

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 = 118

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

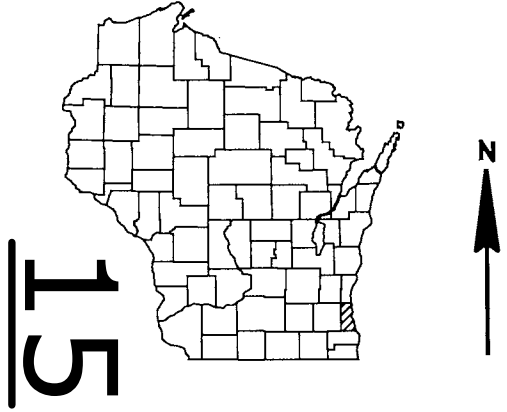
PLAN OF PROPOSED IMPROVEMENT

HIGHWAY LIGHTING 2023 SE REGION

VARIOUS HIGHWAYS, MILWAUKEE CO.
VARIOUS HIGHWAYS
MILWAUKEE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1000-13-76	WISC 2023585	1

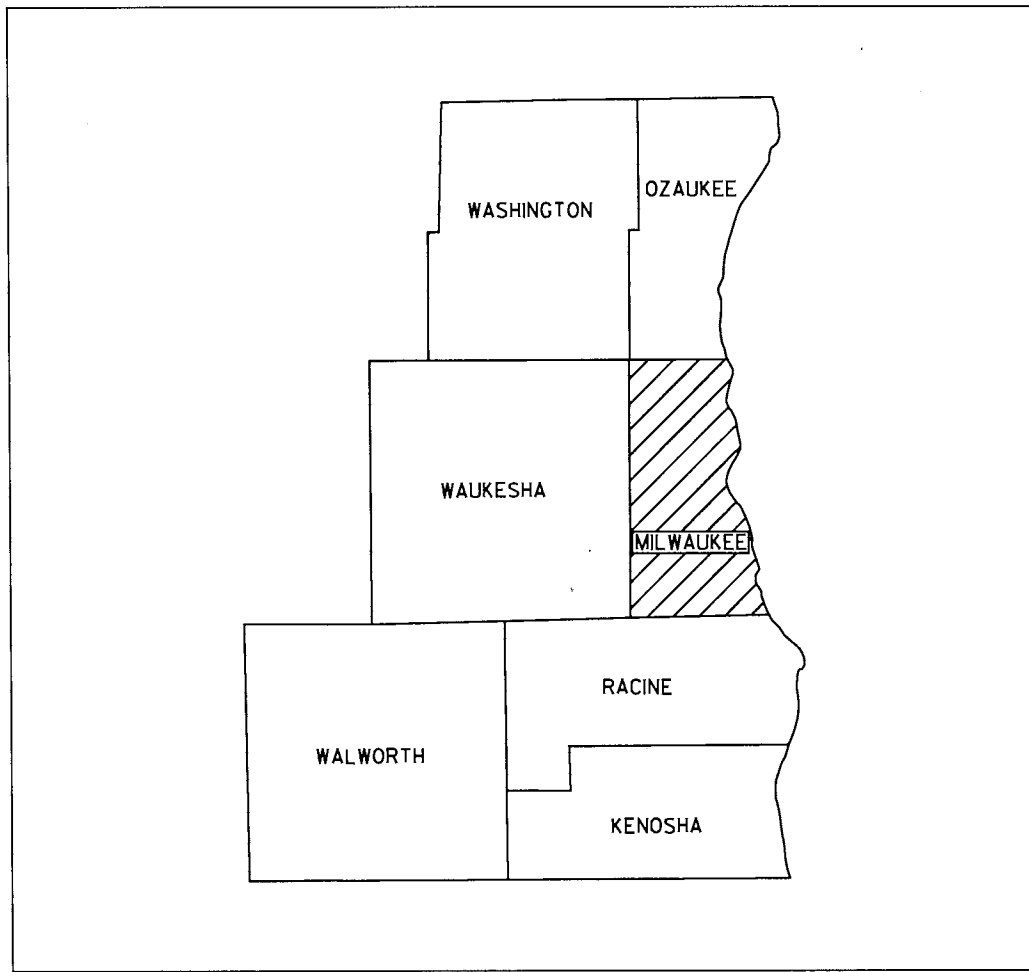
STATE PROJECT NUMBER
1000-13-76



DESIGN DESIGNATION

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

CONVENTIONAL SYMBOLS		PROFILE	
PLAN		GRADE LINE	
CORPORATE LIMITS		ORIGINAL GROUND	
PROPERTY LINE		MARSH OR ROCK PROFILE (To be noted as such)	
LOT LINE		SPECIAL DITCH	
LIMITED HIGHWAY EASEMENT		GRADE ELEVATION	
EXISTING RIGHT OF WAY		CULVERT (Profile View)	
PROPOSED OR NEW R/W LINE		UTILITIES	
SLOPE INTERCEPT		ELECTRIC	
REFERENCE LINE		OVERHEAD UTILITY	
EXISTING CULVERT		FIBER OPTIC	
PROPOSED CULVERT (Box or Pipe)		GAS	
COMBUSTIBLE FLUIDS		SANITARY SEWER	
MARSH AREA		STORM SEWER	
WOODED OR SHRUB AREA		TELEPHONE	
		WATER	
		UTILITY PEDESTAL	
		POWER POLE	
		TELEPHONE POLE	



LAYOUT
SCALE 0 _____ *

TOTAL NET LENGTH OF CENTERLINE = 0.8 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MILWAUKEE COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

8-1-2023

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	_____
Designer	WISDOT/SINGH
Project Manager	ERIC PEREA
Regional Examiner	_____
Regional Supervisor	HEATHER SACKMAN

APPROVED FOR THE DEPARTMENT

DATE: 8-1-2023

(Signature)

UTILITY CONTACTS

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE



CHRIS DAILEY
ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION
P.O BOX 47
WAUKESHA, WI 53187
(262) 506-6884
CDAILEY@ATCLLC.COM

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JOE.MACIEJEWSKI@MILWAUKEE.GOV

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MILWAUKEE, WI 53202
(414) 286-2467
ZYOUSU@MILWAUKEE.GOV

MWW CONTROL CENTER
CITY OF MILWAUKEE - WATER
841 N BROADWAY, ROOM 409
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JIWEN@MILWAUKEE.GOV

JEFF GARY
GENERAL MITCHELL INTERNATIONAL AIRPORT-ELECTRICITY
5300 SOUTH HOWELL AVENUE
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6070 NORTH FLINT ROAD
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WE ENERGIES - GAS/PETROLEUM
500 S 116TH STREET
WEST ALLIS, WI 53214
(920) 621-6903
DISPATCH (800) 261-5325
ALEXDANTINNE@WE-ENERGIES.COM

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CENTURYLINK COMMUNICATIONS, LLC - COMMUNICATION LINE
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BRAHIM.GADDOUR@LUMEN.COM

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NEAL KARWEIK
CITY OF MILWAUKEE - STREET LIGHTING
1540 W. CANAL ST.
MILWAUKEE, WI 53233
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NKARWE@MILWAUKEE.GOV

SHAD GARCIA
EVERSTREAM - COMMUNICATION LINE
324 E WISCONSIN AVE, SUITE 730
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SGARCIA@EVERSTREAM.NET

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LEVEL 3 COMMUNICATIONS LLC - COMMUNICATION LINE
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BROOKFIELD, WI 53045
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MICHAEL LEE
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260 W SEEBOTH ST
MILWAUKEE, WI 53151
(414) 617-1429
MLEE@MMSD.COM

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WE ENERGIES - ELECTRICITY
500 S 116TH STREET
WEST ALLIS, WI 53214
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ALEXDANTINNE@WE-ENERGIES.COM

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
MR. RYAN PAPPAS - ENVIRONMENTAL SPECIALIST
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RYAN.PAPPAS@WISCONSIN.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION
MR. AHMET DEMIRBILEK - STATE ELECTRICAL & LIGHTING SYSTEMS ENGINEER
BUREAU OF TRAFFIC OPERATIONS - TRAFFIC MANAGEMENT CENTER
433 W ST. PAUL AVENUE, SUITE 300,
MILWAUKEE, WI 53203
(414) 220-6801
AHMET.DEMIRBILEK@DOT.WI.GOV

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WISCONSIN DEPARTMENT OF TRANSPORTATION
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935 S. 60TH ST.
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WISCONSIN DEPARTMENT OF TRANSPORTATION
MS. DENISE ROSENTHAL - SE REGION UTILITY COORDINATOR
141 NW BARSTOW ST
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(262) 548-8733
DNISE.ROSENTHAL@DOT.WI.GOV

GENERAL NOTES

1. DETAILS OF CONSTRUCTION MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
2. ONLY TUNNEL LUMINAIRES ARE REPLACED UNDER THIS CONTRACT. SEE LIGHTING PLANS FOR WHICH ARE REPLACED.
3. NO POLES, BASES NOR ARMS ARE MODIFIED OR REPLACED UNDER THIS CONTRACT.
4. LIGHTS ON SIGN STRUCTURES ARE NOT REMOVED NOR REPLACED UNDER THIS CONTRACT.
5. CONTRACTOR SHALL SUPPLY AS-BUILT DRAWING FOR ALL THE WORK BEING DONE.
6. TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

STAGING NOTES

1. MAINTAIN LIGHTING AT ALL TIMES DURING CONSTRUCTION USING EXISTING LIGHTING, FINAL LIGHTING OR COMBINATIONS.
2. DUE TO THE PHASING OF CONSTRUCTION SOME FINAL LIGHTING UNITS MAY BE ORPHANED UNTIL A LATER STAGE IS COMPLETE. IT IS AT THE DISCRETION OF THE CONTRACTOR TO SCHEDULE THESE ITEMS. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF THE PLACEMENT OF RACEWAY THAT SPANS TWO DIFFERENT PHASES OF CONSTRUCTION.
3. A RAMP SHOULD HAVE A SINGLE TYPE OF LIGHTING TO THE EXTENT POSSIBLE.
4. COORDINATE THE CONVERSION TO LED WITH RAMP CLOSURES AND LANE CLOSURES WHERE POSSIBLE.

GENERAL NOTES FOR EROSION CONTROL











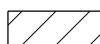
1. PLACE INLET PROTECTION ON INLETS ADJACENT TO STRUCTURES PRIOR TO PERFORMING WORK, OR AS DIRECTED BY THE ENGINEER. INLETS PROTECTION SHALL BE INCIDENTAL ITEMS INCLUDED IN THE COST OF THE TUNNEL CLEANING.

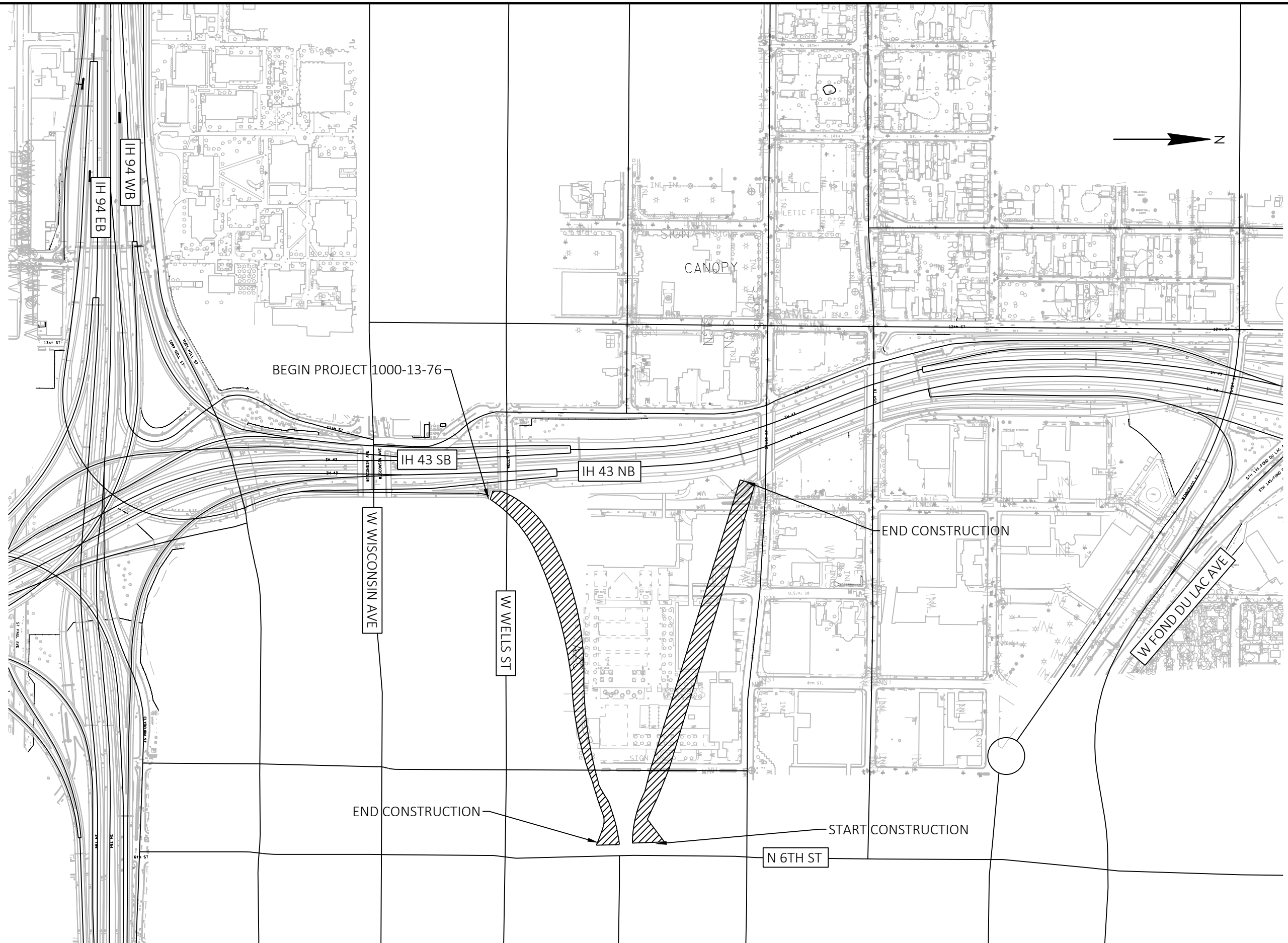
GENERAL NOTES FOR UTILITY

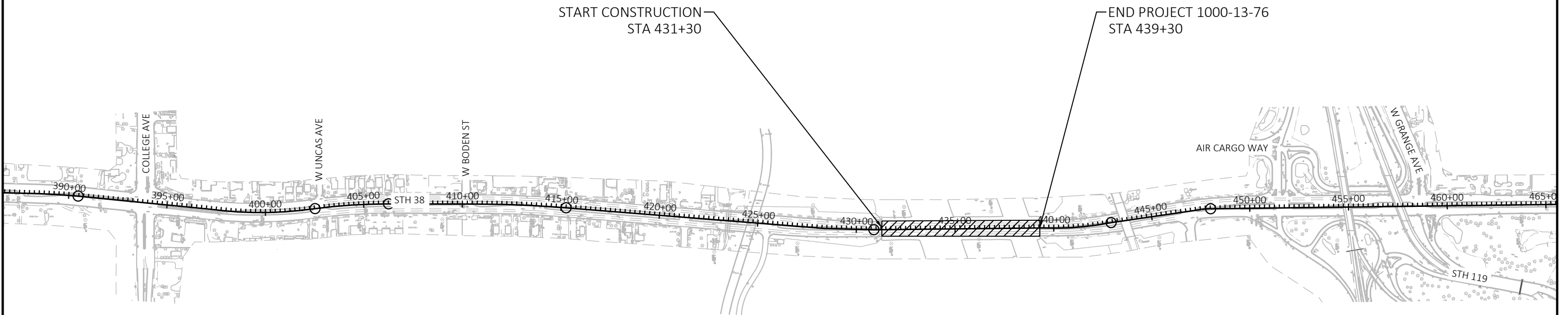
1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATION WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

GENERAL NOTES FOR TRAFFIC CONTROL

1. THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
2. A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER. FLAGGING IS NOT PERMITTED ON FREEWAY LANES.
3. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
4. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
5. FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C STEADY BURN WARNING LIGHT.
6. ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW DENSITY FLASHING) LIGHTS.
7. TRAFFIC CONTROL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.
8. 16" X 16" ORANGE FLAGS SHALL BE INCIDENTAL TO TRAFFIC CONTROL SIGN BID ITEM.
9. INSTALL PROPOSED TRAFFIC CONTROL SIGNS ON BOTH OUTSIDE SHOULDER AND MEDIAN SIDE OF ALL DIVIDED HIGHWAYS.
10. ALL TRAFFIC CONTROL SIGNS LOCATED IN MEDIANS SHALL BE MOUNTED ON CONCRETE BARRIER UNLESS OTHERWISE NOTED, SEE TRAFFIC CONTROL DETAILS.
11. COVER DETOUR SIGNS WHEN NOT IN USE, INCIDENTAL TO WORK ZONE TRAFFIC CONTROL SIGNING.

LEGEND	
	TYPE III BARRICADE
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	FLASHING ARROW BOARD
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	WORK AREA





PROJECT NO: 1000-13-76

HWY: STH 38

COUNTY: MILWAUKEE

PROJECT OVERVIEW

SHEET

E



2

2

HL-40-KI
(INSIDE MILWAUKEE COUNTY BUILDING)
EXISTING TO BE REPLACED

KILBOURN NB ENTRANCE RAMP

HL-40-QA
EXISTING TO REMAIN

KILBOURN NB EXIT RAMP

N 10TH ST

IH - 43

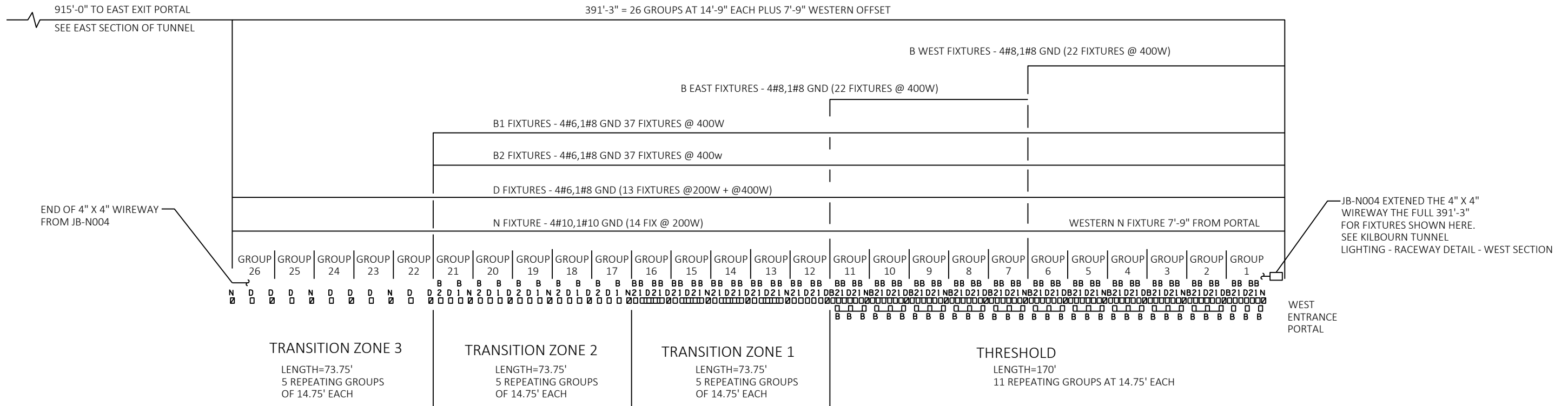
N 9TH ST

N JAMES LOVELL ST

N 6TH ST

E WELLS ST





LEGEND

- 200W HPS TUNNEL LUMINAIRE
SPACED 14.75' OC AND FIRST FIXTURE IN A GROUP.
GROUP 26 HAS TWO 200W FIXTURES
- 400W HPS TUNNEL LUMINAIRE
NUMBER IN GROUP VARIES.

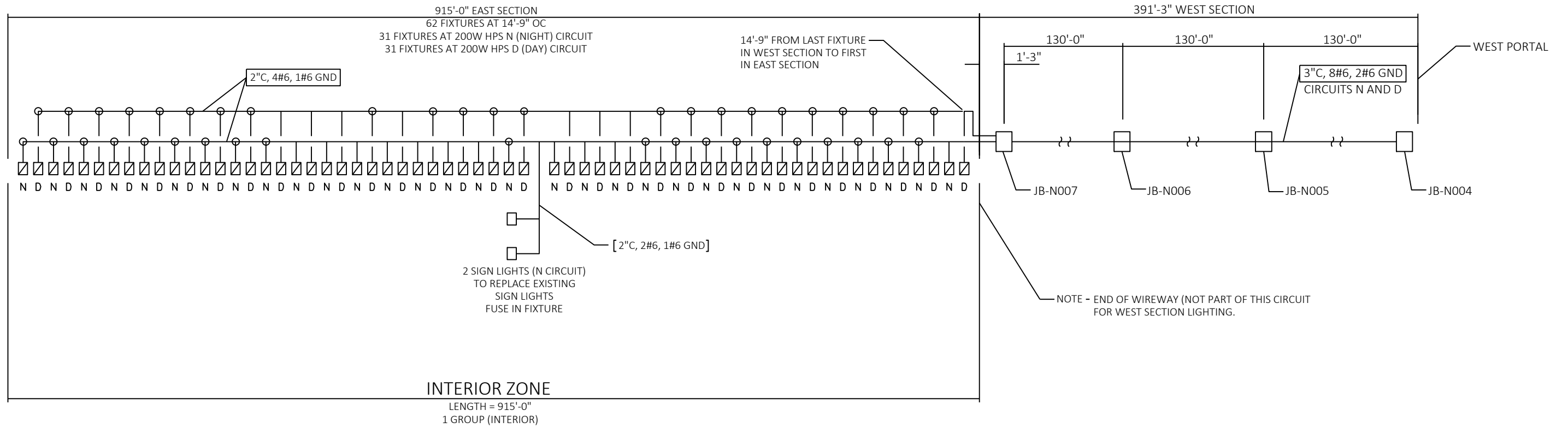
SEQUENCE OF OPERATION

N (NIGHT) FIXTURES DURING THE NIGHT AND DAY
 D (DAY) FIXTURES ALONG WITH N FIXTURES ON DURING DAY. ONLY D+N FIXTURES ON DURING THE DULLEST DAYS
 B2 FIXTURE ALONG WITH D+N FIXTURES ON DURING LESS DULL PERIODS.
 B1 FIXTURES ALONG WITH B2+D+N FIXTURES ON DURING BRIGHTER PERIODS
 B FIXTURES ALONG WITH B1+B2+D+N FIXTURES ON DURING THE BRIGHTEST PERIODS
 MANUFACTURER OF CONTROL SYSTEM TO SET SWITCH POINTS

SPACING

GROUPS 1 THROUGH 11: LOWER LEVEL B FIXTURES SATRT 1'-0" FROM 1ST 200W FIXTURE IN GROUP AND 5.0' OC; FIXTURES IN UPPER ROW ARE 2.11' OC.
 GROUPS 12 THROUGH 16: FIXTURES SPACED 2.46' OC.
 GROUPS 17 THROUGH 21: FIXTURES SPACED 3.69' OC.
 GROUPS 22 THROUGH 26: FIXTURES SPACED 7.38' OC

KILBOURN EXIT RAMP TUNNEL LIGHTING REMOVAL WEST SECTION



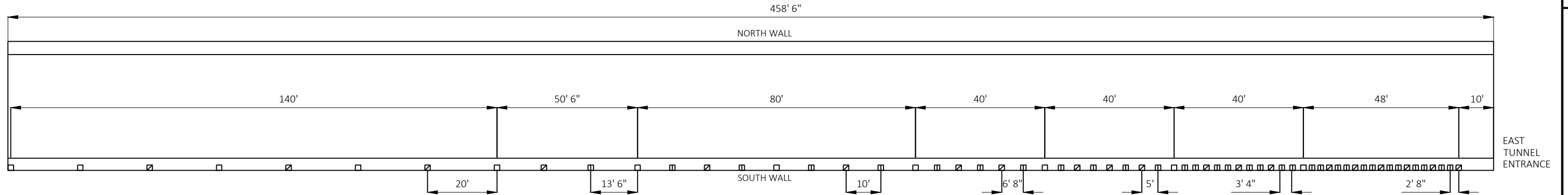
LEGEND

▣ 200W HPS TUNNEL LUMINAIRE

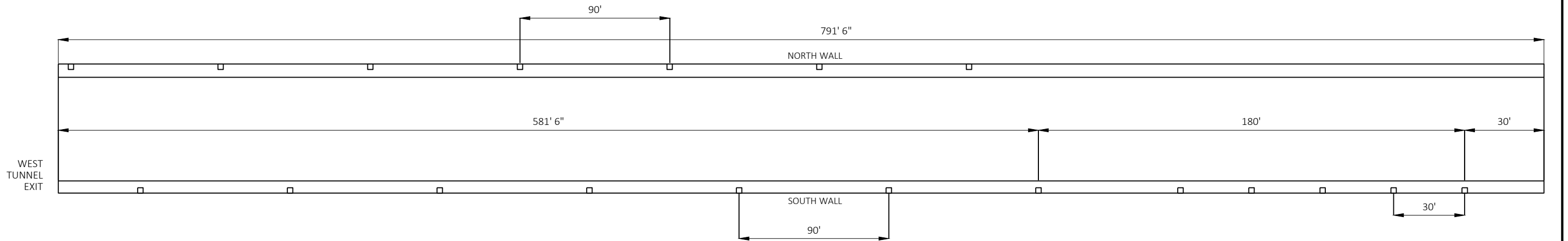
SPACING

14'-9" OC WITH ALTERNATING NIGHT AND DAY CIRCUITS

KILBOURN EXIT RAMP TUNNEL LIGHTING REMOVAL
EAST SECTION



KILBOURN ENTRANCE RAMP TUNNEL LIGHTING REMOVAL
EAST SECTION



KILBOURN ENTRANCE RAMP TUNNEL LIGHTING REMOVAL
WEST SECTION

LEGEND

- 150W HPS TUNNEL LUMINAIRE
- ▣ 250W HPS TUNNEL LUMINAIRE
- ▤ 400W HPS TUNNEL LUMINAIRE



IH - 43

N 10TH ST

KILBOURN NB EXIT RAMP

E WELLS ST

2" C, 8#6, 2#6 GND, +3#10 PHOTOCELL
3" C, EMPTY
3" C, 12#6, 8#8, 4#10, 5#8 GND, 1#10 GND
2" C EMPTY
SEE NOTE 1

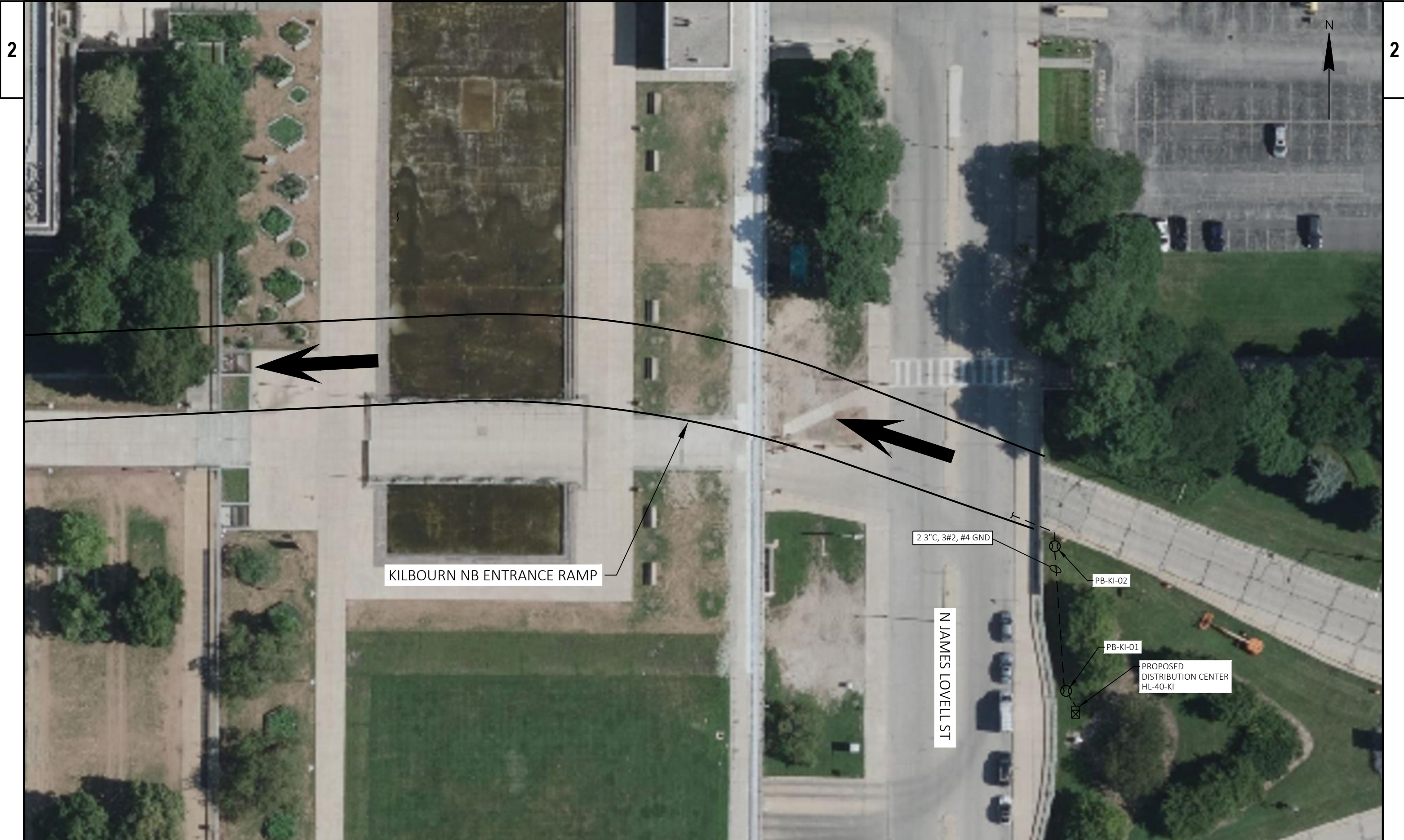
PB-N001

HL-40-QA
EXISTING TO REMAIN

3" C, 8#6 + 2#6 GND
3" C, 12#6, 8#8, 4#10, 5#8 GND, 1#10 GND
2" C EMPTY
SEE NOTE 1

PB-N046
DIRECTLY ABOVE
JBN004

NOTE 1: WIRE TO BE REPLACED, USE EXISTING CONDUIT



2

2



KILBOURN NB ENTRANCE RAMP

2 3/4" C, 3#2, #4 GND

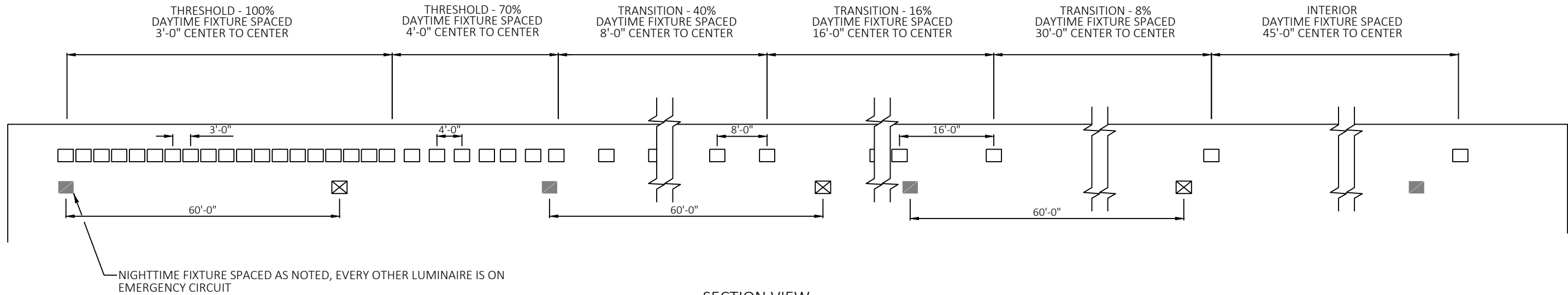
PB-KI-02

PB-KI-01

PROPOSED DISTRIBUTION CENTER HL-40-KI

N JAMES LOVELL ST

PROJECT NO: 1000-13-76	HWY: IH 43	COUNTY: MILWAUKEE	LIGHTING DETAIL - DISTRIBUTION CENTER KI	SHEET	E
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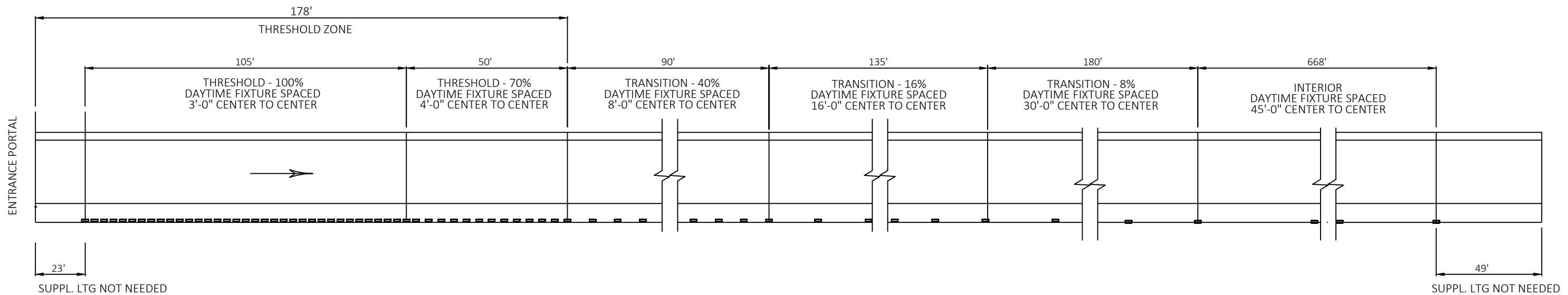
SECTION VIEW

KILBOURN EB TUNNEL DETAILS:
 STRUCTURE:
 NORTH-EAST RAMP OFF I-43
 TUNNEL STARTS AT STA. XX AND ENDS AT STA. XX
 ONE 18' LANE
 LEFT SHOULDER 2'-6" , RIGHT SHOULDER 6'
 HEIGHT VARIES, MIN. CLEARANCE IS 14'-8"
 LENGTH OF TUNNEL IS 1300'
 AVERAGE ANNUAL DAILY TRAFFIC (AADT) IS 4600
 POSTED SPEED LIMIT IS 30MPH
 DIRECTION OF TRAFFIC AT TUNNEL PORTAL IS NORTH

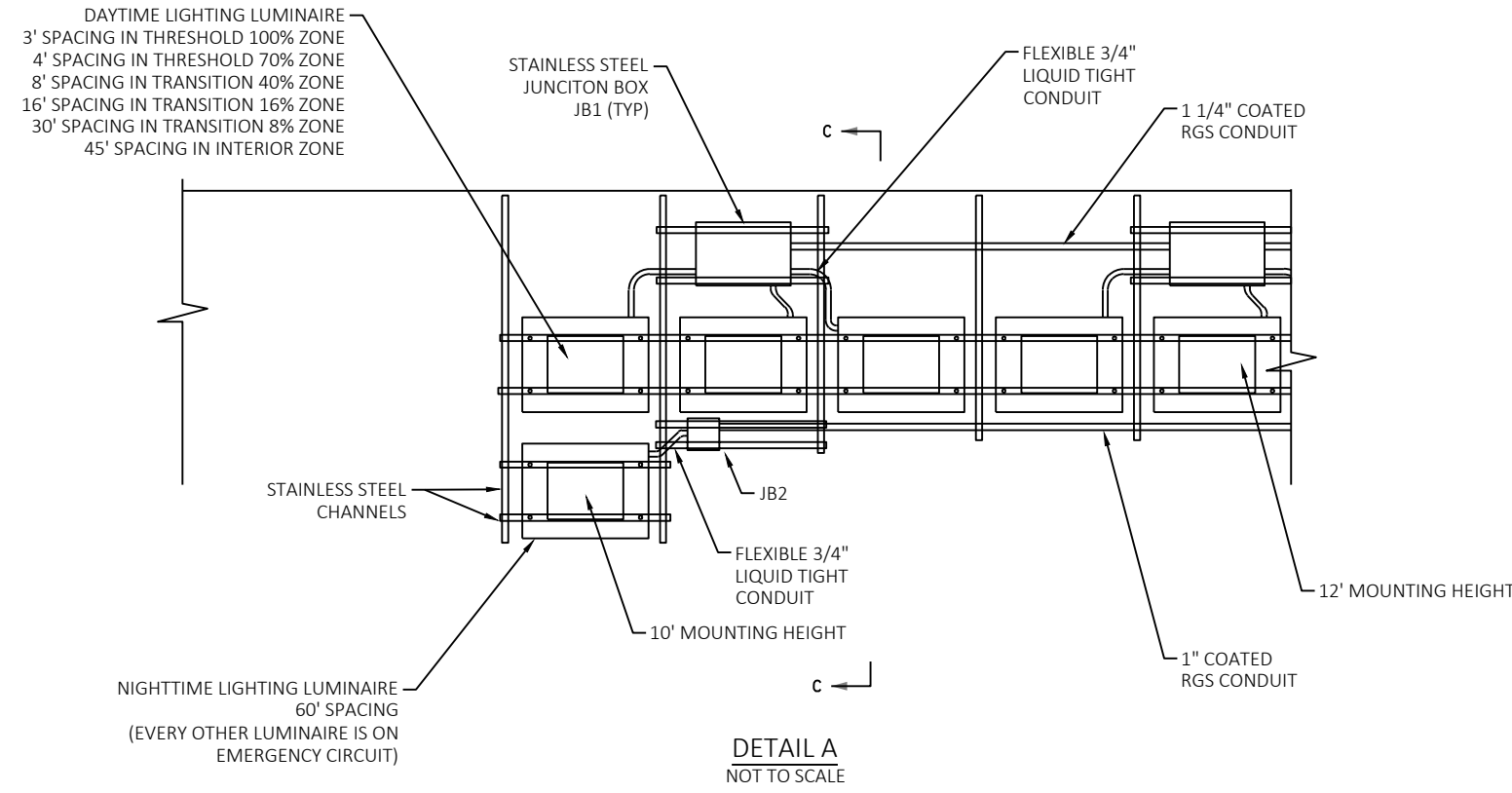
LUMINAIRE SUMMARY:
 100% THRESHOLD ZONE - 3.0' SPACING (36 LUMS)
 70% THRESHOLD ZONE - 4.0' SPACING (12 LUMS)
 40% TRANSITION ZONE - 8.0' SPACING (12 LUMS)
 16% TRANSITION ZONE - 16.0' SPACING (8 LUMS)
 8% TRANSITION ZONE - 30.0' SPACING (7 LUMS)
 INTERIOR ZONE - 45.0' SPACING (15 LUMS)
 NIGHTTIME/EMERGENCY - 60.0' SPACING (22 LUMS)

LEGEND

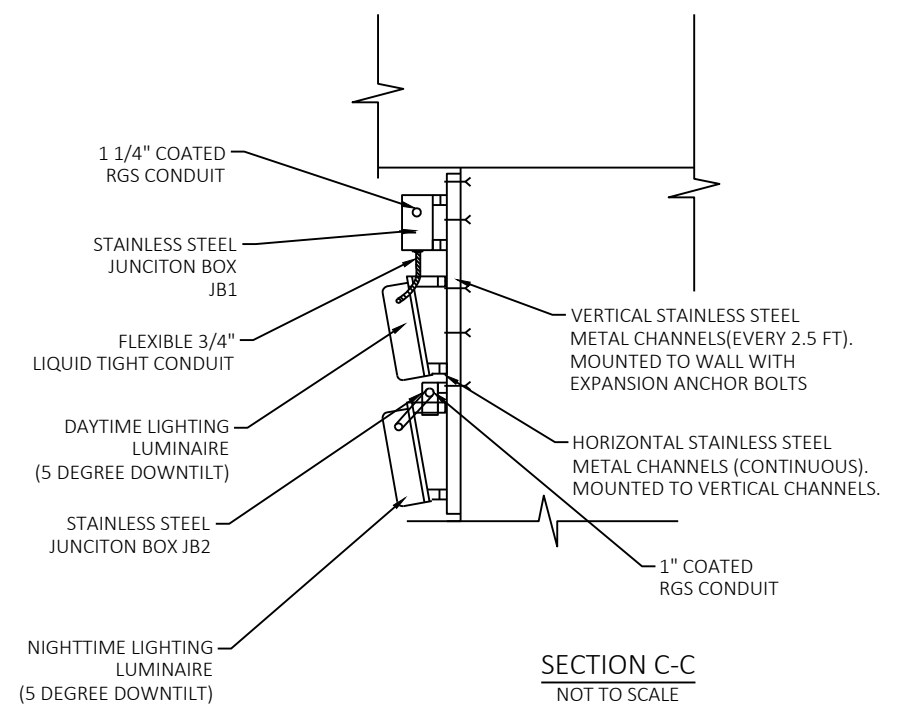
- DAYTIME FIXTURE, LED, 435W, WALL MOUNTED, 12' MOUNTING HEIGHT, 5° TILT, ONE ROW, TOTAL 90 FIXTURES
- NIGHTTIME FIXTURE, LED, 125W, WALL MOUNTED, 10' MOUNTING HEIGHT, 5° TILT, TOTAL 11 FIXTURES
- ⊗ EMERGENCY/NIGHTTIME FIXTURE, LED 10' MOUNTING HEIGHT, 5° TILT, TOTAL 11 FIXTURES



KILBOURN EXIT RAMP TUNNEL LIGHTING LAYOUT (NTS)



DETAIL A
NOT TO SCALE



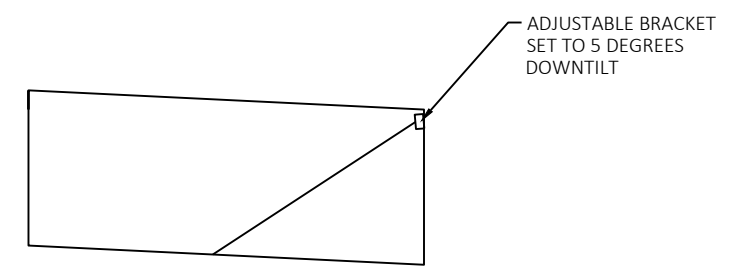
SECTION C-C
NOT TO SCALE

JUNCTION BOX SCHEDULE

JB1	18" X 12" X 6"
JB2	6" X 6" X 4"

NOTES:

- LUMINAIRE MOUNTING SYSTEM AND STAINLESS STEEL CHANNEL ARRANGEMENT MAY BE REVISED AS APPROVED BY THE ENGINEER



MOUNTING ANGLE SCHEMATICS
NOT TO SCALE

KILBOURN EXIT
RAMP

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 100% ZONE (3' SPACING)			
1	RIGHT TOP	1	23.00
2	RIGHT TOP	2	26.00
3	RIGHT TOP	3	29.00
4	RIGHT TOP	1	32.00
5	RIGHT TOP	2	35.00
6	RIGHT TOP	3	38.00
7	RIGHT TOP	1	41.00
8	RIGHT TOP	2	44.00
9	RIGHT TOP	3	47.00
10	RIGHT TOP	1	50.00
11	RIGHT TOP	2	53.00
12	RIGHT TOP	3	56.00
13	RIGHT TOP	1	59.00
14	RIGHT TOP	2	62.00
15	RIGHT TOP	3	65.00
16	RIGHT TOP	1	68.00
17	RIGHT TOP	2	71.00
18	RIGHT TOP	3	74.00
19	RIGHT TOP	1	77.00
20	RIGHT TOP	2	80.00
21	RIGHT TOP	3	83.00
22	RIGHT TOP	1	86.00
23	RIGHT TOP	2	89.00
24	RIGHT TOP	3	92.00
25	RIGHT TOP	1	95.00
26	RIGHT TOP	2	98.00
27	RIGHT TOP	3	101.00
28	RIGHT TOP	1	104.00
29	RIGHT TOP	2	107.00
30	RIGHT TOP	3	110.00
31	RIGHT TOP	1	113.00
32	RIGHT TOP	2	116.00
33	RIGHT TOP	3	119.00
34	RIGHT TOP	1	122.00
35	RIGHT TOP	2	125.00
36	RIGHT TOP	3	128.00
THRESHOLD 70% ZONE (4' SPACING)			
37	RIGHT TOP	1	132.00
38	RIGHT TOP	2	136.00
39	RIGHT TOP	3	140.00
40	RIGHT TOP	1	144.00
41	RIGHT TOP	2	148.00
42	RIGHT TOP	3	152.00
43	RIGHT TOP	1	156.00
44	RIGHT TOP	2	160.00
45	RIGHT TOP	3	164.00
46	RIGHT TOP	1	168.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
47	RIGHT TOP	2	172.00
48	RIGHT TOP	3	176.00
TRANSITION 40% ZONE (8' SPACING)			
49	RIGHT TOP	4	184.00
50	RIGHT TOP	5	192.00
51	RIGHT TOP	6	200.00
52	RIGHT TOP	4	208.00
53	RIGHT TOP	5	216.00
54	RIGHT TOP	6	224.00
55	RIGHT TOP	4	232.00
56	RIGHT TOP	5	240.00
57	RIGHT TOP	6	248.00
58	RIGHT TOP	4	256.00
59	RIGHT TOP	5	264.00
60	RIGHT TOP	6	272.00
TRANSITION 16% ZONE (16' SPACING)			
61	RIGHT TOP	4	288.00
62	RIGHT TOP	5	304.00
63	RIGHT TOP	6	320.00
64	RIGHT TOP	4	336.00
65	RIGHT TOP	5	352.00
66	RIGHT TOP	6	368.00
67	RIGHT TOP	4	384.00
68	RIGHT TOP	5	400.00
TRANSITION 8% ZONE (16' SPACING)			
69	RIGHT TOP	6	430.00
70	RIGHT TOP	4	460.00
71	RIGHT TOP	5	490.00
72	RIGHT TOP	6	520.00
73	RIGHT TOP	4	550.00
74	RIGHT TOP	5	580.00
75	RIGHT TOP	6	610.00
INTERIOR ZONE (45' SPACING)			
76	RIGHT TOP	7	655.00
77	RIGHT TOP	7	700.00
78	RIGHT TOP	7	745.00
79	RIGHT TOP	7	790.00
80	RIGHT TOP	7	835.00
81	RIGHT TOP	7	880.00
82	RIGHT TOP	7	925.00
83	RIGHT TOP	7	970.00
84	RIGHT TOP	7	1015.00
85	RIGHT TOP	7	1060.00
86	RIGHT TOP	7	1105.00
87	RIGHT TOP	7	1150.00
88	RIGHT TOP	7	1195.00
89	RIGHT TOP	7	1240.00
90	RIGHT TOP	7	1285.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
NIGHTTIME AND EMERGENCY (60' SPACING)			
91	RIGHT BOTTOM	NT1	30.00
92	RIGHT BOTTOM	EM1	90.00
93	RIGHT BOTTOM	NT1	150.00
94	RIGHT BOTTOM	EM1	210.00
95	RIGHT BOTTOM	NT1	270.00
96	RIGHT BOTTOM	EM1	330.00
97	RIGHT BOTTOM	NT1	390.00
98	RIGHT BOTTOM	EM1	450.00
99	RIGHT BOTTOM	NT1	510.00
100	RIGHT BOTTOM	EM1	570.00
101	RIGHT BOTTOM	NT1	630.00
102	RIGHT BOTTOM	EM1	690.00
103	RIGHT BOTTOM	NT1	750.00
104	RIGHT BOTTOM	EM1	810.00
105	RIGHT BOTTOM	NT1	870.00
106	RIGHT BOTTOM	EM1	930.00
107	RIGHT BOTTOM	NT1	990.00
108	RIGHT BOTTOM	EM1	1050.00
109	RIGHT BOTTOM	NT1	1110.00
110	RIGHT BOTTOM	EM1	1170.00
111	RIGHT BOTTOM	NT1	1230.00
112	RIGHT BOTTOM	EM1	1290.00

KILBOURN EXIT RAMP

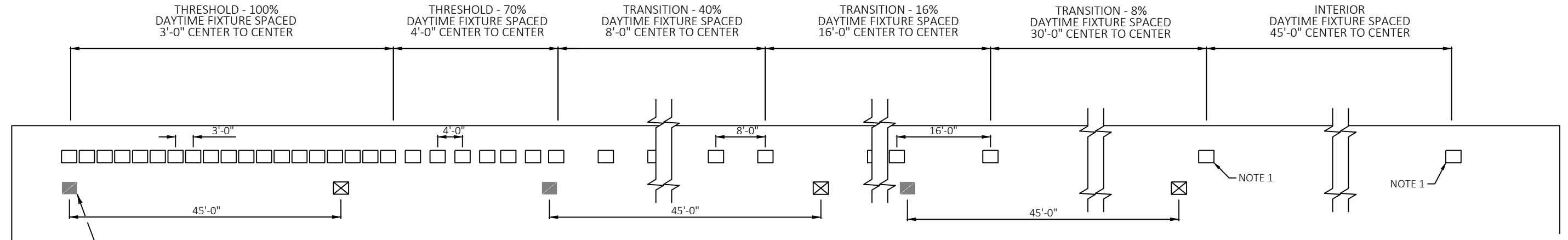
LEFT WALL		RIGHT WALL	
CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT	CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT
--	--	1	16
--	--	2	16
--	--	3	16
--	--	4	9
--	--	5	9
--	--	6	9
--	--	7	15
--	--	NIGHTTIME (NT1)	11
--	--	EMERGENCY (EM1)	11

LIGHT METER CONDITION		ILLUMINATION	
SKY CONDITIONS	LIGHT LEVEL (1X)	CIRCUITS ON	NUMBER OF FIXTURES ENERGIZED
BRIGHT/SUNNY	> 10,000	1 THRU 7, EM1	101
CLEAR, PARTLY CLOUDY	100 - 10,000	1,2,4,5,7,EM1	76
MOSTLY CLOUDY, OVERCAST, DAWN/DUSK	1-100	1,4,7,EM1	51
NIGHT	<1	NT1,EM1	22
EMERGENCY	ALWAYS ON	EM1	11

KILBOURN EXIT RAMP TUNNEL
LUMINAIRE SCHEDULE

NOTES:

1. CONTRACTOR TO COORDINATE WITH TUNNEL LIGHTING CONTROLLER VENDOR ON LIGHT LEVELS TO BE USED TO CONTROL SEVEN DAYTIME AND TWO NIGHTTIME CIRCUITS. ALTERNATIVE LIGHTING SOLUTION MAY BE SUBMITTED TO ENGINEER FOR REVIEW.
2. DAYTIME LUMINAIRES ARE ALL 277V, LED, 435W, FIXTURES. NIGHTTIME AND EMERGENCY LUMINAIRES ARE ALL 277V, LED, 125W, FIXTURES.



NIGHTTIME FIXTURE SPACED AS NOTED, EVERY OTHER LUMINAIRE IS ON EMERGENCY CIRCUIT

SECTION VIEW

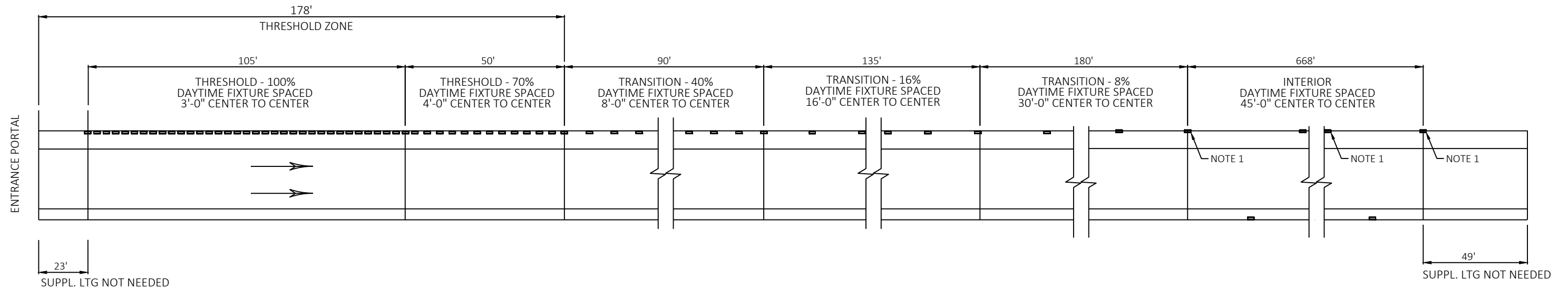
KILBOURN EB TUNNEL DETAILS:
 STRUCTURE:
 NORTH-WEST RAMP OFF I-43 NB
 TUNNEL STARTS AT STA. XX AND ENDS AT STA. XX
 TWO 14' LANES
 LEFT SHOULDER 4', RIGHT SHOULDER 3'
 HEIGHT VARIES, MIN. CLEARANCE IS 14'-8"
 LENGTH OF TUNNEL IS 1250'
 AVERAGE ANNUAL DAILY TRAFFIC (AADT) IS 3100
 POSTED SPEED LIMIT IS 30MPH
 DIRECTION OF TRAFFIC AT TUNNEL PORTAL IS WEST

LUMINAIRE SUMMARY:
 100% THRESHOLD ZONE - 3.0' SPACING (36 LUMS)
 70% THRESHOLD ZONE - 4.0' SPACING (12 LUMS)
 40% TRANSITION ZONE - 8.0' SPACING (12 LUMS)
 16% TRANSITION ZONE - 16.0' SPACING (8 LUMS)
 8% TRANSITION ZONE - 30.0' SPACING (7 LUMS)
 INTERIOR ZONE - 45.0' SPACING (OPPOSITE-STAGGERED)
 (28 LUMS - 125W LUMINAIRES)
 NIGHTTIME/EMERGENCY - 45.0' SPACING (28 LUMS) - NOTE 1

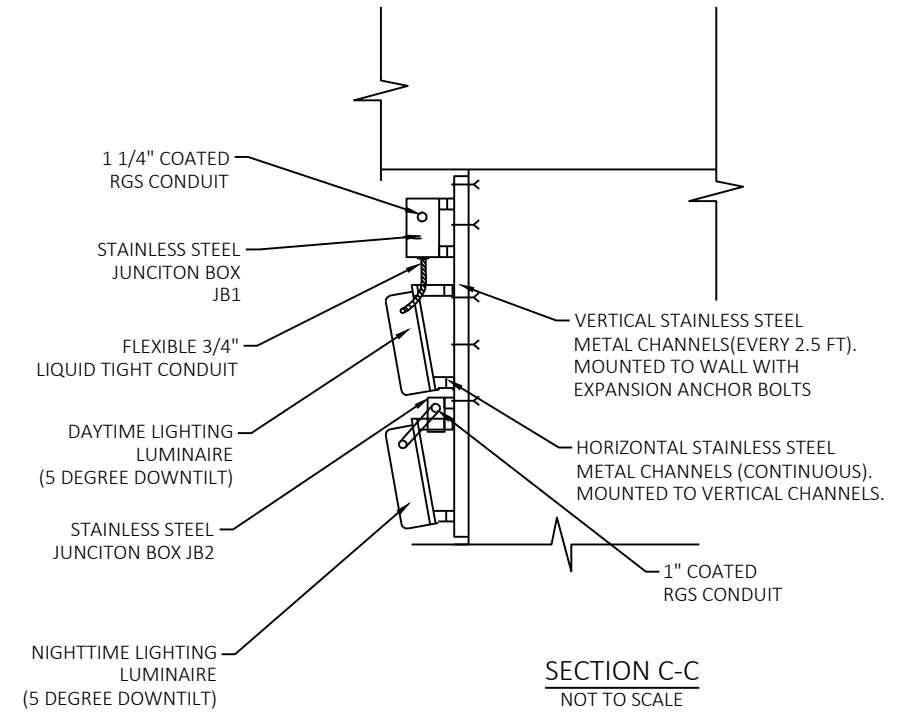
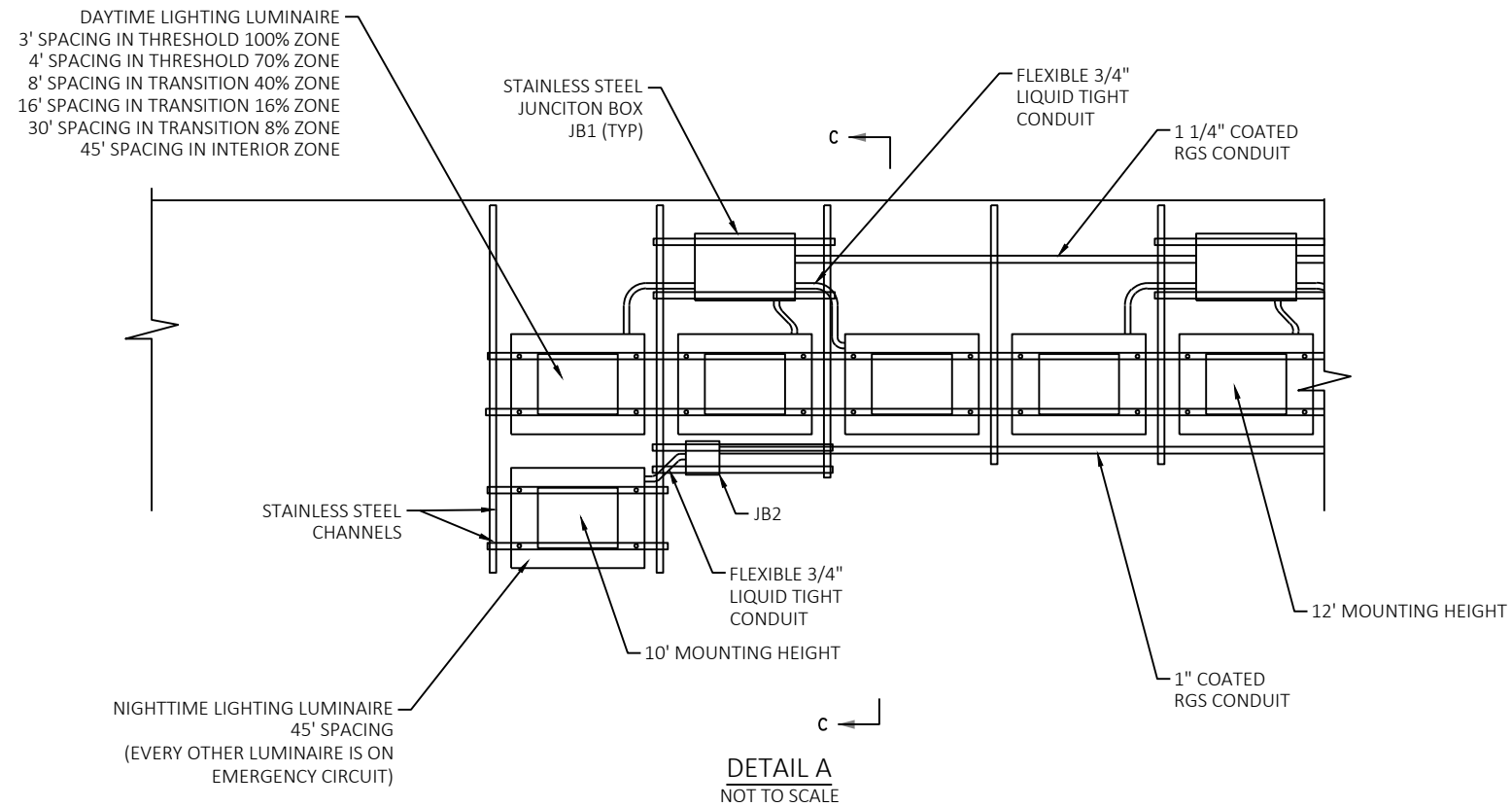
LEGEND

- DAYTIME FIXTURE, LED, 435W, WALL MOUNTED, 12' MOUNTING HEIGHT, 5° TILT, ONE ROW, TOTAL 75 FIXTURES (INTERIOR ZONE FIXTURES SHALL BE 125W) - TOTAL 28 FIXTURES
- NIGHTTIME FIXTURE, LED, 125W, WALL MOUNTED, 10' MOUNTING HEIGHT, 5° TILT, TOTAL 14 FIXTURES
- ⊠ EMERGENCY/NIGHTTIME FIXTURE, LED 10' MOUNTING HEIGHT, 5° TILT, TOTAL 14 FIXTURES

NOTE 1 - ONE SIDE (LEFT) OF INTERIOR ZONE FIXTURES TO BE USED FOR NIGHTTIME AND EMERGENCY



KILBOURN ENTRANCE RAMP TUNNEL LIGHTING LAYOUT (NTS)

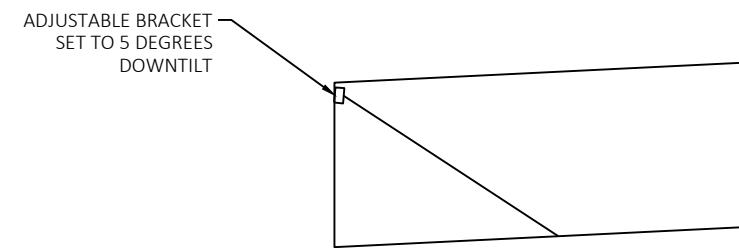


JUNCTION BOX SCHEDULE

JB1	18" X 12" X 6"
JB2	6" X 6" X 4"

NOTES:

- LUMINAIRE MOUNTING SYSTEM AND STAINLESS STEEL CHANNEL ARRANGEMENT MAY BE REVISED AS APPROVED BY THE ENGINEER



MOUNTING ANGLE SCHEMATICS
NOT TO SCALE

KILBOURN ENTRNCE
RAMP

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 100% ZONE (3' SPACING)			
1	LEFT TOP	1	23.00
2	LEFT TOP	2	26.00
3	LEFT TOP	3	29.00
4	LEFT TOP	1	32.00
5	LEFT TOP	2	35.00
6	LEFT TOP	3	38.00
7	LEFT TOP	1	41.00
8	LEFT TOP	2	44.00
9	LEFT TOP	3	47.00
10	LEFT TOP	1	50.00
11	LEFT TOP	2	53.00
12	LEFT TOP	3	56.00
13	LEFT TOP	1	59.00
14	LEFT TOP	2	62.00
15	LEFT TOP	3	65.00
16	LEFT TOP	1	68.00
17	LEFT TOP	2	71.00
18	LEFT TOP	3	74.00
19	LEFT TOP	1	77.00
20	LEFT TOP	2	80.00
21	LEFT TOP	3	83.00
22	LEFT TOP	1	86.00
23	LEFT TOP	2	89.00
24	LEFT TOP	3	92.00
25	LEFT TOP	1	95.00
26	LEFT TOP	2	98.00
27	LEFT TOP	3	101.00
28	LEFT TOP	1	104.00
29	LEFT TOP	2	107.00
30	LEFT TOP	3	110.00
31	LEFT TOP	1	113.00
32	LEFT TOP	2	116.00
33	LEFT TOP	3	119.00
34	LEFT TOP	1	122.00
35	LEFT TOP	2	125.00
36	LEFT TOP	3	128.00
THRESHOLD 70% ZONE (4' SPACING)			
37	LEFT TOP	1	132.00
38	LEFT TOP	2	136.00
39	LEFT TOP	3	140.00
40	LEFT TOP	1	144.00
41	LEFT TOP	2	148.00
42	LEFT TOP	3	152.00
43	LEFT TOP	1	156.00
44	LEFT TOP	2	160.00
45	LEFT TOP	3	164.00
46	LEFT TOP	1	168.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
47	LEFT TOP	2	172.00
48	LEFT TOP	3	176.00
TRANSITION 40% ZONE (8' SPACING)			
49	LEFT TOP	4	184.00
50	LEFT TOP	5	192.00
51	LEFT TOP	6	200.00
52	LEFT TOP	4	208.00
53	LEFT TOP	5	216.00
54	LEFT TOP	6	224.00
55	LEFT TOP	4	232.00
56	LEFT TOP	5	240.00
57	LEFT TOP	6	248.00
58	LEFT TOP	4	256.00
59	LEFT TOP	5	264.00
60	LEFT TOP	6	272.00
TRANSITION 16% ZONE (16' SPACING)			
61	LEFT TOP	4	288.00
62	LEFT TOP	5	304.00
63	LEFT TOP	6	320.00
64	LEFT TOP	4	336.00
65	LEFT TOP	5	352.00
66	LEFT TOP	6	368.00
67	LEFT TOP	4	384.00
68	LEFT TOP	5	400.00
TRANSITION 8% ZONE (30' SPACING)			
69	LEFT TOP	6	430.00
70	LEFT TOP	4	460.00
71	LEFT TOP	5	490.00
72	LEFT TOP	6	520.00
73	LEFT TOP	4	550.00
74	LEFT TOP	5	580.00
75	LEFT TOP	6	610.00
INTERIOR ZONE LEFT (45' SPACING) - ALSO SERVES AS NIGHTTIME AND EMERGENCY			
76	LEFT TOP	7/NT2	655.00
77	LEFT TOP	8/EM2	700.00
78	LEFT TOP	7/NT2	745.00
79	LEFT TOP	8/EM2	790.00
80	LEFT TOP	7/NT2	835.00
81	LEFT TOP	8/EM2	880.00
82	LEFT TOP	7/NT2	925.00
83	LEFT TOP	8/EM2	970.00
84	LEFT TOP	7/NT2	1015.00
85	LEFT TOP	8/EM2	1060.00
86	LEFT TOP	7/NT2	1105.00
87	LEFT TOP	8/EM2	1150.00
88	LEFT TOP	7/NT2	1195.00
89	LEFT TOP	8/EM2	1240.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
NIGHTTIME AND EMERGENCY (45' SPACING)			
90	LEFT BOTTOM	NT1	10.00
91	LEFT BOTTOM	EM1	55.00
92	LEFT BOTTOM	NT1	100.00
93	LEFT BOTTOM	EM1	145.00
94	LEFT BOTTOM	NT1	190.00
95	LEFT BOTTOM	EM1	235.00
96	LEFT BOTTOM	NT1	280.00
97	LEFT BOTTOM	EM1	325.00
98	LEFT BOTTOM	NT1	370.00
99	LEFT BOTTOM	EM1	415.00
100	LEFT BOTTOM	NT1	460.00
101	LEFT BOTTOM	EM1	505.00
102	LEFT BOTTOM	NT1	550.00
103	LEFT BOTTOM	EM1	610.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
INTERIOR ZONE (45' SPACING)			
104	RIGHT TOP	9	632.00
105	RIGHT TOP	9	677.00
106	RIGHT TOP	9	722.00
107	RIGHT TOP	9	767.00
108	RIGHT TOP	9	812.00
109	RIGHT TOP	9	857.00
110	RIGHT TOP	9	902.00
111	RIGHT TOP	9	947.00
112	RIGHT TOP	9	992.00
113	RIGHT TOP	9	1037.00
114	RIGHT TOP	9	1082.00
115	RIGHT TOP	9	1127.00
116	RIGHT TOP	9	1172.00
117	RIGHT TOP	9	1217.00

KILBOURN ENTRNCE RAMP

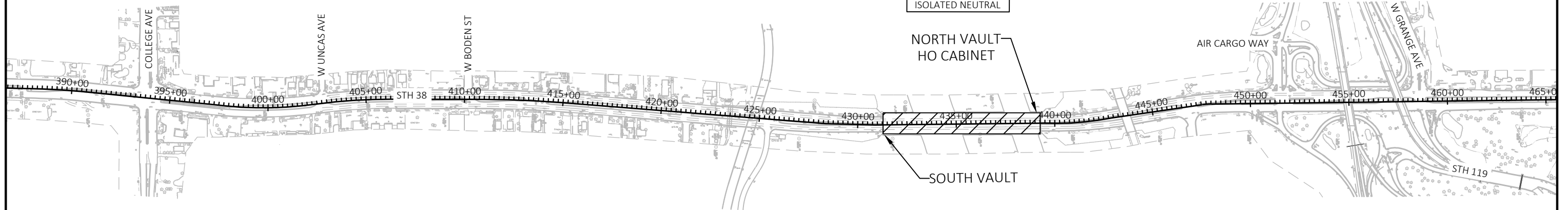
LEFT WALL		RIGHT WALL	
CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT	CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT
1	16	--	--
2	16	--	--
3	16	--	--
4	9	--	--
5	9	--	--
6	9	--	--
7/NT2	7	--	--
8/EM2	7	--	--
--	--	9	14
NIGHTTIME (NT1)	7	--	--
EMERGENCY (EM1)	7	--	--

LIGHT METER CONDITION		ILLUMINATION	
SKY CONDITIONS	LIGHT LEVEL (1X)	CIRCUITS ON	NUMBER OF FIXTURES ENERGIZED
BRIGHT/SUNNY	> 10,000	1 THRU 9, EM1	105
CLEAR, PARTLY CLOUDY	100 - 10,000	1,2,4,5,7/TN2,8/EM2,9,EM1	80
MOSTLY CLOUDY, OVERCAST, DAWN/DUSK	1-100	1,4,7/NT2,8/EM2,9,EM1	55
NIGHT	<1	7/NT2,8/EM2,NT1,EM1	28
EMERGENCY	ALWAYS ON	7/EM2,EM1	14

KILBOURN ENTRANCE RAMP TUNNEL
LUMINAIRE SCHEDULE

NOTES:

1. CONTRACTOR TO COORDINATE WITH TUNNEL LIGHTING CONTROLLER VENDOR ON LIGHT LEVELS TO BE USED TO CONTROL SEVEN DAYTIME AND TWO NIGHTTIME CIRCUITS. ALTERNATIVE LIGHTING SOLUTION MAY BE SUBMITTED TO ENGINEER FOR REVIEW.
2. DAYTIME LUMINAIRES ARE ALL 277V, LED, 435W, FIXTURES, EXCEPT INTERIOR ZONE LUMINAIRES ARE 125W. NIGHTTIME AND EMERGENCY LUMINAIRES ARE ALL 277V, LED, 125W, FIXTURES.
3. DAYTIME INTERIOR ZONE LUMINAIRES ARE SPACED AT 45FT IN STAGGERED ARRANGEMENT. LUMINAIRES LOCATED ON THE LEFT WALL TO BE ALSO USED FOR NIGHTTIME AND EMERGENCY LIGHTING.

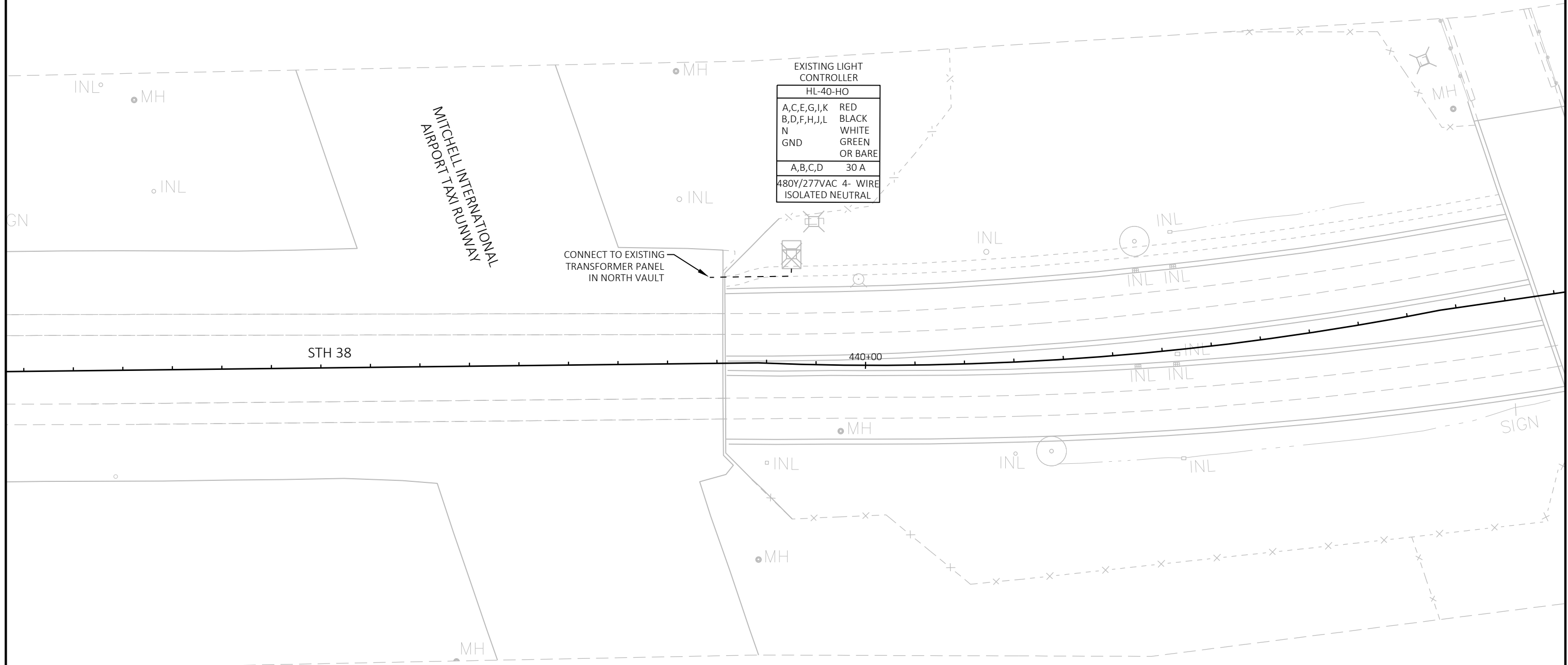
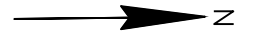


EXISTING LIGHT CONTROLLER

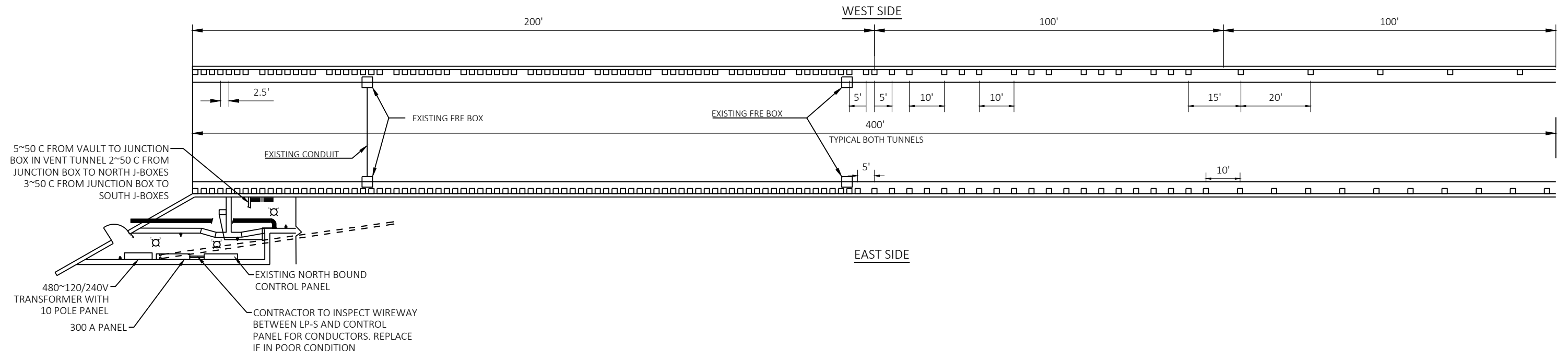
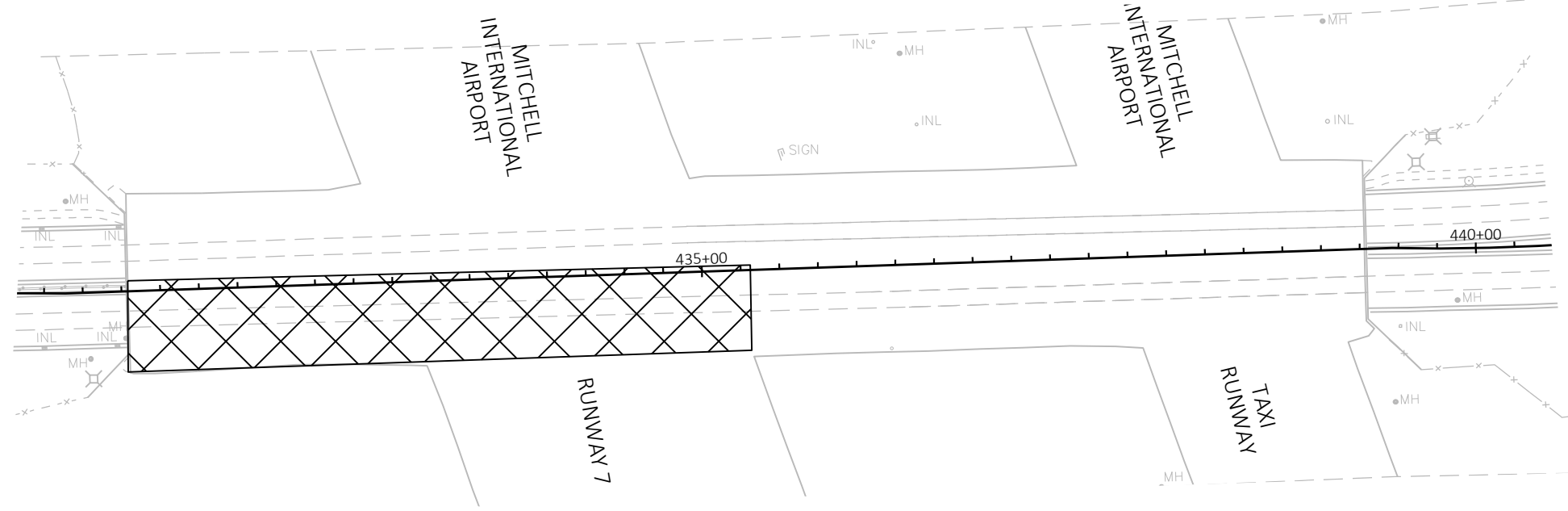
HL-40-HO	
A,C,E,G,I,K	RED
B,D,F,H,J,L	BLACK
N	WHITE
GND	GREEN
	OR BARE
A,B,C,D 30 A	
480Y/277VAC 4- WIRE	
ISOLATED NEUTRAL	

NORTH VAULT-HO CABINET

SOUTH VAULT



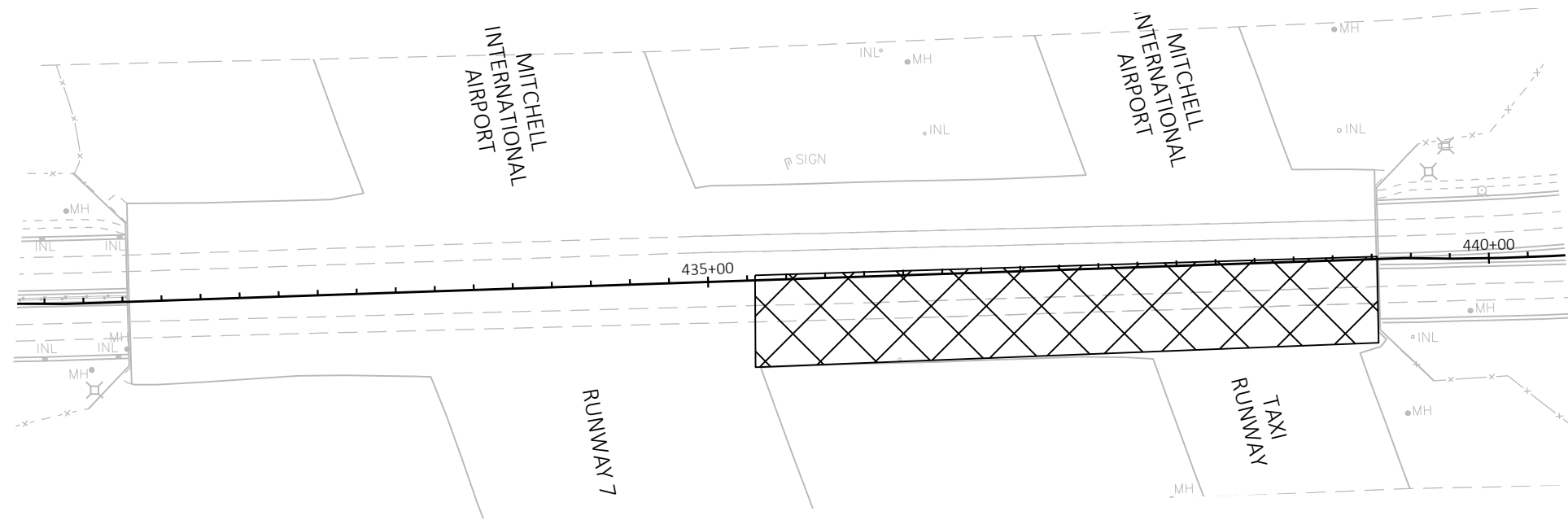
LIGHTING REMOVAL PLAN-NORTH BOUND



LEGEND:

□ EXISTING LUMINAIRE TO BE REMOVED

LIGHTING REMOVAL PLAN-NORTH BOUND



WEST SIDE

400'

NO EXISTING LIGHTING

400'

TYPICAL BOTH TUNNELS

20'

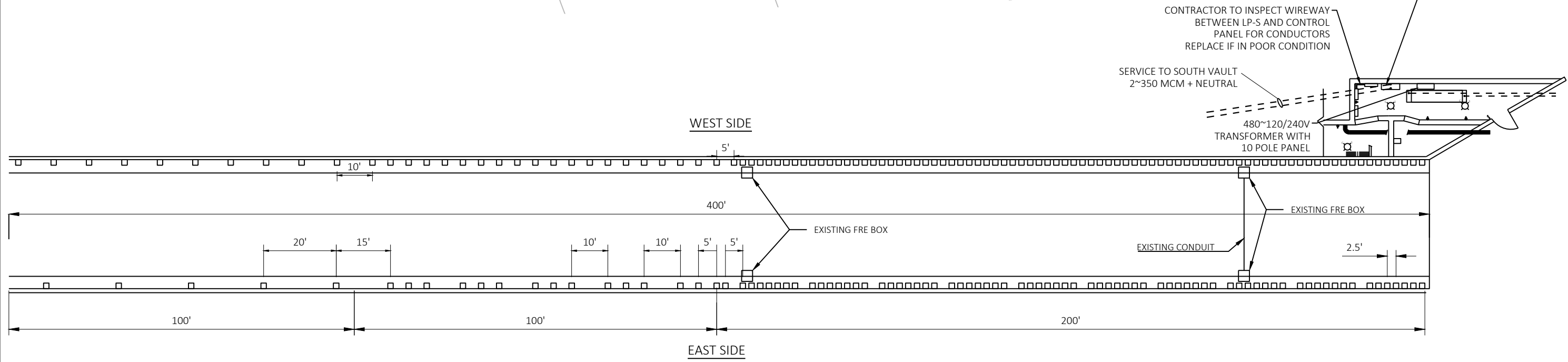
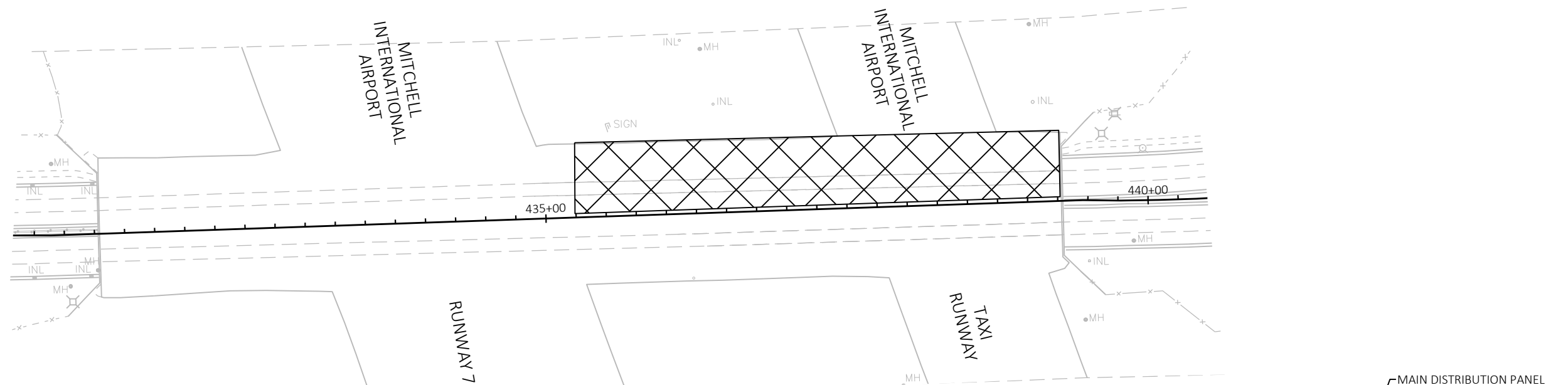
400'

EAST SIDE

LEGEND:

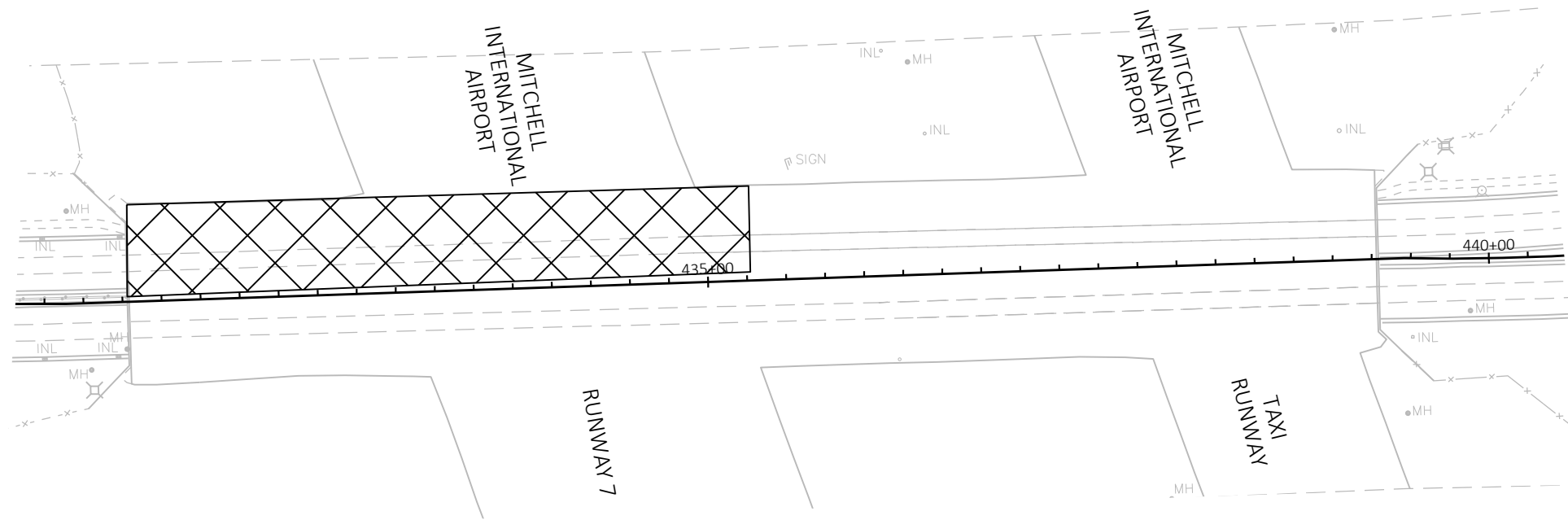
- EXISTING LUMINAIRE TO BE REMOVED

LIGHTING REMOVAL PLAN-SOUTH BOUND



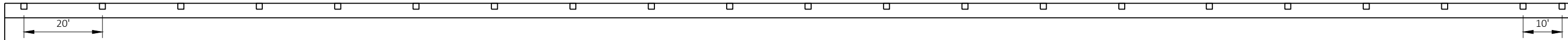
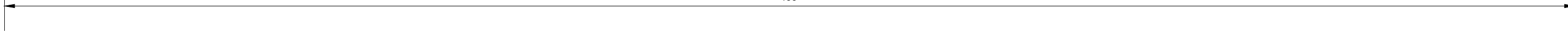
- LEGEND:**
- EXISTING LUMINAIRE TO BE REMOVED

LIGHTING REMOVAL PLAN-SOUTH BOUND



WEST SIDE

400'



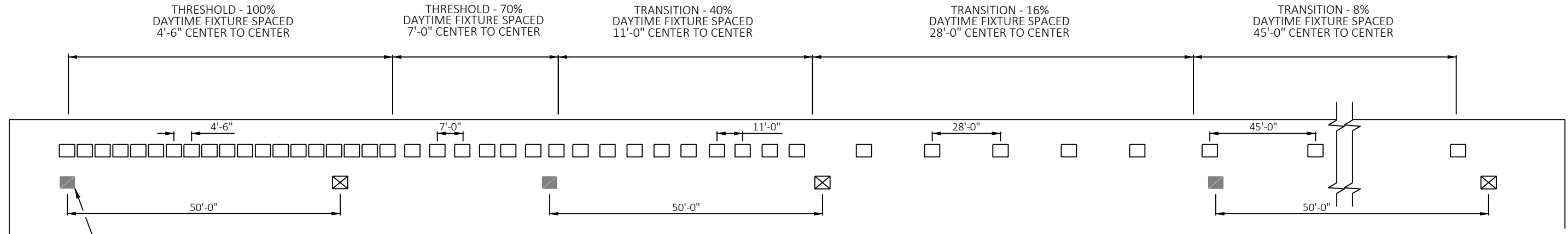
TYPICAL BOTH TUNNELS

NO EXISTING LIGHTING
400'

EAST SIDE

LEGEND:

- EXISTING LUMINAIRE TO BE REMOVED



NIGHTTIME FIXTURE SPACED AS NOTED, EVERY OTHER LUMINAIRE IS ON EMERGENCY CIRCUIT

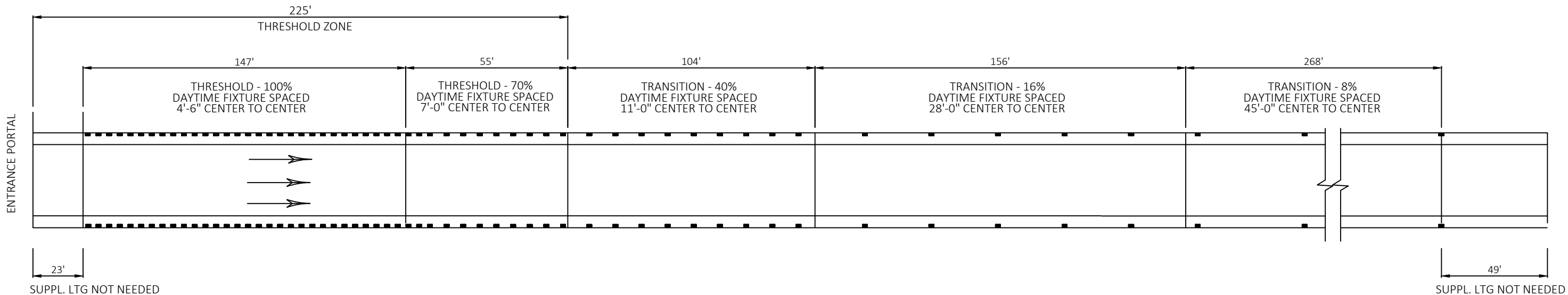
HOWELL NB TUNNEL DETAILS:
 STRUCTURE:
 NORTHBOUND HOWELL AVE UNDER RUNWAY 7R-25L
 (GENERAL MITCHELL INTERNATIONAL AIRPORT)
 TUNNEL STARTS AT STA. 431+30 AND ENDS AT STA. 439+30
 THREE 11' LANES
 LEFT SHOULDER 4' , RIGHT SHOULDER 4'
 HEIGHT VARIES, MIN. CLEARANCE IS 14'-8"
 LENGTH OF TUNNEL IS 800'
 AVERAGE ANNUAL DAILY TRAFFIC (AADT) IS 23600
 POSTED SPEED LIMIT IS 35MPH
 DIRECTION OF TRAFFIC AT TUNNEL PORTAL IS NORTH

SECTION VIEW

LUMINAIRE SUMMARY:
 100% THRESHOLD ZONE - 4.5' SPACING (66 LUMS)
 70% THRESHOLD ZONE - 7.0' SPACING (16 LUMS)
 40% TRANSITION ZONE - 11.0' SPACING (18 LUMS)
 16% TRANSITION ZONE - 28.0' SPACING (10 LUMS)
 8% TRANSITION ZONE - 45.0' SPACING (14 LUMS)
 NIGHTTIME/EMERGENCY - 50.0' SPACING (16 LUMS)

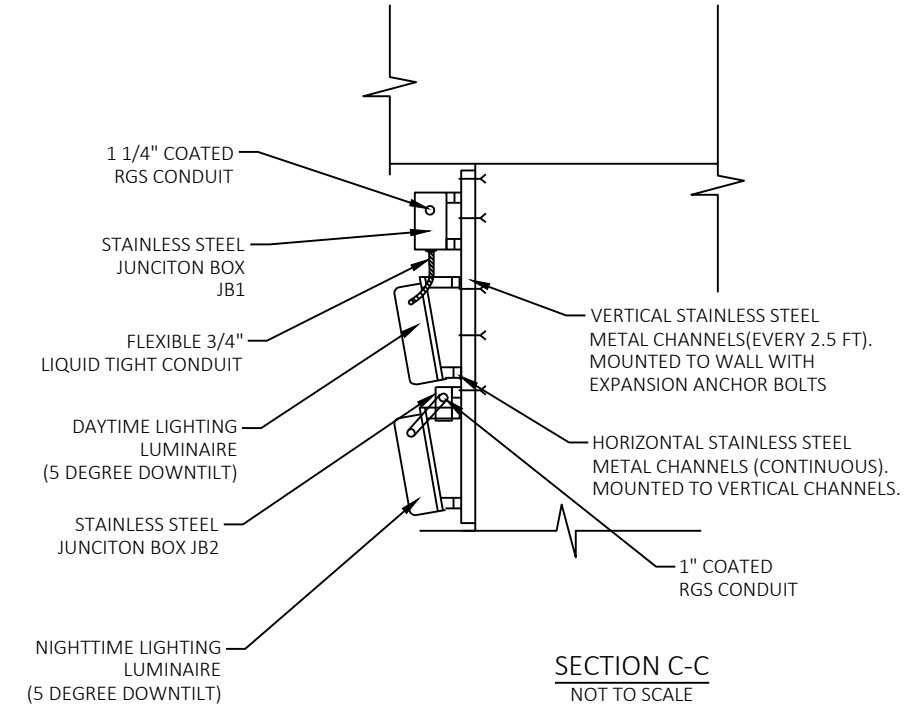
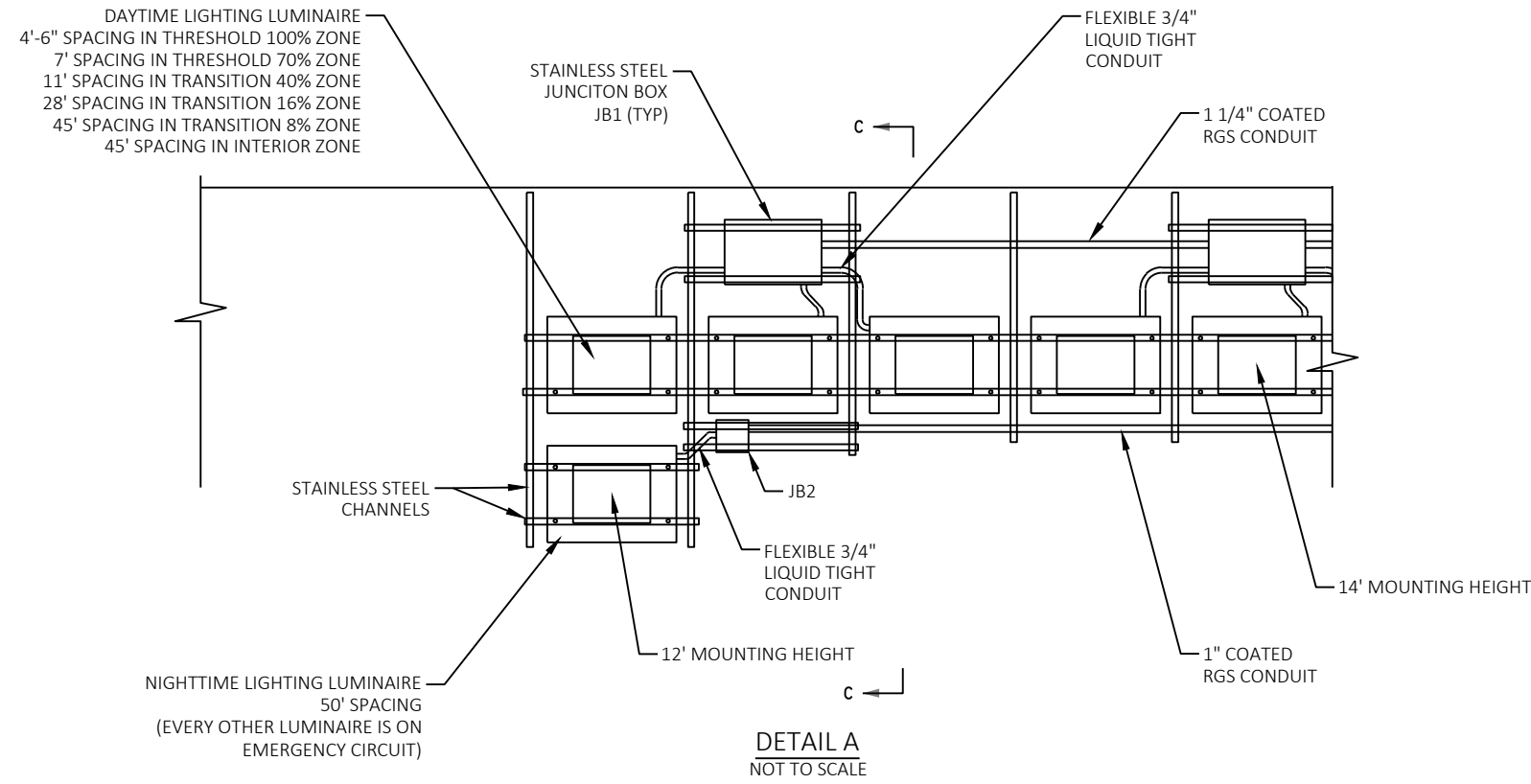
LEGEND

- DAYTIME FIXTURE, LED, 435W, WALL MOUNTED, 14' MOUNTING HEIGHT, 5° TILT, ONE ROW, TOTAL 124 FIXTURES
- NIGHTTIME FIXTURE, LED, 125W, WALL MOUNTED, 12' MOUNTING HEIGHT, 5° TILT, TOTAL 8 FIXTURES
- ⊠ EMERGENCY/NIGHTTIME FIXTURE, LED 12' MOUNTING HEIGHT, 5° TILT, TOTAL 8 FIXTURES



NB HOWELL TUNNEL LIGHTING LAYOUT (NTS)

NB HOWELL AVE



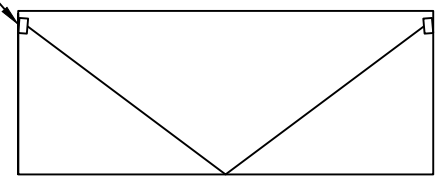
JUNCTION BOX SCHEDULE

JB1	18" X 12" X 6"
JB2	6" X 6" X 4"

NOTES:

- 1. LUMINAIRE MOUNTING SYSTEM AND STAINLESS STEEL CHANNEL ARRANGEMENT MAY BE REVISED AS APPROVED BY THE ENGINEER

ADJUSTABLE BRACKET SET TO 5 DEGREES DOWNTILT



MOUNTING ANGLE SCHEMATICS NOT TO SCALE

NB HOWELL AVE

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 100% ZONE (4.5' SPACING)			
1	LEFT TOP	1	23.00
2	LEFT TOP	2	27.50
3	LEFT TOP	3	32.00
4	LEFT TOP	1	36.50
5	LEFT TOP	2	41.00
6	LEFT TOP	3	45.50
7	LEFT TOP	1	50.00
8	LEFT TOP	2	54.50
9	LEFT TOP	3	59.00
10	LEFT TOP	1	63.50
11	LEFT TOP	2	68.00
12	LEFT TOP	3	72.50
13	LEFT TOP	1	77.00
14	LEFT TOP	2	81.50
15	LEFT TOP	3	86.00
16	LEFT TOP	1	90.50
17	LEFT TOP	2	95.00
18	LEFT TOP	3	99.50
19	LEFT TOP	1	104.00
20	LEFT TOP	2	108.50
21	LEFT TOP	3	113.00
22	LEFT TOP	1	117.50
23	LEFT TOP	2	122.00
24	LEFT TOP	3	126.50
25	LEFT TOP	1	131.00
26	LEFT TOP	2	135.50
27	LEFT TOP	3	140.00
28	LEFT TOP	1	144.50
29	LEFT TOP	2	149.00
30	LEFT TOP	3	153.50
31	LEFT TOP	1	158.00
32	LEFT TOP	2	162.50
33	LEFT TOP	3	167.00
THRESHOLD 70% ZONE (7' SPACING)			
34	LEFT TOP	1	174.00
35	LEFT TOP	2	181.00
36	LEFT TOP	3	188.00
37	LEFT TOP	1	195.00
38	LEFT TOP	2	202.00
39	LEFT TOP	3	209.00
40	LEFT TOP	1	216.00
41	LEFT TOP	2	223.00
TRANSITION 40% ZONE (11' SPACING)			
42	LEFT TOP	4	234.00
43	LEFT TOP	5	245.00
44	LEFT TOP	6	256.00
45	LEFT TOP	4	267.00
46	LEFT TOP	5	278.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
47	LEFT TOP	6	289.00
48	LEFT TOP	4	300.00
49	LEFT TOP	5	311.00
50	LEFT TOP	6	322.00
TRANSITION 16% ZONE (28' SPACING)			
51	LEFT TOP	4	350.00
52	LEFT TOP	5	378.00
53	LEFT TOP	6	406.00
54	LEFT TOP	4	434.00
55	LEFT TOP	5	462.00
TRANSITION 8% ZONE (45' SPACING)			
56	LEFT TOP	4	490.00
57	LEFT TOP	5	535.00
58	LEFT TOP	6	580.00
59	LEFT TOP	4	625.00
60	LEFT TOP	5	670.00
61	LEFT TOP	6	715.00
62	LEFT TOP	4	760.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 100% ZONE (4.5' SPACING)			
63	RIGHT TOP	7	23.00
64	RIGHT TOP	8	27.50
65	RIGHT TOP	9	32.00
66	RIGHT TOP	7	36.50
67	RIGHT TOP	8	41.00
68	RIGHT TOP	9	45.50
69	RIGHT TOP	7	50.00
70	RIGHT TOP	8	54.50
71	RIGHT TOP	9	59.00
72	RIGHT TOP	7	63.50
73	RIGHT TOP	8	68.00
74	RIGHT TOP	9	72.50
75	RIGHT TOP	7	77.00
76	RIGHT TOP	8	81.50
77	RIGHT TOP	9	86.00
78	RIGHT TOP	7	90.50
79	RIGHT TOP	8	95.00
80	RIGHT TOP	9	99.50
81	RIGHT TOP	7	104.00
82	RIGHT TOP	8	108.50
83	RIGHT TOP	9	113.00
84	RIGHT TOP	7	117.50
85	RIGHT TOP	8	122.00
86	RIGHT TOP	9	126.50
87	RIGHT TOP	7	131.00
88	RIGHT TOP	8	135.50
89	RIGHT TOP	9	140.00
90	RIGHT TOP	7	144.50
91	RIGHT TOP	8	149.00
92	RIGHT TOP	9	153.50
93	RIGHT TOP	7	158.00
94	RIGHT TOP	8	162.50
95	RIGHT TOP	9	167.00
THRESHOLD 70% ZONE (7' SPACING)			
96	RIGHT TOP	7	174.00
97	RIGHT TOP	8	181.00
98	RIGHT TOP	9	188.00
99	RIGHT TOP	7	195.00
100	RIGHT TOP	8	202.00
101	RIGHT TOP	9	209.00
102	RIGHT TOP	7	216.00
103	RIGHT TOP	8	223.00
TRANSITION 40% ZONE (11' SPACING)			
104	RIGHT TOP	10	234.00
105	RIGHT TOP	11	245.00
106	RIGHT TOP	12	256.00
107	RIGHT TOP	10	267.00
108	RIGHT TOP	11	278.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
109	RIGHT TOP	12	289.00
110	RIGHT TOP	10	300.00
111	RIGHT TOP	11	311.00
112	RIGHT TOP	12	322.00
TRANSITION 16% ZONE (28' SPACING)			
113	RIGHT TOP	10	350.00
114	RIGHT TOP	11	378.00
115	RIGHT TOP	12	406.00
116	RIGHT TOP	10	434.00
117	RIGHT TOP	11	462.00
TRANSITION 8% ZONE (45' SPACING)			
118	RIGHT TOP	12	490.00
119	RIGHT TOP	10	535.00
120	RIGHT TOP	11	580.00
121	RIGHT TOP	12	625.00
122	RIGHT TOP	10	670.00
123	RIGHT TOP	11	715.00
124	RIGHT TOP	12	760.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
NIGHTTIME AND EMERGENCY (50' SPACING)			
125	RIGHT BOTTOM	NT1	25.00
126	RIGHT BOTTOM	EM1	75.00
127	RIGHT BOTTOM	NT1	125.00
128	RIGHT BOTTOM	EM1	175.00
129	RIGHT BOTTOM	NT1	225.00
130	RIGHT BOTTOM	EM1	275.00
131	RIGHT BOTTOM	NT1	325.00
132	RIGHT BOTTOM	EM1	375.00
133	RIGHT BOTTOM	NT1	425.00
134	RIGHT BOTTOM	EM1	475.00
135	RIGHT BOTTOM	NT1	525.00
136	RIGHT BOTTOM	EM1	575.00
137	RIGHT BOTTOM	NT1	625.00
138	RIGHT BOTTOM	EM1	675.00
139	RIGHT BOTTOM	NT1	725.00
140	RIGHT BOTTOM	EM1	775.00

NB HOWELL AVE

LEFT WALL		RIGHT WALL	
CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT	CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT
1	14	7	14
2	14	8	14
3	13	9	13
4	7	10	7
5	7	11	7
6	7	12	7
--	--	NIGHTTIME (NT1)	8
--	--	EMERGENCY (EM1)	8

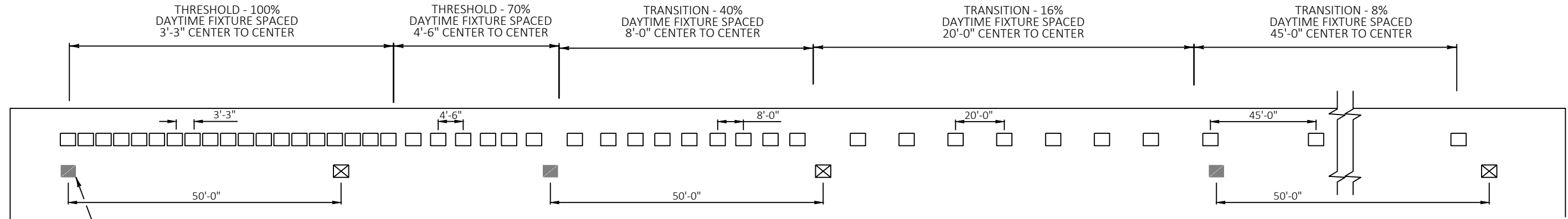
LIGHT METER CONDITION		ILLUMINATION	
SKY CONDITIONS	LIGHT LEVEL (1X)	CIRCUITS ON	NUMBER OF FIXTURES ENERGIZED
BRIGHT/SUNNY	> 10,000	1 THRU 12, EM1	132
CLEAR, PARTLY CLOUDY	100 - 10,000	1,2,4,5,7,8,10,11,EM1	92
MOSTLY CLOUDY, OVERCAST, DAWN/DUSK	1-100	1,4,7,10,EM1	50
NIGHT	<1	NT1,EM1	16
EMERGENCY	ALWAYS ON	EM1	8

HOWELL AVE NB TUNNEL
LUMINAIRE SCHEDULE

NOTES:

1. CONTRACTOR TO COORDINATE WITH TUNNEL LIGHTING CONTROLLER VENDOR ON LIGHT LEVELS TO BE USED TO CONTROL SEVEN DAYTIME AND TWO NIGHTTIME CIRCUITS. ALTERNATIVE LIGHTING SOLUTION MAY BE SUBMITTED TO ENGINEER FOR REVIEW.
2. DAYTIME LUMINAIRES ARE ALL 277V, LED, 435W, FIXTURES. NIGHTTIME AND EMERGENCY LUMINAIRES ARE ALL 277V, LED, 125W, FIXTURES.

NB HOWELL AVE



NIGHTTIME FIXTURE SPACED AS NOTED, EVERY OTHER LUMINAIRE IS ON EMERGENCY CIRCUIT

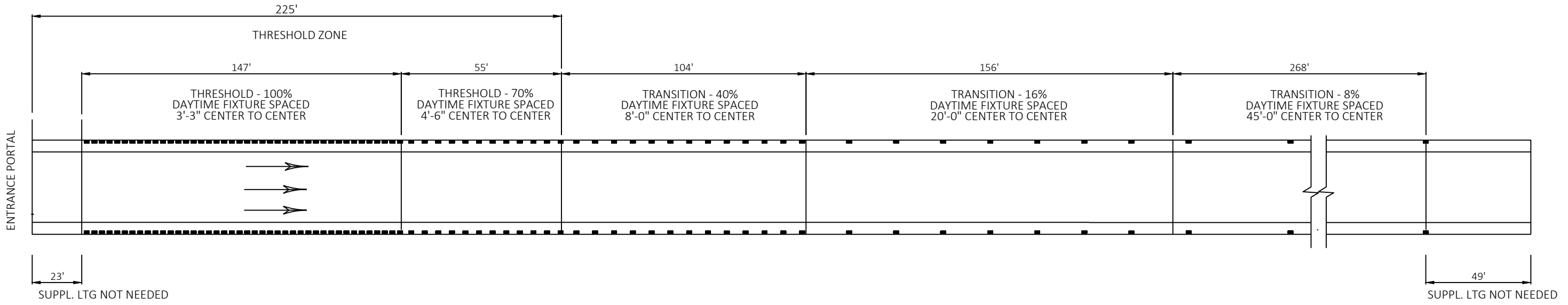
SECTION VIEW

HOWELL SB TUNNEL DETAILS:
 STRUCTURE:
 NORTHBOUND HOWELL AVE UNDER RUNWAY 7R-25L
 (GENERAL MITCHELL INTERNATIONAL AIRPORT)
 TUNNEL STARTS AT STA. 439+30 AND ENDS AT STA. 431+30
 THREE 11' LANES
 LEFT SHOULDER 4', RIGHT SHOULDER 4'
 HEIGHT VARIES, MIN. CLEARANCE IS 14'-8"
 LENGTH OF TUNNEL IS 800'
 AVERAGE ANNUAL DAILY TRAFFIC (AADT) IS 23600
 POSTED SPEED LIMIT IS 35MPH
 DIRECTION OF TRAFFIC AT TUNNEL PORTAL IS SOUTH

LUMINAIRE SUMMARY:
 100% THRESHOLD ZONE - 3.25' SPACING (92 LUMS)
 70% THRESHOLD ZONE - 4.5' SPACING (24 LUMS)
 40% TRANSITION ZONE - 8.0' SPACING (26 LUMS)
 16% TRANSITION ZONE - 20.0' SPACING (16 LUMS)
 8% TRANSITION ZONE - 45.0' SPACING (12 LUMS)
 NIGHTTIME/EMERGENCY - 50.0' SPACING (16 LUMS)

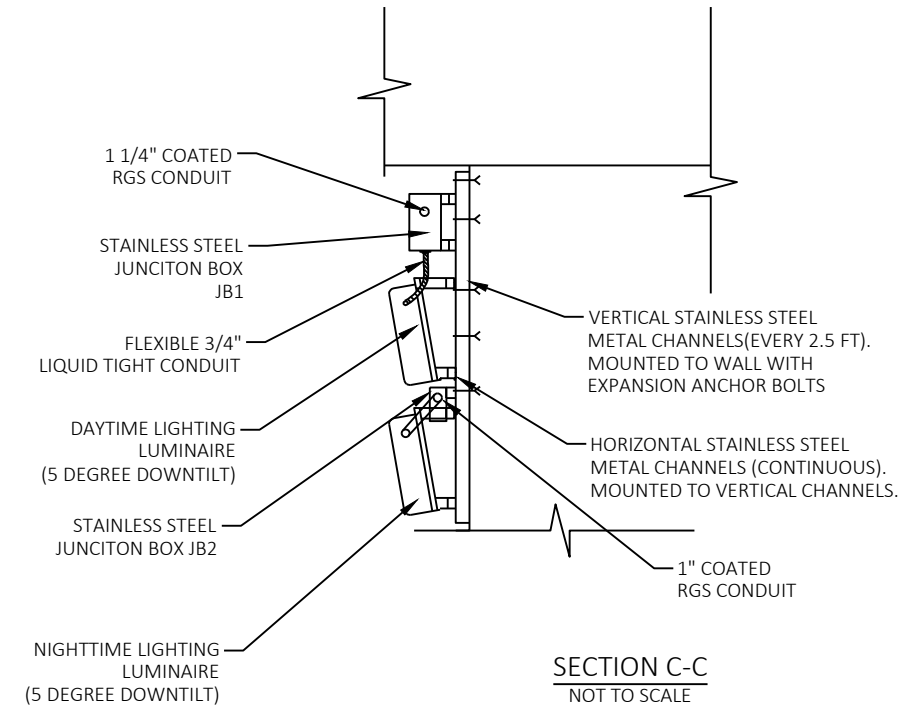
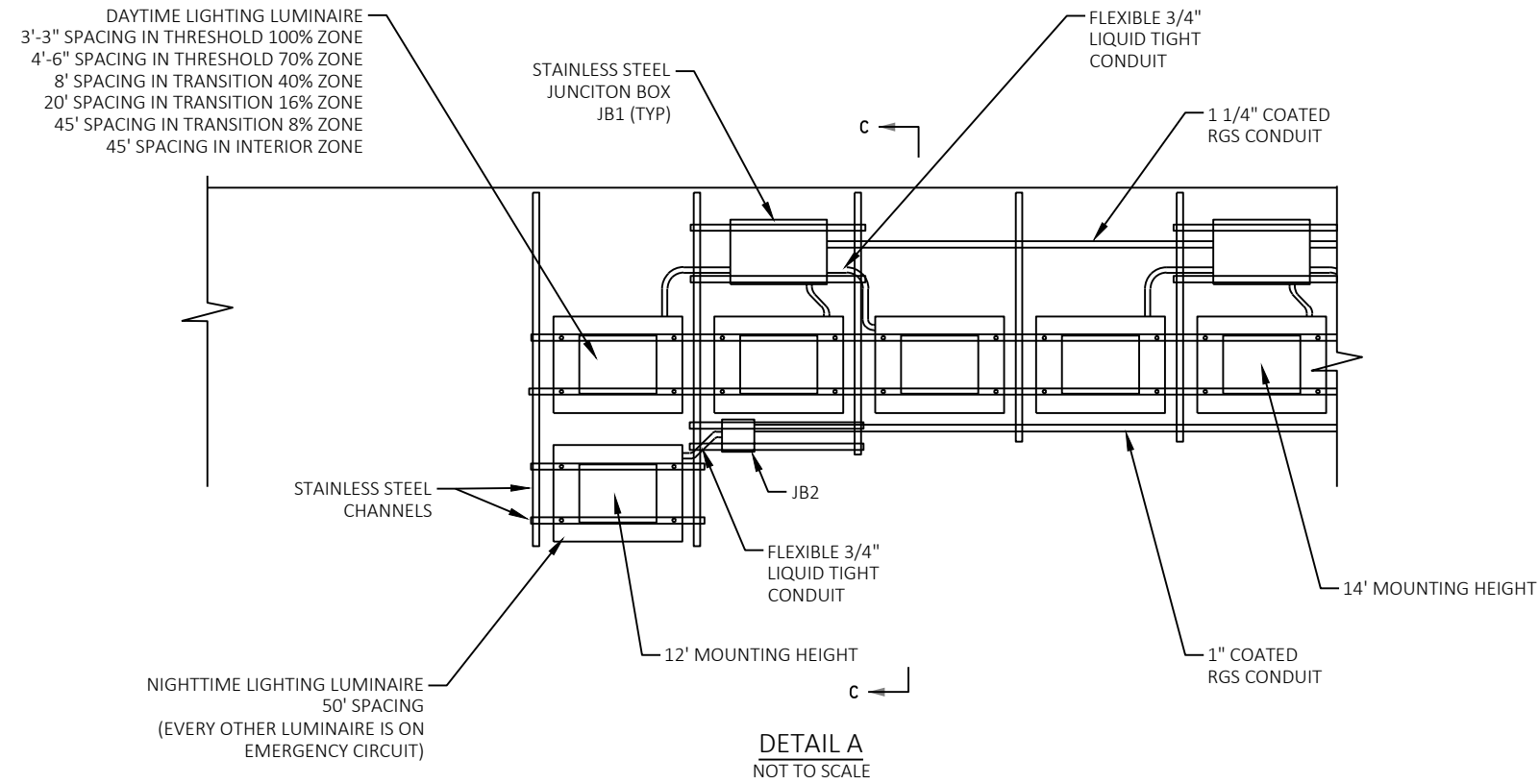
LEGEND

- DAYTIME FIXTURE, LED, 435W, WALL MOUNTED, 14' MOUNTING HEIGHT, 5° TILT, ONE ROW, TOTAL 172 FIXTURES
- NIGHTTIME FIXTURE, LED, 125W, WALL MOUNTED, 12' MOUNTING HEIGHT, 5° TILT, TOTAL 8 FIXTURES
- ⊗ EMERGENCY/NIGHTTIME FIXTURE, LED 12' MOUNTING HEIGHT, 5° TILT, TOTAL 8 FIXTURES



SB HOWELL TUNNEL LIGHTING LAYOUT
(NTS)

SB HOWELL AVE

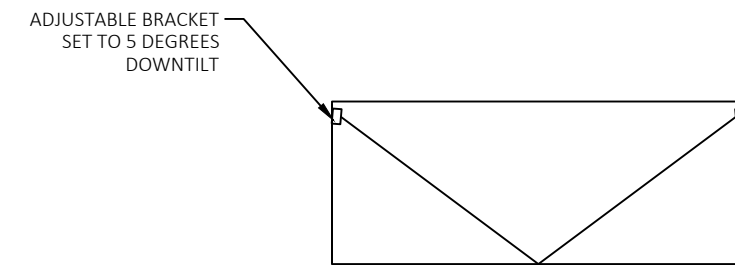


JUNCTION BOX SCHEDULE

JB1	18" X 12" X 6"
JB2	6" X 6" X 4"

NOTES:

- LUMINAIRE MOUNTING SYSTEM AND STAINLESS STEEL CHANNEL ARRANGEMENT MAY BE REVISED AS APPROVED BY THE ENGINEER



MOUNTING ANGLE SCHEMATICS
NOT TO SCALE

SB HOWELL AVE

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 100% ZONE (3.25' SPACING)			
1	LEFT TOP	1	23.00
2	LEFT TOP	2	26.25
3	LEFT TOP	3	29.50
4	LEFT TOP	1	32.75
5	LEFT TOP	2	36.00
6	LEFT TOP	3	39.25
7	LEFT TOP	1	42.50
8	LEFT TOP	2	45.75
9	LEFT TOP	3	49.00
10	LEFT TOP	1	52.25
11	LEFT TOP	2	55.50
12	LEFT TOP	3	58.75
13	LEFT TOP	1	62.00
14	LEFT TOP	2	65.25
15	LEFT TOP	3	68.50
16	LEFT TOP	1	71.75
17	LEFT TOP	2	75.00
18	LEFT TOP	3	78.25
19	LEFT TOP	1	81.50
20	LEFT TOP	2	84.75
21	LEFT TOP	3	88.00
22	LEFT TOP	1	91.25
23	LEFT TOP	2	94.50
24	LEFT TOP	3	97.75
25	LEFT TOP	1	101.00
26	LEFT TOP	2	104.25
27	LEFT TOP	3	107.50
28	LEFT TOP	1	110.75
29	LEFT TOP	2	114.00
30	LEFT TOP	3	117.25
31	LEFT TOP	1	120.50
32	LEFT TOP	2	123.75
33	LEFT TOP	3	127.00
34	LEFT TOP	1	130.25
35	LEFT TOP	2	133.50
36	LEFT TOP	3	136.75
37	LEFT TOP	1	140.00
38	LEFT TOP	2	143.25
39	LEFT TOP	3	146.50
40	LEFT TOP	1	149.75
41	LEFT TOP	2	153.00
42	LEFT TOP	3	156.25
43	LEFT TOP	1	159.50
44	LEFT TOP	2	162.75
45	LEFT TOP	3	166.00
46	LEFT TOP	1	169.25

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 70% ZONE (4.5' SPACING)			
47	LEFT TOP	2	173.75
48	LEFT TOP	3	178.25
49	LEFT TOP	1	182.75
50	LEFT TOP	2	187.25
51	LEFT TOP	3	191.75
52	LEFT TOP	1	196.25
53	LEFT TOP	2	200.75
54	LEFT TOP	3	205.25
55	LEFT TOP	1	209.75
56	LEFT TOP	2	214.25
57	LEFT TOP	3	218.75
58	LEFT TOP	1	223.25
TRANSITION 40% ZONE (8' SPACING)			
59	LEFT TOP	4	231.25
60	LEFT TOP	5	239.25
61	LEFT TOP	6	247.25
62	LEFT TOP	4	255.25
63	LEFT TOP	5	263.25
64	LEFT TOP	6	271.25
65	LEFT TOP	4	279.25
66	LEFT TOP	5	287.25
67	LEFT TOP	6	295.25
68	LEFT TOP	4	303.25
69	LEFT TOP	5	311.25
70	LEFT TOP	6	319.25
71	LEFT TOP	4	327.25
TRANSITION 16% ZONE (20' SPACING)			
72	LEFT TOP	5	347.25
73	LEFT TOP	6	367.25
74	LEFT TOP	4	387.25
75	LEFT TOP	5	407.25
76	LEFT TOP	6	427.25
77	LEFT TOP	4	447.25
78	LEFT TOP	5	467.25
79	LEFT TOP	6	487.25
TRANSITION 8% ZONE (45' SPACING)			
80	LEFT TOP	4	532.25
81	LEFT TOP	5	577.25
82	LEFT TOP	6	622.25
83	LEFT TOP	4	667.25
84	LEFT TOP	5	712.25
85	LEFT TOP	6	757.25

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 100% ZONE (3.25' SPACING)			
86	RIGHT TOP	7	23.00
87	RIGHT TOP	8	26.25
88	RIGHT TOP	9	29.50
89	RIGHT TOP	7	32.75
90	RIGHT TOP	8	36.00
91	RIGHT TOP	9	39.25
92	RIGHT TOP	7	42.50
93	RIGHT TOP	8	45.75
94	RIGHT TOP	9	49.00
95	RIGHT TOP	7	52.25
96	RIGHT TOP	8	55.50
97	RIGHT TOP	9	58.75
98	RIGHT TOP	7	62.00
99	RIGHT TOP	8	65.25
100	RIGHT TOP	9	68.50
101	RIGHT TOP	7	71.75
102	RIGHT TOP	8	75.00
103	RIGHT TOP	9	78.25
104	RIGHT TOP	7	81.50
105	RIGHT TOP	8	84.75
106	RIGHT TOP	9	88.00
107	RIGHT TOP	7	91.25
108	RIGHT TOP	8	94.50
109	RIGHT TOP	9	97.75
110	RIGHT TOP	7	101.00
111	RIGHT TOP	8	104.25
112	RIGHT TOP	9	107.50
113	RIGHT TOP	7	110.75
114	RIGHT TOP	8	114.00
115	RIGHT TOP	9	117.25
116	RIGHT TOP	7	120.50
117	RIGHT TOP	8	123.75
118	RIGHT TOP	9	127.00
119	RIGHT TOP	7	130.25
120	RIGHT TOP	8	133.50
121	RIGHT TOP	9	136.75
122	RIGHT TOP	7	140.00
123	RIGHT TOP	8	143.25
124	RIGHT TOP	9	146.50
125	RIGHT TOP	7	149.75
126	RIGHT TOP	8	153.00
127	RIGHT TOP	9	156.25
128	RIGHT TOP	7	159.50
129	RIGHT TOP	8	162.75
130	RIGHT TOP	9	166.00
131	RIGHT TOP	7	169.25

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
THRESHOLD 70% ZONE (4.5' SPACING)			
47	RIGHT TOP	8	173.75
48	RIGHT TOP	9	178.25
49	RIGHT TOP	7	182.75
50	RIGHT TOP	8	187.25
51	RIGHT TOP	9	191.75
52	RIGHT TOP	7	196.25
53	RIGHT TOP	8	200.75
54	RIGHT TOP	9	205.25
55	RIGHT TOP	7	209.75
56	RIGHT TOP	8	214.25
57	RIGHT TOP	9	218.75
58	RIGHT TOP	7	223.25
TRANSITION 40% ZONE (8' SPACING)			
59	RIGHT TOP	10	231.25
60	RIGHT TOP	11	239.25
61	RIGHT TOP	12	247.25
62	RIGHT TOP	10	255.25
63	RIGHT TOP	11	263.25
64	RIGHT TOP	12	271.25
65	RIGHT TOP	10	279.25
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68	RIGHT TOP	10	303.25
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79	RIGHT TOP	12	487.25
TRANSITION 8% ZONE (45' SPACING)			
80	RIGHT TOP	10	532.25
81	RIGHT TOP	11	577.25
82	RIGHT TOP	12	622.25
83	RIGHT TOP	10	667.25
84	RIGHT TOP	11	712.25
85	RIGHT TOP	12	757.25

SB HOWELL AVE

LEFT WALL		RIGHT WALL	
CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT	CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT
1	20	7	20
2	19	8	19
3	19	9	19
4	9	10	9
5	9	11	9
6	9	12	9
--	--	NIGHTTIME (NT1)	8
--	--	EMERGENCY (EM1)	8

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
NIGHTTIME AND EMERGENCY (50' SPACING)			
171	RIGHT BOTTOM	NT1	25.00
172	RIGHT BOTTOM	EM1	75.00
173	RIGHT BOTTOM	NT1	125.00
174	RIGHT BOTTOM	EM1	175.00
175	RIGHT BOTTOM	NT1	225.00
176	RIGHT BOTTOM	EM1	275.00
177	RIGHT BOTTOM	NT1	325.00
178	RIGHT BOTTOM	EM1	375.00
179	RIGHT BOTTOM	NT1	425.00
180	RIGHT BOTTOM	EM1	475.00
181	RIGHT BOTTOM	NT1	525.00
182	RIGHT BOTTOM	EM1	575.00
183	RIGHT BOTTOM	NT1	625.00
184	RIGHT BOTTOM	EM1	675.00
185	RIGHT BOTTOM	NT1	725.00
186	RIGHT BOTTOM	EM1	775.00

LIGHT METER CONDITION		ILLUMINATION	
SKY CONDITIONS	LIGHT LEVEL (1X)	CIRCUITS ON	NUMBER OF FIXTURES ENERGIZED
BRIGHT/SUNNY	> 10,000	1 THRU 12, EM1	168
CLEAR, PARTLY CLOUDY	100 - 10,000	1,2,4,5,7,8,10,11,EM1	112
MOSTLY CLOUDY, OVERCAST, DAWN/DUSK	1-100	1,4,7,10,EM1	56
NIGHT	<1	NT1,EM1	16
EMERGENCY	ALWAYS ON	EM1	8

HOWELL AVE SB TUNNEL
LUMINAIRE SCHEDULE

NOTES:

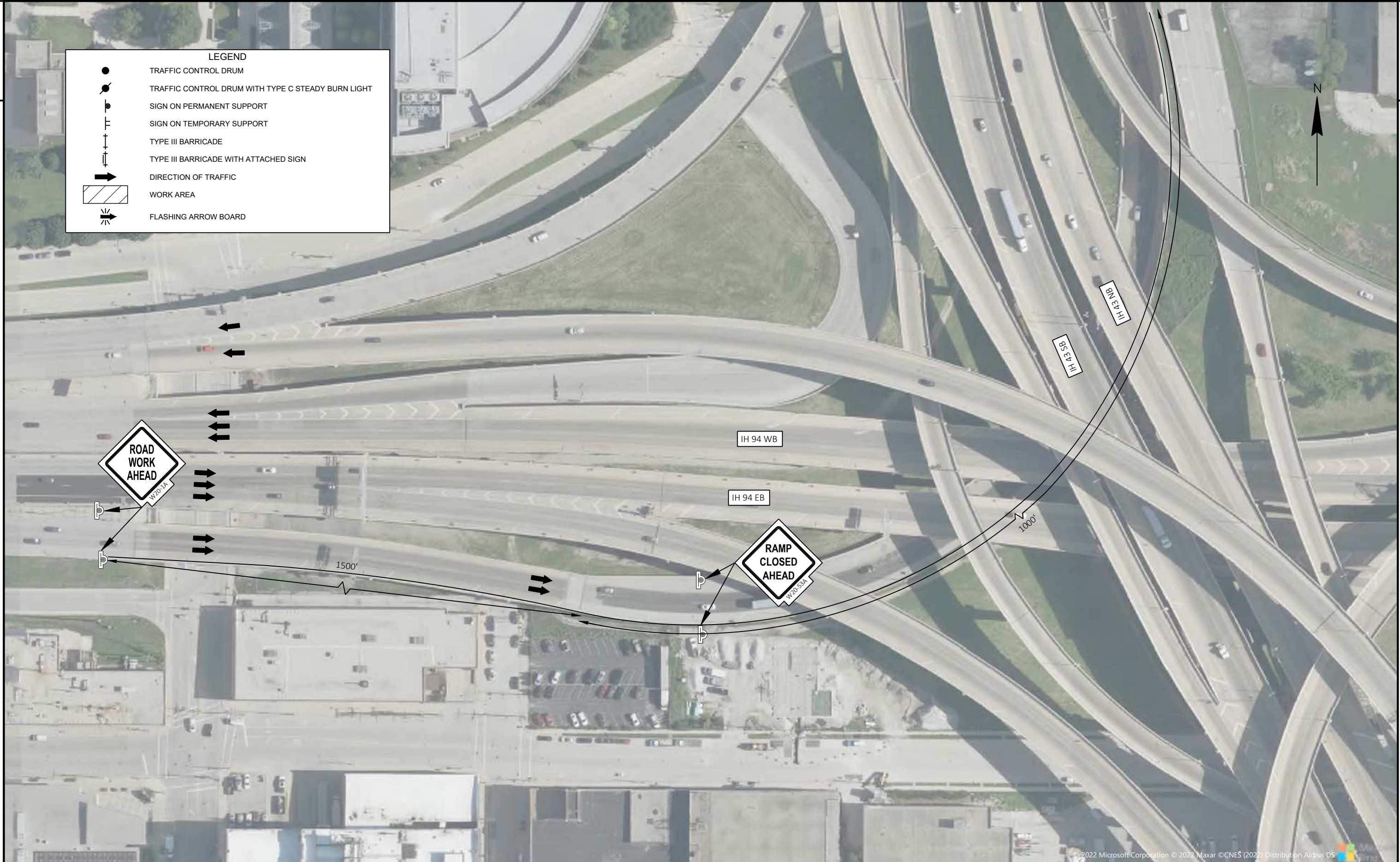
1. CONTRACTOR TO COORDINATE WITH TUNNEL LIGHTING CONTROLLER VENDOR ON LIGHT LEVELS TO BE USED TO CONTROL SEVEN DAYTIME AND TWO NIGHTTIME CIRCUITS. ALTERNATIVE LIGHTING SOLUTION MAY BE SUBMITTED TO ENGINEER FOR REVIEW.
2. DAYTIME LUMINAIRES ARE ALL 277V, LED, 435W, FIXTURES. NIGHTTIME AND EMERGENCY LUMINAIRES ARE ALL 277V, LED, 125W, FIXTURES.

SB HOWELL AVE



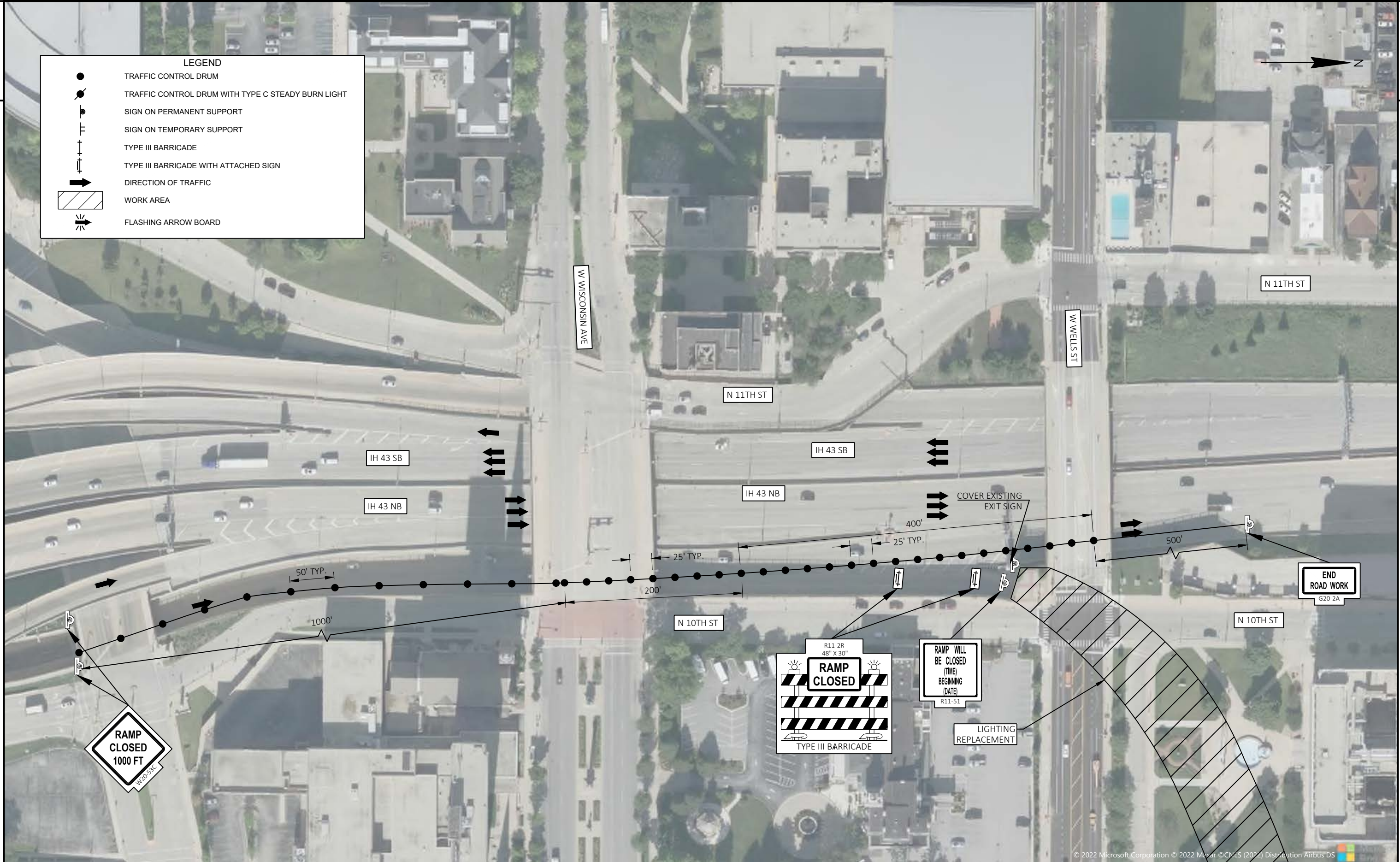
LEGEND

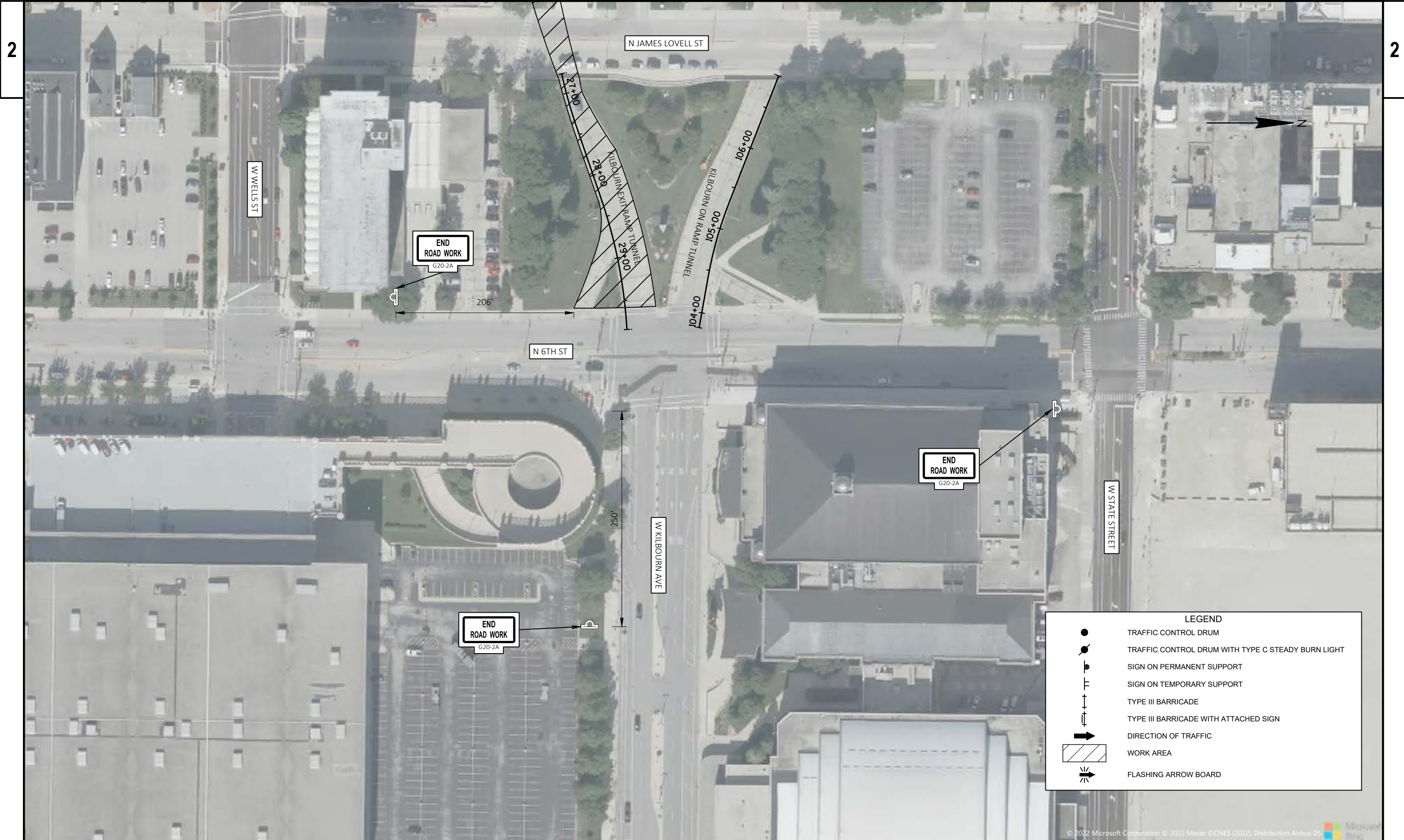
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ⚡ FLASHING ARROW BOARD



LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ⊥ SIGN ON PERMANENT SUPPORT
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➔ DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ⚡ FLASHING ARROW BOARD



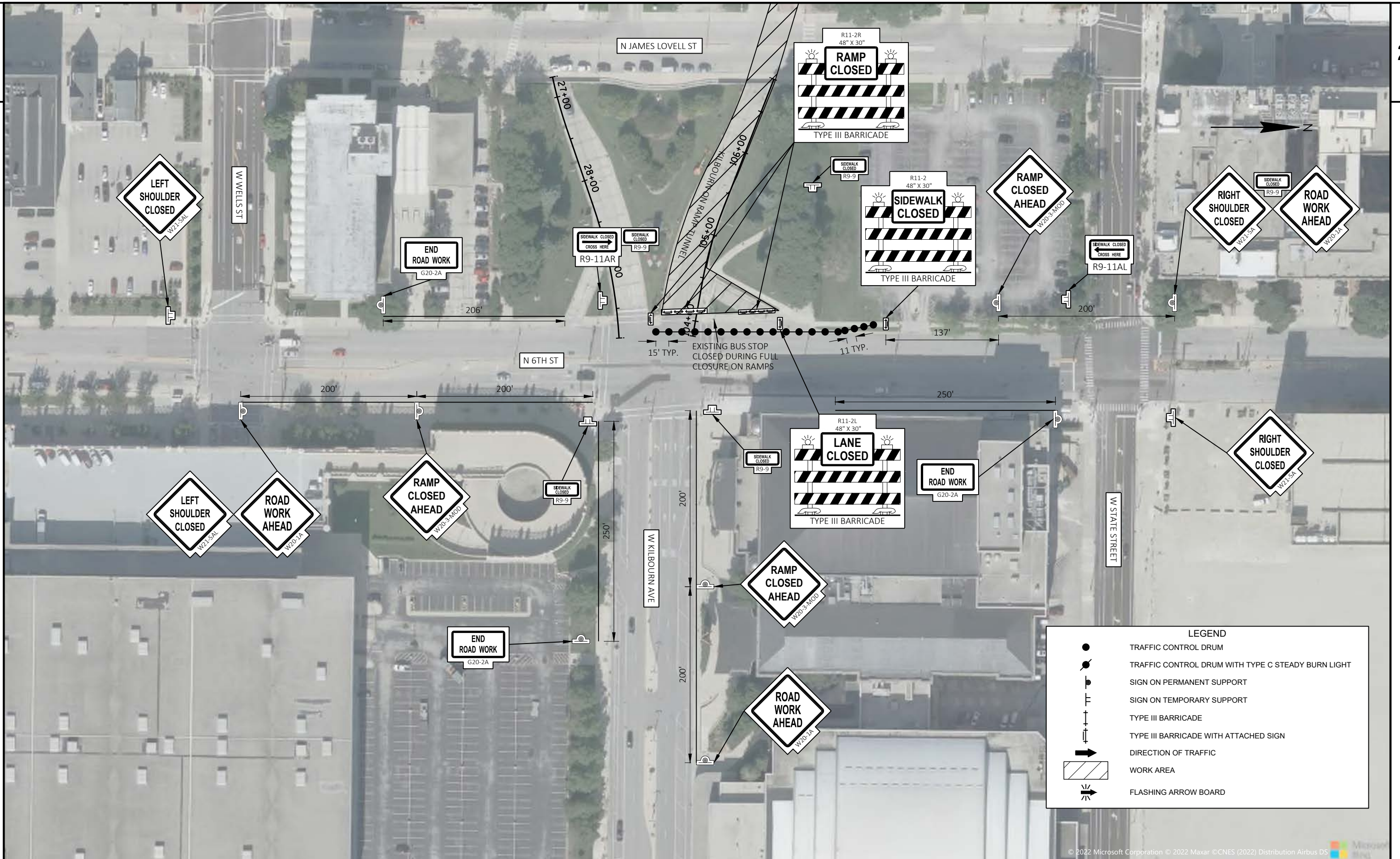


2

2



PROJECT NO: 1000-13-76	HWY: IH 43	COUNTY: MILWAUKEE	TRAFFIC CONTROL, KILBOURN ON RAMP STAGE 2 OVERVIEW	SHEET	E
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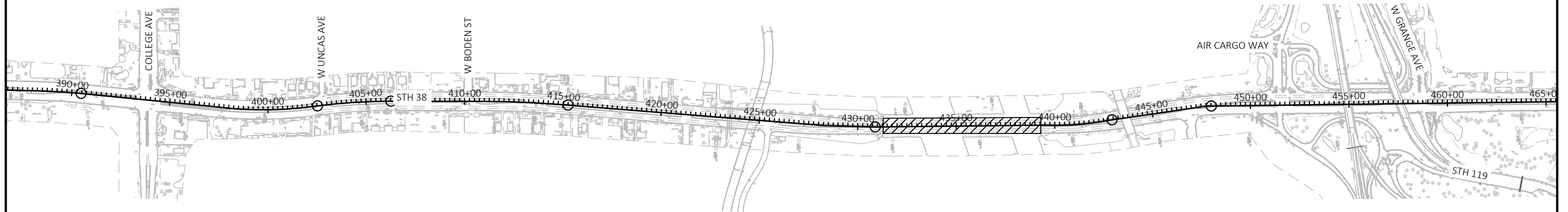


LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- - - SIGN ON TEMPORARY SUPPORT
- ▬ TYPE III BARRICADE
- ▬ TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ⚡ FLASHING ARROW BOARD

LEGEND

WORK ZONE



CONSTRUCTION ACTIVITIES

- 1. ALL CONSTRUCTION OPERATIONS STA 431+25 TO STA 439+25. CONSTRUCTION OPERATIONS INCLUDE LIGHTING REPAIR AND REPLACEMENT
- 2. WORK PERFORMED DURING DAYTIME

MAINTENANCE OF TRAFFIC

- 1. STH 38 TO CLOSE ONE OUTERMOST LANE AT A TIME IN EACH DIRECTION
- 2. ACCESS TO ALL BUSINESSES AND RESIDENTS SHALL BE MAINTAINED AT ALL TIMES.

PROJECT NO: 1000-13-76

HWY: STH 38

COUNTY: MILWAUKEE








TRAFFIC CONTROL

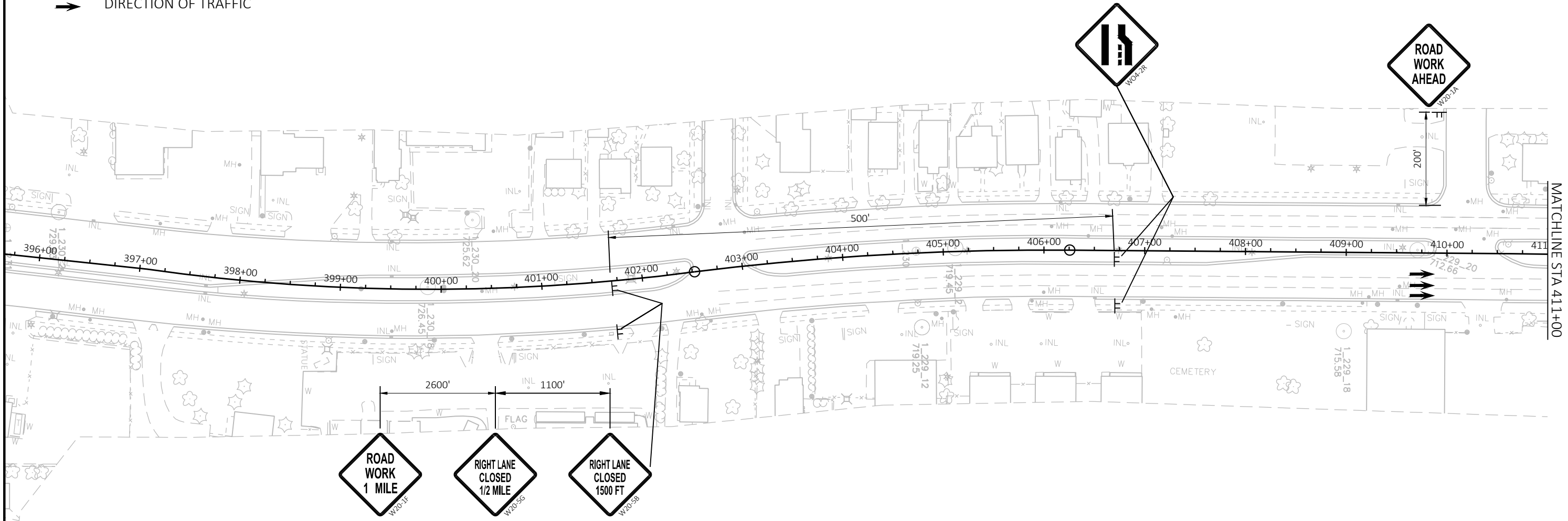
SHEET

E

LEGEND










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



PROJECT NO: 1000-13-76	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3A	SHEET	E
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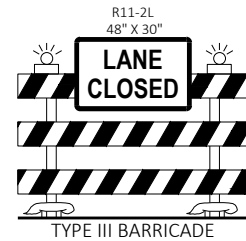
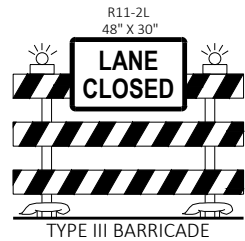
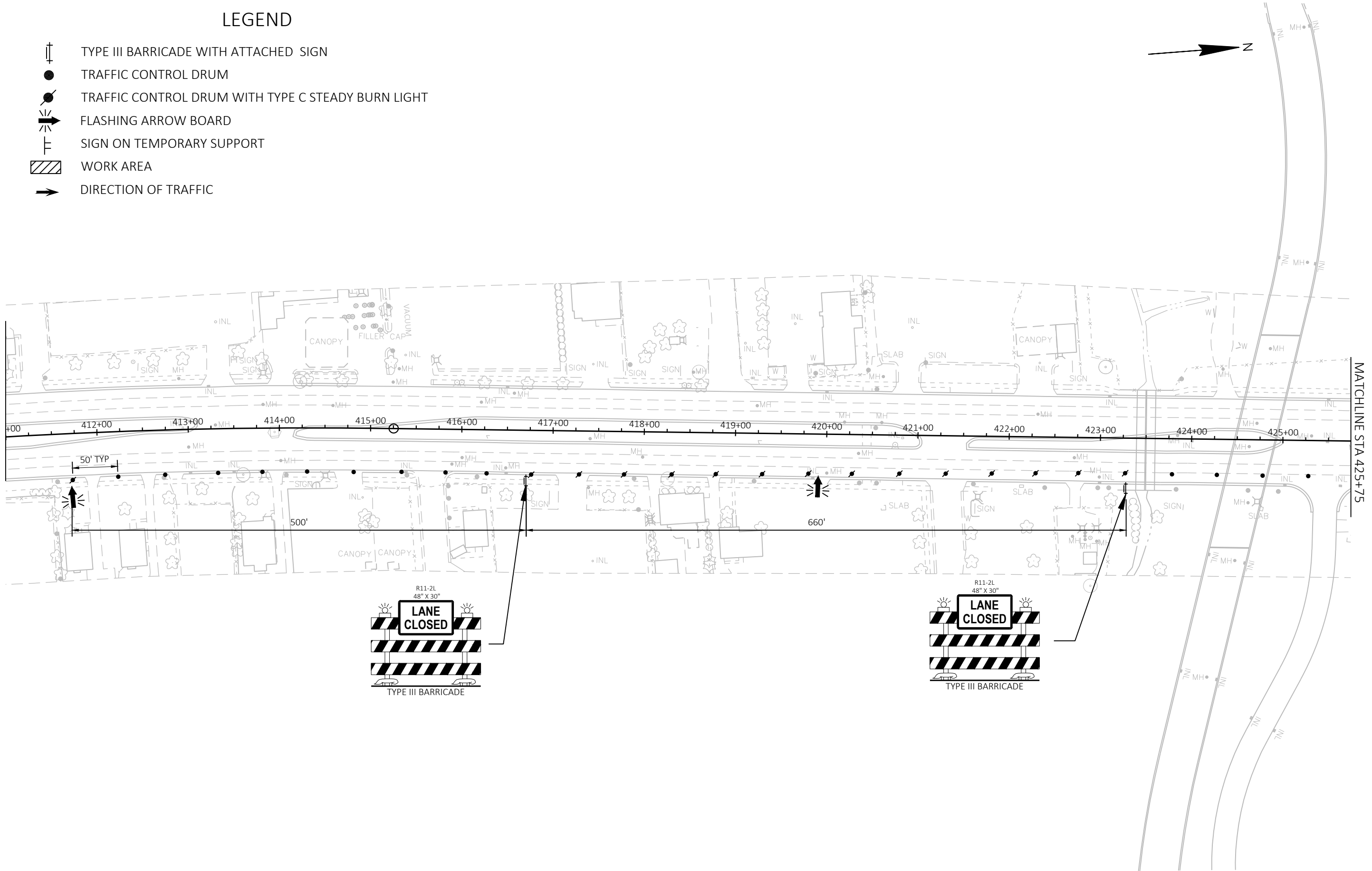
LEGEND

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










MATCHLINE STA 411+00

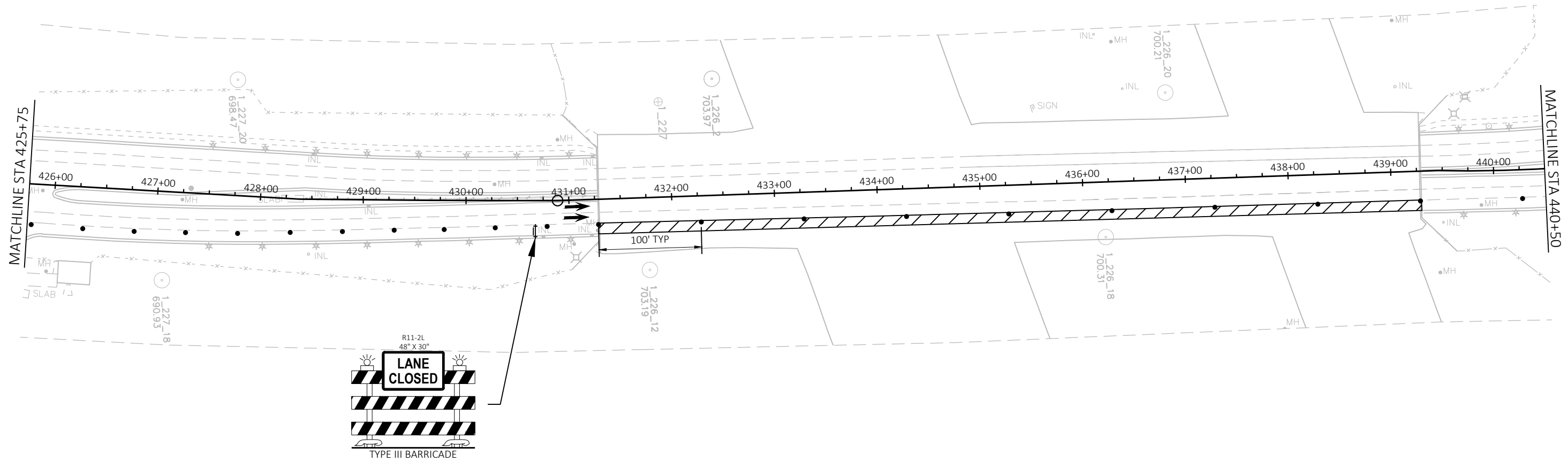
MATCHLINE STA 425+75










LEGEND

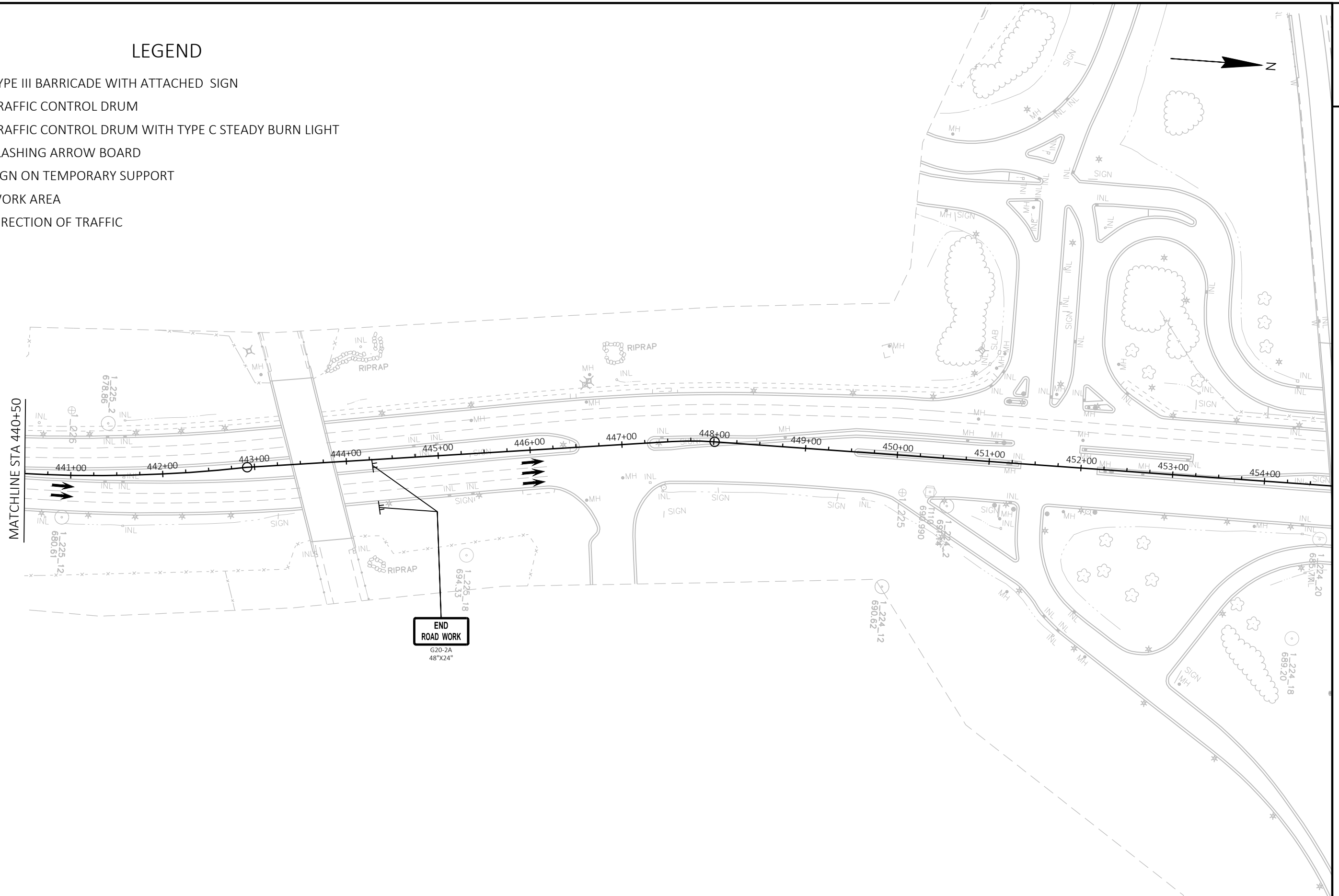


-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA
-  DIRECTION OF TRAFFIC










LEGEND

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

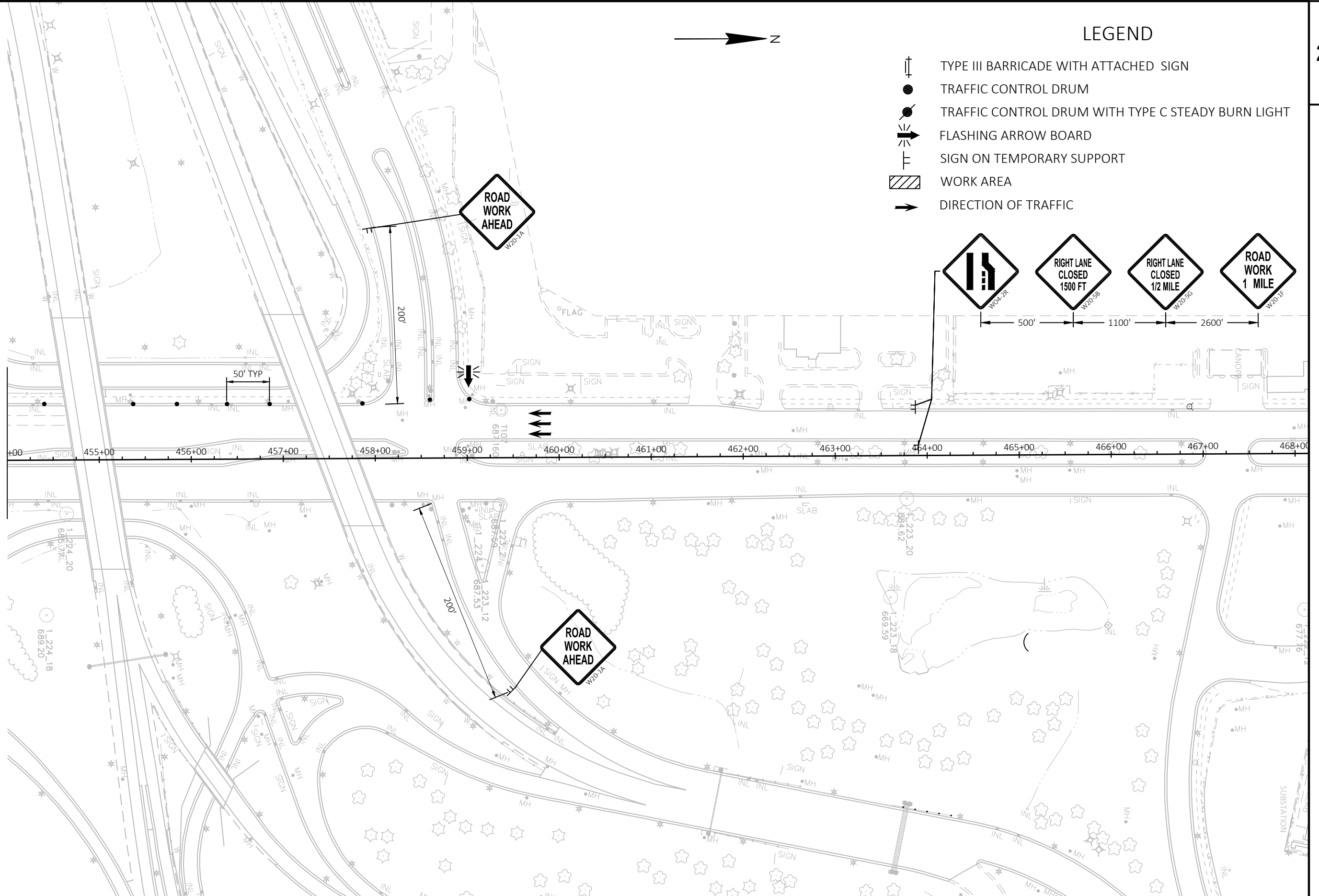


LEGEND








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

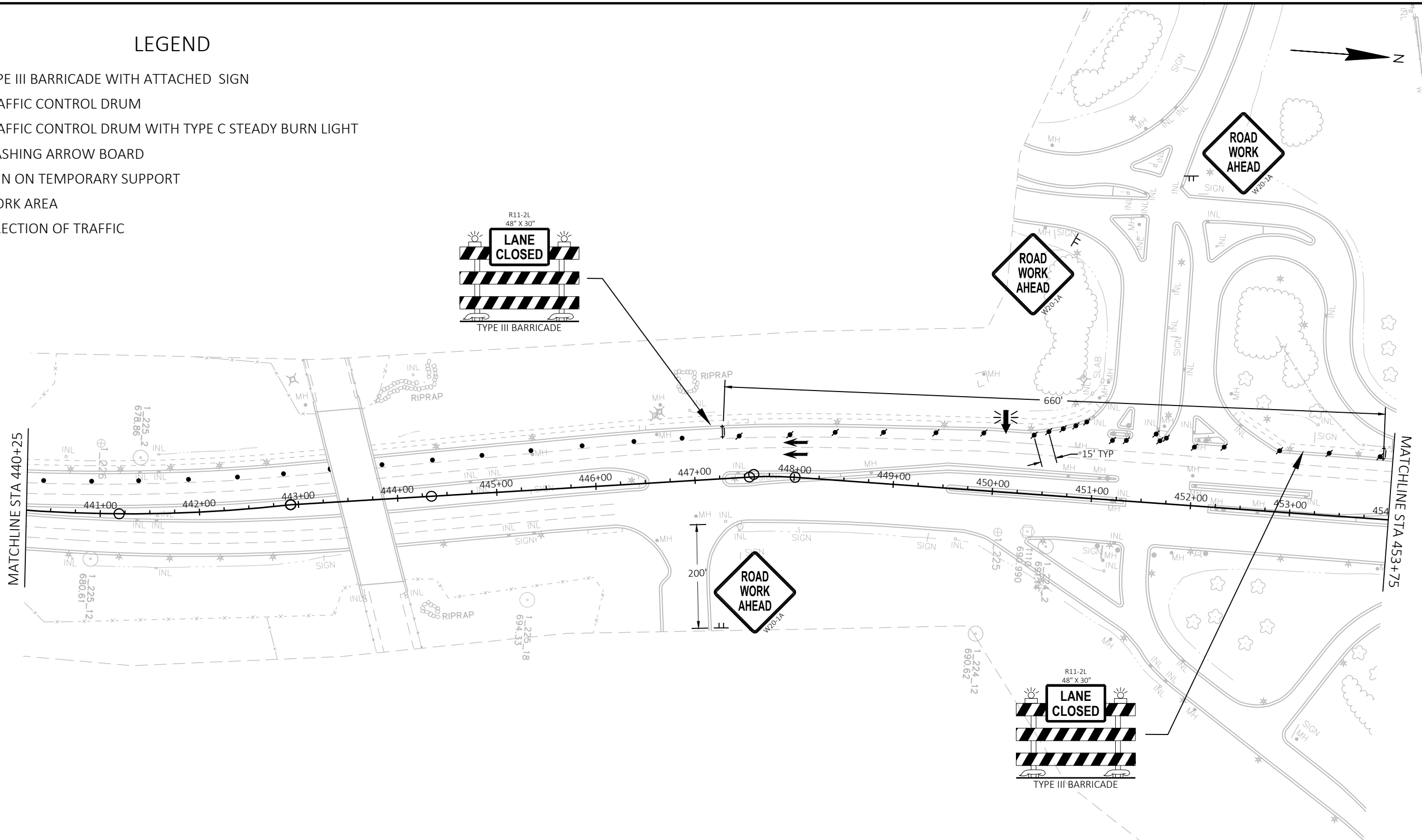
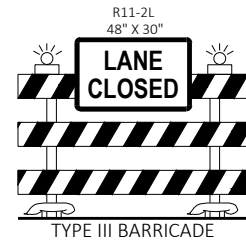


MATCHLINE STA 454+00










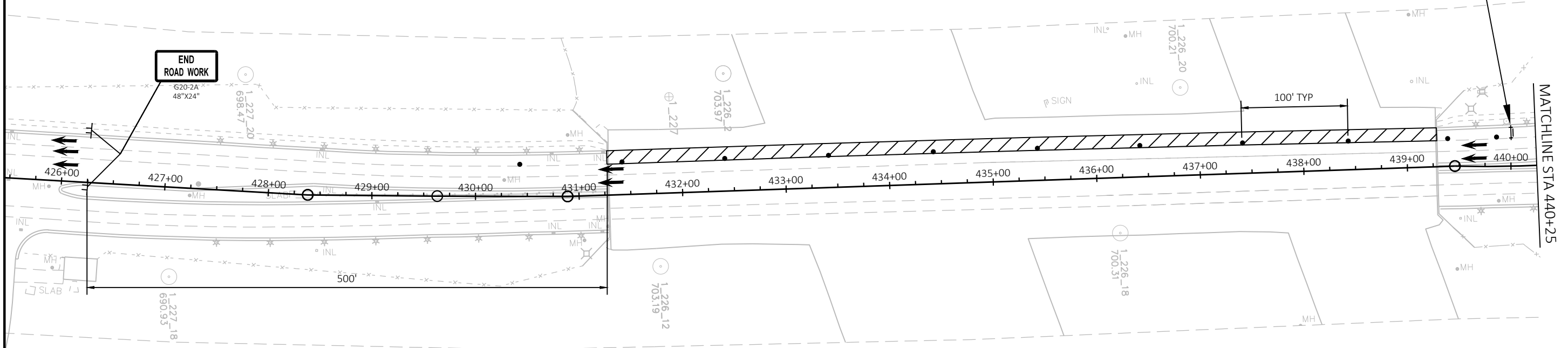
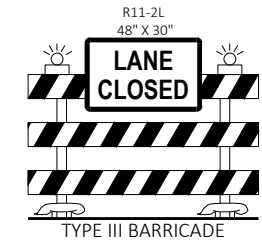
LEGEND

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



LEGEND

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



TRAFFIC CONTROL NOTES:

SEE SDD "TRAFFIC CONTROL, LANE CLOSURE"

PROVIDE TEMPORARY PEDESTRIAN ACCOMMODATIONS ON STH 38 IN THE CLOSED LANE.
CONSTRUCT CURB RAMPS ON THE NORTH SIDE. SEE SDD 15D30-08c AND 15D30-08h

PROJECT NO: 1000-13-76

HWY: STH 38

COUNTY: MILWAUKEE








TRAFFIC CONTROL STAGE 3A

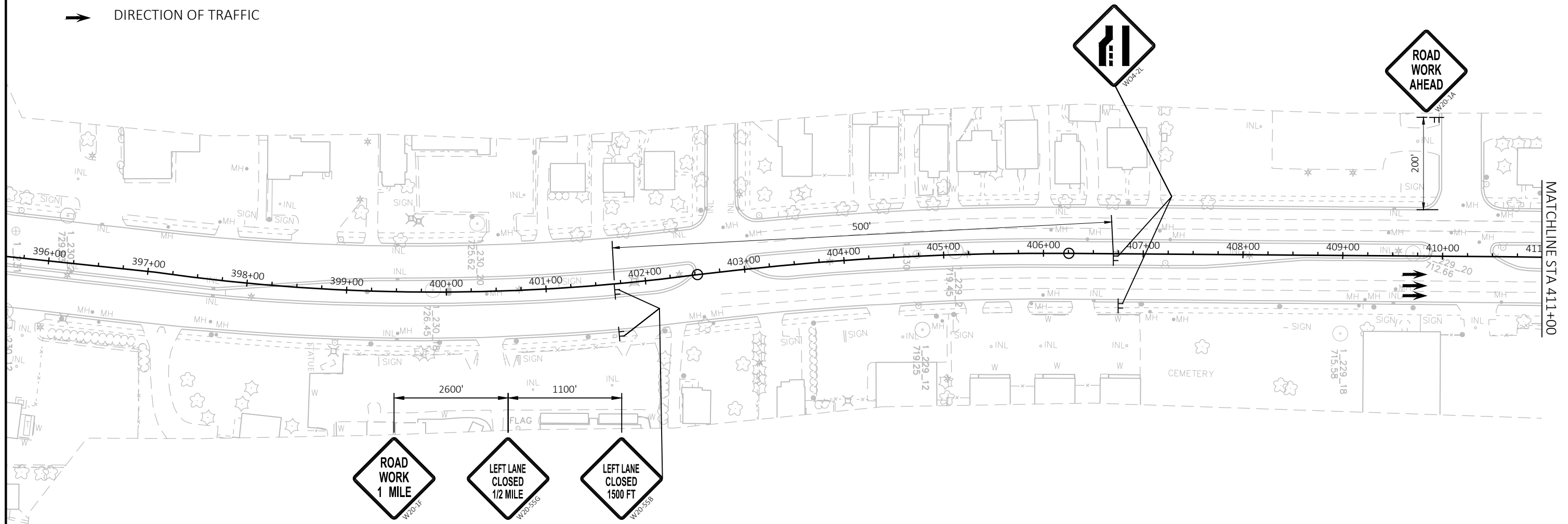
SHEET

E

LEGEND










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



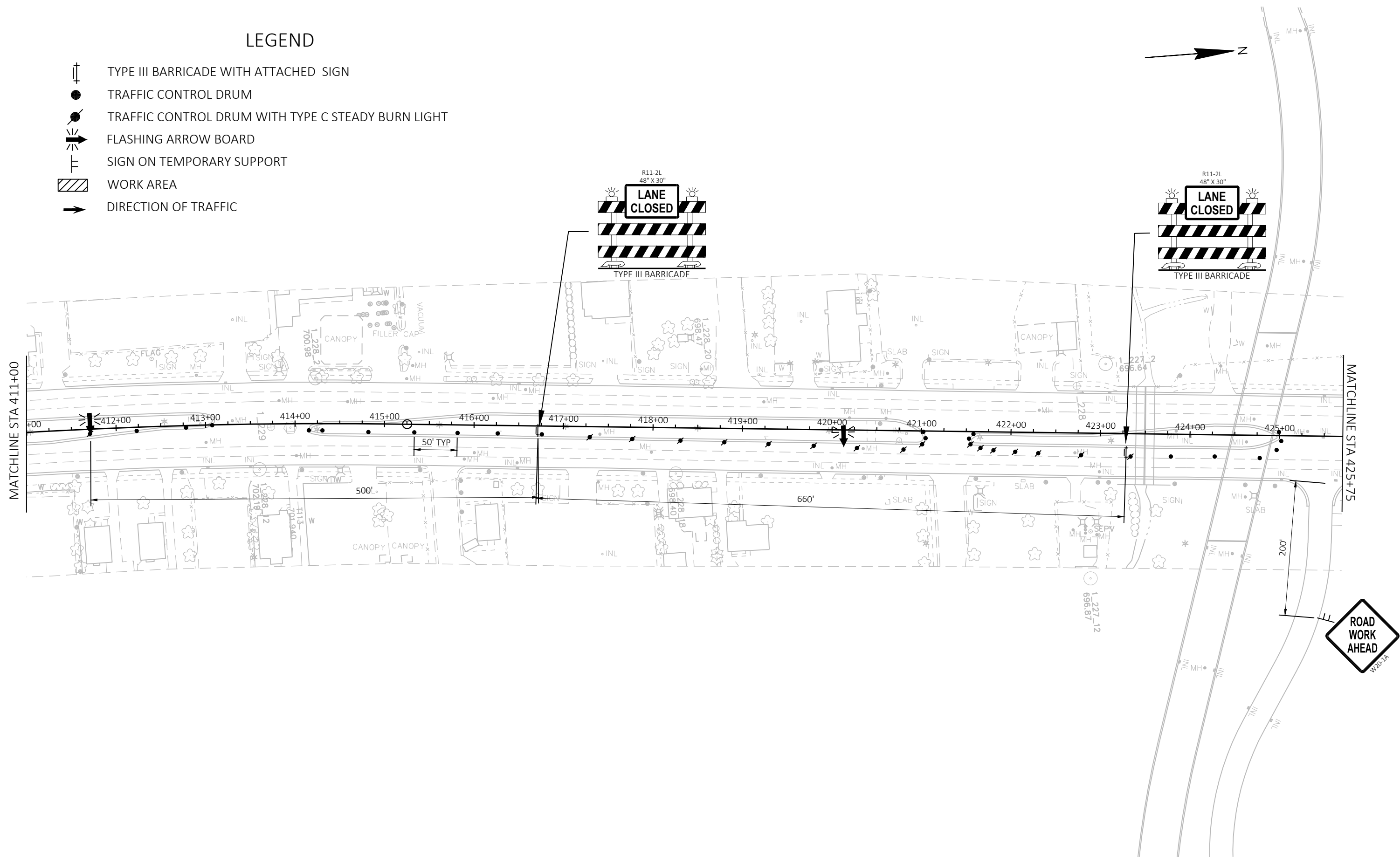
PROJECT NO: 1000-13-76	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3B	SHEET	E
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LEGEND

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

MATCHLINE STA 411+00








MATCHLINE STA 425+75

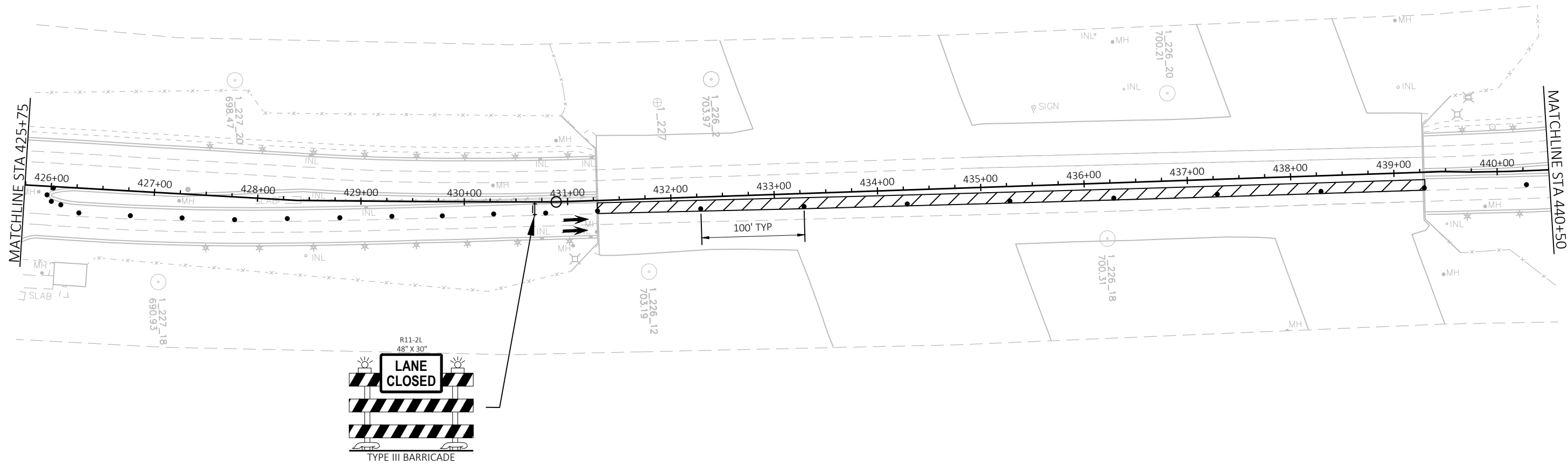


PROJECT NO: 1000-13-76	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3B	SHEET	E
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


LEGEND

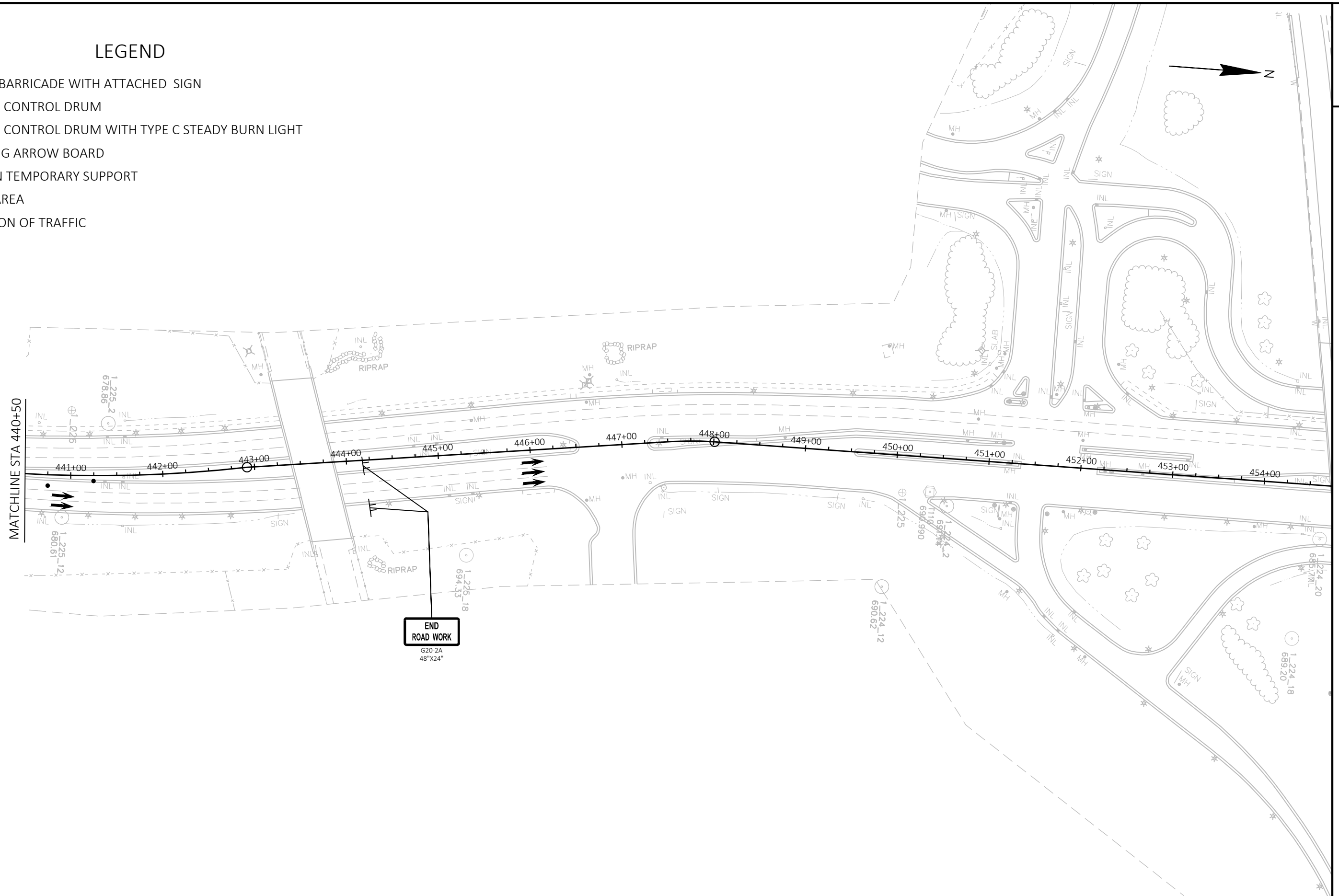


-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA
-  DIRECTION OF TRAFFIC










LEGEND

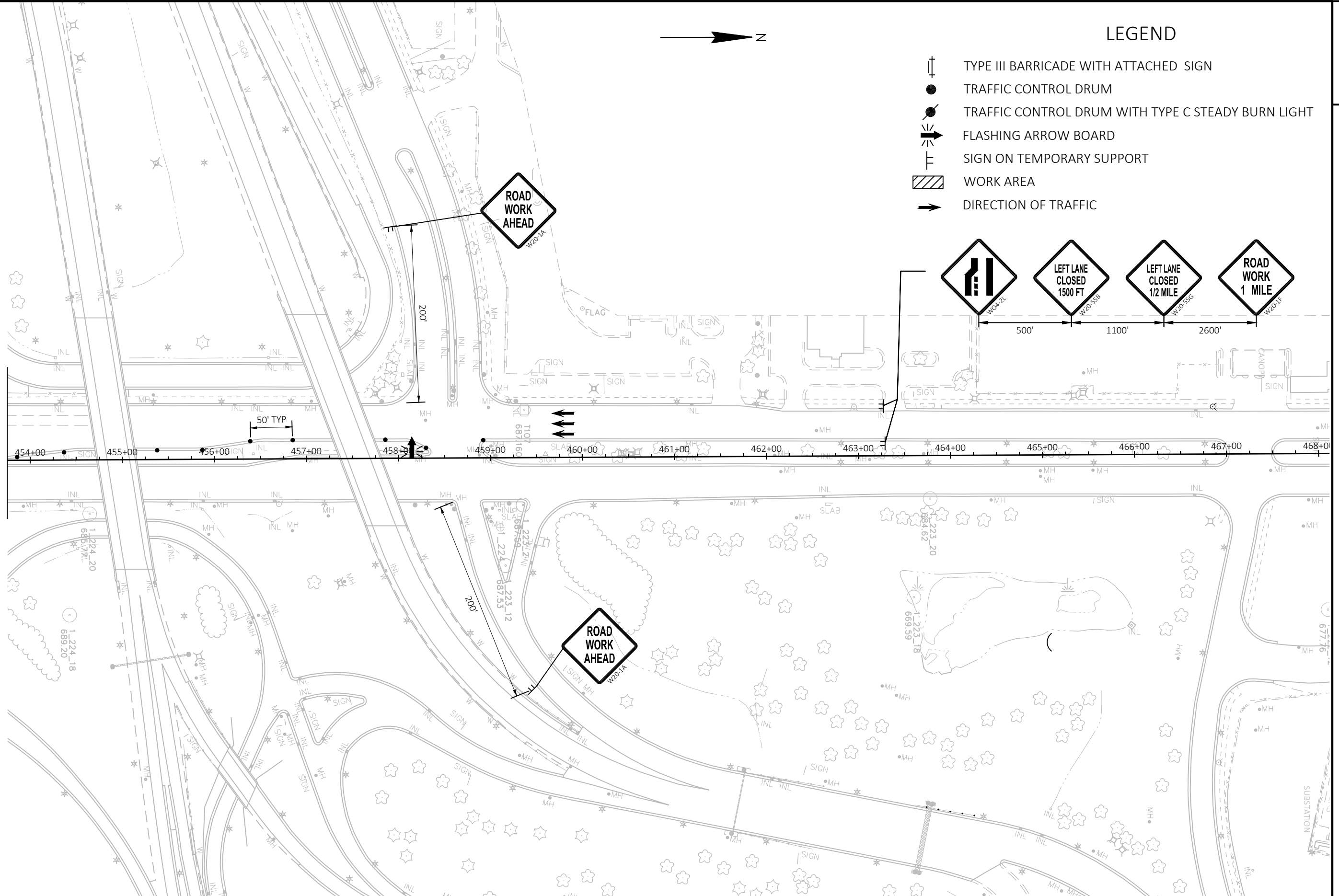
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA
-  DIRECTION OF TRAFFIC



LEGEND

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

MATCHLINE STA 453+75



PROJECT NO: 1000-13-76

HWY: STH 38








COUNTY: MILWAUKEE

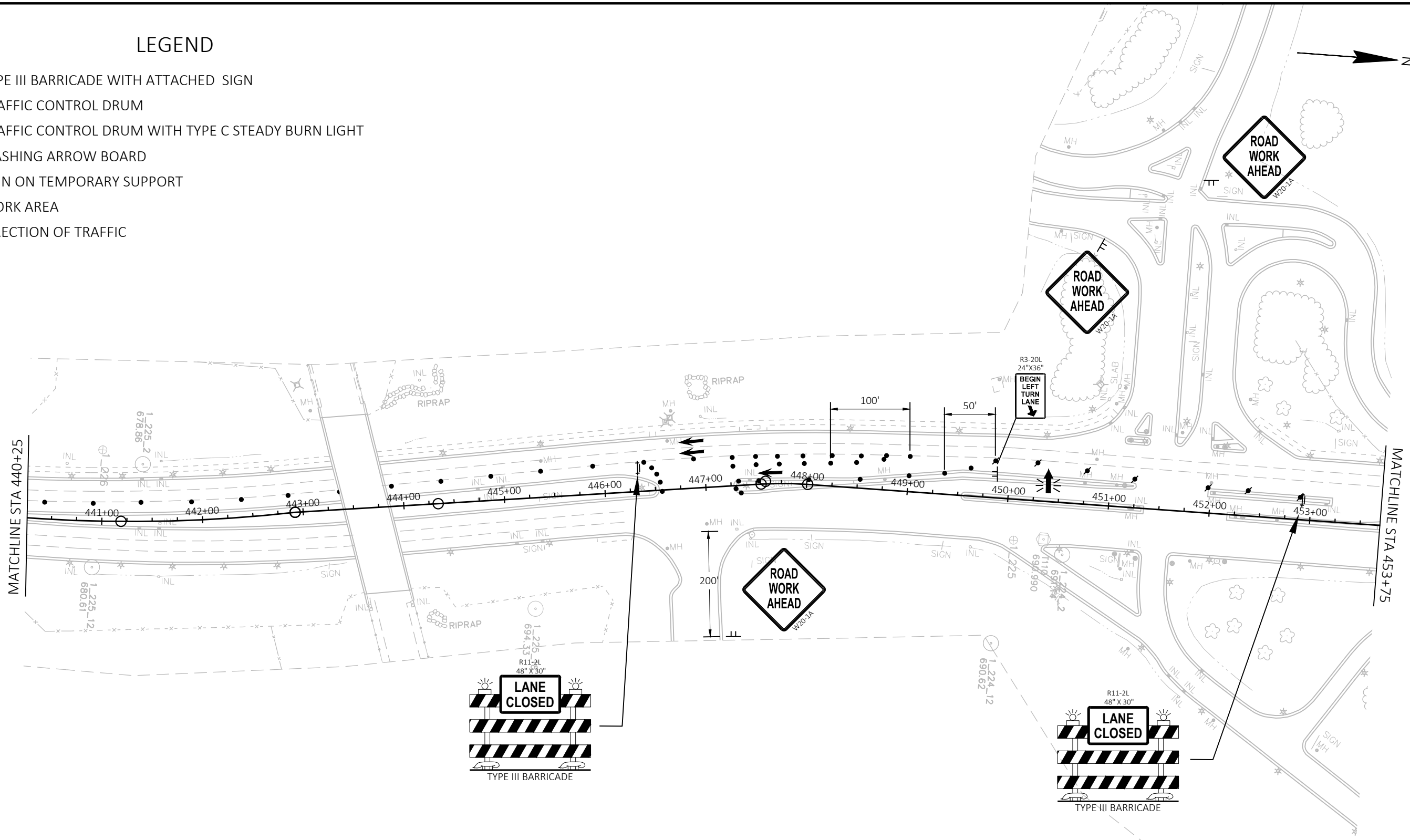
TRAFFIC CONTROL STAGE 3B

SHEET








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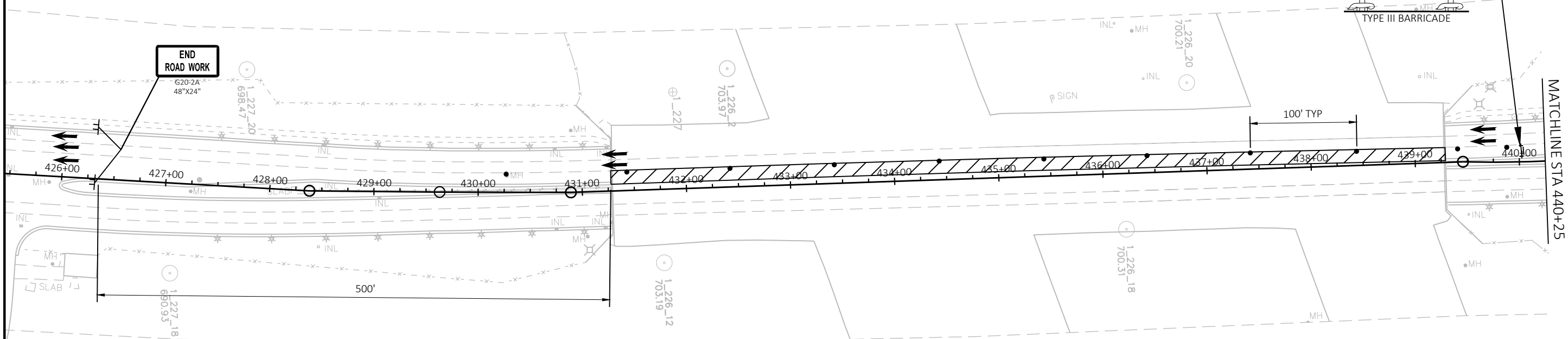
LEGEND

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












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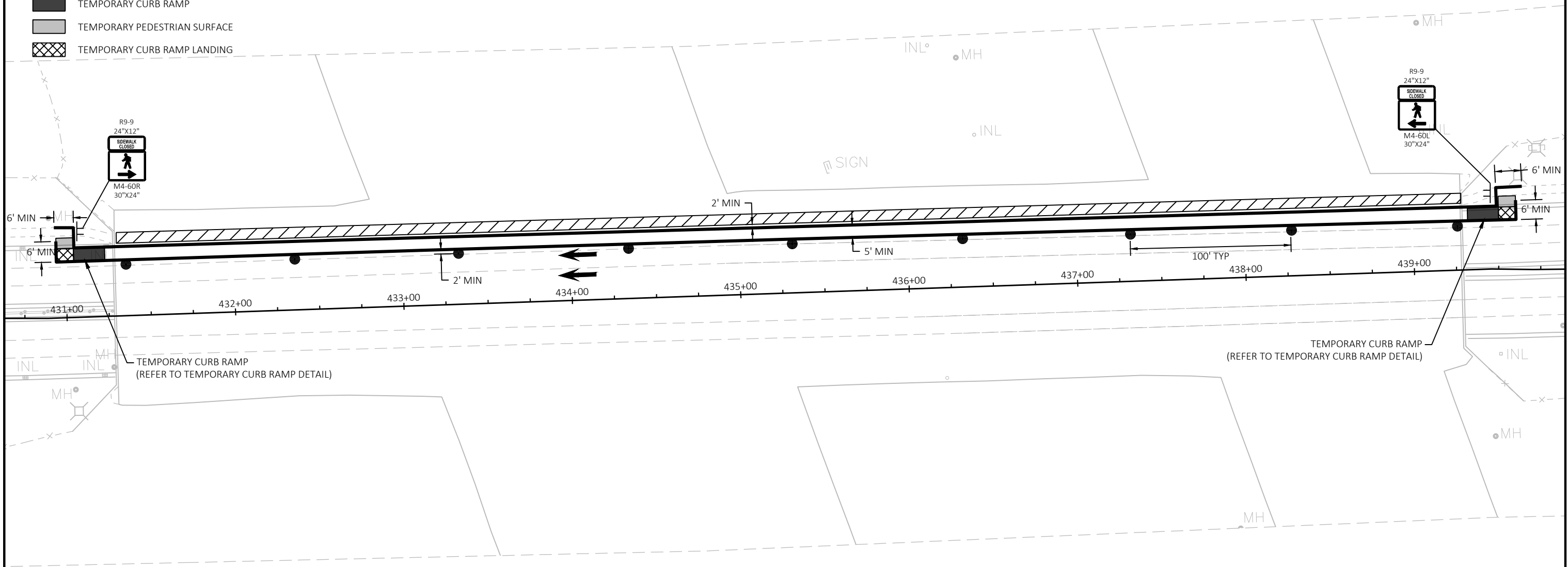
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA
-  DIRECTION OF TRAFFIC



PROJECT NO: 1000-13-76	HWY: STH 38	COUNTY: MILWAUKEE	TRAFFIC CONTROL STAGE 3B	SHEET	E
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LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  SIGN ON TEMPORARY SUPPORT
-  WORK AREA
-  DIRECTION OF TRAFFIC
-  TEMPORARY PEDESTRIAN BARRICADE
-  TEMPORARY CURB RAMP
-  TEMPORARY PEDESTRIAN SURFACE
-  TEMPORARY CURB RAMP LANDING



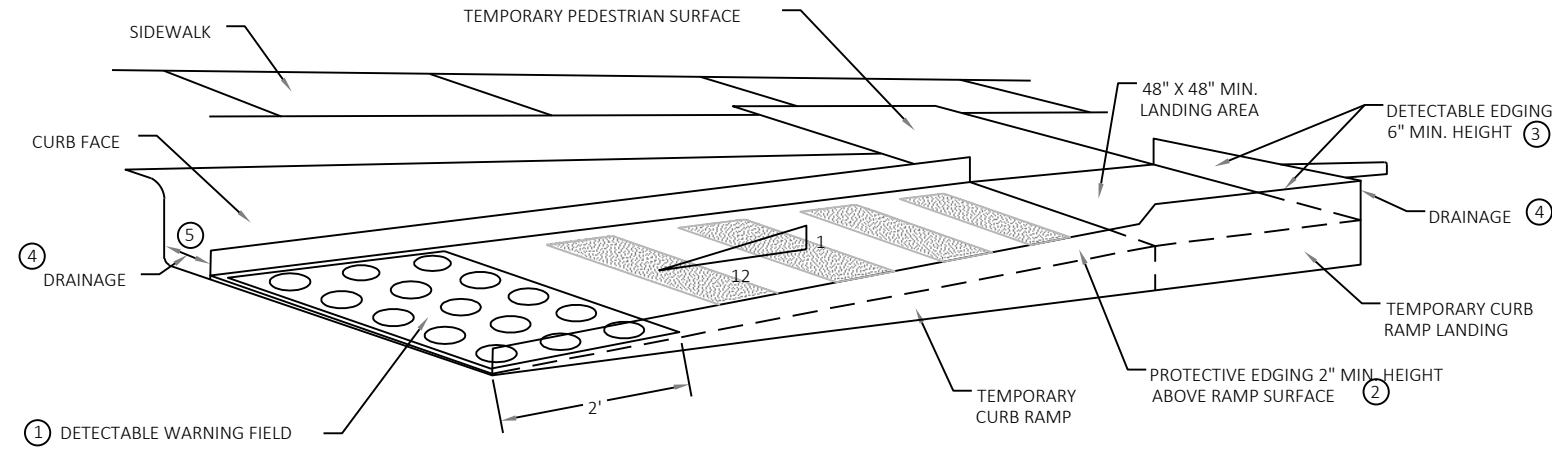
TRAFFIC CONTROL NOTES:

PROVIDE TEMPORARY PEDESTRIAN ACCOMMODATIONS ON STH 38 IN THE CLOSED LANE. CONSTRUCT CURB RAMPS AT EACH END OF THE WORK ZONE. SEE SDD 15D30-09B AND 15D30-09H.

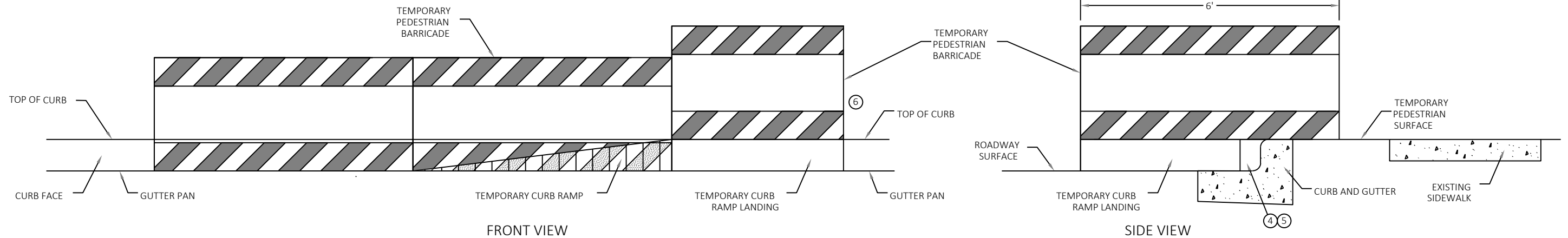
GENERAL NOTES

- CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.
- CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
- CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH
- CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2"

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.
- ⑥ IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.



PERSPECTIVE VIEW



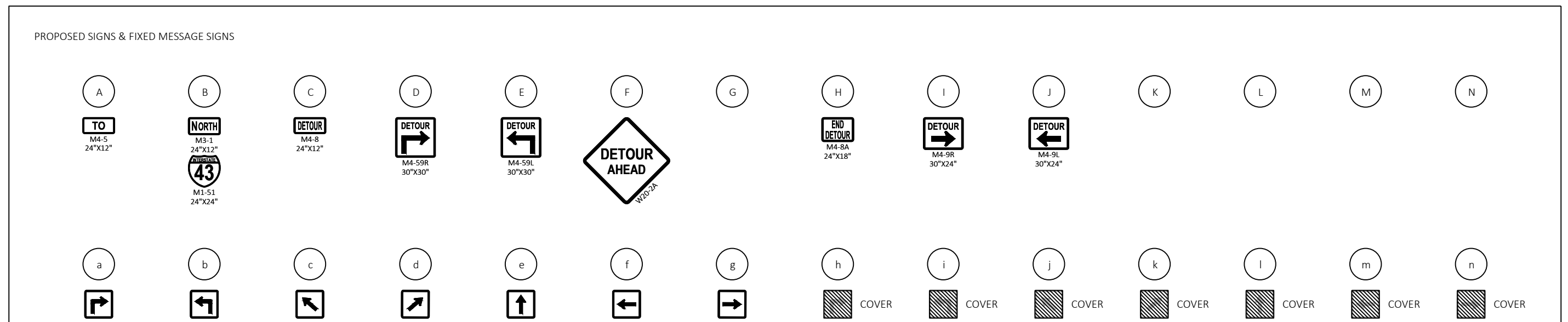
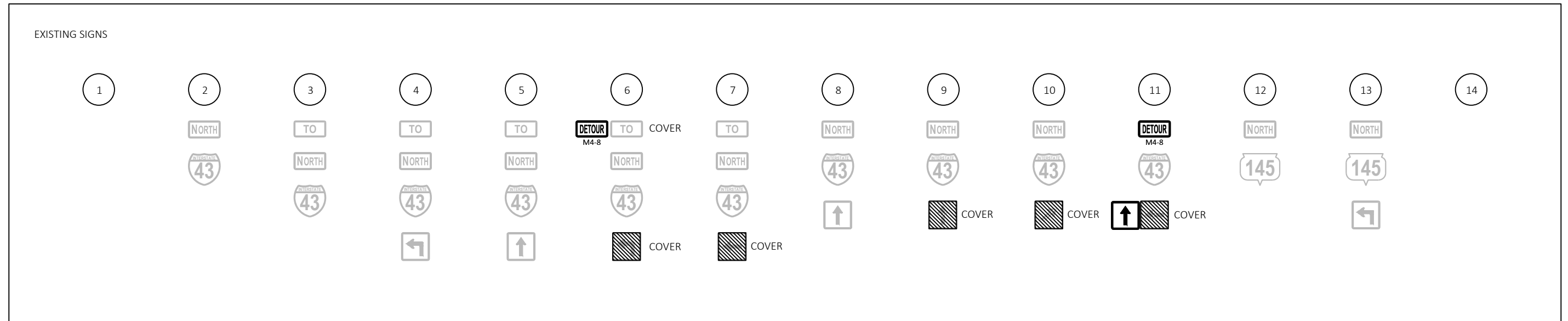
FRONT VIEW

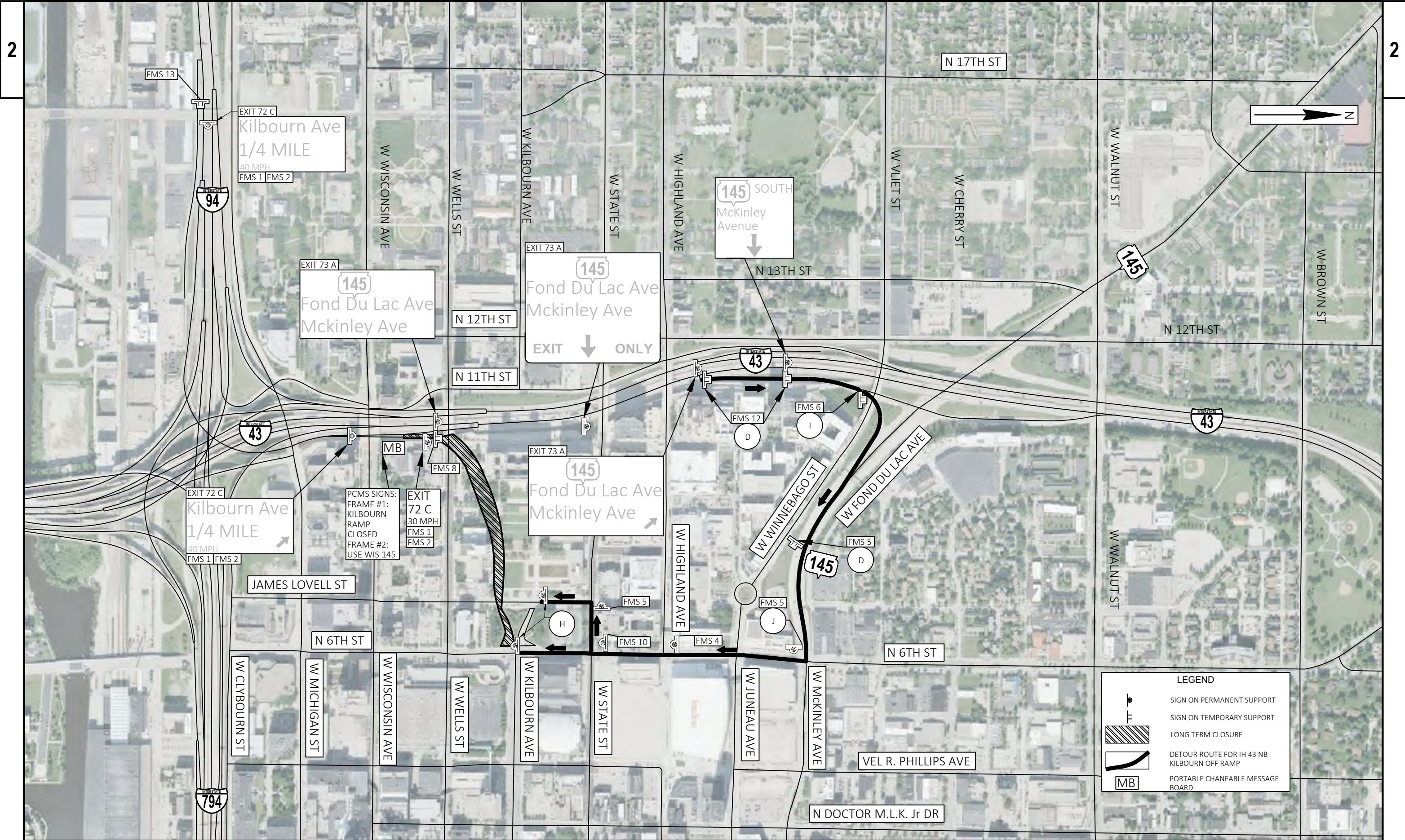
SIDE VIEW

TEMPORARY CURB RAMP PARALLEL TO CURB

NOTES

1. CONTRACTOR SHOULD LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400' FROM ANY EXISTING "I" SIGN.
2. ALL FIXED MESSAGE SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON ORANGE REFLECTIVE BACKGROUND.
3. SEE FIXED MESSAGE SIGNS LAYOUT SHEET FOR MORE INFORMATION.
4. COVER DETOUR SIGNING WHEN NOT IN USE. INCIDENTAL TO WORK ZONE TRAFFIC CONTROL SIGNING.
5. SIGNS TO BE PLACED 10 DAYS PRIOR TO CONSTRUCTION.





PROJECT NO: 1000-13-06

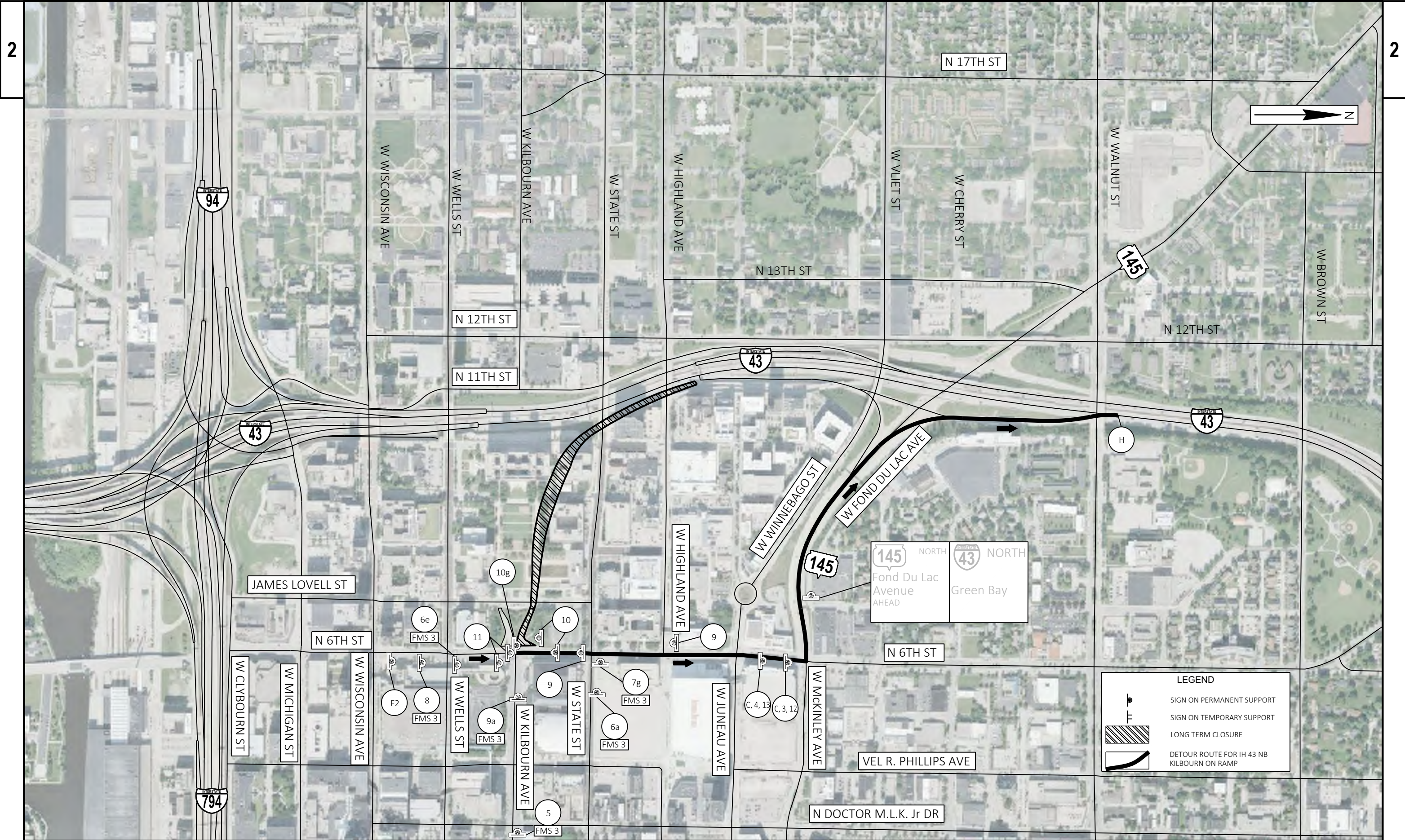
HWY: IH 43

COUNTY: MILWAUKEE

DETOUR PLAN KILBOURN EXIT RAMP

SHEET

E



PROJECT NO: 1000-13-06

HWY: IH43

COUNTY: MILWAUKEE

DETOUR PLAN KILBOURN ON RAMP

SHEET

E

Estimate Of Quantities

1000-13-76

Line	Item	Item Description	Unit	Total	Qty
0002	204.9060.S	Removing (item description) 1001. Removing Luminaires Tunnel Lighting	EACH	766.000	766.000
0004	619.1000	Mobilization	EACH	1.000	1.000
0006	643.0300	Traffic Control Drums	DAY	5,840.000	5,840.000
0008	643.0420	Traffic Control Barricades Type III	DAY	500.000	500.000
0010	643.0705	Traffic Control Warning Lights Type A	DAY	1,000.000	1,000.000
0012	643.0715	Traffic Control Warning Lights Type C	DAY	1,220.000	1,220.000
0014	643.0800	Traffic Control Arrow Boards	DAY	160.000	160.000
0016	643.0900	Traffic Control Signs	DAY	2,500.000	2,500.000
0018	643.0920	Traffic Control Covering Signs Type II	EACH	90.000	90.000
0020	643.1050	Traffic Control Signs PCMS	DAY	20.000	20.000
0022	643.5000	Traffic Control	EACH	1.000	1.000
0024	644.1430	Temporary Pedestrian Surface Plate	SF	40.000	40.000
0026	644.1601	Temporary Pedestrian Curb Ramp	DAY	40.000	40.000
0028	644.1605	Temporary Pedestrian Detectable Warning Field	SF	8.000	8.000
0030	644.1810	Temporary Pedestrian Barricade	LF	1,750.000	1,750.000
0032	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	550.000	550.000
0034	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	150.000	150.000
0036	653.0140	Pull Boxes Steel 24x42-Inch	EACH	2.000	2.000
0038	655.0610	Electrical Wire Lighting 12 AWG	LF	9,258.000	9,258.000
0040	655.0615	Electrical Wire Lighting 10 AWG	LF	9,473.000	9,473.000
0042	655.0620	Electrical Wire Lighting 8 AWG	LF	9,059.000	9,059.000
0044	655.0625	Electrical Wire Lighting 6 AWG	LF	500.000	500.000
0046	655.0630	Electrical Wire Lighting 4 AWG	LF	27,375.000	27,375.000
0048	655.0635	Electrical Wire Lighting 2 AWG	LF	2,700.000	2,700.000
0050	655.0640	Electrical Wire Lighting 1 AWG	LF	54.000	54.000
0052	659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH	766.000	766.000
0054	SPV.0060	Special 1001. Luminaires Tunnel Lighting LED (Daytime)	EACH	504.000	504.000
0056	SPV.0060	Special 1002. Luminaires Tunnel Lighting LED (Nighttime)	EACH	41.000	41.000
0058	SPV.0060	Special 1003. Tunnel Lighting Mounting Brackets	EACH	545.000	545.000
0060	SPV.0060	Special 1004. Junction Boxes Steel 18x12x6-Inch Coated	EACH	168.000	168.000
0062	SPV.0060	Special 1005. Junction Boxes Steel 6x6x4-Inch Coated	EACH	68.000	68.000
0064	SPV.0060	Special 1006. Distribution Center Preventative Maintenance	EACH	3.000	3.000
0066	SPV.0060	Special 1007. Tunnel Cleaning - Kilbourn NB Exit Ramp	EACH	1.000	1.000
0068	SPV.0060	Special 1008. Tunnel Cleaning - Kilbourn NB Entrance Ramp	EACH	1.000	1.000
0070	SPV.0060	Special 1009. Tunnel Cleaning - Howell NB Tunnel	EACH	1.000	1.000
0072	SPV.0060	Special 1010. Tunnel Cleaning - Howell SB Tunnel	EACH	1.000	1.000
0074	SPV.0060	Special 1011. Lighting System Integrator	EACH	1.000	1.000
0076	SPV.0060	Special 1012. Control System Preventive and Maintenance	EACH	1.000	1.000
0078	SPV.0060	Special 1013. Lighting Control System Installation Kilbourn NB Exit Ramp (HL-40-QA)	EACH	1.000	1.000
0080	SPV.0060	Special 1014. Lighting Control System Installation Kilbourn NB Entrance Ramp (HL-40-KI)	EACH	1.000	1.000
0082	SPV.0060	Special 1015. Lighting Control System Installation Howell Tunnel (HL-40-HO)	EACH	1.000	1.000
0084	SPV.0090	Special 1001. Liquid tight Flexible Metallic Conduit 3/4-Inch	LF	6,244.000	6,244.000
0086	SPV.0090	Special 1002. Rigid Galvanized Steel Conduit 1-Inch Coated	LF	3,326.000	3,326.000
0088	SPV.0090	Special 1003. Rigid Galvanized Steel Conduit 1 1/4-Inch Coated	LF	5,733.000	5,733.000

Estimate Of Quantities

1000-13-76

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION STATION	OFFSET	204.9060.S.1001				659.5000.S	COMMENTS	
							REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR		
							EACH	EACH	EACH	EACH	EACH		
1100	HL-40-QA	1	1	NIGHT (N)	--	--	--	1	--	--	1	--	
			61	NIGHT (N)	--	--	--	1	--	--	1	--	
			117	NIGHT (N)	--	--	--	1	--	--	1	--	
			146	NIGHT (N)	--	--	--	1	--	--	1	--	
			167	NIGHT (N)	--	--	--	1	--	--	1	--	
			172-1	NIGHT (N)	--	--	--	1	--	--	1	--	
			7	DAY (D)	--	--	--	--	--	1	1	--	
			26	DAY (D)	--	--	--	--	--	1	1	--	
			46	DAY (D)	--	--	--	--	--	1	1	--	
			66	DAY (D)	--	--	--	--	--	1	1	--	
			86	DAY (D)	--	--	--	--	--	1	1	--	
			106	DAY (D)	--	--	--	--	--	1	1	--	
			120	DAY (D)	--	--	--	--	--	1	1	--	
			132	DAY (D)	--	--	--	--	--	1	1	--	
			143	DAY (D)	--	--	--	--	--	1	1	--	
			151	DAY (D)	--	--	--	--	--	1	1	--	
			159	DAY (D)	--	--	--	--	--	1	1	--	
			164	DAY (D)	--	--	--	--	--	1	1	--	
			168	DAY (D)	--	--	--	--	--	1	1	--	
			21	NIGHT (N)	--	--	--	1	--	--	1	--	
			81	NIGHT (N)	--	--	--	1	--	--	1	--	
			129	NIGHT (N)	--	--	--	1	--	--	1	--	
			157	NIGHT (N)	--	--	--	1	--	--	1	--	
			171	NIGHT (N)	--	--	--	1	--	--	1	--	
			11	DAY (D)	--	--	--	1	--	--	1	--	
			31	DAY (D)	--	--	--	1	--	--	1	--	
			51	DAY (D)	--	--	--	1	--	--	1	--	
			71	DAY (D)	--	--	--	1	--	--	1	--	
			91	DAY (D)	--	--	--	1	--	--	1	--	
			111	DAY (D)	--	--	--	1	--	--	1	--	
			123	DAY (D)	--	--	--	1	--	--	1	--	
			135	DAY (D)	--	--	--	1	--	--	1	--	
			145	DAY (D)	--	--	--	1	--	--	1	--	
			153	DAY (D)	--	--	--	1	--	--	1	--	
			161	DAY (D)	--	--	--	1	--	--	1	--	
		1	SUBTOTAL					0	22	0	13	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR	
							EACH	EACH		EACH	EACH	
1100	HL-40-QA	1	165	DAY (D)	--	--	--	1	--	--	1	--
			169	DAY (D)	--	--	--	1	--	--	1	--
			41	NIGHT (N)	--	--	--	1	--	--	1	--
			101	NIGHT (N)	--	--	--	1	--	--	1	--
			141	NIGHT (N)	--	--	--	1	--	--	1	--
			163	NIGHT (N)	--	--	--	1	--	--	1	--
			16	NIGHT (N)	--	--	--	--	--	1	1	--
			36	NIGHT (N)	--	--	--	--	--	1	1	--
			56	NIGHT (N)	--	--	--	--	--	1	1	--
			76	NIGHT (N)	--	--	--	--	--	1	1	--
			96	NIGHT (N)	--	--	--	--	--	1	1	--
			114	NIGHT (N)	--	--	--	--	--	1	1	--
			126	NIGHT (N)	--	--	--	--	--	1	1	--
			138	NIGHT (N)	--	--	--	--	--	1	1	--
			147	NIGHT (N)	--	--	--	--	--	1	1	--
			155	NIGHT (N)	--	--	--	--	--	1	1	--
			162	NIGHT (N)	--	--	--	--	--	1	1	--
			166	NIGHT (N)	--	--	--	--	--	1	1	--
			170	NIGHT (N)	--	--	--	--	--	1	1	--
			3	B1	--	--	--	--	--	1	1	--
			17	B1	--	--	--	--	--	1	1	--
			33	B1	--	--	--	--	--	1	1	--
			47	B1	--	--	--	--	--	1	1	--
			63	B1	--	--	--	--	--	1	1	--
			77	B1	--	--	--	--	--	1	1	--
			93	B1	--	--	--	--	--	1	1	--
			107	B1	--	--	--	--	--	1	1	--
			118	B1	--	--	--	--	--	1	1	--
			127	B1	--	--	--	--	--	1	1	--
			136	B1	--	--	--	--	--	1	1	--
			146	B1	--	--	--	--	--	1	1	--
			158	B1	--	--	--	--	--	1	1	--
			8	B1	--	--	--	--	--	1	1	--
			23	B1	--	--	--	--	--	1	1	--
			37	B1	--	--	--	--	--	1	1	--
		1	SUBTOTAL				0	6	0	29	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR	
							EACH	EACH		EACH	EACH	
1100	HL-40-QA	1	53	B1	--	--	--	--	--	1	1	--
			67	B1	--	--	--	--	--	1	1	--
			83	B1	--	--	--	--	--	1	1	--
			97	B1	--	--	--	--	--	1	1	--
			112	B1	--	--	--	--	--	1	1	--
			121	B1	--	--	--	--	--	1	1	--
			130	B1	--	--	--	--	--	1	1	--
			139	B1	--	--	--	--	--	1	1	--
			150	B1	--	--	--	--	--	1	1	--
			13	B1	--	--	--	--	--	1	1	--
			27	B1	--	--	--	--	--	1	1	--
			43	B1	--	--	--	--	--	1	1	--
			57	B1	--	--	--	--	--	1	1	--
			73	B1	--	--	--	--	--	1	1	--
			87	B1	--	--	--	--	--	1	1	--
			103	B1	--	--	--	--	--	1	1	--
			115	B1	--	--	--	--	--	1	1	--
			124	B1	--	--	--	--	--	1	1	--
			133	B1	--	--	--	--	--	1	1	--
			142	B1	--	--	--	--	--	1	1	--
			154	B1	--	--	--	--	--	1	1	--
			5	B2	--	--	--	--	--	1	1	--
			18	B2	--	--	--	--	--	1	1	--
			34	B2	--	--	--	--	--	1	1	--
			48	B2	--	--	--	--	--	1	1	--
			64	B2	--	--	--	--	--	1	1	--
			78	B2	--	--	--	--	--	1	1	--
			94	B2	--	--	--	--	--	1	1	--
			108	B2	--	--	--	--	--	1	1	--
			119	B2	--	--	--	--	--	1	1	--
			128	B2	--	--	--	--	--	1	1	--
			137	B2	--	--	--	--	--	1	1	--
			148	B2	--	--	--	--	--	1	1	--
			160	B2	--	--	--	--	--	1	1	--
			2	B (1ST)	--	--	--	--	--	1	1	--
		1	SUBTOTAL				0	0	0	35	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR	
							EACH	EACH		EACH	EACH	
1100	HL-40-QA	1	3	B (1ST)	--	--	--	--	--	1	1	--
			19	B (1ST)	--	--	--	--	--	1	1	--
			25	B (1ST)	--	--	--	--	--	1	1	--
			32	B (1ST)	--	--	--	--	--	1	1	--
			40	B (1ST)	--	--	--	--	--	1	1	--
			49	B (1ST)	--	--	--	--	--	1	1	--
			55	B (1ST)	--	--	--	--	--	1	1	--
			9	B2	--	--	--	--	--	1	1	--
			24	B2	--	--	--	--	--	1	1	--
			38	B2	--	--	--	--	--	1	1	--
			54	B2	--	--	--	--	--	1	1	--
			68	B2	--	--	--	--	--	1	1	--
			84	B2	--	--	--	--	--	1	1	--
			98	B2	--	--	--	--	--	1	1	--
			113	B2	--	--	--	--	--	1	1	--
			122	B2	--	--	--	--	--	1	1	--
			131	B2	--	--	--	--	--	1	1	--
			140	B2	--	--	--	--	--	1	1	--
			152	B2	--	--	--	--	--	1	1	--
			6	B (1ST)	--	--	--	--	--	1	1	--
			12	B (1ST)	--	--	--	--	--	1	1	--
			20	B (1ST)	--	--	--	--	--	1	1	--
			29	B (1ST)	--	--	--	--	--	1	1	--
			35	B (1ST)	--	--	--	--	--	1	1	--
			42	B (1ST)	--	--	--	--	--	1	1	--
			50	B (1ST)	--	--	--	--	--	1	1	--
			59	B (1ST)	--	--	--	--	--	1	1	--
			14	B2	--	--	--	--	--	1	1	--
			28	B2	--	--	--	--	--	1	1	--
			44	B2	--	--	--	--	--	1	1	--
			58	B2	--	--	--	--	--	1	1	--
			74	B2	--	--	--	--	--	1	1	--
			88	B2	--	--	--	--	--	1	1	--
			104	B2	--	--	--	--	--	1	1	--
			116	B2	--	--	--	--	--	1	1	--
		1	SUBTOTAL				0	0	0	35	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR	
							EACH	EACH		EACH	EACH	
1100	HL-40-QA	1	125	B2	--	--	--	--	--	1	1	--
			134	B2	--	--	--	--	--	1	1	--
			144	B2	--	--	--	--	--	1	1	--
			156	B2	--	--	--	--	--	1	1	--
			10	B (1ST)	--	--	--	--	--	1	1	--
			15	B (1ST)	--	--	--	--	--	1	1	--
			22	B (1ST)	--	--	--	--	--	1	1	--
			30	B (1ST)	--	--	--	--	--	1	1	--
			39	B (1ST)	--	--	--	--	--	1	1	--
			45	B (1ST)	--	--	--	--	--	1	1	--
			52	B (1ST)	--	--	--	--	--	1	1	--
			60	B (1ST)	--	--	--	--	--	1	1	--
			62	B (2ND)	--	--	--	--	--	1	1	--
			70	B (2ND)	--	--	--	--	--	1	1	--
			79	B (2ND)	--	--	--	--	--	1	1	--
			85	B (2ND)	--	--	--	--	--	1	1	--
			92	B (2ND)	--	--	--	--	--	1	1	--
			100	B (2ND)	--	--	--	--	--	1	1	--
			109	B (2ND)	--	--	--	--	--	1	1	--
			65	B (2ND)	--	--	--	--	--	1	1	--
			72	B (2ND)	--	--	--	--	--	1	1	--
			80	B (2ND)	--	--	--	--	--	1	1	--
			89	B (2ND)	--	--	--	--	--	1	1	--
			95	B (2ND)	--	--	--	--	--	1	1	--
			102	B (2ND)	--	--	--	--	--	1	1	--
			110	B (2ND)	--	--	--	--	--	1	1	--
			69	B (2ND)	--	--	--	--	--	1	1	--
			75	B (2ND)	--	--	--	--	--	1	1	--
			82	B (2ND)	--	--	--	--	--	1	1	--
			90	B (2ND)	--	--	--	--	--	1	1	--
			99	B (2ND)	--	--	--	--	--	1	1	--
			105	N (INTERIOR)	--	--	--	1	--	--	1	--
			173	N (INTERIOR)	--	--	--	1	--	--	1	--
			179	N (INTERIOR)	--	--	--	1	--	--	1	--
			185	N (INTERIOR)	--	--	--	1	--	--	1	--
		1	SUBTOTAL				0	4	0	31	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR	
							EACH	EACH		EACH	EACH	
1100	HL-40-QA	1	191	N (INTERIOR)	--	--	--	1	--	--	1	--
			197	N (INTERIOR)	--	--	--	1	--	--	1	--
			203	N (INTERIOR)	--	--	--	1	--	--	1	--
			209	N (INTERIOR)	--	--	--	1	--	--	1	--
			215	N (INTERIOR)	--	--	--	1	--	--	1	--
			221	N (INTERIOR)	--	--	--	1	--	--	1	--
			227	N (INTERIOR)	--	--	--	1	--	--	1	--
			172-2	D (INTERIOR)	--	--	--	1	--	--	1	--
			178	D (INTERIOR)	--	--	--	1	--	--	1	--
			184	D (INTERIOR)	--	--	--	1	--	--	1	--
			190	D (INTERIOR)	--	--	--	1	--	--	1	--
			196	D (INTERIOR)	--	--	--	1	--	--	1	--
			202	D (INTERIOR)	--	--	--	1	--	--	1	--
			208	D (INTERIOR)	--	--	--	1	--	--	1	--
			214	D (INTERIOR)	--	--	--	1	--	--	1	--
			220	D (INTERIOR)	--	--	--	1	--	--	1	--
			226	D (INTERIOR)	--	--	--	1	--	--	1	--
			232	D (INTERIOR)	--	--	--	1	--	--	1	--
			175	N (INTERIOR)	--	--	--	1	--	--	1	--
			181	N (INTERIOR)	--	--	--	1	--	--	1	--
			157	N (INTERIOR)	--	--	--	1	--	--	1	--
			193	N (INTERIOR)	--	--	--	1	--	--	1	--
			199	N (INTERIOR)	--	--	--	1	--	--	1	--
			205	N (INTERIOR)	--	--	--	1	--	--	1	--
			211	N (INTERIOR)	--	--	--	1	--	--	1	--
			217	N (INTERIOR)	--	--	--	1	--	--	1	--
			223	N (INTERIOR)	--	--	--	1	--	--	1	--
			229	N (INTERIOR)	--	--	--	1	--	--	1	--
			174	D (INTERIOR)	--	--	--	1	--	--	1	--
			180	D (INTERIOR)	--	--	--	1	--	--	1	--
			186	D (INTERIOR)	--	--	--	1	--	--	1	--
			192	D (INTERIOR)	--	--	--	1	--	--	1	--
			198	D (INTERIOR)	--	--	--	1	--	--	1	--
			204	D (INTERIOR)	--	--	--	1	--	--	1	--
			210	D (INTERIOR)	--	--	--	1	--	--	1	--
		1	SUBTOTAL				0	35	0	0	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS	
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR		
							EACH	EACH		EACH	EACH		
1100	HL-40-QA	1	216	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			222	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			228	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			177	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			183	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			189	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			195	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			201	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			207	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			213	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			219	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			225	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			233	N (INTERIOR)	--	--	--	--	--	1	1	--	--
			234	N (INTERIOR)	--	--	--	--	--	1	1	--	--
			231	N (INTERIOR)	--	--	--	1	--	--	1	--	--
			176	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			182	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			188	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			194	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			200	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			206	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			212	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			218	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			224	D (INTERIOR)	--	--	--	1	--	--	1	--	--
			230	D (INTERIOR)	--	--	--	1	--	--	1	--	--
		1	SUBTOTAL				0	23	0	2	25		
	HL-40-QA		SUBTOTAL				0	90	0	145	235		

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION STATION	OFFSET	204.9060.S.1001				659.5000.S LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR	COMMENTS	
							REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS			
							EACH	EACH		EACH	EACH		
1100	HL-40-KI	1	26	BRIGHT 3	--	--	--	--	--	1	1	--	
			27	BRIGHT 3	--	--	--	--	--	1	1	--	
			29	BRIGHT 3	--	--	--	--	--	1	1	--	
			30	BRIGHT 3	--	--	--	--	--	1	1	--	
			32	BRIGHT 3	--	--	--	--	--	1	1	--	
			34	BRIGHT 3	--	--	--	--	--	1	1	--	
			36	BRIGHT 3	--	--	--	--	--	1	1	--	
			38	BRIGHT 3	--	--	--	--	--	1	1	--	
			40	BRIGHT 3	--	--	--	--	--	1	1	--	
			42	BRIGHT 3	--	--	--	--	--	1	1	--	
			44	BRIGHT 3	--	--	--	--	--	1	1	--	
			46	BRIGHT 3	--	--	--	--	--	1	1	--	
			48	BRIGHT 3	--	--	--	--	--	1	1	--	
			50	BRIGHT 3	--	--	--	--	--	1	1	--	
			52	BRIGHT 3	--	--	--	--	--	1	1	--	
			54	BRIGHT 3	--	--	--	--	--	1	1	--	
			1	CONTINUOUS	--	--	1	--	--	--	1	--	
			7	CONTINUOUS	--	--	1	--	--	--	1	--	
			10	CONTINUOUS	--	--	1	--	--	--	1	--	
			13	CONTINUOUS	--	--	1	--	--	--	1	--	
			16	CONTINUOUS	--	--	1	--	--	--	1	--	
			22	CONTINUOUS	--	--	1	--	--	--	1	--	
			25	CONTINUOUS	--	--	1	--	--	--	1	--	
			28	CONTINUOUS	--	--	1	--	--	--	1	--	
			33	CONTINUOUS	--	--	1	--	--	--	1	--	
			35	CONTINUOUS	--	--	1	--	--	--	1	--	
			37	CONTINUOUS	--	--	1	--	--	--	1	--	
			41	CONTINUOUS	--	--	1	--	--	--	1	--	
			47	CONTINUOUS	--	--	1	--	--	--	1	--	
			51	CONTINUOUS	--	--	1	--	--	--	1	--	
			55	CONTINUOUS	--	--	1	--	--	--	1	--	
			57	CONTINUOUS	--	--	1	--	--	--	1	--	
			59	CONTINUOUS	--	--	1	--	--	--	1	--	
			61	CONTINUOUS	--	--	1	--	--	--	1	--	
			64	CONTINUOUS	--	--	1	--	--	--	1	--	
		1	SUBTOTAL					19	0	0	16	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION STATION	OFFSET	204.9060.S.1001				659.5000.S	COMMENTS
							REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS EACH	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS EACH	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR EACH	
1100	HL-40-KI	1	65	CONTINUOUS	--	--	1	--	--	--	1	--
			66	CONTINUOUS	--	--	1	--	--	--	1	--
			67	CONTINUOUS	--	--	1	--	--	--	1	--
			68	CONTINUOUS	--	--	1	--	--	--	1	--
			69	CONTINUOUS	--	--	1	--	--	--	1	--
			70	CONTINUOUS	--	--	1	--	--	--	1	--
			71	CONTINUOUS	--	--	1	--	--	--	1	--
			72	CONTINUOUS	--	--	1	--	--	--	1	--
			73	CONTINUOUS	--	--	1	--	--	--	1	--
			74	CONTINUOUS	--	--	1	--	--	--	1	--
			75	CONTINUOUS	--	--	1	--	--	--	1	--
			76	CONTINUOUS	--	--	1	--	--	--	1	--
			77	CONTINUOUS	--	--	1	--	--	--	1	--
			78	CONTINUOUS	--	--	1	--	--	--	1	--
			79	CONTINUOUS	--	--	1	--	--	--	1	--
			80	CONTINUOUS	--	--	1	--	--	--	1	--
			81	CONTINUOUS	--	--	1	--	--	--	1	--
			82	CONTINUOUS	--	--	1	--	--	--	1	--
			83	CONTINUOUS	--	--	1	--	--	--	1	--
			4	CONTINUOUS	--	--	1	--	--	--	1	--
			19	CONTINUOUS	--	--	1	--	--	--	1	--
			31	CONTINUOUS	--	--	1	--	--	--	1	--
			39	CONTINUOUS	--	--	1	--	--	--	1	--
			43	CONTINUOUS	--	--	1	--	--	--	1	--
			45	CONTINUOUS	--	--	1	--	--	--	1	--
			49	CONTINUOUS	--	--	1	--	--	--	1	--
			53	CONTINUOUS	--	--	1	--	--	--	1	--
			56	CONTINUOUS	--	--	1	--	--	--	1	--
			58	CONTINUOUS	--	--	1	--	--	--	1	--
			60	CONTINUOUS	--	--	1	--	--	--	1	--
			62	CONTINUOUS	--	--	1	--	--	--	1	--
			63	CONTINUOUS	--	--	1	--	--	--	1	--
			2	DULL 1	--	--	--	--	1	--	1	--
			3	DULL 1	--	--	--	--	1	--	1	--
			5	DULL 1	--	--	--	--	1	--	1	--
		1	SUBTOTAL				32	0	3	0	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS		
							EACH	EACH	EACH	EACH	EACH	
1100	HL-40-KI	1	6	DULL 1	--	--	--	--	1	--	1	--
			8	DULL 1	--	--	--	--	1	--	1	--
			9	DULL 1	--	--	--	--	1	--	1	--
			11	DULL 1	--	--	--	--	1	--	1	--
			12	DULL 1	--	--	--	--	1	--	1	--
			14	DULL 1	--	--	--	--	1	--	1	--
			15	DULL 1	--	--	--	--	1	--	1	--
			17	DULL 1	--	--	--	--	1	--	1	--
			18	DULL 1	--	--	--	--	1	--	1	--
			20	DULL 1	--	--	--	--	1	--	1	--
			21	DULL 1	--	--	--	--	1	--	1	--
			23	DULL 1	--	--	--	--	1	--	1	--
			24	DULL 1	--	--	--	--	1	--	1	--
		1	SUBTOTAL				0	0	13	0	13	
	HL-40-KI		SUBTOTAL				51	0	16	16	83	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST LED, SWITCH DISPOSAL BY CONTRACTOR	
1100	HL-40-HO	1		2/11	--	--	--	--	--	1	1	North Vault (SB Tunnel)
				2/11	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				6/19	--	--	--	--	--	1	1	"
				7/21	--	--	--	--	--	1	1	"
		1		SUBTOTAL			0	0	0	35	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR	
1100	HL-40-HO	1		2/5	--	--	1	--	--	--	1	South Vault (NB Tunnel)
				2/5	--	--	1	--	--	--	1	"
				2/5	--	--	1	--	--	--	1	"
				2/5	--	--	1	--	--	--	1	"
				2/5	--	--	1	--	--	--	1	"
				2/5	--	--	1	--	--	--	1	"
				2/5	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				3/7	--	--	1	--	--	--	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				1/4	--	--	--	--	--	1	1	"
				2/6	--	--	--	--	--	1	1	"
				2/6	--	--	--	--	--	1	1	"
				2/6	--	--	--	--	--	1	1	"
				2/6	--	--	--	--	--	1	1	"
				2/6	--	--	--	--	--	1	1	"
				2/6	--	--	--	--	--	1	1	"
				3/8	--	--	--	--	--	1	1	"
		1		SUBTOTAL			20	0	0	15	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

3

3

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS		
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR			
							EACH	EACH	EACH	EACH				
1100	HL-40-HO	1		3/8	--	--	--	--	1	1	South Vault (NB Tunnel)			
				3/8	--	--	--	--	1	1	"			
				3/8	--	--	--	--	1	1	"			
				3/8	--	--	--	--	1	1	"			
				3/8	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				1/10	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				2/12	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				3/14	--	--	--	--	1	1	"			
				4/16	--	--	--	--	1	1	"			
				4/16	--	--	--	--	1	1	"			
				4/16	--	--	--	--	1	1	"			
		1		SUBTOTAL					0	0	0	35	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

3

3

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR	
							EACH	EACH	EACH	EACH		
1100	HL-40-HO	1		4/16	--	--	--	--	--	1	1	South Vault (NB Tunnel)
				4/16	--	--	--	--	--	1	1	"
				4/16	--	--	--	--	--	1	1	"
				4/16	--	--	--	--	--	1	1	"
				4/16	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				5/18	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				6/20	--	--	--	--	--	1	1	"
				7/22	--	--	--	--	--	1	1	"
				7/22	--	--	--	--	--	1	1	"
				7/22	--	--	--	--	--	1	1	"
				8/24	--	--	--	--	--	1	1	"
				8/24	--	--	--	--	--	1	1	"
				8/24	--	--	--	--	--	1	1	"
				9/26	--	--	--	--	--	1	1	"
				9/26	--	--	--	--	--	1	1	"
				9/26	--	--	--	--	--	1	1	"
				1/9	--	--	--	--	--	1	1	"
				1/9	--	--	--	--	--	1	1	"
		1		SUBTOTAL			0	0	0	35	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR	
							EACH	EACH	EACH	EACH		
1100	HL-40-HO	1		1/9	--	--	--	--	--	1	1	South Vault (NB Tunnel)
				1/9	--	--	--	--	--	1	1	"
				1/9	--	--	--	--	--	1	1	"
				1/9	--	--	--	--	--	1	1	"
				1/9	--	--	--	--	--	1	1	"
				1/9	--	--	--	--	--	1	1	"
				1/9	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				2/11	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				3/13	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				4/15	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
				5/17	--	--	--	--	--	1	1	"
		1		SUBTOTAL			0	0	0	35	35	

ALL ITEMS CATEGORY 1100

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
 659.5000.S LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001				659.5000.S	COMMENTS		
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 150 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 250 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	LAMP, BALLAST, LED, SWITCH DISPOSAL BY CONTRACTOR			
							EACH	EACH			EACH	EACH		
1100	HL-40-HO	1		5/17	--	--	--	--	--	1	1	South Vault (NB Tunnel)		
				5/17	--	--	--	--	--	1	1	"		
				5/17	--	--	--	--	--	1	1	"		
				5/17	--	--	--	--	--	1	1	"		
				5/17	--	--	--	--	--	1	1	"		
				5/17	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				6/19	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				7/21	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				8/23	--	--	--	--	--	1	1	"		
				9/25	--	--	--	--	--	1	1	"		
				9/25	--	--	--	--	--	1	1	"		
				9/25	--	--	--	--	--	1	1	"		
				9/25	--	--	--	--	--	1	1	"		
		1		SUBTOTAL			0	0	0	35	35			

ALL ITEMS CATEGORY 1100

LIGHTING - HOWELL TUNNELS LIGHTING (HL-40-HO)
480Y/277 VAC 4-WIRE

- 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
- 655.0610 ELECTRICAL WIRE LIGHTING 12 AWG
- 655.0620 ELECTRICAL WIRE LIGHTING 8 AWG
- 655.0625 ELECTRICAL WIRE LIGHTING 6 AWG
- 655.0630 ELECTRICAL WIRE LIGHTING 4 AWG
- 655.0635 ELECTRICAL WIRE LIGHTING 2 AWG
- SPV.0060.100 LUMINAIRES TUNNEL LIGHTING LED (DAYTIME)
- SPV.0060.100 LUMINAIRES TUNNEL LIGHTING LED (NIGHTTIME)
- SPV.0060.100 TUNNEL FIXTURE MOUNTING BRACKET
- SPV.0060.100 JUNCTION BOXES STEEL 18 X 12 X 6-INCH COATED
- SPV.0060.100 JUNCTION BOXES STEEL 6 X 6 X 4-INCH
- SPV.0090.100 LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT 3/4-INCH
- SPV.0090.100 RIGID GALVANIZED STEEL CONDUIT 1-INCH COATED
- SPV.0090.100 RIGID GALVANIZED STEEL CONDUIT 1 1/4-INCH COATED

CATEGORY	STAGE	SYSTEM	DESCRIPTION	FUNCTION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG	SPV.0060.1001 LUMINAIRES TUNNEL LIGHTING LED (DAYTIME)	SPV.0060.1002 LUMINAIRES TUNNEL LIGHTING LED (NIGHTTIME)	SPV.0060.1003 TUNNEL FIXTURE MOUNTING BRACKET	SPV.0060.1004 JUNCTION BOXES STEEL 18X12X6-INCH COATED	SPV.0060.1005 JUNCTION BOXES STEEL 6X6X4-INCH COATED	SPV.0090.1001 LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT 3/4-INCH	SPV.0090.1002 RIGID GALVANIZED STEEL CONDUIT 1-INCH	SPV.0090.1003 RIGID GALVANIZED STEEL CONDUIT 1 1/4-INCH	COMMENTS
					EACH	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	LF	LF	LF	
1100	3A/3B	HL-40-HO	B-40-525	TO TUNNEL	150	--	--	150	--	450	--	--	--	--	--	--	--	--	FROM THE CONTROLLER HL-40-HO
				POWER IN TUNNE	--	4,602	2,136	--	6,408	--	132	8	140	44	16	1,534	742	1,394	NB TUNNEL
				DIMMING IN TUNNE	--	4,656	2,118	--	6,354	--	168	8	176	56	16	1,552	742	1,376	SB TUNNEL
					--	--	--	--	--	--	--	--	--	--	--	--	--	--	FIXTURE WITH DIMMING CAPABILITIES
		HL-40-HO		SUBTOTAL	300	9,258	4,254	300	12,762	900	300	16	316	100	32	3,086	1,484	2,770	

CONTINUED ON NEXT PAGE

ALL ITEMS CATEGORY 1100

LIGHTING - KILBOURN EXIT TUNNEL LIGHTING (HL-40-QA)
480Y277 VAC 4-WIRE

- 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
- 655.0615 ELECTRICAL WIRE LIGHTING 10 AWG
- 655.0620 ELECTRICAL WIRE LIGHTING 8 AWG
- 655.0625 ELECTRICAL WIRE LIGHTING 6 AWG
- 655.0630 ELECTRICAL WIRE LIGHTING 4 AWG
- 655.0635 ELECTRICAL WIRE LIGHTING 2 AWG
- SPV.0060.1001 LUMINAIRES TUNNEL LIGHTING LED (DAYTIME)
- SPV.0060.1002 LUMINAIRES TUNNEL LIGHTING LED (NIGHTTIME)
- SPV.0060.1003 TUNNEL FIXTURE MOUNTING BRACKET
- SPV.0060.1004 JUNCTION BOXES STEEL 18 X 12 X 6-INCH COATED
- SPV.0060.1005 JUNCTION BOXES STEEL 6 X 6 X 4-INCH
- SPV.0090.1001 LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT 3/4-INCH
- SPV.0090.1002 RIGID GALVANIZED STEEL CONDUIT 1-INCH COATED
- SPV.0090.1003 RIGID GALVANIZED STEEL CONDUIT 1 1/4-INCH COATED

CATEGORY	STAGE	SYSTEM	DESCRIPTION	FUNCTION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG	SPV.0060.1001 LUMINAIRES TUNNEL LIGHTING LED (DAYTIME)	SPV.0060.1002 LUMINAIRES TUNNEL LIGHTING LED (NIGHTTIME)	SPV.0060.1003 TUNNEL FIXTURE MOUNTING BRACKET	SPV.0060.1004 JUNCTION BOXES STEEL 18X12X6-INCH COATED	SPV.0060.1005 JUNCTION BOXES STEEL 6X6X4-INCH COATED	SPV.0090.1001 LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT 3/4-INCH	SPV.0090.1002 RIGID GALVANIZED STEEL CONDUIT 1-INCH	SPV.0090.1003 RIGID GALVANIZED STEEL CONDUIT 1 1/4-INCH	COMMENTS	
					EACH	EACH	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	LF	LF	LF		
1100	2	HL-40-QA	B-40-292	TO TUNNEL	150	--	--	150	--	450	--	--	--	--	--	--	--	--	--	FROM THE CONTROLLER HL-40-QA
				POWER IN TUNNEL	--	3,870	2,461	--	7,382	--	101	11	112	34	22	1,290	1,249	1,212	LEFT WALL FED BY JB-N004	
				DIMMING IN TUNNEL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	FIXTURE WITH DIMMING CAPABILITIES
		HL-40-QA		SUBTOTAL	150	3,870	2,461	150	7,382	450	101	11	112	34	22	1,290	1,249	1,212		

LIGHTING - KILBOURN ENTRANCE TUNNEL LIGHTING (HL-40-KI)
480Y277 VAC 4-WIRE

- 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
- 652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH
- 655.0610 ELECTRICAL WIRE LIGHTING 12 AWG
- 655.0615 ELECTRICAL WIRE LIGHTING 10 AWG
- 655.0620 ELECTRICAL WIRE LIGHTING 8 AWG
- 655.0625 ELECTRICAL WIRE LIGHTING 6 AWG
- 655.0630 ELECTRICAL WIRE LIGHTING 4 AWG
- 655.0635 ELECTRICAL WIRE LIGHTING 2 AWG
- SPV.0060.1001 LUMINAIRES TUNNEL LIGHTING LED (DAYTIME)
- SPV.0060.1002 LUMINAIRES TUNNEL LIGHTING LED (NIGHTTIME)
- SPV.0060.1003 TUNNEL FIXTURE MOUNTING BRACKET
- SPV.0060.1004 JUNCTION BOXES STEEL 18 X 12 X 6-INCH COATED
- SPV.0060.1005 JUNCTION BOXES STEEL 6 X 6 X 4-INCH
- SPV.0090.1001 LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT 3/4-INCH
- SPV.0090.1002 RIGID GALVANIZED STEEL CONDUIT 1-INCH COATED
- SPV.0090.1003 RIGID GALVANIZED STEEL CONDUIT 1 1/4-INCH COATED

CATEGORY	STAGE	SYSTEM	DESCRIPTION	FUNCTION	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	655.0620 ELECTRICAL WIRE LIGHTING 8 AWG	655.0625 ELECTRICAL WIRE LIGHTING 6 AWG	655.0630 ELECTRICAL WIRE LIGHTING 4 AWG	655.0635 ELECTRICAL WIRE LIGHTING 2 AWG	SPV.0060.1001 LUMINAIRES TUNNEL LIGHTING LED (DAYTIME)	SPV.0060.1002 LUMINAIRES TUNNEL LIGHTING LED (NIGHTTIME)	SPV.0060.1003 TUNNEL FIXTURE MOUNTING BRACKET	SPV.0060.1004 JUNCTION BOXES STEEL 18X12X6-INCH COATED	SPV.0060.1005 JUNCTION BOXES STEEL 6X6X4-INCH COATED	SPV.0090.1001 LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT 3/4-INCH	SPV.0090.1002 RIGID GALVANIZED STEEL CONDUIT 1-INCH	SPV.0090.1003 RIGID GALVANIZED STEEL CONDUIT 1 1/4-INCH	COMMENTS	
					LF	LF	LF	LF	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	LF	LF	LF		
1100	1	HL-40-KI	B-40-293	TO TUNNEL	50	150	--	--	--	--	200	1,200	--	--	--	--	--	--	--	--	--	FROM CONTROLLER HL-40-KI TO LEFT WALL
				POWER IN TUNNEL	50	--	--	--	50	--	150	--	--	--	--	--	--	--	--	--	--	FROM LEFT WALL TO RIGHT WALL
				DIMMING IN TUNNEL	--	--	--	3,827.0	1,766	--	5,297	--	89	14	103	30	14	1,276	593	1,173	LEFT WALL	
					--	--	--	1,776.0	578	--	1,734	--	14	--	14	5	--	592	--	578	RIGHT WALL	
					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	FIXTURE WITH DIMMING CAPABILITIES
		HL-40-KI		SUBTOTAL	100	150	0	5,603.0	2,344	50	7,231	1,350	103	14	117	34	14	1,868	593	1,751		
1100		TOTAL			550	150	9,258	9,473.0	9,059	500	27,375	2,700	504	41	545	168	68	6,244	3,326	5,733		

ALL ITEMS CATEGORY 1100

PROJECT NO: 1000-13-76

HWY: VARIOUS HIGHWAYS

COUNTY: MILWAUKEE

MISCELLANEOUS QUANTITIES

SHEET:

E

FILE NAME :

PLOT DATE : 8/2/2023

PLOT BY : SINGH AND ASSOCIATES

PLOT NAME :

PLOT SCALE : 1:1

LIGHTING MAINTENANCE - WORK ZONE TRAFFIC CONTROL

- 643.0300 TRAFFIC CONTROL DRUMS ***
- 643.0420 TRAFFIC CONTROL BARRICADES TYPE III
- 643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A
- 643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C
- 643.0800 TRAFFIC CONTROL ARROW BOARDS
- 643.0900 TRAFFIC CONTROL SIGNS
- 643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II
- 643.1050 TRAFFIC CONTROL SIGNS PCMS

CATEGORY	STAGE	DESCRIPTION / LOCATION	STAGE DURATION DAYS	643.0300	643.0420	643.0705	643.0715	643.0800	643.0900	643.0920	643.1050	643.1601	644.1601	644.1605	644.1810	COMMENTS									
				TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES 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 II	TRAFFIC CONTROL SIGNS PCMS	TEMPORARY PEDESTRIAN SURFACE PLATE	TEMPORARY PEDESTRIAN CURB RAMP TYPE II	TEMPORARY PEDESTRIAN DETECTABLE WARNING FIELD	TEMPORARY PEDESTRIAN BARRICADE										
				EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	CYCLES**	SIGNS**	EACH	EACH**	DAY	SF	EACH	DAY	SF	LF				
1100	1	KILBOURN TUNNEL - ON RAMP	20	37	740	2	40	4	80	--	--	--	--	19	380	10	0	0	1	20	--	--	--	--	
STAGE 1 SUBTOTAL					740		40		80		0		0		380	--	--	0		20	0	0	0	0	
	2	KILBOURN TUNNEL - EXIT RAMP	20	19	380	11	220	22	440	--	--	--	--	36	720	10	9	90	0	0	--	--	--	--	
STAGE 2 SUBTOTAL					380		220		440		0		0		720	--	--	90		0	0	0	0	0	
	3A	HOWELL TUNNEL NB	20	49	980	3	60	6	120	15	300	2	40	14	280	--	--	--	--	--	--	--	--	--	
		HOWELL TUNNEL SB	20	56	1,120	3	60	6	120	22	440	2	40	22	440	--	--	--	--	--	40	2	40	8	1,750
STAGE 3A SUBTOTAL					2,100		120		240		740		80		720			0		0	40		8	1,750	
	3B	HOWELL TUNNEL NB	20	61	1,220	3	60	6	120	17	340	2	40	15	300	--	--	--	--	--	--	--	--	--	
		HOWELL TUNNEL SB	20	70	1,400	3	60	6	120	7	140	2	40	19	380	--	--	--	--	--	--	--	--	--	
STAGE 3B SUBTOTAL					2620		120		240		480		80		680			0		0	0	0	0	0	
1100	TOTAL				5,840		500		1,000		1,220		160		2,500			90		20	40		40	8	1,750

** FOR INFORMATION ONLY

*** APPROVED TRAFFIC CONES WILL BE ACCEPTED FOR THIS ITEM FOR SHORT-TERM DAYTIME WORK, BUT WILL NOT BE MEASURED FOR PAYMENT. SEE THE SPECIAL PROVISIONS.

ALL ITEMS CATEGORY 1100

PROJECT - MOBILIZATION

619.1000 MOBILIZATION

CATEGORY	STAGE	PROJECT	619.1000 MOBILIZATION	COMMENTS
			EACH	
1100	1 / 2 / 3A / 3B	1000-13-75	1	--
1100	TOTAL		1	

PROJECT - TRAFFIC CONTROL

643.5000 TRAFFIC CONTROL

CATEGORY	STAGE	PROJECT	643.5000 TRAFFIC CONTROL	COMMENTS
			EACH	
1100	1 / 2 / 3A / 3B	1000-13-75	1	--
1100	TOTAL		1	

LIGHTING - CONTROL AND SERVICES
480Y/277 VAC 4-WIRE

- 653.0140 PULL BOXES STEEL 24X42-INCH
- 655.0640 ELECTRICAL WIRE LIGHTING 1 AWG
- SPV.0060.1006 DISTRIBUTION CENTER PREVENTIVE AND MAINTENANCE
- SPV.0060.1007 TUNNEL CLEANING - KILBOURN NB EXIT RAMP
- SPV.0060.1008 TUNNEL CLEANING - KILBOURN NB ENTRANCE RAMP
- SPV.0060.1009 TUNNEL CLEANING - HOWELL NB TUNNEL
- SPV.0060.1010 TUNNEL CLEANING - HOWELL SB TUNNEL
- SPV.0060.1011 LIGHTING SYSTEM INTEGRATOR
- SPV.0060.1012 CONTROL SYSTEM PREVENTIVE AND MAINTENANCE
- SPV.0060.1013 LIGHTING CONTROL SYSTEM INSTALLATION KILBOURN NB EXIT RAMP (HL-40-QA)
- SPV.0060.1014 LIGHTING CONTROL SYSTEM INSTALLATION KILBOURN NB ENTRANCE RAMP (HL-40-KI)
- SPV.0060.1015 LIGHTING CONTROL SYSTEM INSTALLATION HOWELL TUNNEL (HL-40-HO)

CATEGORY	STAGE	DESCRIPTION / SEQUENCE	653.0140 PULL BOXES STEEL 12X24-INCH	655.0640 ELECTRICAL WIRE LIGHTING 1 AWG	SPV.0060.1006 DISTRIBUTION CENTER PREVENTIVE AND MAINTENANCE	SPV.0060.1007 TUNNEL CLEANING KILBOURN NB EXIT RAMP	SPV.0060.1008 TUNNEL CLEANING KILBOURN NB ENTRANCE RAMP	SPV.0060.1009 TUNNEL CLEANING HOWELL NB TUNNEL	SPV.0060.1010 TUNNEL CLEANING HOWELL SB TUNNEL	SPV.0060.1011 LIGHTING SYSTEM INTEGRATOR	SPV.0060.1012 CONTROL SYSTEM PREVENTIVE AND MAINTENANCE	SPV.0060.1013 LIGHTING CONTROL SYSTEM INSTALLATION KILBOURN NB EXIT RAMP (HL-40-QA)	SPV.0060.1014 LIGHTING CONTROL SYSTEM INSTALLATION KILBOURN NB ENTRANCE RAMP (HL-40-KI)	SPV.0060.1015 LIGHTING CONTROL SYSTEM INSTALLATION HOWELL TUNNEL (HL-40-HO)	COMMENTS
			EACH	LF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
1100	1/2/3A/3B	HL-40-HO	--	18	1	1	1	--	--	0.2	0.2	--	--	1	HOWELL TUNNELS (STRUCTURE B-40-525)
		HL-40-QA	--	18	1	--	--	1	--	0.4	0.4	1	--	--	KILBOURN EXIT RAMP (STRUCTURE B-40-292)
		HL-40-KI	2	18	1	--	--	--	1	0.4	0.4	--	1	--	KILBOURN ENTRANCE RAMP (STRUCTURE B-40-293)
1100	TOTAL		2	54	3	1	1	1	1	1	1	1	1	1	

ALL ITEMS CATEGORY 1100

PROJECT NO: 1000-13-76

HWY: VARIOUS HIGHWAYS

COUNTY: MILWAUKEE

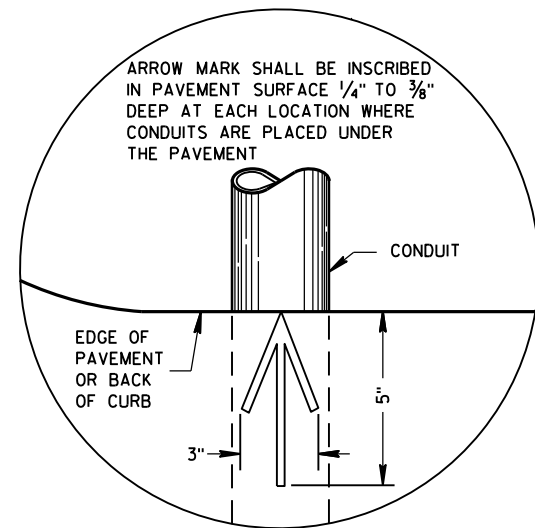
MISCELLANEOUS QUANTITIES

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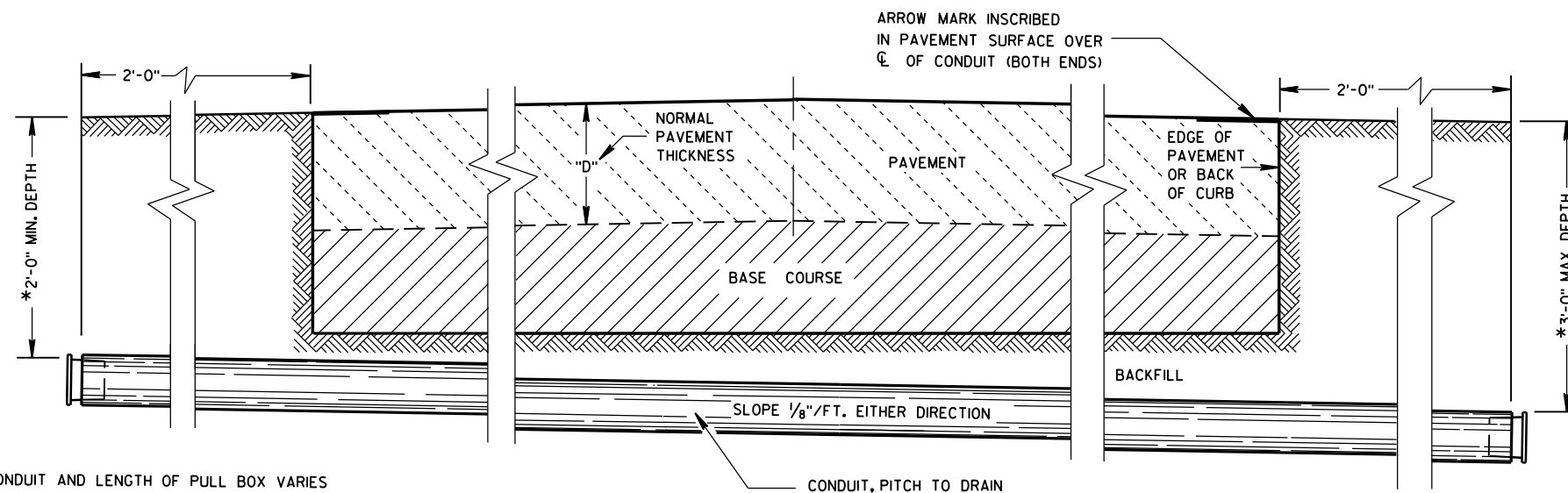
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Standard Detail Drawing List

09B02-10	CONDUIT
09B04-12	PULL BOX
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D04-03	LIGHTING CONTROL CABINET 120/240 VOLT
09D05-02	L30 LIGHTING CONTROL CABINET 240/480 VOLT
09H11-01	IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS
10A03-03	CIRCUIT IDENTIFICATION PLAQUES SIGN BRIDGES
15A04-07D	CHANNELIZING DEVICES, PERMANENT FLEXIBLE TUBULAR MARKER POST
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-09D	ON RAMP LANE CLOSURE
15C02-09E	OFF RAMP LANE CLOSURE
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M. P. H. OR LESS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C12-09B	TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE
15D04-01	TRAFFIC CONTROL, RAMP CONSTRUCTION STAGING
15D06-06	TRAFFIC CONTROL, TWO LANE TWO WAY OPERATION
15D12-11A	TRAFFIC CONTROL, LANE CLOSURE
15D16-06	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-07A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D21-07B	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D30-09B	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09H	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION



**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 EMERSON 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.

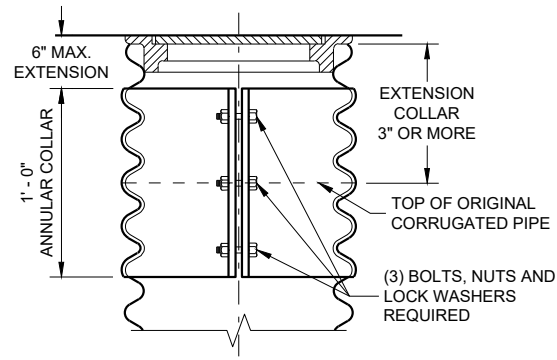
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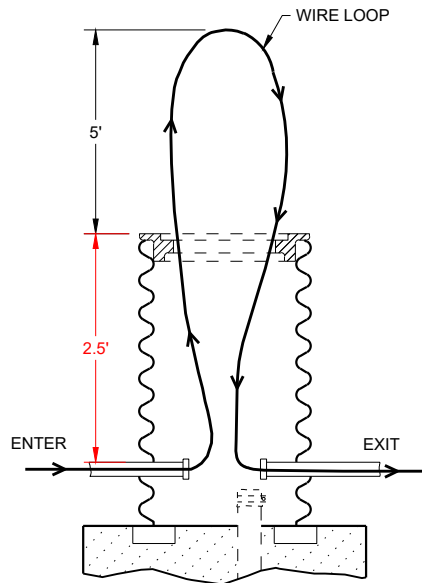
S.D.D. 9 B 2-10

S.D.D. 9 B 2-10

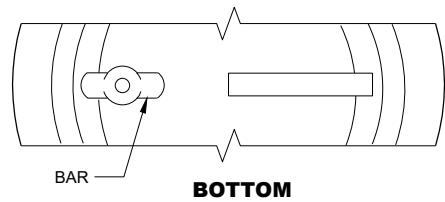
CONDUIT	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



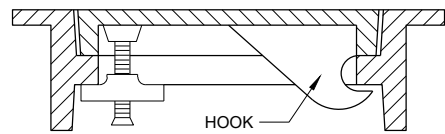
CORRUGATED PIPE EXTENDER



MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



BOTTOM



SECTION

**ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE**

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.

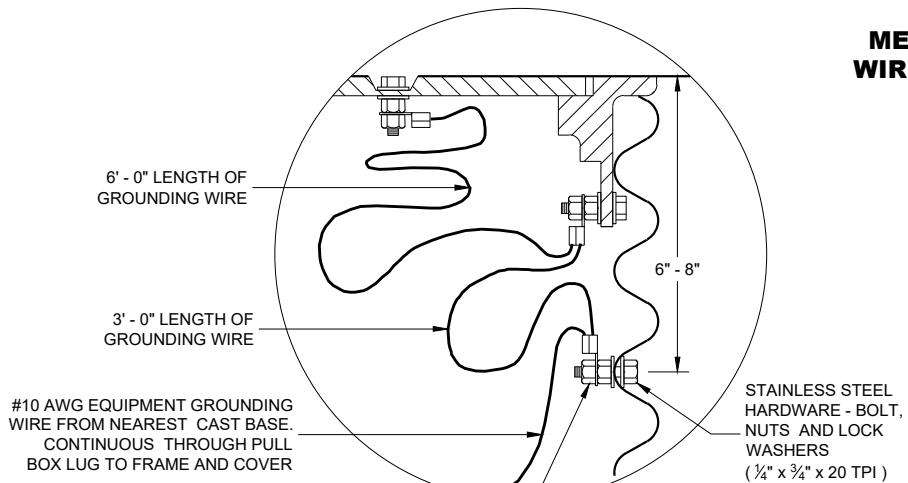
WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

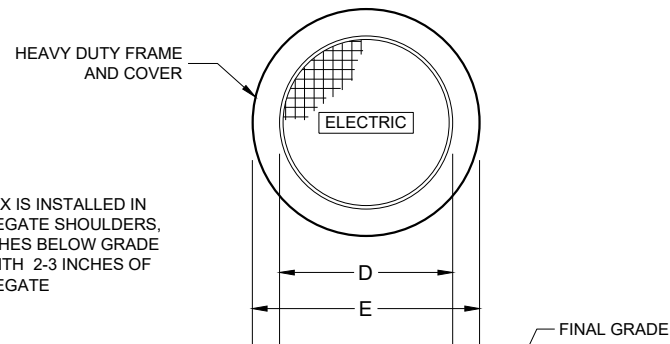
DIMENSION IN INCHES	CORRUGATED STEEL PIPE										
	PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24	
PIPE LENGTH**	B	24	30	36	24	30	36	36	42	48	
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	
COVER	D	10 1/4	10 1/4	10 1/4	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.

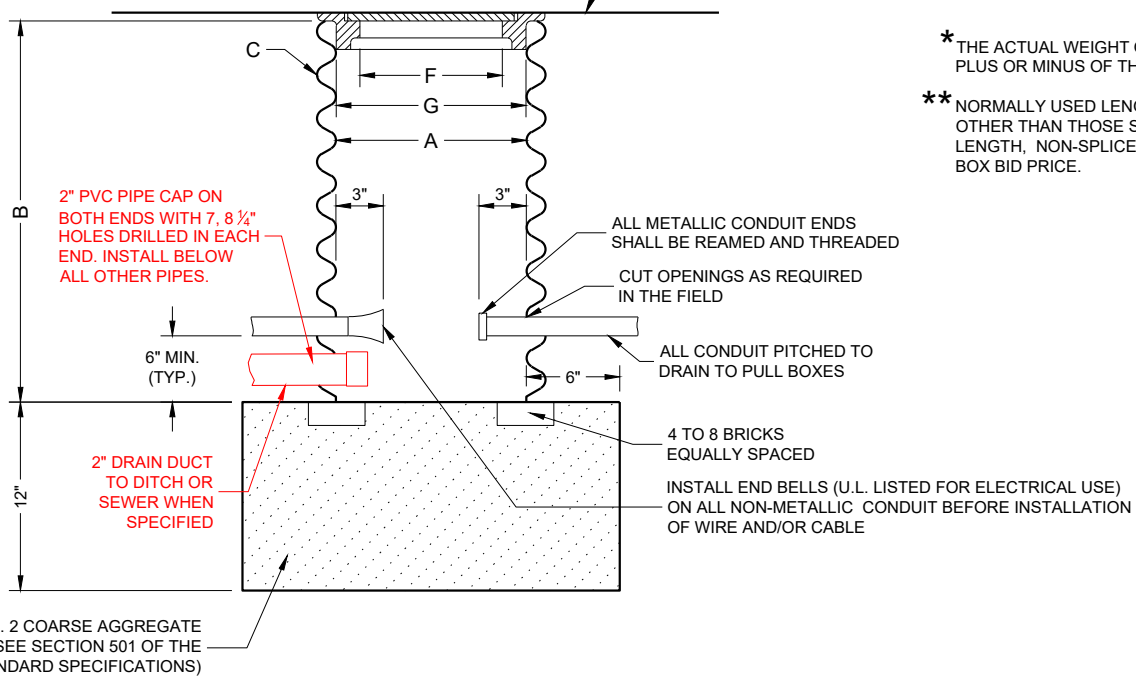
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

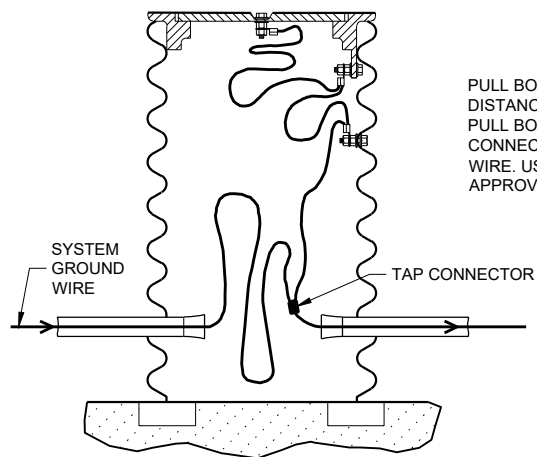


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE



PULL BOX

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



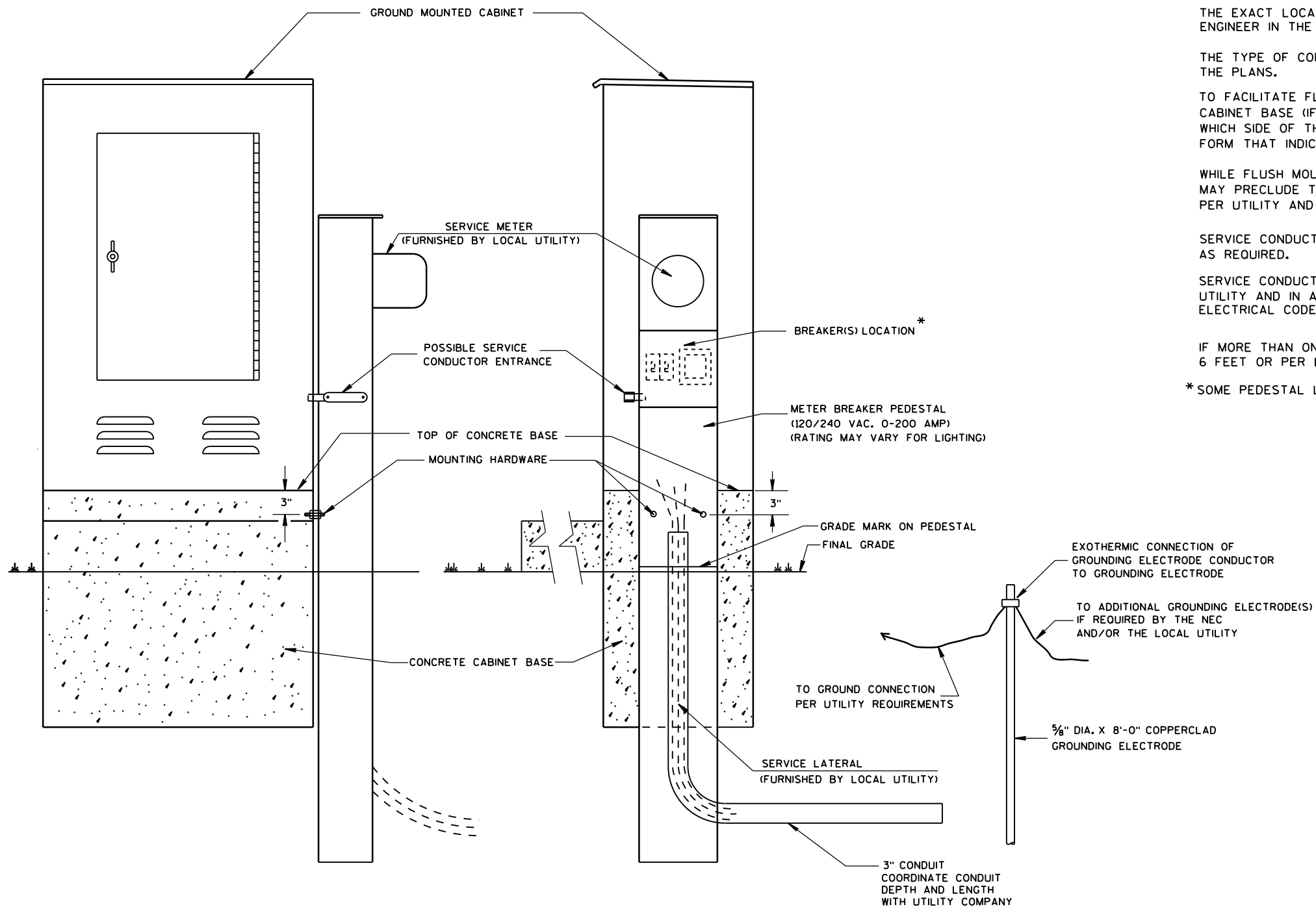
EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER

FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH, THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

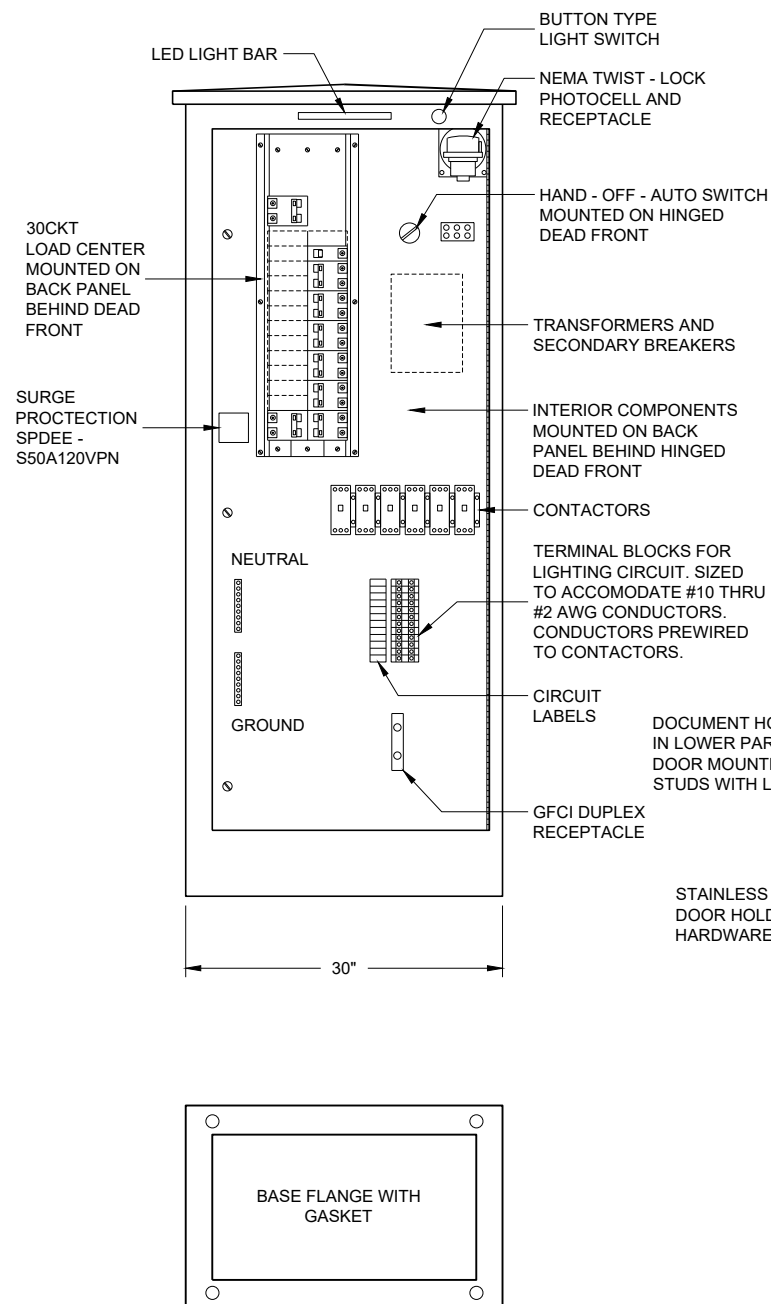
SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

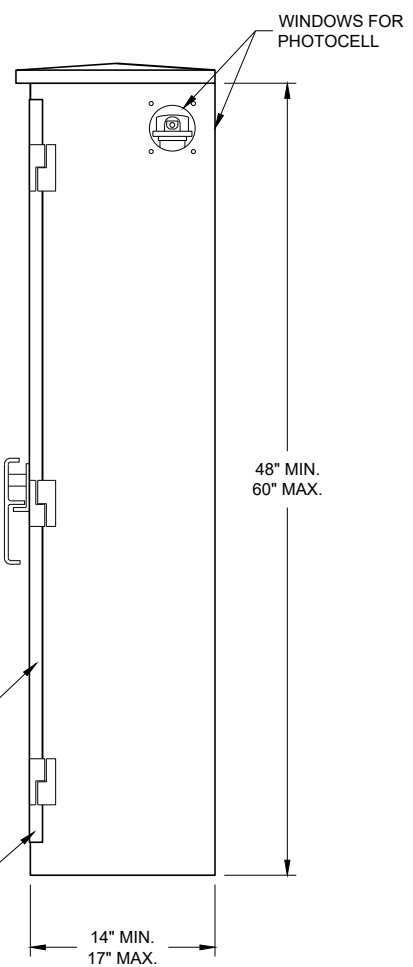
* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

FRONT INTERIOR ELEVATION

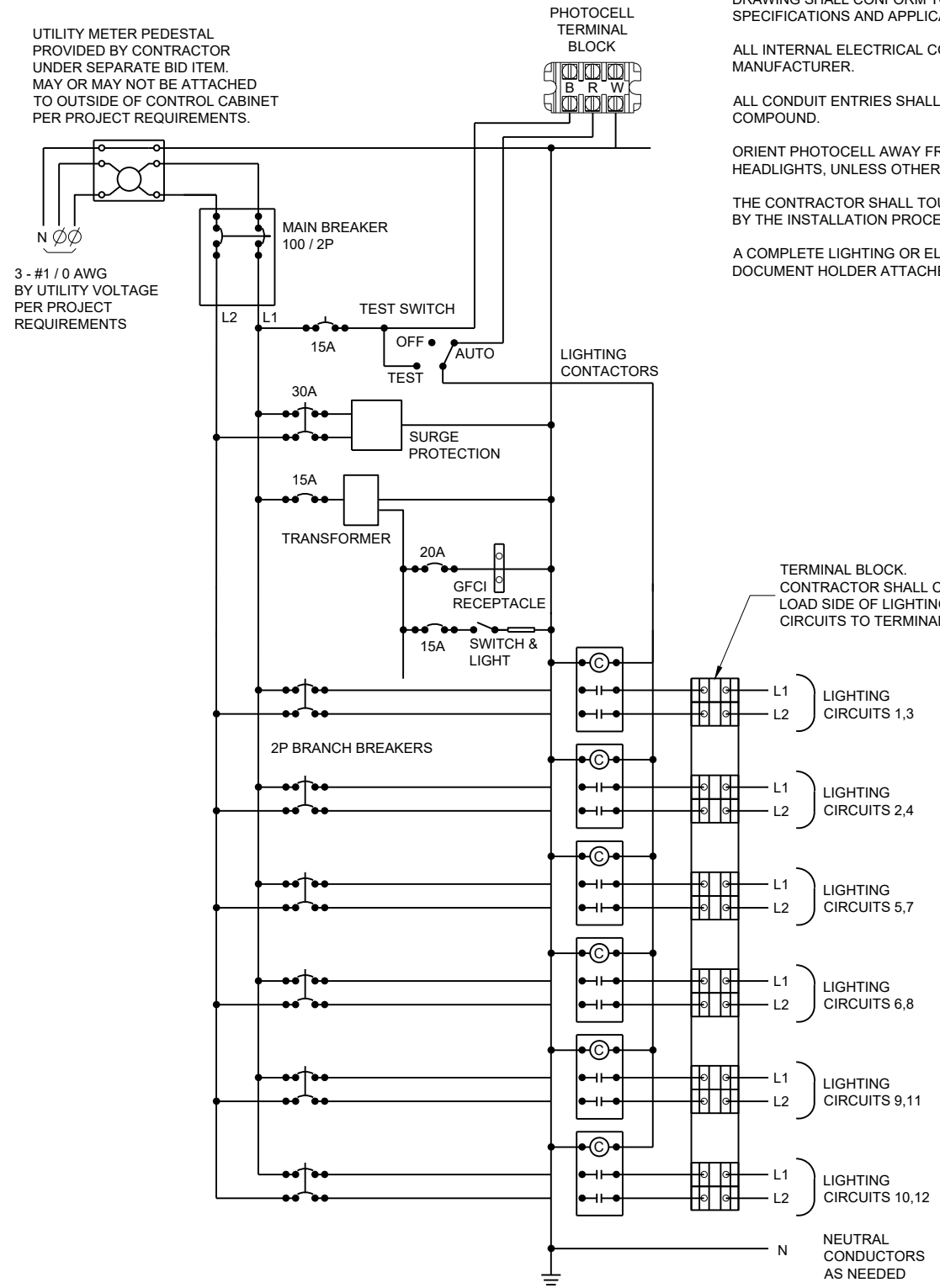


SIDE VIEW



LIGHTING CONTROL CABINET

UTILITY METER PEDESTAL PROVIDED BY CONTRACTOR UNDER SEPARATE BID ITEM. MAY OR MAY NOT BE ATTACHED TO OUTSIDE OF CONTROL CABINET PER PROJECT REQUIREMENTS.



CONTROL CABINET SCHEMATIC

GENERAL NOTES

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

ALL INTERNAL ELECTRICAL COMPONENTS WILL BE PRE - WIRED BY THE CABINET MANUFACTURER.

ALL CONDUIT ENTRIES SHALL BE SEALED WITH AN APPROPRIATE DUCT SEALING COMPOUND.

ORIENT PHOTOCELL AWAY FROM AMBIENT LIGHT SOURCES AND ONCOMING TRAFFIC HEADLIGHTS, UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISION.

THE CONTRACTOR SHALL TOUCH UP ANY DAMAGE TO THE ANODIZED FINISH CAUSED BY THE INSTALLATION PROCESS. COLOR MATCH PAINT SHALL BE USED.

A COMPLETE LIGHTING OR ELECTRICAL PLAN SHALL BE SECURELY PLACED IN THE DOCUMENT HOLDER ATTACHED TO THE DOOR.

6

6

SDD 09D05 - 02

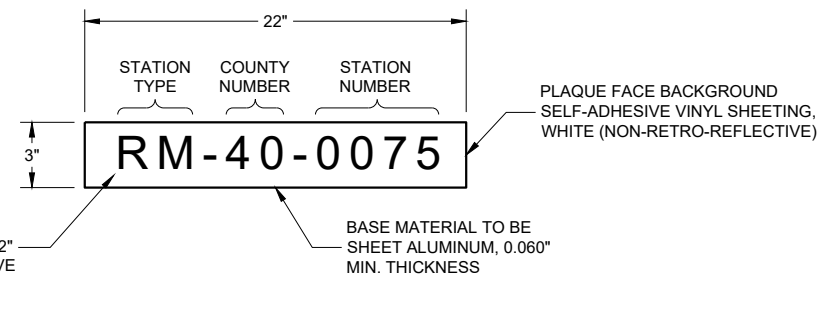
SDD 09D05 - 02

L30
LIGHTING CONTROL CABINET
240 / 480 VOLT

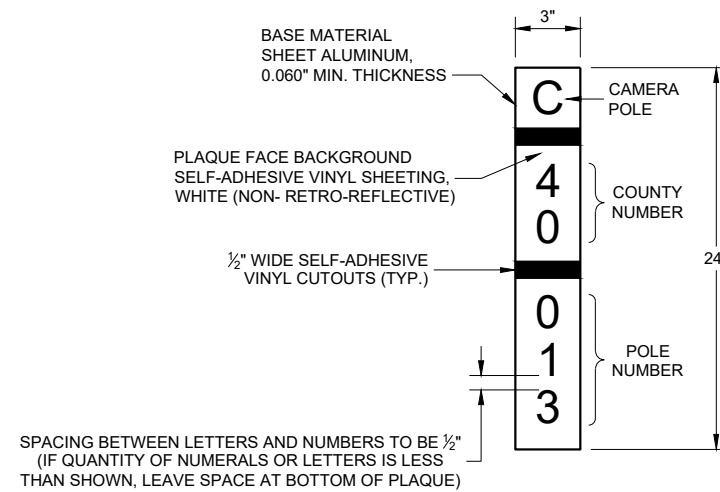
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER

FHWA



CONTROL CABINET IDENTIFICATION PLAQUE DETAIL



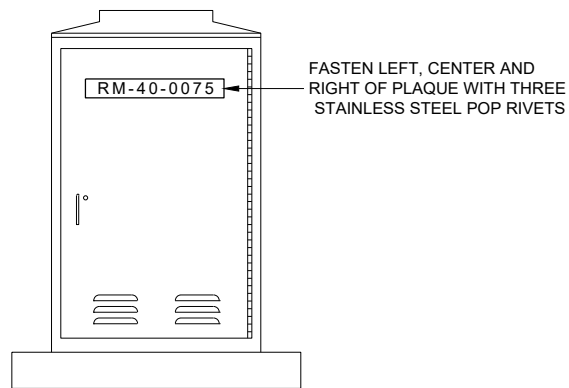
POLE IDENTIFICATION PLAQUE DETAIL

GENERAL NOTES

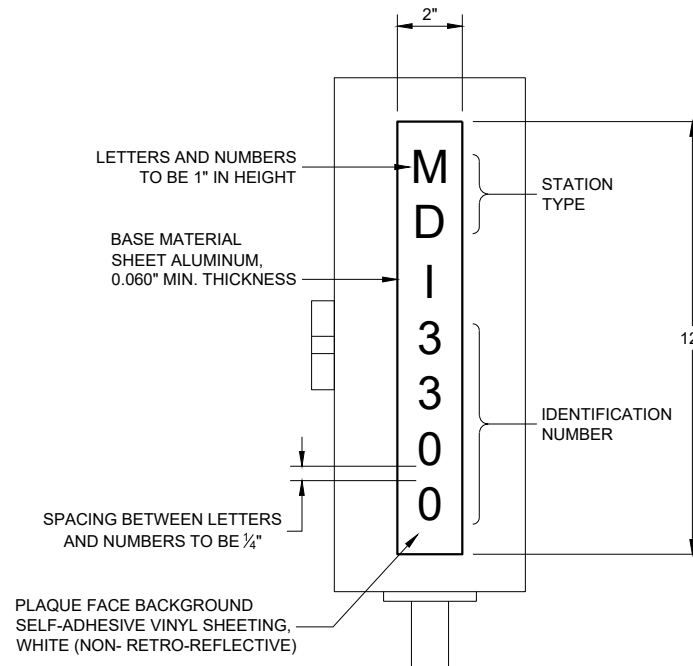
1. TWO PLAQUES PER CABINET REQUIRED ON CONTROL CABINET.
2. FASTEN ONE PLAQUE ON FRONT DOOR, UPPER HALF.
3. FASTEN ONE PLAQUE ON SIDE FACING LOCAL STREET. IF NO LOCAL STREET NEARBY, OR IF SUCH LOCATION COINCIDES WITH LOCATION OF PLAQUE IN NOTE 2, FASTEN PLAQUE ON REAR OF CABINET, UPPER HALF.
4. COUNTY NUMBER NOT REQUIRED ON RAMP METER CABINETS.

LEGEND STATION TYPE

- RM - RAMP METER
- CCTV - CLOSED CIRCUIT TELEVISION
- ATR - AUTOMATIC TRAFFIC RECORDER
- SDS - SYSTEM DETECTOR STATION
- MD - MICROWAVE DETECTOR



CONTROL CABINET IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS
(TYPICAL ALL CONTROL CABINETS)

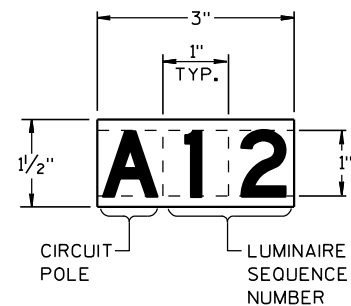


MICROWAVE DETECTOR FIELD CABINET IDENTIFICATION PLAQUE DETAIL

IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENTS

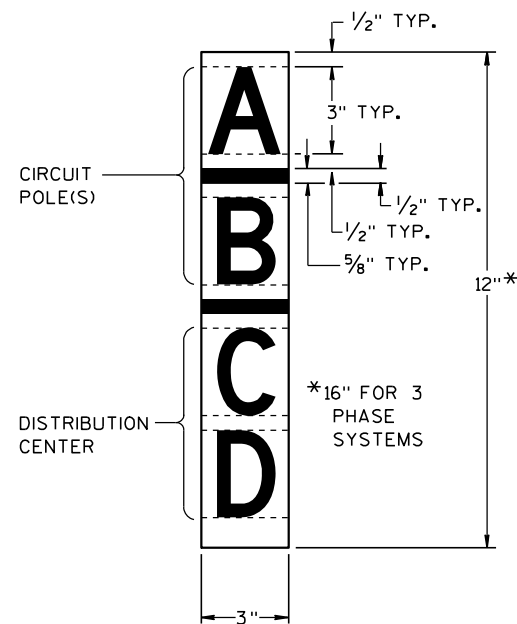
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE September 2014 /S/ Ahmet Demirelek
STATE ELECTRICAL ENGINEER



SEQUENCE DECAL

(MOUNT ON LUMINAIRE)



SIGN BRIDGE CIRCUIT PLAQUE

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

WHERE SHOWN IN THE PLANS, REPLACEMENT PLAQUES WILL BE MEASURED AND PAID SEPARATELY.

FASTEN TOP, CENTER AND BOTTOM OF PLAQUE TO POLE OR OTHER LOCATION AS FOLLOWS:

GALVANIZED STEEL SHAFT - 3 STAINLESS STEEL POP RIVETS

A588 STEEL SHAFT - SHIM FOR DRAINAGE WITH STAINLESS WASHERS;
FASTEN WITH STAINLESS SELF-TAPPING SCREWS

ALUMINUM SHAFTS - 3 ALUMINUM POP RIVETS

MOUNTING HEIGHT SHALL BE APPROXIMATELY 5.0' ABOVE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL OBSTRUCT.

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

FACE - WHITE, SELF-ADHESIVE VINYL SHEETING, NON-RETROREFLECTIVE

LINES - BLACK, 1/2" WIDE, SELF-ADHESIVE

CHARACTERS - BLACK, SELF-ADHESIVE, SERIES "D", SIZE AS SHOWN

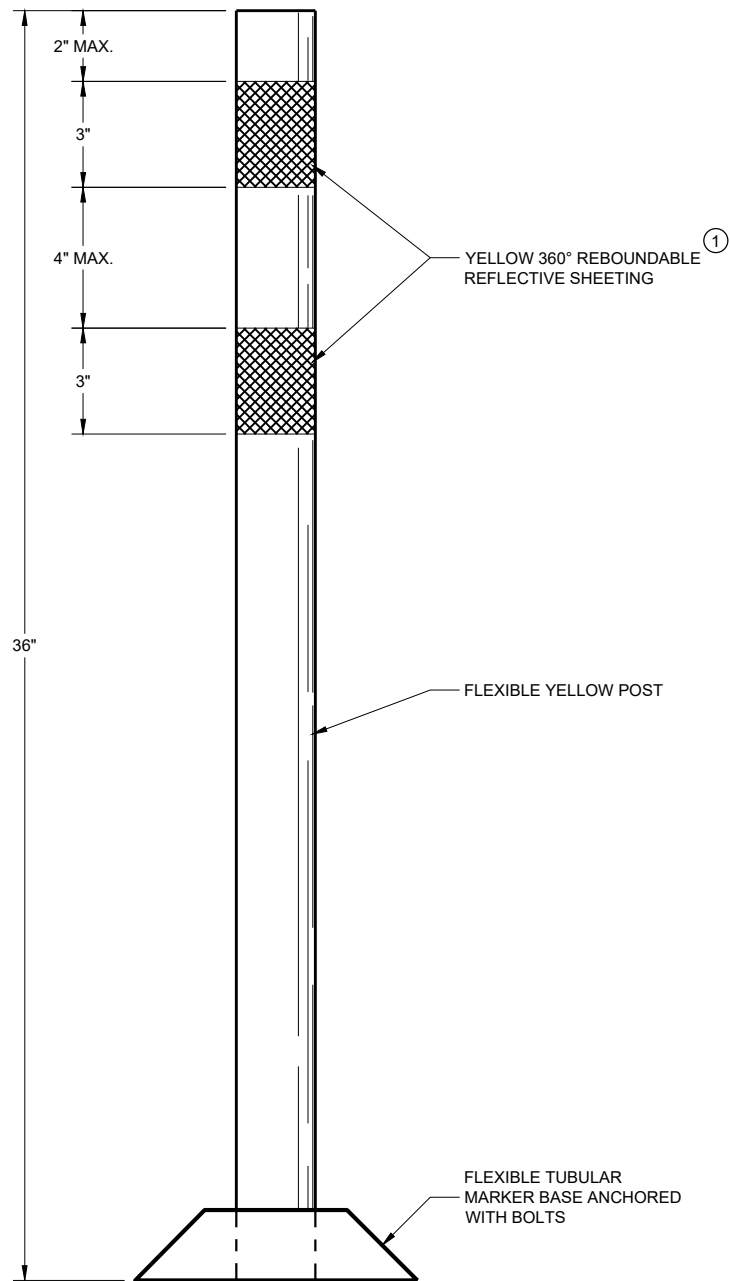
WITH THE APPROVAL OF THE ENGINEER, THE BASE MATERIAL MAY BE OMITTED AND THE FACE ADHERED DIRECTLY TO THE SURFACE, IN CASES SUCH AS SMOOTH, CLEAN ALUMINUM STRUCTURES.

ALTERNATIVE COMPUTER-GENERATED SIGN LETTERING MAY BE ACCEPTED IF THE ENGINEER FINDS IT TO BE EQUIVALENT.

ALL SIGN BRIDGE STRUCTURES MUST ALSO HAVE STRUCTURE ID PLAQUES AS SHOWN IN THE STRUCTURE DETAILS.

CIRCUIT PLAQUES SHALL BE MOUNTED IN THE STEM WHICH HAS THE ELECTRICAL CIRCUIT, FACING TRAFFIC.

CIRCUIT IDENTIFICATION PLAQUES SIGN BRIDGES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/25/2010 DATE	/S/ John Corbin STATE ELECTRICAL ENGINEER FOR HWYS
FHWA	



PERMANENT FLEXIBLE TUBULAR MARKER POST

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

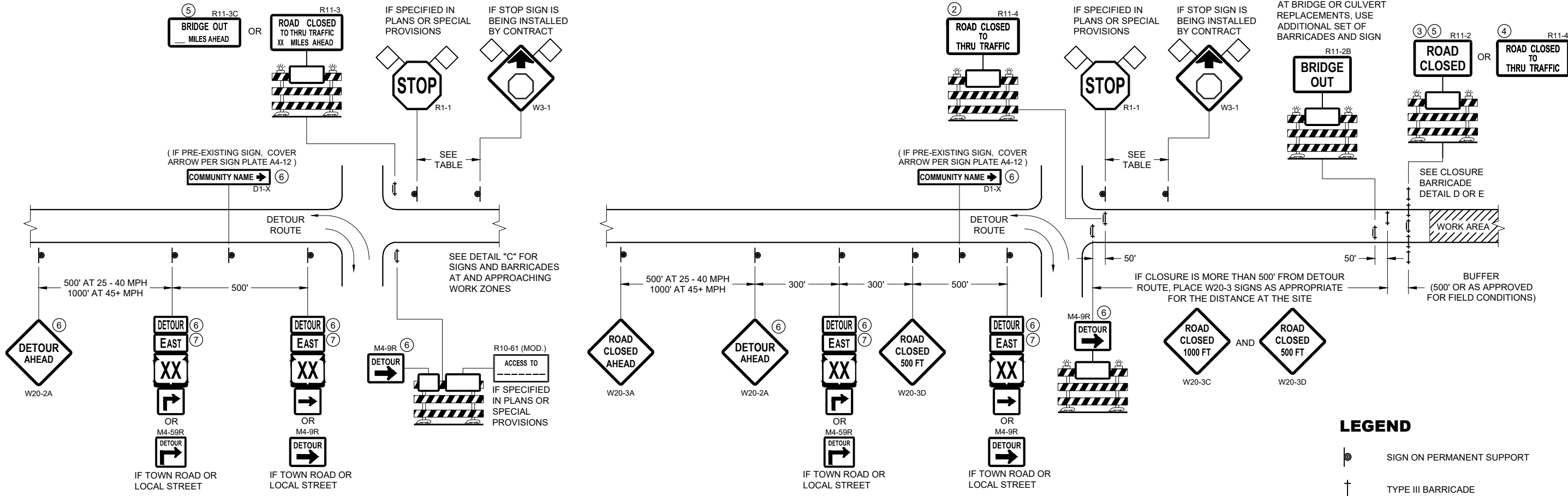
① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

**CHANNELIZING DEVICES
PERMANENT FLEXIBLE
TUBULAR MARKER POST**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

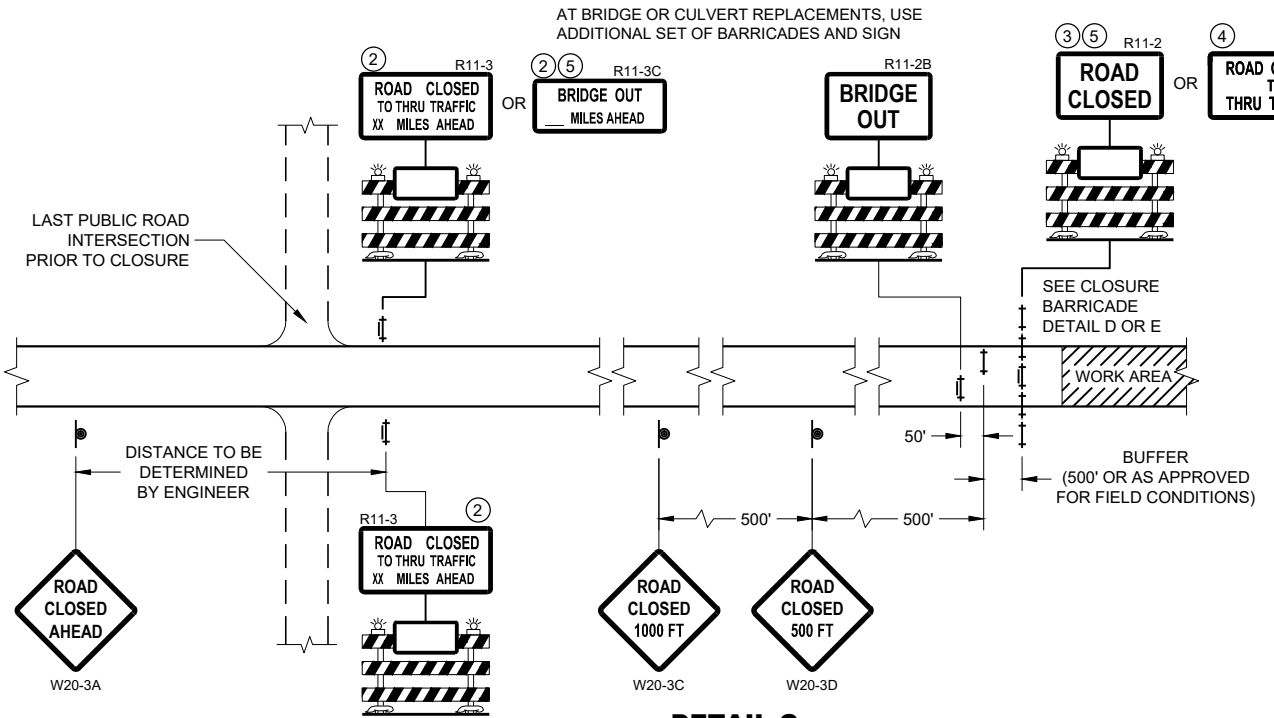
**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

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

- LEGEND**
- SIGN ON PERMANENT SUPPORT
 - TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TYPE "A" WARNING LIGHT (FLASHING)
 - WORK AREA
 - FLAGS, 16" X 16" MIN. (ORANGE)

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

- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1



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

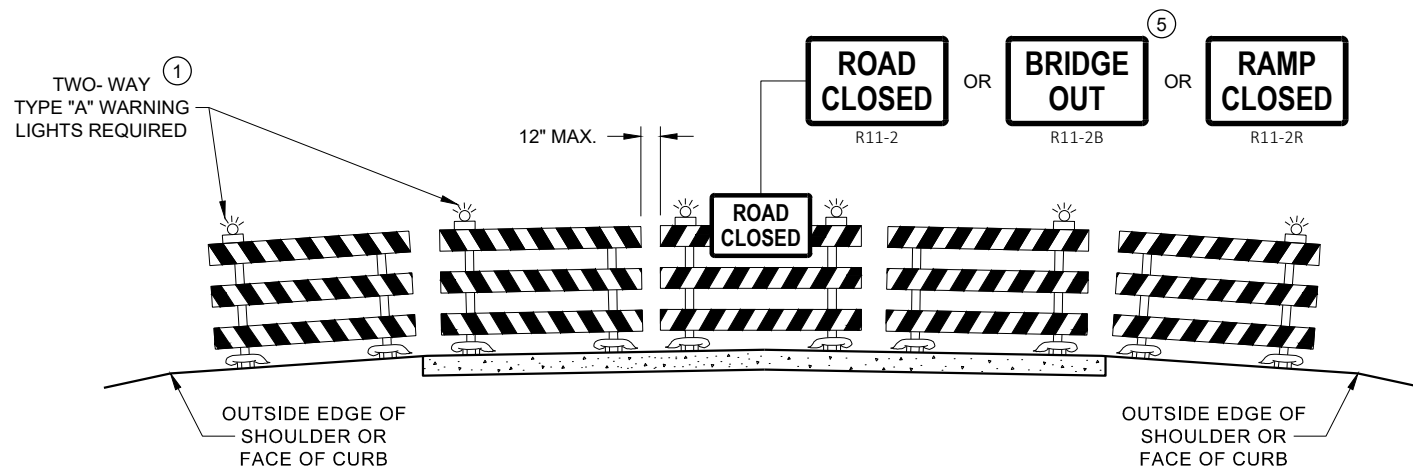
SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

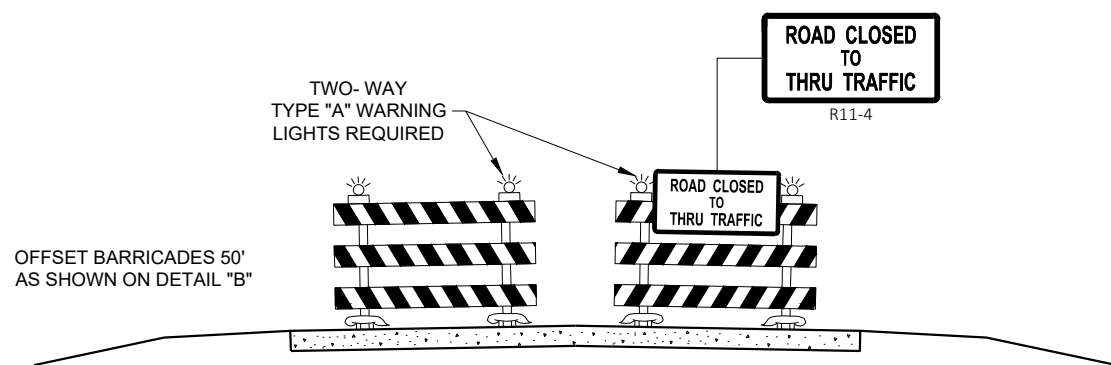
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

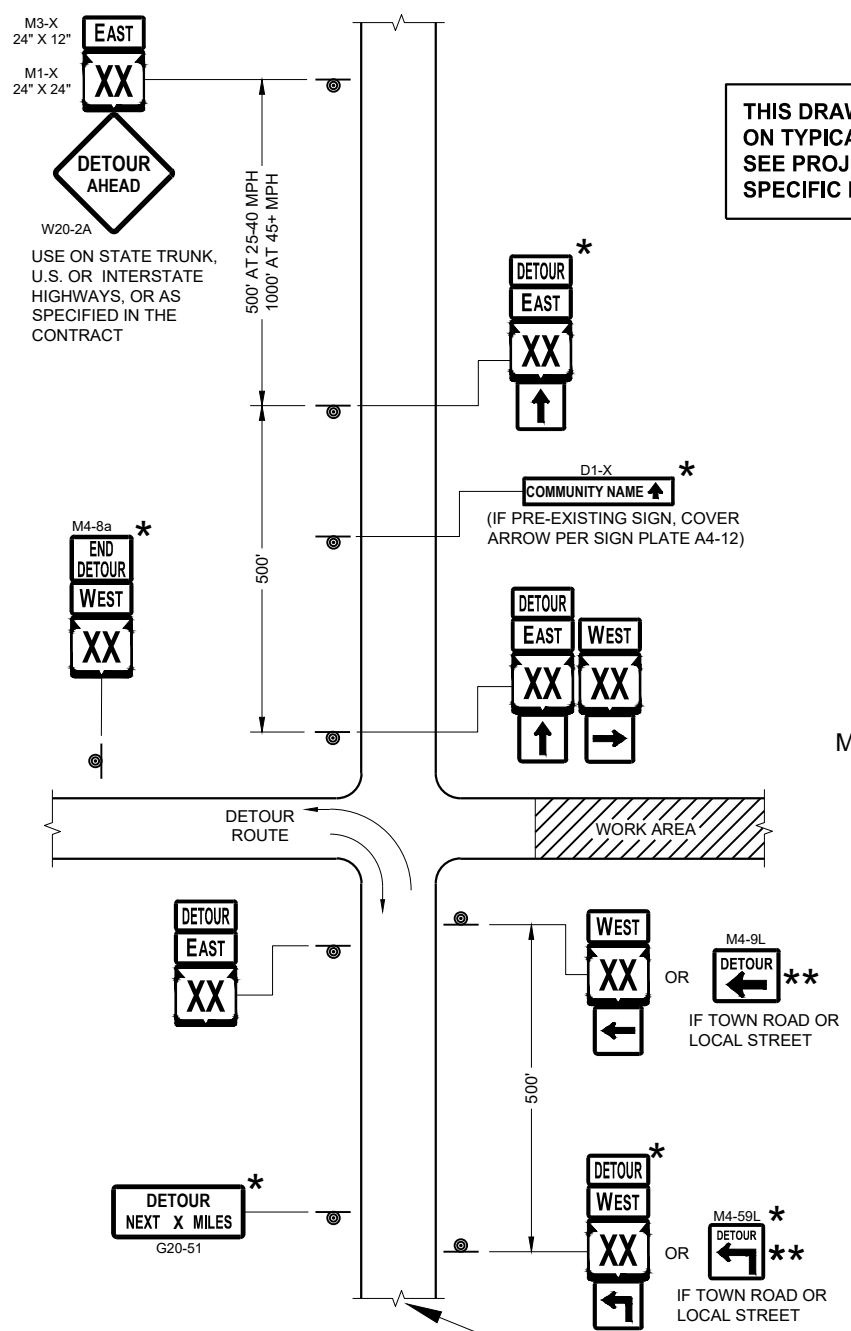
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24"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

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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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

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

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

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

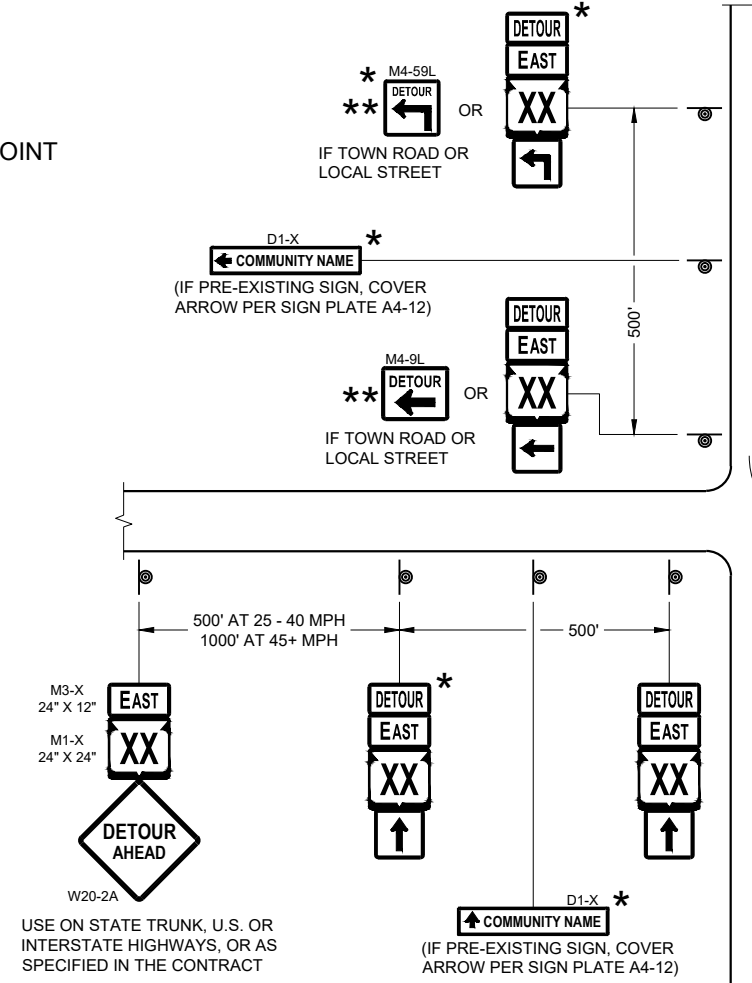
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

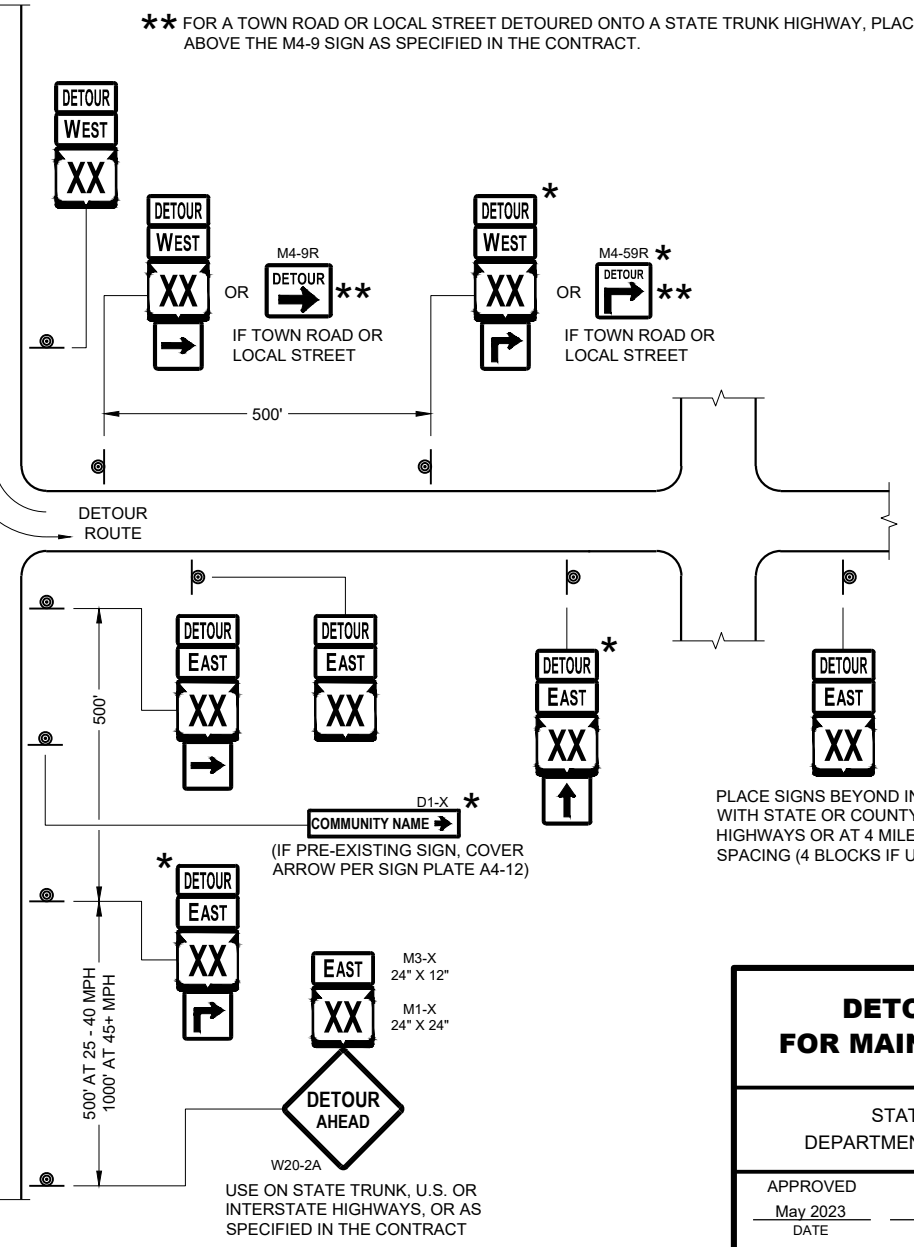
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

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

MATCH POINT



**DETAIL F
DETOUR SIGNING**



**DETOUR SIGNING
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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

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

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

LEGEND

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

GENERAL NOTES

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

6

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SDD 15C02 - 09d

SDD 15C02 - 09d

ON RAMP LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

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

LEGEND

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

GENERAL NOTES

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

SEE SDD 15D16 FOR RAMP CLOSURE

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SDD 15C02 - 09e

SDD 15C02 - 09e

PCMS MESSAGING

FRAME 1	FRAME 2
EXIT XX CLOSED	USE EXIT XX

OR

FIXED MESSAGE SIGN

HWY XX
RAMP CLOSED
USE EXIT XX

G20 - 56

**OFF RAMP
LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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




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

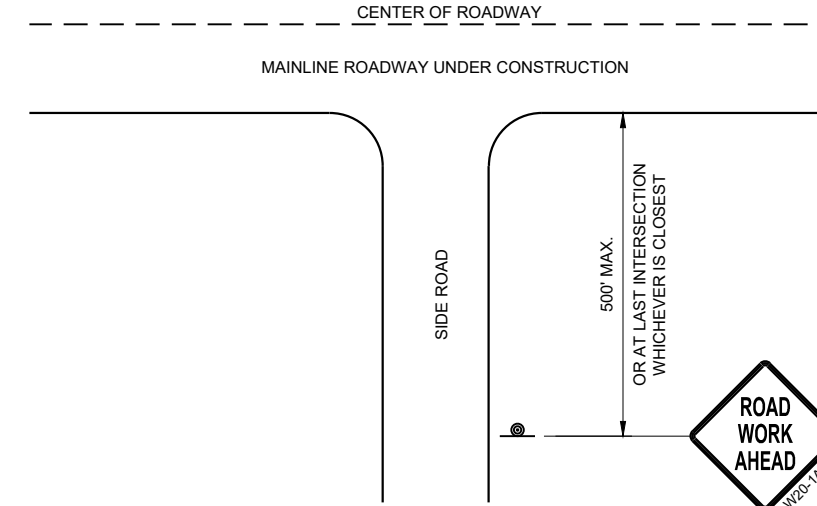
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

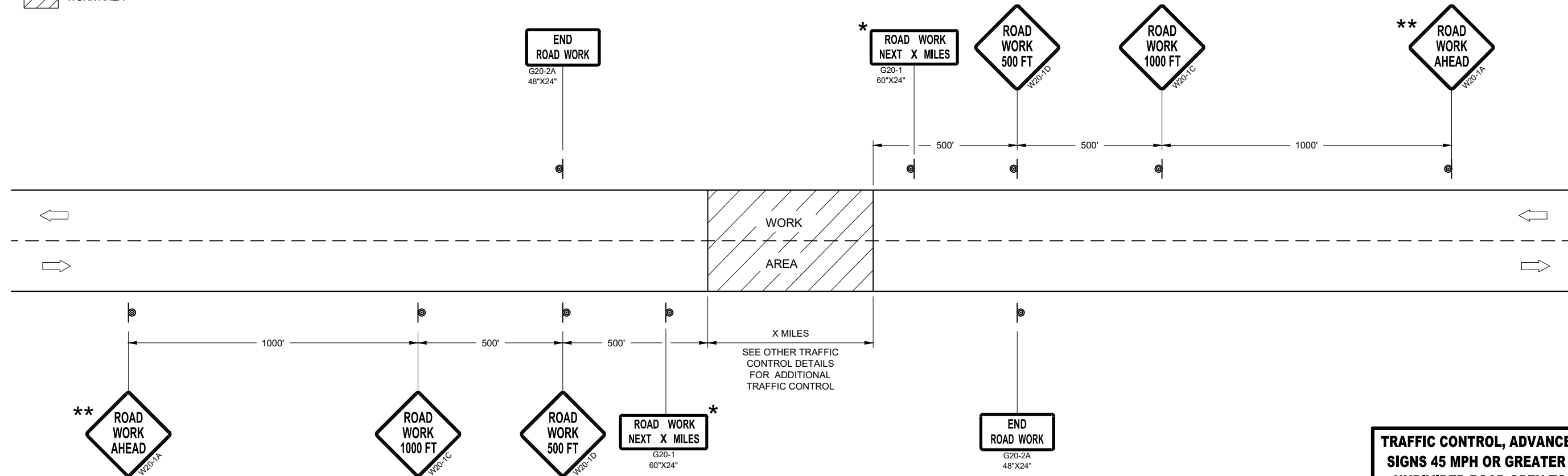
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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




ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

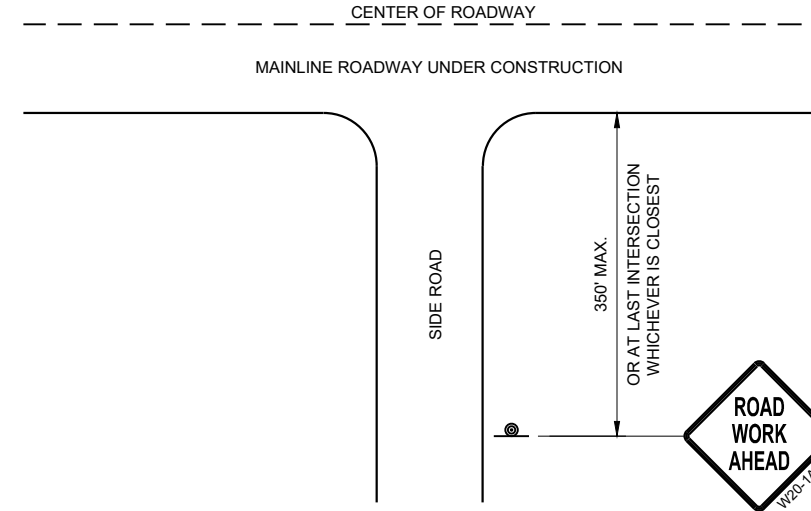
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

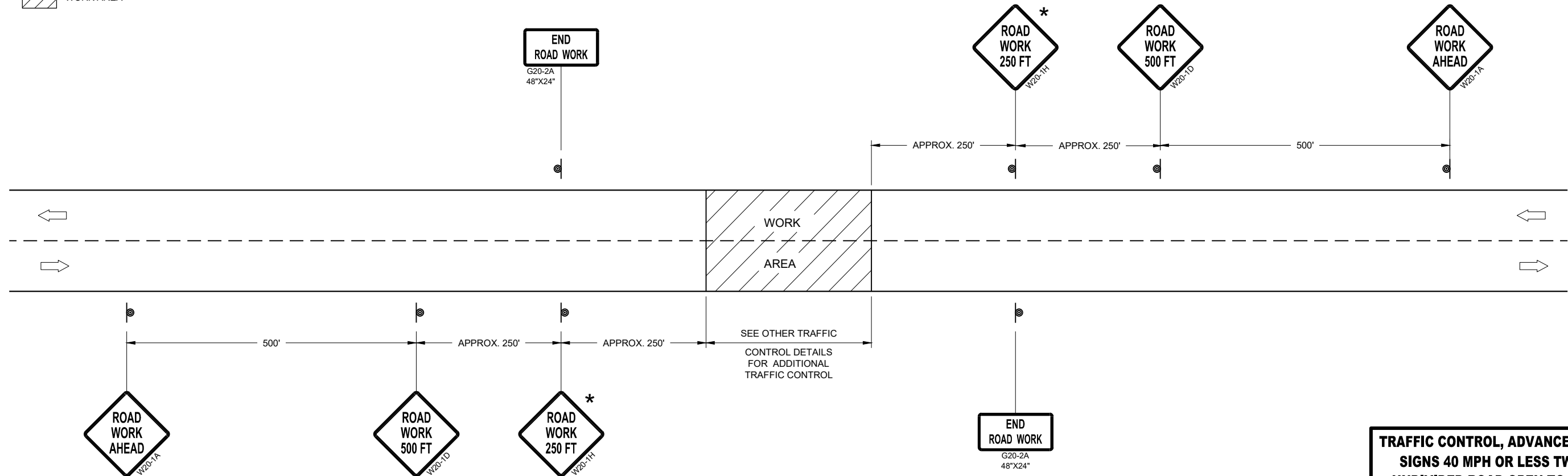
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



**TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL**



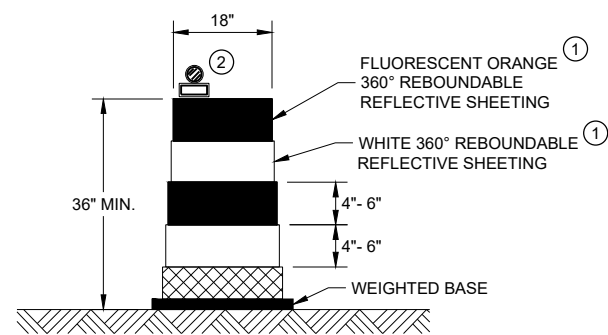
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

**TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

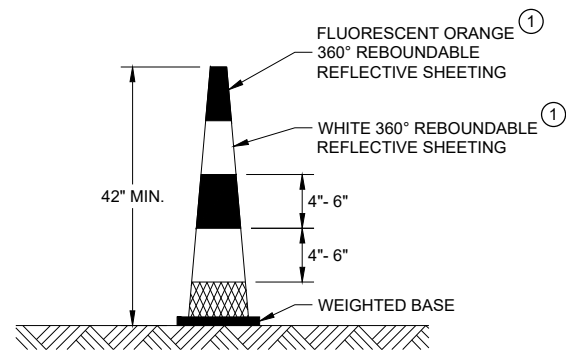
APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



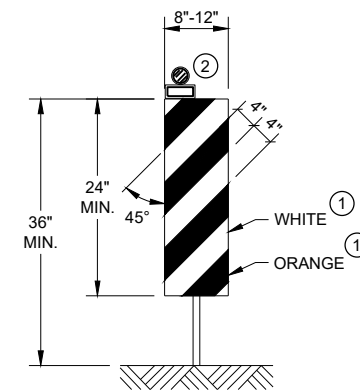
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE

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

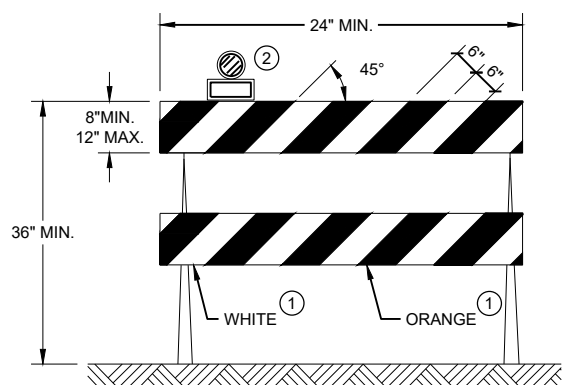


VERTICAL PANEL

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

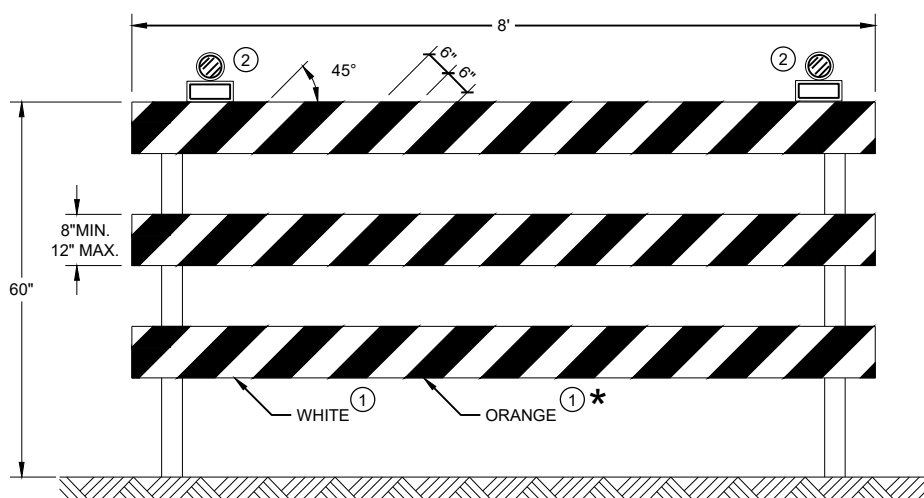
GENERAL NOTES

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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






* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

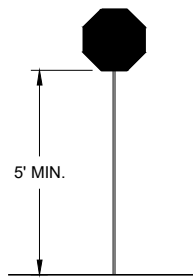
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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



STOP/SLOW PADDLE ON SUPPORT STAFF

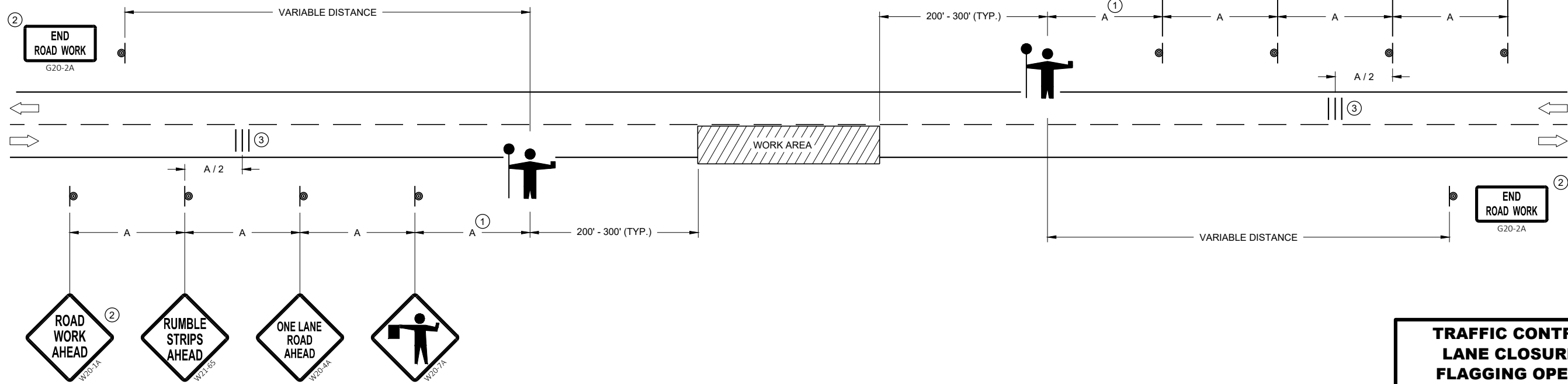
SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



W03-4

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








TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

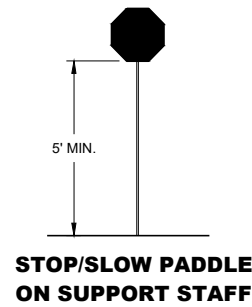
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

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

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

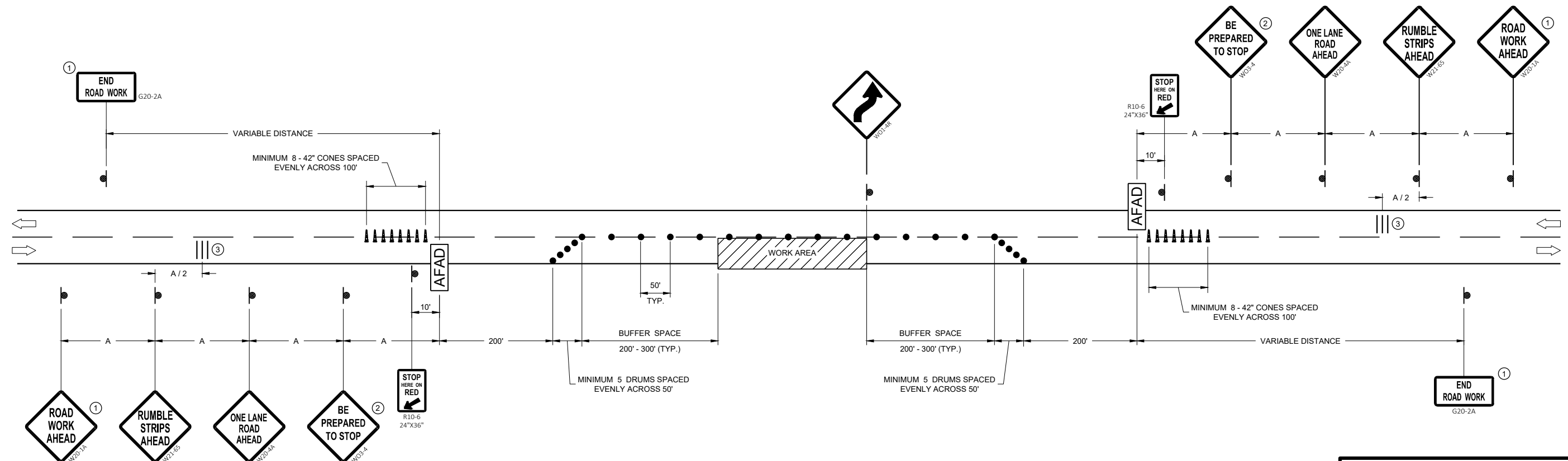
DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

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



SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

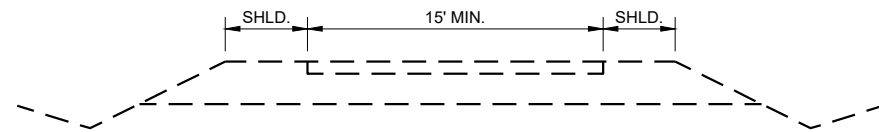
FHWA

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SDD 15C12 - 09b

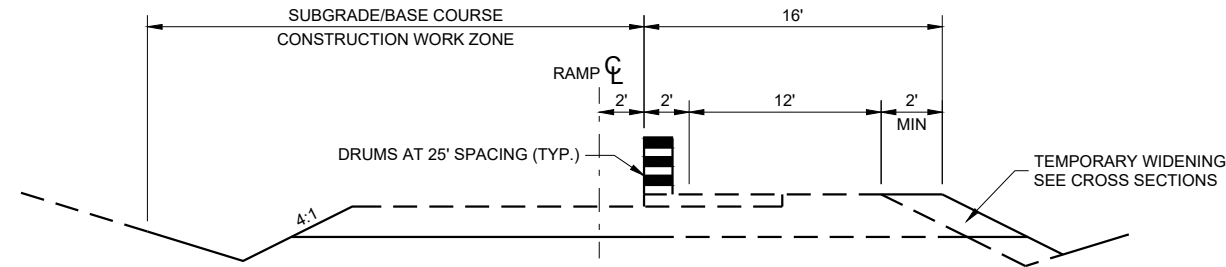
SDD 15C12 - 09b



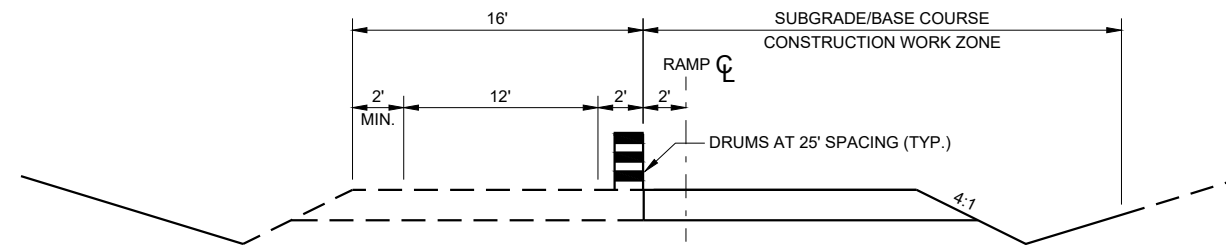
INITIAL RAMP - TYPICAL

GENERAL NOTES

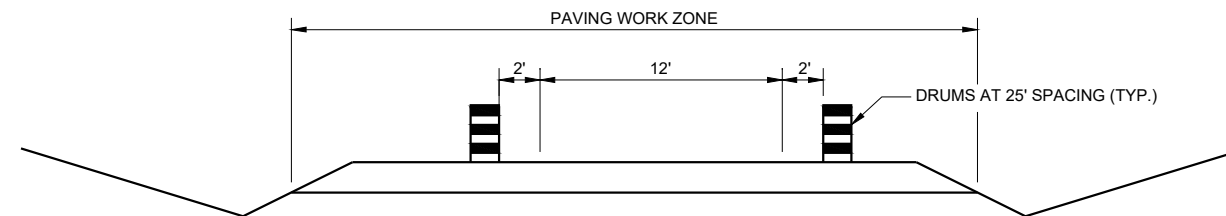
WORK SHALL BE SCHEDULED FOR ALL STAGES TO MINIMIZE INCONVENIENCE TO THE TRAFFIC USING THE RAMP WHILE IT IS ONLY BASE COURSE.
 IN STATE III, A MINIMUM 12' LANE WIDTH SHALL BE DELINEATED WITH DRUMS ALONG BOTH EDGES AT ALL TIMES UNTIL PAVED AND PAVEMENT MARKINGS ARE PLACED.



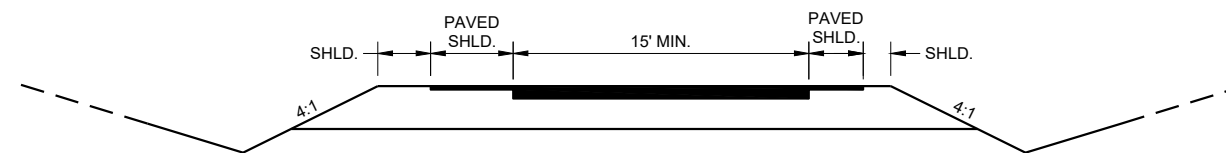
STAGE I - CONSTRUCTION TO SUBGRADE, LEFT



STAGE II - CONSTRUCTION TO SUBGRADE, RIGHT



STAGE III - TRAFFIC ON BASE COURSE



STAGE IV - PAVING

6




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SDD 15D04 - 01

SDD 15D04 - 01

TRAFFIC CONTROL, RAMP CONSTRUCTION STAGING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 1994 DATE	/s/ Chester J. Spang DIRECTOR, OFFICE OF TRAFFIC
FHWA	

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DELINEATOR, FLEXIBLE/TUBULAR MARKER
-  DIRECTION OF TRAFFIC

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.

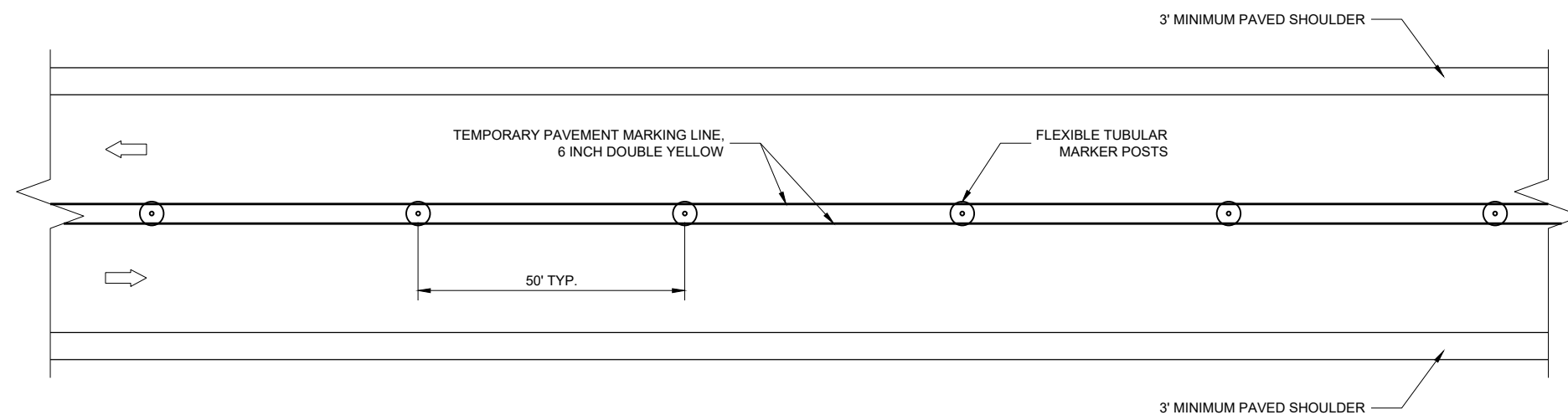
THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS.

A SINGLE ROW OF FLEXIBLE TUBULAR MARKERS ON CENTERLINE EXTEND FOR THE ENTIRE LENGTH OF TWO-WAY TRAFFIC AT 50 FOOT SPACING.

COVER EXISTING CENTERLINE STRIPE WITH TEMPORARY PAVEMENT MARKING LINE, 6 INCH DOUBLE YELLOW.



- ① THE W06-3 AND W057-51 SHALL BE LOCATED 200 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND / OR 500 FEET BEYOND ANY SIDE ROAD. THE R4-1 SHALL BE LOCATED 1000 FEET BEYOND THE W06-3 AND THE W057-51 AND THE SIGNS SHALL BE ALTERNATED WITH ONE MILE INTERVALS BETWEEN THE SIGNS.
- ② CONVENTIONAL: 24" X 30"
 FREEWAY AND EXPRESSWAY: 36" X 48"



TWO LANE, TWO WAY OPERATION

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SDD 15D06-06

SDD 15D06-06

TRAFFIC CONTROL TWO LANE TWO WAY OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS 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 AND PLACE TEMPORARY PAVEMENT MARKING LINE 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.

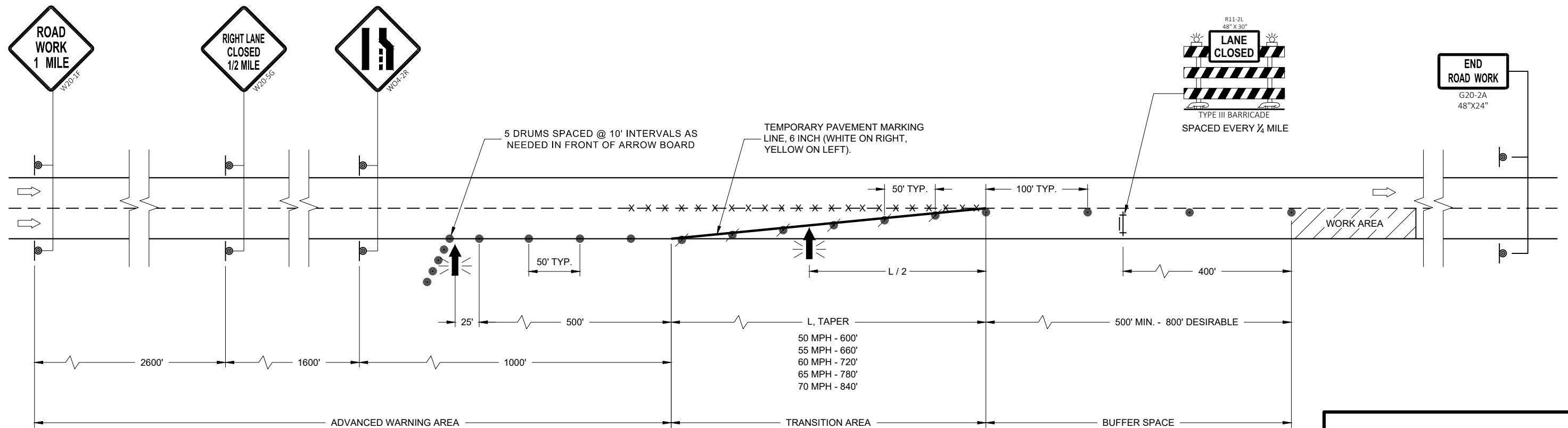
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS

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)
-  -X-X-X- REMOVING PAVEMENT MARKINGS
-   DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD



TRAFFIC CONTROL LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE May 2023	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

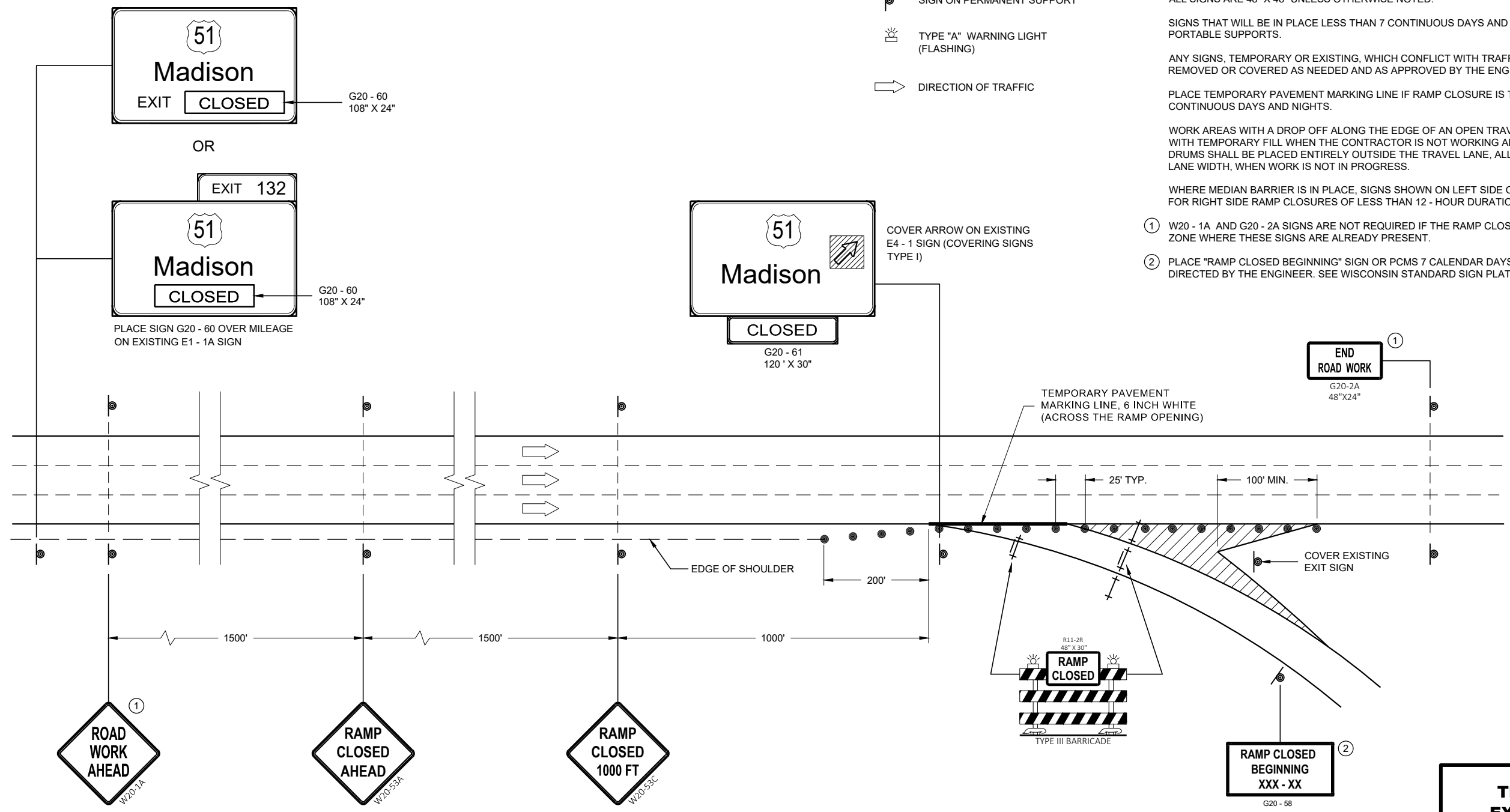
PLACE TEMPORARY PAVEMENT MARKING LINE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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.

① 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.

② 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
DATE May 2023 /S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

LEGEND

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

GENERAL NOTES

FOR WORK ON ROADWAYS WITH SPEEDS GREATER THAN 45MPH, USE SDD 15D12.

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

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

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

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

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

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

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

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

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

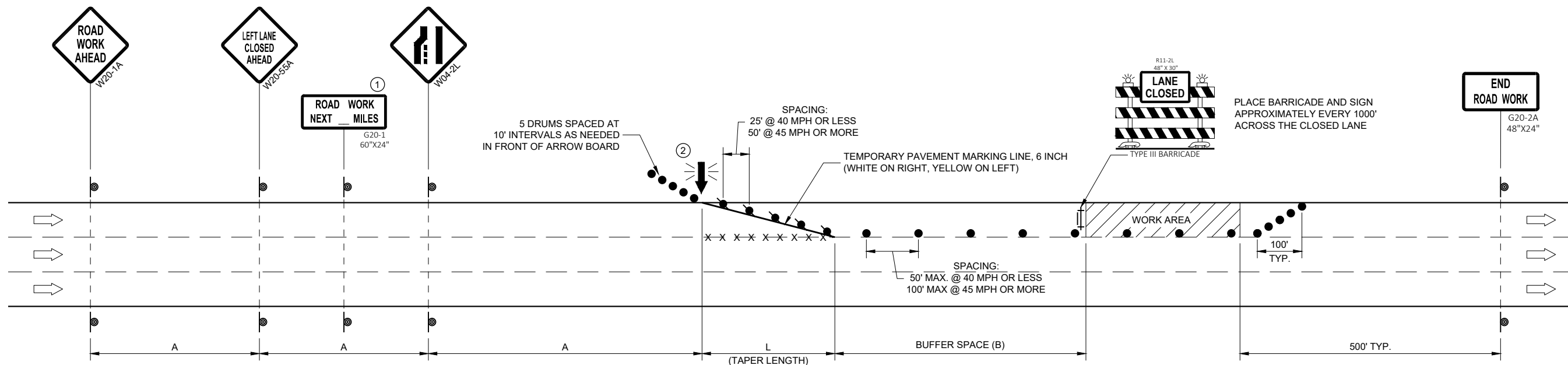
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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

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

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

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.



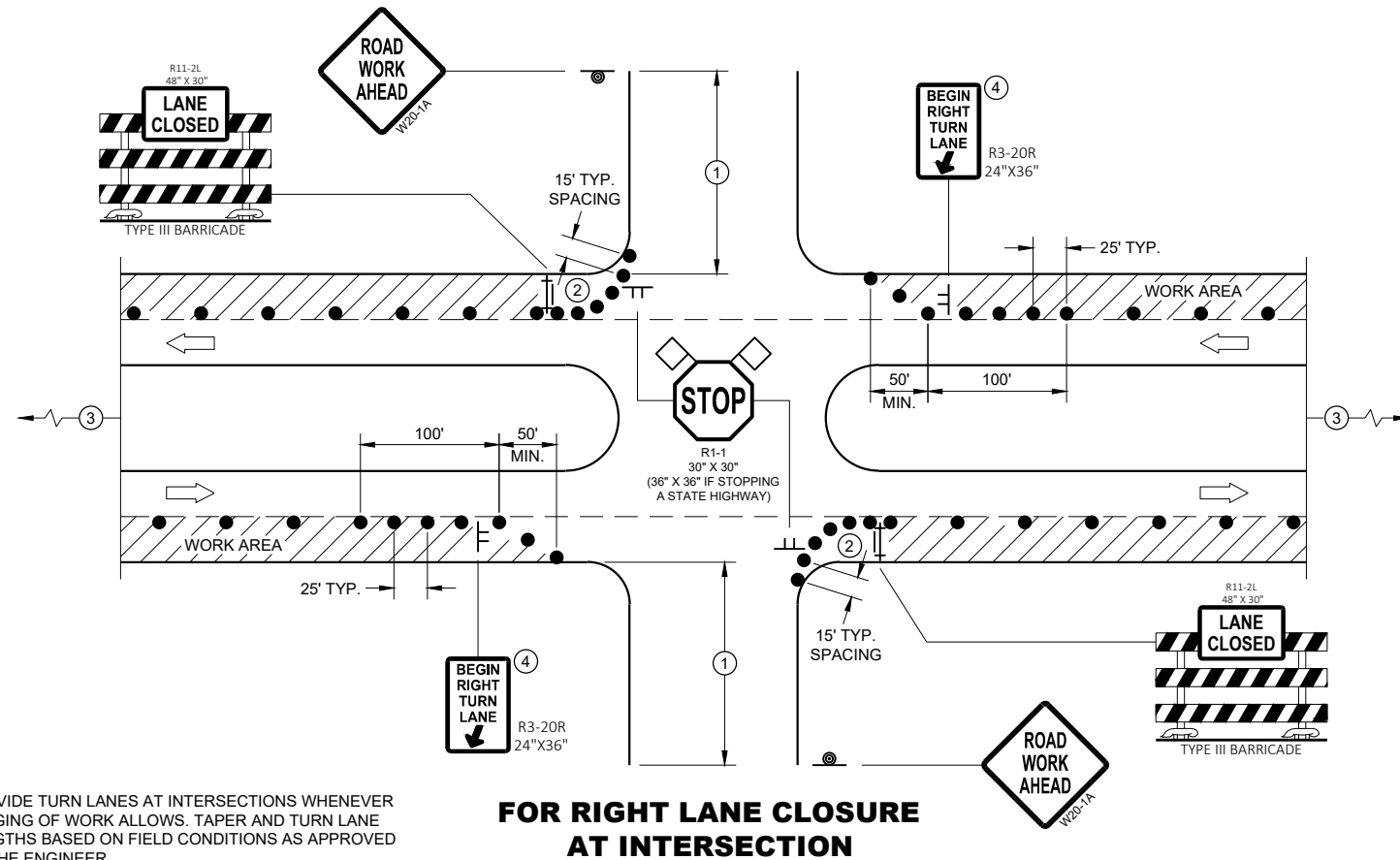
POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'

TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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

GENERAL NOTES

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

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

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

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

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

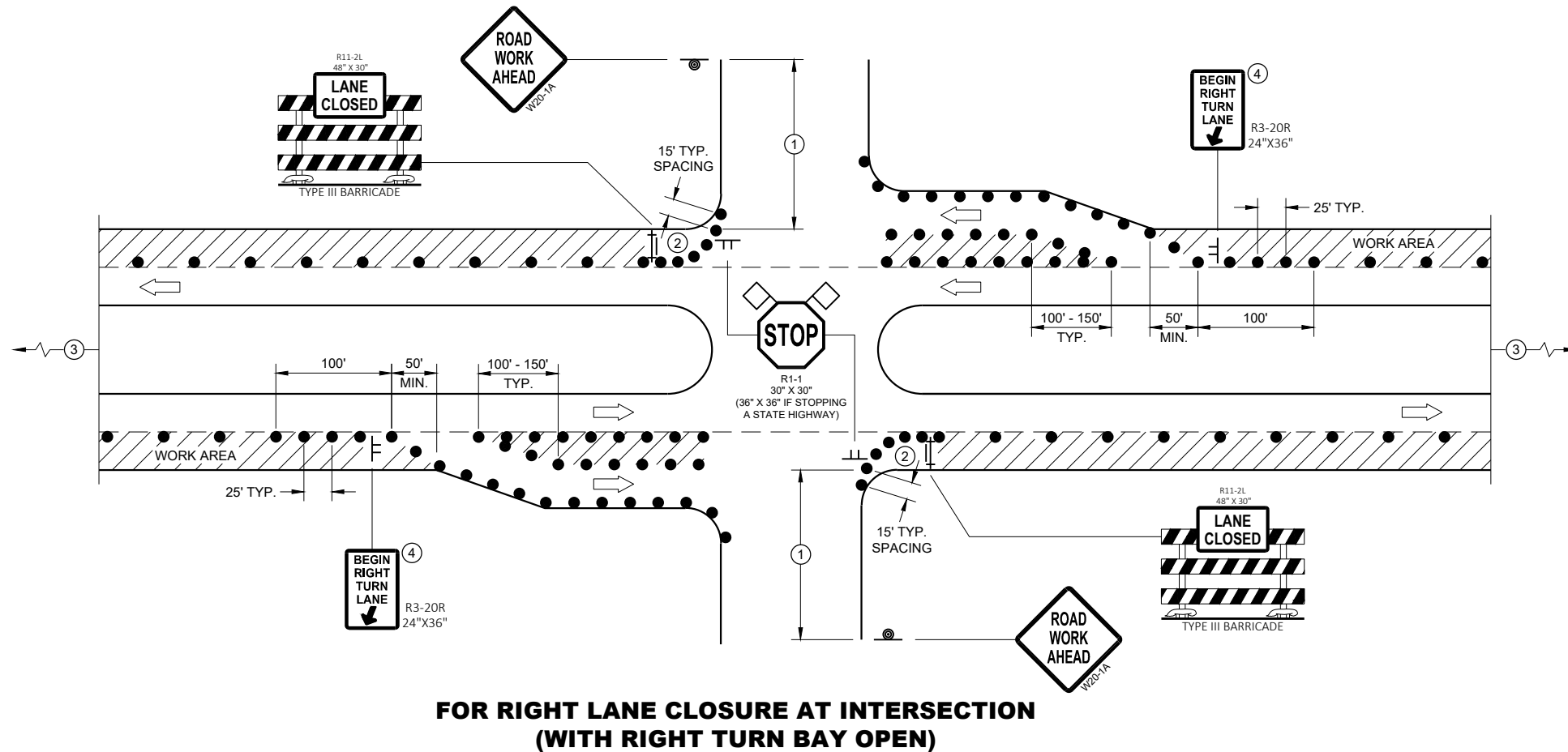
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

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

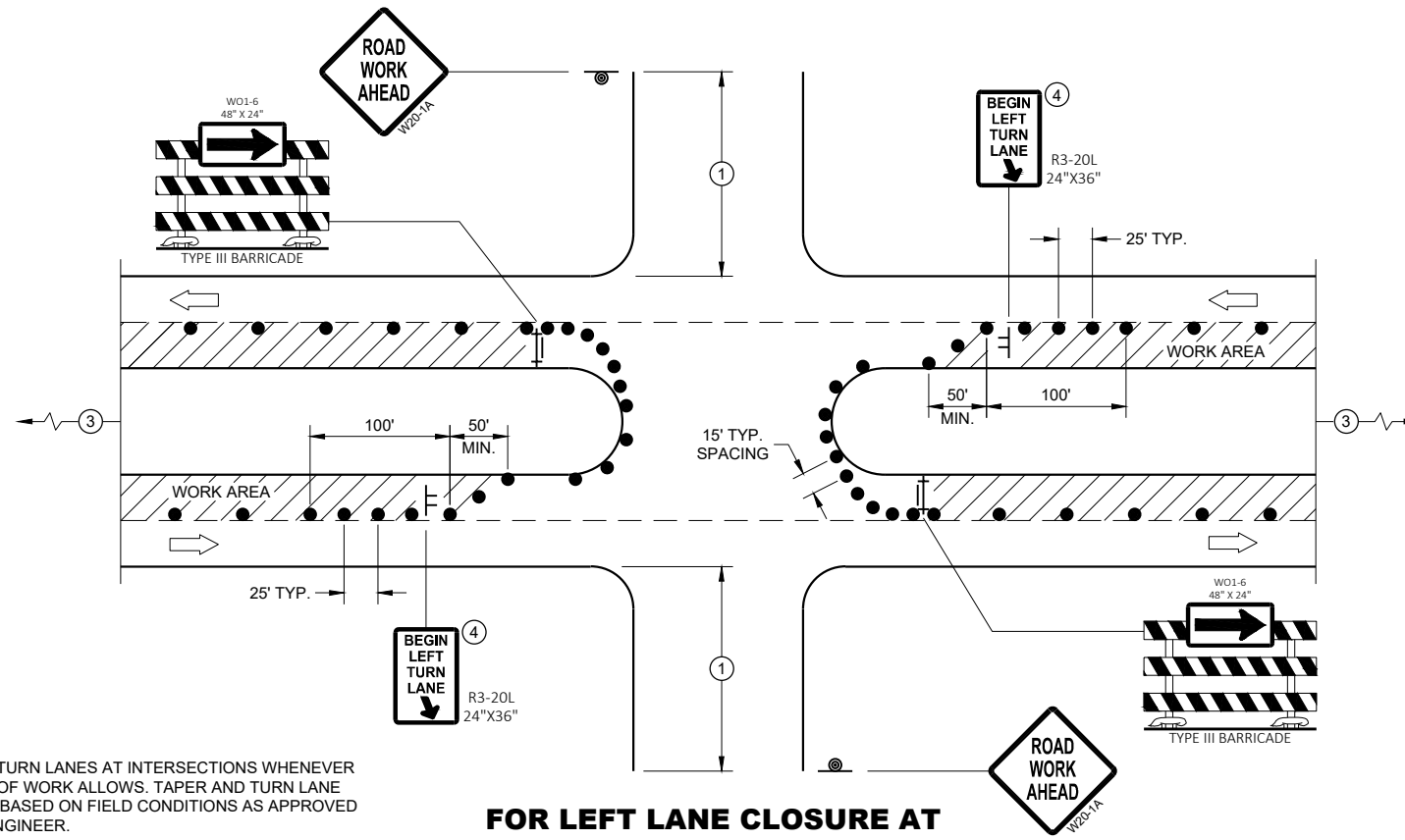


LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

GENERAL NOTES

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

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

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

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

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

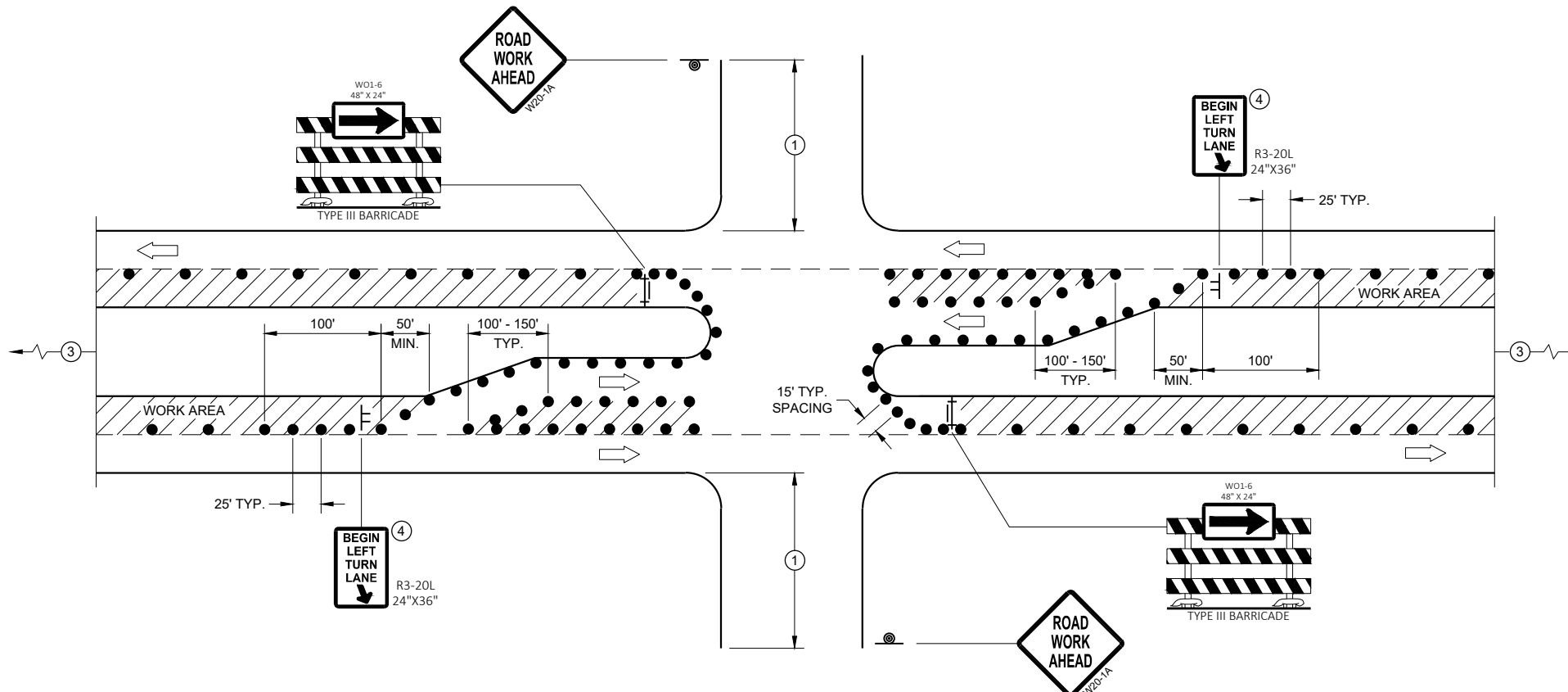
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

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



FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)

LEGEND

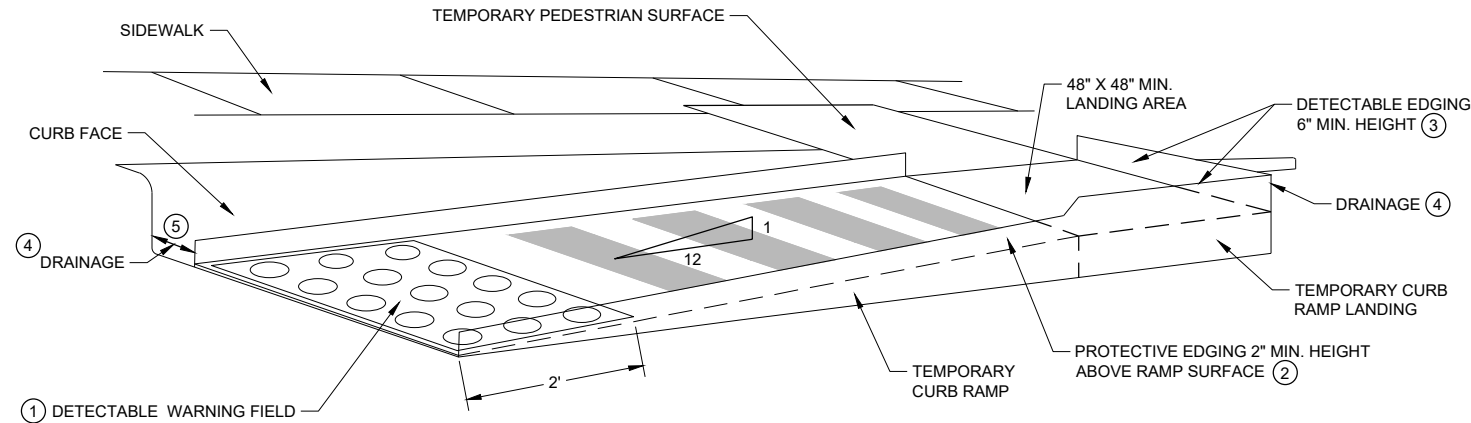
- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➔ DIRECTION OF TRAFFIC
- ◇ FLAGS, 16" X 16" MIN., ORANGE
- ▨ WORK AREA

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

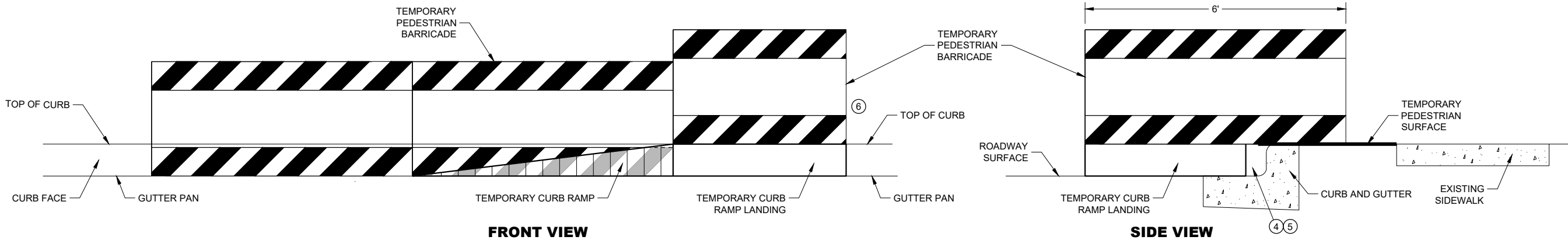
GENERAL NOTES

CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.
 CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
 CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
 LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
 CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.
- ⑥ IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.



PERSPECTIVE VIEW

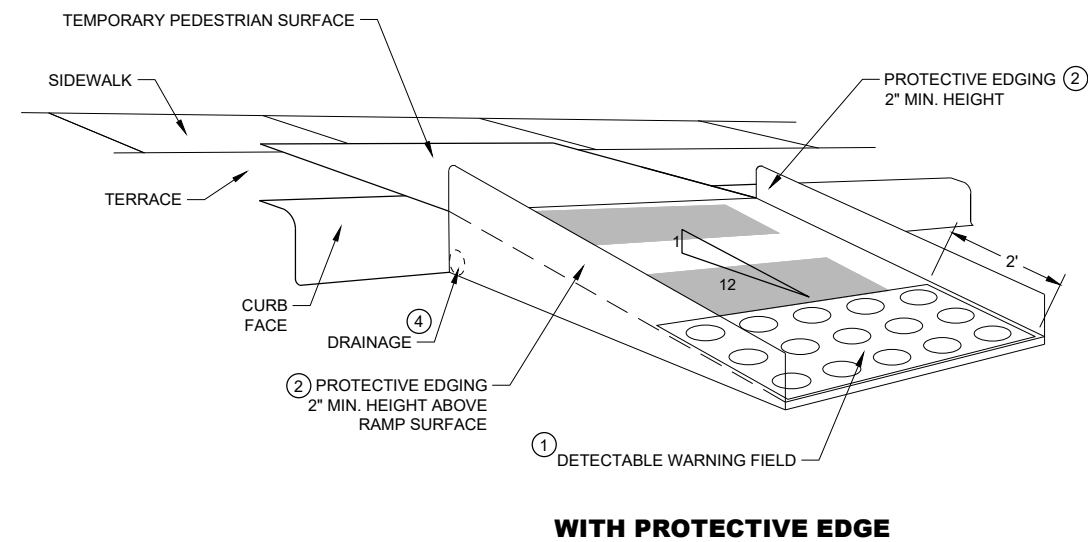
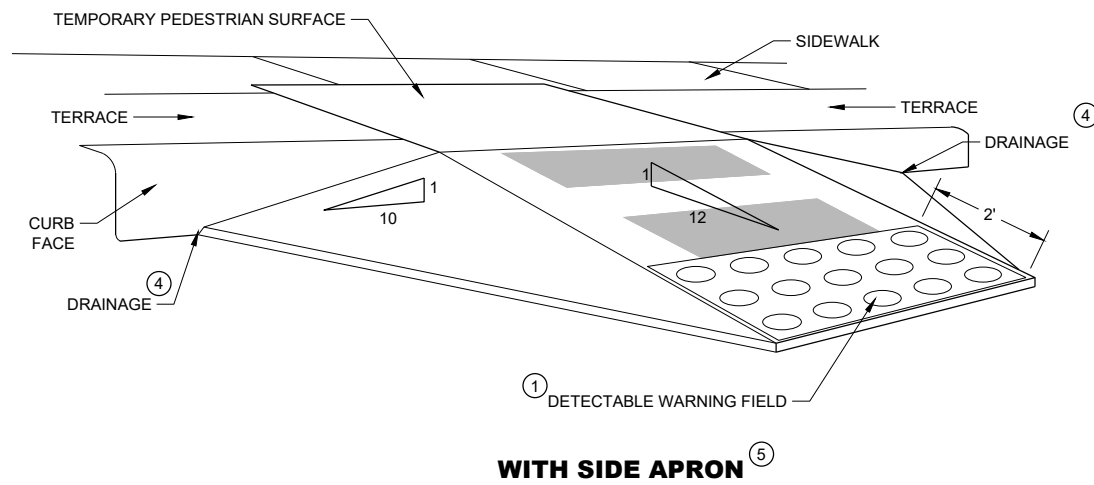


FRONT VIEW

SIDE VIEW

TEMPORARY CURB RAMP PARALLEL TO CURB

<p>TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION</p>
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>



TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MINIMUM WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.










CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

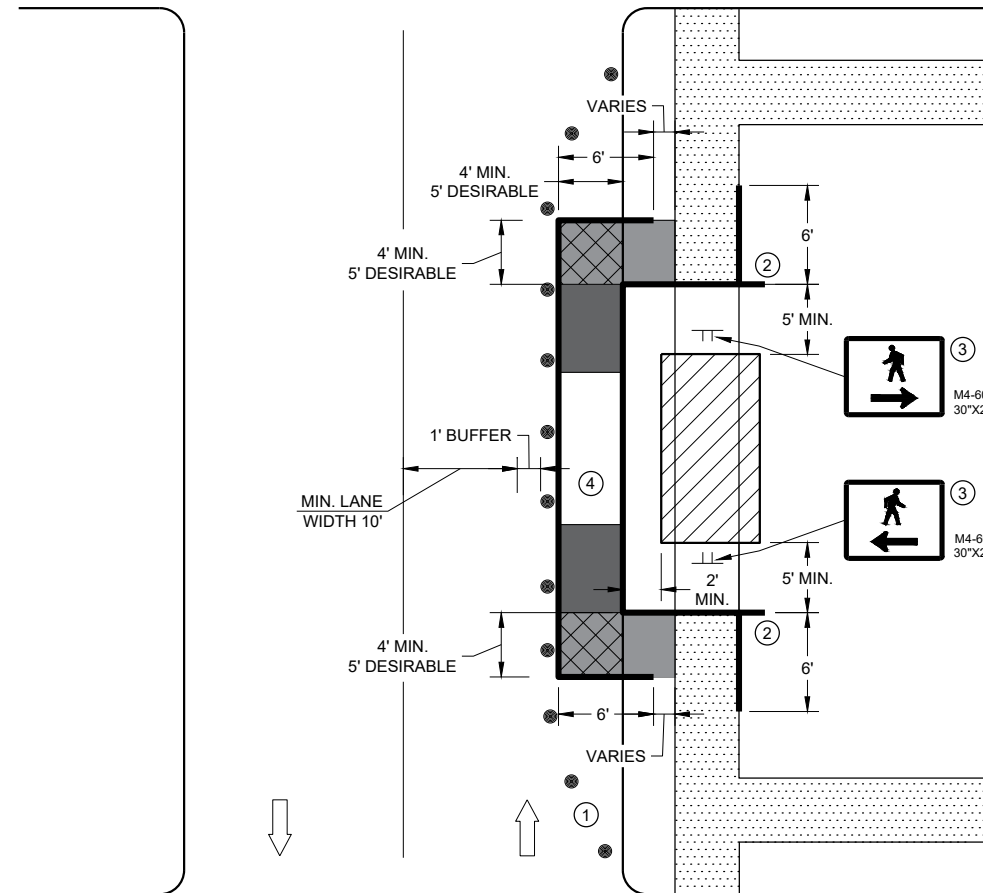
- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  WORK AREA
-  UNDER PEDESTRIAN TRAFFIC
-  TEMPORARY CURB RAMP
-  TEMPORARY PEDESTRIAN SURFACE "A"
-  TEMPORARY PEDESTRIAN SURFACE "B"
-  TEMPORARY PEDESTRIAN BARRICADE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

- TYPICAL TEMPORARY PEDESTRIAN BARRICADE PANEL IS 6 FEET LONG.
- SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.
- WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.
- ① SHOULDER OR LANE CLOSURE ADVANCE WARNING AND BUFFER SPACE REQUIRED.
 - ② PLACE EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL PAST THE SIDEWALK ON THE SIDE AWAY FROM THE ROAD.
 - ③ MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.
 - ④ USE EXISTING PAVEMENT SURFACE. IF EXISTING PAVEMENT SURFACE HAS BEEN REMOVED, USE A TEMPORARY PEDESTRIAN SURFACE.



SIDEWALK DIVERSION, SINGLE SIDE

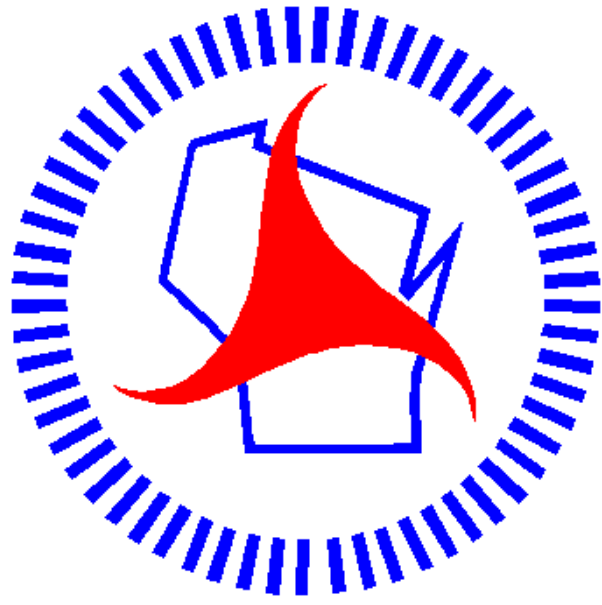
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6

6

SDD 15D30 - 09h

SDD 15D30 - 09h



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