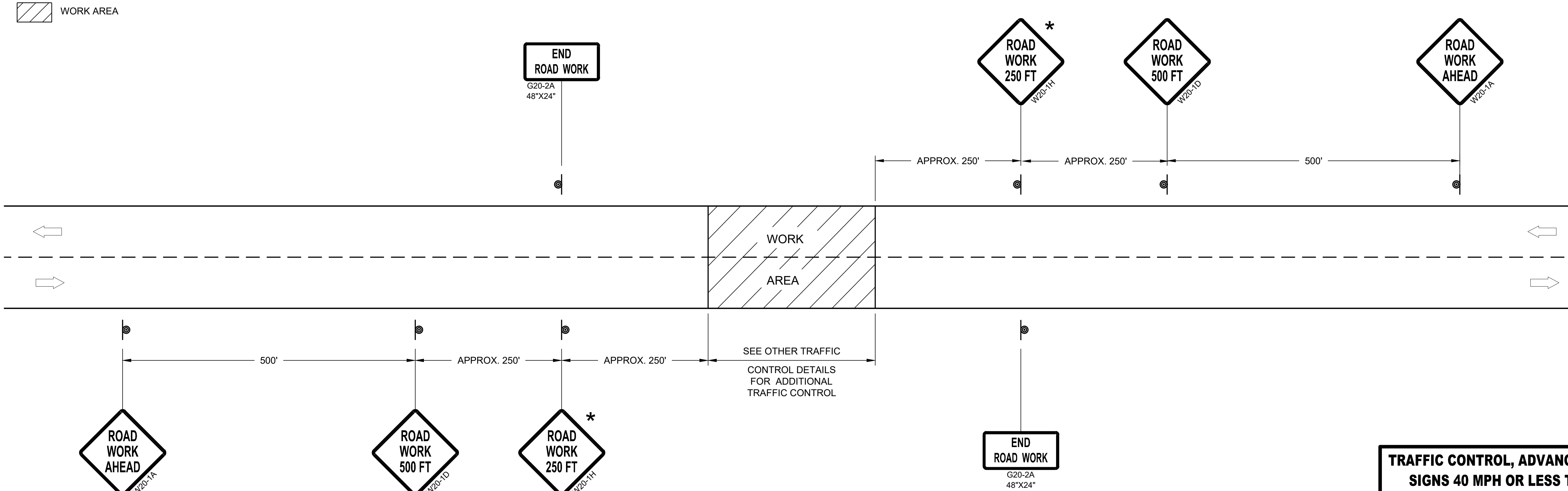
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

LEGEND

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



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

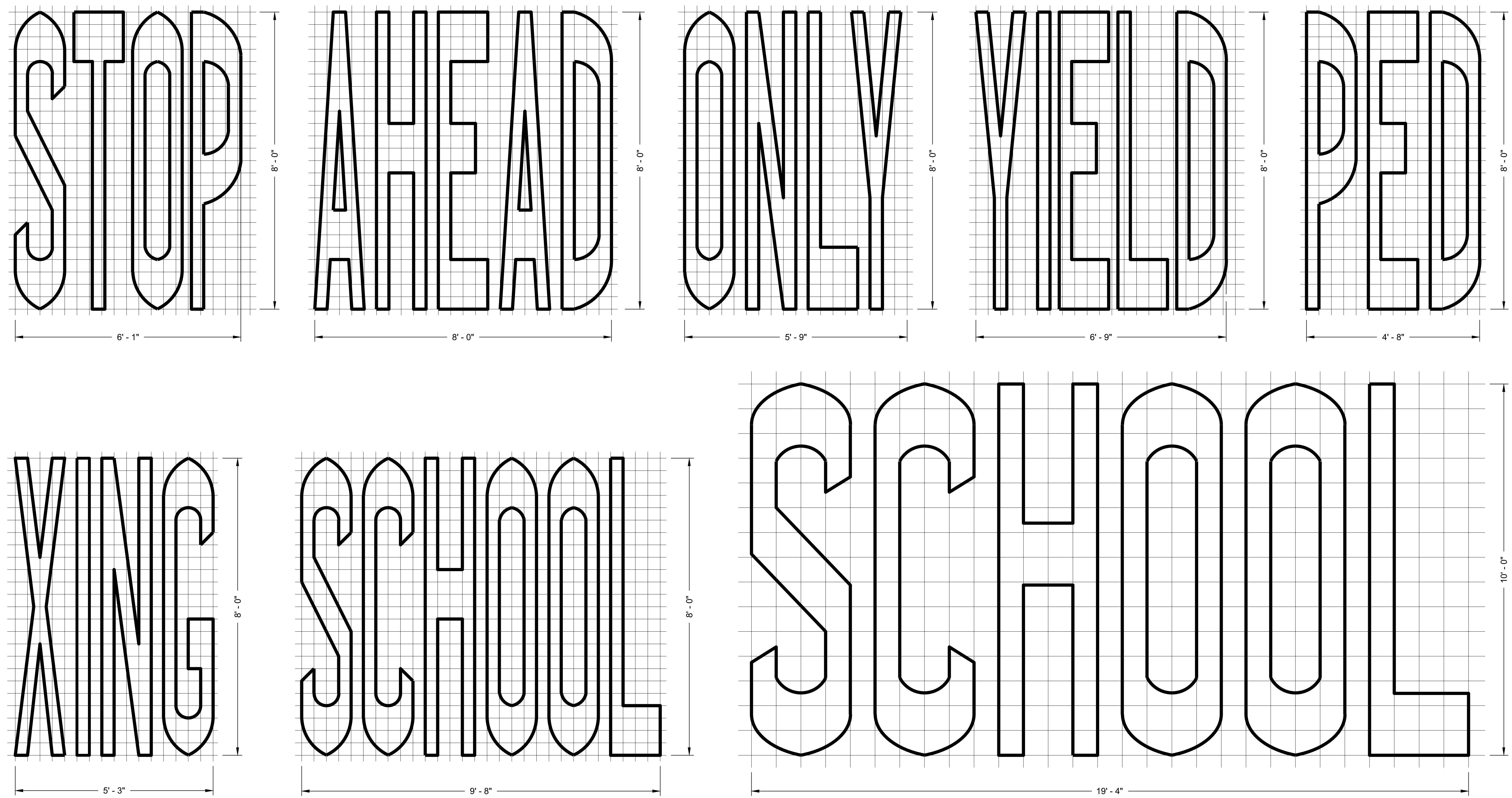
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 MPH OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

SDD 15C05 - 05



SINGLE LANE

TWO - LANE

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 WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

November 2019 — DATE

/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

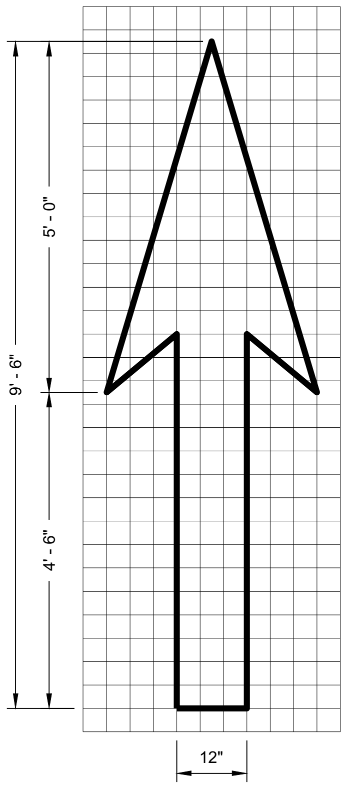
FHWA

6

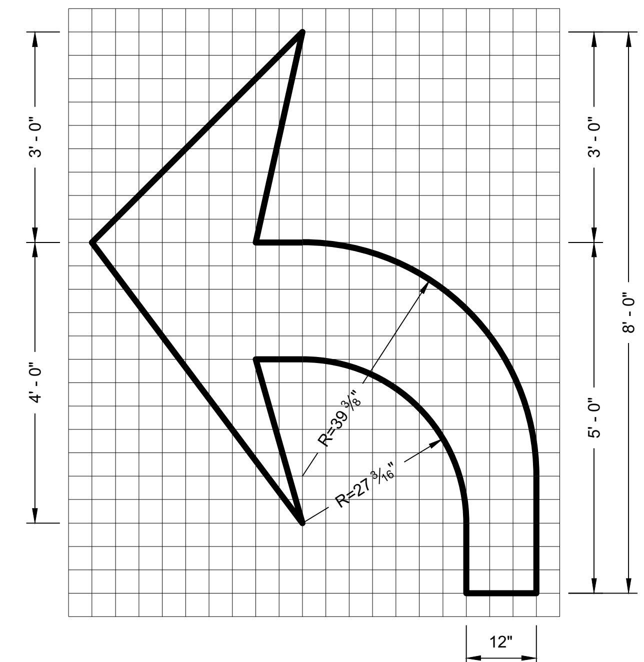
SDD 15C07 - 15b

GENERAL NOTES

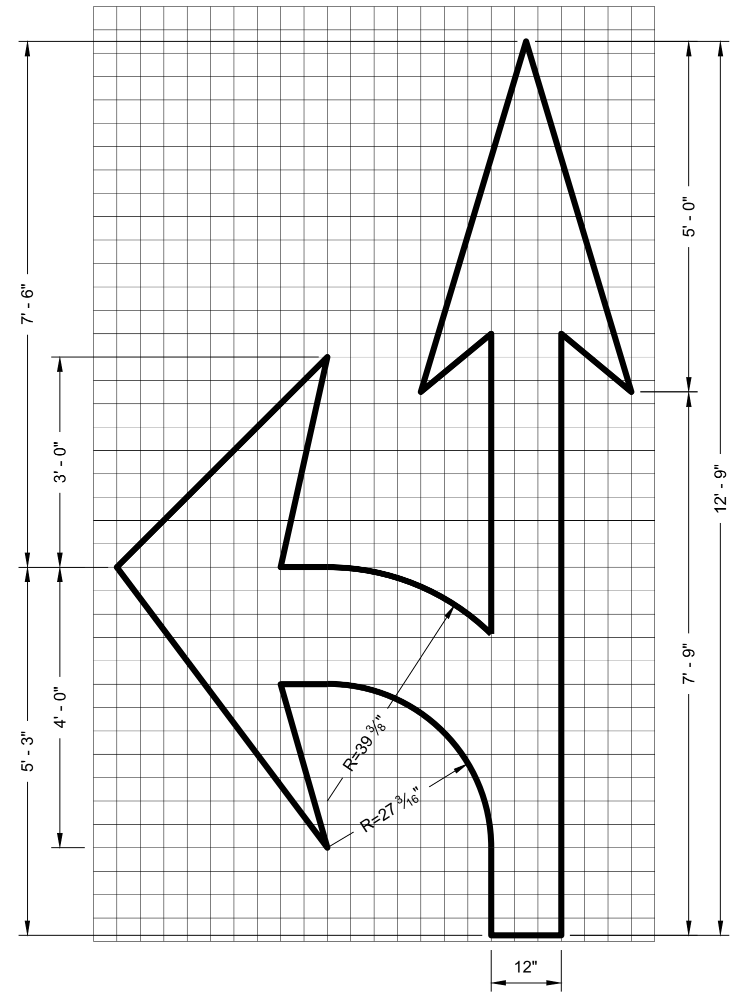
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



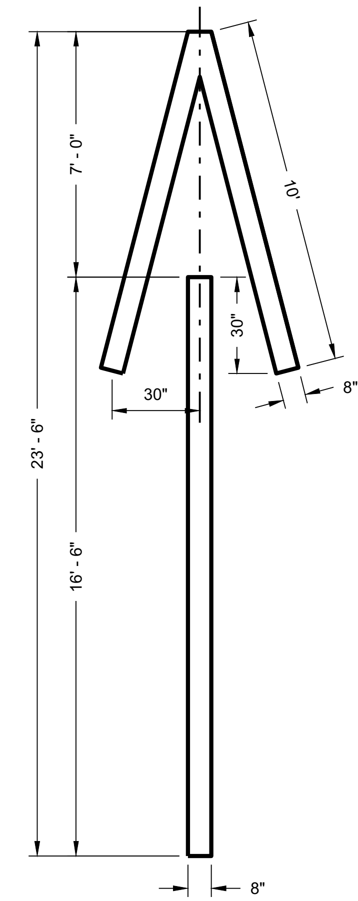
TYPE 1



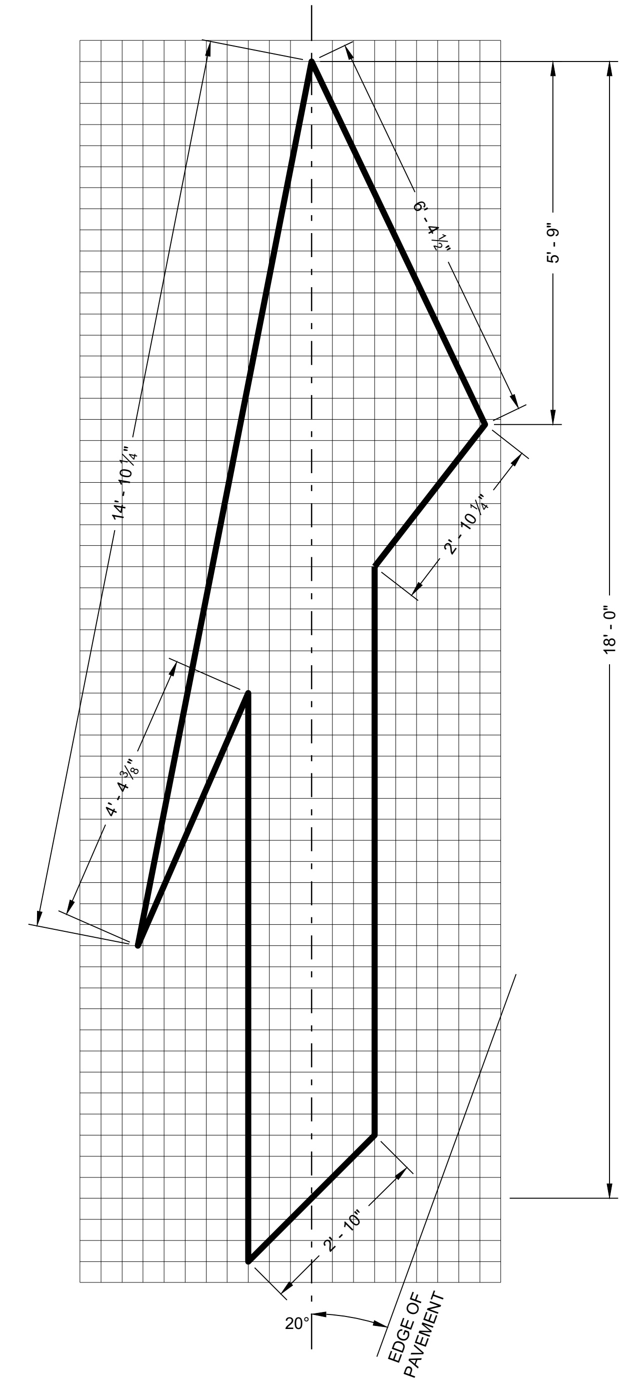
TYPE 2



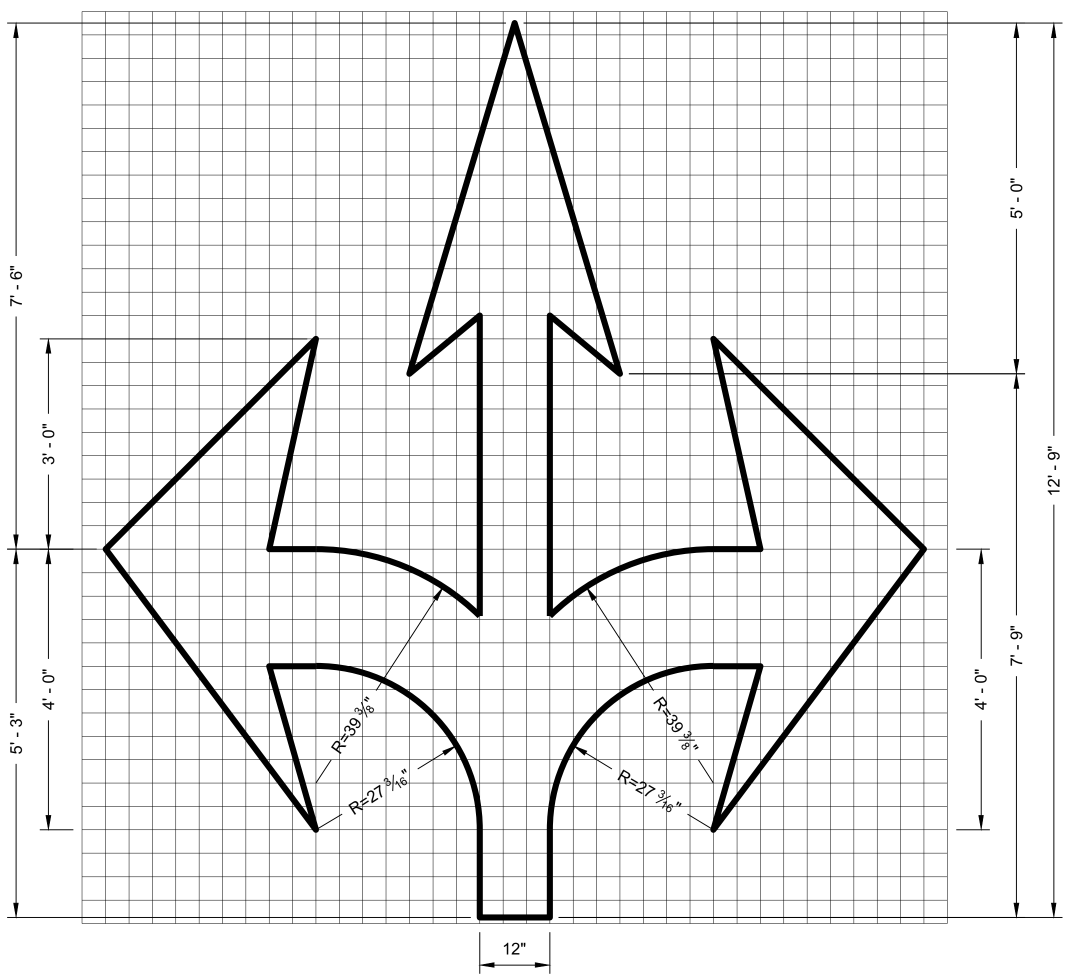
TYPE 3



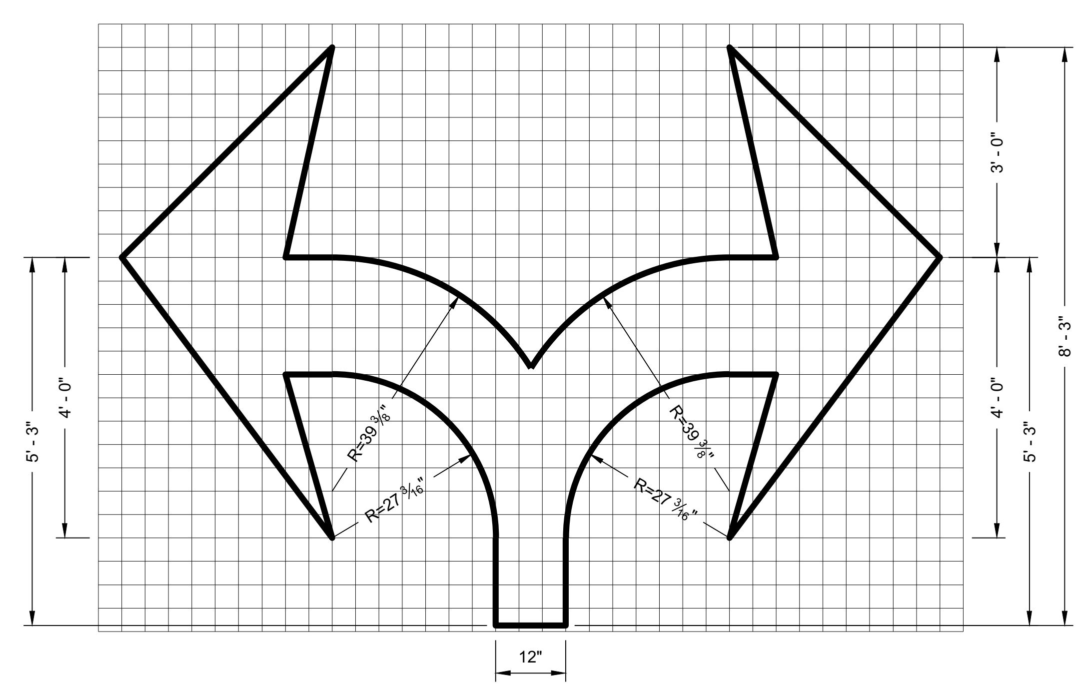
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

6

6

PAVEMENT MARKING ARROWS

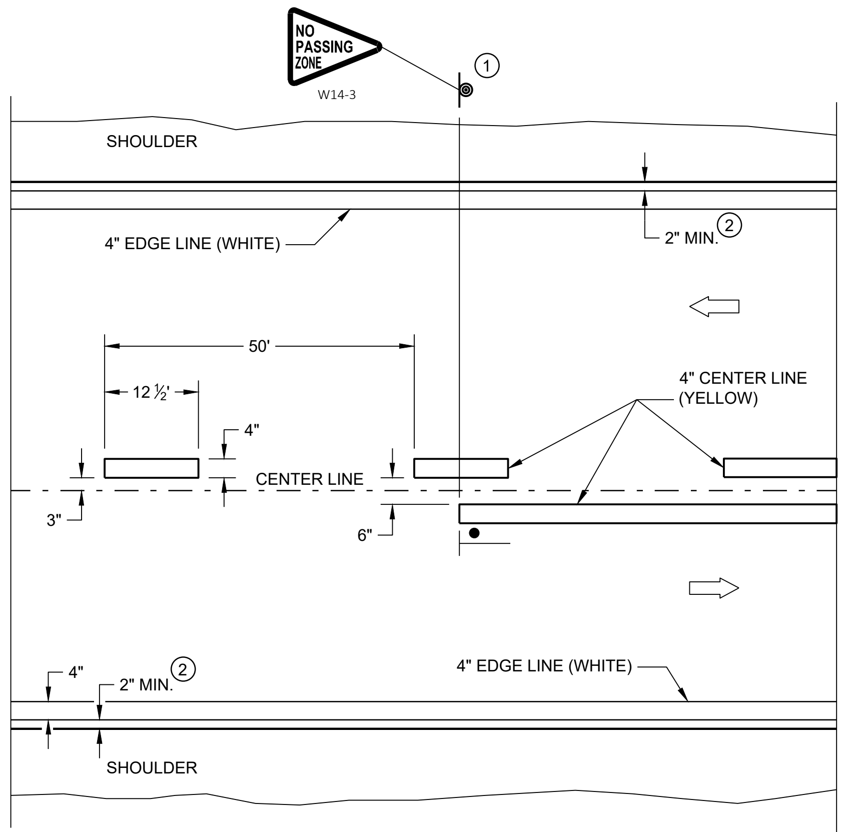
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MAF ENGINEER

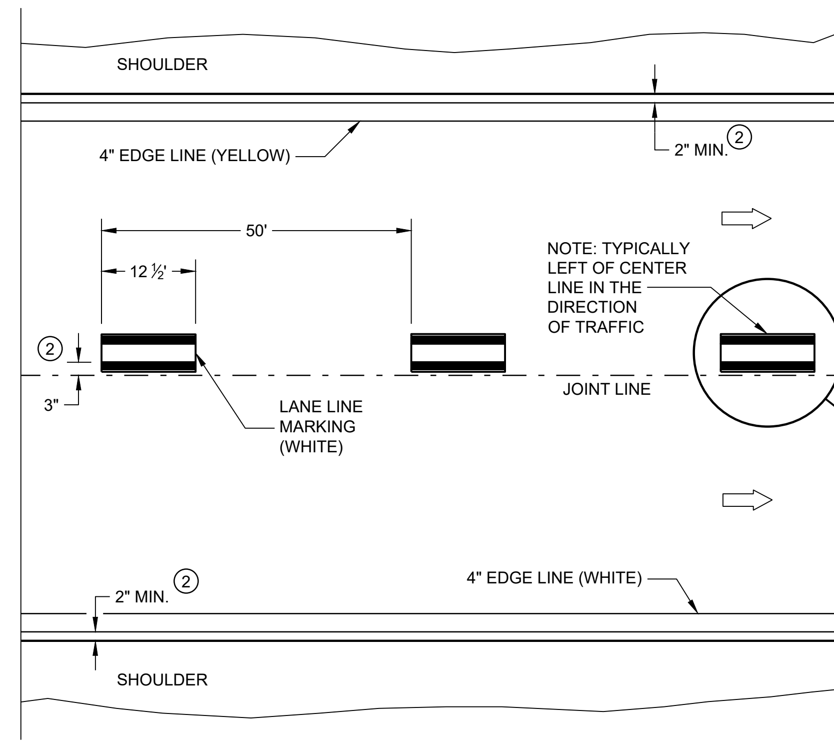
FHWA

SDD 15C07 - 15c

SDD 15C07 - 15c

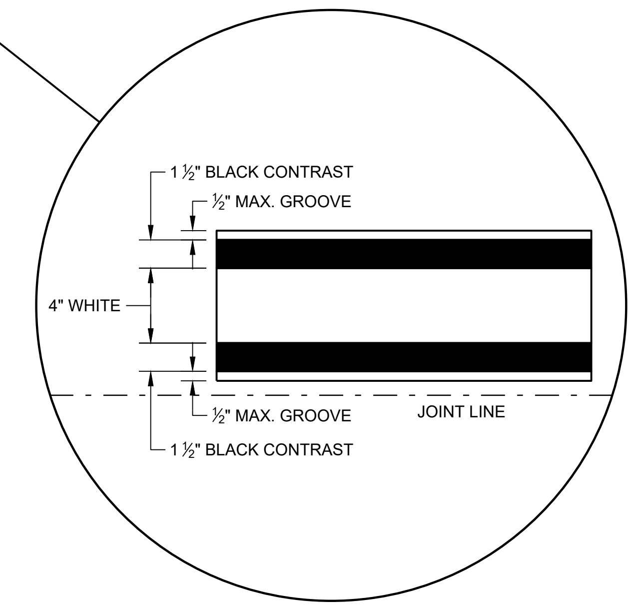


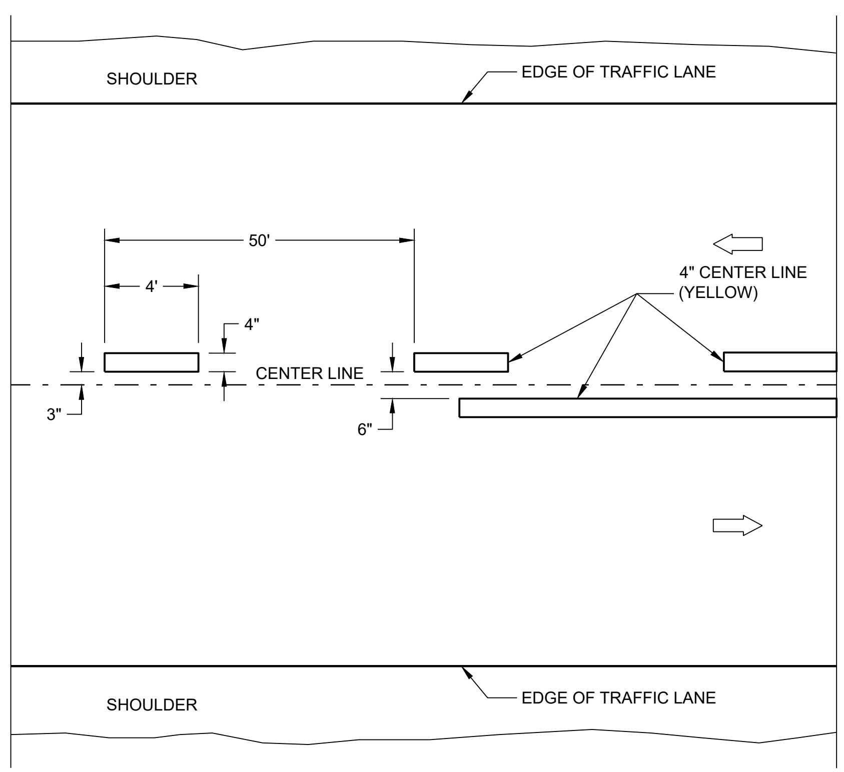
TWO WAY TRAFFIC



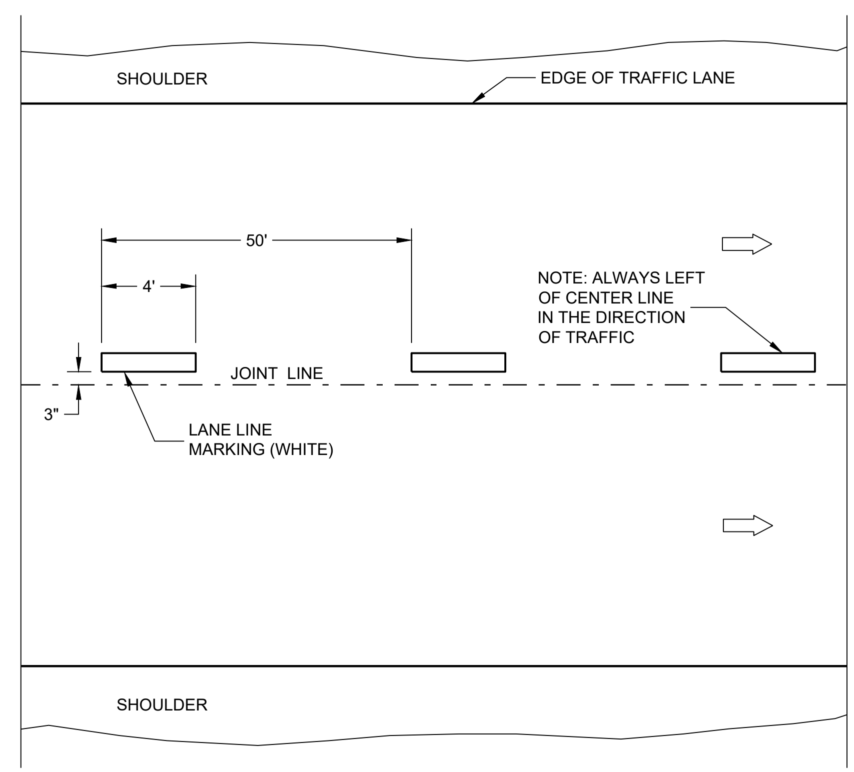
ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING





TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

1 LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING

2 MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

"T" MARKING

SIGN ON PERMANENT SUPPORT

DIRECTION OF TRAFFIC

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

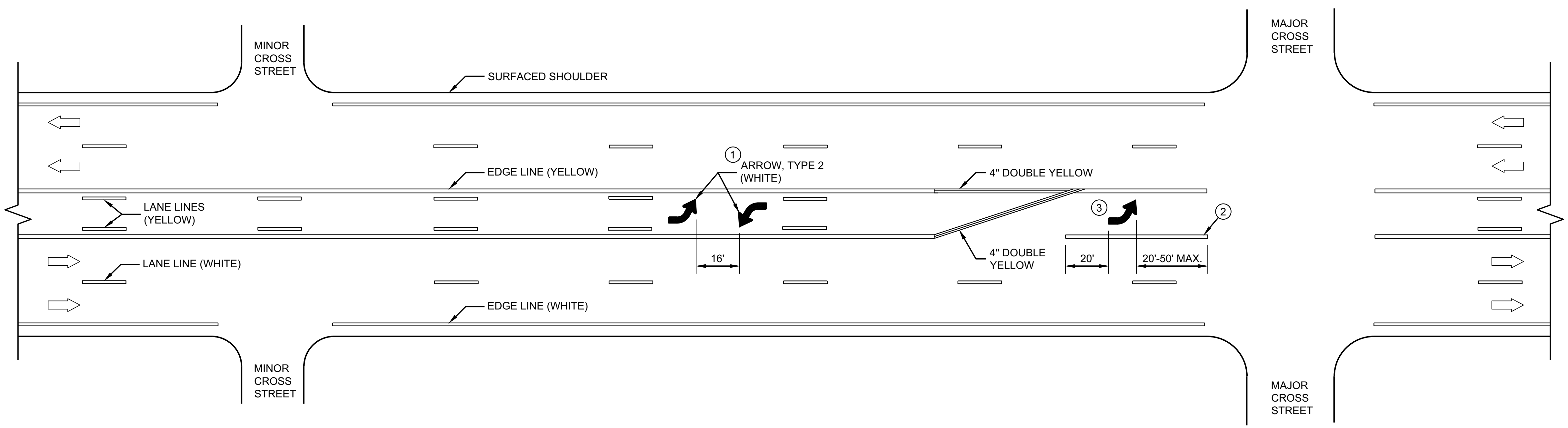
APPROVED
February 2020 — DATE
/S/ Matthew Rauch — STATEWIDE SIGNING AND M ENGINEER
FHWA

SDD 15C08 - 20a
6

GENERAL NOTES

1. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
2. 8" WHITE
3. TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

⇨ DIRECTION OF TRAFFIC

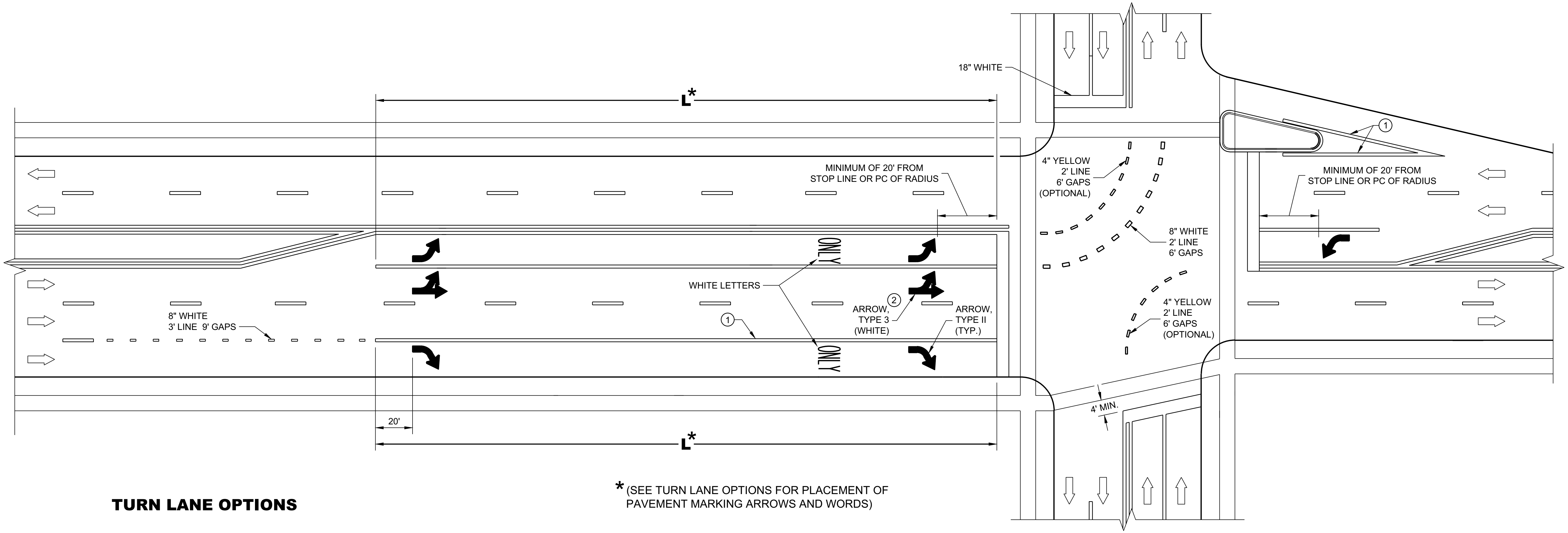


TWO WAY LEFT TURN LANE

SDD 15C08 - 20b

PAVEMENT MARKING (TURN LANES)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

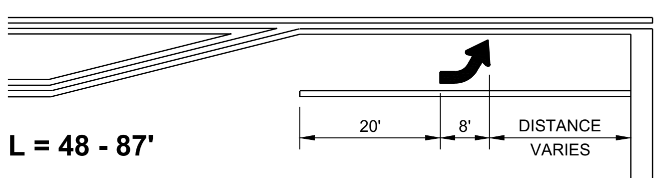
SDD 15C08 - 20b



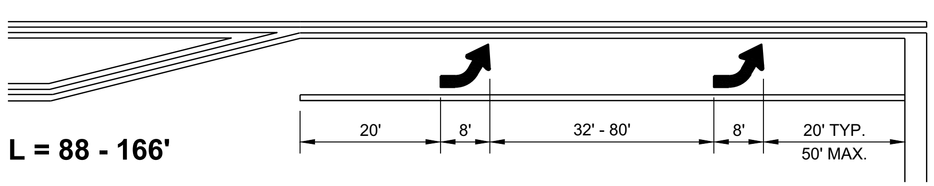
* (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

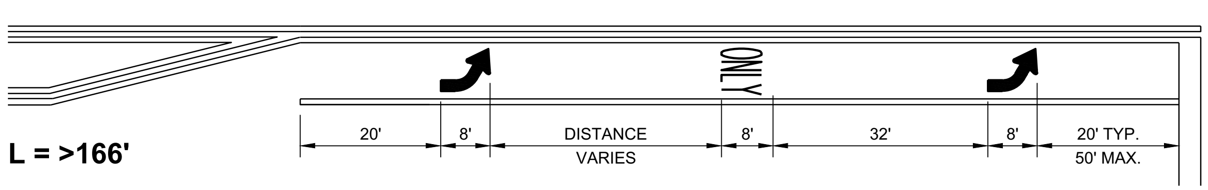
LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



L = 48 - 87'



L = 88 - 166'



L = >166'

GENERAL NOTES

1. 8" WHITE
2. QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

⇨ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

6

6

PAVEMENT MARKING (TURN LANES)

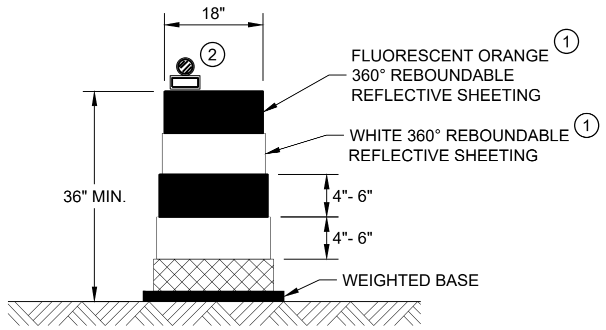
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 15C08 - 20c

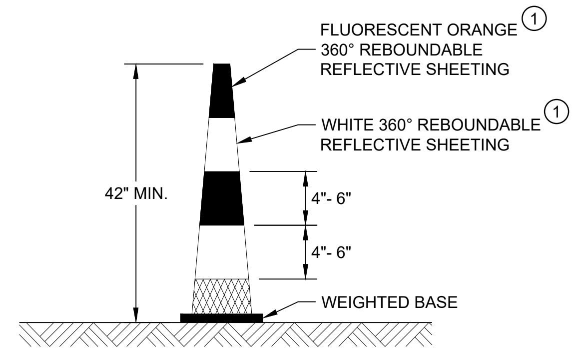
SDD 15C08 - 20c

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.

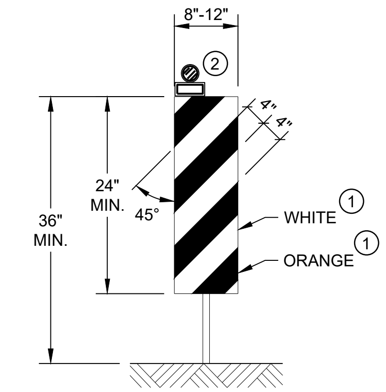


DRUM



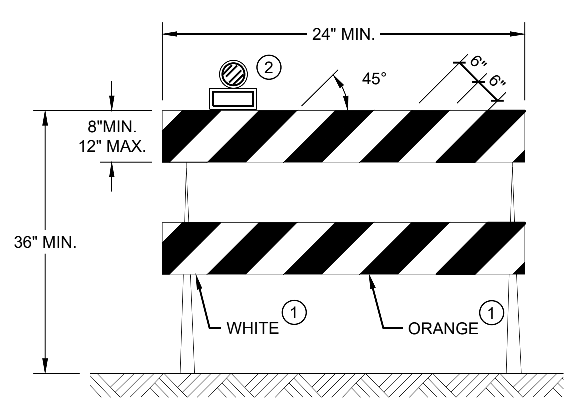
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



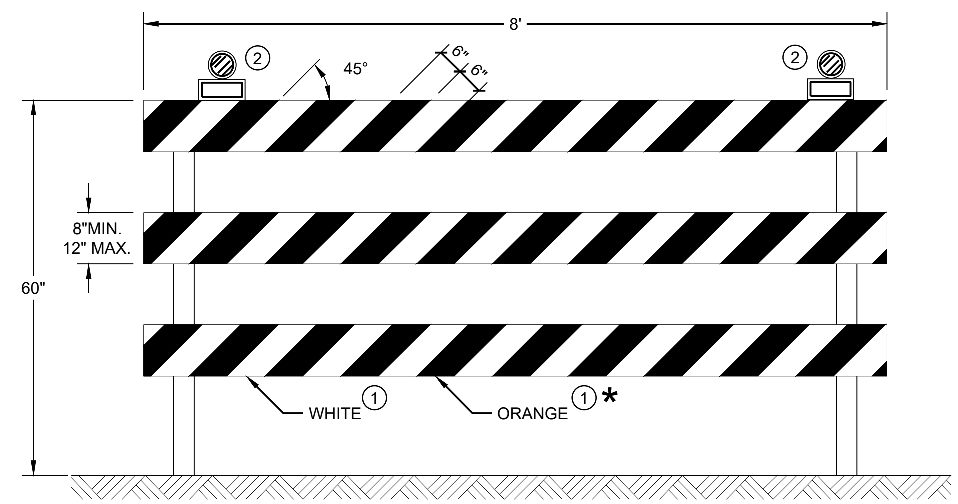
VERTICAL PANEL

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.

6

6

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

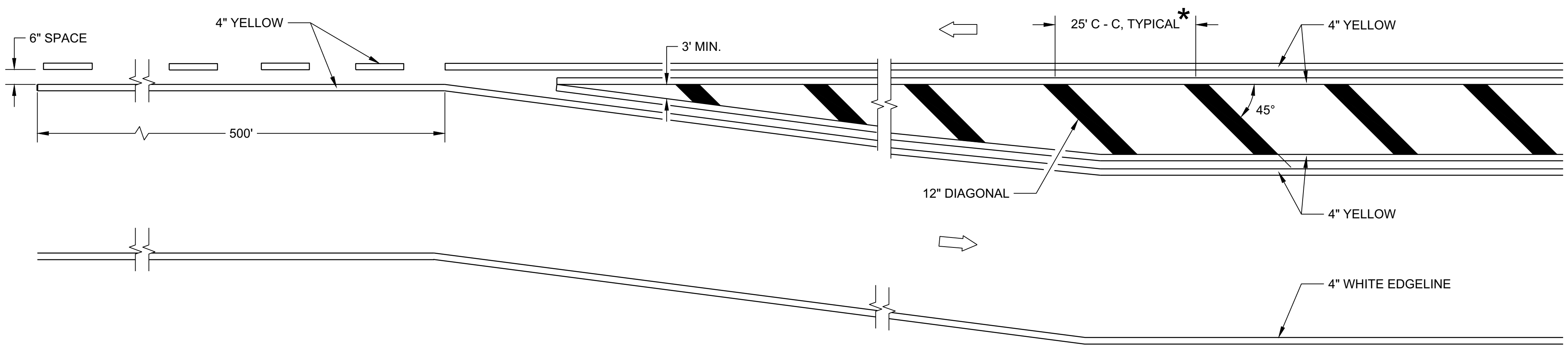
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

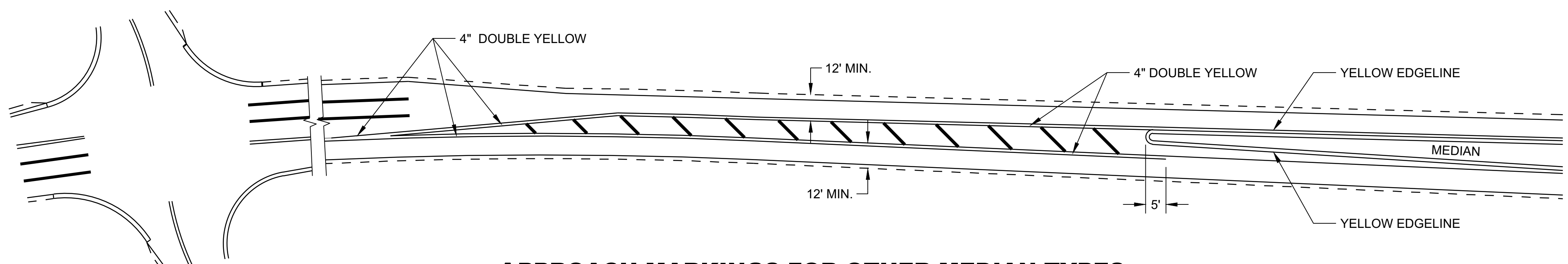
SDD 15C11 - 09b

SDD 15C11 - 09b

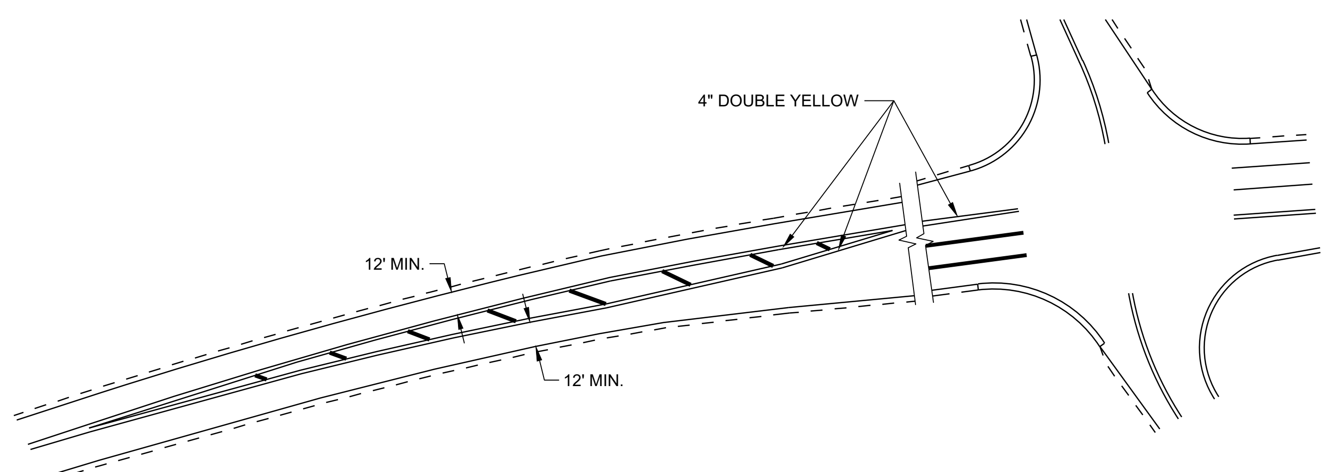
* WHEN THE PAINTED MEDIAN LENGTH IS LESS THAN 50 FEET THE SPACING IS 10'.



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

GENERAL NOTES

DIAGONALS ARE OPTIONAL WHEN PAINED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

⇨ DIRECTION OF TRAVEL

6

6

MEDIAN ISLAND PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

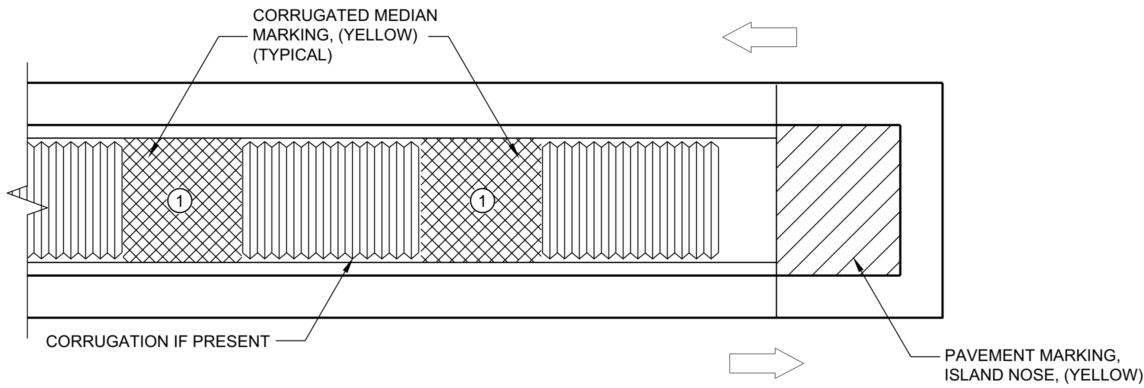
FHWA

SDD 15C18 - 05a

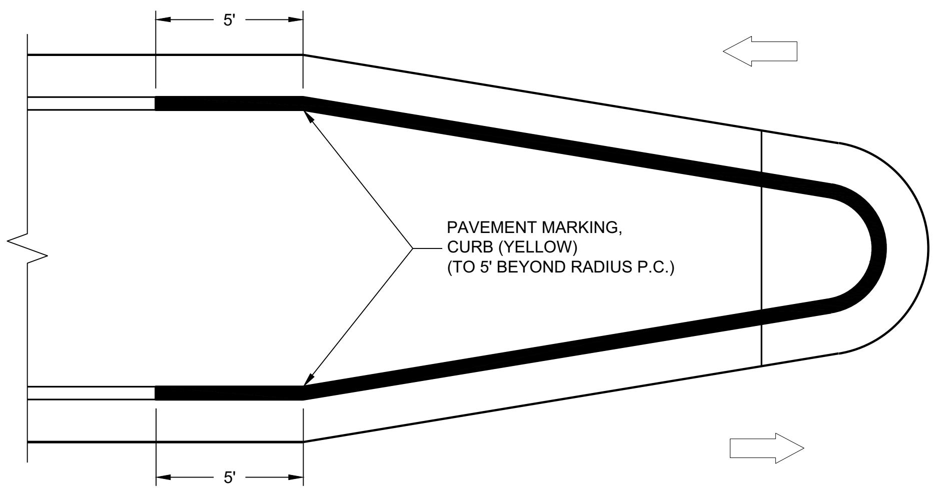
SDD 15C18 - 05a

GENERAL NOTES

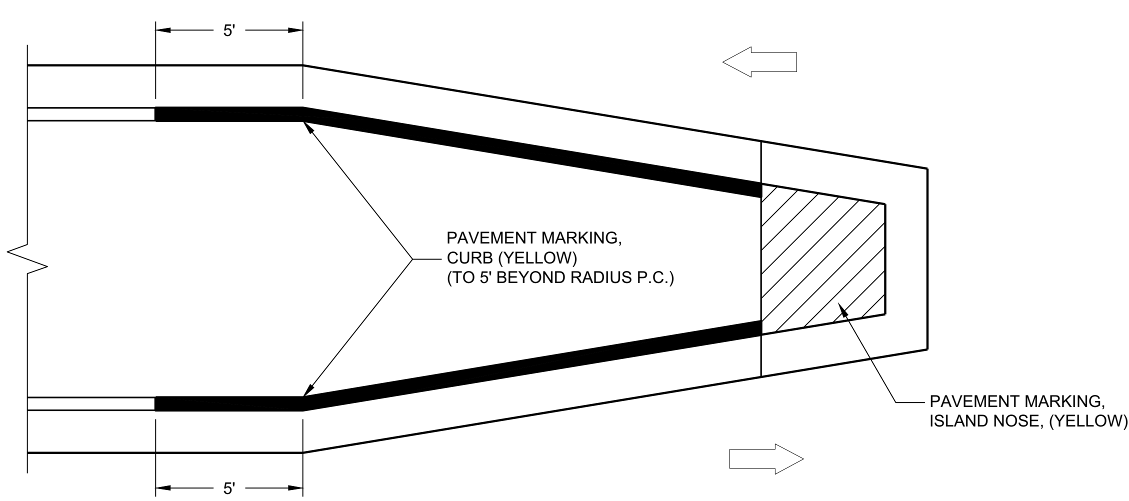
WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

ISLAND NOSE MARKING

CURB MARKING

CORRUGATED MEDIAN MARKING

DIRECTION OF TRAVEL

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

6

6

PAVEMENT MARKINGS, MEDIAN ISLAND NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

February 2021 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

SDD 15C18 - 05b

SDD 15C18 - 05b

LEGEND

- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL (CAUTION)

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.

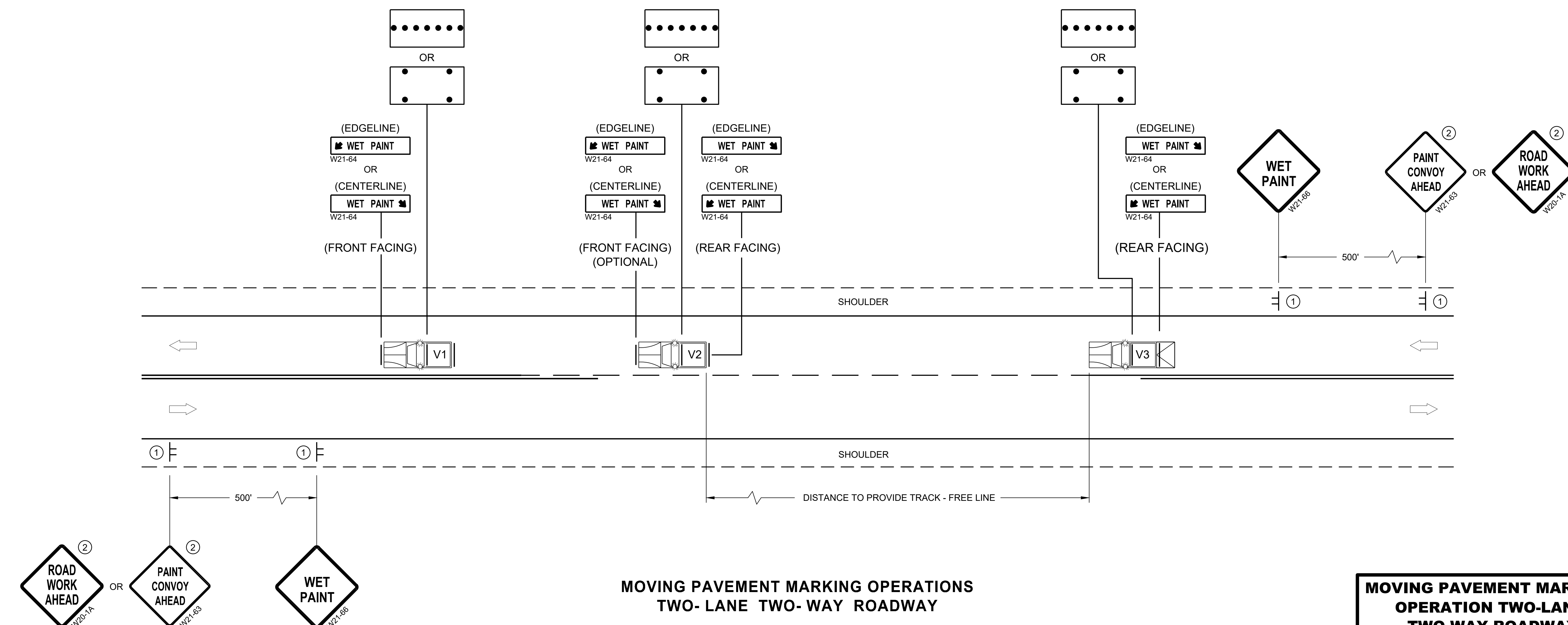
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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.
2. IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.

6



MOVING PAVEMENT MARKING OPERATIONS
TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

SDD 15C19 - 06a

SDD 15C19 - 06a

LEGEND

V1 LEAD VEHICLE

V2 MARKING VEHICLE

V3 SHADOW VEHICLE

TRUCK MOUNTED ATTENUATOR (TMA)

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC

FLASHING ARROW PANEL (MERGE)

FLASHING ARROW PANEL (CAUTION)

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. 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.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

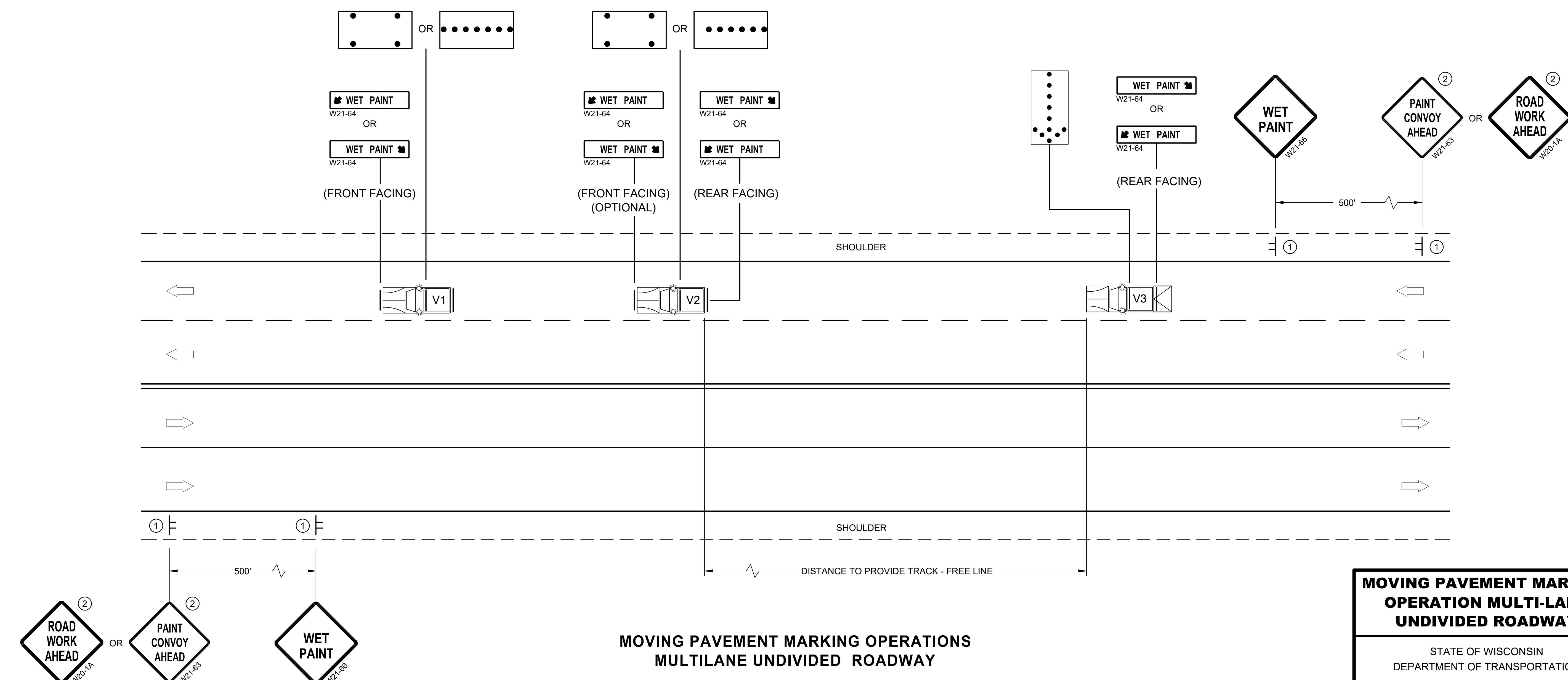
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLES 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 HAVE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS.

1 SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

2 IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



MOVING PAVEMENT MARKING OPERATIONS
MULTILANE UNDIVIDED ROADWAY

MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

6

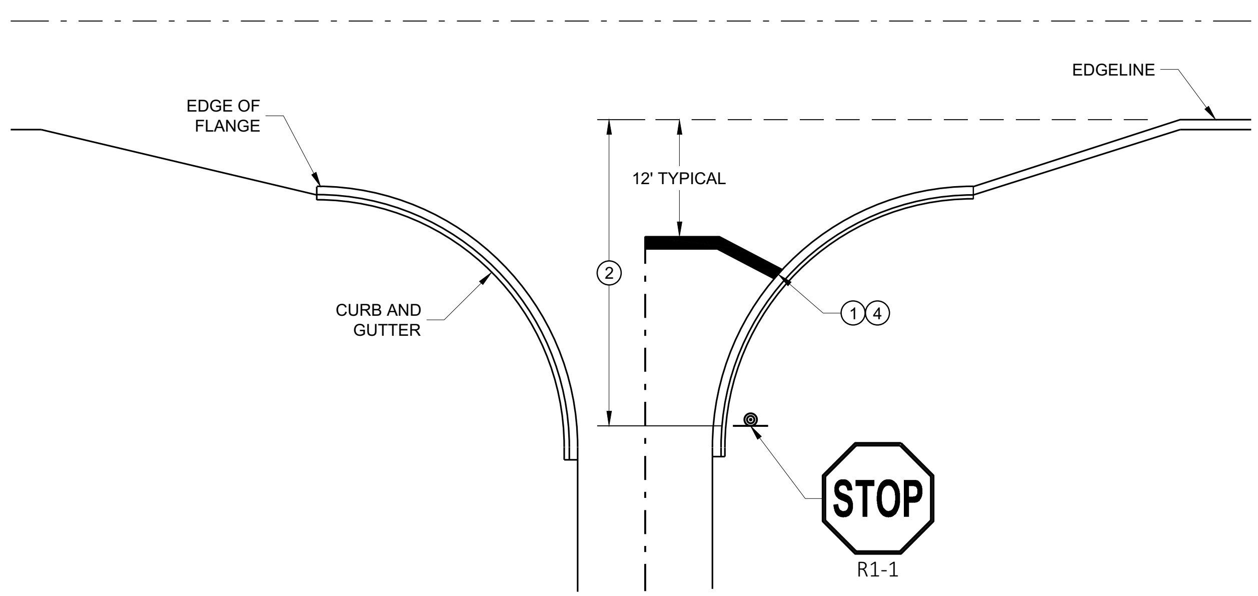
SDD 15C19 - 06b

SDD 15C19 - 06b

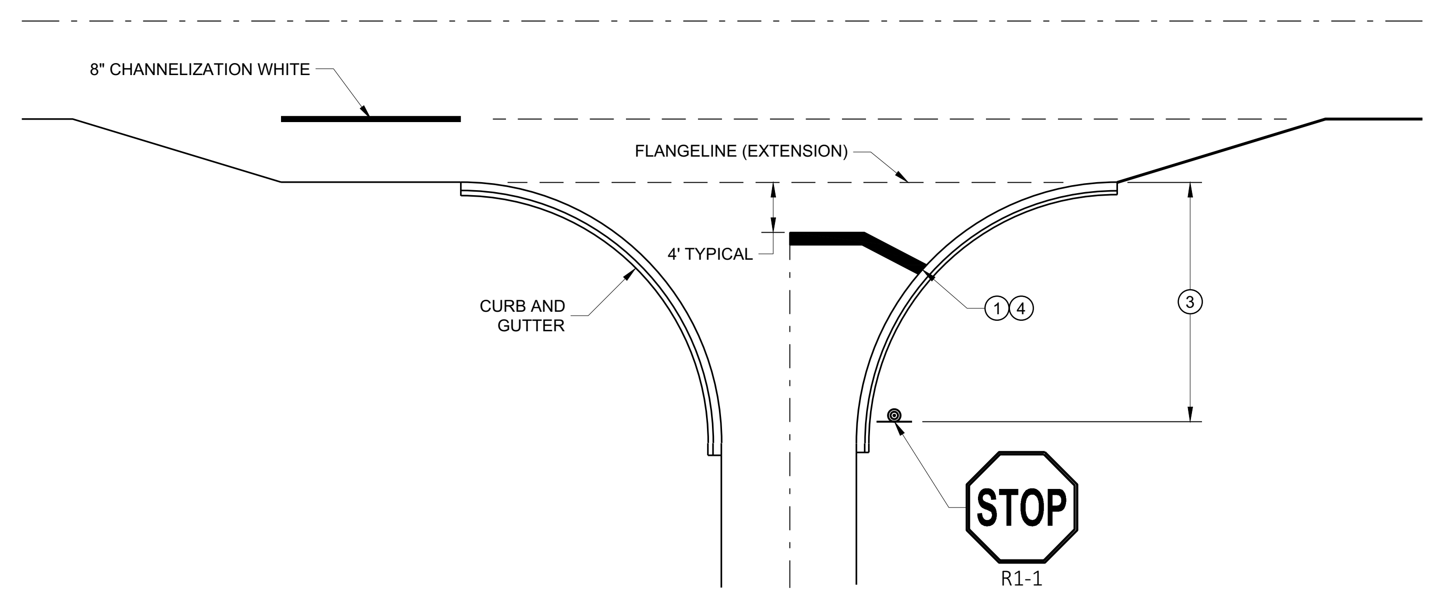
GENERAL NOTES

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

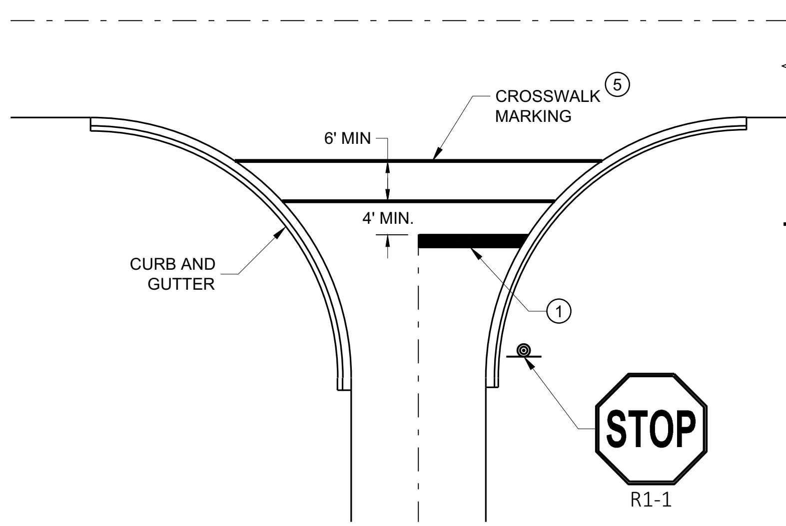
1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
3. NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE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



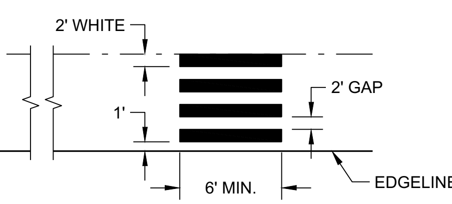
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



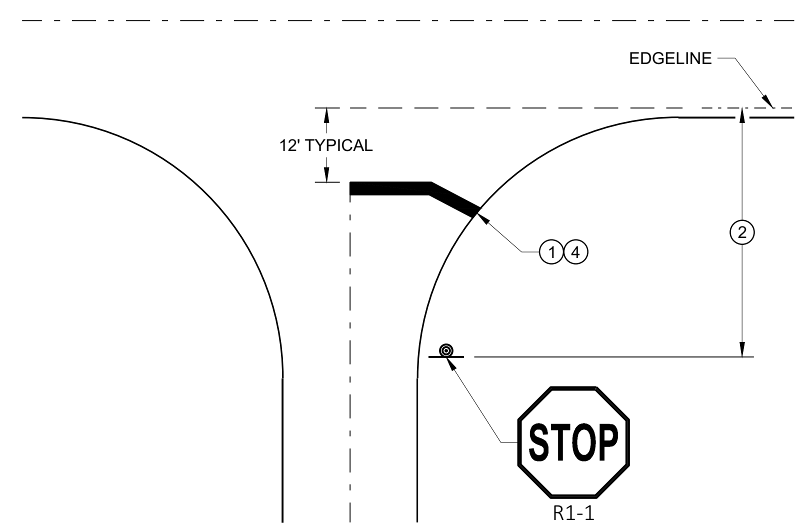
TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK 5



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

6

6

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

SDD 15C33 - 04

6

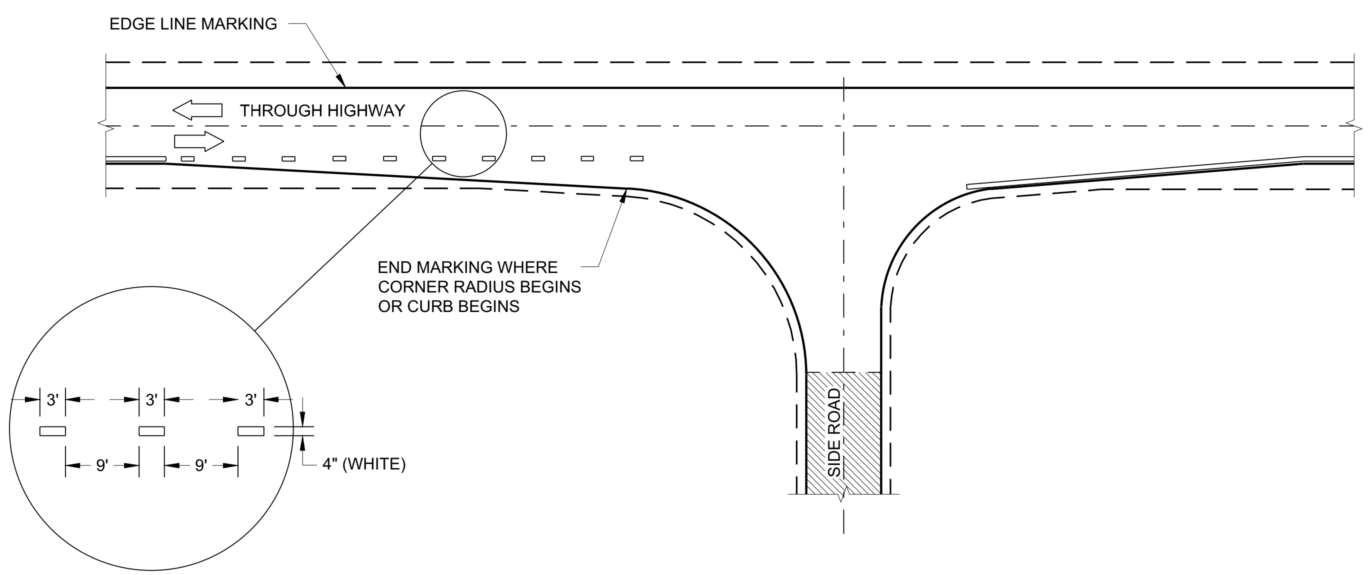
GENERAL NOTES

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

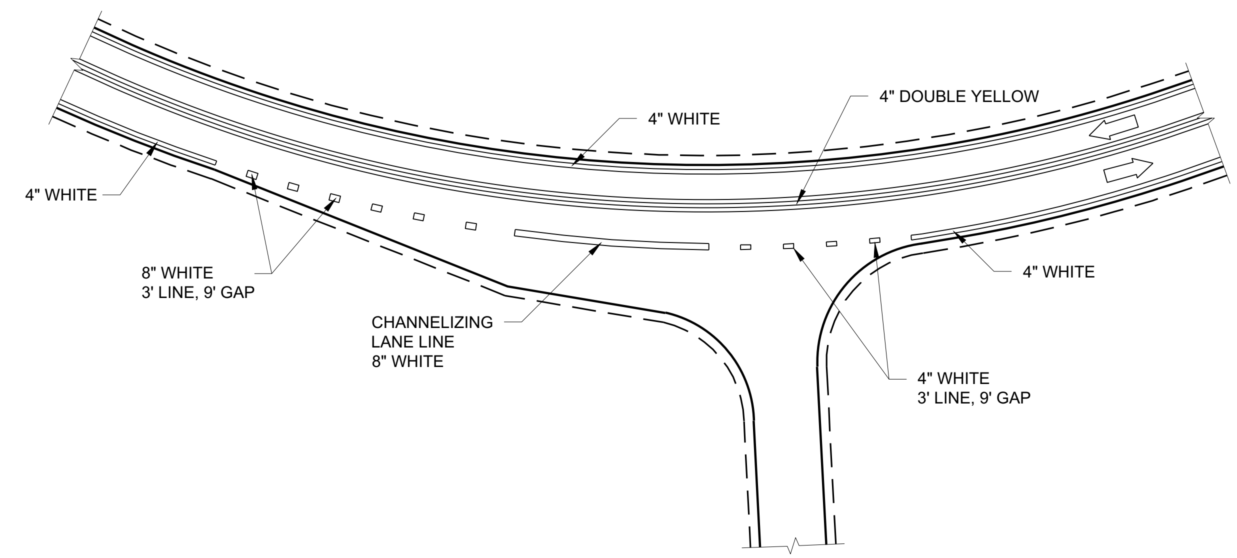
1. WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
2. WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
3. BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
4. BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

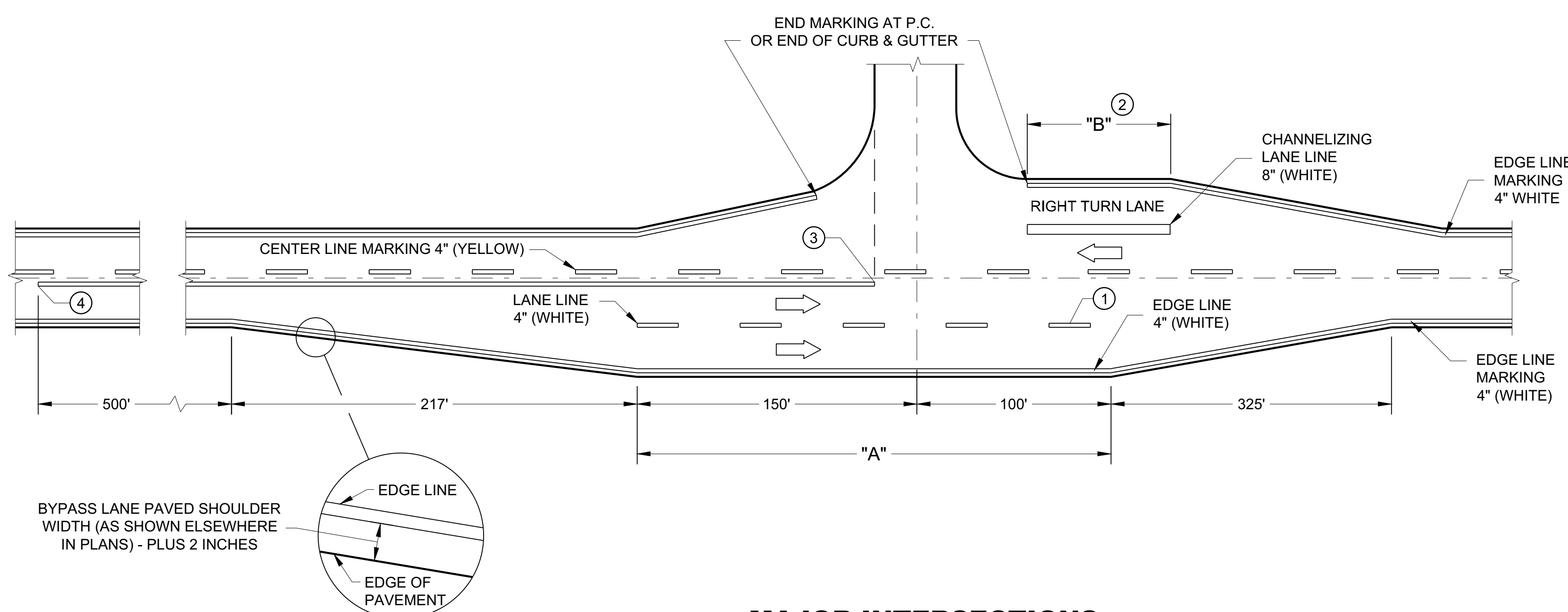
DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

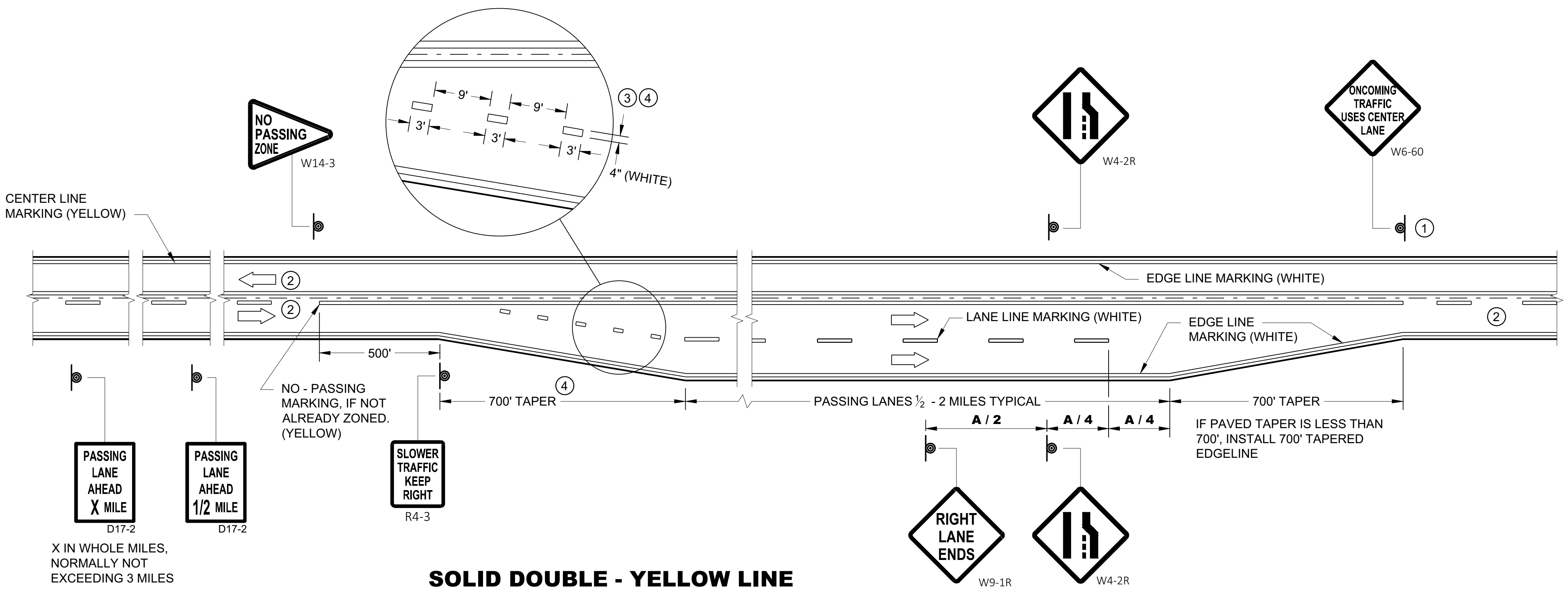
6

PAVEMENT MARKING (INTERSECTIONS)

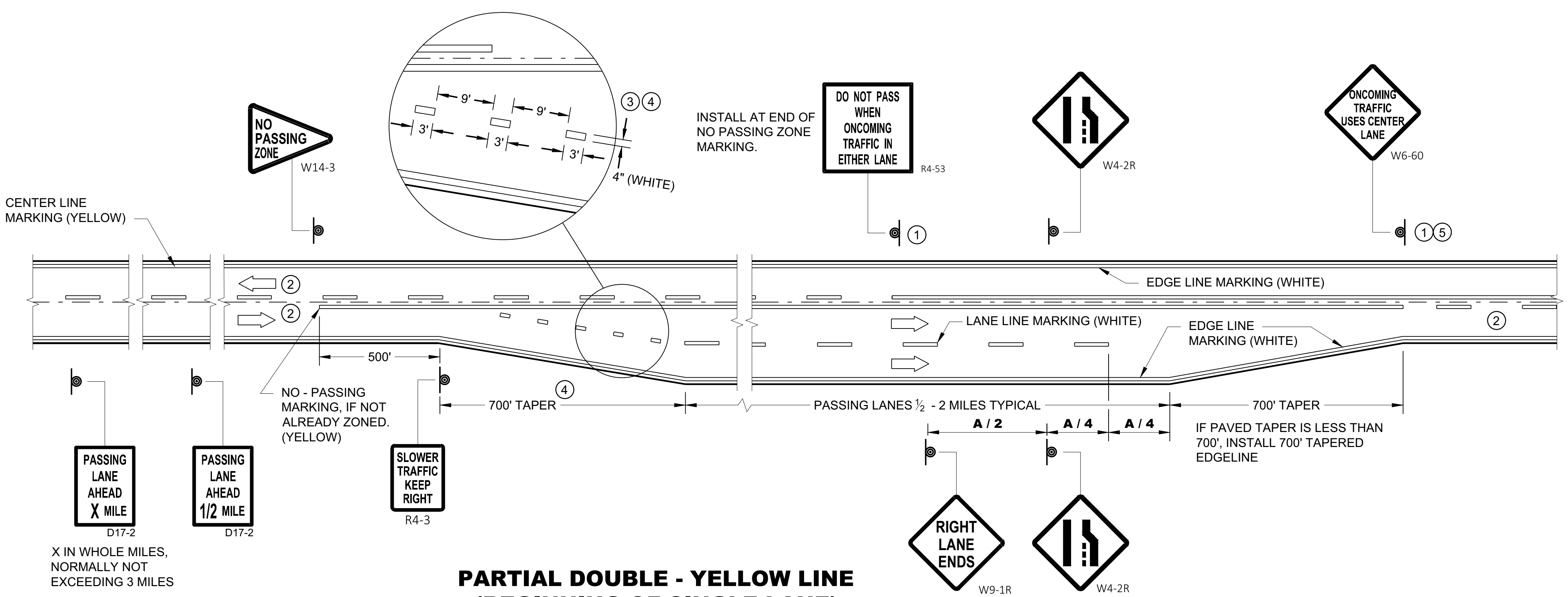
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

SDD 15C35 - 04a

SDD 15C35 - 04a



SOLID DOUBLE - YELLOW LINE
(THROUGHOUT ENTIRE PASSING / CLIMBING LANE)



PARTIAL DOUBLE - YELLOW LINE
(BEGINNING OF SINGLE LANE)

GENERAL NOTES

1. SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
2. THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
3. THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
4. WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
5. REPEAT EVERY 1 MILE UP UNTIL R4-53.

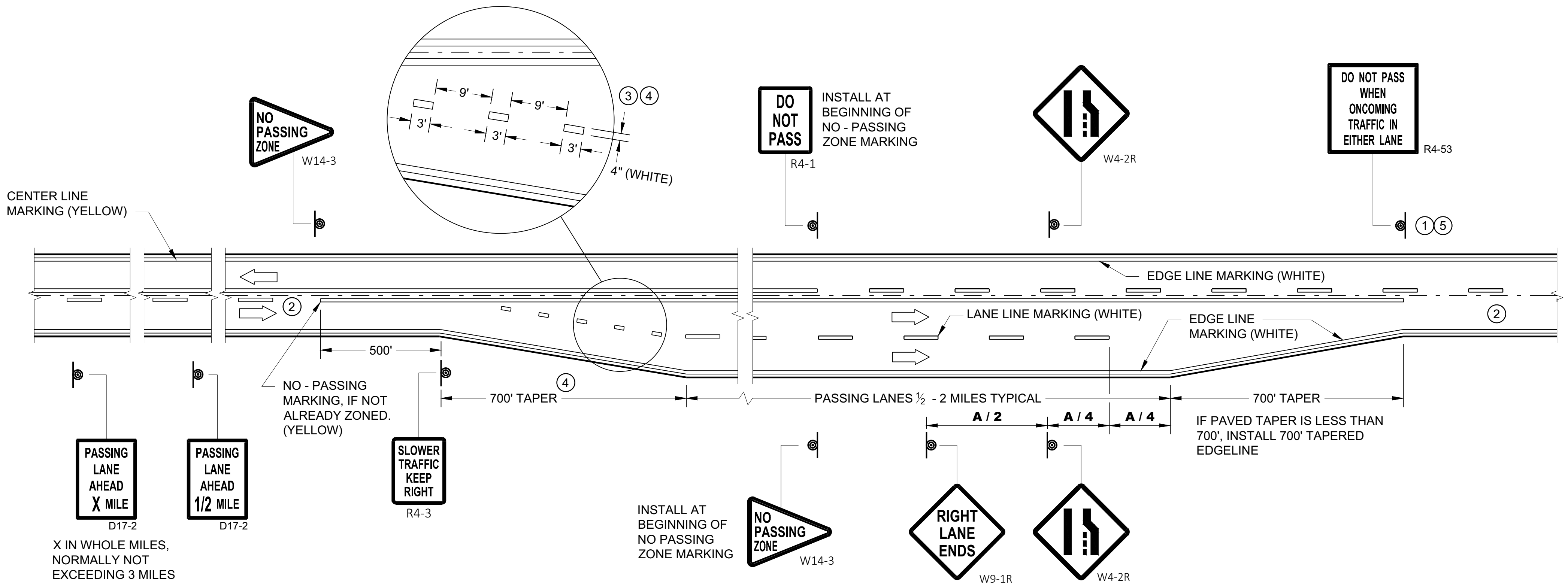
ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

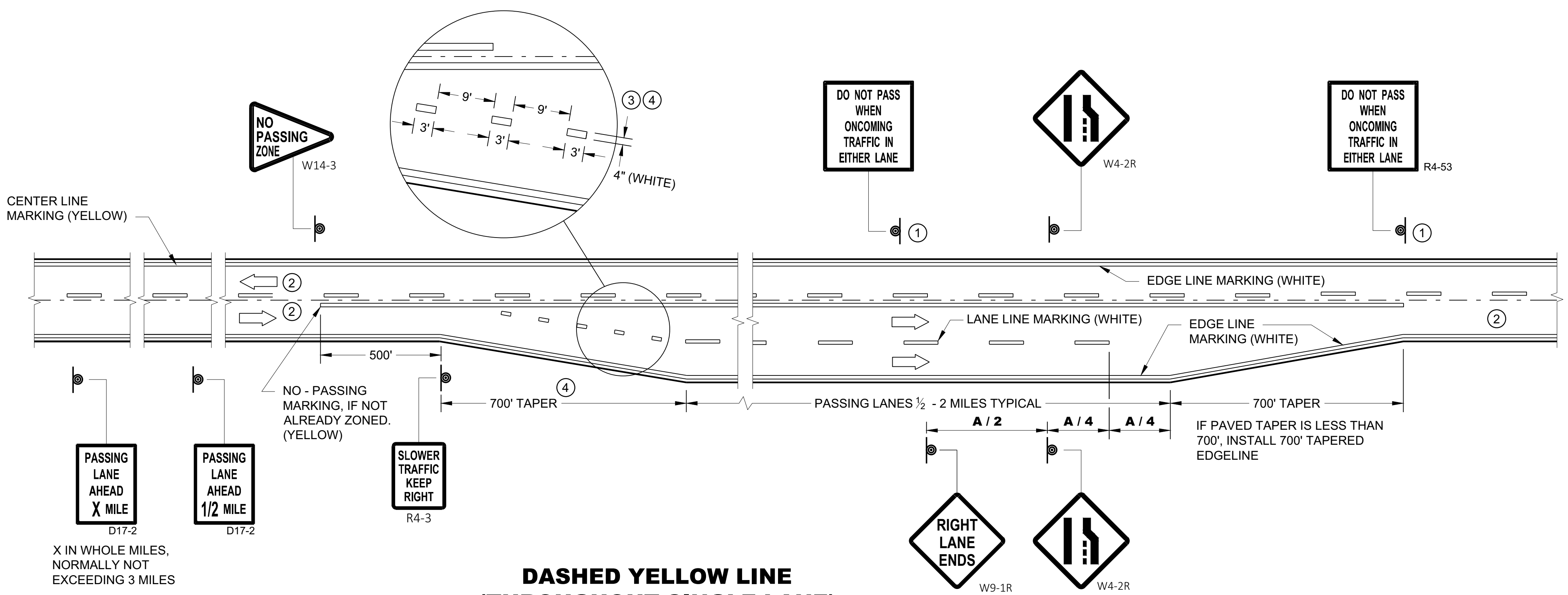
POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	885
55	990

PAVEMENT MARKING & SIGNING (CLIMBING LANE & PASSING LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SOLID DOUBLE - YELLOW LINE (END OF SINGLE LANE)



DASHED YELLOW LINE (THROUGHOUT SINGLE LANE)

GENERAL NOTES

1. SIGN SHALL BE REPEATED AT 1 MILE INCREMENTS OR AT THE DISCRETION OF THE REGIONAL TRAFFIC ENGINEER.
2. THERE MAY BE SOLID YELLOW ON THE CENTERLINE DUE TO SIGHT CONDITIONS.
3. THE TAPER LENGTH OF THE DOTTED LINE PAVEMENT MARKING SHALL BE 700 FEET, 3' LINE, 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
4. WHEN THE ENTRANCE TAPER IS LESS THAN 700 FEET OR THE SHOULDER WIDTH IN THE PASSING / CLIMBING LANE IS LESS THAN THE ADJACENT HIGHWAY, DO NOT INSTALL DOTTED LINE PAVEMENT MARKING.
5. REPEAT EVERY ONE MILE UP UNTIL NO PASSING ZONE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	885
55	990

6

6

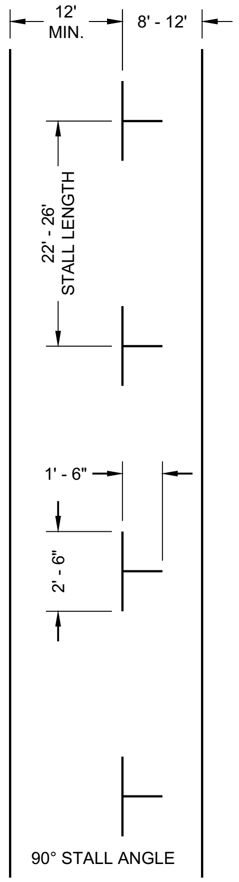
PAVEMNET MARKING & SIGNING (CLIMBING LANE & PASSING LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

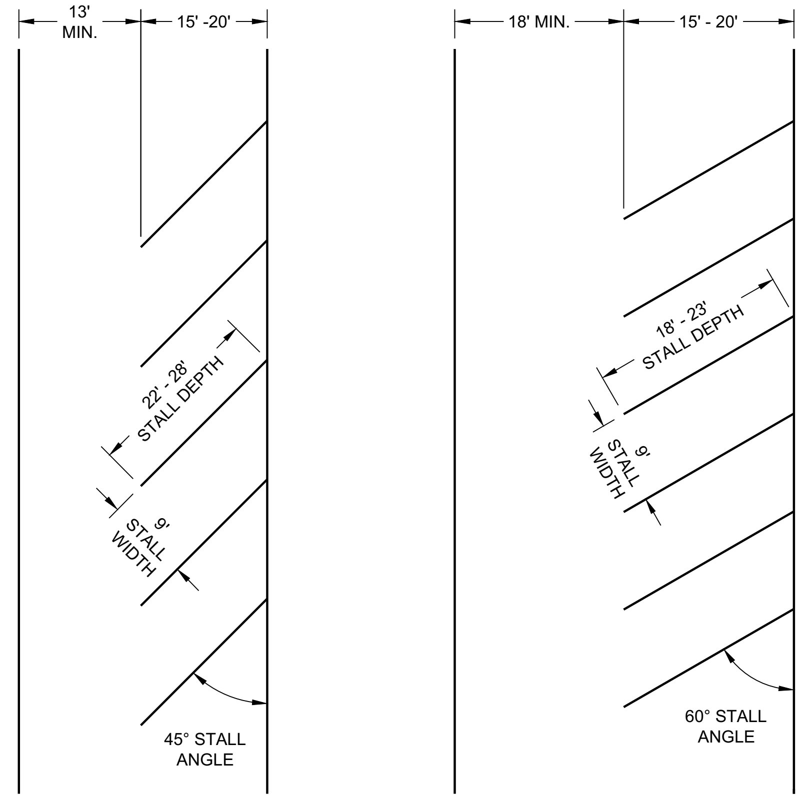
APPROVED
November 2019 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER
FHWA

SDD 15C35 - 04c

SDD 15C35 - 04c

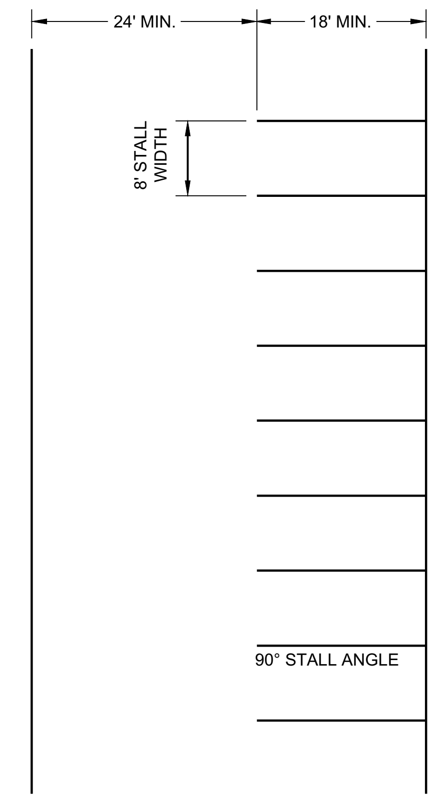


PARALLEL PARKING



ANGLED PARKING

(ANGLED PARKING IS NOT ALLOWED ON STATE HIGHWAYS UNLESS A DESIGN JUSTIFICATION HAS BEEN COMPLETED.)



PARKING LOTS

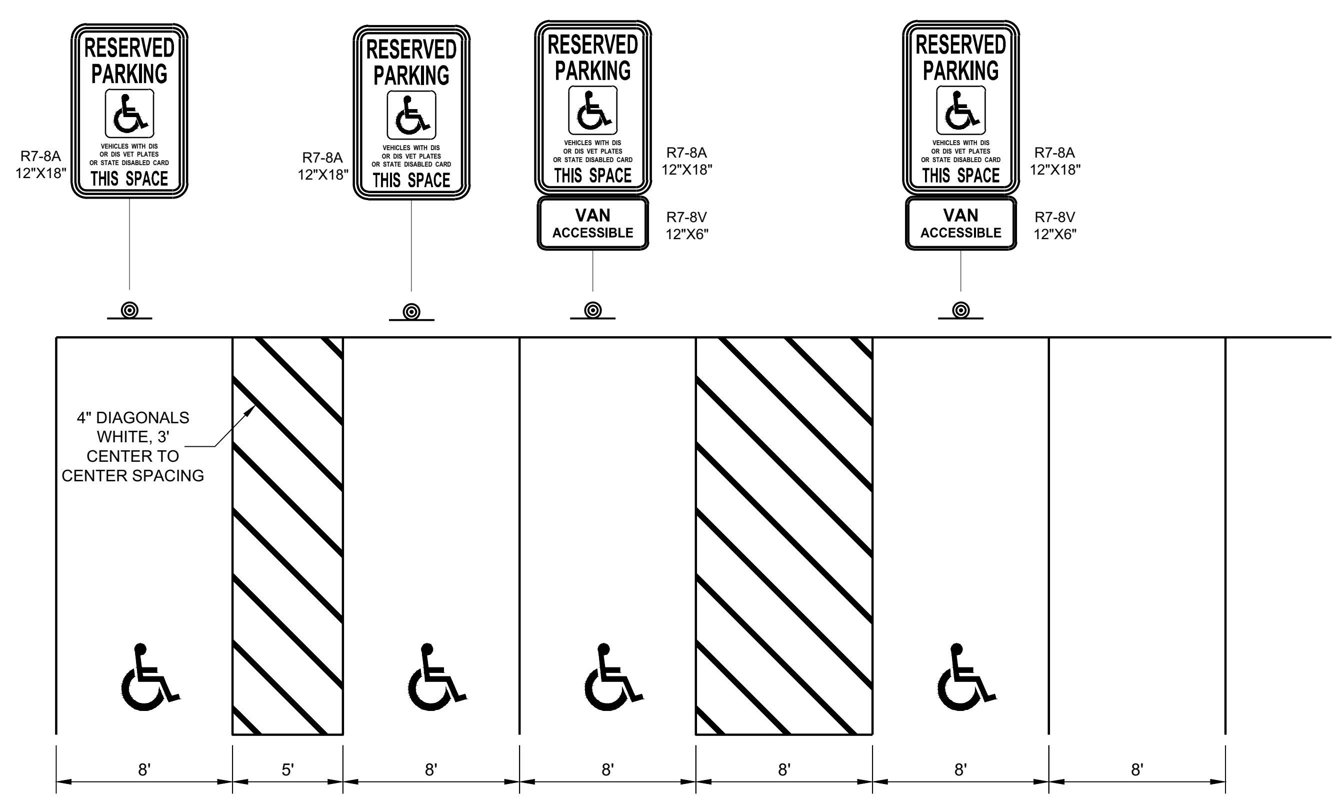
GENERAL NOTES

ALL LINES 4" WHITE (UNLESS OTHERWISE NOTED)

LAST PARKING STALL IS A MINIMUM OF 15' FROM THE CROSSWALK.

LEGEND

SIGN ON PERMANENT SUPPORT



ACCESSIBLE **VAN ACCESSIBLE**

PARKING STALL MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

August 2019 — DATE

/S/ Matthew Rauch — STATE SIGNING AND MARKING ENGINEER

FHWA

6

SDD 15C36 - 01

LEGEND

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

GENERAL NOTES

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

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

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

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

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

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

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

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

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

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

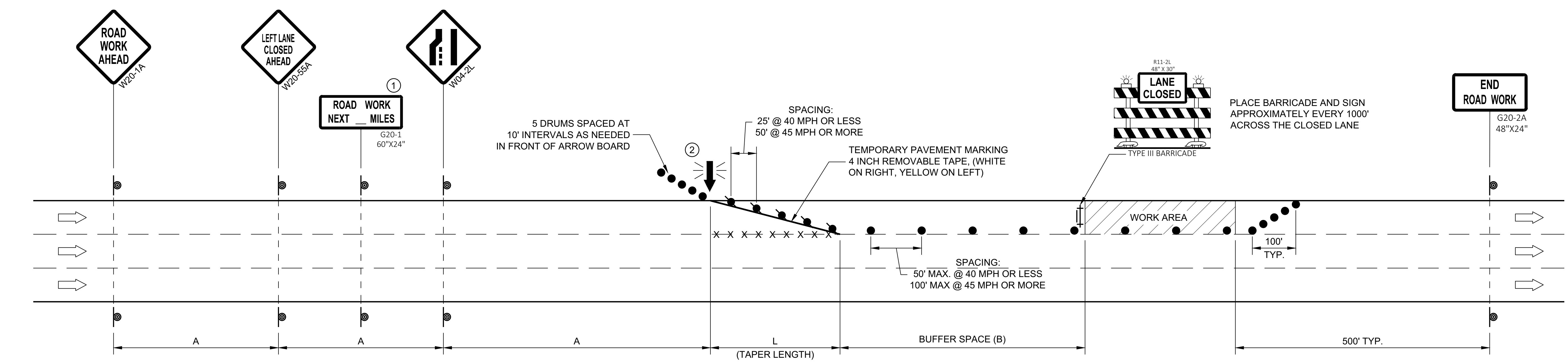
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

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

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

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



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

May 2020 — DATE

/S/ Andrew Heidtke — STATEWIDE WORK ZONE SAFETY ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

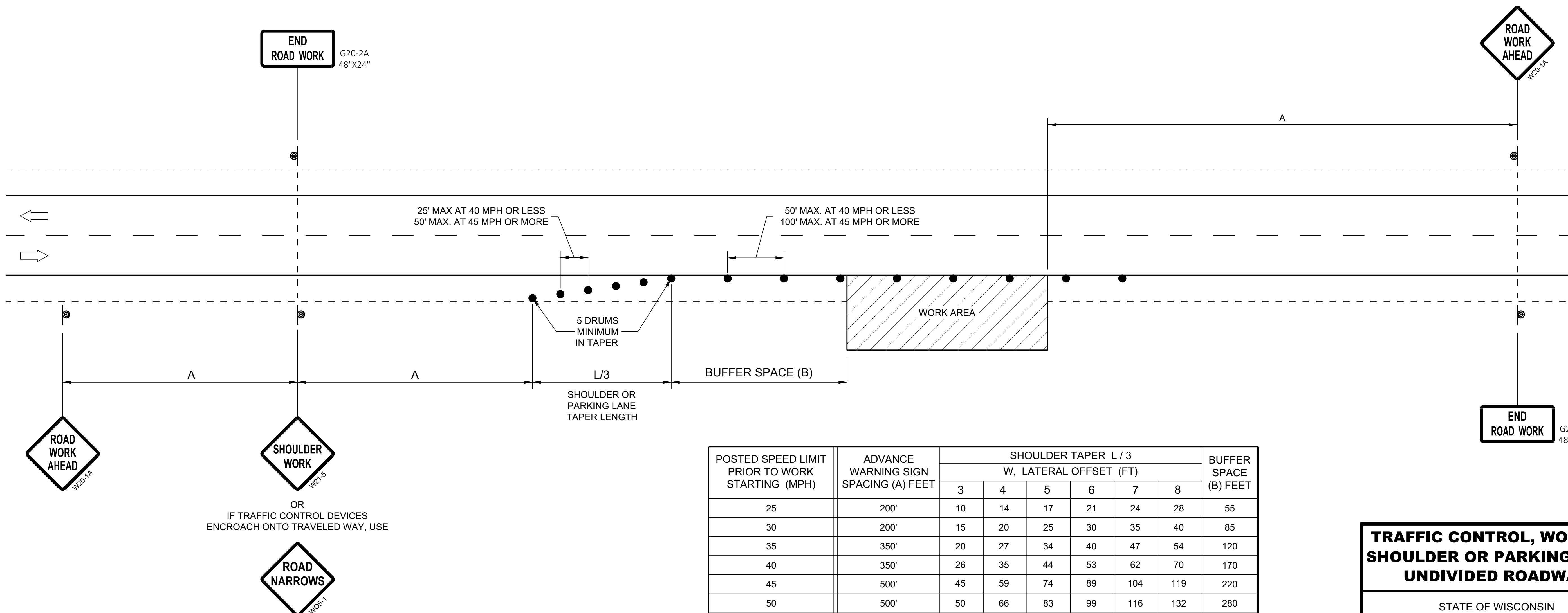
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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

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

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

6



6

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

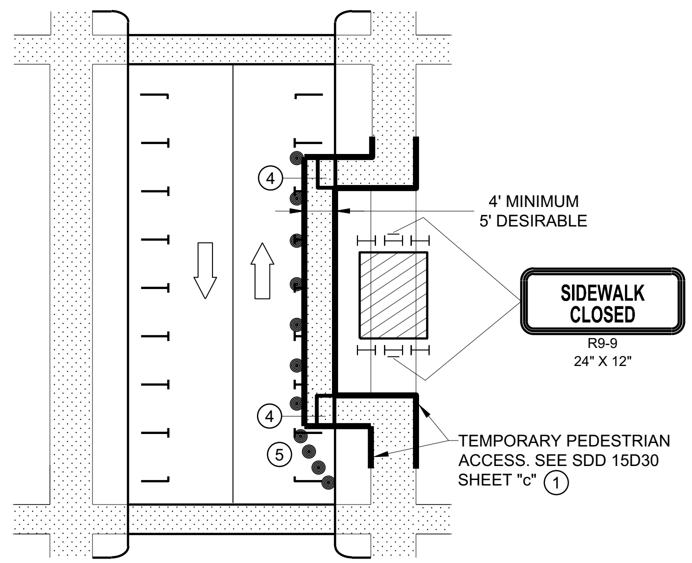
APPROVED
May 2020 — DATE
/S/ Andrew Heidtke — STATEWIDE WORK ZONE T SAFETY ENGINEER
FHWA

SDD 15D28 - 04

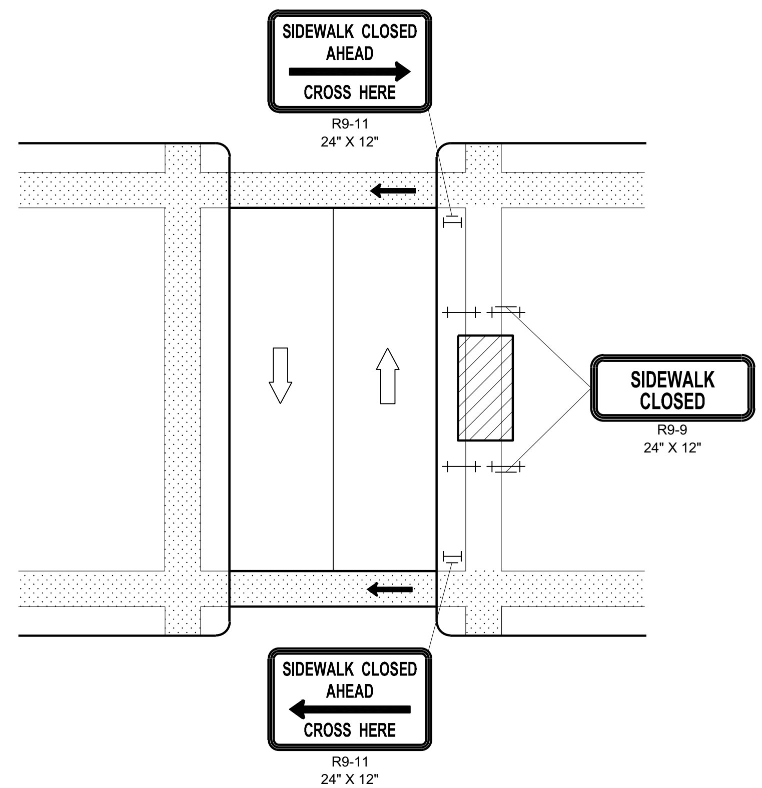
SDD 15D28 - 04

6

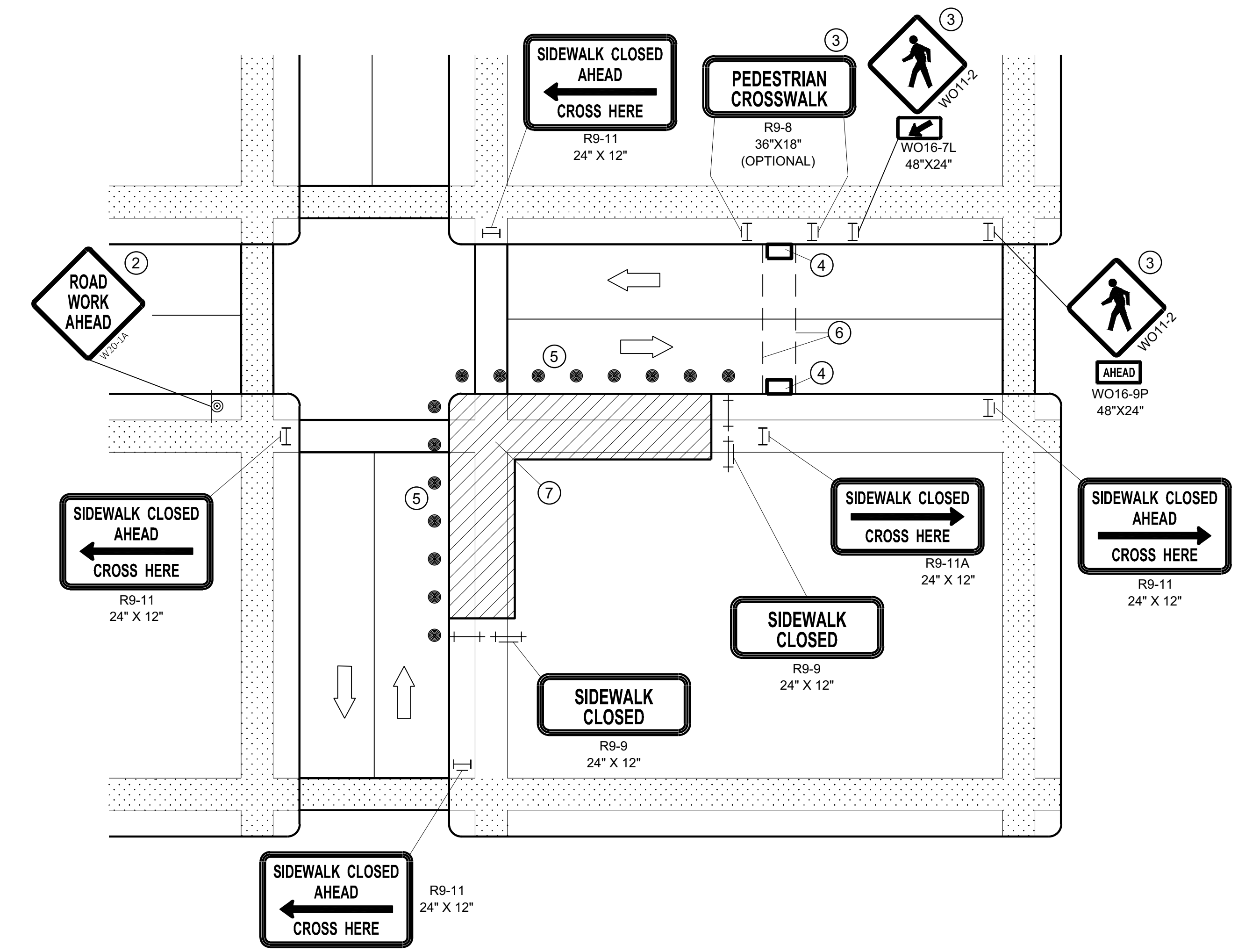
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.



MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE



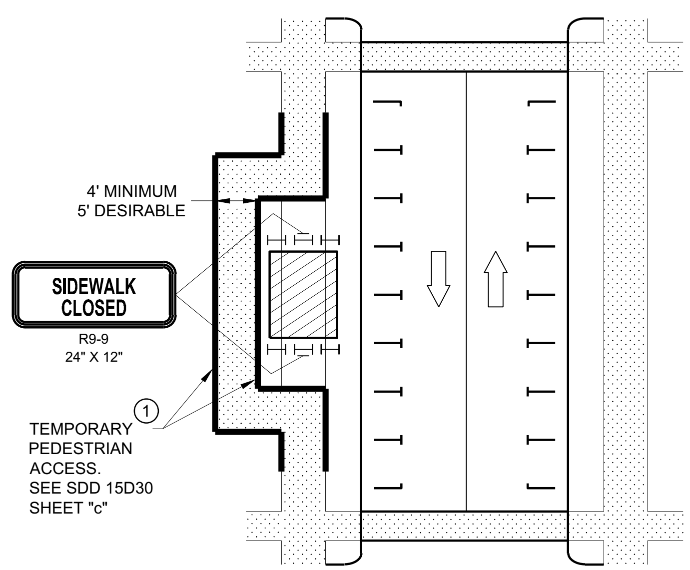
MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

6

NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

FOR NIGHTIME CLOSURE, USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEK LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

1. IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE
2. "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.
3. IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND WO11-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.
4. TEMPORARY CURB RAMPS. SEE SDD 15D30 SHEET 'b'.
5. DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
6. TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.
7. LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL DRUM

TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)

TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW INTENSITY FLASHING)

UNDER PEDESTRIAN TRAFFIC

WORK AREA

PEDESTRIAN CHANNELIZATION DEVICE

DIRECTION OF TRAFFIC

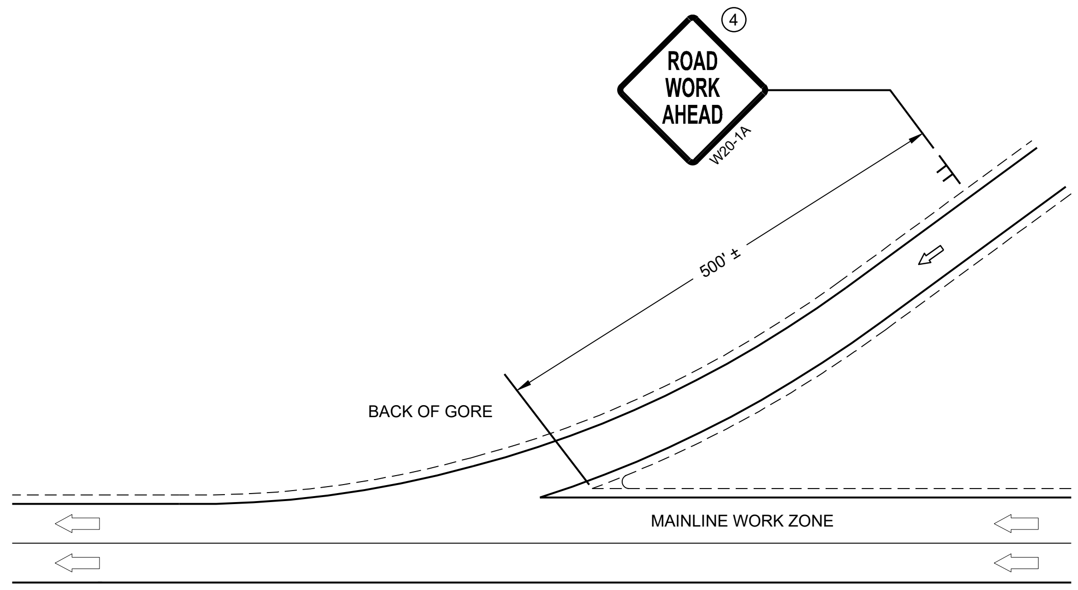
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 15D30 - 06a

LEGEND

- V1 SHADOW VEHICLE 1
- V2 SHADOW VEHICLE 2
- V3 ADVANCE WARNING TRUCK
- TRAFFIC CONTROL DRUM
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW PANEL (MERGE)
- FLASHING ARROW PANEL (CAUTION)
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- WORK AREA



GENERAL NOTES

SHORT DURATION IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.

MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.

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. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

WHEN WORK ACTIVITY BLOCKS THE RIGHT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

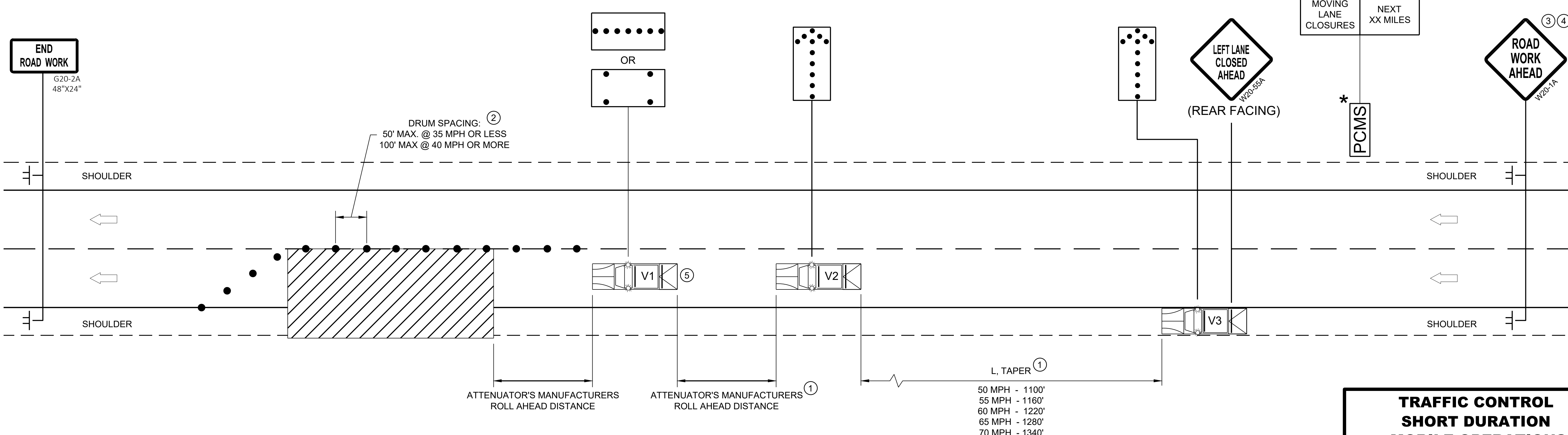
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC

1. DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO 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 AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
2. DRUMS ARE TO BE USED FOR BRIDGE DECK SEALING AND OTHER PROJECTS THAT REQUIRE DELINEATION.
3. WITHIN 5 MILES, RELOCATE SIGNS AS WORK PROGRESSES AND NECESSARY OR AS DIRECTED BY THE ENGINEER.
4. SIGN NOT REQUIRED IF MOVING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
5. SHADOW VEHICLE 1 (V1) IS OPTIONAL

* PCMS OPTIONAL

PCMS MESSAGING

FRAME 1	FRAME 2
MOVING LANE CLOSURES	NEXT XX MILES



TRAFFIC CONTROL SHORT DURATION MOBILE OPERATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER
FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

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

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

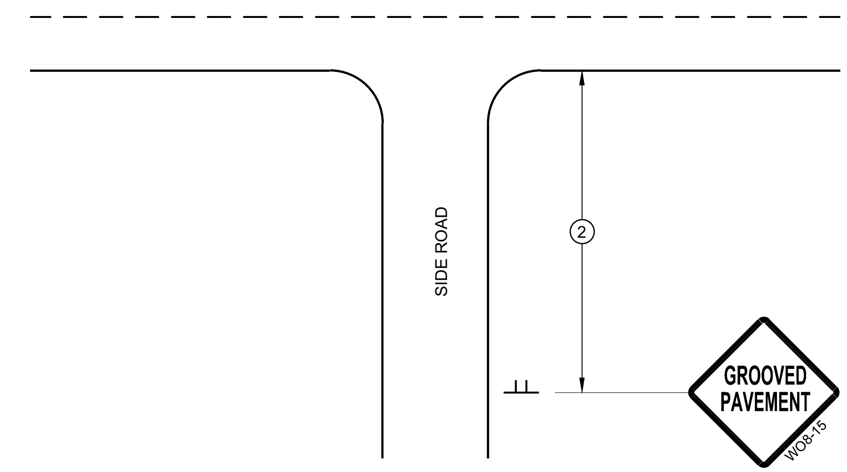
SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

1. PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
2. PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

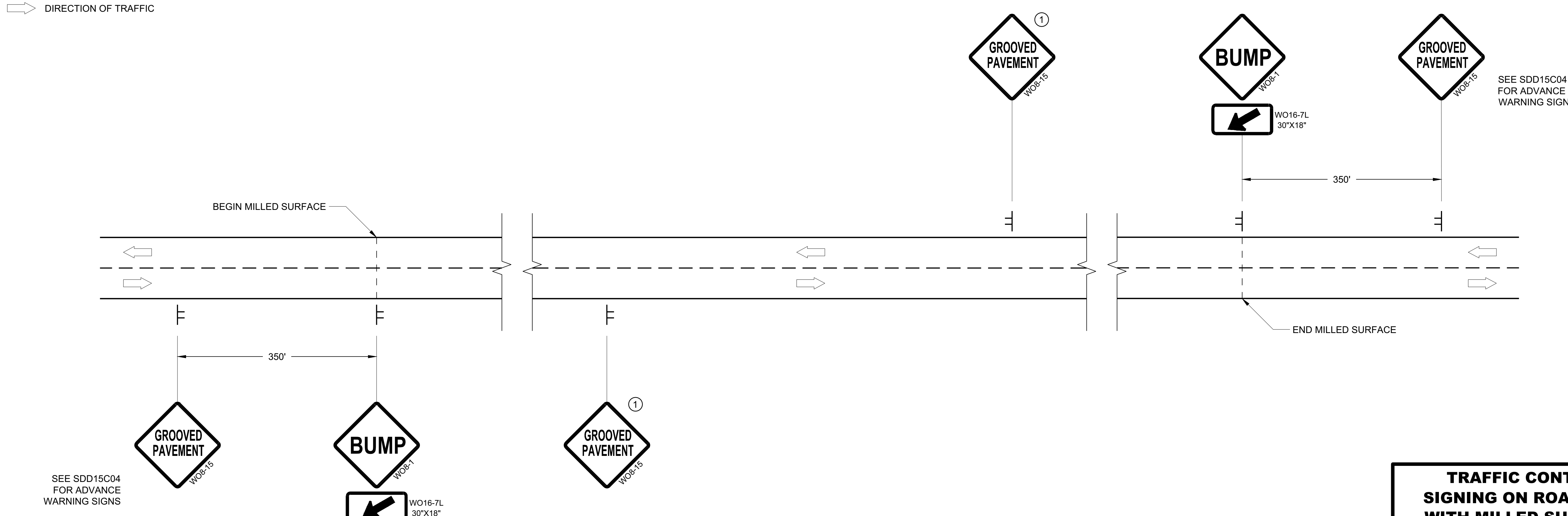
LEGEND

SIGN ON TEMPORARY SUPPORT

DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH SIGN DETAIL



DETAIL FOR SIGNING ON MILLED SURFACES

6

6

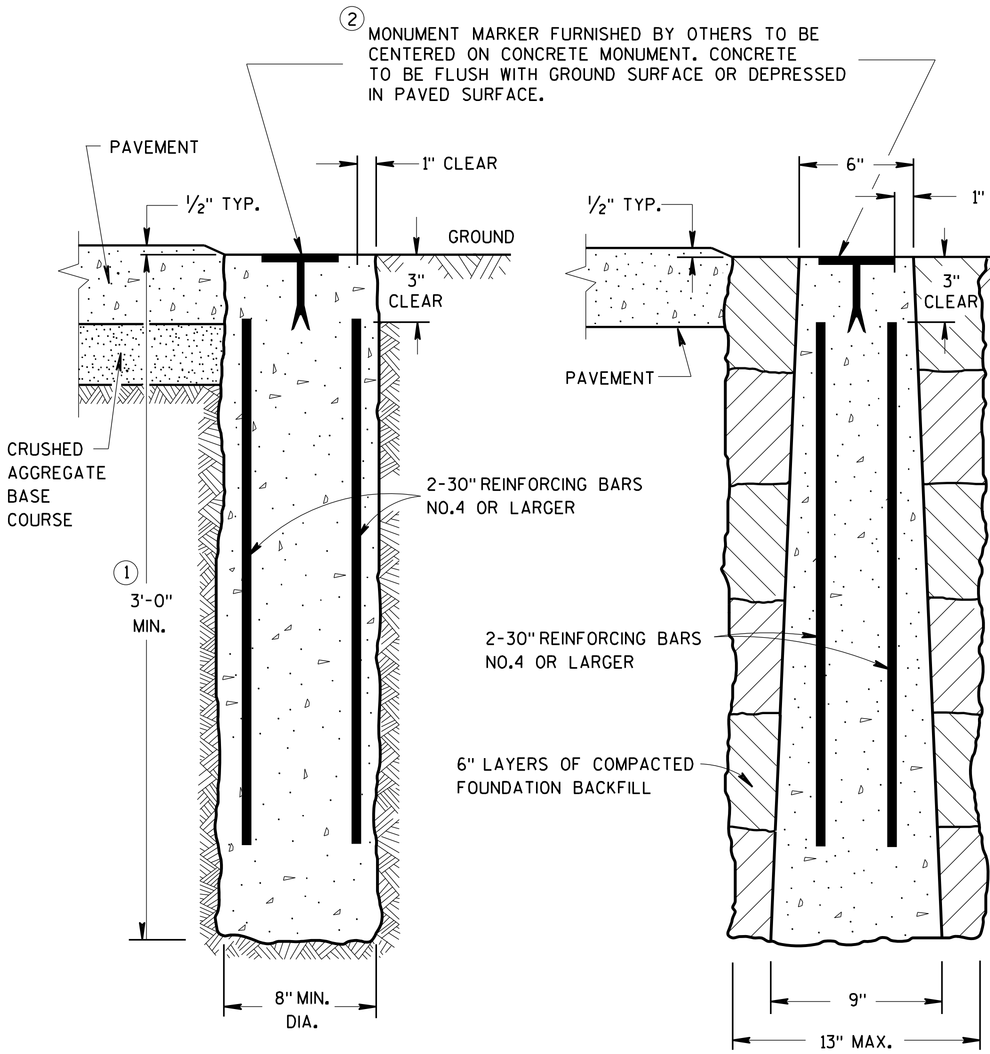
TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

SDD 15D44 - 02

SDD 15D44 - 02

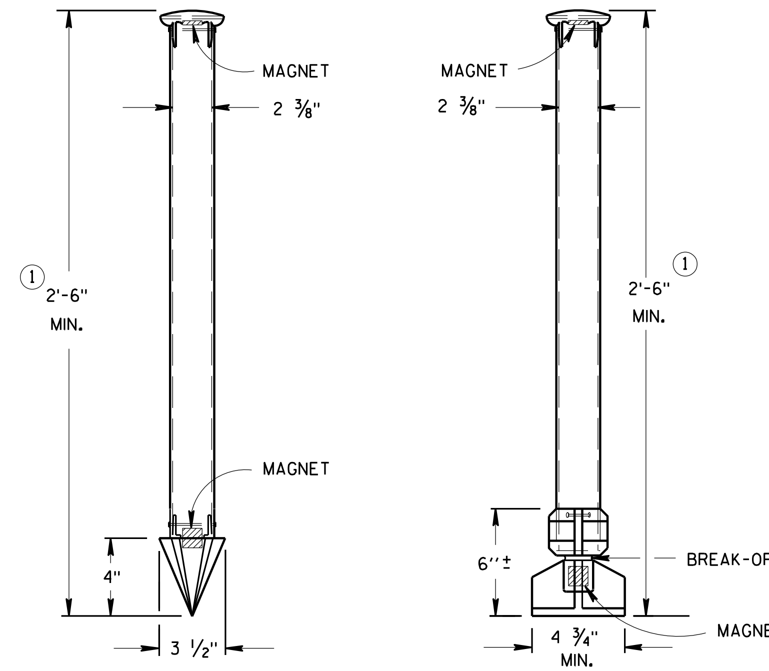


CAST-IN-PLACE

PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C

DRIVE-IN MONUMENT

TYPE D
NON-DRIVEN
BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

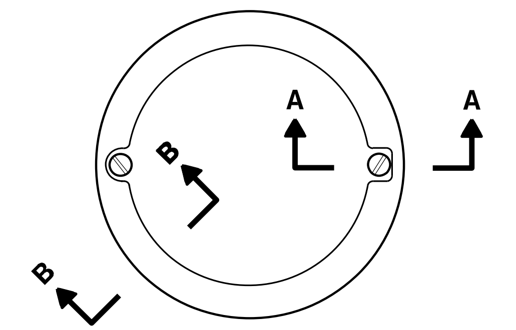
MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

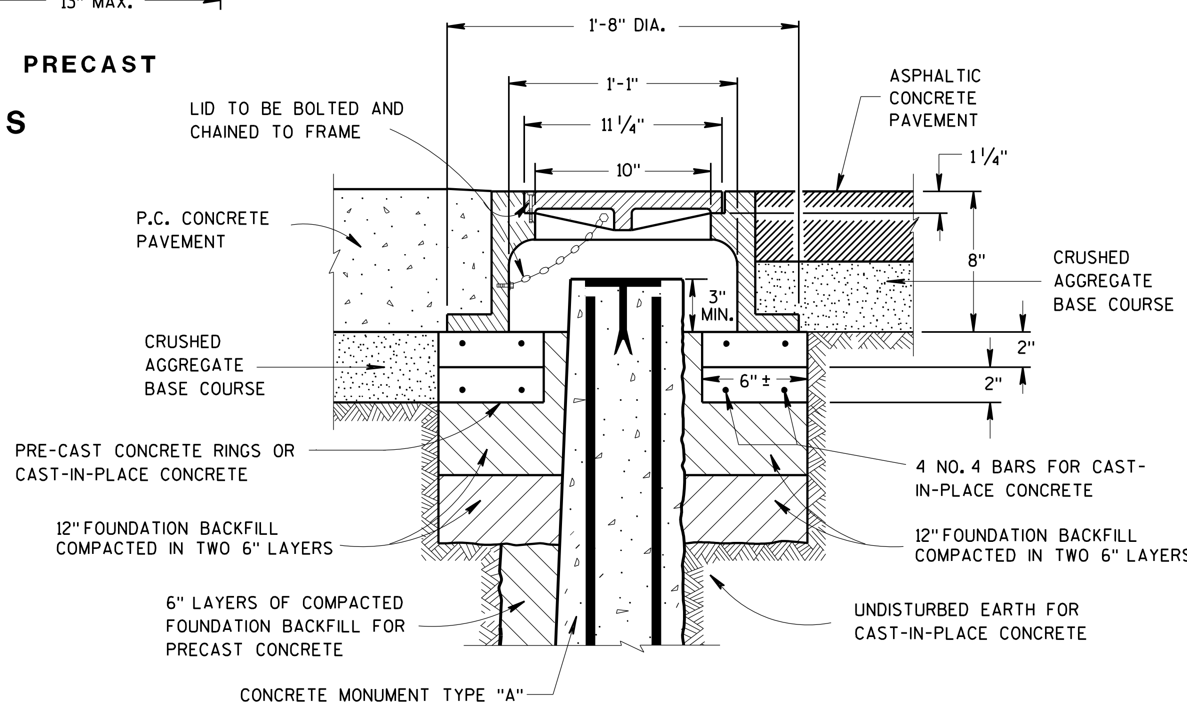
THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER

1. MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
2. AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.

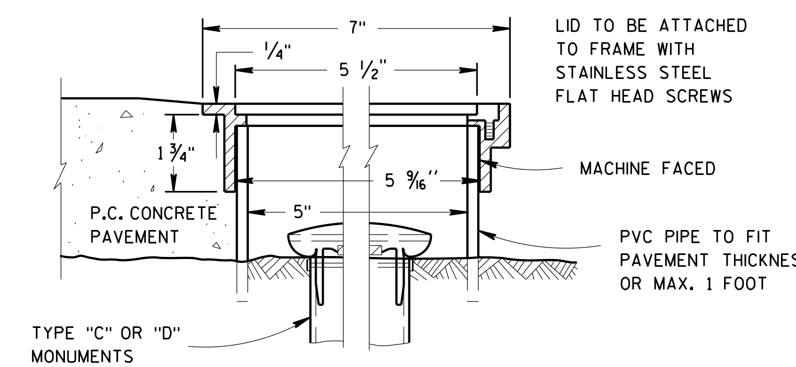


TOP VIEW



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT 95 LBS)

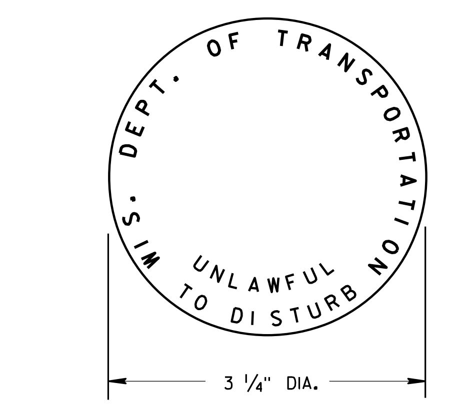


SECTION B-B

SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)



2 WIS DOT MONUMENT MARKER LOGO

FOR TYPES "A", "C", & "D"

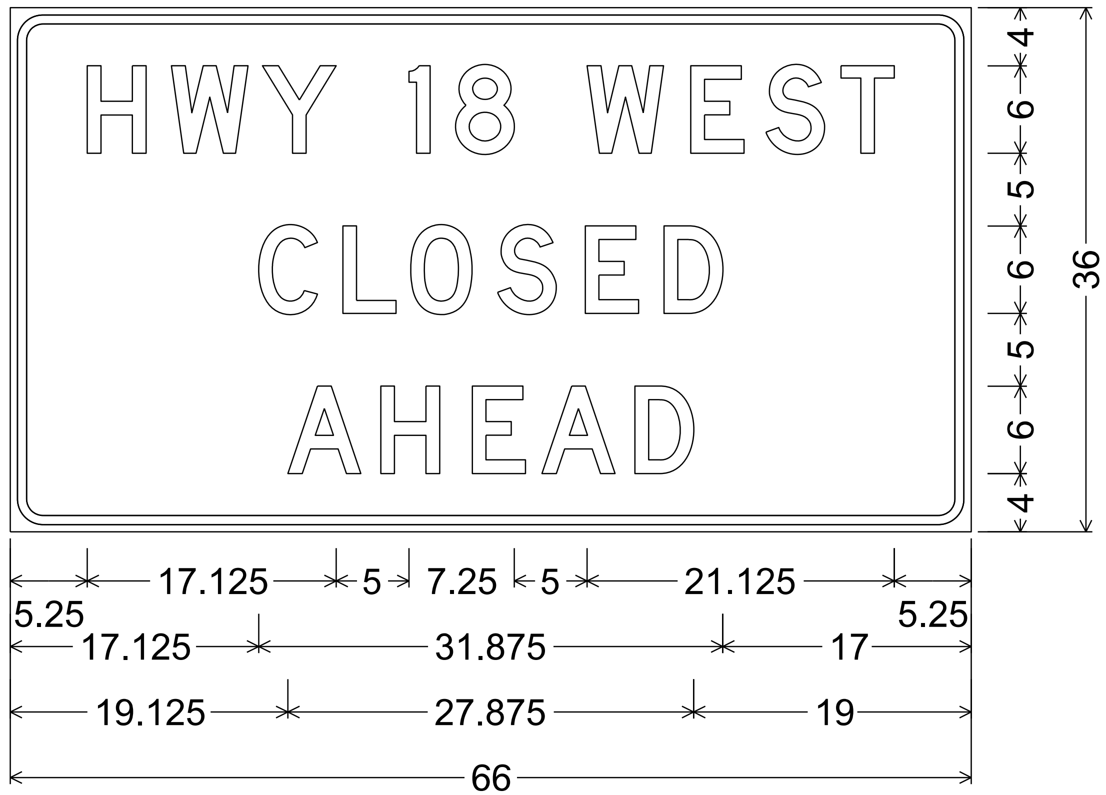
LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

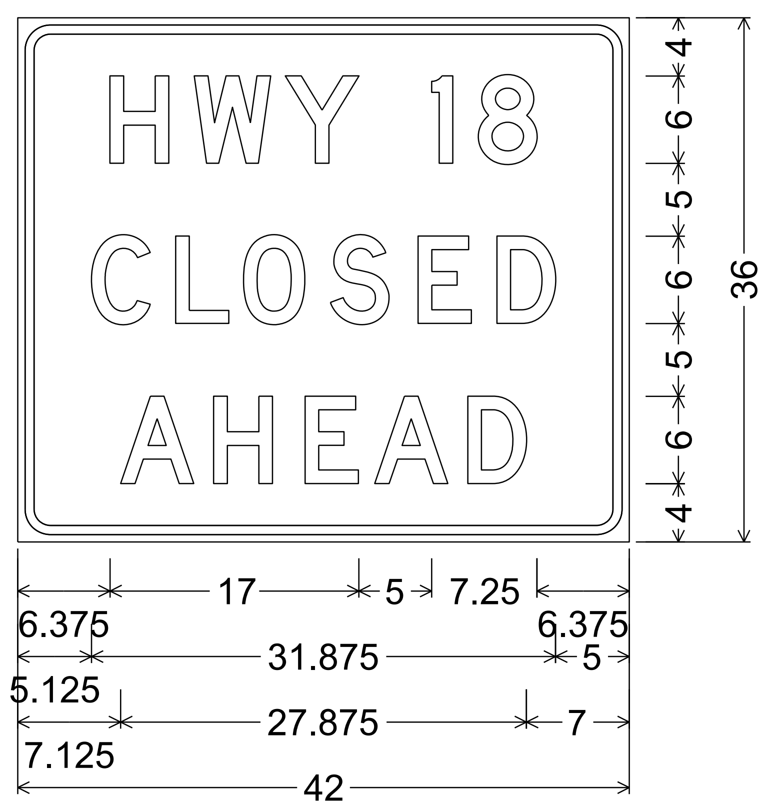
APPROVED
March 2018 — /S/ Raymond A.
DATE — CHIEF SURVEYING AND M... GINEER
FHWA

S.D.D. 16 A 1-7

6



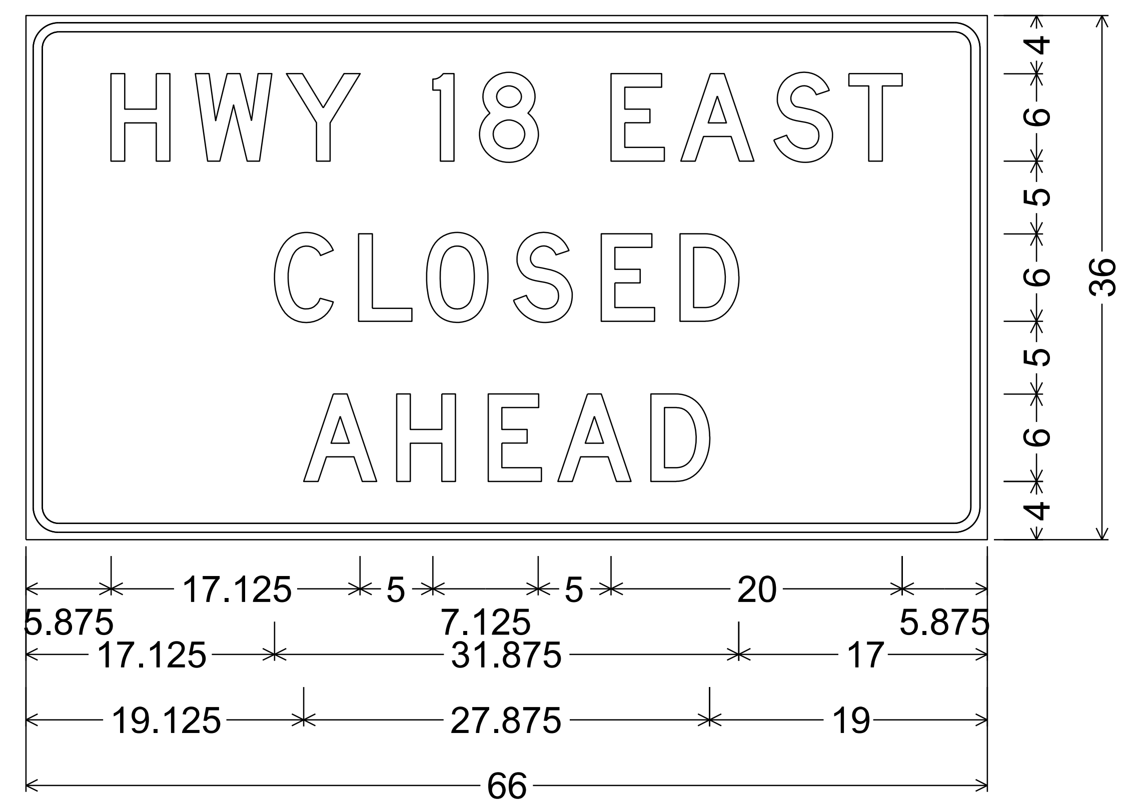
2.250" Radius, 0.625" Border, 0.500" Indent



2.250" Radius, 0.625" Border, 0.500" Indent

NOTES

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

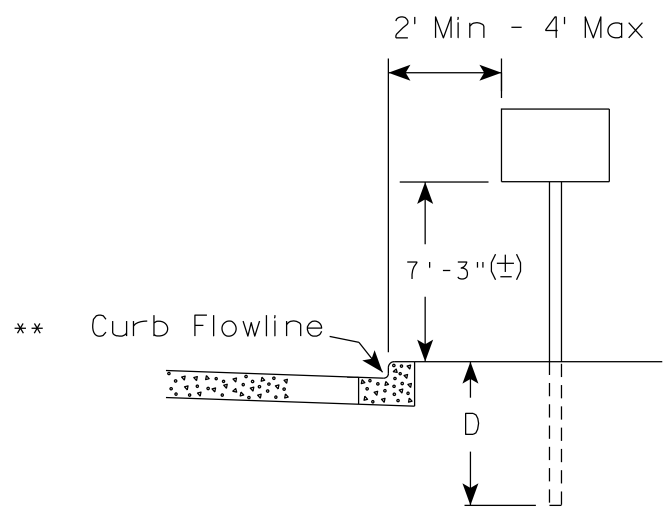


2.250" Radius, 0.625" Border, 0.500" Indent

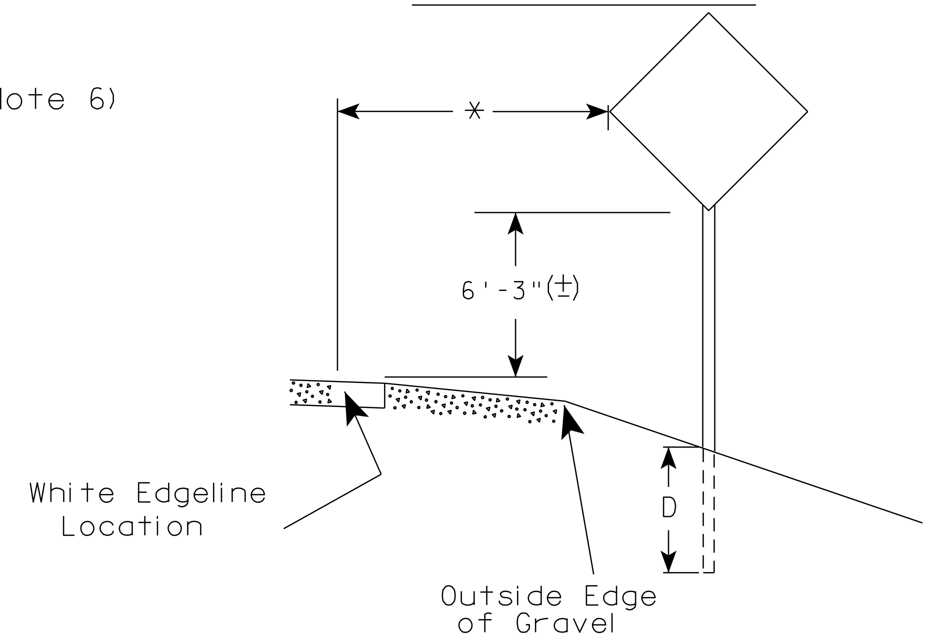
7

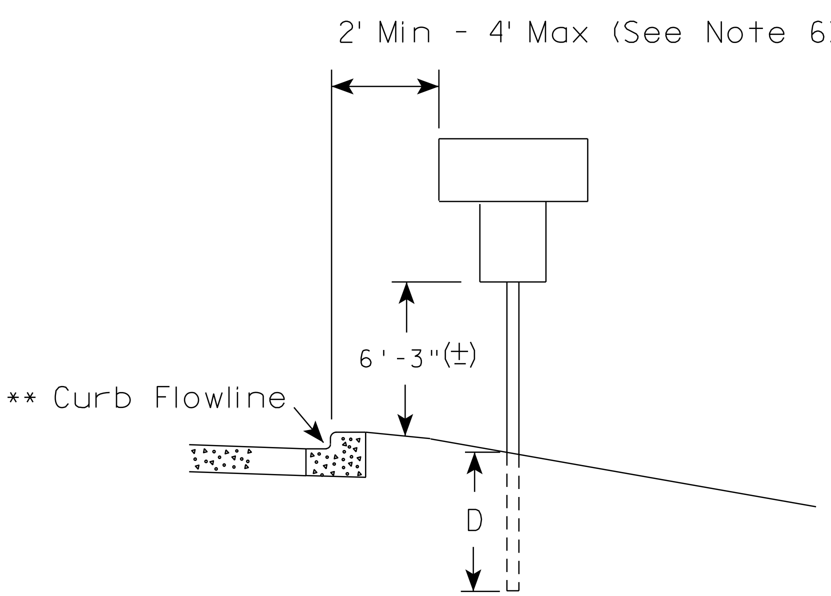
7

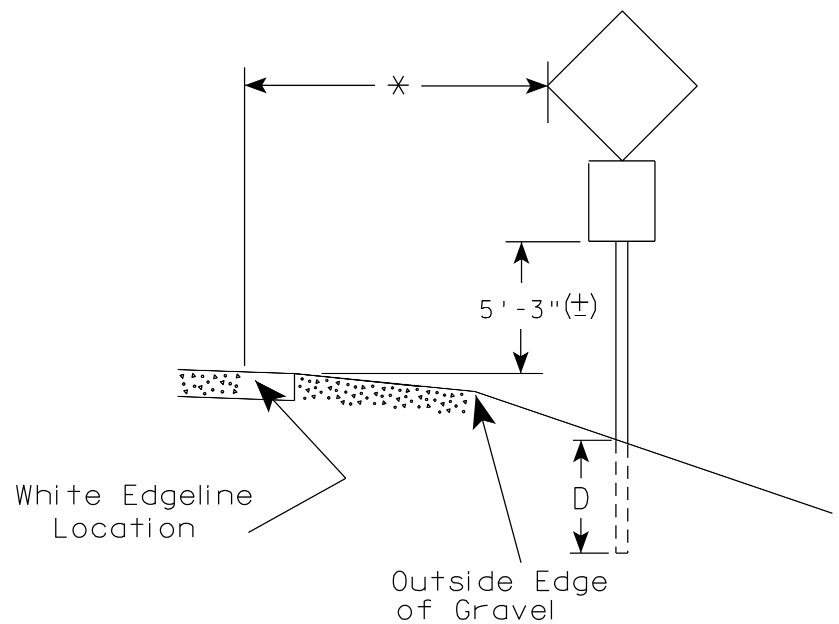
URBAN AREA



RURAL AREA (See Note 2)







GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

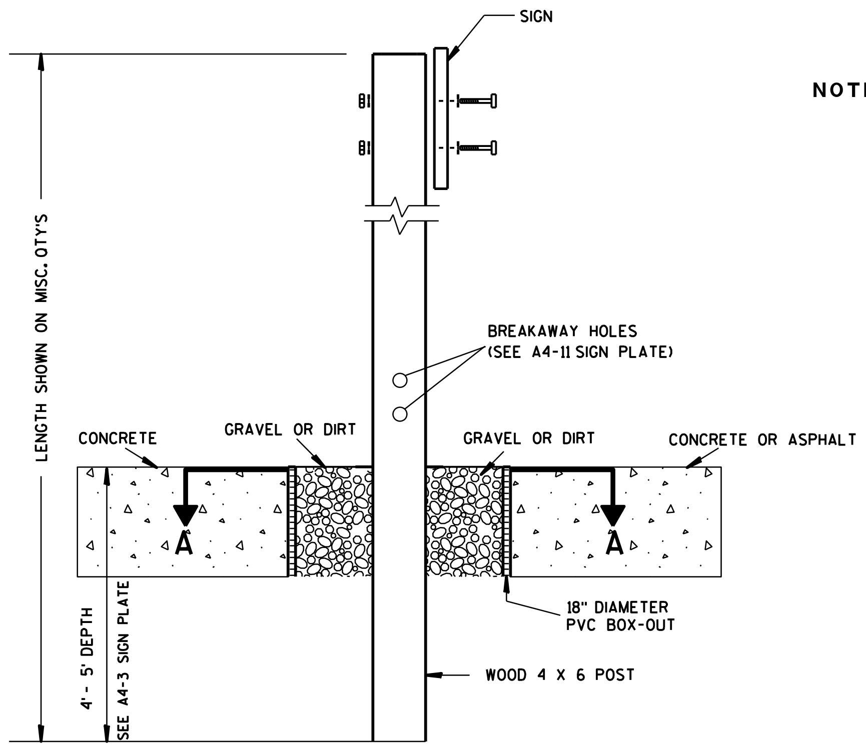
7

7

NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION

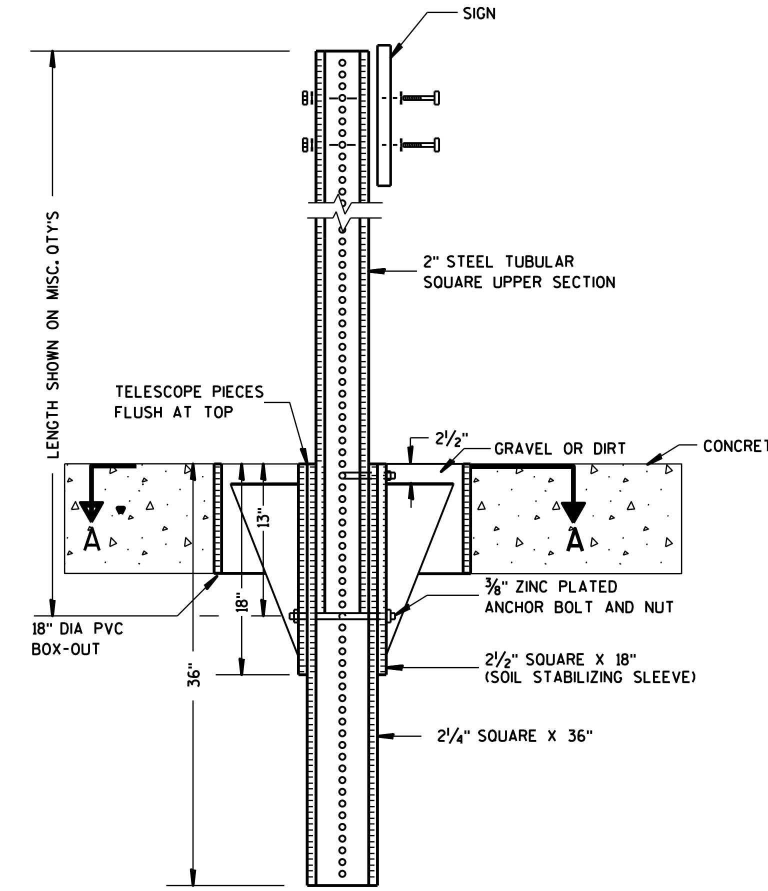
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS

3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



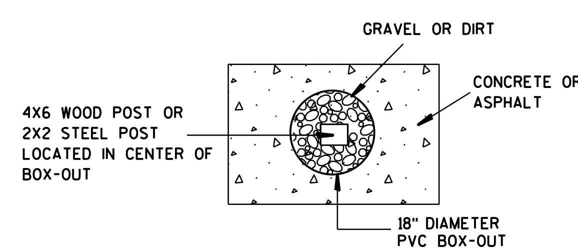
ELEVATION VIEW

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

7

7

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

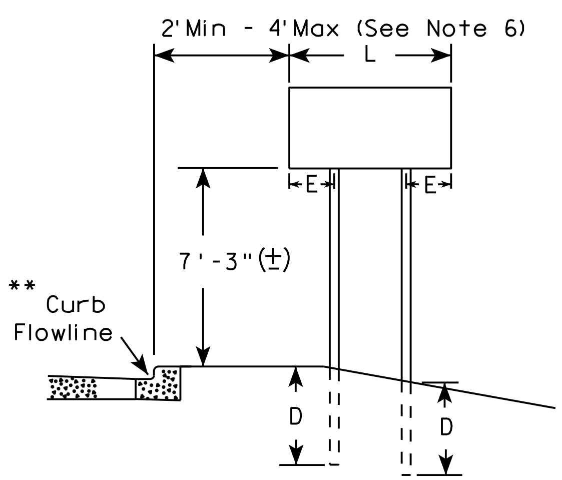
APPROVED Matthew R Rauch

for State Traffic Engineer

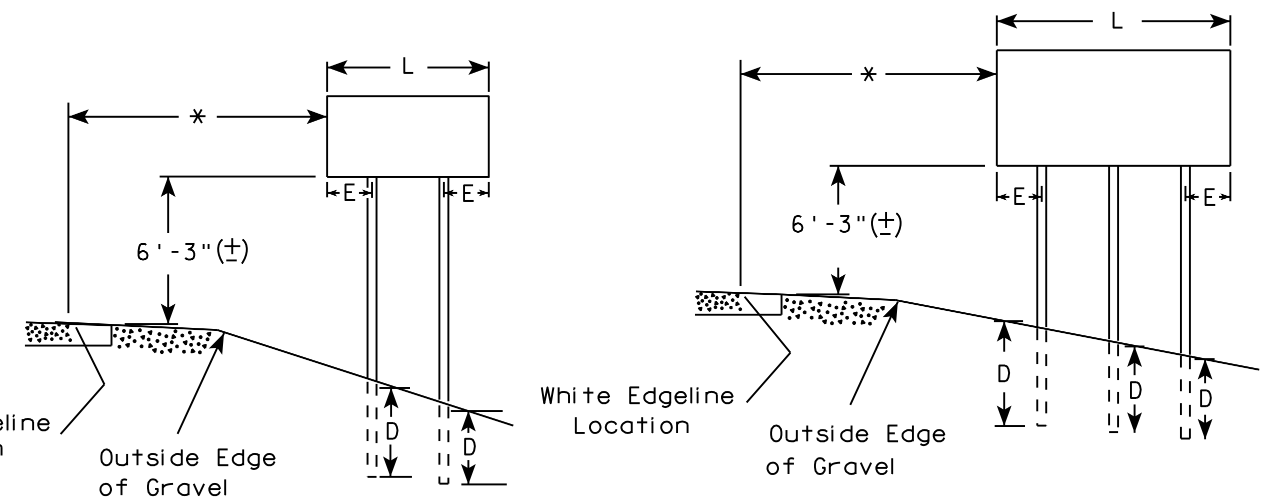
DATE 1/27/14 PLATE NO. A4-3B.1

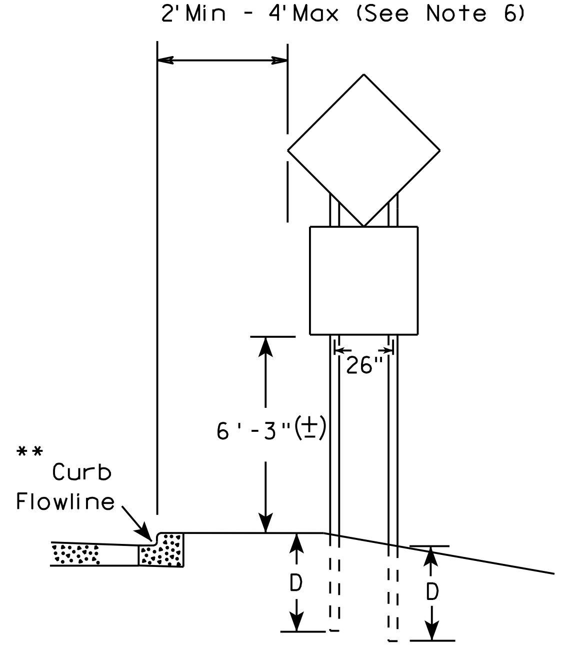
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

URBAN AREA

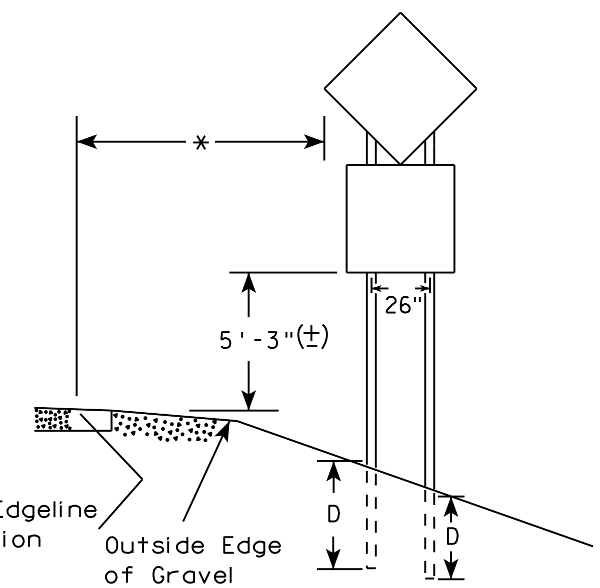


RURAL AREA (See Note 3)





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

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

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

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

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)

	L	E
***	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)

L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

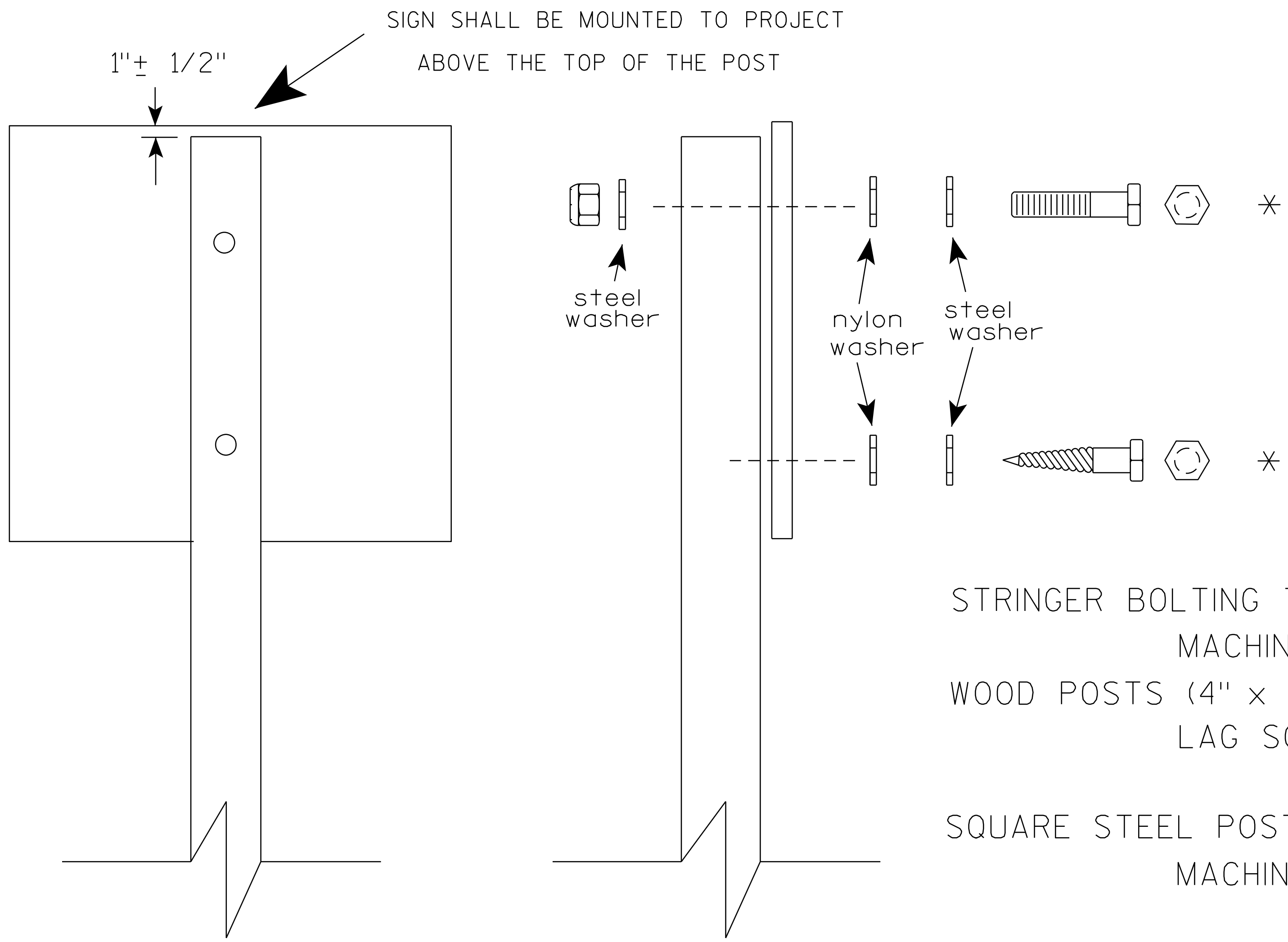
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

7

7

ATTACHMENT OF SIGNS TO POSTS

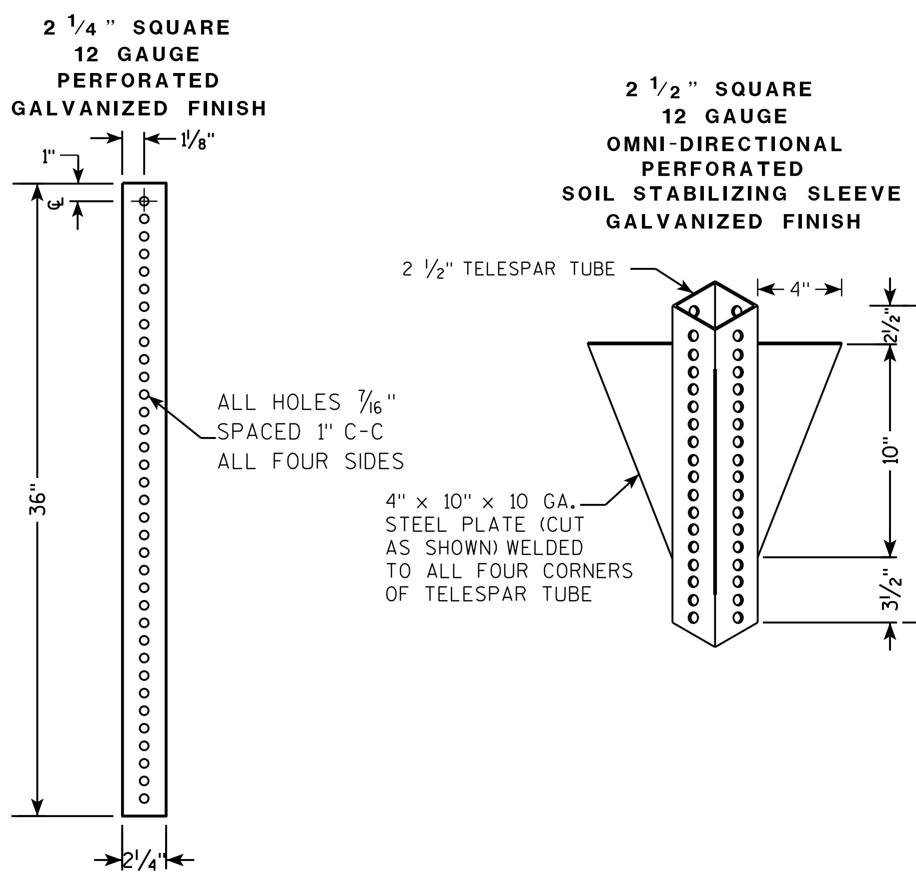
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

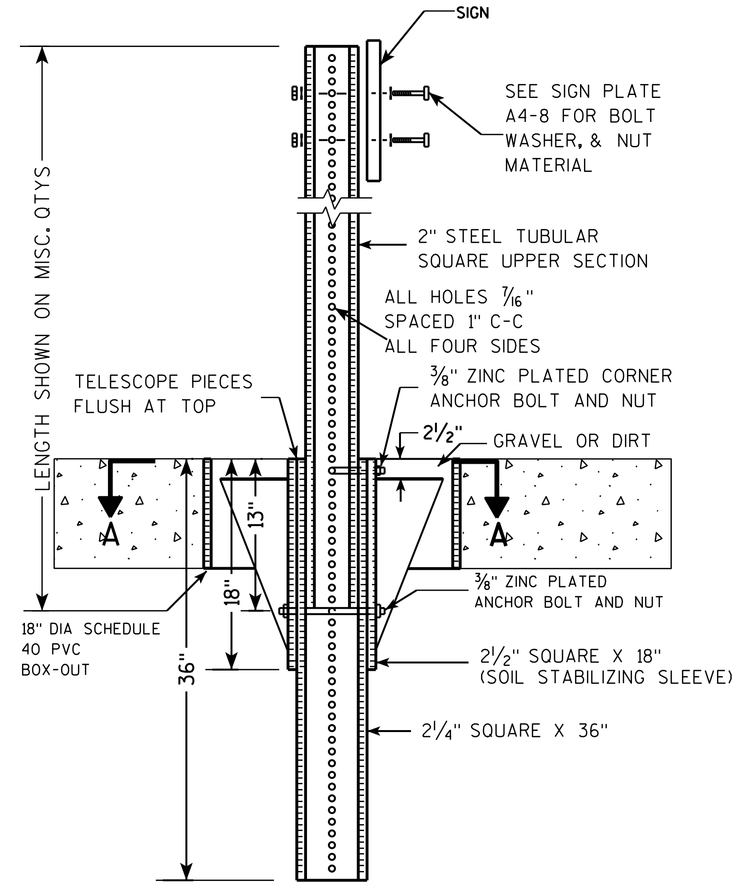
PROJECT NO:				SHEET NO: 244	E

TELESCOPIC TUBING ANCHORS TWO PIECE SYSTEM



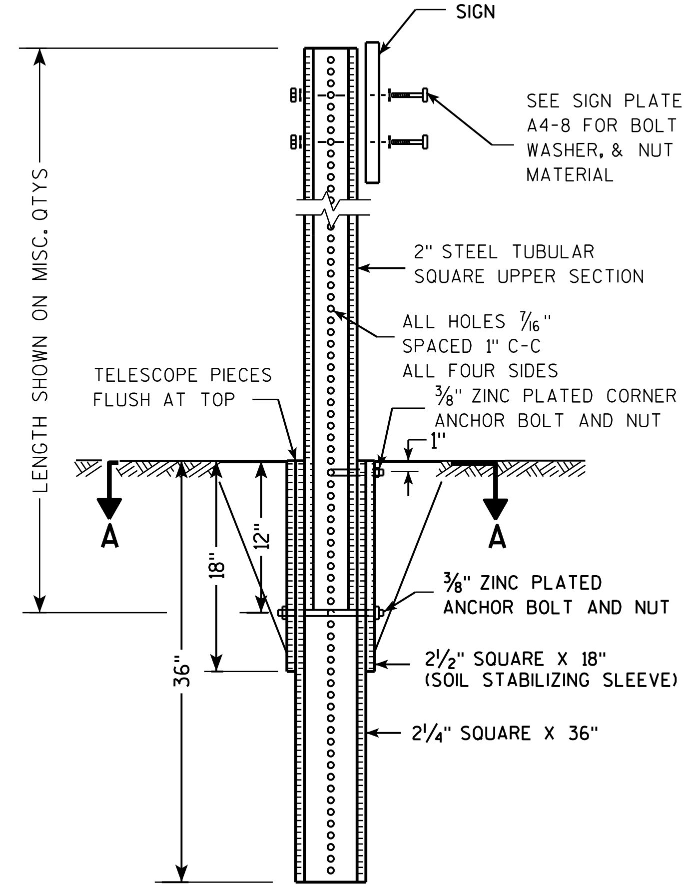
DETAIL OF TUBULAR STEEL SIGN POST

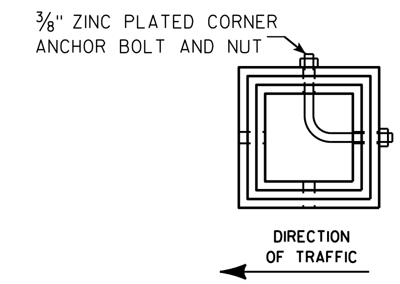
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST

(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





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).

7

7

TUBULAR STEEL
SIGN POST
A4-9

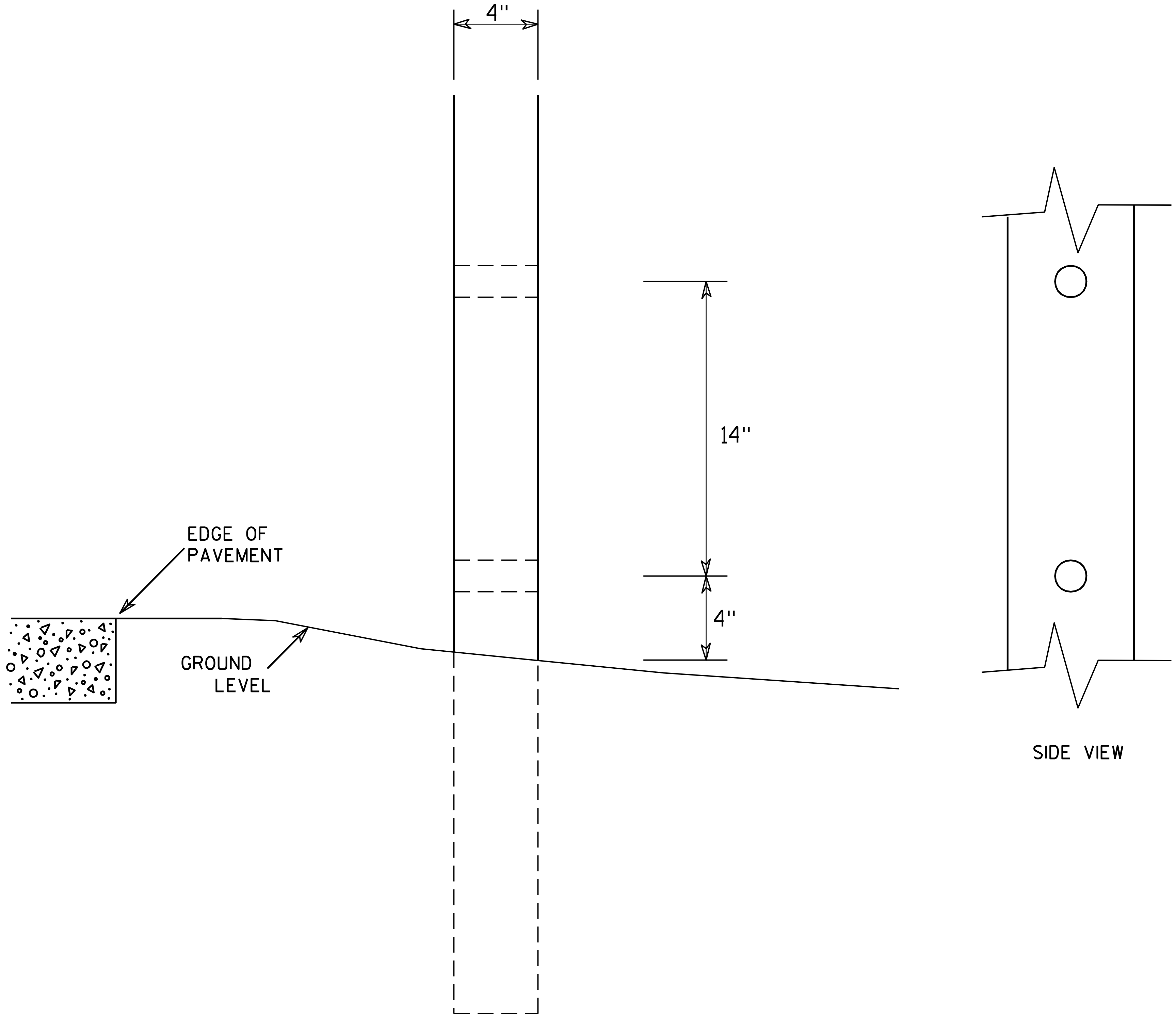
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

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



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two $1\frac{1}{2}$" diameter holes drilled perpendicular to the roadway centerline.

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

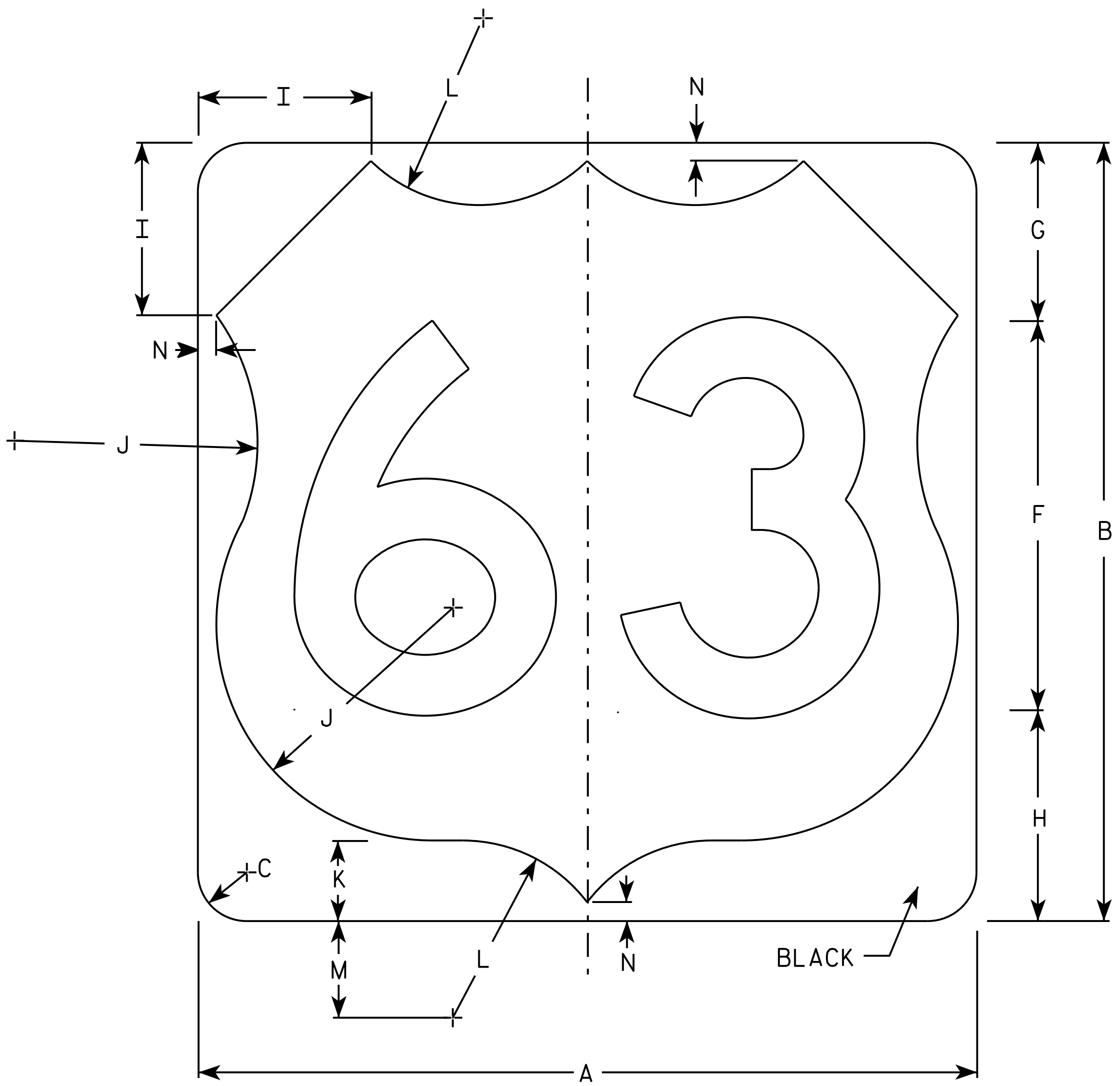
7

7

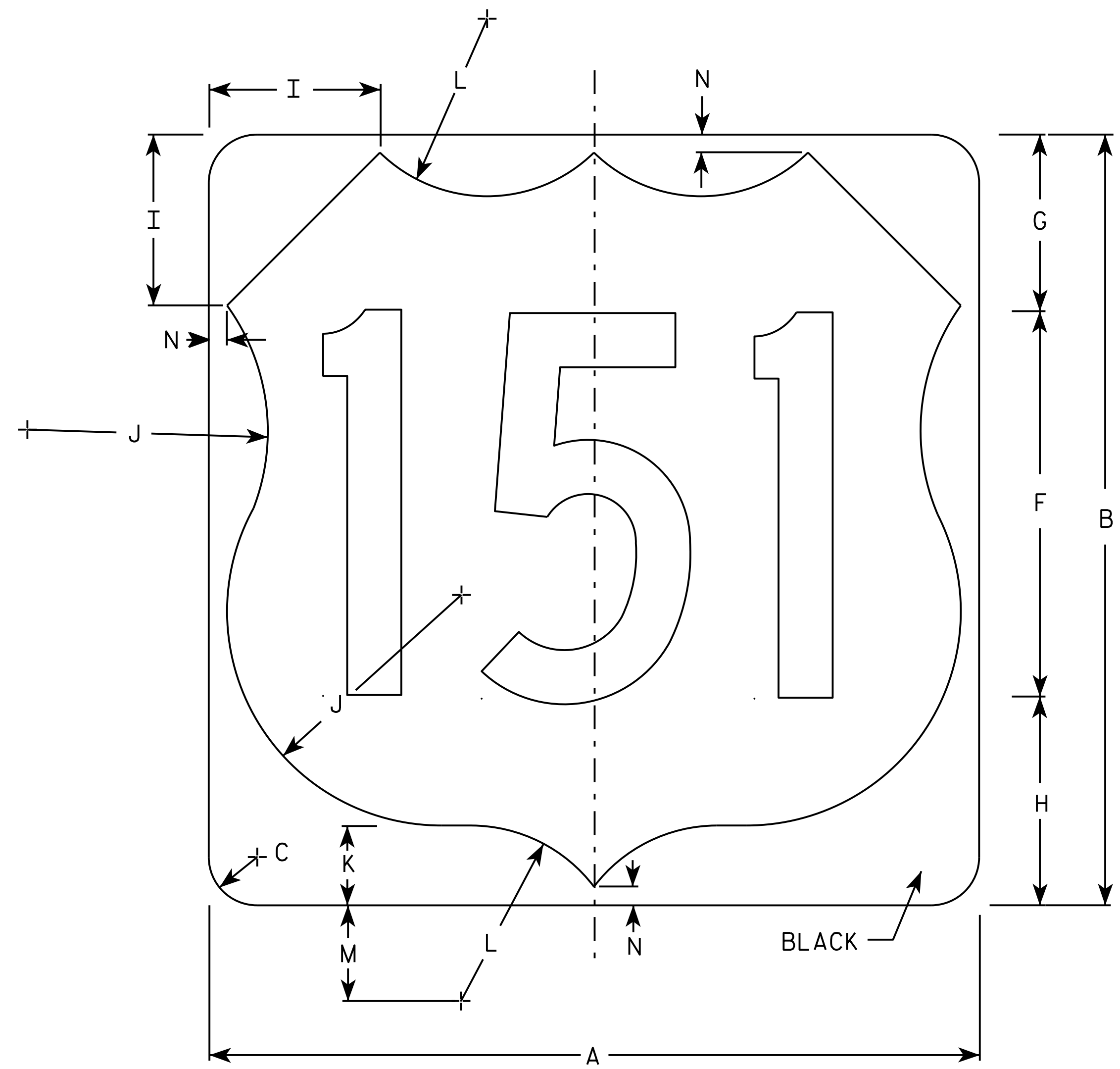
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 246	E

NOTES

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



M1-4



M1-4

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

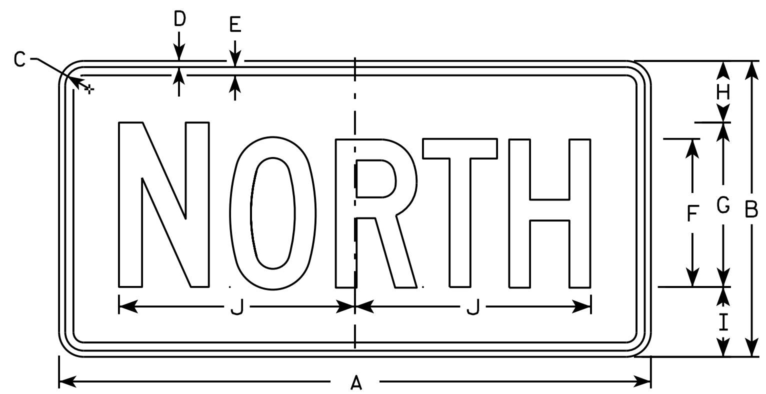
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

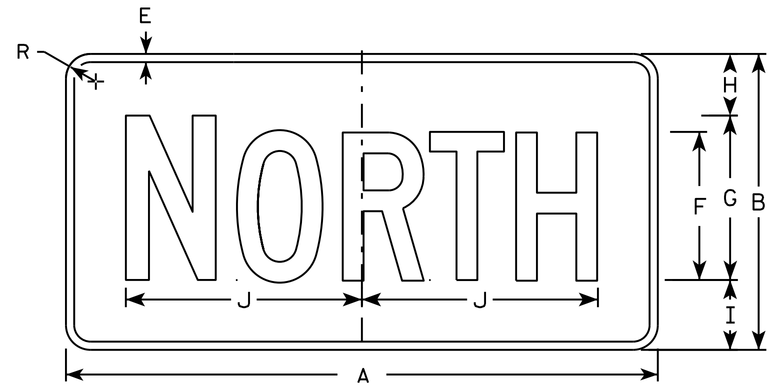
APPROVED Matthew R Rauch
for State Traffic Engineer

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

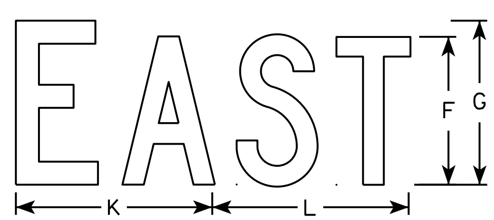
PROJECT NO: HWY: COUNTY: SHEET NO: 247 E



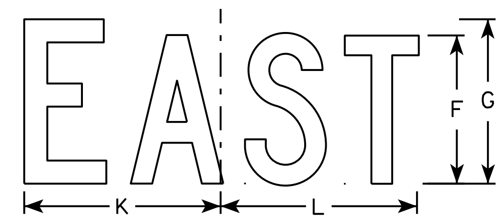
M3-1
MM3-1
MP3-1



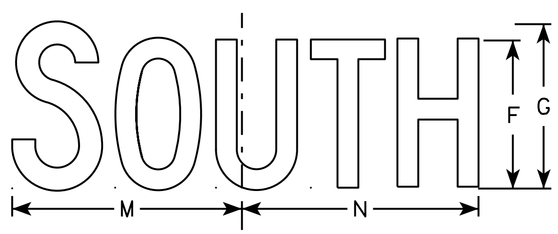
MB3-1
MK3-1
MN3-1



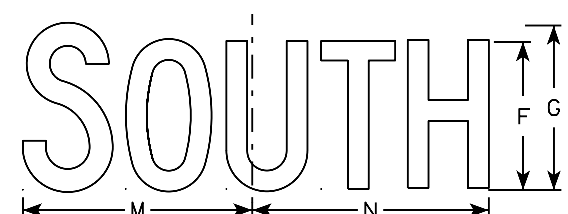
M3-2
MM3-2
MP3-2



MB3-2
MK3-2
MN3-2

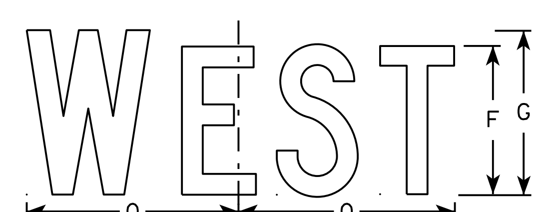


M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3

M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
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 sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thur M3-4
SERIES

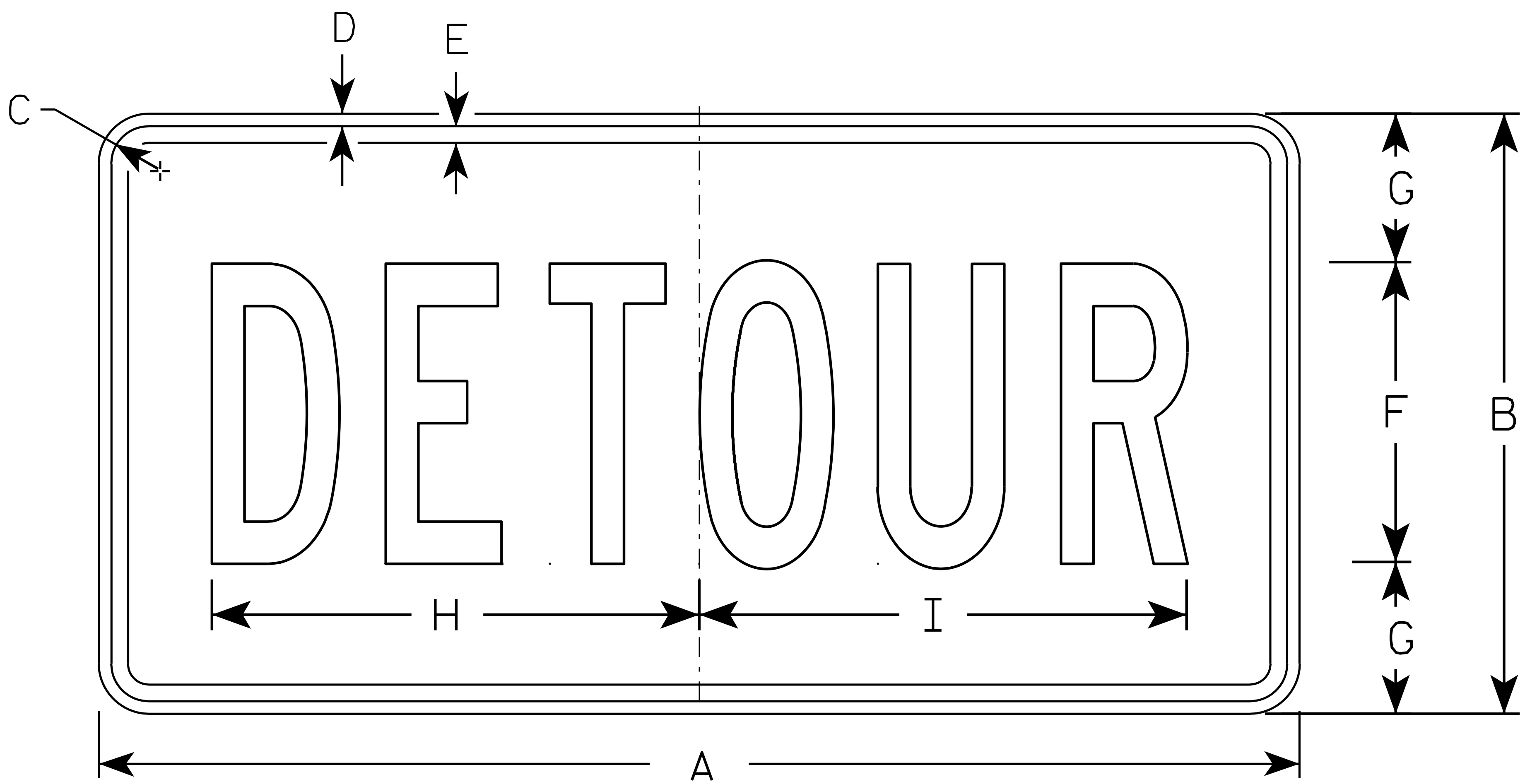
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

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

PROJECT NO: HWY: COUNTY: SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



M4-8

NOTES

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

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

STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

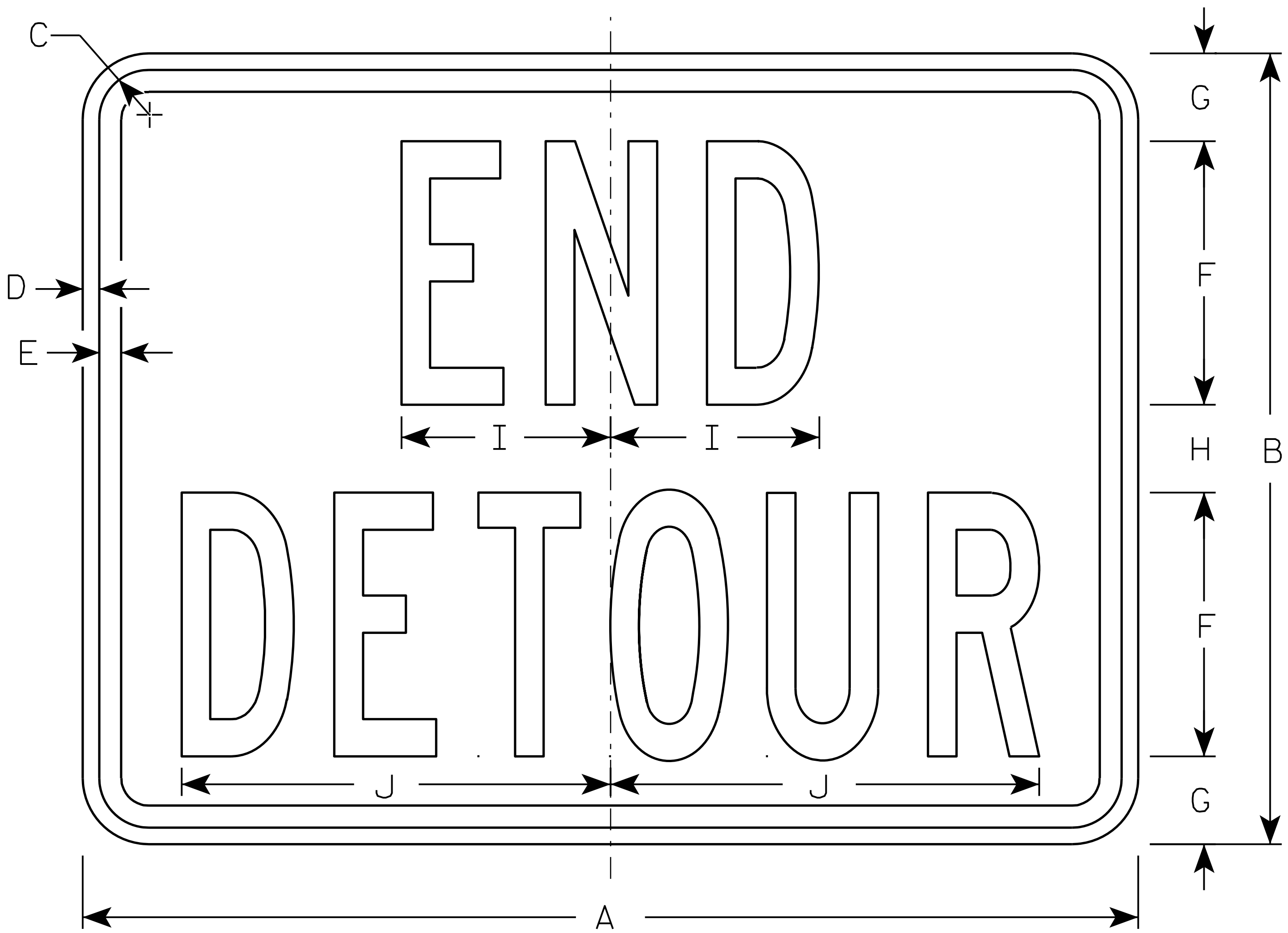
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 249 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M48.DGN PLOT DATE : 10-NOV-2010 13:18 PLOT BY : dotjph PLOT NAME : PLOT SCALE : 4.767233:1.000000

WISDOT/CADDS SHEET 42



M4-8A

NOTES

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

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

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

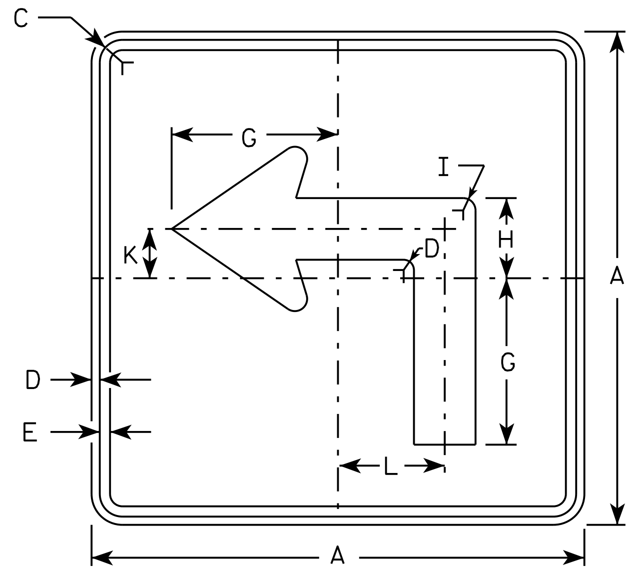
APPROVED Matthew R Rauch
for State Traffic Engineer

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

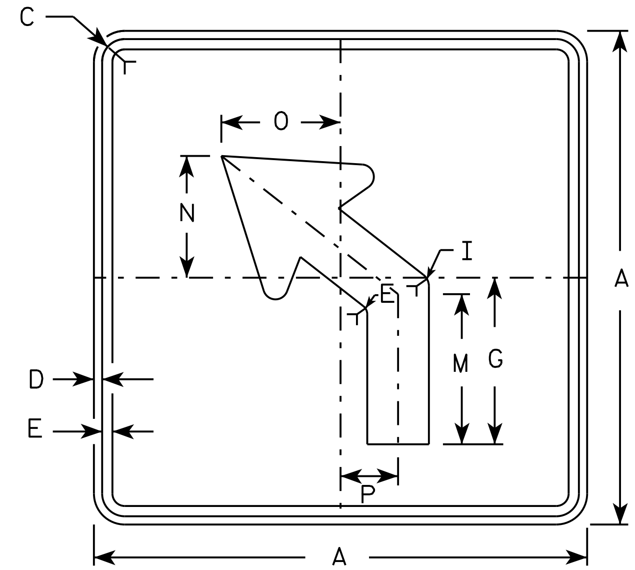
PROJECT NO: HWY: COUNTY: SHEET NO: 250 E

7 7

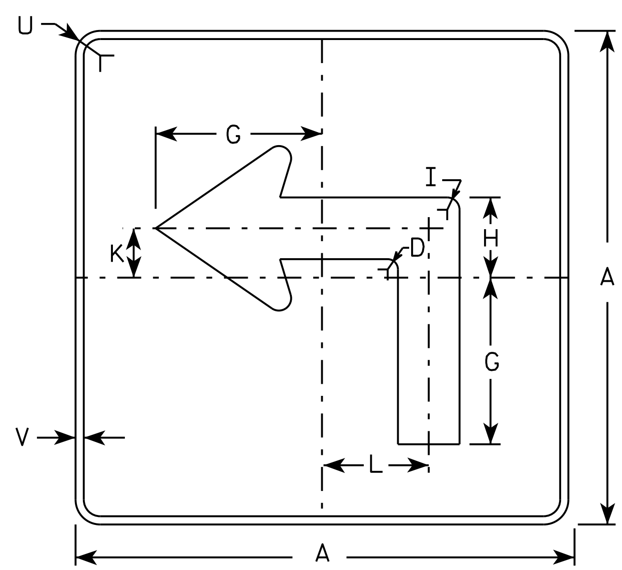
FILE NAME : C:\Users\PROJECTS\tr_stdplate\M48A.DGN PLOT DATE : 09-MAR-2011 10:29 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 3.972696:1.000000 WISDOT/CADDS SHEET 42



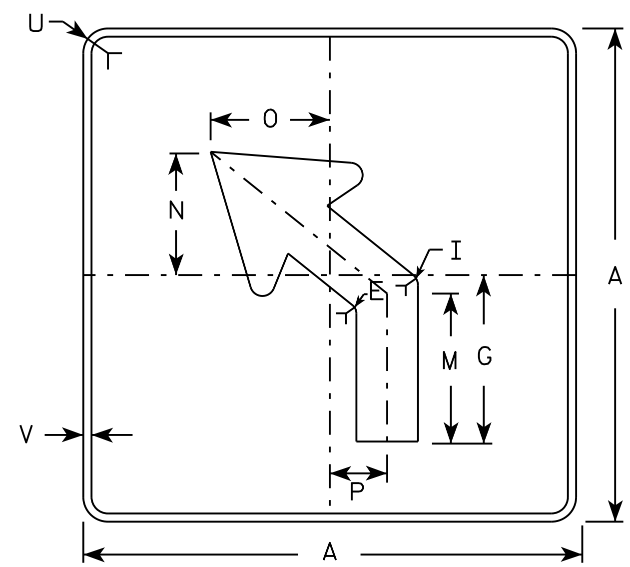
M5-1L
MM5-1L
MO5-1L
MP5-1L



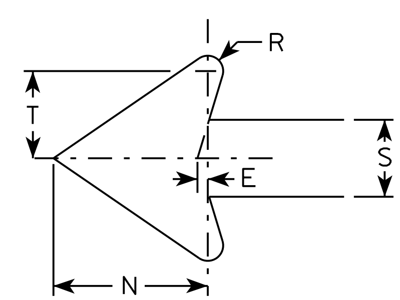
M5-2L
MM5-2L
MO5-2L
MP5-2L



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



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



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. 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
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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

STANDARD SIGN
M5-1 & M5-2

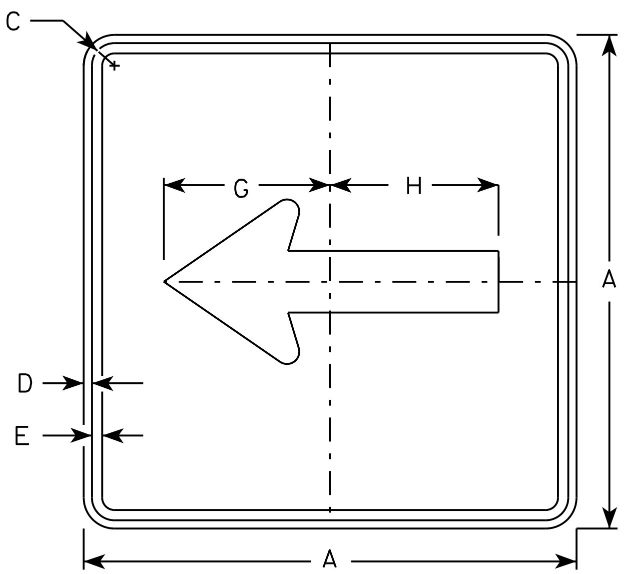
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

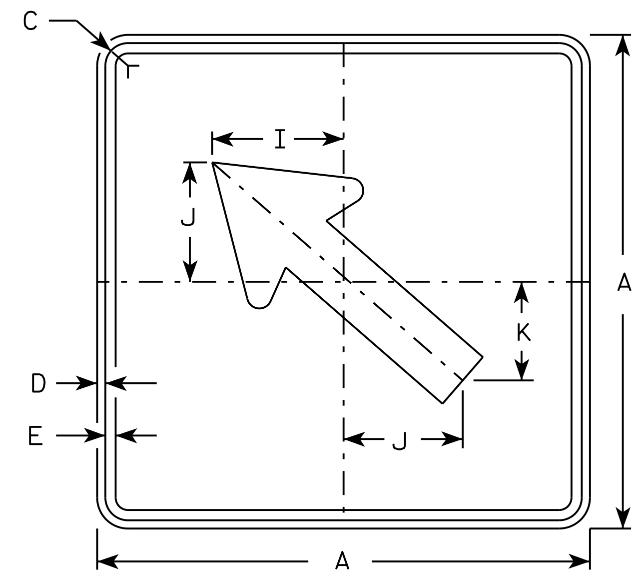
DATE 10/15/15 PLATE NO. M5-1.13

PROJECT NO: HWY: COUNTY: SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



M6 - 1
MM6 - 1
MO6 - 1
MP6 - 1



M6 - 2
MM6 - 2
MO6 - 2
MP6 - 2

NOTES

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

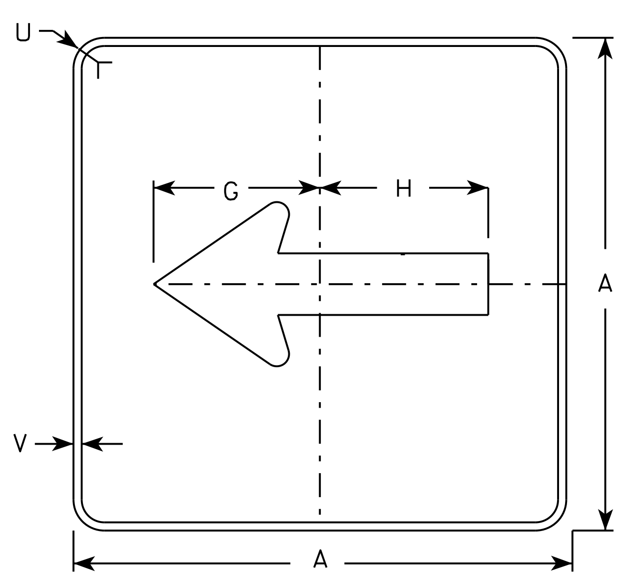
   MM6-1 and MM6-2 Background - White
   Message - Green

   MN6-1 and MN6-2 Background - Brown
   Message - White

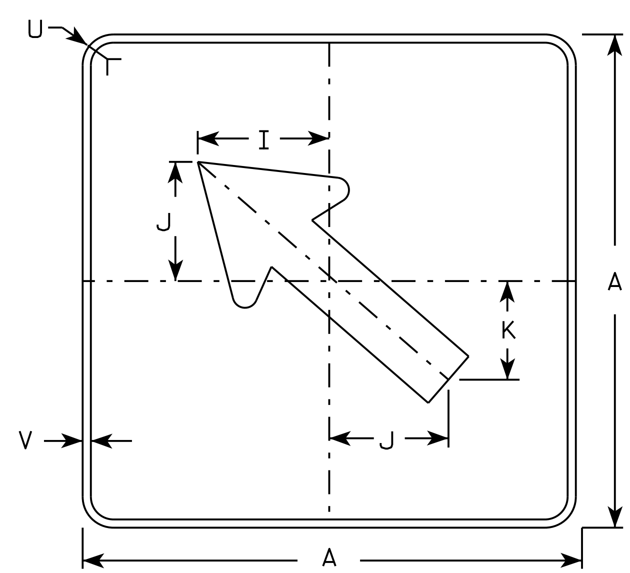
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black

   MP6-1 and MP6-2 Background - White
   Message - Blue

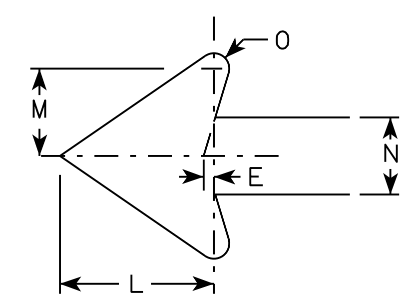
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



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



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



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

STANDARD SIGN M6 - 1 & M6 - 2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

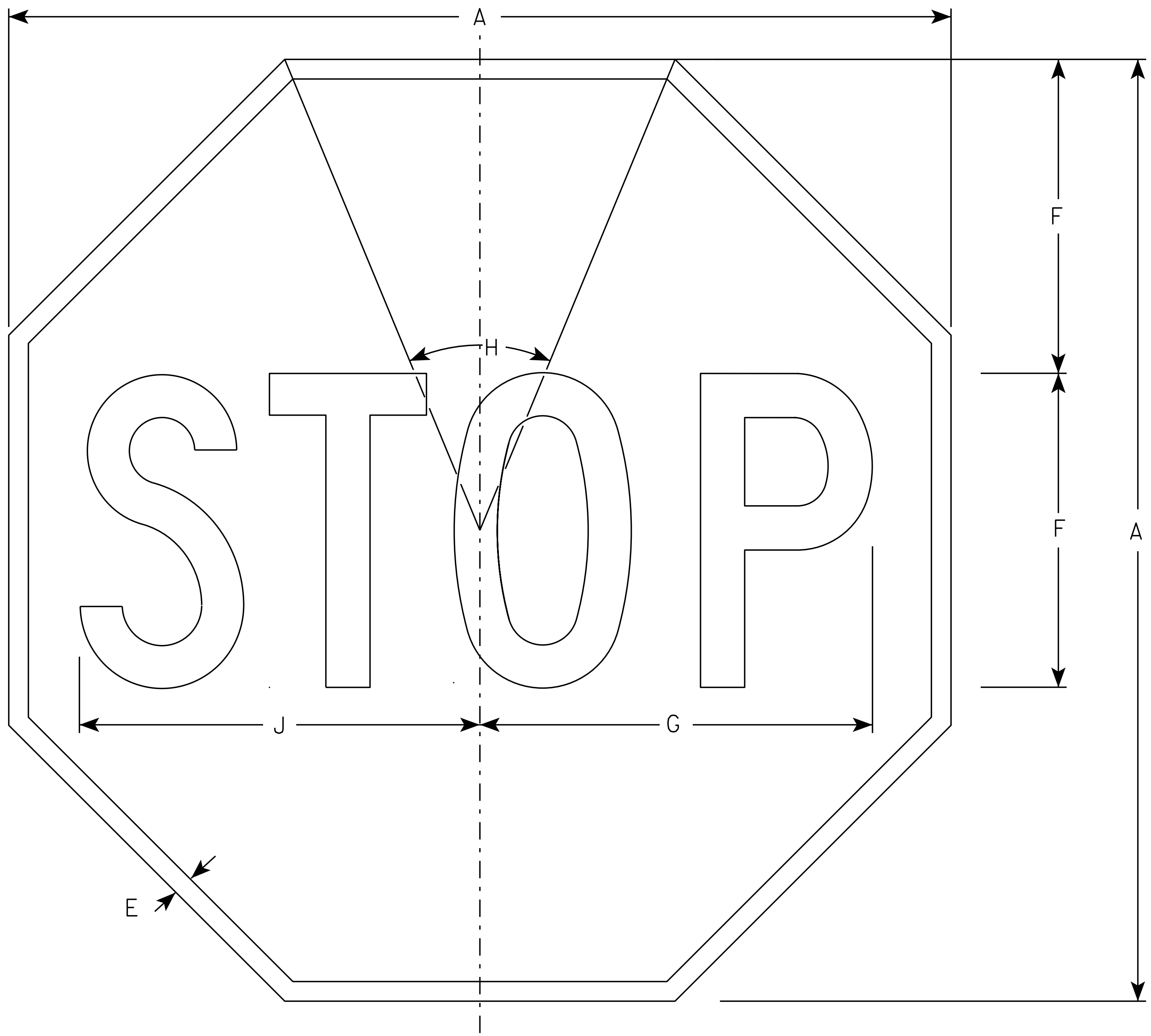
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 252 M6-1.15

PROJECT NO: HWY: COUNTY: SHEET NO: E

NOTES

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



R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				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

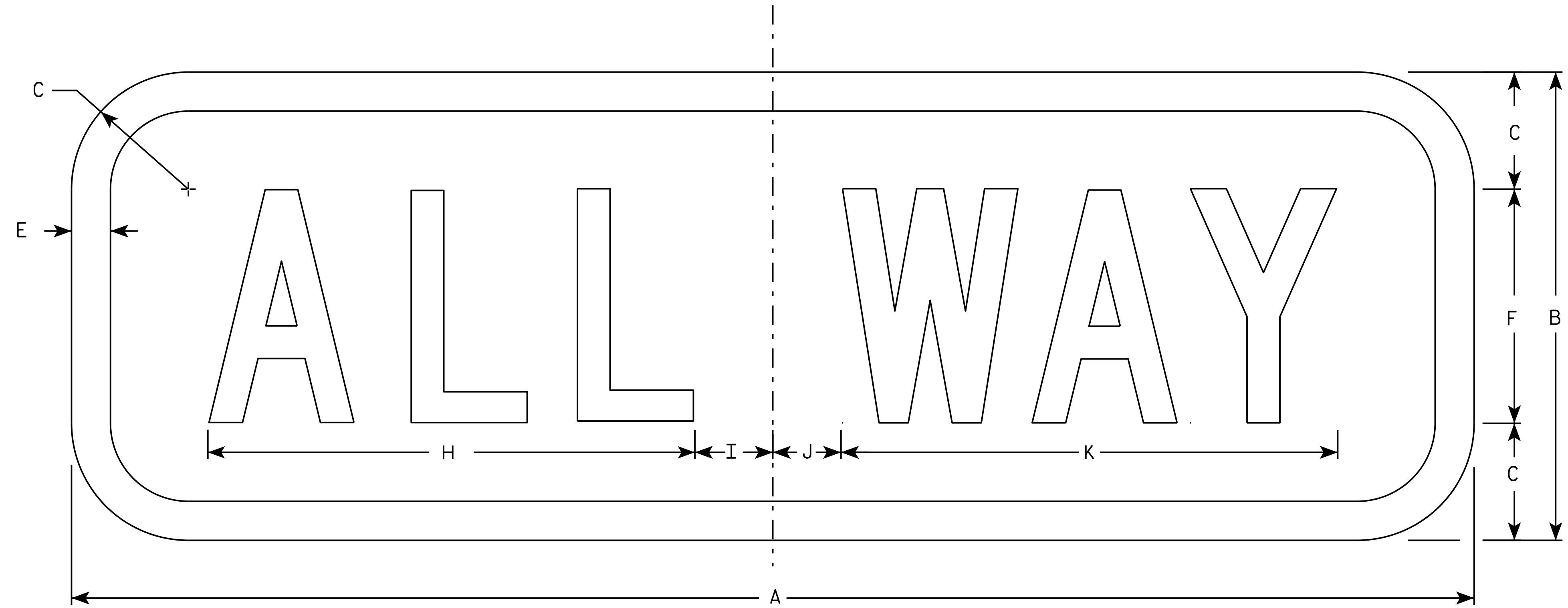
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: HWY: COUNTY: SHEET NO: 253 E

7 7



R1-3P

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. For 30"x30" R1-1 use 18"x6" R1-3P sign
   For 36"x36" R1-1 use 24"x9" R1-3P sign
   For 48"x48" R1-1 use 30"x12" R1-3P 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 sq. ft.
1	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																0.75
2S	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																1.5
2M	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
3	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
4	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5
5	30	12	2 1/4		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5

STANDARD SIGN
R1-3P

WISCONSIN DEPT OF TRANSPORTATION

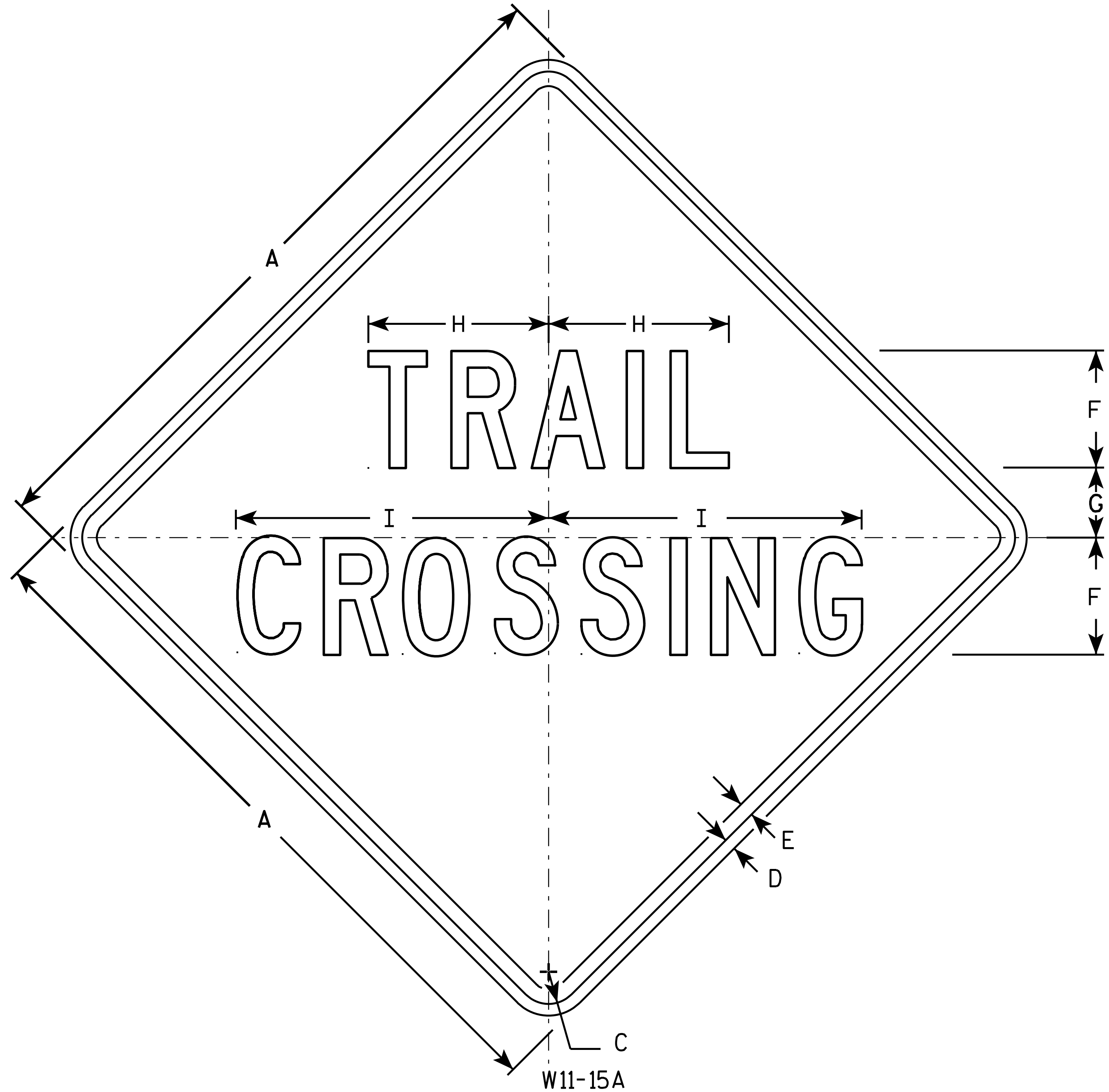
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/29/16 PLATE NO. R1-3P.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 254 | E

7

7



NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2 3/8	6 1/8	10 3/4																		4.0
2S	30		1 3/8	1/2	5/8	5	3	7 3/4	13 3/8																		6.25
2M	36		1 5/8	5/8	3/4	6	3 1/2	9 1/4	16																		9.0
3	36		1 5/8	5/8	3/4	6	3 1/2	9 1/4	16																		9.0
4	48		2 1/4	3/4	1	8	5	12 7/8	21 1/4																		16.0
5																											

STANDARD SIGN
W11-15A

WISCONSIN DEPT OF TRANSPORTATION

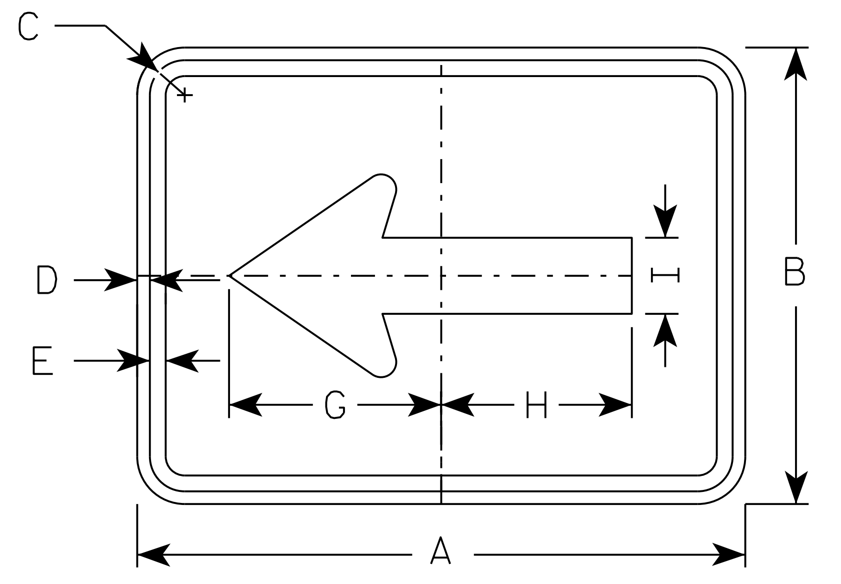
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/21/10 PLATE NO. W11-15A.1

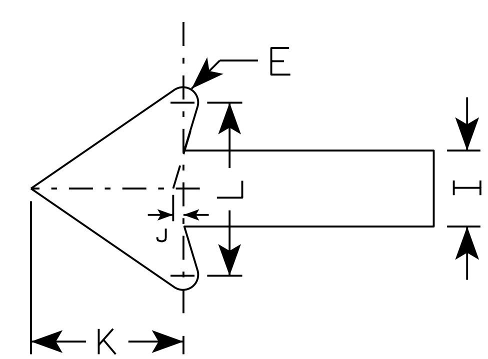
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 255 | E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - YELLOW
   Message - BLACK
3. W16-5PR is the same as W16-5PL except the arrow is reversed along the vertical centerline.



W16-5PL



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	18	1 3/8	1/2	5/8		8 3/8	7 1/2	3	3/8	6	6 7/8															3.0
2M	24	18	1 3/8	1/2	5/8		8 3/8	7 1/2	3	3/8	6	6 7/8															3.0
3																											
4																											
5																											

STANDARD SIGN

W16-5P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
for State Traffic Engineer

DATE 3/15/18 PLATE NO. W16-5P.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 256 | E

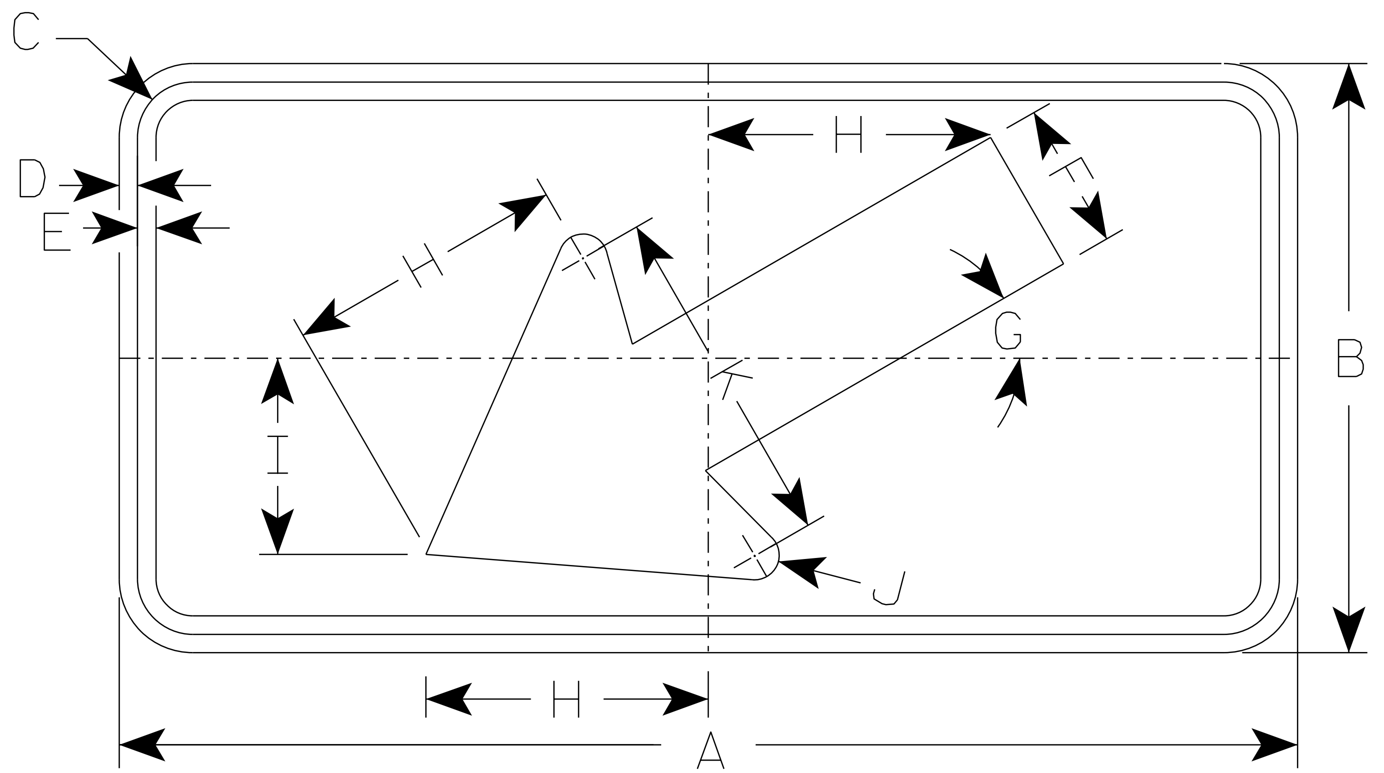
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W165P.DGN PLOT DATE : 15-MAR-2018 16:42 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 7.575285:1.000000 WISDOT/CADDS SHEET 42

7

7

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 sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	3	30°	5 3/4	4	1/2	7																2.0
* 2M	30	18	1 1/8	3/8	1/2	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
* 3	30	18	1 1/8	3/8	1/2	4 1/2	30°	8 1/2	6	5/8	10 1/4																3.75
* 4	48	24	1 3/8	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 3/16/2021 PLATE NO. W16-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 257	E

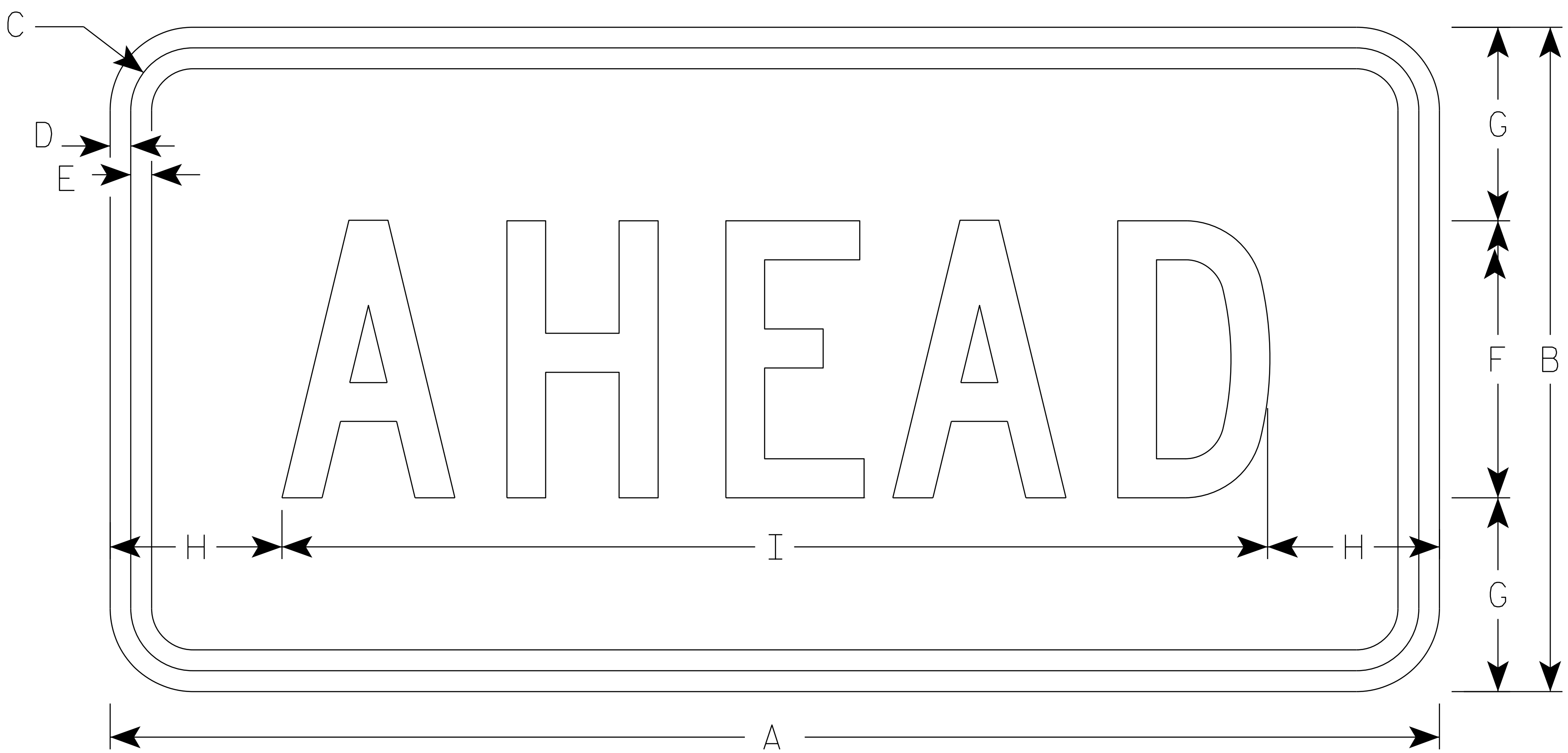
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W167.dgn PLOT DATE : 16-MAR-2021 3:53 PLOT BY : dotc4c PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

7

7

NOTES

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



W16-9P

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

STANDARD SIGN
W16-9P

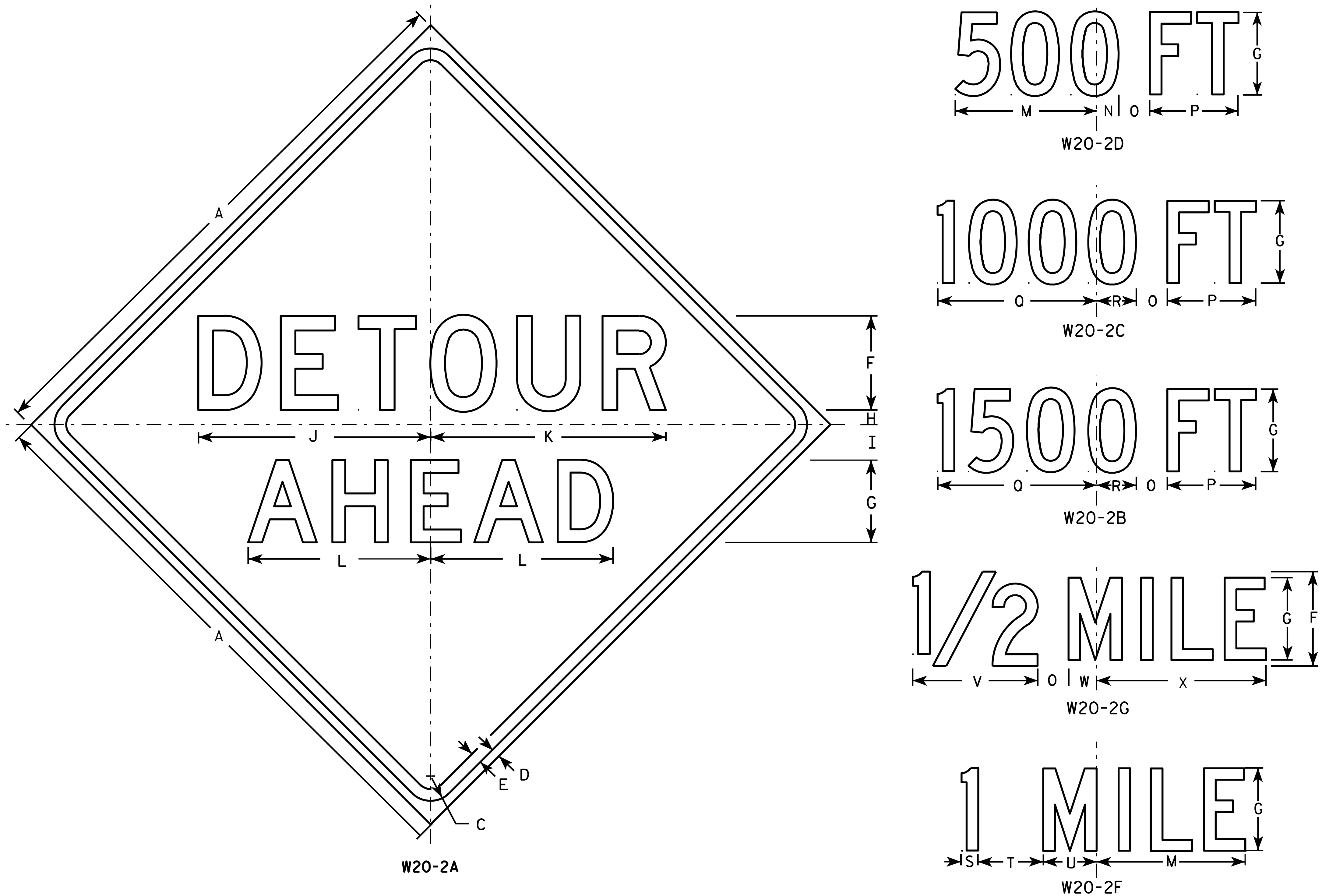
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

7



NOTES

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

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

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

WISCONSIN DEPT OF TRANSPORTATION

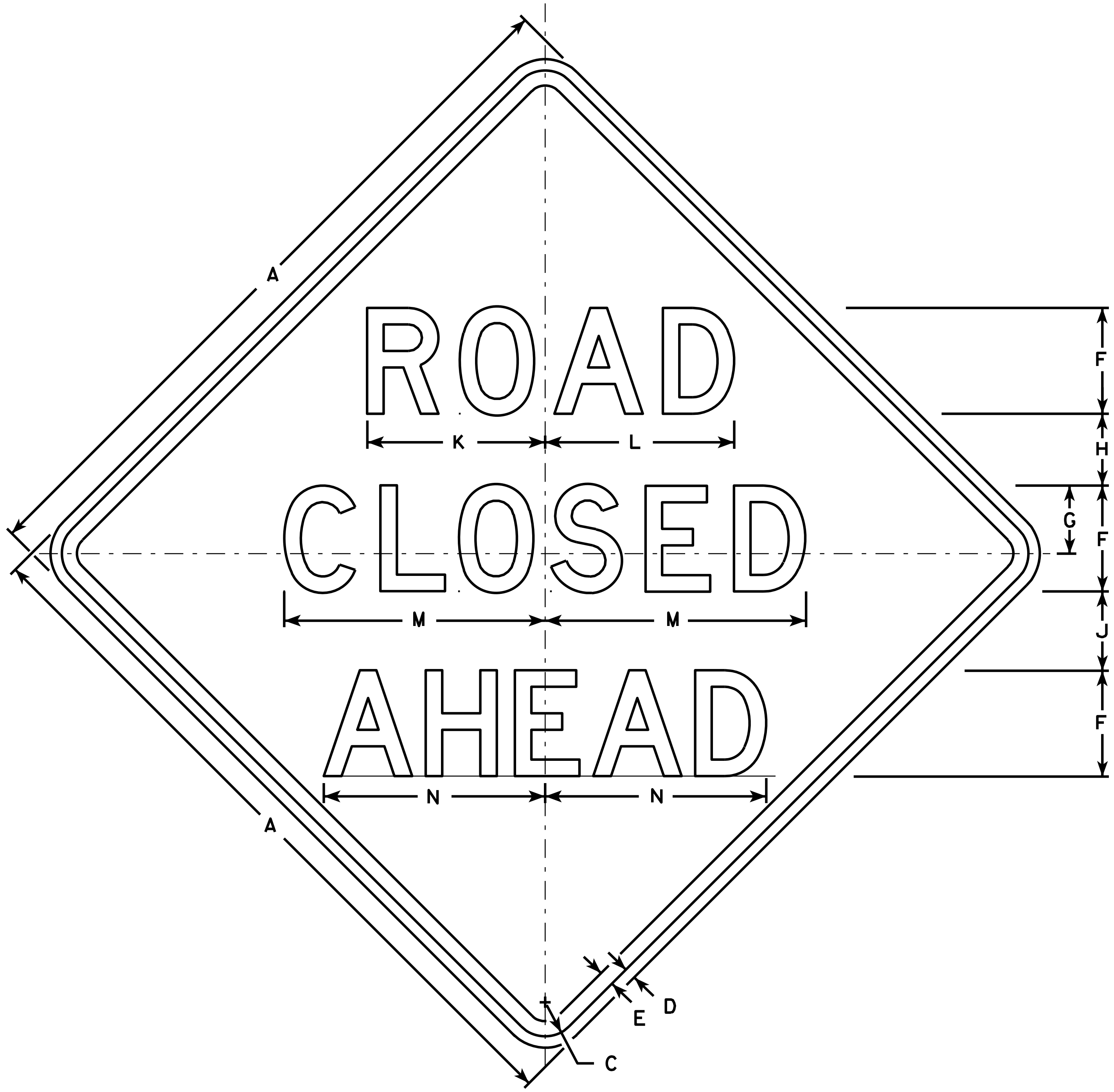
APPROVED Matthew R Rauch
for State Traffic Engineer

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

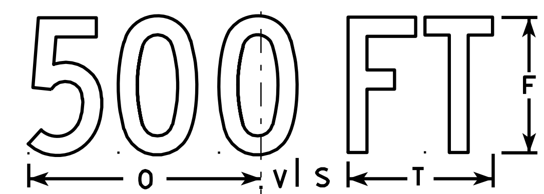
7

7

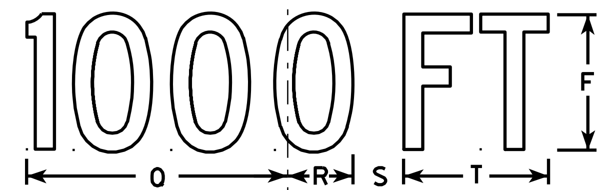
7



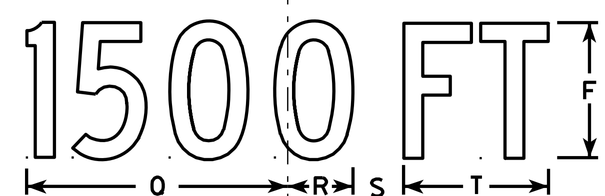
W20-3A



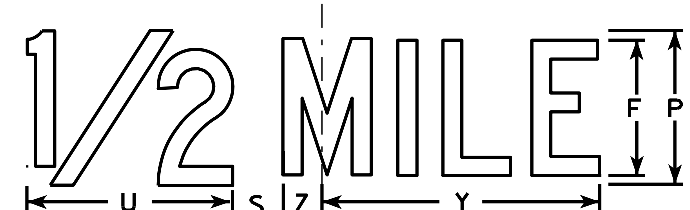
W20-3D



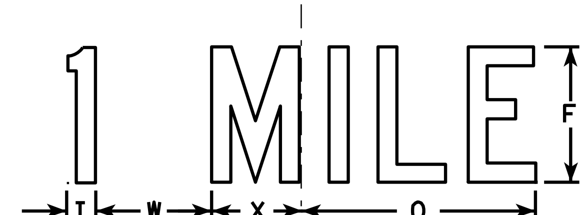
W20-3C



W20-3B



W20-3G



W20-3F

7

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

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

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

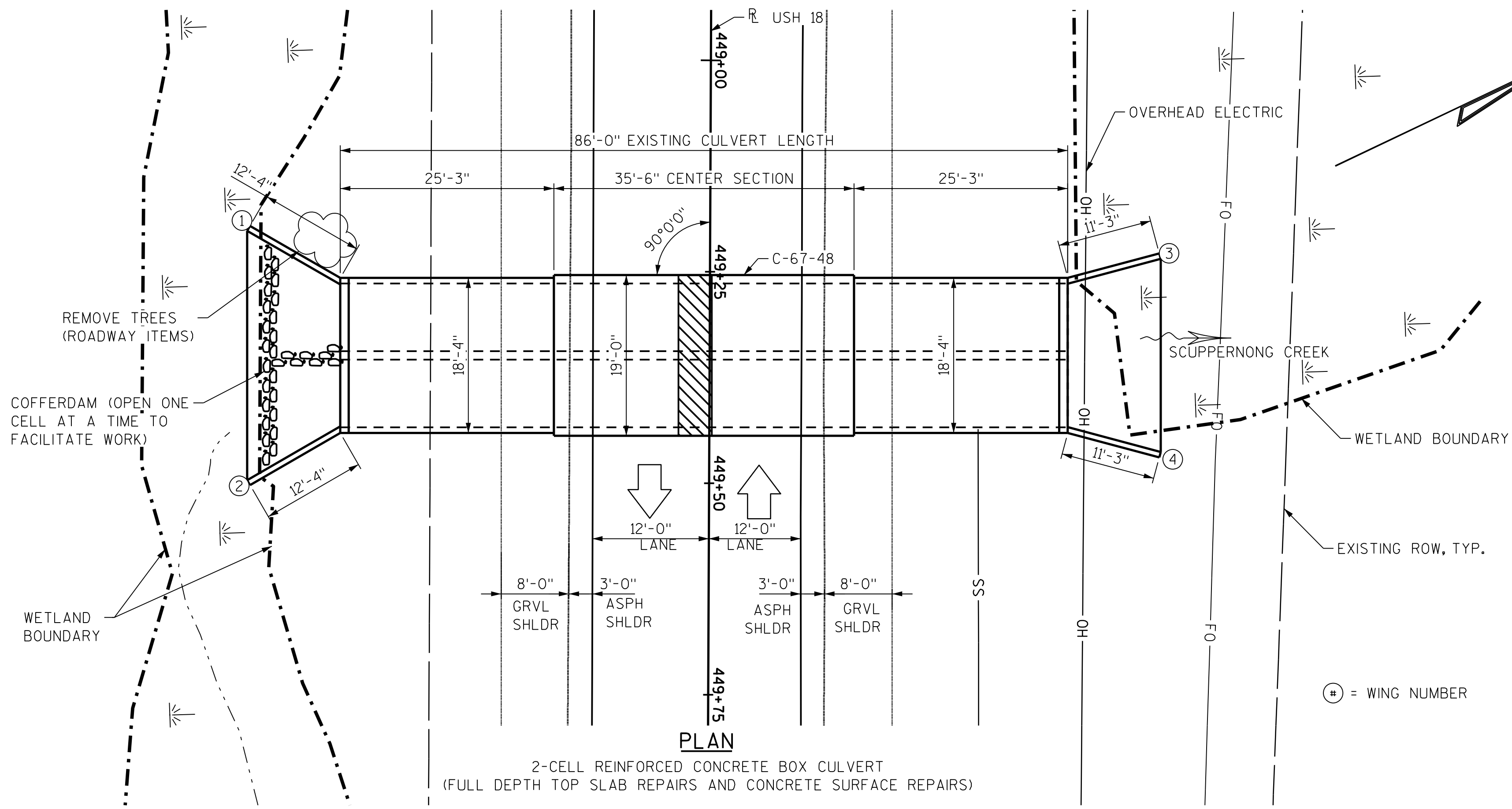
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

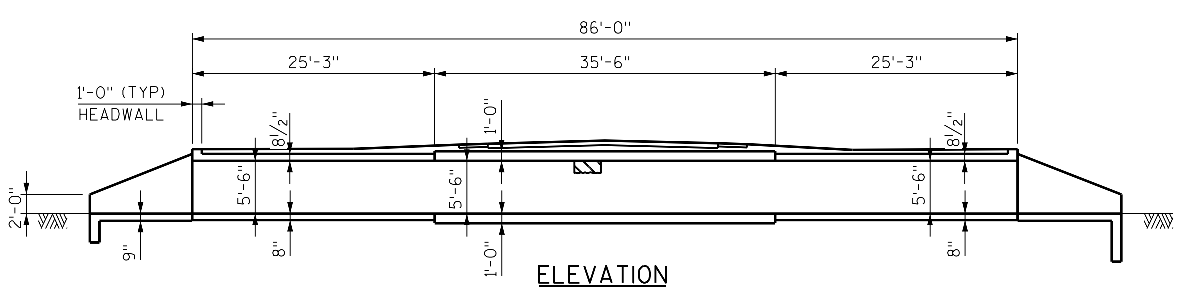
STATE PROJECT NUMBER

3080-04-70



PLAN

2-CELL REINFORCED CONCRETE BOX CULVERT
(FULL DEPTH TOP SLAB REPAIRS AND CONCRETE SURFACE REPAIRS)



ELEVATION

WISCONSIN
WILLIAM J. ZIPPEL
38868-006
MILWAUKEE, WI
3/1/2022
PROFESSIONAL ENGINEER

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY .... f'c = 3,500 psi
BAR STEEL REINFORCEMENT .... fy = 60,000 psi

GENERAL NOTES:

1. DRAWINGS SHALL NOT BE SCALED.
2. BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
3. THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
4. EXISTING STRUCTURE DIMENSIONS ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
5. ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE. ALL STATIONS AND ELEVATIONS ARE IN FEET.
6. DO NOT DREDGE CHANNEL WITHIN CULVERT, ON THE APRONS, OR BEYOND THE LIMITS OF THE EXISTING APRONS. EXISTING SAND AND MUD SHALL REMAIN WITHIN THE CHANNEL BOTTOM.
7. REMOVE CONCRETE DEBRIS RESULTING FROM CONCRETE REMOVAL FROM THE WATERWAY.
8. TRANSVERSE SAWCUTTING OF TOP SLAB SHALL BE PARTIAL DEPTH TO PREVENT SLURRY FROM POURING THROUGH INTO WATERWAY. FINAL REMOVAL SHALL BE DONE WITH BREAKER.

CONCRETE REPAIR NOTES:

1. ALL CONCRETE REMOVAL FOR FULL DEPTH REPAIRS AND CONCRETE SURFACE REPAIR SHALL BE DEFINED BY A ½-INCH DEEP SAW CUT.
2. CLEAN, COAT AND SECURE EXISTING REINFORCING STEEL. ADDITIONAL REINFORCING STEEL SHALL BE TIED IN PLACE TO EXISTING REINFORCING STEEL AS SHOWN IN THE DETAILS AND AS DIRECTED BY THE ENGINEER.
3. LOCATIONS OF REMOVING LOOSE CONCRETE SHOWN ON THE UNDERSIDE OF THE TOP SLAB ARE APPROXIMATE. EXACT LIMITS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
4. CONCRETE SURFACE REPAIR SPALLED AND DELAMINATED AREAS ON THE CULVERT WALLS, WINGWALLS, AND HEADWALLS AT LOCATIONS DETERMINED BY THE ENGINEER.
5. AREAS OF FULL DEPTH CONCRETE REPAIR TO BE PAID AS CONCRETE MASONRY CULVERTS.

TRAFFIC DATA

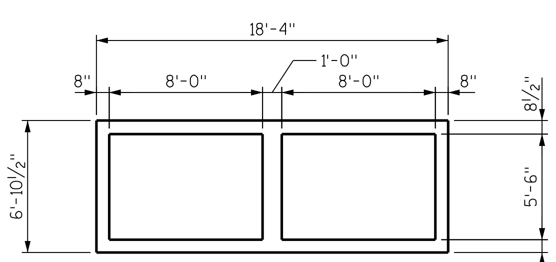
USH 18
AADT (2025) = 13,100
AADT (2045) = 14,700

STRUCTURES DESIGN CONTACTS

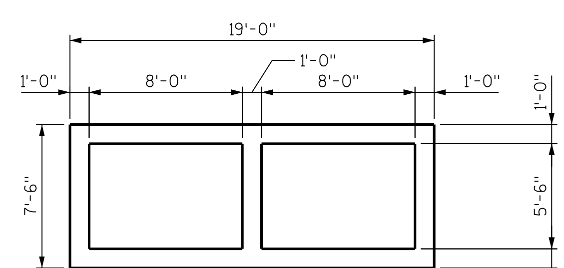
BRIDGE OFFICE:
AARON BONK, PE
(608) 261-0261

CONSULTANT:
WILLIAM J. ZIPPEL, PE, SE
ALFRED BENESCH & CO
1300 W CANAL ST, SUITE 150
MILWAUKEE, WI 53233
(414) 308-1321

LIST OF DRAWINGS:



TYPICAL SECTION THRU BOX AT NORTH AND SOUTH ENDS



TYPICAL SECTION THRU BOX AT CENTER

TOTAL ESTIMATE OF QUANTITIES

ITEM NO.	BID ITEM	UNIT	TOTAL
203.0260	REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS C-67-48	EACH	1
204.9165.S	REMOVING LOOSE CONCRETE	SF	50
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-67-48	LS	1
206.5000	COFFERDAMS C-67-48	LS	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	11
502.4204	ADHESIVE ANCHORS NO. 4 BAR	EACH	64
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	12
504.0100	CONCRETE MASONRY CULVERTS	CY	3
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	464
509.1500	CONCRETE SURFACE REPAIR	SF	5
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	15
SPV.0090.05	WIDE CRACK REPAIR	LF	22

NO.	DATE	REVISION	BY

benesch
Alfred Benesch & Company
1300 West Canal Street, Suite 150
Milwaukee, Wisconsin 53233
414-308-1310 Job No. 20270.00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED SDR 03/02/22
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE C-67-48

USH 18 OVER SCUPPERNONG CREEK

COUNTY WAUKESHA | TOWN/~~CITY/VILLAGE~~ GENESEE

DESIGN SPEC. REHABILITATION N/A

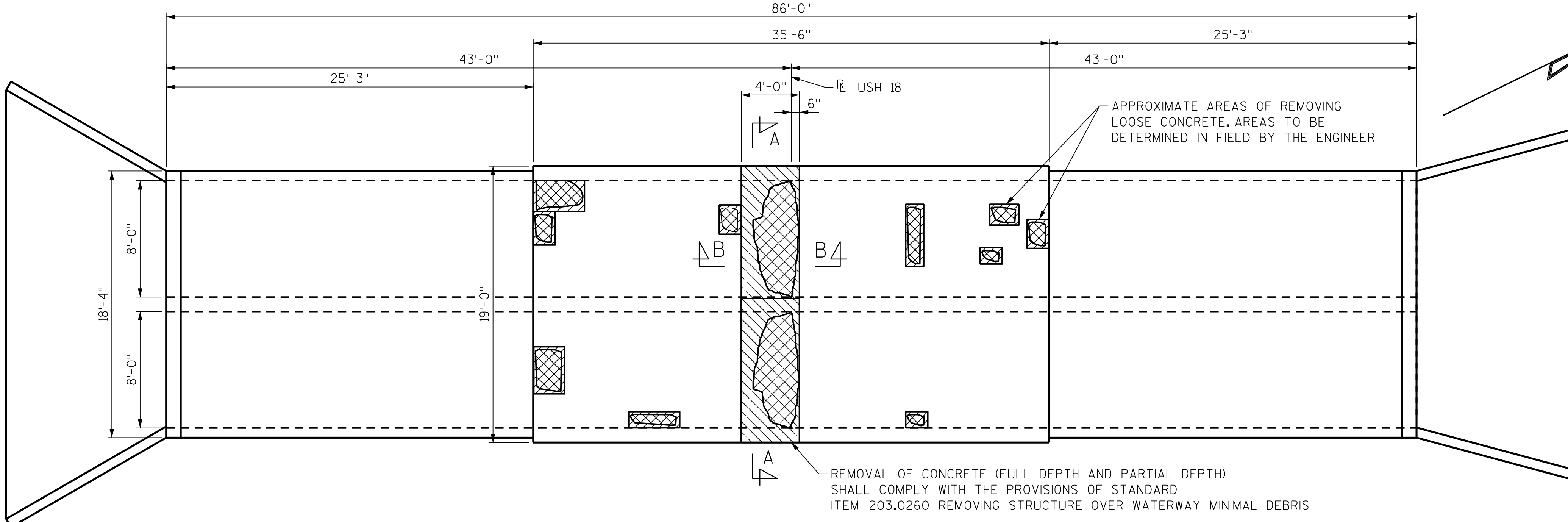
DESIGNED BY JAP | DESIGN CK'D. WJZ | DRAWN BY HRC | PLANS CK'D. WJZ

GENERAL PLAN & ELEVATION

SHEET 1 OF 2

8

FILE= C-67-48_GP.DGN
SCALE = 1:20



REFLECTED CEILING PLAN
TOP SLAB

LEGEND

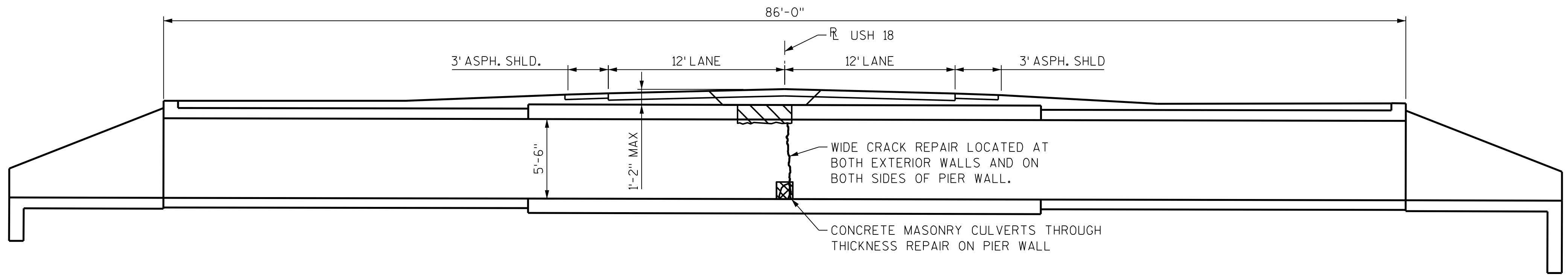
- APPROXIMATE LIMITS OF SPALLS AND DELAMINATIONS
- APPROXIMATE LIMITS OF REMOVING LOOSE CONCRETE
- APPROXIMATE LIMITS OF FULL DEPTH CONCRETE REPAIR

BILL OF BARS

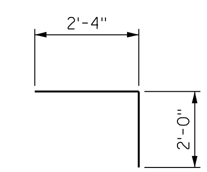
BAR NO.	COATED BAR	NO. REQ'D	LENGTH	BENT BAR	BAR SERIES	LOCATION (464 # COATED, 0 # UNCOATED)
A501	X	12	18'-8"			MAIN REINFORCEMENT TOP SLAB
A502	X	12	4'-3"	X		OUTSIDE CORNERS
A403	X	24	1'-10"			VERTICAL WALLS
A404	X	40	3'-8"			LONGITUDINAL TOP SLAB
A405	X	40	1'-10"			ADHESIVE ANCHORS TOP SLAB

BAR LENGTHS ARE ESTIMATED BASED ON ANTICIPATED REMOVAL LIMITS. TRIM BARS AS NEEDED TO FIT WITHIN ACTUAL ALLOWABLE CLEAR DISTANCES.

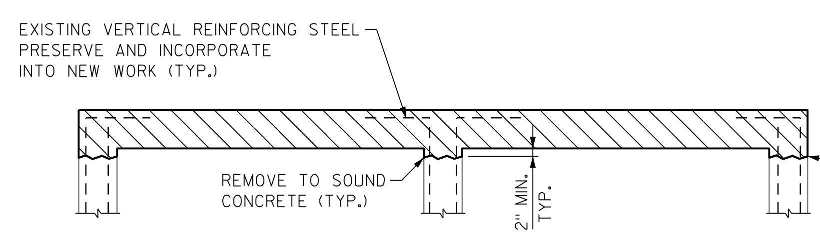
PROVIDE EPOXY ANCHORED A403 AND A502 BARS AT 9" SPACING WHERE EXISTING VERTICAL REINFORCEMENT IS DAMAGED OR SPACED INSUFFICIENTLY.



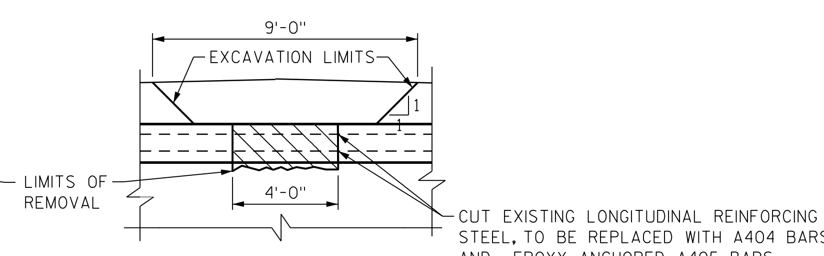
PIER WALL ELEVATION



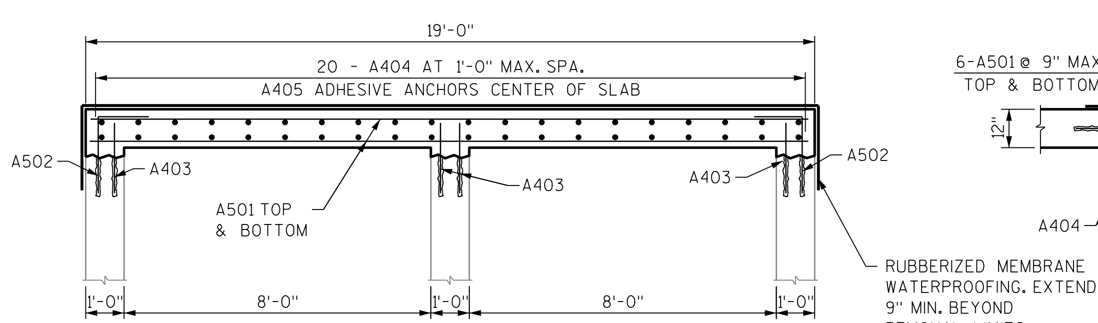
A502



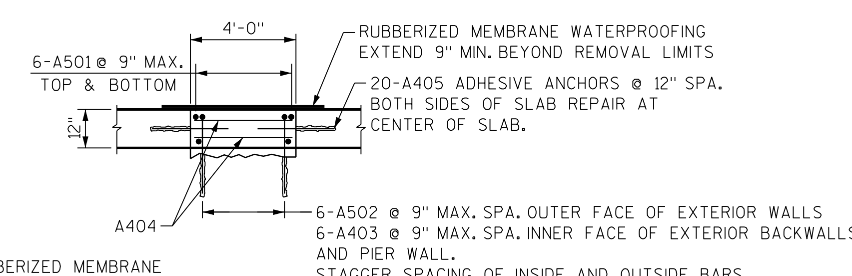
SECTION A-A
FULL DEPTH REPAIR REMOVALS



SECTION B-B
FULL DEPTH REPAIR REMOVALS



SECTION A-A
FULL DEPTH REPAIR



SECTION B-B
FULL DEPTH REPAIR

10" MIN EMBEDMENT AND 3" MIN CLEAR COVER REQUIRED FOR #4 EPOXY ANCHORS
12" MIN EMBEDMENT AND 3¾" MIN CLEAR COVER REQUIRED FOR #5 EPOXY ANCHORS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE C-67-48

DRAWN BY HRC | PLANS CK'D. WJZ

REPAIR DETAILS

SHEET 2 OF 2

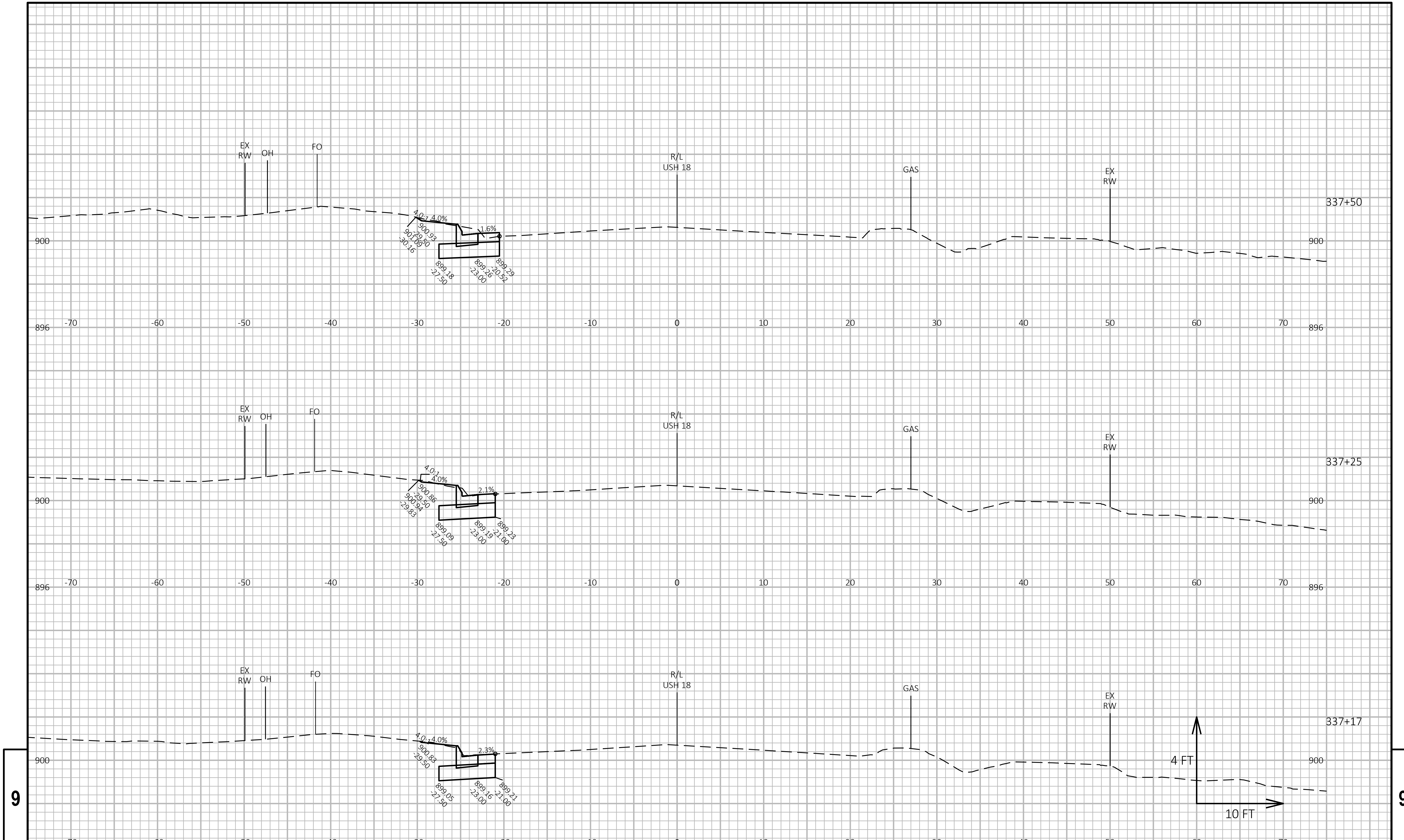
FILE= C-67-48_REPAIRS.DGN
SCALE = 1:10

8

PROJECT ID 3080-04-70
DIVISION 1

STATION	DISTANCE	AREA (SF)						INCREMENTAL VOLUME (CY) (UNADJUSTED)						CUMULATIVE VOLUME (CY)							
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL	FILL	MARSH EXC	ROCK EXC	EBS	CUT	EXPANDED FILL	EXPANDED MARSH BACKFILL	EXPANDED ROCK	EXPANDED EBS BACKFILL	REDUCED MARSH IN FILL	REDUCED EBS IN FILL	MASS ORDINATE
														1.00	1.00	1.00	1.00	1.00	1.00	1.00	
								NOTE 1	NOTE 2	NOTE 3				NOTE 1		NOTE 4		NOTE 5	NOTE 6	NOTE 7	NOTE 8
337+17	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
337+25	8	8	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2
337+50	25	9	0	0	0	0	0	8	0	0	0	0	0	10	0	0	0	0	0	0	10
337+75	25	12	0	0	0	0	0	10	0	0	0	0	0	20	0	0	0	0	0	0	20
338+00	25	20	0	0	0	0	0	15	0	0	0	0	0	35	0	0	0	0	0	0	35
338+10	10	22	0	0	0	0	0	8	0	0	0	0	0	43	0	0	0	0	0	0	43
338+19	9	27	0	0	0	0	0	8	0	0	0	0	0	51	0	0	0	0	0	0	51
338+25	6	29	0	0	0	0	0	6	0	0	0	0	0	57	0	0	0	0	0	0	57
338+50	25	30	0	0	0	0	0	27	0	0	0	0	0	84	0	0	0	0	0	0	84
338+75	25	25	0	0	0	0	0	25	0	0	0	0	0	109	0	0	0	0	0	0	109
339+00	25	12	0	0	0	0	0	17	0	0	0	0	0	126	0	0	0	0	0	0	126
339+12	12	8	0	0	0	0	0	4	0	0	0	0	0	130	0	0	0	0	0	0	130
								130	0	0	0	0	0								

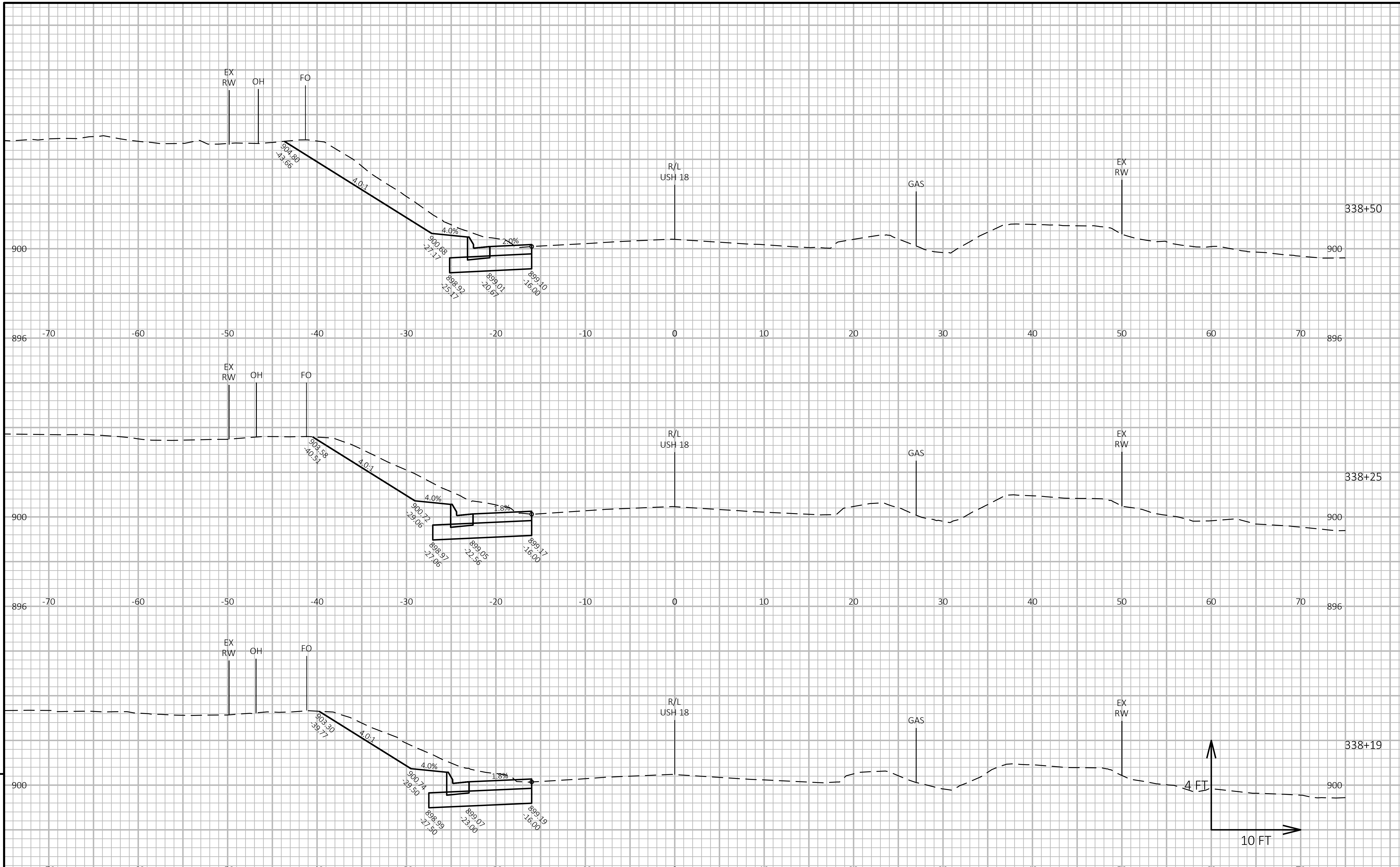
NOTES		
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL	
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS	
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME	
4 - EXPANDED MARSH BACKFILL	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)	NOTE 4 - SELECT ONE BASED ON INPUT DIALOG SELECTION
5 - EXPANDED EBS	WILL BE BACKFILLED WITH GRANULAR BACKFILL (OR CUT, OR BORROW)	NOTE 5 - SELECT ONE BASED ON INPUT DIALOG SELECTION
6 - REDUCED MARSH IN FILL	REDUCED MARSH EXCAVATION THAT CAN BE USED IN FILL	NOTE 6 - IF EXCAVATED MARSH CAN BE USED IN FILL
7 - REDUCED EBS IN FILL	REDUCED EBS EXCAVATION THAT CAN BE USED IN FILL	NOTE 7 - IF EXCAVATED EBS CAN BE USED IN FILL
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)]	NOTE 8 - SELECT ONE BASED ON MASS HAUL INPUT DIALOG SELECTION. EBS AND MARSH EXC USED OUTSIDE 1:1 IN FILL SLOPES
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)]	EBS AND MARSH EXC USED OUTSIDE 1:1 IN FILL SLOPES
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - EXPANDED ROCK) * FILL FACTOR)]	MARSH AND EBS ARE NOT USABLE OUTSIDE THE 1:1 SLOPES
8 - MASS ORDINATE	IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]	MARSH AND EBS ARE NOT USABLE OUTSIDE THE 1:1 SLOPES



PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET 264 E

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET 265	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\DESIGN\CORRIDORS\CRDR-NDECL.DWG
LAYOUT NAME - 02
PLOT DATE : 11/12/2021 9:49 PM PLOT BY : VALBON LATIFI PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:4 FT VERT.

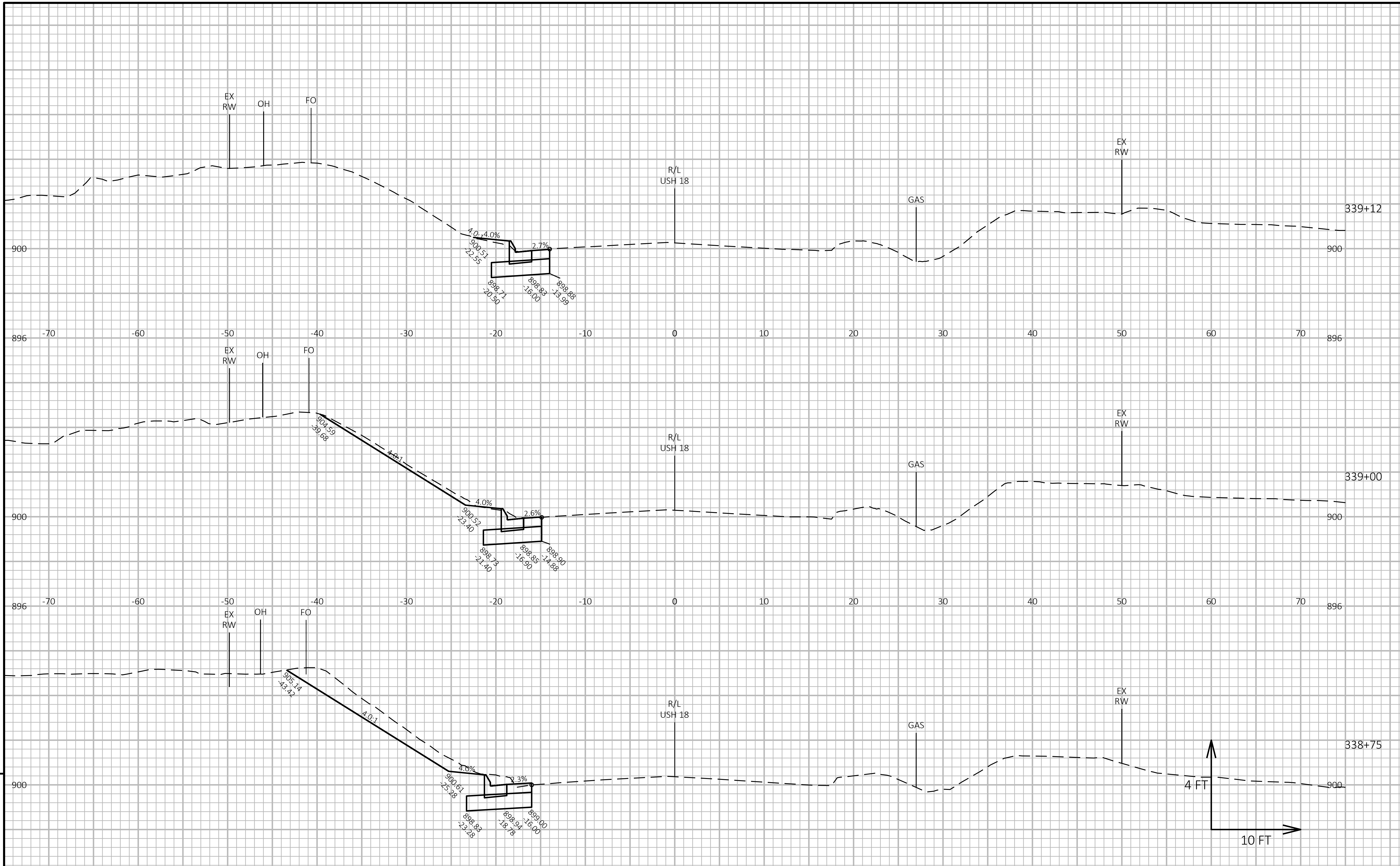


9

9

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET 266	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\DESIGN\CORRIDORS\CRDR-NDECL.DWG
LAYOUT NAME - 03
PLOT DATE : 11/12/2021 9:49 PM
PLOT BY : VALBON LATIFI
PLOT NAME :
PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:4 FT VERT.
WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 3080-04-70	HWY: USH 18	COUNTY: WAUKESHA	CROSS SECTIONS: USH 18	SHEET 267	E

FILE NAME : X:\BM1-3582D WO #4 USH 18\5_DESIGN\03_ROADS\30800400\DESIGN\CORRIDORS\CRDR-NDECL.DWG
LAYOUT NAME - 04

PLOT DATE : 11/12/2021 9:49 PM PLOT BY : VALBON LATIFI PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:4 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

http://www.dot.wisconsin.gov