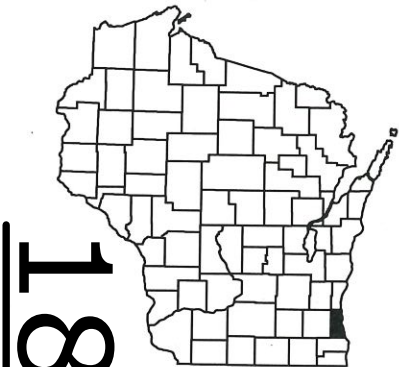


ORDER OF SHEETS

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

TOTAL SHEETS = 258



DESIGN DESIGNATION

A.A.D.T. (2019)	=	89,700
A.A.D.T. (2035)	=	102,131
D.H.V.	=	5,088
D.D.	=	61/39
T.	=	11.6%
DESIGN SPEED	=	55 MPH
ESALS	=	-

CONVENTIONAL SYMBOLS

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

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

ROCK	
LABEL	
95.36	
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MILWAUKEE - FOND DU LAC

GOOD HOPE RD TO WAUKESHA CO LN

IH 41

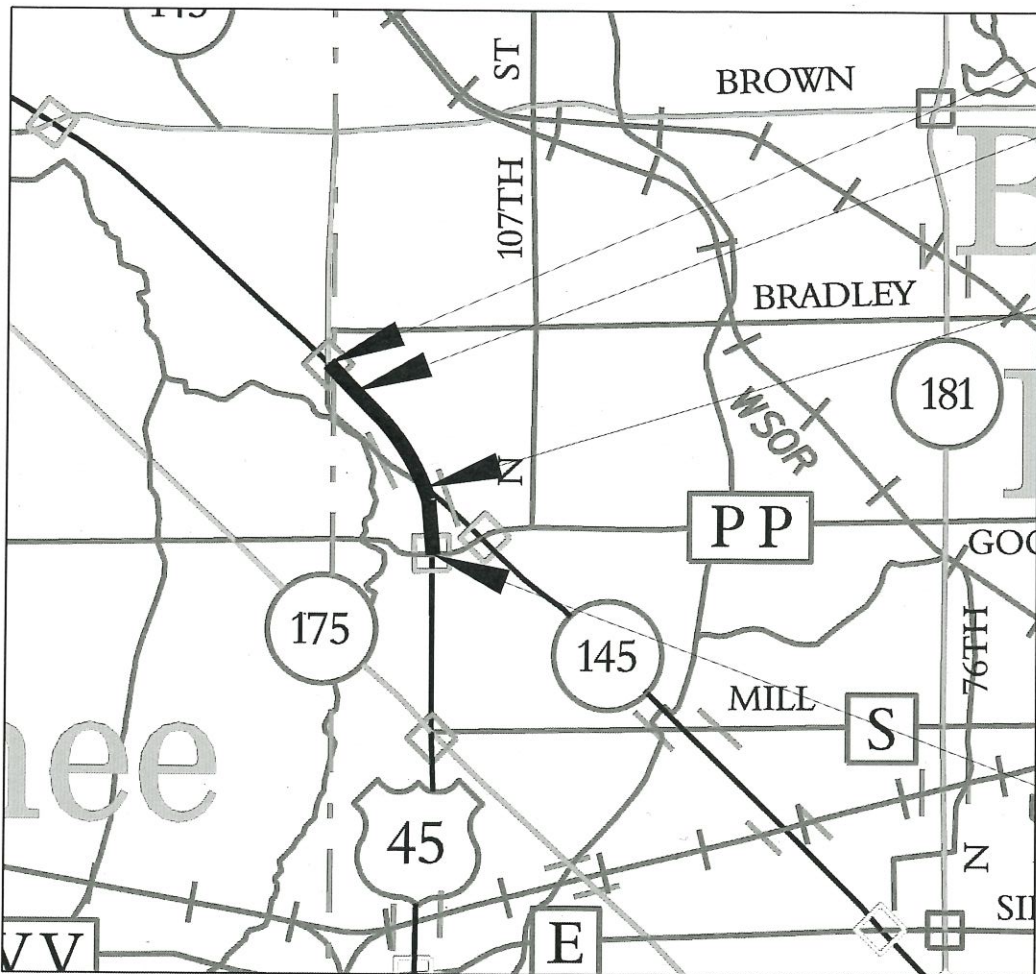
MILWAUKEE COUNTY

STATE PROJECT NUMBER
1100-17-76

WAUKESHA COUNTY

MILWAUKEE COUNTY

R-21-E



END PROJECT
STA 171+45.60
EXCEPTION TO NET C/L LENGTH
STA. 156+00.00 - STA. 158+59.20 (B-40-397)

EXCEPTION TO NET C/L LENGTH
STA. 111+14.49 - STA. 114+43.15 (B-40-395)

BEGIN PROJECT
STA 105+88.92
Y=339794.039
X=567212.880

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MILWAUKEE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

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

TOTAL NET LENGTH OF CENTERLINE = 1.130 MILES

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	
Designer	BHUVAN MANANDHAR
Project Manager	JOE GALLAMORE
Regional Examiner	
Regional Supervisor	JOE GALLAMORE
APPROVED FOR THE DEPARTMENT	
DATE: 1/27/22	

GENERAL NOTES

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. COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

CONTACT THE PROJECT ENGINEER, THE COUNTY SURVEYOR, AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC) AT LEAST TWO WEEKS BEFORE WORKING NEAR ANY SECTION CORNER MONUMENT.

VERIFY EXISTING PAVEMENT ELEVATIONS AT ALL TIE-INS TO EXISTING PAVEMENT PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF A DISCREPANCY IS FOUND BETWEEN PROPOSED PLAN ELEVATIONS AND EXISTING PAVEMENT ELEVATIONS.

DO NOT REMOVE ANY TREES OR SHRUBS WITHOUT APPROVAL OF THE ENGINEER.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

WHEN THE QUANTITY OF HMA PAVEMENT OR BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

ALL PRIVATE EXISTING UTILITIES ARE TO BE ADJUSTED BY THE UTILITIES CONCERNED.

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES SHALL BE FILLED WITH COMPACTED BACKFILL GRANULAR UNLESS REGULATIONS REQUIRE OTHERWISE. BACKFILL GRANULAR MATERIAL IS INCIDENTAL TO THE REMOVAL ITEM.

REMOVE RAISED PAVEMENT MARKERS AND FILL VOIDS PRIOR TO DIAMOND GRINDING.

REMOVAL OF EXISTING PAVEMENT MARKINGS IS INCIDENTAL TO THE DIAMOND GRINDING BID ITEM.

SHOULDER PAVEMENT TYPE	TOTAL LAYER PAVEMENT THICKNESS	LAYERS
4 MT 58-28 S	5"	2" UPPER LAYER 3" LOWER LAYER
4 MT 58-28 S	6"	2" UPPER LAYER 2" MIDDLE LAYER 2" LOWER LAYER

STANDARD ABBREVIATIONS

AEW	APRON ENDWALL
AGG	AGGREGATE
ASPH	ASPHALTIC
BAD	BASE AGGREGATE DENSE
BM	BENCHMARK
C&G	CURB AND GUTTER
CL OR ^C _L	CENTER LINE OR CONSTRUCTION LINE
CONC	CONCRETE
	CULVERT PIPE REINFORCED
CPRCHE	CONCRETE
CY	CUBIC YARD
DISCH	DISCHARGE
EB	EASTBOUND
FE	FIELD ENTRANCE
FL	FLOW LINE
HMA	HOT MIX ASPHALTIC
INV	INVERT
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PE	PRIVATE ENTRANCE
REQD	REQUIRED
RT	RIGHT
SALV	SALVAGED
	SALVAGED ASPHALTIC PAVEMENT
SAPBC	BASE COURSE
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SF	SQUARE FOOT
SI	SLOPE INTERCEPT
	STORM SEWER PIPE REINFORCED
SSPRC	CONCRETE
STA	STATION
SY	SQUARE YARD
TLE	TEMPORARY LIMITED EASEMENT
WB	WESTBOUND

STATE AGENCIES

WISDOT SE REGION
JOE GALLAMORE -
PROJECT MANAGER
141 NW BARSTOW STREET
WAUKESHA, WI 53187
262-548-5601
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WISDOT SE REGION
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141 NW BARSTOW STREET
WAUKESHA, WI 53187
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WISCONSIN DNR
KRISTINA BETZOLD - ENVIRONMENTAL
ANALYSIS AND REVIEW SPECIALIST
2300 N DR. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
414-507-4946
KRISTINA.BETZOLD@WISCONSIN.GOV

ORDER OF SHEETS

TITLE SHEET
GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
FTMS
EROSION CONTROL
PERMANENT SIGNING
TRAFFIC SIGNAL PLAN
PAVEMENT MARKING
TRAFFIC CONTROL
DETOUR
ALIGNMENT
MISCELLANEOUS QUANTITIES
FIXED MESSAGE SIGNS
OTHER MISC SIGNS

UTILITY LIST

JAY BULANEK
AT&T WISCONSIN - COMMUNICATION LINE
435 SOUTH 95TH STREET
MILWAUKEE, WI 53214-1226
(262) 896-7669
JB5175@ATT.COM

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CITY OF MILWAUKEE - SEWER
841 N BROADWAY
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(414) 286-3301
SAMIN@MILWAUKEE.GOV

RICHARD TRGOVEC
MIDWEST FIBER NETWORKS LLC - COMMUNICATION
LINE
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GLENDALE, WI 53209
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RTRGOVEC@MIDWESTFIBERNETWORKS.COM

GREGORY BOERNER
WE ENERGIES - ELECTRICITY
500 S 116TH STREET
WEST ALLIS, WI 53214
MOBILE (618) 409-5861

BEAU ABUYA
CHARTER - COMMUNICATION LINE
1320 N DR MARTIN LUTHER KING JR DR
MILWAUKEE, WI 53212
(414) 908-1343
WIS.ENGINEERING@CHARTER.COM

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CITY OF MILWAUKEE - WATER
841 N BROADWAY
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SAMIN@MILWAUKEE.GOV

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15725 WEST RYERSON ROAD
NEW BERLIN, WI 53151
(262) 782-9836
RANDY.CICATELLO@VERIZON.COM

JACOB HULBERT
WE ENERGIES - GAS/PETROLEUM
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WEST ALLIS, WI 53214
(414) 944-5575, MOBILE (414) 651-1577
JACOB.HULBERT@WE-ENERGIES.COM

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MILWAUKEE, WI 53202
(414) 286-3301
SAMIN@MILWAUKEE.GOV

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EVERSTREAM - COMMUNICATION LINE
324 E WISCONSIN AVE, SUITE 730
MILWAUKEE, WI 53202
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WI-RELOCATIONS@EVERSTREAM.NET

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MENOMONEE FALLS, WI 53051
(262) 532-4704
MJANECKE@MENOMONEE-FALLS.ORG

DAVID JONES
WEST SHORE PIPE LINE COMPANY - GAS/PETROLEUM
FIVE TEK PARK, 9999 HAMILTON BLVD
BREINIGSVILLE, PA 18031
(610) 904-4409
DAJONES@BUCKEYE.COM

SAMIR AMIN
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841 N BROADWAY
MILWAUKEE, WI 53202
(414) 286-3301
SAMIN@MILWAUKEE.GOV

NETWORK RELOCATIONS
LEVEL 3 COMMUNICATIONS LLC – COMMUNICATION
LINE
1025 ELDORADO BLVD
BROOMFIELD, CO 80021
RELOCATIONS@LUMEN.COM

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WIN TECHNOLOGY - COMMUNICATION LINE
SUITE 219
800 WISCONSIN AVE
EAU CLAIRE, WI 54703
(414) 406-0722
DICK.HAMMETTER@WINTECHNOLOGY.COM

WISDOT FACILITIES

JEFF MADSON
WISCONSIN DEPARTMENT OF TRANSPORTATION -
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MILWAUKEE, WI 53203-3007
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JEFFREY.MADSON@DOT.WI.GOV

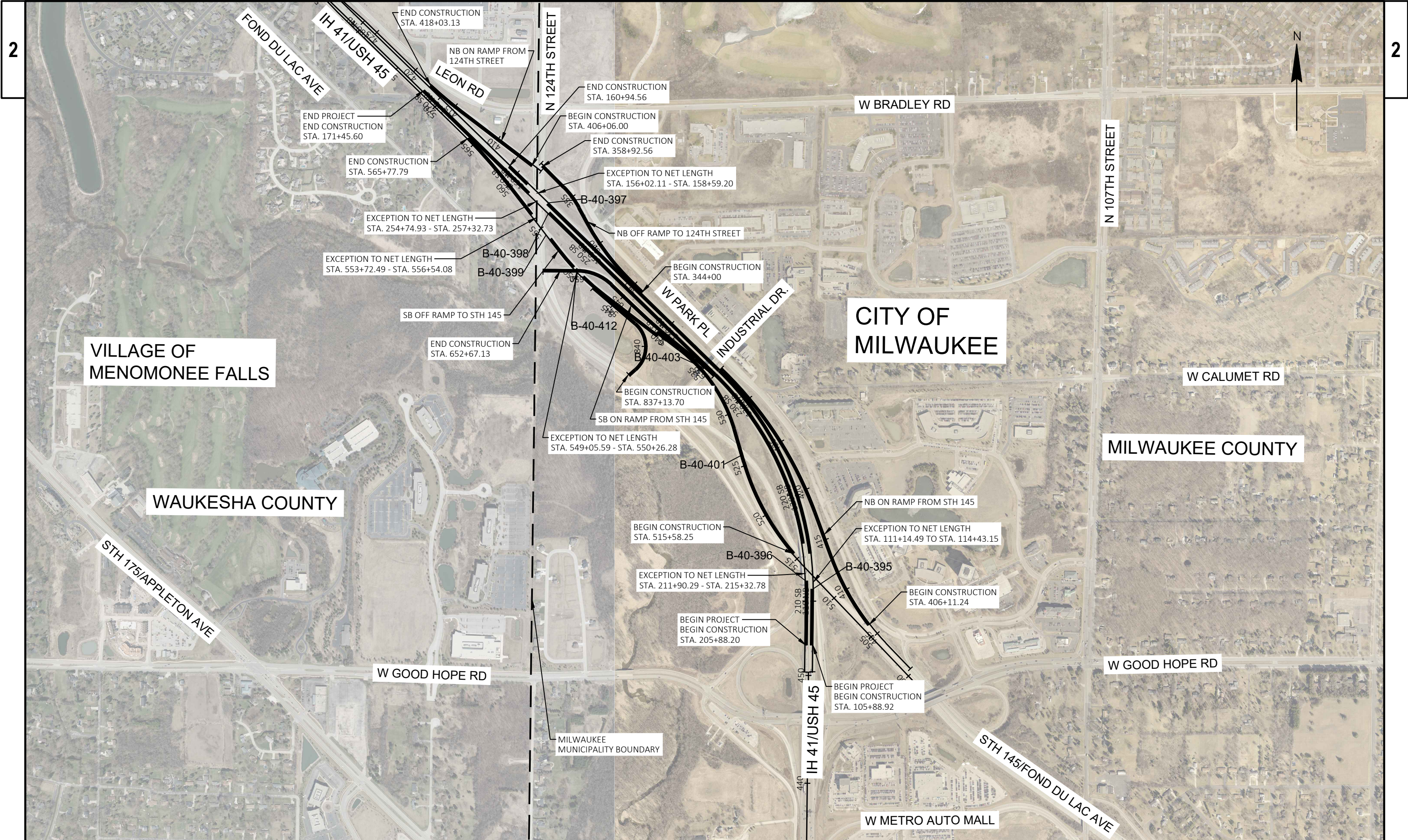
ERIC PEREA
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141 NW BARSTOW STREET
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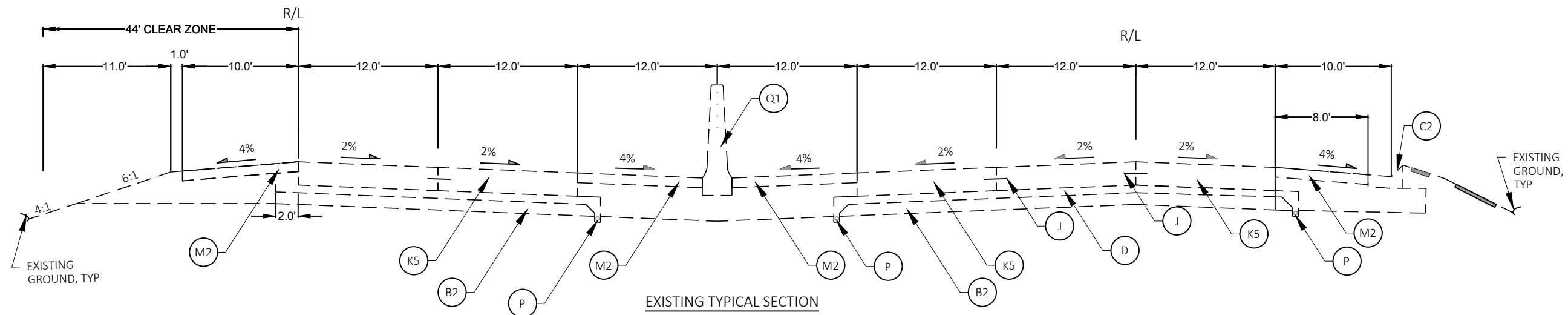
DERRIN WOLFORD
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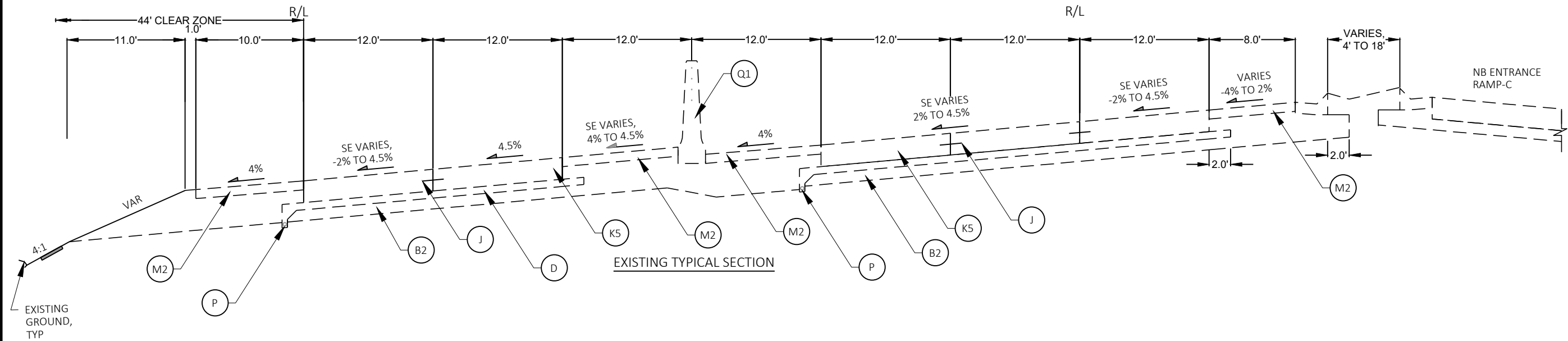
MIKE ADAMS
WISCONSIN DOT RWIS PROGRAM - COMMUNICATION
TOWER
P.O. BOX 7986
MADISON, WI 53707-7986
(608) 266-5004
MICHAEL.ADAMS@DOT.WI.GOV



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







USH 41/45 SB
207+78 SB TO 211+90 SB

USH 41/45 NB
107+22 NB TO 111+14 NB

LEGEND

- (B2) CRUSHED AGGREGATE BASE COURSE, 6-INCH
- (C2) CONCRETE CURB AND GUTTER, 36-INCH, TYPE D
- (C4) CONCRETE CURB AND GUTTER, 36-INCH, TYPE D
4-INCH MOUNTABLE
- (D) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- (J) PAVEMENT TIES, TYP
- (K1) CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- (K3) CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- (K5) CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- (M1) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 ½ -INCH
- (M2) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- (M3) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- (P) PIPE UNDERDRAIN, 6-INCH, TYP
- (Q1) CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- (S1) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 ½ -INCH
- (S2) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH

PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

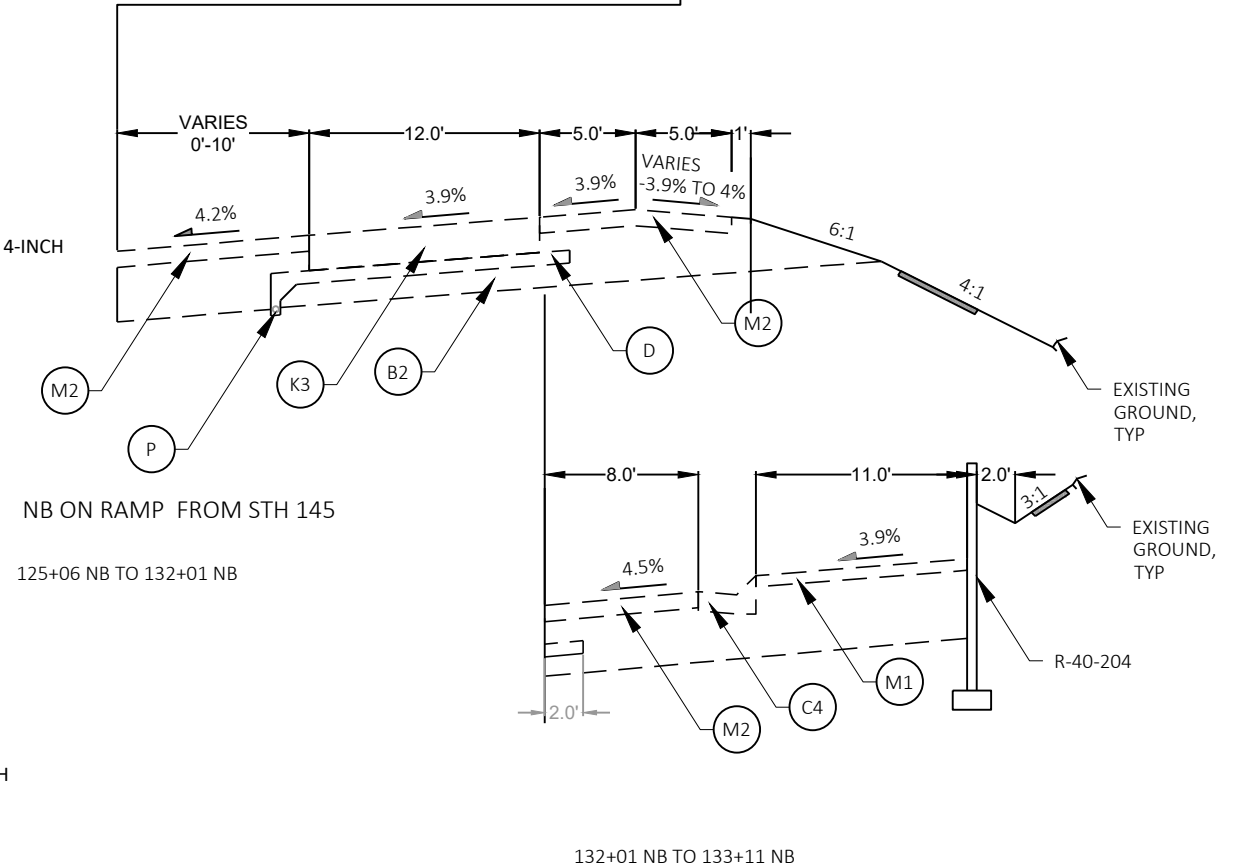
COUNTY: MILWAUKEE

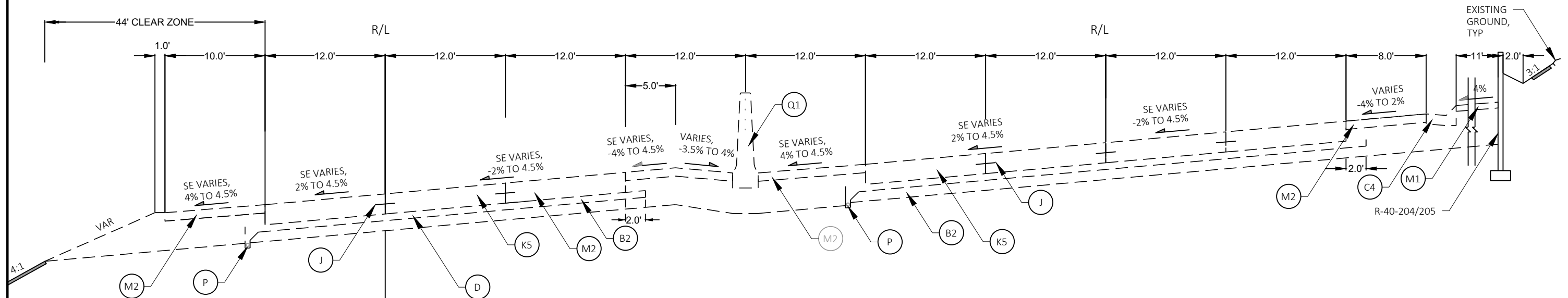
TYPICAL SECTIONS

SHEET

6

E





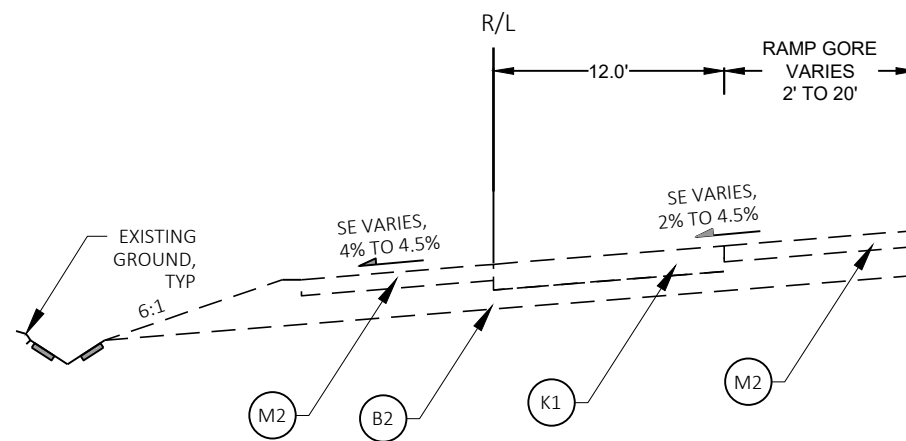
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USH 41/45 SB
232+53 SB TO 236+64 SB

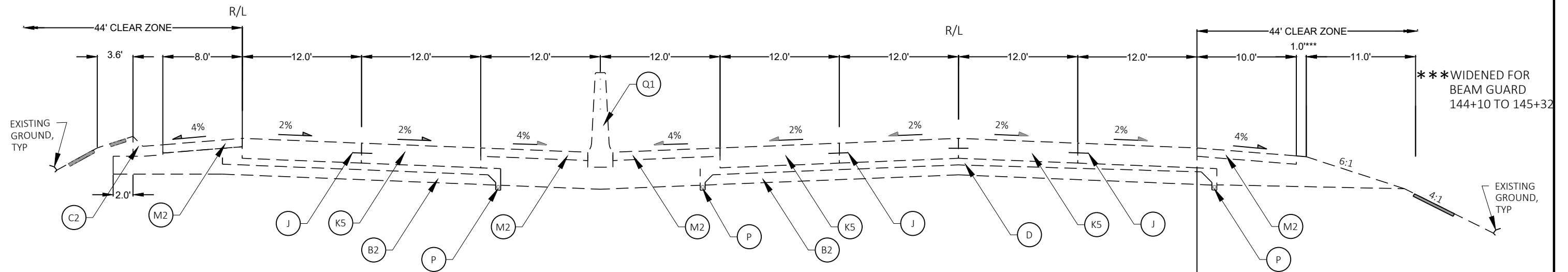
USH 41/45 NB
133+11 NB TO 136+17 NB

LEGEND

- (B2) CRUSHED AGGREGATE BASE COURSE, 6-INCH
- (C2) CONCRETE CURB AND GUTTER. 36-INCH, TYPE D
- (C4) CONCRETE CURB AND GUTTER. 36-INCH, TYPE D
4-INCH MOUNTABLE
- (D) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- (J) PAVEMENT TIES, TYP
- (K1) CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- (K3) CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- (K5) CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- (M1) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 1/2-INCH
- (M2) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- (M3) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- (P) PIPE UNDERDRAIN, 6-INCH, TYP
- (Q1) CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- (S1) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 1/2-INCH
- (S2) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH



SB ON RAMP FROM STH 145
234 +33 SB TO 236+36 SB



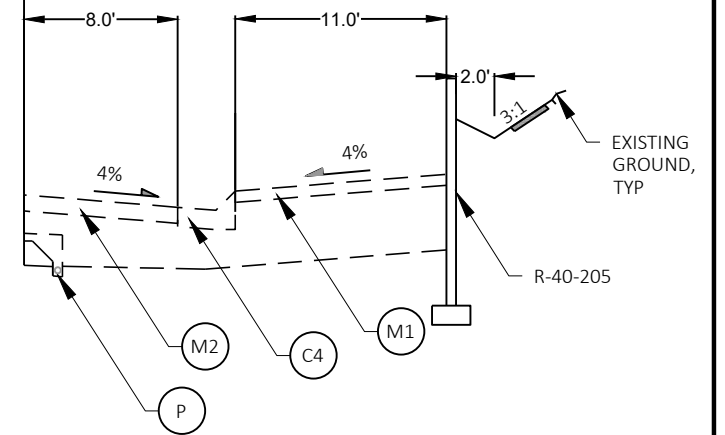
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USH 41/45 SB
236+64 SB TO 245+32 SB

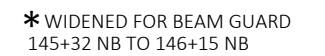
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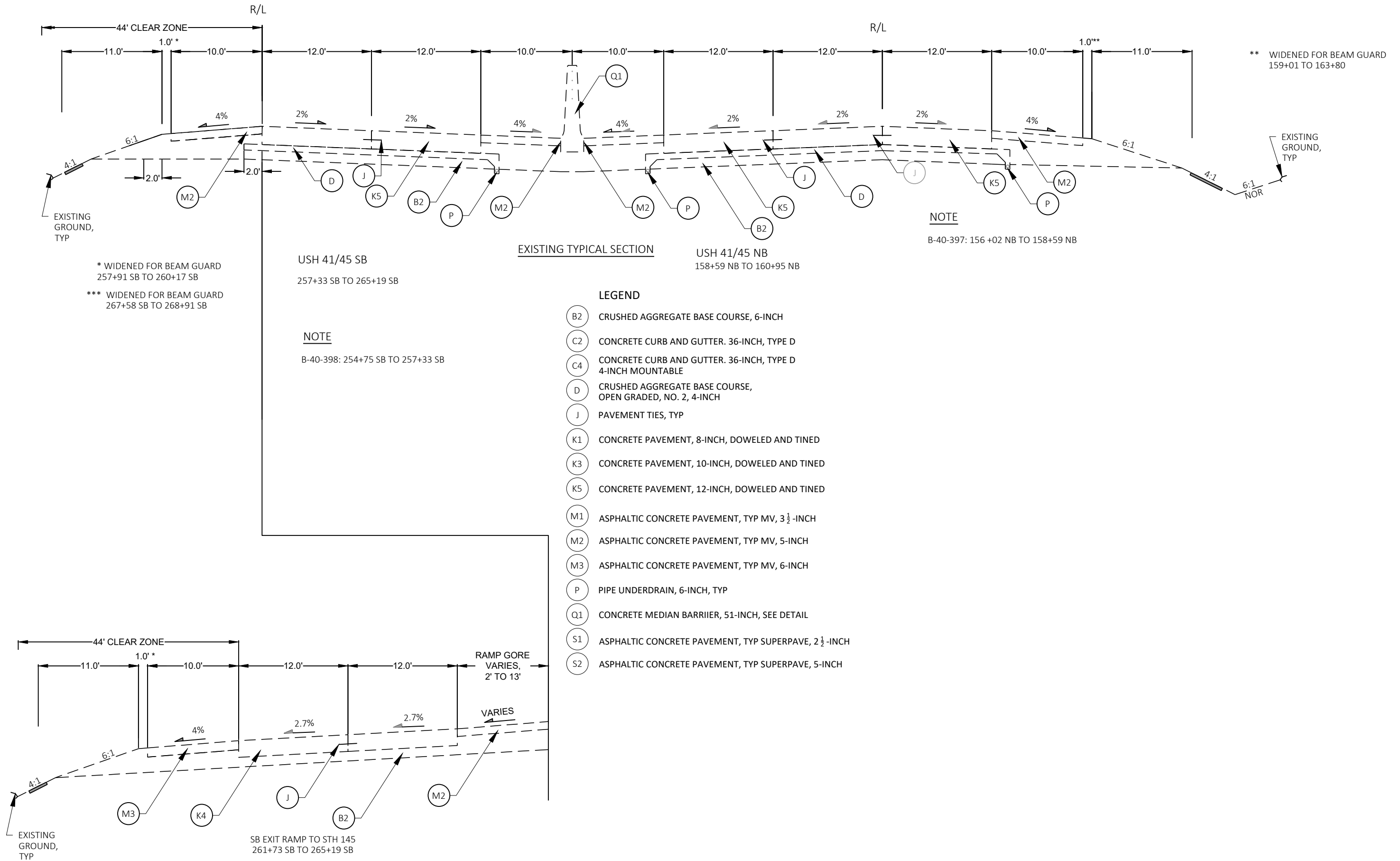
- (B2) CRUSHED AGGREGATE BASE COURSE, 6-INCH
- (C2) CONCRETE CURB AND GUTTER. 36-INCH, TYPE D
- (C4) CONCRETE CURB AND GUTTER. 36-INCH, TYPE D
4-INCH MOUNTABLE
- (D) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- (J) PAVEMENT TIES, TYP
- (K1) CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- (K3) CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- (K5) CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- (M1) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 1/2 -INCH
- (M2) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- (M3) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- (P) PIPE UNDERDRAIN, 6-INCH, TYP
- (Q1) CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- (S1) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 1/2 -INCH
- (S2) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH

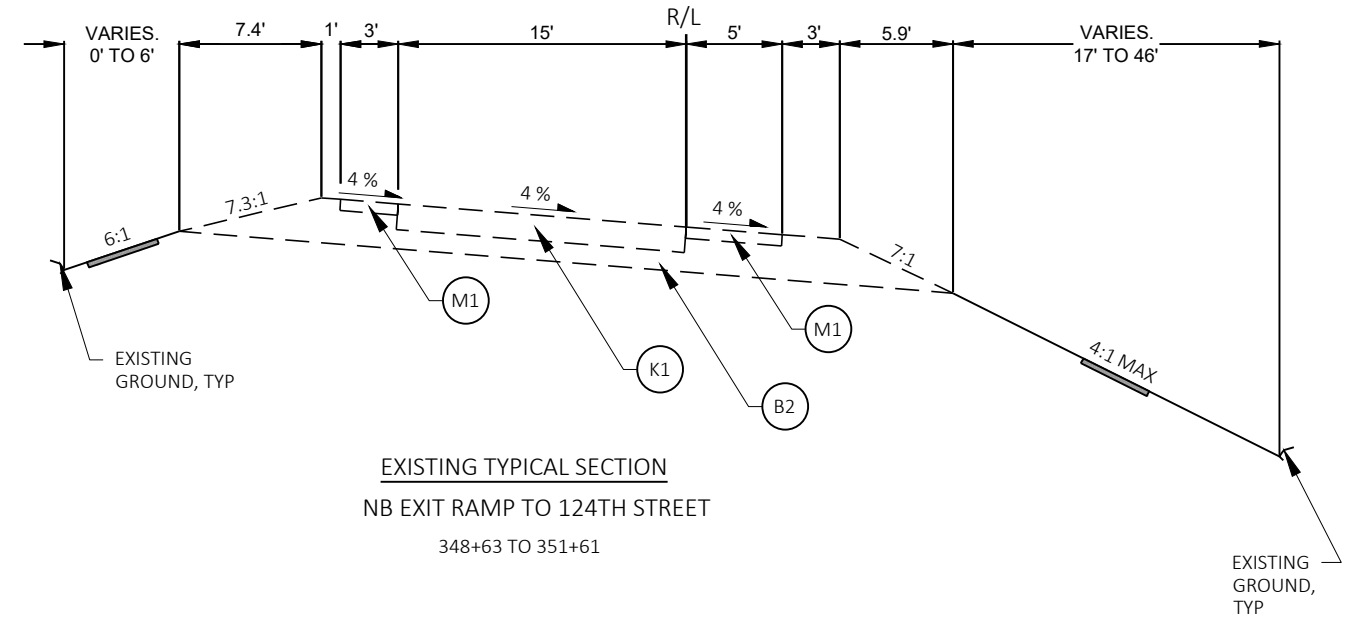
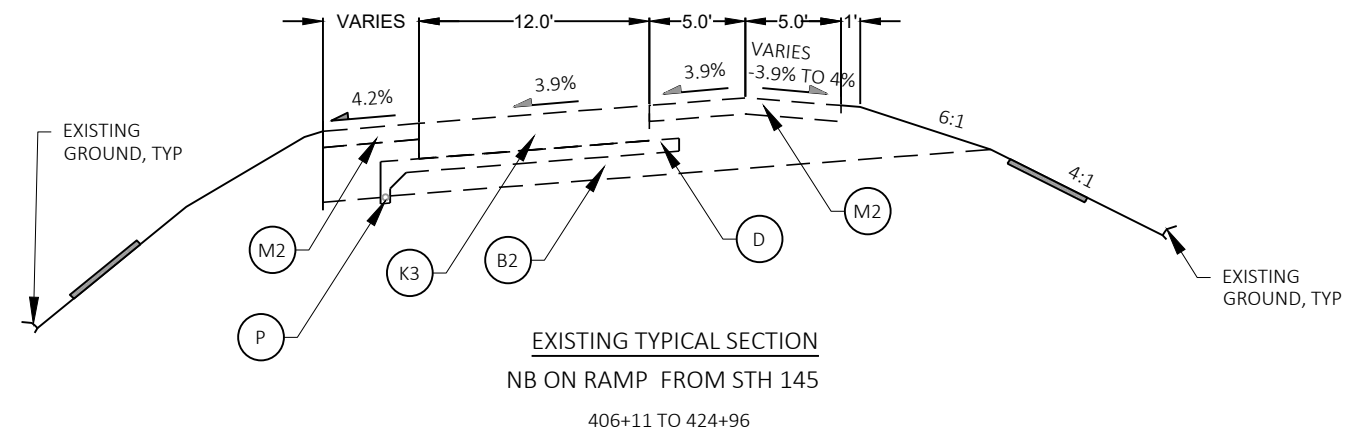
USH 41/45 NB
136+17 NB TO 145+32 NB



136+17 NB TO 138+80 NB

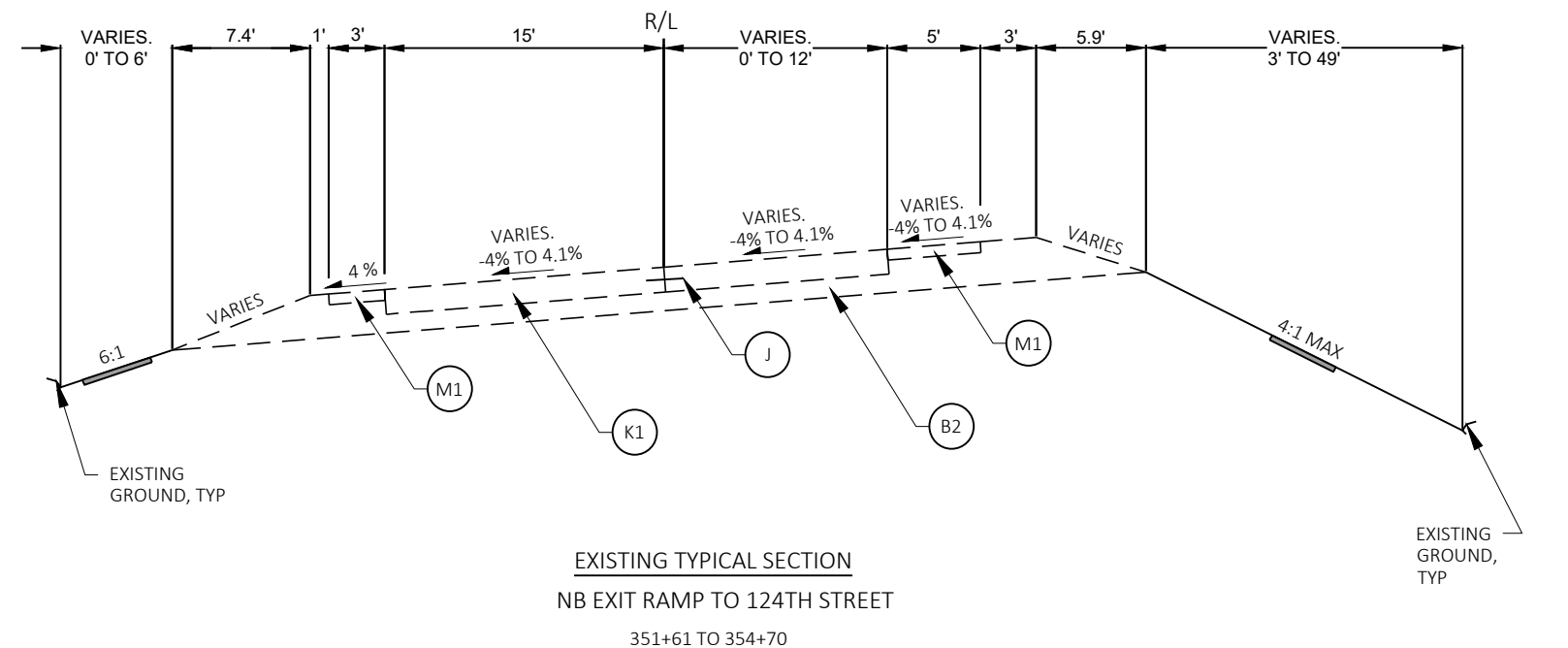


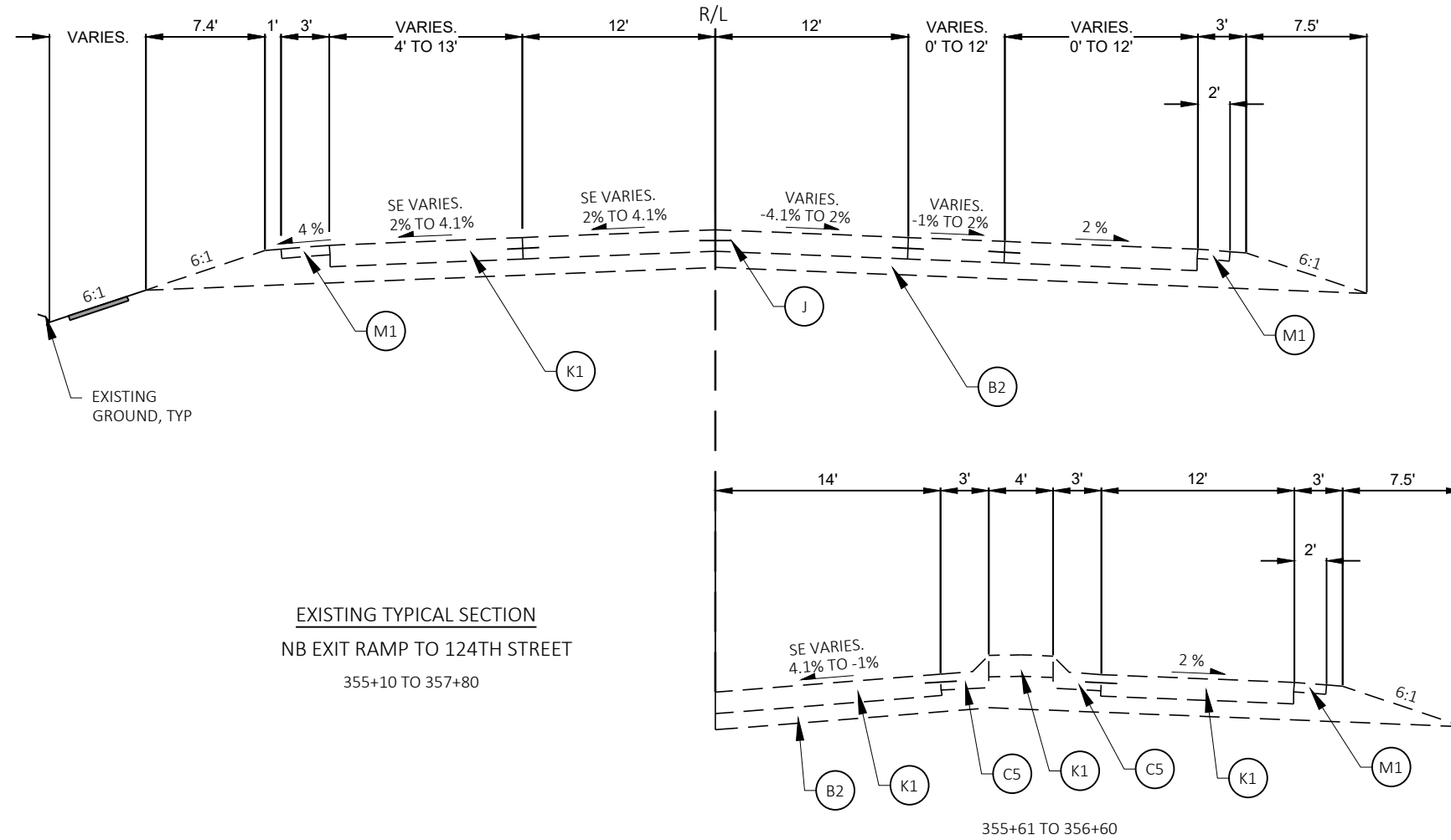




LEGEND

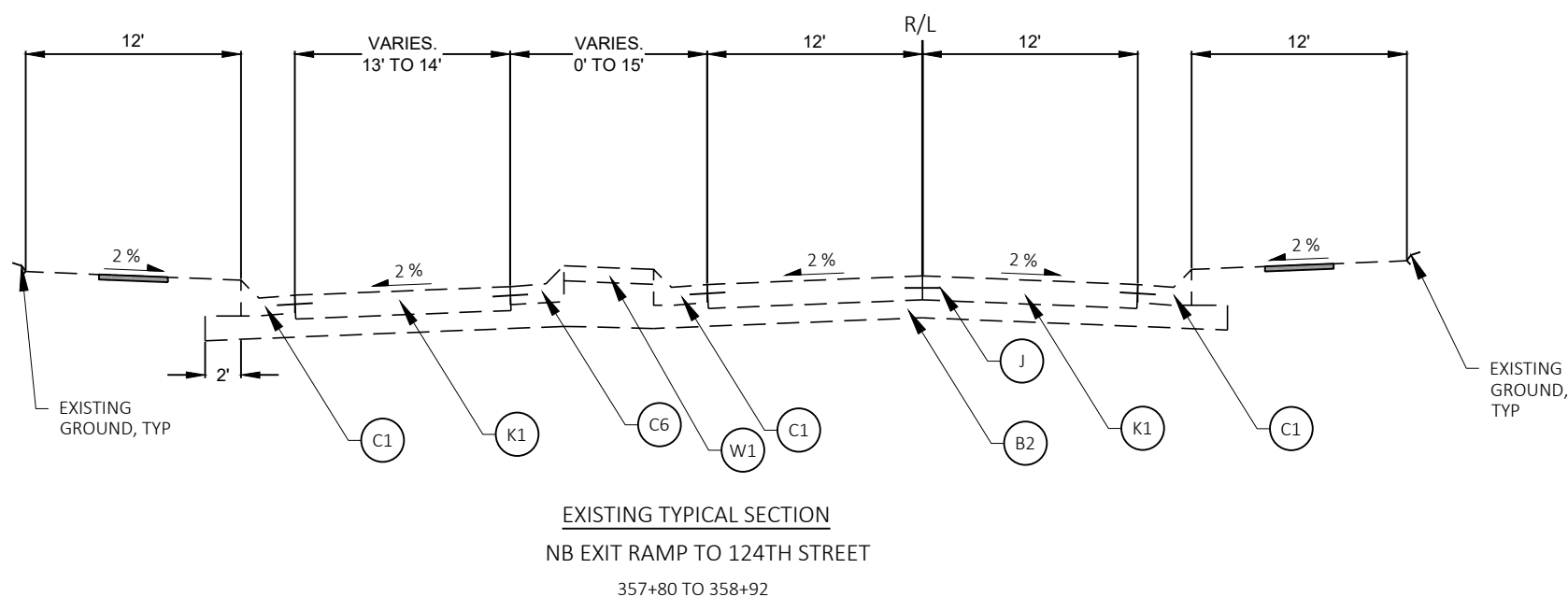
- (B2) CRUSHED AGGREGATE BASE COURSE, 6-INCH
- (C2) CONCRETE CURB AND GUTTER, 36-INCH, TYPE D
- (C4) CONCRETE CURB AND GUTTER, 36-INCH, TYPE D
4-INCH MOUNTABLE
- (D) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- (J) PAVEMENT TIES, TYP
- (K1) CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- (K3) CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- (K5) CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- (M1) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 1/2 -INCH
- (M2) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- (M3) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- (P) PIPE UNDERDRAIN, 6-INCH, TYP
- (Q1) CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- (S1) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 1/2 -INCH
- (S2) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH

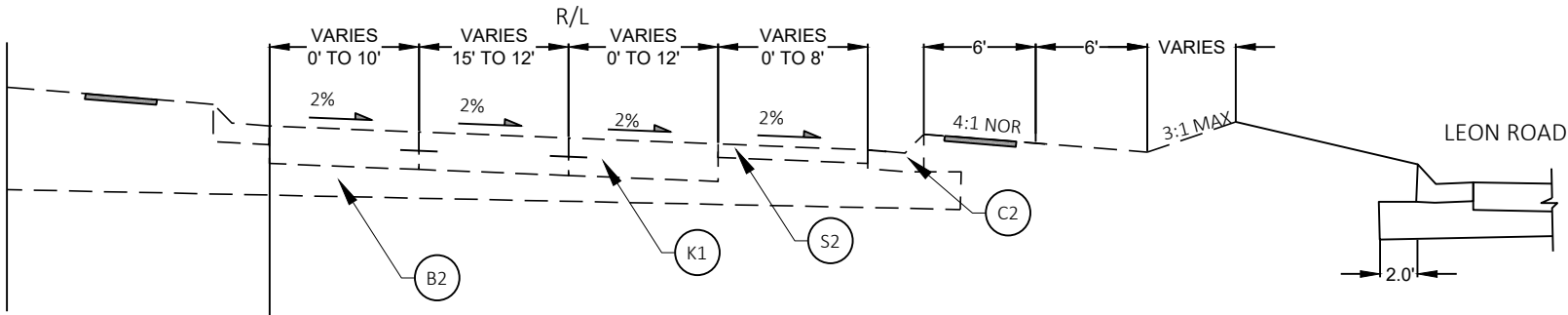




LEGEND

- (B2) CRUSHED AGGREGATE BASE COURSE, 6-INCH
- (C1) CONCRETE CURB AND GUTTER, 31-INCH
- (C5) CONCRETE CURB AND GUTTER, 36-INCH, TYPE A, REVERSE SLOPE
- (C6) CONCRETE CURB AND GUTTER, 31-INCH, REVERSE SLOPE
- (D) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- (J) PAVEMENT TIES, TYP
- (K1) CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- (K3) CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- (K5) CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- (M1) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 1/2 -INCH
- (M2) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- (M3) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- (P) PIPE UNDERDRAIN, 6-INCH, TYP
- (Q1) CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- (S1) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 1/2 -INCH
- (S2) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH
- (W1) CONCRETE SIDEWALK, 5-INCH

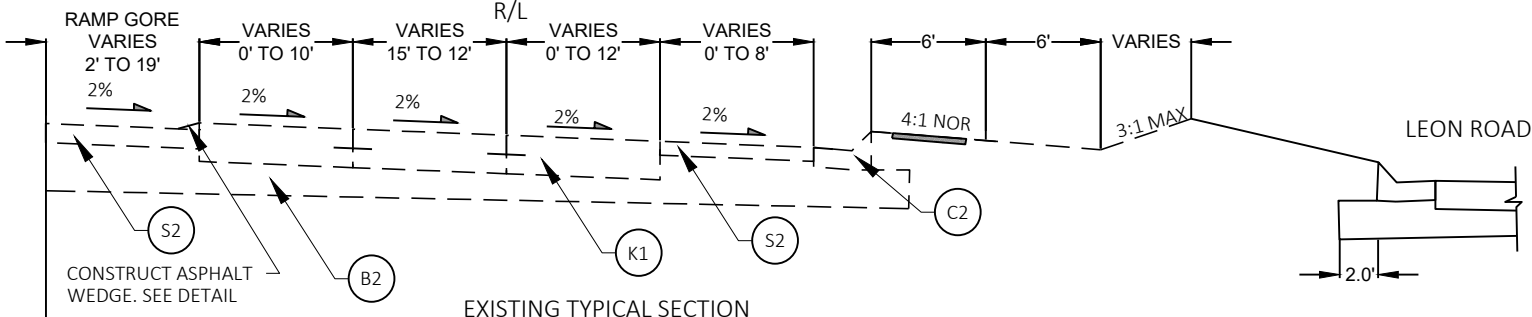




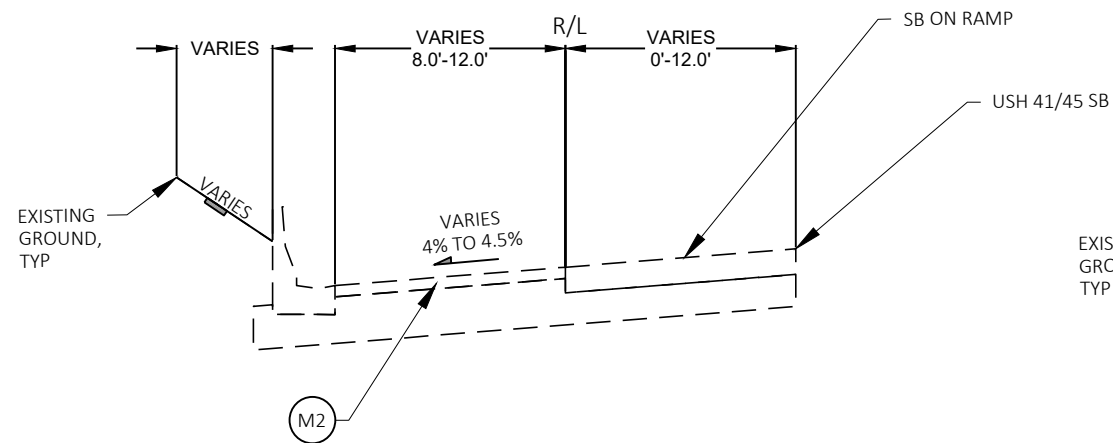
EXISTING TYPICAL SECTION
NB ON RAMP FROM 124TH STREET
406+06 TO 414+32

LEGEND

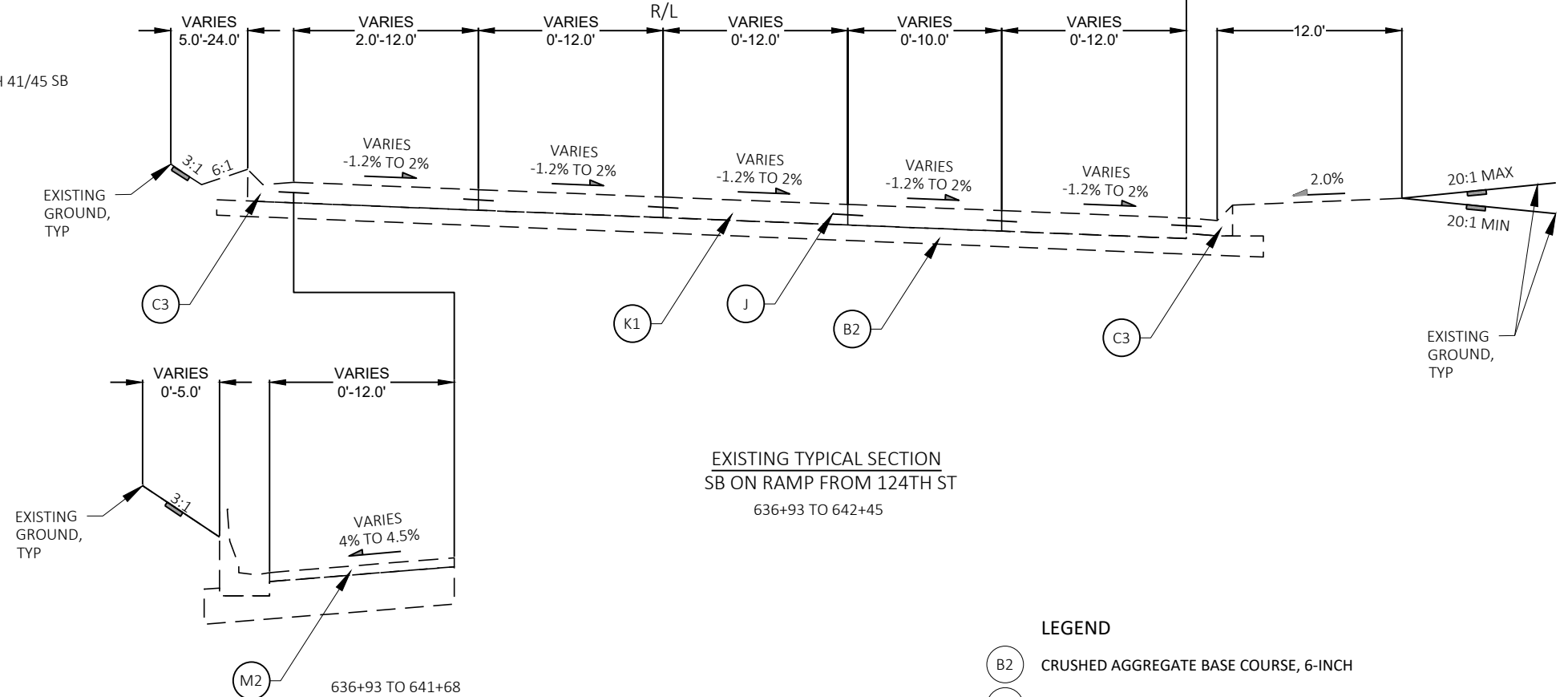
- B2 CRUSHED AGGREGATE BASE COURSE, 6-INCH
- C2 CONCRETE CURB AND GUTTER. 36-INCH, TYPE D
- C4 CONCRETE CURB AND GUTTER. 36-INCH, TYPE D 4-INCH MOUNTABLE
- D CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- J PAVEMENT TIES, TYP
- K1 CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- K3 CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- K5 CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- M1 ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 1/2 -INCH
- M2 ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- M3 ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- P PIPE UNDERDRAIN, 6-INCH, TYP
- Q1 CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- S1 ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 1/2 -INCH
- S2 ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH



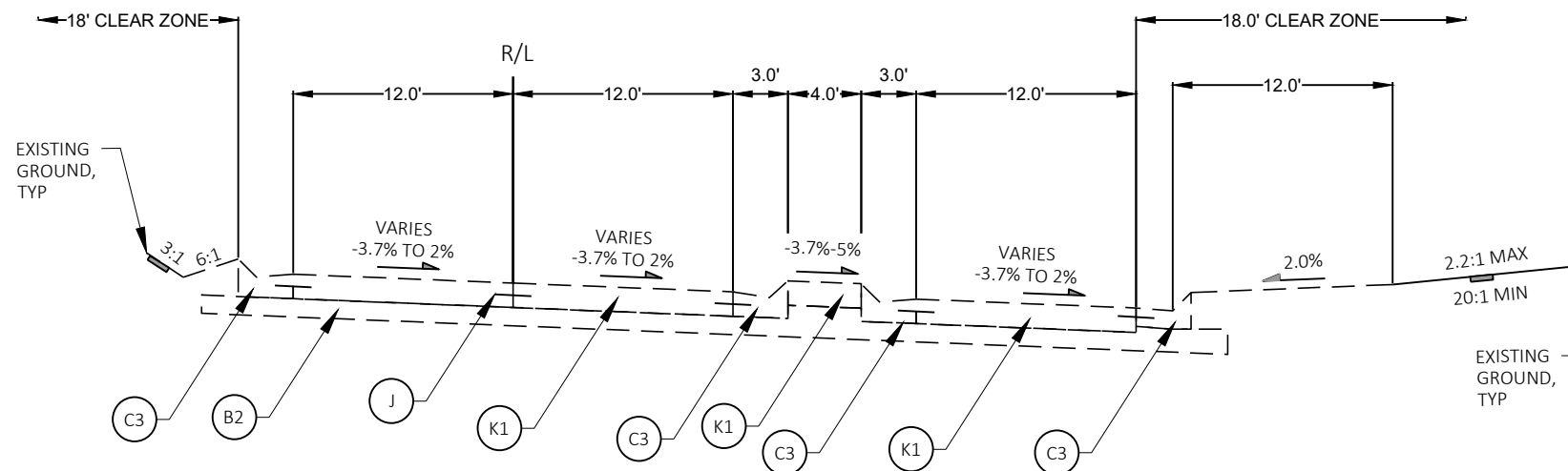
EXISTING TYPICAL SECTION
NB ON RAMP FROM 124TH STREET
167+73 NB TO 171+45 NB
414+32 TO 418+03



EXISTING TYPICAL SECTION
SB ON RAMP FROM 124TH ST
633+81 TO 636+93



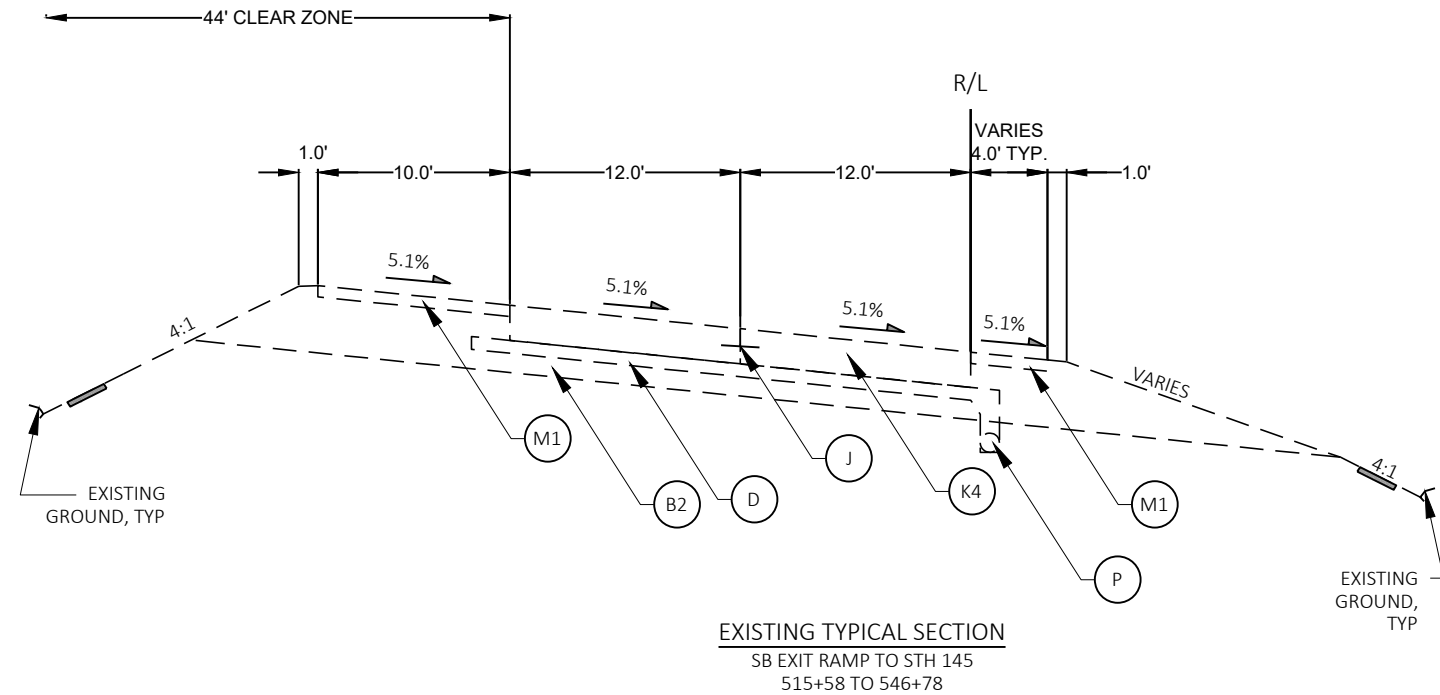
EXISTING TYPICAL SECTION
SB ON RAMP FROM 124TH ST
636+93 TO 642+45



EXISTING TYPICAL SECTION
SB ON RAMP FROM 124TH ST
642+45 TO 652+67

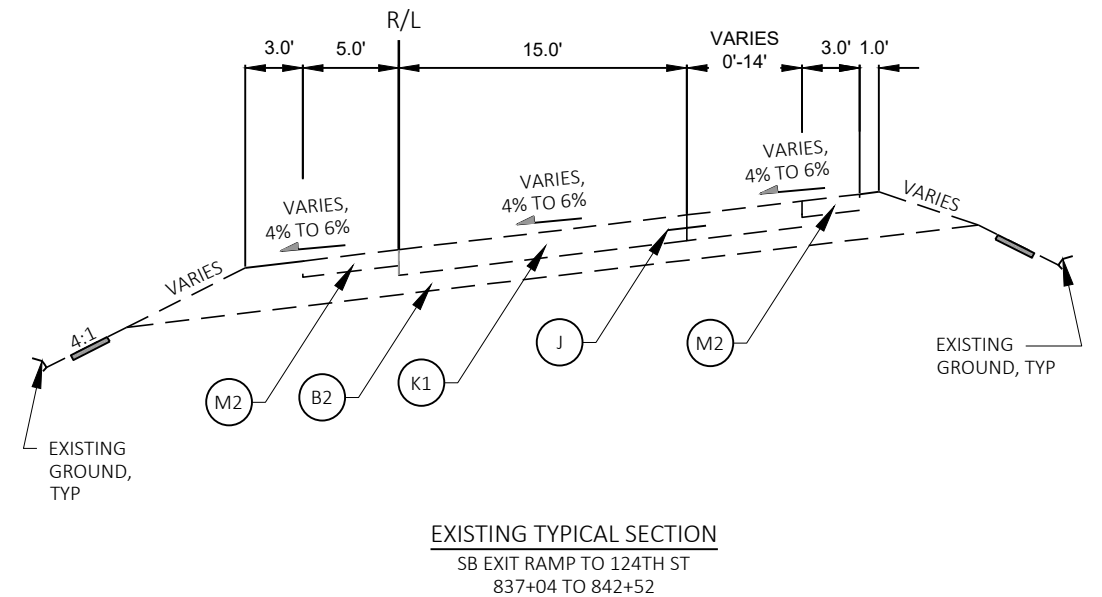
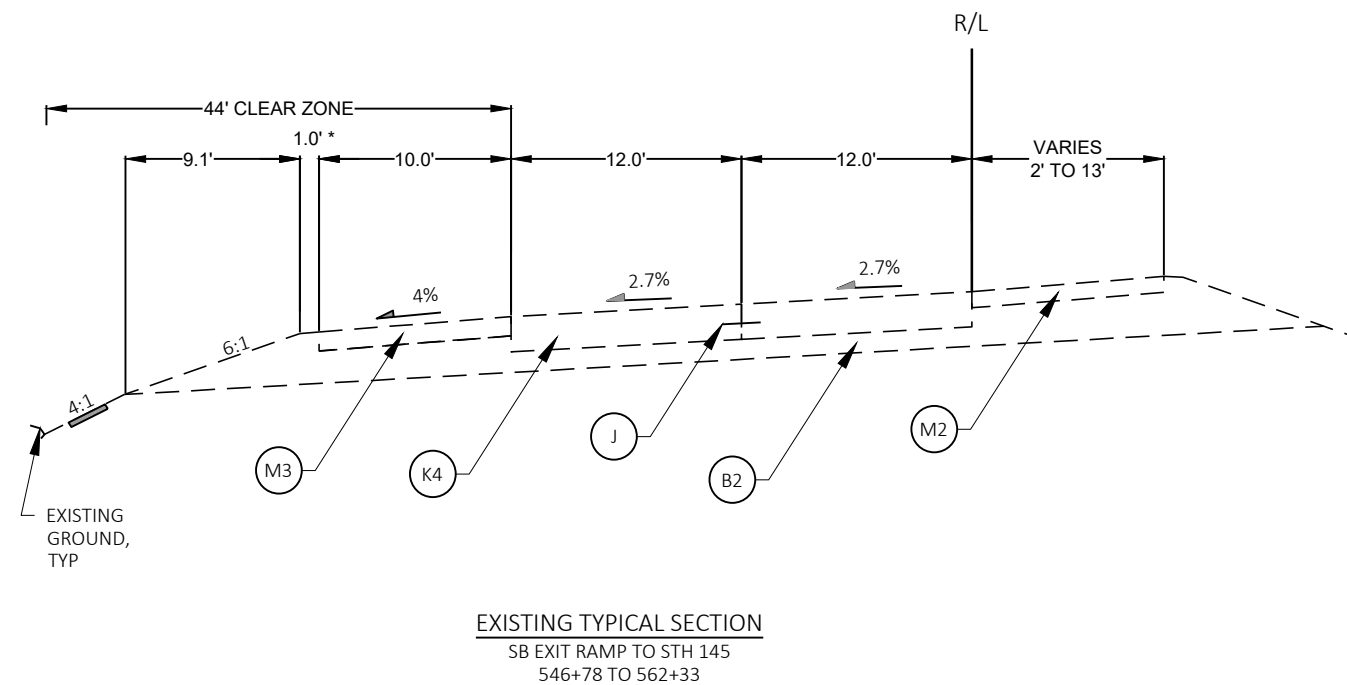
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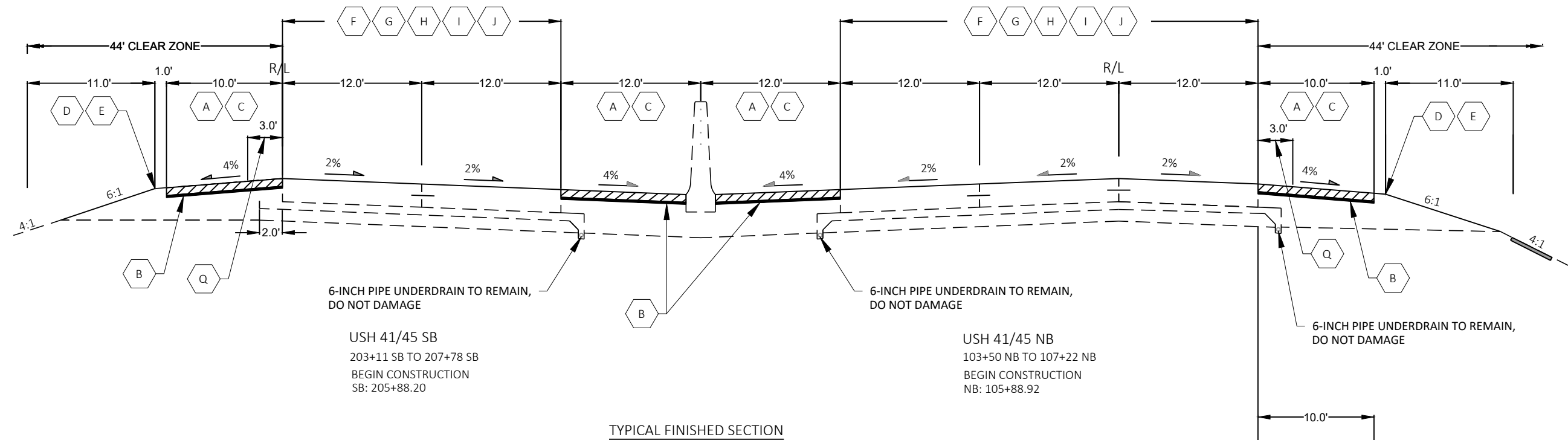
- (B2) CRUSHED AGGREGATE BASE COURSE, 6-INCH
- (C3) CONCRETE CURB AND GUTTER. 36-INCH, TYPE A
- (C4) CONCRETE CURB AND GUTTER. 36-INCH, TYPE D
- (D) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- (J) PAVEMENT TIES, TYP
- (K1) CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- (K3) CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- (K5) CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- (M1) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 1/2 -INCH
- (M2) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- (M3) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- (P) PIPE UNDERDRAIN, 6-INCH, TYP
- (Q1) CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- (S1) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 1/2 -INCH
- (S2) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH



LEGEND

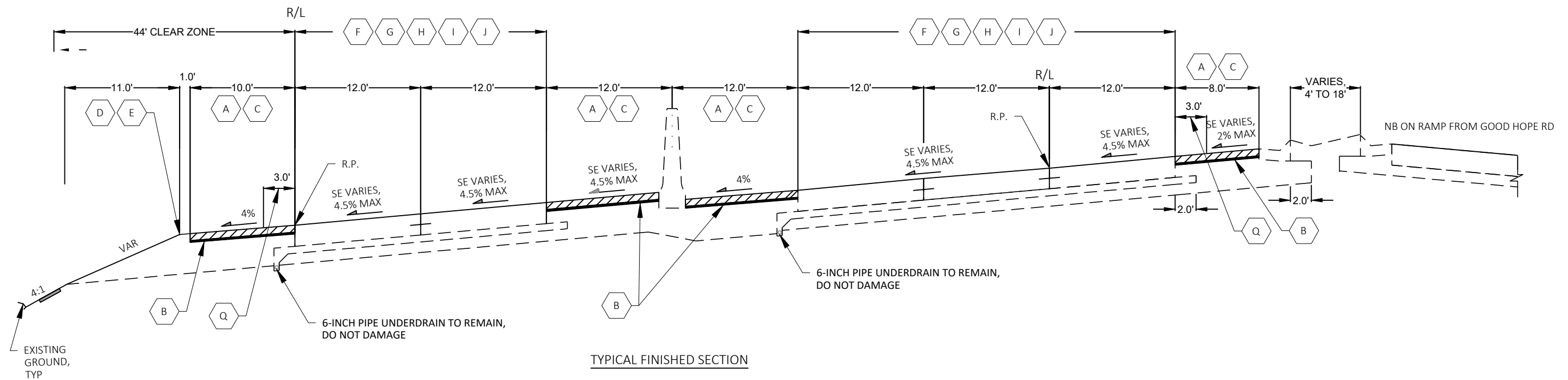
- (B2) CRUSHED AGGREGATE BASE COURSE, 6-INCH
- (C2) CONCRETE CURB AND GUTTER. 36-INCH, TYPE D
- (C4) CONCRETE CURB AND GUTTER. 36-INCH, TYPE D 4-INCH MOUNTABLE
- (D) CRUSHED AGGREGATE BASE COURSE, OPEN GRADED, NO. 2, 4-INCH
- (J) PAVEMENT TIES, TYP
- (K1) CONCRETE PAVEMENT, 8-INCH, DOWELED AND TINED
- (K3) CONCRETE PAVEMENT, 10-INCH, DOWELED AND TINED
- (K5) CONCRETE PAVEMENT, 12-INCH, DOWELED AND TINED
- (M1) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 3 1/2 -INCH
- (M2) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 5-INCH
- (M3) ASPHALTIC CONCRETE PAVEMENT, TYP MV, 6-INCH
- (P) PIPE UNDERDRAIN, 6-INCH, TYP
- (Q1) CONCRETE MEDIAN BARRIER, 51-INCH, SEE DETAIL
- (S1) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 2 1/2 -INCH
- (S2) ASPHALTIC CONCRETE PAVEMENT, TYP SUPERPAVE, 5-INCH





LEGEND

- | | |
|--|---|
| (A) REMOVING ASPHALTIC SURFACE MILLING, 5-INCH | (J) SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT |
| (B) PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS | (K) REMOVING ASPHALTIC SURFACE MILLING, 6-INCH |
| (C) HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH | (L) HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH |
| (D) SHAPING SHOULDERS | (M) BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH |
| (E) BASE AGGREGATE DENSE 3/4-INCH | (N) SELECT CRUSHED MATERIAL, 3-INCH |
| (F) CONCRETE PAVEMENT REPAIR SHES | (O) SELECT CRUSHED MATERIAL, 12-INCH |
| (G) CONCRETE PAVEMENT REPLACEMENT SHES | (P) CONCRETE PAVEMENT HES 8-INCH |
| (H) DRILLED TIE BARS AND DOWEL BARS | (Q) VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER
PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT |
| (I) CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT | |

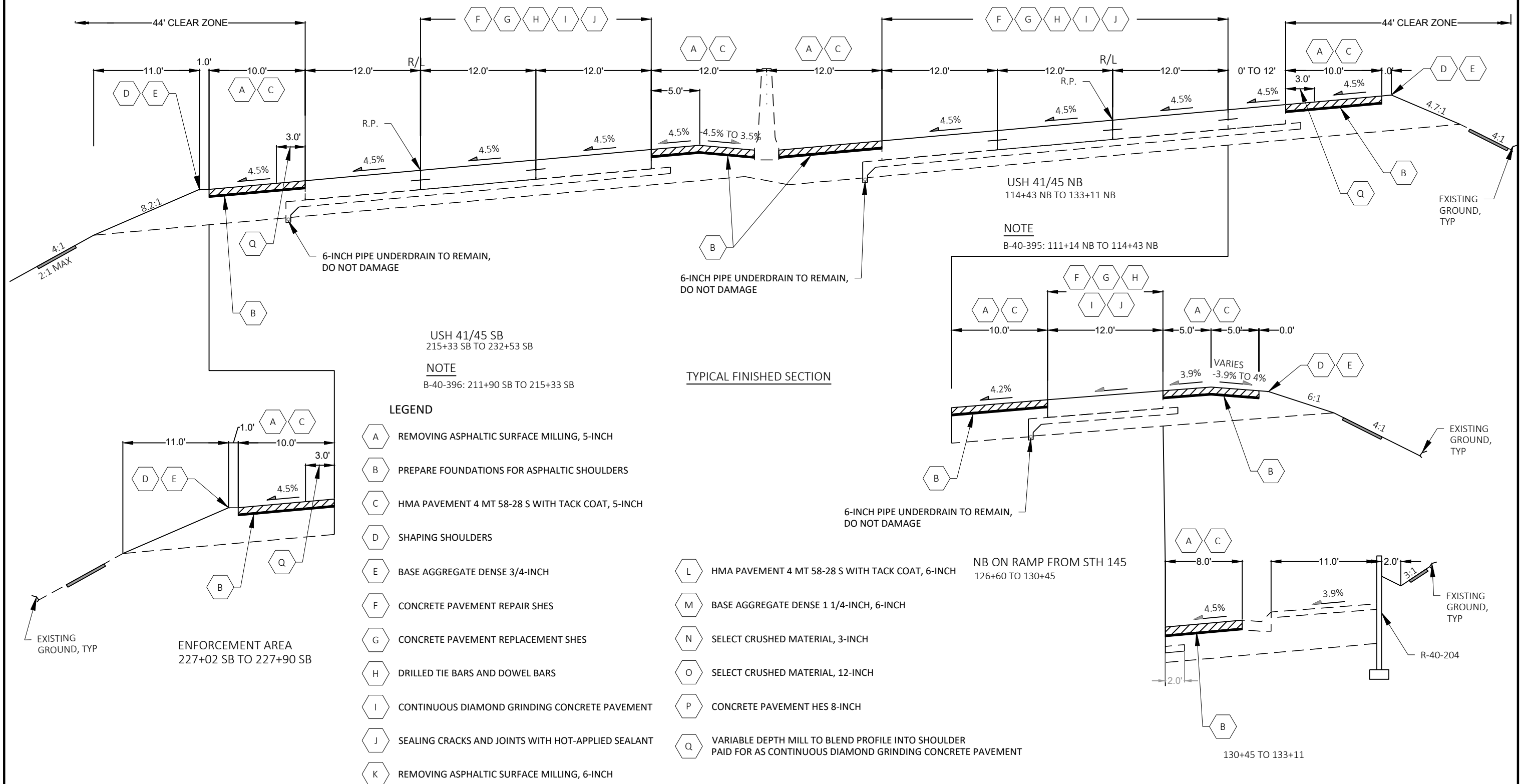


R.P. = RETENTION POINT

LEGEND

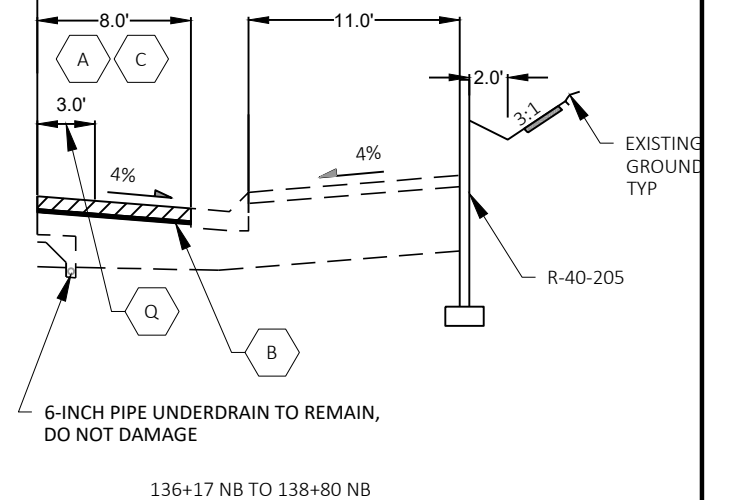
A	REMOVING ASPHALTIC SURFACE MILLING, 5-INCH	J	SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT
B	PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS	K	REMOVING ASPHALTIC SURFACE MILLING, 6-INCH
C	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH	L	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH
D	SHAPING SHOULDERS	M	BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH
E	BASE AGGREGATE DENSE 3/4-INCH	N	SELECT CRUSHED MATERIAL, 3-INCH
F	CONCRETE PAVEMENT REPAIR SHES	O	SELECT CRUSHED MATERIAL, 12-INCH
G	CONCRETE PAVEMENT REPLACEMENT SHES	P	CONCRETE PAVEMENT HES 8-INCH
H	DRILLED TIE BARS AND DOWEL BARS	Q	VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
I	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT		

R.P. = RETENTION POINT

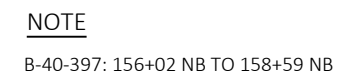


TYPICAL FINISHED SECTION

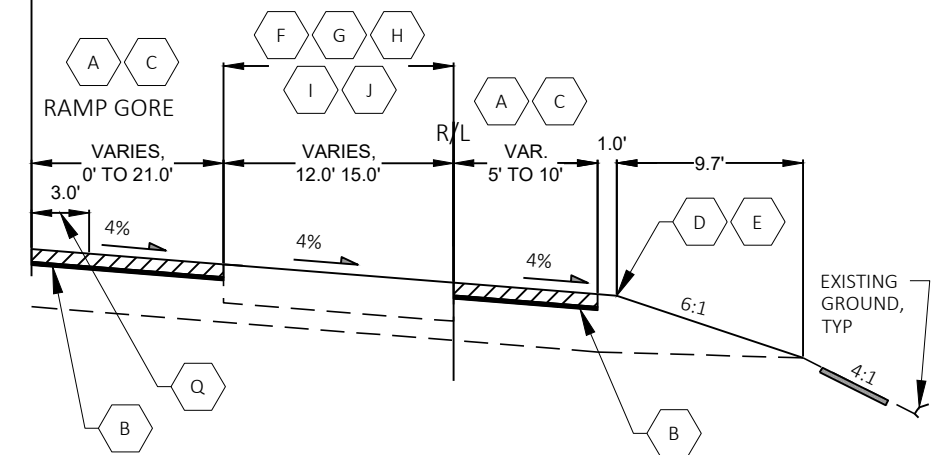
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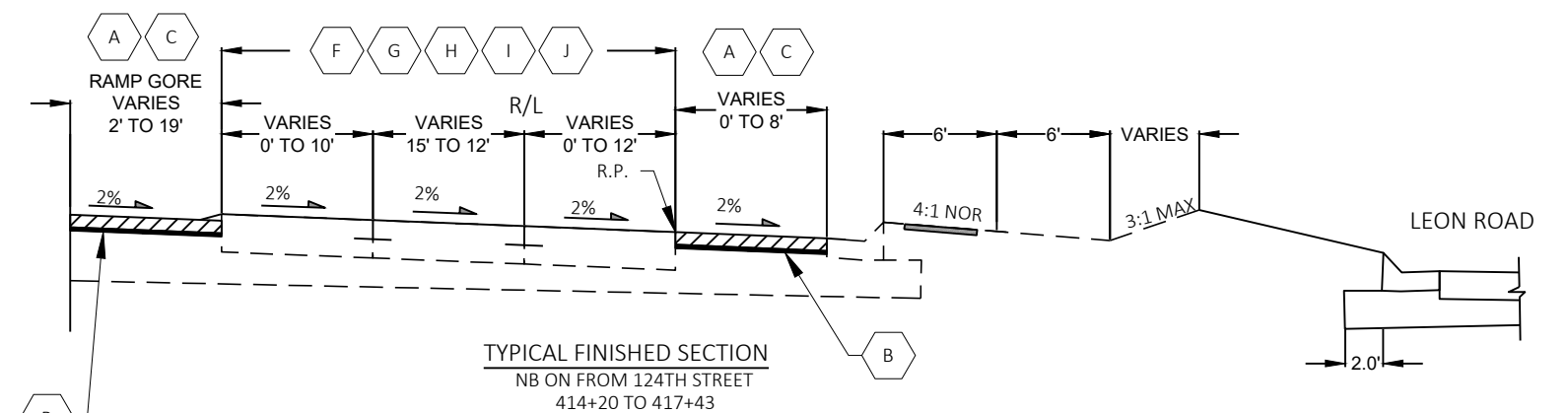
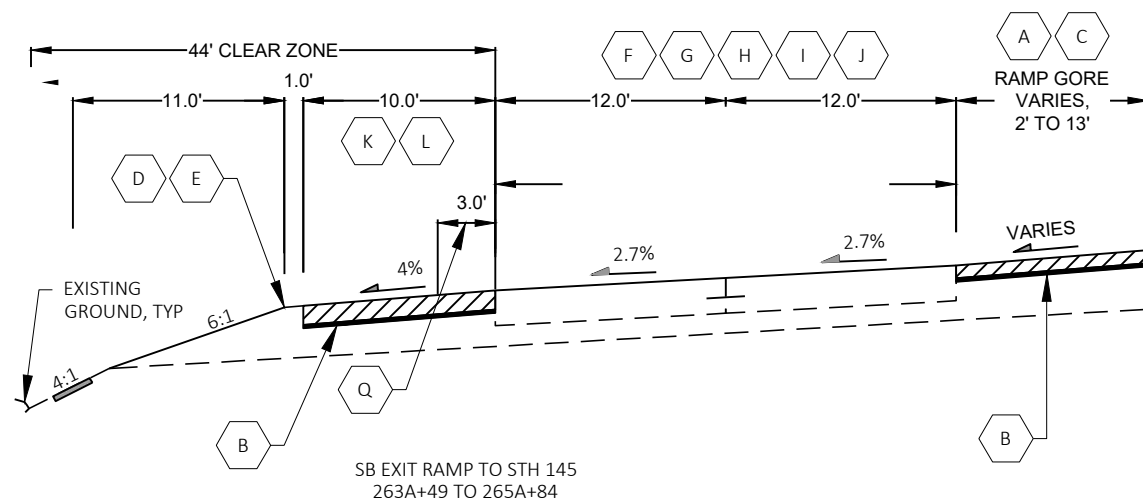
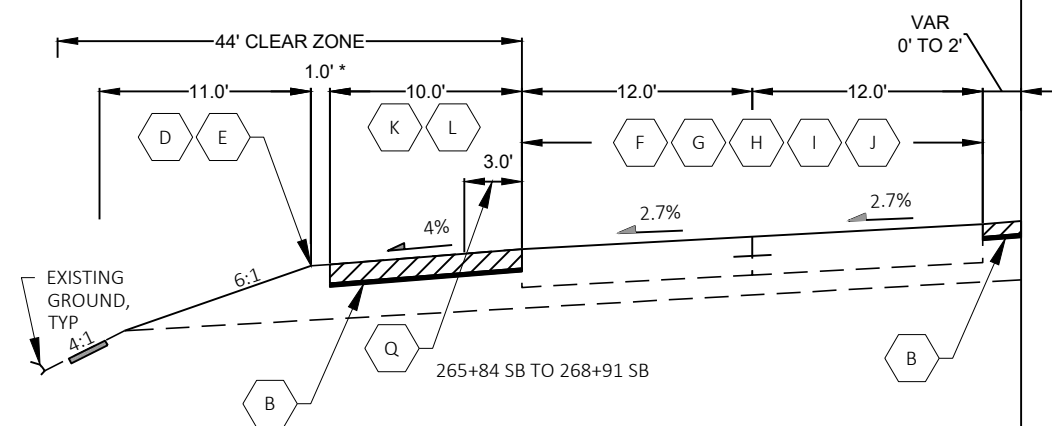
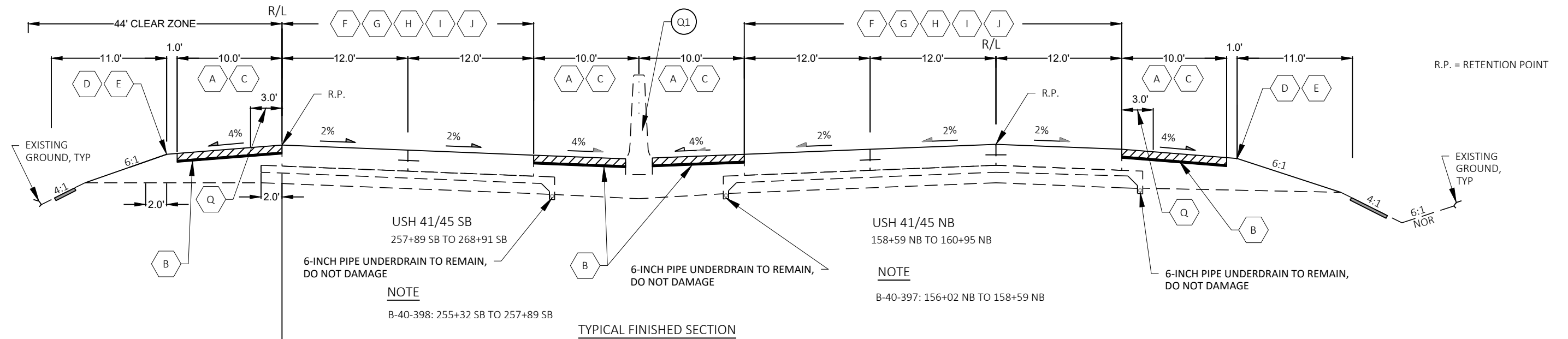
LEGEND



NOTE
B-40-397: 156+02 NB TO 158+59 NB

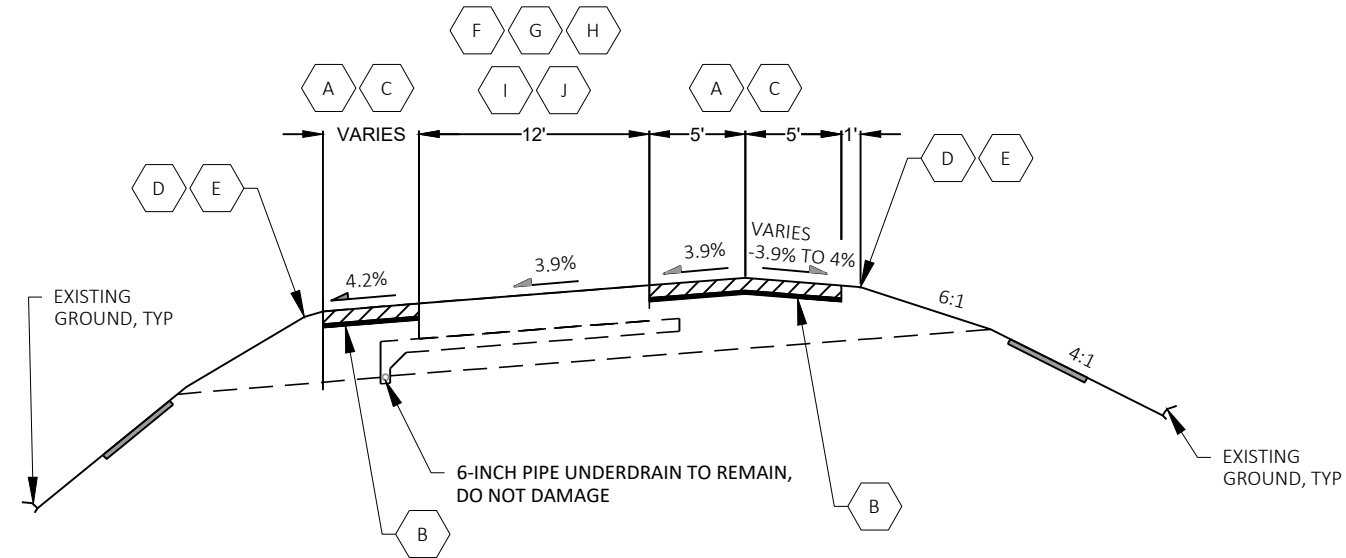


A	REMOVING ASPHALTIC SURFACE MILLING, 5-INCH	J	SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT
B	PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS	K	REMOVING ASPHALTIC SURFACE MILLING, 6-INCH
C	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH	L	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH
D	SHAPING SHOULDERS	M	BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH
E	BASE AGGREGATE DENSE 3/4-INCH	N	SELECT CRUSHED MATERIAL, 3-INCH
F	CONCRETE PAVEMENT REPAIR SHES	O	SELECT CRUSHED MATERIAL, 12-INCH
G	CONCRETE PAVEMENT REPLACEMENT SHES	P	CONCRETE PAVEMENT HES 8-INCH
H	DRILLED TIE BARS AND DOWEL BARS	Q	VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
I	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT		



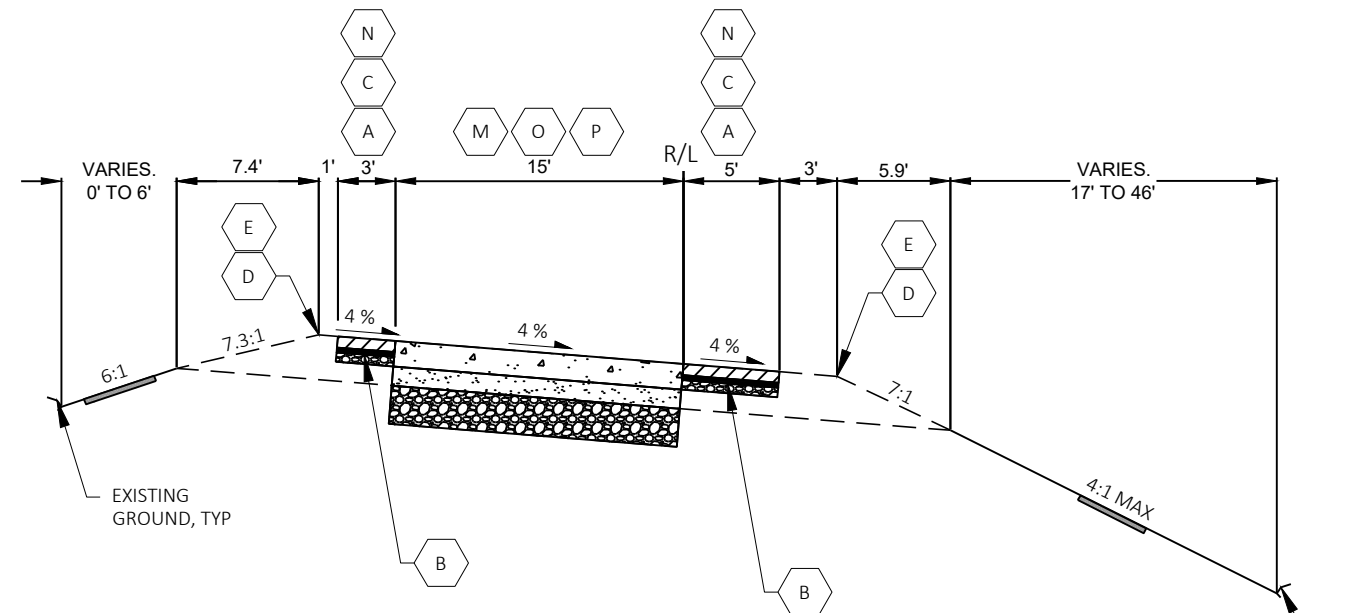
LEGEND

- | | | | |
|---|--|---|---|
| A | REMOVING ASPHALTIC SURFACE MILLING, 5-INCH | J | SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT |
| B | PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS | K | REMOVING ASPHALTIC SURFACE MILLING, 6-INCH |
| C | HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH | L | HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH |
| D | SHAPING SHOULDERS | M | BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH |
| E | BASE AGGREGATE DENSE 3/4-INCH | N | SELECT CRUSHED MATERIAL, 3-INCH |
| F | CONCRETE PAVEMENT REPAIR SHES | O | SELECT CRUSHED MATERIAL, 12-INCH |
| G | CONCRETE PAVEMENT REPLACEMENT SHES | P | CONCRETE PAVEMENT HES 8-INCH |
| H | DRILLED TIE BARS AND DOWEL BARS | Q | VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER
PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT |
| I | CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT | | |



TYPICAL FINISHED SECTION
NB ON RAMP FROM STH 145

406+11 TO 424+96

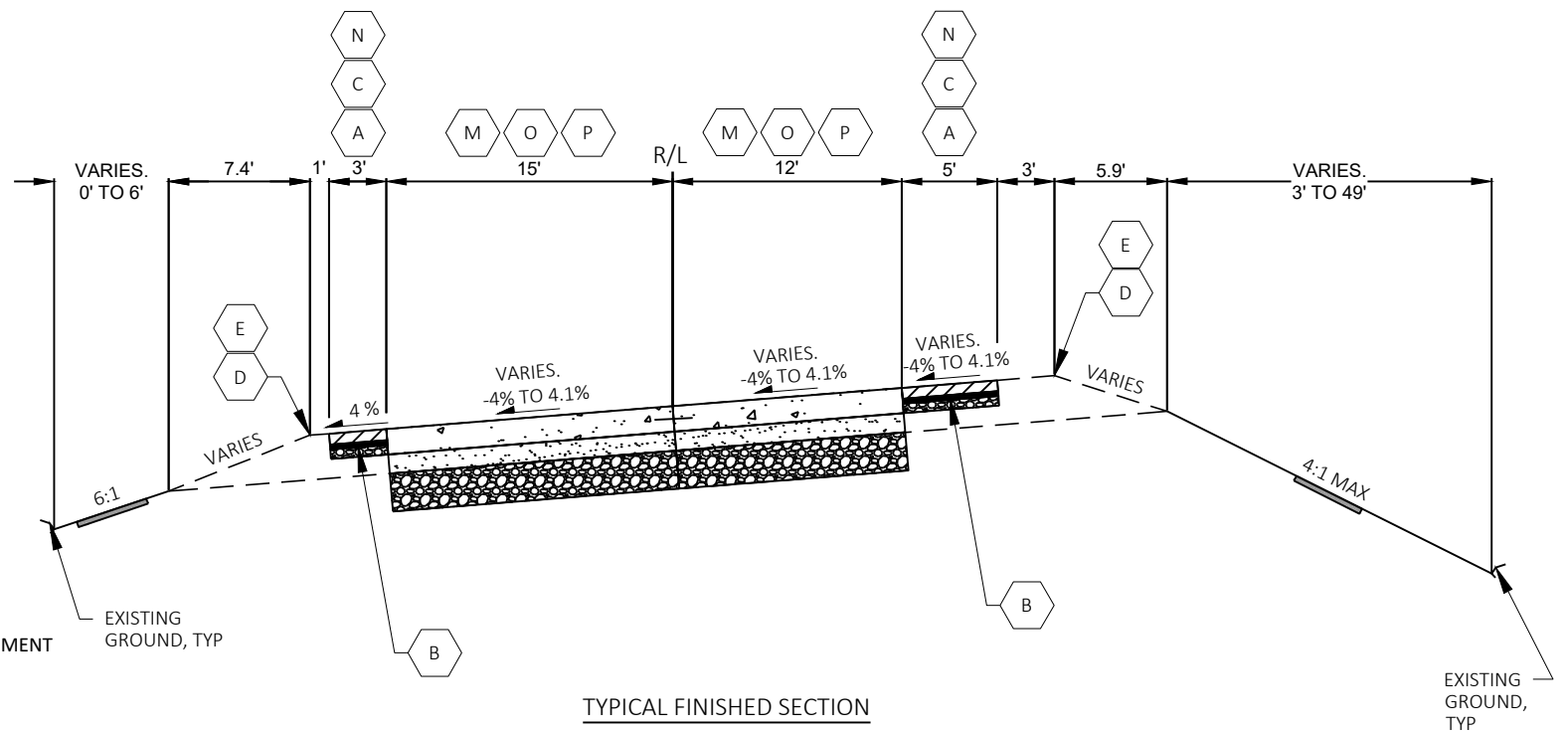


TYPICAL FINISHED SECTION
NB EXIT RAMP TO 124TH STREET

348+63 TO 351+61

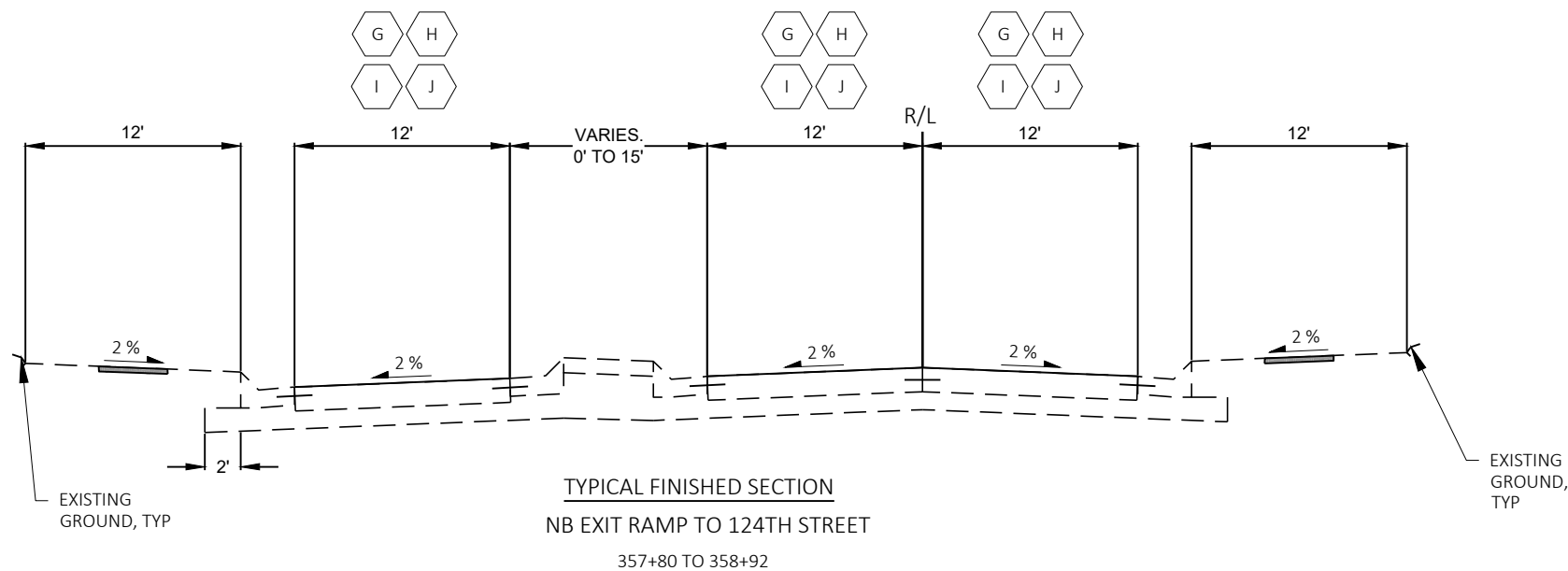
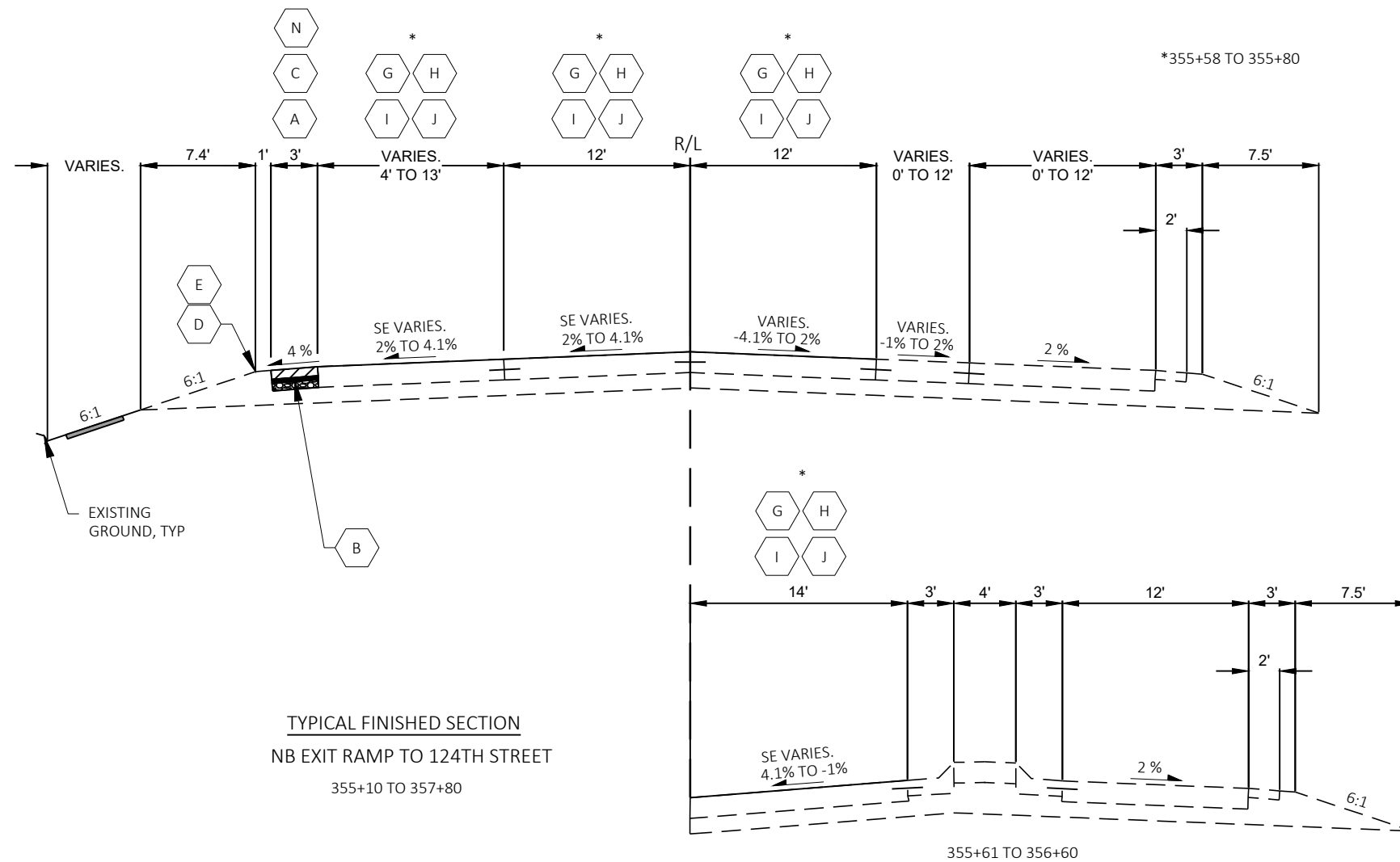
LEGEND

A	REMOVING ASPHALTIC SURFACE MILLING, 5-INCH	J	SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT
B	PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS	K	REMOVING ASPHALTIC SURFACE MILLING, 6-INCH
C	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH	L	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH
D	SHAPING SHOULDERS	M	BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH
E	BASE AGGREGATE DENSE 3/4-INCH	N	SELECT CRUSHED MATERIAL, 3-INCH
F	CONCRETE PAVEMENT REPAIR SHES	O	SELECT CRUSHED MATERIAL, 12-INCH
G	CONCRETE PAVEMENT REPLACEMENT SHES	P	CONCRETE PAVEMENT HES 8-INCH
H	DRILLED TIE BARS AND DOWEL BARS	Q	VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
I	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT		



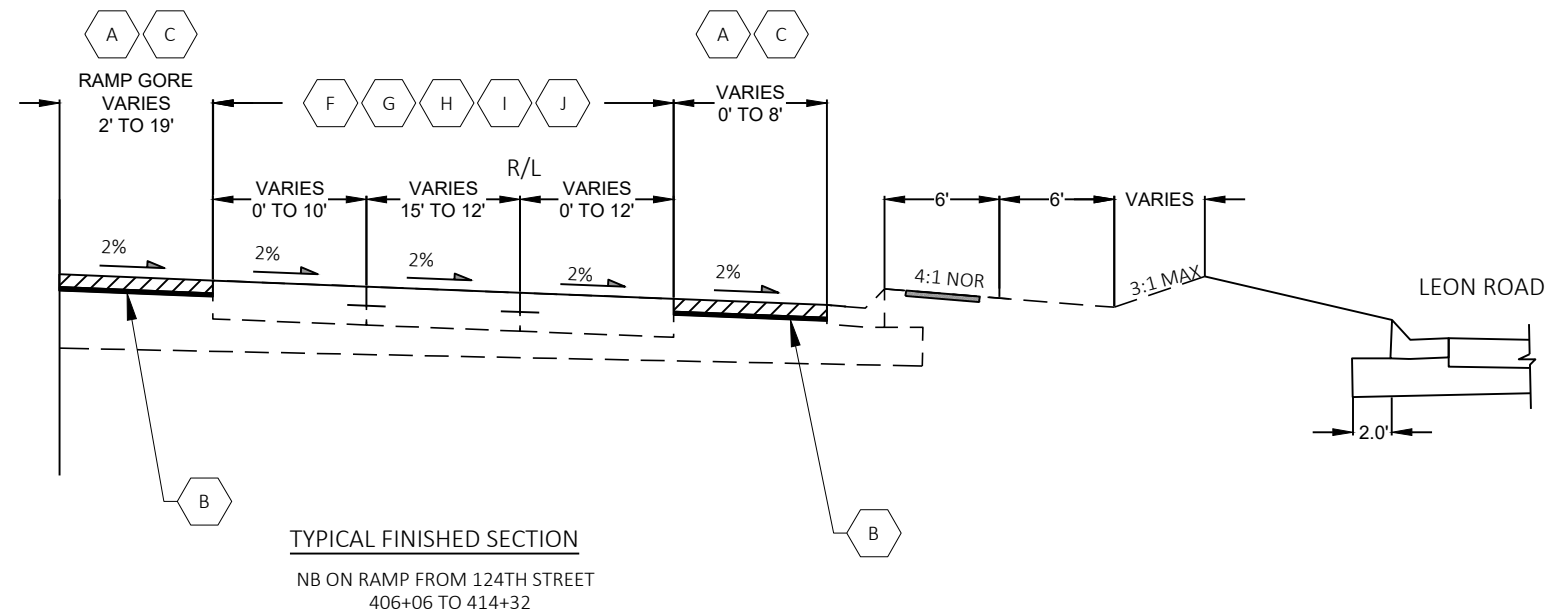
TYPICAL FINISHED SECTION
NB EXIT RAMP TO 124TH STREET

351+61 TO 354+70



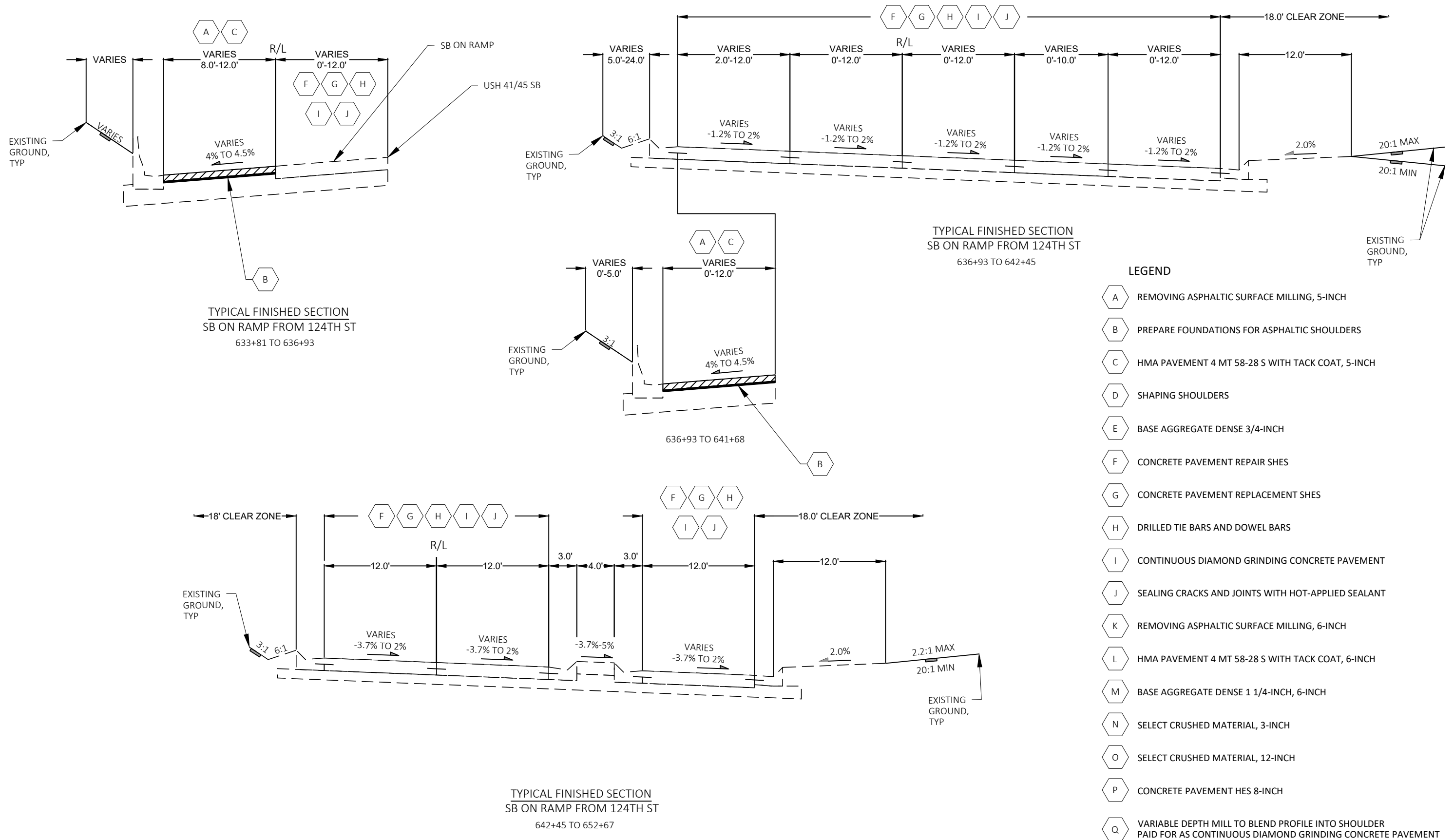
LEGEND

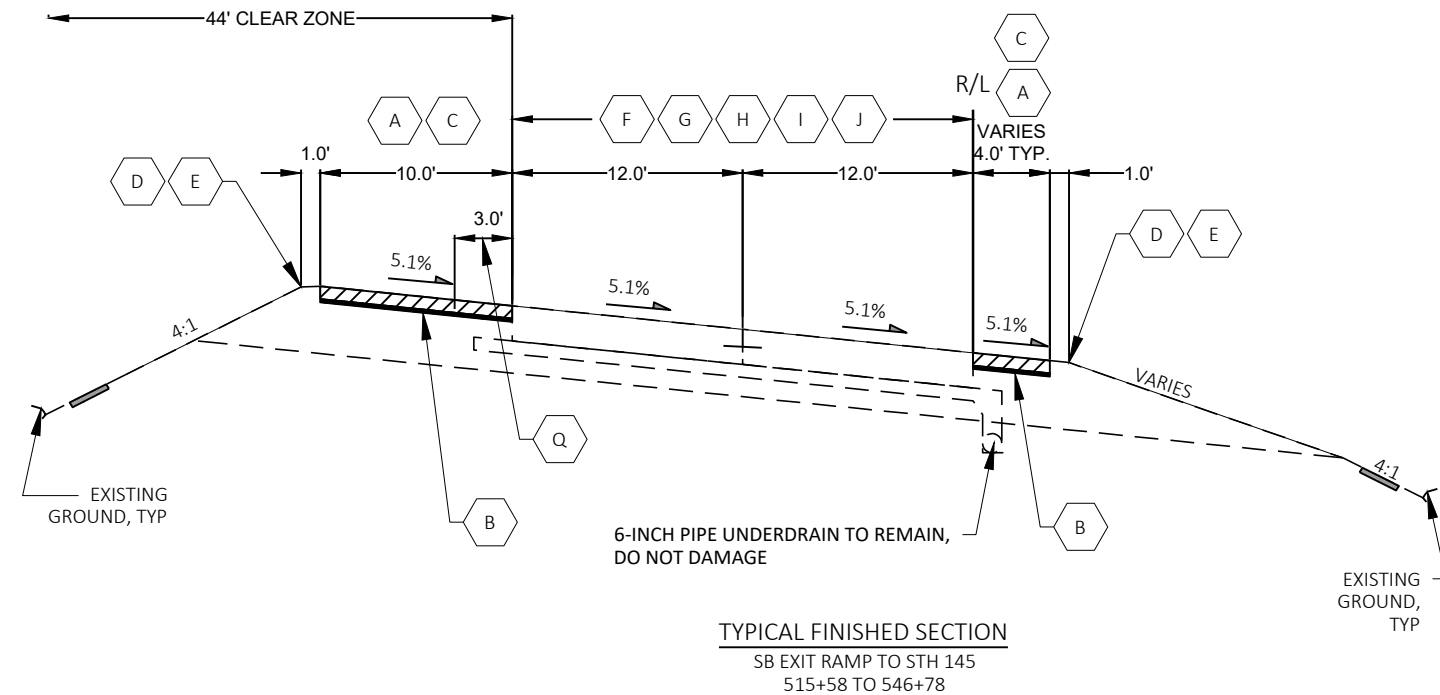
- A REMOVING ASPHALTIC SURFACE MILLING, 5-INCH
- B PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS
- C HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH
- D SHAPING SHOULDERS
- E BASE AGGREGATE DENSE 3/4-INCH
- F CONCRETE PAVEMENT REPAIR SHES
- G CONCRETE PAVEMENT REPLACEMENT SHES
- H DRILLED TIE BARS AND DOWEL BARS
- I CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
- J SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT
- K REMOVING ASPHALTIC SURFACE MILLING, 6-INCH
- L HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH
- M BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH
- N SELECT CRUSHED MATERIAL, 3-INCH
- O SELECT CRUSHED MATERIAL, 12-INCH
- P CONCRETE PAVEMENT HES 8-INCH
- Q VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT



LEGEND

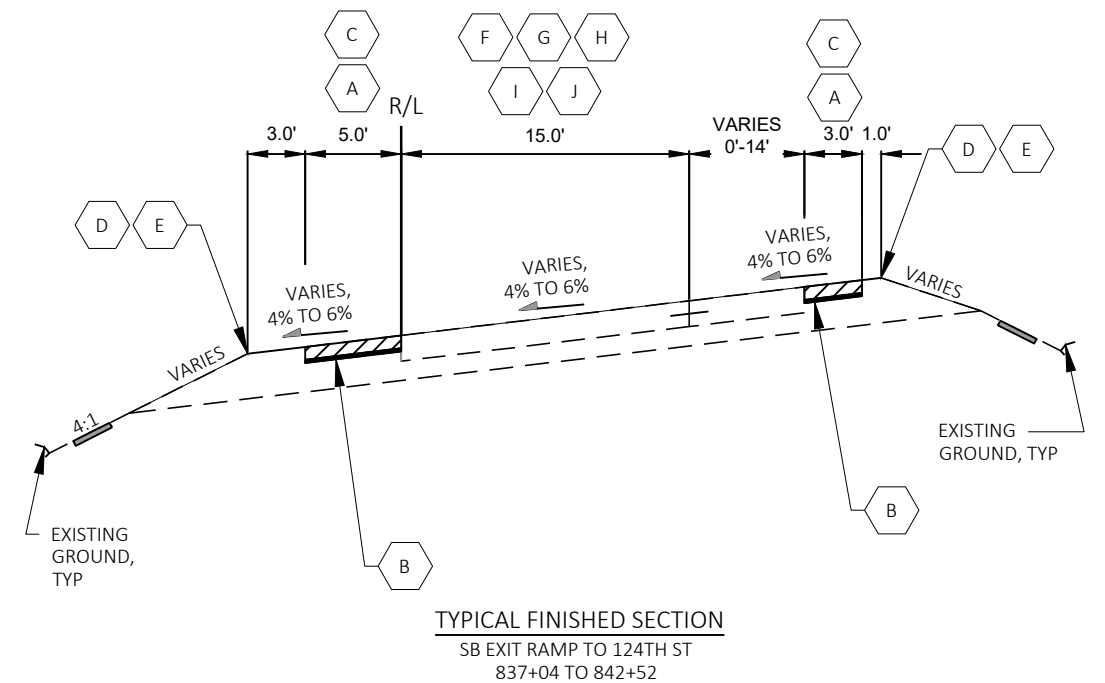
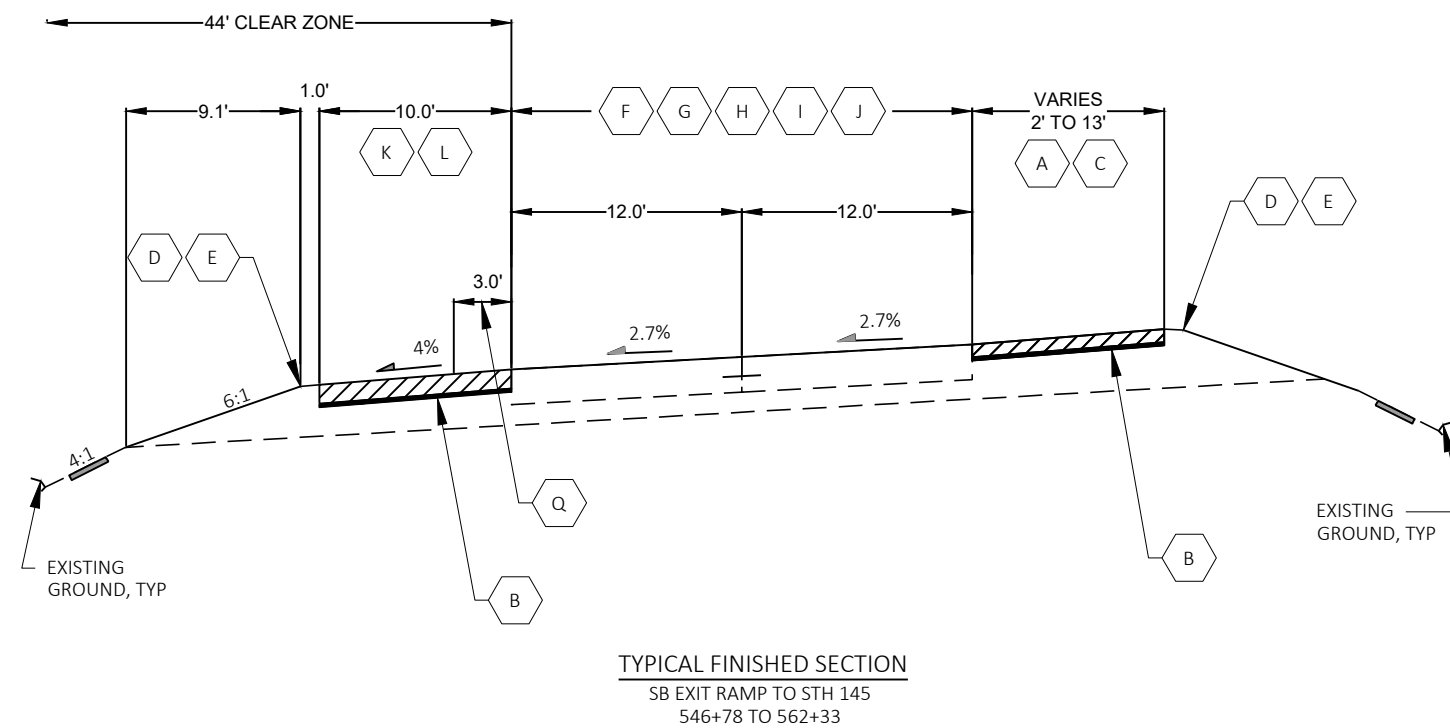
A	REMOVING ASPHALTIC SURFACE MILLING, 5-INCH	J	SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT
B	PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS	K	REMOVING ASPHALTIC SURFACE MILLING, 6-INCH
C	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH	L	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH
D	SHAPING SHOULDERS	M	BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH
E	BASE AGGREGATE DENSE 3/4-INCH	N	SELECT CRUSHED MATERIAL, 3-INCH
F	CONCRETE PAVEMENT REPAIR SHES	O	SELECT CRUSHED MATERIAL, 12-INCH
G	CONCRETE PAVEMENT REPLACEMENT SHES	P	CONCRETE PAVEMENT HES 8-INCH
H	DRILLED TIE BARS AND DOWEL BARS	Q	VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
I	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT		

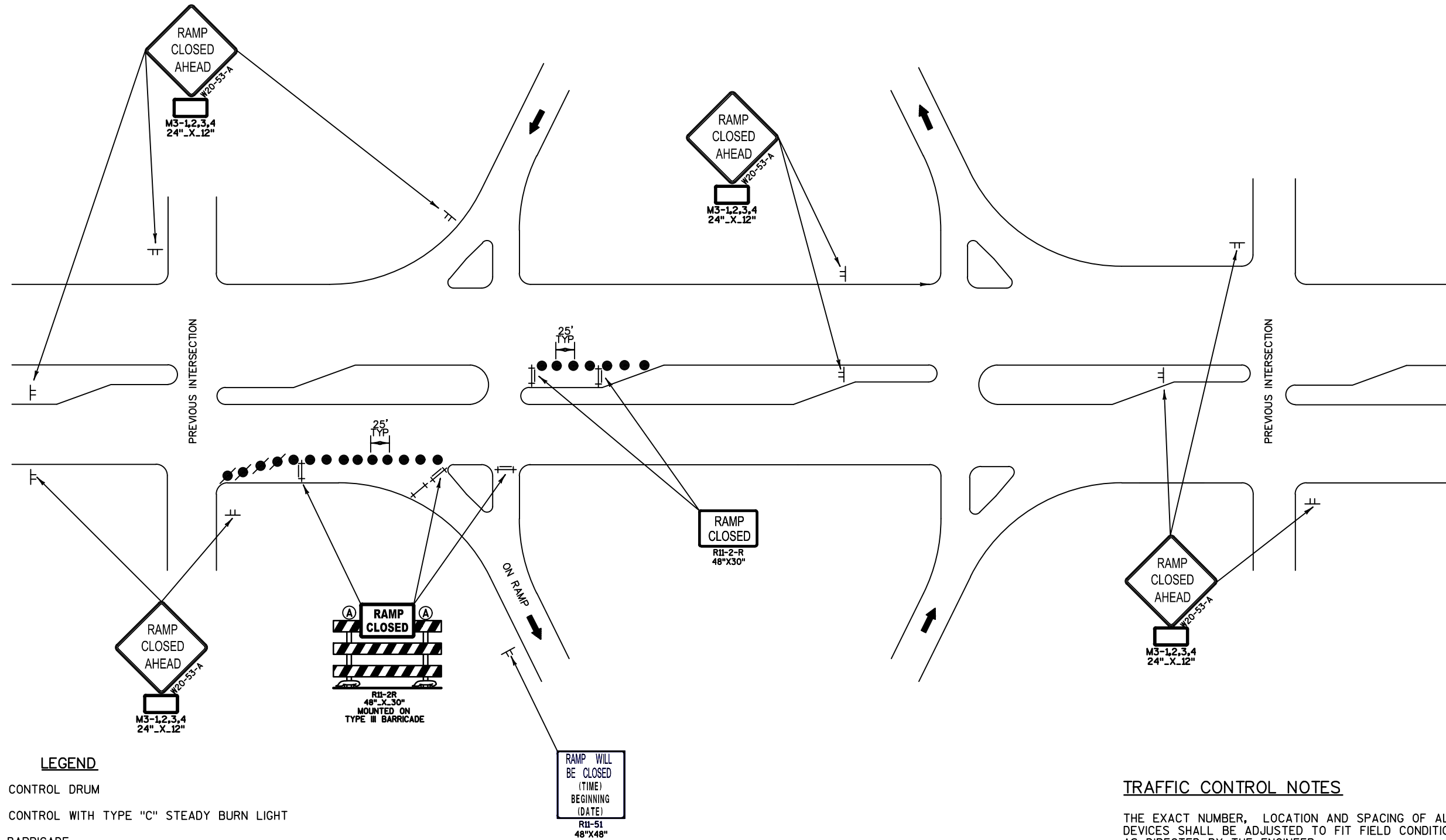


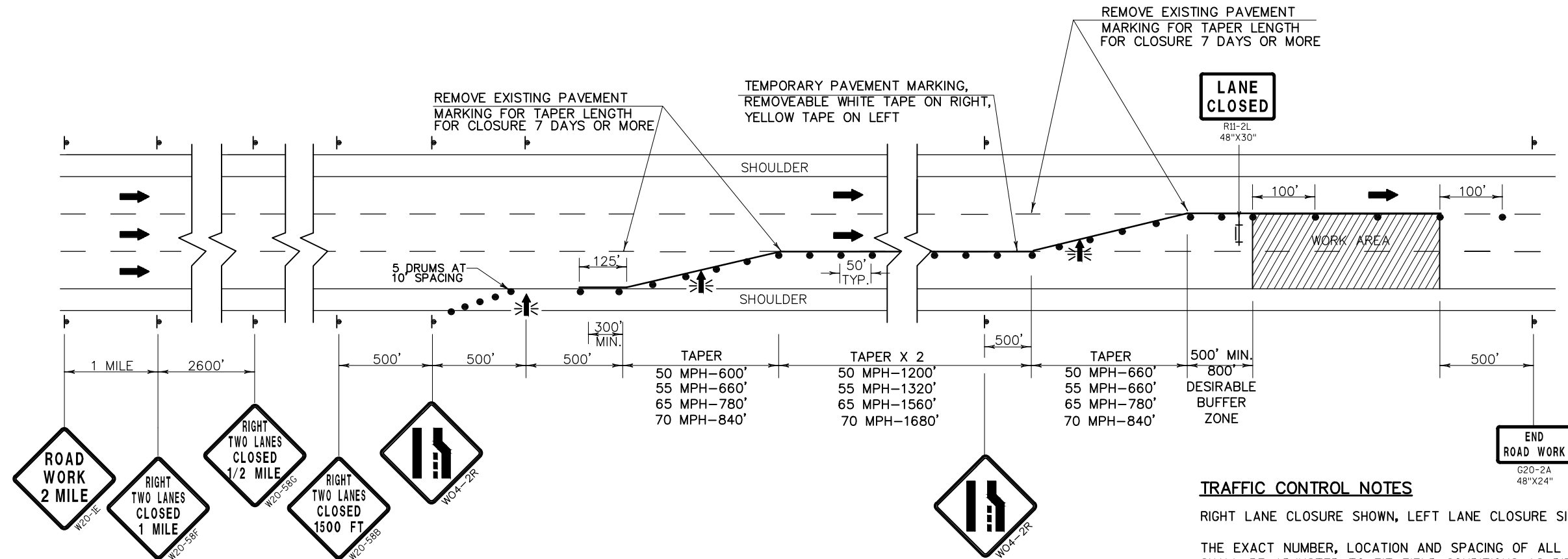


LEGEND

A	REMOVING ASPHALTIC SURFACE MILLING, 5-INCH	J	SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT
B	PREPARE FOUNDATIONS FOR ASPHALTIC SHOULDERS	K	REMOVING ASPHALTIC SURFACE MILLING, 6-INCH
C	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 5-INCH	L	HMA PAVEMENT 4 MT 58-28 S WITH TACK COAT, 6-INCH
D	SHAPING SHOULDERS	M	BASE AGGREGATE DENSE 1 1/4-INCH, 6-INCH
E	BASE AGGREGATE DENSE 3/4-INCH	N	SELECT CRUSHED MATERIAL, 3-INCH
F	CONCRETE PAVEMENT REPAIR SHES	O	SELECT CRUSHED MATERIAL, 12-INCH
G	CONCRETE PAVEMENT REPLACEMENT SHES	P	CONCRETE PAVEMENT HES 8-INCH
H	DRILLED TIE BARS AND DOWEL BARS	Q	VARIABLE DEPTH MILL TO BLEND PROFILE INTO SHOULDER PAID FOR AS CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
I	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT		







LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL WITH TYPE "C" STEADY BURN LIGHT
- † TYPE III BARRICADE WITH TWO (2) TYPE "A" WARNING LIGHTS (FLASHING)
- ‡ TYPE III BARRICADE WITH SIGN WITH TWO (2) TYPE "A" WARNING LIGHTS (FLASHING)
- SIGN ON PERMANENT SUPPORT
- ⊥ SIGN ON TEMPORARY SUPPORT
- ↔ FLASHING ARROW BOARD
- ➔ DIRECTION OF TRAFFIC
- PCMS TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE BOARD
- ▨ WORK AREA

TRAFFIC CONTROL NOTES

RIGHT LANE CLOSURE SHOWN, LEFT LANE CLOSURE SIMILAR.

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

FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A WARNING LIGHT, TYPE C (STEADY BURN).

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

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

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

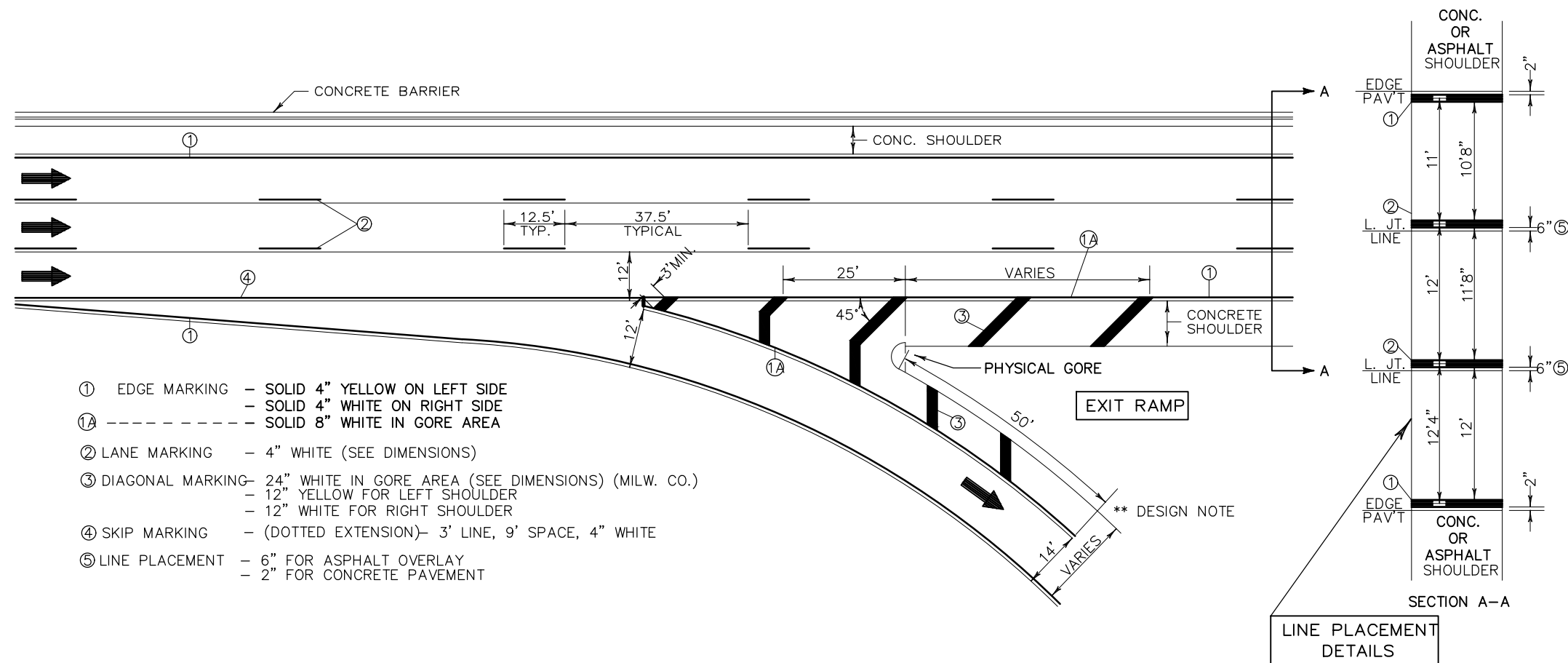
ALL SHORT TERM LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL ARROWBOARDS AND DEVICES REMOVED BEYOND THE SHOULDER WHEN THE WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROWBOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500' IN FRONT OF DRUMS.

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

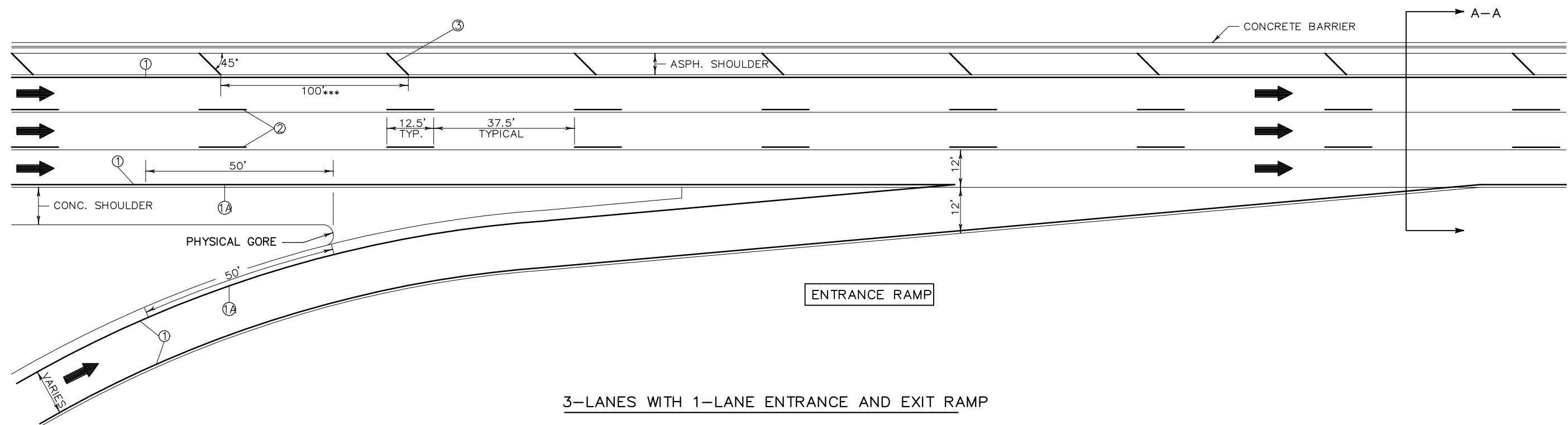
TYPICAL TWO-LANE CLOSURE

2 LANE CLOSURE - SPEEDS 50 MPH OR HIGHER

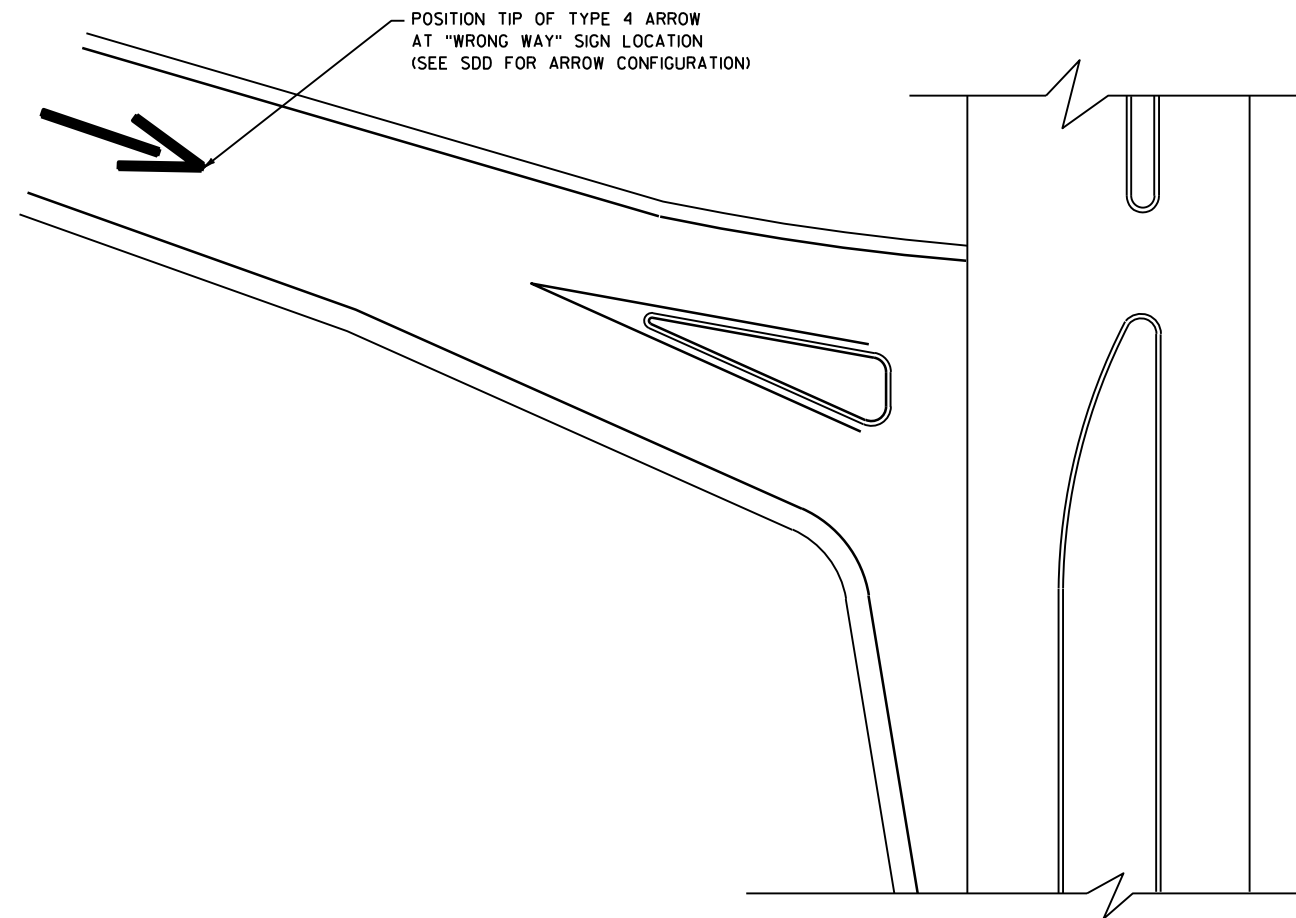


NOTES:

1. THE 12" WIDE DIAGONAL SHOULDER MARKING SHALL BE USED ONLY WHERE THE ASPHALTIC CONCRETE SHOULDER ABUTS ASPHALTIC CONC. PAV'T. IF THERE ARE CONTINUOUS RUMBLE STRIPS, DO NOT USE DIAGONAL SHOULDER MARKING.
2. WHERE THE DOTTED EXTENSION OF THE RIGHT EDGE LINE IS SHOWN ON THE PLAN, IT SHALL BE 4" WIDE, WITH A LINE SKIP PATTERN CONSISTING OF A 3' LONG LINE AND A 9' SKIP.
3. PAVEMENT LANE MARKINGS SHALL BE LOCATED 6" OFF THE LONGITUDINAL JOINT OF THE UNDERLYING CONC. PAVEMENT.
4. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
5. SPOTTING FOR PAVEMENT LANE MARKINGS AND EDGE LINES SHALL BE 4"x4" PIECES OF REFLECTORIZED PAV'T MARKING TAPE SPACED AT 50' INTERVALS, INCIDENTAL TO PAV'T MARKING.



3-LANES WITH 1-LANE ENTRANCE AND EXIT RAMP



EXIT RAMP PLAN VIEW

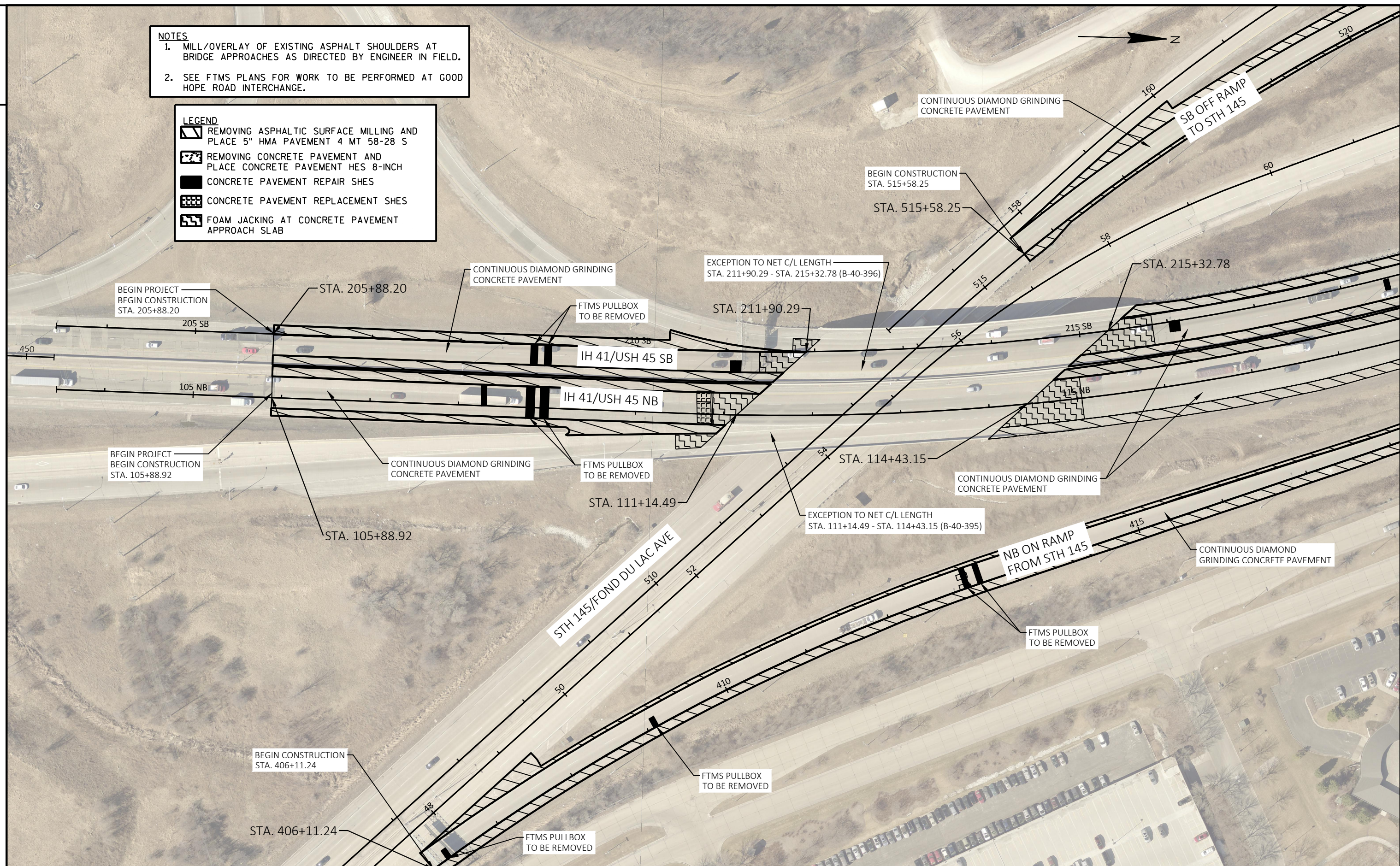
RAMPS & ARROWS

NOTES

1. MILL/OVERLAY OF EXISTING ASPHALT SHOULDERS AT BRIDGE APPROACHES AS DIRECTED BY ENGINEER IN FIELD.
2. SEE FTMS PLANS FOR WORK TO BE PERFORMED AT GOOD HOPE ROAD INTERCHANGE.

LEGEND

- REMOVING ASPHALTIC SURFACE MILLING AND PLACE 5" HMA PAVEMENT 4 MT 58-28 S
- REMOVING CONCRETE PAVEMENT AND PLACE CONCRETE PAVEMENT HES 8-INCH
- CONCRETE PAVEMENT REPAIR SHES
- CONCRETE PAVEMENT REPLACEMENT SHES
- FOAM JACKING AT CONCRETE PAVEMENT APPROACH SLAB



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

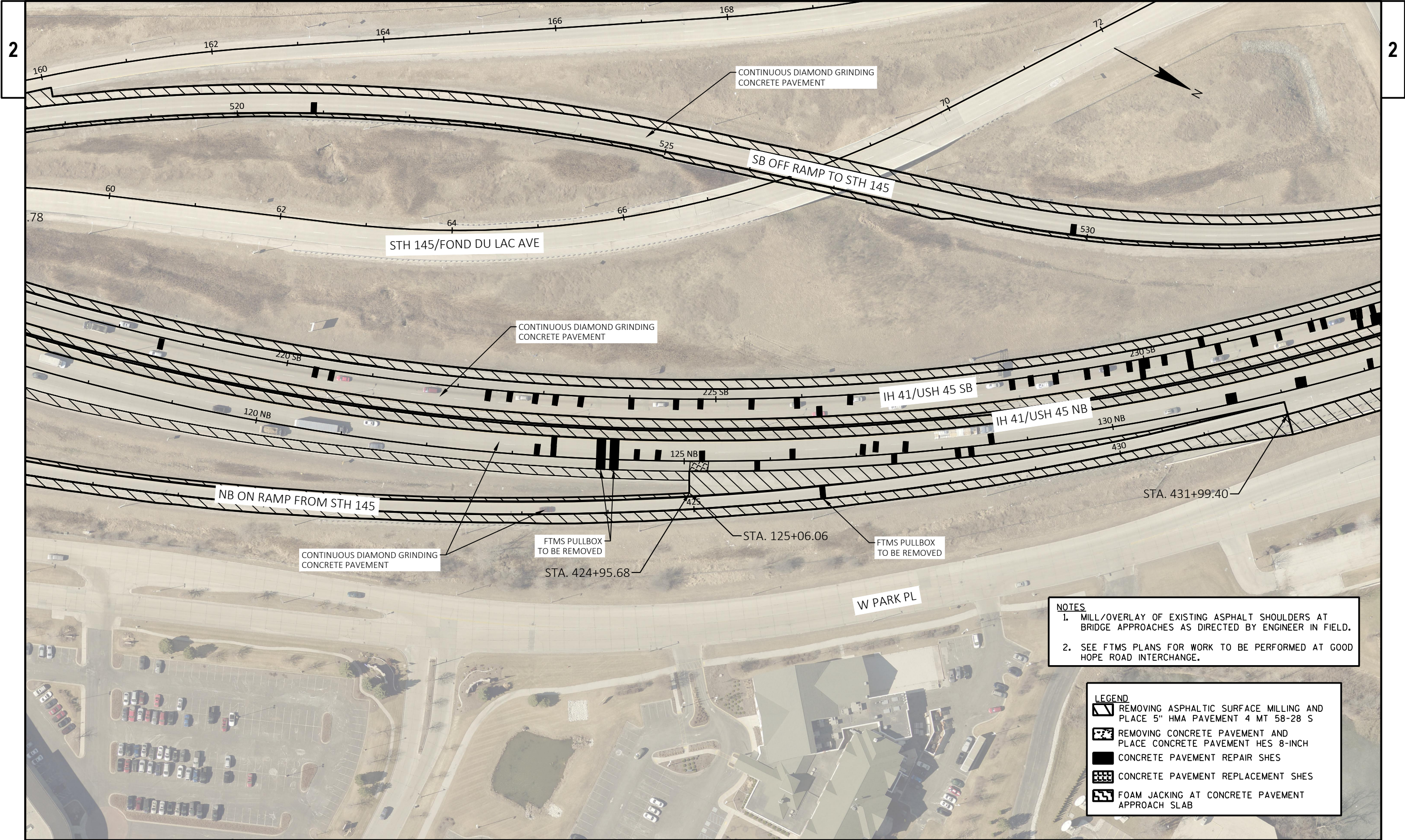
COUNTY: MILWAUKEE

PLAN DETAILS

SHEET

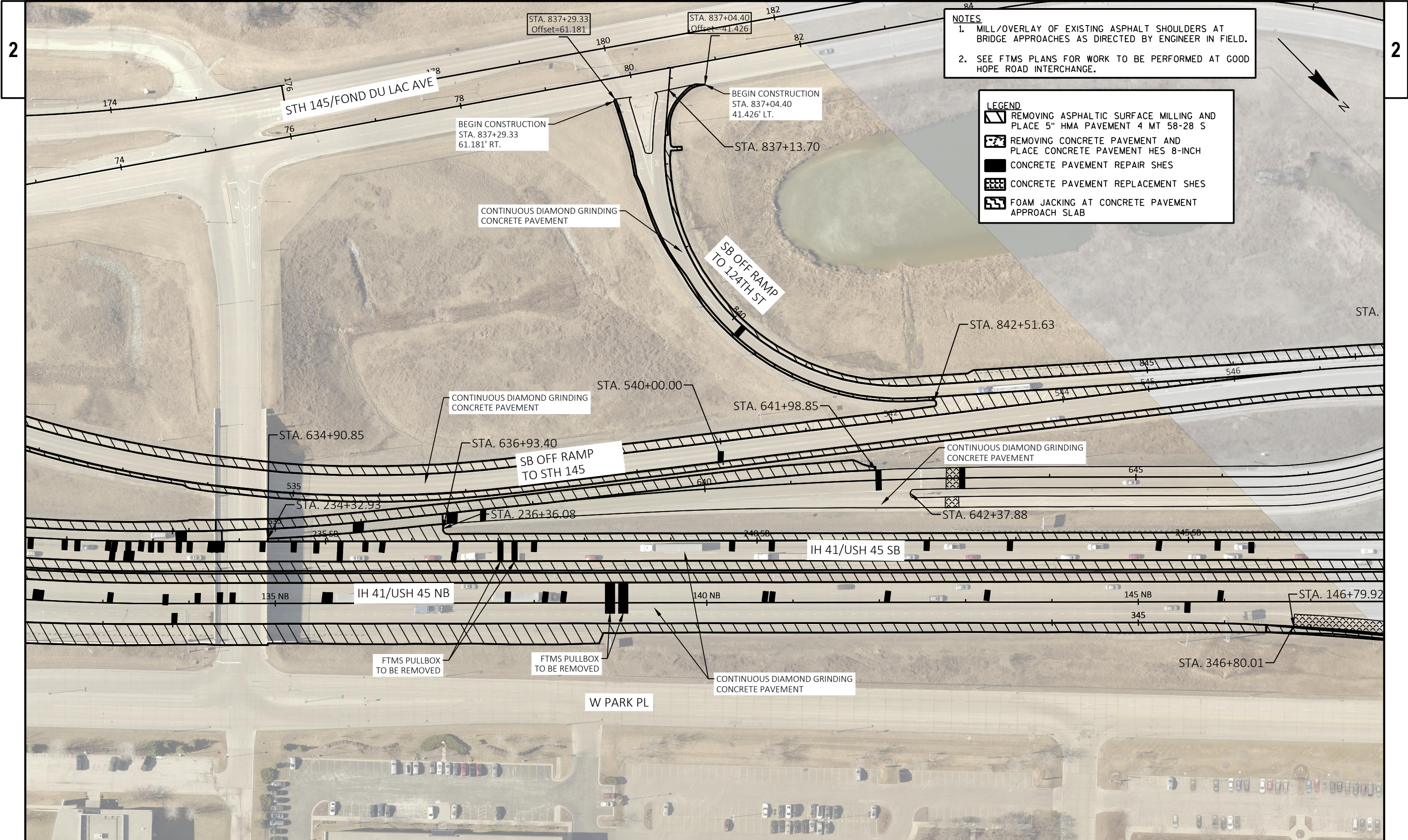
33

E



- NOTES**
- 1. MILL/OVERLAY OF EXISTING ASPHALT SHOULDERS AT BRIDGE APPROACHES AS DIRECTED BY ENGINEER IN FIELD.
 - 2. SEE FTMS PLANS FOR WORK TO BE PERFORMED AT GOOD HOPE ROAD INTERCHANGE.

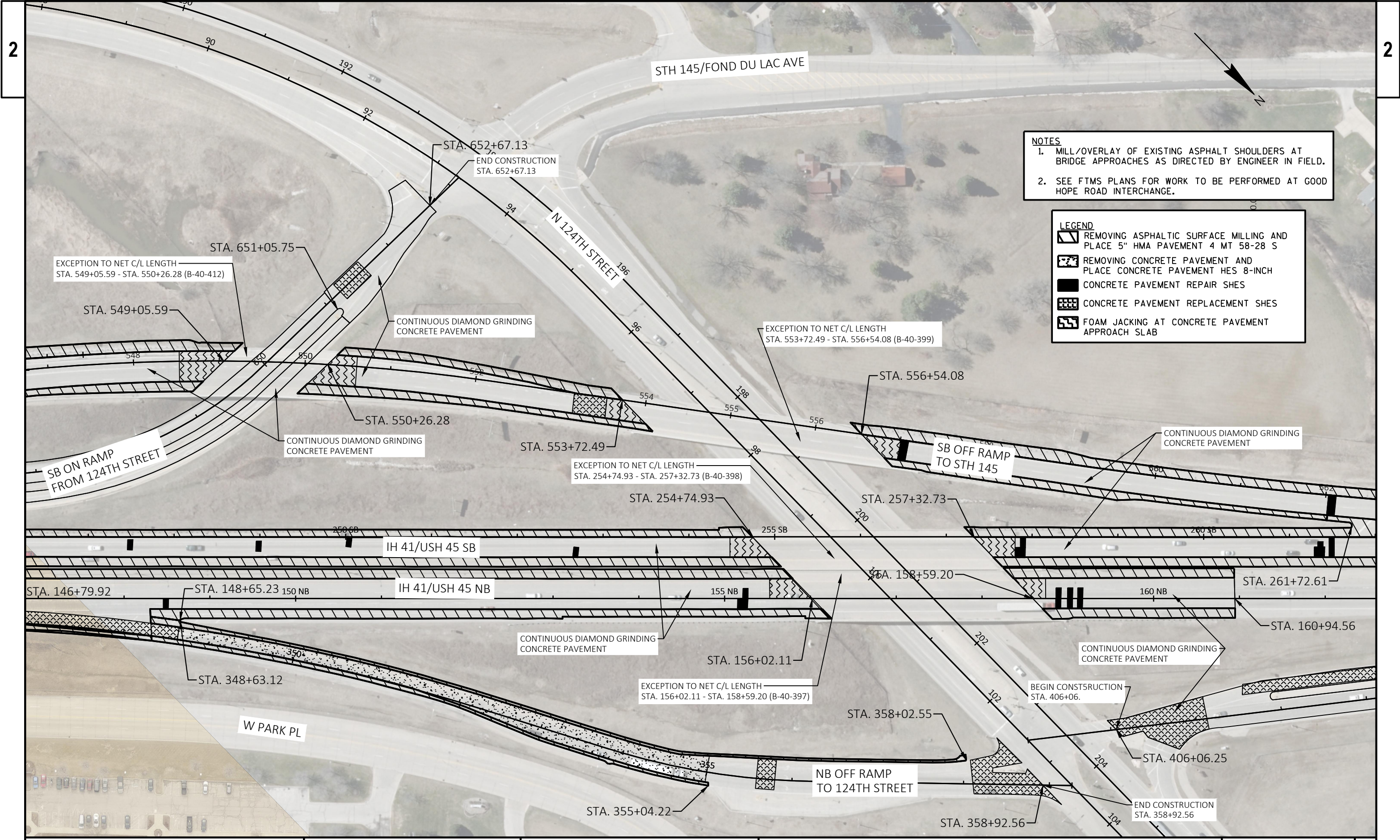
- LEGEND**
- [Symbol] REMOVING ASPHALTIC SURFACE MILLING AND PLACE 5" HMA PAVEMENT 4 MT 58-28 S
 - [Symbol] REMOVING CONCRETE PAVEMENT AND PLACE CONCRETE PAVEMENT HES 8-INCH
 - [Symbol] CONCRETE PAVEMENT REPAIR SHES
 - [Symbol] CONCRETE PAVEMENT REPLACEMENT SHES
 - [Symbol] FOAM JACKING AT CONCRETE PAVEMENT APPROACH SLAB



- NOTES**
1. MILL/OVERLAY OF EXISTING ASPHALT SHOULDERS AT BRIDGE APPROACHES AS DIRECTED BY ENGINEER IN FIELD.
 2. SEE FTMS PLANS FOR WORK TO BE PERFORMED AT GOOD HOPE ROAD INTERCHANGE.

LEGEND

- REMOVING ASPHALTIC SURFACE MILLING AND PLACE 5" HMA PAVEMENT 4 MT 58-28 S
- REMOVING CONCRETE PAVEMENT AND PLACE CONCRETE PAVEMENT HES 8-INCH
- CONCRETE PAVEMENT REPAIR SHES
- CONCRETE PAVEMENT REPLACEMENT SHES
- FOAM JACKING AT CONCRETE PAVEMENT APPROACH SLAB

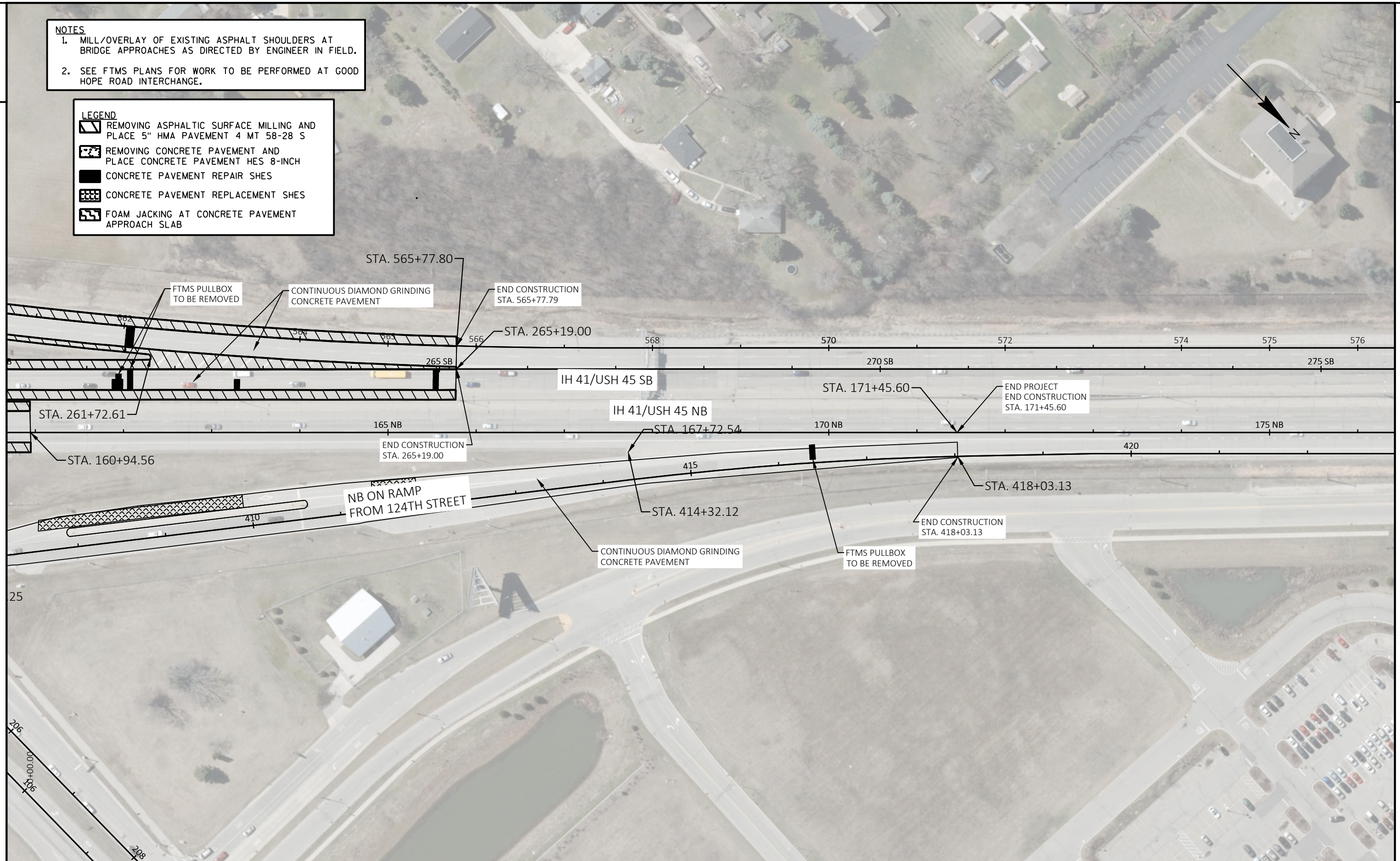


- NOTES**
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 - FOAM JACKING AT CONCRETE PAVEMENT APPROACH SLAB



LEGEND

FTMS CONVENTIONAL SYMBOLS

GROUND MOUNTED ITS CONTROLLER CABINET	-----
METER BREAKER PEDESTAL	-----
24X42-INCH CSCP PULL BOX	-----
FTMS (ITS) CONDUIT	-----
BREAKER DISCONNECT BOX	-----
COMMUNICATIONS VAULT, TYPE 1	-----
TYPE 6 POLE AND MICROWAVE DETECTOR	-----
MICROWAVE VEHICLE DETECTOR DETECTION ZONE	-----
24X36-INCH CSCP PULL BOX	-----

PROPOSED



EXISTING

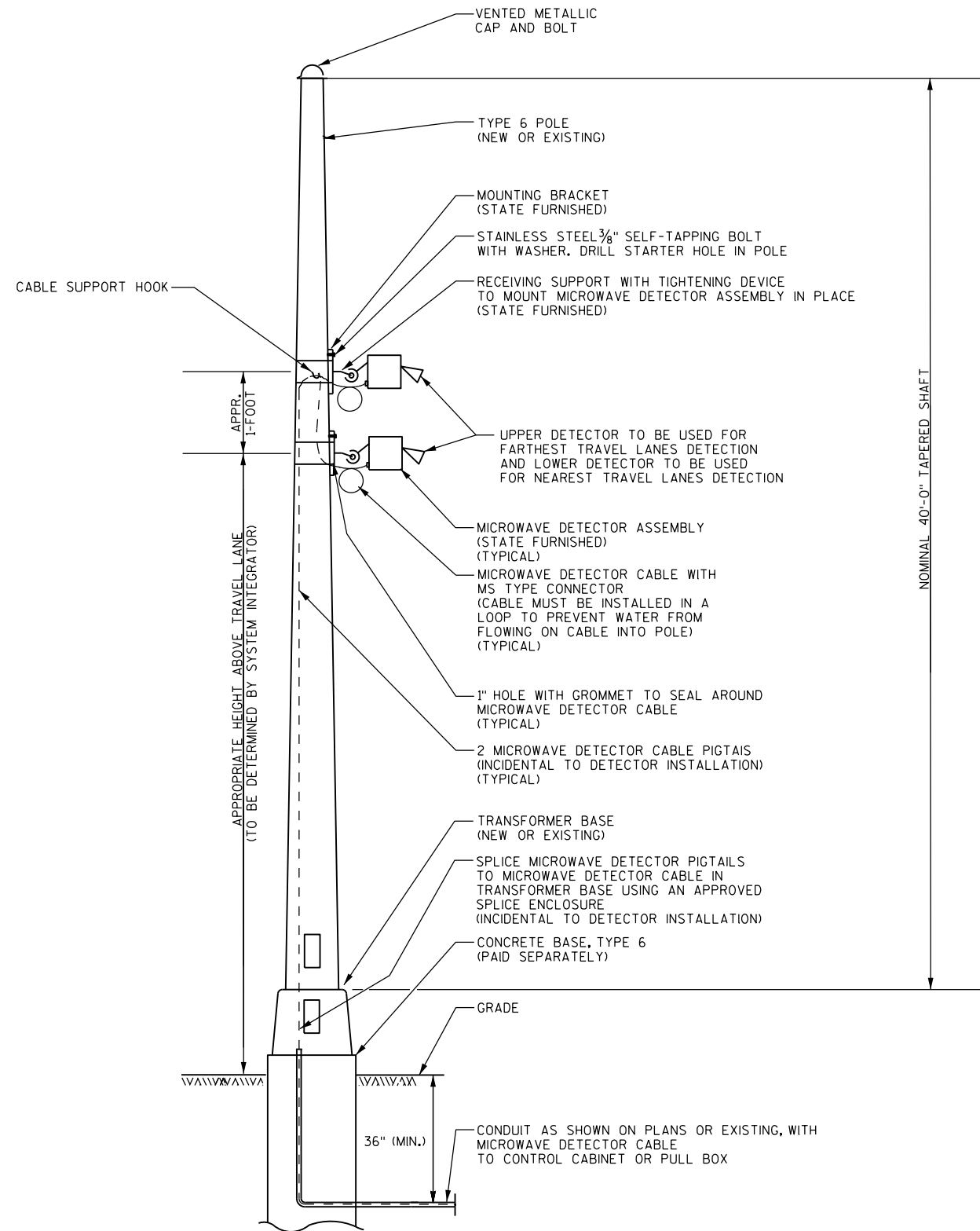


FTMS STANDARD ABBREVIATIONS

CB	CONTROLLER CABINET
CCTV	CLOSED CIRCUIT TELEVISION SITE
CV	COMMUNICATIONS VAULT
PB	PULL BOX
EX	EXISTING
SDS	SYSTEM DETECTOR STATION
FOC	FIBER OPTIC CABLE
F.O.	FIBER OPTIC
MD	MICROWAVE DETECTOR
S-F	STATE-FURNISHED
RM	RAMP METER

FTMS GENERAL NOTES

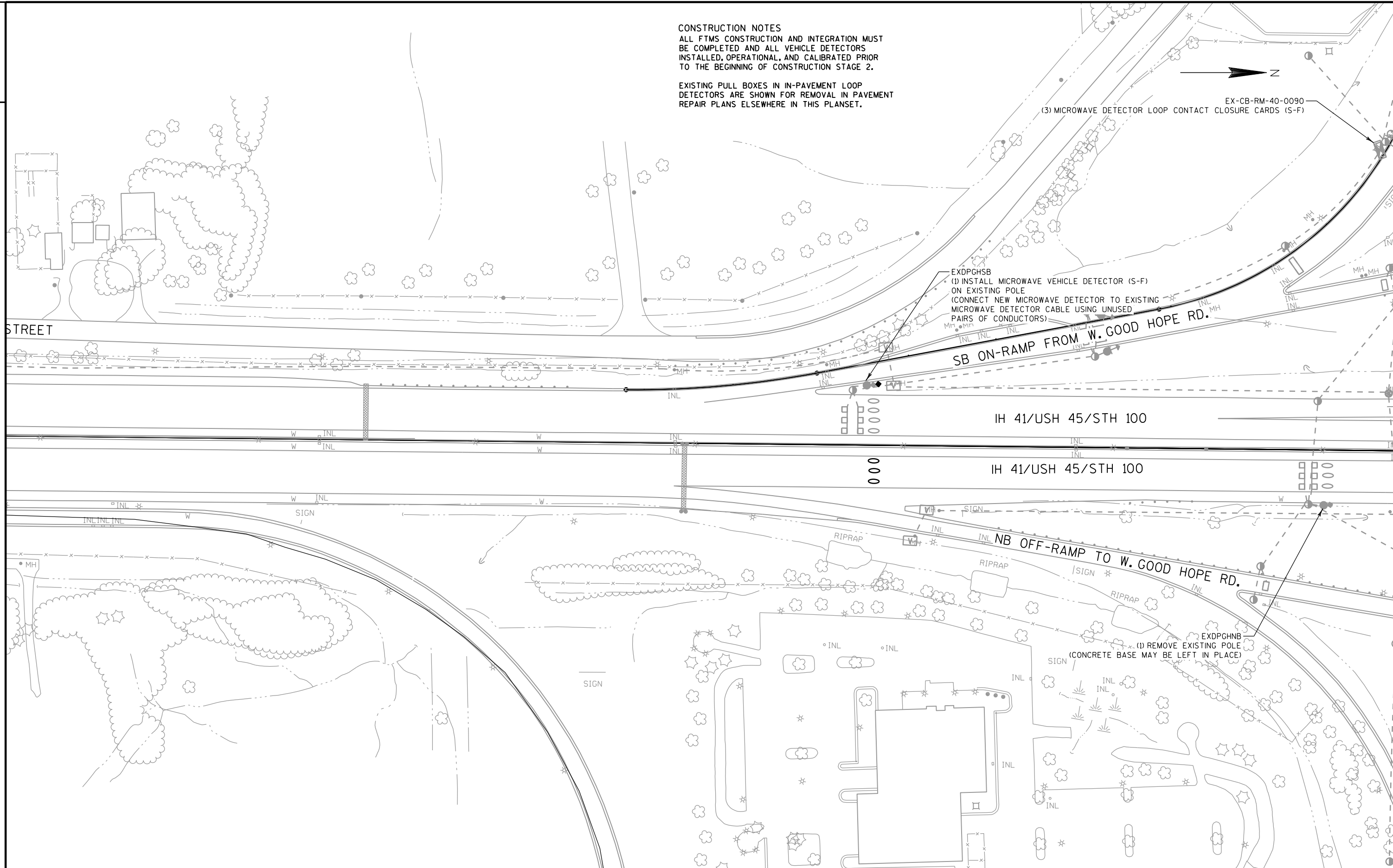
- THESE PLANS AND THE ASSOCIATED SPECIAL PROVISIONS REFLECT CONDITIONS KNOWN DURING THE DEVELOPMENT OF THE PLANS AND TECHNICAL SPECIAL PROVISIONS. ALL SCALES, DIMENSIONS AND LOCATIONS SHOWN IN THESE PLANS ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE APPLICATION OF ALL WORK SHOWN IN THE PLANS TO THE ACTUAL PHYSICAL FIELD CONDITIONS TO PROVIDE A COMPLETE AND ACCEPTED PROJECT. IN THE EVENT THAT ACTUAL PHYSICAL FIELD CONDITIONS AFFECT OR PREVENT THE APPLICATION OR PROGRESSION OF ANY WORK SHOWN IN THE PLANS OR TECHNICAL SPECIAL PROVISIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, AND PRIOR TO ANY FURTHER WORK ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY LOCATION CHANGES OTHER THAN MINOR ADJUSTMENTS.
- BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES.
- BE AWARE THAT NO TEST BORINGS WERE MADE WHERE CONDUITS, PULLBOXES, POLES, CABINET FOUNDATIONS, OR OTHER EQUIPMENT IS TO BE INSTALLED. THE CONTRACTOR IS FULLY RESPONSIBLE FOR EXAMINING THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS.
- NO TREES (AND/OR SHRUBS) SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
- AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED, AND EROSION MAT, AND SHALL BE INCLUDED IN THE COST OF INSTALLING FTMS ITEMS. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION SHALL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS.
- THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- DUE TO RAMP, LANE, SHOULDER CLOSURE RESTRICTIONS, AND WORK UNDER OTHER CONTRACTS, SOME WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR COORDINATING RAMP, LANE, SHOULDER, AND ROADWAY CLOSURES WITH OTHER CONTRACTS IN THE AREA.
- THE CONTRACTOR SHALL CONTACT THE WISDOT STATEWIDE TRAFFIC OPERATIONS CENTER AT (414) 227-2166 FIVE (5) WORKING DAYS PRIOR TO ENTERING ANY EXISTING WISDOT FTMS OR ITS CABINET.
- ALL LOOP DETECTORS ARE STATIONED TO CENTER OF LEADING EDGE AS APPROACHED BY NORMAL VEHICLE PATH.
- HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.
- VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.



MICROWAVE DETECTOR INSTALLATION
ON TYPE 6 POLE

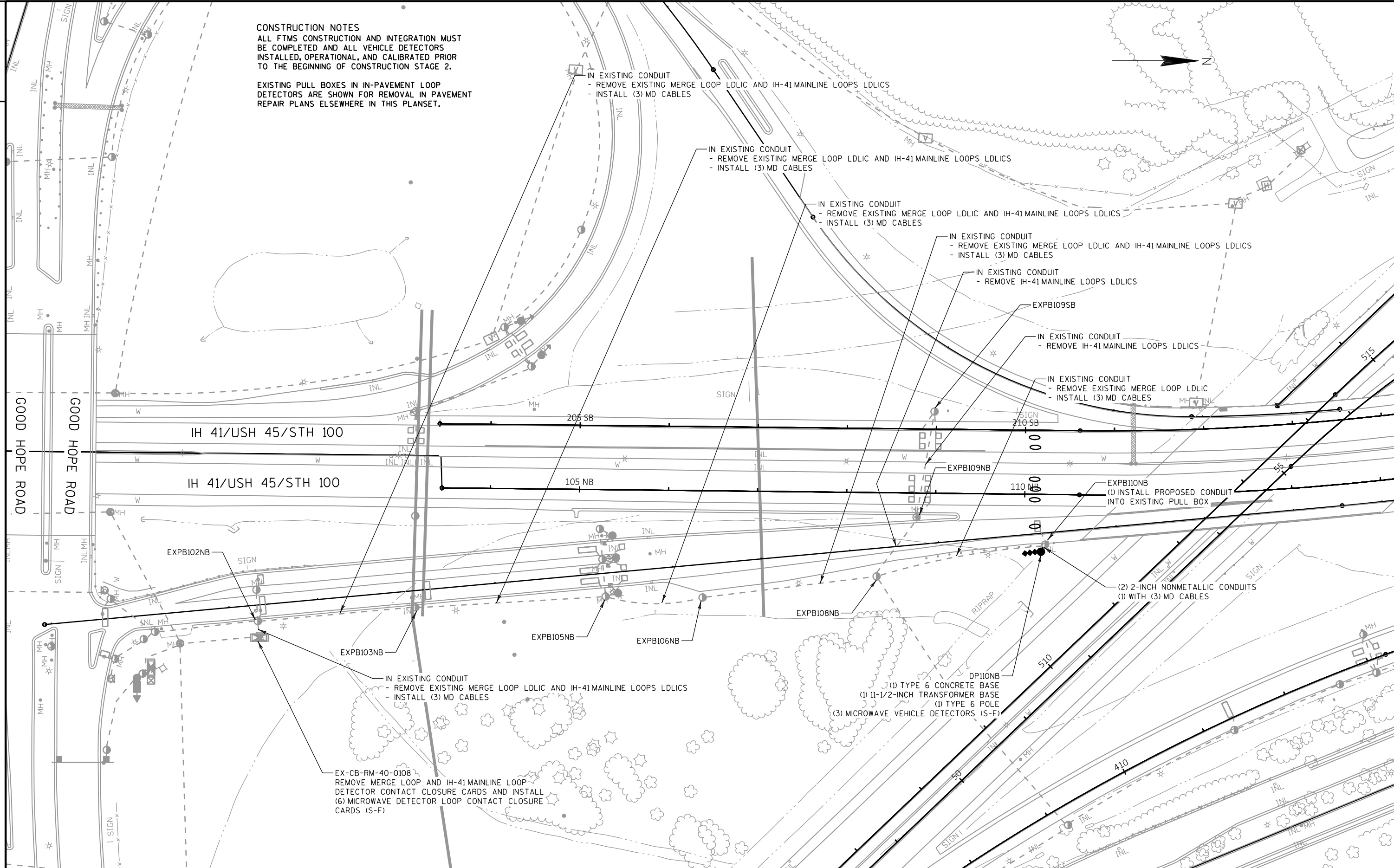
CONSTRUCTION NOTES
ALL FTMS CONSTRUCTION AND INTEGRATION MUST
BE COMPLETED AND ALL VEHICLE DETECTORS
INSTALLED, OPERATIONAL, AND CALIBRATED PRIOR
TO THE BEGINNING OF CONSTRUCTION STAGE 2.

EXISTING PULL BOXES IN IN-PAVEMENT LOOP
DETECTORS ARE SHOWN FOR REMOVAL IN PAVEMENT
REPAIR PLANS ELSEWHERE IN THIS PLANSET.



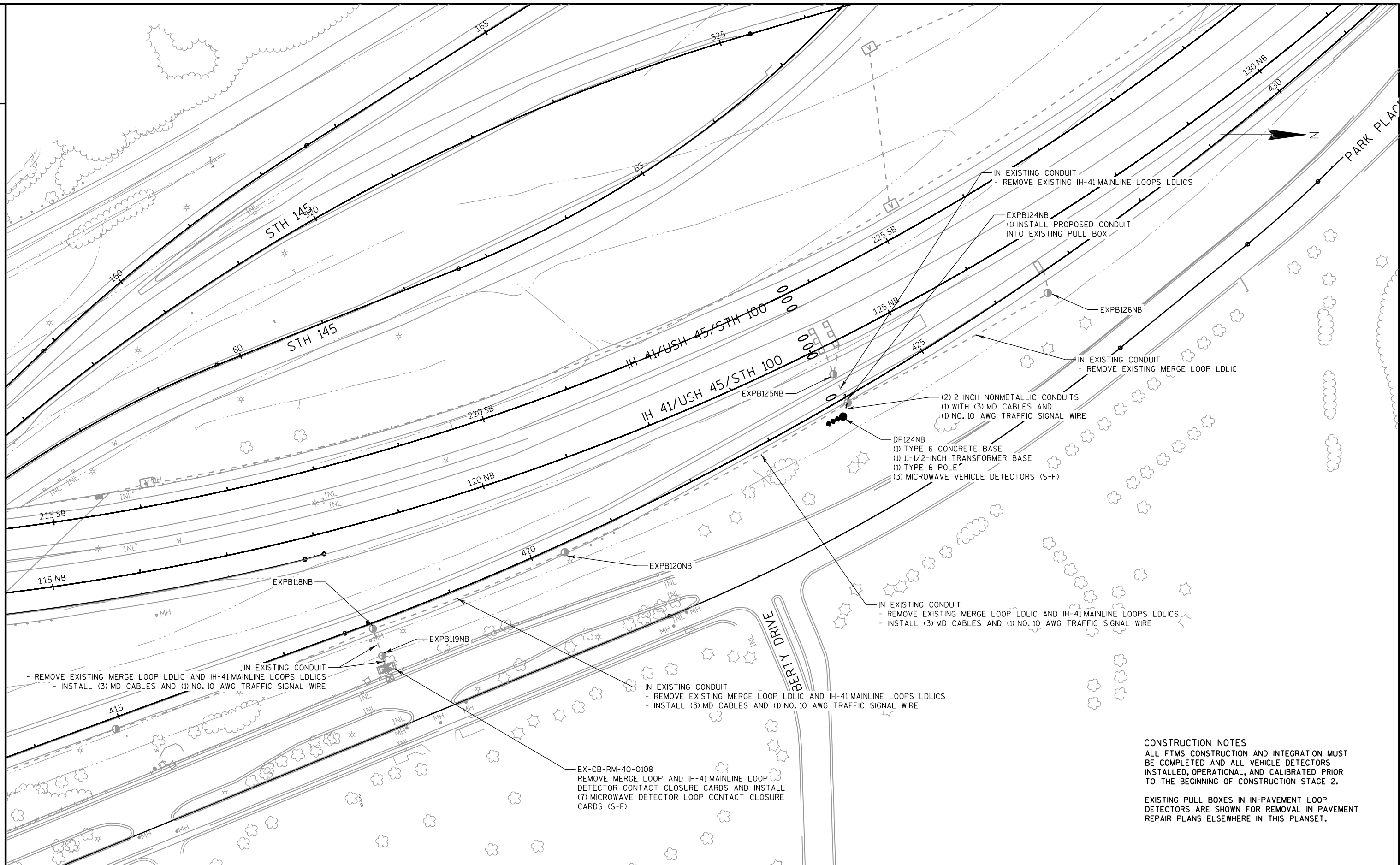
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2

2



PROJECT NO: 1100-17-76

HWY: IH-41 / US-45

COUNTY: MILWAUKEE

FTMS PLANS

SHEET 42

E

FILE NAME : \\mlww400\ingrproj\77532\base\milwaukee\11001776_41_mil_fm.dgn PLOT DATE : 11/10/2020

PLOT DATE : 11/10/2020 PLOT BY : PKutz

PLOT BY : PKutz
PLOT NAME :

PLOT NAME : PLOT SCALE : 100:1

PLOT SCALE : 100:1

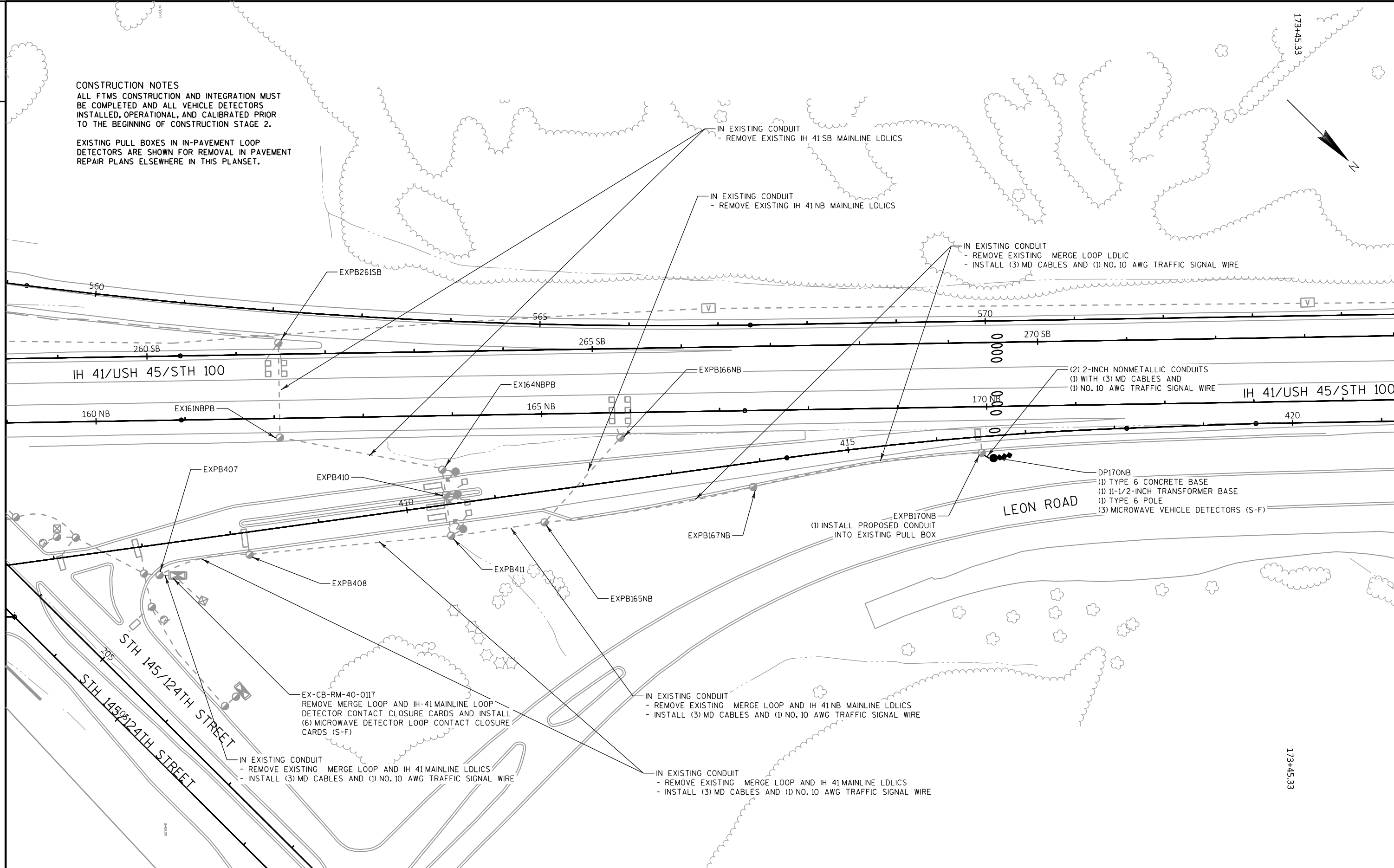
WISDOT/CADDS SHEET 42

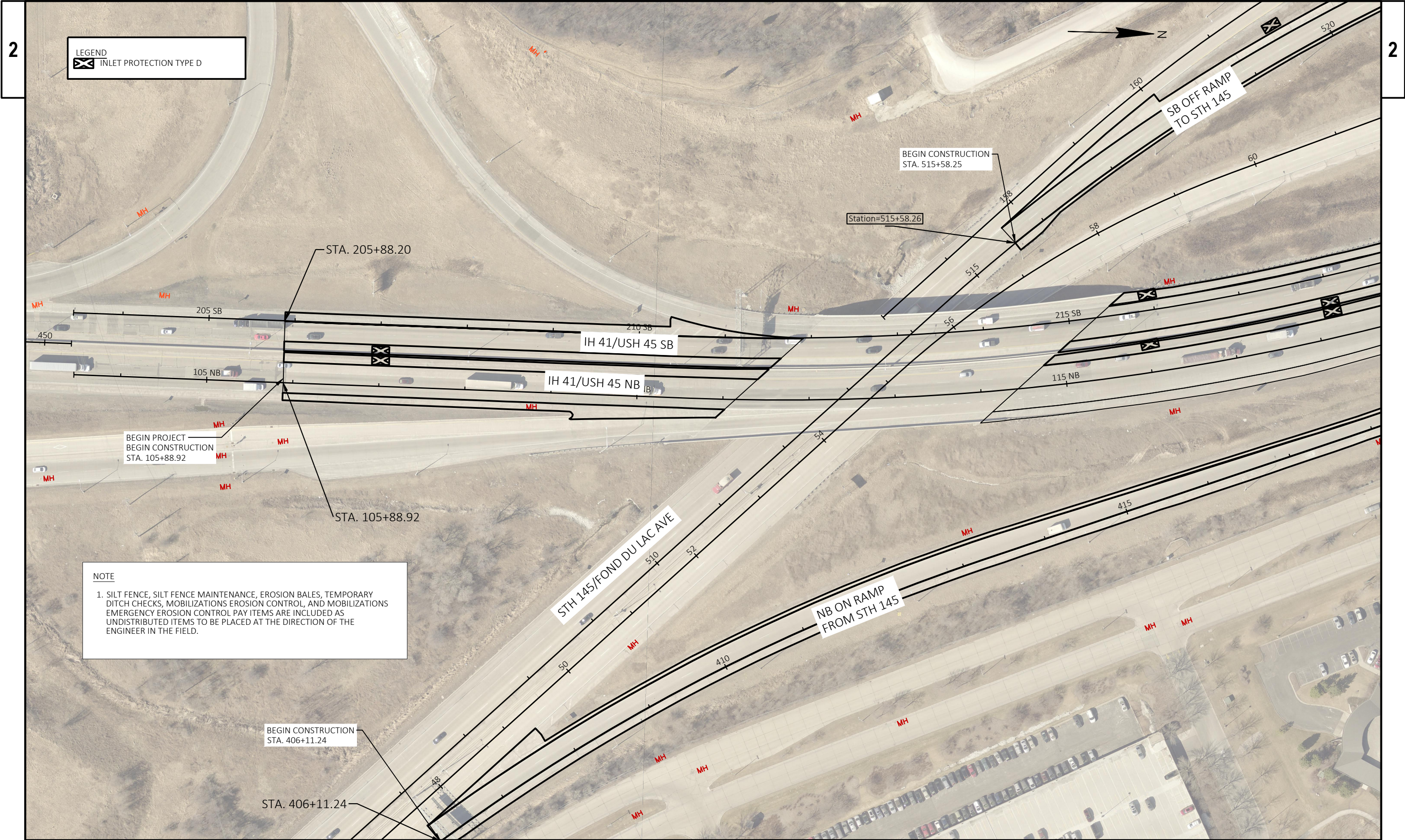
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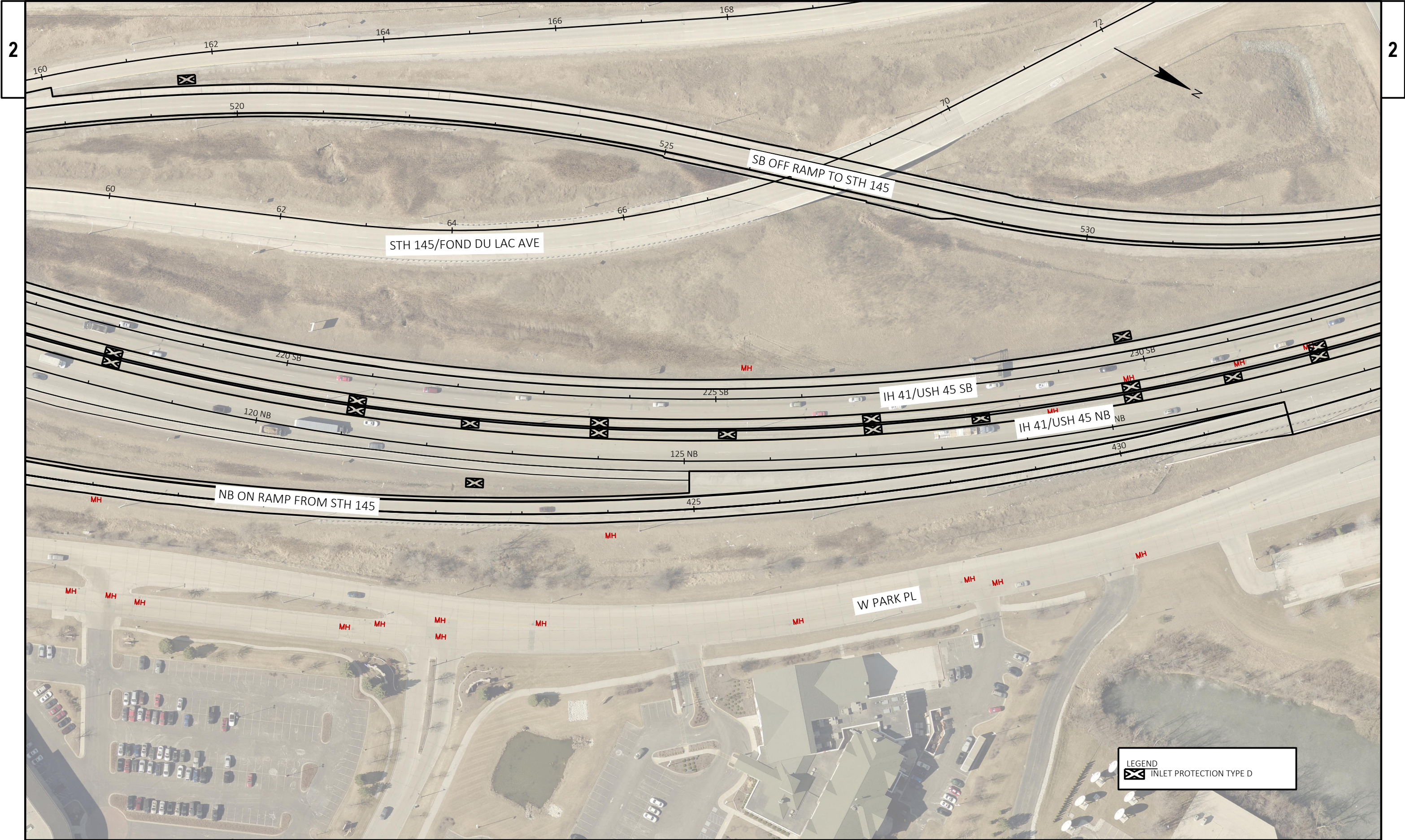


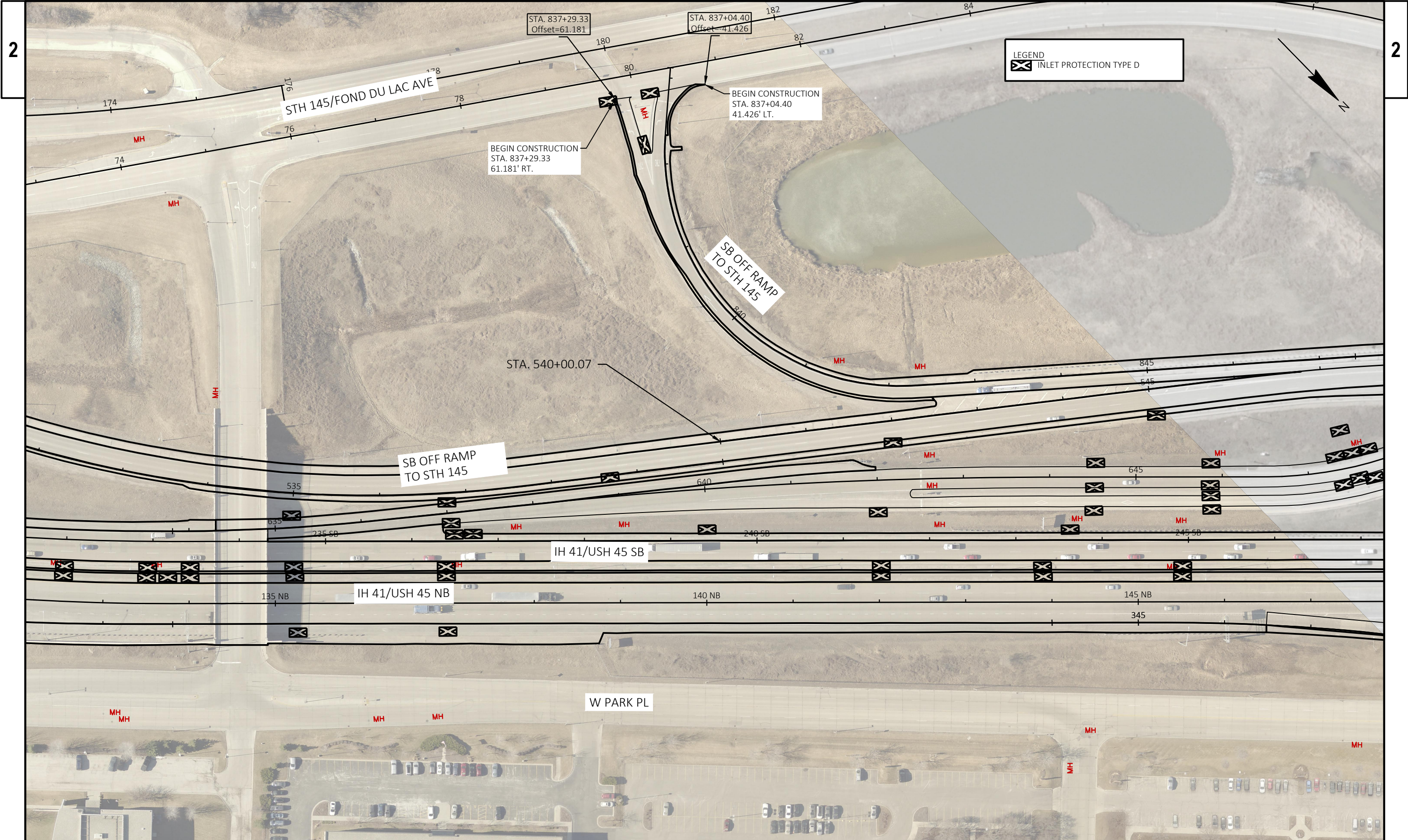
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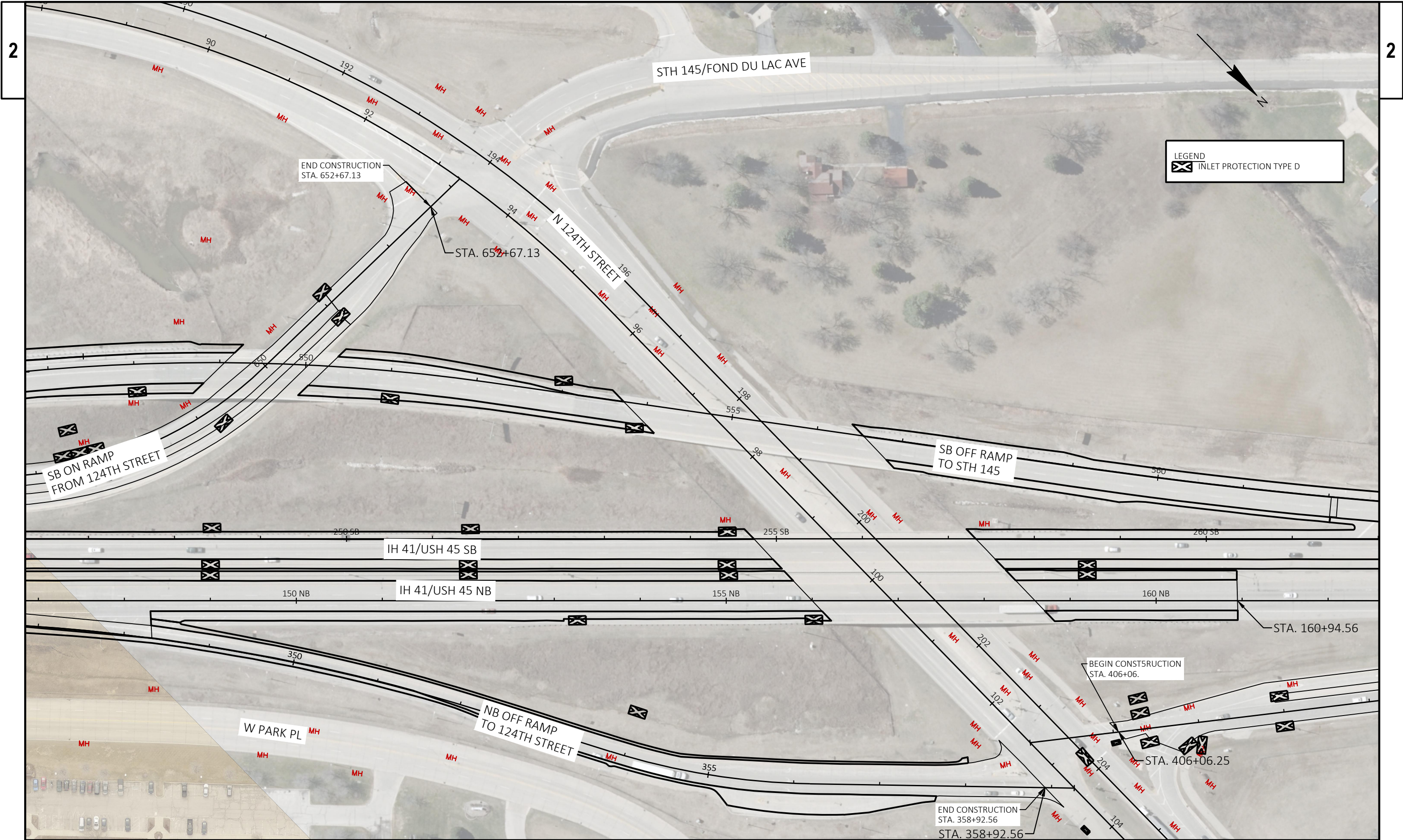
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REPAIR PLANS ELSEWHERE IN THIS PLANSET.



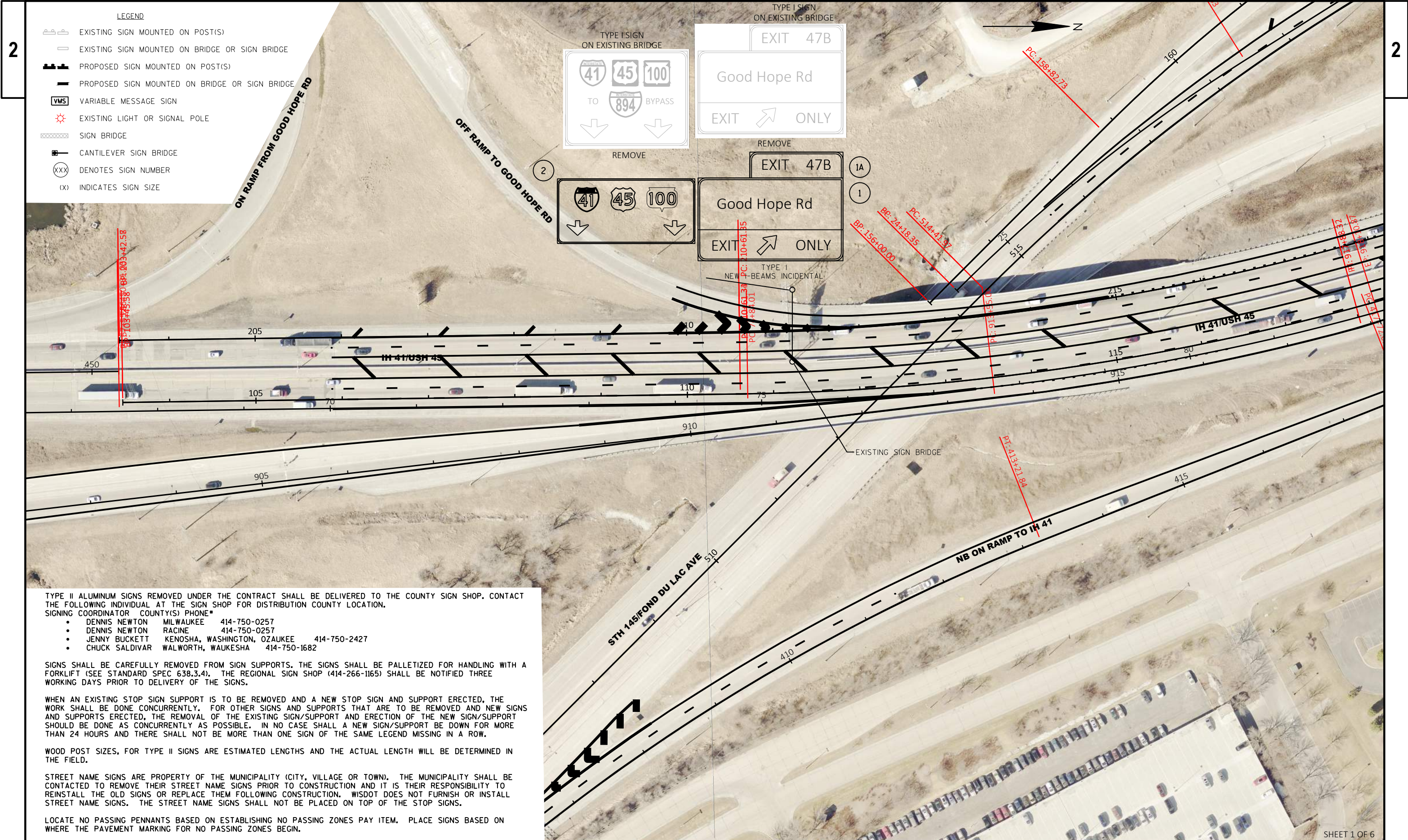












- LEGEND
- EXISTING SIGN MOUNTED ON POST(S)
 - EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
 - PROPOSED SIGN MOUNTED ON POST(S)
 - PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
 - VMS VARIABLE MESSAGE SIGN
 - EXISTING LIGHT OR SIGNAL POLE
 - SIGN BRIDGE
 - CANTILEVER SIGN BRIDGE
 - DENOTES SIGN NUMBER
 - INDICATES SIGN SIZE

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 COUNTY(S) PHONE*

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

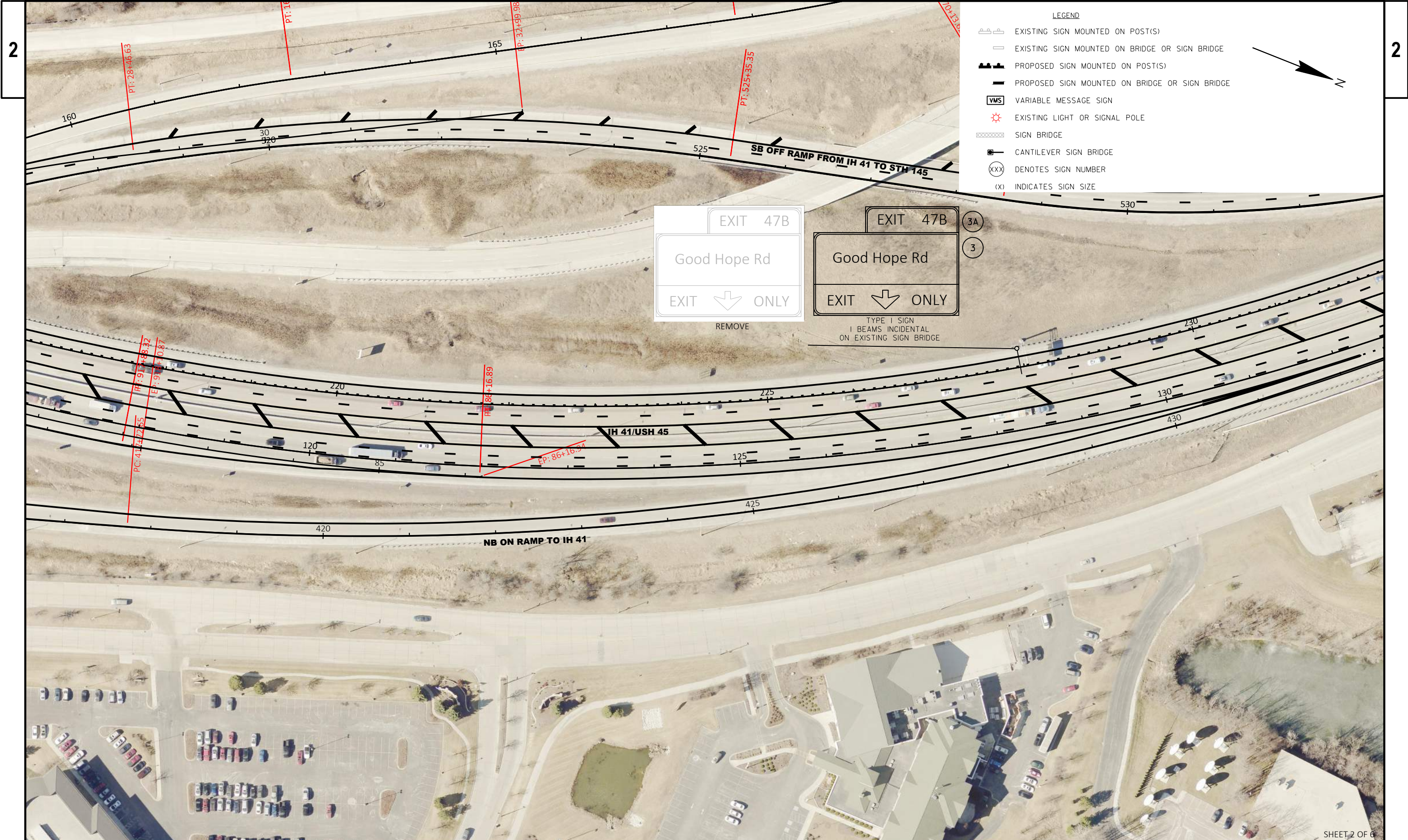
SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

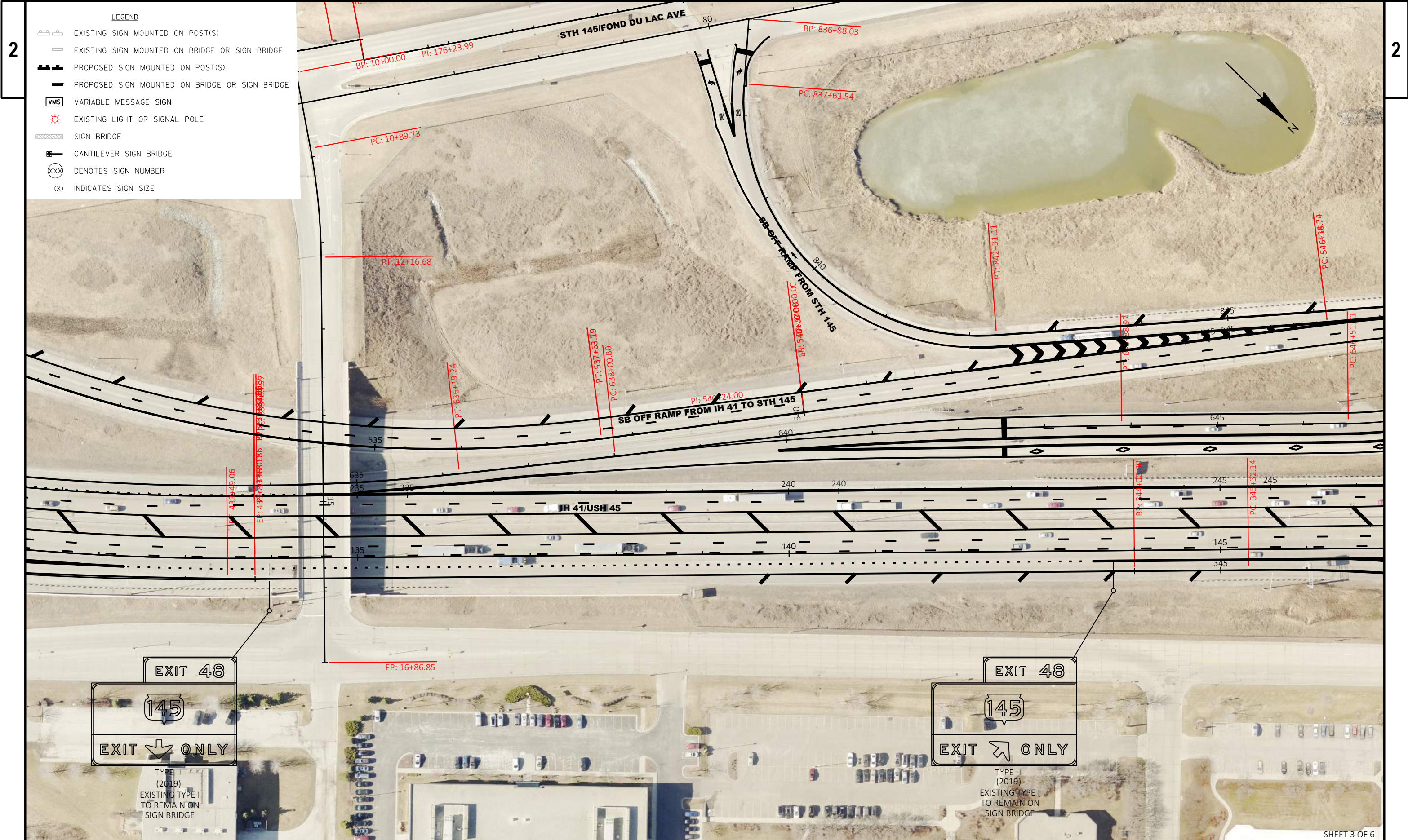
WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD 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.

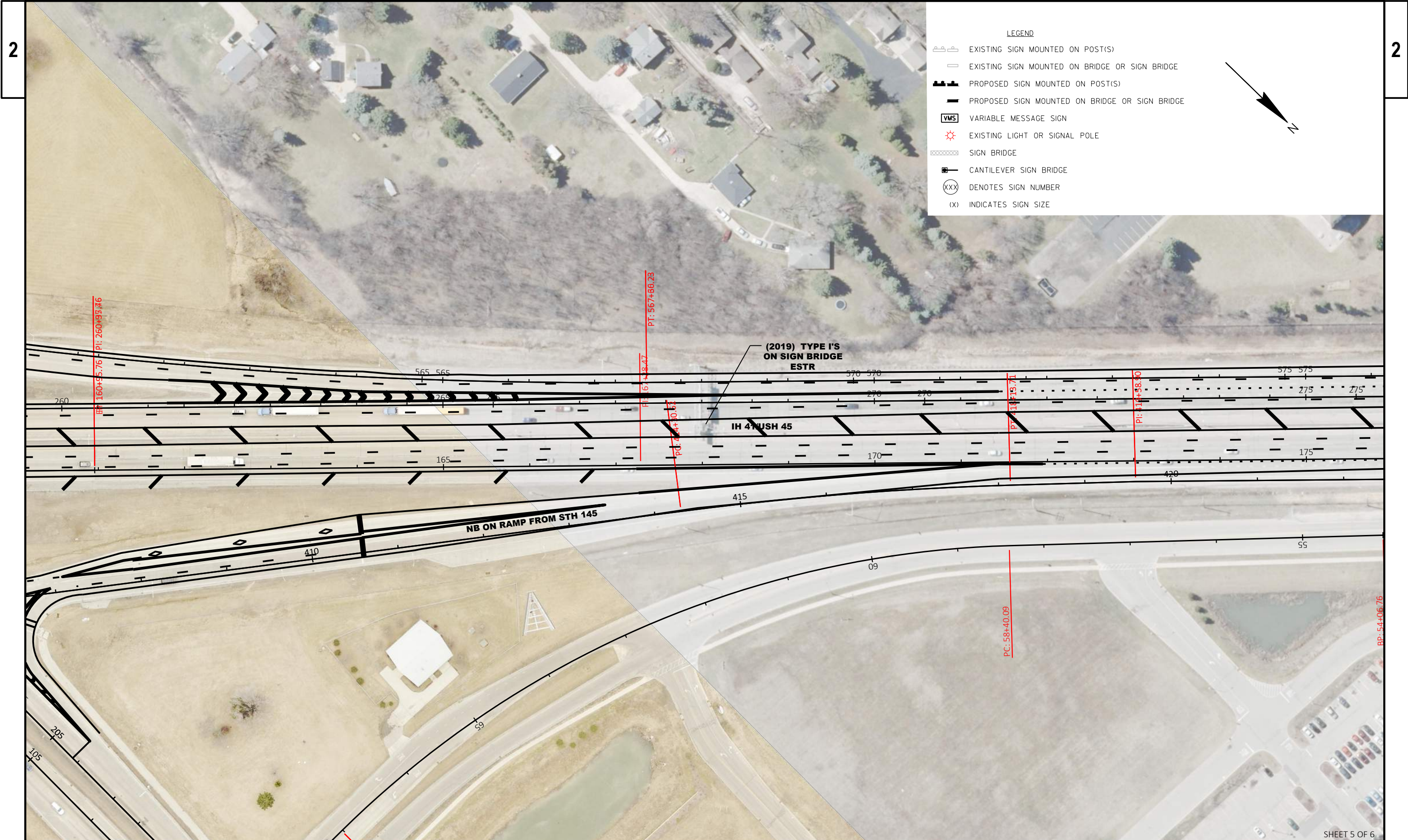
LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.





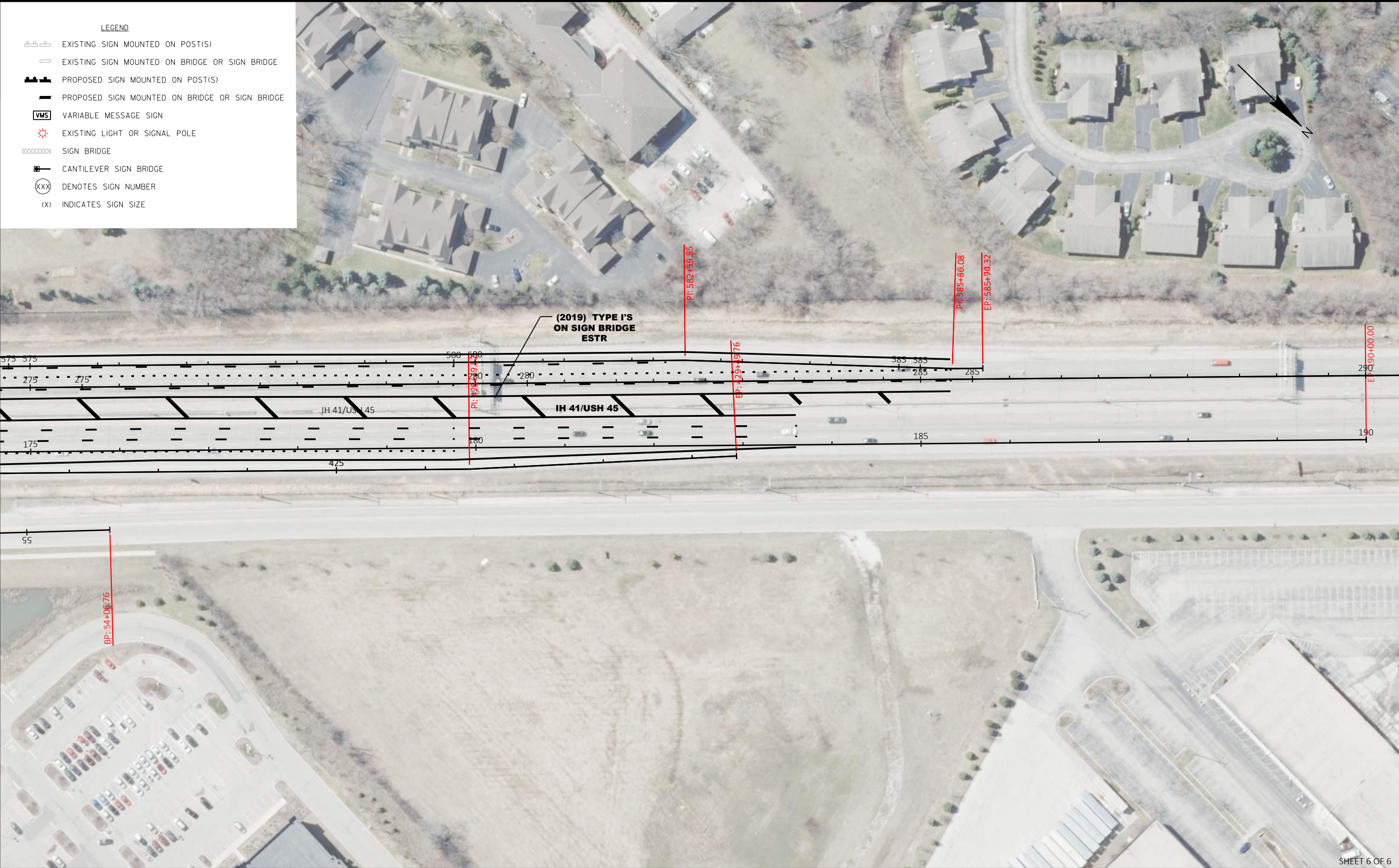
LEGEND

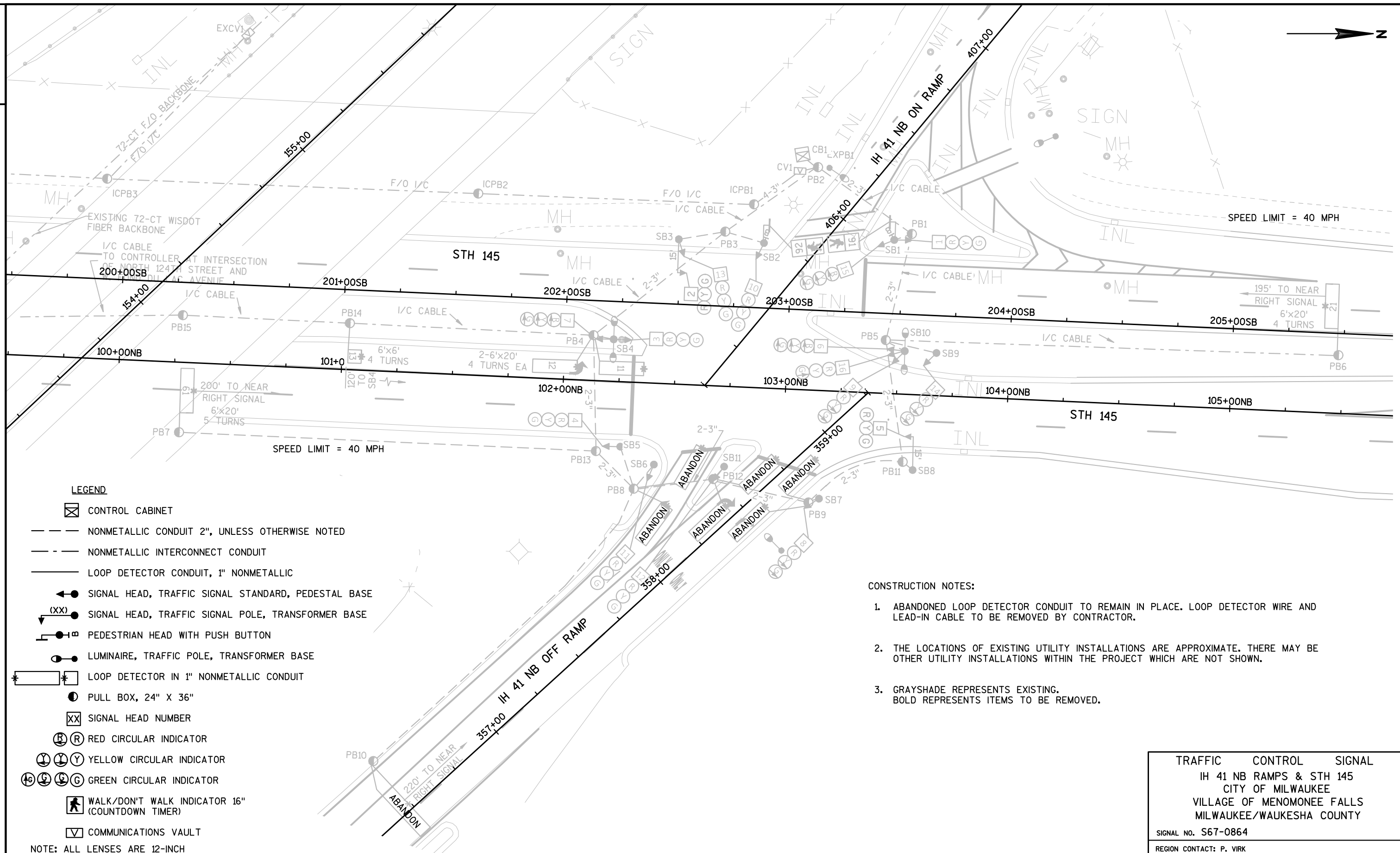
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- VMS VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DENOTES SIGN NUMBER
- (X) INDICATES SIGN SIZE



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
- VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE





LEGEND

- CONTROL CABINET
-
- NONMETALLIC INTERCONNECT CONDUIT
-
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
-
-
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
-
- COMMUNICATIONS VAULT

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

CONSTRUCTION NOTES:

1. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE TO BE REMOVED BY CONTRACTOR.
2. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. GRAYSHADE REPRESENTS EXISTING.
BOLD REPRESENTS ITEMS TO BE REMOVED.

TRAFFIC CONTROL SIGNAL
IH 41 NB RAMPS & STH 145
CITY OF MILWAUKEE
VILLAGE OF MENOMONEE FALLS
MILWAUKEE/WAUKESHA COUNTY

SIGNAL NO. S67-0864

REGION CONTACT: P. VIRK
DESIGNED BY:
REVISED BY: J. BUSH

PAGE 1 OF 1

PROJECT NO: 1100-17-76

HWY: IH 41

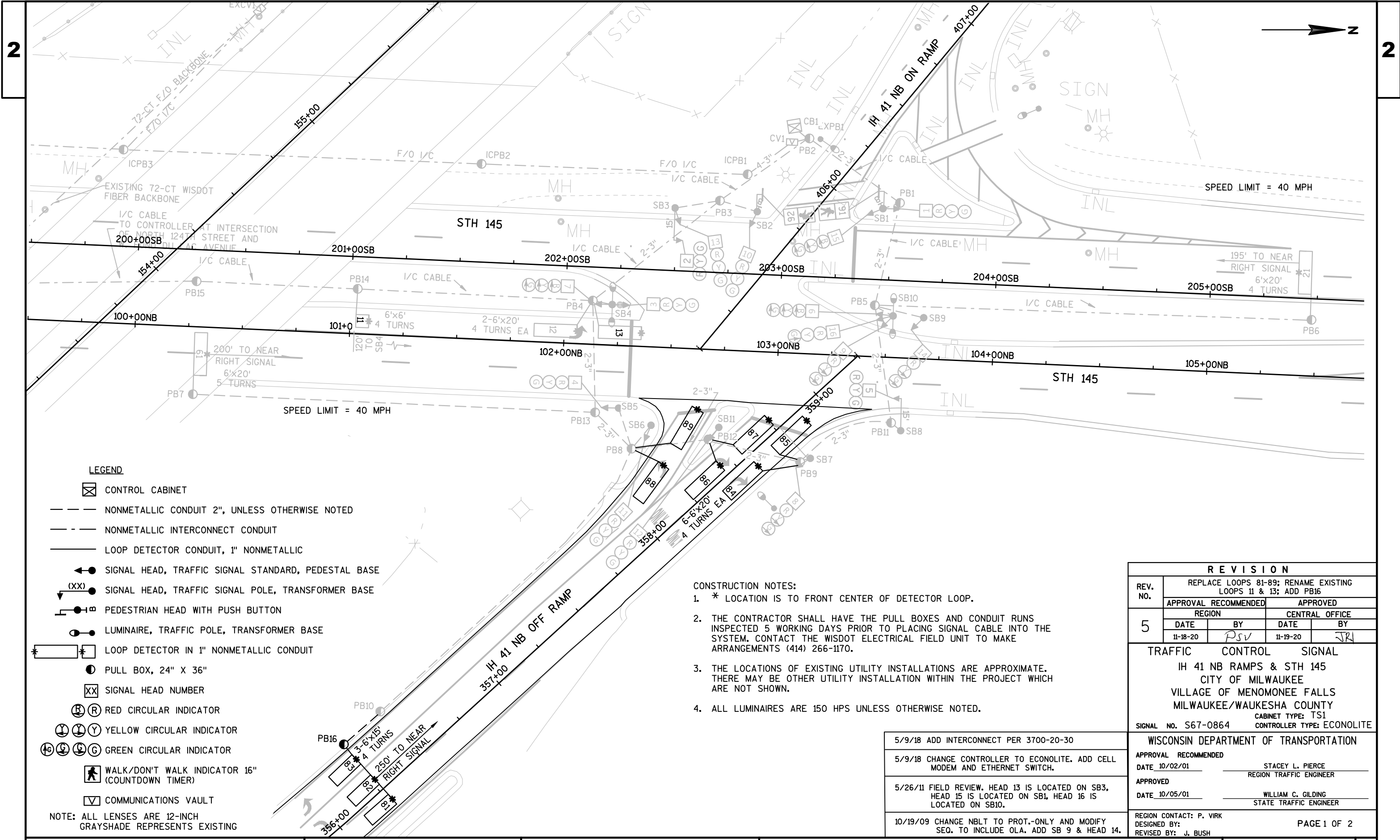
COUNTY: MILWAUKEE/WAUKESHA

TRAFFIC SIGNAL REMOVAL PLAN

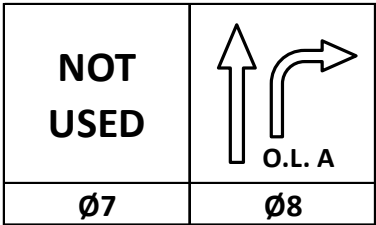
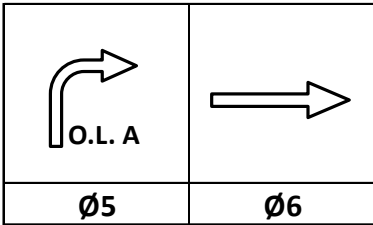
SHEET

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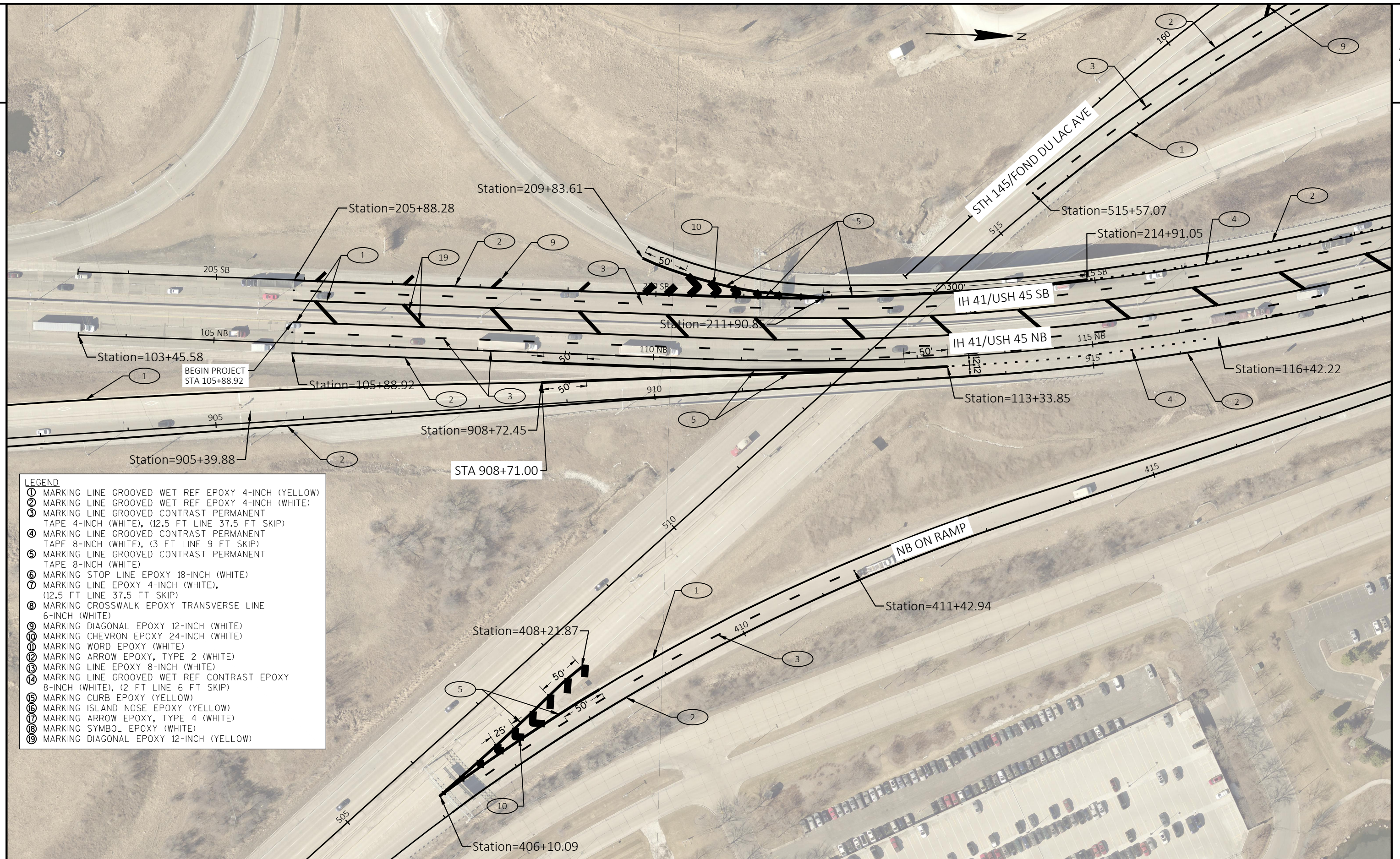
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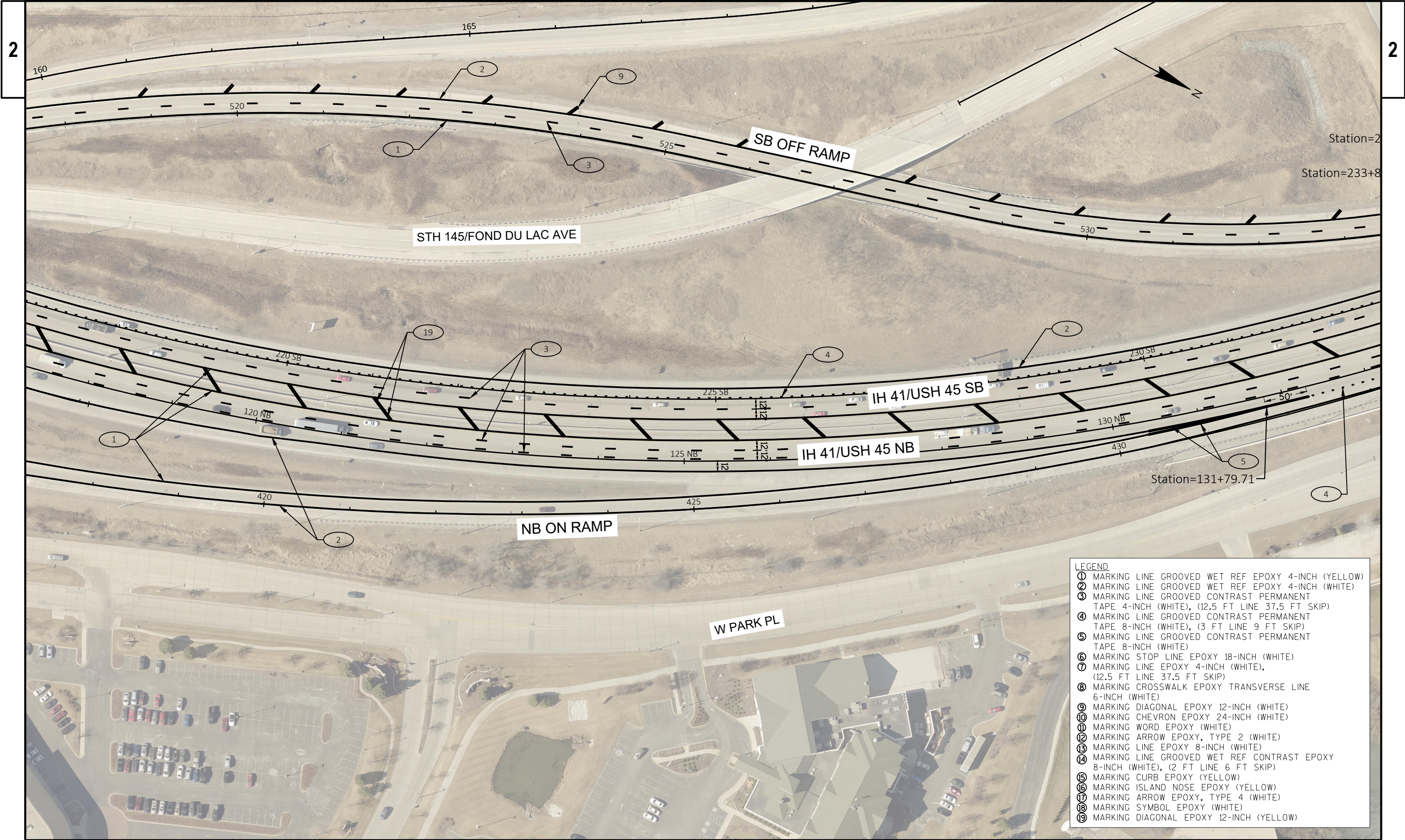


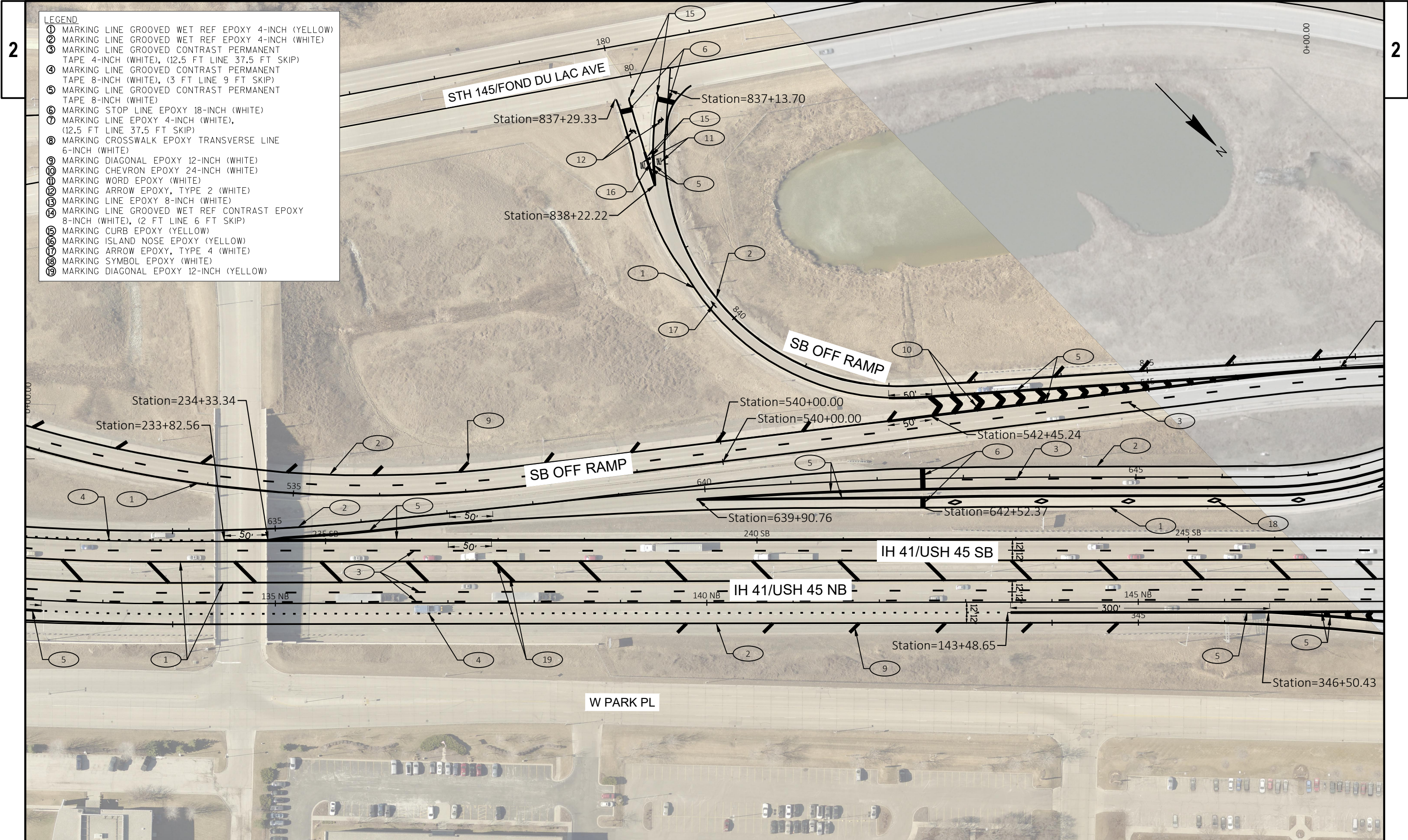
RING 2

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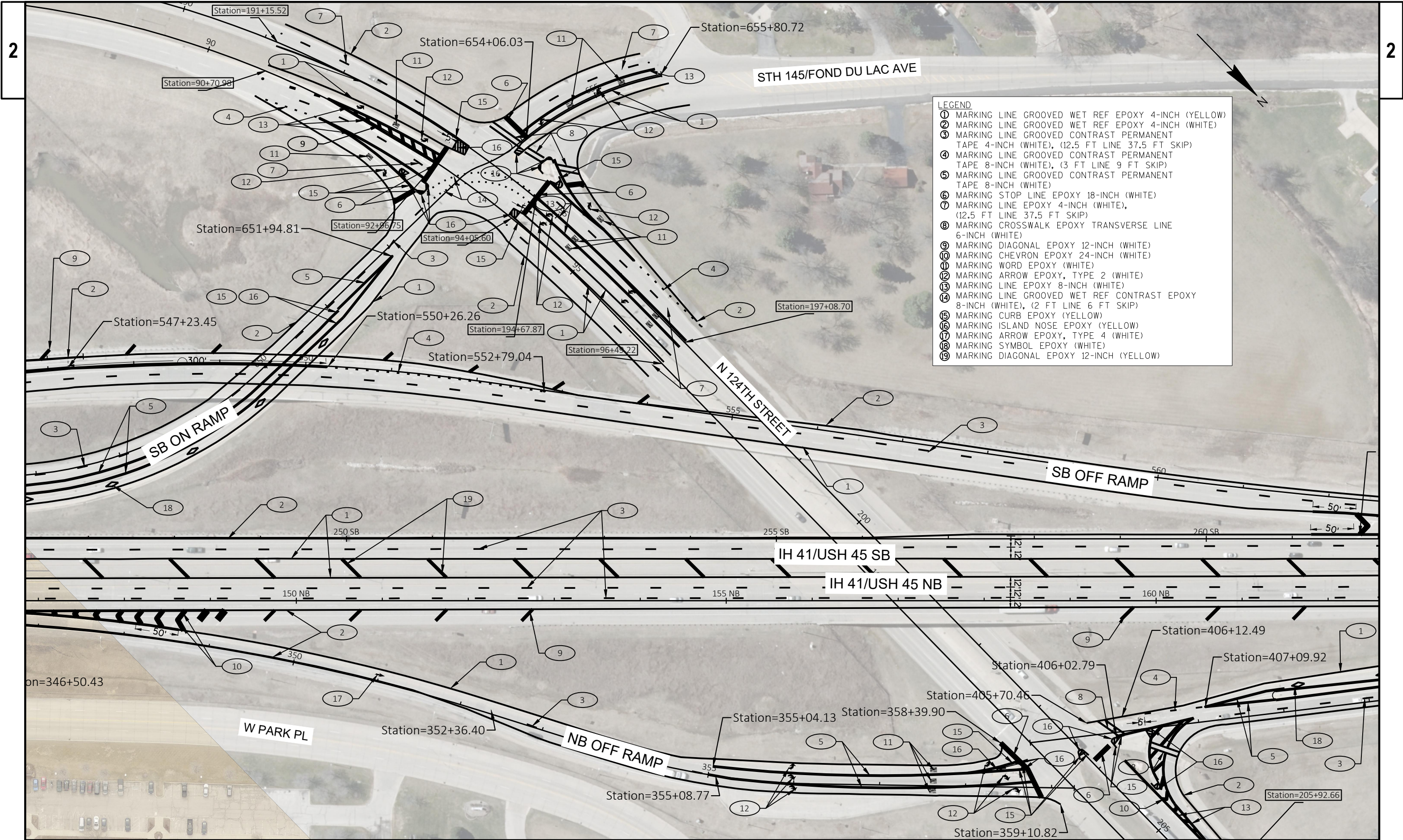
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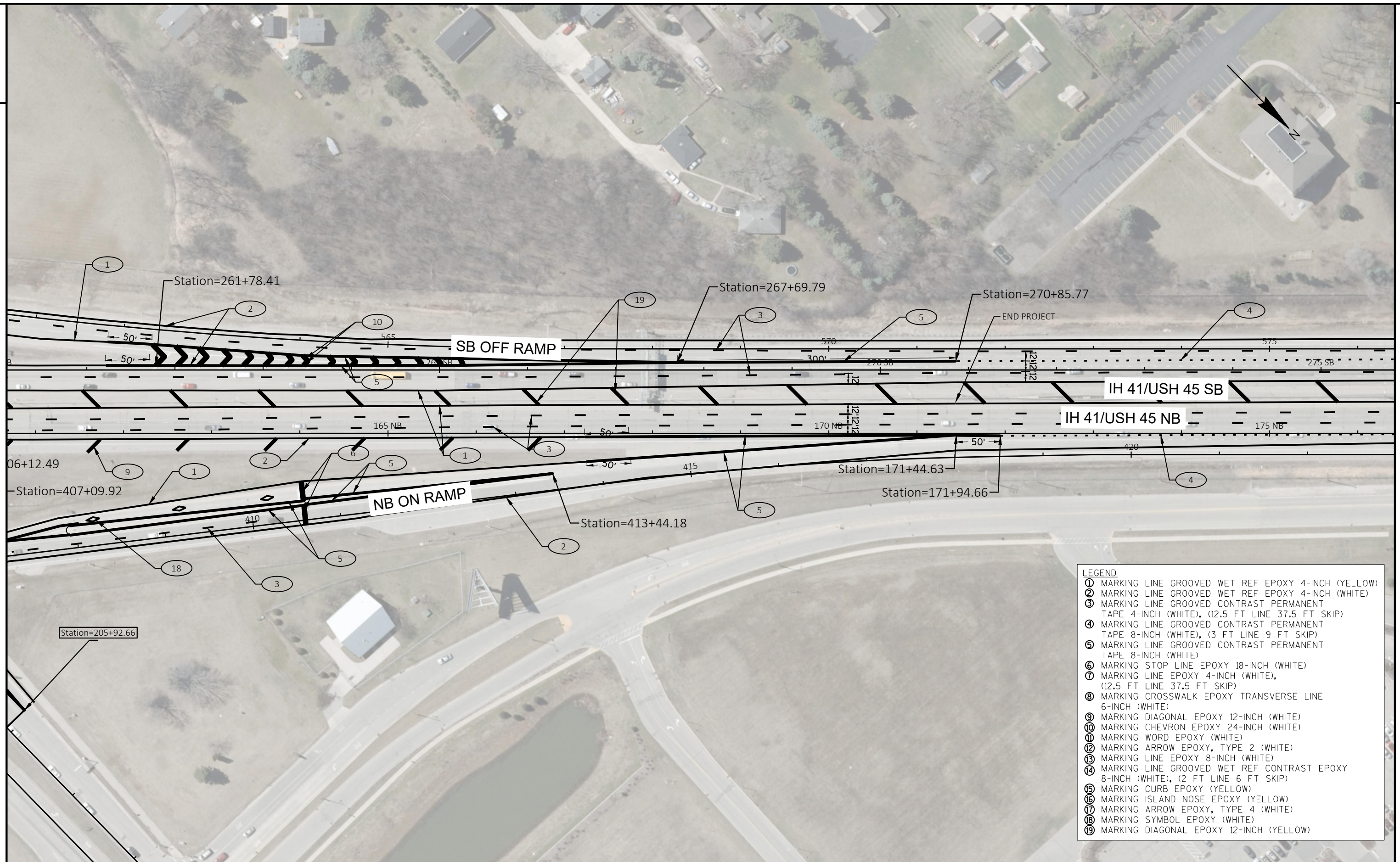




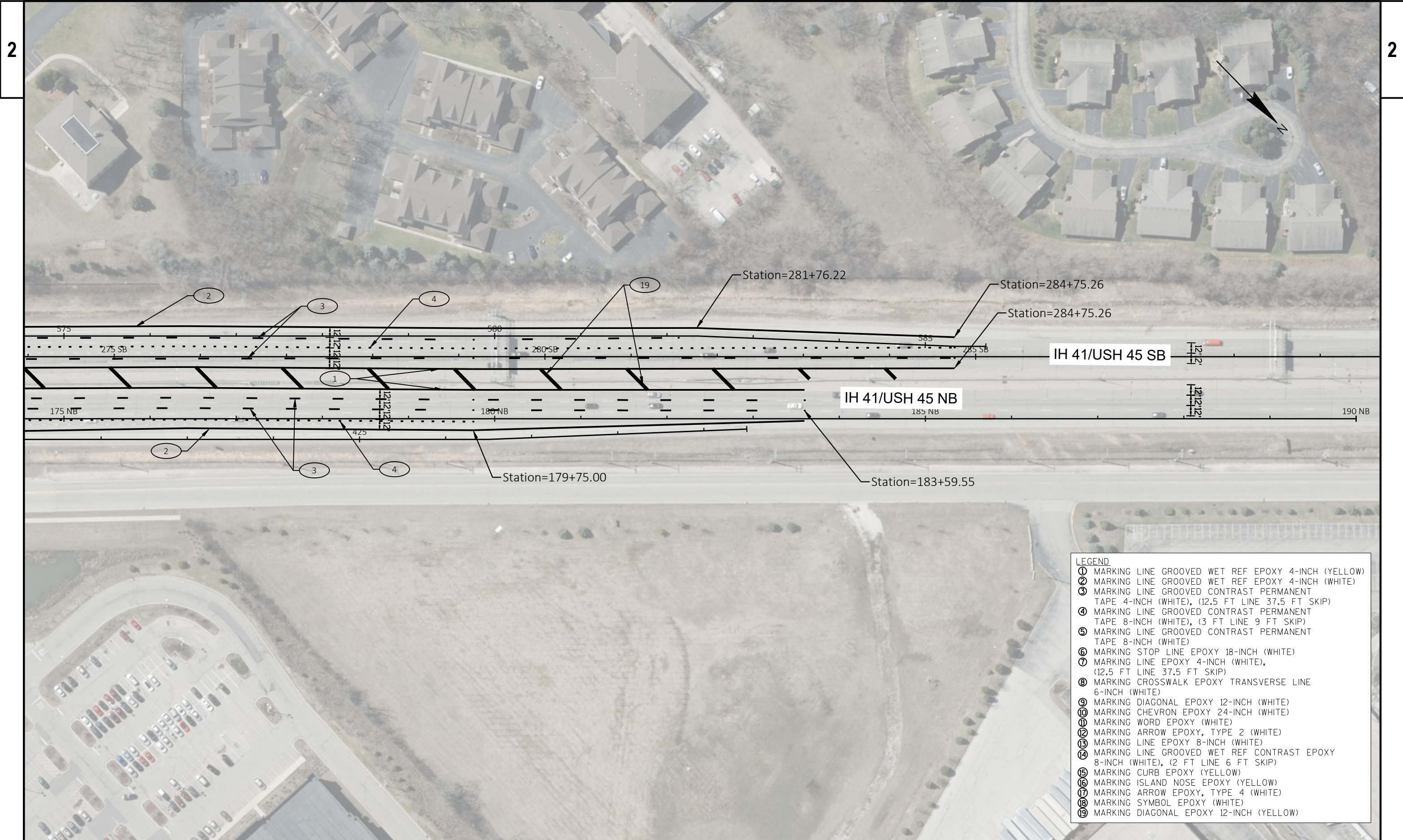
- LEGEND
- ① MARKING LINE GROOVED WET REF EPOXY 4-INCH (YELLOW)
 - ② MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
 - ③ MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH (WHITE), (12.5 FT LINE 37.5 FT SKIP)
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 - ⑨ MARKING DIAGONAL EPOXY 12-INCH (WHITE)
 - ⑩ MARKING CHEVRON EPOXY 24-INCH (WHITE)
 - ⑪ MARKING WORD EPOXY (WHITE)
 - ⑫ MARKING ARROW EPOXY, TYPE 2 (WHITE)
 - ⑬ MARKING LINE EPOXY 8-INCH (WHITE)
 - ⑭ MARKING LINE GROOVED WET REF CONTRAST EPOXY 8-INCH (WHITE), (2 FT LINE 6 FT SKIP)
 - ⑮ MARKING CURB EPOXY (YELLOW)
 - ⑯ MARKING ISLAND NOSE EPOXY (YELLOW)
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 - ⑱ MARKING SYMBOL EPOXY (WHITE)
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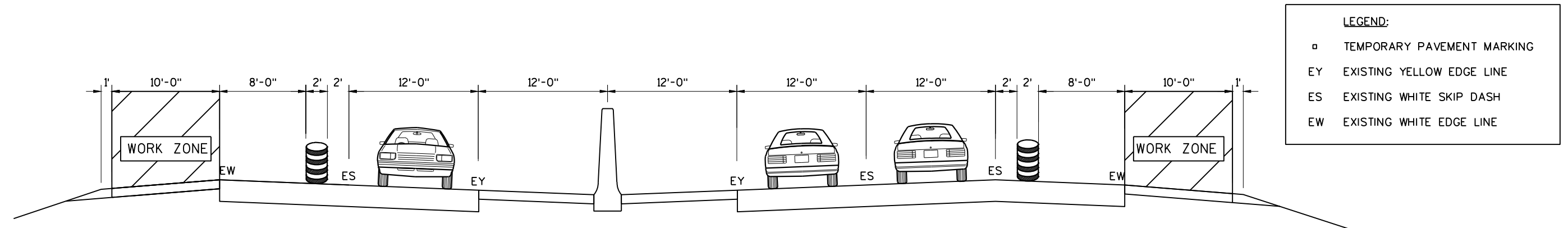
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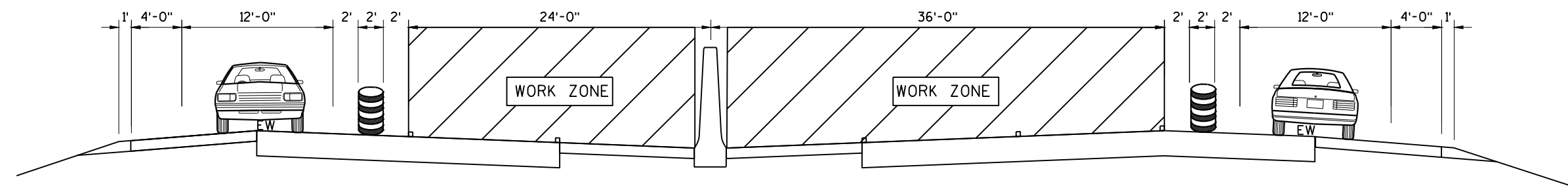


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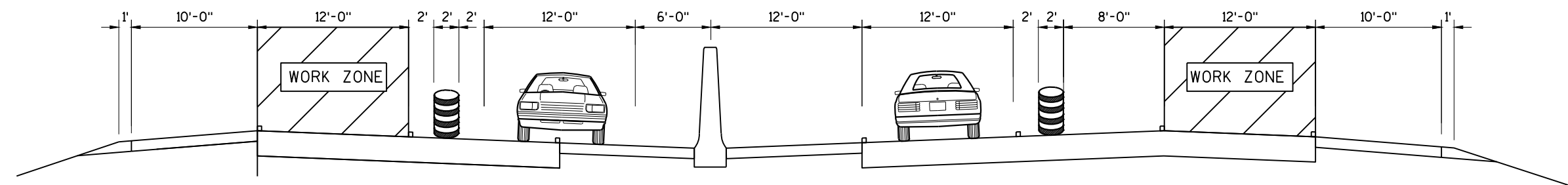
IH 41/USH 45 SB STAGE 1

IH 41/USH 45 NB STAGE 1



IH 41/USH 45 SB STAGE 2

IH 41/USH 45 NB STAGE 2



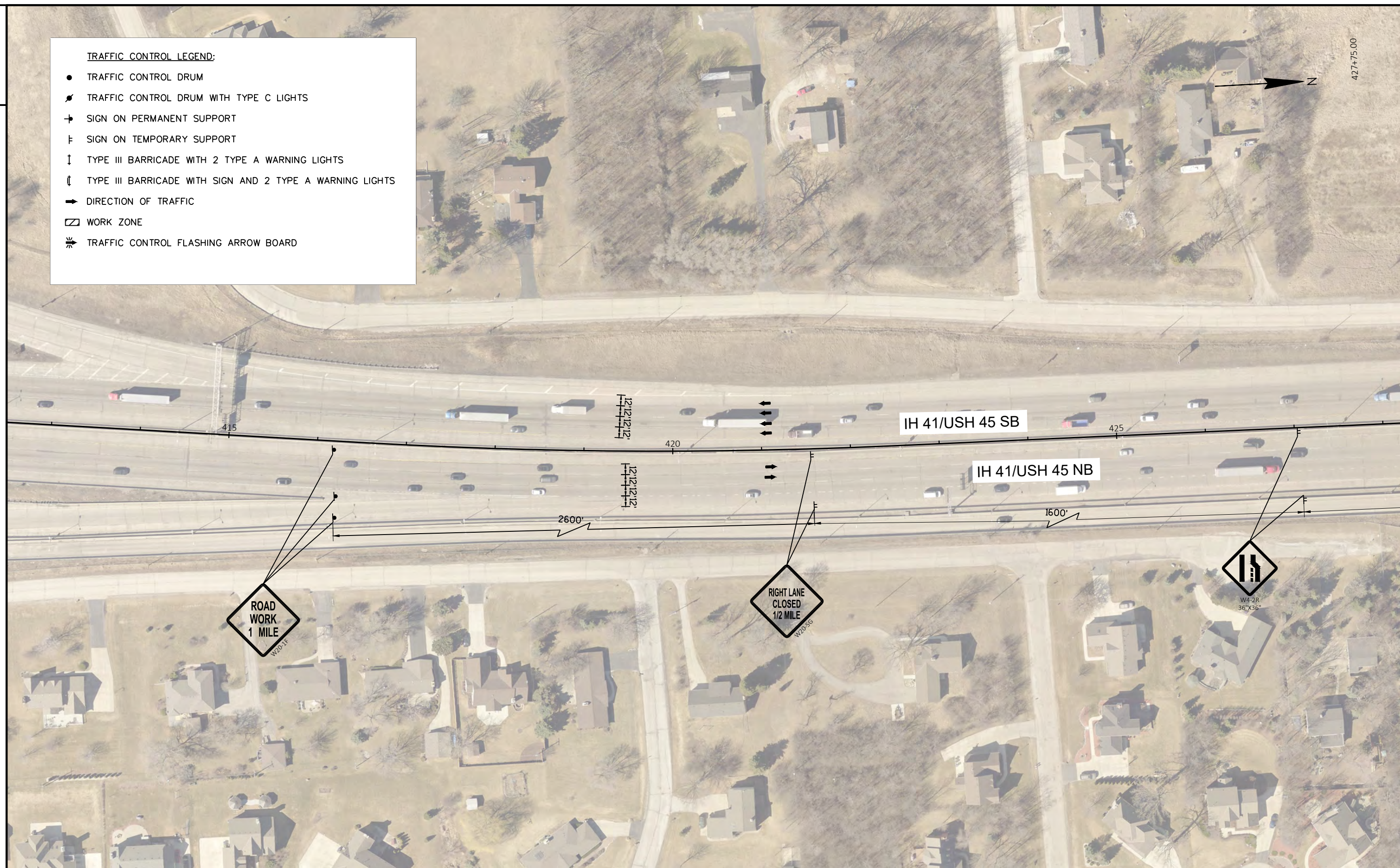
IH 41/USH 45 SB STAGE 3

IH 41/USH 45 NB STAGE 3

NOTE: PERMANENT PAVEMENT MARKINGS
APPLIED AT END OF STAGE 3 ONCE ALL
CONSTRUCTION WORK COMPLETE.

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ✈ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⌄ SIGN ON TEMPORARY SUPPORT
- ↓ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⌄ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ✈ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 1

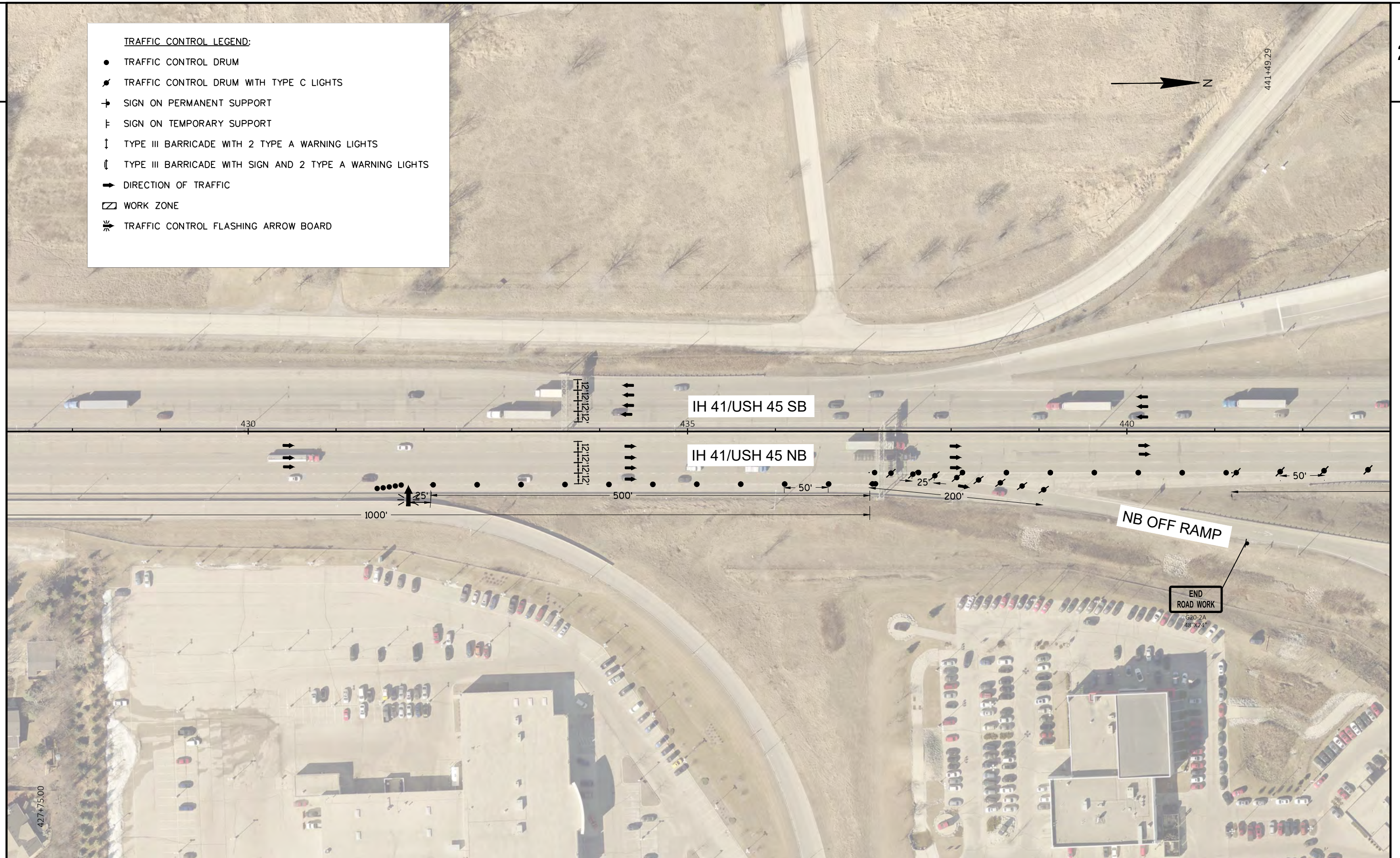
SHEET

66

E

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⌵ SIGN ON TEMPORARY SUPPORT
- ⬇ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⬇ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 1

SHEET

67

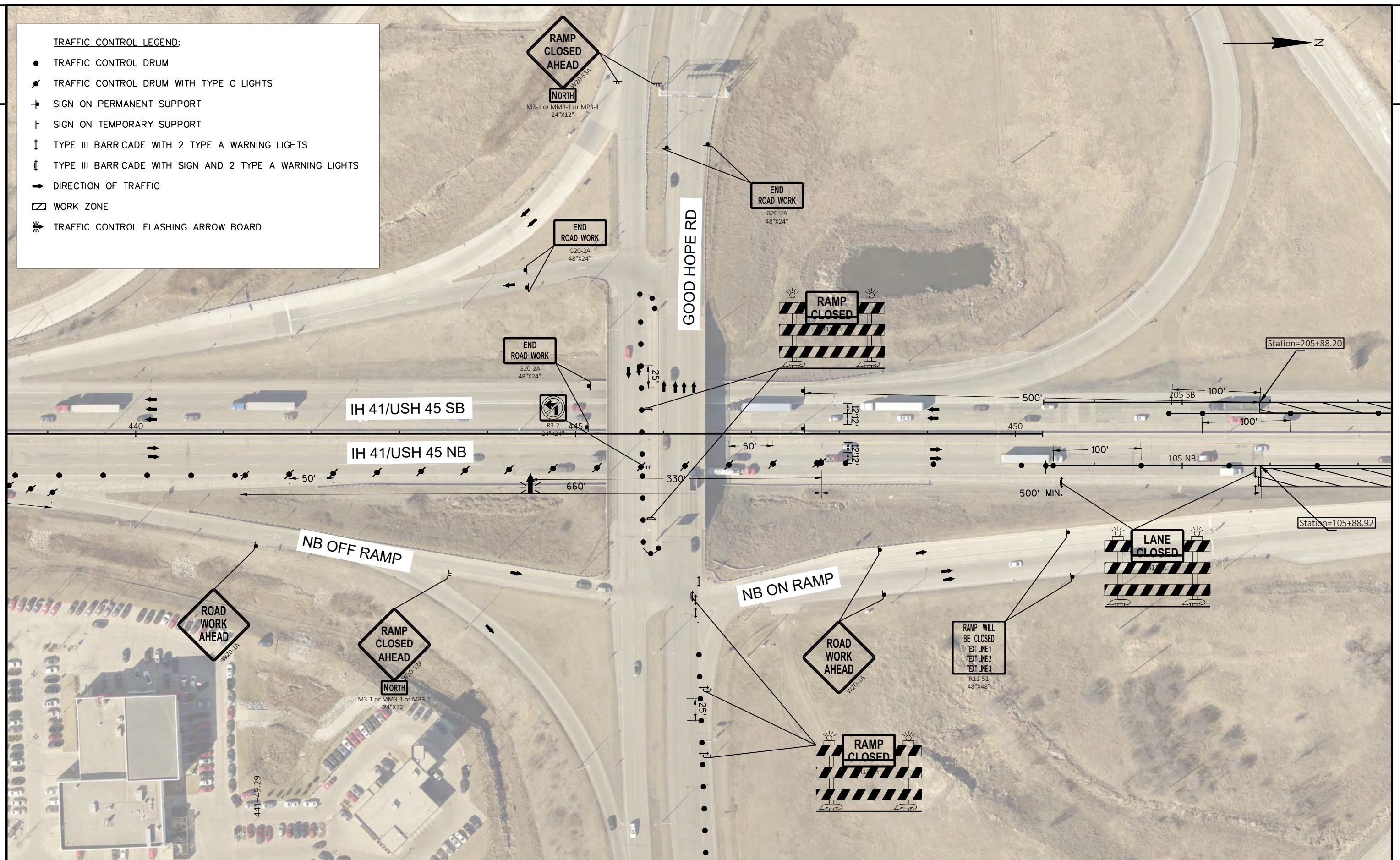
E

2

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ☼ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- SIGN ON PERMANENT SUPPORT
- ⌋ SIGN ON TEMPORARY SUPPORT
- ↑↓ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ↑↓ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ☼➡ TRAFFIC CONTROL FLASHING ARROW BOARD

2 |



PROJECT NO:	1100-17-76
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HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 1

SHEET

58

E

FILE NAME : C:\CIVIL 3D PROJECTS\11001706\SHEETSPLAN\025001-TC_STAGE1.DWG
LAYOUT NAME - 025001-tc (3)

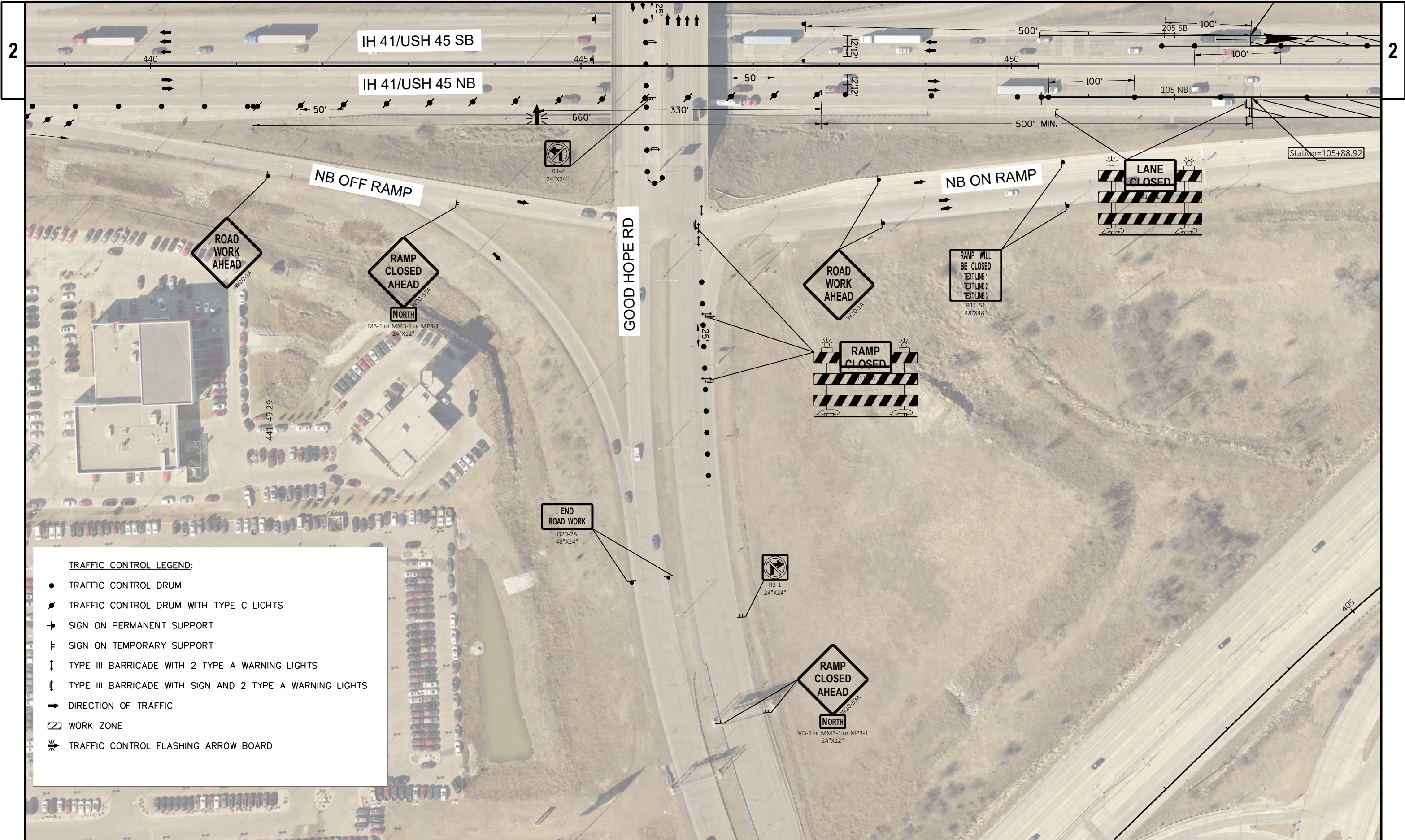
PLOT DATE : 2/18/2019 6:43 AM

PLOT BY : MANANDHAR, BHUVAN K

PLOT NAME :

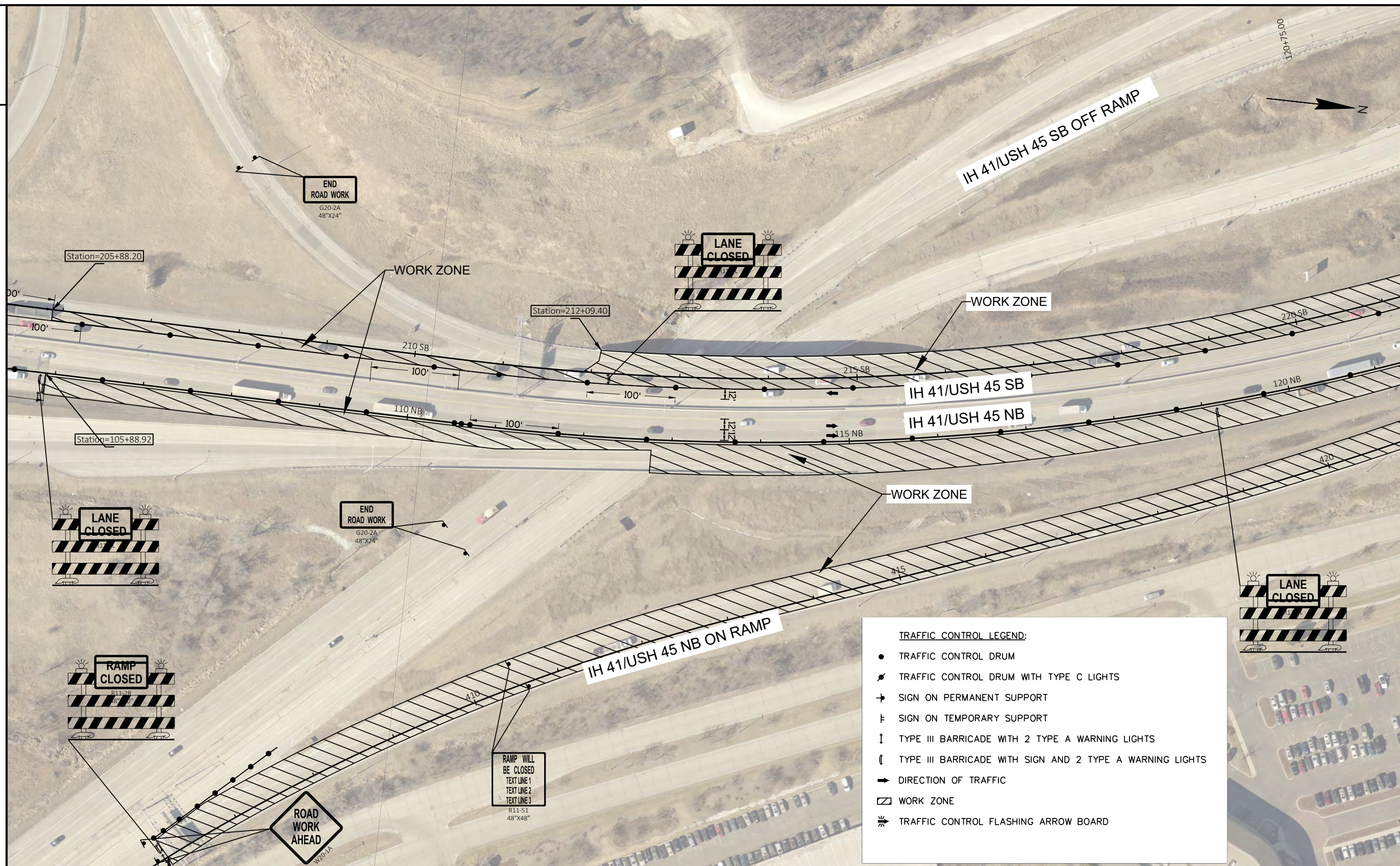
PLOT SCALE : 1 IN:100 FT

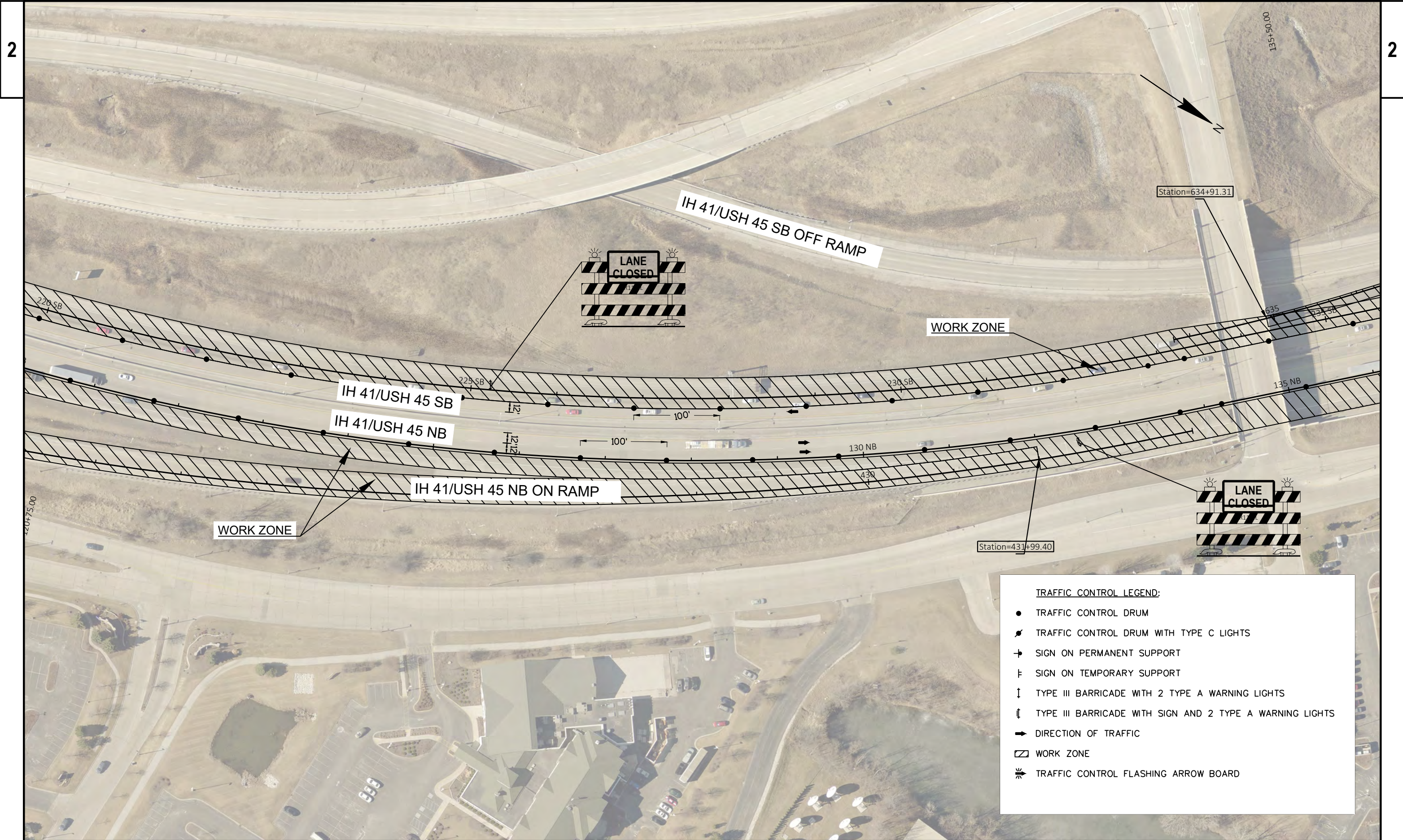
WISDOT/CADDS SHEET 42



TRAFFIC CONTROL LEGEND:

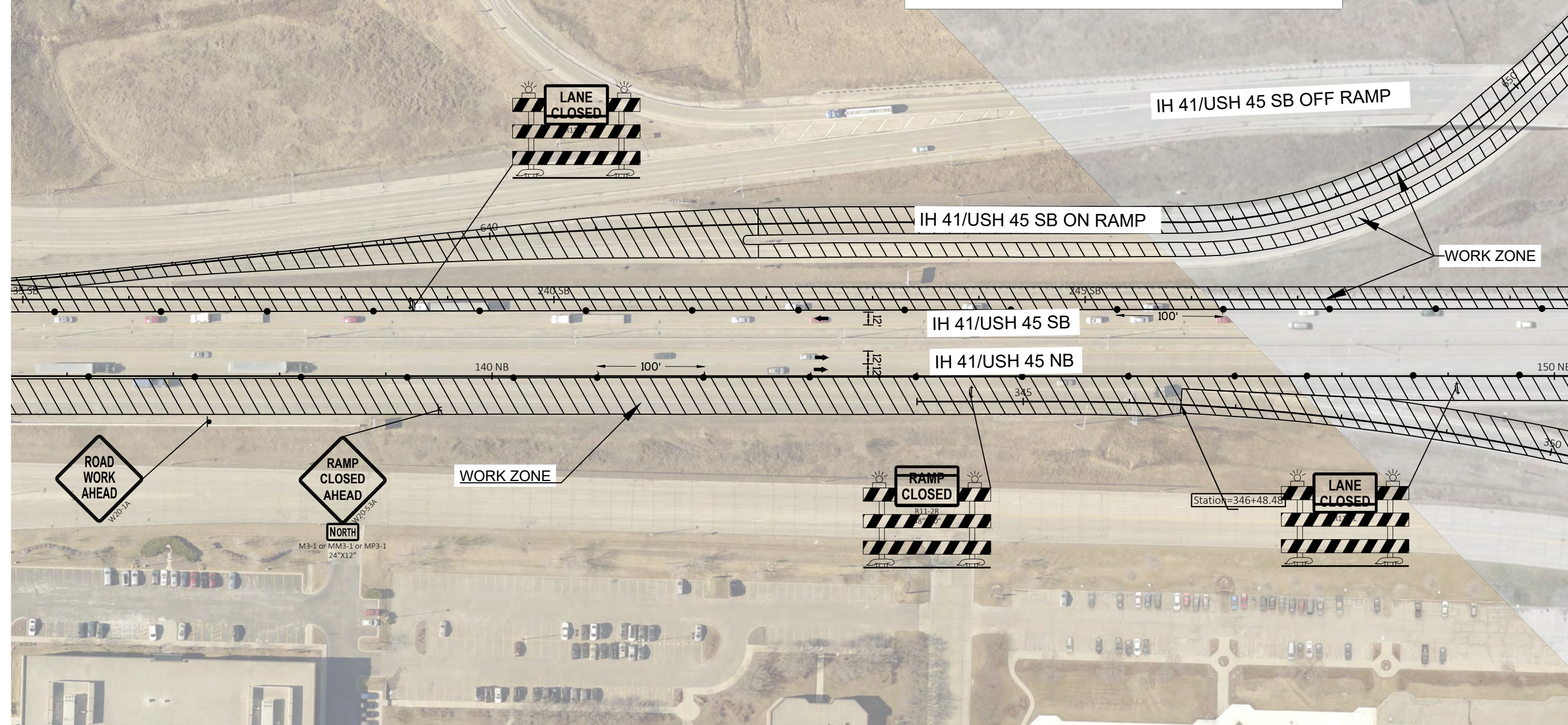
- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⚡ SIGN ON TEMPORARY SUPPORT
- ⚡ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⚡ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD





TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ✱ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⌄ SIGN ON TEMPORARY SUPPORT
- ⬇ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⬇ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

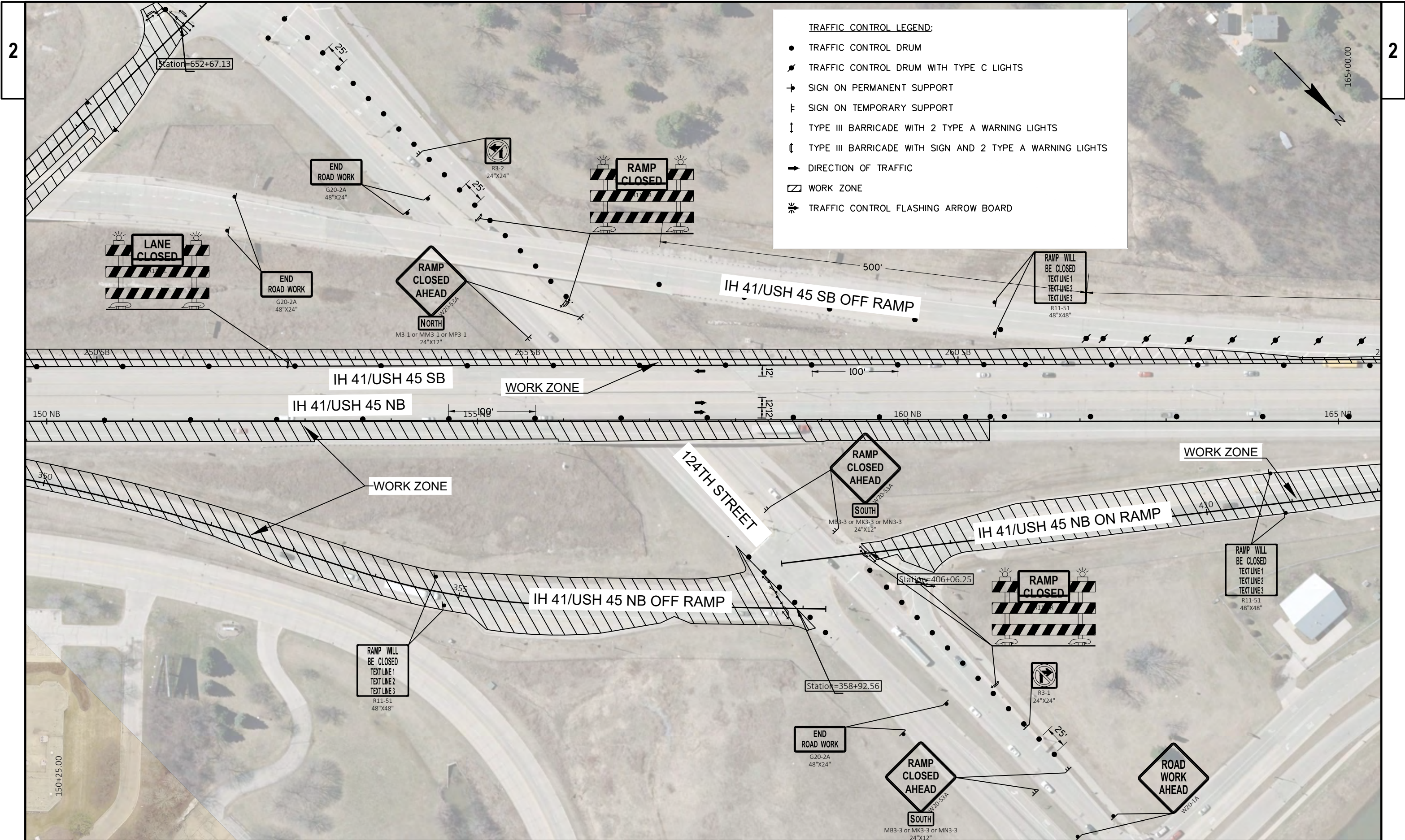
COUNTY: MILWAUKEE

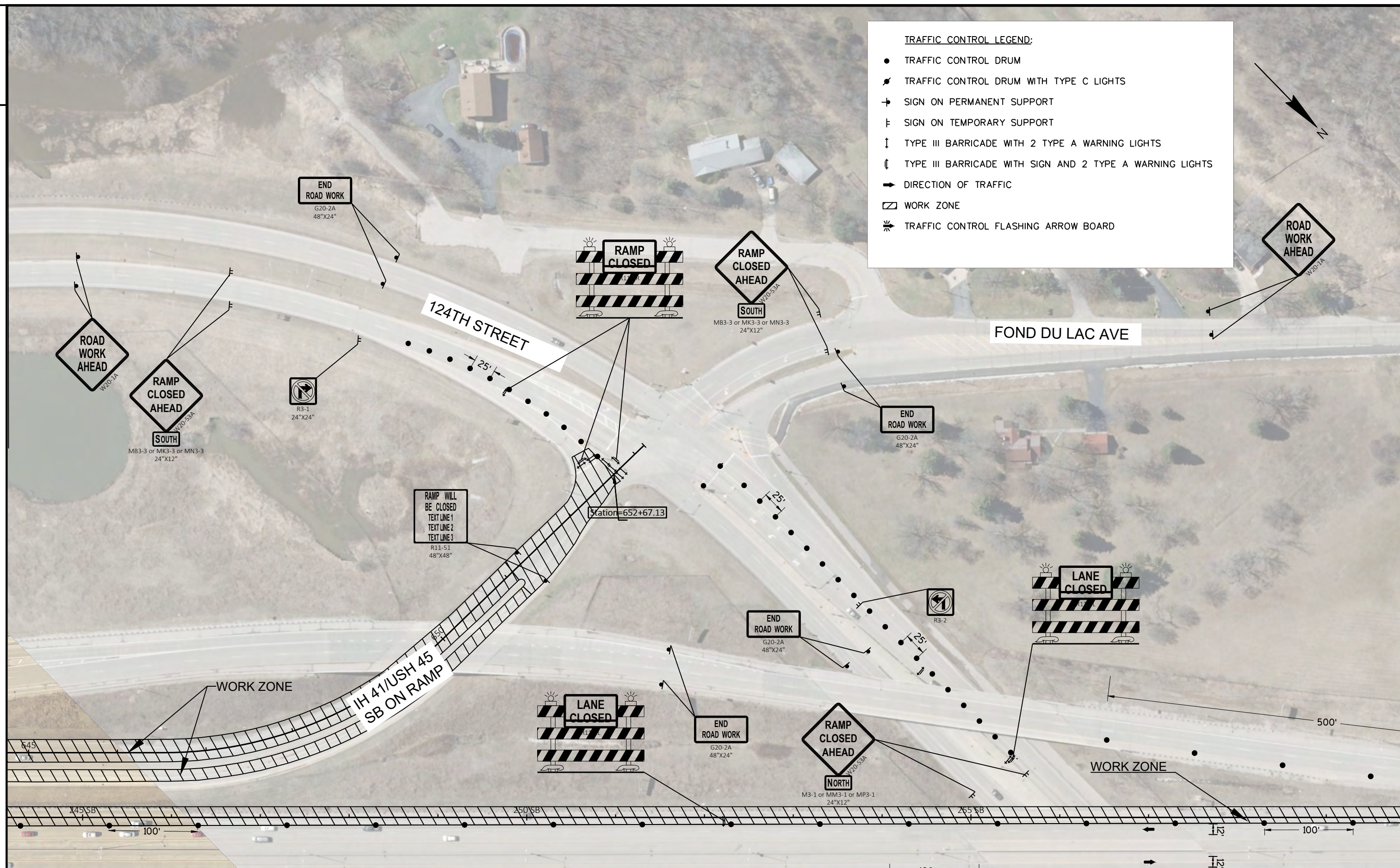
TRAFFIC CONTROL, STAGE 1

SHEET

72

E





PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

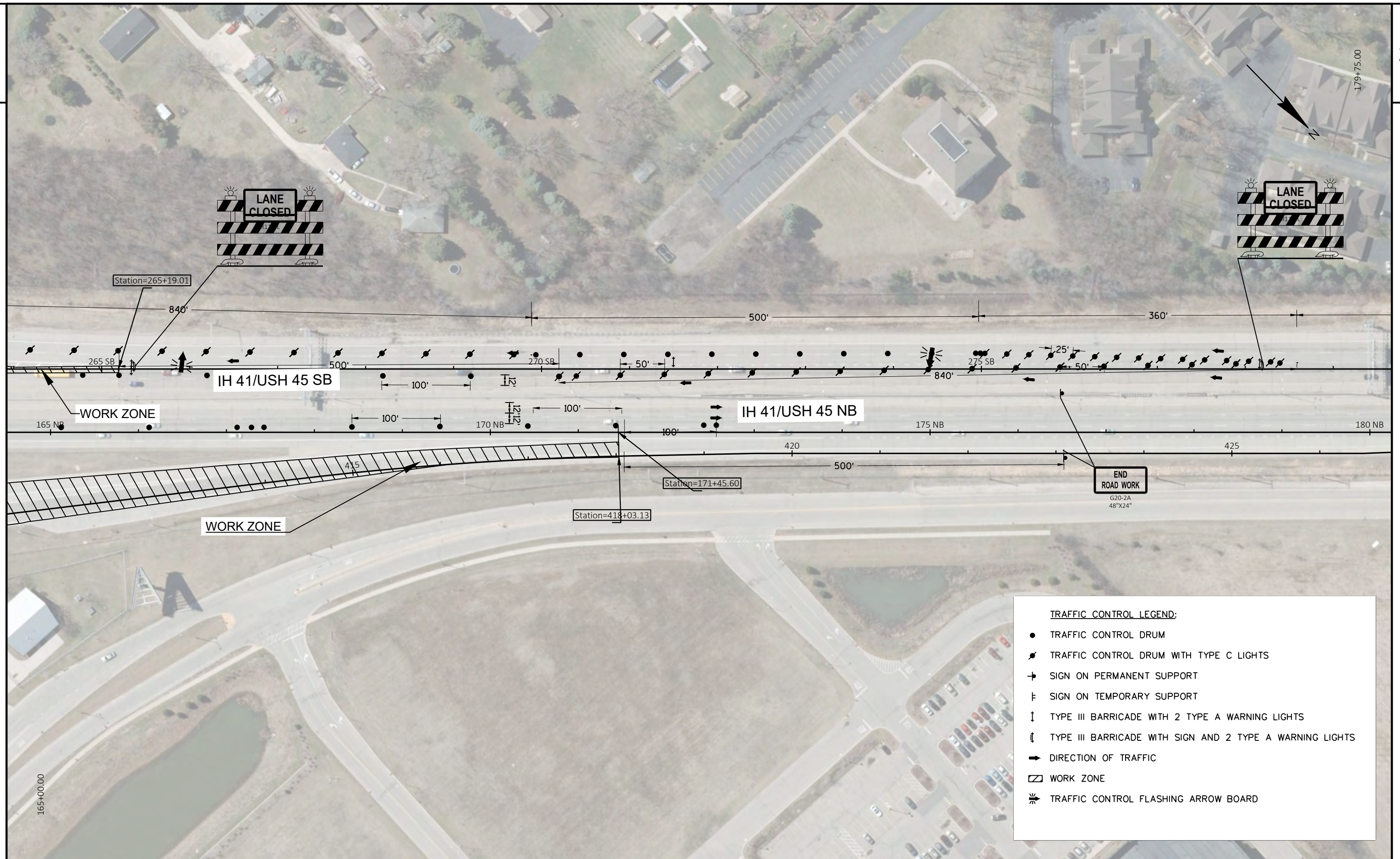
COUNTY: MILWAUKEE

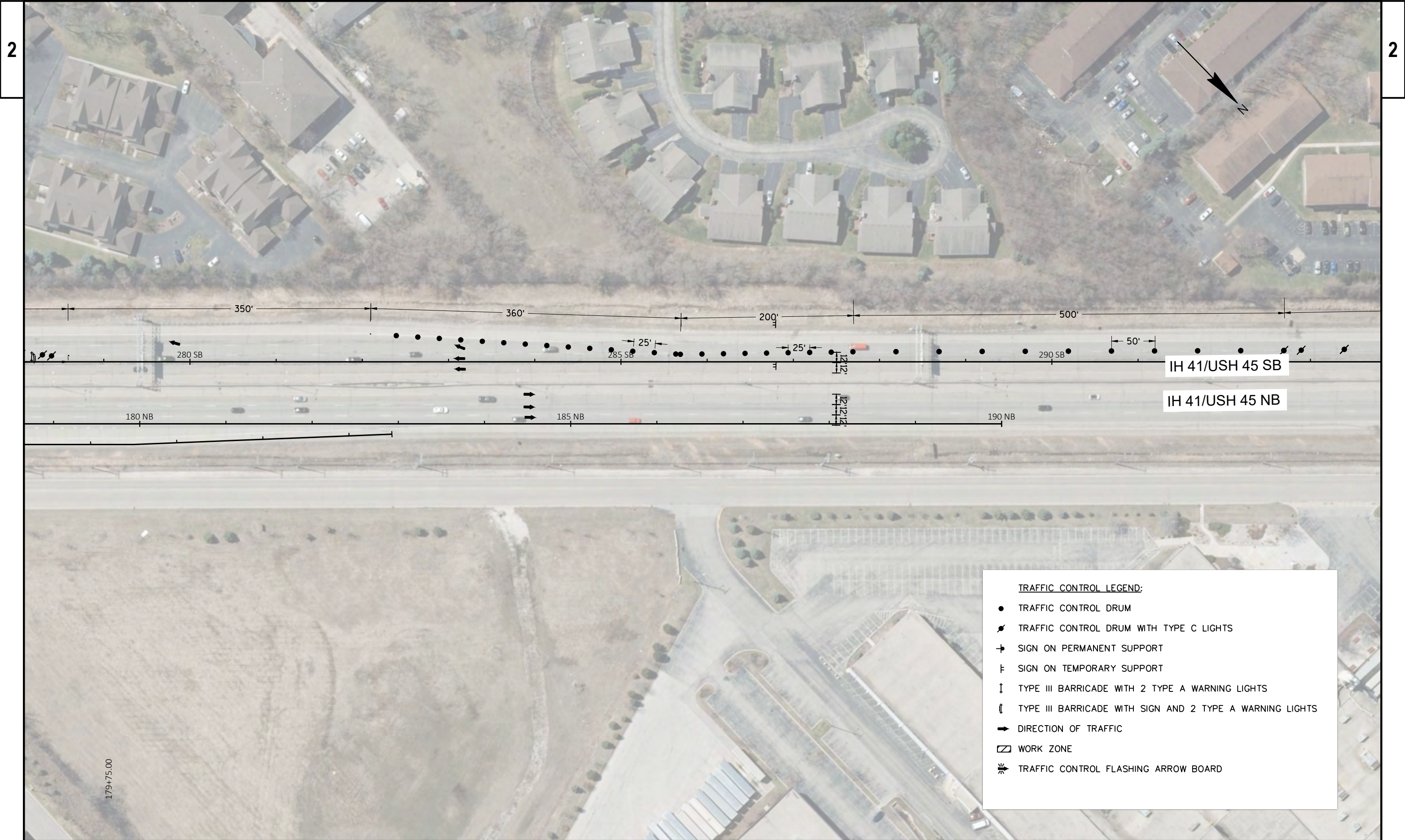
TRAFFIC CONTROL, STAGE 1

SHEET

74

E





2

2 |



PROJECT NO:	1100-17-76
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HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 1

SHEET

7

11

FILE NAME : C:\CIVIL 3D PROJECTS\11001706\SHEETSP\PLAN\025001-TC_STAGE1.DWG
LAYOUT NAME - 025001-tc (11)

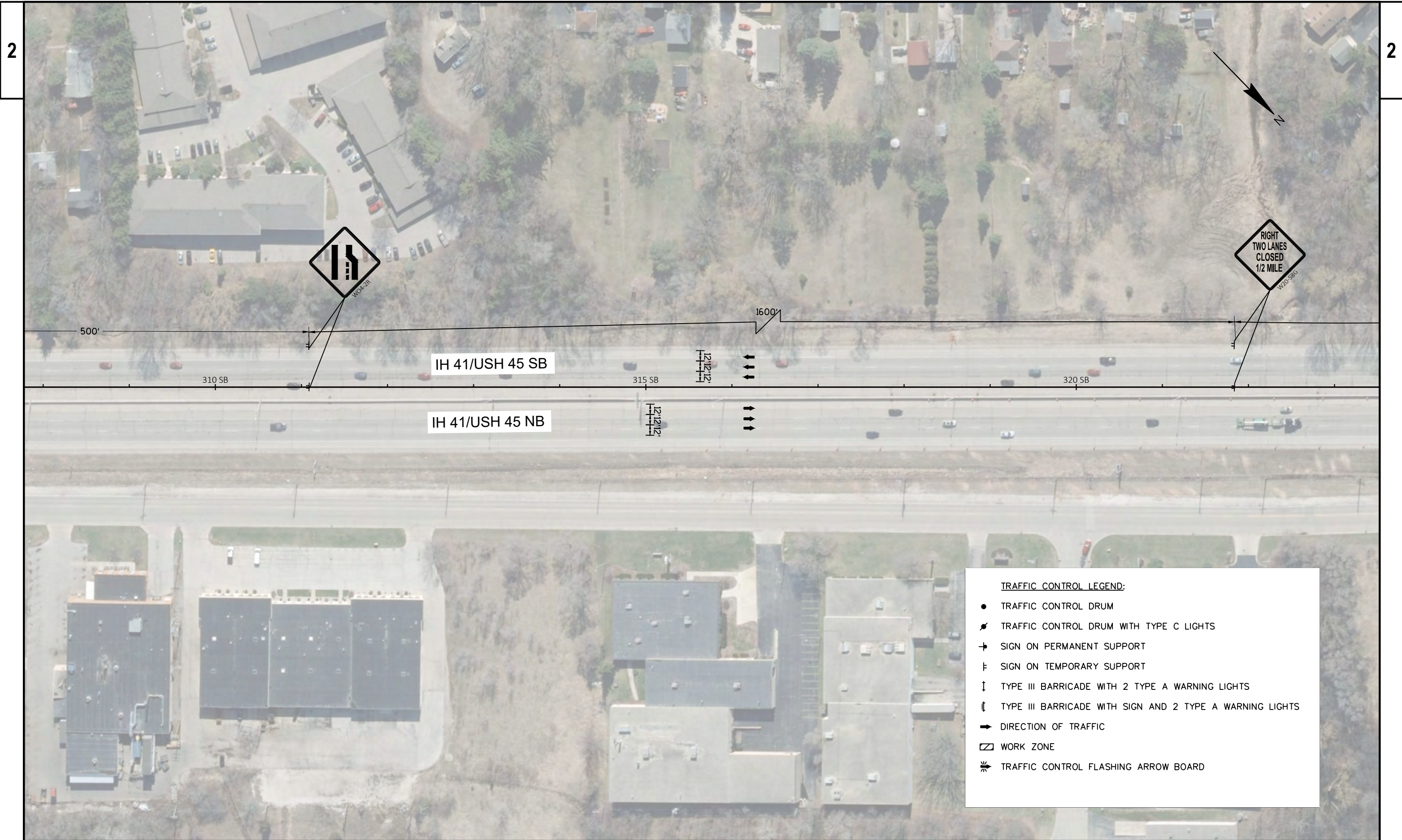
PLOT DATE : 2/18/2019 6:43 AM

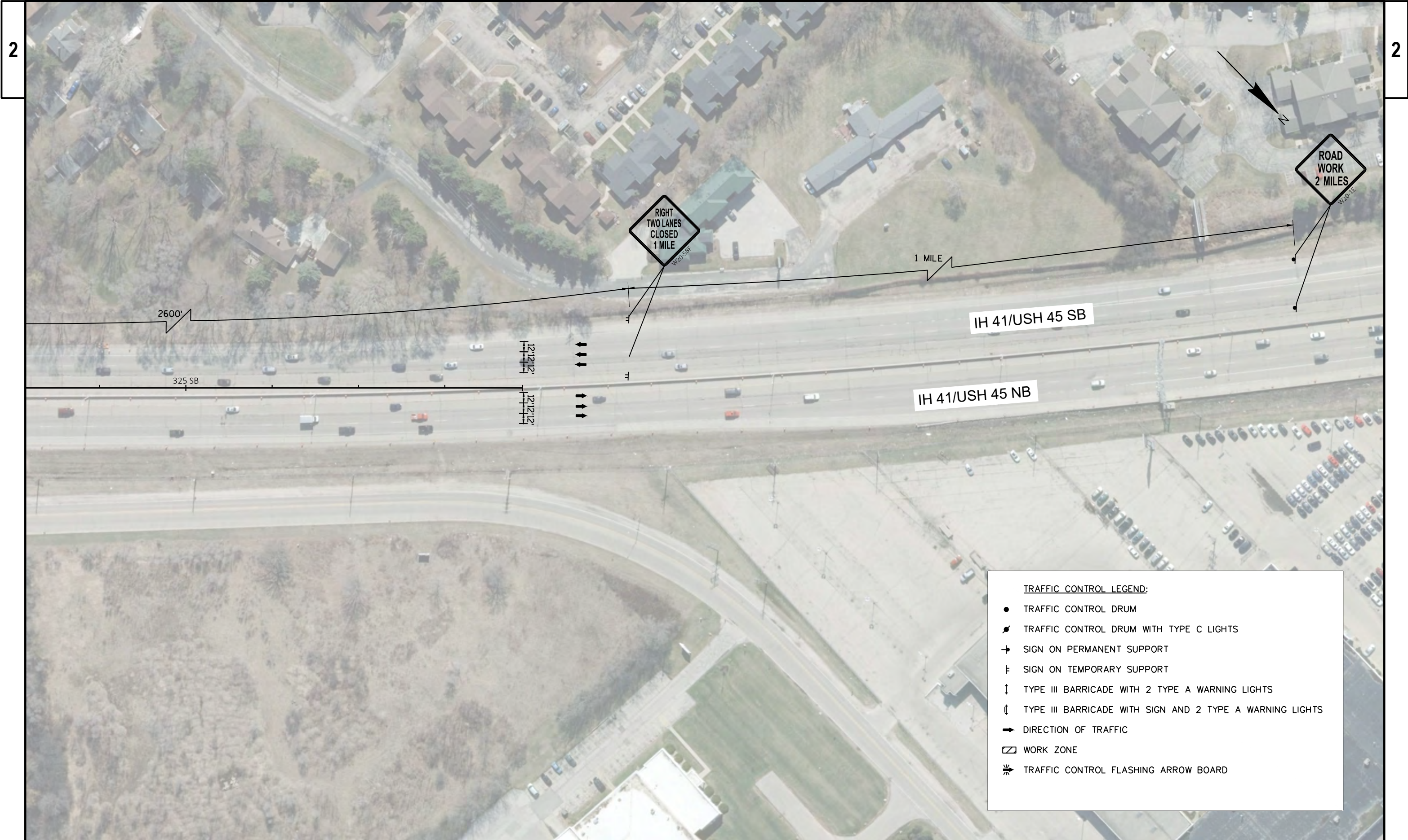
PLOT BY : MANANDHAR, BHUVAN K

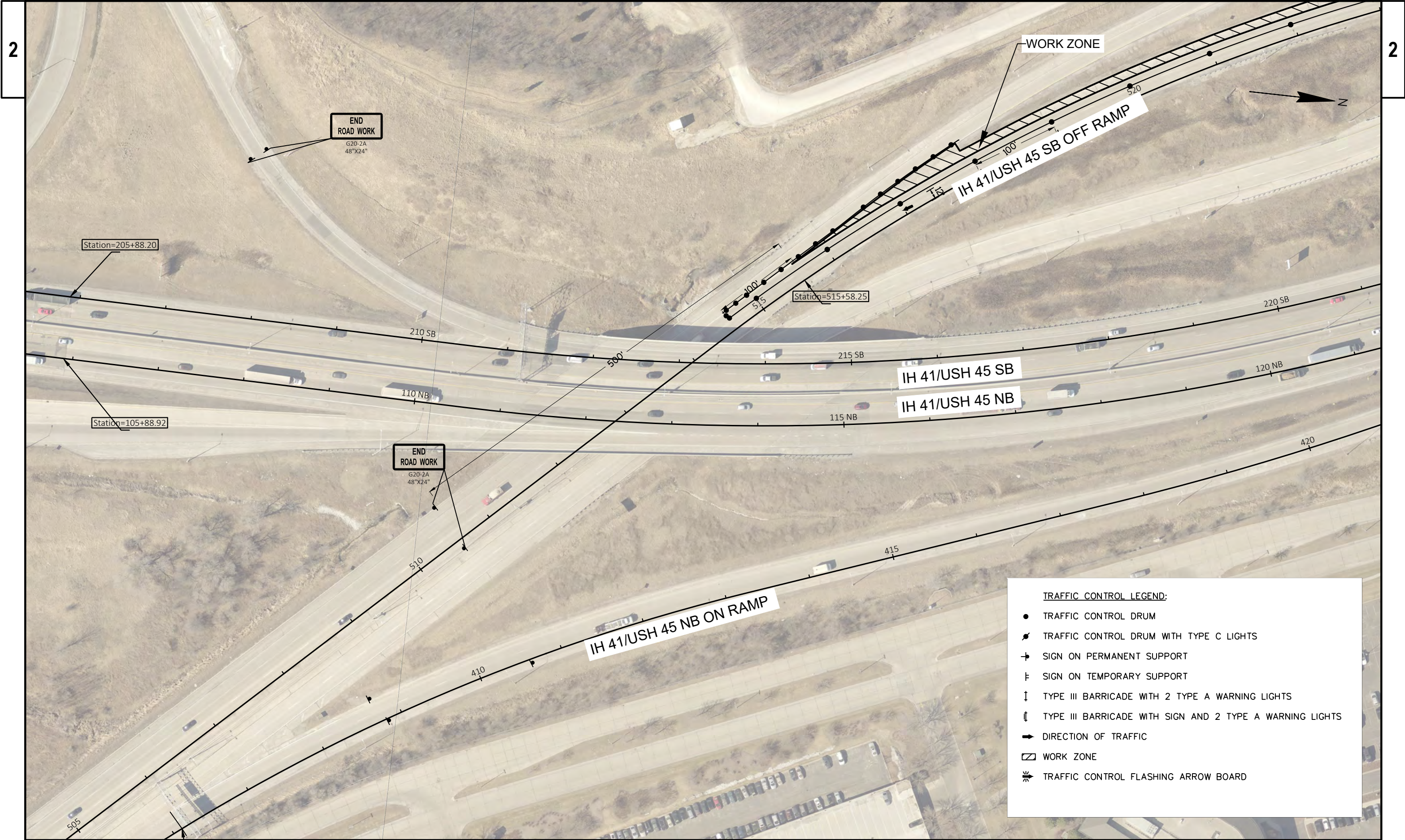
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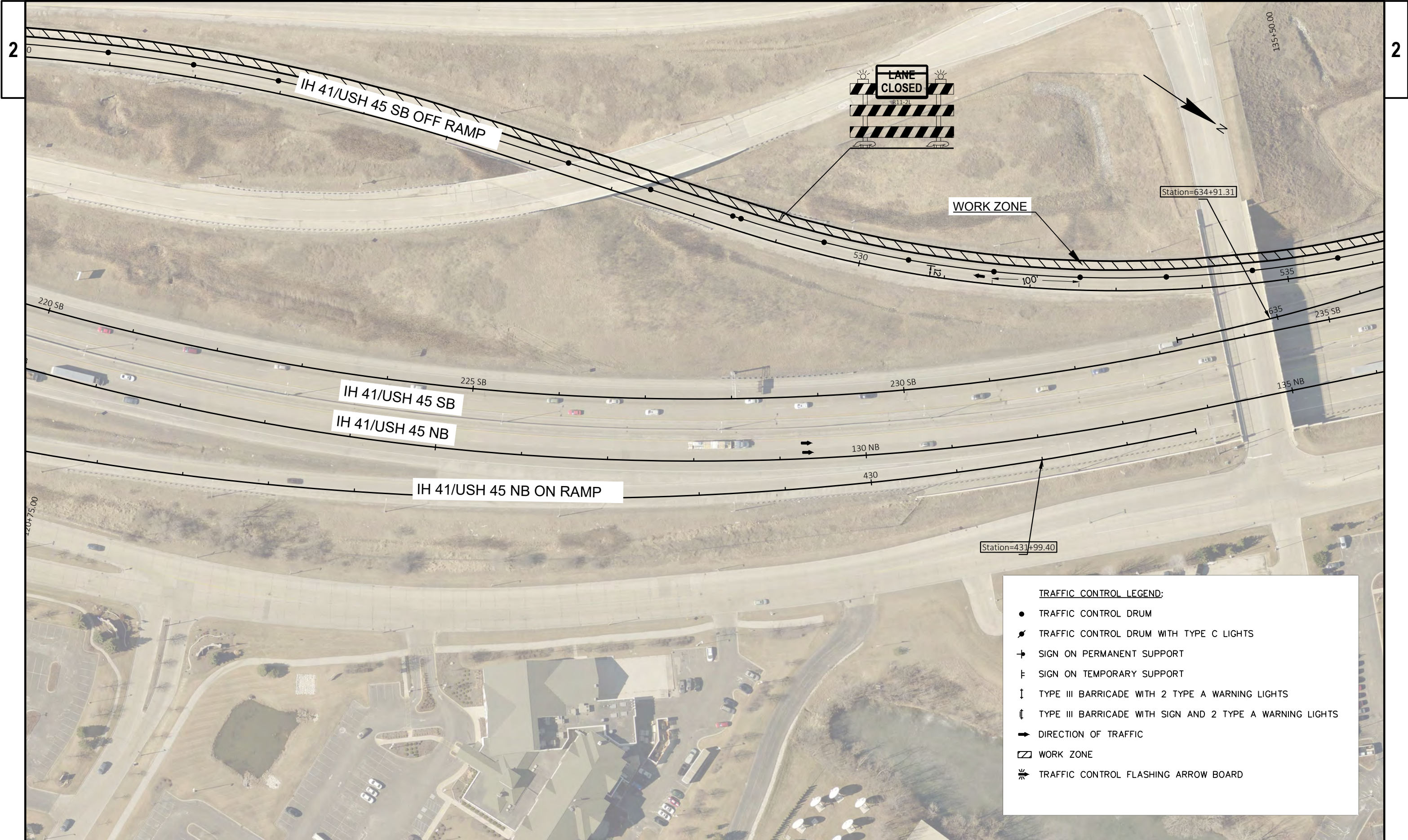
PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42



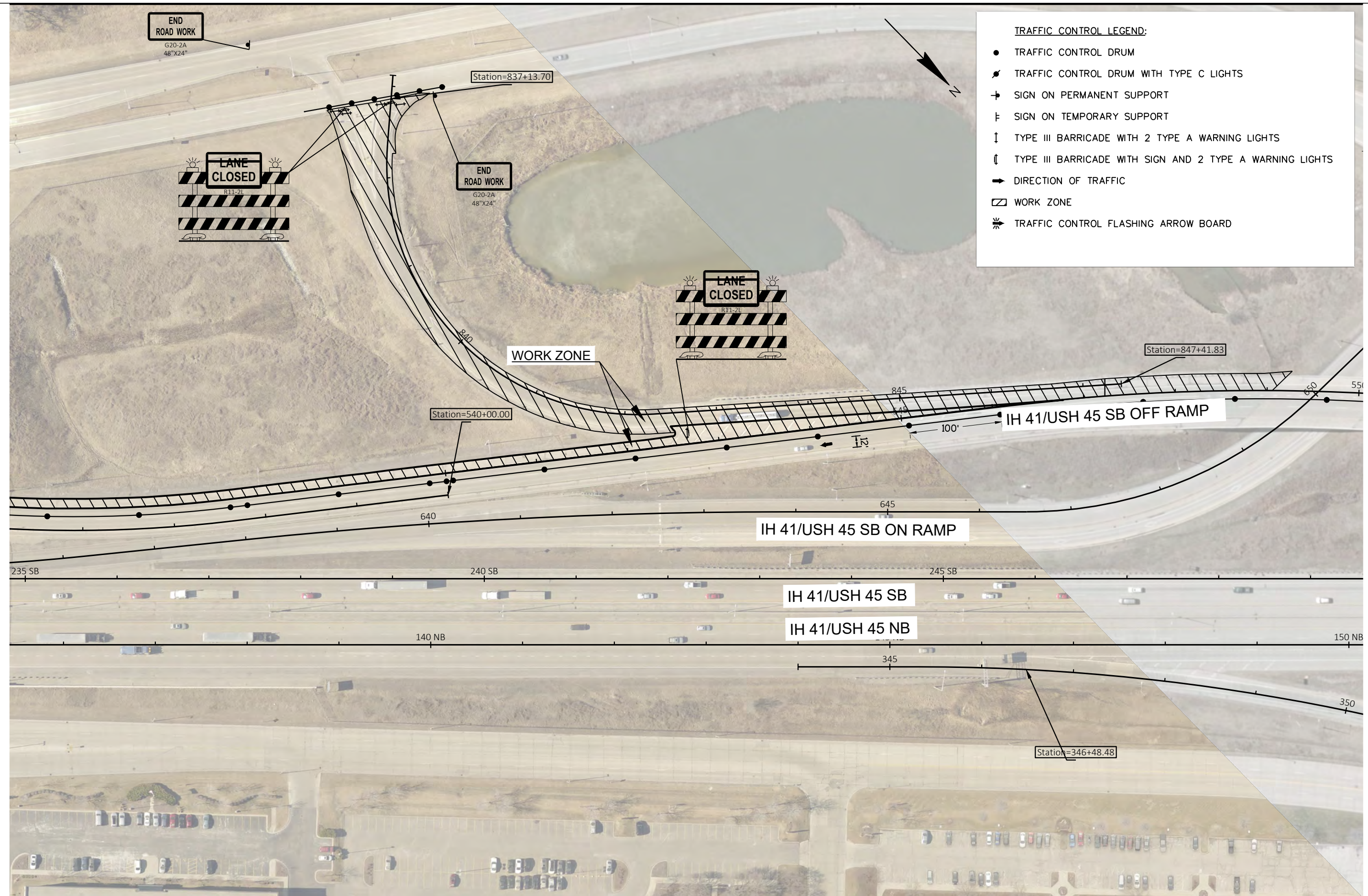


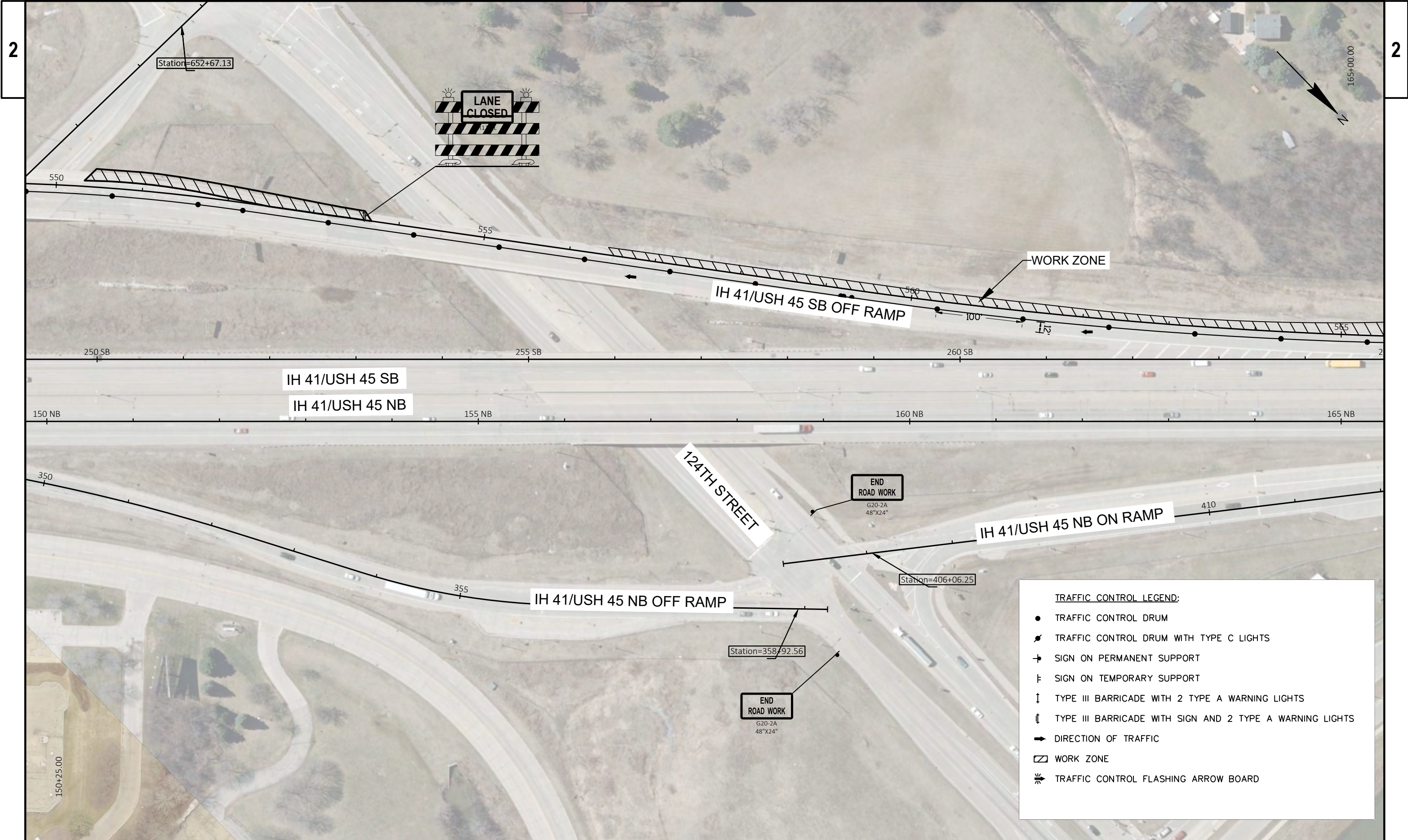




TRAFFIC CONTROL LEGEND:

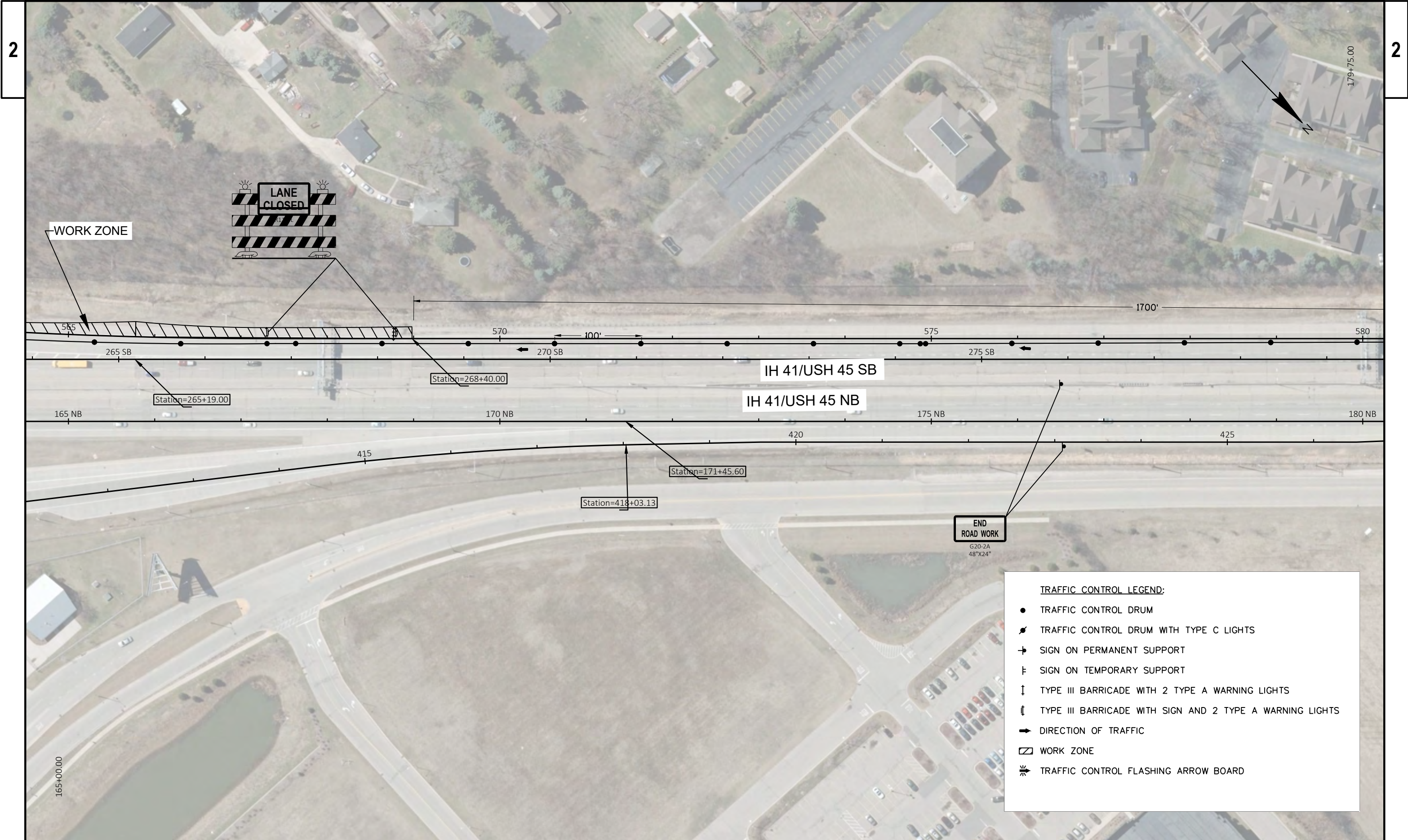
- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ⊕ SIGN ON PERMANENT SUPPORT
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⏏ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⏏⏏ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD





TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⦿ SIGN ON TEMPORARY SUPPORT
- ⏏ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⏏ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD

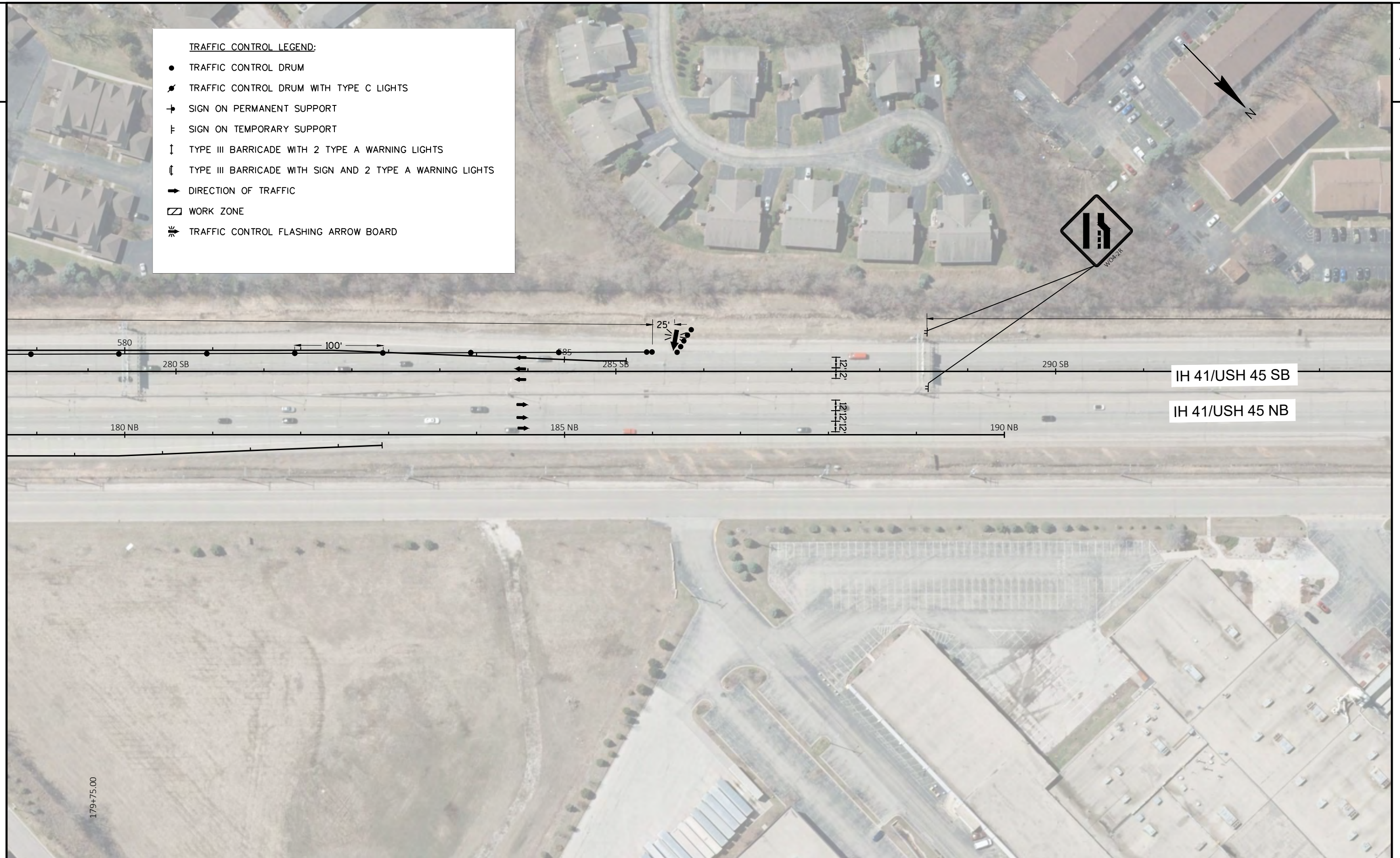


TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⦿ SIGN ON TEMPORARY SUPPORT
- ↓ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⦿ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- SIGN ON PERMANENT SUPPORT
- ⇌ SIGN ON TEMPORARY SUPPORT
- ↑ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⇌ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

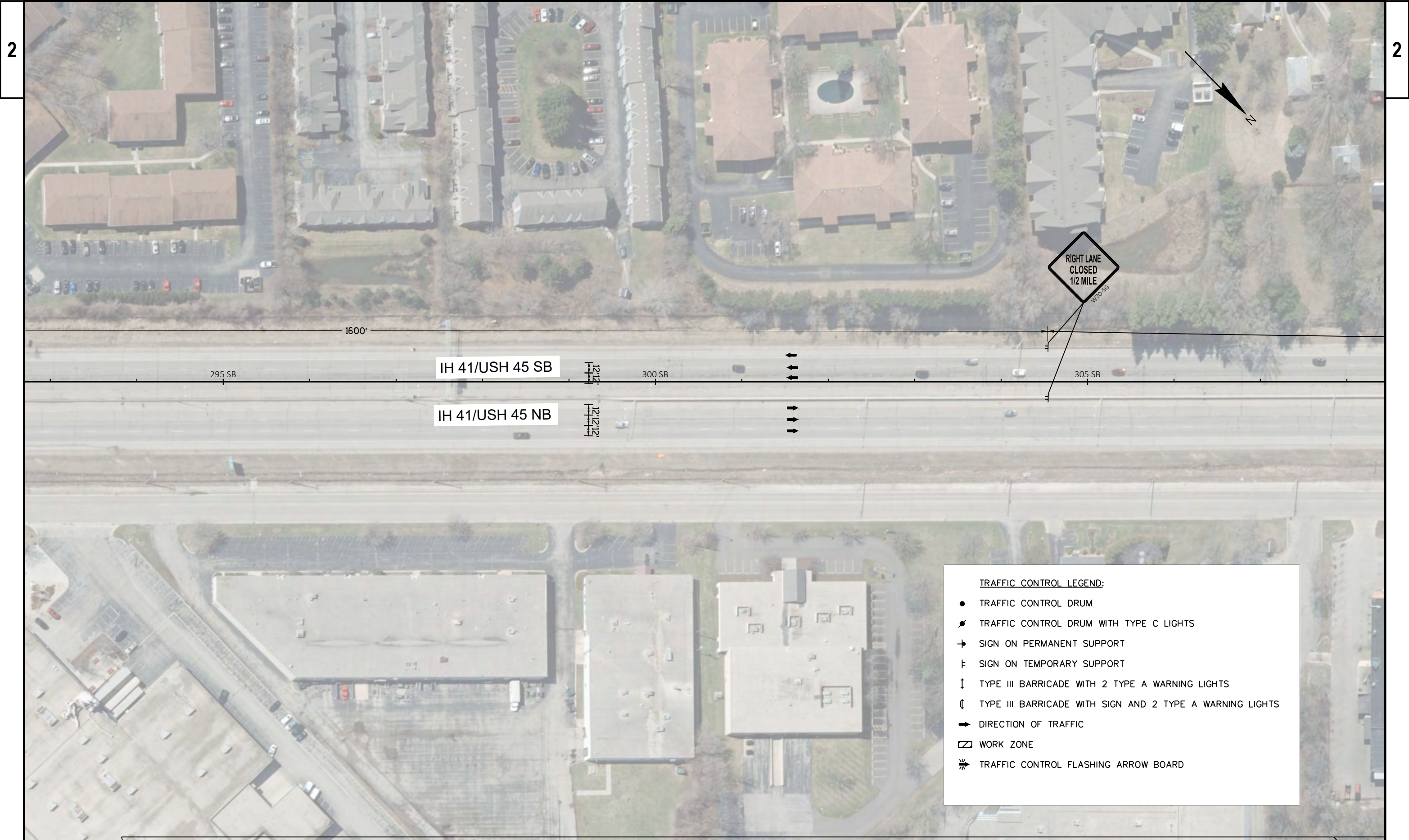
COUNTY: MILWAUKEE

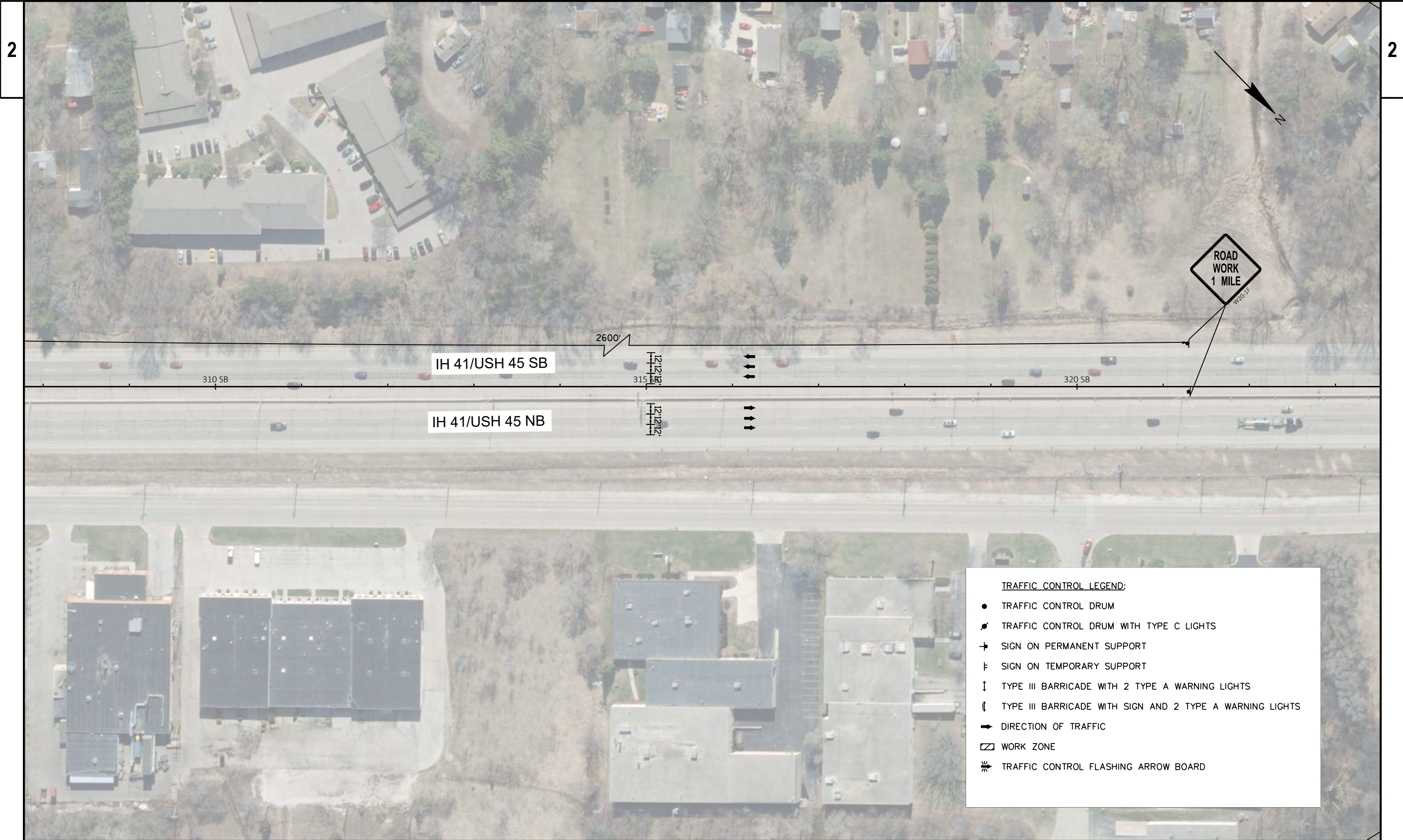
TRAFFIC CONTROL SB OFF RAMP, STAGE 1

SHEET

85

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IH 41/USH 45 SB

IH 41/USH 45 NB

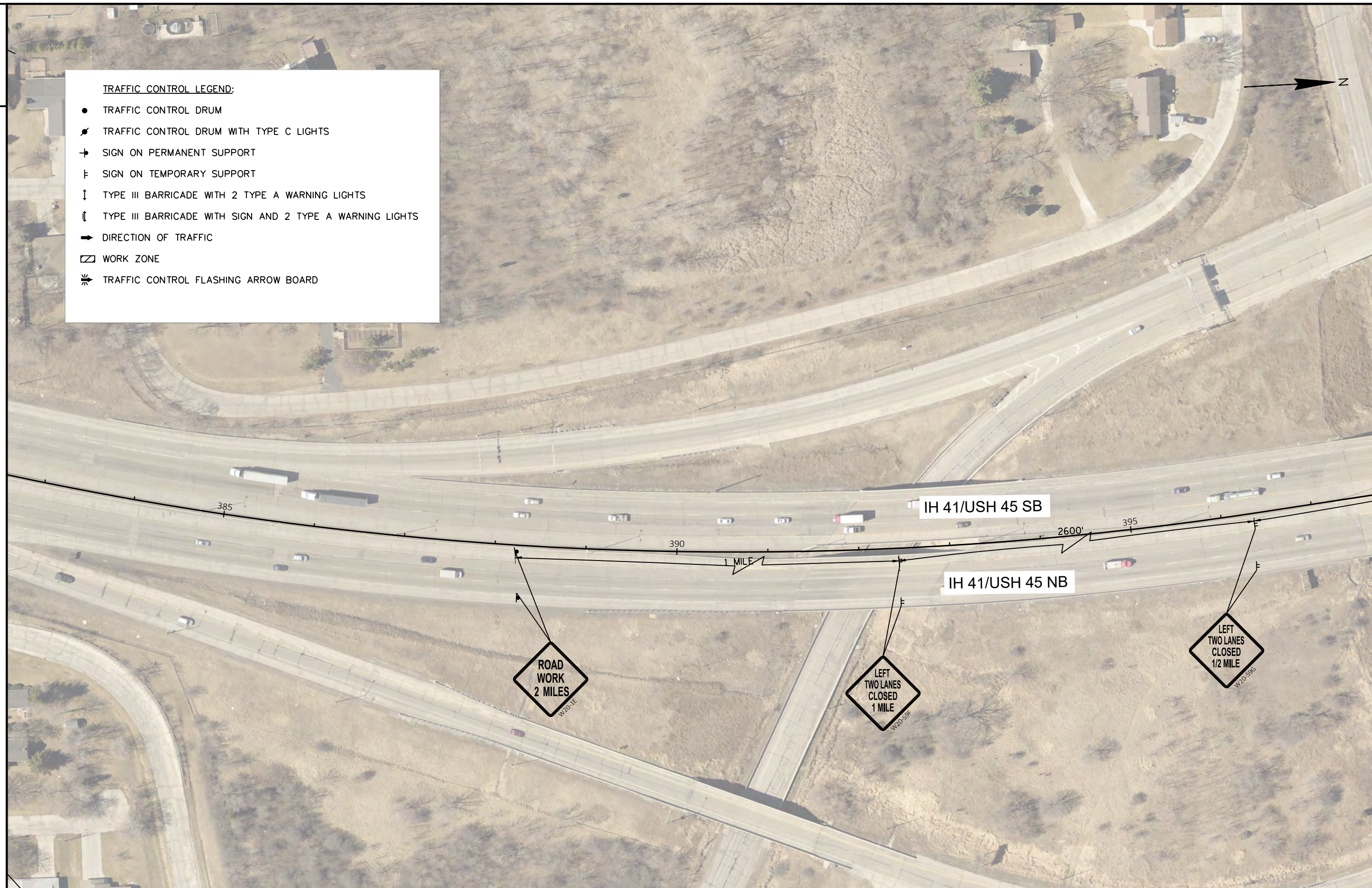
ROAD
WORK
1 MILE
W20-1F

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⦿ SIGN ON TEMPORARY SUPPORT
- ⏏ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⏏ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ⊕ SIGN ON PERMANENT SUPPORT
- ⊥ SIGN ON TEMPORARY SUPPORT
- ↓ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⏏ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 2

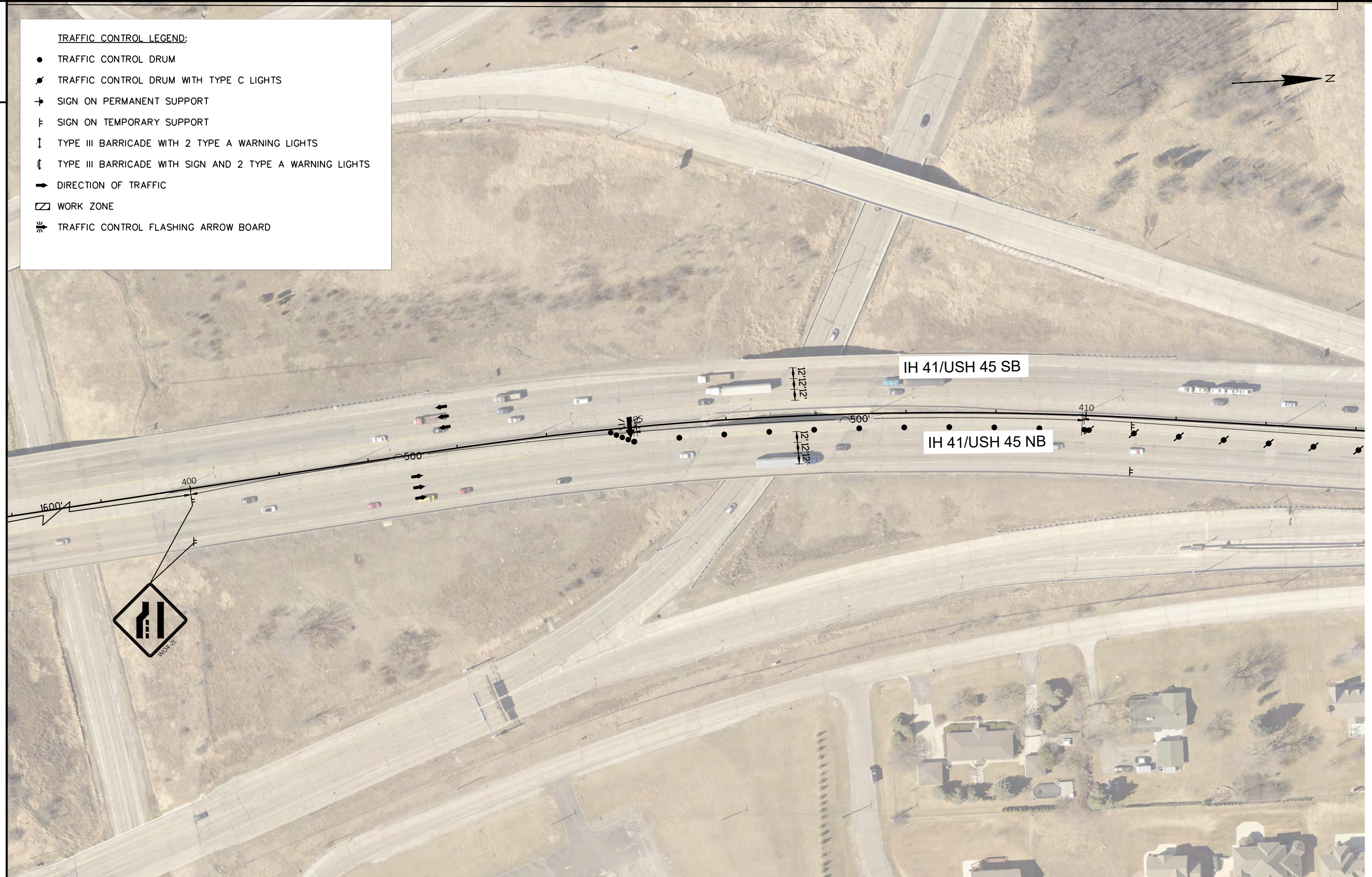
SHEET

88

E

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ⊢ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT
- ↓ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⬇ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 2

SHEET

89

E

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⚡ SIGN ON TEMPORARY SUPPORT
- ⚡ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⚡ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD

IH 41/USH 45 SB

IH 41/USH 45 NB

PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 2

SHEET

90

E

FILE NAME : C:\CIVIL 3D PROJECTS\11001706\SHEETSPLAN\025001-TC_STAGE2.DWG
LAYOUT NAME - 025001-tc (3)

PLOT DATE : 2/18/2019 6:43 AM

PLOT BY : MANANDHAR, BHUVAN K

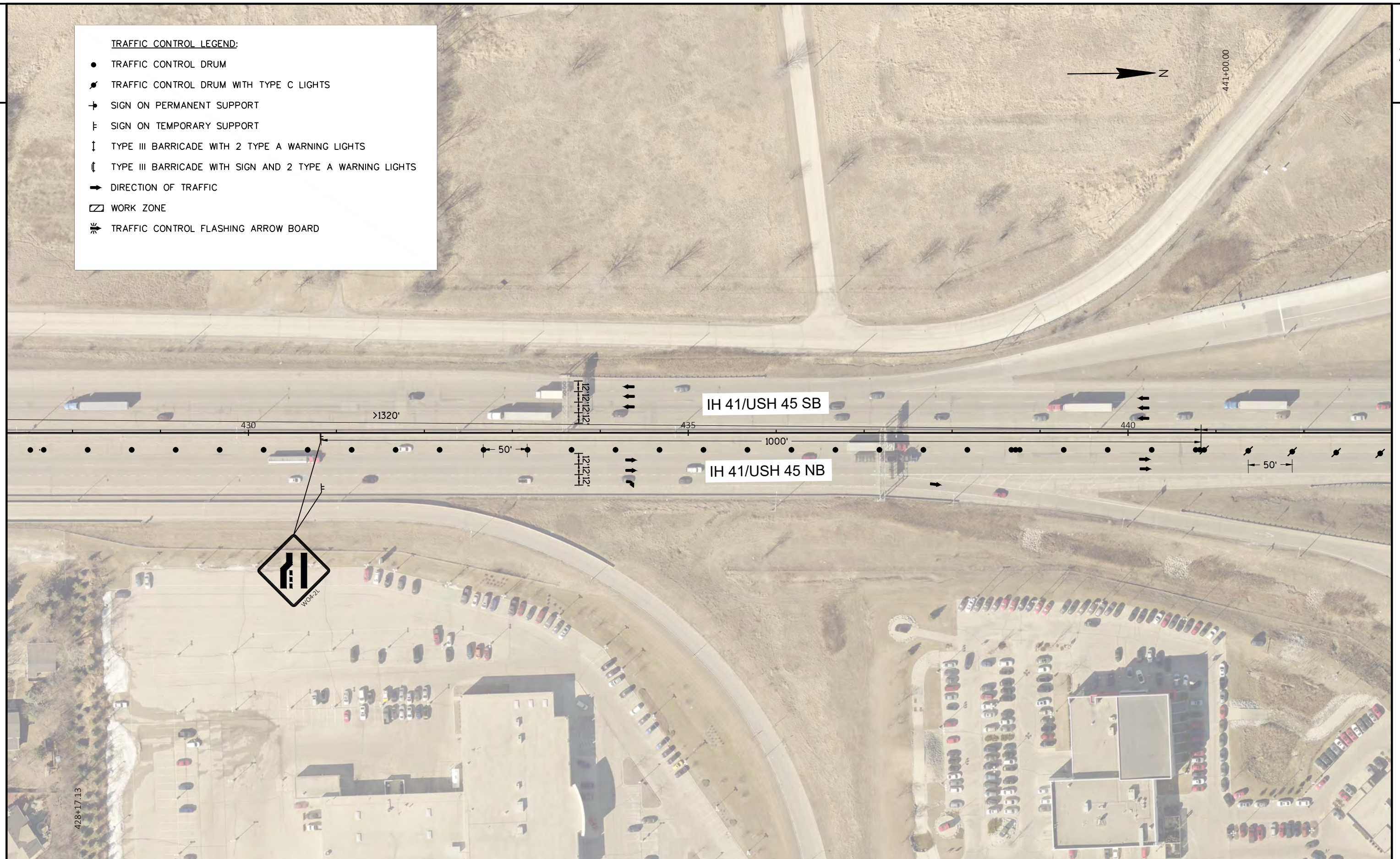
PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ✱ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⌄ SIGN ON TEMPORARY SUPPORT
- ⌄ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⌄ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ➔ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 2

SHEET

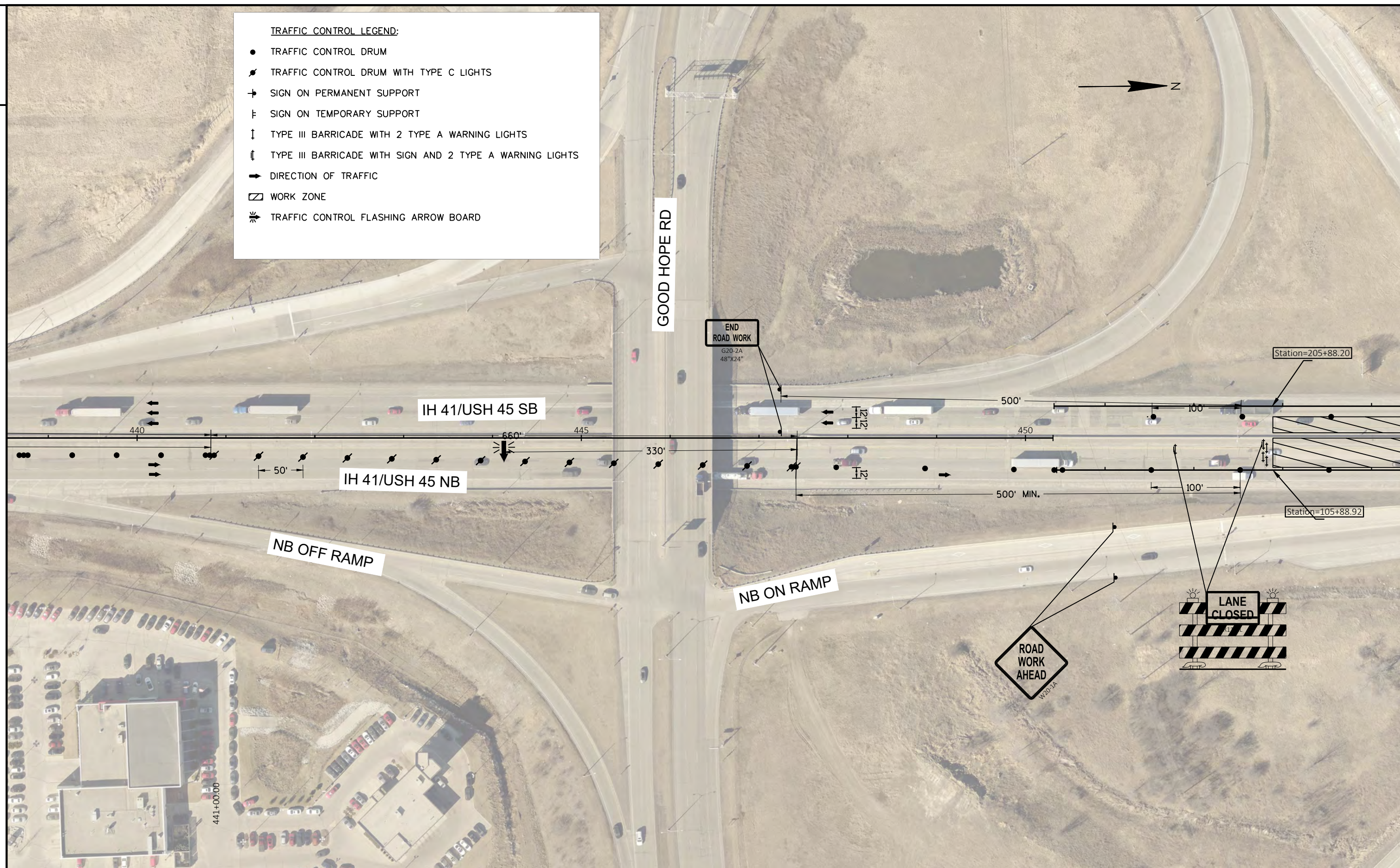
91

E

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⌋ SIGN ON TEMPORARY SUPPORT
- ⬇ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⬇ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ➡ TRAFFIC CONTROL FLASHING ARROW BOARD

- ### TRAFFIC CONTROL LEGEND:
- TRAFFIC CONTROL DRUM
 - ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
 - ➔ SIGN ON PERMANENT SUPPORT
 - ⌋ SIGN ON TEMPORARY SUPPORT
 - ⬇ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
 - ⬇ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
 - ➡ DIRECTION OF TRAFFIC
 - ▭ WORK ZONE
 - ➡ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76	HWY: IH 41/USH 45
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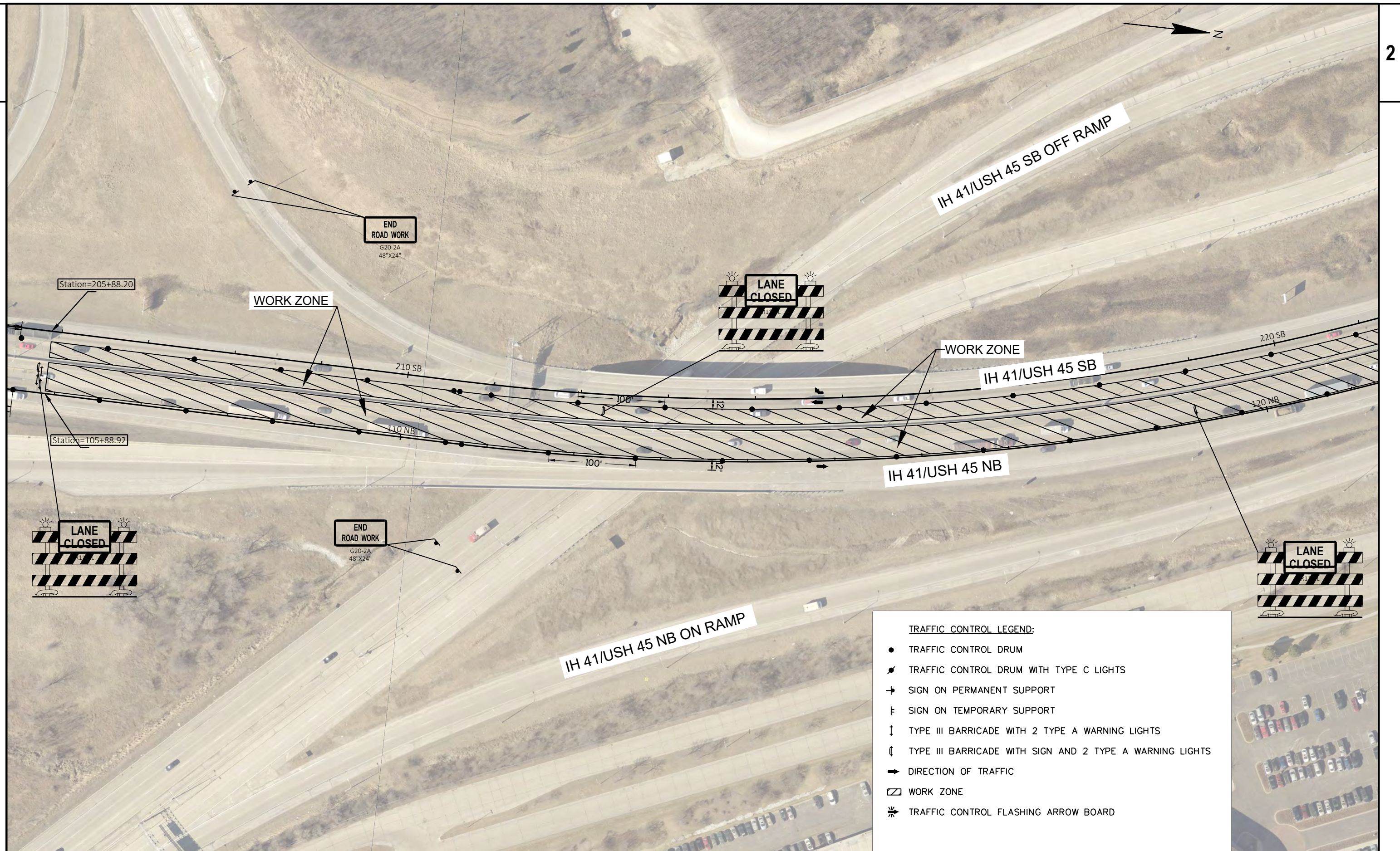
COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 2

SHEET	92
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E[illegible]

WISDOT/CADDS SHEET 42



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

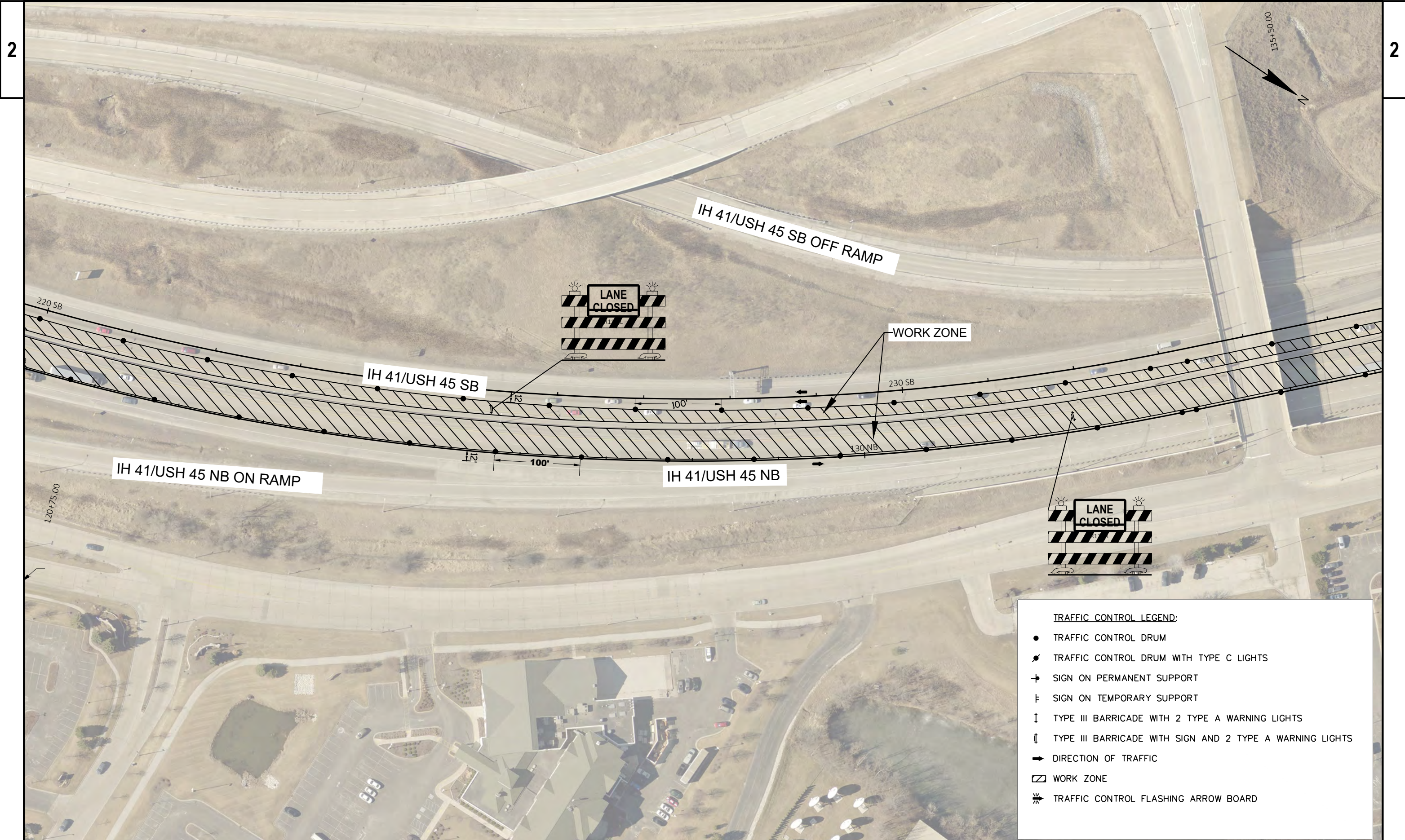
COUNTY: MILWAUKEE

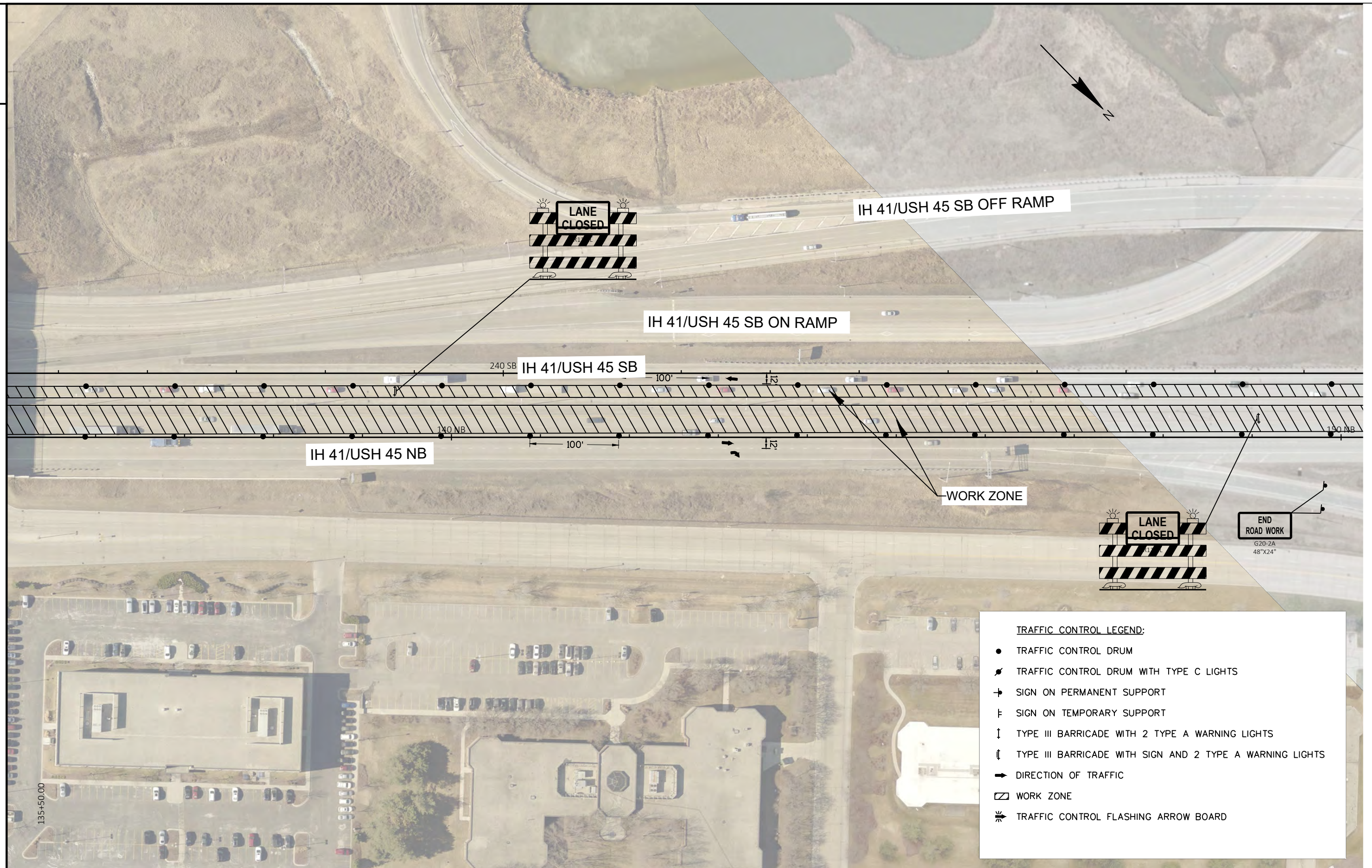
TRAFFIC CONTROL, STAGE 2

SHEET

93

E





PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

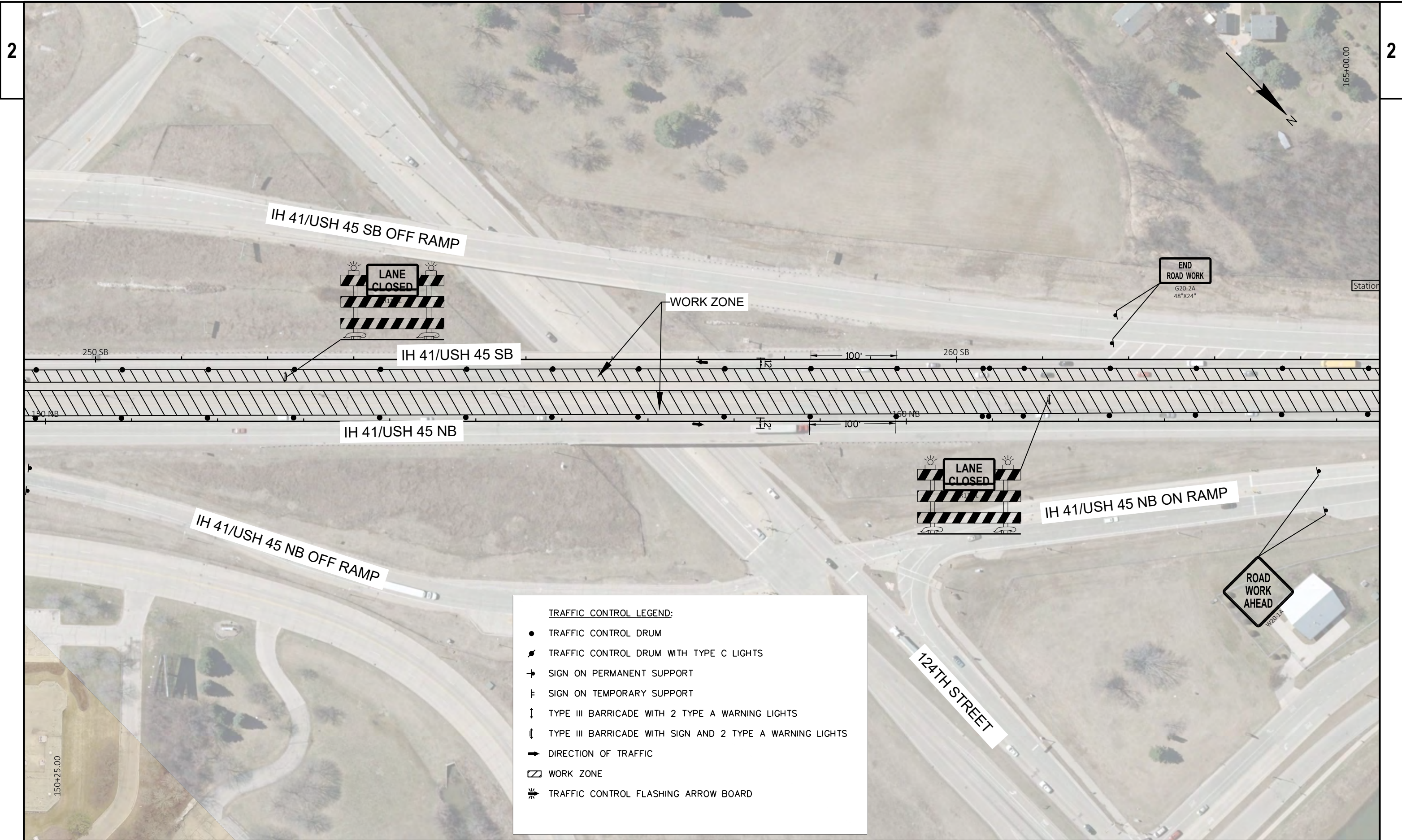
COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 2

SHEET

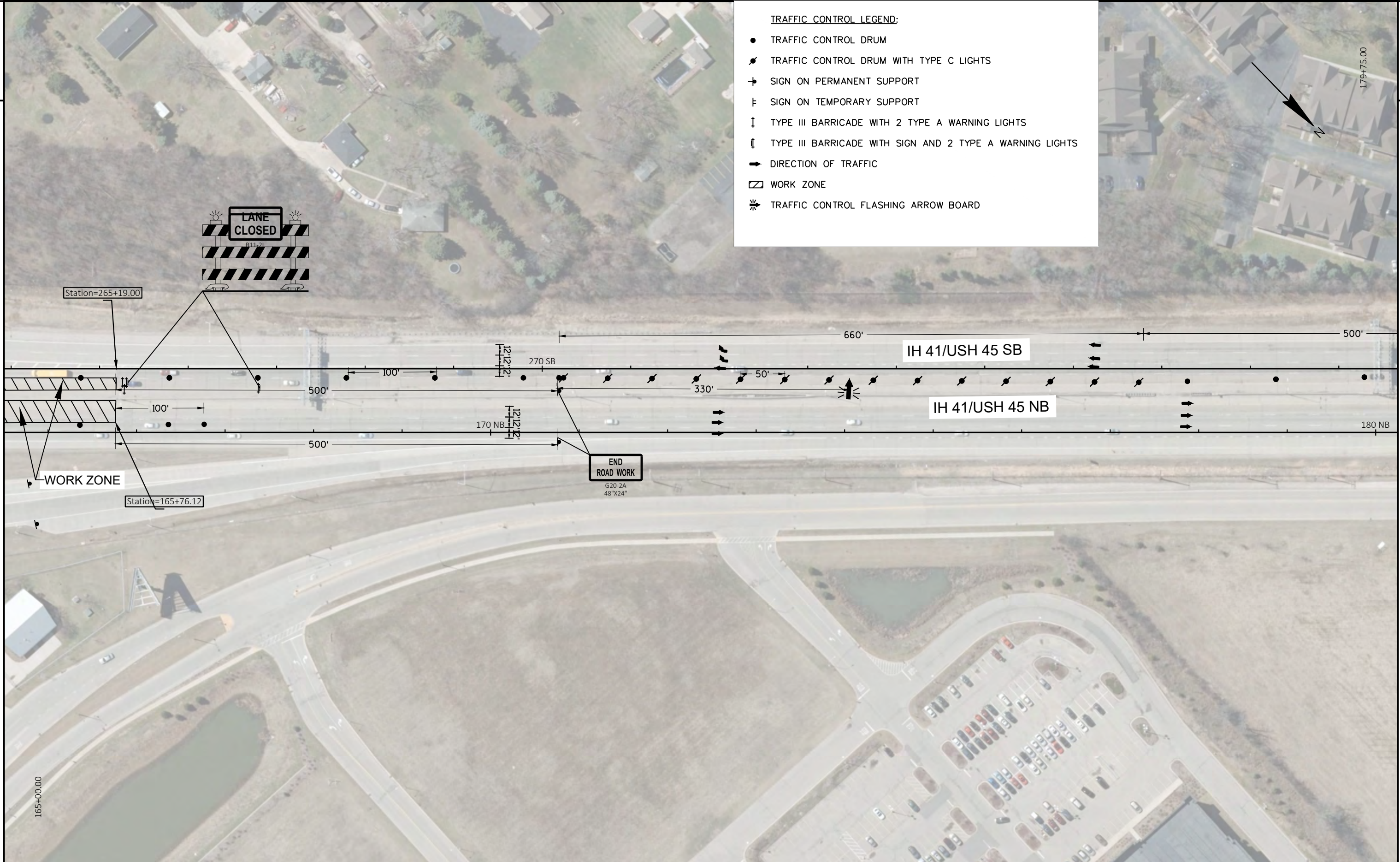
95

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2

2



PROJECT NO:	1100-17-76
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HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 2

SHEET 97

E

FILE NAME : C:\CIVIL 3D PROJECTS\11001706\SHEETSPLAN\025001-TC_STAGE2.DWG
LAYOUT NAME - 025001-tc (10)

PLOT DATE : 2/18/2019 6:43 AM

PLOT BY : MANANDHAR, BHUVAN K

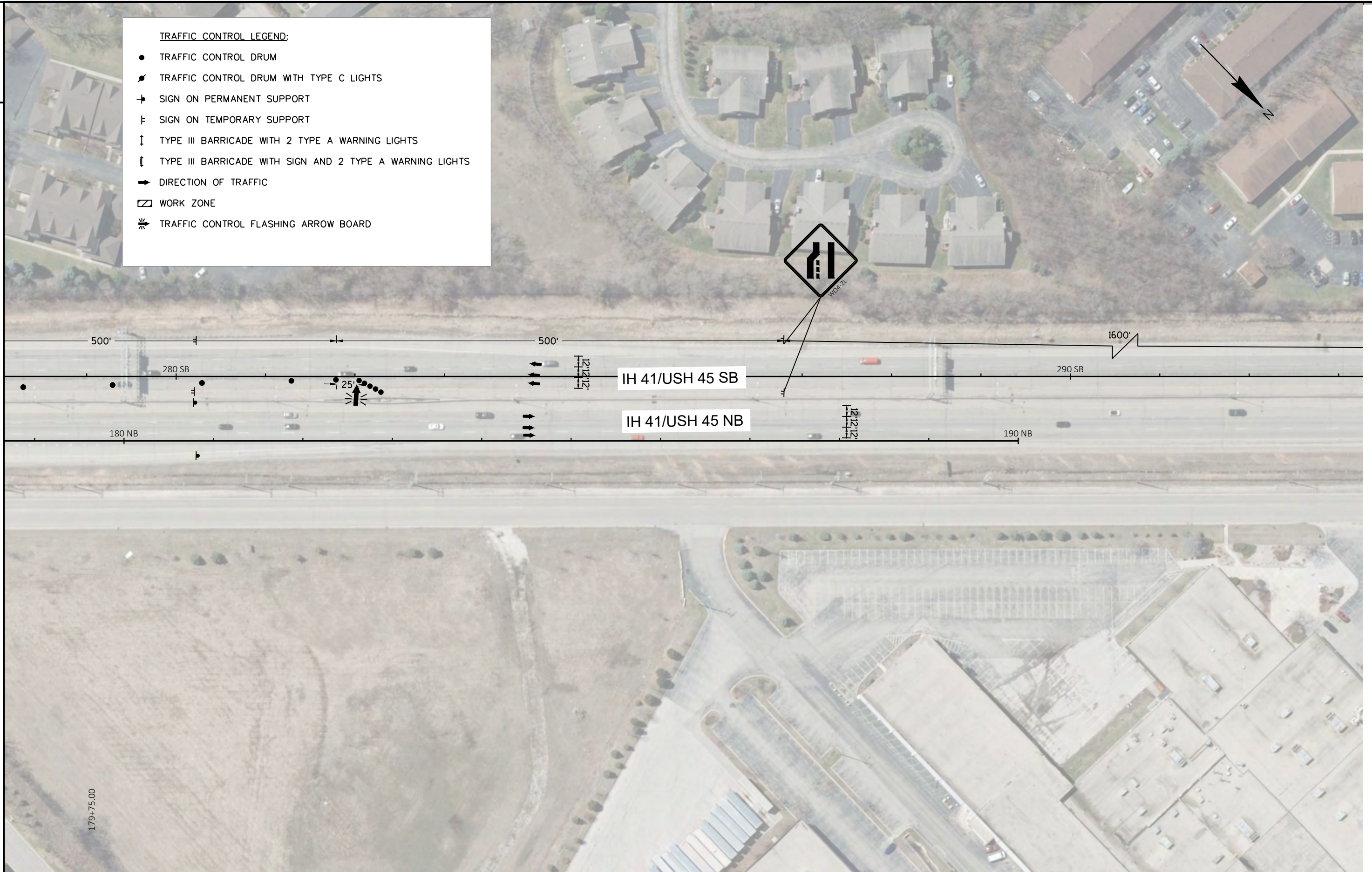
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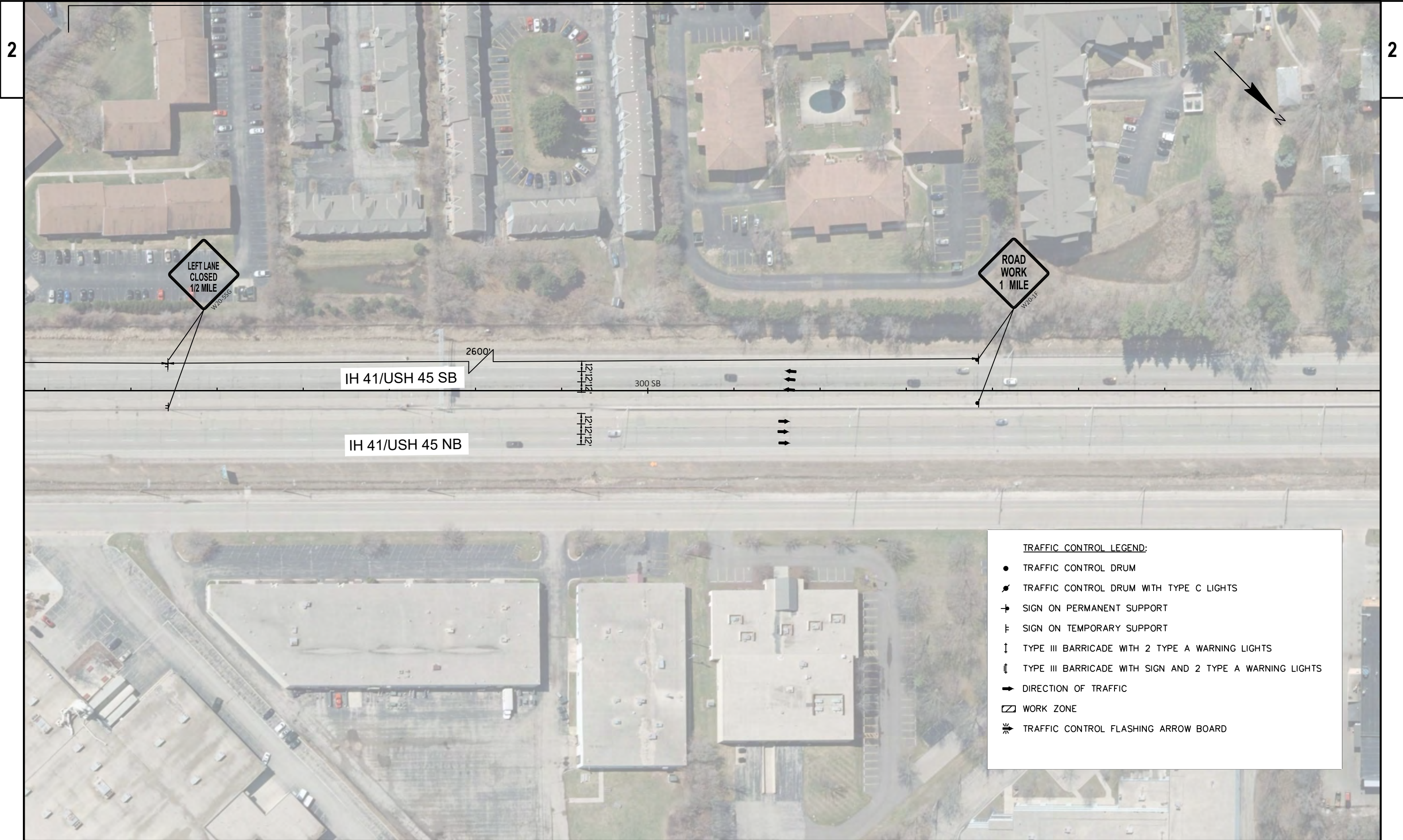
PLOT SCALE : 1 IN:100 FT

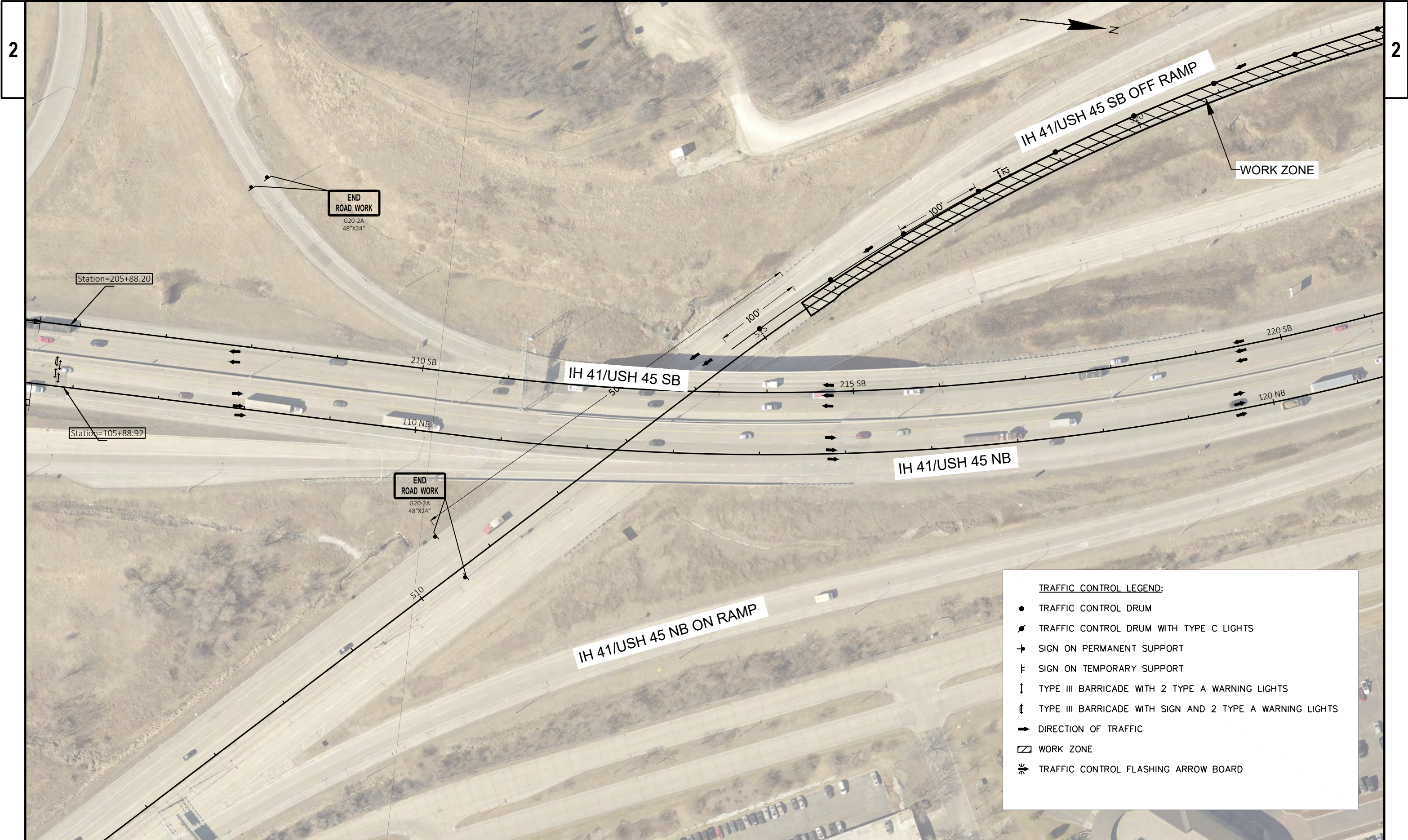
WISDOT/CADDS SHEET 42

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⚡ SIGN ON TEMPORARY SUPPORT
- ⬆ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⬆ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD

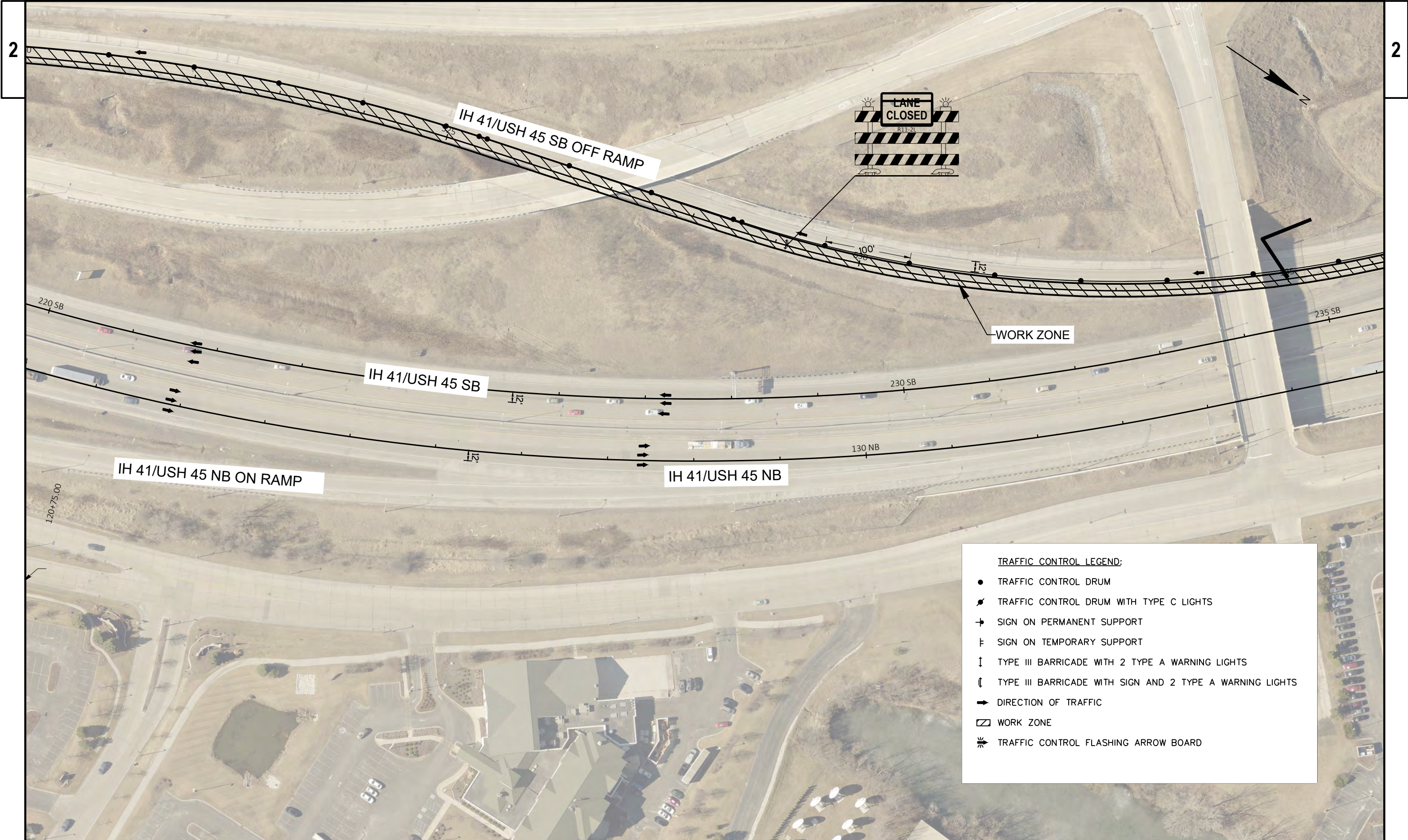






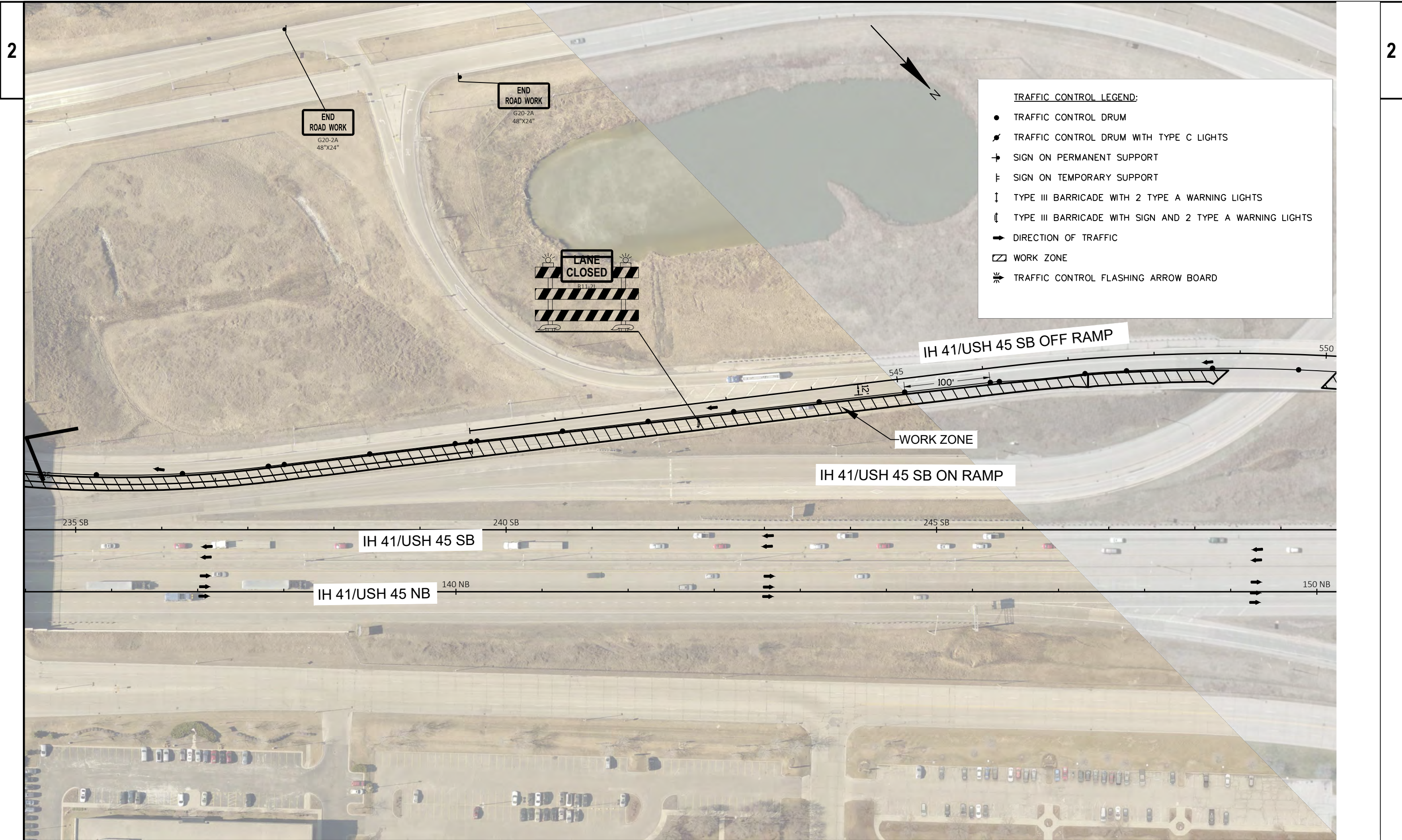
TRAFFIC CONTROL LEGEND:

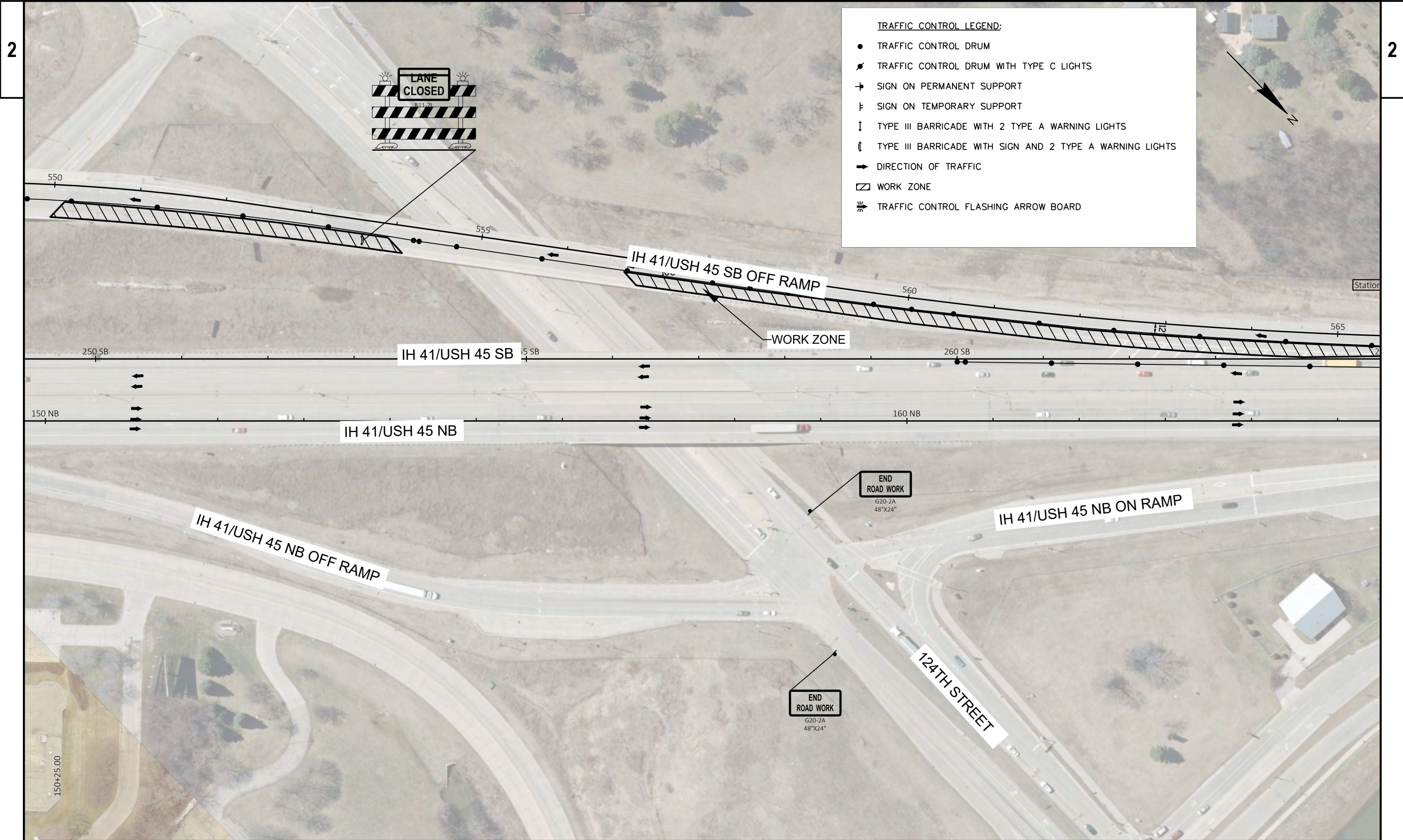
- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ⊕ SIGN ON PERMANENT SUPPORT
- ⊞ SIGN ON TEMPORARY SUPPORT
- ↓ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⏚ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



TRAFFIC CONTROL LEGEND:

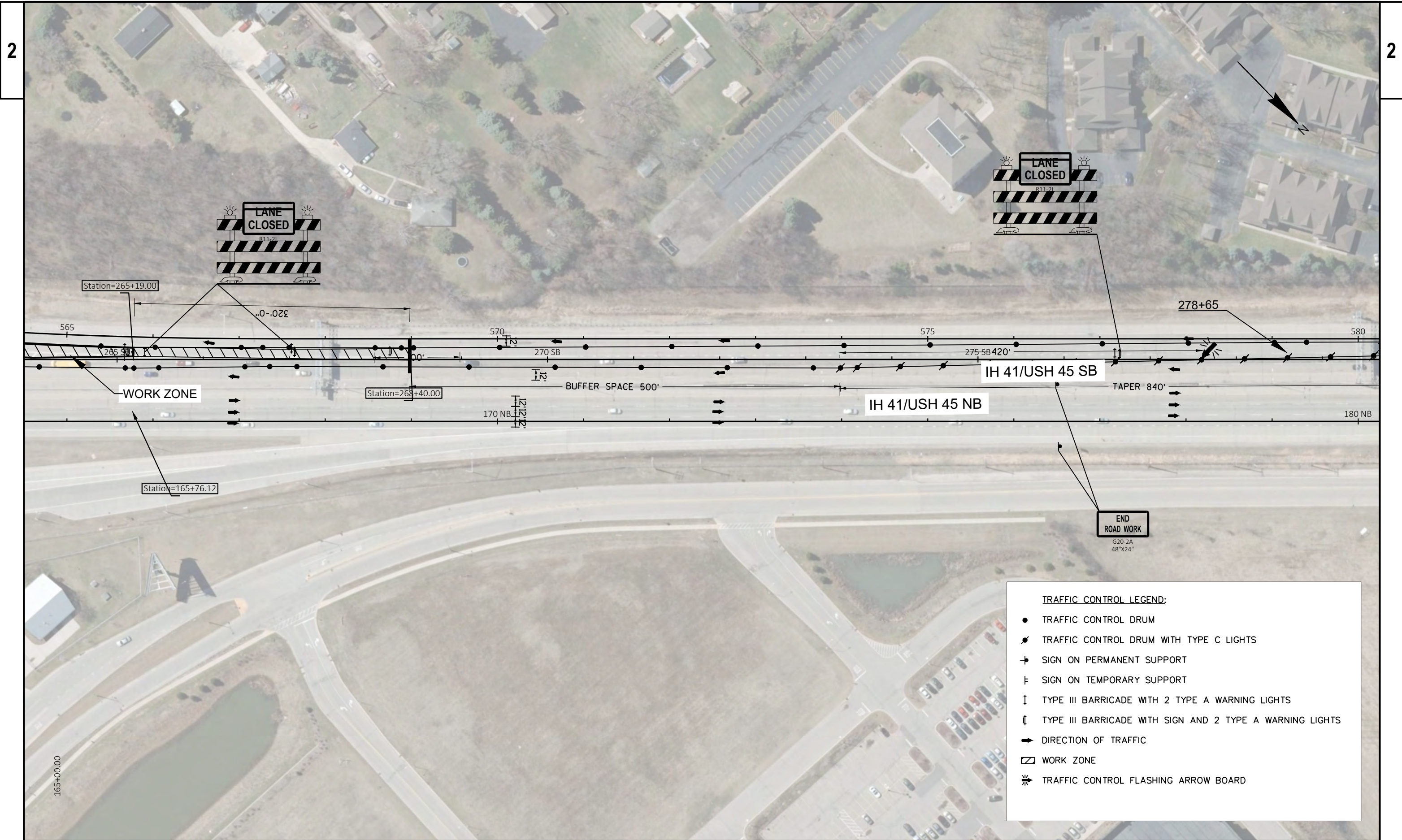
- TRAFFIC CONTROL DRUM
- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⦿ SIGN ON TEMPORARY SUPPORT
- ⏏ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⏏ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD

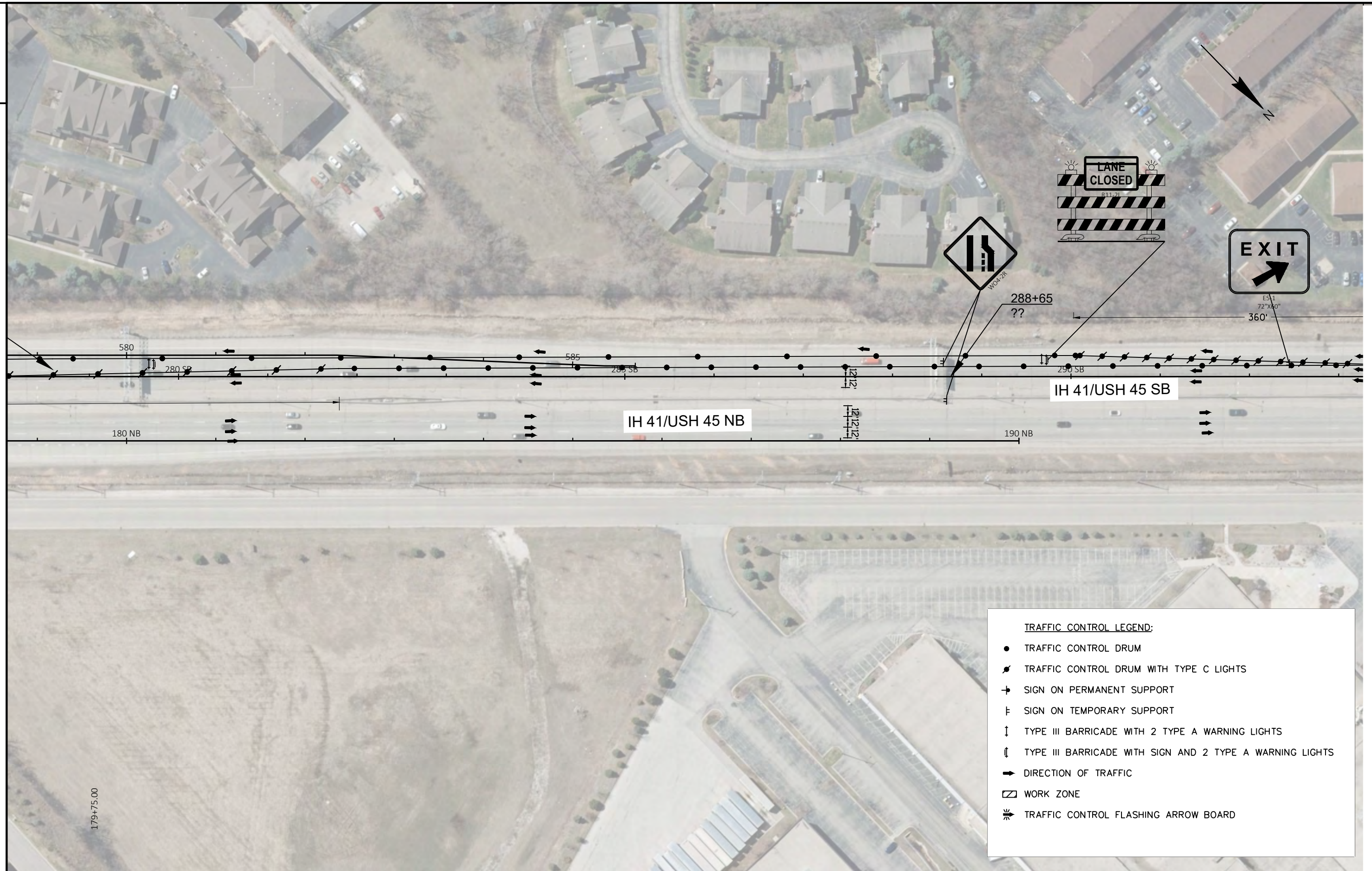


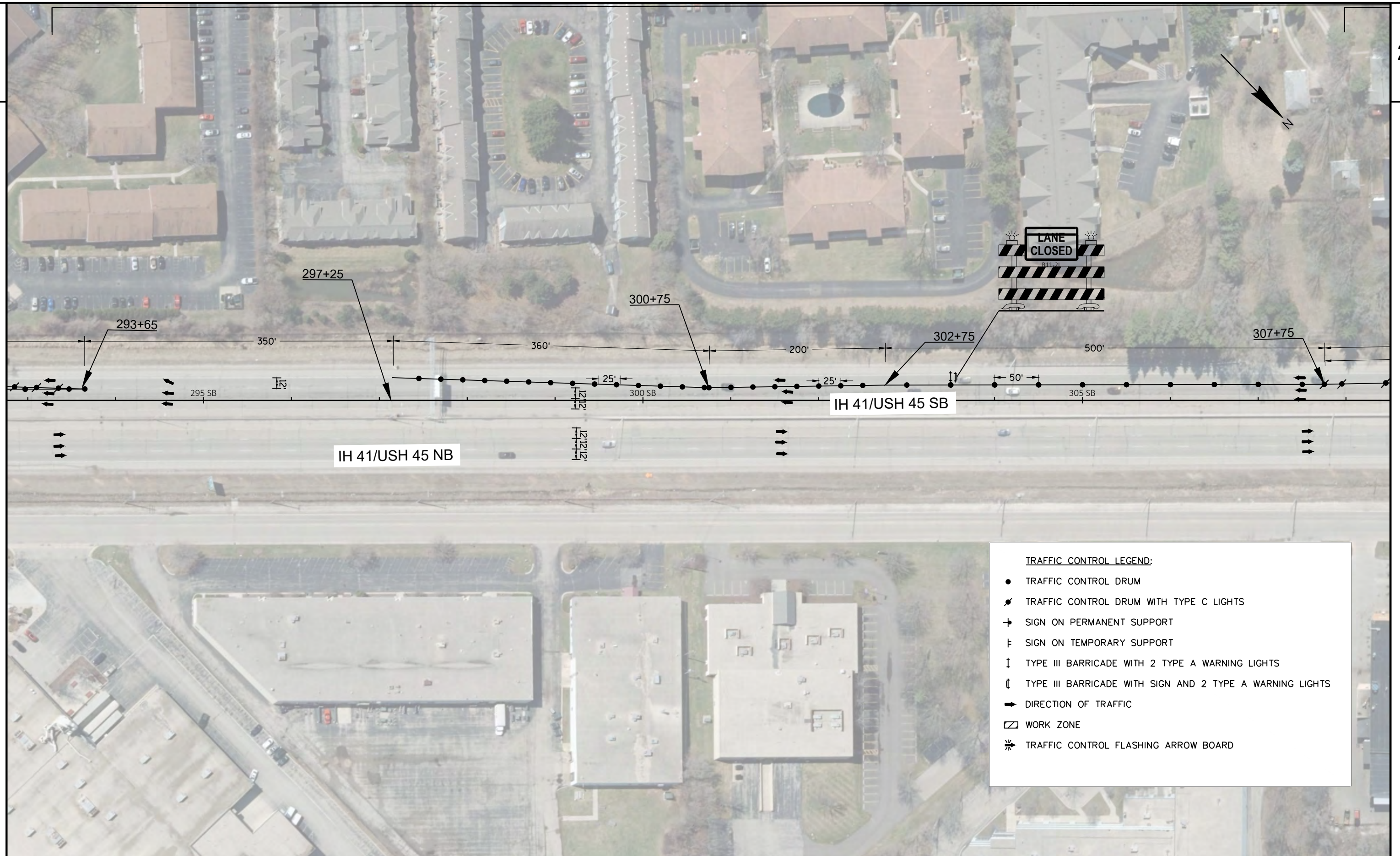


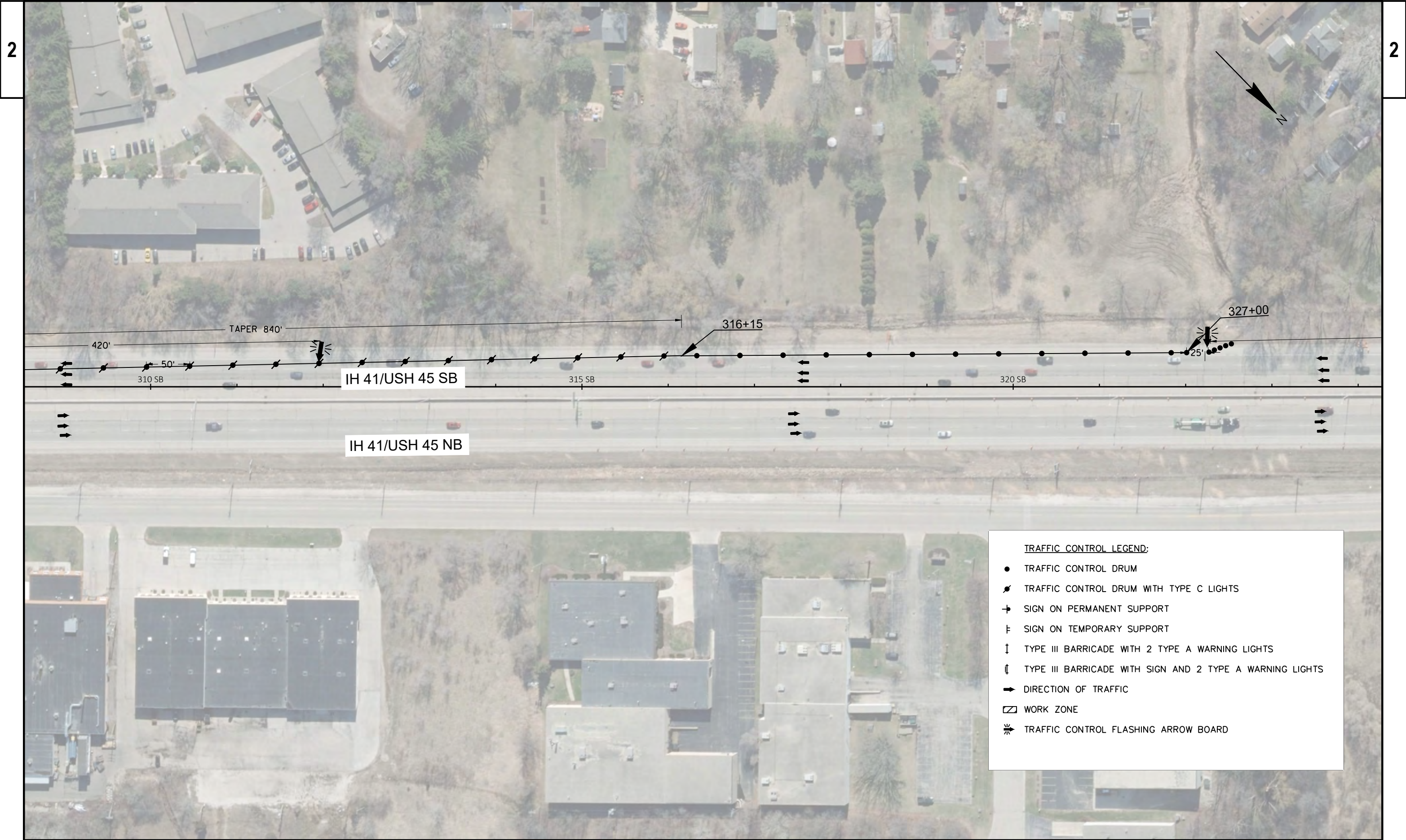
TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⌵ SIGN ON TEMPORARY SUPPORT
- ⬆ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⬆⬆ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



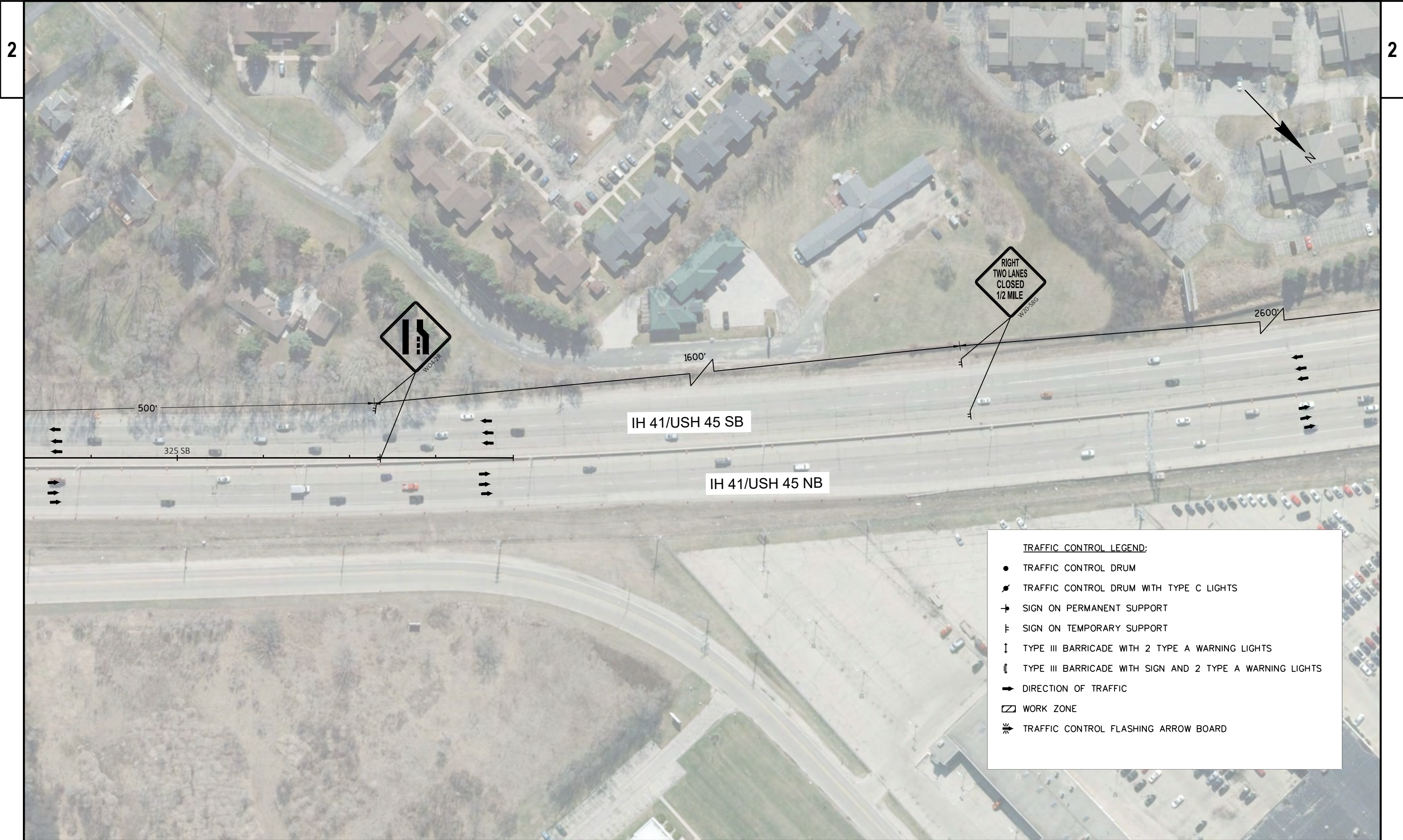


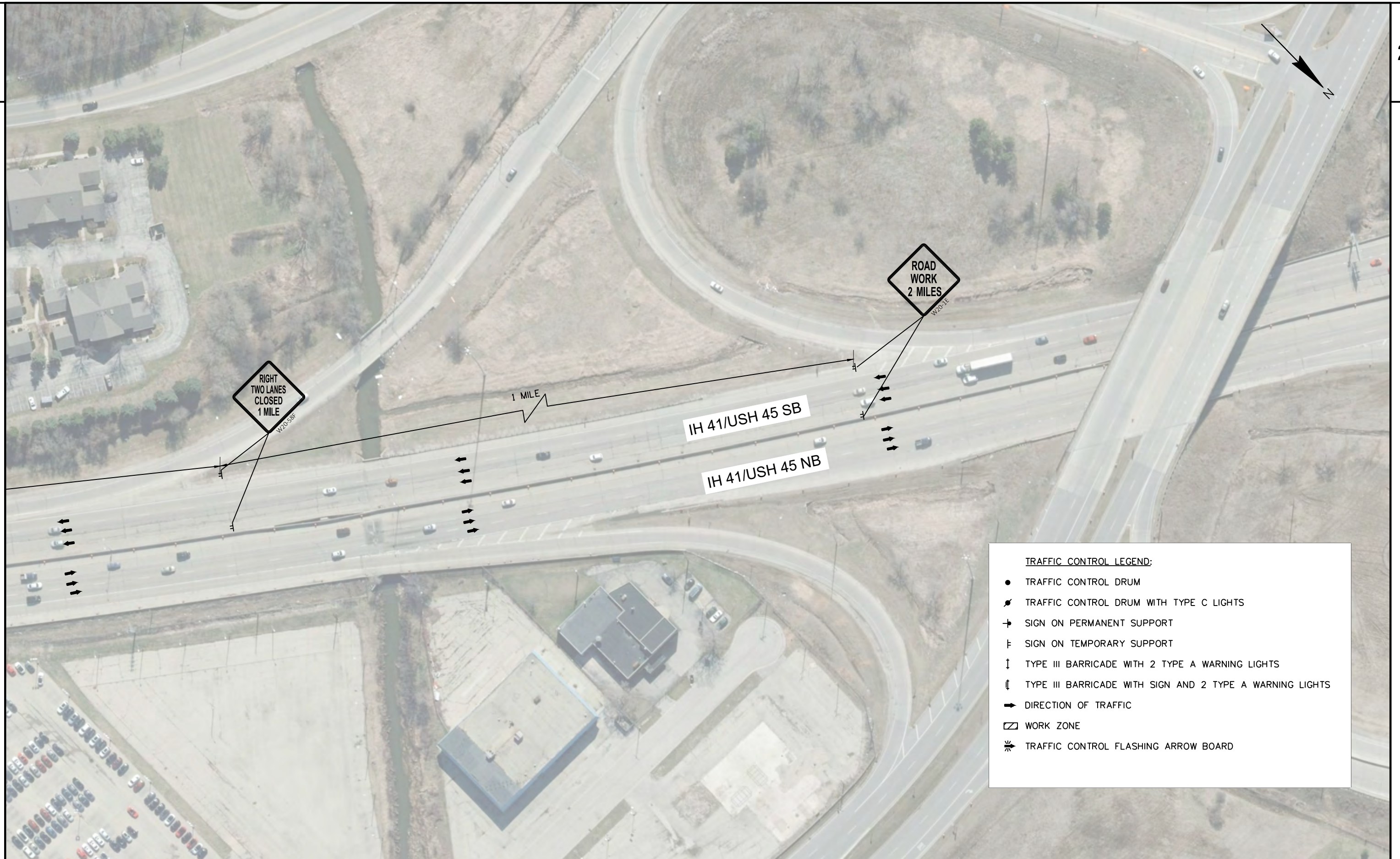




2

2





PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL SB OFF RAMP, STAGE 2

SHEET

109

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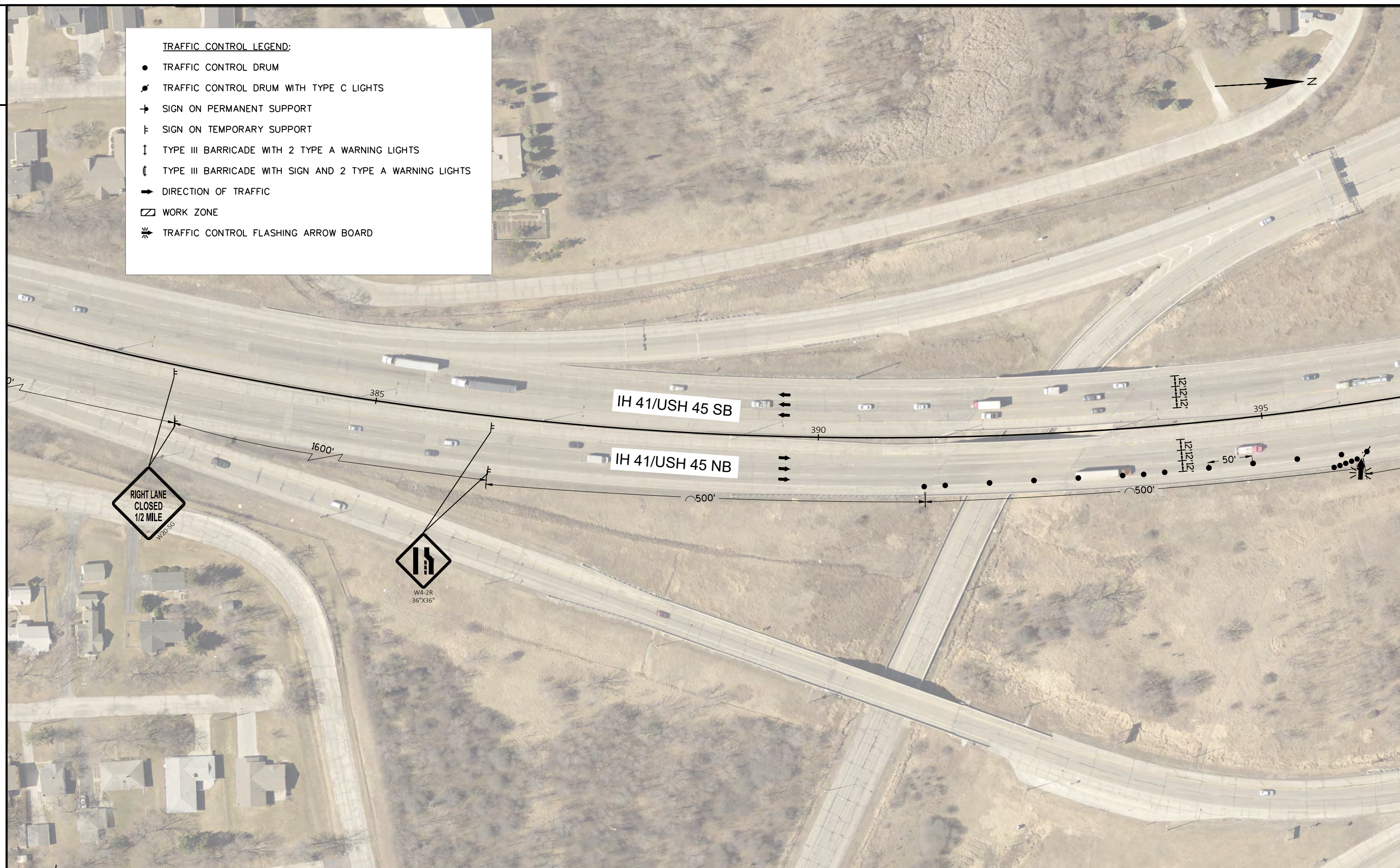


TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
- ⌵ SIGN ON TEMPORARY SUPPORT
- ⏏ TYPE III BARRICADE WITH 2 TYPE A WARNING LIGHTS
- ⏏ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➔ DIRECTION OF TRAFFIC
- ▭ WORK ZONE
- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ⊢ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT
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- ⌄ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
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- ⚡ TRAFFIC CONTROL FLASHING ARROW BOARD



PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 3

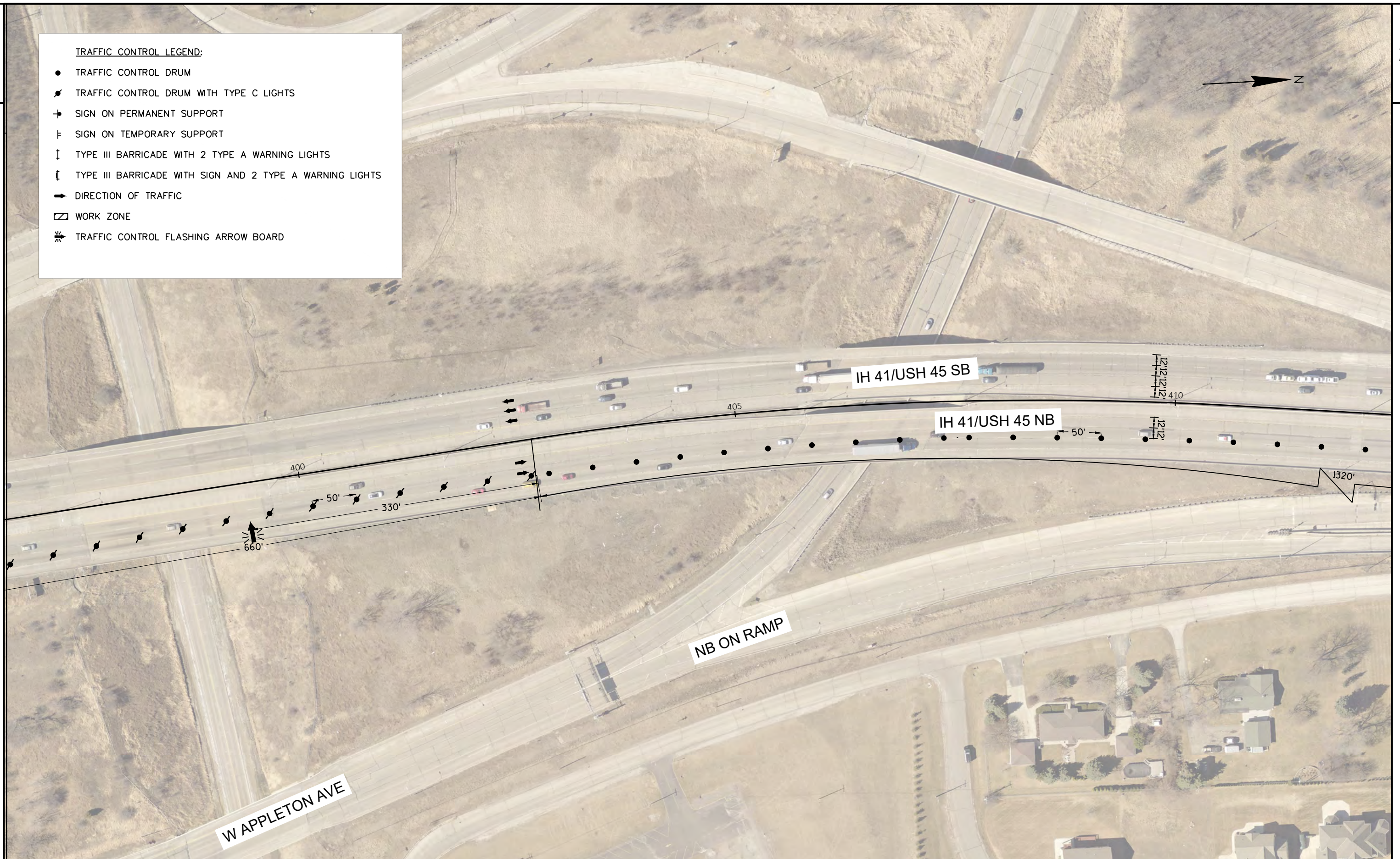
SHEET

111

E

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
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PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 3

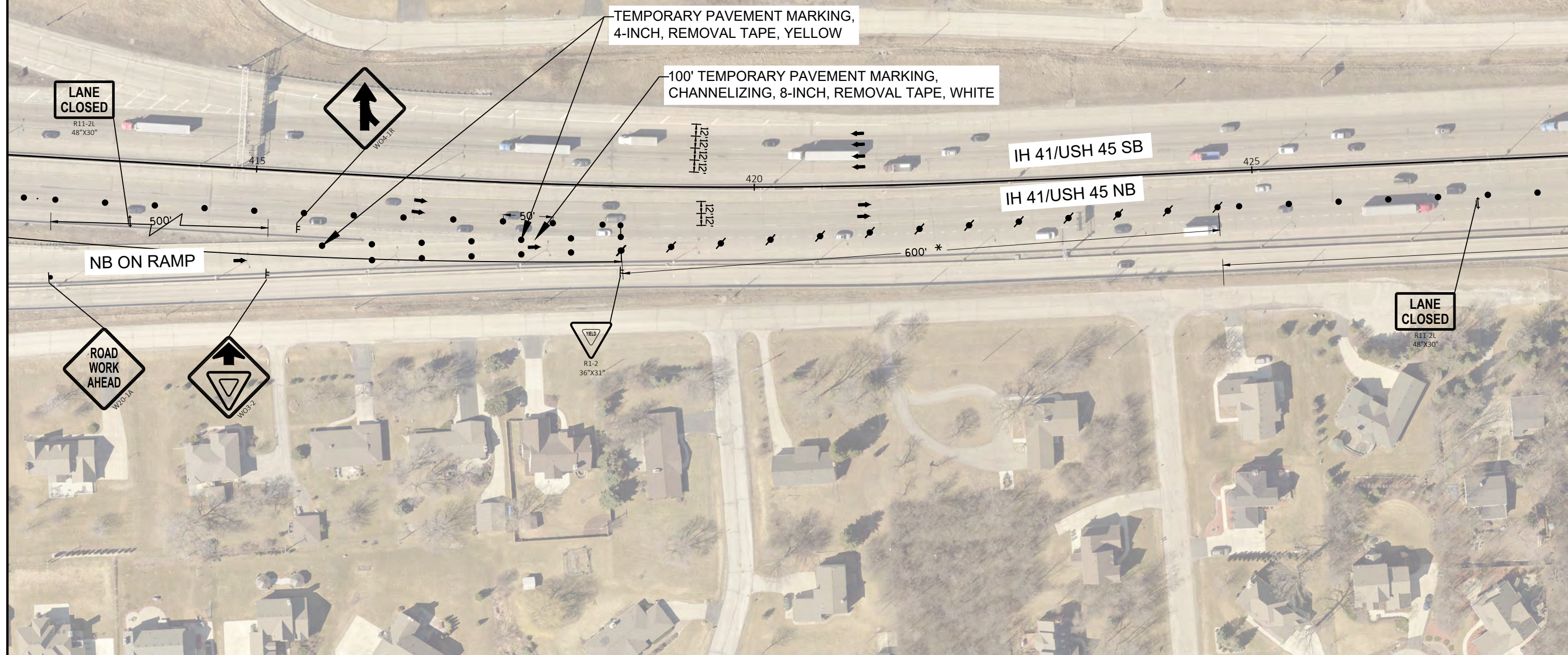
SHEET

112

E

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- ➔ SIGN ON PERMANENT SUPPORT
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PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 3

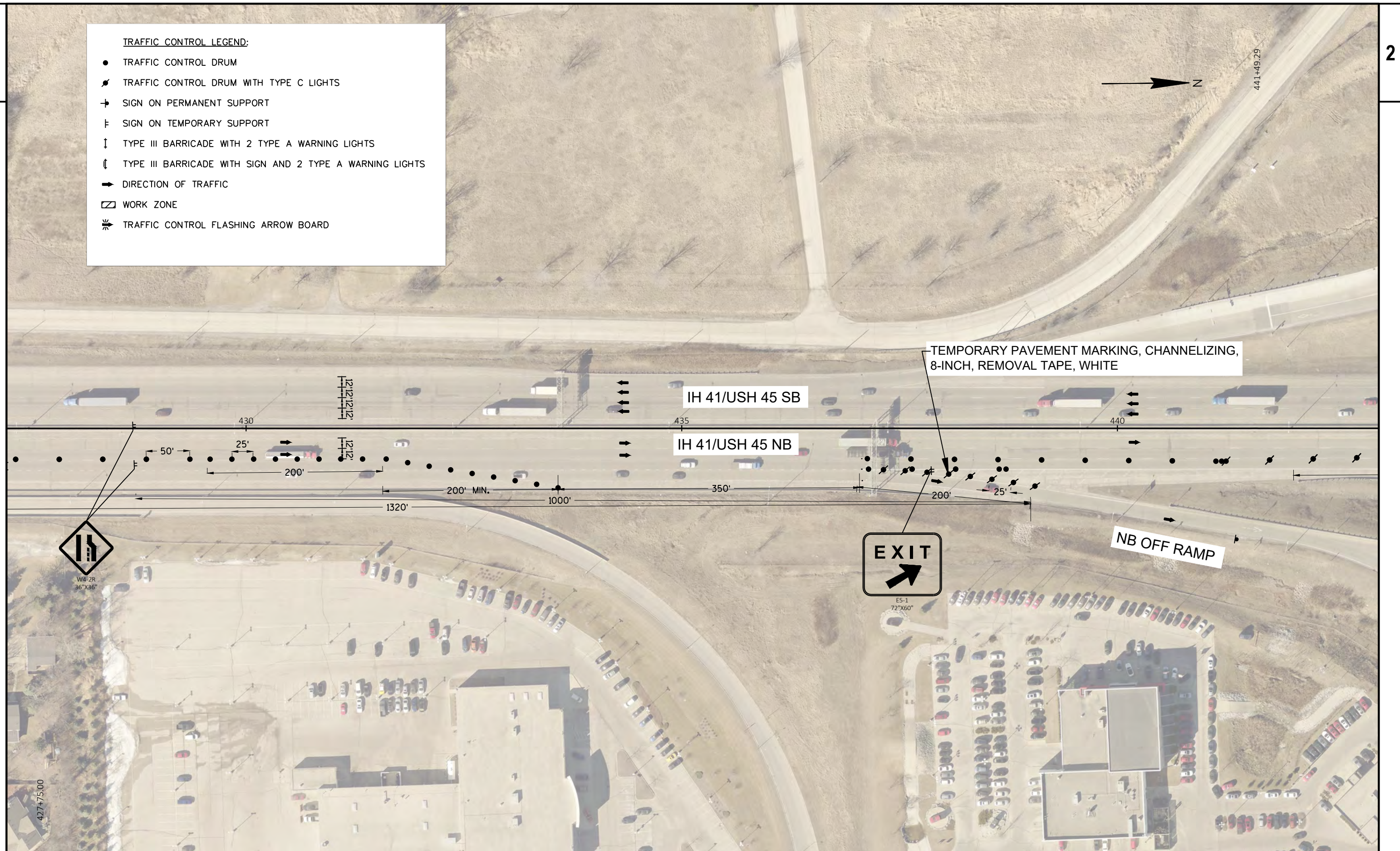
SHEET

113

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TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
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PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 3

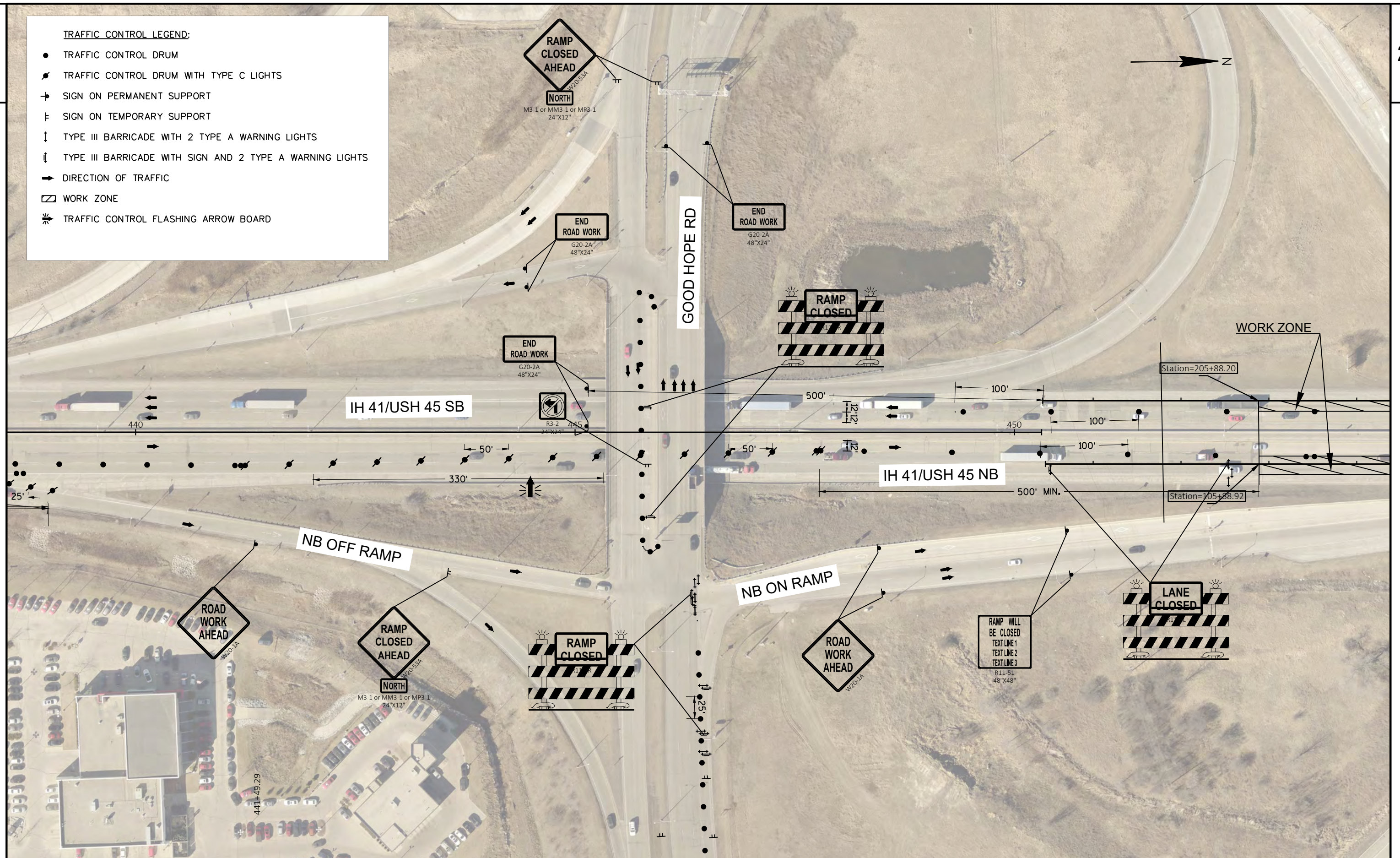
SHEET

114

E

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
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PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

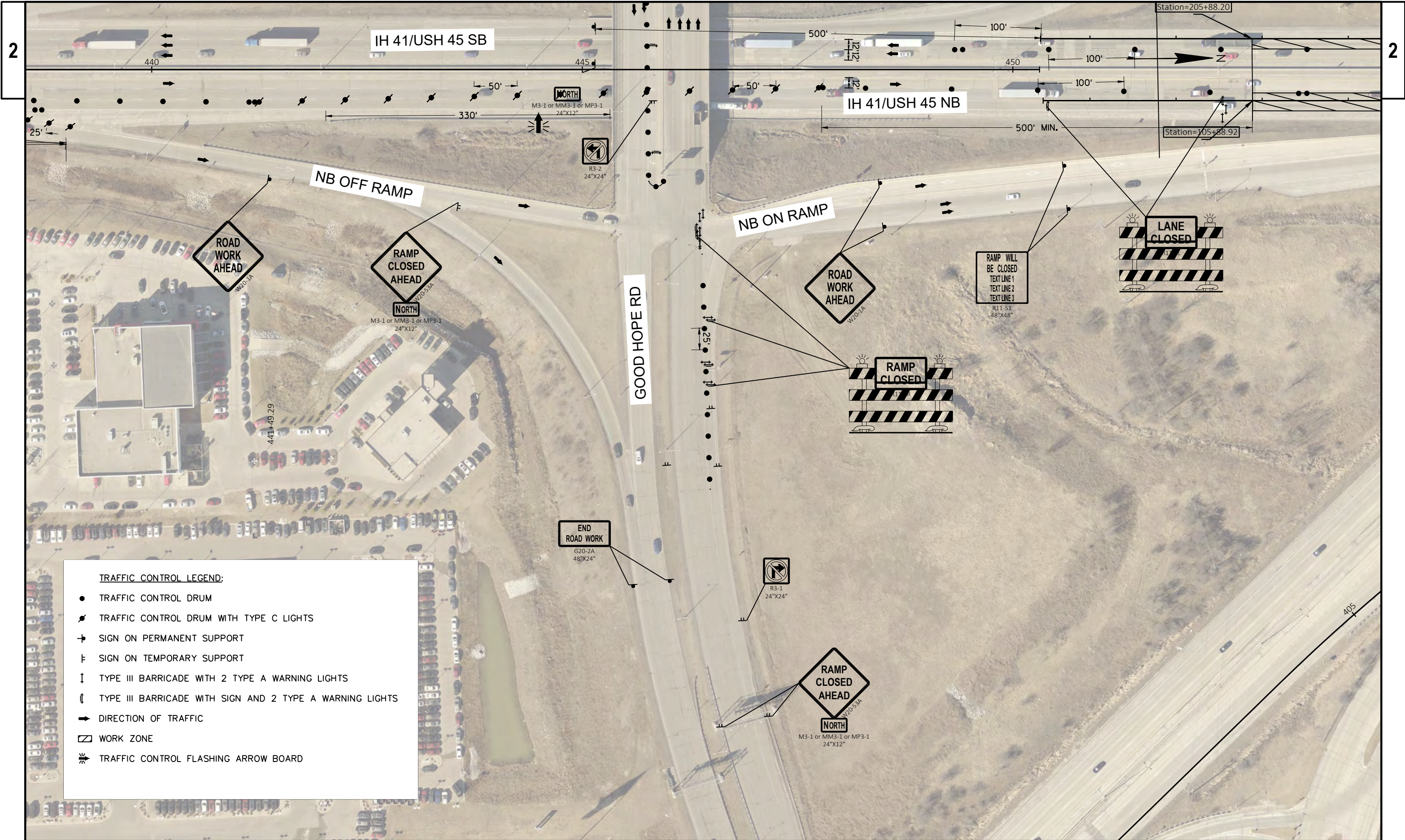
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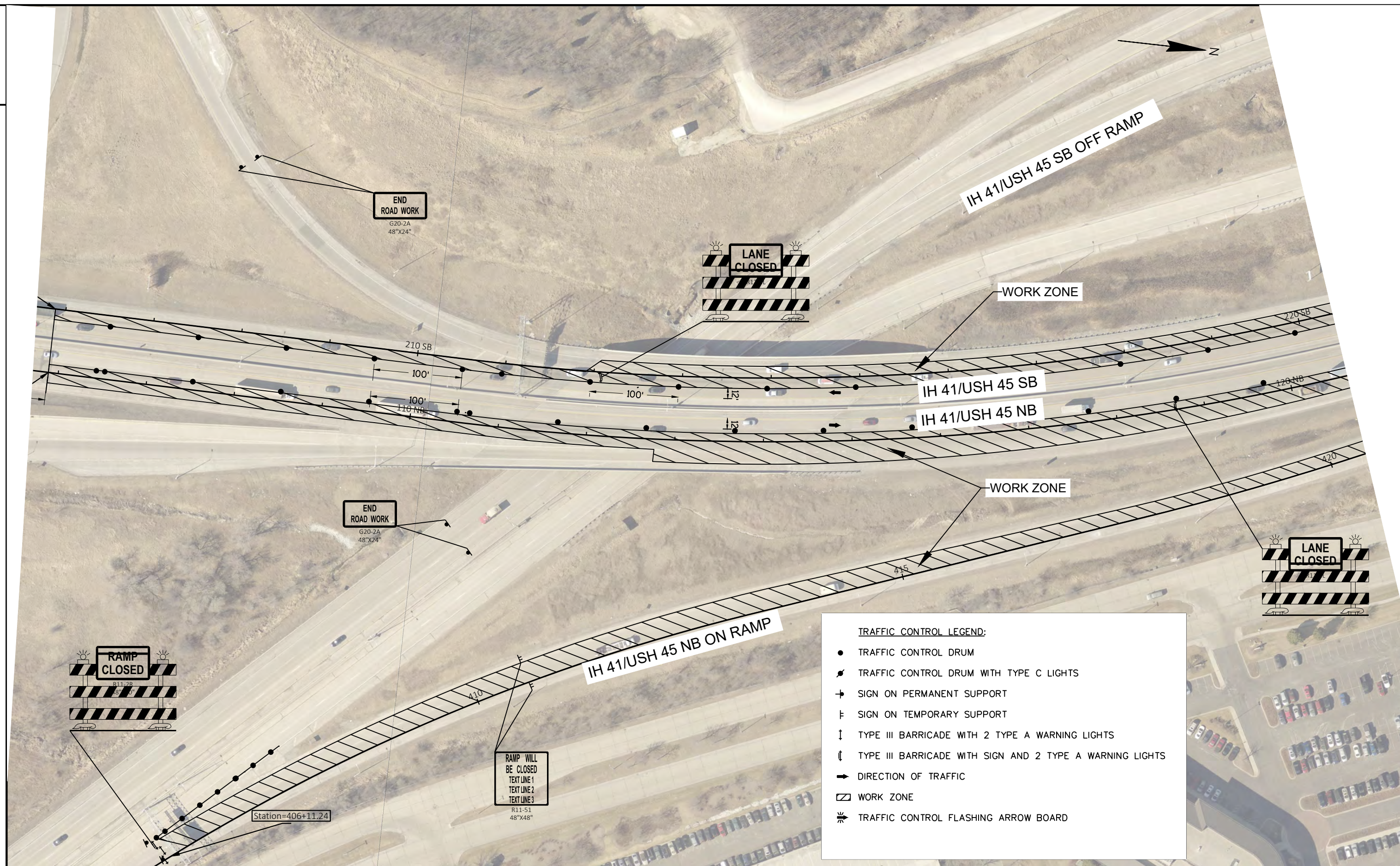
TRAFFIC CONTROL, STAGE 3

SHEET

115

E





PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

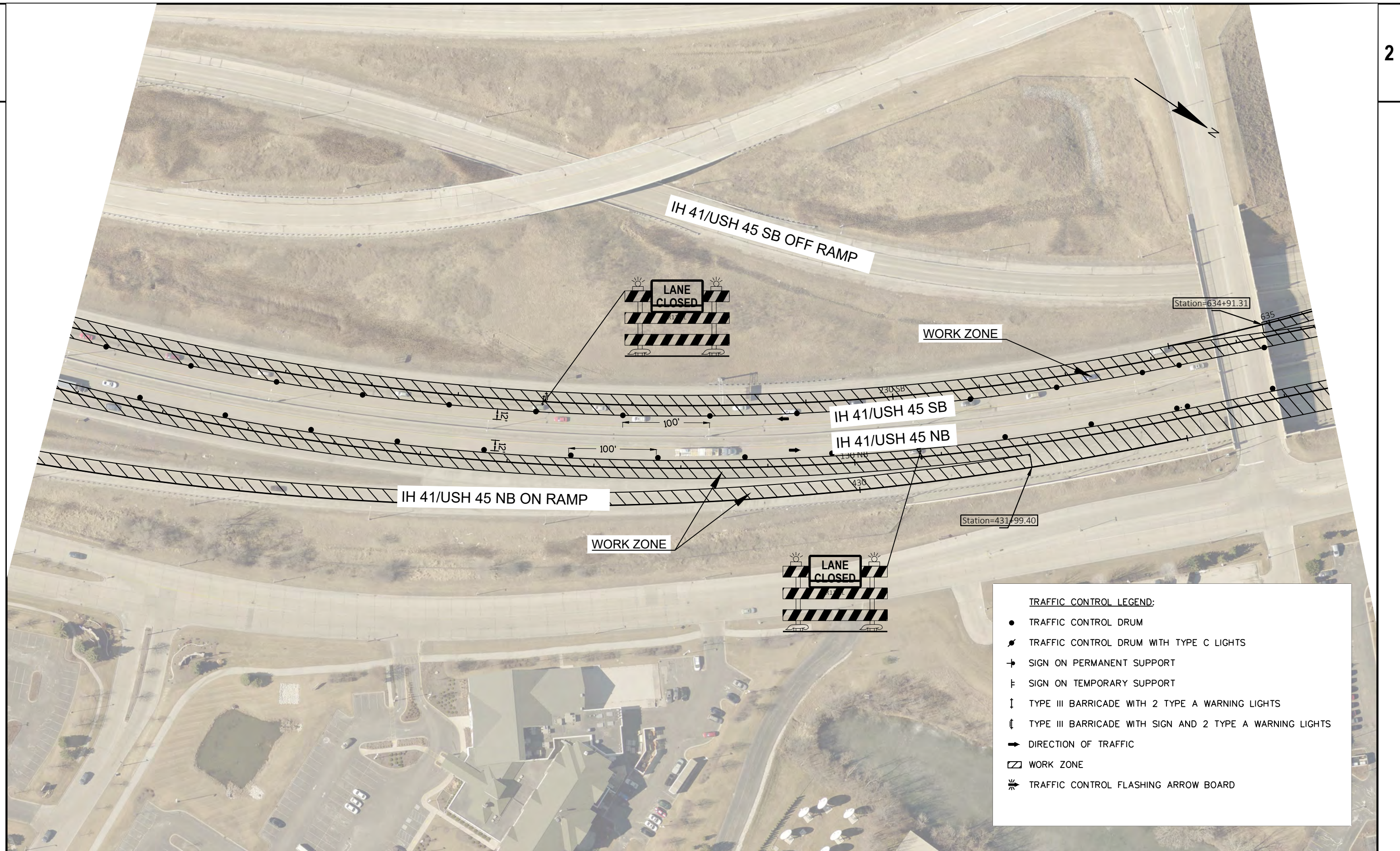
COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 3

SHEET

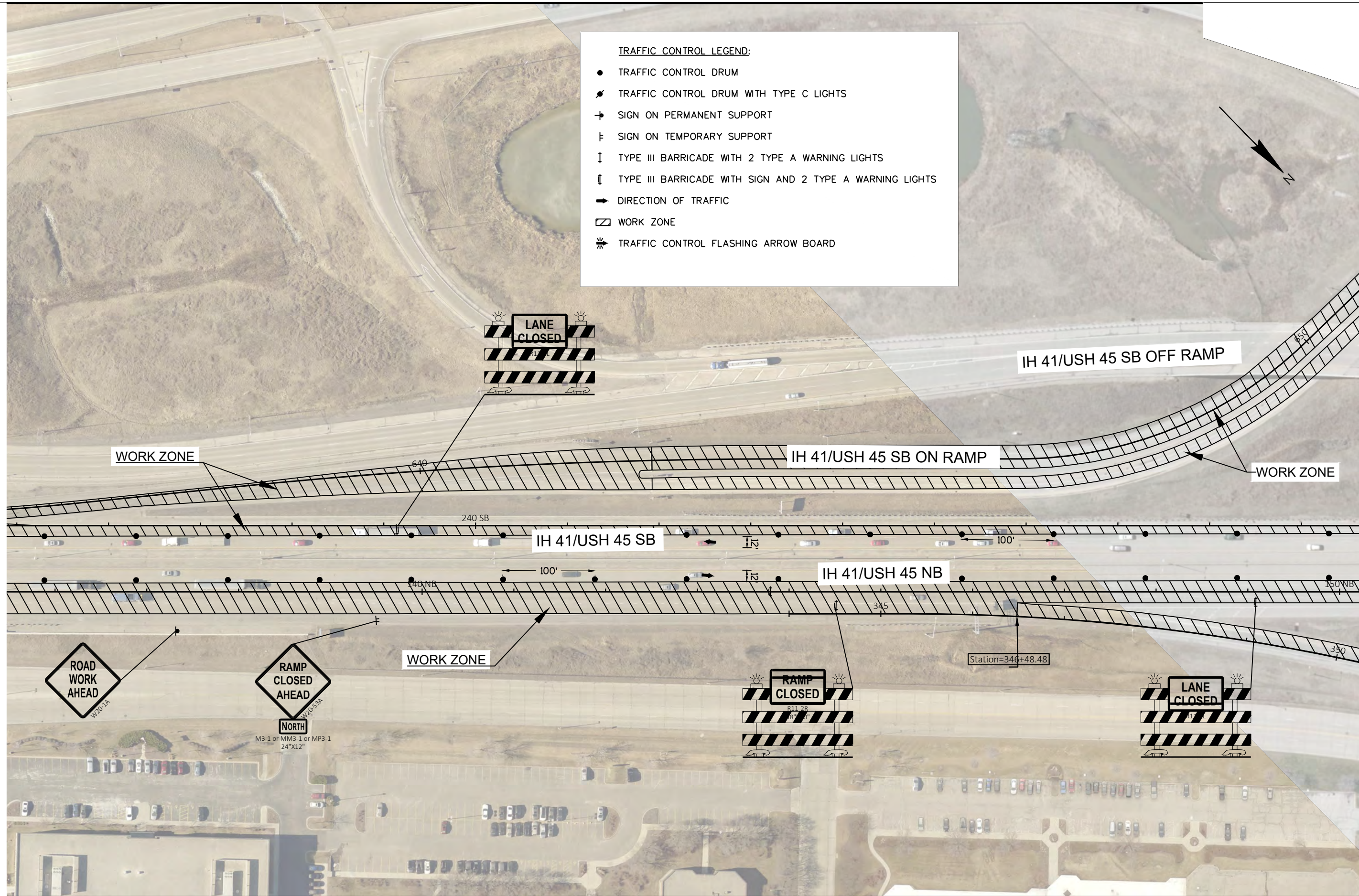
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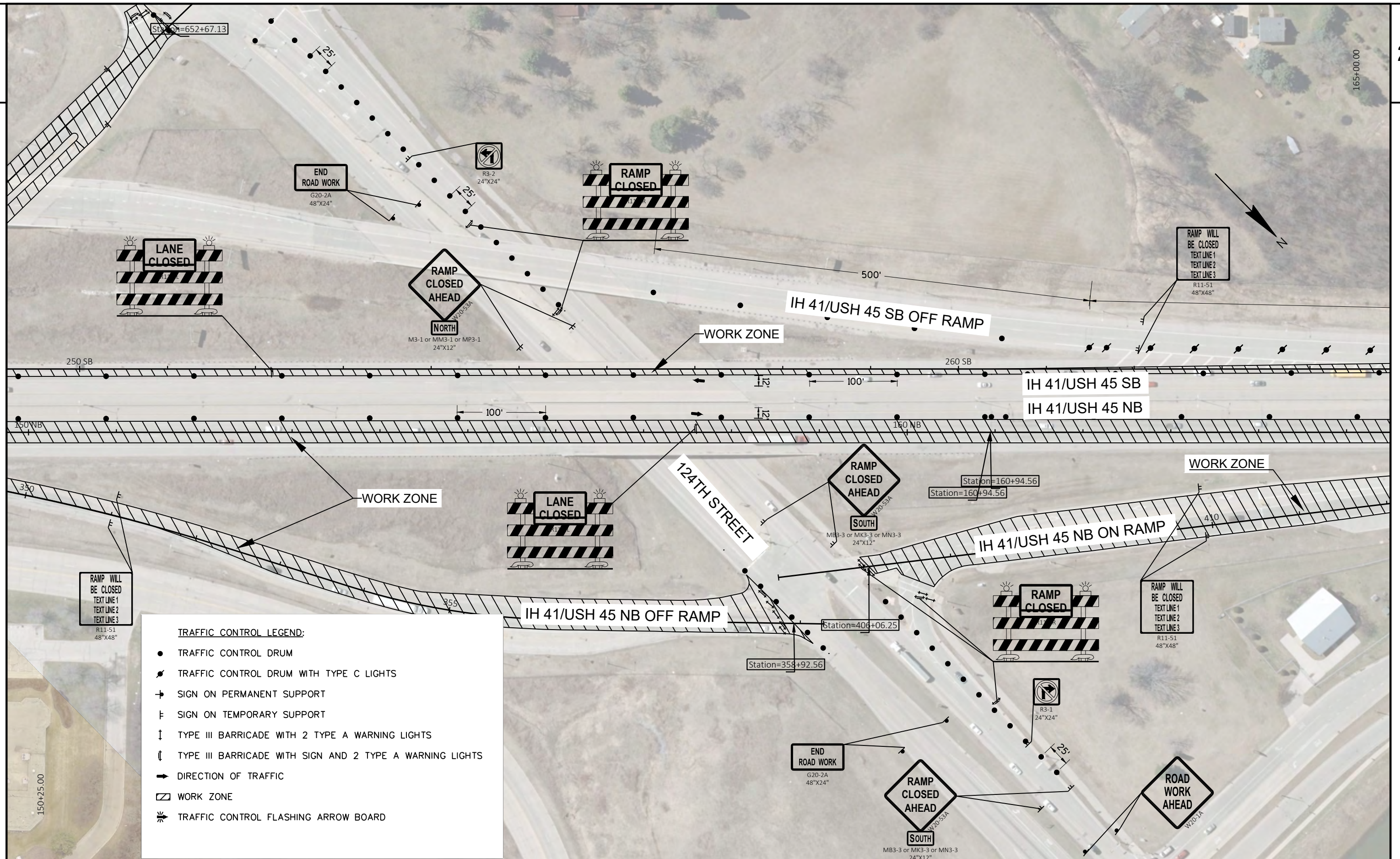
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TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
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- ▨ WORK ZONE
- ➔ TRAFFIC CONTROL FLASHING ARROW BOARD





PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

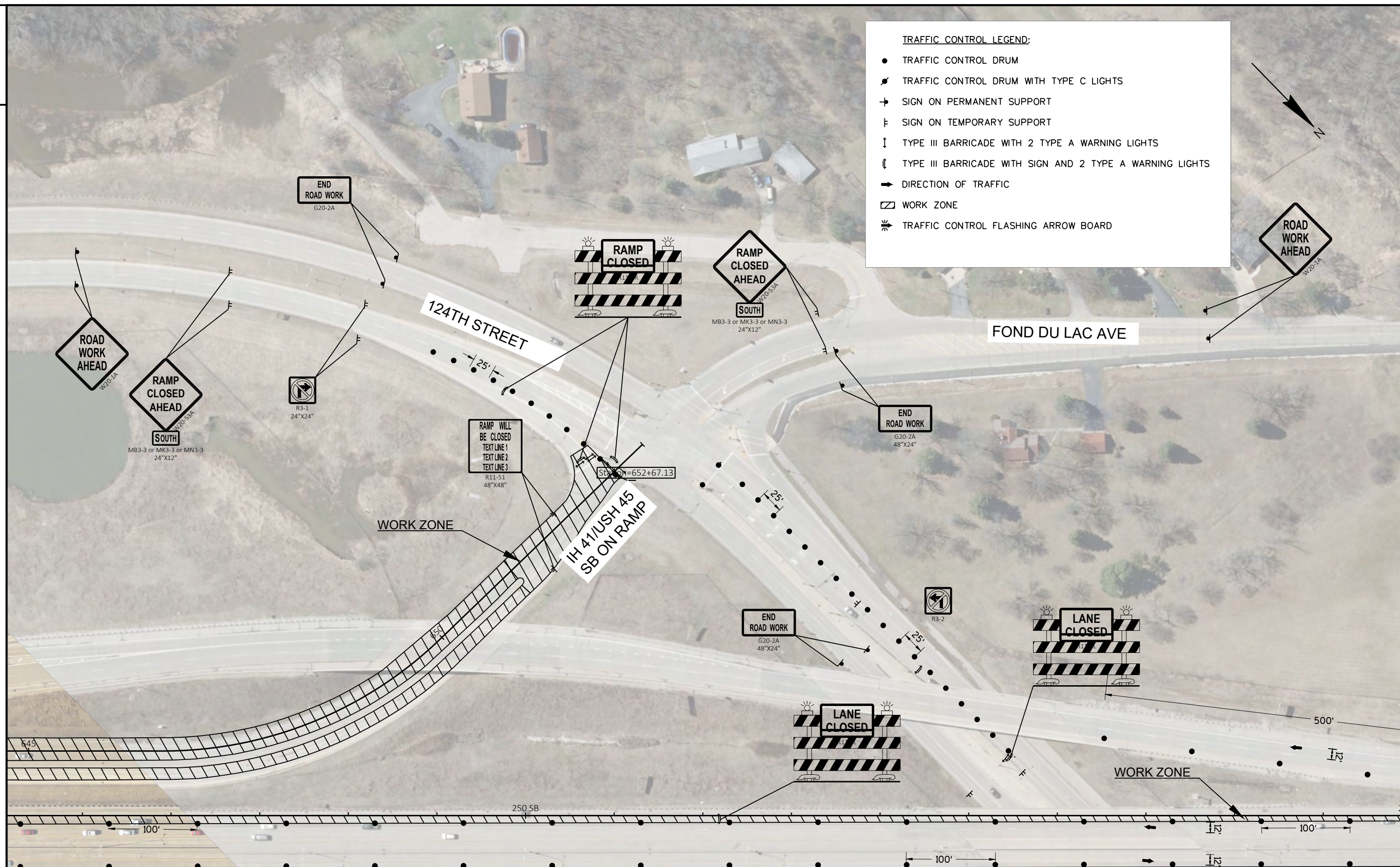
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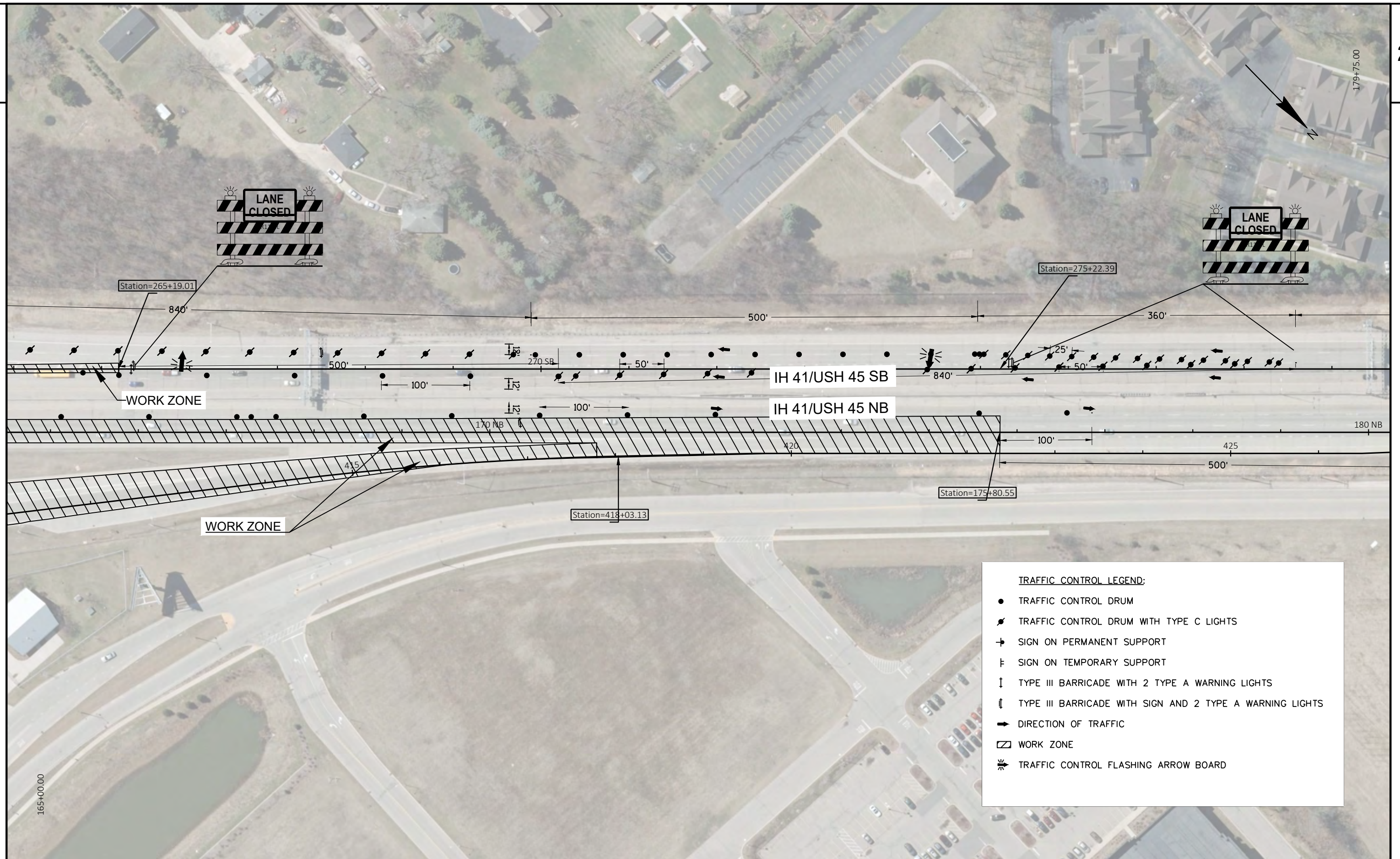
TRAFFIC CONTROL, STAGE 3

SHEET

120

E





PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

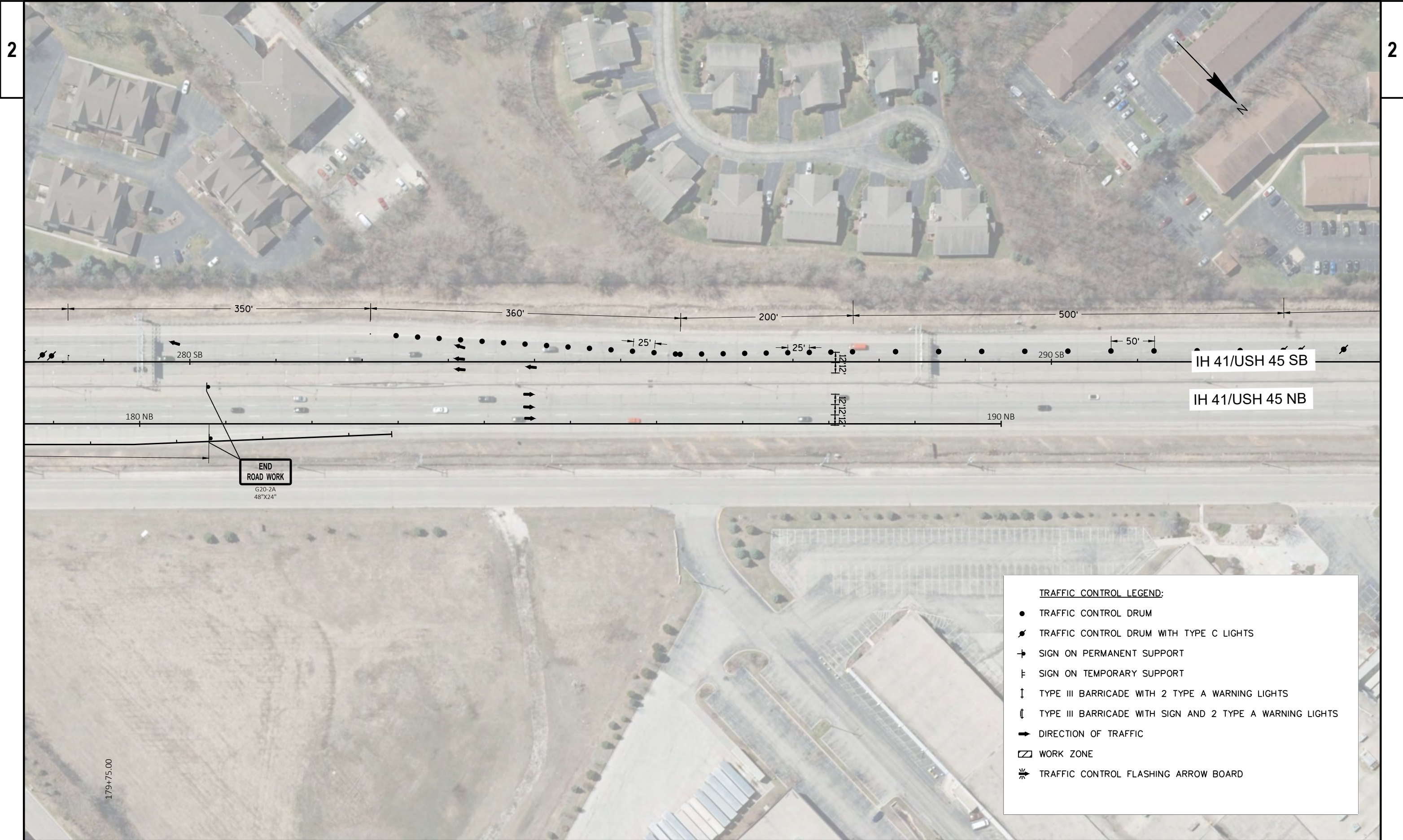
COUNTY: MILWAUKEE

TRAFFIC CONTROL, STAGE 3

SHEET

122

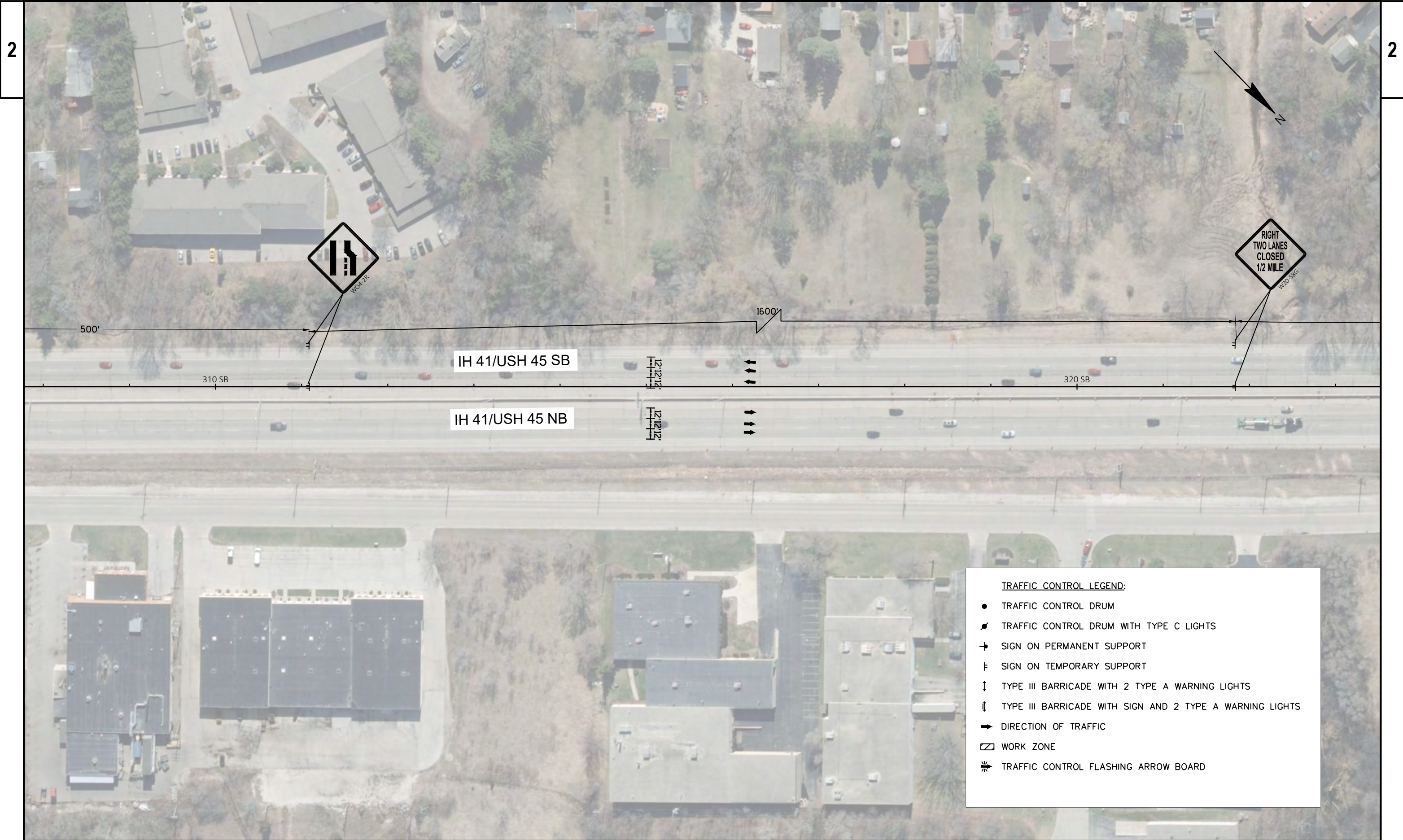
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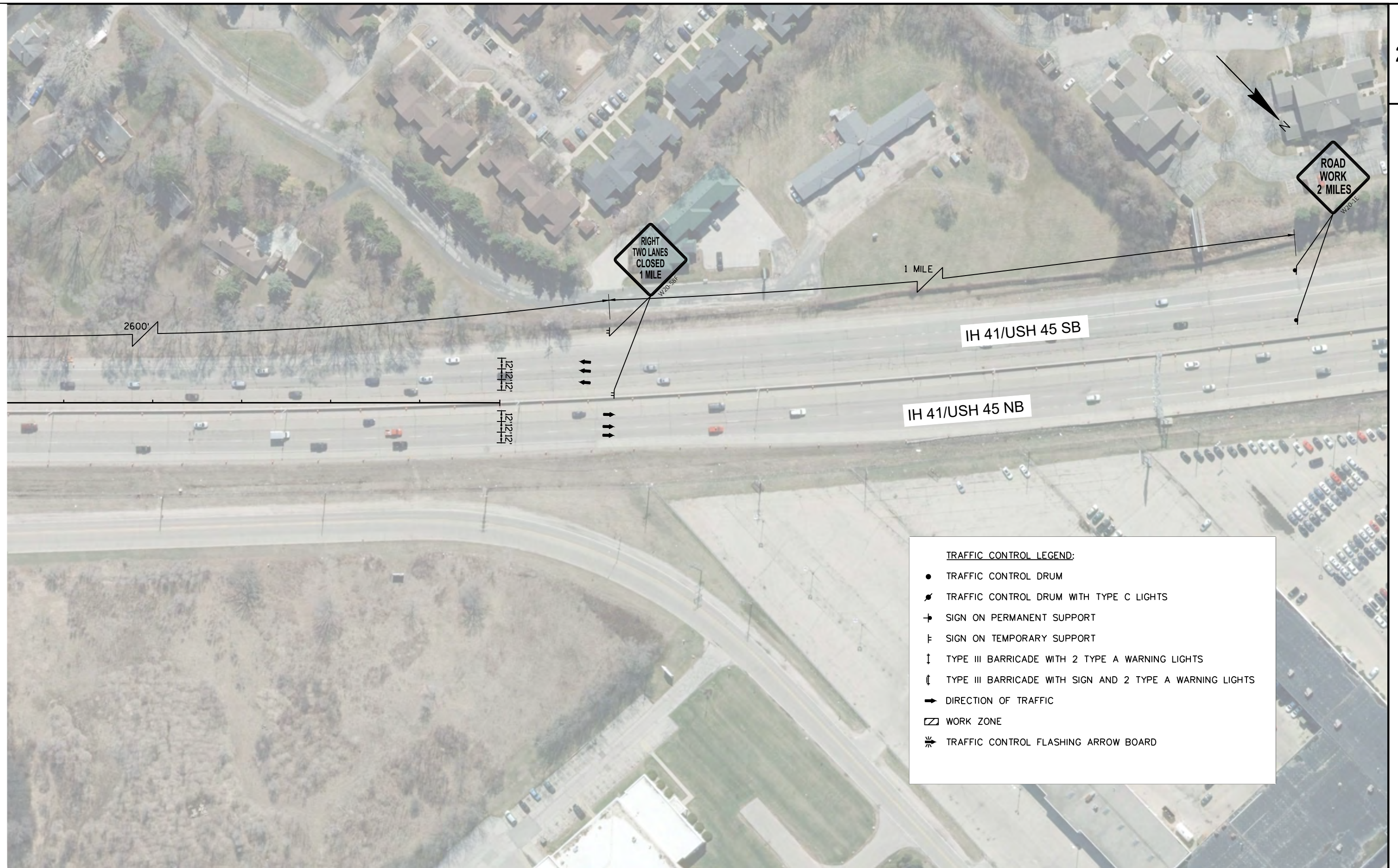




TRAFFIC CONTROL LEGEND:

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- ⦿ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
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PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

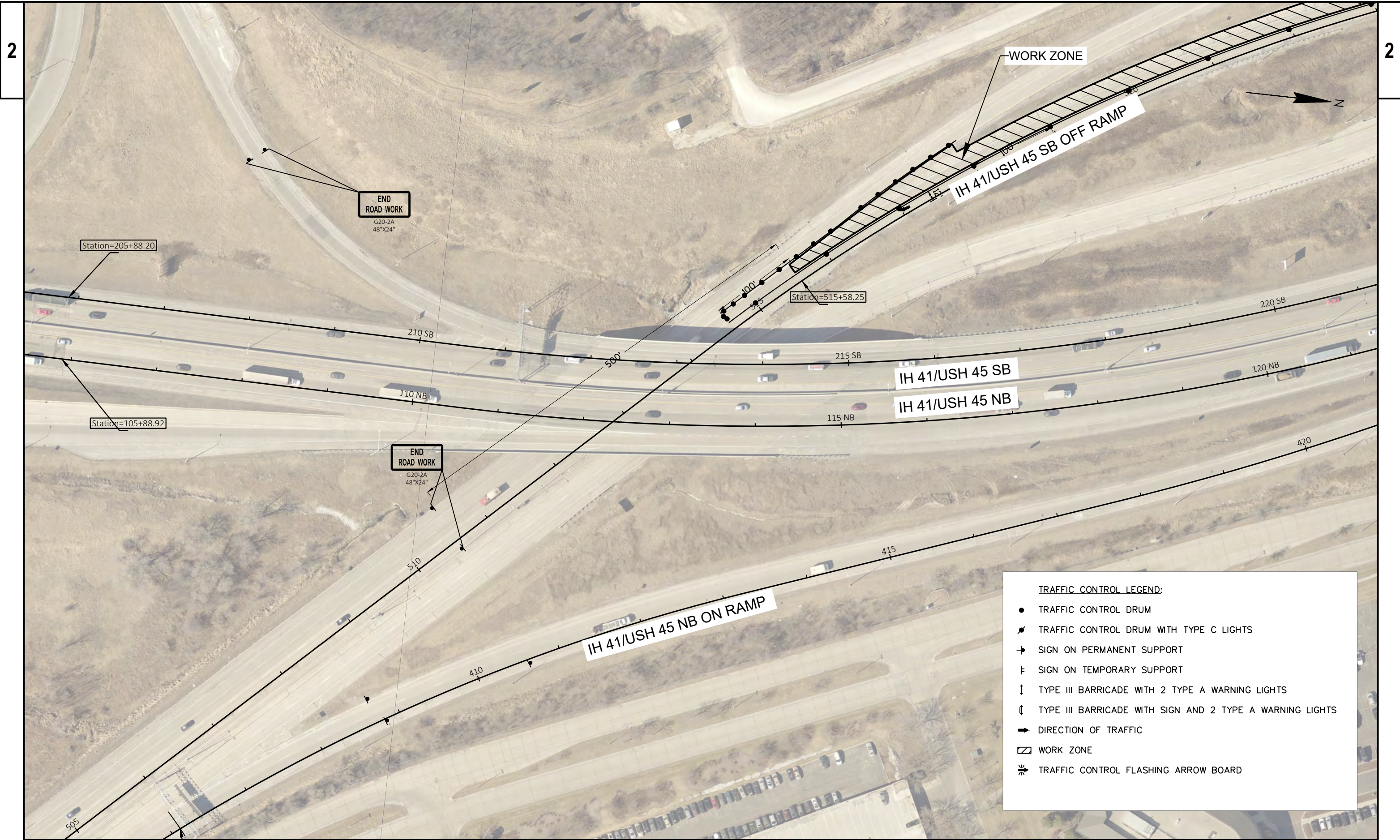
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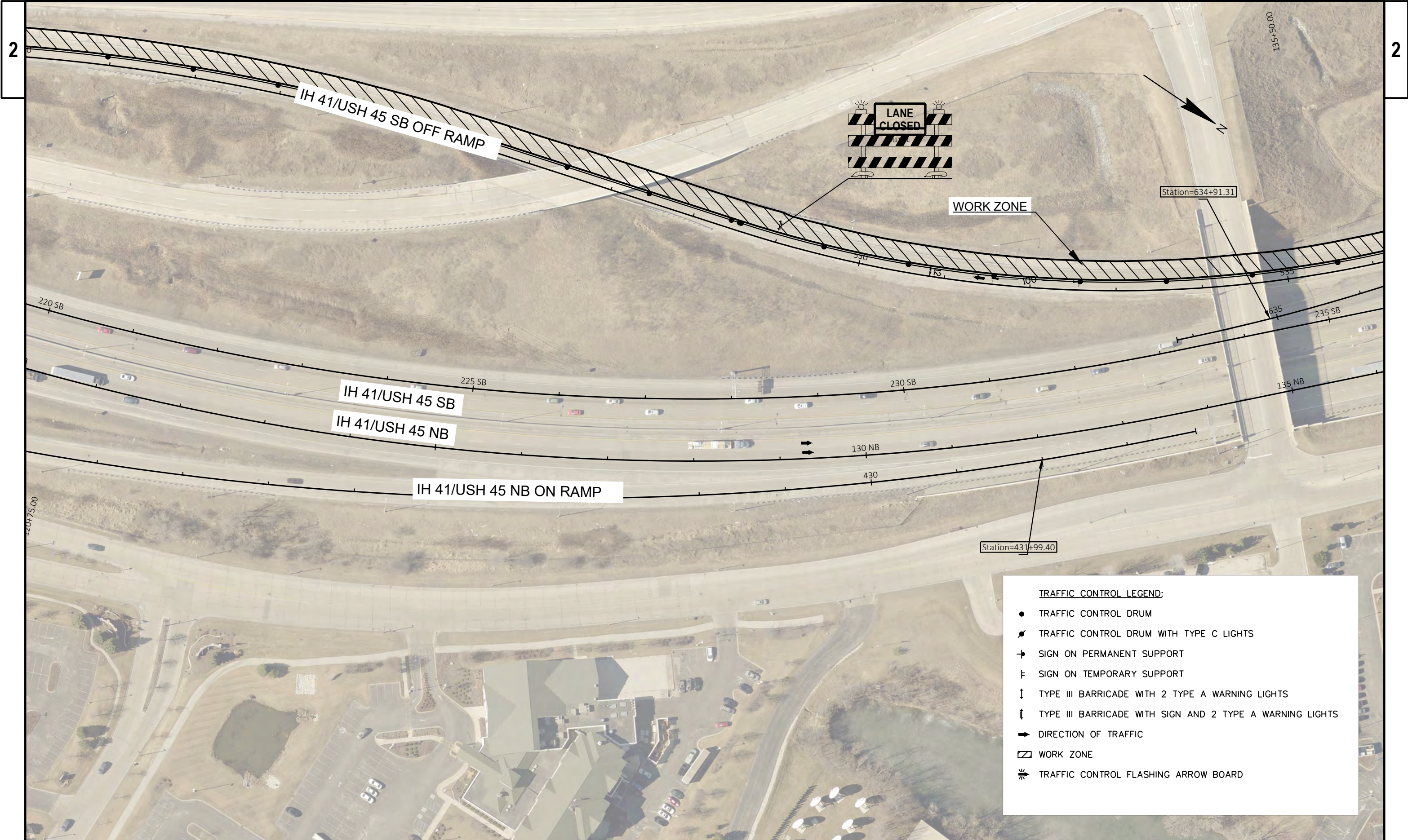
TRAFFIC CONTROL, STAGE 3

SHEET

126

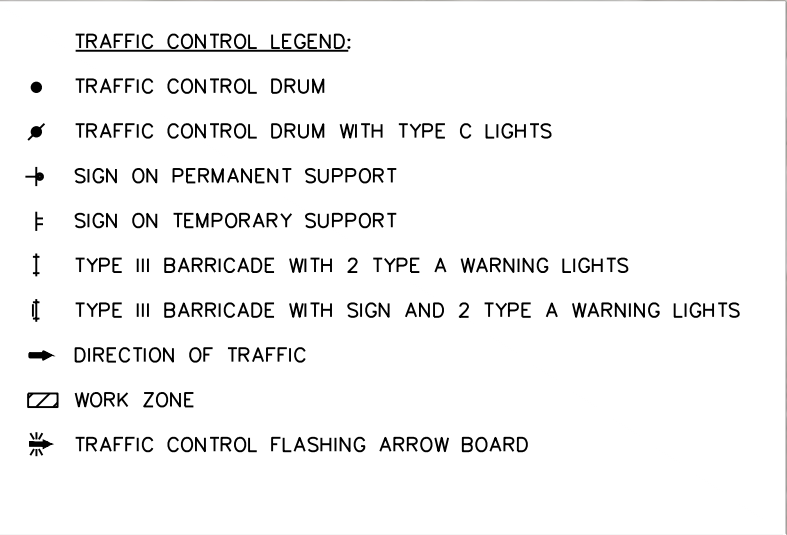
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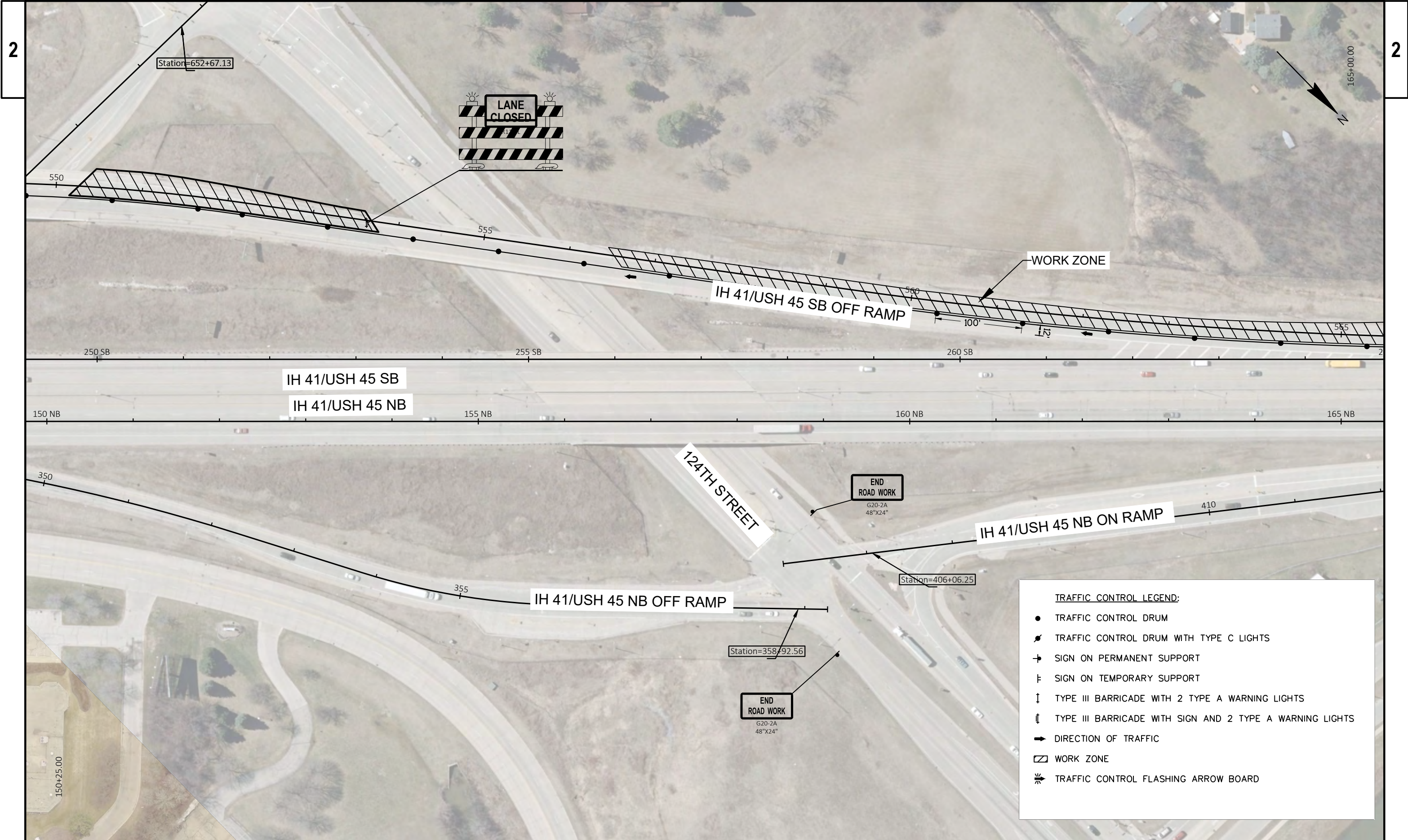


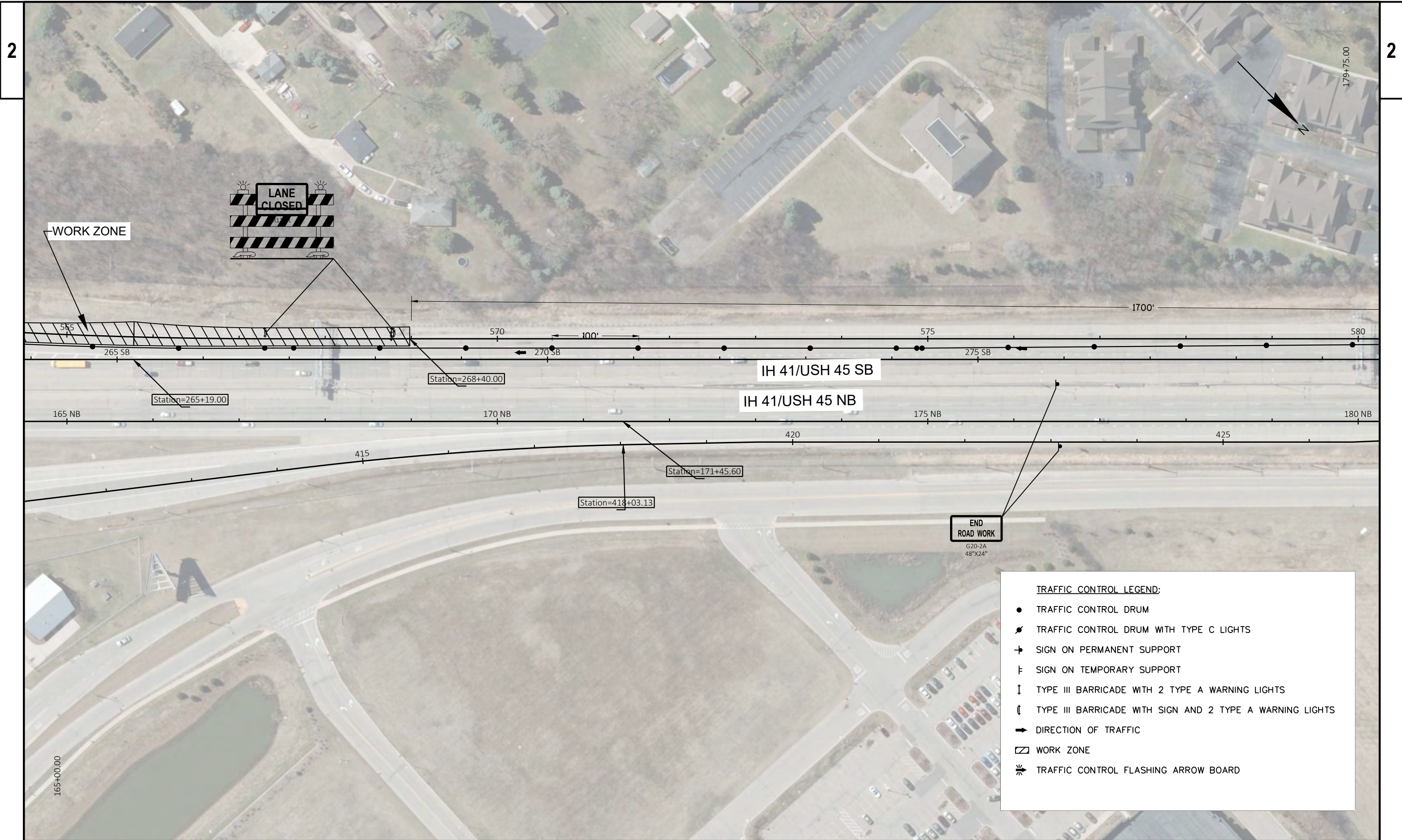


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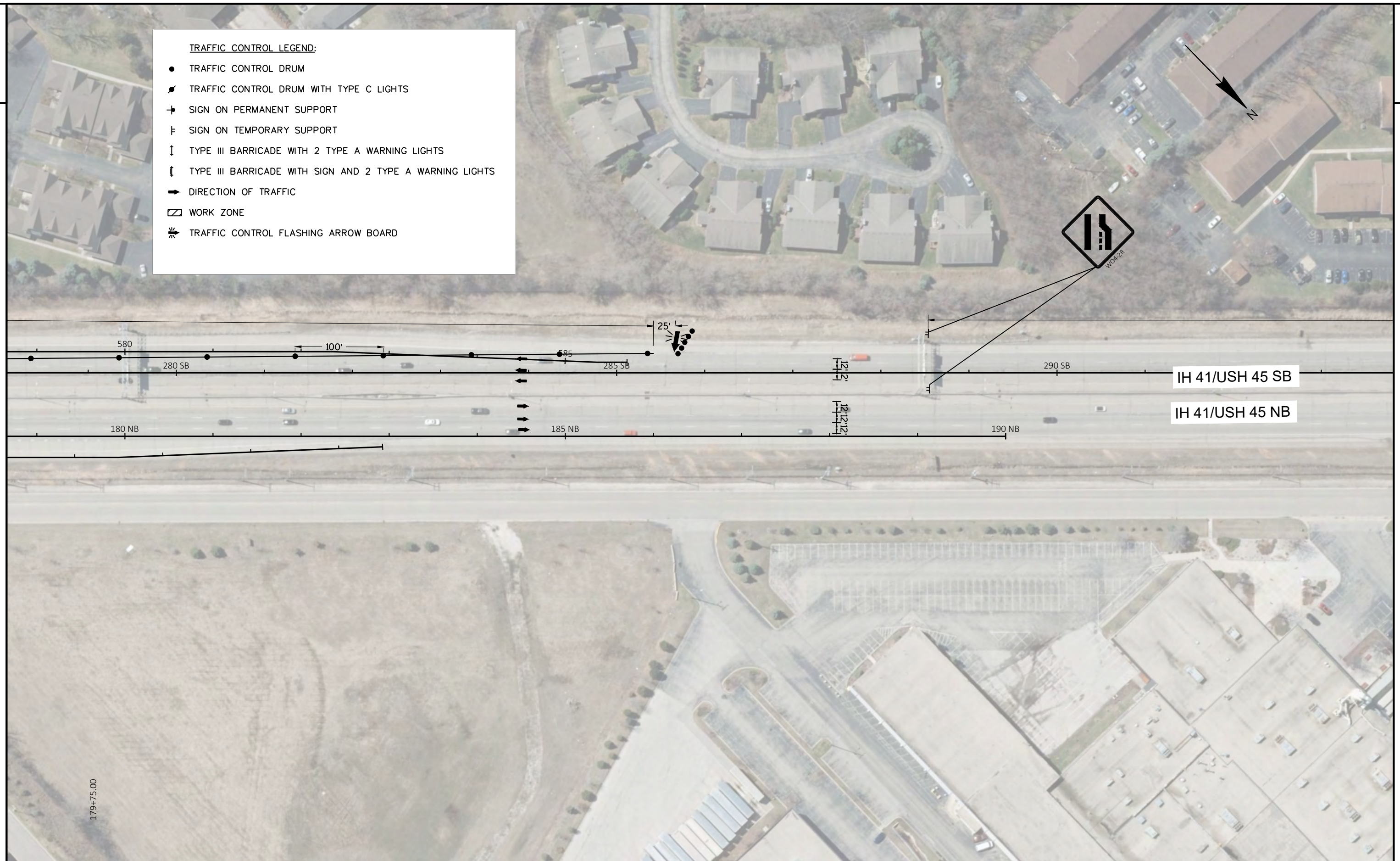






TRAFFIC CONTROL LEGEND:

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PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

COUNTY: MILWAUKEE

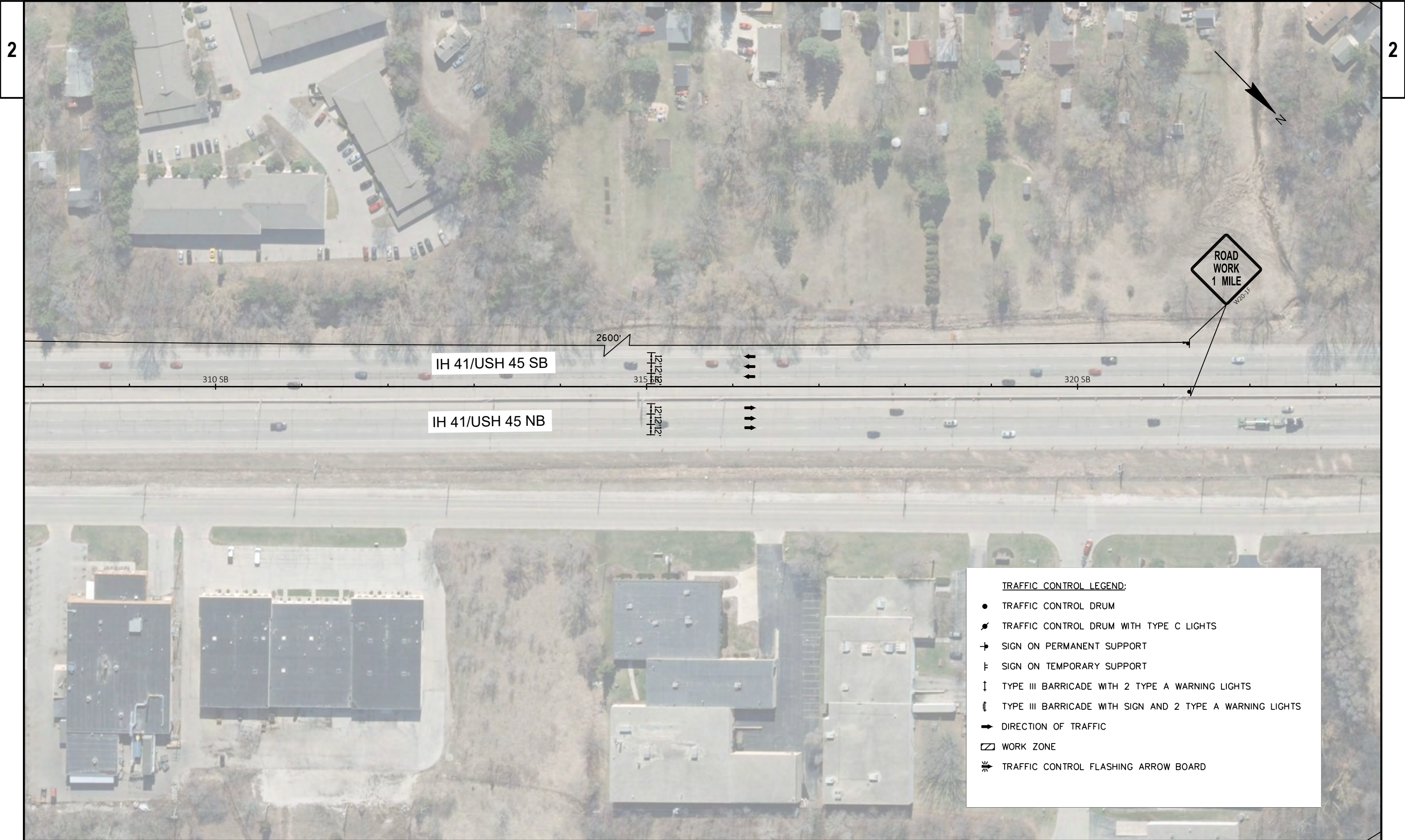
TRAFFIC CONTROL SB OFF RAMP, STAGE 3

SHEET

132

E





IH 41/USH 45 SB

IH 41/USH 45 NB

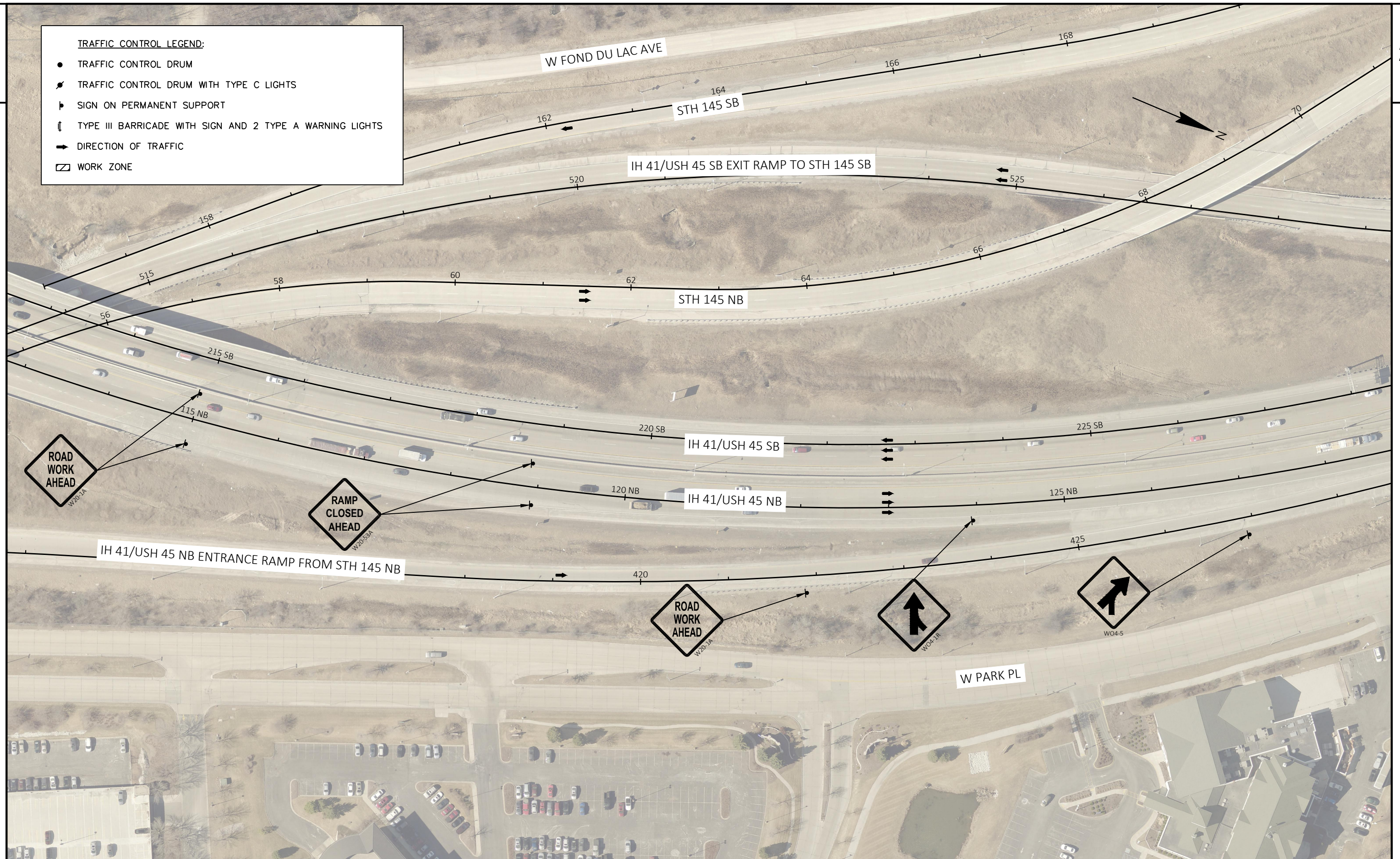
ROAD
WORK
1 MILE
W20-1F

TRAFFIC CONTROL LEGEND:

- TRAFFIC CONTROL DRUM
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PROJECT NO: 1100-17-76

HWY: IH 41/USH 45

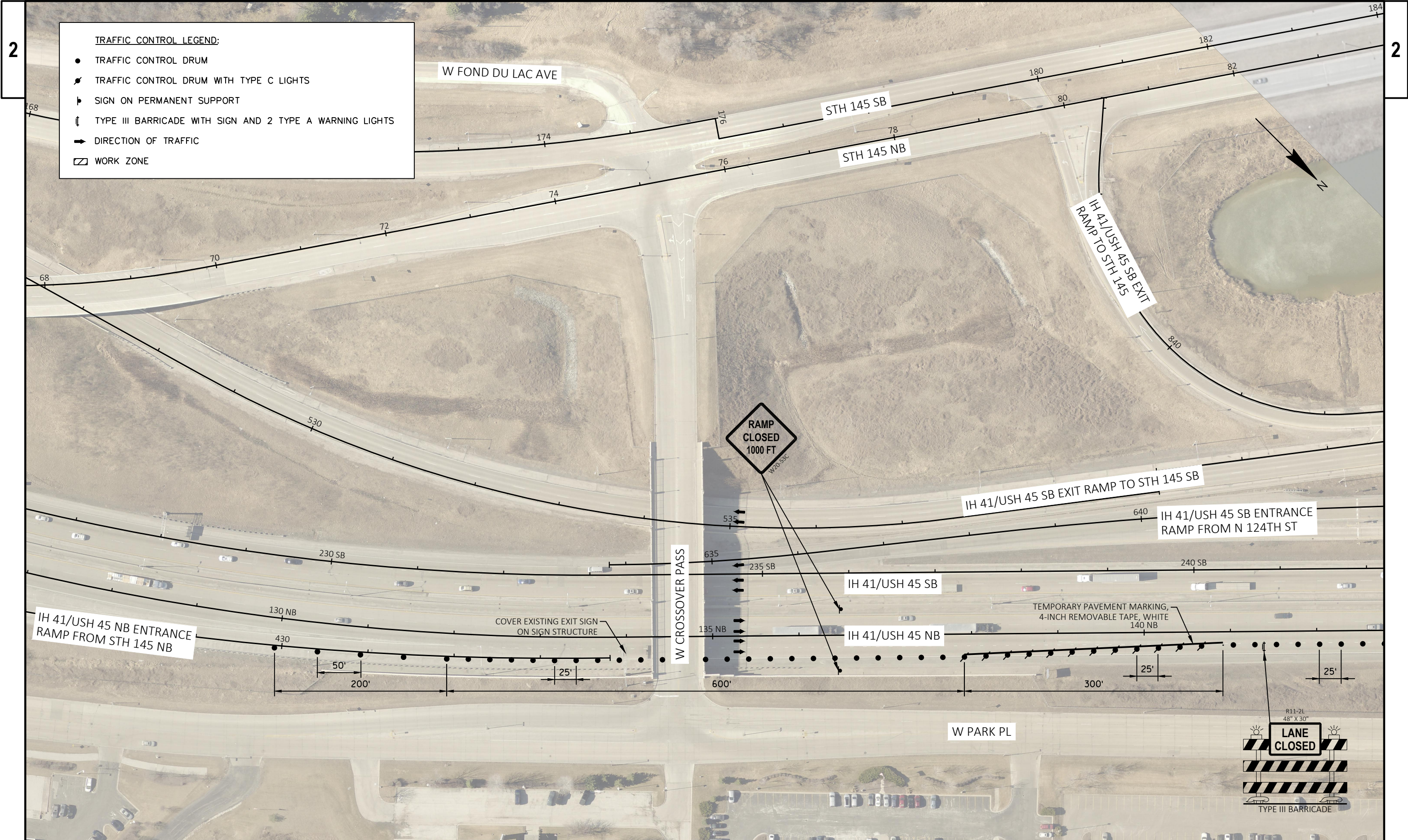
COUNTY: MILWAUKEE

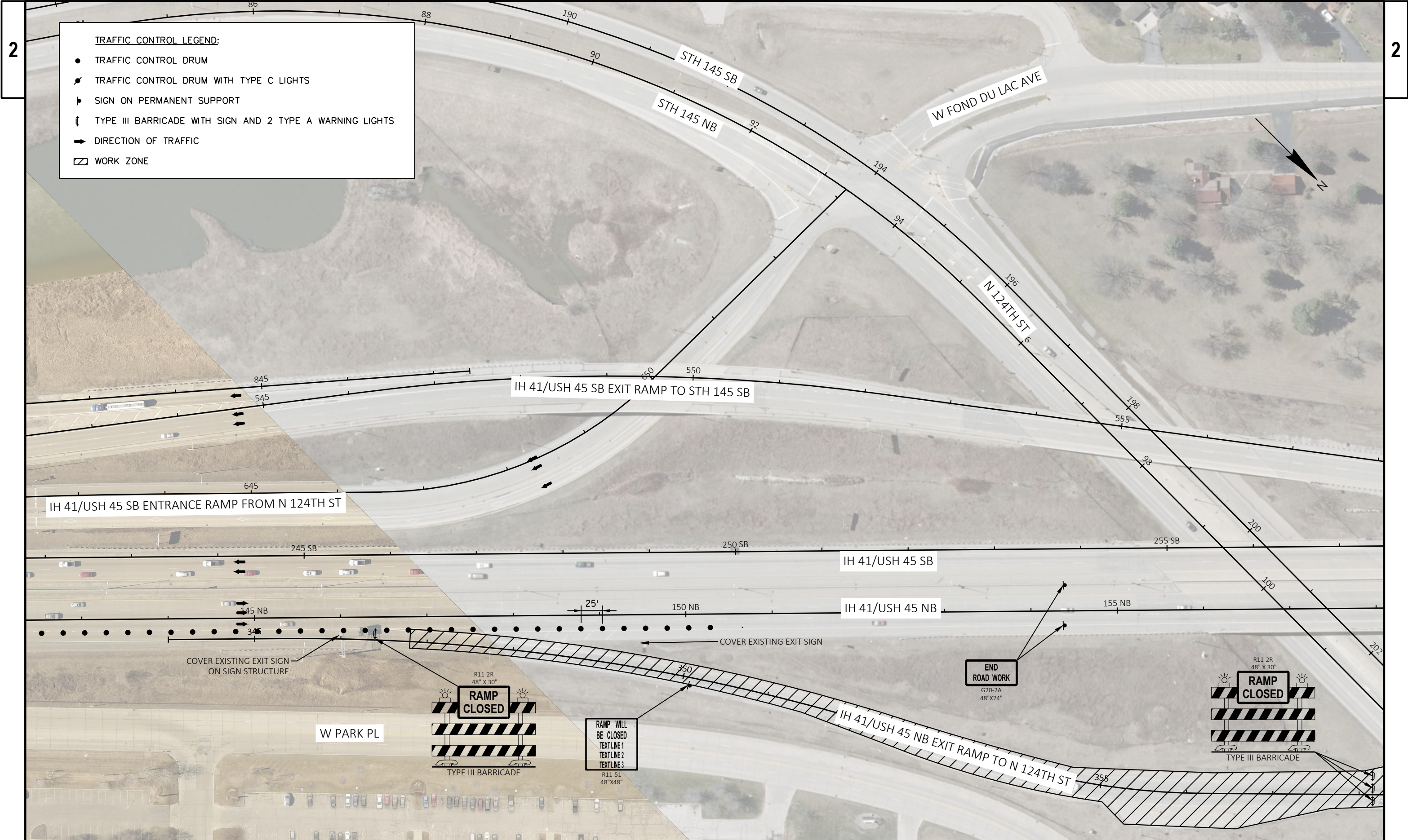
TRAFFIC CONTROL, N 124TH ST EXIT RAMP CLOSURE

SHEET

135

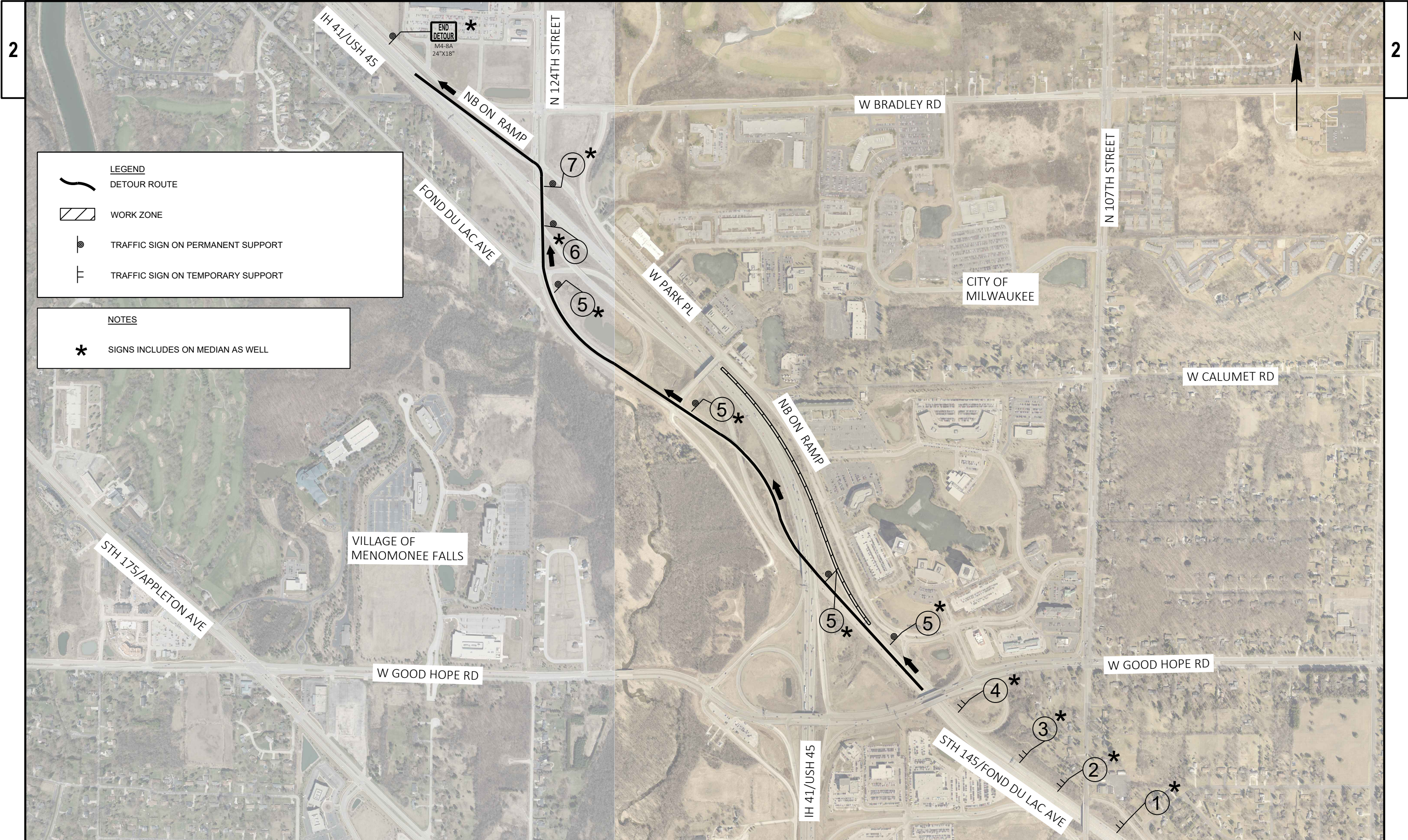
E





TRAFFIC CONTROL LEGEND:

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- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C LIGHTS
- 🚧 SIGN ON PERMANENT SUPPORT
- ⬆ TYPE III BARRICADE WITH SIGN AND 2 TYPE A WARNING LIGHTS
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK ZONE



LEGEND

- DETOUR ROUTE
- WORK ZONE
- TRAFFIC SIGN ON PERMANENT SUPPORT
- TRAFFIC SIGN ON TEMPORARY SUPPORT

NOTES

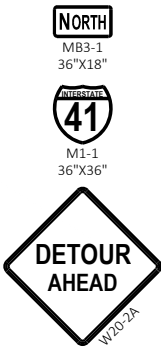
- * SIGNS INCLUDES ON MEDIAN AS WELL

DETOUR ROUTE SIGNS

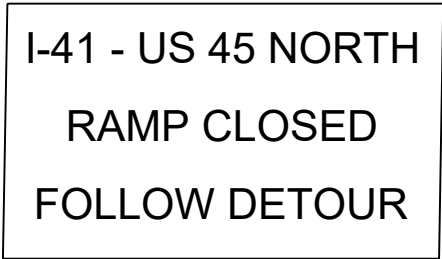
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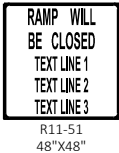
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3



4



5

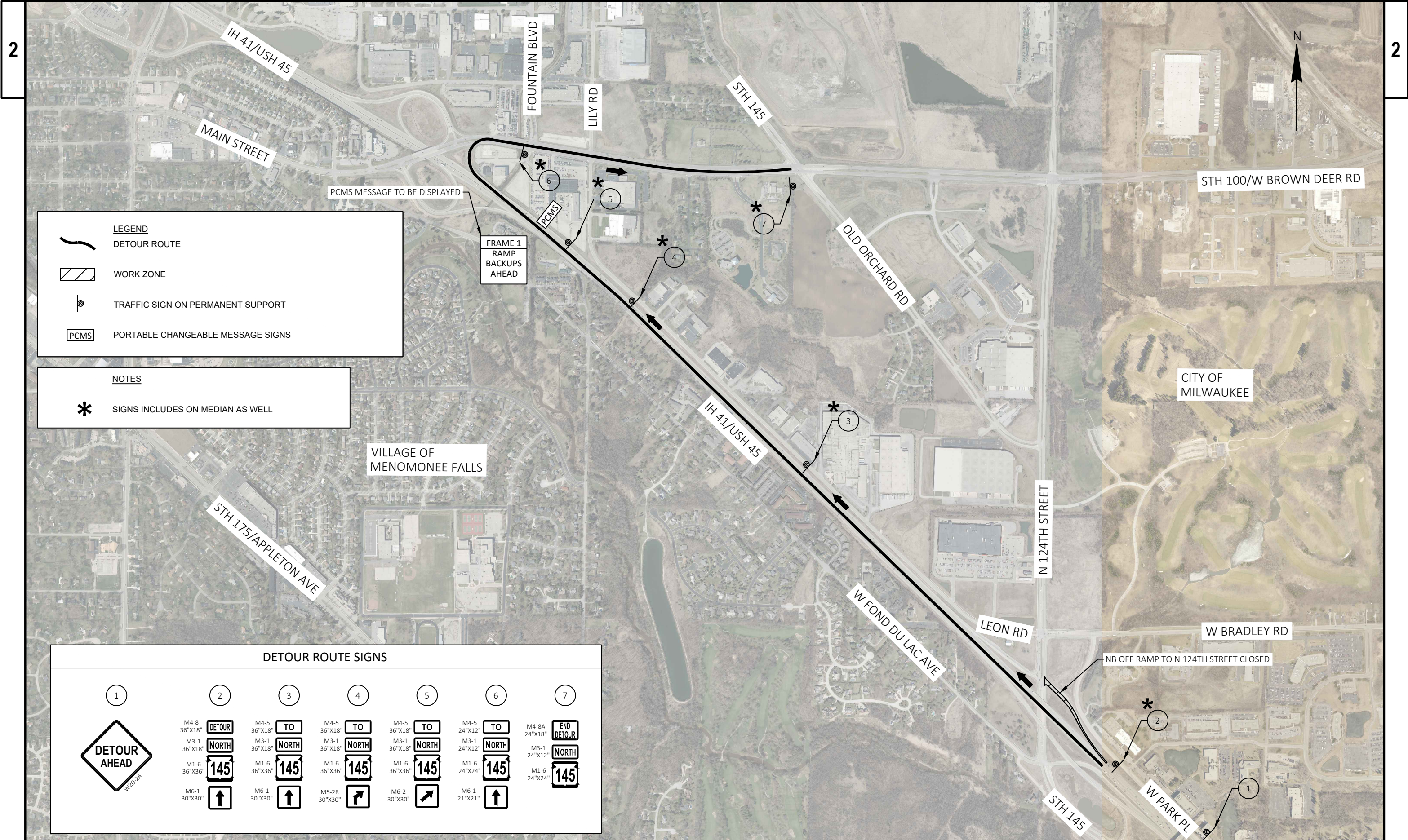


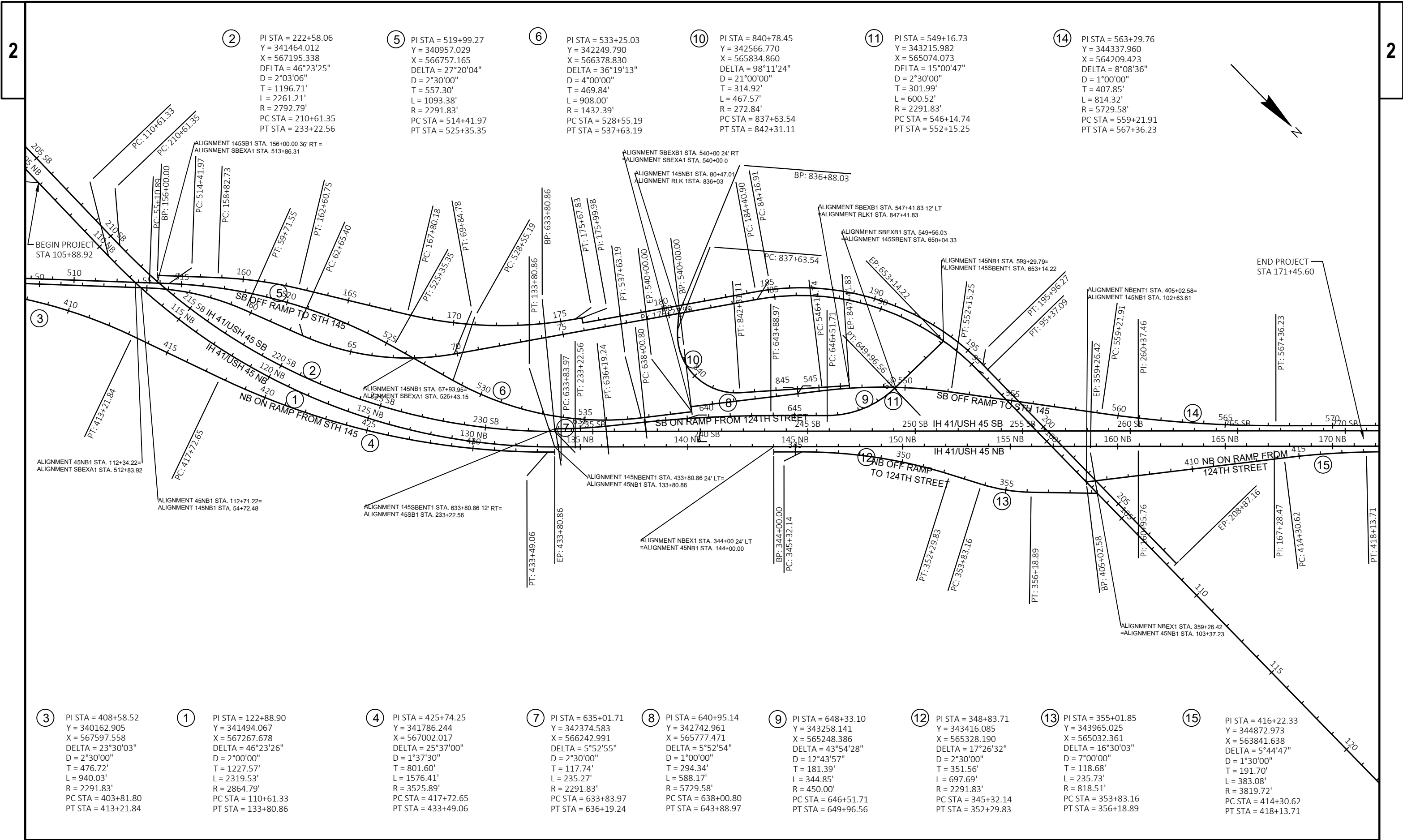
6



7







Estimate Of Quantities

1100-17-76

Line	Item	Item Description	Unit	Total	Qty
0002	108.4300	RBC Progress Schedule	EACH	1.000	1.000
0004	204.0100	Removing Concrete Pavement	SY	1,400.000	1,400.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	42,220.000	42,220.000
0008	204.9060.S	Removing (item description) 2000. Microwave Detector	EACH	1.000	1.000
0010	204.9060.S	Removing (item description) 2001. Pole	EACH	1.000	1.000
0012	204.9060.S	Removing (item description) 3000. Loop Detector Wire & Lead In Cable IH 41 NB Ramps & STH 145	EACH	1.000	1.000
0014	205.0100	Excavation Common	CY	1,920.000	1,920.000
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	474.000	474.000
0018	213.0100	Finishing Roadway (project) 0001. 1100-17-76	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	488.000	488.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	470.000	470.000
0024	305.0500	Shaping Shoulders	STA	474.000	474.000
0026	312.0115	Select Crushed Material	CY	1,920.000	1,920.000
0028	415.1080	Concrete Pavement HES 8-Inch	SY	1,400.000	1,400.000
0030	416.0610	Drilled Tie Bars	EACH	1,472.000	1,472.000
0032	416.0620	Drilled Dowel Bars	EACH	6,882.000	6,882.000
0034	416.1715	Concrete Pavement Repair SHES	SY	2,572.000	2,572.000
0036	416.1725	Concrete Pavement Replacement SHES	SY	2,559.000	2,559.000
0038	420.1000	Continuous Diamond Grinding Concrete Pavement	SY	78,738.000	78,738.000
0040	455.0605	Tack Coat	GAL	5,916.000	5,916.000
0042	460.2000	Incentive Density HMA Pavement	DOL	7,630.000	7,630.000
0044	460.6224	HMA Pavement 4 MT 58-28 S	TON	11,828.000	11,828.000
0046	495.1000.S	Cold patch	TON	10.000	10.000
0048	611.8110	Adjusting Manhole Covers	EACH	32.000	32.000
0050	611.8115	Adjusting Inlet Covers	EACH	116.000	116.000
0052	611.8120.S	Cover Plates Temporary	EACH	32.000	32.000
0054	612.0700	Drain Tile Exploration	LF	250.000	250.000
0056	618.0100	Maintenance And Repair of Haul Roads (project) 0001. 1100-17-76	EACH	1.000	1.000
0058	619.1000	Mobilization	EACH	1.000	1.000
0060	628.1104	Erosion Bales	EACH	100.000	100.000
0062	628.1504	Silt Fence	LF	2,000.000	2,000.000
0064	628.1520	Silt Fence Maintenance	LF	2,000.000	2,000.000
0066	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0068	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0070	628.7020	Inlet Protection Type D	EACH	116.000	116.000
0072	628.7504	Temporary Ditch Checks	LF	100.000	100.000
0074	634.0622	Posts Wood 4x6-Inch X 22-FT	EACH	3.000	3.000
0076	637.1220	Signs Type I Reflective SH	SF	994.000	994.000
0078	637.2210	Signs Type II Reflective H	SF	50.000	50.000
0080	638.2102	Moving Signs Type II	EACH	3.000	3.000
0082	638.2601	Removing Signs Type I	EACH	7.000	7.000
0084	638.2602	Removing Signs Type II	EACH	3.000	3.000
0086	638.3000	Removing Small Sign Supports	EACH	3.000	3.000
0088	643.0300	Traffic Control Drums	DAY	14,139.000	14,139.000
0090	643.0420	Traffic Control Barricades Type III	DAY	1,470.000	1,470.000
0092	643.0705	Traffic Control Warning Lights Type A	DAY	2,840.000	2,840.000
0094	643.0715	Traffic Control Warning Lights Type C	DAY	2,461.000	2,461.000
0096	643.0800	Traffic Control Arrow Boards	DAY	241.000	241.000

1100-17-76

Line	Item	Item Description	Unit	Total	Qty
0098	643.0900	Traffic Control Signs	DAY	4,484.000	4,484.000
0100	643.0910	Traffic Control Covering Signs Type I	EACH	3.000	3.000
0102	643.1000	Traffic Control Signs Fixed Message	SF	286.000	286.000
0104	643.1050	Traffic Control Signs PCMS	DAY	90.000	90.000
0106	643.1055.S	Truck or Trailer Mounted Attenuator	DAY	80.000	80.000
0108	643.4100.S	Traffic Control Interim Lane Closure	EACH	275.000	275.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	646.1020	Marking Line Epoxy 4-Inch	LF	319.000	319.000
0114	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	60,376.000	60,376.000
0116	646.1555	Marking Line Grooved Contrast Permanent Tape 4-Inch	LF	8,488.000	8,488.000
0118	646.3020	Marking Line Epoxy 8-Inch	LF	2,099.000	2,099.000
0120	646.3545	Marking Line Grooved Wet Ref Contrast Epoxy 8-Inch	LF	75.000	75.000
0122	646.3555	Marking Line Grooved Contrast Permanent Tape 8-Inch	LF	14,321.000	14,321.000
0124	646.5020	Marking Arrow Epoxy	EACH	24.000	24.000
0126	646.5120	Marking Word Epoxy	EACH	16.000	16.000
0128	646.5220	Marking Symbol Epoxy	EACH	12.000	12.000
0130	646.5520	Marking Outfall Epoxy	EACH	15.000	15.000
0132	646.6120	Marking Stop Line Epoxy 18-Inch	LF	424.000	424.000
0134	646.7120	Marking Diagonal Epoxy 12-Inch	LF	3,699.000	3,699.000
0136	646.7220	Marking Chevron Epoxy 24-Inch	LF	1,135.000	1,135.000
0138	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	327.000	327.000
0140	646.8120	Marking Curb Epoxy	LF	221.000	221.000
0142	646.8220	Marking Island Nose Epoxy	EACH	23.000	23.000
0144	646.9010	Marking Removal Line Water Blasting 4-Inch	LF	17,296.000	17,296.000
0146	646.9110	Marking Removal Line Water Blasting 8-Inch	LF	4,124.000	4,124.000
0148	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	60,695.000	60,695.000
0150	649.0155	Temporary Marking Line Removable Contrast Tape 4-Inch	LF	8,488.000	8,488.000
0152	649.0250	Temporary Marking Line Removable Tape 8-Inch	LF	1,687.000	1,687.000
0154	649.0255	Temporary Marking Line Removable Contrast Tape 8-Inch	LF	14,274.000	14,274.000
0156	649.0550	Temporary Marking Arrow Removable Tape	EACH	24.000	24.000
0158	649.0650	Temporary Marking Word Removable Tape	EACH	16.000	16.000
0160	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	424.000	424.000
0162	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	814.000	814.000
0164	652.0700.S	Install Conduit into Existing Item	EACH	4.000	4.000
0166	652.0800	Conduit Loop Detector	LF	718.000	718.000
0168	653.0135	Pull Boxes Steel 24x36-Inch	EACH	1.000	1.000
0170	653.0140	Pull Boxes Steel 24x42-Inch	EACH	1.000	1.000
0172	653.0905	Removing Pull Boxes	EACH	38.000	38.000
0174	654.0106	Concrete Bases Type 6	EACH	4.000	4.000
0176	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	3,365.000	3,365.000
0178	655.0700	Loop Detector Lead In Cable	LF	2,824.000	2,824.000
0180	655.0800	Loop Detector Wire	LF	2,872.000	2,872.000
0182	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	4.000	4.000
0184	657.0327	Poles Type 6-Aluminum	EACH	4.000	4.000
0186	670.0100	Field System Integrator	LS	1.000	1.000
0188	670.0200	ITS Documentation	LS	1.000	1.000
0190	674.0200	Cable Microwave Detector	LF	10,095.000	10,095.000
0192	674.0300	Remove Cable	LF	4,330.000	4,330.000
0194	675.0300	Install Mounted Controller Microwave Detector Assembly	EACH	13.000	13.000

Estimate Of Quantities

1100-17-76					
Line	Item	Item Description	Unit	Total	Qty
0196	690.0150	Sawing Asphalt	LF	430.000	430.000
0198	690.0250	Sawing Concrete	LF	10,140.000	10,140.000
0200	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0202	740.0440	Incentive IRI Ride	DOL	19,570.000	19,570.000
0204	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	3,000.000	3,000.000
0206	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	4,320.000	4,320.000
0208	SPV.0060	Special 2002. Ground Rod	EACH	4.000	4.000
0210	SPV.0060	Special 2003. Refocus Side-Fire Vehicle Detector Site	EACH	10.000	10.000
0212	SPV.0060	Special 5001. Traffic Control Close-Open Freeway Entrance Ramp	EACH	38.000	38.000
0214	SPV.0060	Special 5002. Traffic Control Full Freeway Closure	EACH	1.000	1.000
0216	SPV.0060	Special 5003. Removing Raised Pavement Markers And Filling Voids	EACH	318.000	318.000
0218	SPV.0060	Special 5004. Utility Line Opening (ULO)	EACH	10.000	10.000
0220	SPV.0060	Special 5005. Fastening Sewer Access Covers	EACH	148.000	148.000
0222	SPV.0060	Special 5006. Mobilizations Emergency Pavement Repair	EACH	10.000	10.000
0224	SPV.0060	Special 5007. Survey Project 1100-17-76	EACH	1.000	1.000
0226	SPV.0075	Special 0001. Pavement Cleanup Project 1100-17-76	HRS	100.000	100.000
0228	SPV.0085	Special 0001. Foam Jacking	LB	12,000.000	12,000.000
0230	SPV.0085	Special 0002. Sealing Cracks and Joints with Hot-Applied Sealant	LB	21,120.000	21,120.000

REMOVAL AND DIAMOND GRINDING								
				204.0100	204.0120	420.1000	653.0905	SPV.0060.5003
				REMOVING CONCRETE PAVEMENT	REMOVING ASPHALTIC SURFACE MILLING	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT	REMOVING PULL BOXES	REMOVING RAISED PAVEMENT MARKERS AND FILLING VOIDS
CATEGORY	ROADWAY	STATION	LOCATION	SY	SY	SY	EACH	EACH
1000	IH 41/USH 45 NB	105+88 NB-111+20 NB	MAIN LINE	-	1280	2316	6	14
		114+00 NB-156+00 NB		-	10000	20747	12	129
		158+60 NB-161+00 NB		-	610	1030	-	8
	IH 41/USH 45 SB	205+00 SB-212+00 SB	MAIN LINE	-	1370	1727	4	8
		215+00 SB-255+00 SB		-	9090	14296	4	62
		257+00 SB-265+50 SB		-	1930	2274	4	9
	NB ON RAMP FROM STH 145	406+00-430+50	ON RAMP TO IH 41/USH 45 NB	-	5200	5234	7	-
	NB EXIT RAMP TO 124TH ST	346+00-359+00	EXIT RAMP FROM RAMP 124TH ST	1400	840	3323	-	-
	NB ON RAMP FROM 124TH ST	407+00-418+00	ON RAMP TO IH 41/USH 45 NB	-	-	4589	1	-
	SB EXIT RAMP TO STH 145	515+50-549+00	EXIT RAMP FROM IH 41/USH 45 SB STH 145	-	5890	9958	-	39
		550+00-554+00		-	760	1367	-	8
		556+50-566+00		-	1640	2698	-	11
		837+13-847+42		-	1490	1878	-	-
	SB ON RAMP FROM STH 145	634+00-651+00	ON RAMP FROM STH 145 SB	-	1120	5523	-	-
		651+00-656+00		-	-	778	-	-
	UNDISTRIBUTED			-	1000	1000	-	30
			TOTAL	1400	42220	78738	38	318

PAVEMENT													
				205.0100	211.0400	305.0110	305.0120	305.0500	312.0115	415.1080	455.0605	460.6224	690.0150
				EXCAVATION COMMON	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4- INCH	SHAPING SHOULDERS	SELECT CRUSHED MATERIAL	CONCRETE PAVEMENT HES 8-INCH	TACK COAT	HMA PAVEMENT 4 MT 58-28 S	SAWING ASPHALT
CATEGORY	ROADWAY	STATION	LOCATION	CY	STA	TON	TON	STA	CY	SY	GAL	TON	LF
1000	IH 41/USH 45 NB	105+88 NB-111+20 NB	MAIN LINE	-	12	11	-	12	-	-	180	359	40
		114+00 NB-156+00 NB		-	84	87	-	84	-	-	1400	2800	40
		158+60 NB-161+00 NB		-	6	5	-	6	-	-	86	171	40
	IH 41/USH 45 SB	205+00 SB-212+00 SB	MAIN LINE	-	14	15	-	14	-	-	192	384	40
		215+00 SB-255+00 SB		-	80	83	-	80	-	-	1273	2546	40
		257+00 SB-265+50 SB		-	18	18	-	18	-	-	271	541	40
	NB ON RAMP FROM STH 145	406+00-430+50	NB ON RAMP FROM STH 145	-	50	51	-	50	-	-	728	1456	10
	NB EXIT RAMP TO 124TH ST	346+00-359+00	NB EXIT RAMP TO 124TH ST	540	26	27	470	26	540	1400	118	236	-
	NB ON RAMP FROM 124TH ST	407+00-418+00	NB ON RAMP FROM 124TH STREET	-	22	23	-	22	-	-	-	-	-
	SB EXIT RAMP TO STH 145	515+50-549+00	SB EXIT RAMP TO STH 145	-	68	70	-	68	-	-	825	1650	30
		550+00-554+00		-	8	9	-	8	-	-	107	213	40
		556+50-566+00		-	20	20	-	20	-	-	230	460	30
		837+13-847+42		-	22	22	-	22	-	-	209	418	20
	SB ON RAMP FROM STH 145	634+00-651+00	SB ON RAMP FROM STH 145	-	34	36	-	34	-	-	157	314	10
		651+00-656+00		-	10	11	-	10	-	-	-	-	-
	UNDISTRIBUTED			1380	-	-	-	-	1380	-	140	280	50
			TOTAL	1920	474	488	470	474	1920	1400	5916	11828	430

CONCRETE PAVEMENT																
				416.0610			416.0620			416.1715			416.1725			690.0250
				DRILLED TIE BARS			DRILLED DOWEL BARS			CONCRETE PAVEMENT REPAIR SHES			CONCRETE PAVEMENT REPLACEMENT SHES			SAWING CONCRETE
				Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3	
CATEGORY	ROADWAY	STATION	LOCATION	EACH	EACH	EACH	EACH	EACH	EACH	SY	SY	SY	SY	SY	SY	LF
1000	IH 41/USH 45 NB	105+88 NB-111+20 NB	MAIN LINE	12	9	12	66	66	46	34	34	26	22	22	22	416
		114+00 NB-156+00 NB		15	93	21	84	688	274	64	296	128	-	-	28	1912
		158+60 NB-161+00 NB		-	9	9	-	60	60	-	24	24	-	-	-	216
	IH 41/USH 45 SB	205+00 SB-212+00 SB	MAIN LINE	10	4	-	72	32	-	37	21	-	-	-	-	200
		215+00 SB-255+00 SB		31	196	9	212	1312	60	88	528	24	-	-	-	2964
		257+00 SB-265+50 SB		22	9	-	152	52	-	64	32	-	-	-	-	408
	NB ON RAMP FROM STH 145 NB	406+00-430+50	NB ON RAMP FROM STH 145	8	12	-	48	64	-	26	32	-	-	-	-	233
	NB EXIT RAMP TO 124TH ST	346+00-359+00	NB EXIT RAMP TO 124TH ST	142	-	-	156	-	-	-	-	-	721	-	-	890
	NB ON RAMP FROM 124TH ST	407+00-418+00	NB ON RAMP FROM 124TH STREET	124	-	-	608	-	-	12	-	-	870	-	-	969
	SB EXIT RAMP TO STH 145	515+50-549+00	SB EXIT RAMP TO STH 145	9	-	-	60	-	-	24	-	-	-	-	-	108
		550+00-554+00		14	-	-	80	-	-	-	-	-	104	-	-	126
		556+50-566+00		15	-	-	100	-	-	40	-	-	-	-	-	132
		837+13-847+42		6	-	-	40	-	-	10	-	-	-	-	-	42
	SB ON RAMP FROM STH 145	634+00-651+00	SB ON RAMP FROM STH 145	75	-	-	210	110	30	72	32	-	22	22	22	498
		651+00-656+00		6	-	-	40	-	-	-	-	-	52	52	-	126
	UNDISTRIBUTED			200	200	200	700	700	700	300	300	300	200	200	200	900
			SUBTOTAL	689	532	251	2628	3084	1170	771	1299	502	1991	296	272	
			TOTAL	1472			6882			2572			2559			10140

NOTE: CONCRETE PAVEMENT ARE APPROXIMATE IN MISCELLANEOUS QUANTITY SHEET

		DRAINAGE				
		611.8110	611.8115	611.8120.S	612.0700	SPV.0060.5005
		ADJUSTING MANHOLE COVERS	ADJUSTING INLET COVERS	COVER PLATES TEMPORARY	DRAIN TILE EXPLORATION	FASTENING SEWER ACCESS COVERS
CATEGORY	ROADWAY	EACH	EACH	EACH	LF	EACH
1000	IH 41/USH 45 NB	2	29	-	-	-
	IH 41/USH 45 SB	8	29	-	-	-
	STH 145 (NB) ON RAMP	1	1	-	-	-
	TO 124TH STREET	3	2	-	-	-
	FROM 124TH STREET	7	12	-	-	-
	SB EXIT TO STH 145 SB	4	11	-	-	-
	FROM 124TH STREET	2	20	-	-	-
	UNDISTRIBUTED	5	12	32	250	148
	TOTAL	32	116	32	250	148

MAINTENANCE			
			618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 0001. 1100-17-76
CATEGORY	ROADWAY	STATION	EACH
1000	124TH STREET		1
		TOTAL	1

		EROSION CONTROL						
		628.1104	628.1504	628.1520	628.1905	628.1910	628.7020	628.7504
		EROSION BALES	SILT FENCE	SILT FENCE MAINTENANCE	MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL	INLET PROTECTION TYPE D	TEMPORARY DITCH CHECKS
CATEGORY	ROADWAY	EACH	LF	LF	EACH	EACH	EACH	LF
1000	IH 41/USH 45 NB	-	-	-	-	-	28	-
	IH 41/USH 45 SB	-	-	-	-		28	-
	STH 145 (NB) ON RAMP	-	-	-	-	-	3	-
	TO 124TH STREET	-	-	-	-	-	4	-
	FROM 124TH STREET	-	-	-	-	-	14	-
	SB EXIT TO STH 145 SB	-	-	-	-	-	11	-
	FROM 124TH STREET	-	-	-	-	-	18	-
	UNDISTRIBUTED	100	2000	2000	4	1	10	100
	TOTAL	100	2000	2000	4	1	116	100

TRAFFIC CONTROL ITEMS																				
				643.0300		643.0420		643.0705		643.0715		643.0800		643.0900		643.0910	643.1050		643.1055.S	
				TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADE TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL ARROW BOARDS		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL COVERING SIGNS TYPE I	TRAFFIC CONTROL SIGNS PCMS		TRUCK OR TRAILER MOUNTED- ATTENUATOR	
CATEGORY	ROADWAY	STATION	DURATION*	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH*	DAY	EACH	EACH*	DAY	EACH	DAY
1000	IH 41/USH 45 NB STAGE 1	-	12	150	1800	25	300	50	600	24	288	2	24	81	972	-	-	-	-	-
	IH 41/USH 45 NB STAGE 2	-	15	164	2460	6	90	12	180	30	450	3	45	17	255	-	-	-	-	-
	IH 41/USH 45 NB STAGE 3	-	12	264	3168	25	300	50	600	54	648	3	36	67	804	-	-	-	-	-
	IH 41/USH 45 NB EXT RAMP TO N 124TH ST	-	10	79	790	5	50	10	100	12	120	-	-	64	640	3	1	10	-	-
	IH 41/USH 45 SB STAGE 1	-	15	141	2115	20	300	40	600	30	450	3	45	57	855	-	-	-	-	-
	IH 41/USH 45 SB STAGE 2	-	15	98	1470	6	90	12	180	15	225	2	30	14	210	-	-	-	-	-
	IH 41/USH 45 SB STAGE 3	-	12	153	1836	20	240	40	480	15	180	3	36	54	648	-	-	-	-	-
	UNDISTRIBUTED	-	40	-	500	-	100	-	100	-	100	-	25	-	100	-	2	80	2	80
			TOTAL		14,139		1,470		2,840		2,461		241		4484	3		90		80

NOTE:

*=FOR INFORMATION ONLY

TRAFFIC CONTROL SIGNS FIXED MESSAGE							
						643.1000	
						TRAFFIC CONTROL SIGNS FIXED MESSAGE	
CATEGORY	SIGN NO.	NUMBER REQUIRED	SIZE LENGTH (FT.)	SIZE WIDTH (FT.)	SIGN AREA (SF.)	SF	SIGN MESSAGE
1000	FM-01	2	11	6	66	132	HWY 145 NIGHTTIME RAMP CLOSURES 9PM-5:30AM
	FM-02	2	11	2	22	44	BEGINS XX -XX
	FM-03	2	11	5	55	110	I-41/HWY 45 NORTH RAMP CLOSED FOLLOW DETOUR
					TOTAL	286	

TRAFFIC CONTROL CLOSURES					
			643.4100.S	SPV.0060.5001	SPV.0060 5002
			TRAFFIC CONTROL INTERIM LANE CLOSURE	TRAFFIC CONTROL CLOSE-OPEN FREEWAY ENTRANCE RAMP	TRAFFIC CONTROL FULL FREEWAY CLOSURE
CATEGORY	ROADWAY	LOCATION	EACH	EACH	EACH
1000	IH 41/USH 45 NB	MAIN LINE	12	-	
	IH 41/USH 45 SB	MAIN LINE	12	-	1
	W GOOD HOPE RD	ON RAMP	-	6	-
	STH 145 (NB) ON RAMP	ON RAMP	-	6	-
	NB EXIT RAMP TO 124TH STREET	EXIT RAMP	-	6	-
	NB ON RAMP FROM 124TH STREET	ON RAMP	-	6	-
	SB EXIT TO STH 145 SB	EXIT RAMP	-	6	-
	SB ON RAMP FROM 124TH STREET	ON RAMP	-	8	-
	UNDISTRIBUTED		251	-	-
		TOTAL	275	38	1

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PAVEMENT MARKING																					
			646.1040		646.1555	646.1020	646.3020	646.3545	646.3555	646.5020		646.5120	646.5220	646.5520	646.6120	646.7120		646.7220	646.7420	646.8120	646.8220
			MARKING LINE GROOVED WET REF EPOXY 4-INCH		MARKING LINE GROOVED CONTRAST PERMANENT TAPE 4-INCH	MARKING LINE EPOXY 4-INCH	MARKING LINE EPOXY 8-INCH	MARKING LINE GROOVED WET REF CONTRAST EPOXY 8-INCH	MARKING LINE GROOVED CONTRAST PERMANENT TAPE 8-INCH	MARKING ARROW EPOXY		MARKING WORD EPOXY	MARKING SYMBOL EPOXY	MARKING OUTFALL EPOXY	MARKING STOP LINE EPOXY 18-INCH	MARKING DIAGONAL EPOXY 12-INCH		MARKING CHEVRON EPOXY 24-INCH	MARKING CROSSWALK EPOXY TRANVERSE LINE 6-INCH	MARKING CURB EPOXY	MARKING ISLAND NOSE EPOXY
			WHITE	YELLOW	WHITE	WHITE	WHITE	WHITE	WHITE	TYPE 2 WHITE	TYPE 4 WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	YELLOW	WHITE	WHITE	YELLOW	YELLOW
CATEGORY	ROADWAY	STATION	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	LF	LF	LF	LF	LF	LF	EACH
1000	IH 41/USH 45 NB	105+89-183+60	6,069	7,752	3,883	-	-	-	2,242	-	-	-	-	-	-	327	1,252	-	-	-	-
	IH 41/USH 45 SB	205+88-284+75	6,597	7,906	2,242	-	-	-	2,802	-	-	-	-	-	-	60	1,286	121	-	-	-
	NB ON RAMP FROM GOOD HOPE RD	899+40-911+00	1,419	907	-	-	-	-	412	-	-	-	-	-	-	-	-	-	-	-	-
	NB ON RAMP FROM STH 145	406+00-430+50	2,618	2,210	134	-	-	-	578	-	-	-	-	-	-	-	-	124	-	-	-
	NB EXT RAMP TO 124TH ST	348+00-359+00	1,564	992	66	-	-	-	1,021	6	1	3	-	-	81	-	-	150	-	30	3
	NB ON RAMP FROM 124TH ST	407+00-418+00	1,293	816	108	-	534	-	1,700	-	-	-	3	-	71	-	-	151	130	40	4
	SB EXT RAMP TO STH 145	515+50-566+00	4,754	4,619	1,396	-	-	-	1,539	-	-	-	-	-	-	393	-	277	-	-	-
	SB EXT RAMP TO STH 145 NB	837+00-550+25	1,395	576	-	-	-	-	604	2	1	2	-	-	33	110	-	258	-	30	3
	SB ON RAMP FROM STH 145	634+00-656+00	1,798	1,543	254	-	-	-	2,694	-	-	-	9	-	36	-	-	-	-	20	2
	STH 145 & 124TH ST	90+71-96+49	1,382	1,290	-	303	1,465	71	47	10	-	9	-	-	183	95	-	-	181	90	9
	UNDISTRIBUTED		1,445	1,431	405	16	100	4	682	3	1	2	-	15	20	49	127	54	16	11	2
		SUB-TOTAL	30,334	30,042	8,488	319	2,099	75	14,321	21	3	16	12	15	424	1,034	2,665	1,135	327	221	23
		TOTAL	60,376			8,488	319	2,099	75	14,321	24		16	12	15	424	3,699		1,135	327	221

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TEMPORARY PAVEMENT MARKING													
			646.9010	646.9110	649.0150		649.0155	649.0250	649.0255	649.0550		649.0650	649.0850
			MARKING REMOVAL LINE WATER BLASTING 4-INCH	MARKING REMOVAL LINE WATER BLASTING 8-INCH	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH		TEMPORARY MARKING LINE REMOVABLE CONTRAST TAPE 4-INCH	TEMPORARY MARKING LINE REMOVABLE TAPE 8-INCH	TEMPORARY MARKING LINE REMOVABLE CONTRAST TAPE 8-INCH	TEMPORARY MARKING ARROW REMOVABLE TAPE		TEMPORARY MARKING WORD REMOVABLE TAPE	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH
					WHITE	YELLOW	WHITE	WHITE	WHITE	TYPE 2	TYPE 4	WHITE	WHITE
CATEGORY	ROADWAY	STATION	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	EACH	LF
1000	IH 41/USH 45 NB	105+89-183+60	-	-	6,069	7,752	3,883	-	2,242	-	-	-	-
	IH 41/USH 45 SB	205+88-284+75	-	-	6,597	7,906	2,242	-	2,802	-	-	-	-
	NB ON RAMP FROM GOOD HOPE RD	899+40-911+00	-	-	1,419	907	-	-	412	-	-	-	-
	NB ON RAMP FROM STH 145	406+00-430+50	-	-	2,618	2,210	134	-	578	-	-	-	-
	NB EXT RAMP TO 124TH ST	348+00-359+00	-	-	1,564	992	66	-	1,021	6	1	3	81
	NB ON RAMP FROM 124TH ST	407+00-418+00	-	-	1,293	816	108	-	1,700	-	-	-	71
	SB EXT RAMP TO STH 145	515+50-566+00	-	-	4,754	4,619	1,396	-	1,539	-	-	-	-
	SB EXT RAMP TO STH 145 NB	837+00-550+25	-	-	1,395	576	-	-	604	2	1	2	33
	SB ON RAMP FROM STH 145	634+00-656+00	-	-	1,798	1,543	254	-	2,694	-	-	-	36
	STH 145 & 124TH ST	651+00-656+00	-	-	1,685	1,290	-	1,583	-	10	-	9	183
	UNDISTRIBUTED		17,296	4,124	1,461	1,431	405	104	682	3	1	2	20
		SUB-TOTAL	17,296	4,124	30,653	30,042	8,488	1,687	14,274	21	3	16	424
		TOTAL			60,695					24			

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PROGRESS SCHEDULE			
			108.4300
			RBC PROGRESS SCHEDULE
CATEGORY	PROJECT	STATION	EACH
1000	1100-17-76		1
		TOTAL	1

ROADWAY				
			213.0100	SPV.0075.0001
			FINISHING ROADWAY (PROJECT) 0001. 1100-17-76	PAVEMENT CLEANUP PROJECT 1100-17-76
CATEGORY	ROADWAY	STATION	EACH	HRS
1000	IH 41/USH 45		1	100
		TOTAL	1	100

COLD PATCH			
			495.1000.S
			COLD PATCH
CATEGORY	PROJECT	STATION	TON
1000	1100-17-76		10
		TOTAL	10

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MOBILIZATION			
			619.1000
			MOBILIZATION
CATEGORY	ROADWAY	STATION	EACH
1000	IH 41/USH 45		1
		TOTAL	1

TRAFFIC CONTROL		
		643.5000
		TRAFFIC CONTROL
CATEGORY	ROADWAY	EACH
1000	IH 41/USH 45	1
	TOTAL	1

ULO			
			SPV.0060.5004
			UTILITY LINE OPENING (ULO)
CATEGORY	ROADWAY	STATION	EACH
1000	IH 41/USH 45		10
		TOTAL	10

MOBILIZATIONS EMERGENCY PAVEMENT REPAIR			
			SPV.0060.5006
			MOBILIZATIONS EMERGENCY PAVEMENT REPAIR
CATEGORY	ROADWAY	STATION	EACH
1000	IH 41/USH 45		10
		TOTAL	10

FOAM JACKING				
			SPV.0085.0001	
			FOAM JACKING	
			SOUTH	NORTH
CATEGORY	ROADWAY	LOCATION	LB	LB
1000	IH 41/USH 45 NB	B-40-295	1000	1000
		B-40-397	1000	1000
	IH 41/USH 45 SB	B-40-296	1000	1000
		B-40-398	1000	1000
	SB EXIT TO STH 145 SB	B-40-399	1000	1000
	SB ON RAMP FROM 124TH STREET	B-40-412	1000	1000
		SUBTOTAL	6000	6000
		TOTAL	12000	

SEALING CRACKS AND JOINTS			
			SPV.0085.0002
			SEALING CRACKS AND JOINTS WITH HOT-APPLIED SEALANT
CATEGORY	ROADWAY		LB
1000	IH 41NB/USH 45 NB		13,728
	IH 41SB/USH 45 SB		7,392
		TOTAL	21,120

SURVEY			
			SPV.0060.5007
			SURVEY PROJECT 1100-17-76
CATEGORY	ROADWAY	STATION	EACH
1000	IH 41/USH 45		1
		TOTAL	1

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TYPE I & II PERMANENT SIGNING -

1100-17-76 IH 41

SIGN NO.	SIGN CODE & SIZE	SIGN TYPE	SIGN MESSAGE	TYPE II SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	638.2602 REMOVING SIGNS TYPE II [EA]	638.3000 REMOVING SMALL SIGN SUPPORTS [EA]	634.0622 POSTS WOOD 4" X 6" X 22' EA	638.2102 MOVE SIGNS TYPE II [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION	TYPE I SIGN SIZE W x H [FT.] x [FT.]	637.1220 SIGNS TYPE I REFLC SH [SF]	638.2601 REMOVING SIGNS TYPE I [EA]
1	E6-1	I	GOOD HOPE RD , EXIT ONLY , TILT ARROW RIGHT								MOUNT ON EXISTING SIGN BRIDGE , I BEAMS INCIDENTAL	17 X 7	119.000	1
1A	E1-5P	I	EXIT 47B								MOUNT ON SIGN # 1	10 X 2.5	25.000	
2	E6-51 MODIFIED	I	41-45-100 ,TO 894 , TWO DOWN ARROWS								MOUNT ON EXISTING SIGN BRIDGE, I BEAMS INCIDENTAL	17 X 8	136.00	1
3	E6-51	I	GOOD HOPE RD, EXIT ONLY , DOWN ARROW								MOUNT ON EXISTING SIGN BRIDGE, I BEAMS INCIDENTAL	17 X 6.5	110.50	1
3A	E1-5P	1	EXIT 47B								MOUNT ON SIGN # 3	10 X 2.5	25.00	
4	E1-1A	I	GOOD HOPE RD , 3/4 MILE								MOUNT ON EXISTING I BEAMS BEHIND EXISTING GUARD RAIL	21 X 6.5	136.50	1
4A	E1-5P	I	EXIT 47B								MOUNT ON SIGN # 4	10 X 2.5	25.00	
5	NONE	I	145 SOUTH, FOND DU LAC AVE AHEAD								MOUNT ON EXISTING STEEL POSE BEHIND EXISTING BARRIER WALL	20 X 9	180.00	1
6	NONE	I	145 NORTH 124TH ST TILT ARROW RIGHT								MOUNT ON EXISTING STEEL POSE BEHIND EXISTING BARRIER WALL	16 X 7.5	120.00	1
7	NONE	I	145 NORTH 124TH ST, NEXT RIGHT								MOUNT ON EXISTING STEEL POSE BEHIND EXISTING BARRIER WALL	13 X 9	117.00	1
undistributed					50.000	3	3	3	3					
TOTALS					50.000	3	3	3	3				994.000	7

3

3

FTMS CABLE REMOVALS			
		674.0300 REMOVE CABLE	
CATEGORY	ROADWAY	ITEM ID	LF
1300	IH 41 / US 45		
		EX-CB-RM-40-0108 - EXPB102NB	15
		EXPB102NB - EXPB103NB	180
		EXPB103NB - EXPB105NB	215
		EXPB105NB - EXPB106NB	110
		EXPB106NB - EXPB108NB	200
		EXPB108NB - EXPB109NB	85
		EXPB109NB - EXPB109SB	120
		EXPB109NB - EXPB110NB	195
		EX-CB-RM-40-0116 - EXPB119NB	10
		EXPB119NB - EXPB118NB	30
		EXPB118NB - EXPB120NB	235
		EXPB120NB - EXPB124NB	370
		EXPB124NB - EXPB125NB	40
		EXPB124NB - EXPB126NB	260
		EXPB140NB - EXPB139NB	130
		EXPB139NB - EXPB143NB	365
		EXPB143NB - EXPB645	15
		EXPB645 - EXPB644	25
		EXPB644 - EXPB643	35
		EXPB643 - EXPB646	375
		EXPB646 - EX-CB-RM-40-0117	15
		EX-CB-RM-40-0114 - EXPB407	15
		EXPB407 - EXPB408	65
		EXPB408 - EXPB411	230
		EXPB411 - EXPB410	45
		EXPB410 - EXPB164NB	30
		EXPB164NB - EXPB161NB	185
		EXPB161NB - EXPB261SB	105
		EXPB165NB - EXPB166NB	130
		EXPB165NB - EXPB167NB	240
		EXPB167NB - EXPB170NB	260
		TOTAL	4,330

FTMS EACH REMOVALS				
		204.9060.S.2000	204.9060.S.2001	
		REMOVING MICROWAVE DETECTOR	REMOVING POLE	
CATEGORY	ROADWAY	ITEM ID.	EACH	EACH
1300	IH 41 / US 45			
		EXDPGHNB	1	1
		TOTALS	1	1

FTMS UNDERGROUND EACH ITEMS				
		652.0700.S INSTALL CONDUIT INTO EXISTING ITEM	653.0140 PULL BOXES STEEL 24 X 42 - INCH	
CATEGORY	ROADWAY	ITEM ID	EACH	EACH
1300	IH 41 / US 45			
		EXPB110NB	1	--
		EXPB124NB	1	--
		PB539	--	1
		EXPB641	1	--
		EXPB170NB	1	--
		TOTALS	4	1

MISCELLANEOUS ITEMS				
		670.0100 FIELD SYSTEM INTEGRATOR	670.0200 ITS DOCUMENTATION	
CATEGORY	ROADWAY	LS	LS	
1300	IH 41 / US 45			
	PROJECT	1	1	
		TOTALS	1	1

3

FTMS CONDUIT AND WIRE						
		652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG	674.0200 CABLE MICROWAVE DETECTOR		
CATEGORY	ROADWAY	ITEM ID	LINEAR DISTANCE	LF	LF	LF
1300	IH 41 / US 45					
		EX-CB-RM-40-0108 - EXPB110NB	920	--	920	2,760
		EXPB110NB - DP110NB	10	20	10	30
		EX-CB-RM-40-0116 - EXPB124NB	640	--	640	1,920
		EXPB124NB - DP124NB	10	20	10	30
		EX-CB-RM-40-0117 - EXPB641	460	--	460	1,380
		EXPB641 - PB539	355	710	355	1,065
		PB539 - DP539	10	20	10	30
		EX-CB-RM-40-0114 - EXPB170NB	950	--	950	2,850
		EXPB170NB - DP170NB	10	20	10	30
		TOTALS		790	3,365	10,095

FTMS BASES, POLES, CABINETS, AND EQUIPMENT							
		654.0106 CONCRETE BASES TYPE 6	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	657.0327 POLES TYPE 6- ALUMINUM	675.0300 INSTALL MOUNTED CONTROLLER MICROWAVE DETECTOR ASSEMBLY	SPV.0060.2002 GROUND ROD	SPV.0060.2003 REFOCUS SIDE-FIRE VEHICLE DETECTOR SITE
CATEGORY	ROADWAY	ITEM ID.	EACH	EACH	EACH	EACH	EACH
1300	IH 41 / US 45						
		EXDPGHSB	--	--	--	1	--
		DP110NB	1	1	1	3	1
		DP124NB	1	1	1	3	1
		DP539	1	1	1	3	1
		DP170NB	1	1	1	3	1
		TOTALS	4	4	4	13	4

IH 41 NB RAMPS & STH 145
MILWAUKEE/WAUKESHA COUNTY
CATEGORY 1500
S67-0864

REMOVING LOOP DETECTOR WIRE AND LEAD-IN CABLE	
204.9060.S.3000	
REMOVING LOOP DETECTOR WIRE & LEAD-IN CABLE	
LOCATION	EACH
IH 41 NB RAMPS & STH 145	1
TOTAL	1

PULL BOXES		
653.0135		
PULL BOXES		
STEEL		
24x36-INCH		
PULL BOX NO.	LOCATION^	EACH
PB16	356+27.4, 27.7' LT	1
TOTAL		1

CONDUIT		
652.0225		
CONDUIT RIGID		
NONMETALLIC		
SCHEDULE 40		
2-INCH		
FROM	TO	L.F.
PB10	PB16	24
TOTAL		24

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

TRAFFIC DETECTOR LOOPS									
LOOP NO.	HOME RUN PB	LOCATION** ^	SIZE (FT)x(FT)	NO. OF TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800	655.0700	655.0800
							CONDUIT LOOP DETECTOR L.F.	LOOP DETECTOR LEAD IN CABLE L.F.	LOOP DETECTOR WIRE L.F.
81	PB16	356+27.0, 6.5' RT	6'X15'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	106	440	424
82	PB16	356+27.0, 5.8' LT	6'X15'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	80	440	320
83	PB16	356+27.0, 18.6' LT	6'X15'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	54	440	216
84	PB9	358+57.5, 6.7' RT	6'X20'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	88	240	352
85	PB9	358+88.5, 6.3' RT	6'X20'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	72	240	288
86	PB12	358+44.7, 5.5' LT	6'X20'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	74	277	296
87	PB12	358+75.7, 5.9' LT	6'X20'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	76	277	304
88	PB8	358+25.2, 23.3' LT	6'X20'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	80	235	320
89	PB8	358+54.4, 31.9' LT	6'X20'	4	ASPHALT	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPlice) BOX OFF ROADWAY (OPTION 2)	88	235	352
TOTAL							718	2824	2872

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

Standard Detail Drawing List

08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E01-15E	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 6 (35 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09F04-05	LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT ROUND CSCP PULLBOX
09F12-04	LOOP DETECTOR INSTALLED IN EXISTING CONCRETE PAVEMENT
09F14-03	LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT ROUND CSCP PULL BOX 45 DEGREE ELBOWS TO PULL BOX
09F16-02	LOOP DETECTOR INSTALLED IN NEW CONCRETE PAVEMENT ROUND CSCP PULL BOX 45 DEGREE ELBOWS TO PULL BOX
11B02-02	CONCRETE MEDIAN NOSE
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-15A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-15C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-08D	ON RAMP LANE CLOSURE
15C02-08E	OFF RAMP LANE CLOSURE
15C02-08F	ADVANCED WIDTH RESTRICTION SIGNING
15C07-15A	PAVEMENT MARKING SYMBOLS
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)
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
15C18-05C	MEDIAN PAVEMENT MARKINGS DOUBLE ARROW WARNING SIGN PLACEMENT
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-06B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-06C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C21-10	SIGNING AND MARKING FOR TWO LANE TO FOUR LANE DIVIDED TRANSITIONS
15C31-04A	PAVEMENT MARKING EXIT RAMP AND PARALLEL EXIT RAMP
15C31-04B	PAVEMENT MARKING MAJOR SPLIT FREEWAY TO FREEWAY
15C31-04C	PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP
15C31-04D	PAVEMENT MARKING SERVICE INTERCHANGE LANE DROP AND LANE REDUCTION MARKING
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)
15D12-09A	TRAFFIC CONTROL, LANE CLOSURE
15D12-09B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D12-09C	DYNAMIC LATE MERGE SYSTEM
15D12-09D	TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM
15D12-09E	TRAFFIC CONTROL, LANE CLOSURE, TRAFFIC QUEUE WARNING SYSTEM
15D14-04	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D15-05A	TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05B	TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05C	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D16-04	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D42-01	TRAFFIC CONTROL, TWO LANE FULL FREEWAY CLOSURE
15D47-01A	TRAFFIC CONTROL, INGRESS/EGRESS WITH BARRIER

Standard Detail Drawing List

15D47-01B TRAFFIC CONTROL, INGRESS/EGRESS WITHOUT BARRIER

GENERAL NOTES

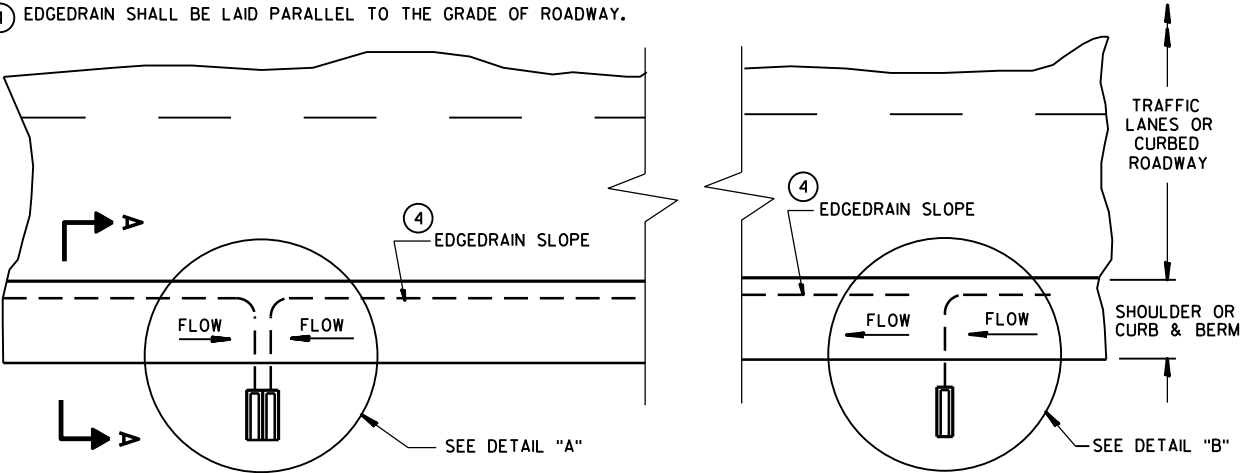
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

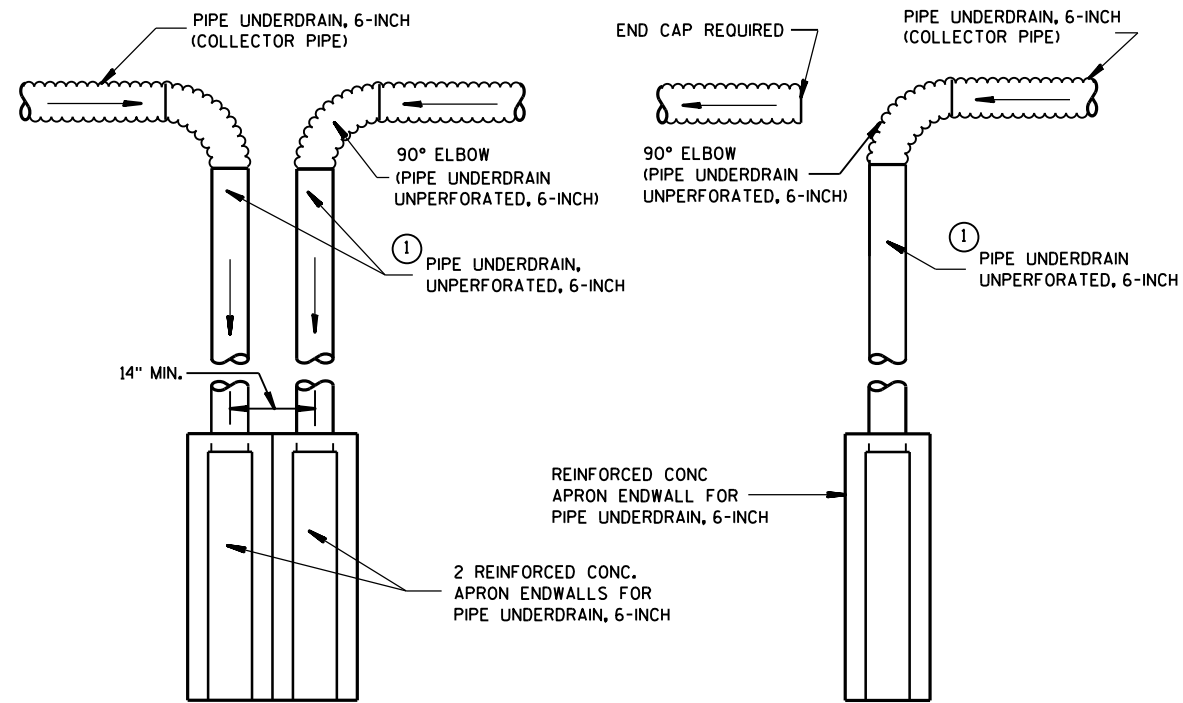
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



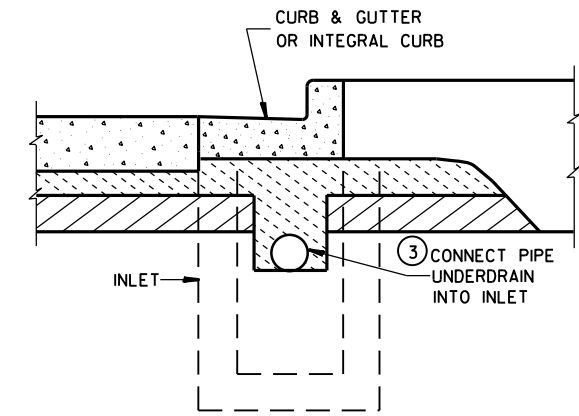
PLAN VIEW
ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN OUTLETS TO ROADSIDE) ②



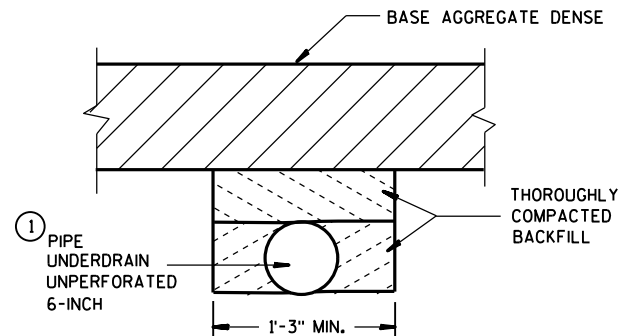
DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

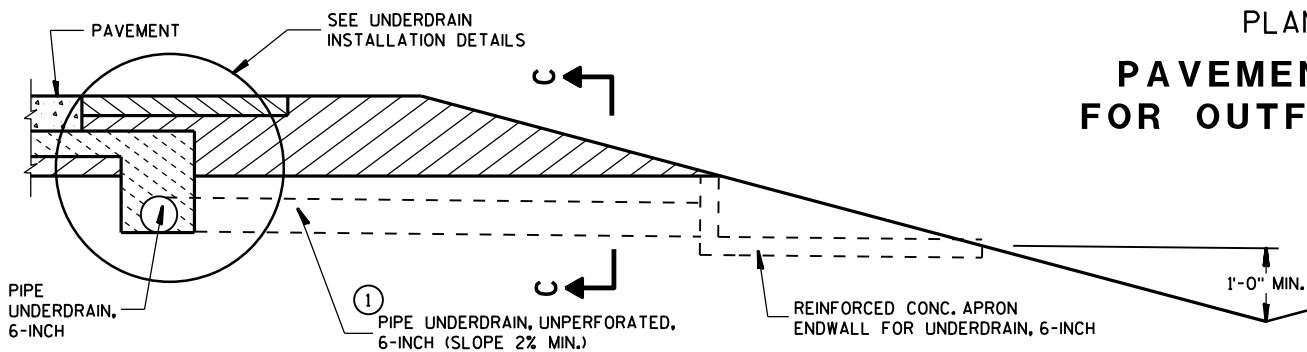
TYPICAL DRAIN OUT DETAILS



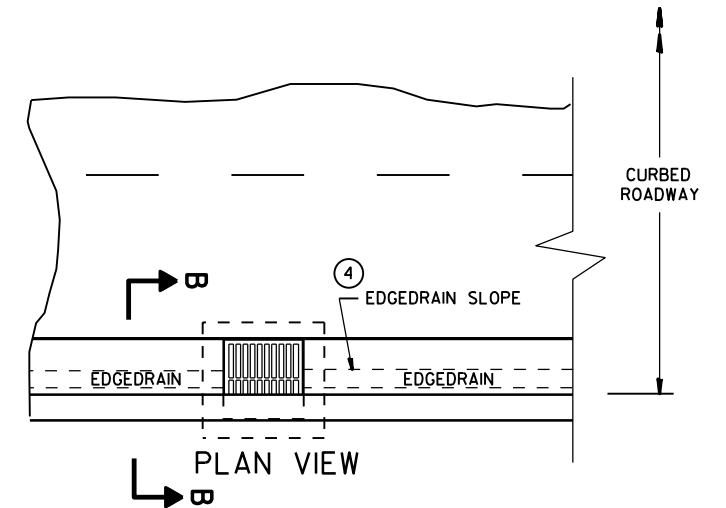
SECTION B-B
URBAN CROSS SECTION



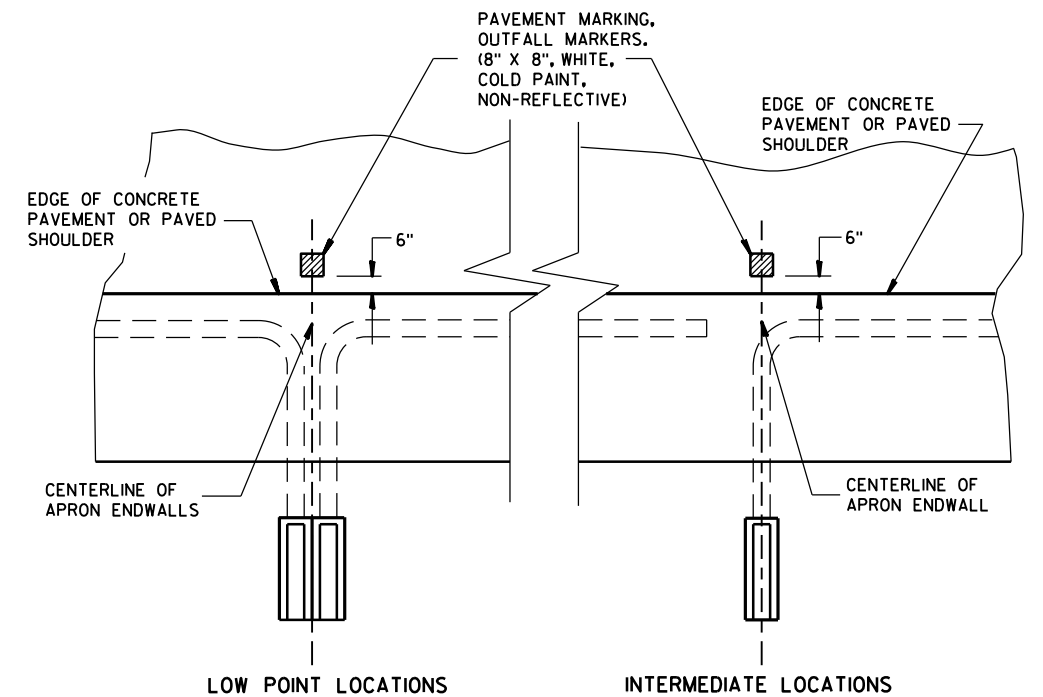
SECTION C-C
(TRENCH FOR OUTFALL PIPE)



SECTION A-A
RURAL CROSS SECTION



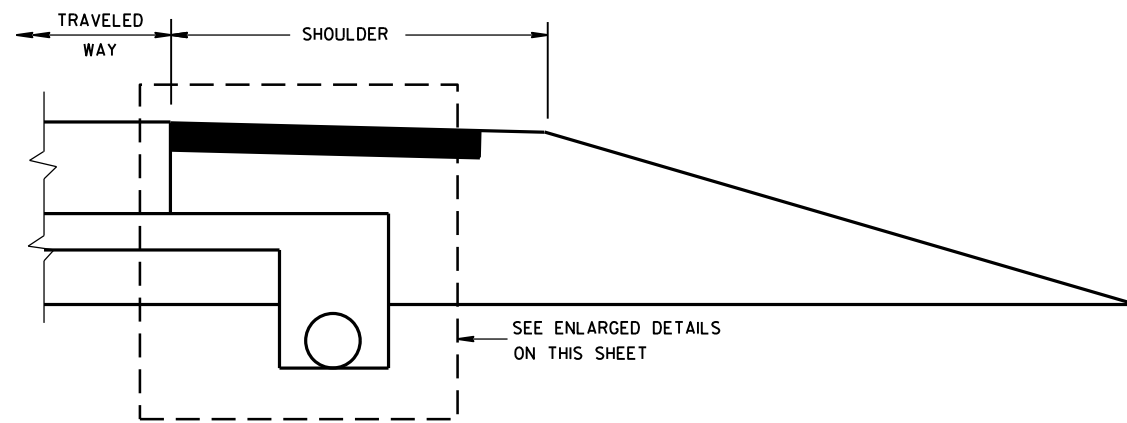
ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)



PLAN VIEW
**PAVEMENT MARKING
FOR OUTFALL MARKERS**

**EDGEDRAIN OUTLET
AND OUTFALL MARKERS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 158



RURAL CROSS SECTION

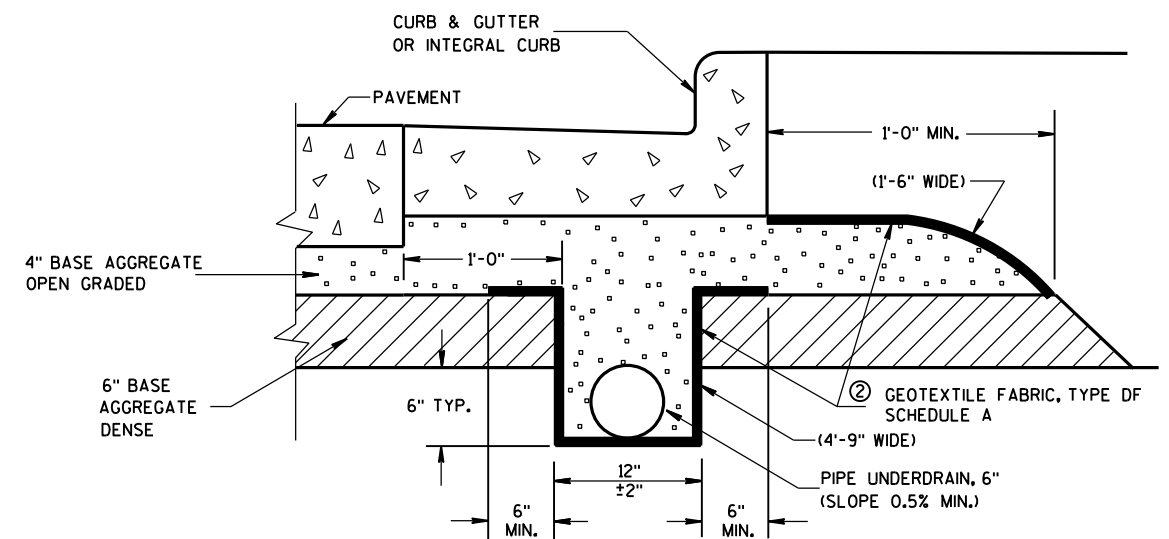
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

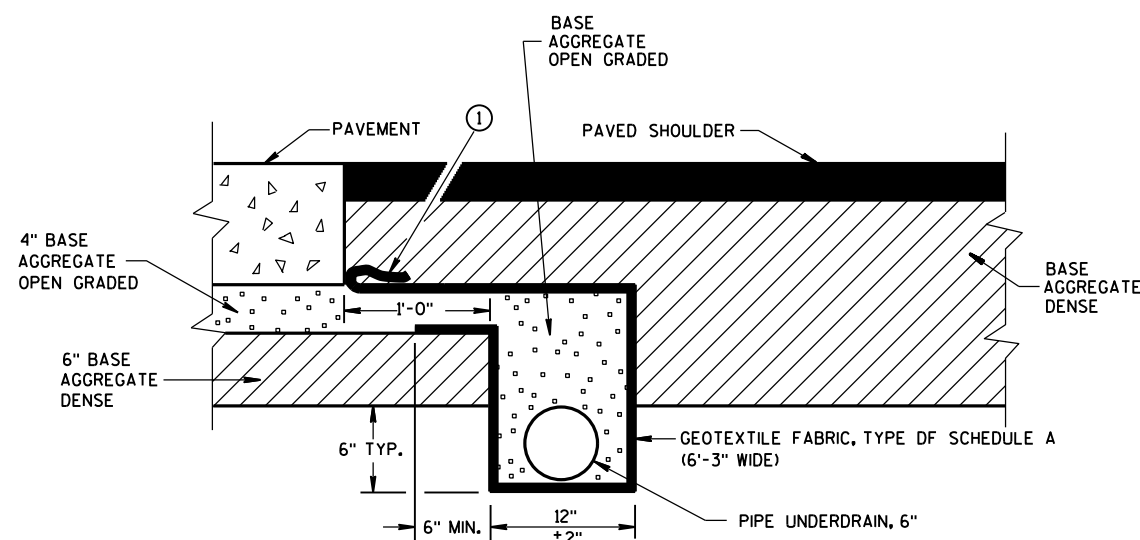
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

① FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.

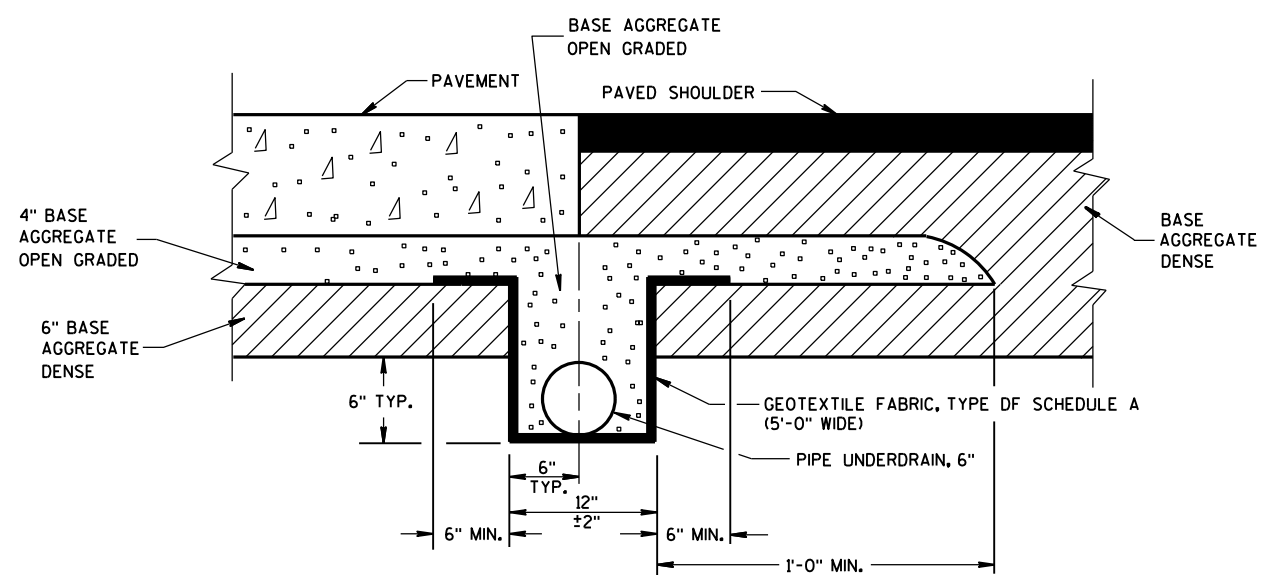
② TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



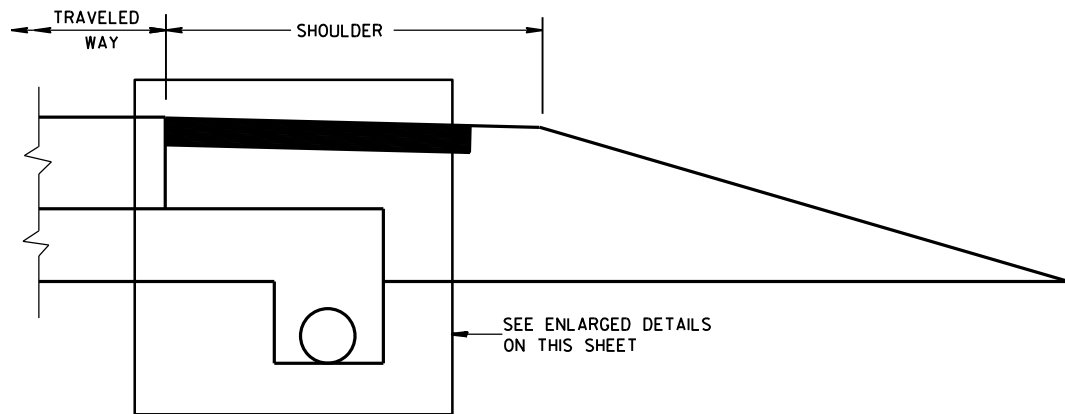
PRE-PAVING INSTALLATION ALTERNATE

EDGEDRAIN IN RURAL ROADWAY

**EDGEDRAIN AND BASE
AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept. 2015 /S/ Peter Kemp, P.E.
PAVEMENT SUPE 159
FHWA

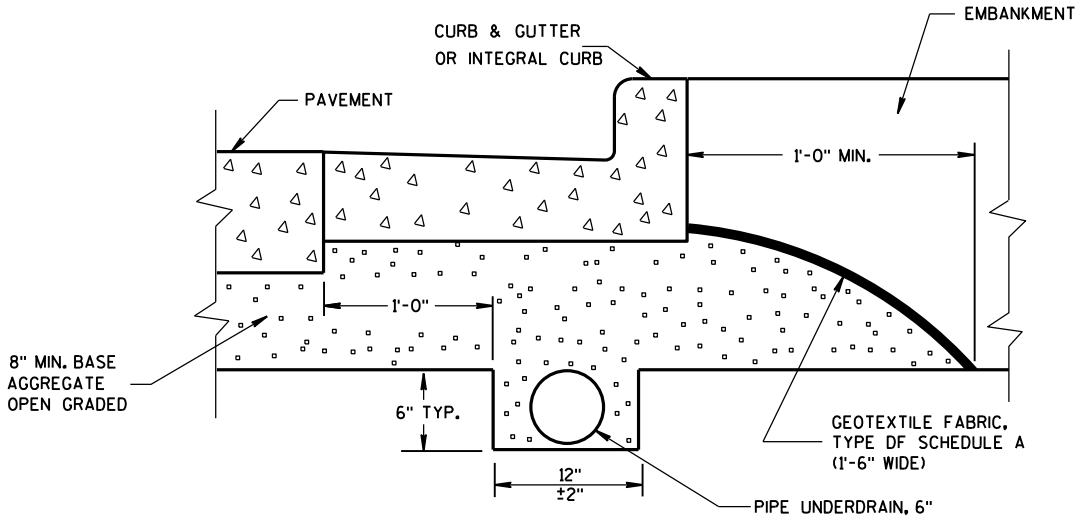


RURAL CROSS SECTION

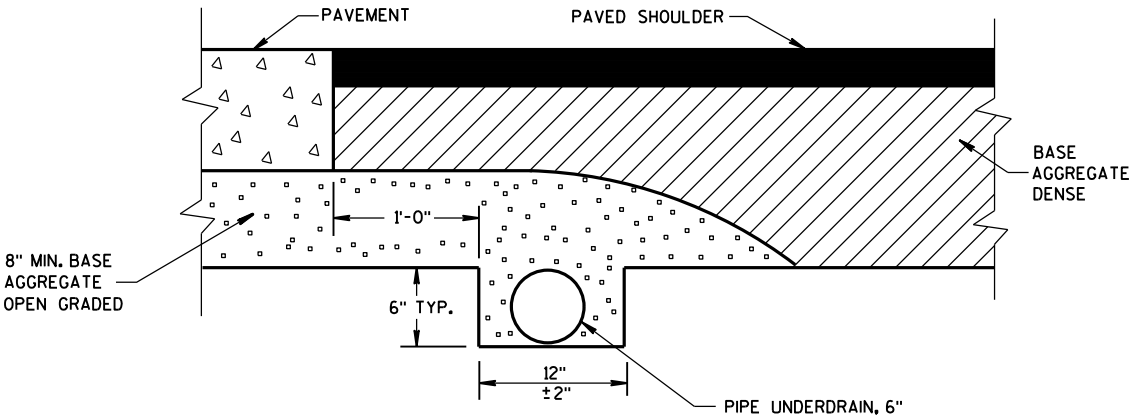
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

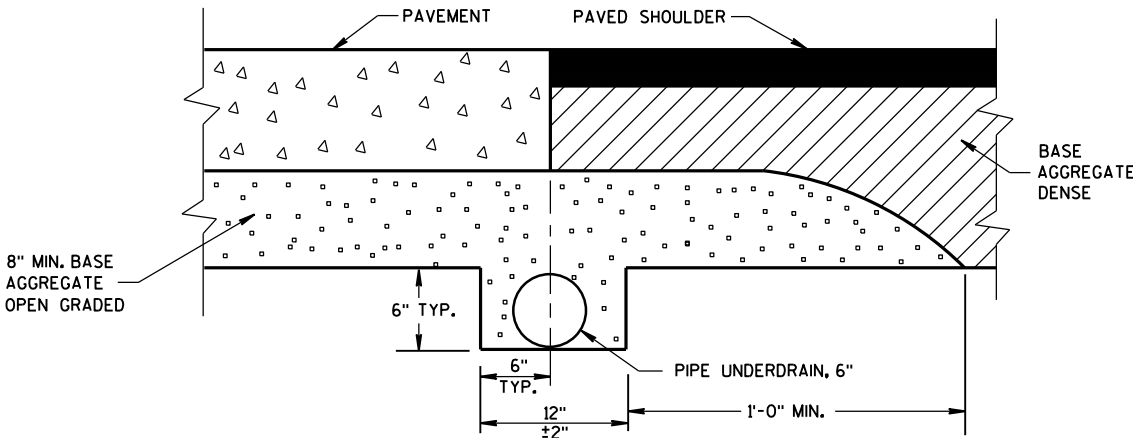
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.



EDGEDRAIN IN URBAN ROADWAY



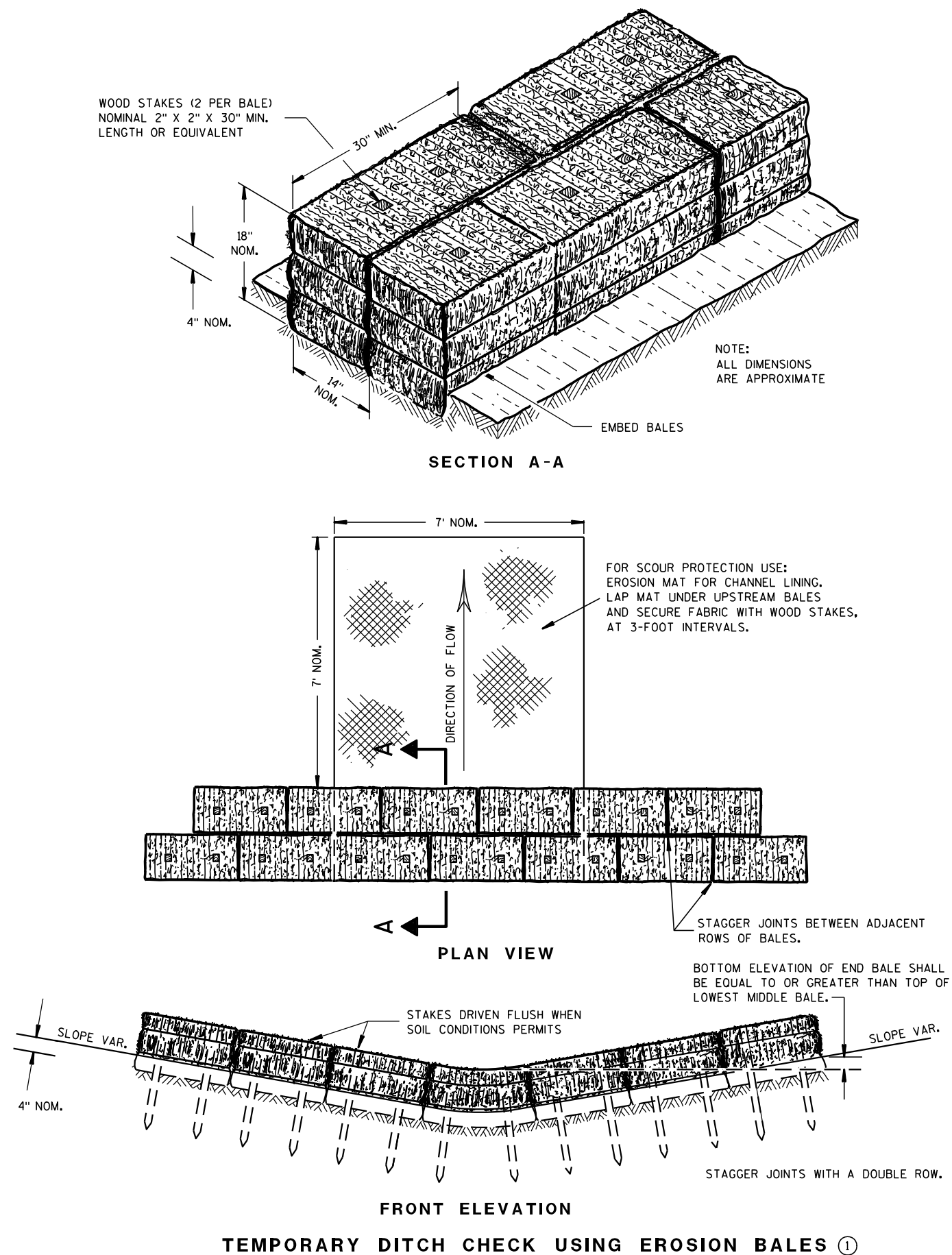
POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

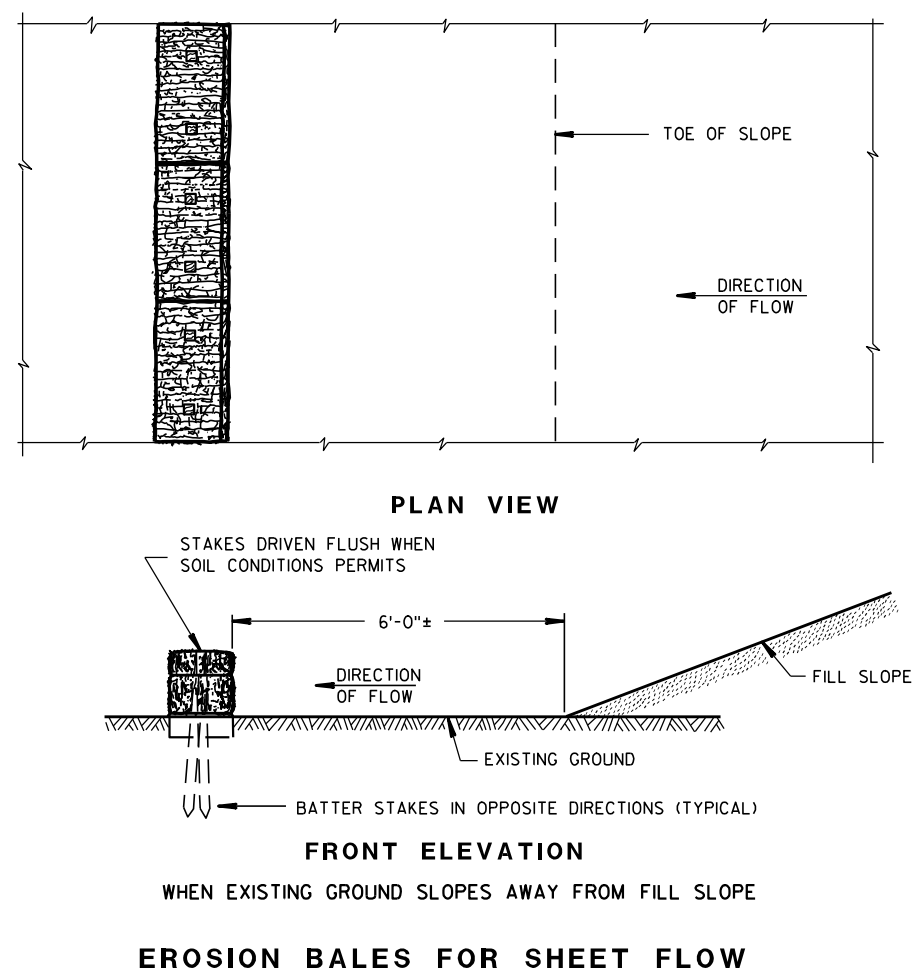
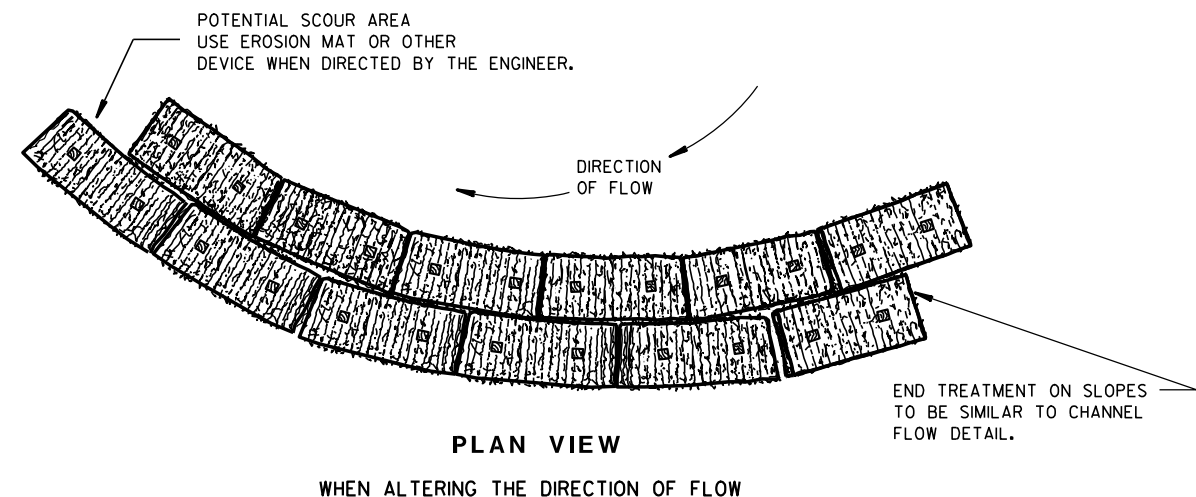
EDGEDRAIN AND BASE AGGREGATE OPEN GRADED	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2015 DATE	/S/ Peter Kemp, P.E. PAVEMENT SUPE 160
FHWA	



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

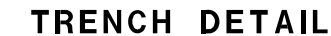
APPROVED

6/04/02
DATE/S/ Beth Conn-----
CHIEF ROADWAY DEVELOPER 161 ENGINEER

FHWA



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



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

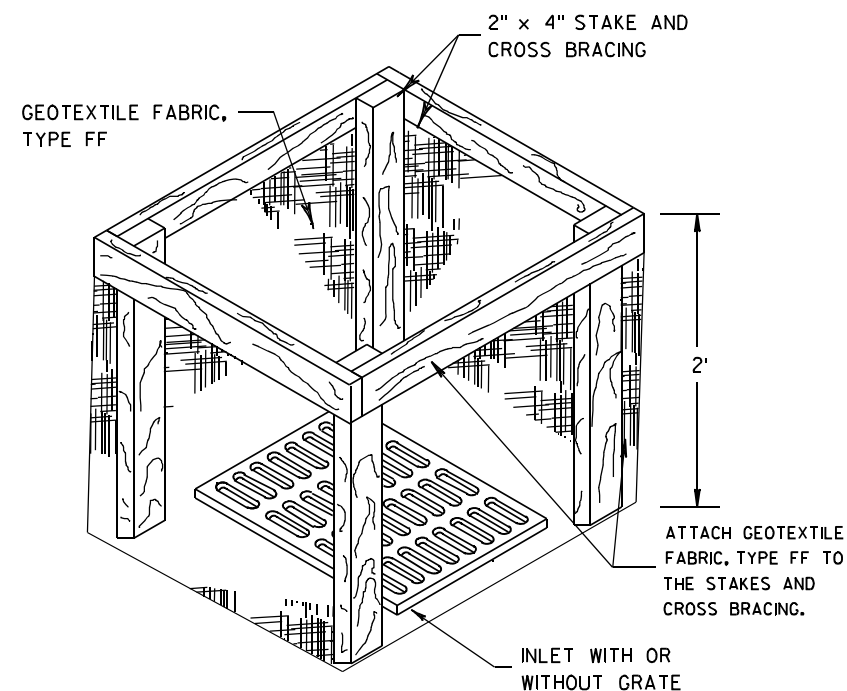
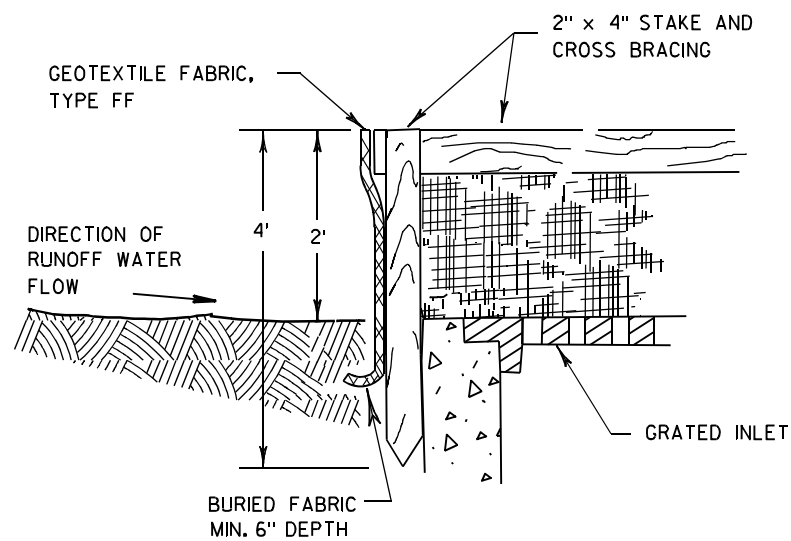
APPROVED
4-29-05
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT

162

ENGINEER

FHWA



INLET PROTECTION, TYPE A

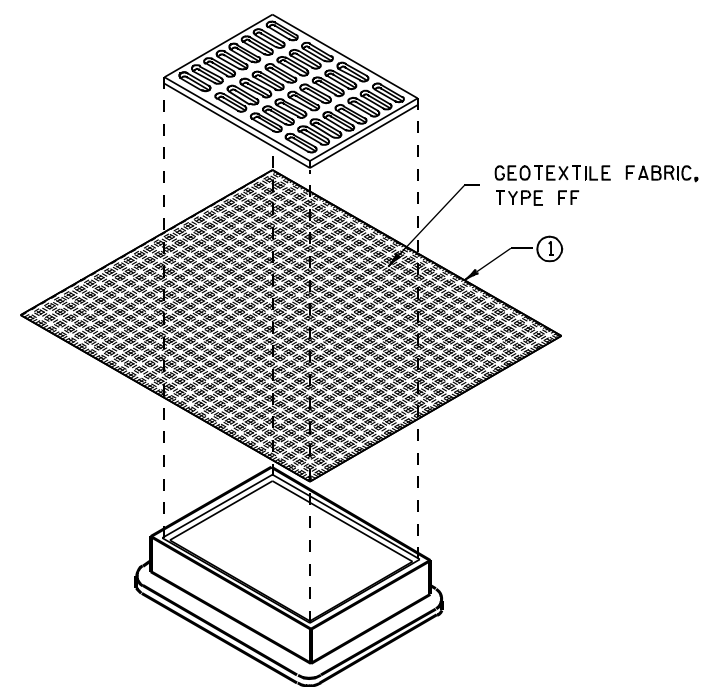
GENERAL NOTES

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

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

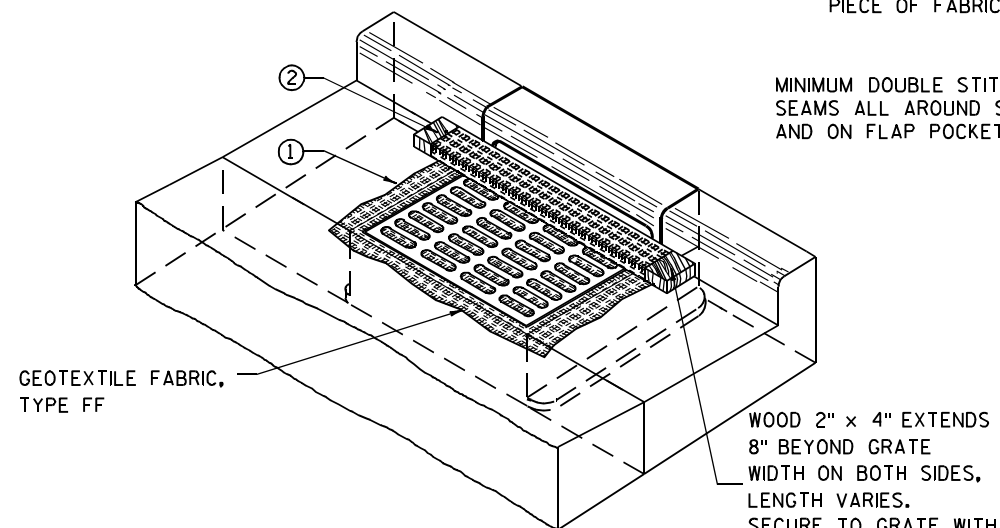
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

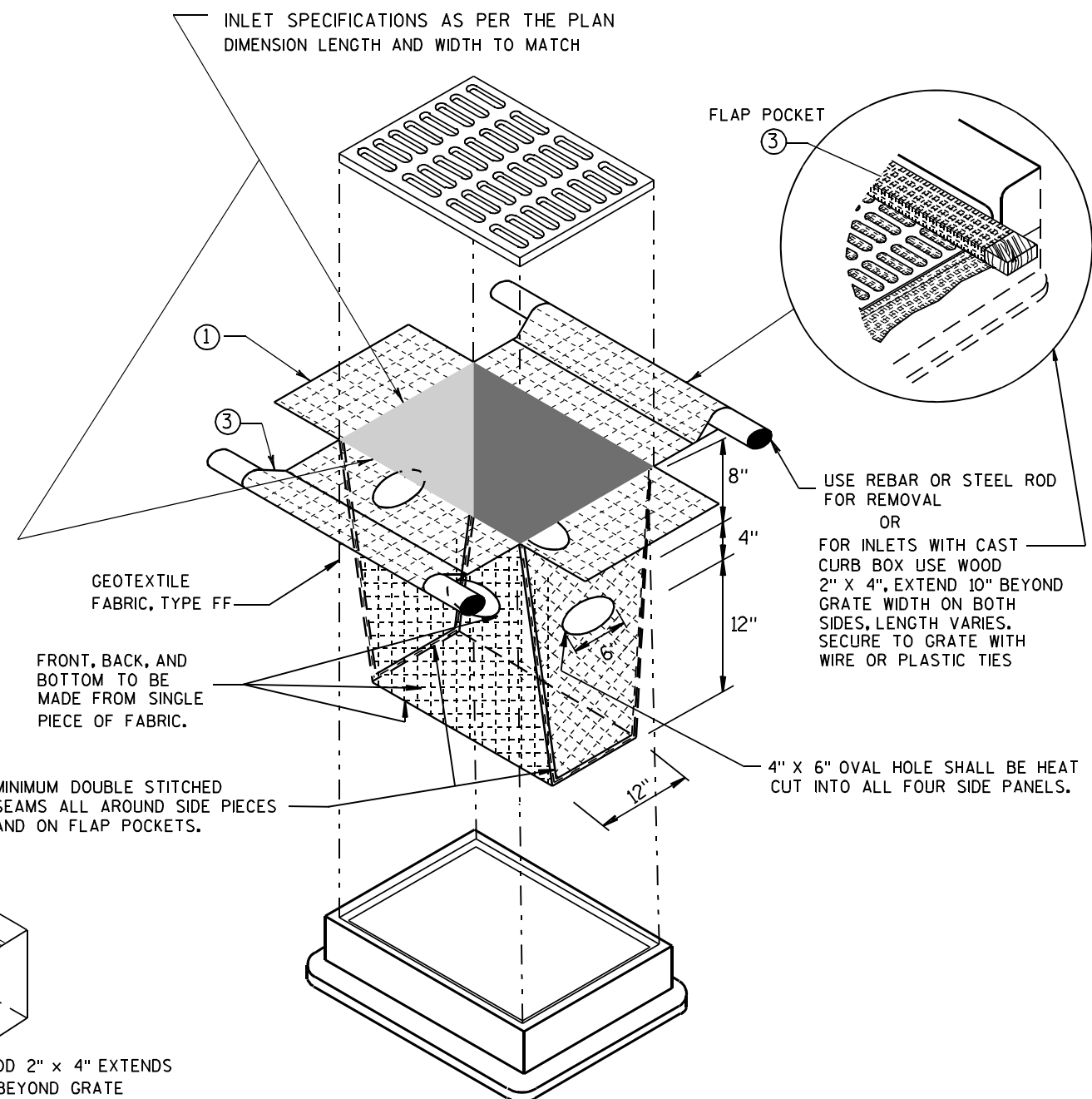
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



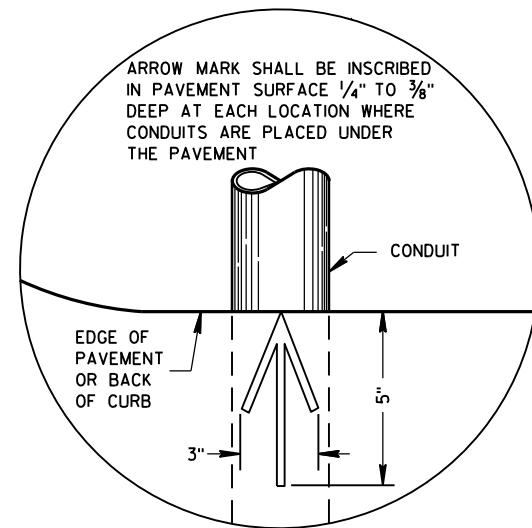
INLET PROTECTION, TYPE D

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

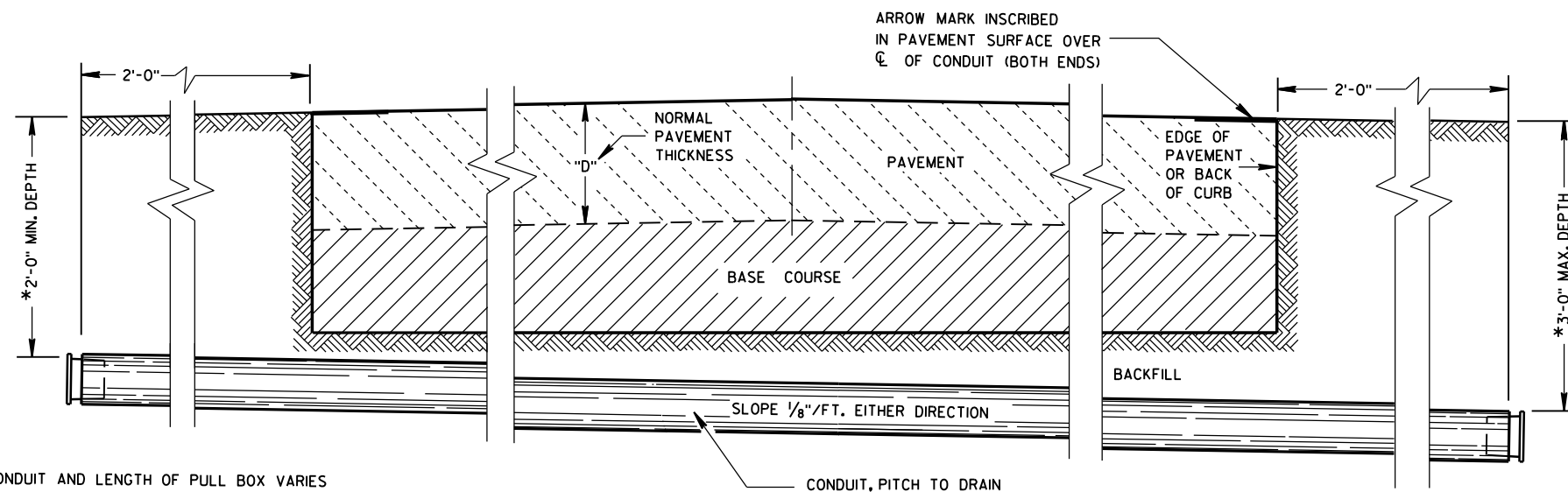
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 163
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

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 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 164
FHWA

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.

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.

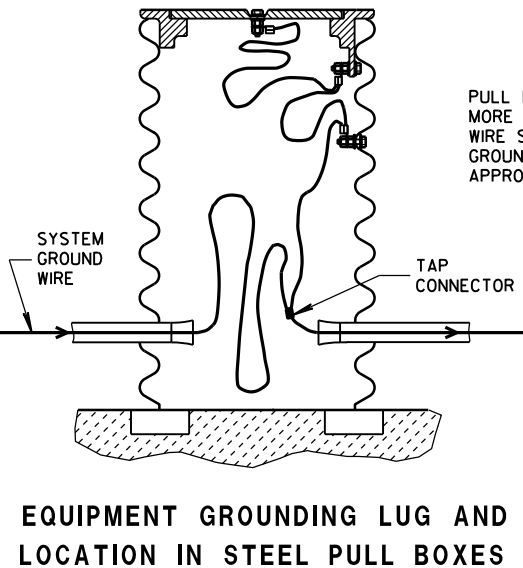
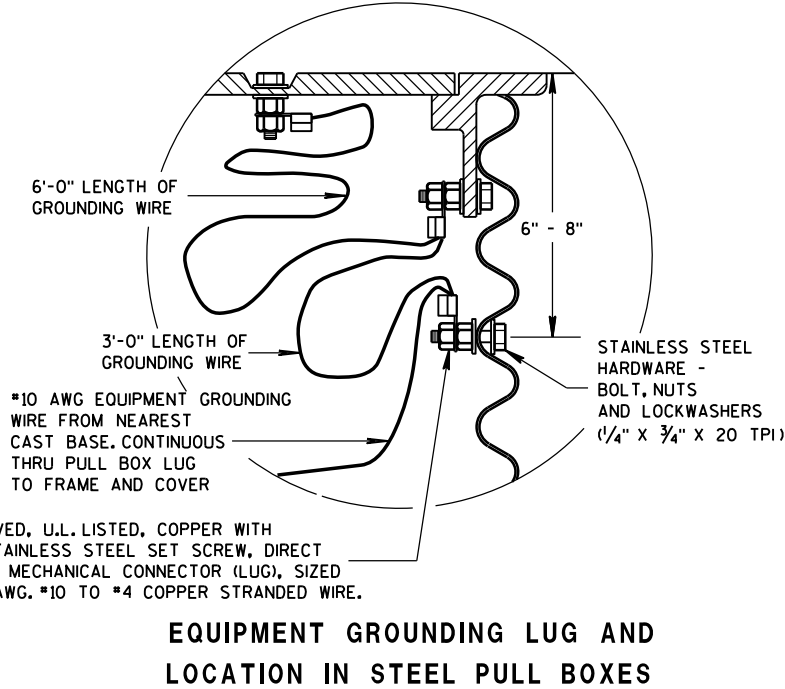
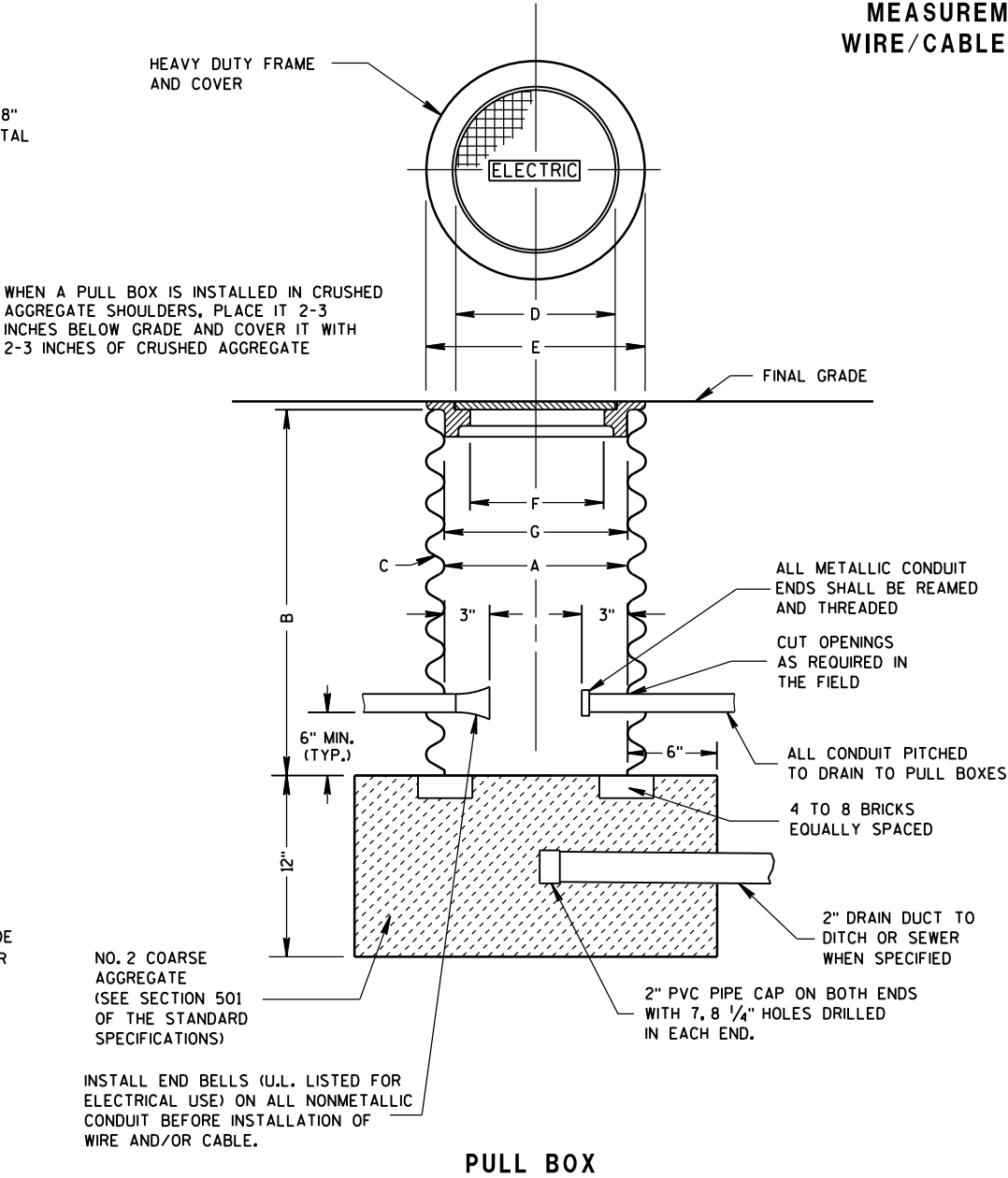
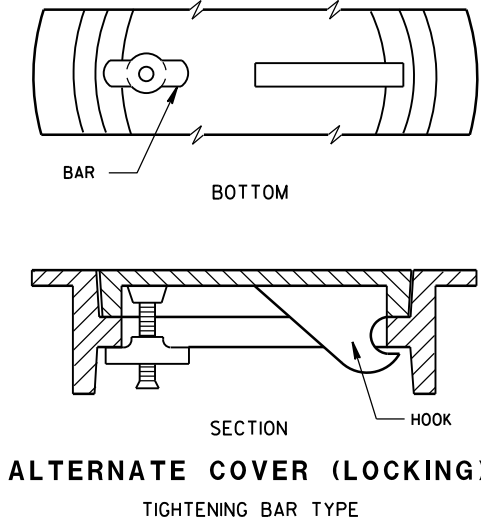
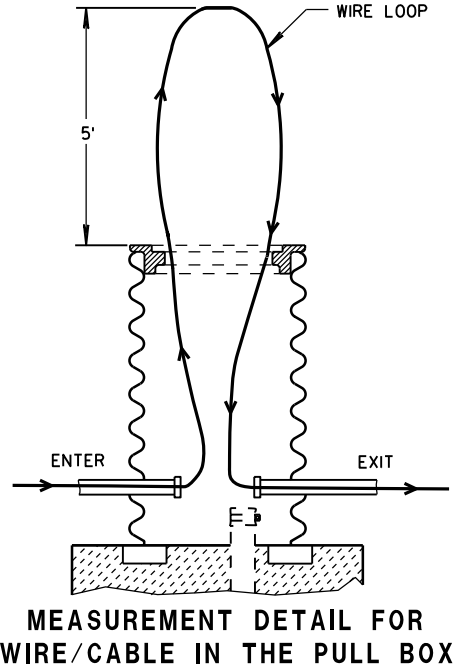
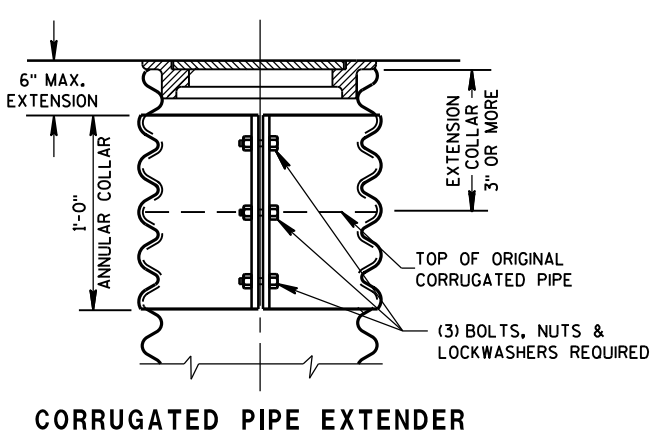
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 165
FHWA	

FORM

4" MAX

6" MAX.

FORM

FORMING SHALL BE REMOVED AFTER CONCRETE HAS SET

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

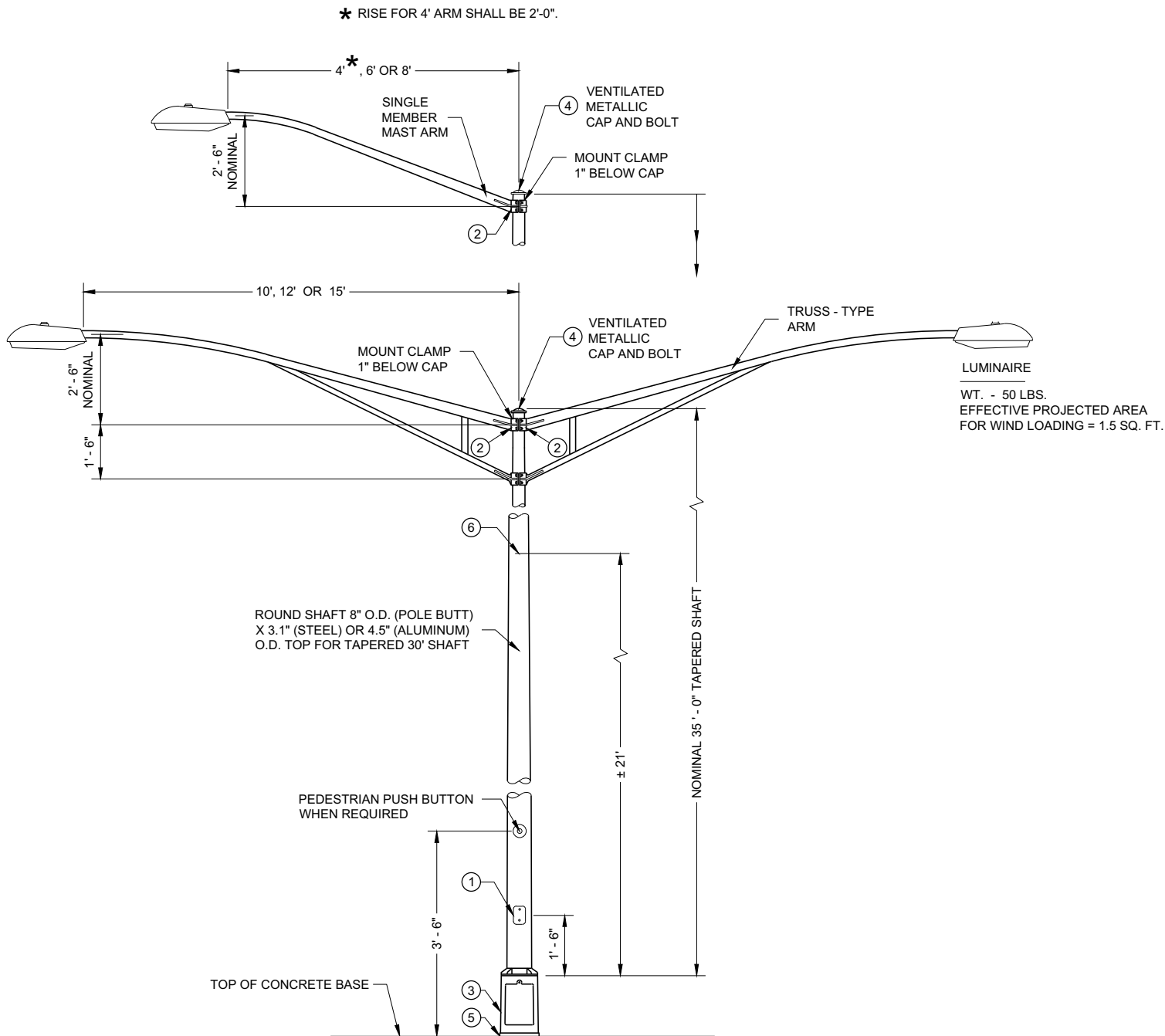
APPROVED
May 2019
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL ENGI 166

FHWA

6

TRANSFORMER/PEDESTAL BASES
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED <u>Sept., 2014</u> DATE <u>/S/ Ahmet Demirbilek</u> STATE ELECTRICAL <u>167</u>



**TYPE 6 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 6 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 6 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVEING INSIDE THE POLE IS NOT ACCEPTABLE.

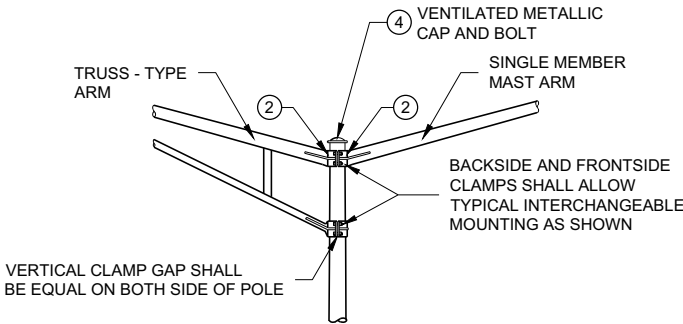
TYPE 6 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.219".

TYPE 6 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.

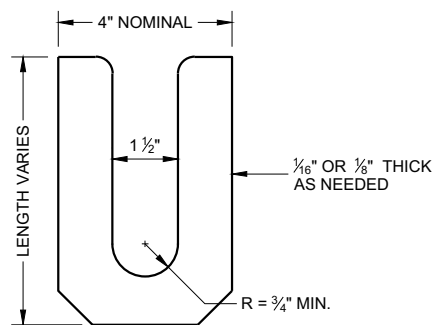
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 3/4" X 3/4" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 3/4" 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.



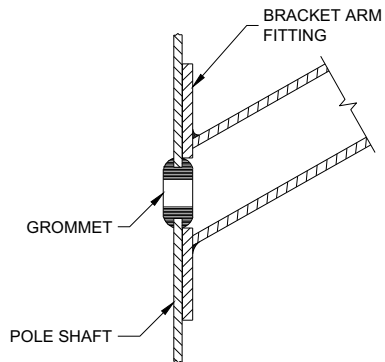
INTERCHANGEABLE MOUNTING DETAIL

**POLE MOUNTINGS FOR
LIGHTING UNITS, TYPE 6
(35 FEET)**

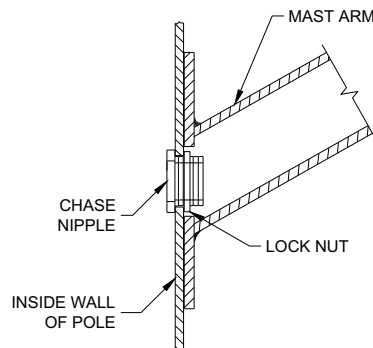
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 168



LEVELING SHIM
SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



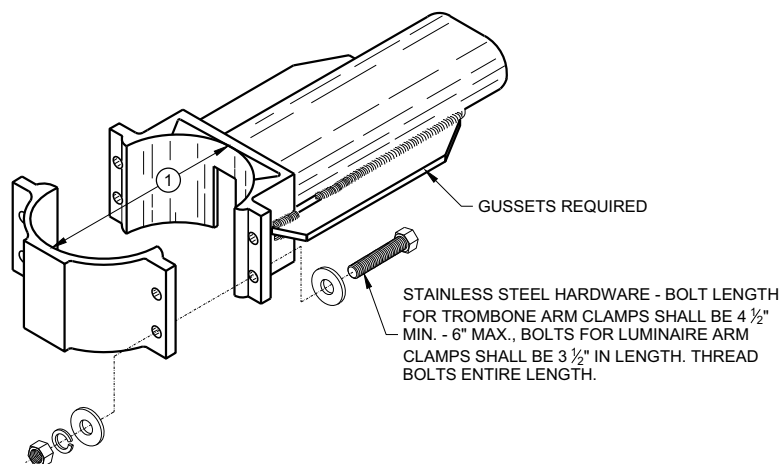
TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

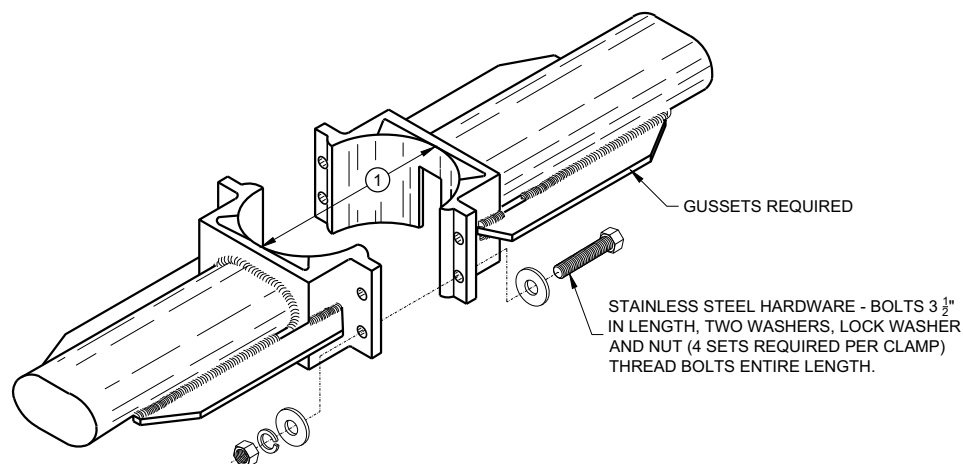
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- 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.

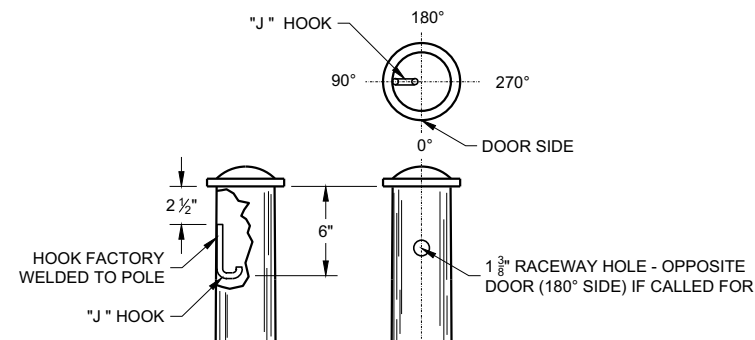
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



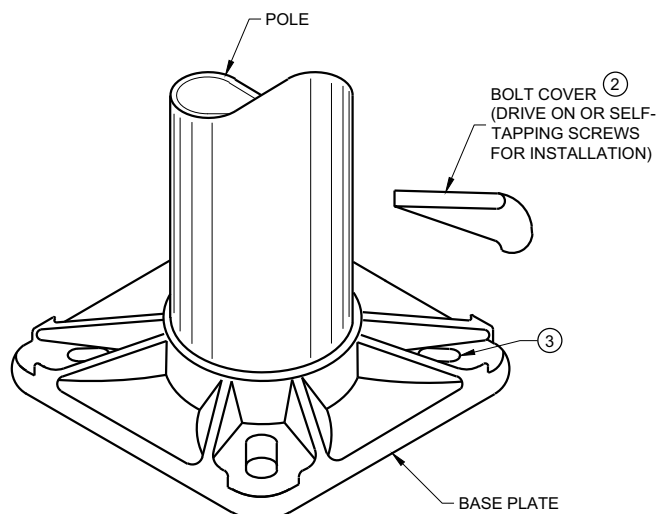
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



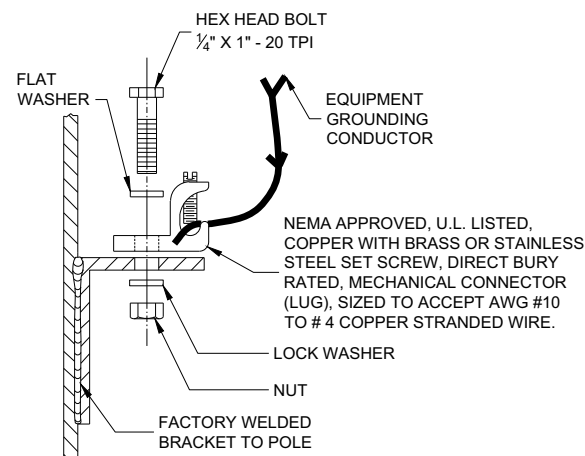
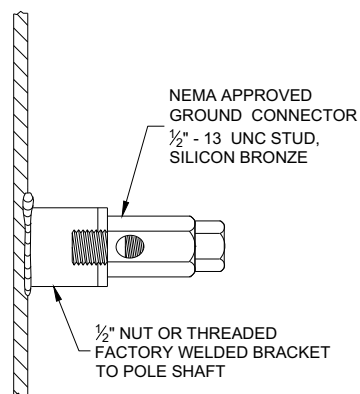
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS



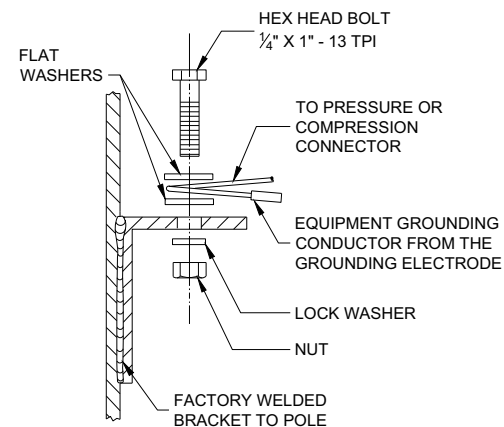
TYPICAL "J" HOOK LOCATION



BASE PLATE



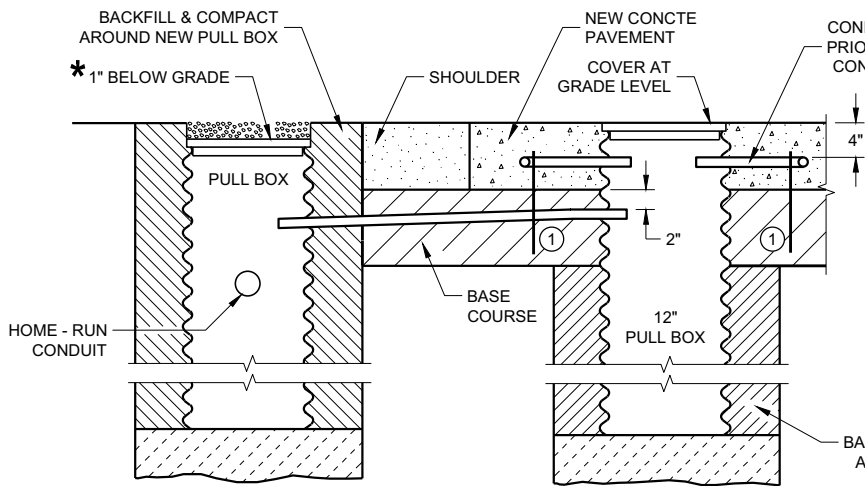
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTING

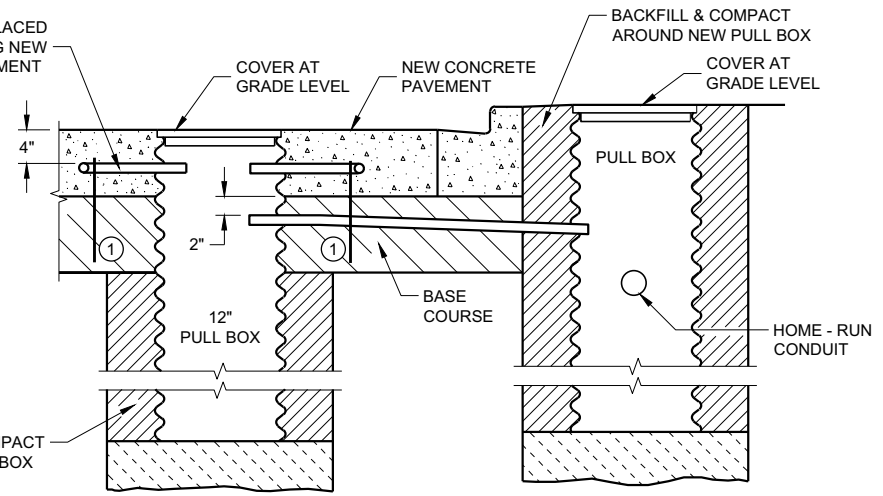
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 169
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

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.

ANY PVC LEADOUT CONDUIT CONTAINING MORE THAN ONE TWISTED PAIR OF LOOP LEAD WIRE SHALL BE 2".

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.

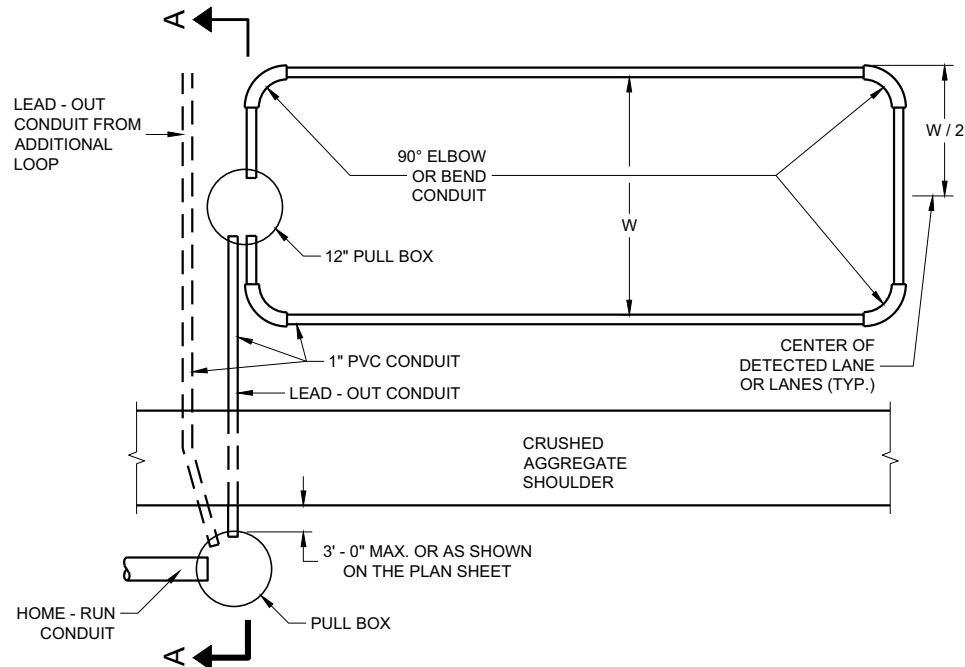
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

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

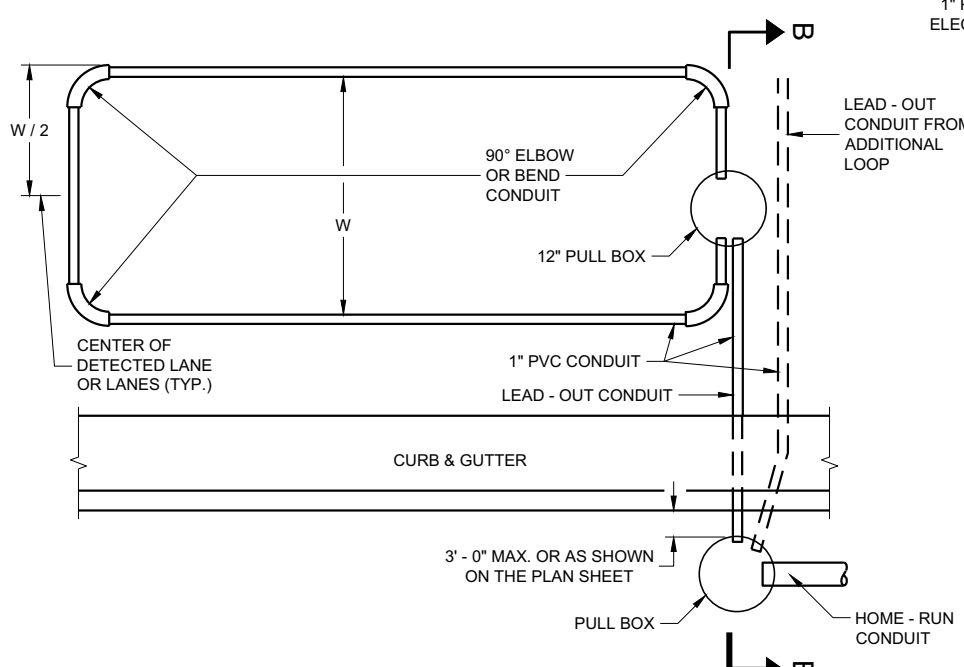
PROTECTION OF THE PULL BOX IN THE BASE COURSE, AND THE RELATED CONDUITS SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW CONCRETE PAVEMENT IS POURED.

12" PULL BOXES IN PAVEMENT SHALL BE CORRUGATED STEEL ONLY.

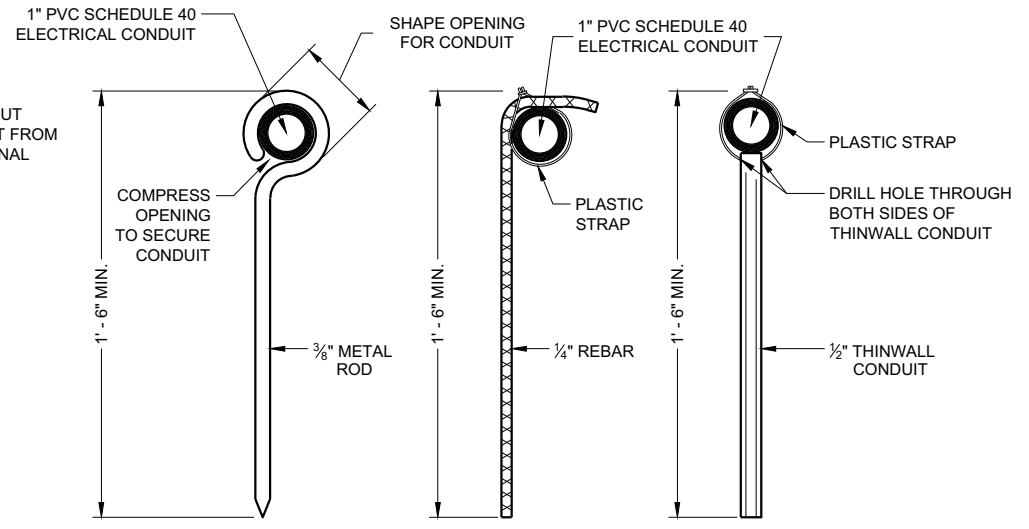
① HOLD DOWN PINS TO HOLD CONDUIT DURING POUR.



TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX



TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULLBOX

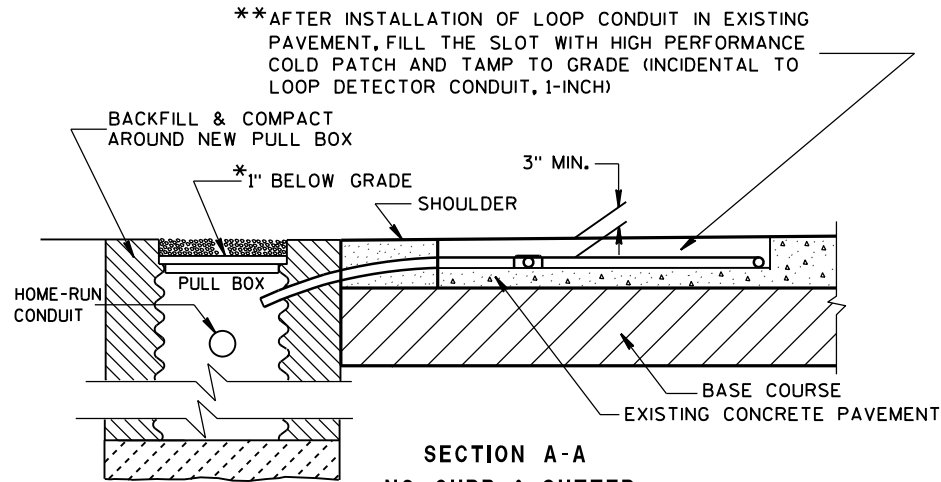


TYPICAL DETAILS FOR HOLD DOWN PINS ①

LOOP DETECTOR INSTALLED
IN NEW CONCRETE PAVEMENT
ROUND CSCP PULLBOX

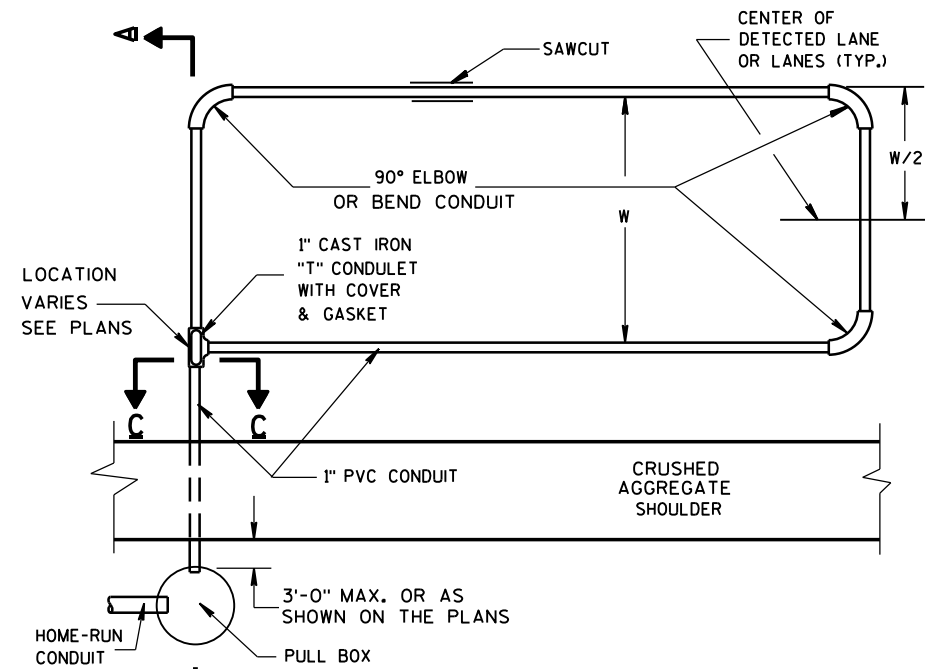
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirebilek
DATE STATE ELECTRICAL ENGI 170
FHWA

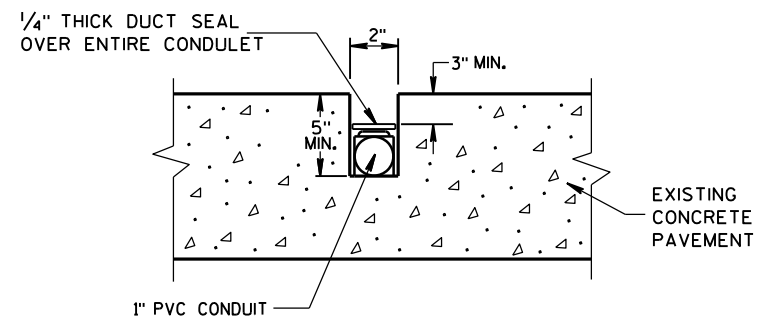


**SECTION A-A
NO CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL**

**RECESS PULL BOX SO THAT THE COVER IS 3\"/>



TYPICAL PLAN OF LOOP DETECTOR



**SIDE VIEW
SECTION C-C
LOOP DETECTOR SLOT DETAIL**

GENERAL NOTES

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

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

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 READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

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 1/2 INCH.

ONCE THE 2\"/>

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.

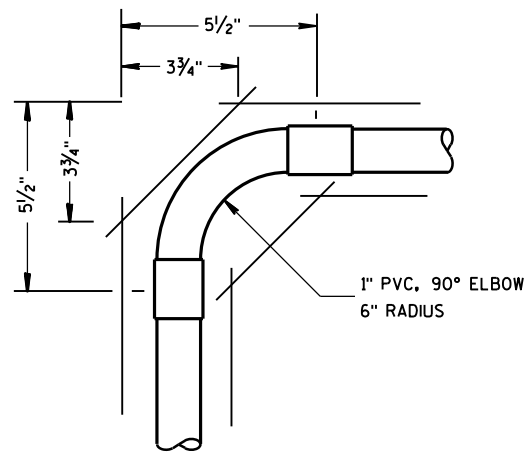
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

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

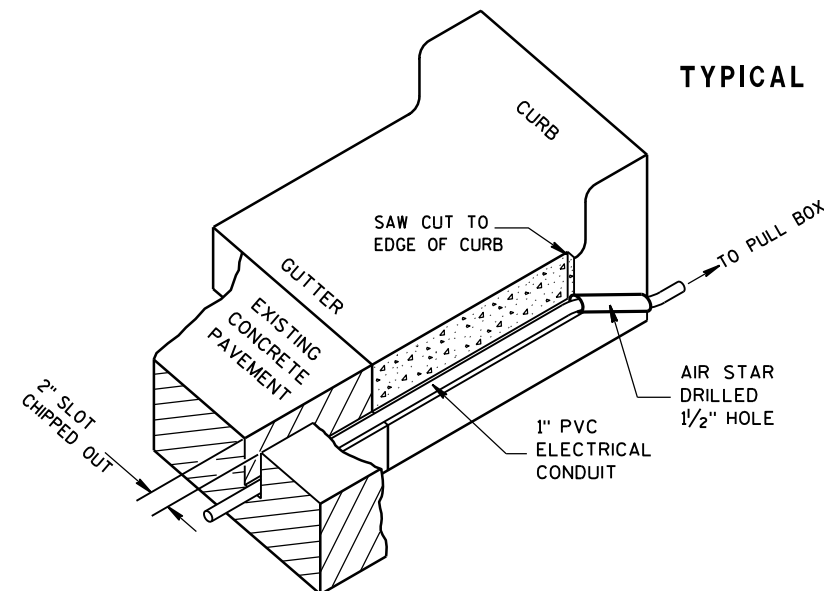
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

** 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".

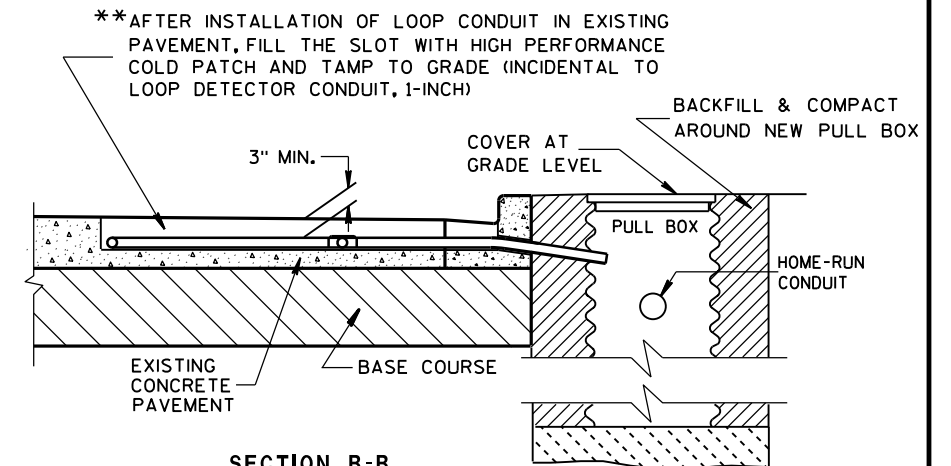
IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN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



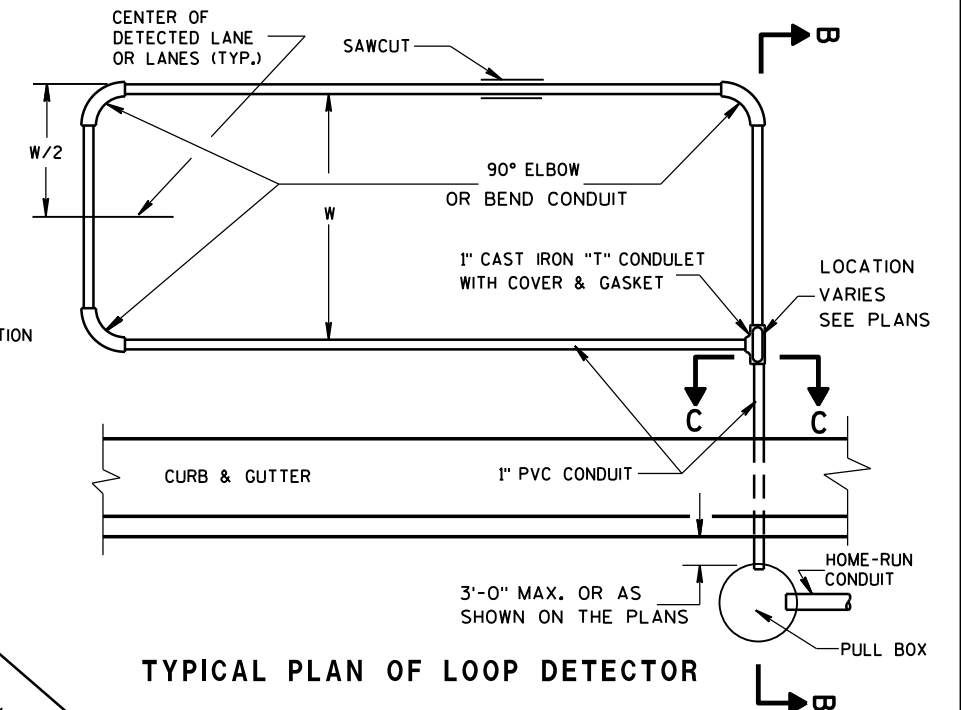
**TOP VIEW
CORNER SAW SLOT DETAIL**



**ISOMETRIC VIEW
TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT**



**SECTION B-B
CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL**



TYPICAL PLAN OF LOOP DETECTOR

**LOOP DETECTOR INSTALLED IN
EXISTING CONCRETE PAVEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 171
FHWA

GENERAL NOTES

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

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

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

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 READINGS 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.

ANY PVC LEAD-OUT CONDUIT CONTAINING MORE THAN TWO TWISTED PAIR OF LOOP LEAD-IN WIRE SHALL BE 2".

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.

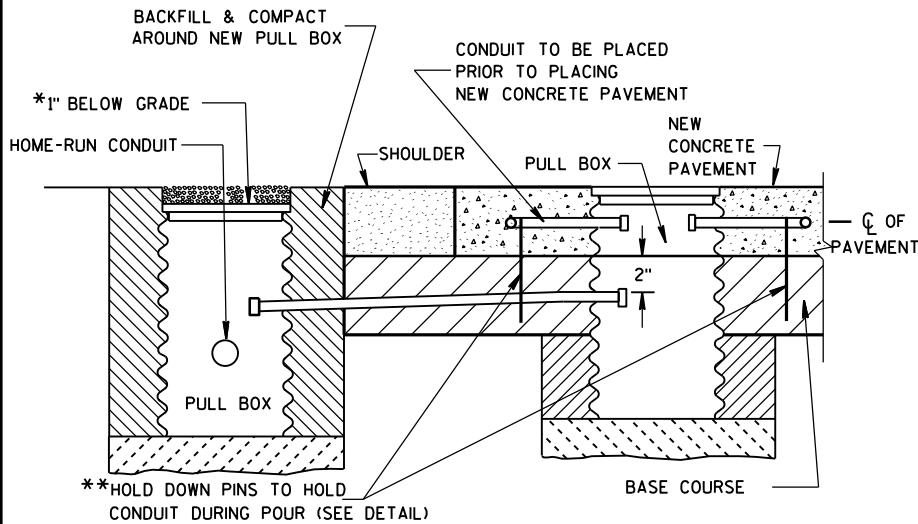
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

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

PROTECTION OF THE PULL BOX IN THE BASE COURSE, AND THE RELATED CONDUITS SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW CONCRETE PAVEMENT IS POURED. ANY DAMAGE THAT OCCURS DUE TO FAILURE TO PROTECT THE INSTALLATION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

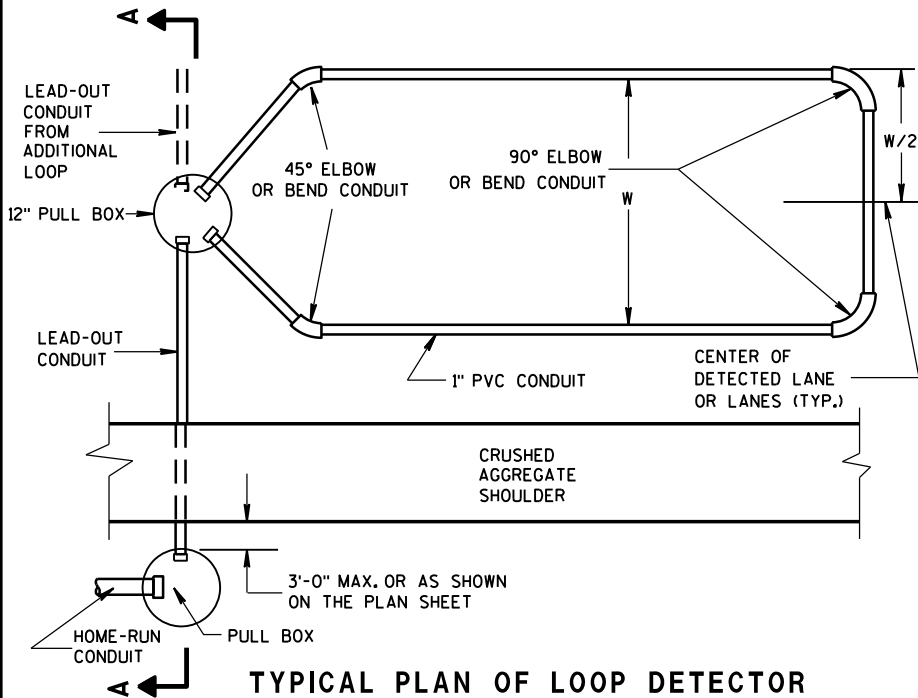
SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE ACCOMPLISHED UNDER THE DIRECTION OF THE PROJECT ENGINEER.

12" PULL BOXES IN PAVEMENT SHALL BE CORRUGATED STEEL ONLY.

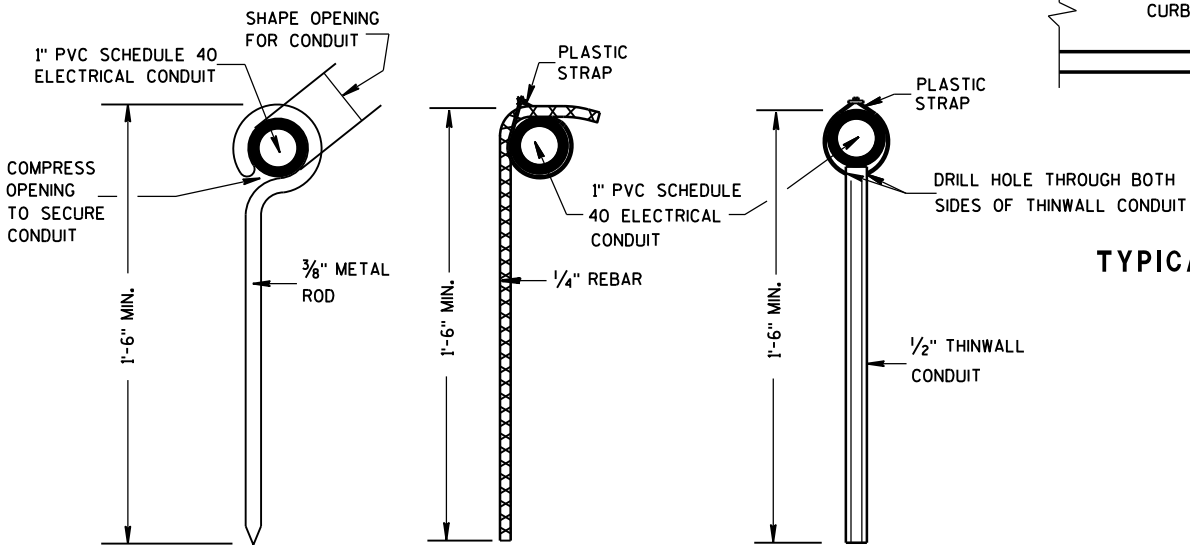


SECTION A-A
NO CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL

*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.

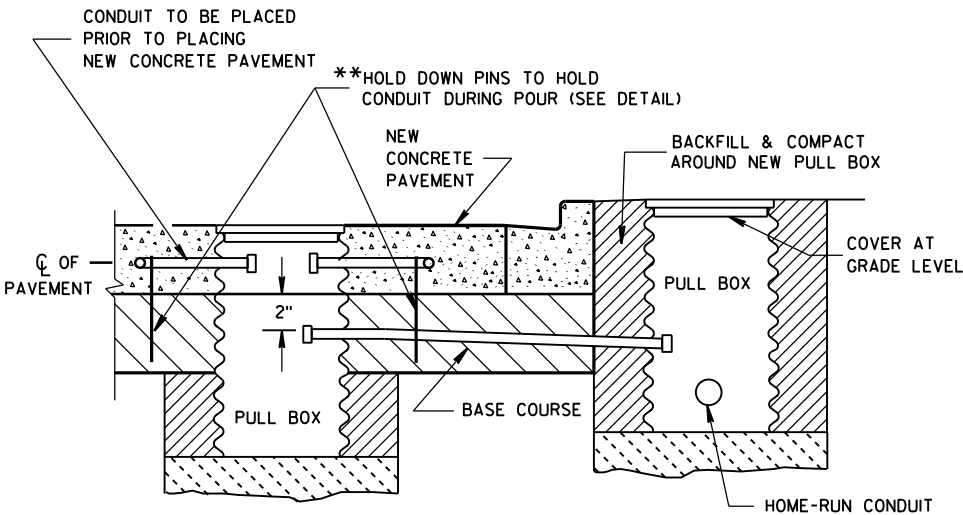


TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULL BOX

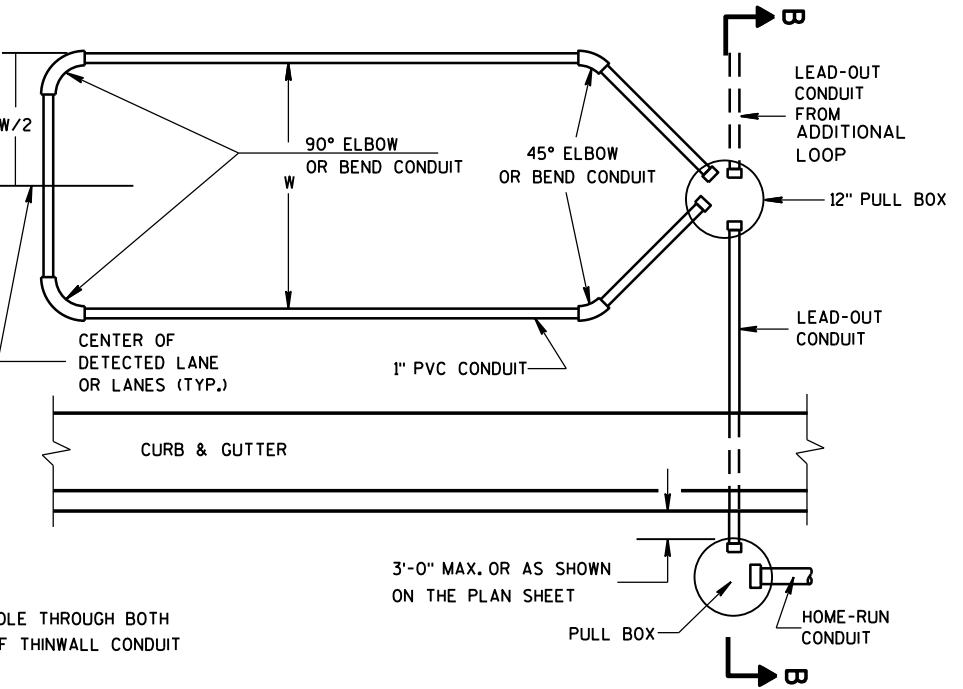


TYPICAL DETAILS FOR HOLD DOWN PINS

**HOLD DOWN PINS ARE REQUIRED TO STABILIZE THE LOOP TO MEET THE DIMENSIONAL AND PHYSICAL CONSTRUCTION REQUIREMENTS OF THE PLANS. THE NUMBER OF HOLD DOWN PINS SHALL BE DETERMINED IN THE FIELD, BY THE PROJECT ENGINEER.



SECTION B-B
CURB & GUTTER
LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR
WITH 12" PULL BOX

LOOP DETECTOR INSTALLED IN
NEW CONCRETE PAVEMENT
ROUND CSCP PULL BOX
45 DEGREE ELBOWS TO PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 172
FHWA

GENERAL NOTES

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

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

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

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.

THE GROUND RESISTANCE READING OF THE LOOP SHALL READ "INFINITY" TO GROUND ON AN OHMMETER USING A MULTIPLIER SCALE OF 1MEGOHM AND AN INPUT RESISTANCE OF 11MEGOHMS MINIMUM BEFORE SPLICING THE LOOP TO THE LEAD-IN CABLE.

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 READINGS 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.

ALL PVC LEAD-OUT CONDUIT CONTAINING LOOP LEAD-IN CABLES SHALL BE 2".

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.

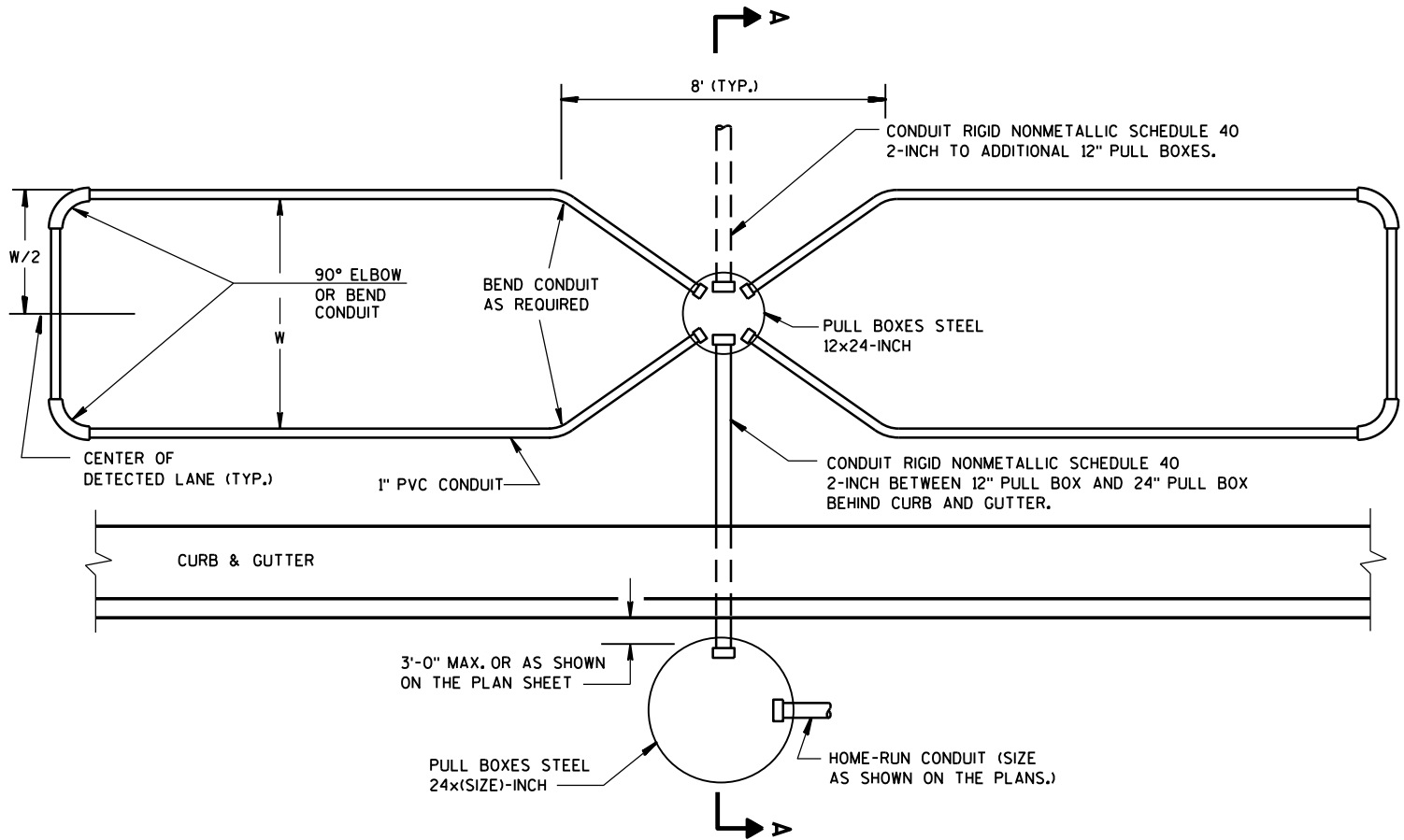
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

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

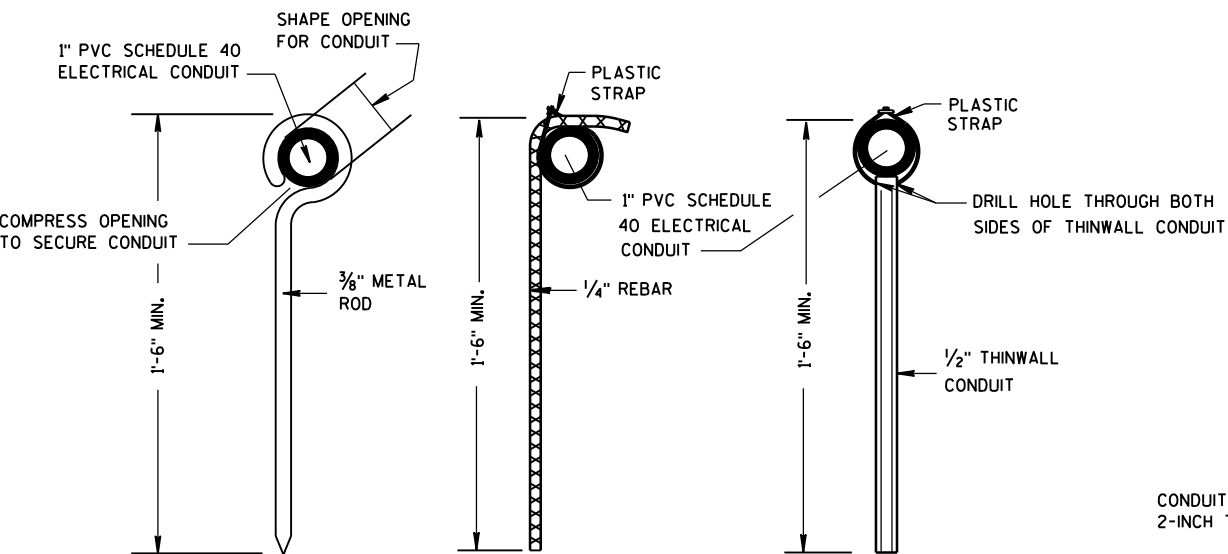
PROTECTION OF THE PULL BOX IN THE BASE COURSE, AND THE RELATED CONDUITS SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW CONCRETE PAVEMENT IS POURED. ANY DAMAGE THAT OCCURS DUE TO FAILURE TO PROTECT THE INSTALLATION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

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

12" PULL BOXES IN PAVEMENT SHALL BE CORRUGATED STEEL ONLY.

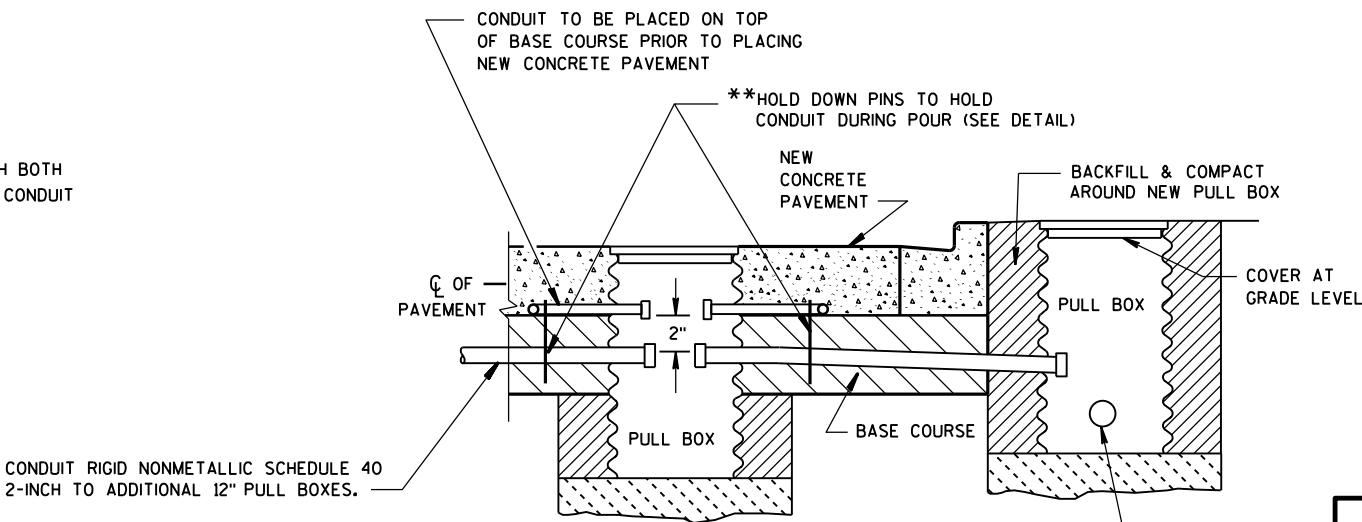


TYPICAL PLAN OF LOOP DETECTOR WITH 12" PULL BOX



TYPICAL DETAILS FOR HOLD DOWN PINS

**HOLD DOWN PINS ARE REQUIRED TO STABILIZE THE LOOP TO MEET THE DIMENSIONAL AND PHYSICAL CONSTRUCTION REQUIREMENTS OF THE PLANS. THE NUMBER OF HOLD DOWN PINS SHALL BE DETERMINED IN THE FIELD, BY THE PROJECT ENGINEER.



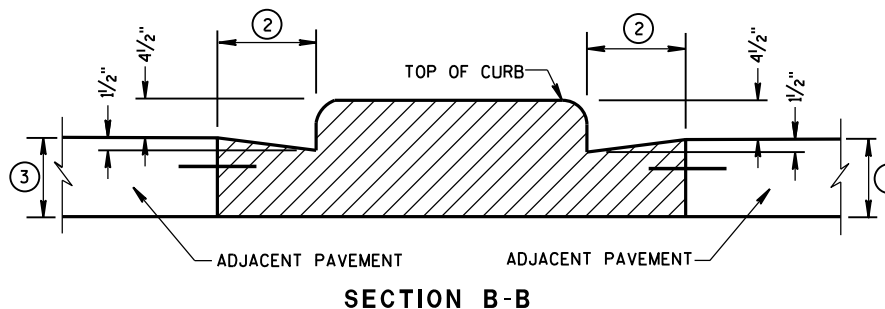
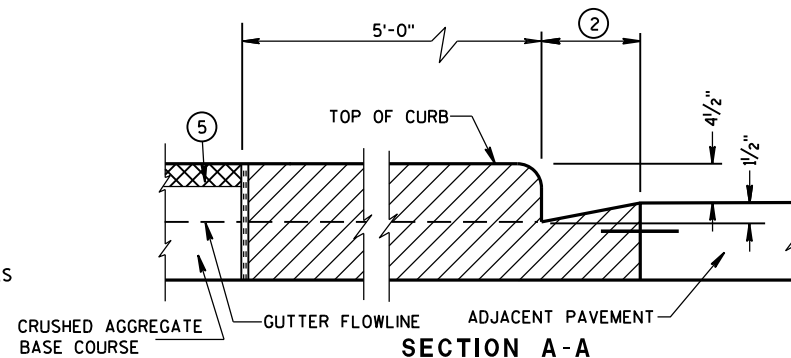
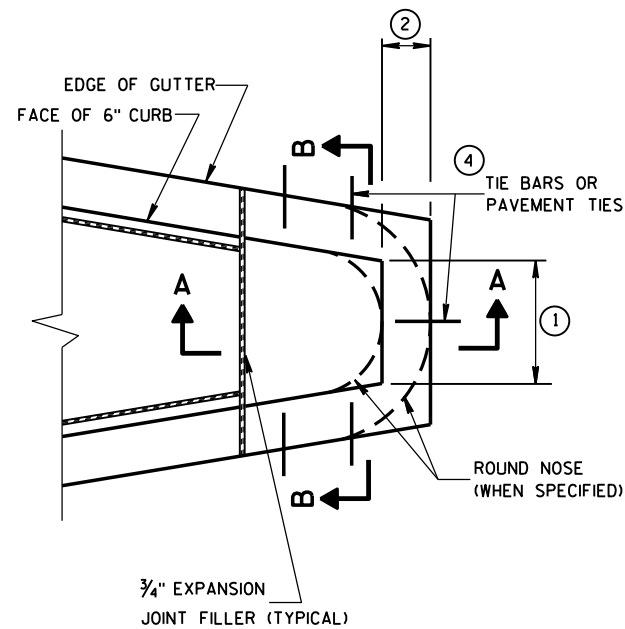
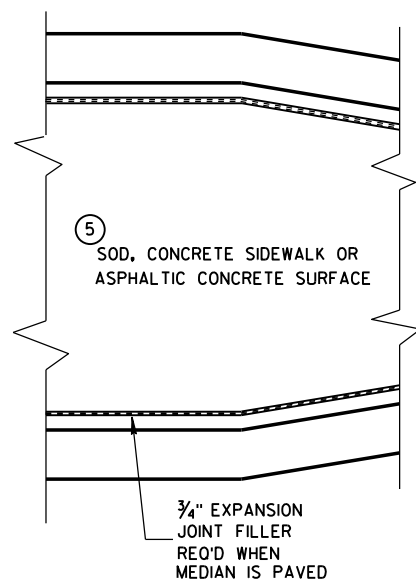
SECTION A-A
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

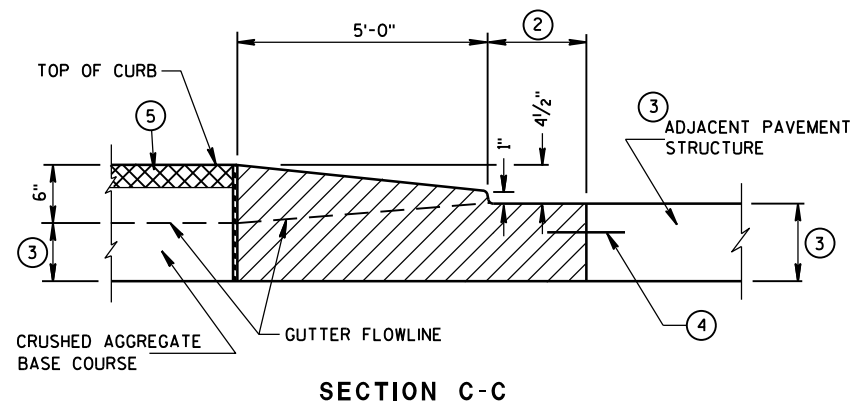
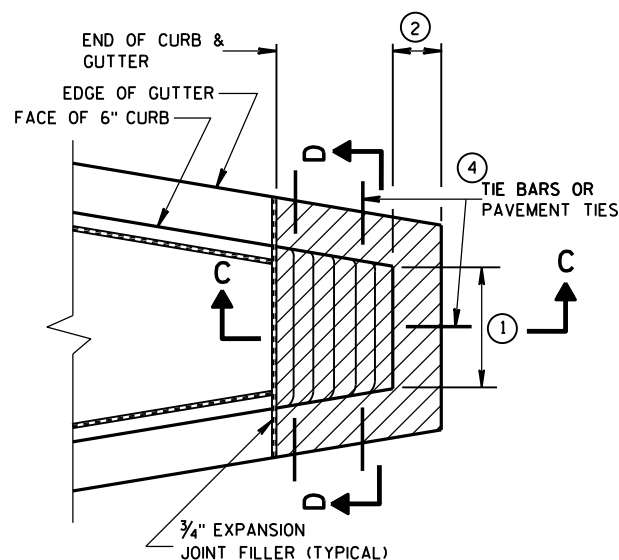
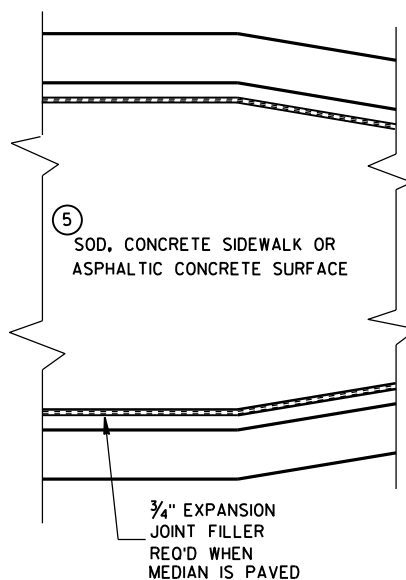
TWO LOOP DETECTORS INSTALLED IN NEW CONCRETE PAVEMENT ROUND CSCP PULL BOX 45 DEGREE ELBOWS TO PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

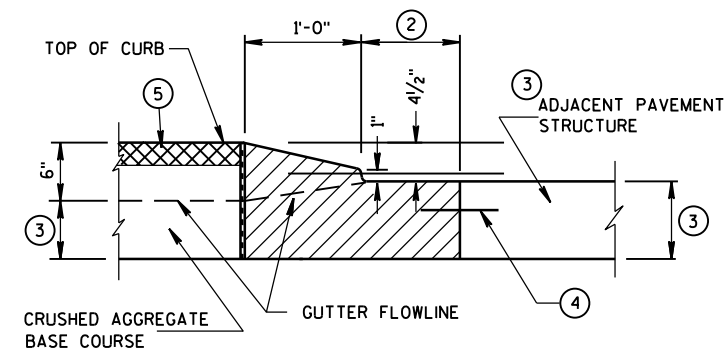
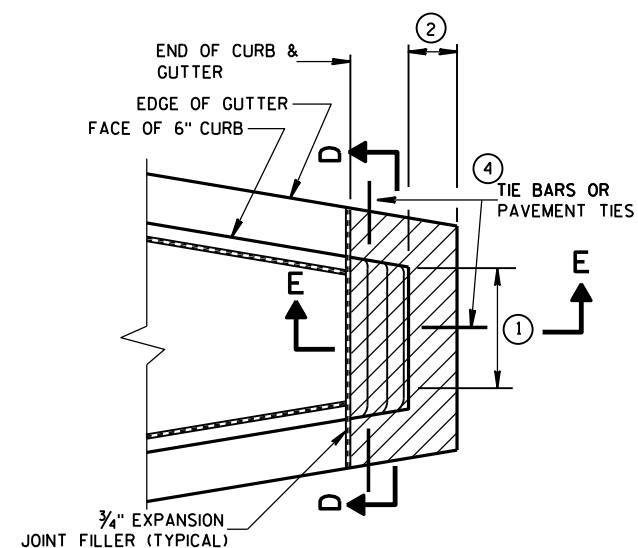
APPROVED
Sept. 2014 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 173
FHWA



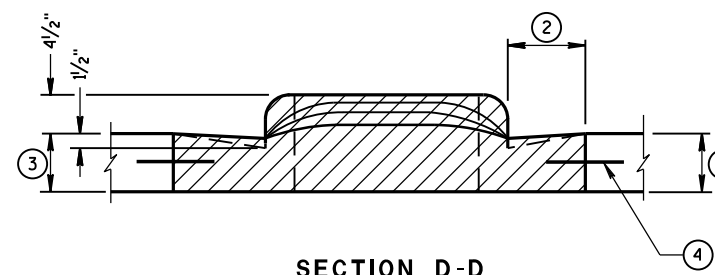
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



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 NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

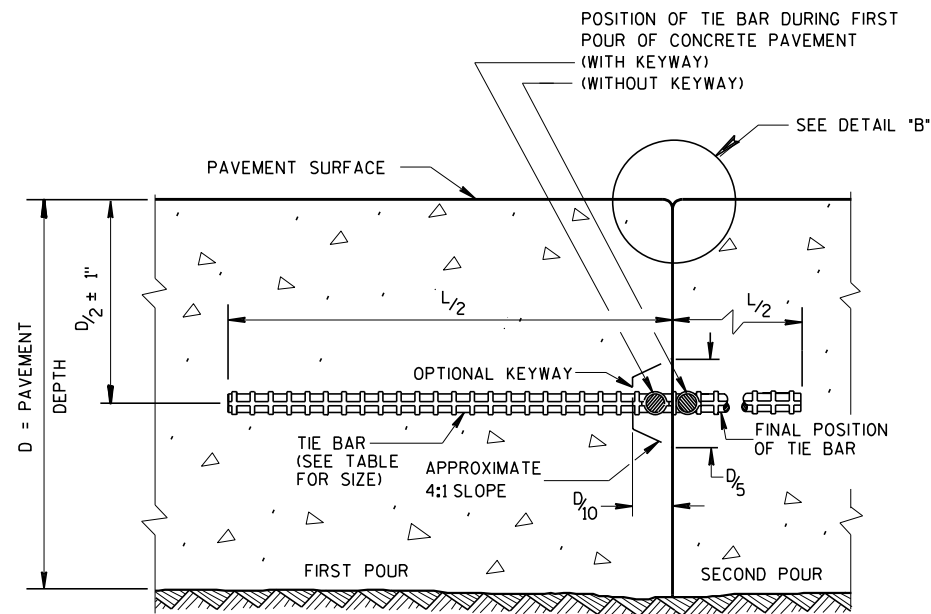
6/8/2006

DATE

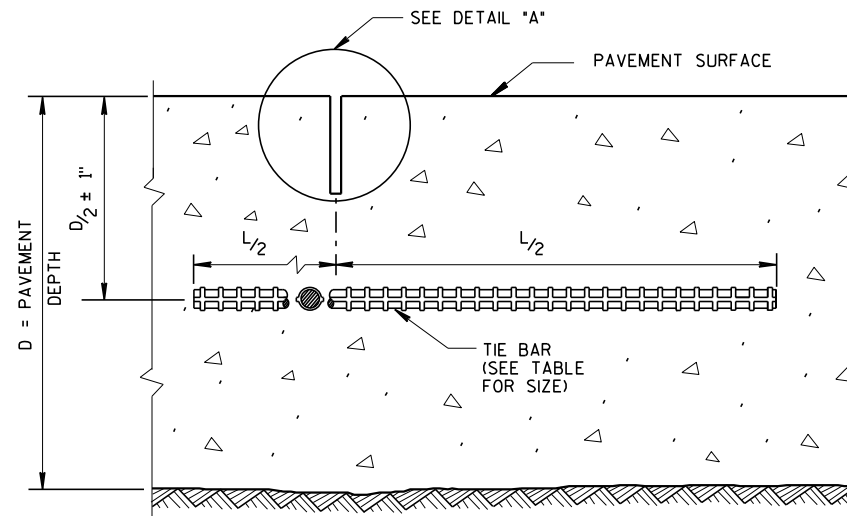
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS & 174
ENGINEER

4T



CONSTRUCTION JOINT



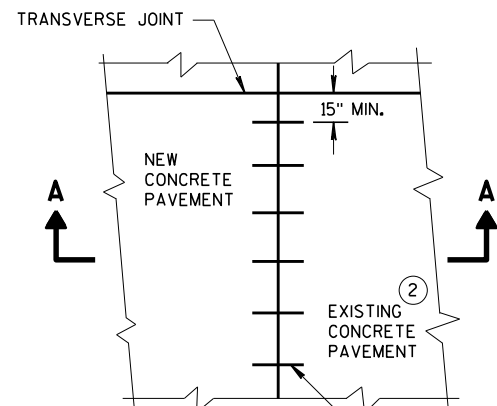
SAWED JOINT

GENERAL NOTES

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

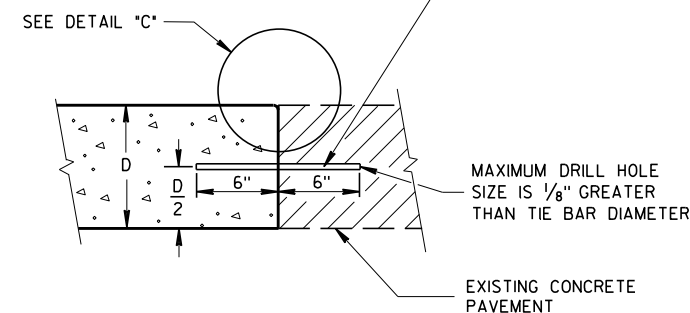
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

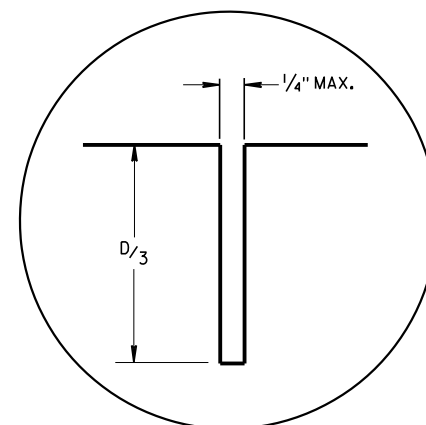


PLAN VIEW

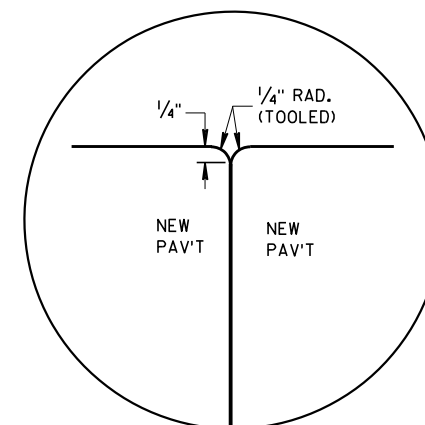
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



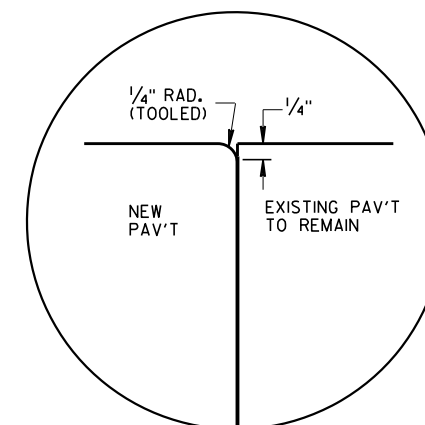
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



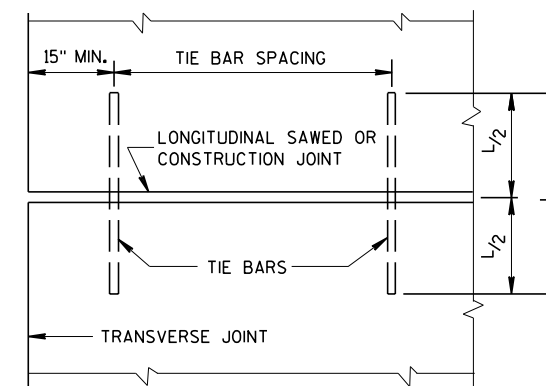
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

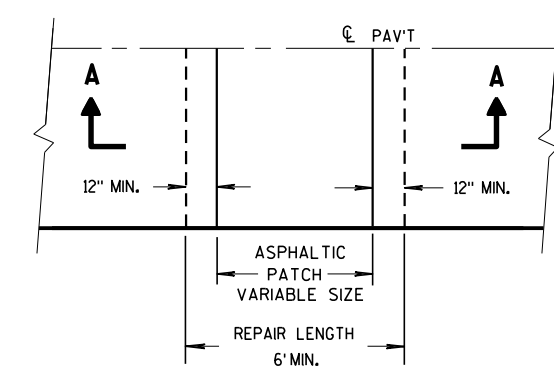


PLAN VIEW
SHOWING LOCATION OF TIE BARS

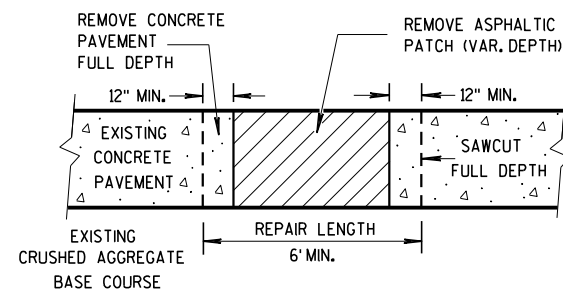
CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 175
FHWA

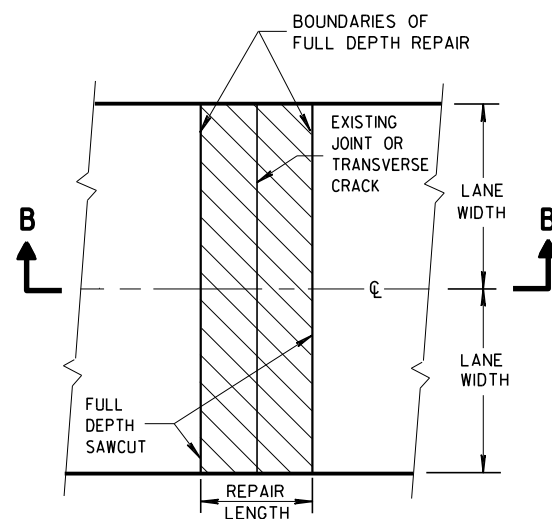
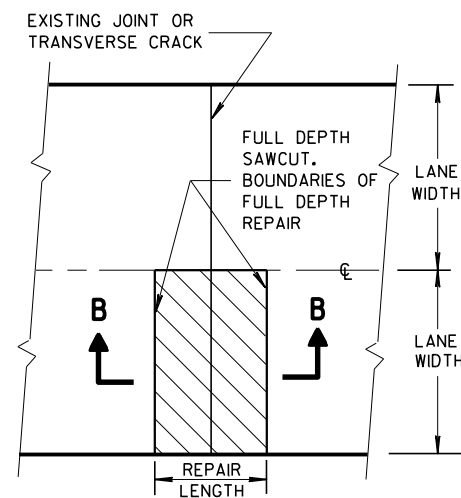


PLAN VIEW



SECTION A-A

HMA PATCH REMOVAL

PLAN VIEW
(DOUBLE LANE REPAIR)PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

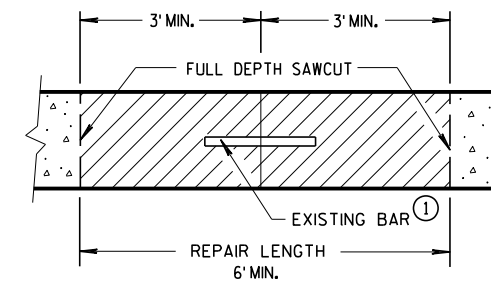
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

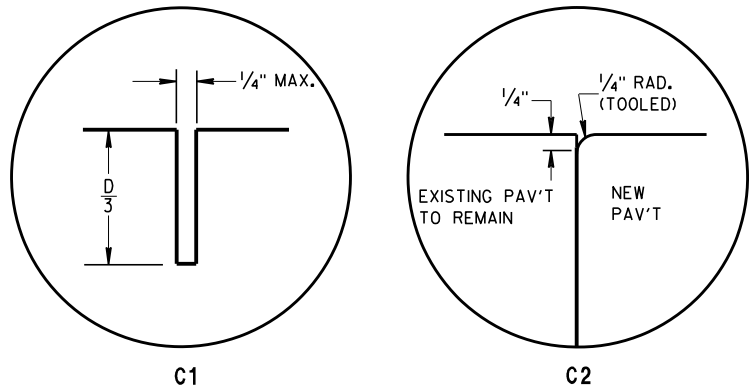
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

① DOWEL BARS MIGHT NOT EXIST.

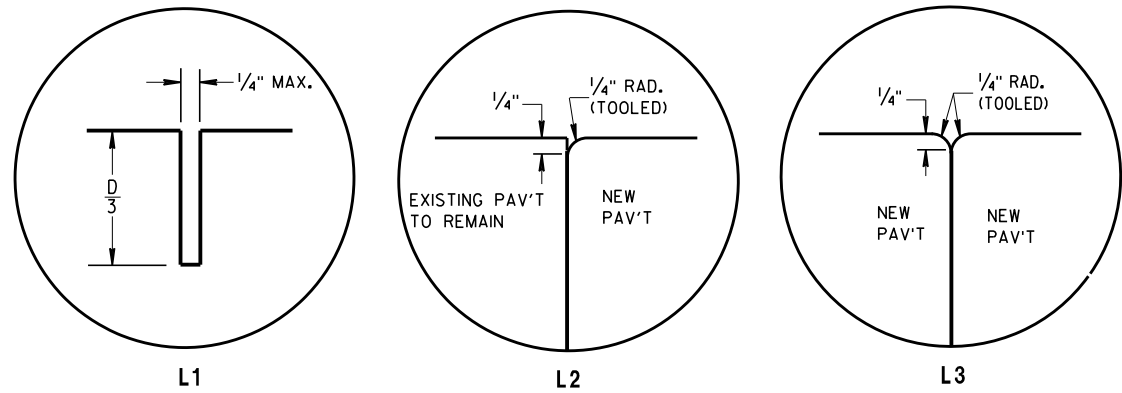
SECTION B-B
CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR
AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TRANSVERSE JOINTS

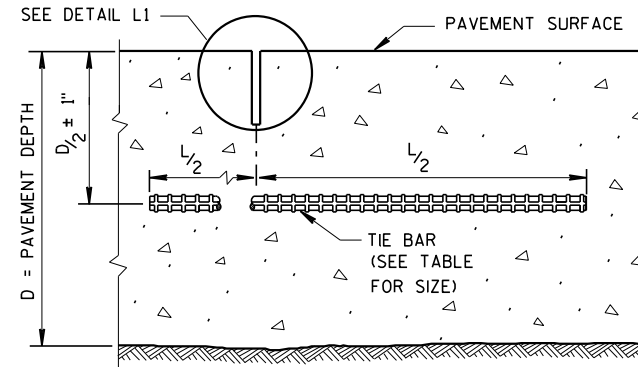


LONGITUDINAL JOINTS

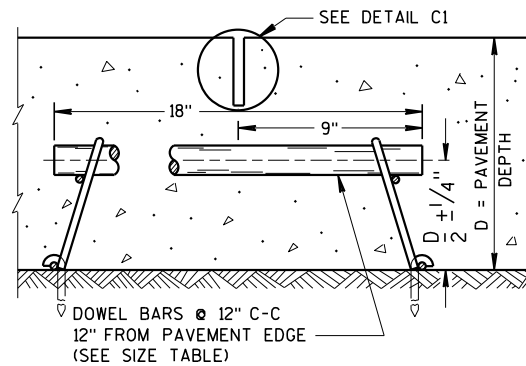
TIE BAR TABLE			
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT

GENERAL NOTES

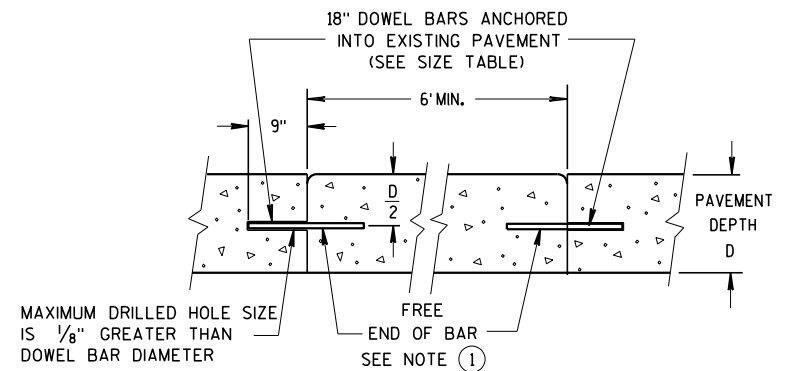
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

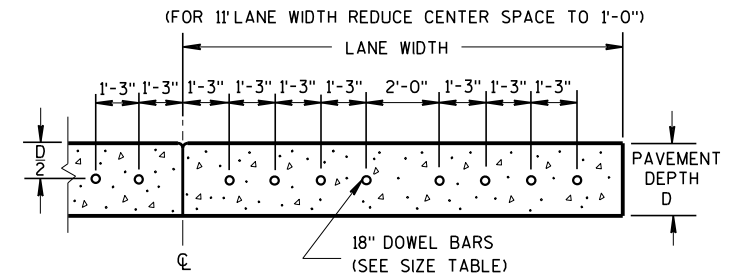
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- ① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



SECTION D-D



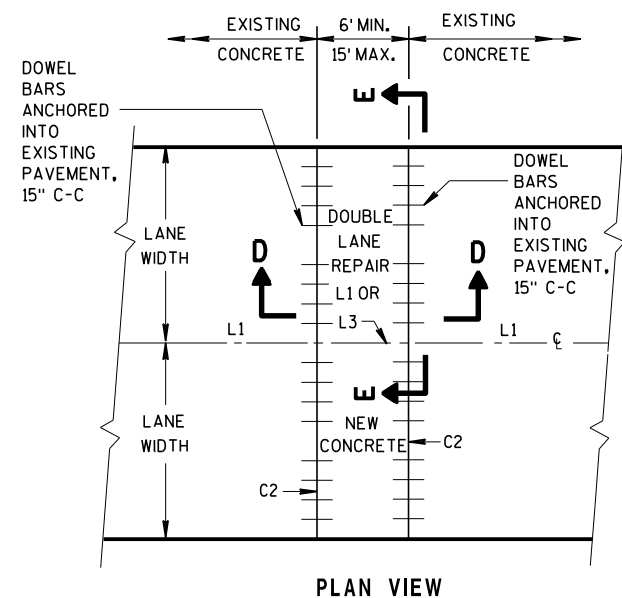
SECTION E-E
DRILLED DOWEL BAR CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

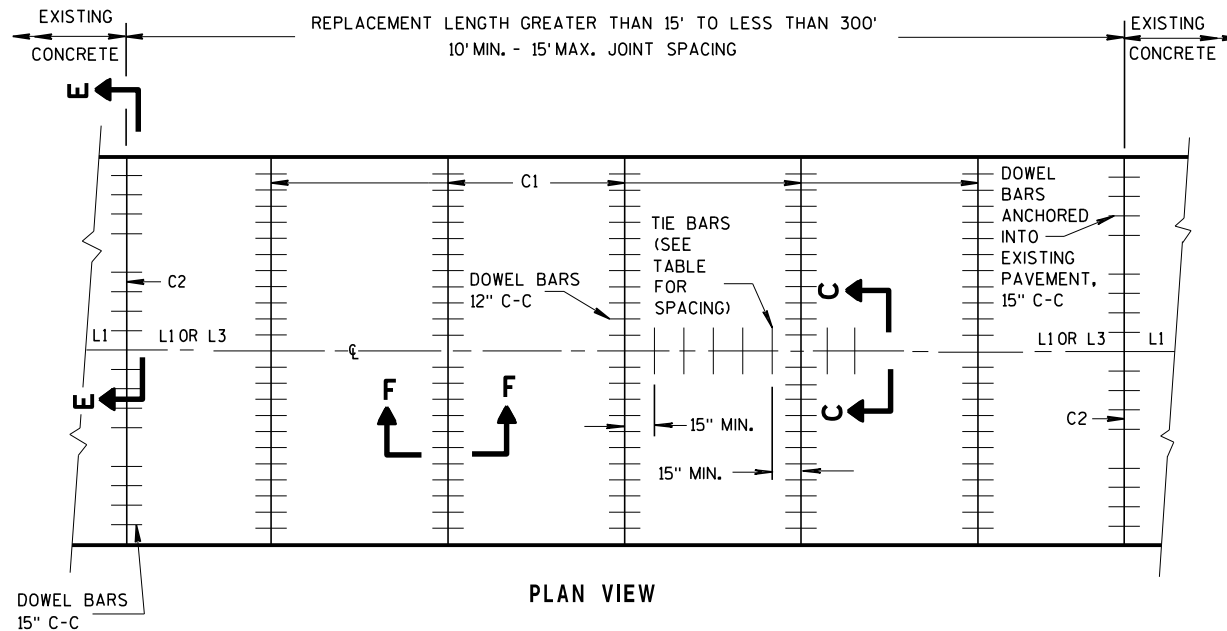
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	NONE	12'
7", 7 1/2"	1"	1"	14'
8", 8 1/2"	1 1/4"	1 1/4"	15'
9", 9 1/2"	1 1/4"	1 1/4"	15'
10" & ABOVE	1 1/2"	1 1/4"	15'

CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

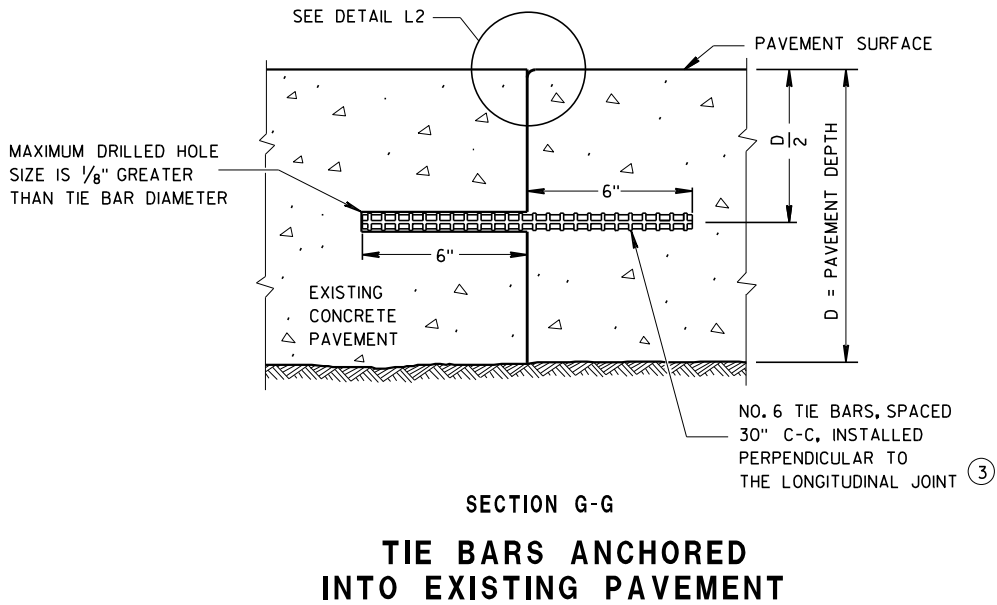
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MULTI-LANE CONCRETE PAVEMENT REPAIR

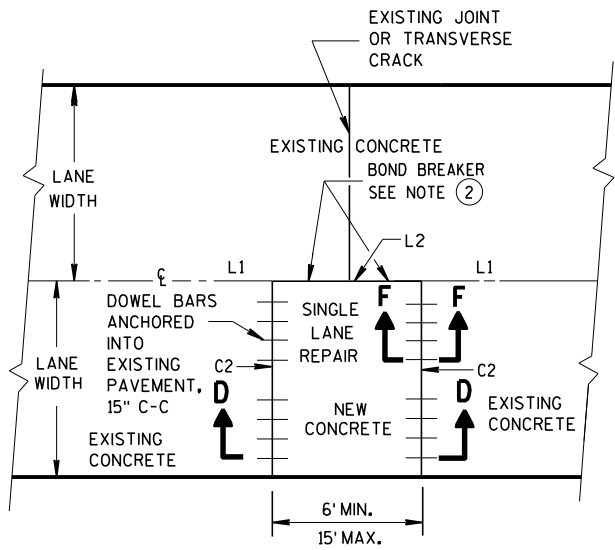


MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

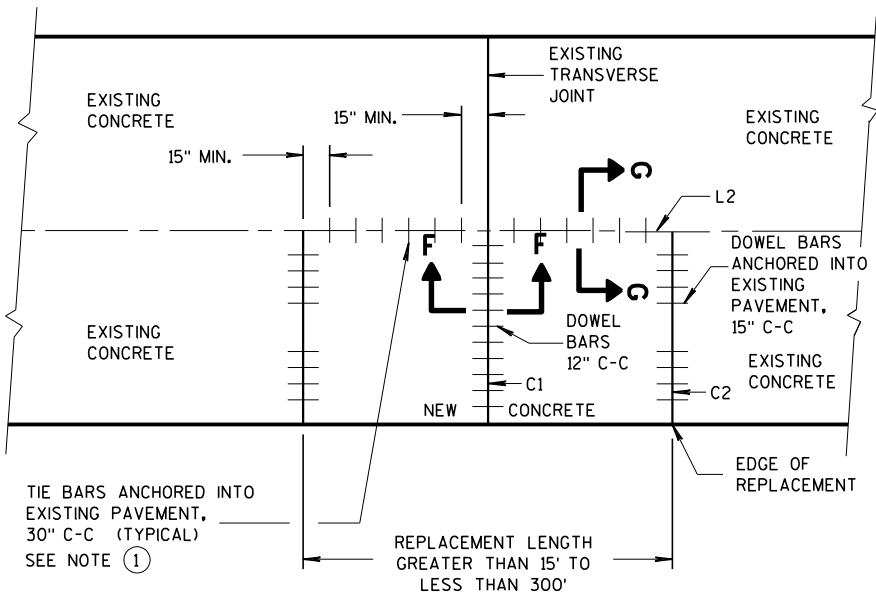


GENERAL NOTES

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

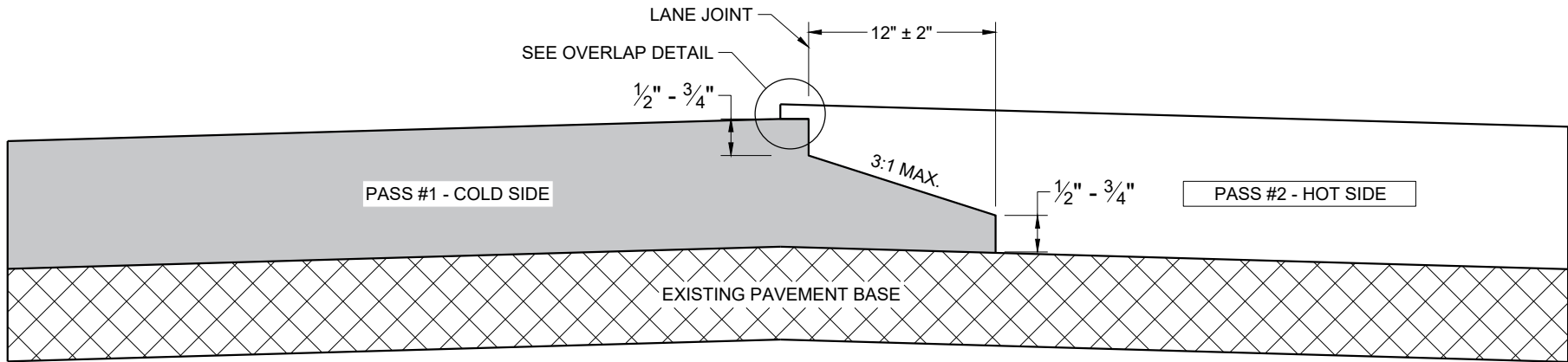


PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPAIR

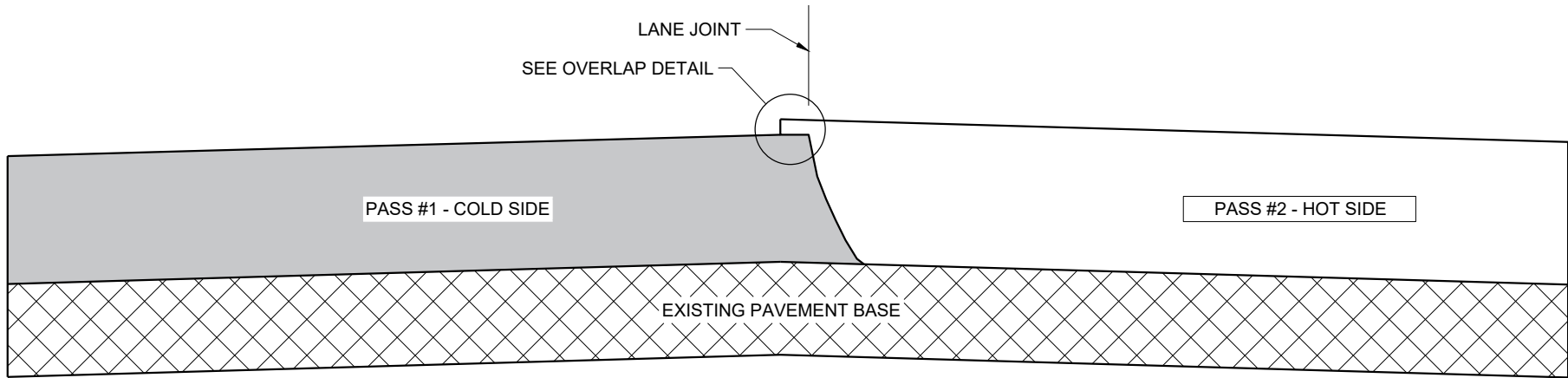


PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT

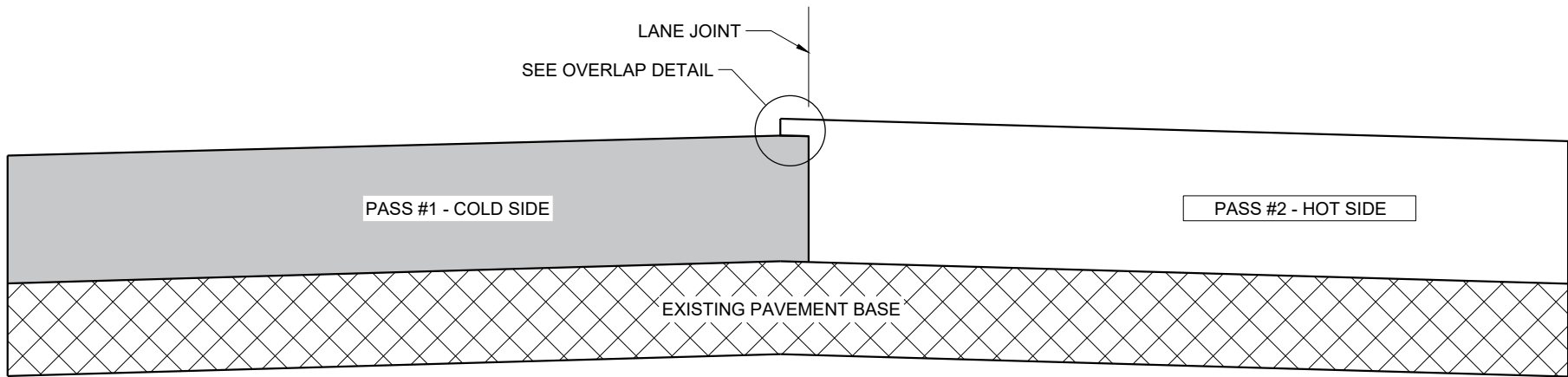
CONCRETE PAVEMENT REPAIR AND REPLACEMENT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
March 2018 DATE	/S/ Peter Kenney PAVEMENT SUPERVISOR 178
FHWA	



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

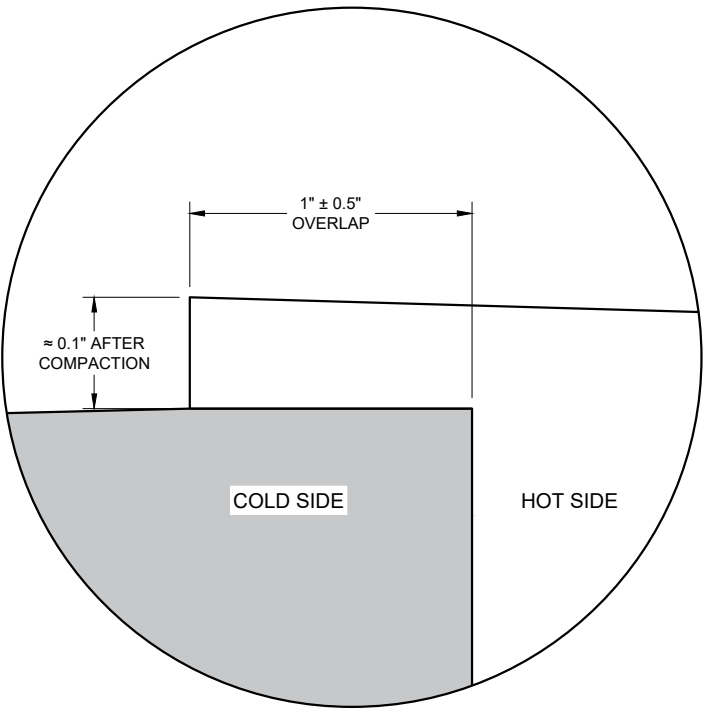
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



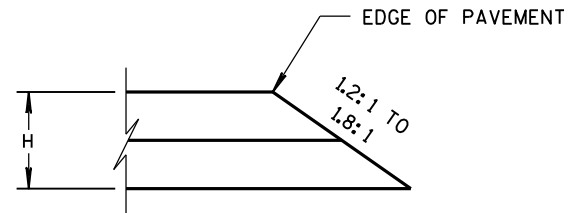
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

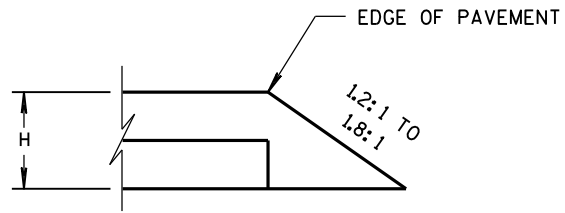
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 179

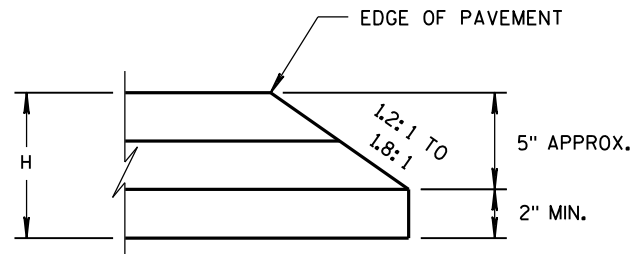
FHWA



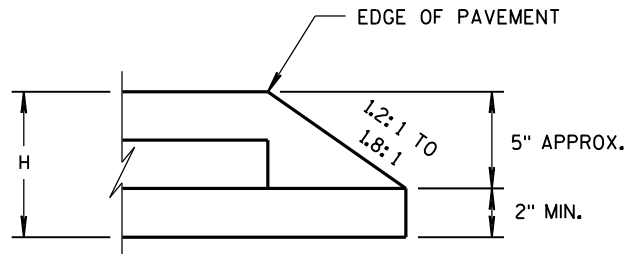
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

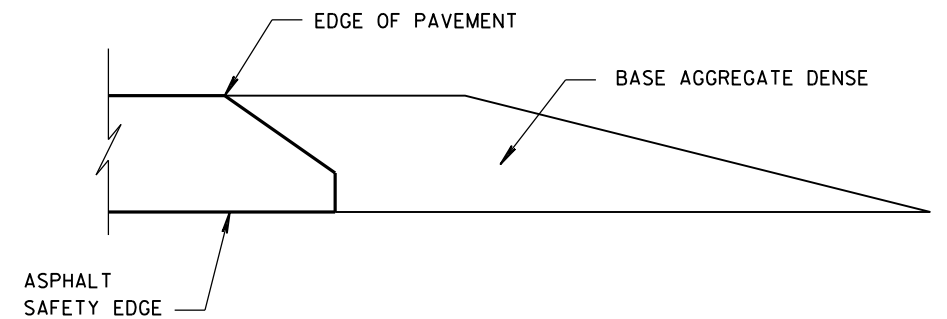


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



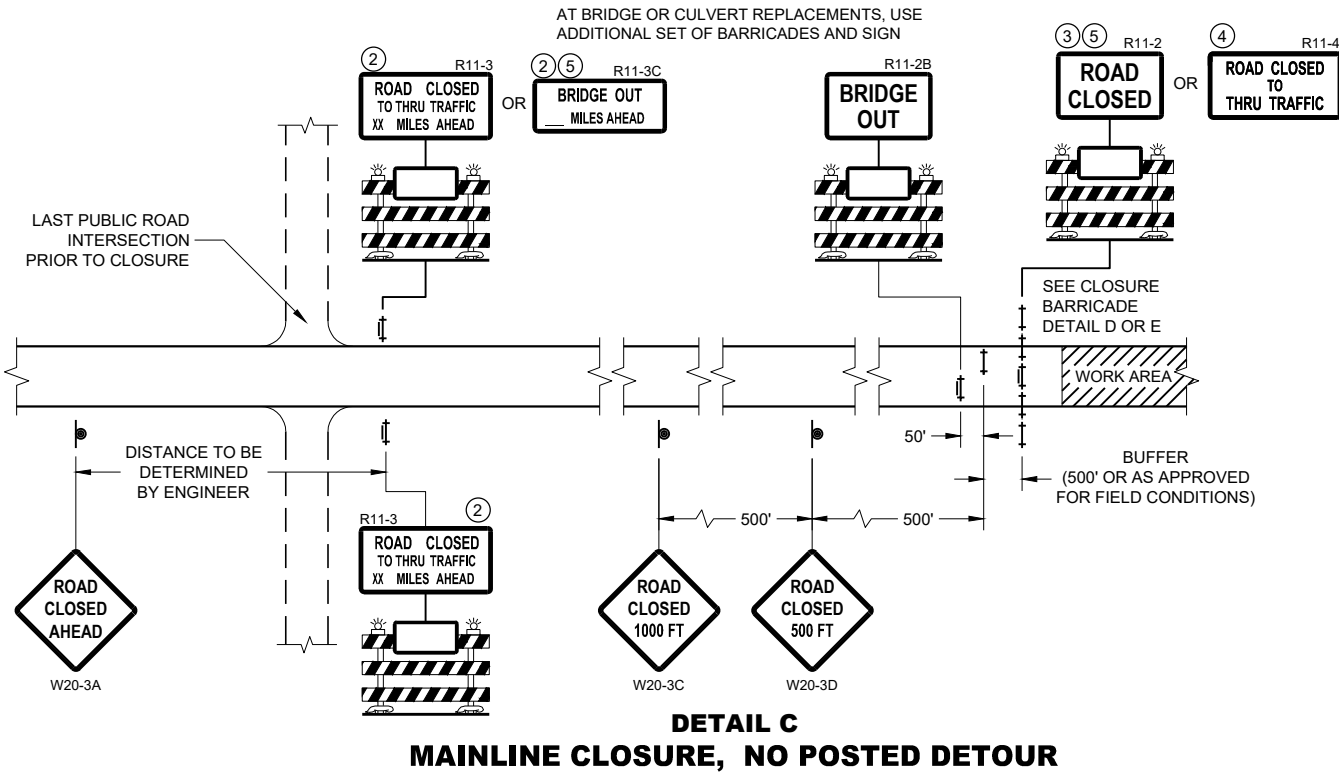
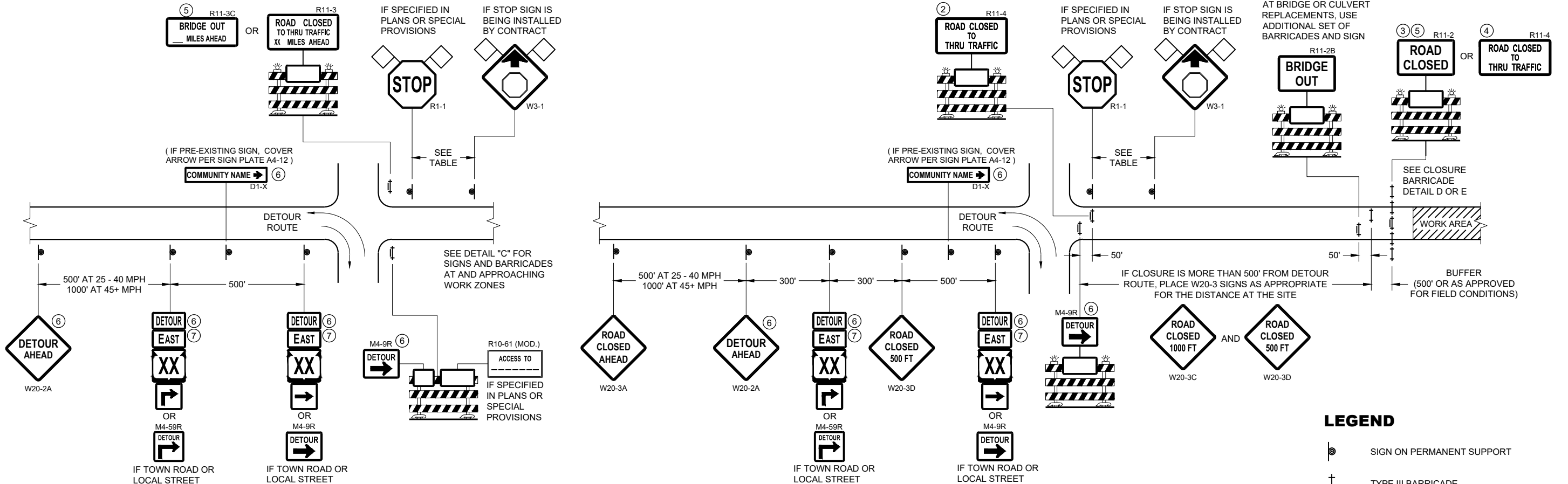
CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 11/30/2012	/S/ Jerry H. Zoaga ROADWAY STANDARDS ENGINEER	180 INT
FHWA		

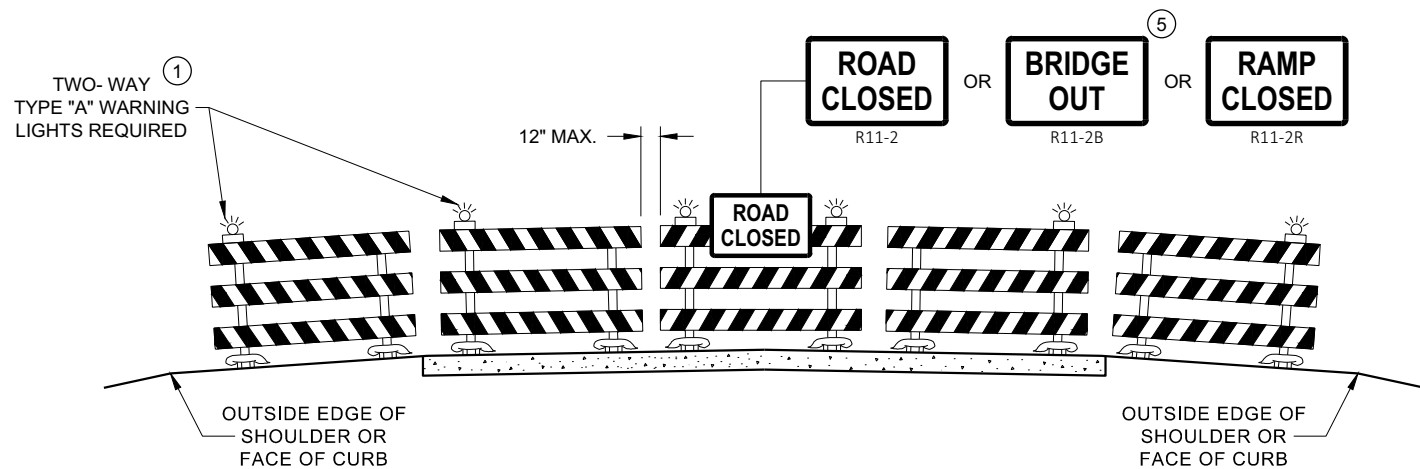


**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

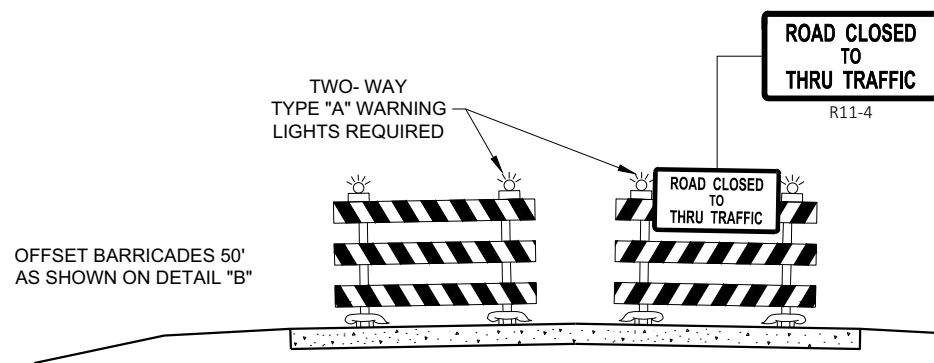
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 181

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

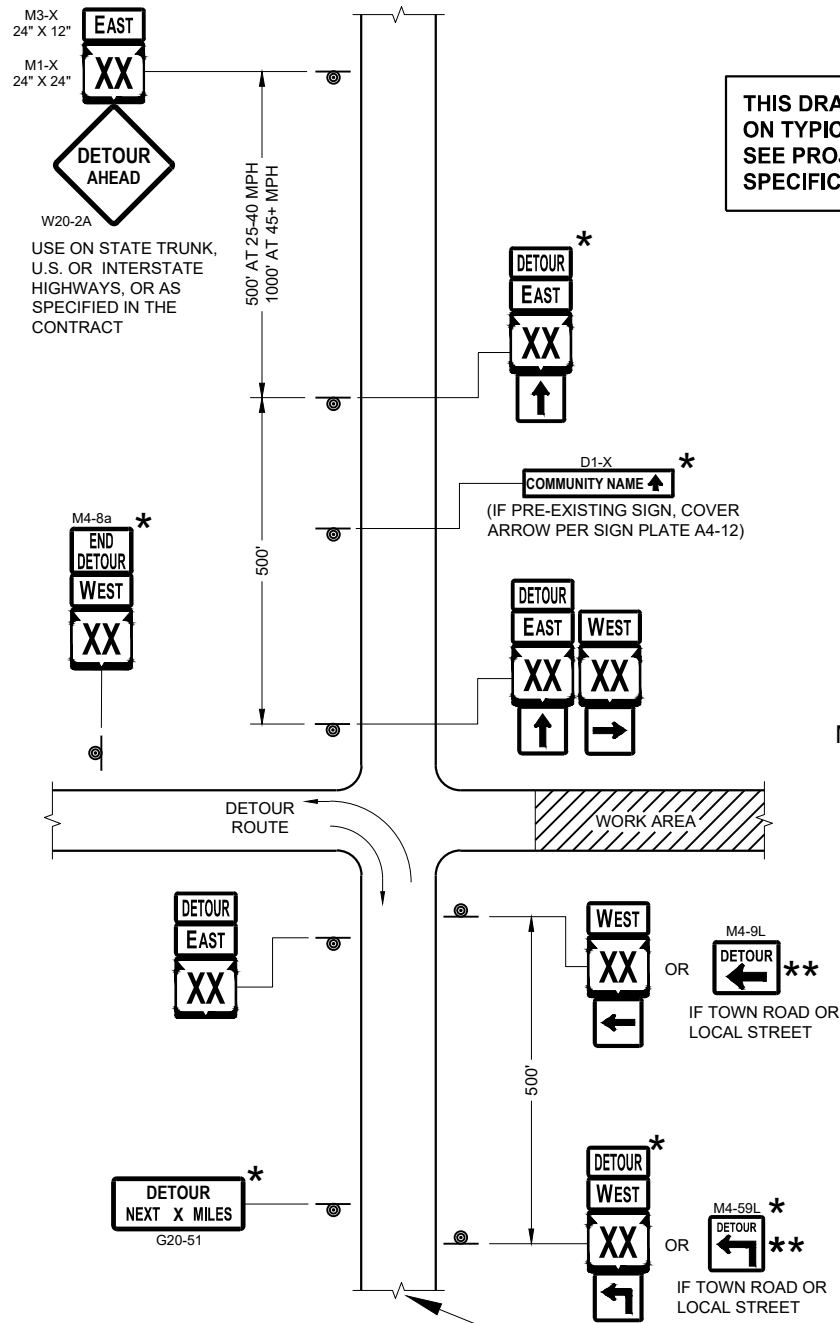
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE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

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

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

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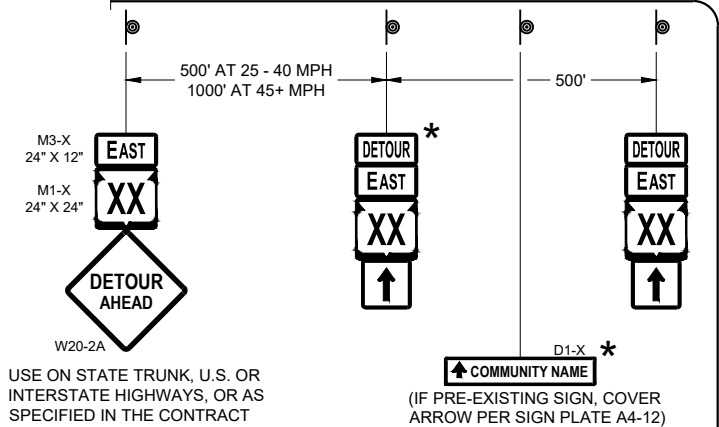
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February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 182
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SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

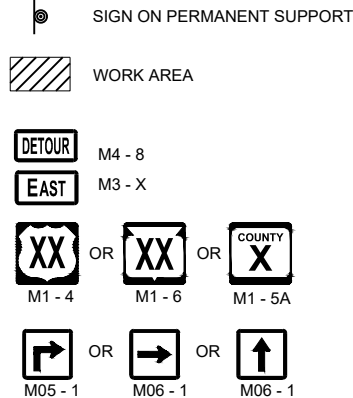
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

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

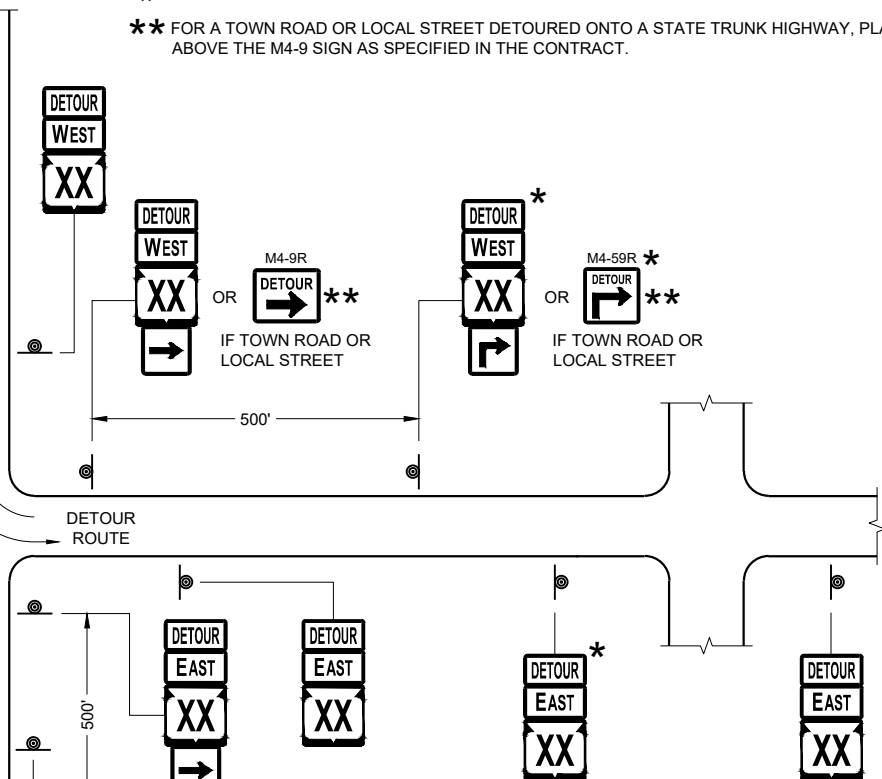
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

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

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

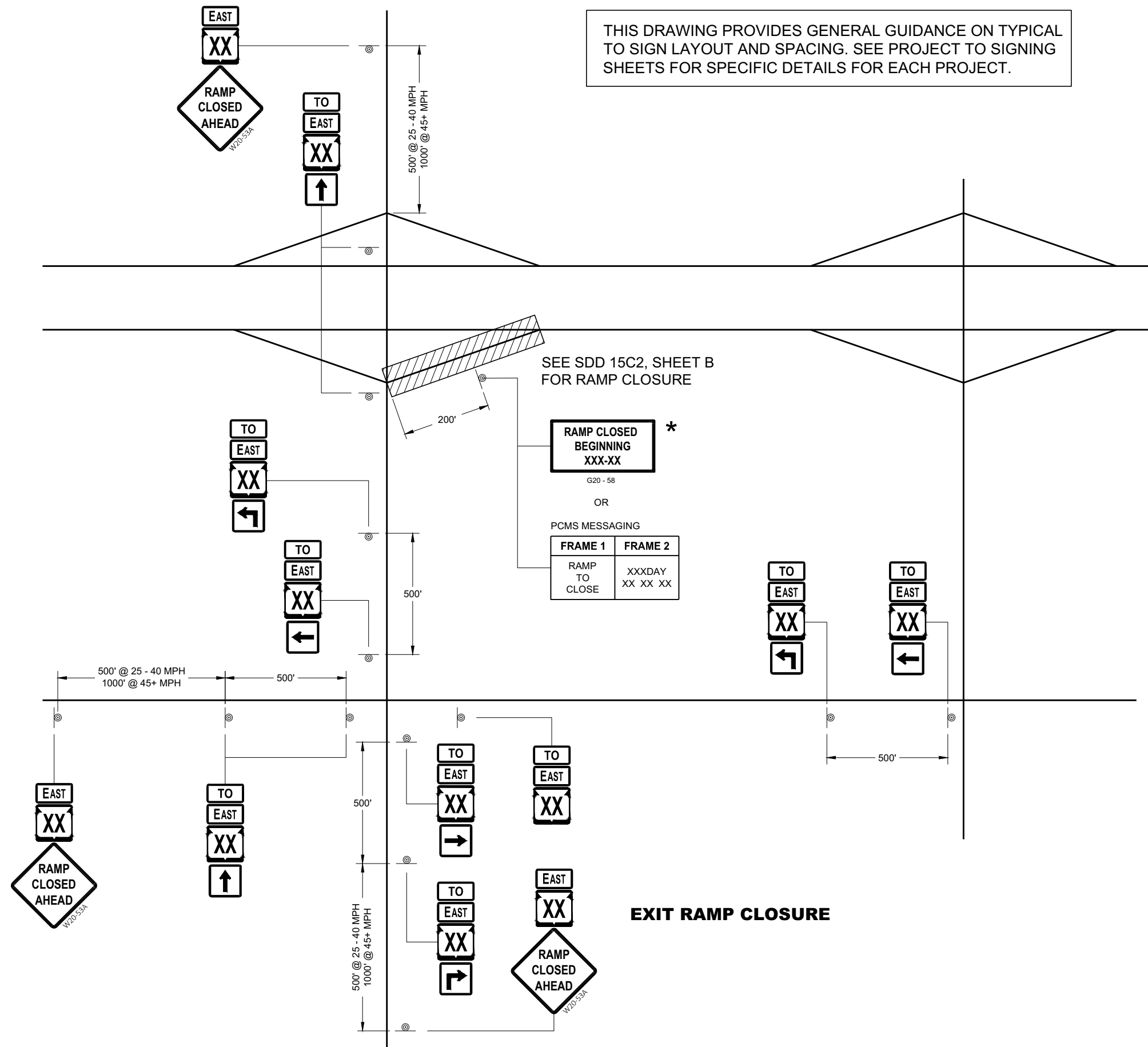


PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 183
FHWA



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

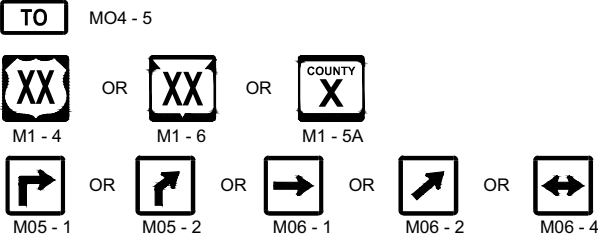
LEGEND



SIGN ON PERMANENT SUPPORT

PCMS

PORTABLE CHANGEABLE MESSAGE SIGN



GENERAL NOTES

SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET. CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

SIGN SIZES SHALL BE AS FOLLOW:

MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH
EXISTING SIGNS).

MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).

- ① ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

OFF RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

/s/ Andrew Heidtke
WORK ZONE ENGINEER

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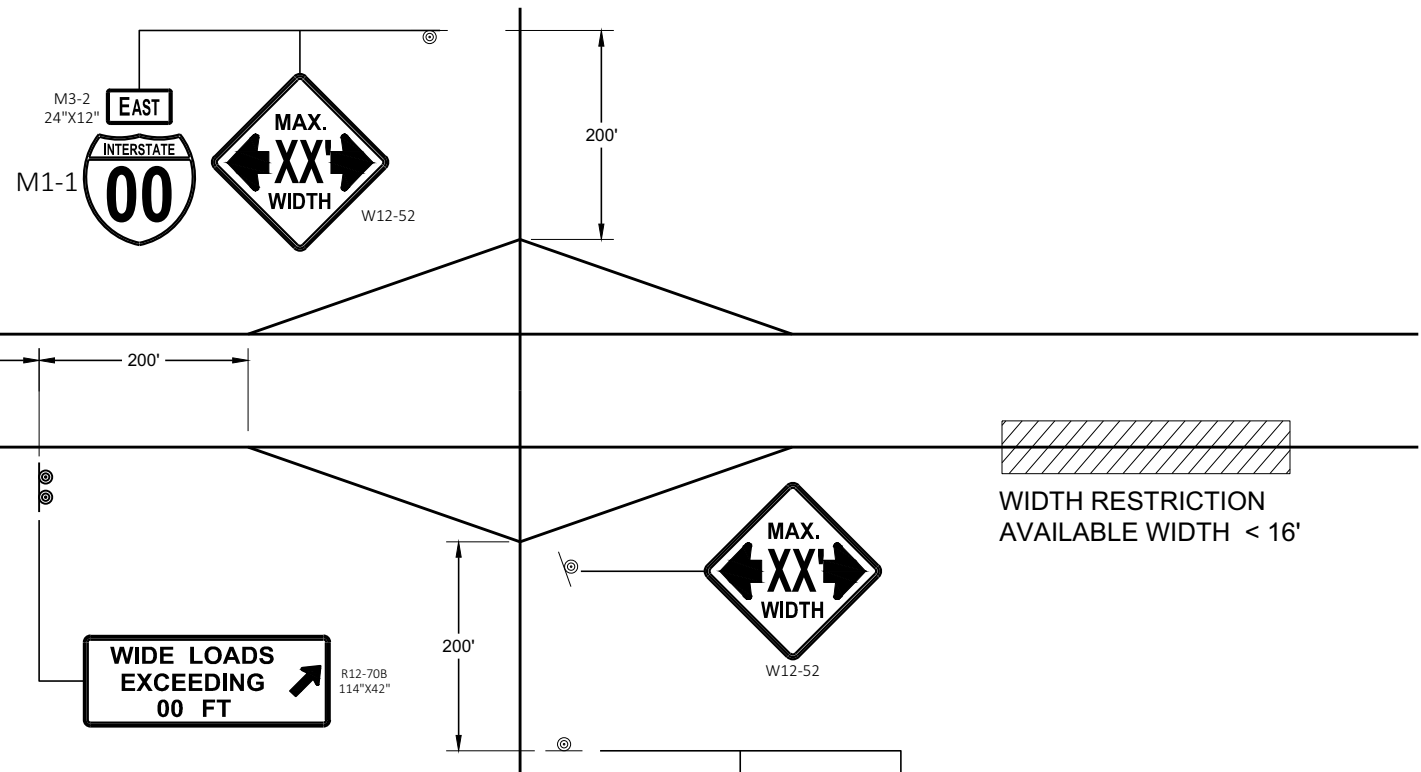
FHWA

6

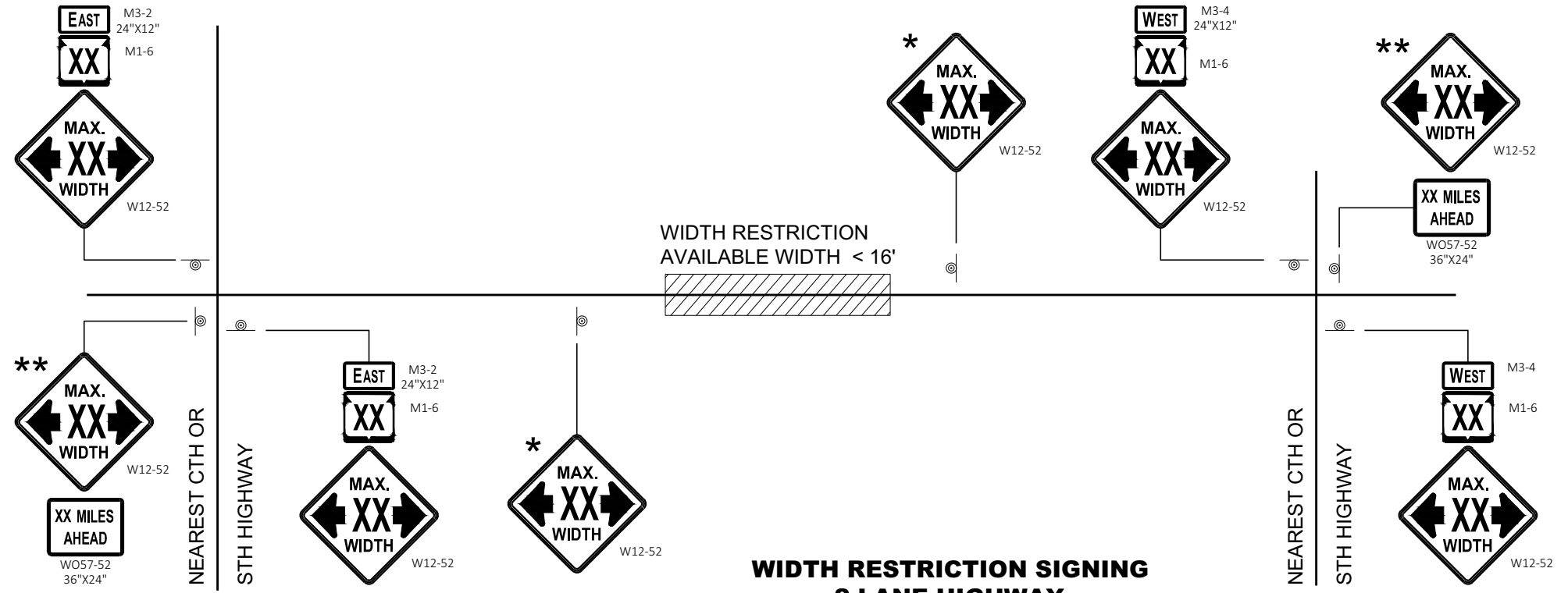
SDD 15C02 - 08e

6

SDD15C02 - 08e



WIDTH RESTRICTION SIGNING



**WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY**

LEGEND

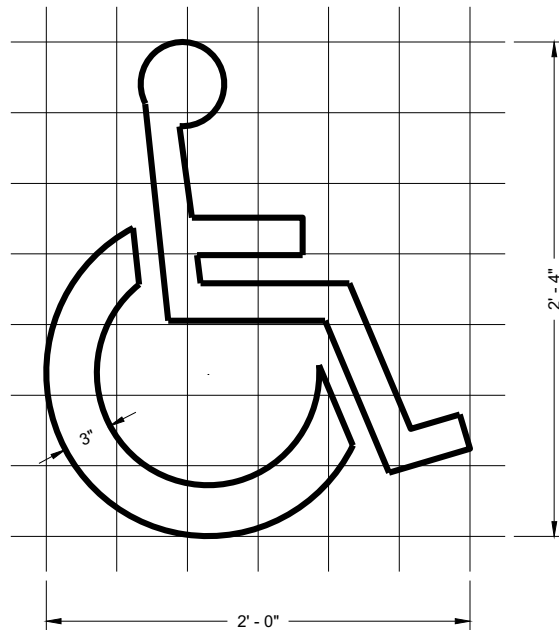
⊙ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

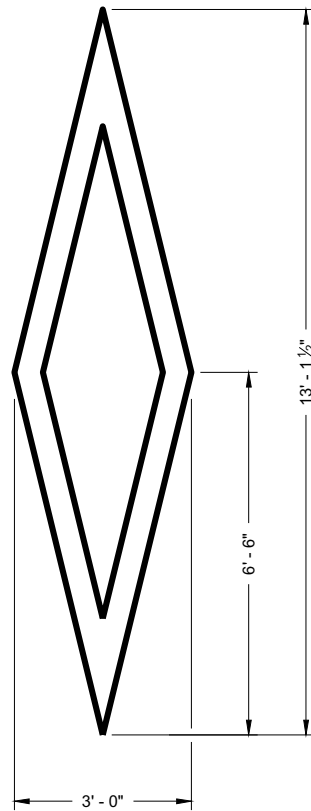
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.
- *** PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.
- **** SIGN SHALL BE VISIBLE FROM ROADWAY.
- ***** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.



ADVANCED WIDTH RESTRICTION SIGNING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 186
FHWA	



HANDICAP SYMBOL



PREFERENTIAL
LANE SYMBOL

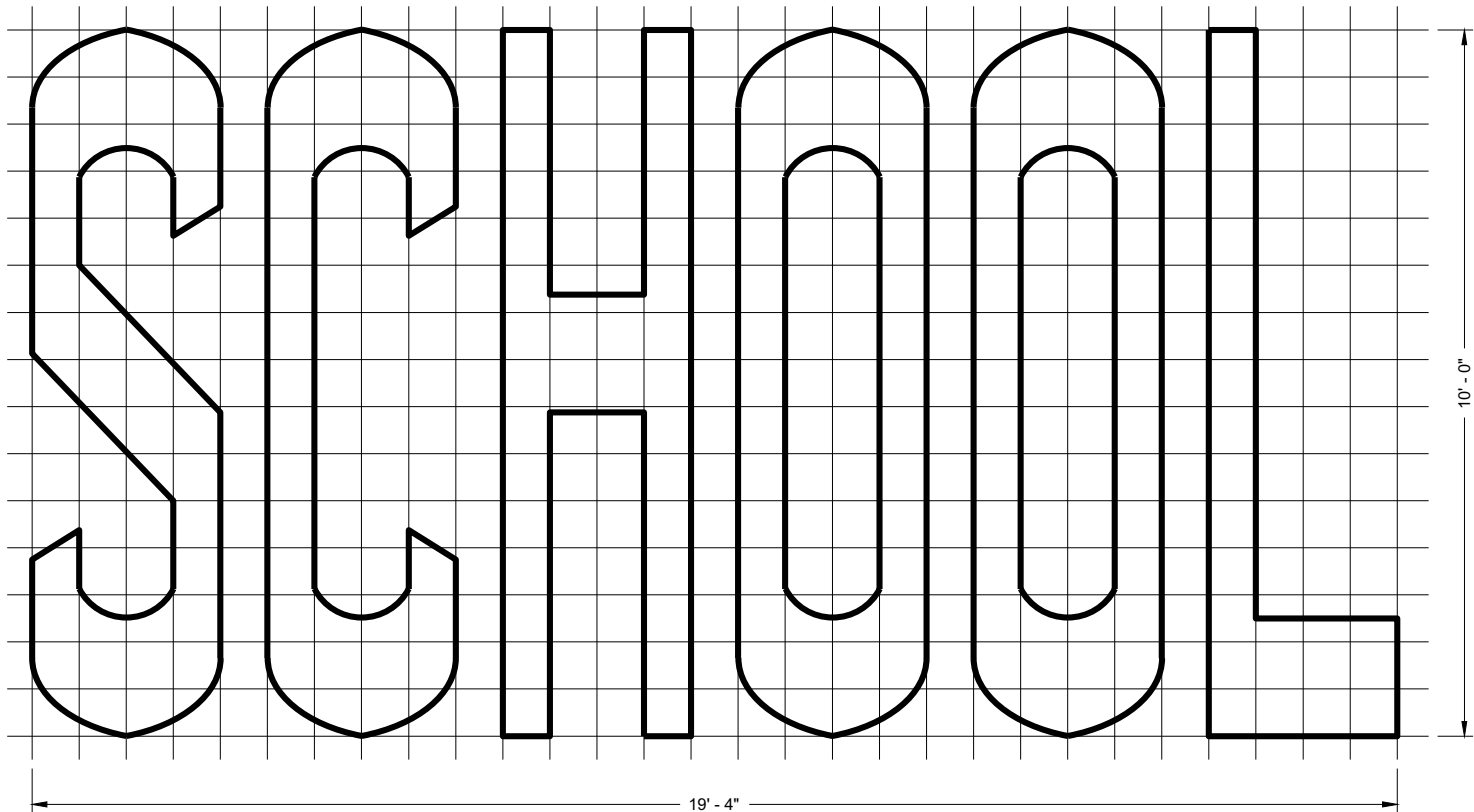
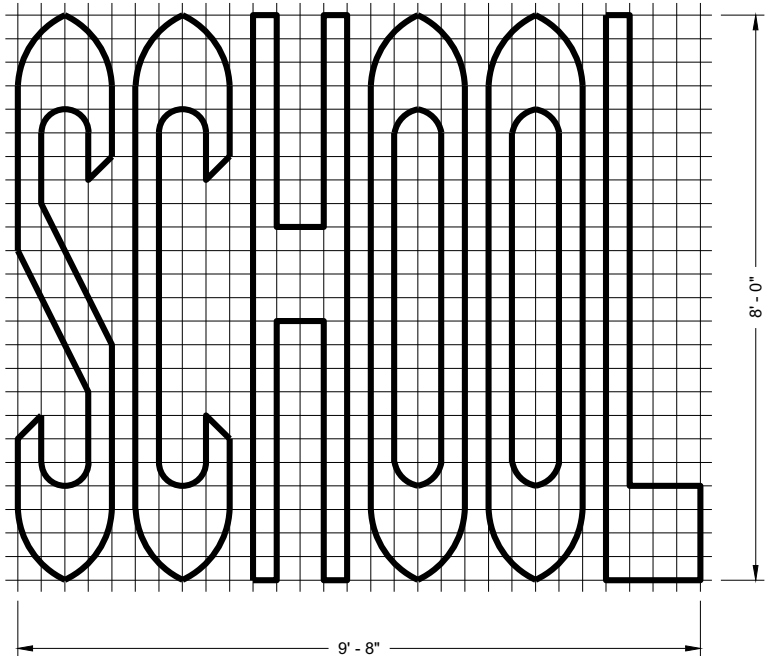
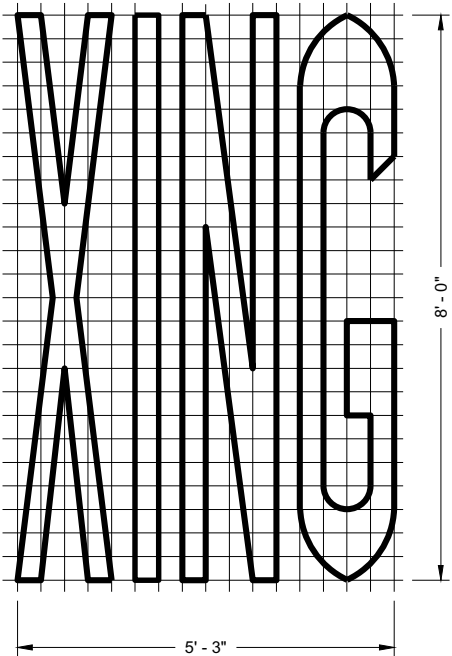
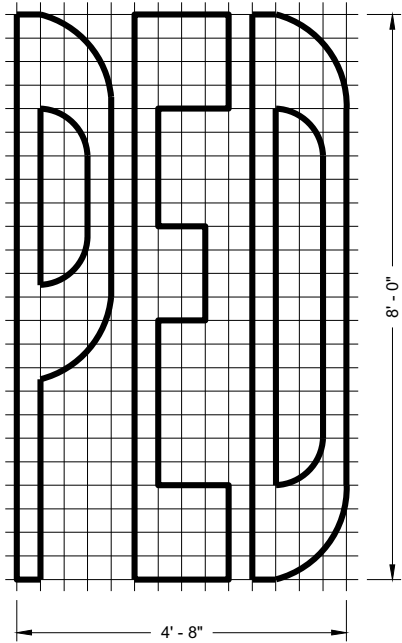
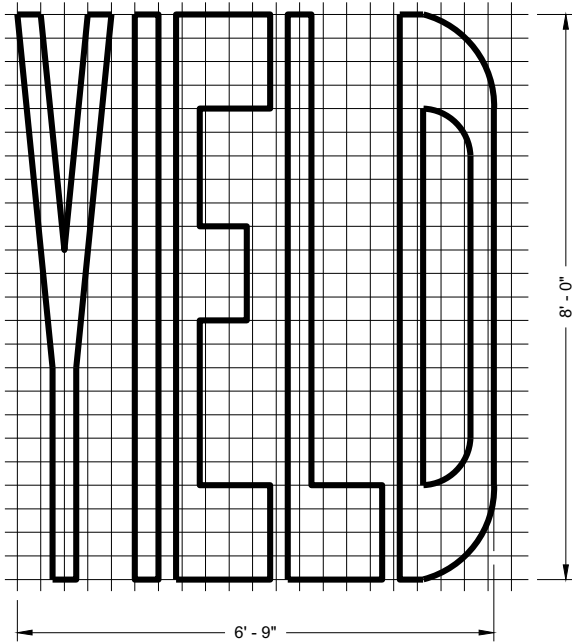
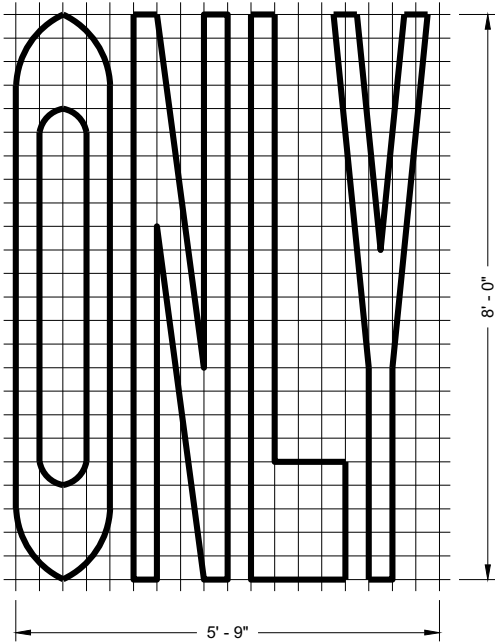
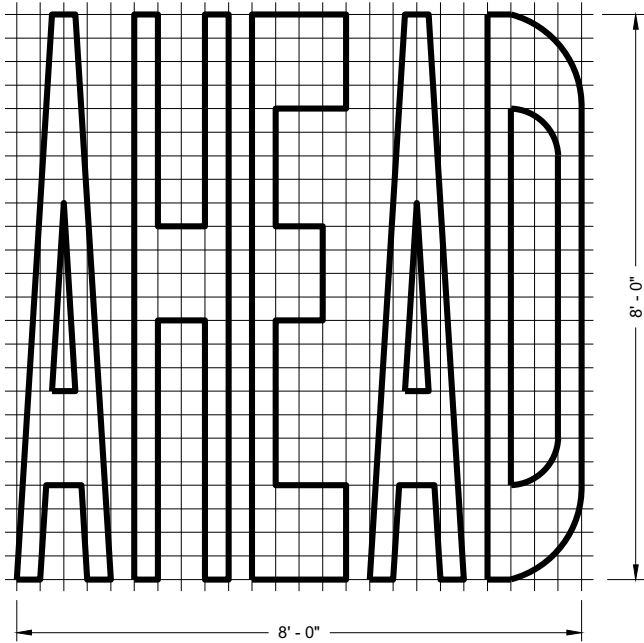
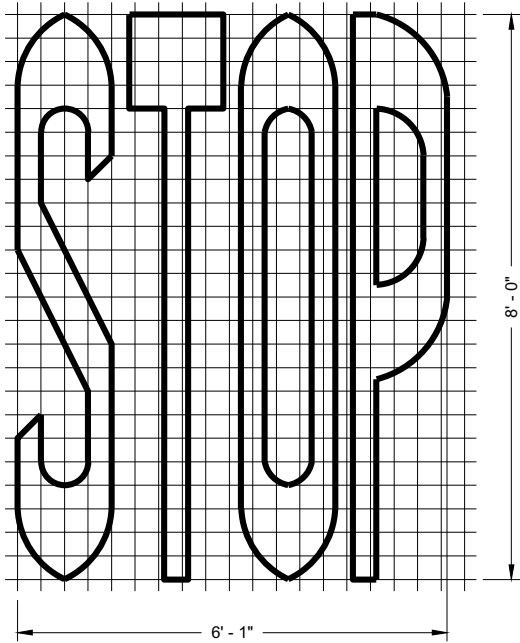
GENERAL NOTES

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 SYMBOLS

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SINGLE LANE

TWO - LANE

GENERAL NOTES

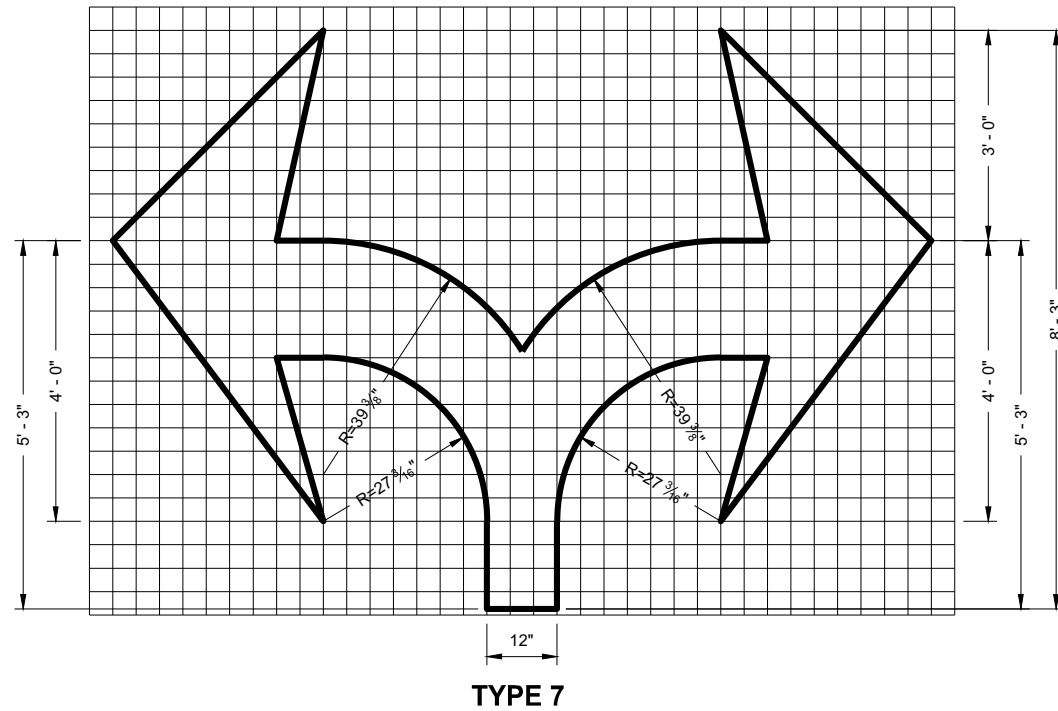
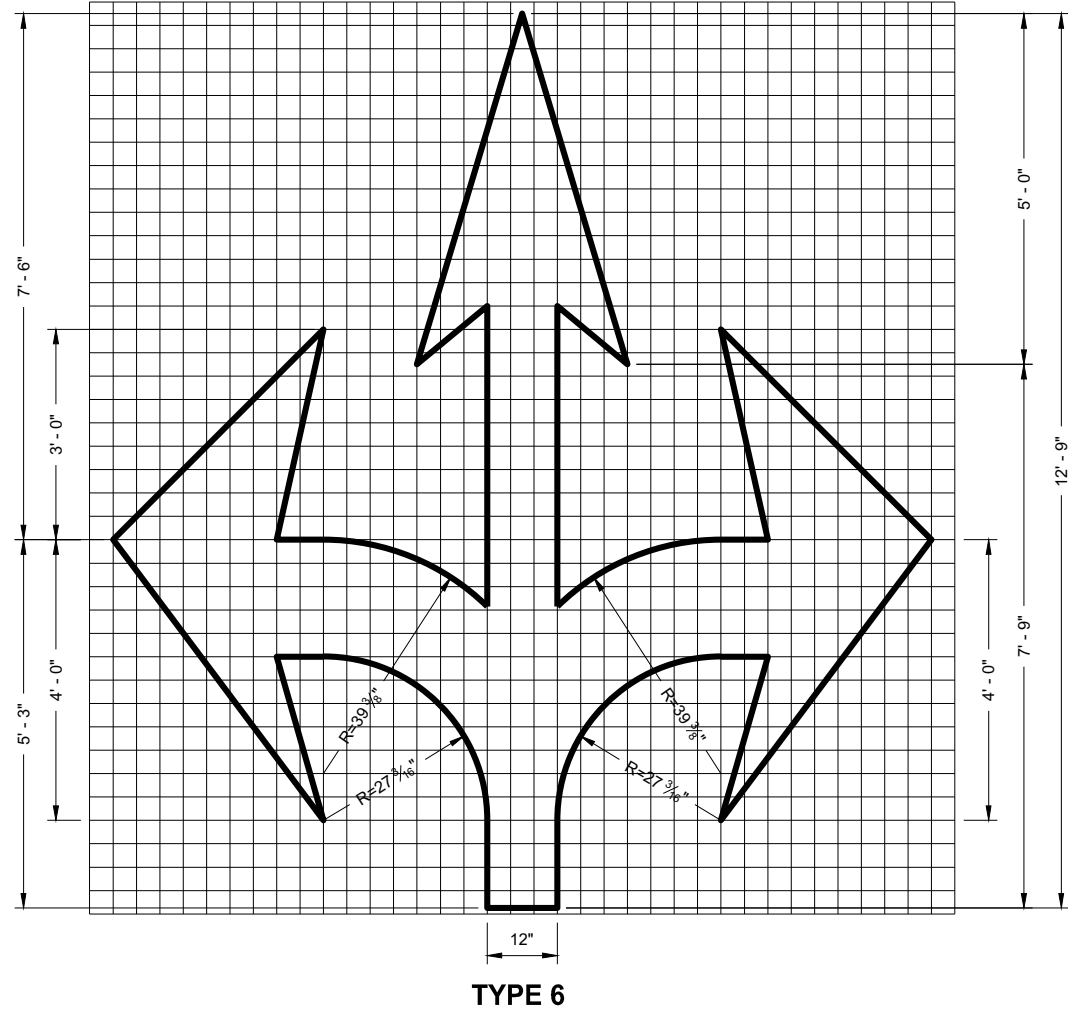
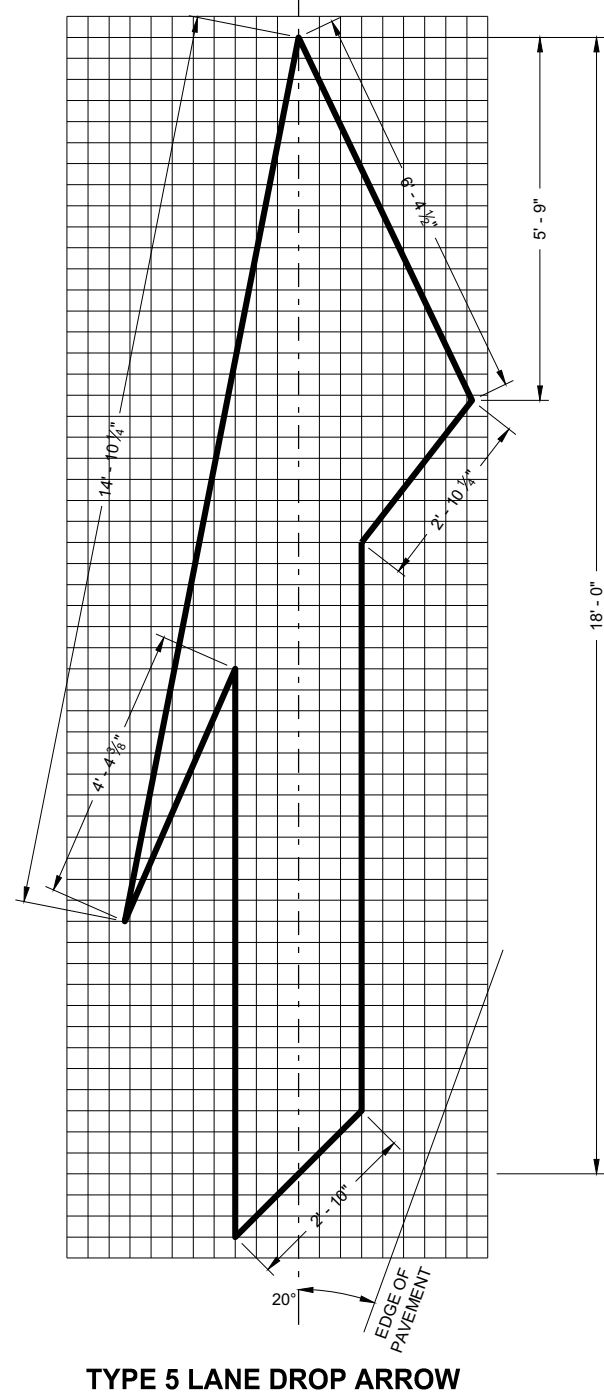
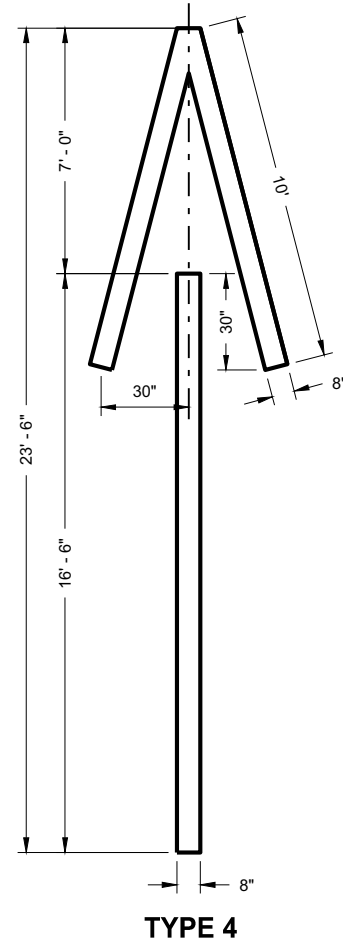
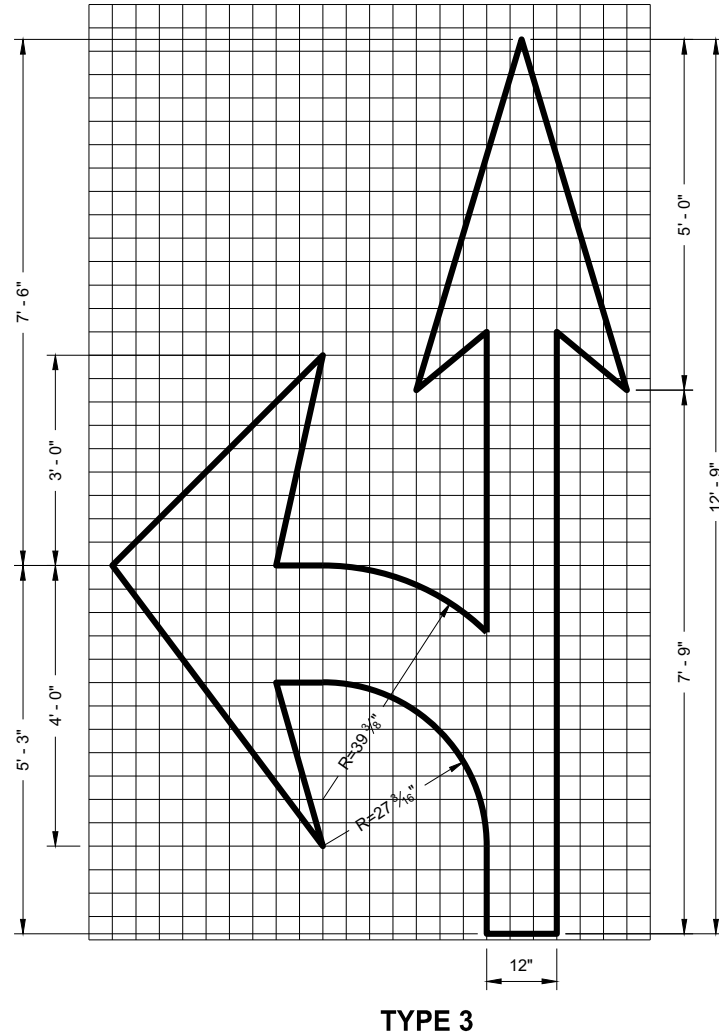
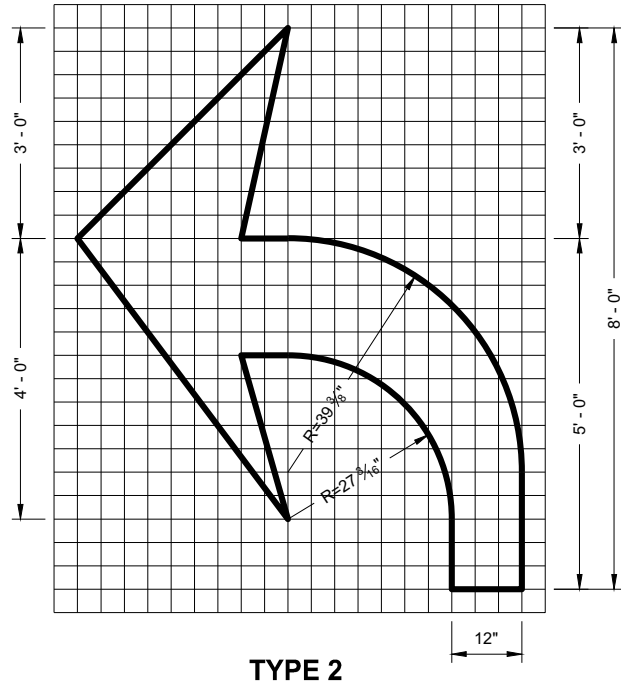
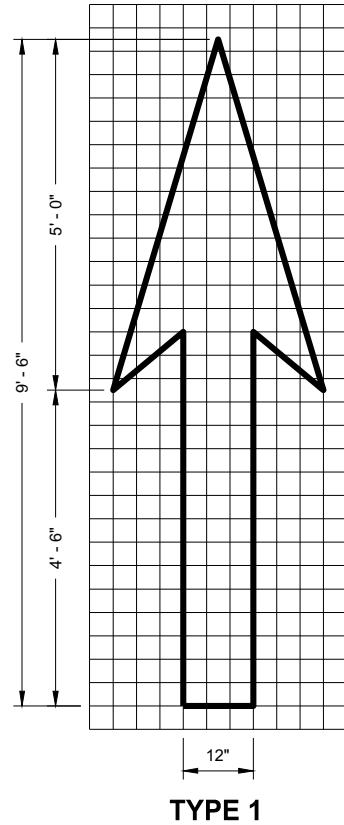
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING WORDS

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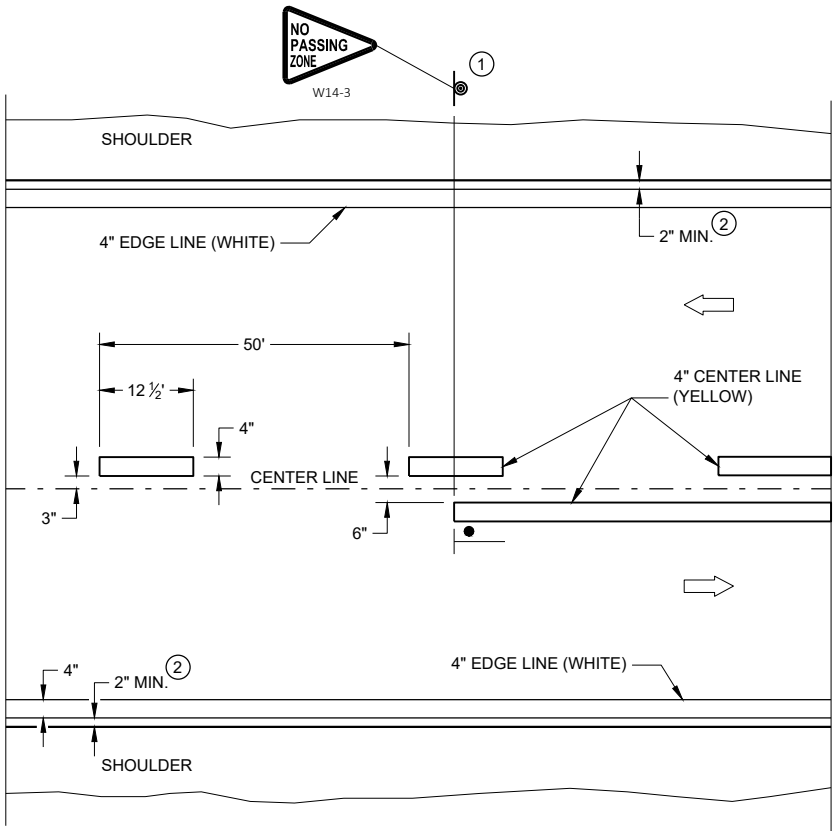
GENERAL NOTES

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

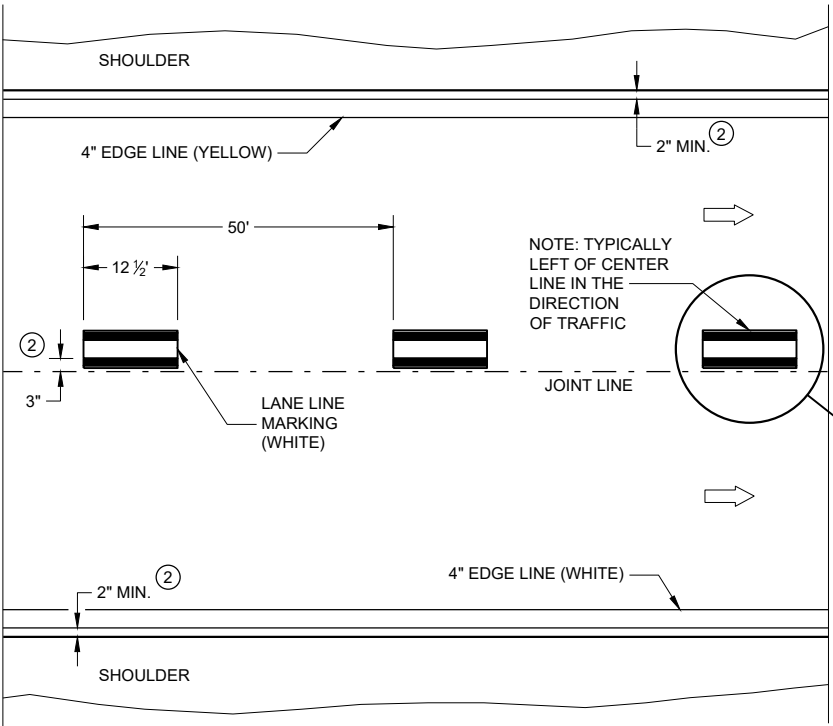
PAVEMENT MARKING ARROWS

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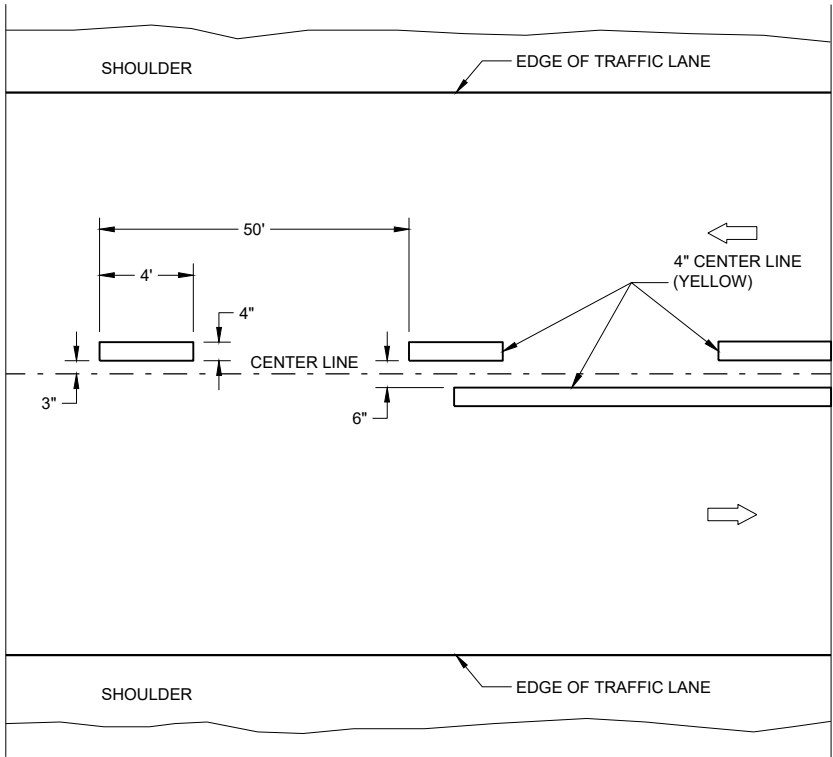


TWO WAY TRAFFIC

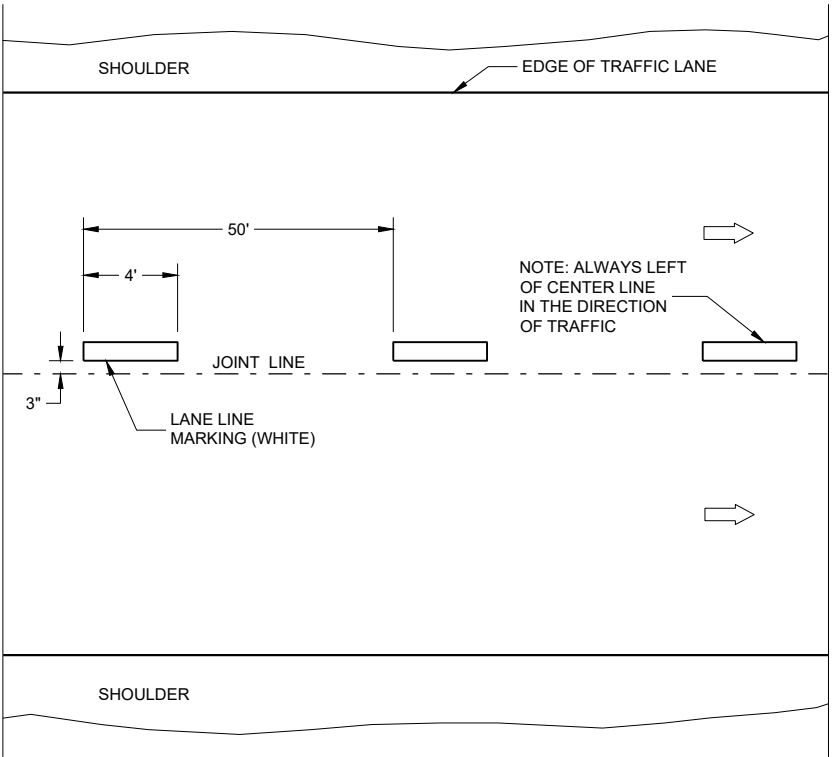


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

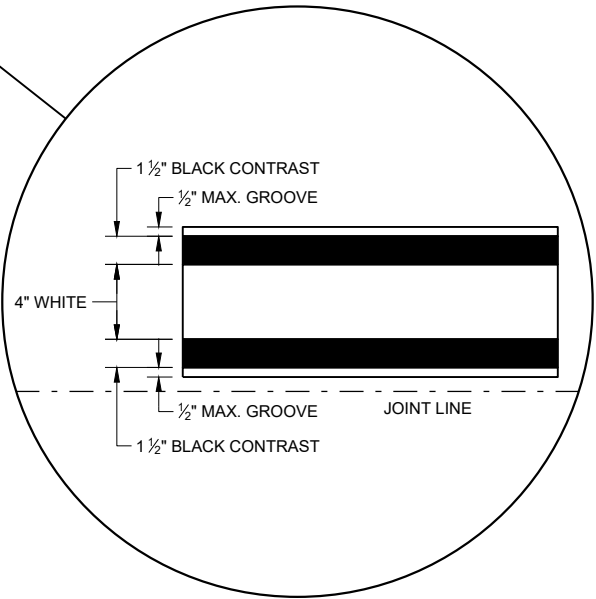
GENERAL NOTES

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

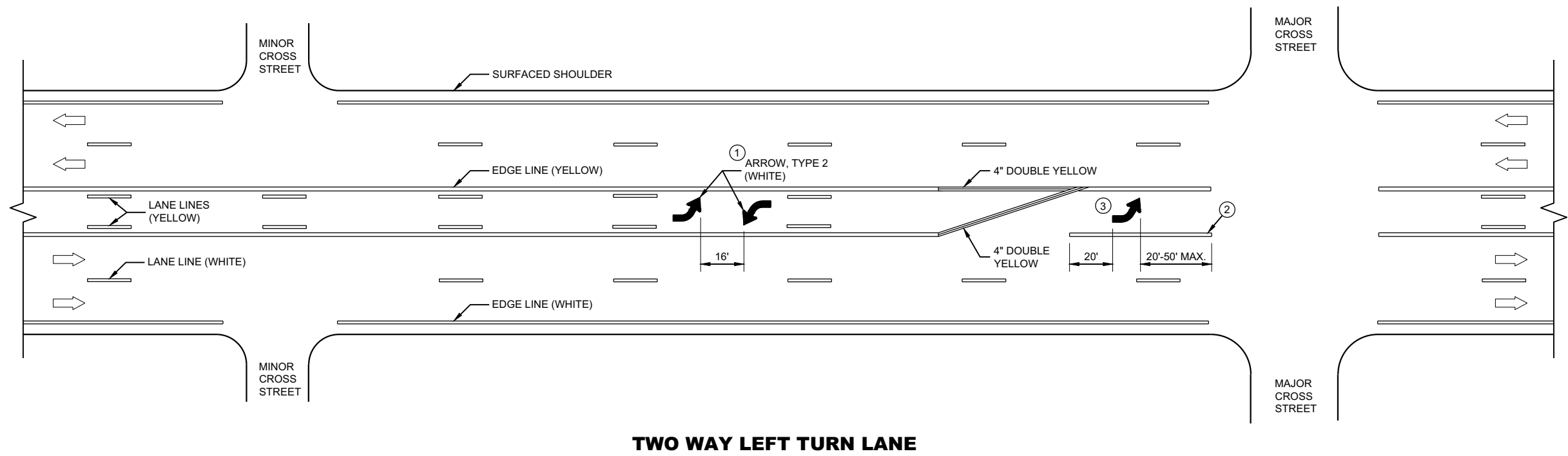


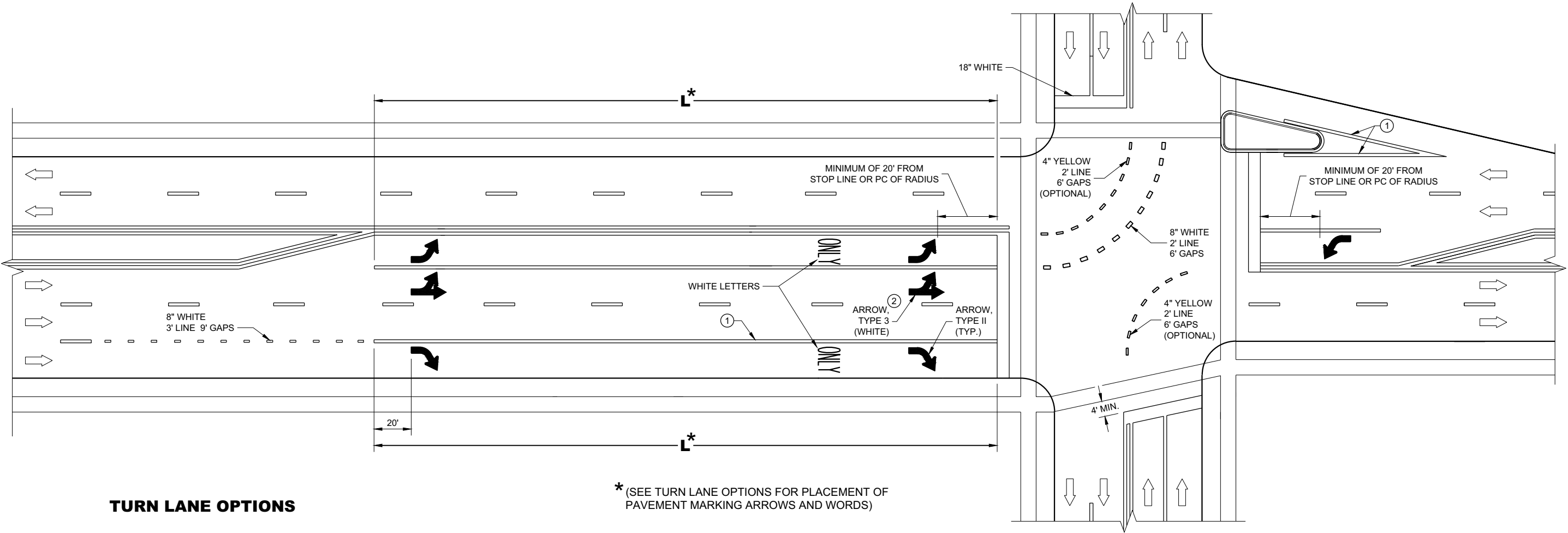
LONGITUDINAL MARKING (MAINLINE)

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ENGINEER

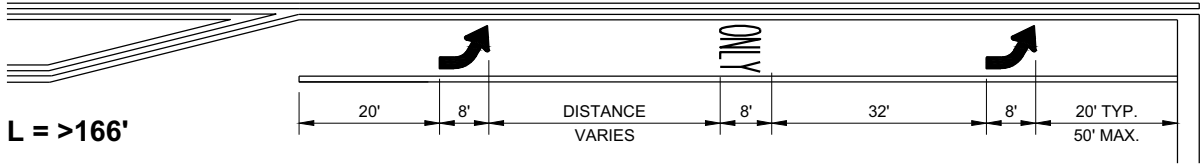
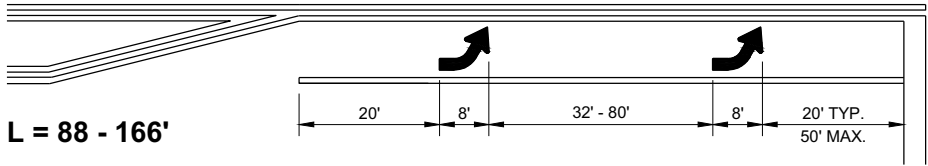
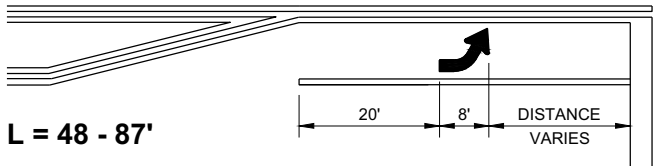
FHWA





TURN LANE OPTIONS

LENGTH OF TURN BAY (**L**) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

GENERAL NOTES

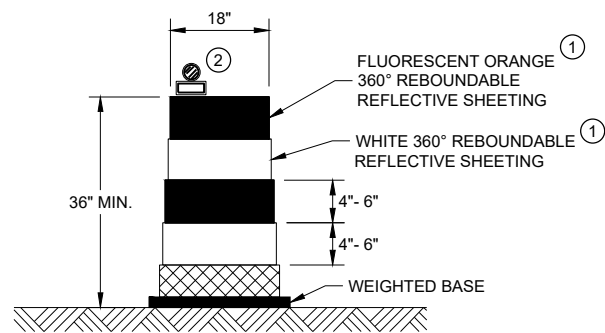
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

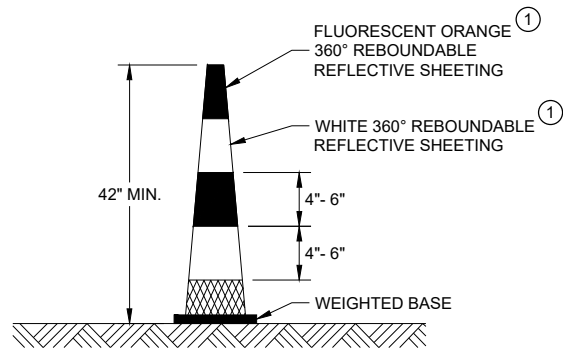
L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

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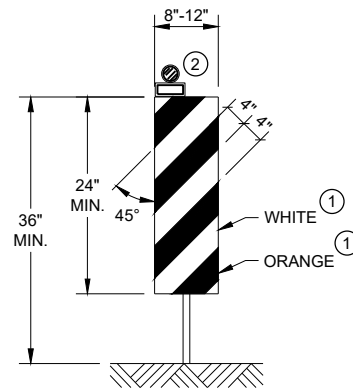


DRUM



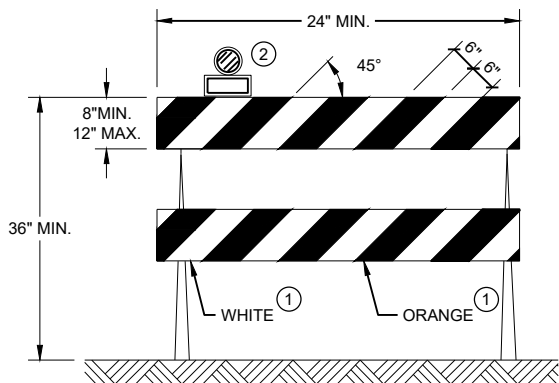
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



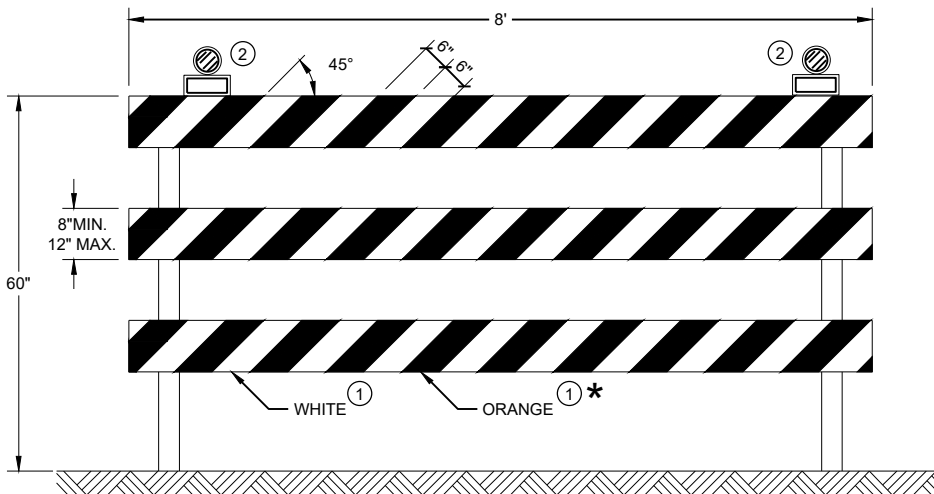
VERTICAL PANEL

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.

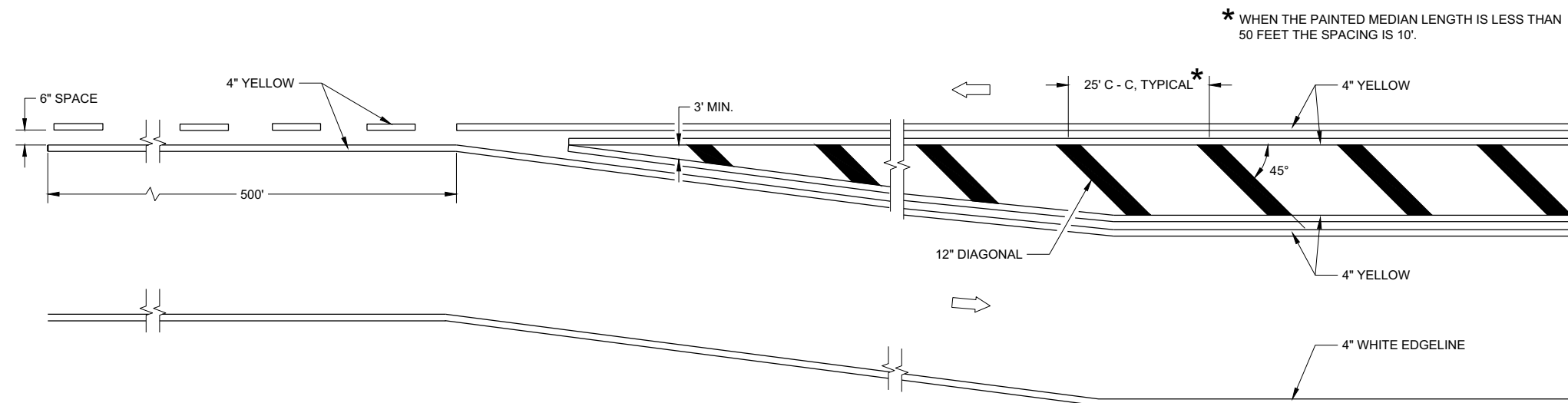
GENERAL NOTES

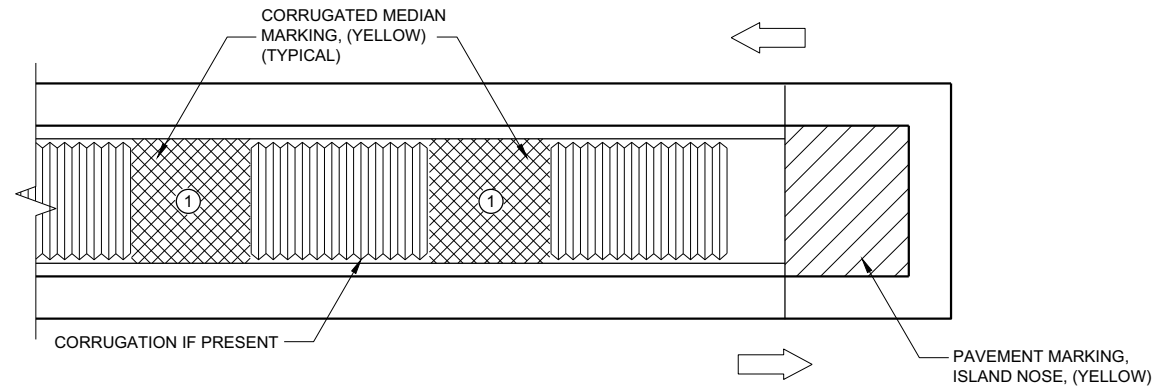
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

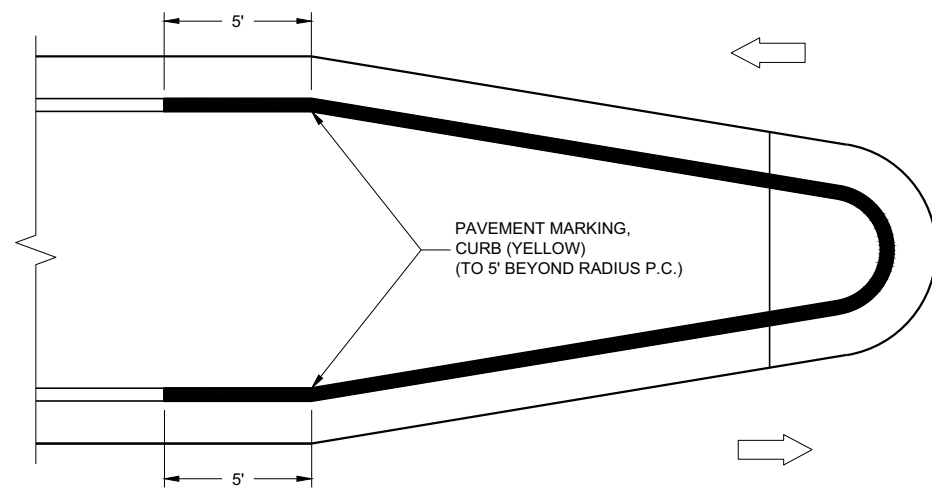
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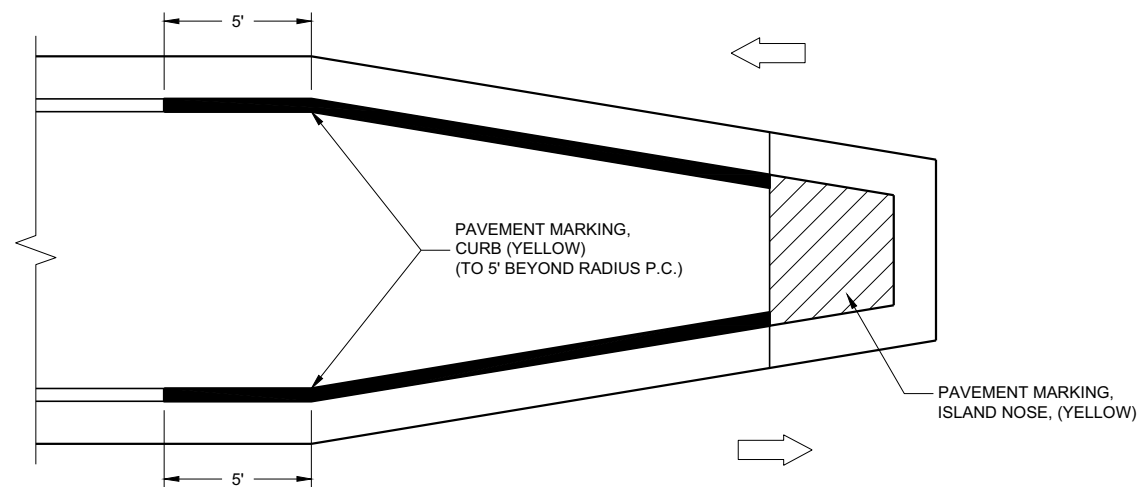




MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

**TYPICAL PLACEMENT OF
PAVEMENT MARKING ON MEDIAN ISLANDS**

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.

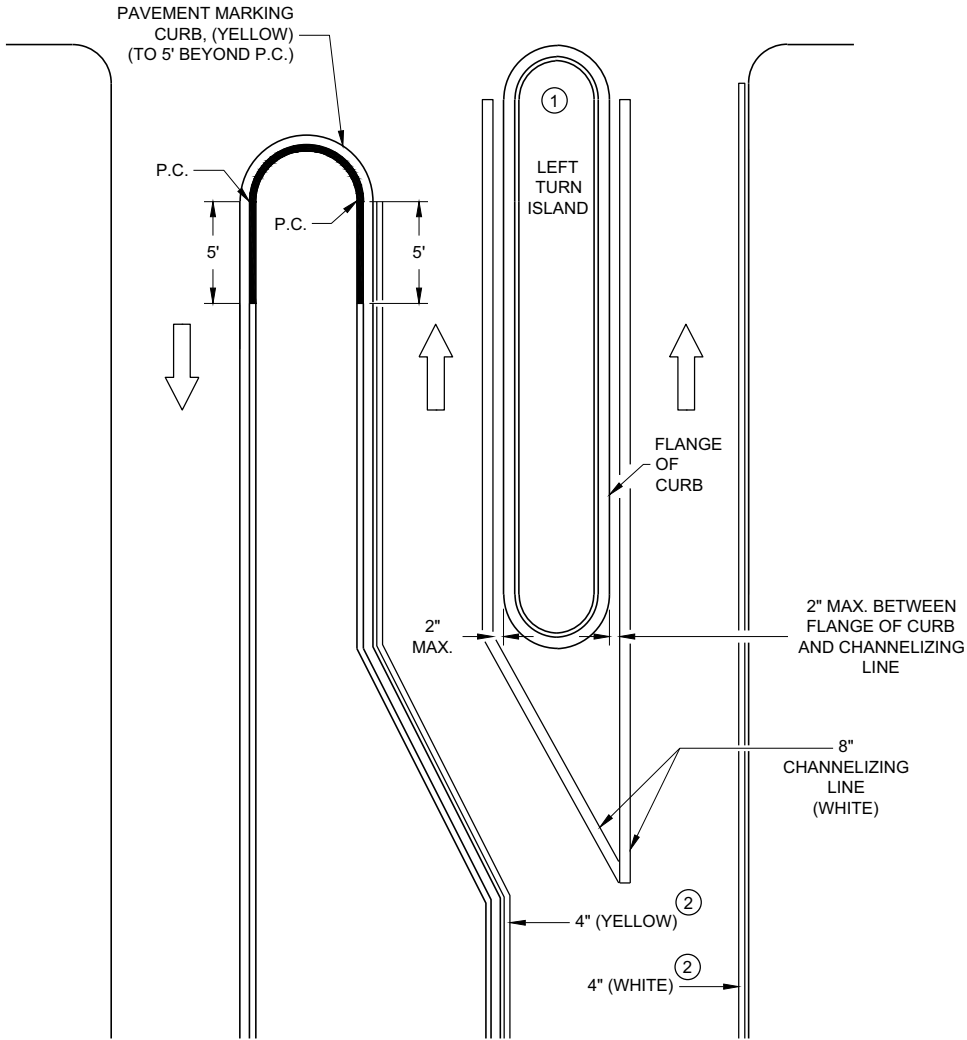
-  ISLAND NOSE MARKING
-  CURB MARKING
-  CORRUGATED MEDIAN MARKING
-  DIRECTION OF TRAVEL

PAVEMENT MARKINGS, MEDIAN ISLAND NOSE

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REQUIREMENTS FOR EDGE LINES		
POSTED SPEED	IS THERE CONTINUOUS LIGHTING?	
	YES	NO
≤ 30 MPH	NO	OPTIONAL
35 OR 40 MPH	OPTIONAL	RECOMMENDED
≥ 45 MPH	RECOMMENDED	REQUIRED



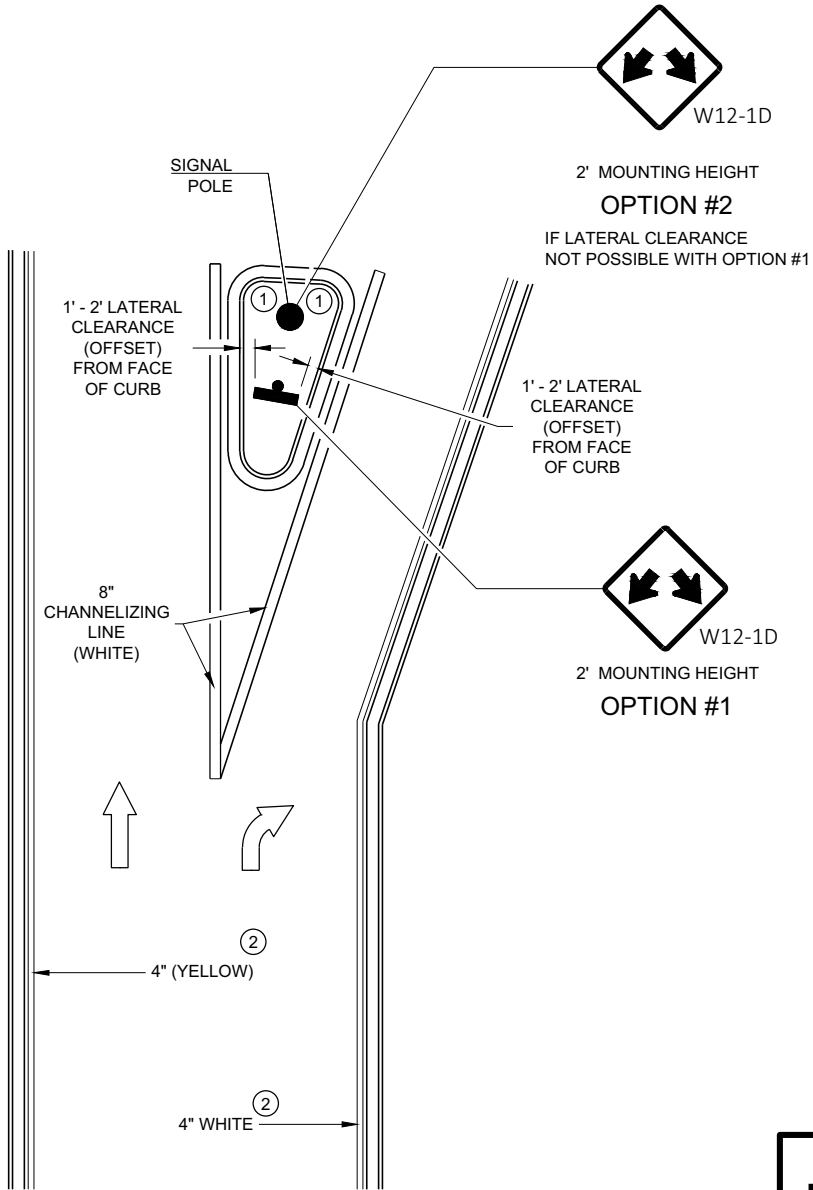
LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

- ① MARK CURB NOSES YELLOW.
- ② MARK ACCORDING TO TABLE.

DIRECTION OF TRAVEL



RIGHT TURN ISLAND

MEDIAN PAVEMENT MARKINGS, DOUBLE ARROW WARNING SIGN PLACEMENT

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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.

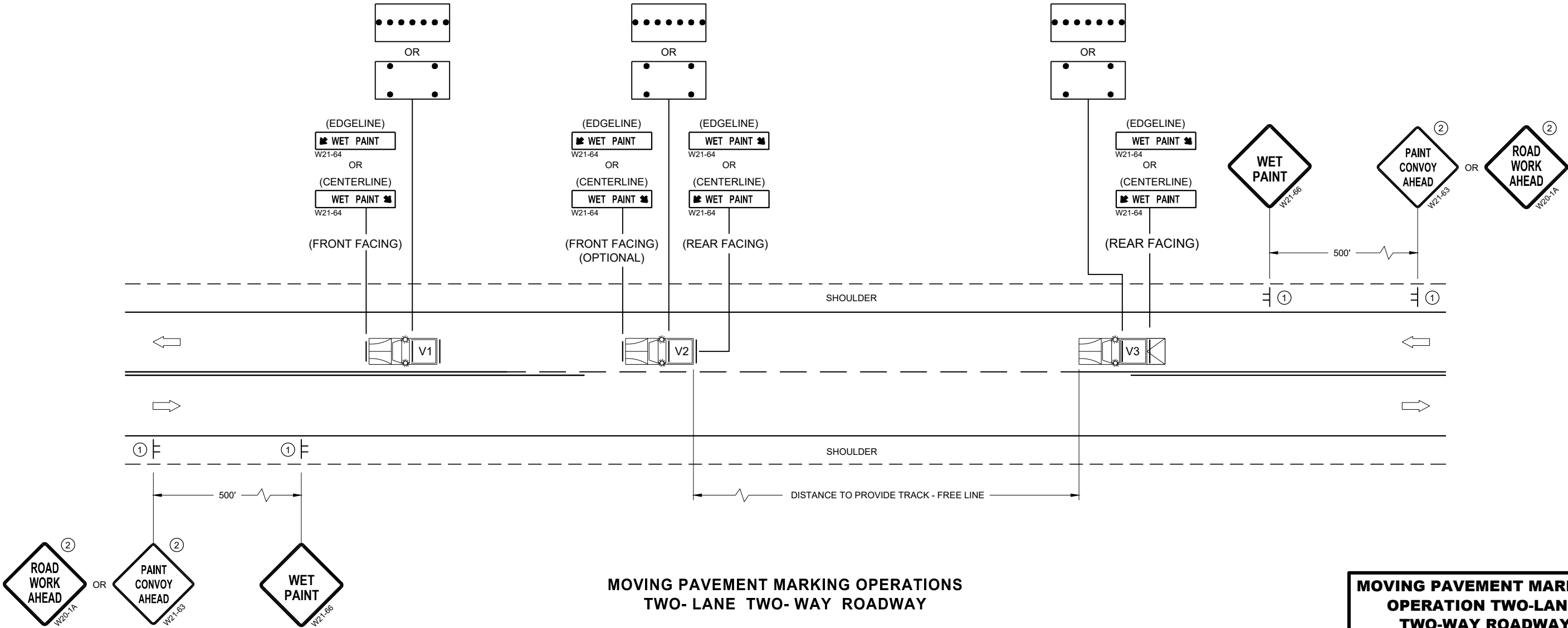
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

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.



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

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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.

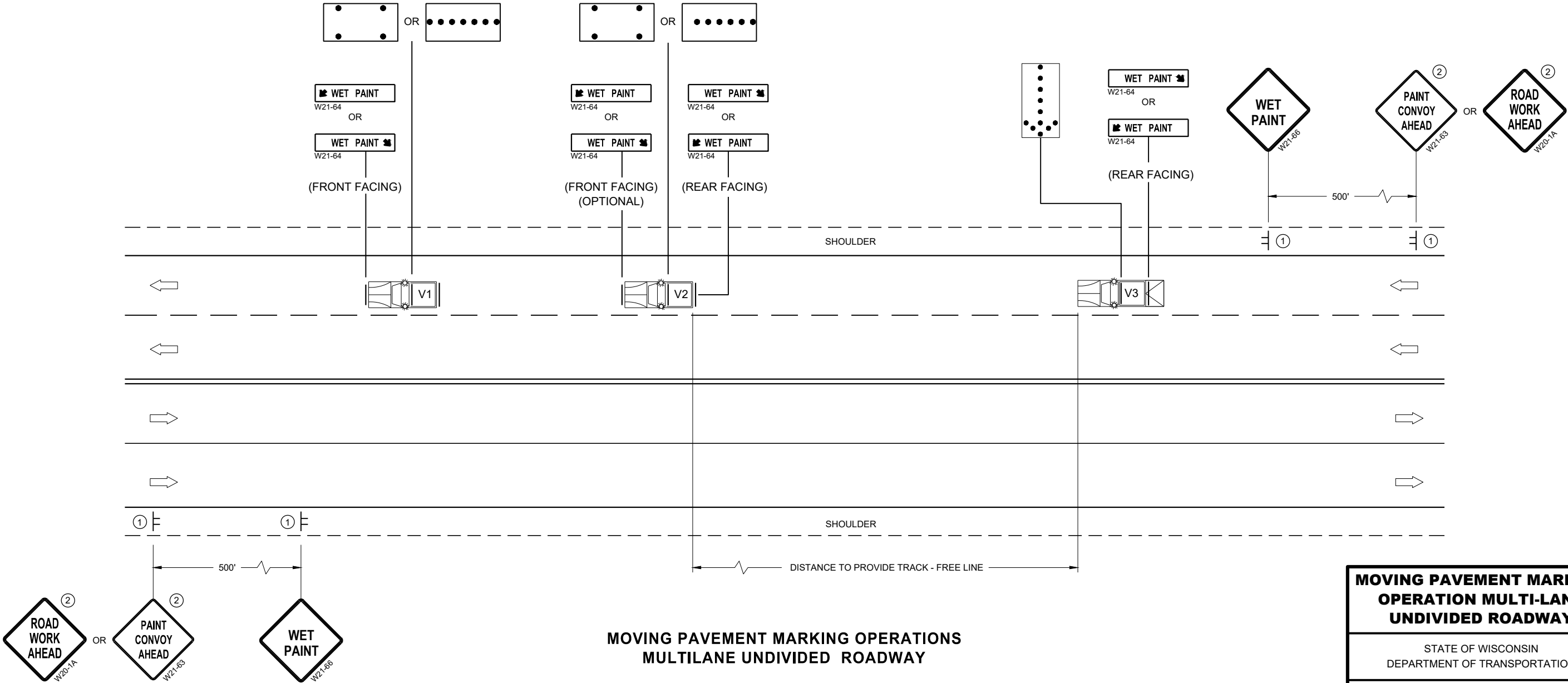
WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

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

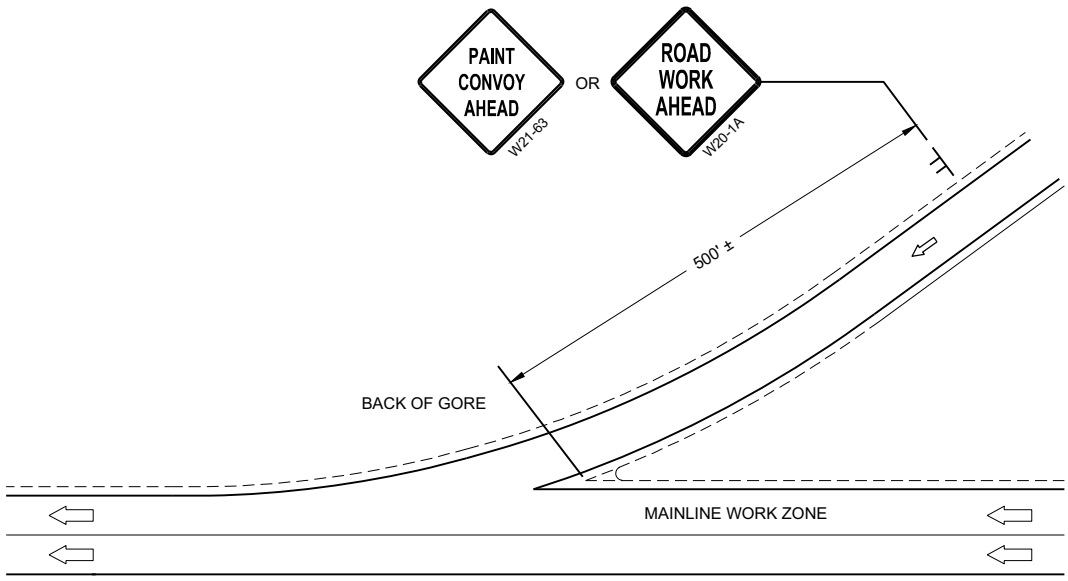
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LEGEND

- V1 MARKING VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL 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.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

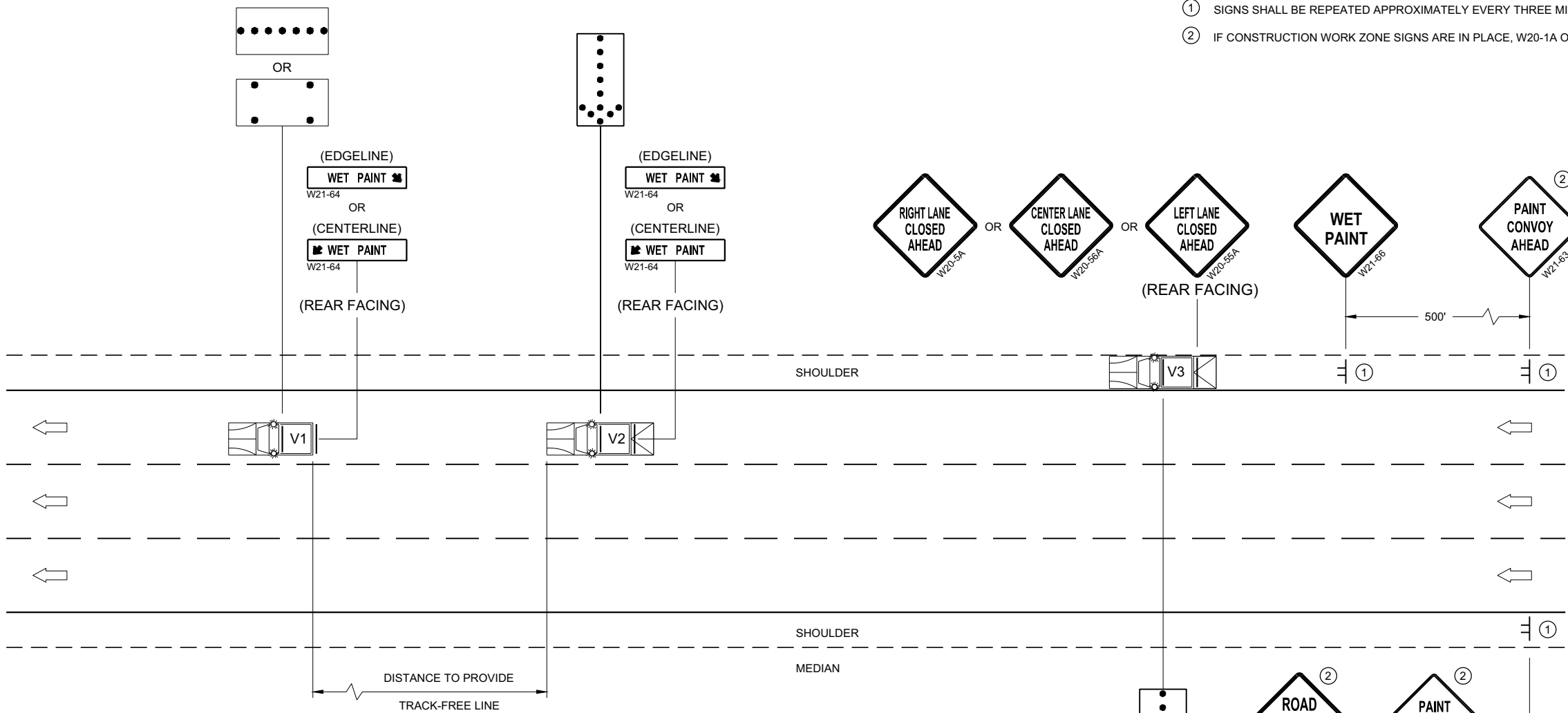
IF THE SHOULDER IS TOO NARROW TO ACCOMMODATE THE LAST TRAILING VEHICLE, THE VEHICLE SHOULD STRADDLE THE EDGE LINE.

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 HEIGHT OF 18" FOR WET PAVEMENT MARKINGS

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY ON RAMP.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



MOVING PAVEMENT MARKING OPERATIONS
MULTILANE DIVIDED ROADWAY

MOVING PAVEMENT MARKING
OPERATION MULTI-LANE
DIVIDED ROADWAY

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SIGNING AND MARKING IS SHOWN AS TYPICAL PLACEMENT. FIELD CONDITIONS MAY DICTATE CHANGES IN SIGNING AND MARKING PLACEMENT.

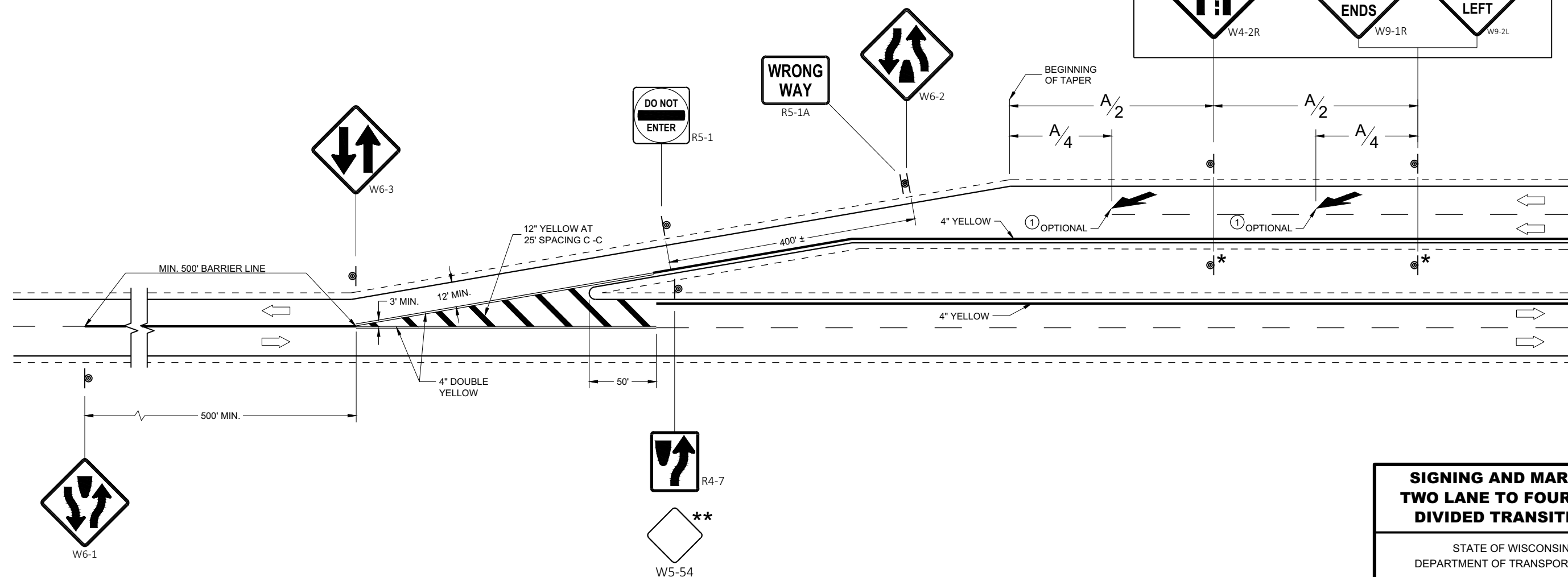
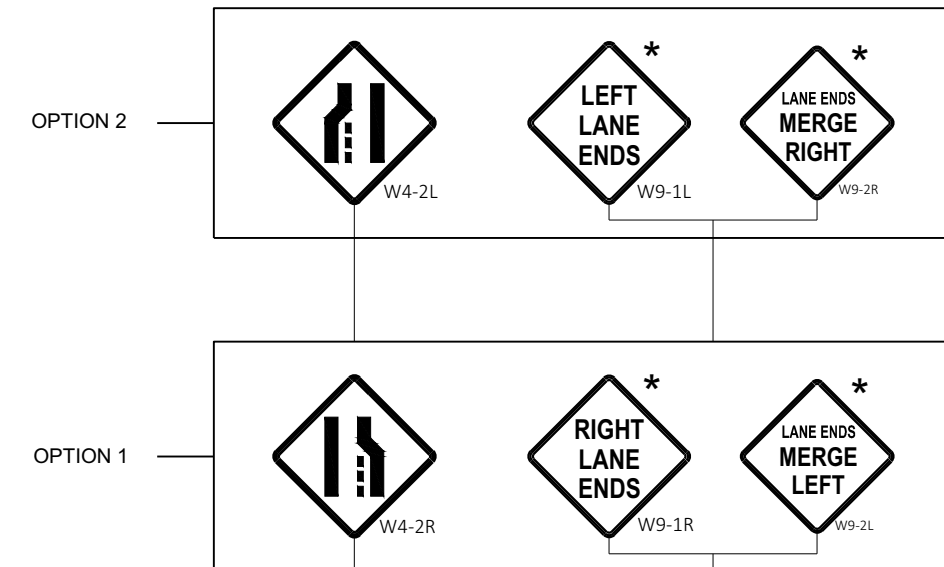
* SIGNS MAY BE OMITTED IF SPACE DOES NOT PERMIT PLACEMENT.

LEGEND

 SIGN MOUNTED ON PERMANENT SUPPORT

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	325'
30	460'
35	565'
40	670'
45	775'
50	885'
55	990'
65	1200'
70	1250'



SIGNING AND MARKING TWO LANE TO FOUR LANE DIVIDED TRANSITIONS

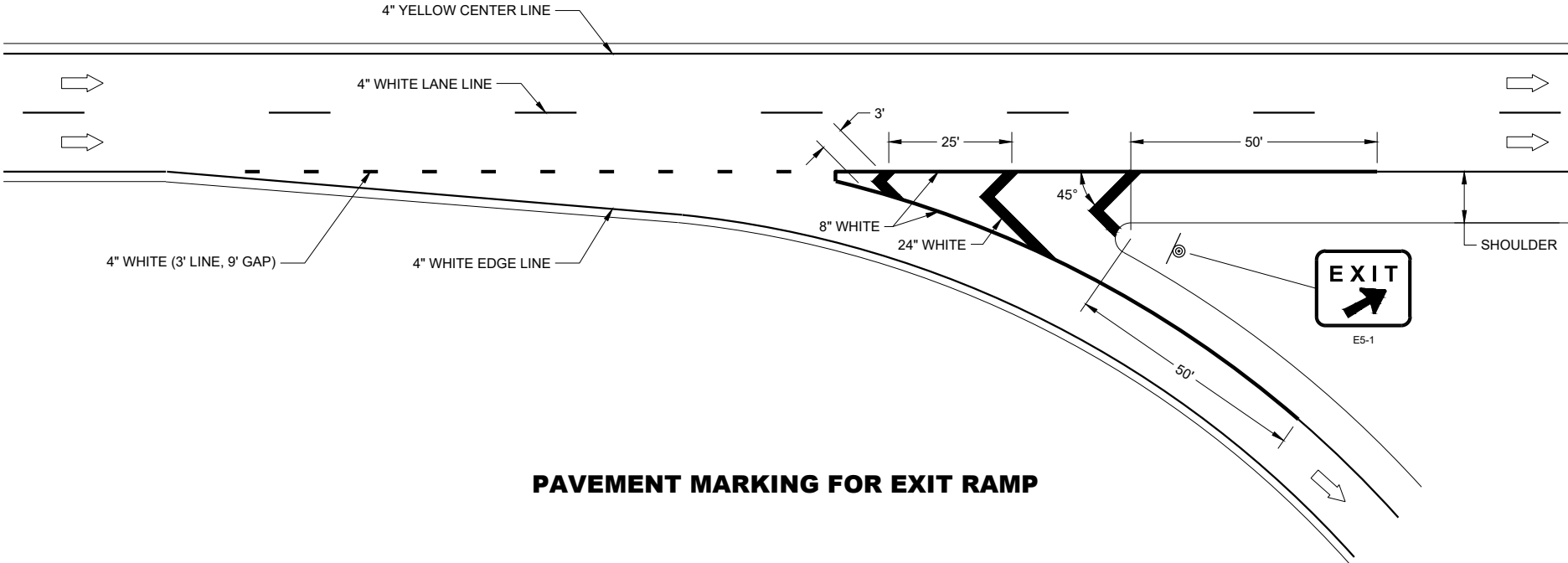
STATE OF WISCONSIN
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May 2020
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ENGINEER

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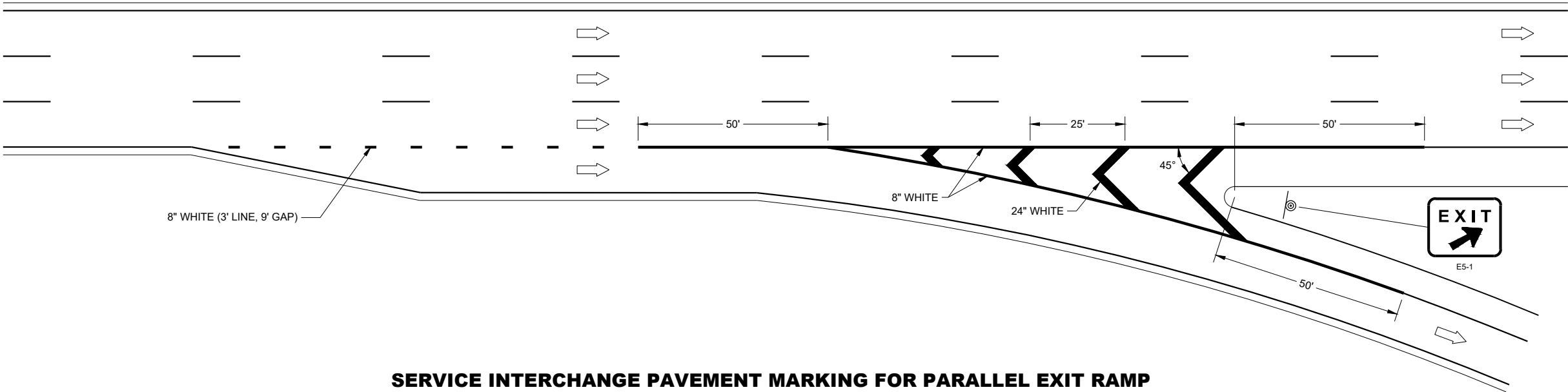
PAVEMENT MARKING FOR EXIT RAMP

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAVEL



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT RAMP

PAVEMENT MARKING,
EXIT RAMP AND
PARALLEL EXIT RAMP

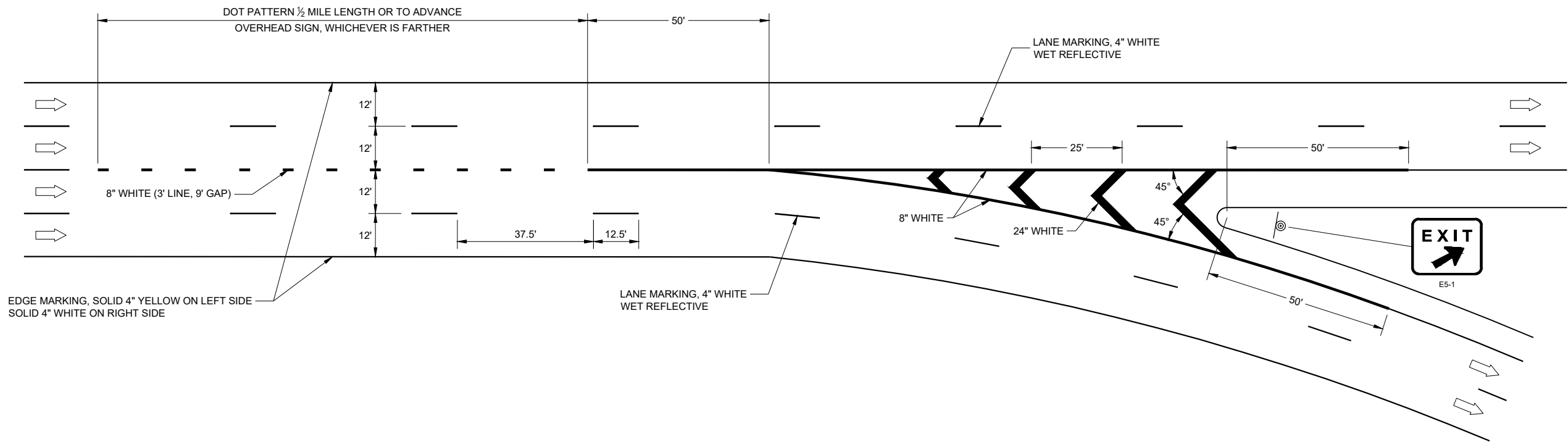
STATE OF WISCONSIN
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GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

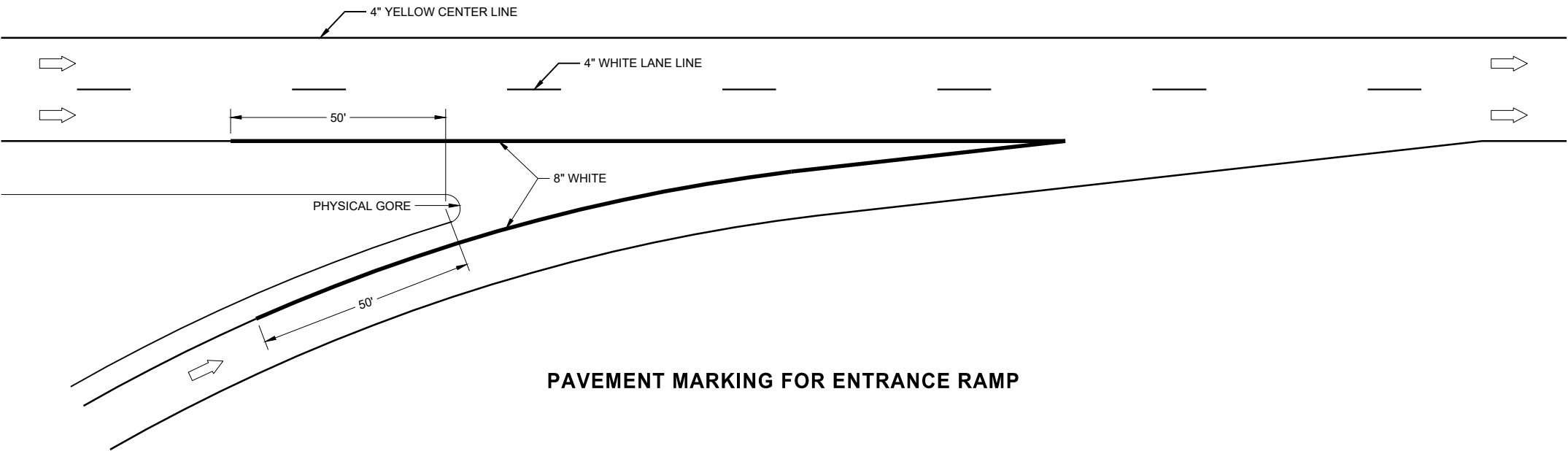
LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAVEL

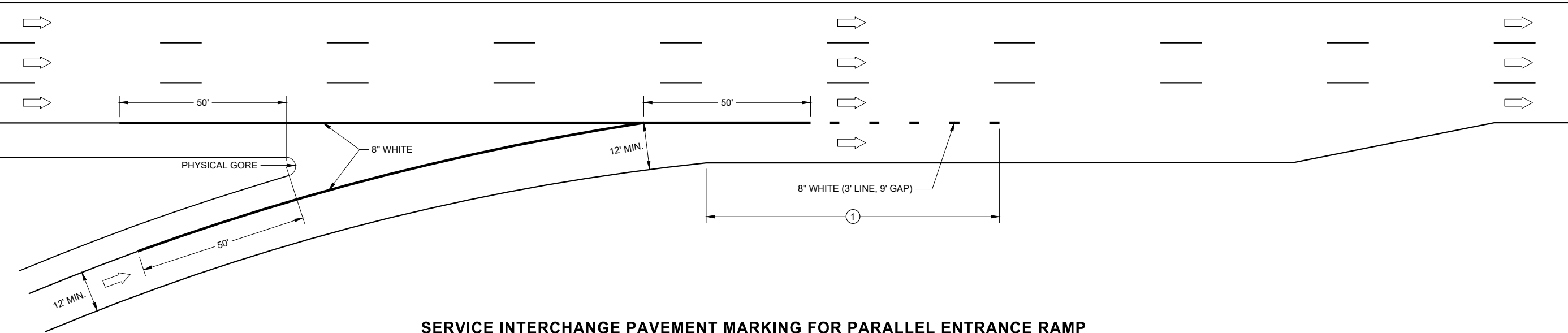


PAVEMENT MARKING,
MAJOR SPLIT
FREEWAY TO FREEWAY

STATE OF WISCONSIN
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PAVEMENT MARKING FOR ENTRANCE RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP

GENERAL NOTES

- PLACE GROOVE 3 INCHES LEFT OF JOINT.
- ① ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

LEGEND

➡ DIRECTION OF TRAVEL

PAVEMENT MARKING,
ENTRANCE RAMP AND
PARALLEL ENTRANCE RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 203

➡ DIRECTION OF TRAVEL

PLACE GROOVE 3 INCHES LEFT OF JOINT.



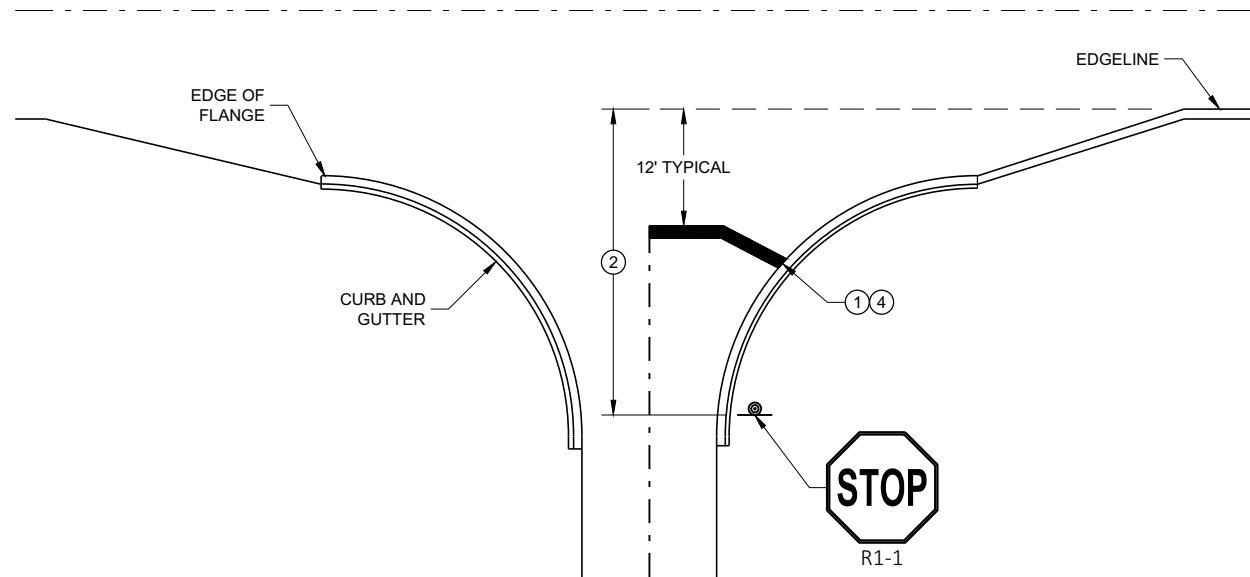
POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
40	670'
45	775'
50	885'
55	990'
60	1100'
65	1200'
70	1250'

APPROVED
May 2021
DATE

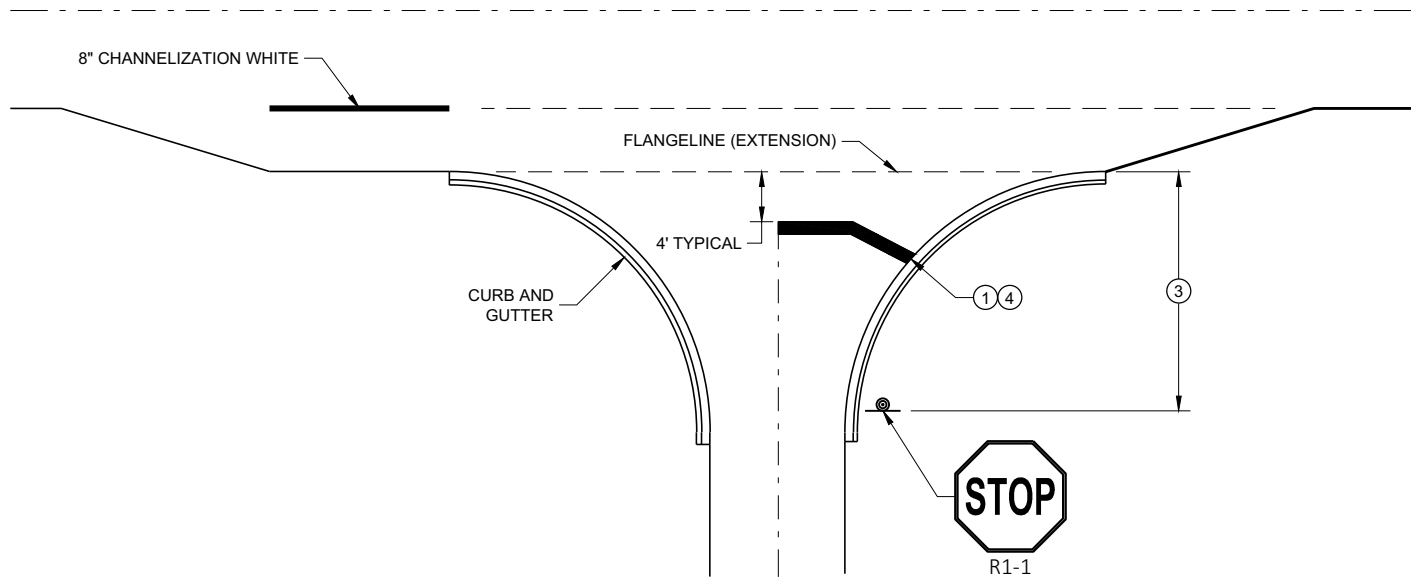
/S/ Matthew Rauch
STATE MARKING AND SIC
ENGINEER

204

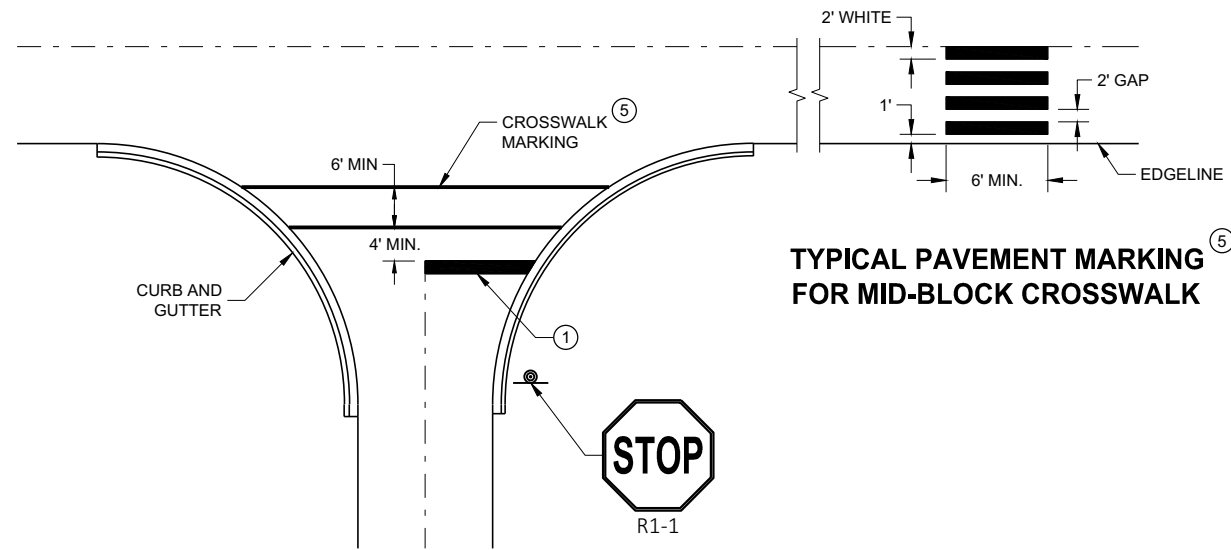
FWHA



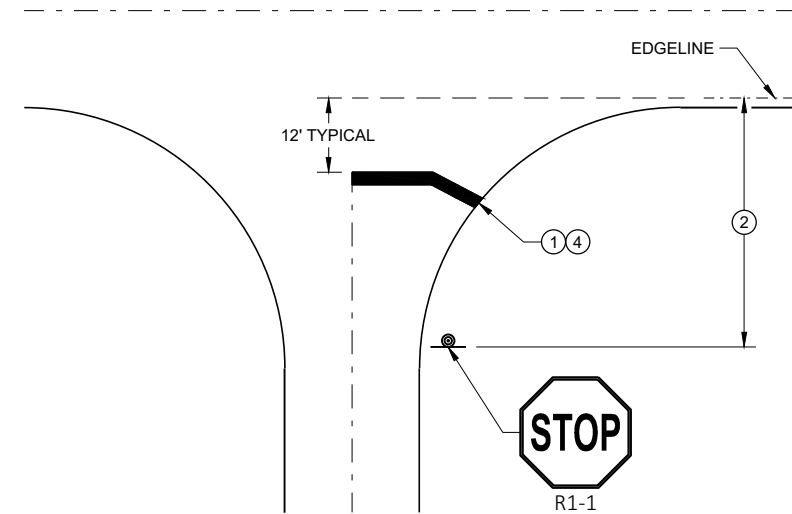
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

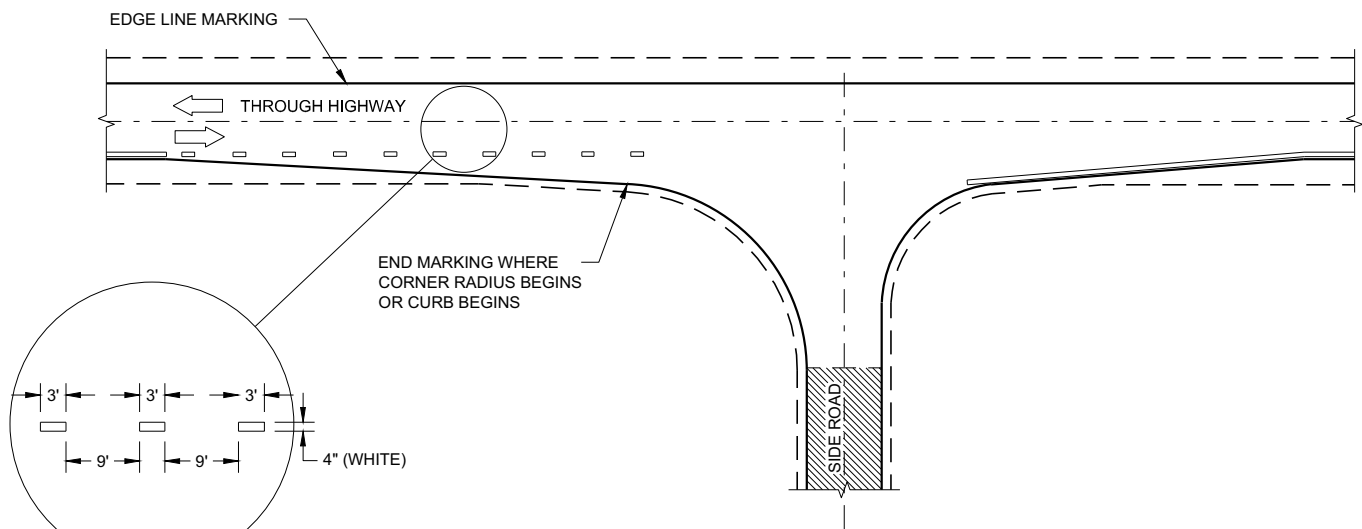
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- 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 EDGE LINE.
- 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.

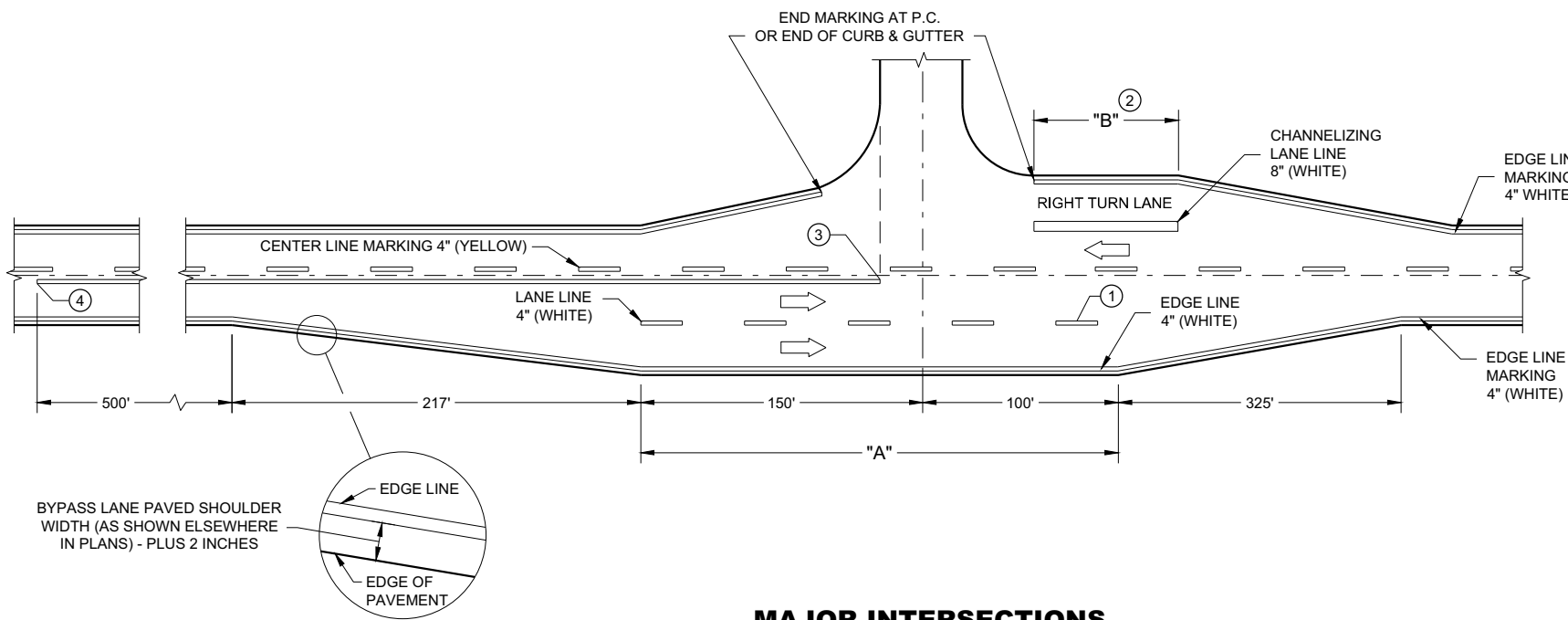
STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 205
FHWA



MINOR INTERSECTION



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

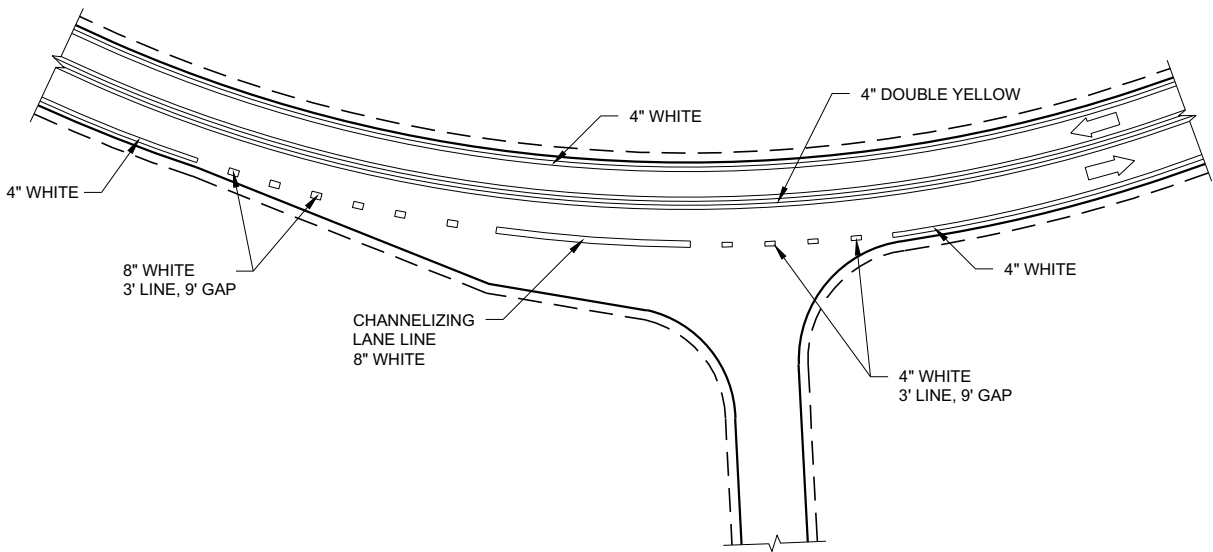
GENERAL NOTES

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

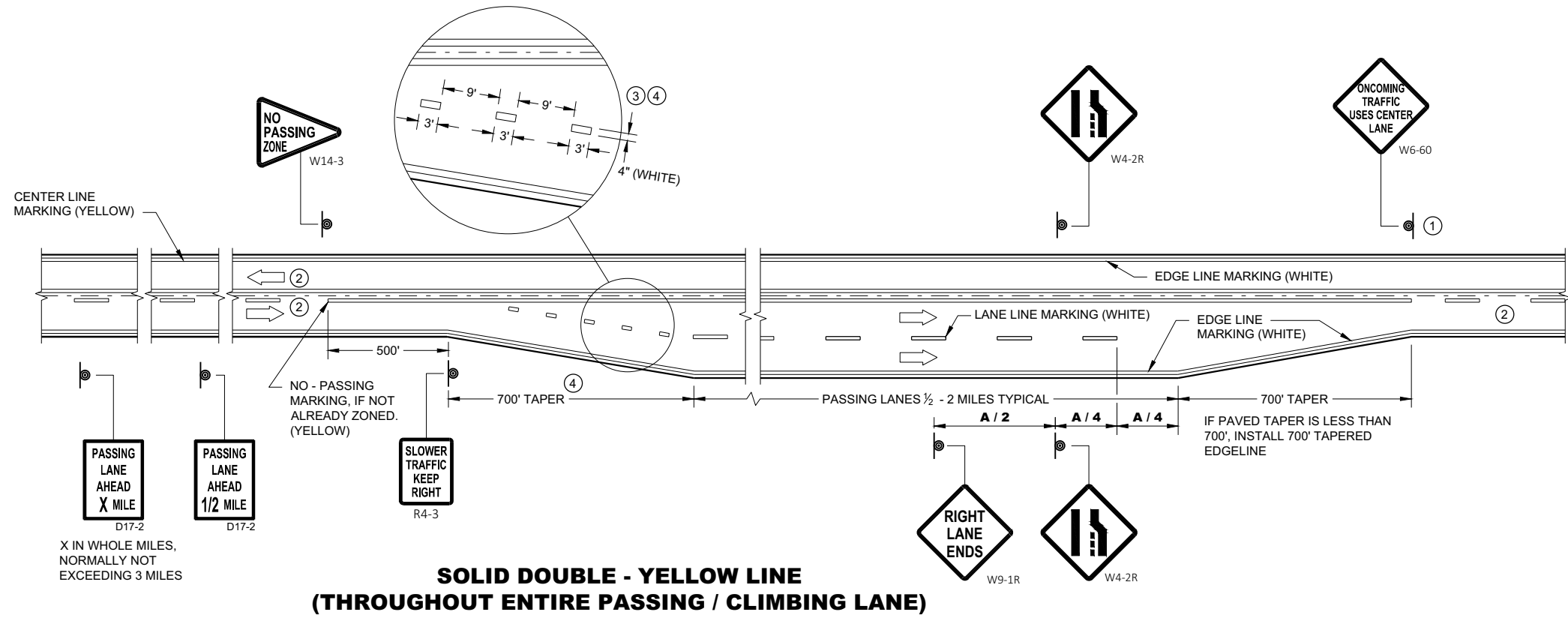
➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 206



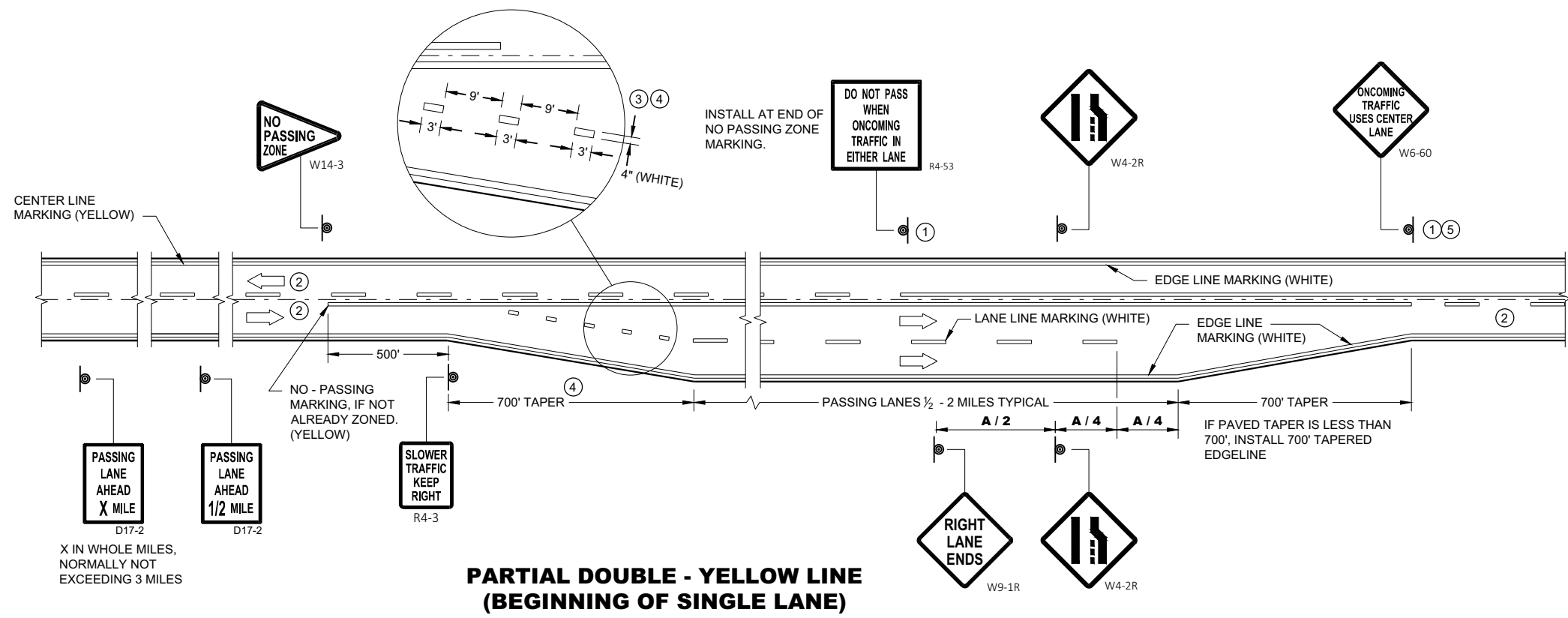
GENERAL NOTES

- 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

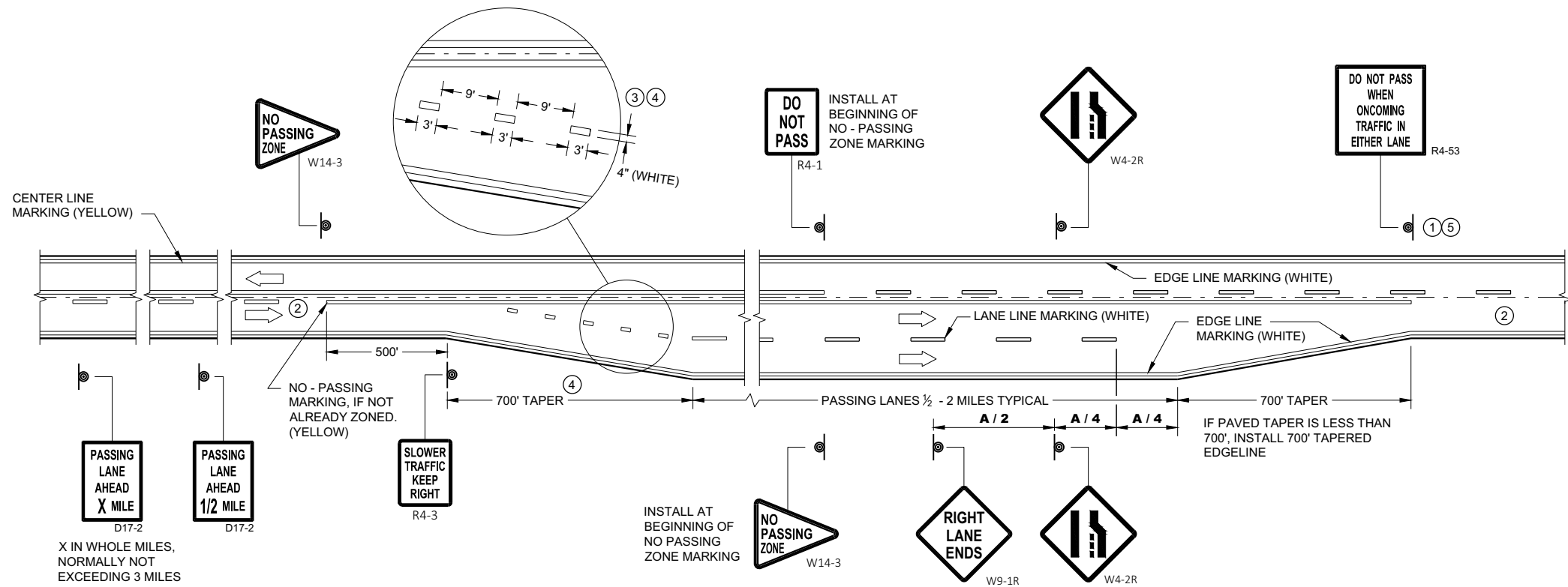
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
45	775
50	885
55	990

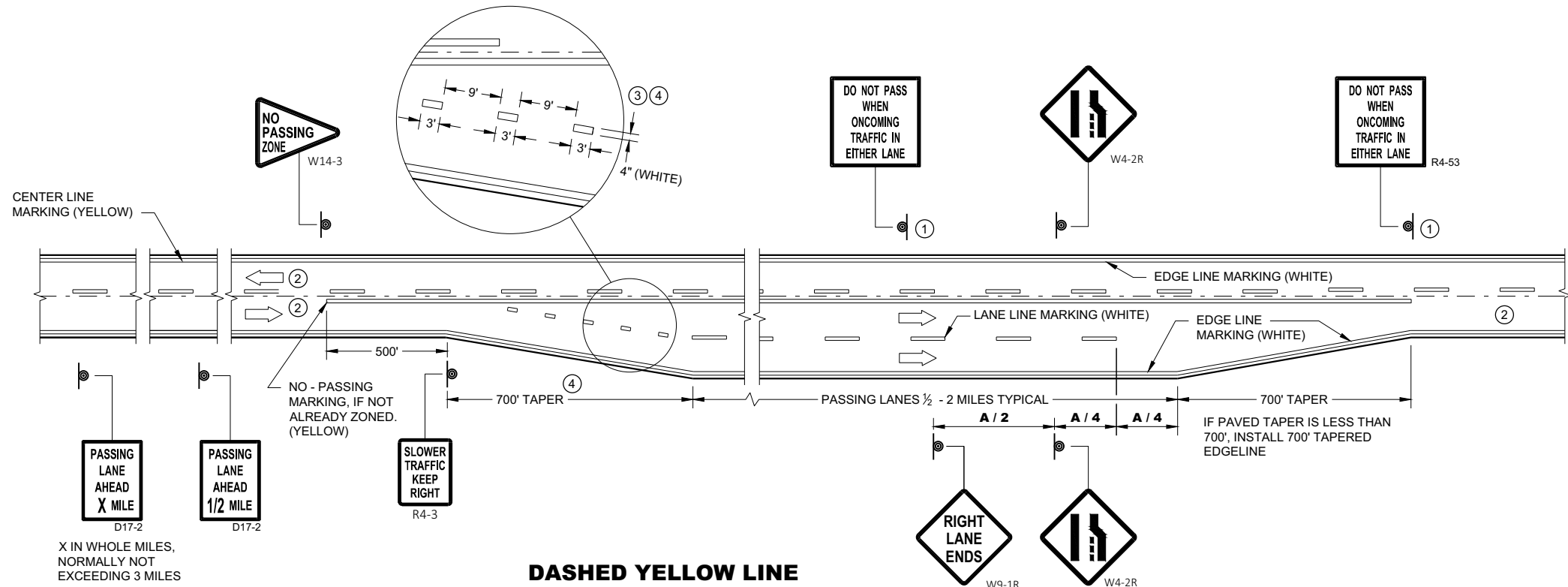


**PAVEMENT MARKING & SIGNING
(CLIMBING LANE & PASSING LANE)**

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

**PAVEMNET MARKING & SIGNING
(CLIMBING LANE & PASSING LANE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 208
FHWA

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

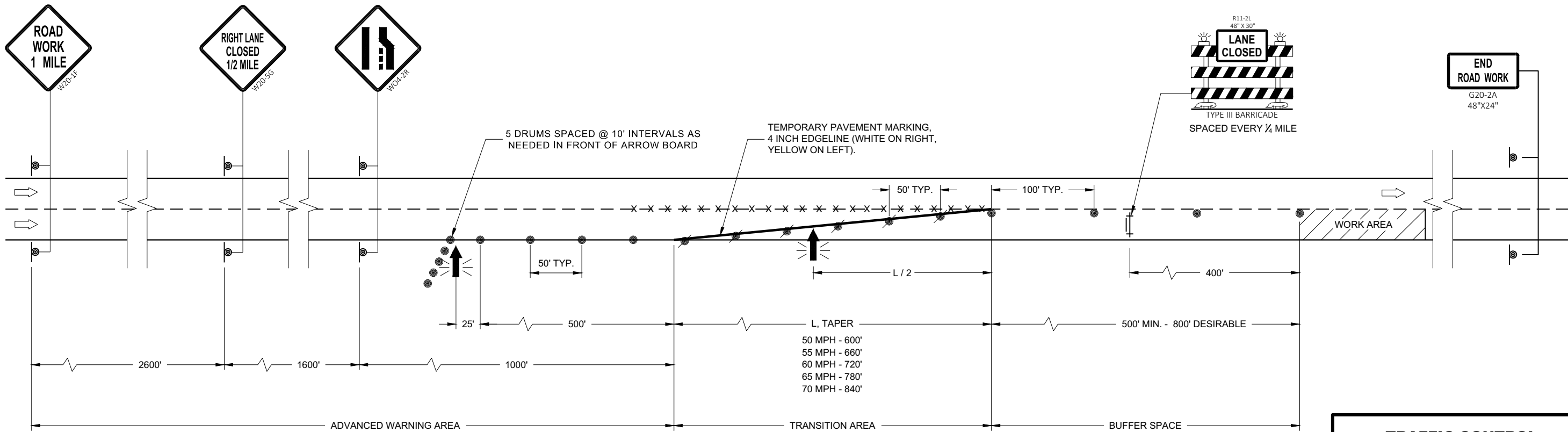
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS

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

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

LEGEND

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



TRAFFIC CONTROL
LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 209

FHWA

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

LEGEND

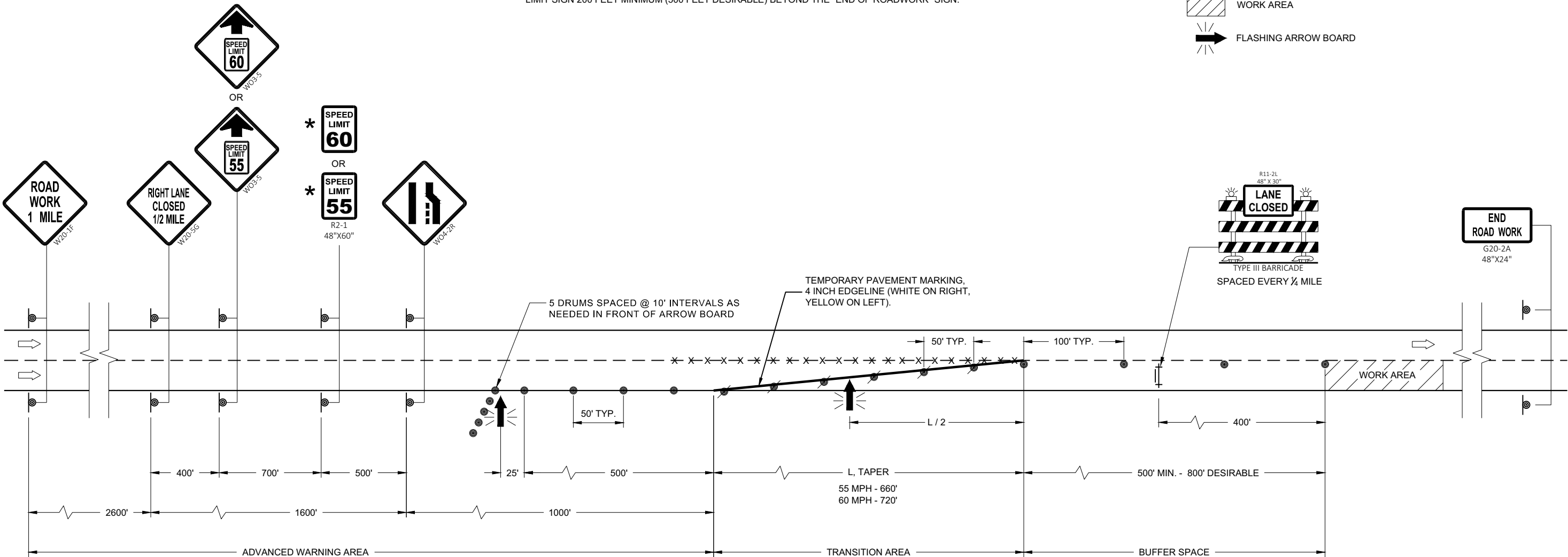
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)

✕ ✕ ✕ REMOVING PAVEMENT MARKINGS

➡ DIRECTION OF TRAFFIC

WORK AREA

FLASHING ARROW BOARD



TRAFFIC CONTROL,
LANE CLOSURE,
SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 210

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

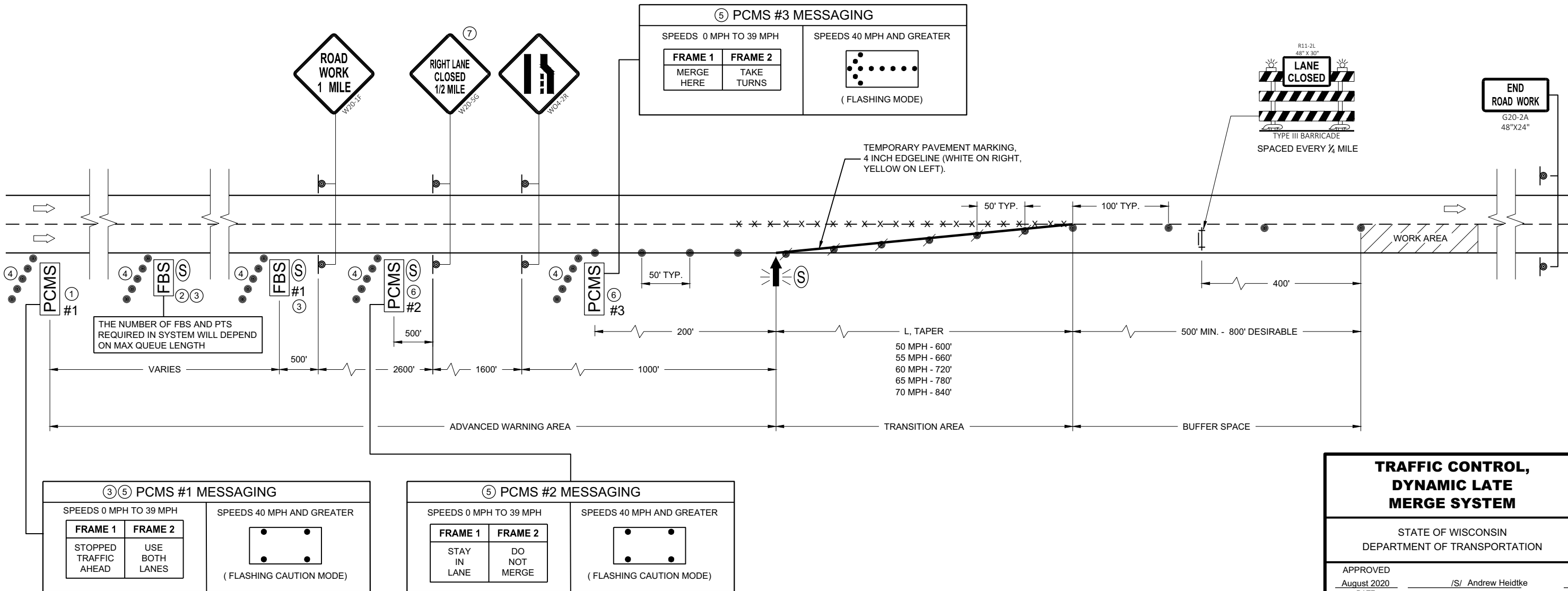
FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION. ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

- CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.
- PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON PCMS, FBS, ARROW BOARD OR OTHER TRAILER DEVICES.
- PLACE PCMS #1 ONE MILE BEYOND ESTIMATED MAXIMUM QUEUE LENGTH. PLACE FLASHING BEACON SIGNS EVERY ONE MILE BETWEEN THE W20 - 1F AND PCMS #1 BEYOND ESTIMATED QUEUE.
 - PLACE FLASHING BEACON SIGNS EVERY ONE MILE BETWEEN PCMS #1 AND FBS #1. THE NUMBER OF FBS MAY BE MORE THAN SHOWN ON THIS DETAIL.
 - FOR THREE LANE CONFIGURATION, PLACE FBS ON BOTH SIDES OF ROADWAY. CHANGE PCMS #1 FRAME 2 MESSAGE TO "USE ALL LANES".
 - 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.
 - PCMS SHALL FOLLOW ARROW BOARD STANDARDS WHEN DISPLAYING FLASHING FOUR CORNER CAUTION MODE OR FLASHING ARROW MERGE MODE.
 - TO MINIMIZE OBSTRUCTION OF THE ARROW BOARD BY THE PCMS, OFFSET THE PCMS AS NEEDED FROM THE EDGE LINE
 - IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.



LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

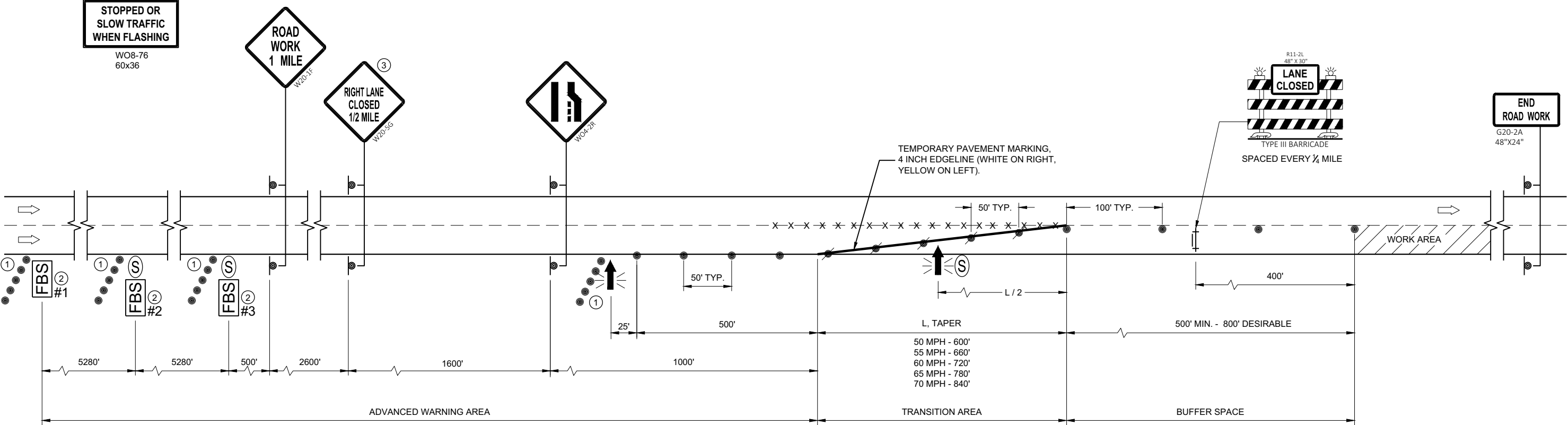
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

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

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

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



TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 212

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS. WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

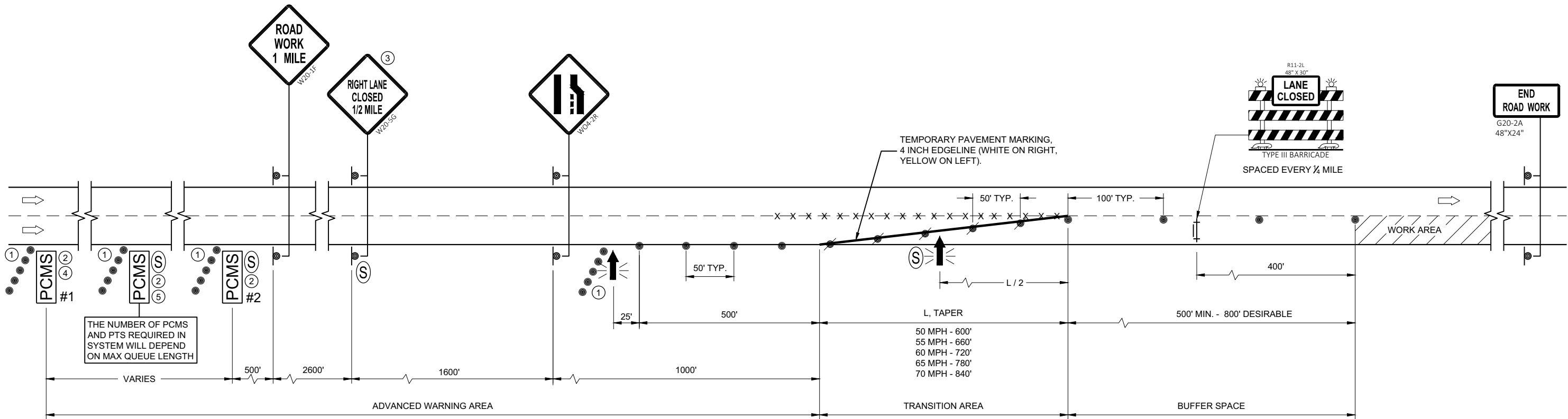
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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

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

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

- 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
- IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE PCMS ON BOTH SIDES OF THE ROADWAY.
- IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.
- PLACE PCMS #1 ONE MILE BEYOND ESTIMATED MAXIMUM QUEUE LENGTH, OR AS THE ENGINEER DIRECTS.
- PLACE PCMS EVERY ONE MILE BETWEEN PCMS #1 AND PCMS #2, OR AS THE ENGINEER DIRECTS. THE NUMBER OF PCMS MAY BE MORE THAN SHOWN ON THIS DETAIL.
- PCMS SHALL FOLLOW ARROW BOARD STANDARDS WHEN DISPLAYING FLASHING FOUR CORNER CAUTION MODE OR FLASHING ARROW MERGE MODE.



LEGEND

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

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT TWO LANES. FOR CLOSING THE LEFT TWO LANES, REVERSE THE TRAFFIC CONTROL.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

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

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

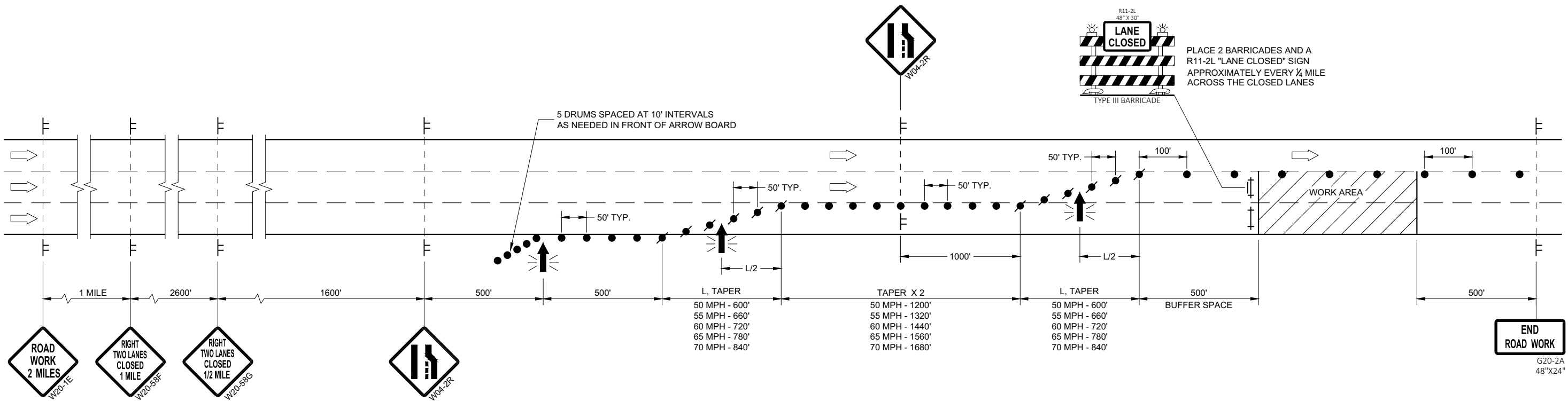
CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS.

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

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.



TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT TERM (LESS THAN 24 HOURS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2020 DATE	/S/ Andrew Heidtke STATEWIDE WORK ZONE T SAFETY ENGINEER 214
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

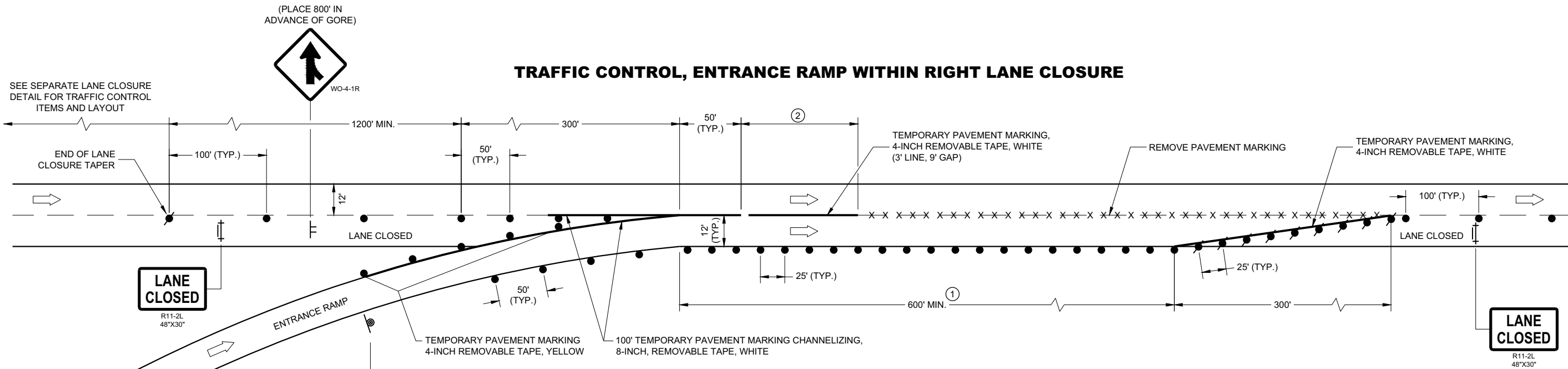
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

- ① EXTEND THE LENGTH OF THE MERGE ARE IF THE ENTERING (DESIGN) SPEED IS LESS THAN 50MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- ② END TEMPORARY MARKING AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE



PARALLEL EXIT RAMP

TRAFFIC CONTROL,
PARALLEL ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 215

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS /OR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

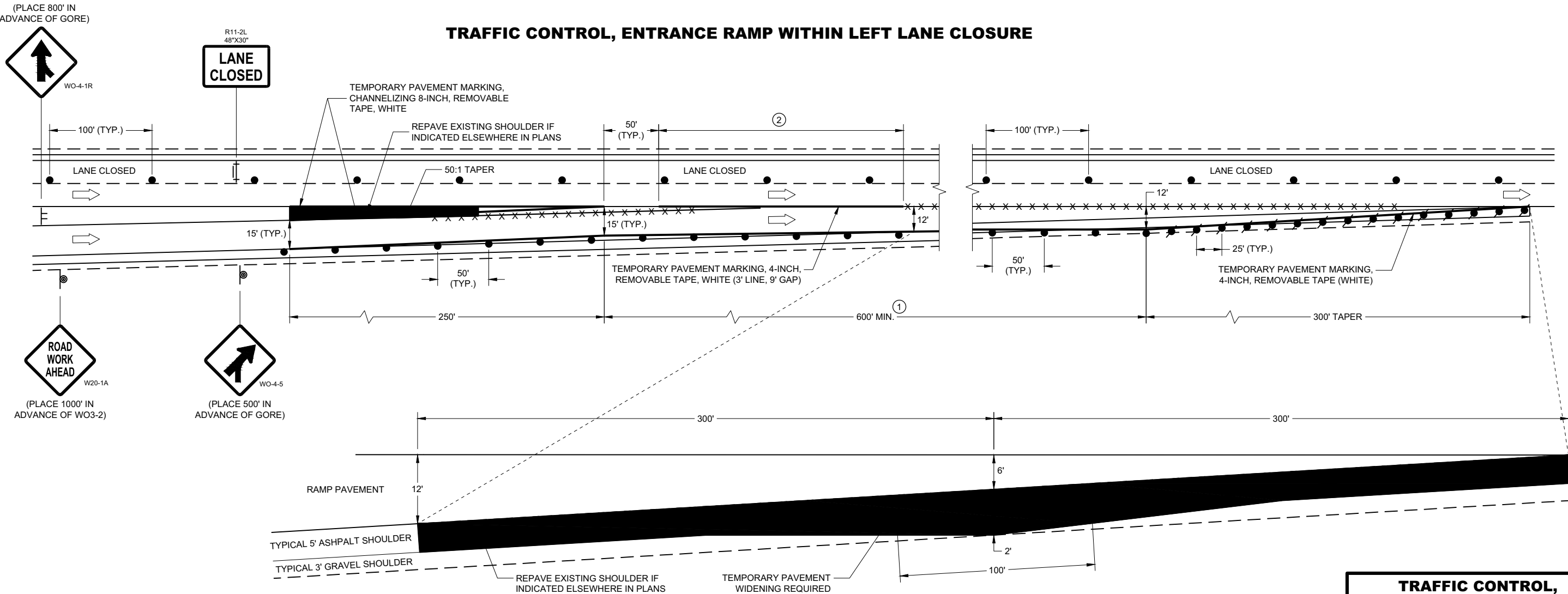
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

- 1 EXTEND THE LENGTH OF THE MERGE AREA IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- 2 END TEMPORARY MARKING AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LEFT LANE CLOSURE



TEMPORARY PAVEMENT DETAIL

(EXISTING RAMP DIMENSIONS MAY VARY, ADJUST TEMPORARY PAVEMENT ACCORDINGLY)

TRAFFIC CONTROL,
ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 216

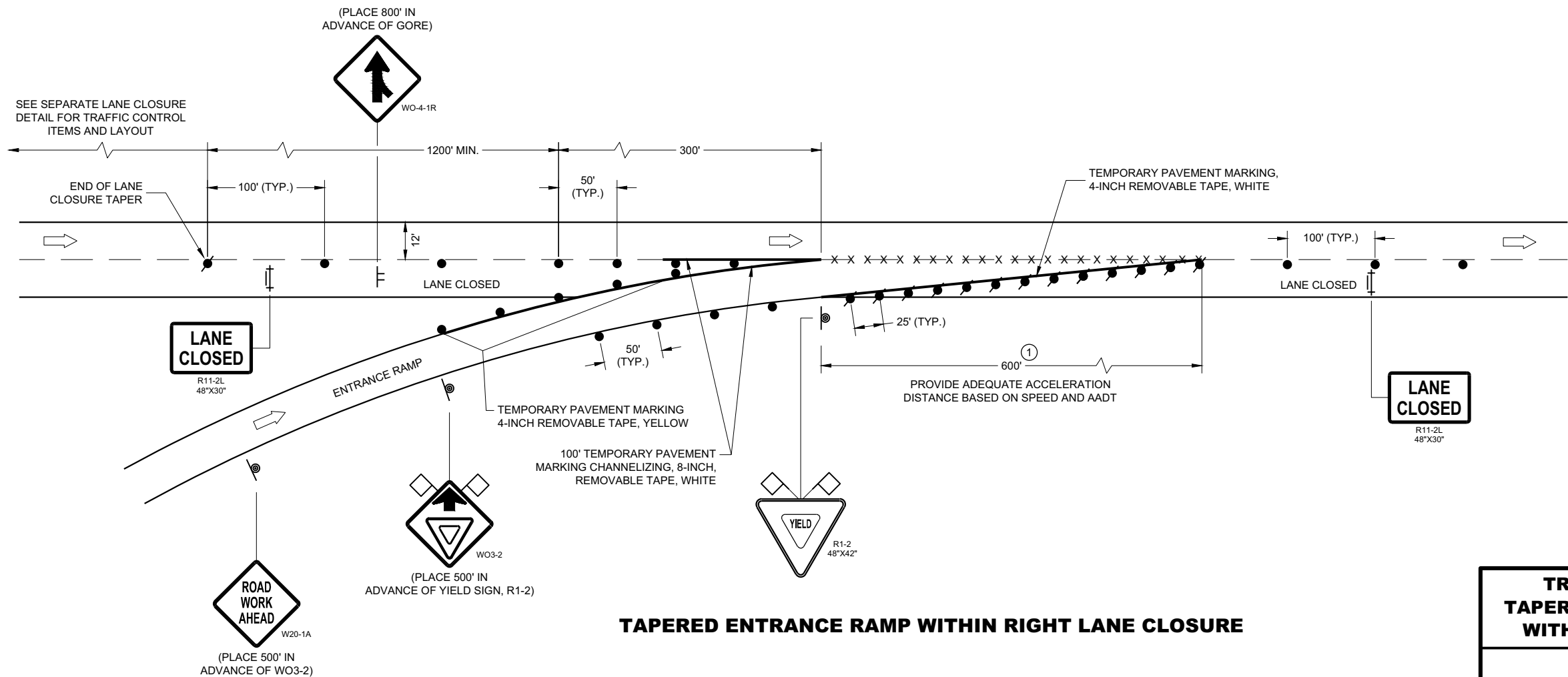
FHWA

LEGEND

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

GENERAL NOTES

- THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.
- SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.
- YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.
- IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- ① CONSULT WITH REGIONAL WORK ZONE ENGINEER IF NEED TO REDUCE LENGTH EXISTS.



TAPERED ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE

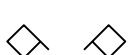
**TRAFFIC CONTROL,
TAPERED ENTRANCE RAMP
WITHIN LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 217

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

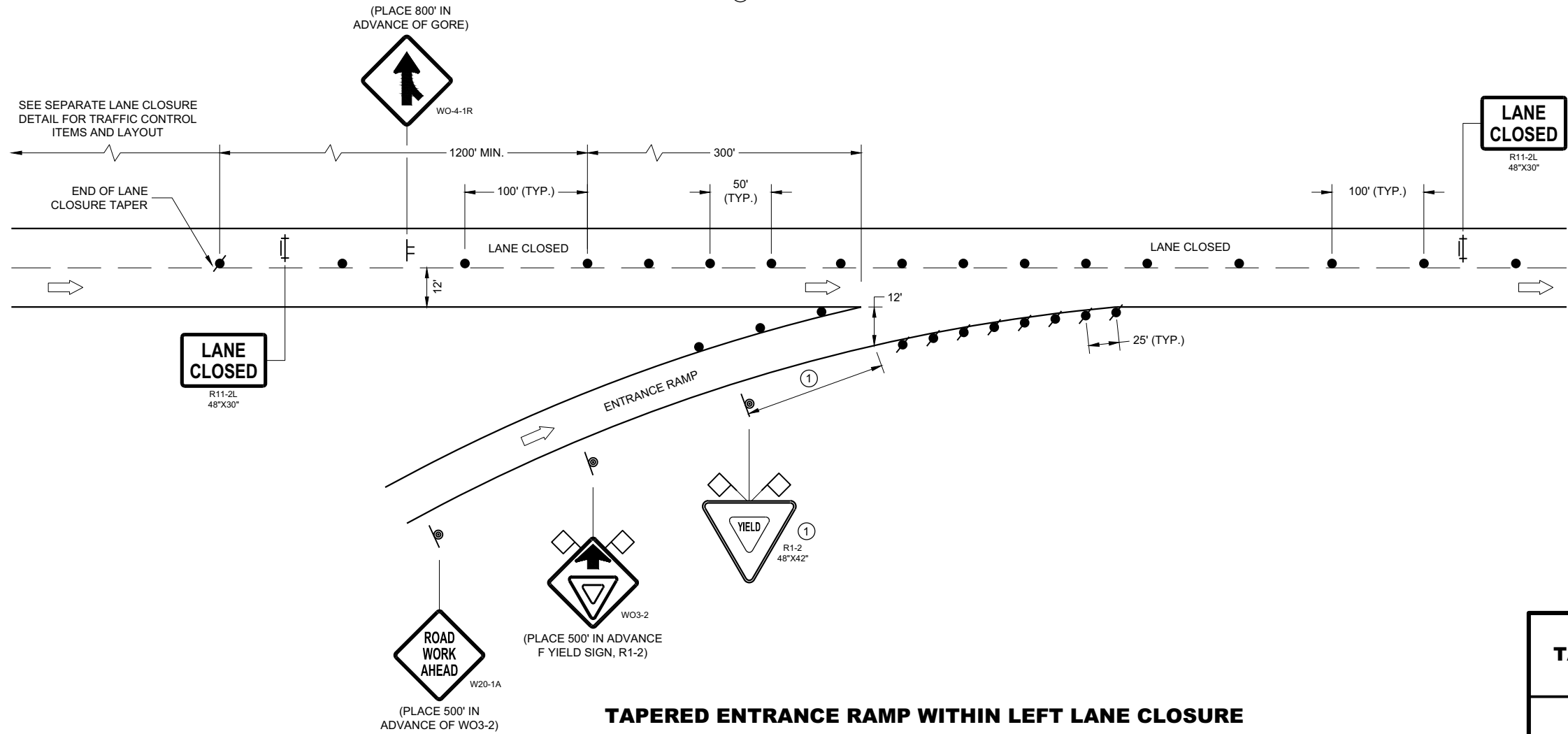
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

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

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

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



TAPERED ENTRANCE RAMP WITHIN LEFT LANE CLOSURE

TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 218
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

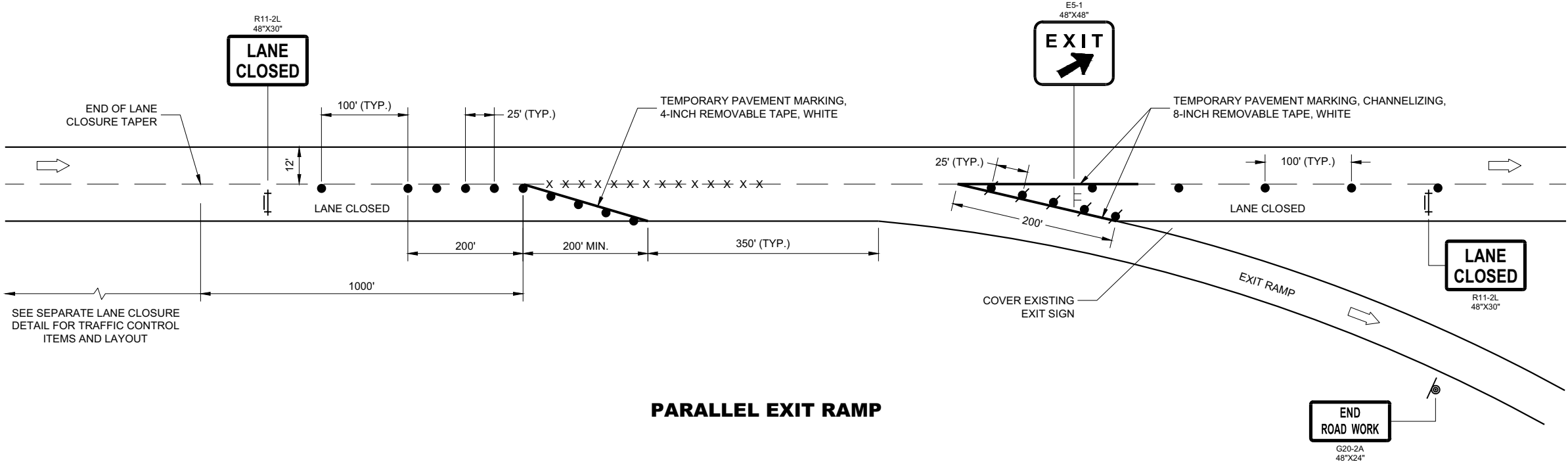
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



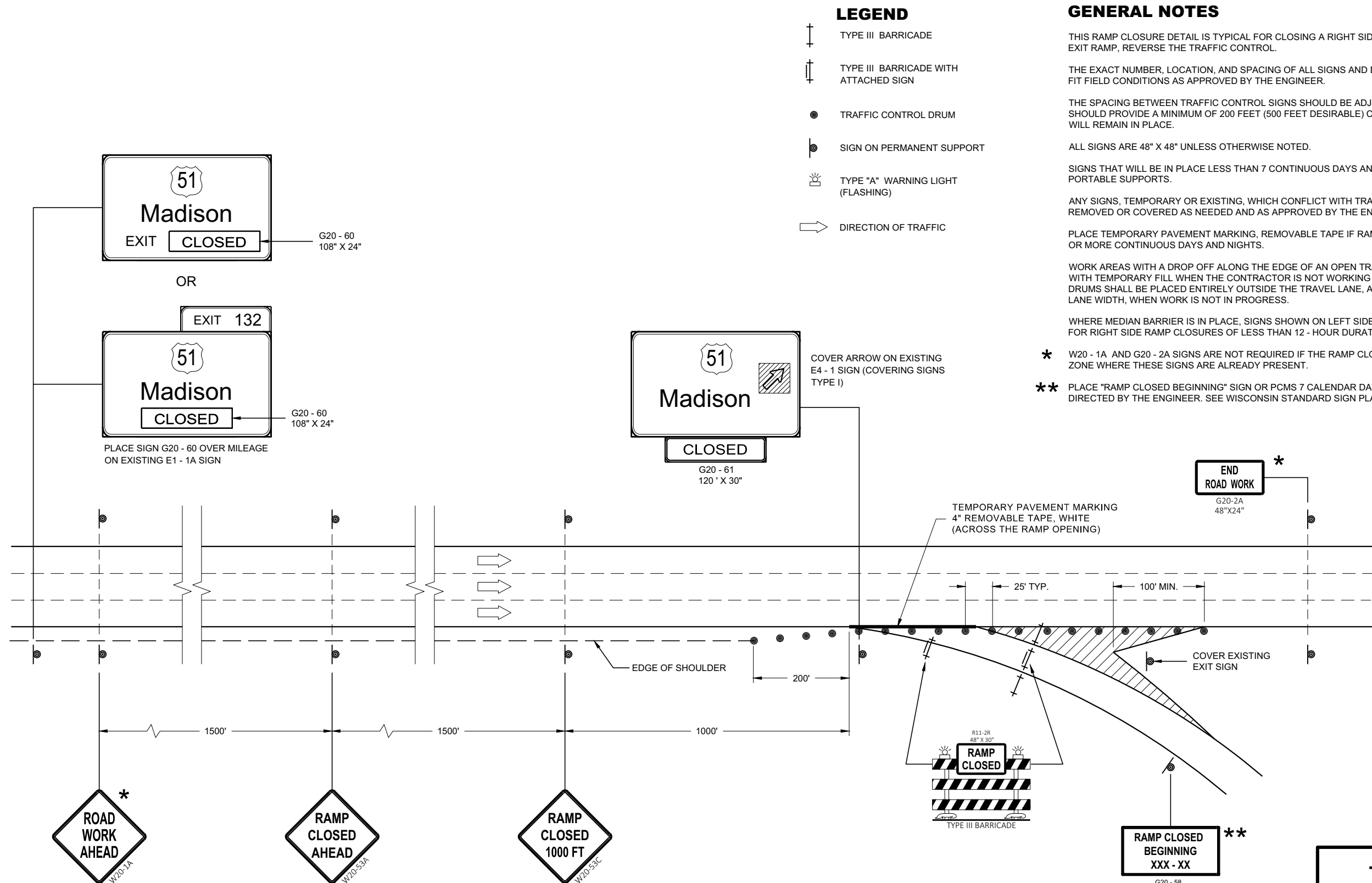
PARALLEL EXIT RAMP

TRAFFIC CONTROL,
PARALLEL EXIT RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 219

FHWA



LEGEND

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

GENERAL NOTES

- THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- ANY SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.
- WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.
- WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.
- * W20 - 1A AND G20 - 2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.
- ** PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

TRAFFIC CONTROL, EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE
/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT ENGINEER
220
FHWA

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

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

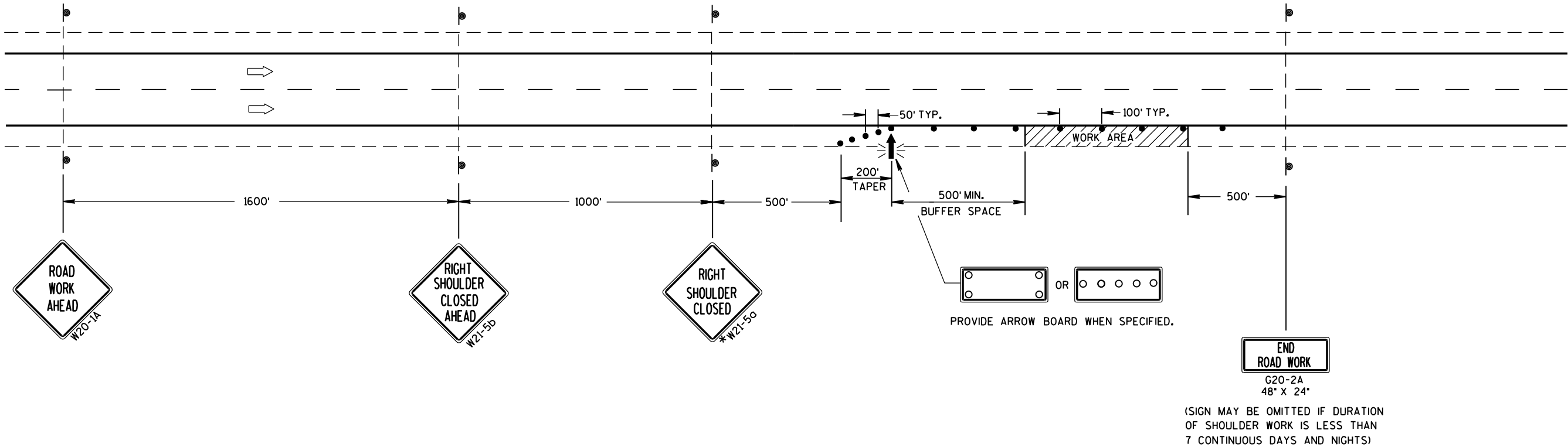
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

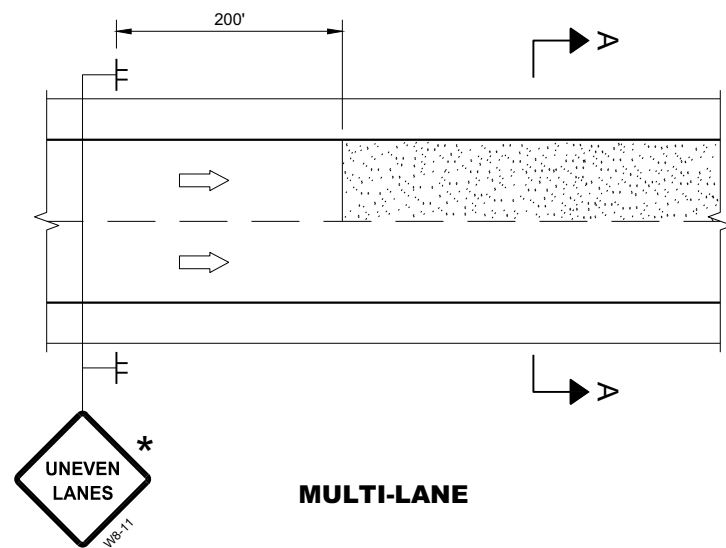
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

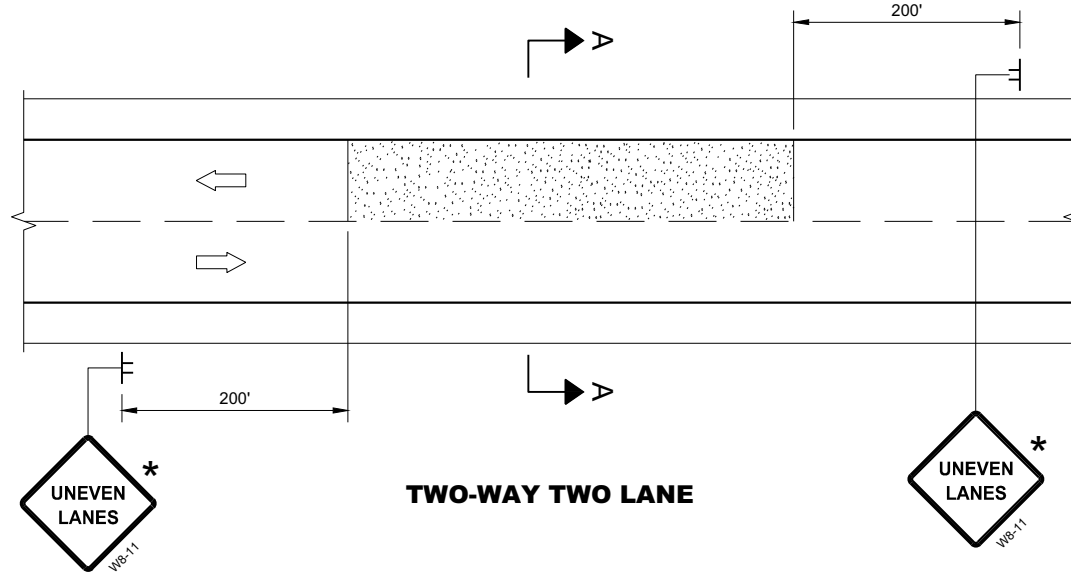
*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



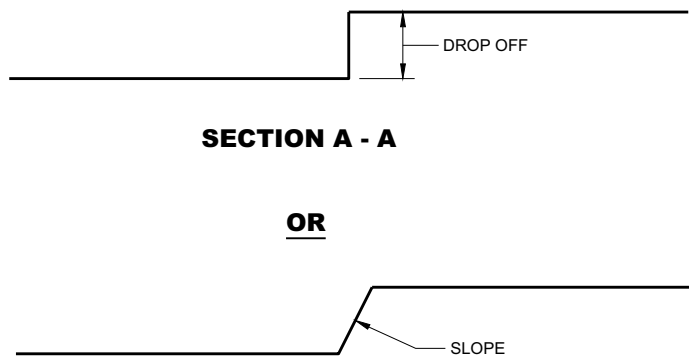
TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED		
June 2016	/S/ Peter Amakobe Atepe	
DATE	STATEWIDE WORK ZO 221	IC
FHWA	SAFETY ENGR	



MULTI-LANE



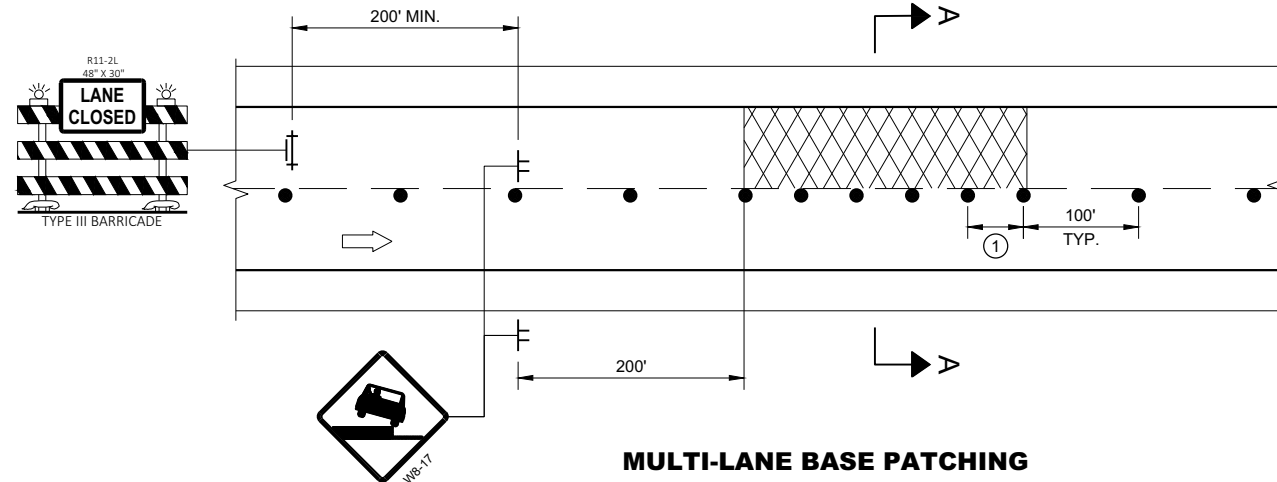
TWO-WAY TWO LANE



SECTION A - A

OR

SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



UNEVEN LANES

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

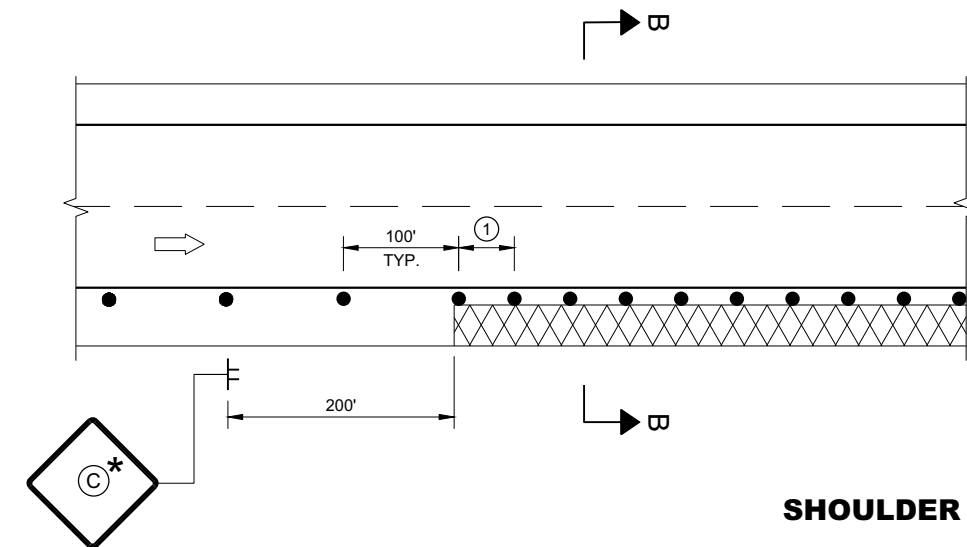
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

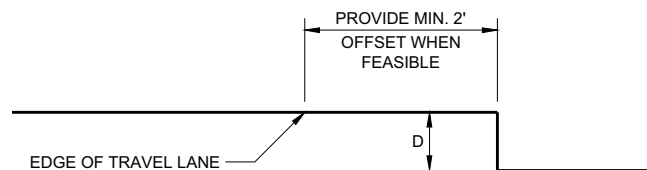
① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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



SHOULDER DROP-OFFS



SECTION B - B

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

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER 222

FHWA

	TYPE III BARRICADE
	TYPE III BARRICADE WITH ATTACHED SIGN
	SIGN ON TEMPORARY SUPPORT
	SIGN ON PERMANENT SUPPORT
	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
	TRAFFIC CONTROL DRUM
	TYPE "A" WARNING LIGHT (FLASHING)
	DIRECTION OF TRAFFIC
	WORK AREA
	FLASHING ARROW BOARD
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN

RIGHT CLOSURE SHOWN (LEFT LANE CLOSURE SIMILAR)

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

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

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

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

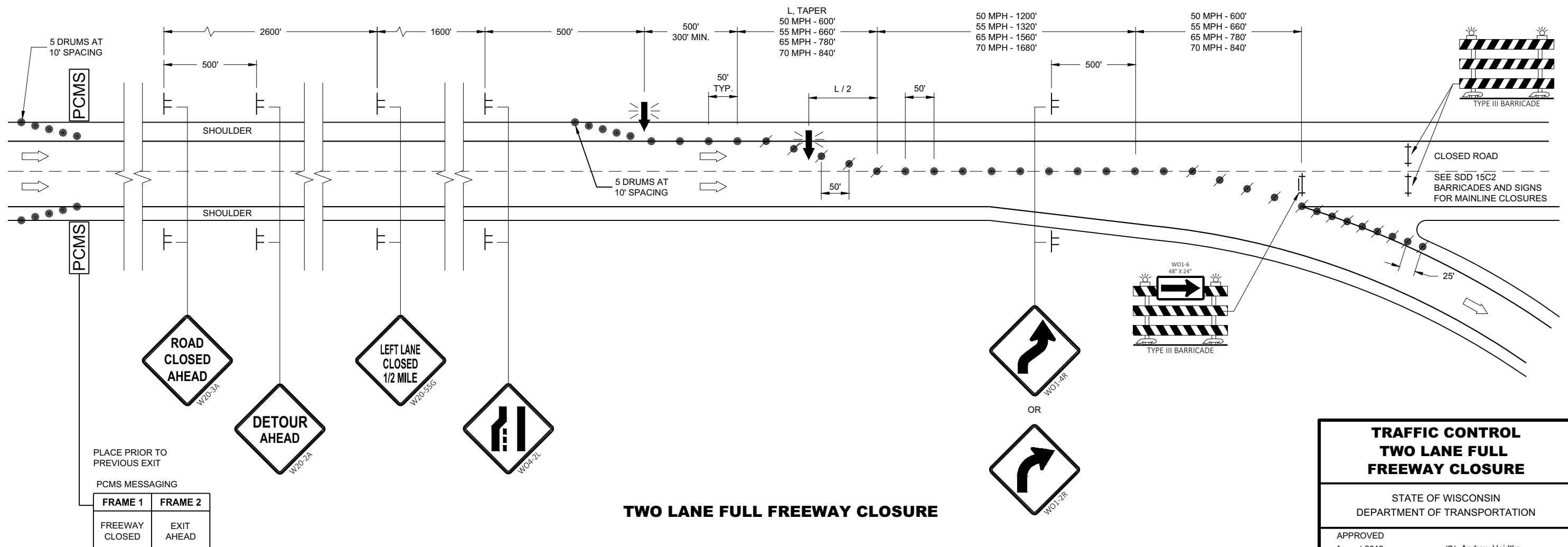
WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROL SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND / OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.

PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1000' ACROSS EACH CLOSED LANE TO HELP REINFORCE THE DRUM LINE.

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

REFER TO DETOUR ROUTES FOR TRAFFIC GUIDANCE SIGNING.

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



LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  DELINEATOR, FLEXIBLE TUBULAR MARKER
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  DIRECTION OF TRAFFIC
-  CONSTRUCTION TRAFFIC
-  WORK AREA
-  CRASH CUSHION TEMPORARY
-  EXISTING CONCRETE BARRIER TEMPORARY PRECAST

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

WORK ZONE INGRESS/EGRESS LOCATIONS SHALL BE APPROVED BY THE ENGINEER. LOCATIONS FOR WORK ZONE ACCESS TO/FROM THE FREEWAY SHALL NOT BE USED FOR INGRESS AND EGRESS AT THE SAME TIME.

THIS ACCESS DETAIL IS TYPICAL FOR LEFT LANE ACCESS, FOR RIGHT LANE ACCESS, REVERSE THE TRAFFIC CONTROL

TEMPORARY SUPPORTS MAY BE USED IF PLACED BEHIND TEMPORARY BARRIER WALL

TRUCKS SHALL USE FLASHING YELLOW BEACON WHEN ENTERING AND EXITING LIVE TRAFFIC.

- ① WIDEN BARRIER AS NECESSARY TO ACCOMMODATE CRASH CUSHION WIDTH.
- ② USE TUBULAR MARKERS TO HELP DELINEATE TEMPORARY CRASH CUSHION.
- ③ REMOVE DRUMS / BARRICADES WHEN INGRESS / EGRESS ARE IN USE.
- ④ REMOVE OR COVER WHEN ACCESS IS NOT NEEDED.

TABLE 1

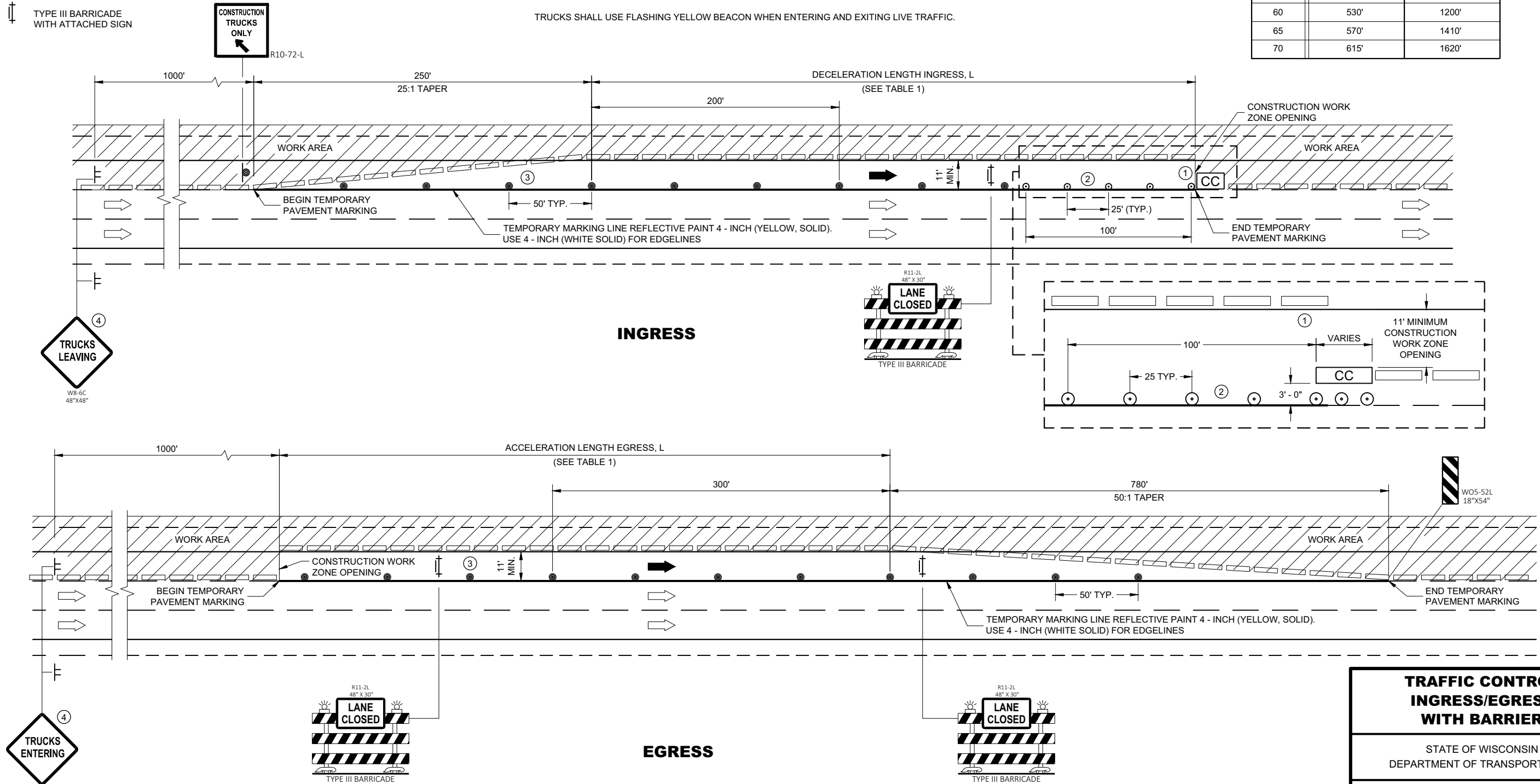
S (MPH)	INGRESS, L	EGRESS, L
50	435'	720'
55	480'	960'
60	530'	1200'
65	570'	1410'
70	615'	1620'

6

6

SDD 15D47 - 01a

SDD 15D47 - 01a



**TRAFFIC CONTROL
INGRESS/EGRESS
WITH BARRIER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 224

FHWA

LEGEND

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

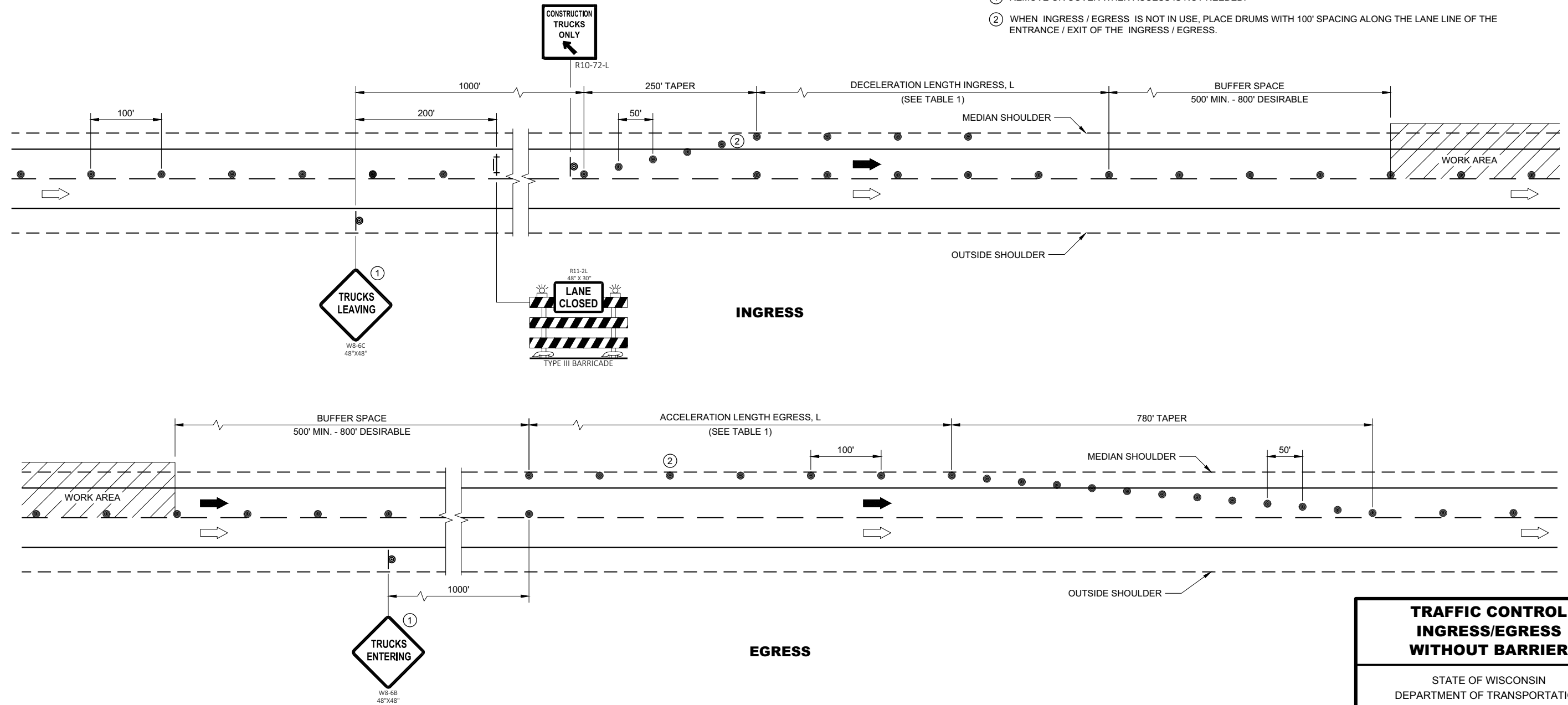
TABLE 1

S (MPH)	INGRESS, L	EGRESS, L
50	435'	720'
55	480'	960'
60	530'	1200'
65	570'	1410'
70	615'	1620'

LEGEND

- ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.
- "WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- WORK ZONE INGRESS/EGRESS LOCATIONS SHALL BE APPROVED BY THE ENGINEER. LOCATIONS FOR WORK ZONE ACCESS TO/FROM THE FREEWAY SHALL NOT BE USED FOR INGRESS AND EGRESS AT THE SAME TIME.
- THIS ACCESS DETAIL IS TYPICAL FOR LEFT LANE ACCESS, FOR RIGHT LANE ACCESS, REVERSE THE TRAFFIC CONTROL
- TEMPORARY SUPPORTS MAY BE USED IF PLACED BEHIND TEMPORARY BARRIER WALL
- TRUCKS SHALL USE FLASHING YELLOW BEACON WHEN ENTERING AND EXITING LIVE TRAFFIC.

- ① REMOVE OR COVER WHEN ACCESS IS NOT NEEDED.
- ② WHEN INGRESS / EGRESS IS NOT IN USE, PLACE DRUMS WITH 100' SPACING ALONG THE LANE LINE OF THE ENTRANCE / EXIT OF THE INGRESS / EGRESS.



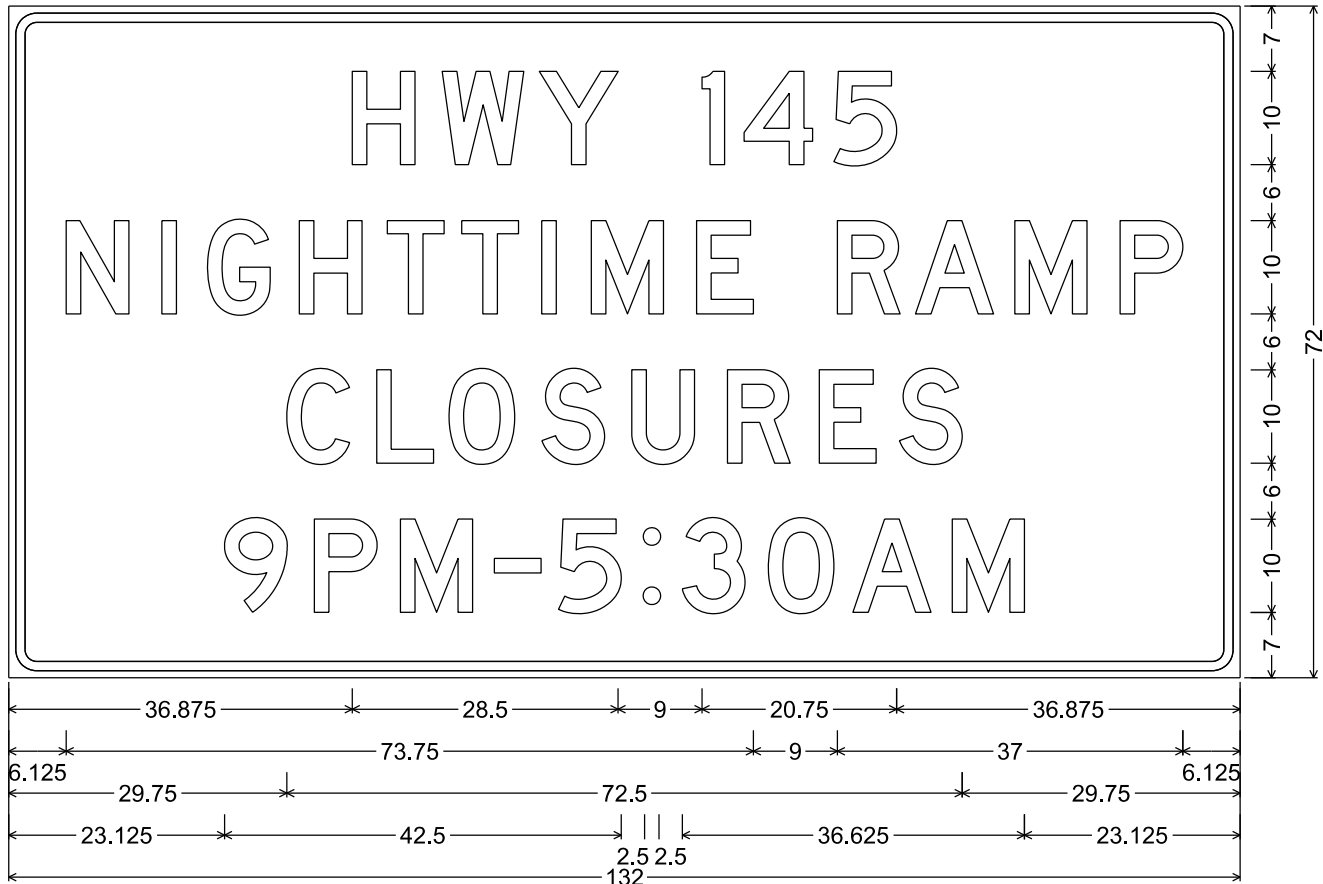
TRAFFIC CONTROL
INGRESS/EGRESS
WITHOUT BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

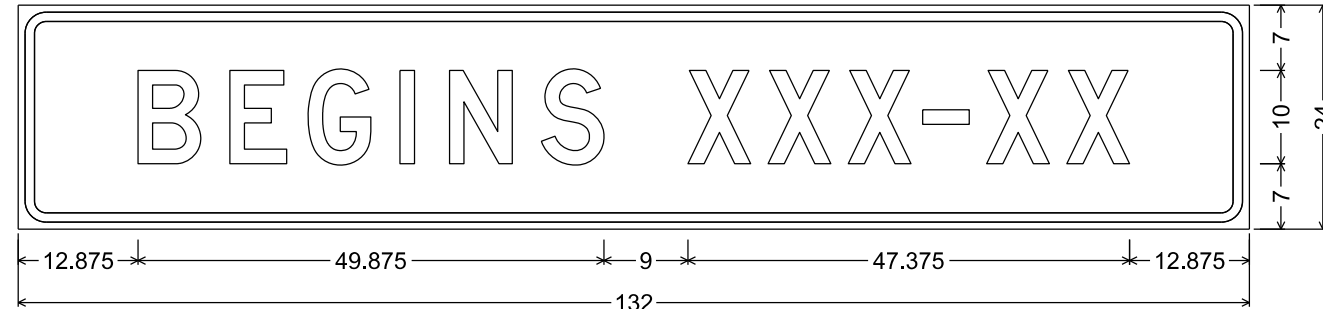
APPROVED
May 2020 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 225

FHWA

7



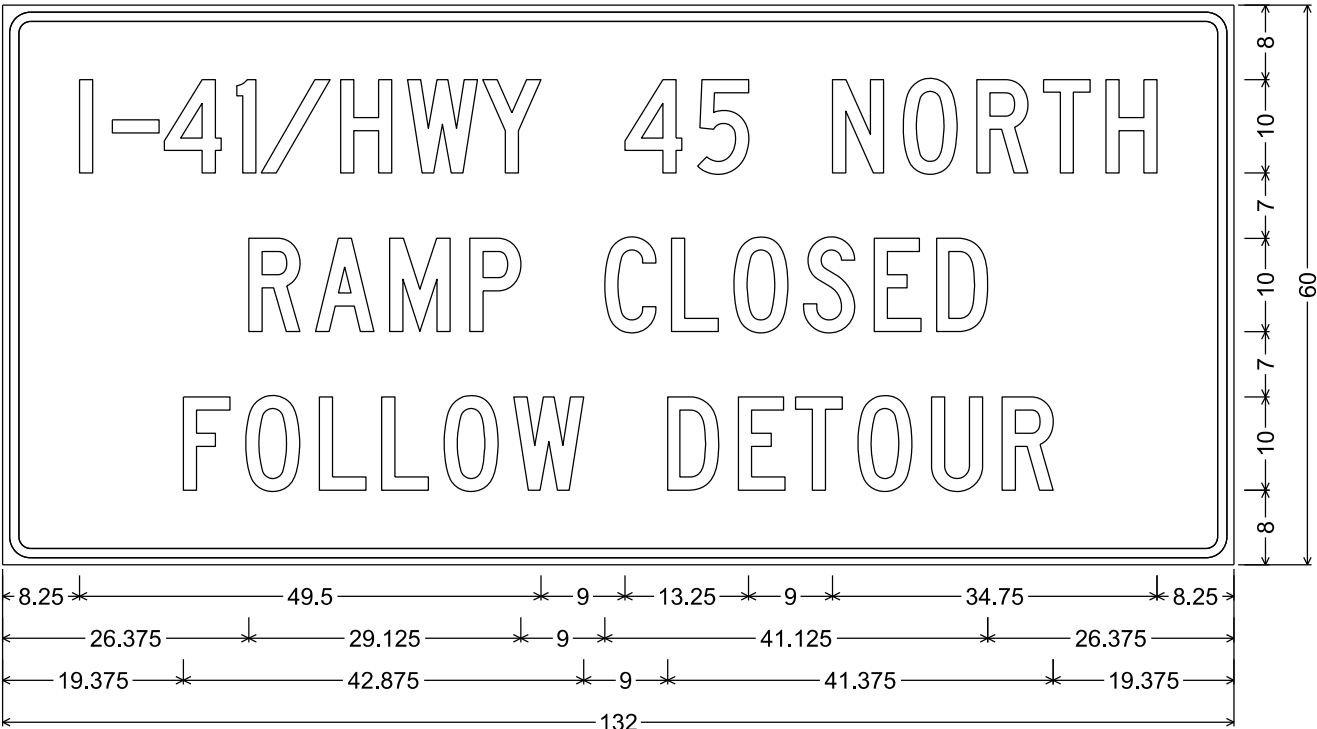
3.000" Radius, 1.000" Border, 0.750" Indent



3.000" Radius, 1.000" Border, 0.750" Indent

NOTES

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

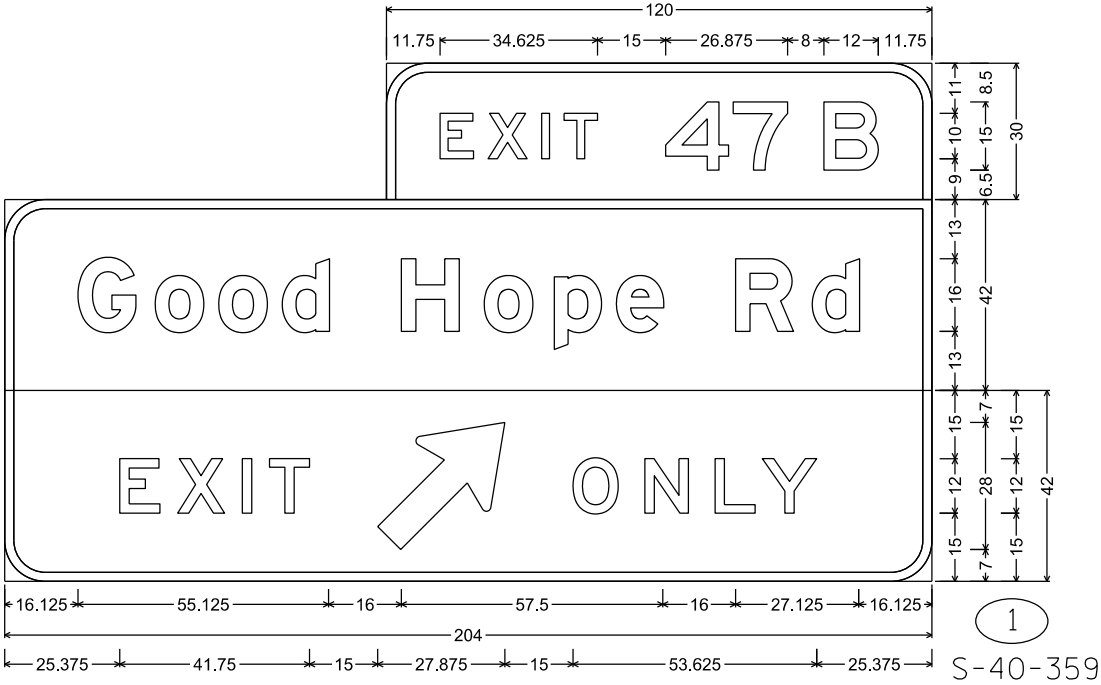


3.000" Radius, 1.000" Border, 0.750" Indent
"I-41/HWY", C; "45", C; "NORTH", C; "RAMP", C; "CLOSED", C; "FOLLOW", C; "DETOUR", C;

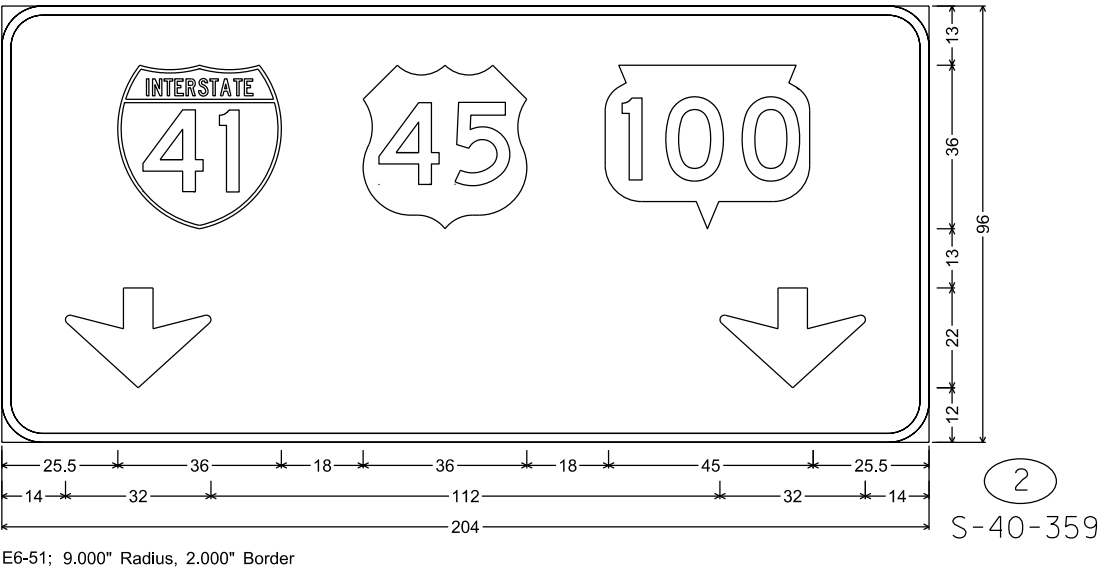
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NOTES

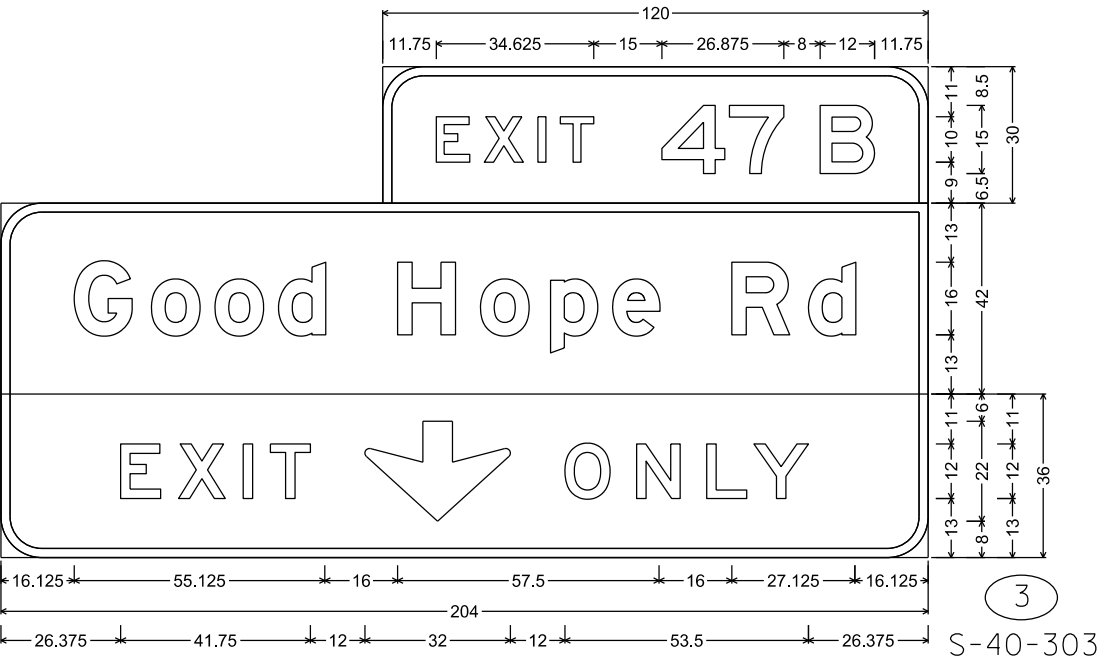
- 1. Signs are Type I - Type SH Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E Modified except all Cap Words Series E
- 4. Exit Only Panel background on Yellow Type F Reflective Sheeting with Black Non-Reflective Message



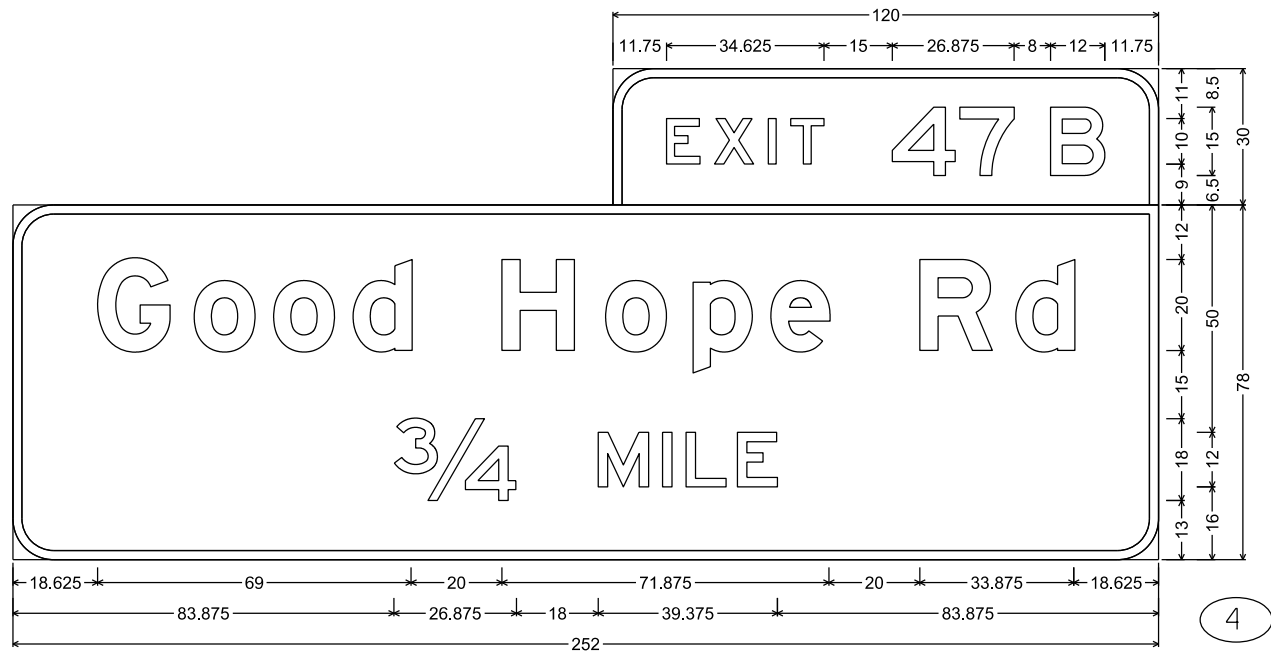
E1-5P; 9.000" Radius, 2.000" Border
E6-1; 9.000" Radius, 2.000" Border
E11-1D; 9.000" Radius, 2.000" Border, Black on, Yellow



E6-51; 9.000" Radius, 2.000" Border



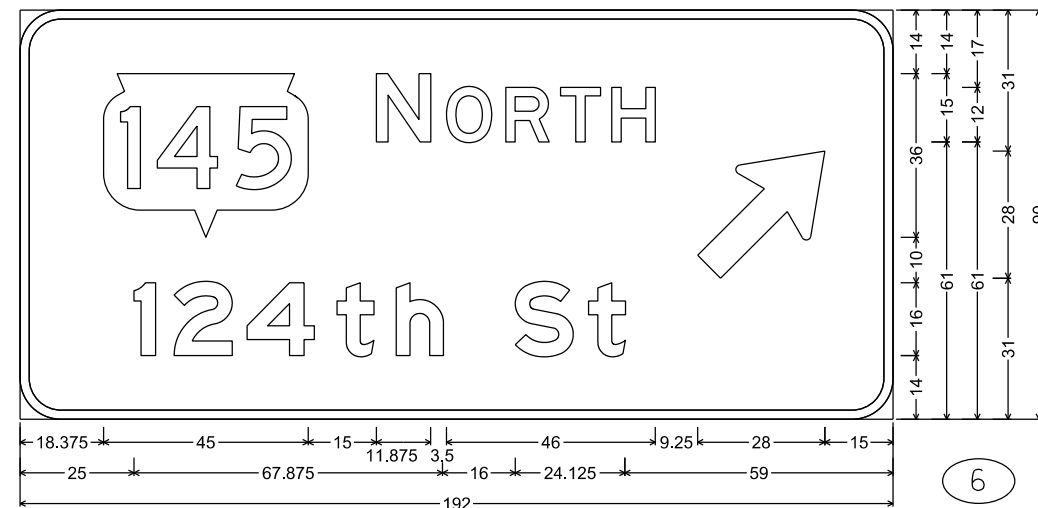
E1-5P; 9.000" Radius, 2.000" Border
E6-1; 9.000" Radius, 2.000" Border
E11-1D; 9.000" Radius, 2.000" Border, Black on, Yellow



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

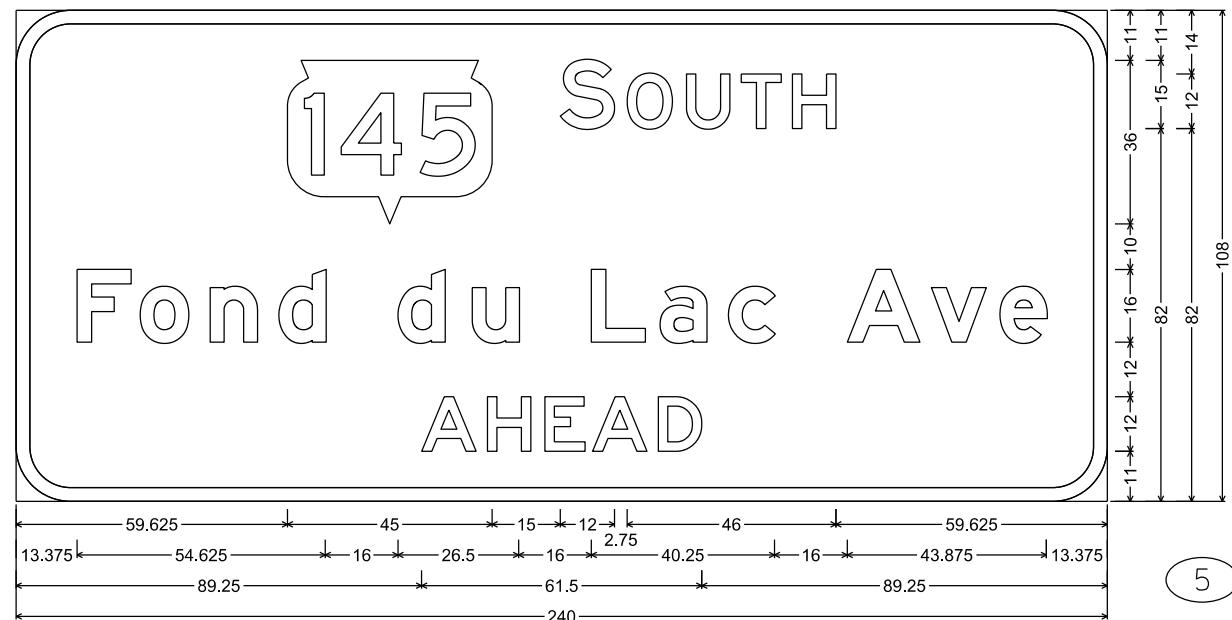
4

- NOTES
- Signs are Type I - Type SH Reflective
 - Color:
Background - Green
Message - White
 - Message Series - E Modified except all Cap Words Series E



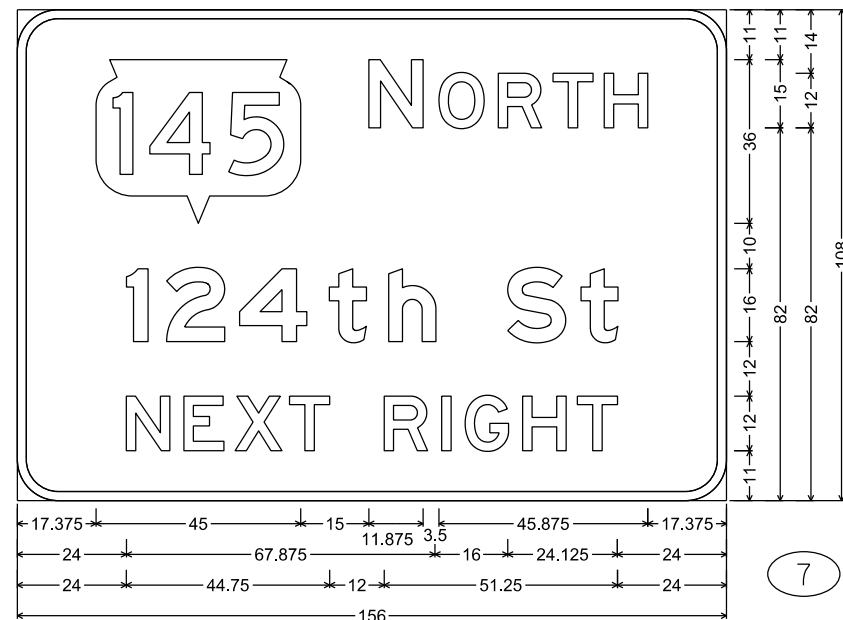
E1-1A; 9.000" Radius, 2.000" Border

6



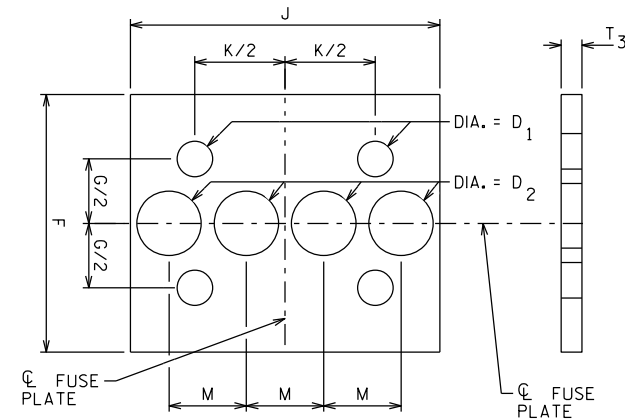
E1-1A; 12.000" Radius, 3.000" Border

5



E1-1A; 9.000" Radius, 2.000" Border

7



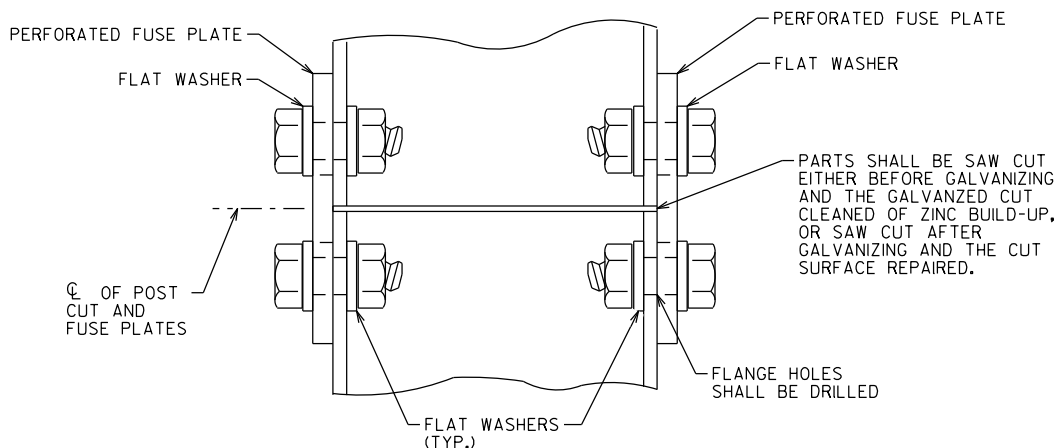
PERFORATED FUSE PLATE DETAIL

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

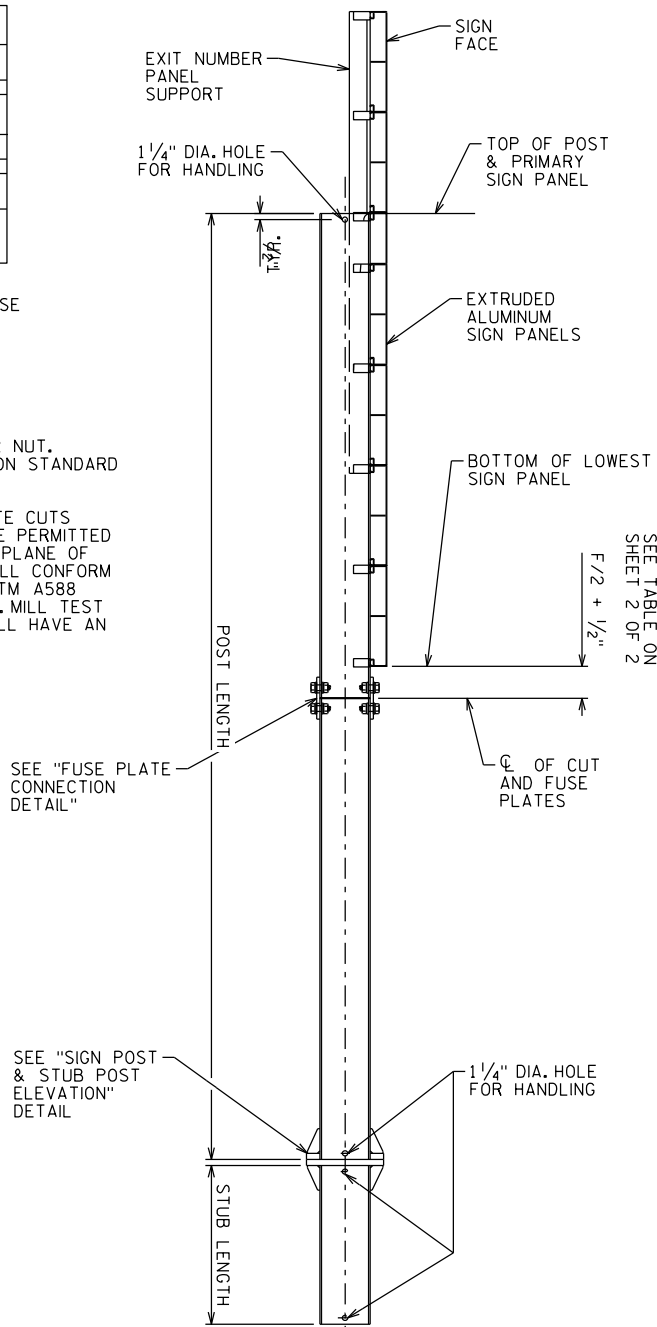
ALL HOLES SHALL BE DRILLED, SUB-PUNCHED AND REAMED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS. HOWEVER, FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM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



FURNISH TWO .012"± THICK AND TWO .032"± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO ASTM B36.



FUSE PLATE CONNECTION DETAIL

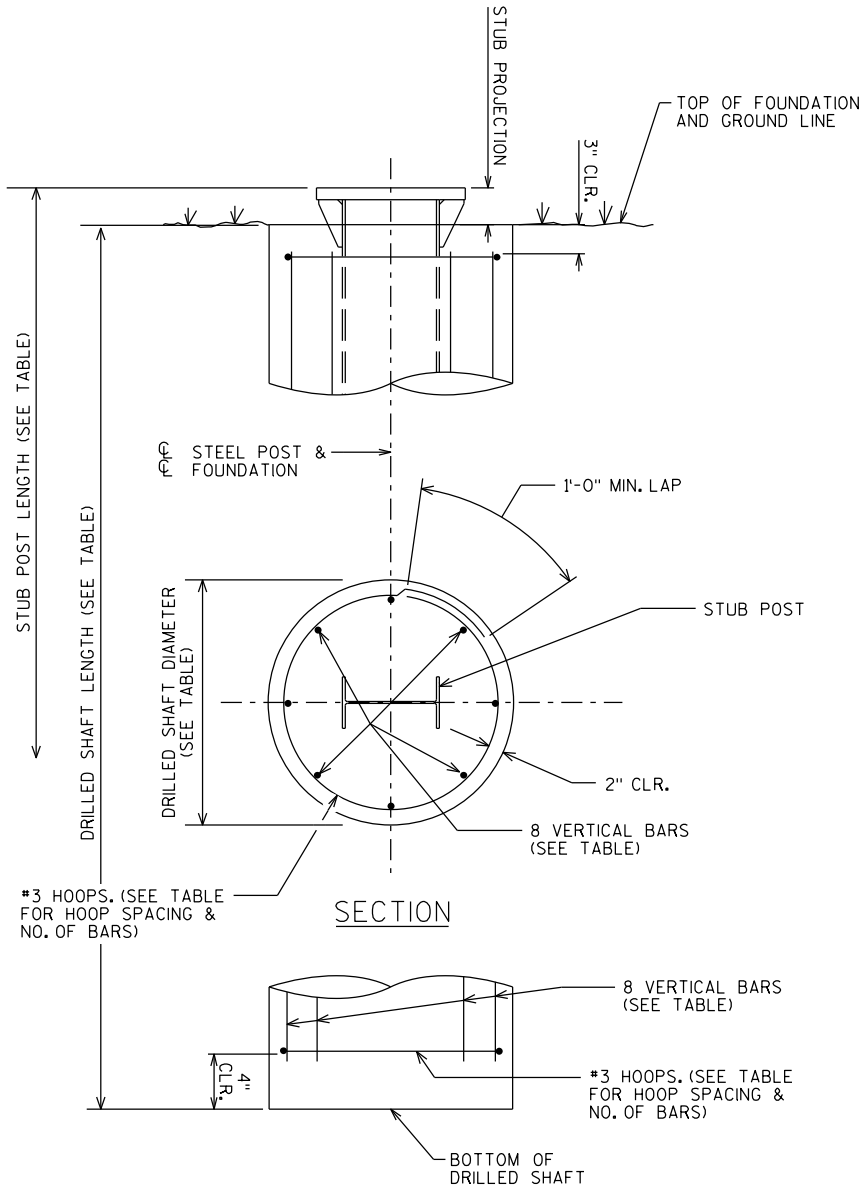


POST DETAIL

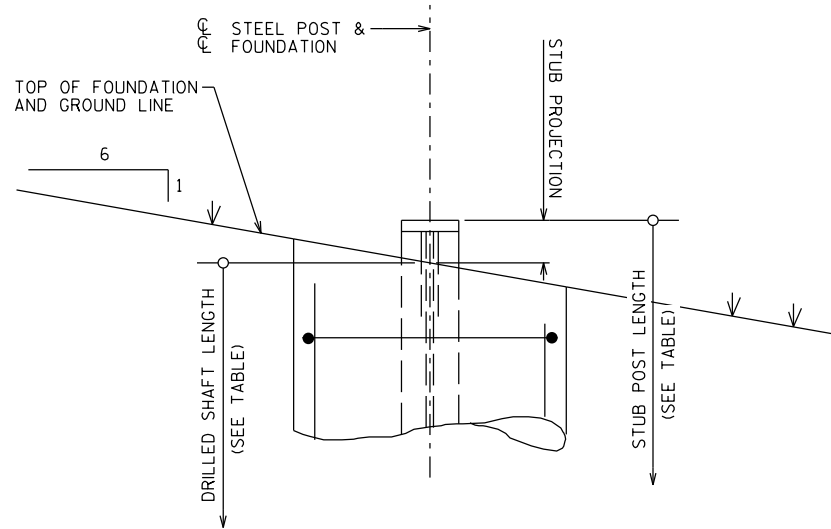
BOLTING PROCEDURE FOR BASE CONNECTION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE 1 SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 1 OF 2		SHEET A3-1.20	
		229	



FOUNDATION DETAIL



SHAFT PLACEMENT

FOUNDATION DATA TABLE

POST SHAPE	STUB LENGTH	STUB PROJECTION	DRILLED SHAFT DIAMETER	DRILLED SHAFT LENGTH	VERTICAL BARS		HOOPS		CONCRETE VOLUME	TOTAL REINF. WEIGHT
					SIZE	LENGTH	MAX SPA.	NO.		
W6X15	2'-6"	3"	24"	6'-6"	#5	5'-11"	10"	9	0.8 CY	71 LB
W8X18	2'-6"	3"	24"	7'-6"	#6	6'-11"	12"	8	0.9 CY	102 LB
W8X21	3'-0"	2½"	24"	8'-0"	#6	7'-5"	12"	9	1.0 CY	110 LB
W10X22	3'-0"	2½"	24"	8'-6"	#7	7'-11"	12"	9	1.0 CY	151 LB
W12X26	3'-0"	2½"	24"	10'-0"	#7	9'-5"	12"	11	1.2 CY	180 LB

◆ QUANTITIES SHOWN ARE FOR ONE DRILLED SHAFT

BASE CONNECTION & FUSE PLATE DATA TABLE

		BASE CONNECTION DATA										BOLT KEEPER PLATE DATA		PERFORATED FUSE PLATE DATA													
POST SHAPE	WEIGHT PER FOOT	BOLT SIZE & TORQUE	A	B	C	D	E	T1	T2	W	R	P	U	F	G	J	K	M	D1	D2	T3	BOLT DIA.	WGT. EA. LBS	BOLT LENGTH	V 		
W6X15	15 LB	5/8" DIA. X 4"	5"	2"	1/4"	2 3/4"	1/8"	1/4"	1/2"	1/4"	1/32"	8 1/2"	10"	5"	2 1/2"	6"	3 1/2"	1 1/2"	1 1/16"	1 1/4"	3/8"	5/8"	2.4	2	73.0 LB		
W8X18	18 LB	36 TO 38 FT-LB										10 5/8"	12 7/8"	5"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 1/16"	1 1/16"	3/8"	5/8"	2.0	2	83.0 LB		
W8X21	21 LB	3/4" DIA. X 4 3/4"	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1 1/2"	3/4"	5/16"	1/32"	11"	12 3/4"	5 1/2"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 3/16"	1"	1 1/2"	3/4"	3.1	2 1/4"	124.0 LB		
W10X22	22 LB											12 7/8"	14 5/8"	6"	3"	5 3/4"	2 3/4"	1 3/8"	1 3/16"	1 1/8"	1/2"	3/4"	3.9	2 1/4"	134.0 LB		
W12X26	26 LB											62 TO 63 FT-LB	15"	16 3/4"	6"	3"	6 1/2"	3 1/2"	1 5/8"	1 3/16"	1 1/2"	3/4"	4.5	2 1/4"	152.0 LB		

■ TOTAL STRUCTURAL CARBON STEEL WEIGHT FOR ONE POST
= V + (POST LENGTH X POST WEIGHT PER FOOT)

"V" INCLUDES STUB POST, BASE PLATES, STIFFENER
PLATES, PERFORATED FUSE PLATES, BOLTS, NUTS, AND
WASHERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

MATERIALS SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506, UNLESS
NOTED OTHERWISE.

FABRICATION SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506.

ALL POST, POST STUBS & ATTACHMENTS SHALL BE ASTM
A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123.

THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST, FLANGE
SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER
FABRICATION.

H.S. BOLTS, WASHERS, & NUTS SHALL BE A325 GALVANIZED.

FOUNDATION MATERIAL PROPERTIES

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

DESIGN DATA

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

DEAD LOADS (DL):

- STEEL POST SELF WEIGHT
- SIGN PANEL WEIGHT = 3 PSF

WIND LOADS (WL):

WIND LOADS WERE APPLIED TO THE PROJECTED AREAS OF THE SIGN
PANELS AND THE STEEL SIGN POSTS.

- BASIC WIND SPEED = 76 MPH
- MEAN RECURRENCE INTERVAL (MRI) = 10 YEARS
- HEIGHT & EXPOSURE FACTOR = 1.00
- DIRECTIONALITY FACTOR = 0.85
- GUST EFFECT FACTOR = 1.14

WIND LOAD CASES:

- WL CASE 1: 1.0 X NORMAL WIND
- WL CASE 2: 1.0 X TRANSVERSE WIND
- WL CASE 3: 0.75 X NORMAL WIND + 0.75 X TRANSVERSE WIND

LOAD COMBINATIONS:

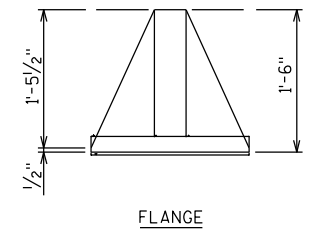
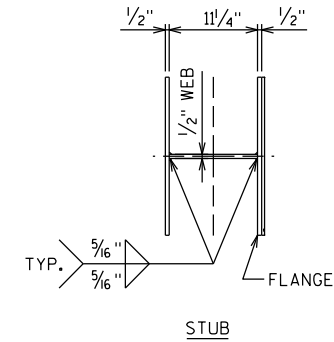
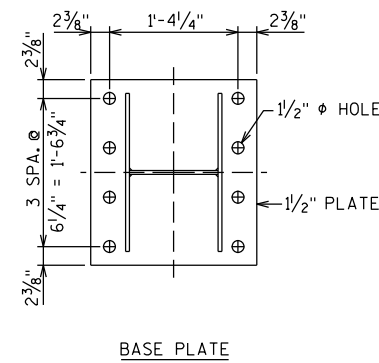
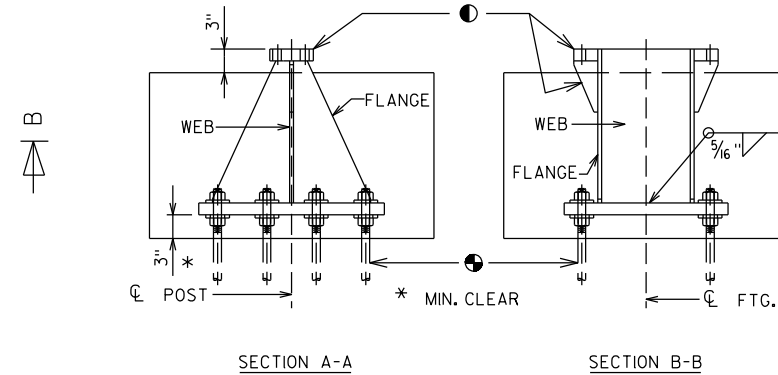
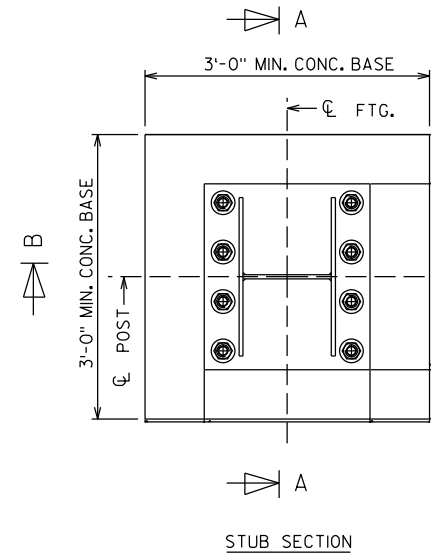
LOAD COMBINATION	TYPE	DL FACTOR	WL FACTOR
STRENGTH I	GRAVITY	1.25	-
EXTREME I	WIND	1.10	1.0
		0.9	1.0
SERVICE I	DEFLECTION	1.0	1.0

FOUNDATION DESIGN DATA

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

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 2 OF 2		SHEET A3-120	
		230	



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

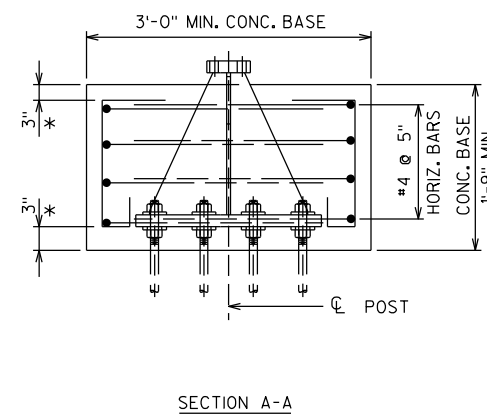
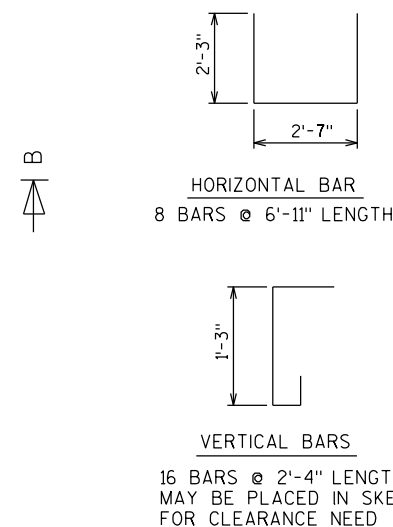
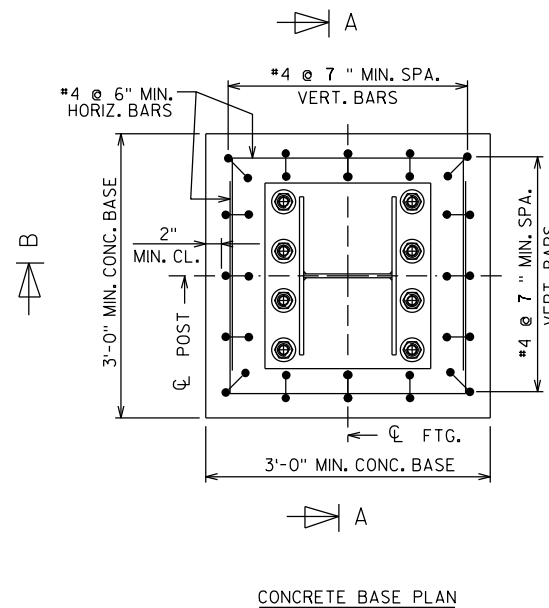
GENERAL NOTES:

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

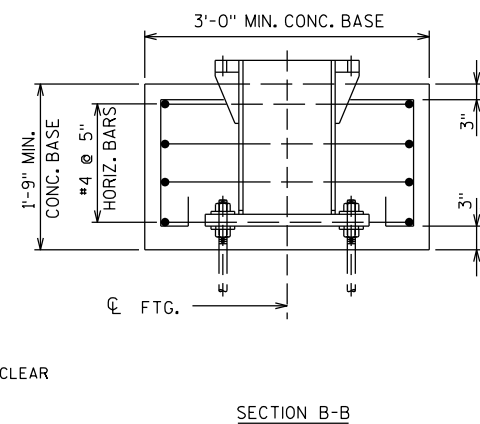
ALL MATERIALS, EXCEPT FOR ANCHOR ROD, NUTS, AND WASHERS, SHALL BE ASTM A709 GRADE 50. ALL MATERIALS TO BE GALVANIZED AFTER FABRICATION.

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

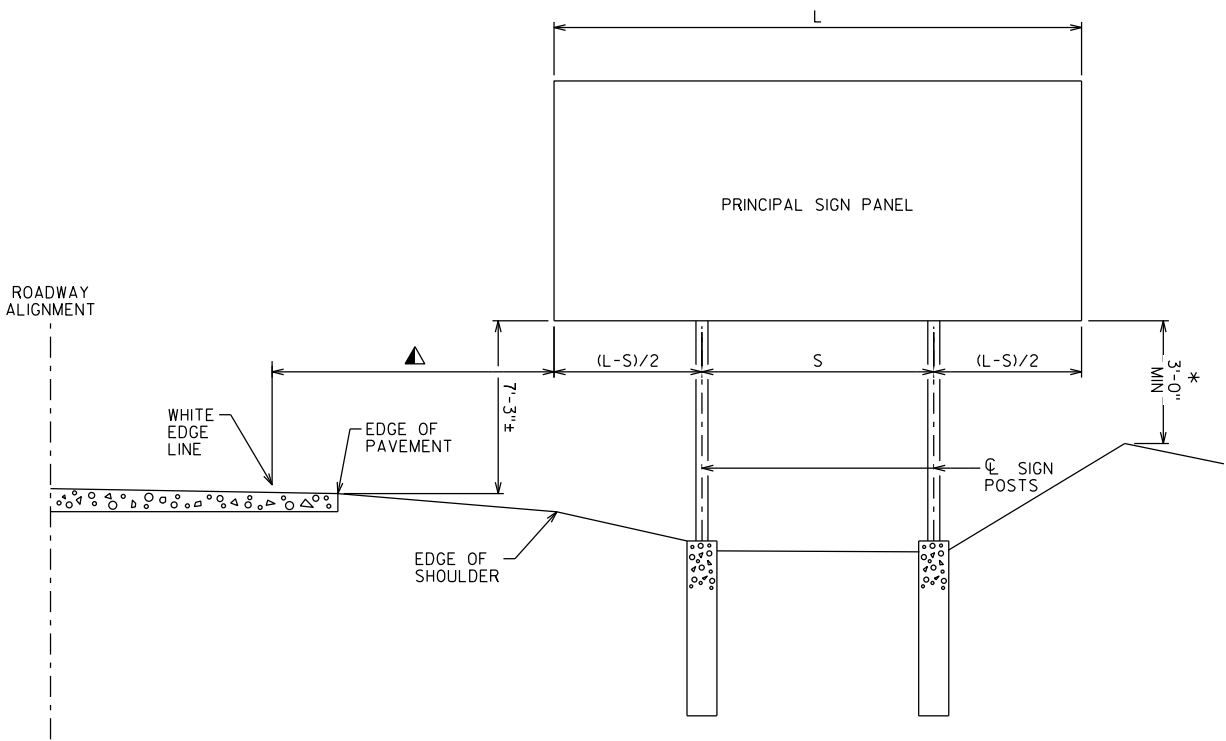
CONCRETE BASE DETAILS



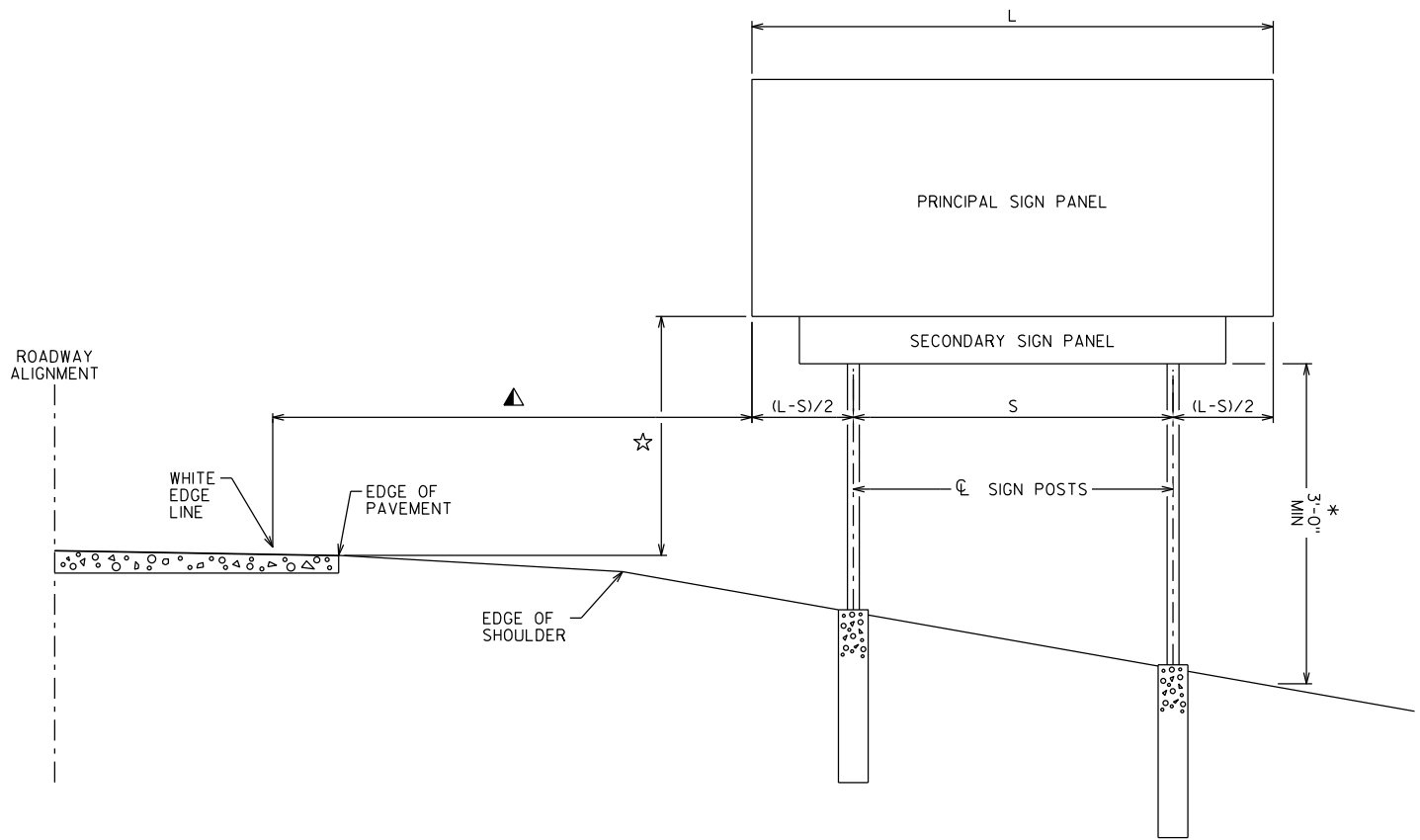
* MIN. CLEAR



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
DRAWN BY		PLANS CK'D.	
ALTERNATE BREAK-AWAY BASE ON ROCK		SHEET A3-1M.2	
		231	



INSTALLATION WITHOUT SECONDARY SIGN



INSTALLATION WITH SECONDARY SIGN

TYPE 1 SIGN INSTALLATION NOTES:

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

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

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

THE ± TOLERANCE SHOWN ON THIS SHEETS IS 3".

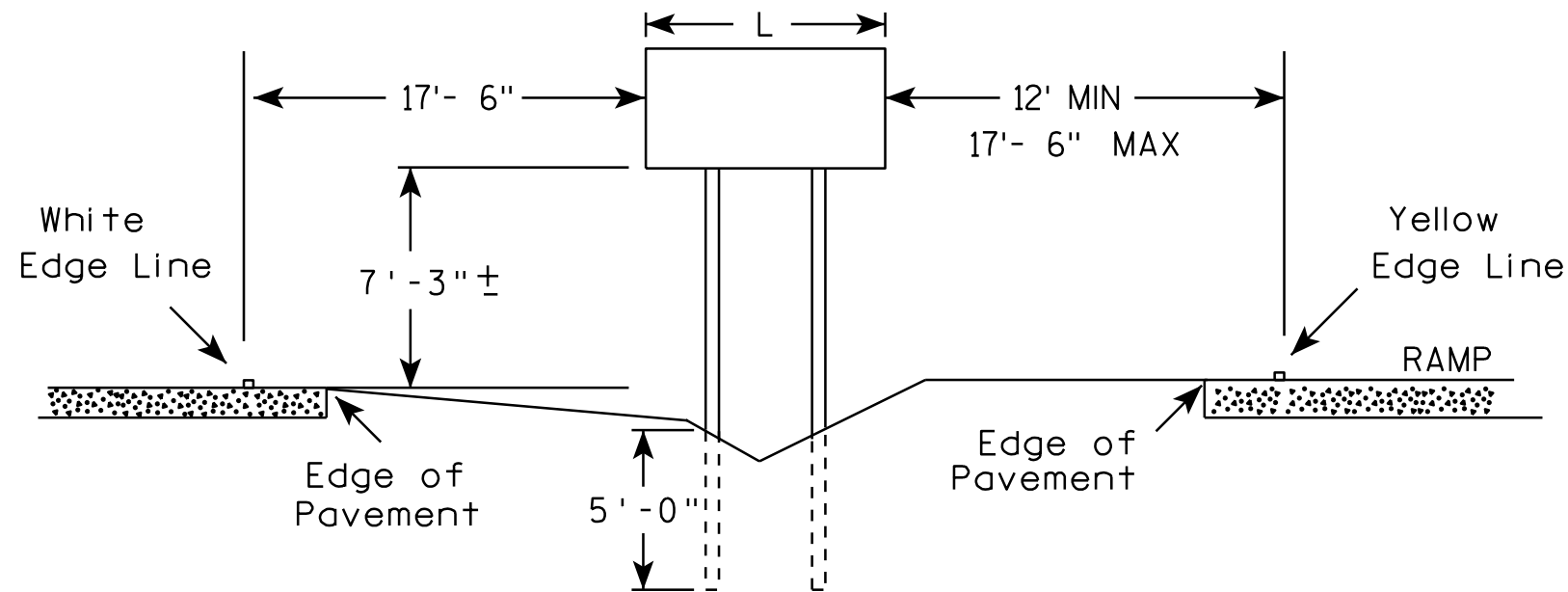
THE VERTICAL SIGN HEIGHT CLEARANCES SHOWN ON THIS SHEET ARE MEASURED FROM THE BOTTOM OF THE SIGN PANEL TO THE NEAR EDGE OF PAVEMENT.

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

* THE VERTICAL SIGN GROUND CLEARANCE ON RIGHT END OF SIGN SHALL BE A MINIMUM OF 3'-0"±.
- POST LENGTHS SHOWN IN THE MISCELLANEOUS QUANTITIES ARE ESTIMATED LENGTHS. THE CONTRACTOR SHALL VERIFY POST LENGTHS AT THE TIME OF FINAL GRADING.

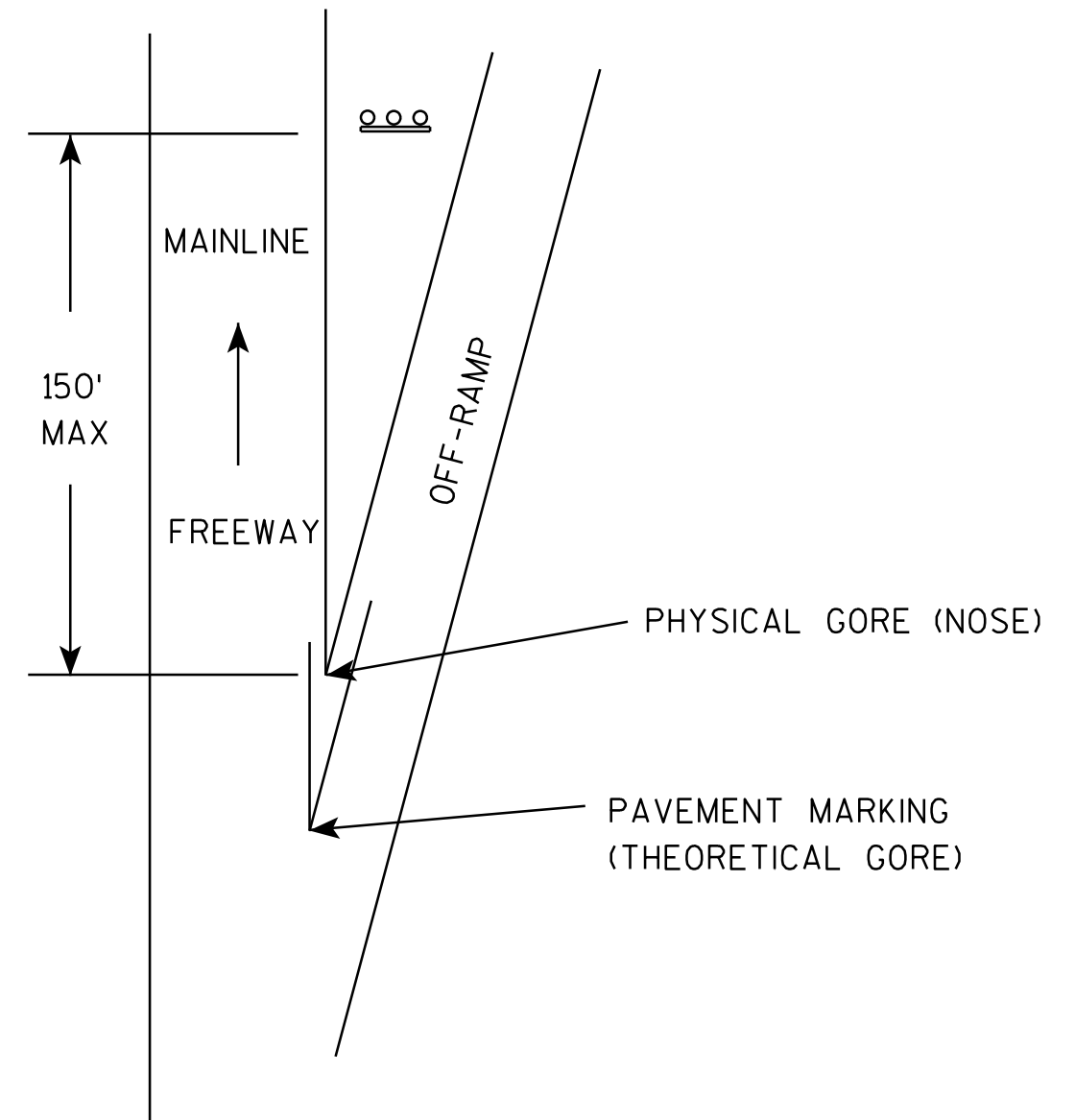
REFER TO THE TRAFFIC ENGINEERING OPERATIONS AND SAFETY MANUAL FOR FURTHER GUIDANCE ON MINIMUM VERTICAL CLEARANCE REQUIREMENTS.

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



GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The ($\pm$) tolerance for the mounting height is 3 inches.



TYPICAL INSTALLATION
OF TYPE II SIGNS ON
WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

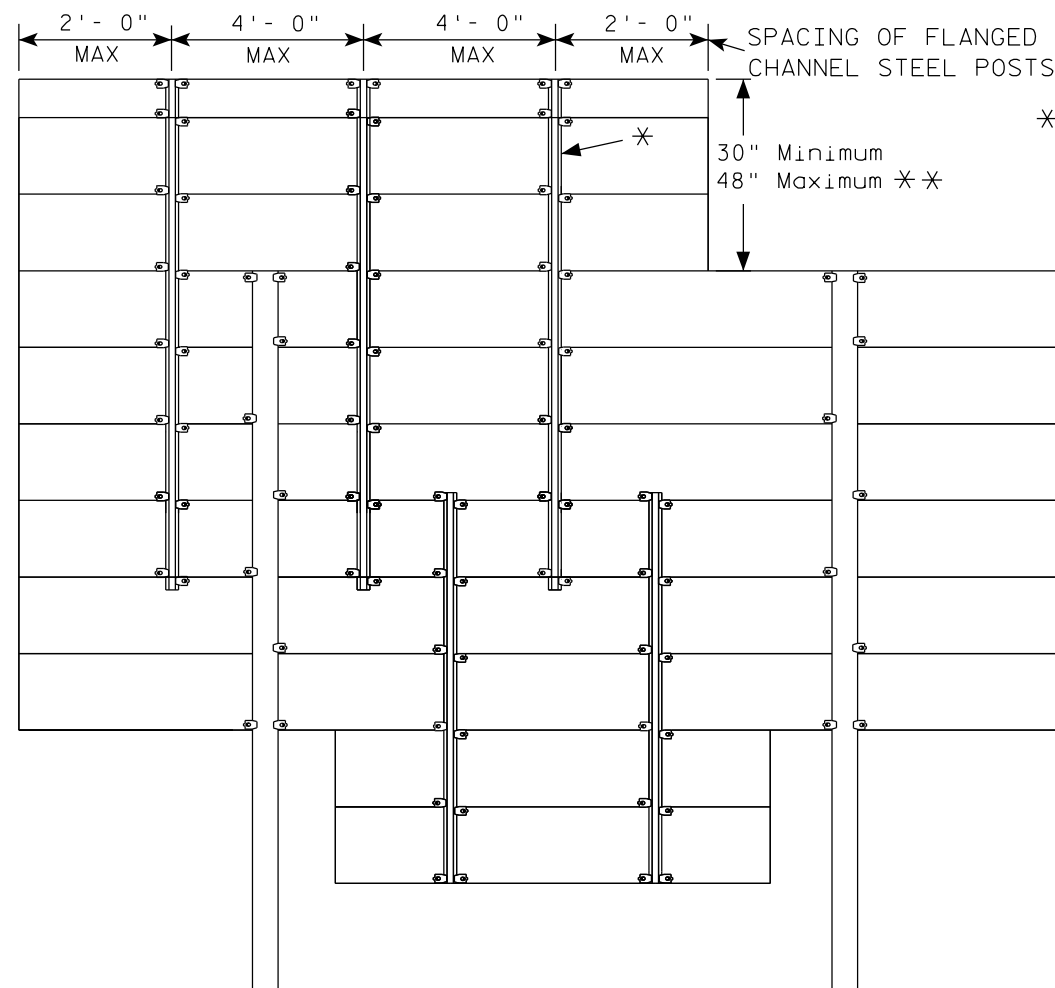
DATE 2/06/14 PLA 233 A4-2.3

PROJECT NO:

SHEET NO:

E

GROUND MOUNTED SIGN



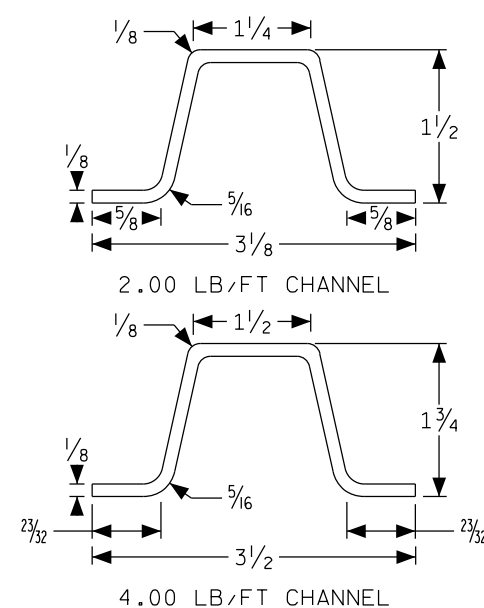
* = 2.00 lb/ft AND 4.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

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

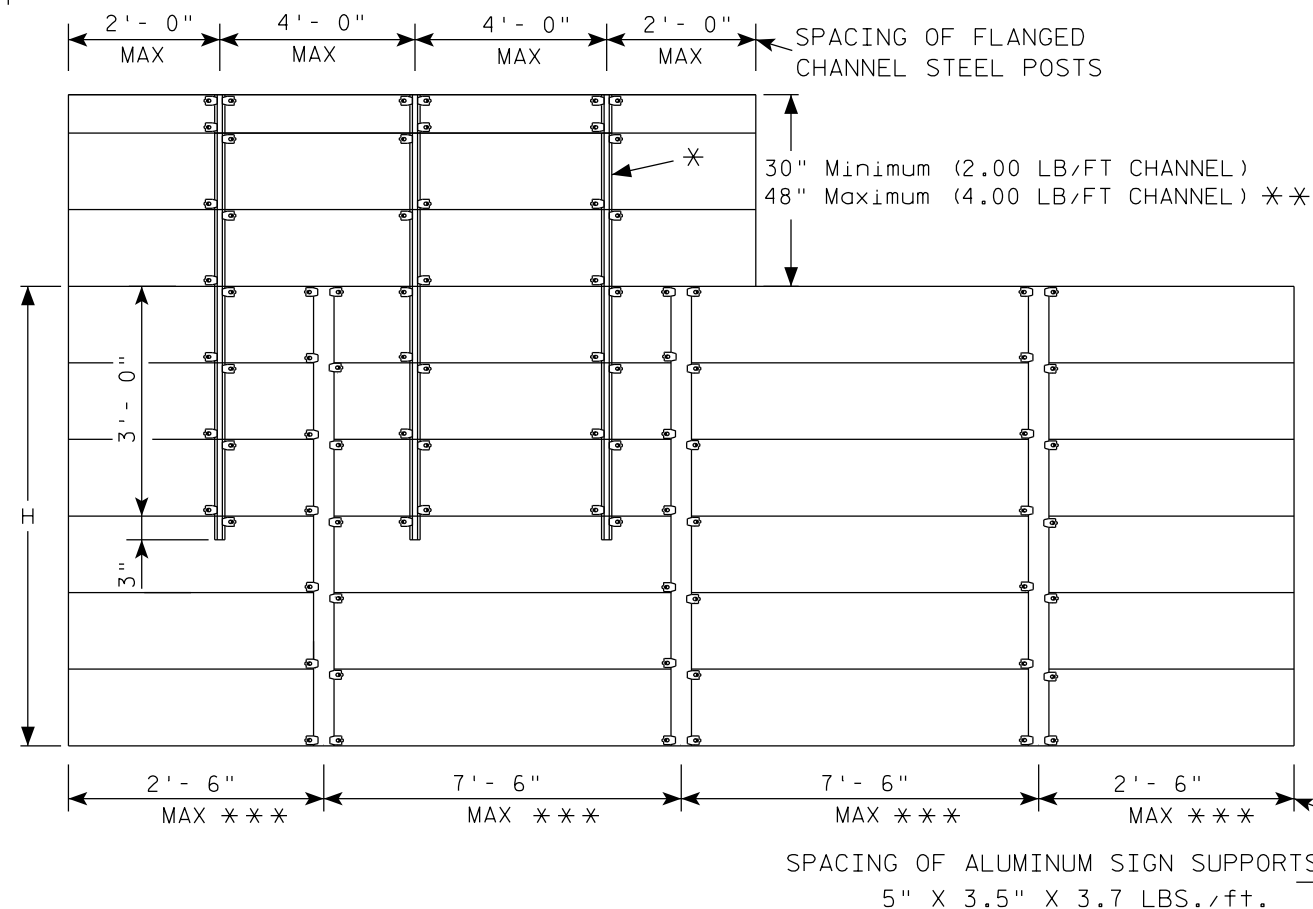
* * * THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 15 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 15 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAILS

NOT TO SCALE



SIGN BRIDGE MOUNTED SIGN



GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:
 PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
 PANEL LENGTH 9'-0" - 12'-0" = 3 CHANNELS
 PANEL LENGTH 13'-0" OR MORE = 4 CHANNELS
 If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.

3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
 for State Traffic Engineer

DATE 1/07/20

PLATE NO. A4-6.12

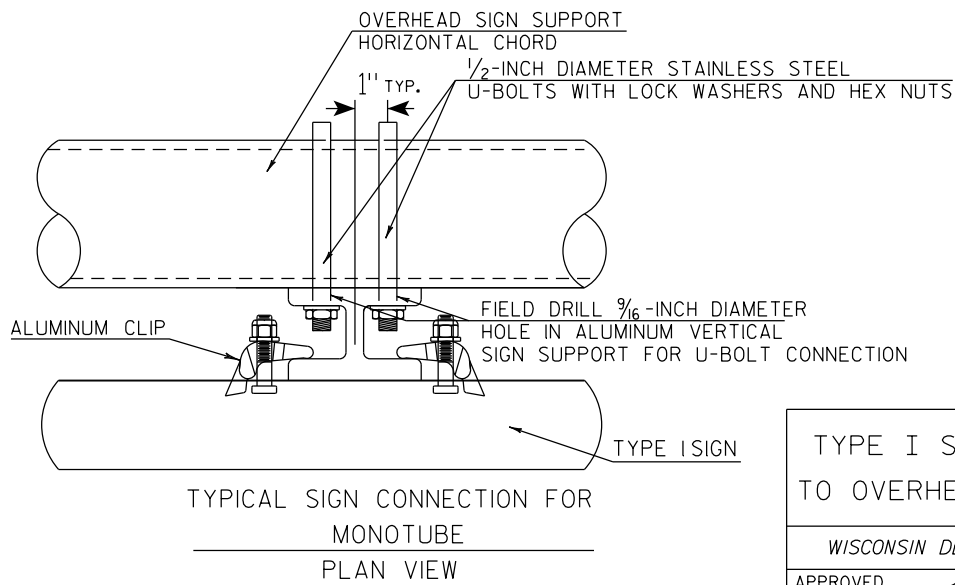
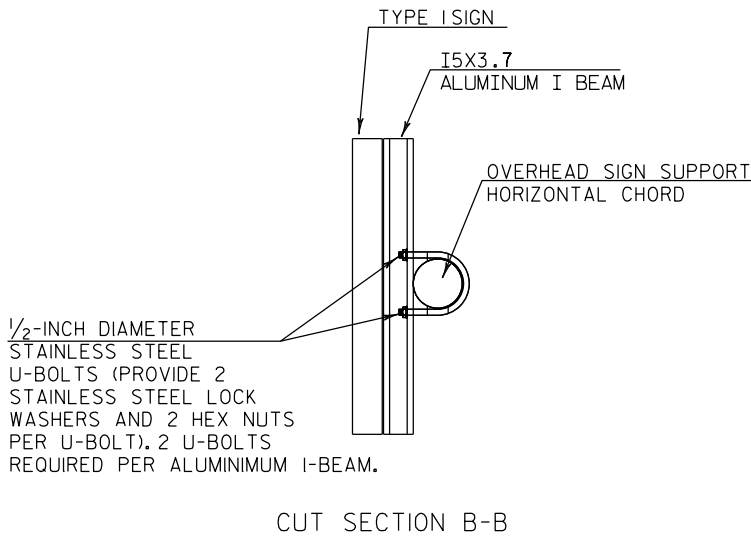
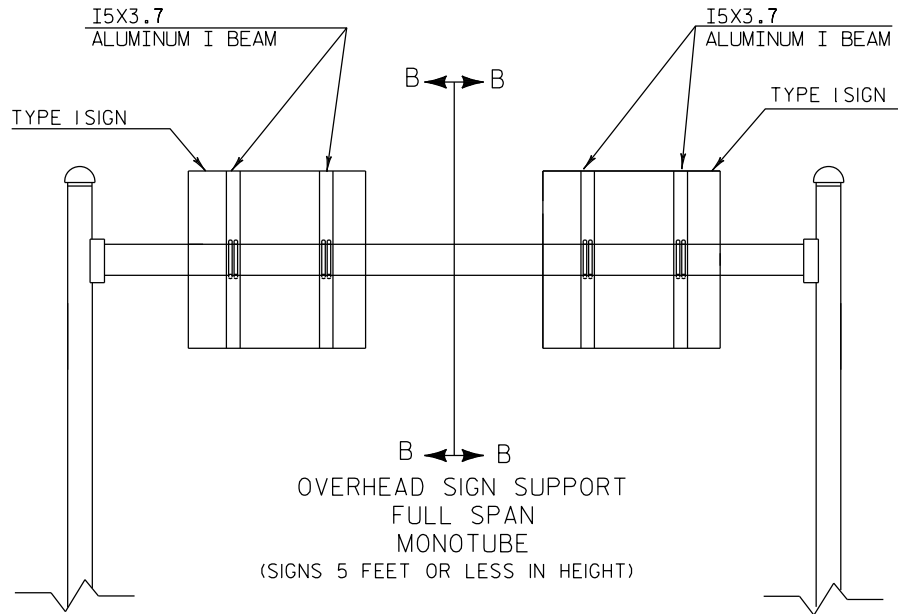
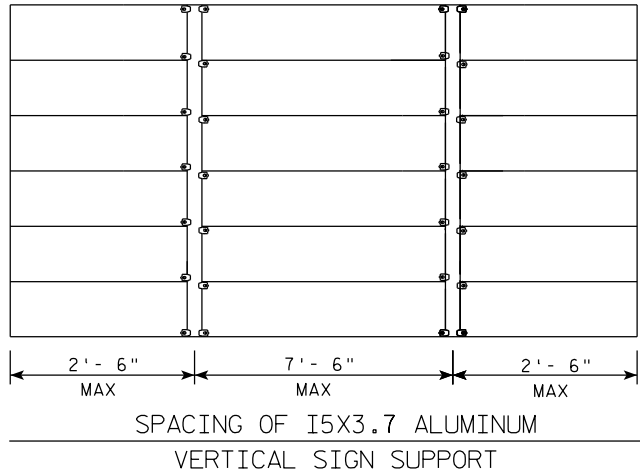
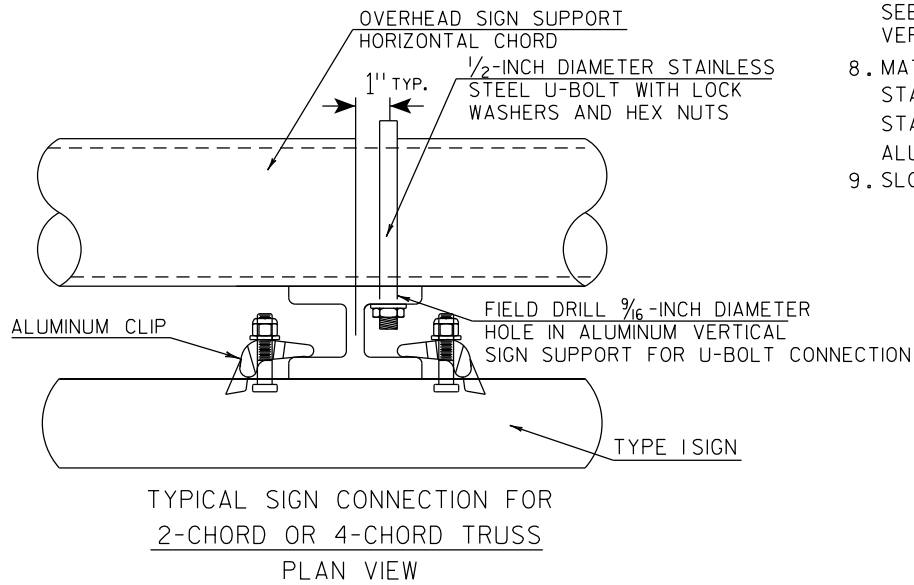
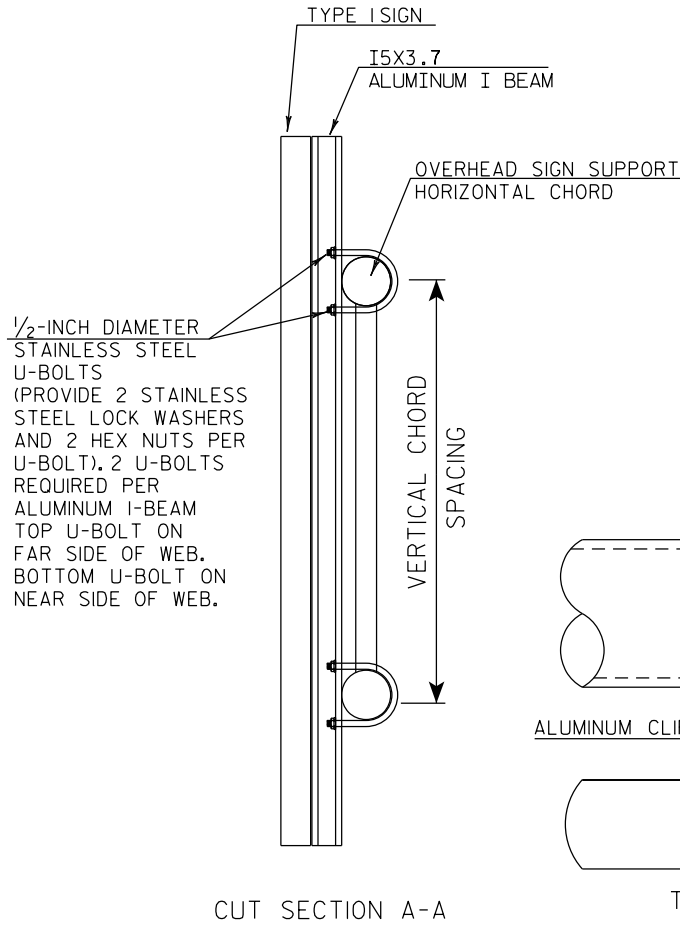
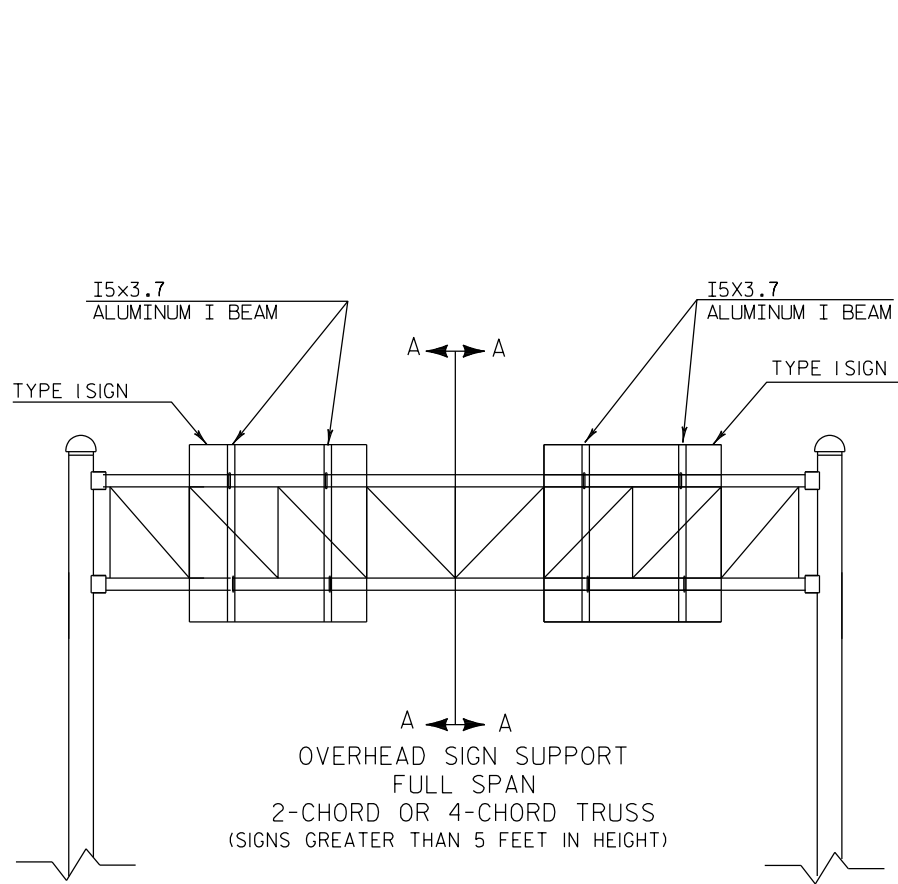
PROJECT NO:

SHEET NO: 234

E

GENERAL NOTES

1. USE STAINLESS STEEL U-BOLTS, WASHERS, AND NUTS.
2. USE CLIPS ON EVERY EXTRUDED PANEL JOINT PER SIGN PLATE A4-6.
3. USE ALUMINUM VERTICAL SIGN SUPPORT BEAMS HAVING A 5 INCH BEAM DEPTH AND WEIGHT OF 3.7 LBS PER FOOT.
4. U-BOLTS SHALL BE STAINLESS STEEL AND MANUFACTURED TO THE PROPER SIZE TO FIT THE CHORDS OF THE OVERHEAD SIGN STRUCTURE.
5. DIAMETER OF U-BOLTS SHALL BE AS SHOWN.
6. THE LENGTH OF THE ALUMINUM VERTICAL SIGN SUPPORT BEAMS SHALL BE THE SAME AS THE HEIGHT OF THE SIGN THEY ARE SUPPORTING. BEAM LENGTHS MAY BE LONGER FOR PROPER ATTACHMENT TO CHORDS.
7. MINIMUM NUMBER OF BRACKETS PER SIGN IS TWO. SEE DETAIL BELOW FOR SPACING OF ALUMINUM VERTICAL SIGN SUPPORTS
8. MATERIAL NOTES:
STAINLESS STEEL U-BOLTS AND LOCKWASHERS ASTM 304.
STAINLESS STEEL HEX NUTS ASTM A276.
ALUMINUM I-BEAMS ARE 6061-T6.
9. SLOTTED HOLES IN I-BEAMS ARE NOT ALLOWED



TYPE I SIGN CONNECTION TO OVERHEAD SIGN SUPPORT

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
State Traffic Engineer

DATE 1/07/20

PLATE NO. A4-7A.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 235

E

7

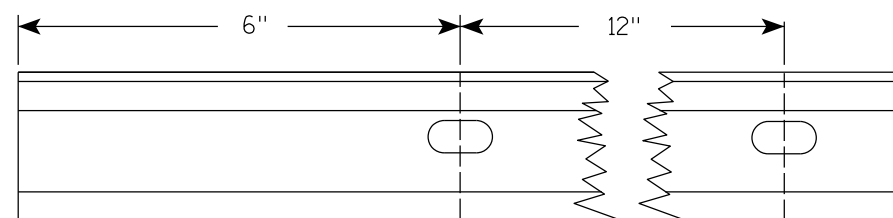
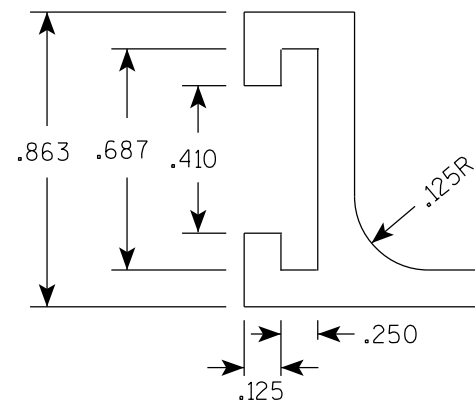
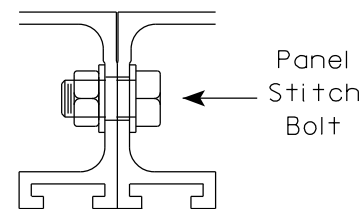


Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.

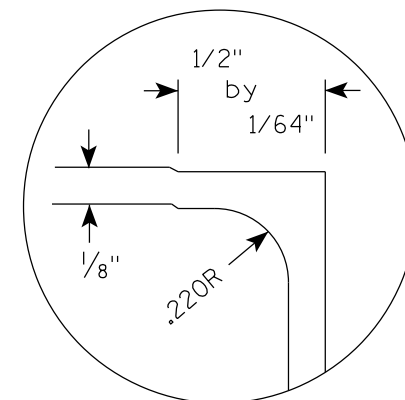
STITCH BOLT, WASHER & NUT

The hardware includes:

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

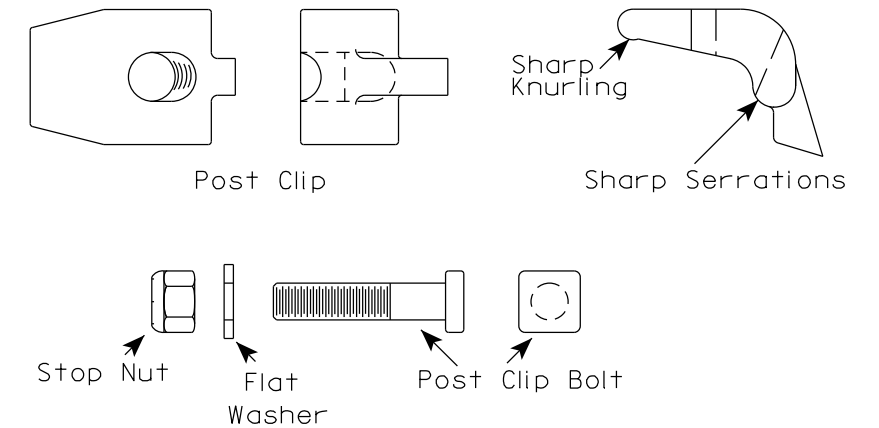


DETAIL A (EDGE WRAP JOINT)



POST CLIP, POST CLIP BOLT, WASHER & NUT

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



NOTES

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

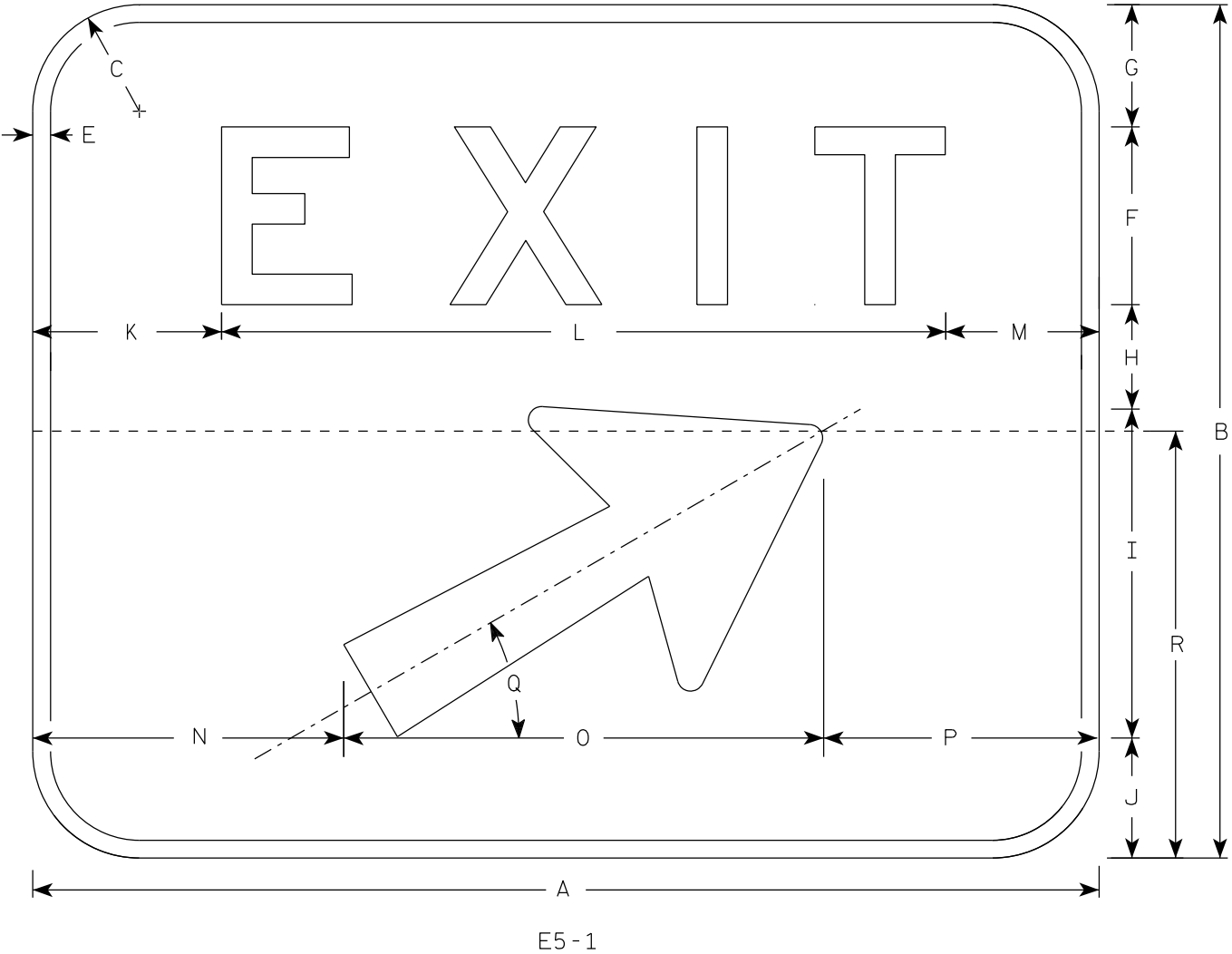
ALUMINUM EXTRUSIONS FOR
TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 1/07/20 PLATE NO. A5-2.10

PROJECT NO:				SHEET NO: 236	E
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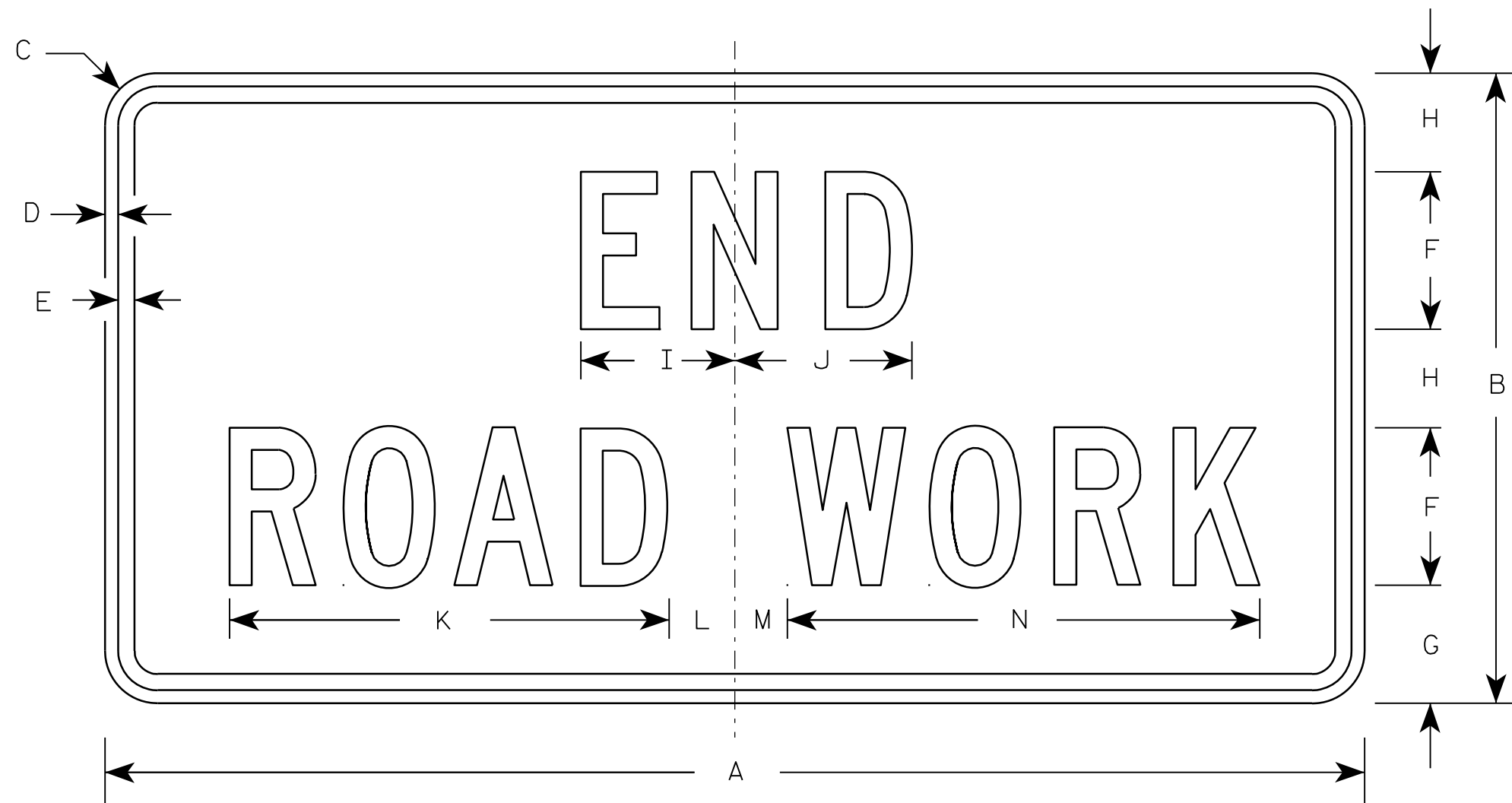


NOTES

- 1. Sign is Type II - Type H reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - E
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. When Base material for this sign is plywood sign shall be split into two separate pieces for the 72 x 60 size as shown on the detail by the dashed line (-----).
- 6. Arrow is Type "A" from sign plate A1-1.
- 7. As per the Standard Spec's, this sign shall not have a vertical joint.
- 8. Size 3 E5-1 shall only be used in a Work Zone application with a Temporary Sign Support

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3	48	48	6		1	10	6 7/8	5 7/8	18 1/2	6 3/4	8 1/2	31 1/8	8 3/8	11 1/2	27	9 1/2	30°	30									16.0
4	60	48	6		1	10	6 7/8	5 7/8	18 1/2	6 3/4	10 5/8	40 3/4	8 5/8	17 1/2	27	15 1/2	30°	30									20.0
5	72	60	6		1	12	9 3/4	10	18 1/2	9 3/4	13 1/4	48 1/2	10 1/4	23 1/2	27	21 1/2	30°	30									30.0

7



G20-2A

Metric equivalent
for this sign is:

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

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

NOTES

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

7

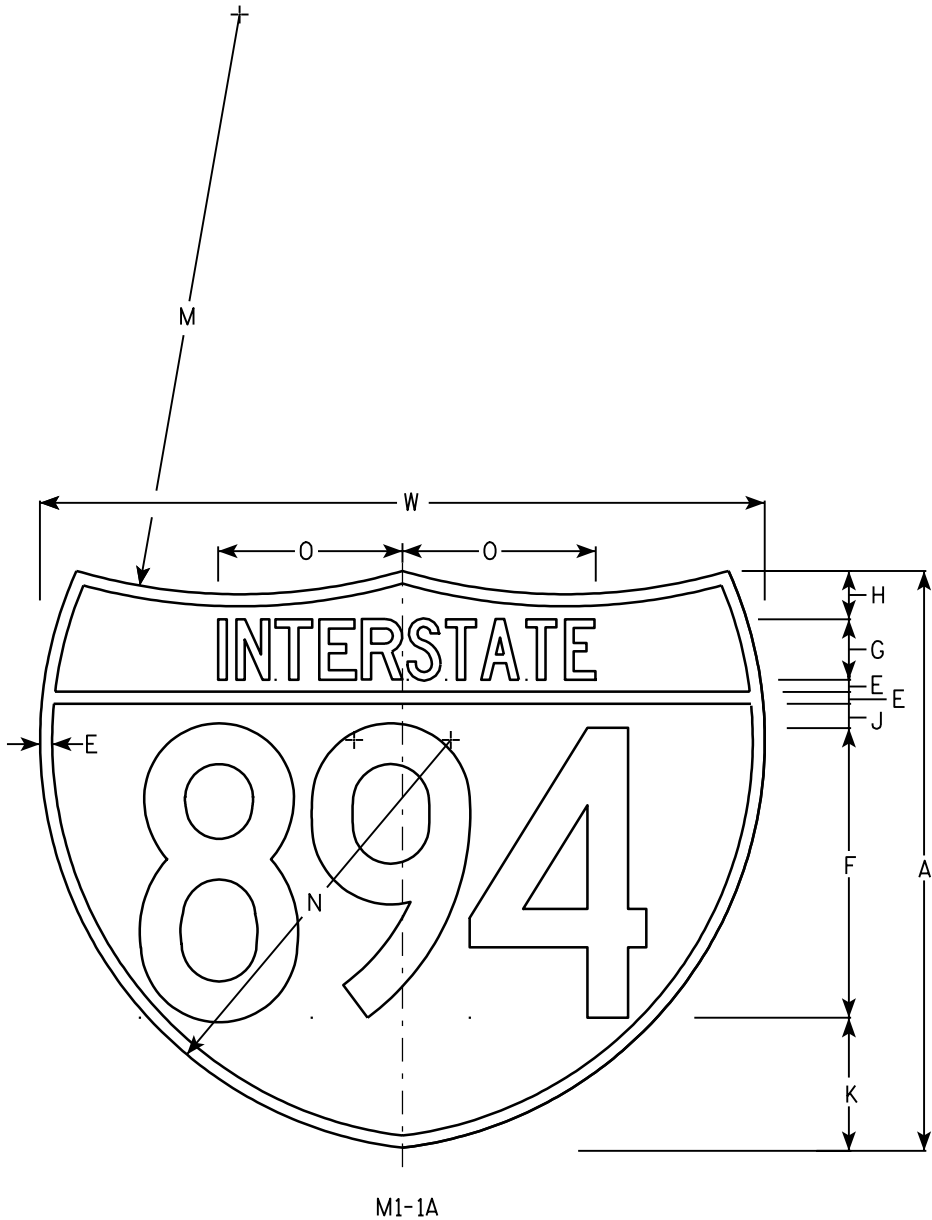
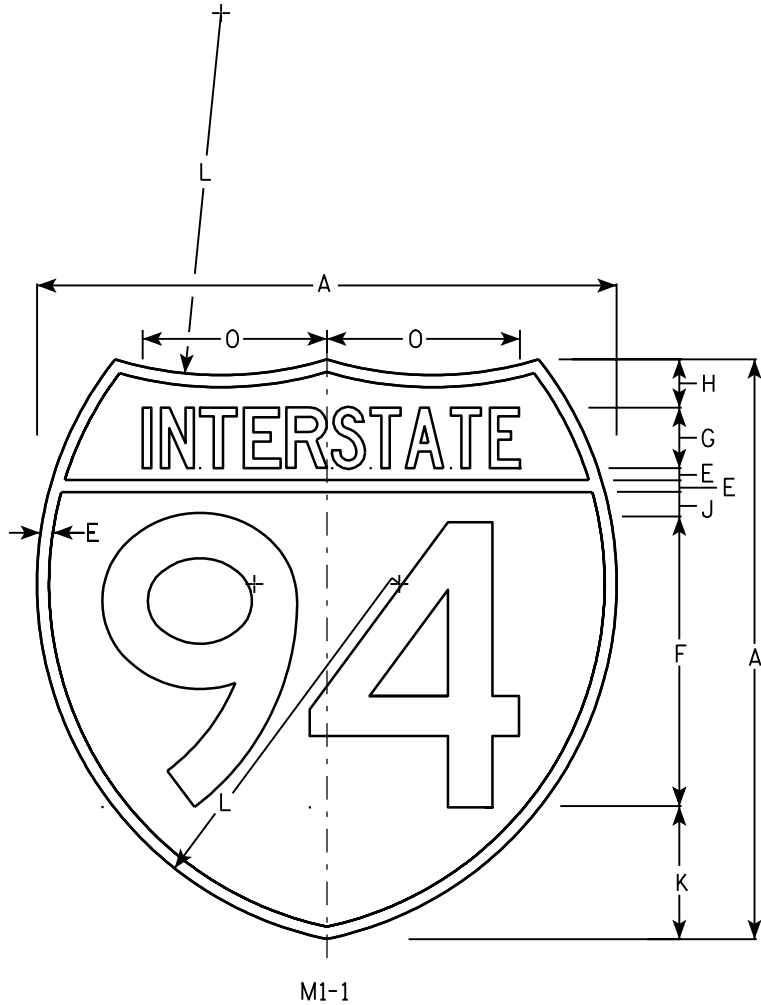
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 238

E



NOTES

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

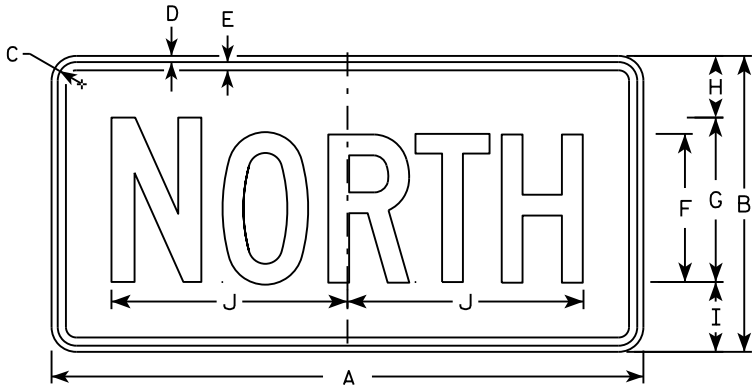
Metric equivalent for these signs are:

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

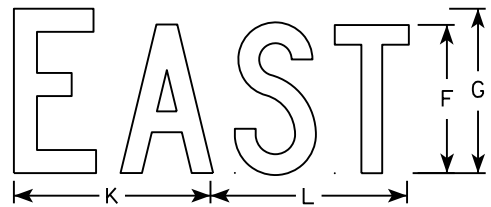
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Area sq. ft.	Area sq. ft.	Area m ²	Area m ²
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36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

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

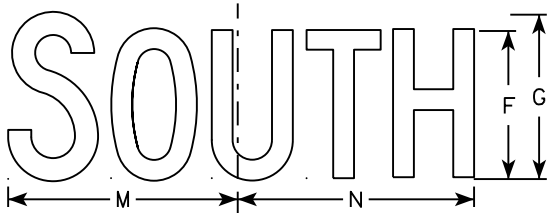
WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 08/23/05 PLATE NO. M1-1.8



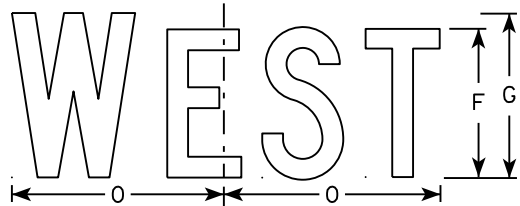
M3-1
MM3-1
MP3-1



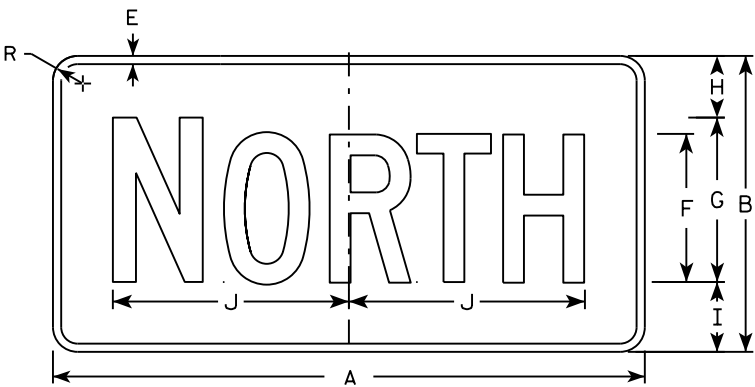
M3-2
MM3-2
MP3-2



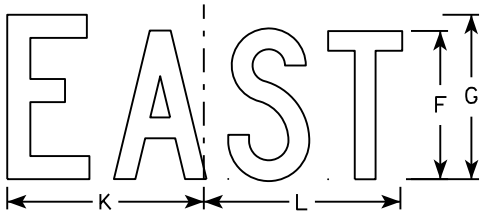
M3-3
MM3-3
MP3-3



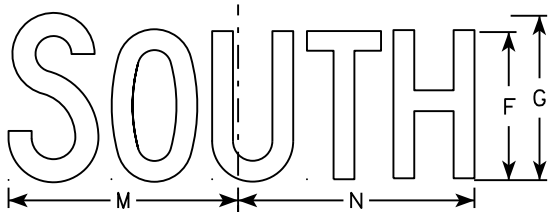
M3-4
MM3-4
MP3-4



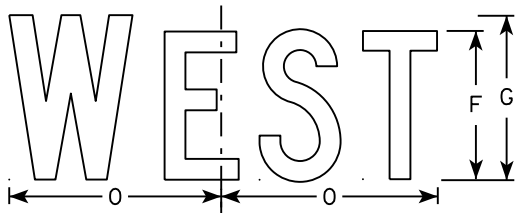
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



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 thru M3-4
SERIES

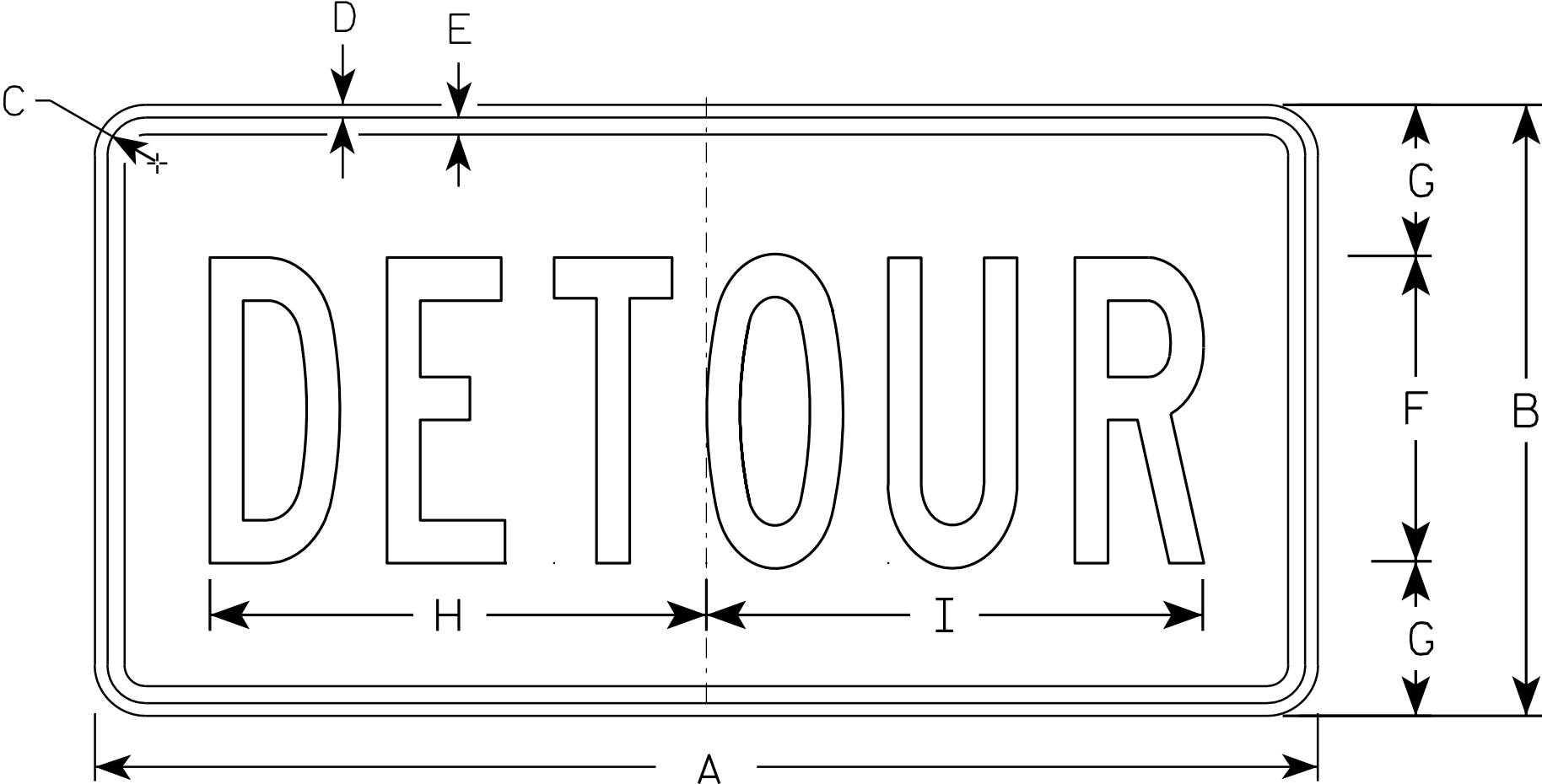
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. 240 M3-1.14

NOTES

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



M4 - 8

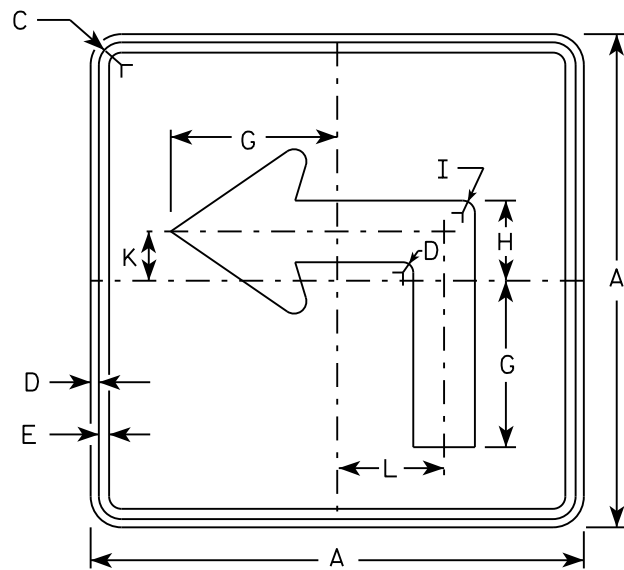
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN
M4 - 8

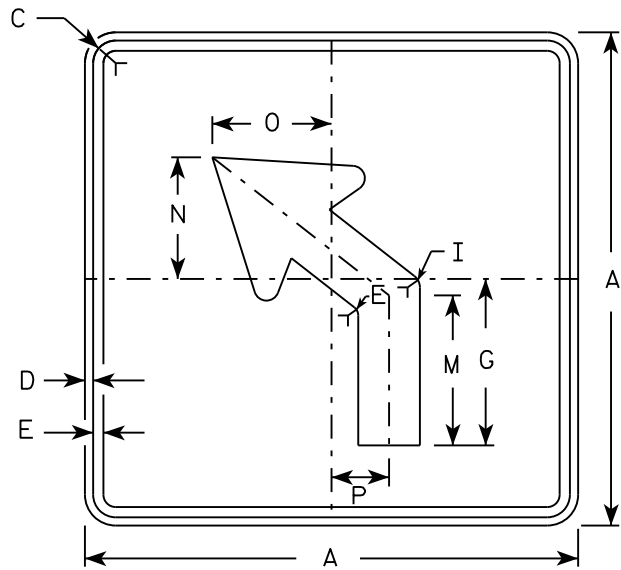
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

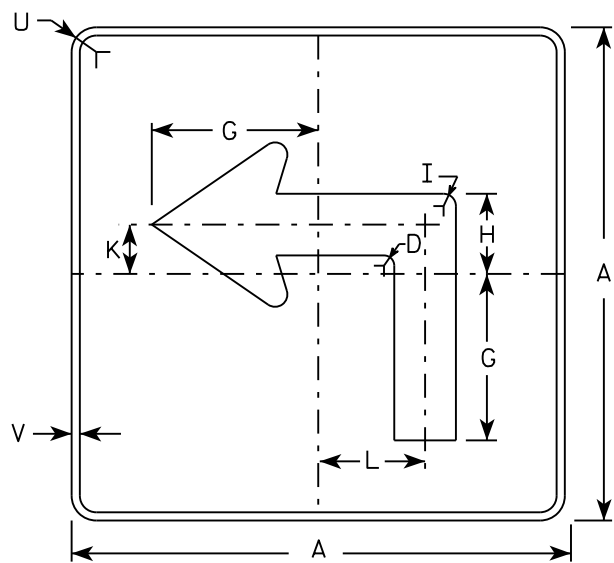
DATE 11/10/10 PLATE NO. M4-8.2



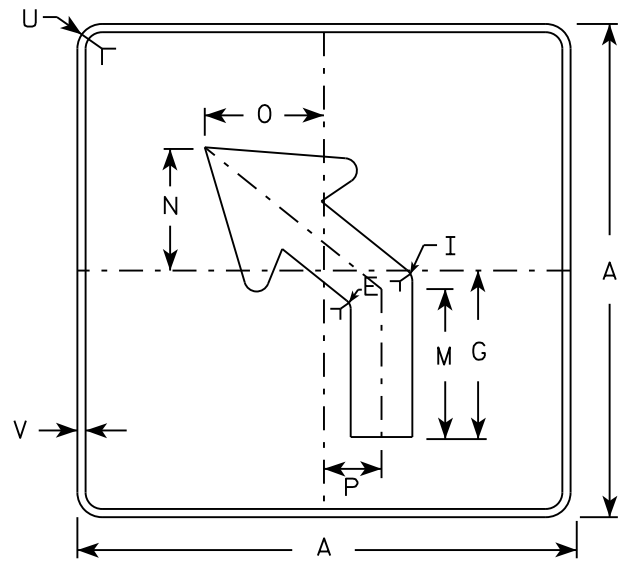
M5-1L
MM5-1L
M05-1L
MP5-1L



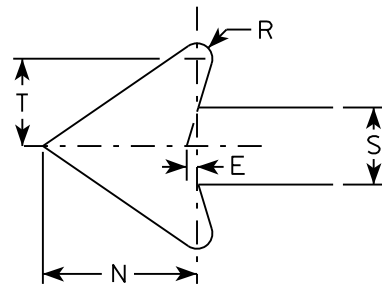
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

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

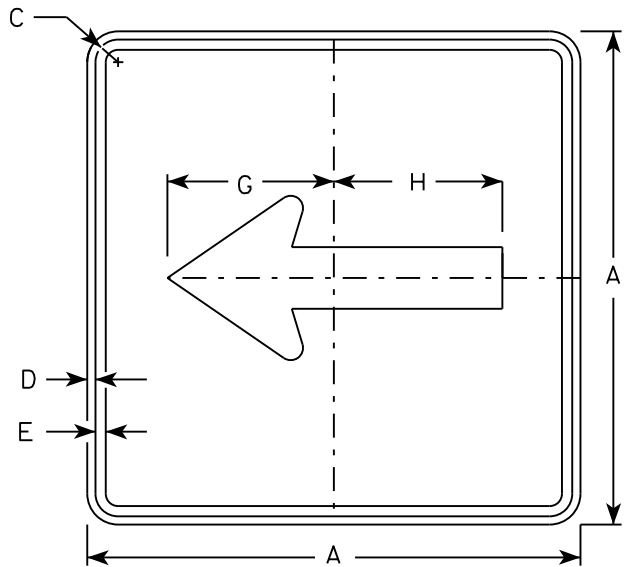
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

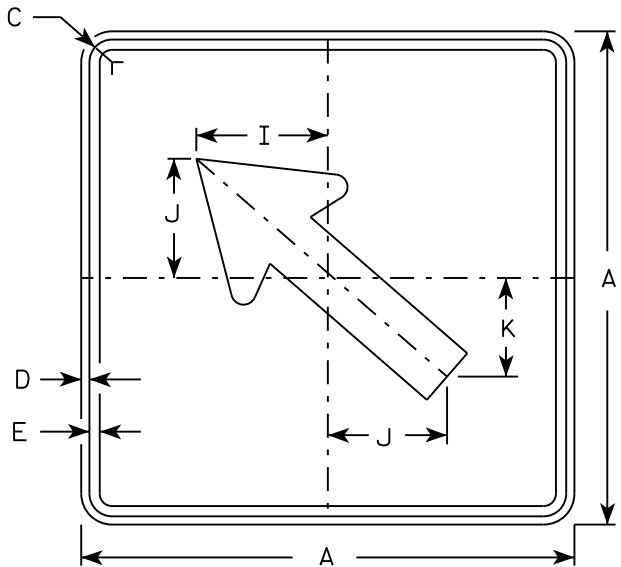
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

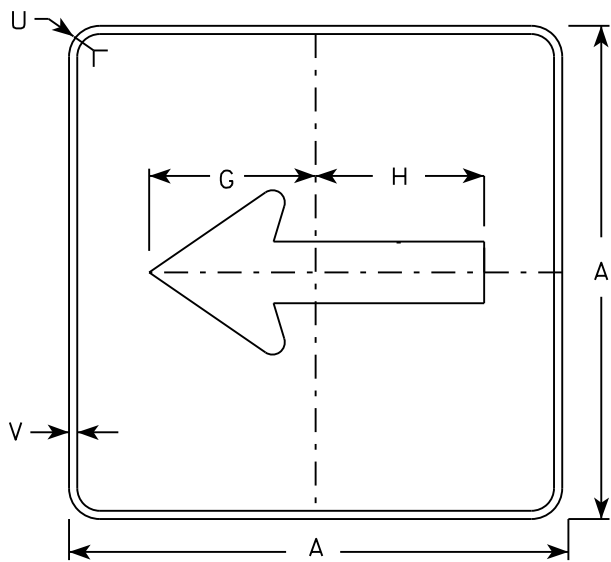
DATE 10/15/15 PLATE 242 M5-1.13



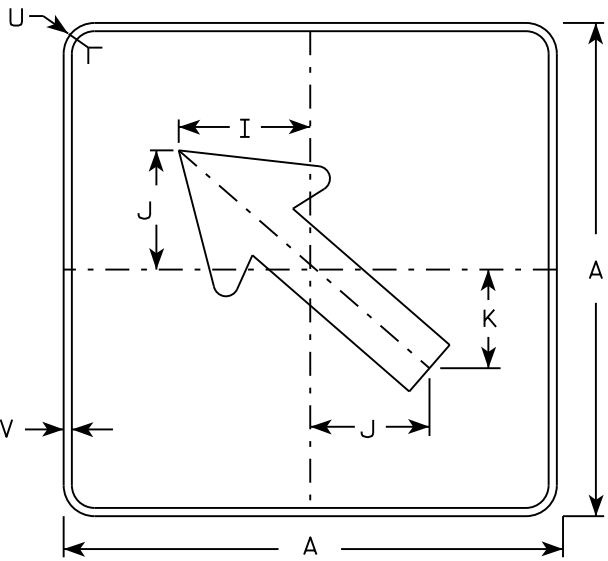
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



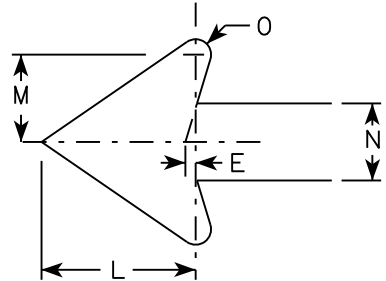
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

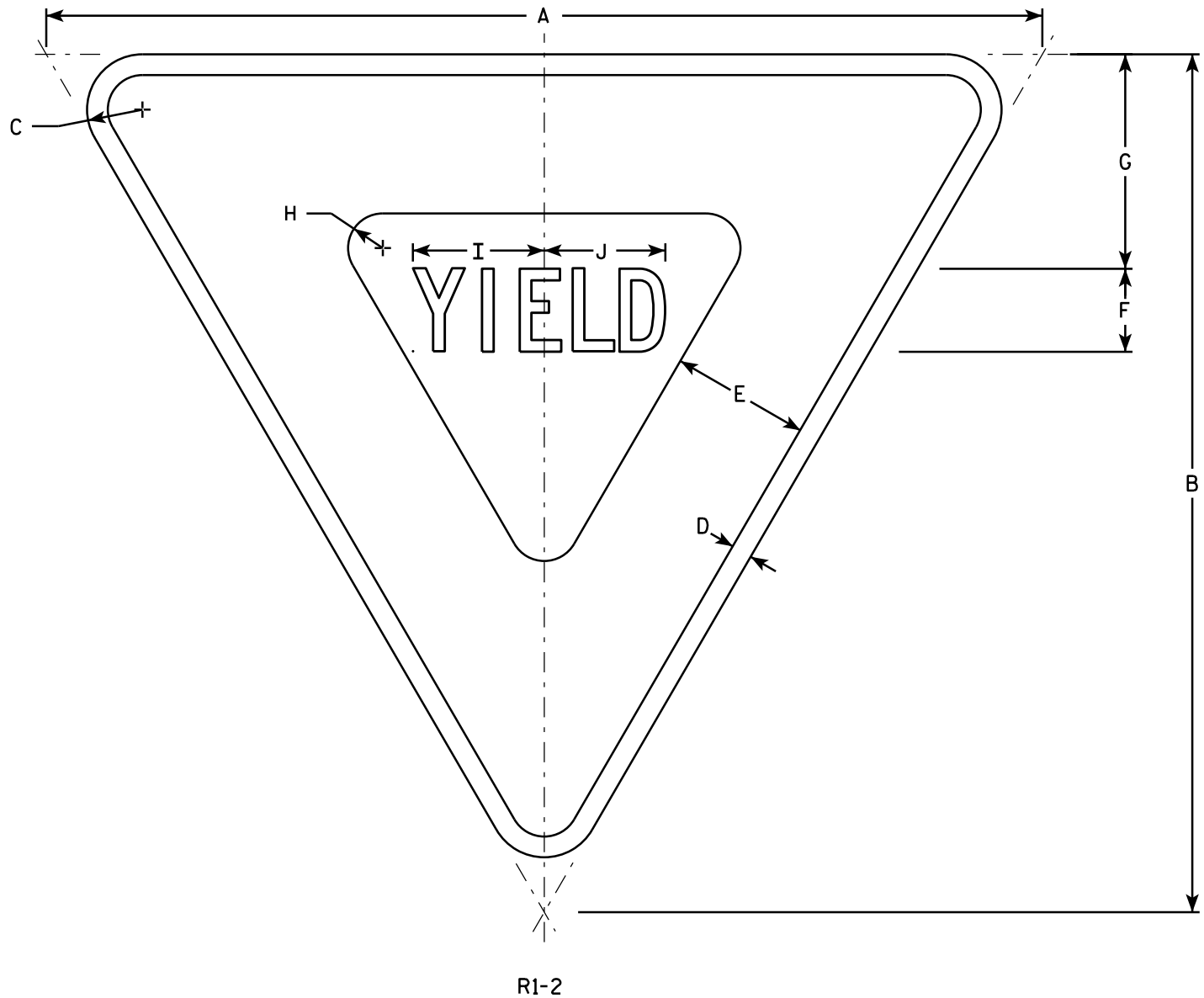
E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15 PLAT 243 M6-1.15



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - White
Message - See note 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. The border strip and word message are reflectorized red.

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	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

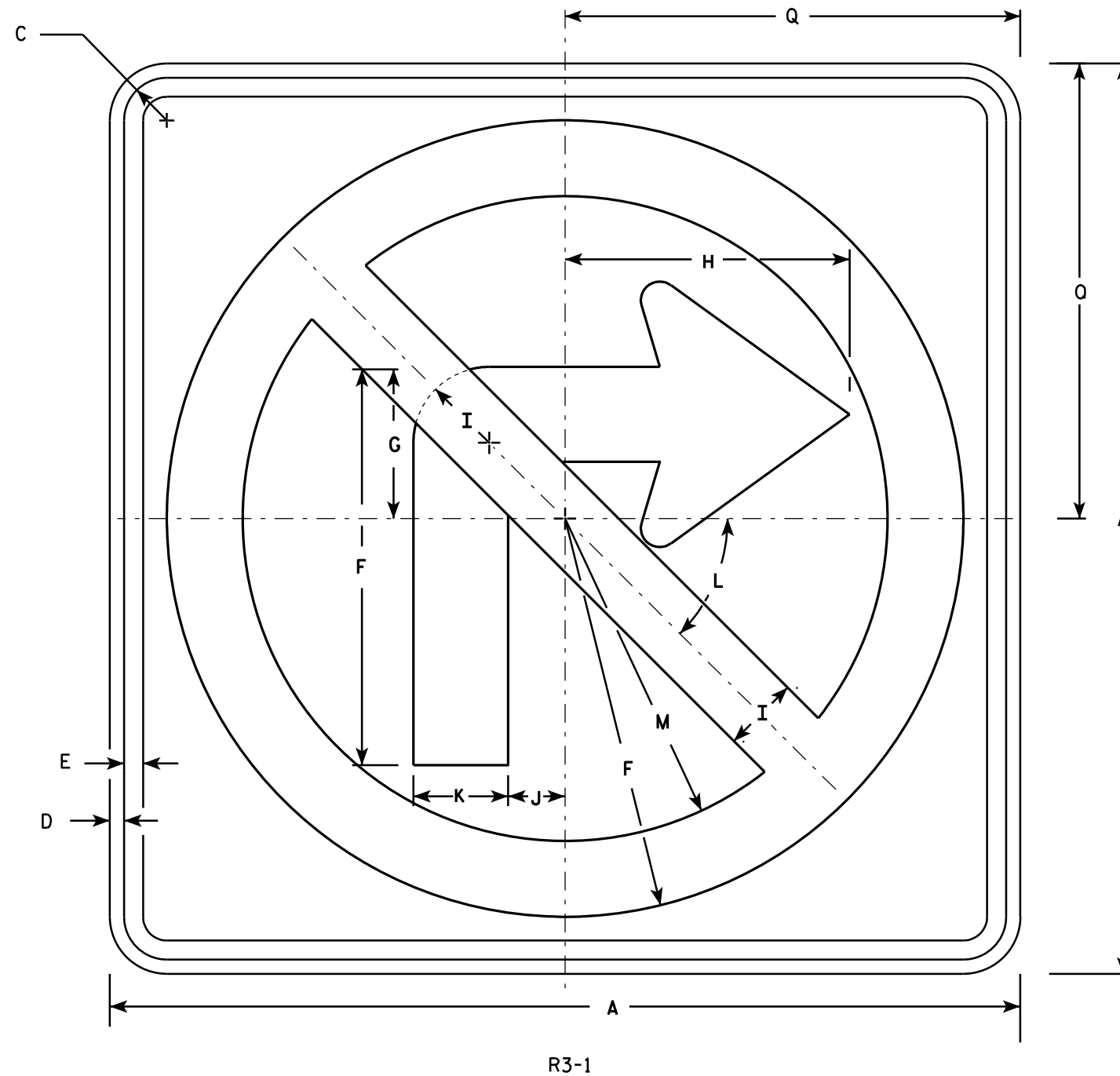
STANDARD SIGN

R1-2

WISCONSIN DEPT OF TRANSPORTATION

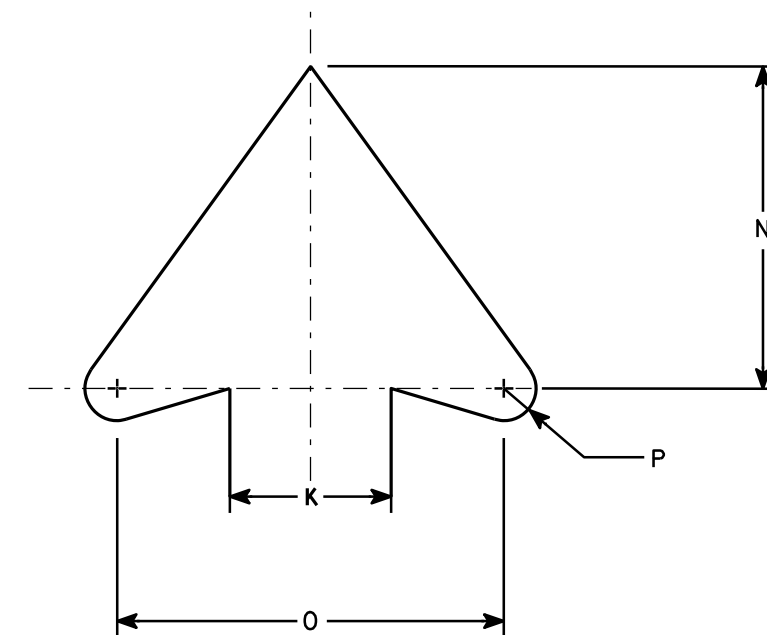
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/13/14 PLATE 244 P1-2.12



NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

STANDARD SIGN

R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

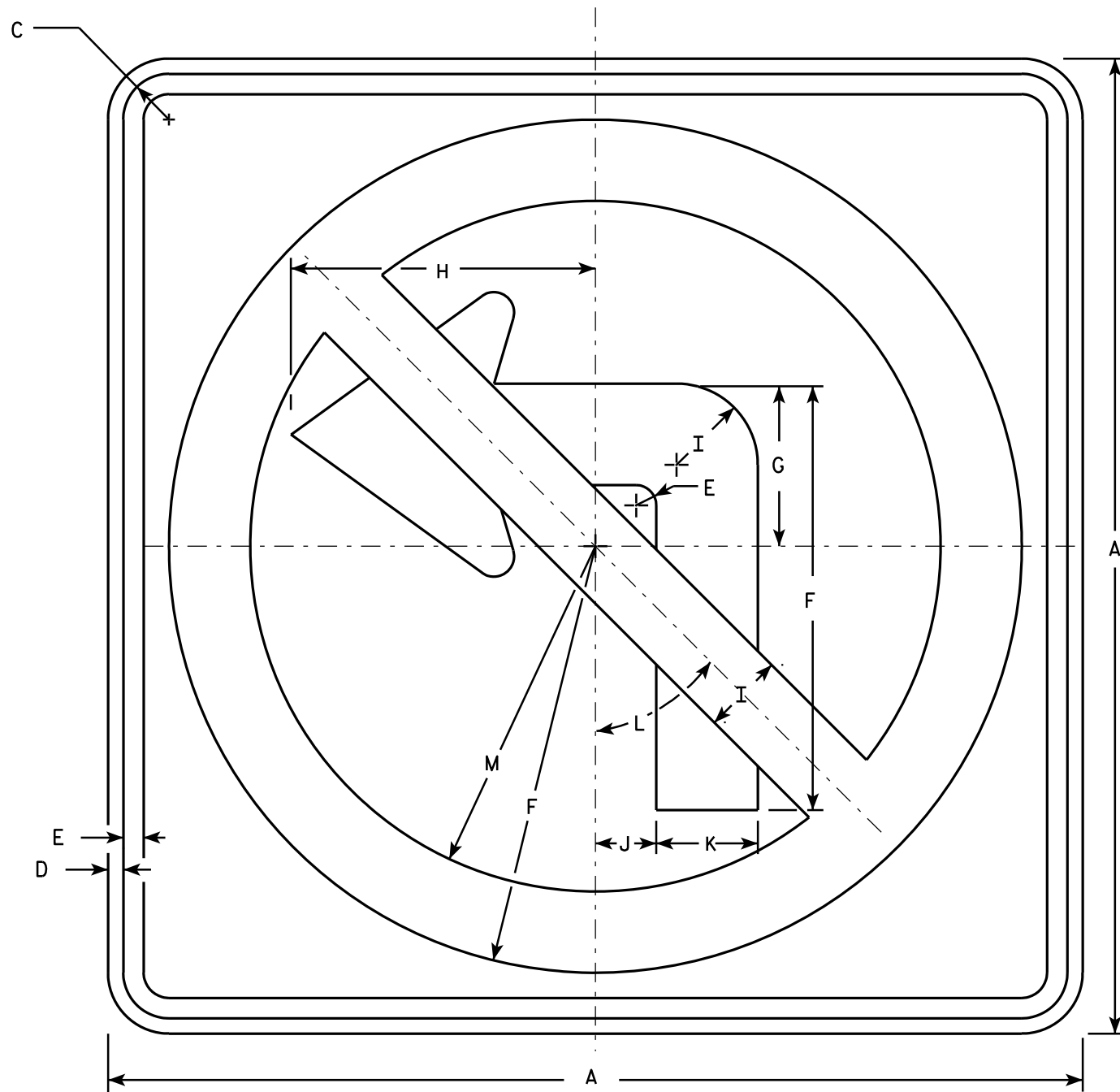
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 245

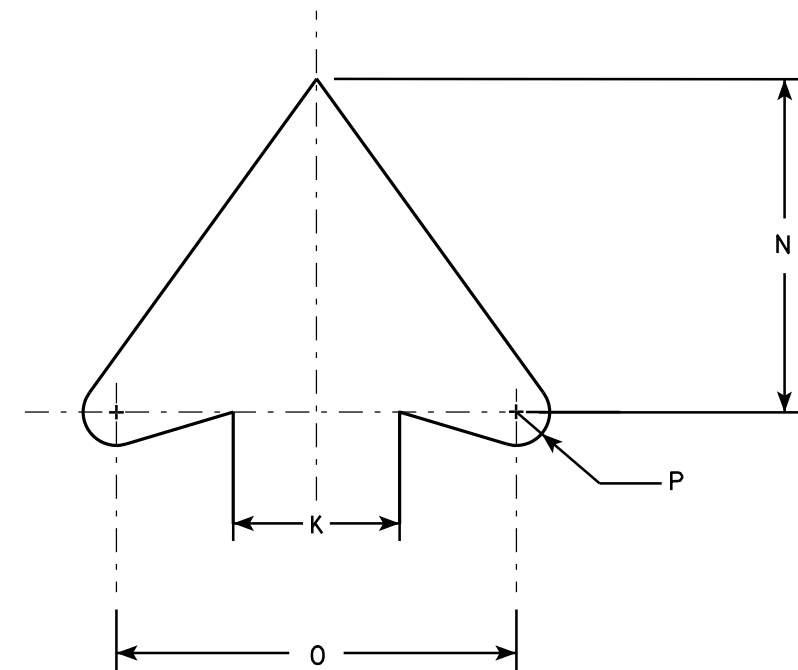
E



R3-2

NOTES

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



ARROW DETAIL

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

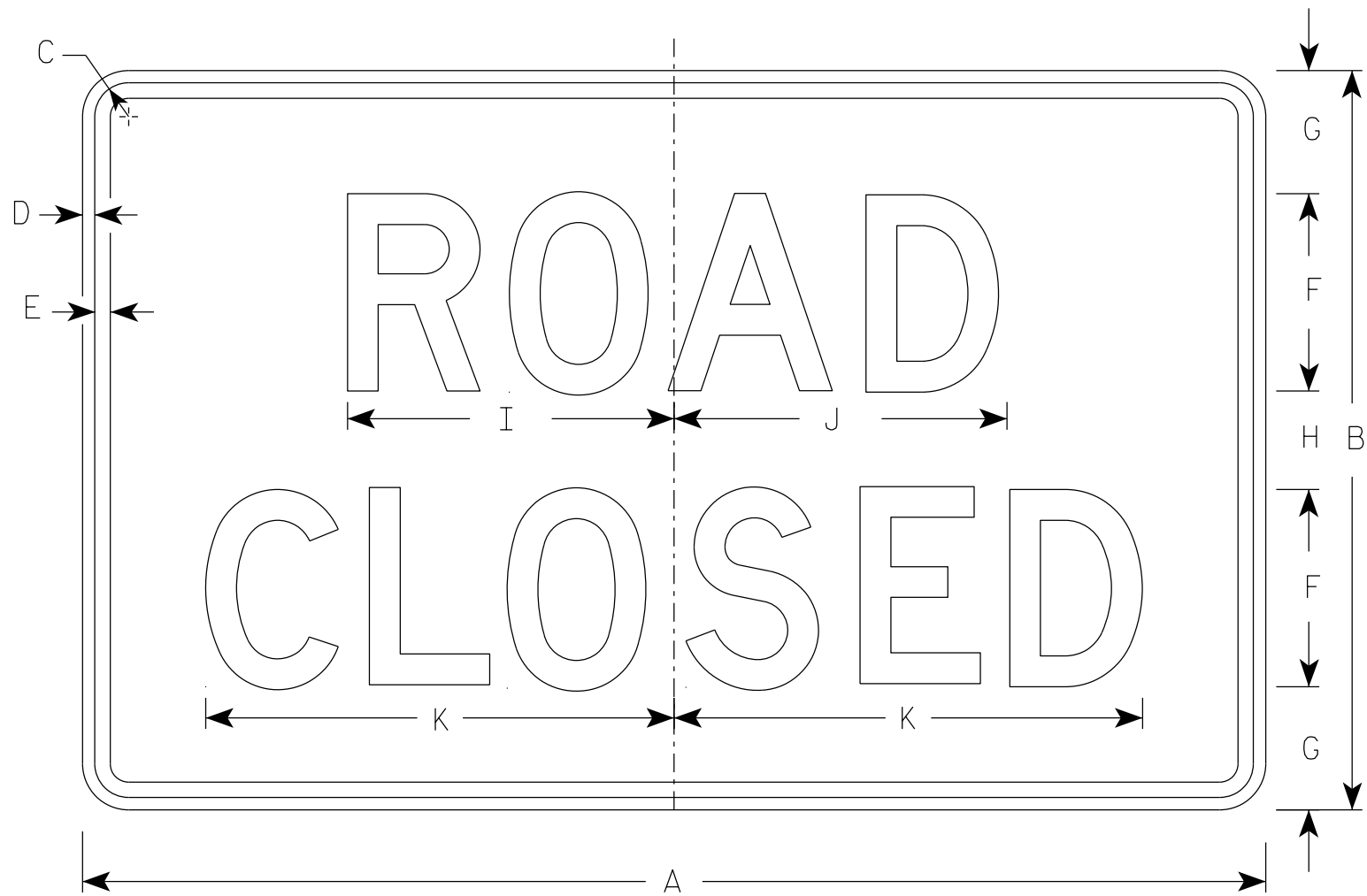
PROJECT NO: HWY: COUNTY: SHEET NO: 246 E

STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

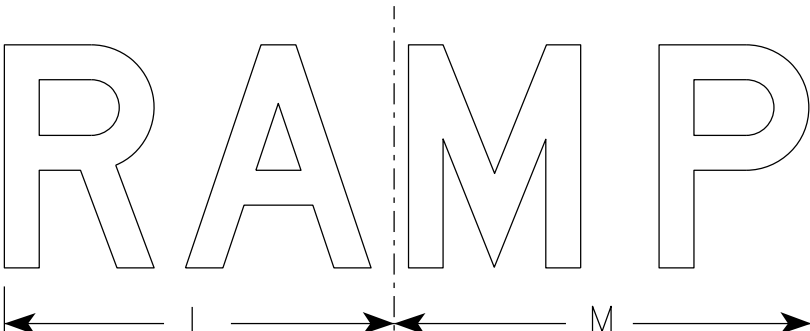
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

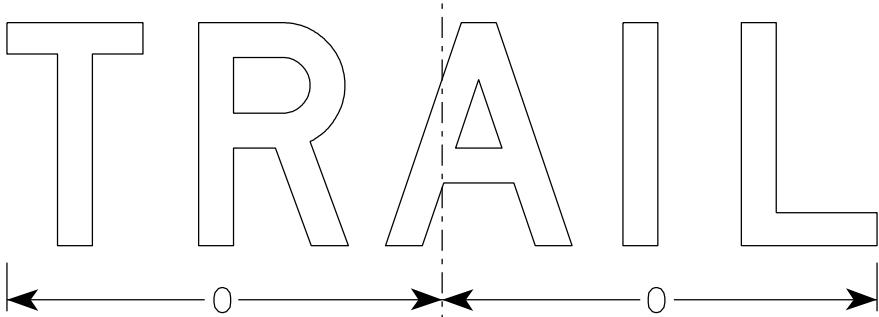


R11-2

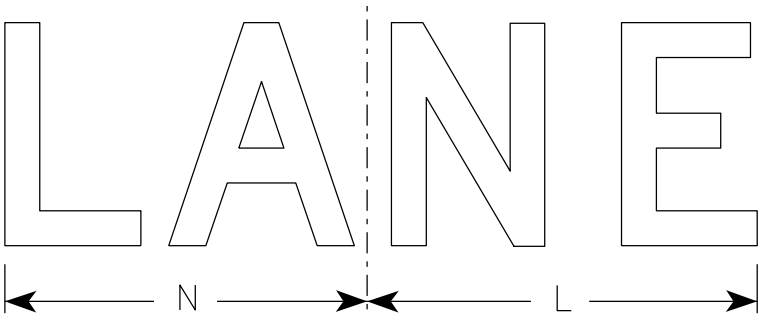
- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 5. Modify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



R11-2R



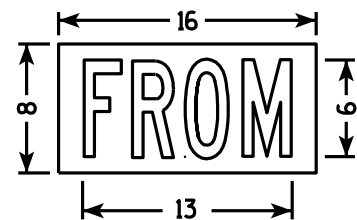
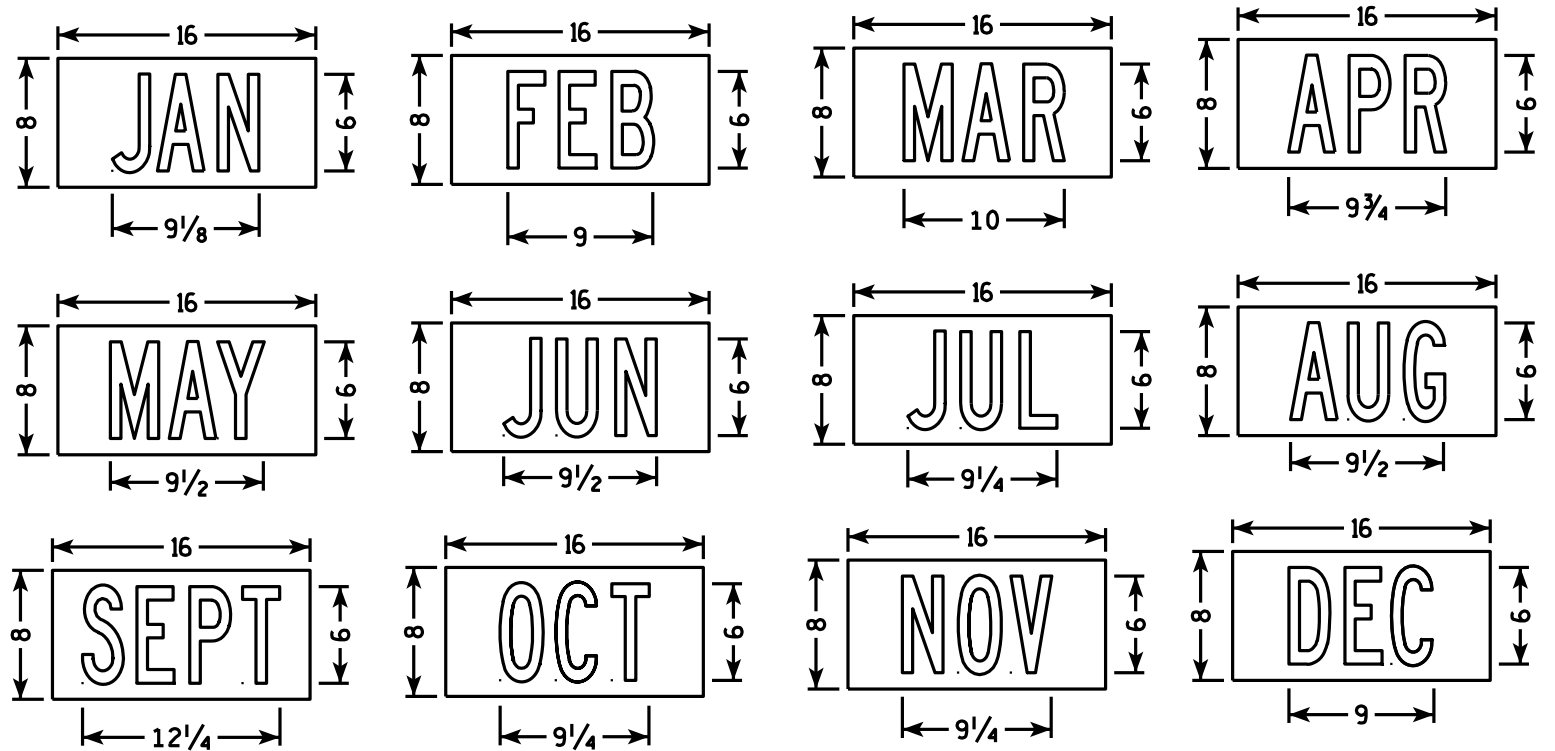
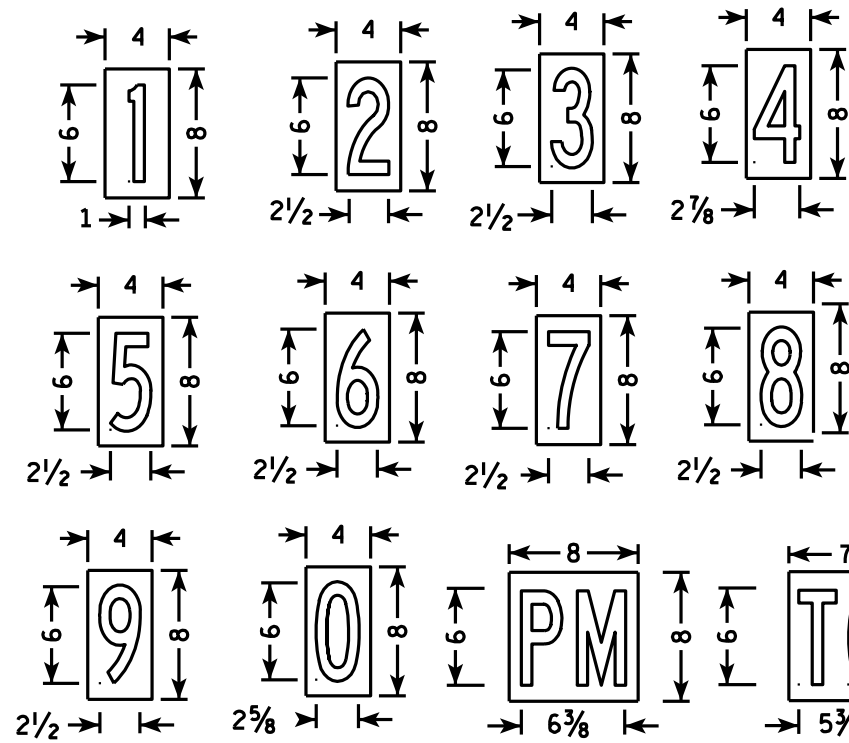
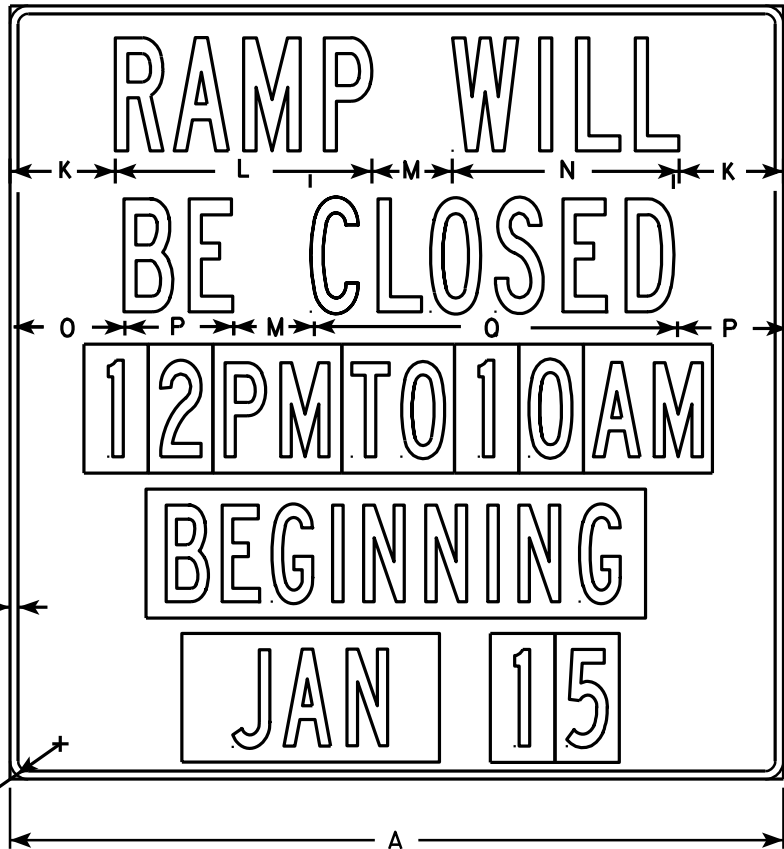
R11-2T



R11-2L

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

STANDARD SIGN R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/29/2021	PLATE NO. R11-2.11



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - White
Message - Black
- 3. Message Series - B
- 4. Message plaques consist of Type H Reflective sheeting with the appropriate non-reflective black message applied to .040 aluminum and screwed to the base 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																											
2S	48		2 1/4	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
2M	48		2 1/4	1/2		2	6	7	3		6 1/2	15 7/8	5	14 1/8	6 7/8	6 3/4	22 1/2										16.0
3																											
4																											
5																											

STANDARD SIGN
R11-51

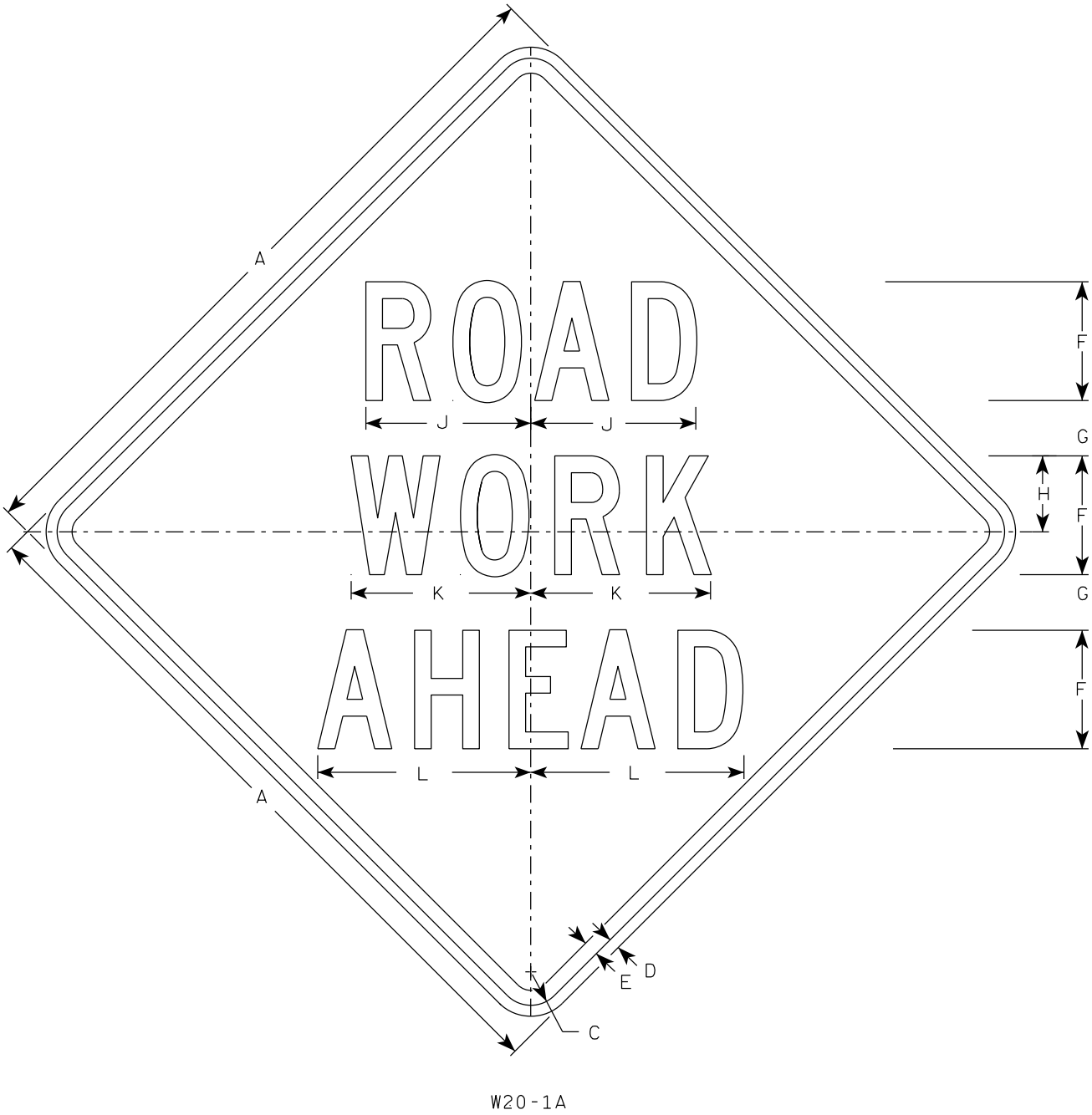
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

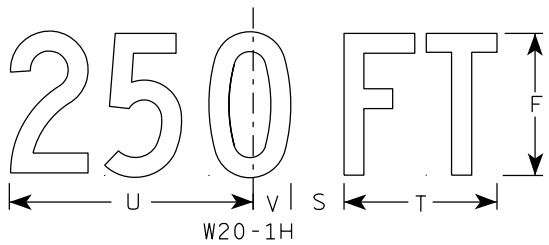
DATE 4/1/11 PLATE NO. R11-51.4

NOTES

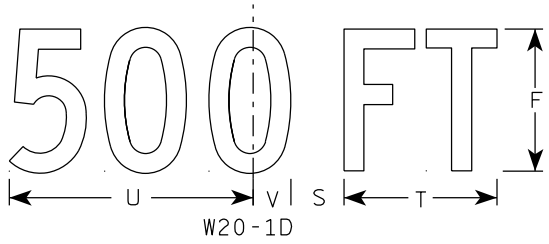
1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



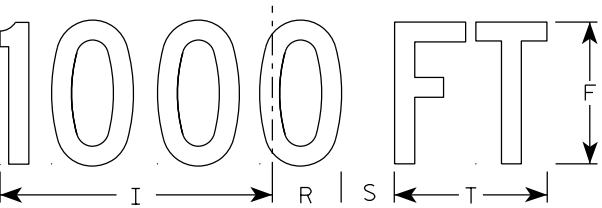
W20-1A



W20-1H



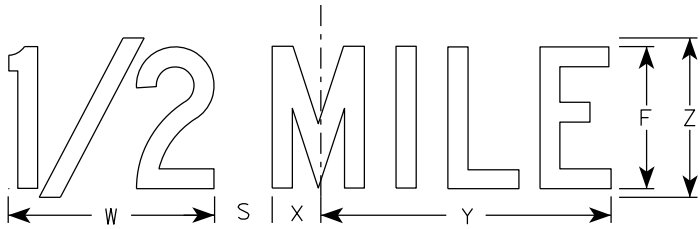
W20-1D



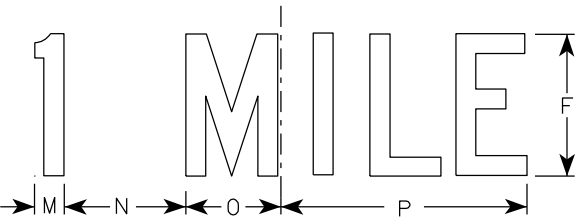
W20-1C



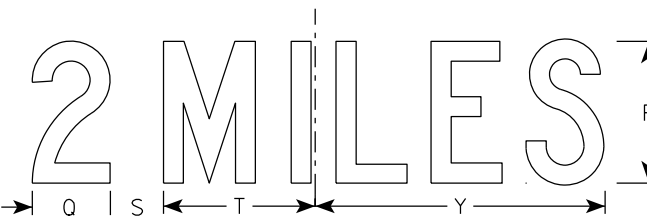
W20-1B



W20-1G



W20-1F



W20-1E

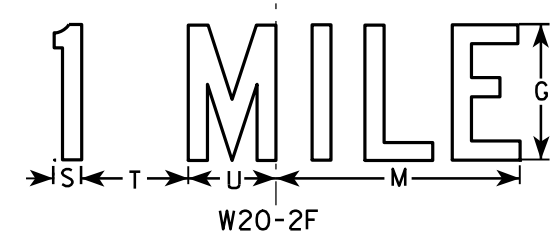
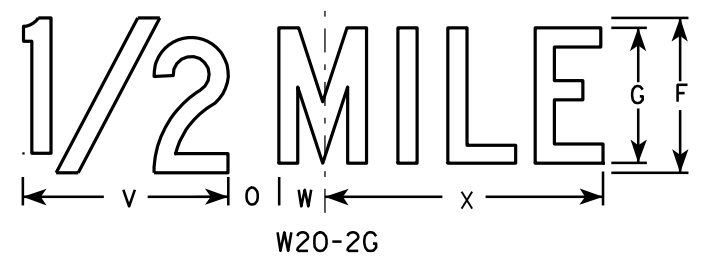
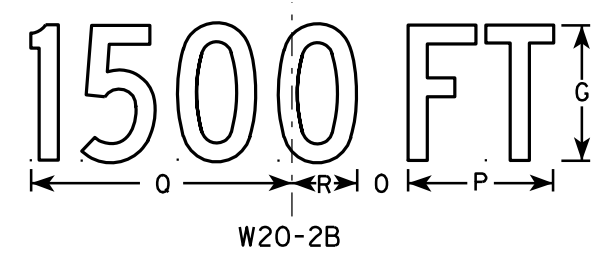
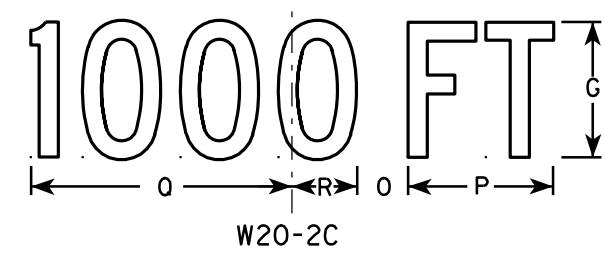
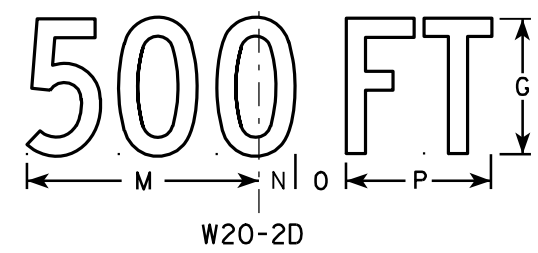
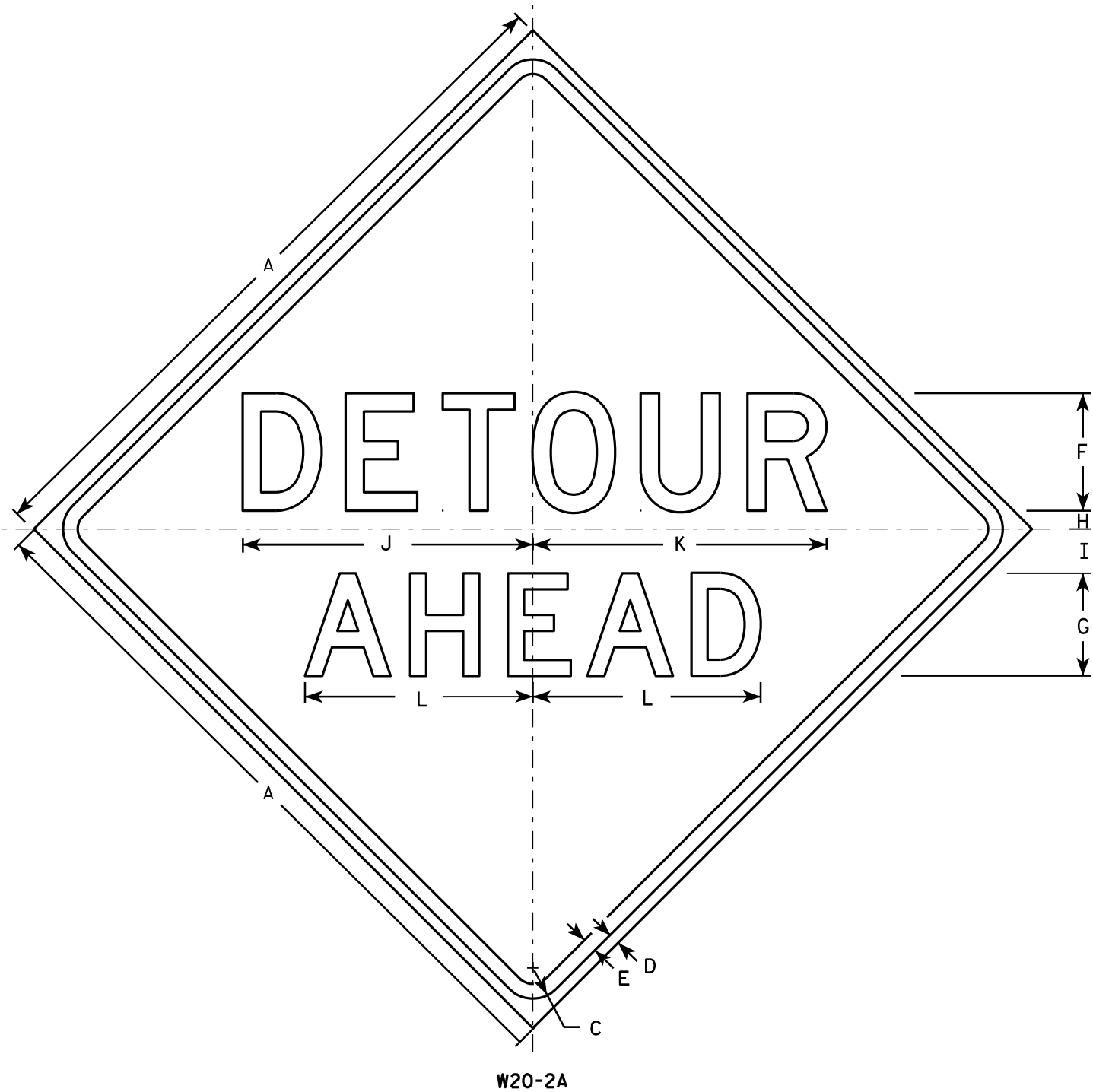
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A _{req} sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 250

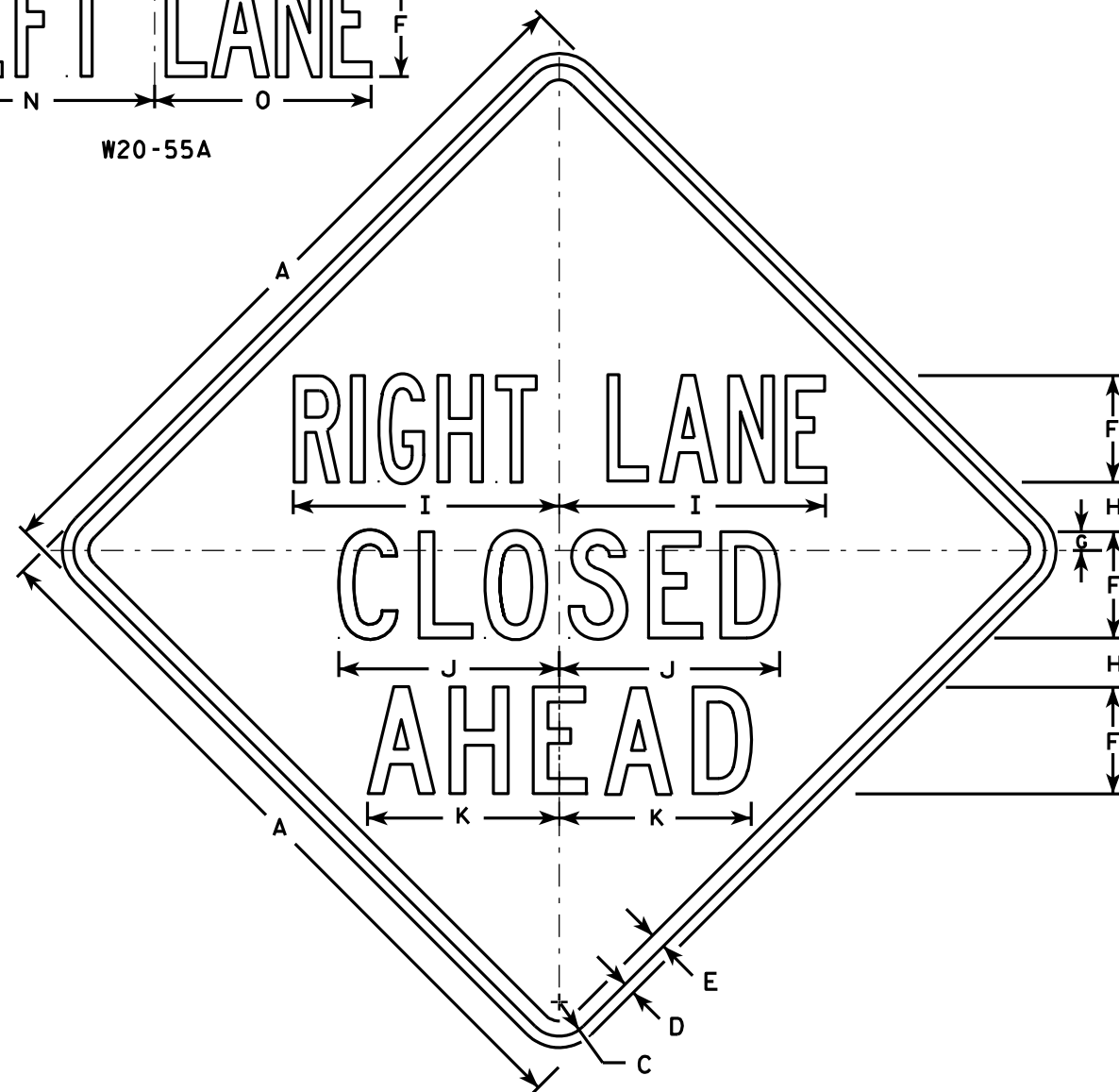
E

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

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. "-----LANE" is Series B.
All other copy is Series C.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	1 1/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

PROJECT NO:

HWY:

COUNTY:

STANDARD SIGN
W20-5A, B, C, D, F & G

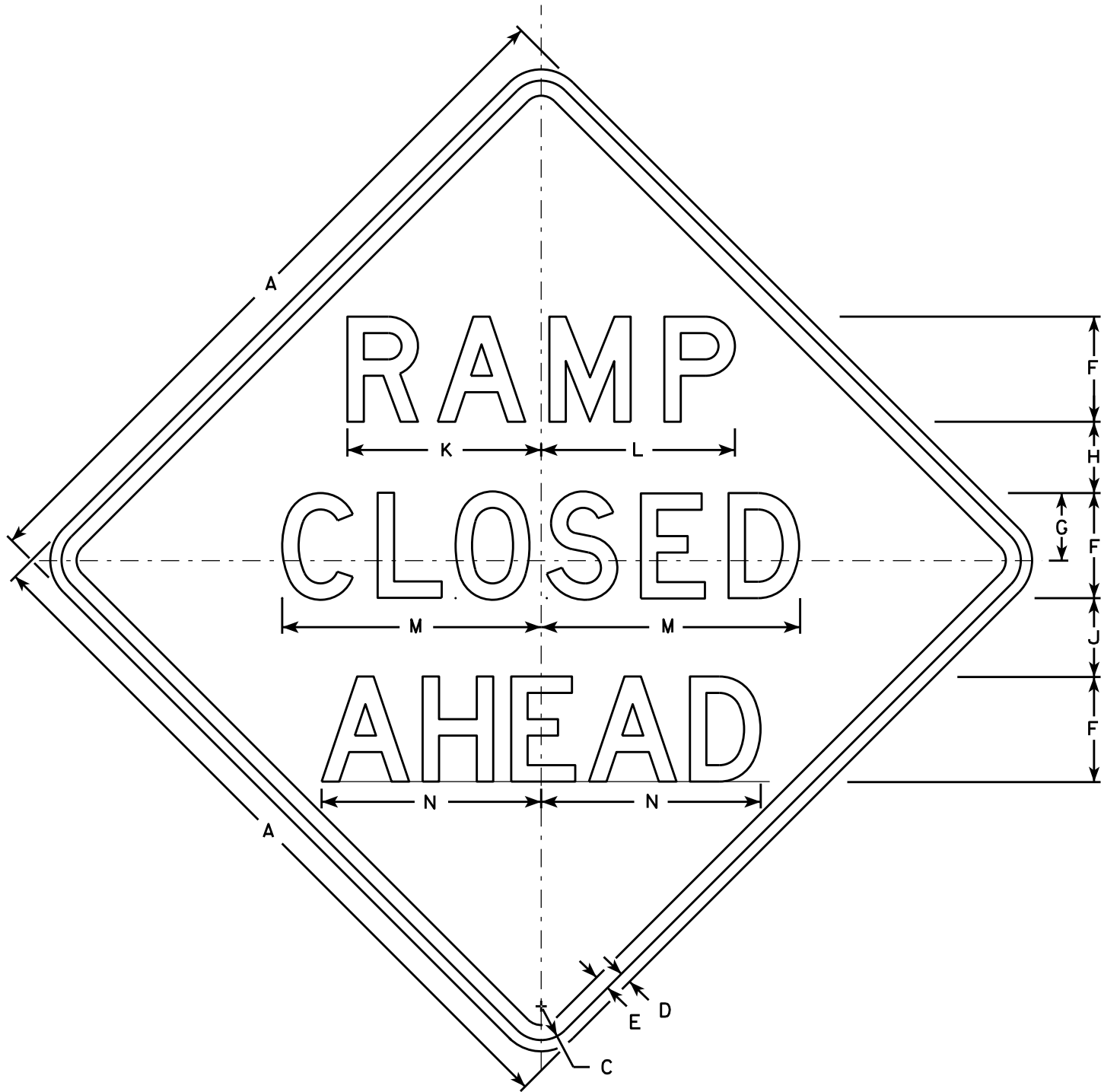
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

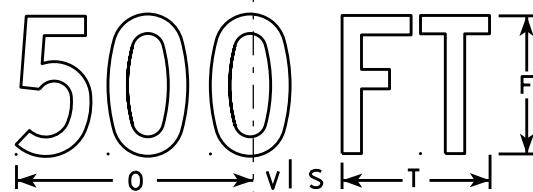
DATE 3/18/11 PLATE NO. W20-5.11

SHEET NO: 251

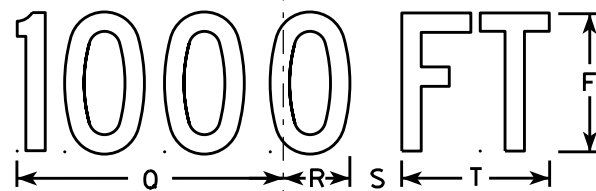
E



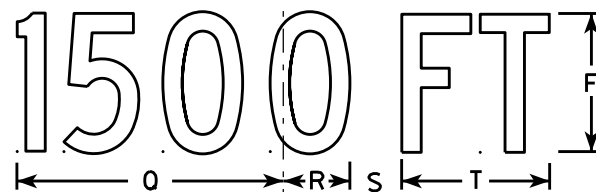
W20-53A



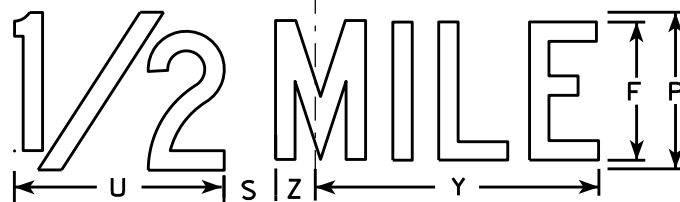
W20-53D



W20-53C



W20-53B



W20-53G



W20-53F

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	9 1/4	9 1/4	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	12 7/8	12 7/8	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	12 7/8	12 7/8	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	12 7/8	12 7/8	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	12 7/8	12 7/8	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	12 7/8	12 7/8	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
W20-53A,B,C,D,F,G

WISCONSIN DEPT OF TRANSPORTATION

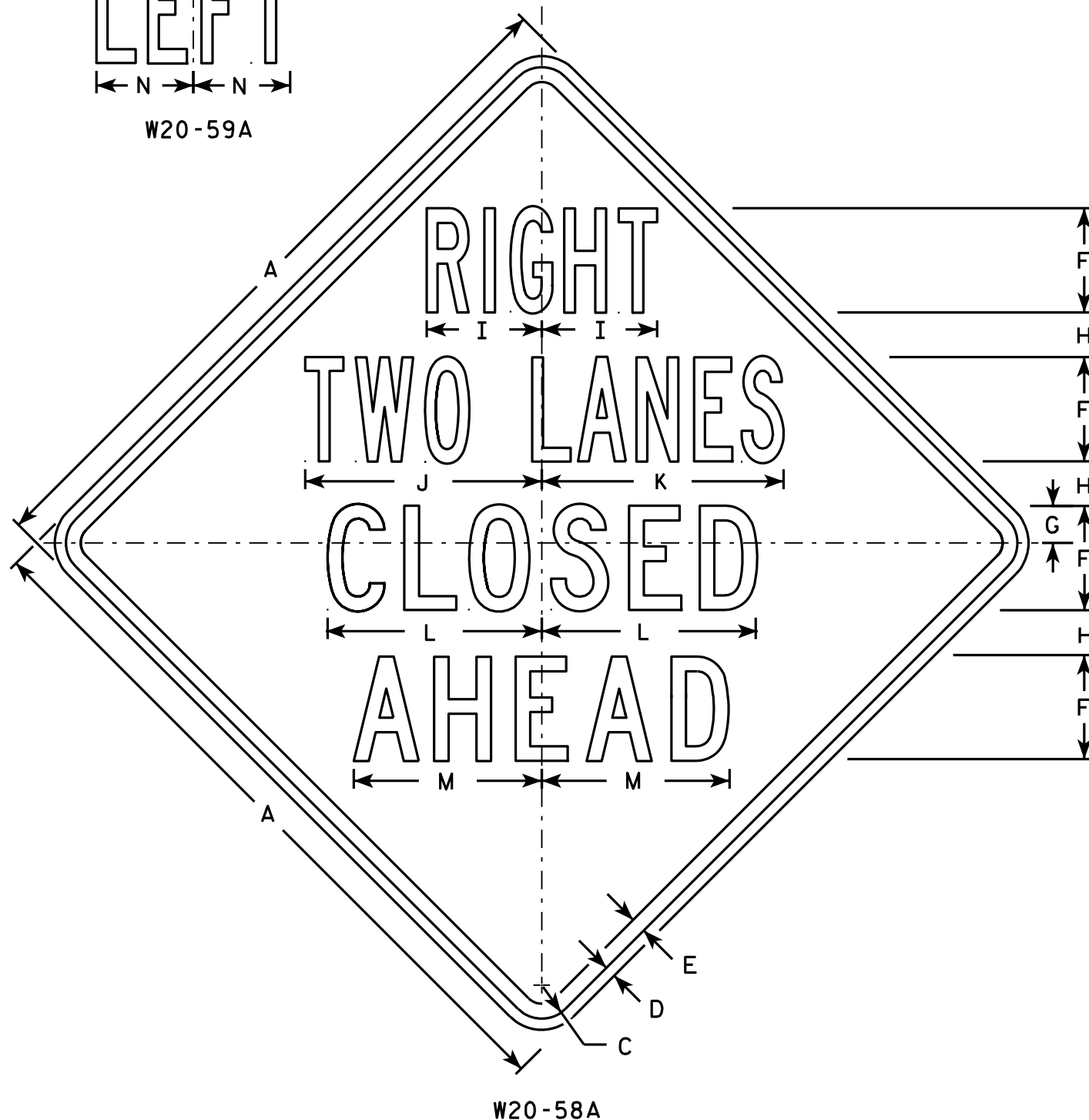
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/27/15 PLATE NO. W20-53.1

252

LEFT

W20-59A



W20-58A

500 FT

W20-58D

1000 FT

W20-58C

1500 FT

W20-58B

1/2 MILE

W20-58G

1 MILE

W20-58F

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 & 2 Series B.
Lines 3 & 4 Series C.

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

PROJECT NO:

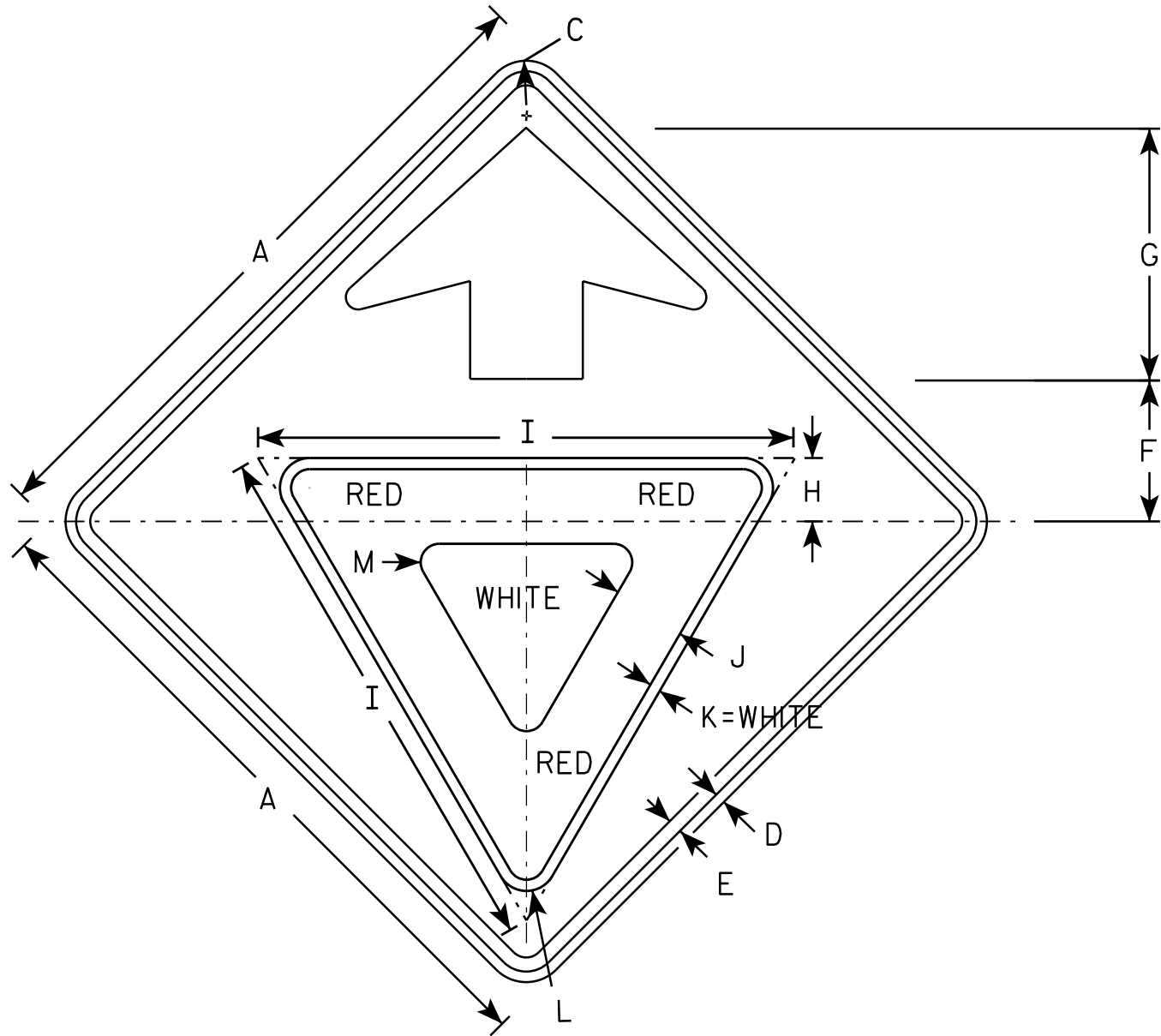
HWY:

COUNTY:

SHEET NO: 253

E

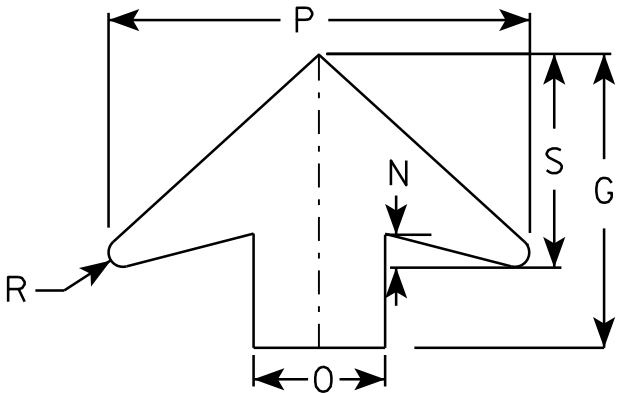
STANDARD SIGN	
W20-58A, B, C, D, F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/18/11	PLATE NO. W20-58.4



W03-2

NOTES

- 1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - ORANGE
 - Arrow & Border - BLACK
 - Yield Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
2S	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
2M	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
3	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0

PROJECT NO:

SHEET NO:

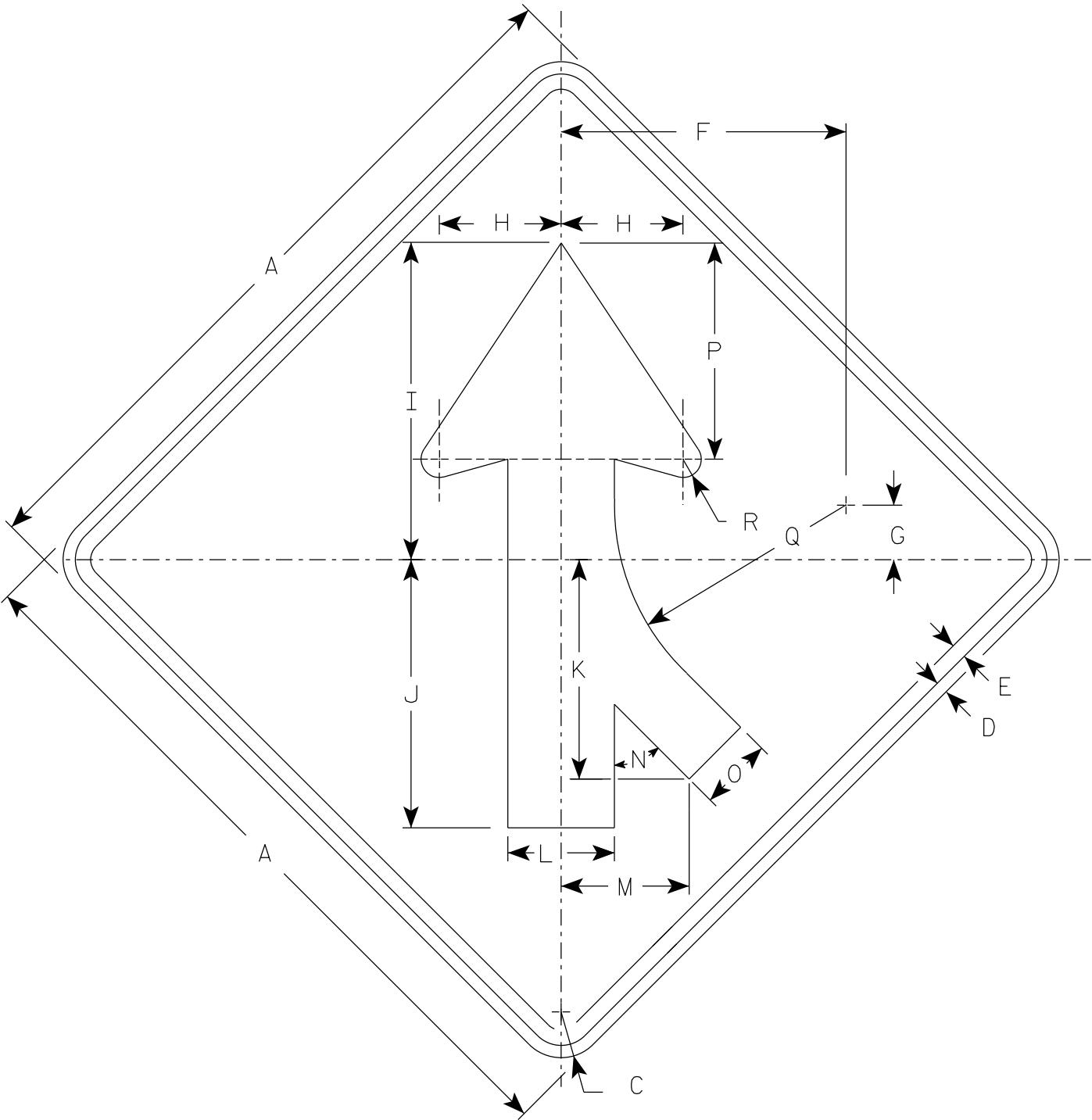
E

STANDARD SIGN
W03-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 254 W03-2.1



W04-1 R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. W04-1L is the same as W04-1R except the arrow is reversed along the vertical centerline.

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	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2S	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
2M	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
3	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

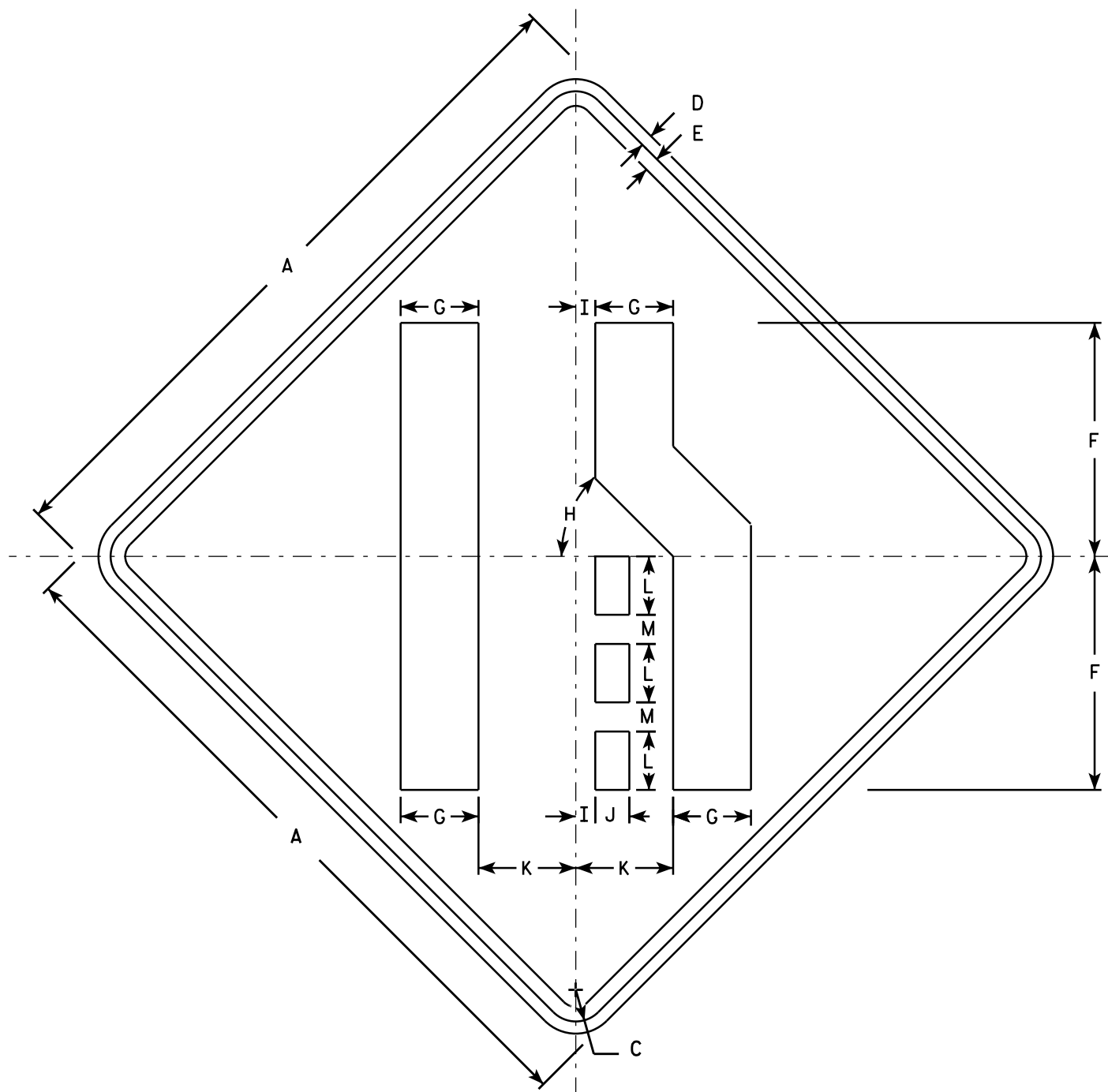
STANDARD SIGN

W04-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/31/2021 PLATE NO. W04-1.2



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbols are reversed along the vertical centerline.

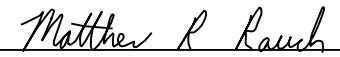
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

STANDARD SIGN

W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED



For State Traffic Engineer

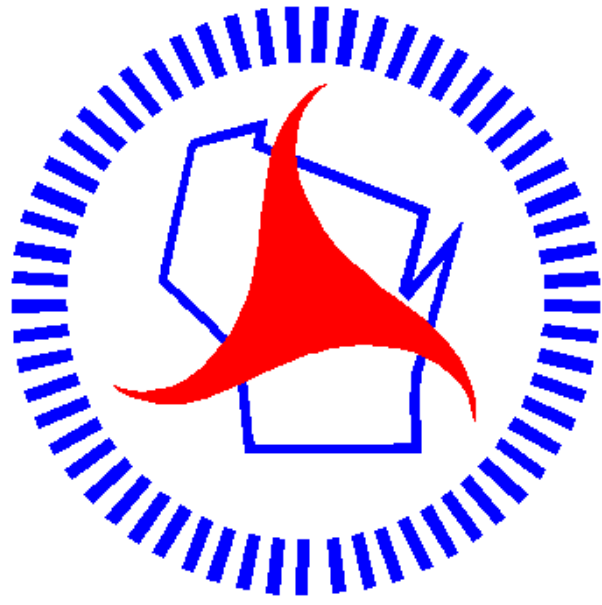
DATE 11/20/13

PLATE 256

W04-2.1

SHEET NO: E

Notes



Wisconsin Department of Transportation

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