

WKE AUGUST 2020

PROJECT ID: 1000-13-75

COUNTY: MILWAUKEE

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 Plan
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 = 90



DESIGN DESIGNATION

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

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

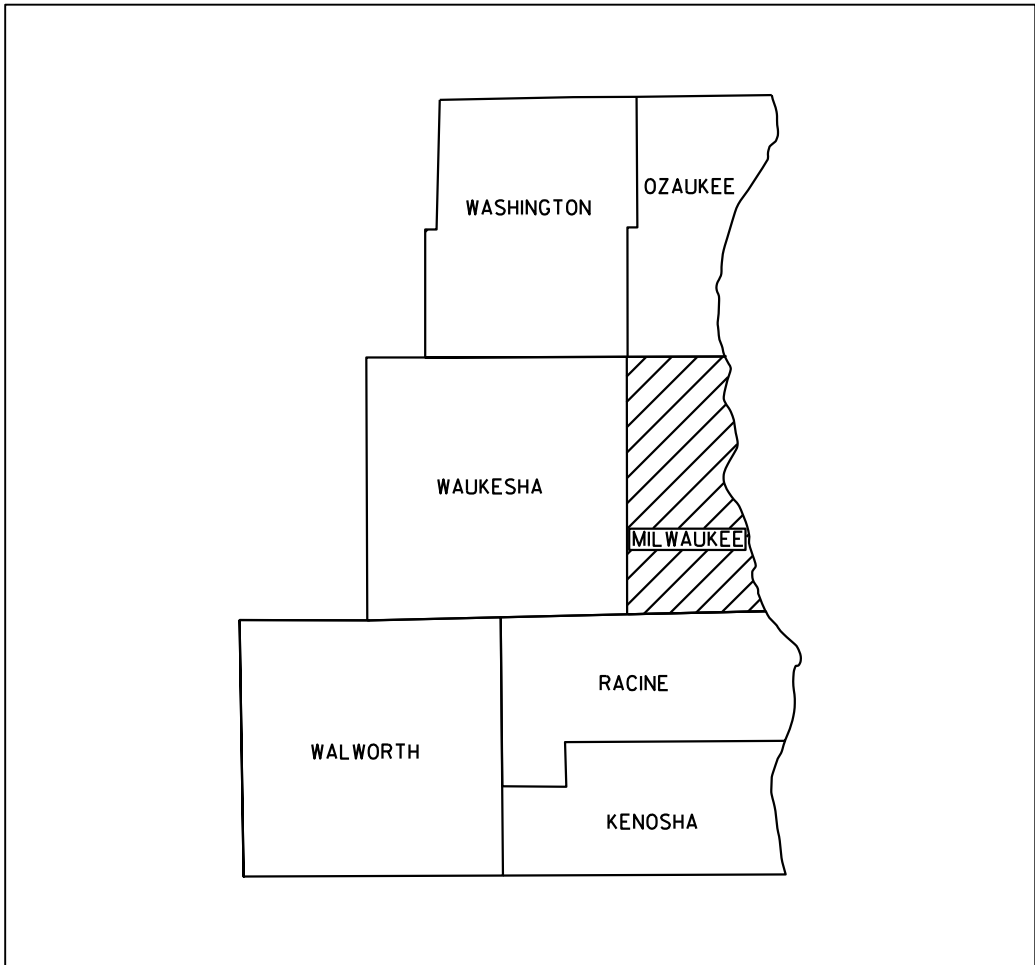
SE REGION - MILWAUKEE COUNTY

MITCHELL TUNNELS 1 & 2 (SYS RAMP W-N)

VARIOUS HIGHWAYS

MILWAUKEE COUNTY

STATE PROJECT NUMBER
1000-13-75



LAYOUT

SCALE 0 *

TOTAL NET LENGTH OF CENTERLINE = 0.000 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.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1000-13-75		

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	
Designer	WISDOT/SINGH
Project Manager	ERIC PEREA
Regional Examiner	
Regional Supervisor	MITZI DOBERSEK
APPROVED FOR THE DEPARTMENT	
DATE: 5/01/20	
(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



MILWAUKEE COUNTY - HIGHWAY MAINTENANCE

MR. KEVIN KENT
HIGHWAY MAINTENANCE MANAGER
10190 WATERTOWN PLK ROAD
WAUWATOSA, WI 53266
(414) 257-6566
KEVIN.KENT@MILWAUKEECOUNTYWI.GOV

WISCONSIN DEPT. OF TRANSPORTATION

MR. PATRICK STOETZEL
WISDOT DTSD SE REGION HIGHWAY LIGHTING COORDINATOR
935 S 60TH STREET
WEST ALLIS, WI 53214
(414) 750-5306
PATRICK.STOETZEL@DOT.WI.GOV

WISCONSIN DEPT. OF TRANSPORTATION

MS. BREE JOHNS-KONKOL
WISDOT DTSD SE REGION ELECTRICAL FIELD UNIT (EFU) SHOP COORDINATOR
935 S 60TH STREET
WEST ALLIS, WI 53214
(414) 266-1170
BREE.JOHNSKONKOL@DOT.WI.GOV

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

MS. KRISTINA BETZOLD - ENVIRONMENTAL SPECIALIST
2300 N. MARTIN LUTHER KING JR. DRIVE
MILWAUKEE, WI 53212
(414) 263-8517
KRISTINA.BETZOLD@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

WISCONSIN DEPARTMENT OF TRANSPORTATION

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WISCONSIN DEPARTMENT OF TRANSPORTATION

MR. STEVEN KUHL - PROJECT MANAGER
141 NW BARSTOW ST
WAUKESHA, WI 53187-0798
(414) 745.7569
STEVEN.KUHL@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION

MR. RABI BISTA - SE REGION UTILITY COORDINATOR
141 NW BARSTOW ST
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(262) 548-5690
RABI.BISTA@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.

TRAFFIC CONTROL NOTES

- 1. SHOULDER AND LANE CLOSURES ON THE FOLLOWING RAMPS ARE REQUIRED TO COMPLETE LIGHTING WORK: IH 43 SB RAMP NW OUTSIDE SHOULDER LIGHTING, IH 43/41/894 RAMP W-N INSIDE AND OUTSIDE SHOULDER LIGHTING. INSTALL CLOSURES IN ACCORDANCE TO STANDARD DETAIL DRAWING FOR TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH. THIS WORK WILL BE PAID FOR IN ACCORDANCE TO APPLICABLE BID ITEMS.
- 2. TRAFFIC CONTROL FOR LIGHTING WORK ON THE FOLLOWING MOVEMENTS SHALL BE PERFORMED PER THE TRAFFIC CONTROL PLANS AND WILL BE PAID FOR IN ACCORDANCE TO APPLICABLE BID ITEMS: IH 43 SB RAMP NW AND IH 43/IH 49 NB RAMP WN.

STAGING NOTES

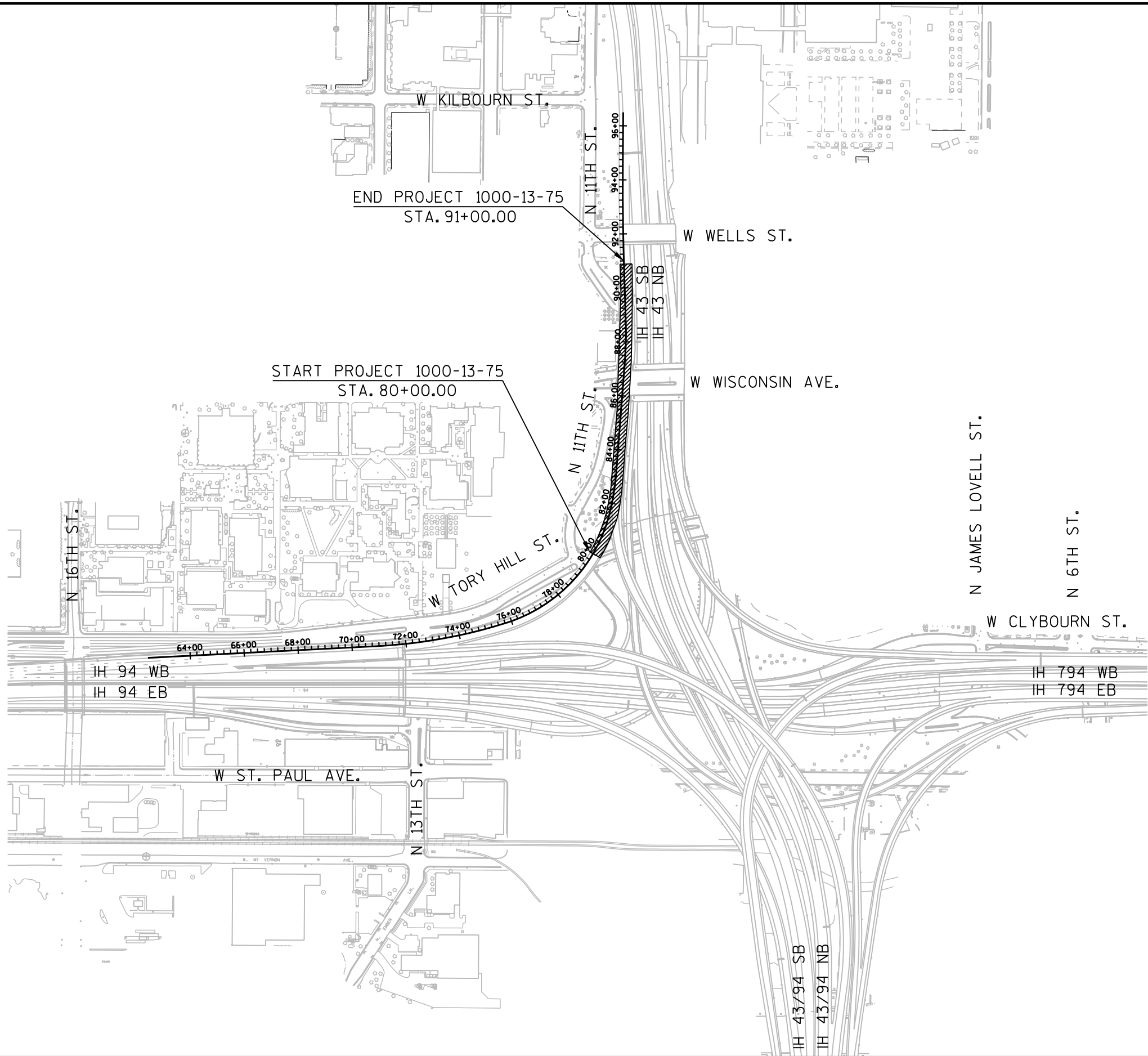
- 1. MAINTAIN LIGHTING AT ALL TIMES DURING CONSTRUCTION USING EXISTING LIGHTING, FINAL LIGHTING OR COMBINATIONS.
- 2. DUE TO THE PHASING OF CONSTRUCTION SOME FINAL LIGHTING UNITS MAY BE ORPHANED UNTIL A LATER STAGE IS COMPLETE. IT IS AT THE DISCRETION OF THE CONTRACTOR TO SCHEDULE THESE ITEMS. THE CONTRACTOR 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.

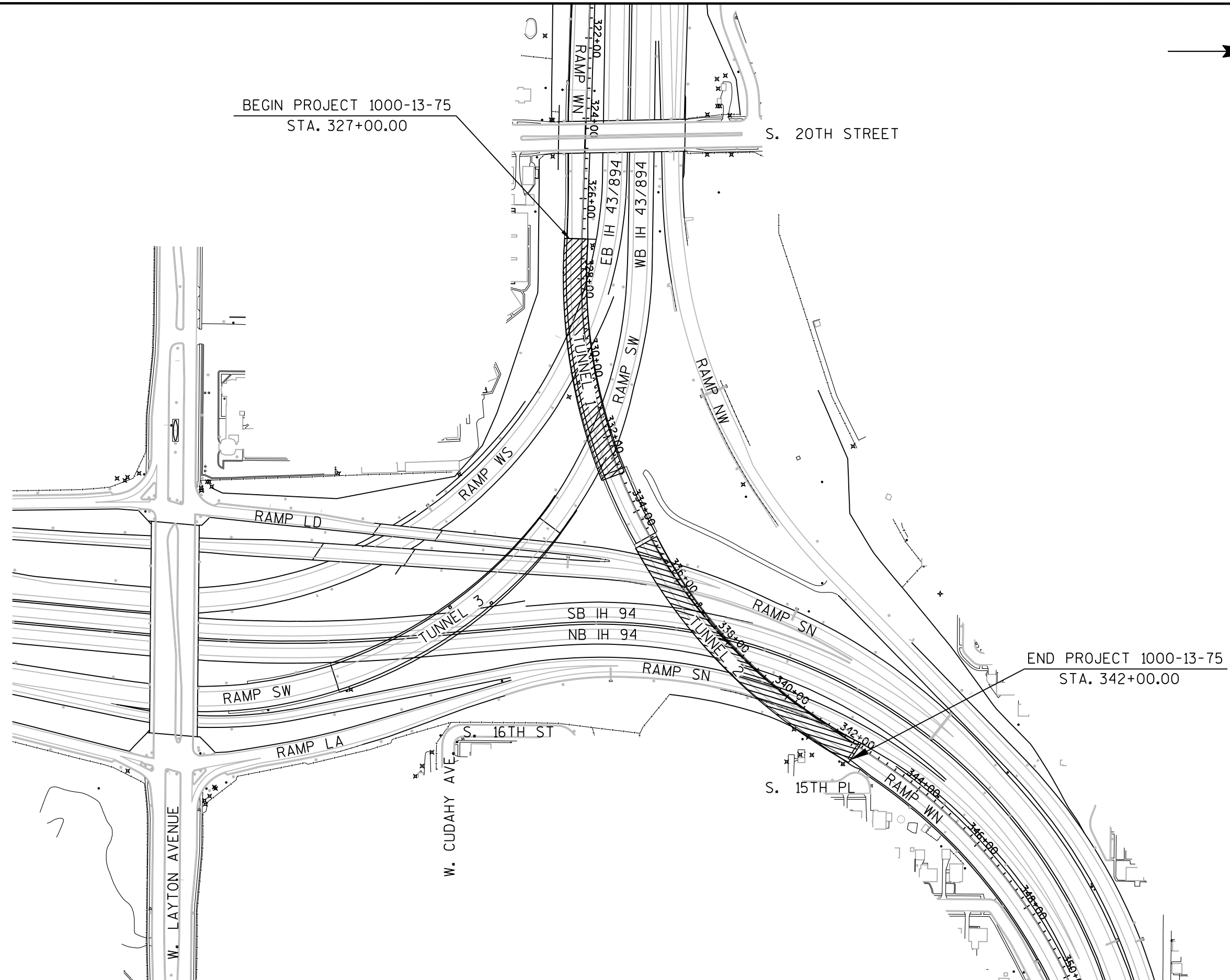
GENERAL NOTES FOR EROSION CONTROL

- 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.





PROJECT NO: 1000-13-75

HWY: IH 41/IH 43/IH 894

COUNTY: MILWAUKEE

PROJECT OVERVIEW

SHEET

E

FILE NAME : W:\PROJECTS\19253\DRAWINGS\CADD SHEETS\023600_LP_MOD V2018.DWG
LAYOUT NAME - PROJECT OVERVIEW

PLOT DATE : 4/14/2020 1:16 PM

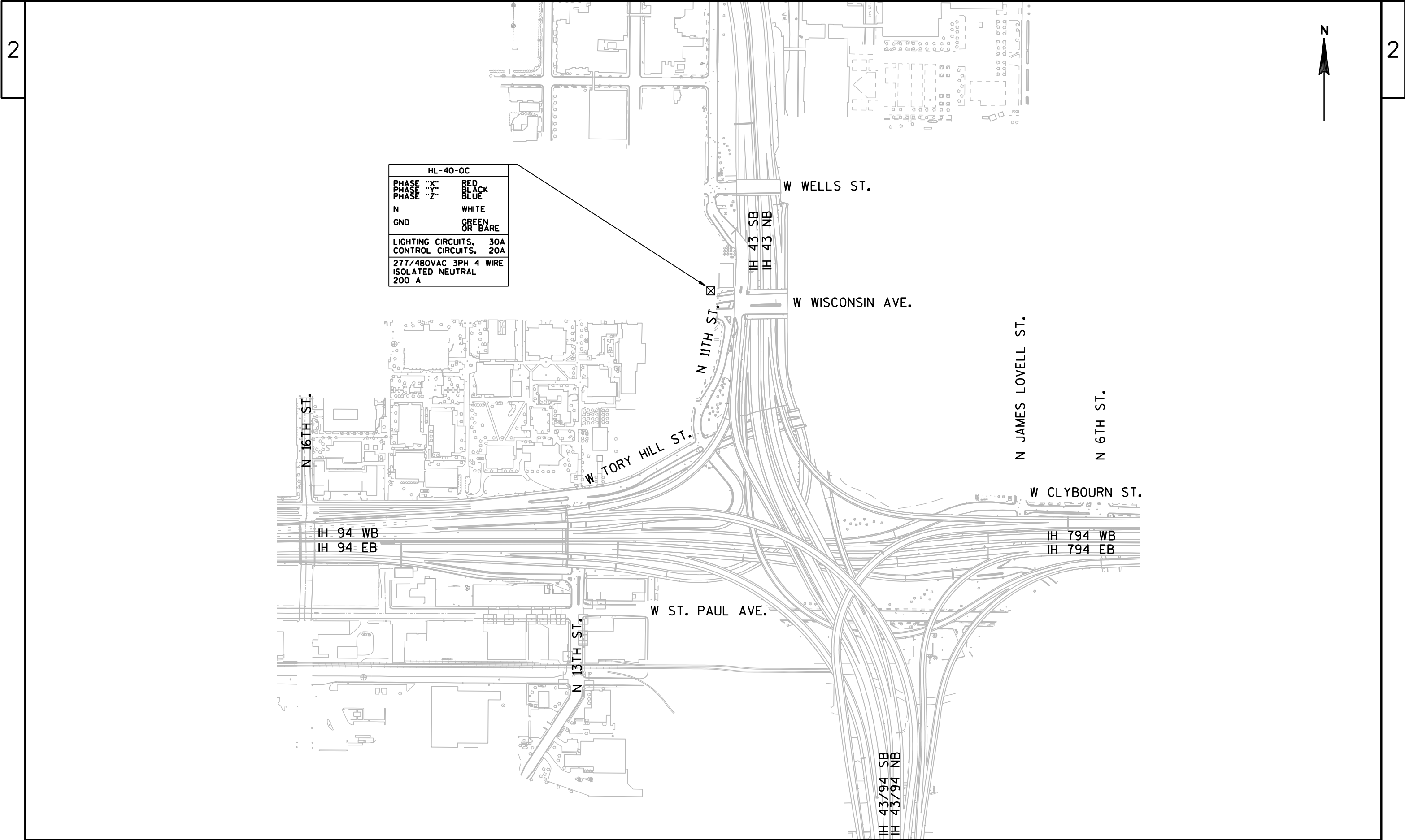
PLOT BY : WILLIAM NEAVE

PLOT NAME :

PLOT SCALE : 1 IN:250 FT

SHEET 2 OF 2

WISDOT/CADD SHEET 44



NOTE

- 1) EXISTING CONDUIT FROM PB-N047 TO JB-C17 IS 3"C,2#8, A,N; 4#6,B,D,F,N; 10#4, E,N,H,K,M,N,J,L,P,N, GND.
- 2) NIGHT (N) FIXTURES ARE 125W LED, REST ARE 435W LED.
- 3) POWER IS FROM EXISTING HL-40-QC.
- 4) EXISTING TO REMAIN

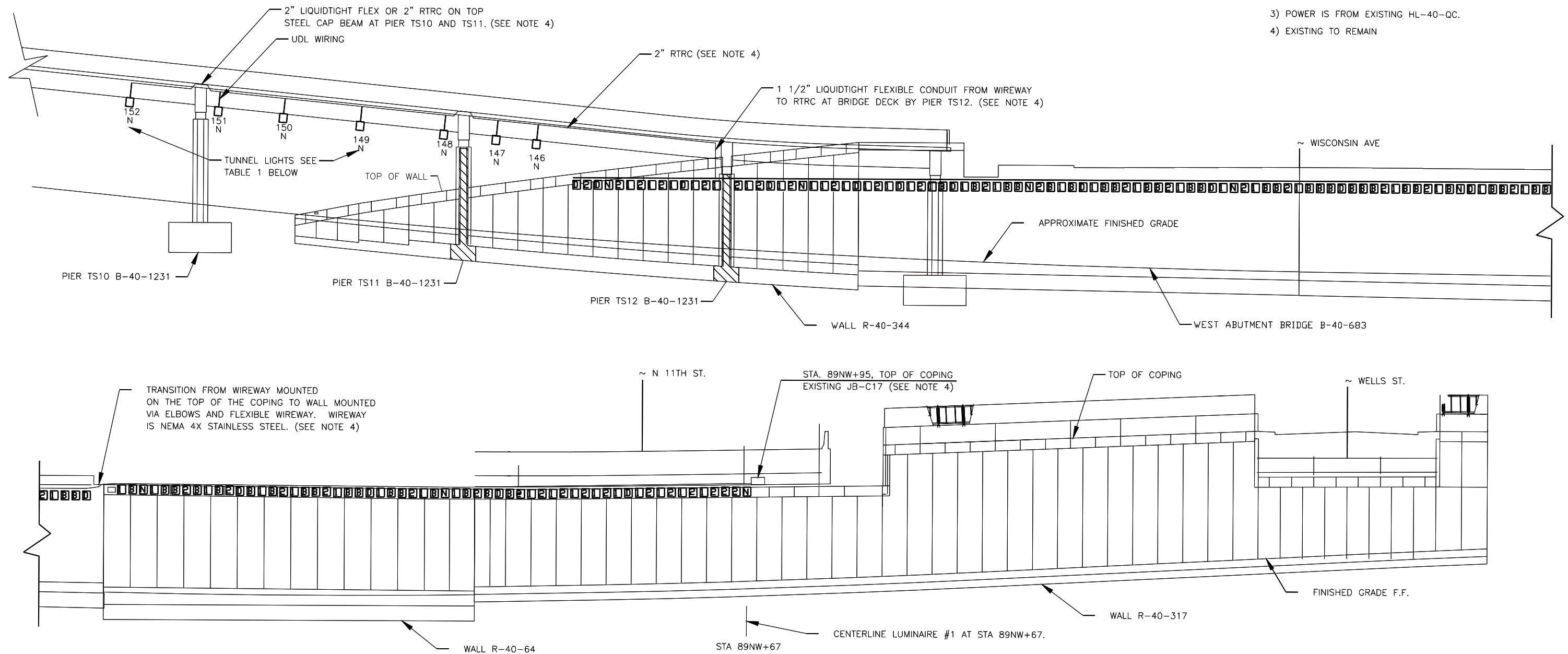
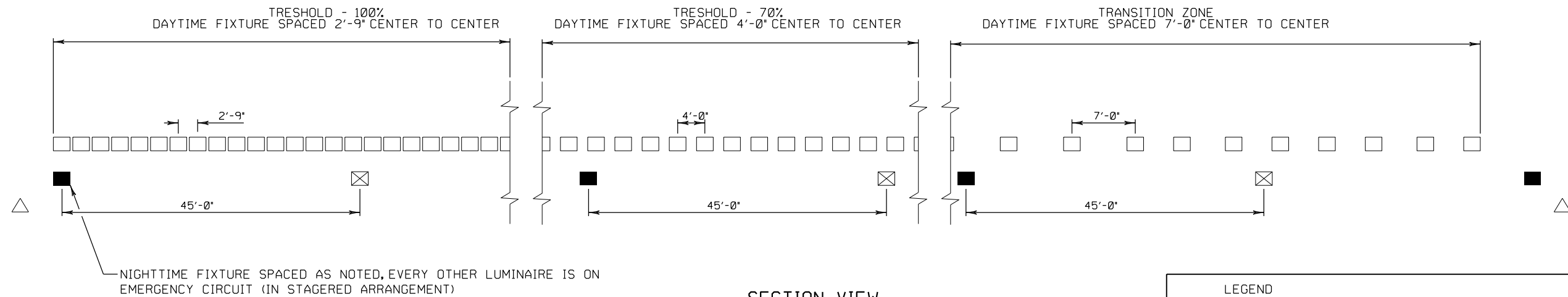


TABLE 1				
FIXTURE #	STATION	TUNNEL CKT	WATTAGE	MOUNTING
146	84NW+45	N	125 LED	SEE LIGHTING PLAN DETAILS-ADJUSTABLE BRACKET DETAIL
147	84NW+15	N	125 LED	
148	83NW+85	N	125 LED	
149	83NW+45	N	125 LED	
150	83NW+15	N	125 LED	
151	82NW+85	N	125 LED	
152	82NW+55	N	125 LED	

ALL FIXTURES CENTERED BETWEEN GIRDERS A2 & B2
AIM FIXTURES 15' DOWN FROM HORIZONTAL, ROATE UNIT 15' COUNTER CLOCKWISE
FROM DIRECTION OF TRAFFIC. BOTTOM OF LIGHT NOT TO EXTEND BEYOND 60" FROM DECK.

TORY HILL TUNNEL ELEVATION (N-W RAMP)
NOT TO SCALE



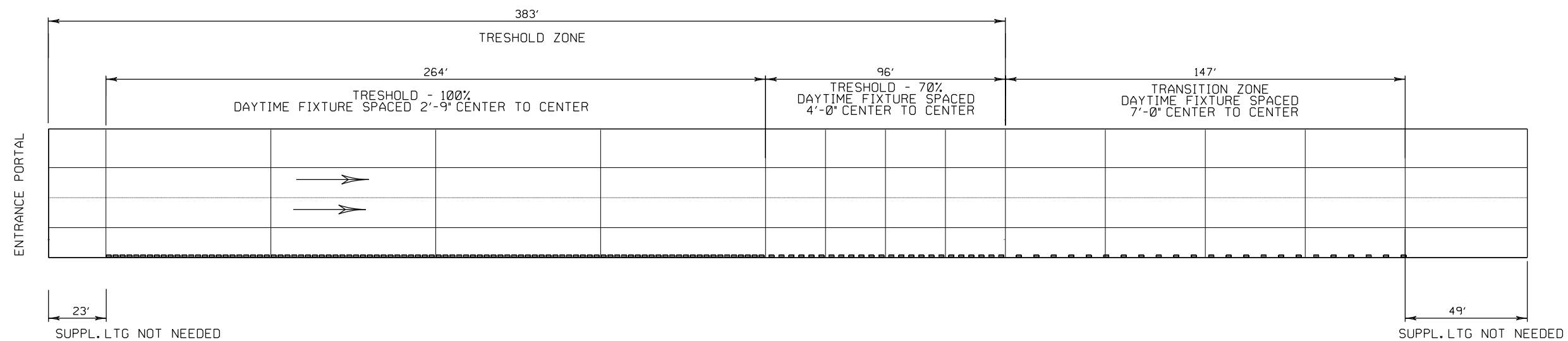
SECTION VIEW

TORY HILL TUNNEL DETAILS:

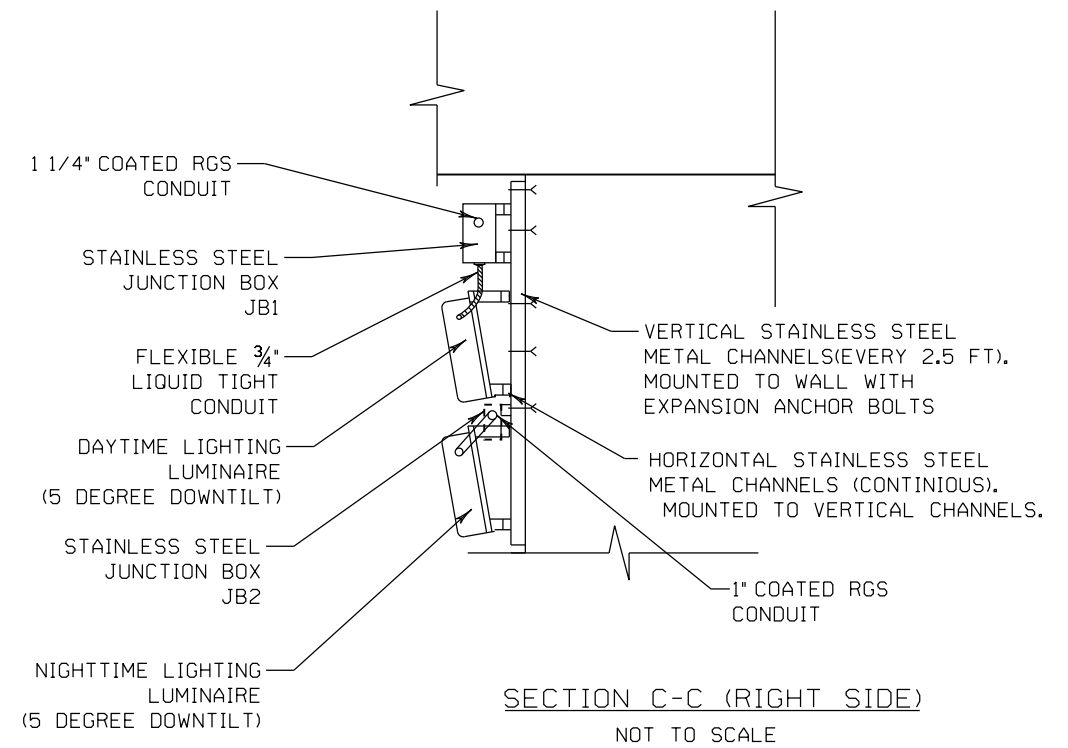
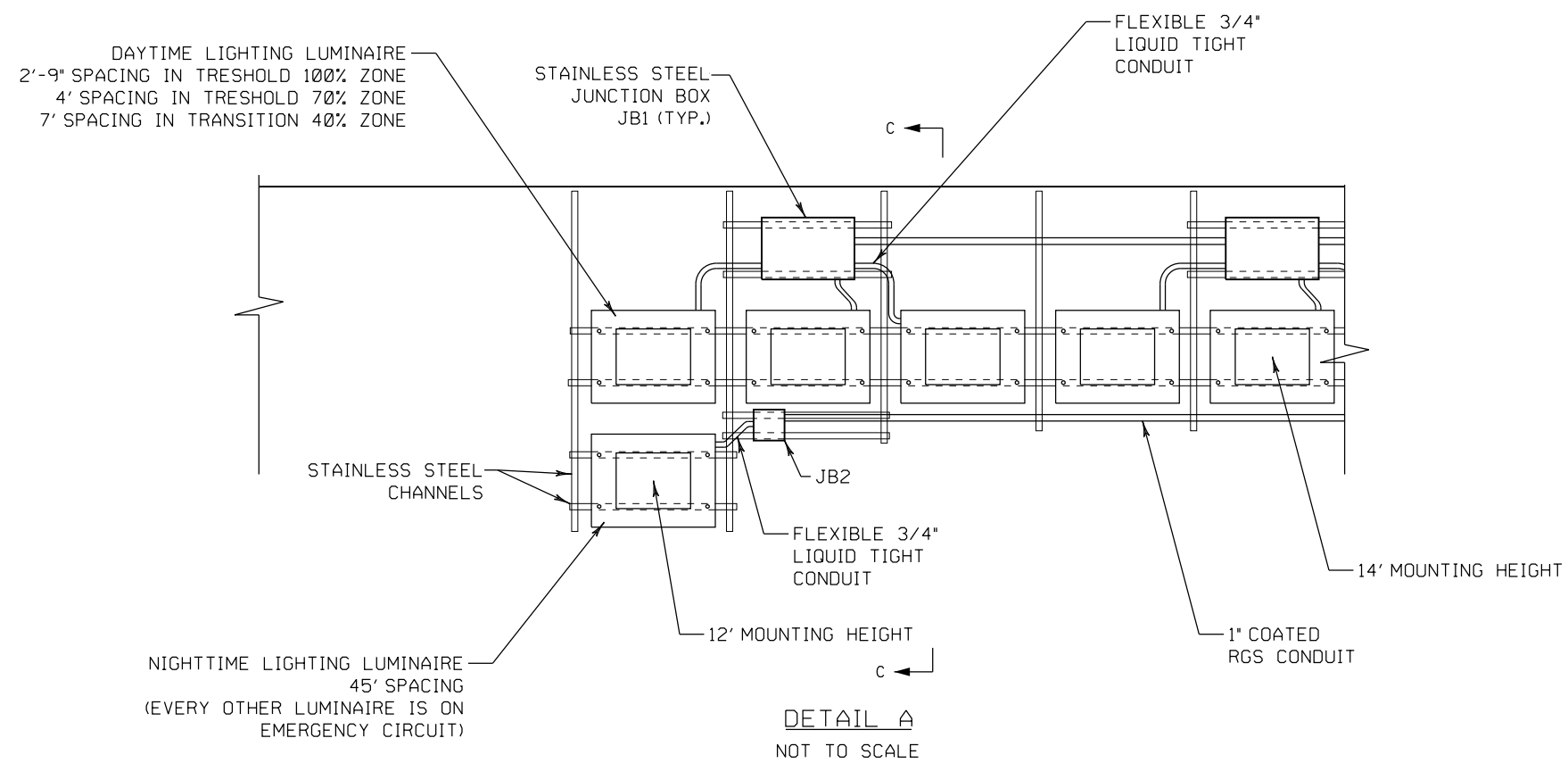
STRUCTURE: B-40-1222
SB RAMP
TUNNEL STARTS AT STA. 89NW+95 AND ENDS AT STA. 84NW+75
TWO 12' LANES
INSIDE SHOULDER 8', OUTSIDE SHOULDER 8'
HEIGHT VARIES, MIN. CLEARANCE IS 16'-9" AS MEASURED AT THE
INSIDE EDGE OF THE 12' OUTSIDE SHOULDER
LENGTH OF TUNNEL IS 520'
AVERAGE ANNUAL DAILY TRAFFIC (AADT) IS 33400
POSTED SPEED LIMIT IS 50MPH
DIRECTION OF TRAFFIC AT TUNNEL PORTAL IS SOUTH

LEGEND

- DAYTIME FIXTURE, LED, 435W, WALL MOUNTED, 14' MOUNTING HEIGHT, 5° TILT, ONE ROW, TOTAL 133 FIXTURES
- NIGHTTIME FIXTURE, LED, 125W, WALL MOUNTED, 12' MOUNTING HEIGHT, 5° TILT, TOTAL 6 FIXTURES
- EMERGENCY/NIGHTTIME FIXTURE, LED 12' MOUNTING HEIGHT, 5° TILT, TOTAL 6 FIXTURES
- EXISTING ILLUMINATED EXIT SIGN CONNECTED TO EMERGENCY CIRCUIT



TORY HILL TUNNEL LIGHTING LAYOUT
DAY TIME LIGHTING

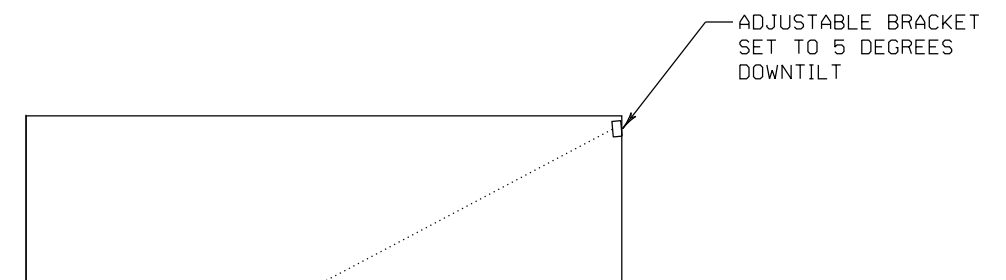


JUNCTION BOX SCHEDULE

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

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
TRESHOLD 100% ZONE (2'-9" SPACING)			
1	RIGHT TOP	1	23.50
2	RIGHT TOP	2	26.25
3	RIGHT TOP	3	29.00
4	RIGHT TOP	1	31.75
5	RIGHT TOP	2	34.50
6	RIGHT TOP	3	37.25
7	RIGHT TOP	1	40.00
8	RIGHT TOP	2	42.75
9	RIGHT TOP	3	45.50
10	RIGHT TOP	1	48.25
11	RIGHT TOP	2	51.00
12	RIGHT TOP	3	53.75
13	RIGHT TOP	1	56.50
14	RIGHT TOP	2	59.25
15	RIGHT TOP	3	62.00
16	RIGHT TOP	1	64.75
17	RIGHT TOP	2	67.50
18	RIGHT TOP	3	70.25
19	RIGHT TOP	1	73.00
20	RIGHT TOP	2	75.75
21	RIGHT TOP	3	78.50
22	RIGHT TOP	1	81.25
23	RIGHT TOP	2	84.00
24	RIGHT TOP	3	86.75
25	RIGHT TOP	1	89.50
26	RIGHT TOP	2	92.25
27	RIGHT TOP	3	95.00
28	RIGHT TOP	1	97.75
29	RIGHT TOP	2	100.50
30	RIGHT TOP	3	103.25
31	RIGHT TOP	1	106.00
32	RIGHT TOP	2	108.75
33	RIGHT TOP	3	111.50
34	RIGHT TOP	1	114.25
35	RIGHT TOP	2	117.00
36	RIGHT TOP	3	119.75
37	RIGHT TOP	1	122.50
38	RIGHT TOP	2	125.25
39	RIGHT TOP	3	128.00
40	RIGHT TOP	1	130.75
41	RIGHT TOP	2	133.50
42	RIGHT TOP	3	136.25
43	RIGHT TOP	1	139.00
44	RIGHT TOP	2	141.75
45	RIGHT TOP	3	144.50
46	RIGHT TOP	1	147.25

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
47	RIGHT TOP	2	150.00
48	RIGHT TOP	3	152.75
49	RIGHT TOP	1	155.50
50	RIGHT TOP	2	158.25
51	RIGHT TOP	3	161.00
52	RIGHT TOP	1	163.75
53	RIGHT TOP	2	166.50
54	RIGHT TOP	3	169.25
55	RIGHT TOP	1	172.00
56	RIGHT TOP	2	174.75
57	RIGHT TOP	3	177.50
58	RIGHT TOP	1	180.25
59	RIGHT TOP	2	183.00
60	RIGHT TOP	3	185.75
61	RIGHT TOP	1	188.50
62	RIGHT TOP	2	191.25
63	RIGHT TOP	3	194.00
64	RIGHT TOP	1	196.75
65	RIGHT TOP	2	199.50
66	RIGHT TOP	3	202.25
67	RIGHT TOP	1	205.00
68	RIGHT TOP	2	207.75
69	RIGHT TOP	3	210.50
70	RIGHT TOP	1	213.25
71	RIGHT TOP	2	216.00
72	RIGHT TOP	3	218.75
73	RIGHT TOP	1	221.50
74	RIGHT TOP	2	224.25
75	RIGHT TOP	3	227.00
76	RIGHT TOP	1	229.75
77	RIGHT TOP	2	232.50
78	RIGHT TOP	3	235.25
79	RIGHT TOP	1	238.00
80	RIGHT TOP	2	240.75
81	RIGHT TOP	3	243.50
82	RIGHT TOP	1	246.25
83	RIGHT TOP	2	249.00
84	RIGHT TOP	3	251.75
85	RIGHT TOP	1	254.50
86	RIGHT TOP	2	257.25
87	RIGHT TOP	3	260.00
88	RIGHT TOP	1	262.75
89	RIGHT TOP	2	265.50
90	RIGHT TOP	3	268.25
91	RIGHT TOP	1	271.00
92	RIGHT TOP	2	273.75

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
93	RIGHT TOP	3	276.50
94	RIGHT TOP	1	279.25
95	RIGHT TOP	2	282.00
96	RIGHT TOP	3	284.75
97	RIGHT TOP	1	288.75
TRESHOLD 70% ZONE (4' SPACING)			
98	RIGHT TOP	4	292.75
99	RIGHT TOP	5	296.75
100	RIGHT TOP	6	300.75
101	RIGHT TOP	4	304.75
102	RIGHT TOP	5	308.75
103	RIGHT TOP	6	312.75
104	RIGHT TOP	4	316.75
105	RIGHT TOP	5	320.75
106	RIGHT TOP	6	324.75
107	RIGHT TOP	4	328.75
108	RIGHT TOP	5	332.75
109	RIGHT TOP	6	336.75
110	RIGHT TOP	4	340.75
111	RIGHT TOP	5	344.75
112	RIGHT TOP	6	348.75
113	RIGHT TOP	4	352.75
114	RIGHT TOP	5	356.75
115	RIGHT TOP	6	360.75
116	RIGHT TOP	4	364.75
117	RIGHT TOP	5	368.75
118	RIGHT TOP	6	372.75
119	RIGHT TOP	4	376.75
120	RIGHT TOP	5	380.75
121	RIGHT TOP	6	387.75
TRANSITION 40% ZONE (7' SPACING)			
122	RIGHT TOP	4	394.75
123	RIGHT TOP	5	401.75
124	RIGHT TOP	6	408.75
125	RIGHT TOP	4	415.75
126	RIGHT TOP	5	422.75
127	RIGHT TOP	6	429.75
128	RIGHT TOP	4	436.75
129	RIGHT TOP	5	443.75
130	RIGHT TOP	6	450.75
131	RIGHT TOP	4	457.75
132	RIGHT TOP	5	464.75
133	RIGHT TOP	6	471.75

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
NIGHTTIME AND EMERGENCY (45' SPACING)			
134	RIGHT BOTTOM	NT1	15.0
135	RIGHT BOTTOM	EM1	60.0
136	RIGHT BOTTOM	NT1	105.0
137	RIGHT BOTTOM	EM1	150.0
138	RIGHT BOTTOM	NT1	195.0
139	RIGHT BOTTOM	EM1	240.0
140	RIGHT BOTTOM	NT1	285.0
141	RIGHT BOTTOM	EM1	330.0
142	RIGHT BOTTOM	NT1	375.0
143	RIGHT BOTTOM	EM1	420.0
144	RIGHT BOTTOM	NT1	465.0
145	RIGHT BOTTOM	EM1	510.0

FIXTURE NO.	POSITION	CKT. NO.	WATTAGE
UNDERDECK FIXTURES (30' SPACING)			
146	84NW+45	NT1	125W LED
147	84NW+15	NT1	125W LED
148	83NW+85	NT1	125W LED
149	83NW+45	NT1	125W LED
150	83NW+15	NT1	125W LED
151	82NW+85	NT1	125W LED
152	82NW+55	NT1	125W LED

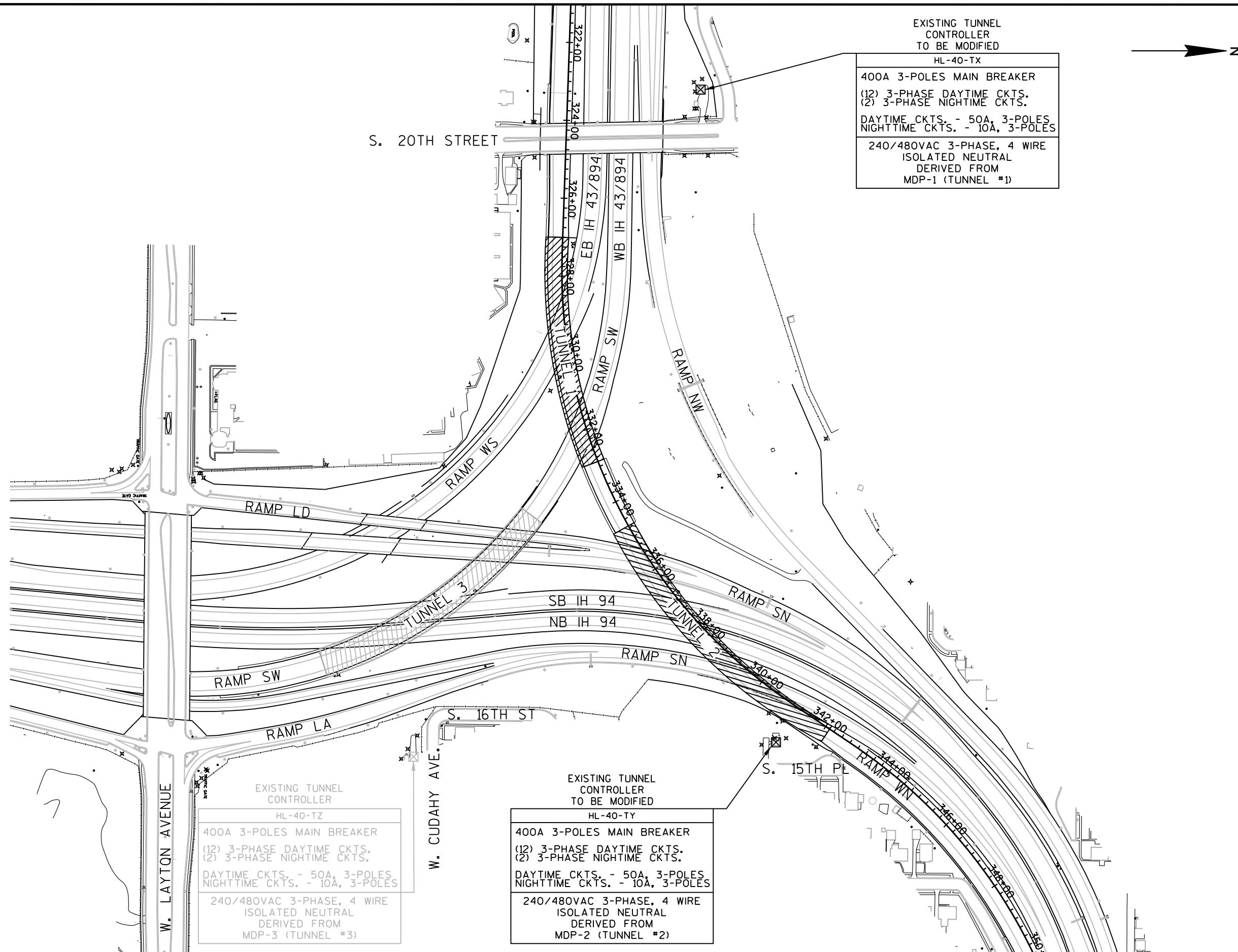
LEFT WALL		RIGHT WALL	
CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT	CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT
-	-	1	33
-	-	2	32
-	-	3	32
-	-	4	12
-	-	5	12
-	-	6	12
-	-	NIGHTTIME1 (NT1)	6
-	-	EMERGENCY1 (EM1)	6

LIGHT METER CONDITION		ILLUMINATION	
SKY CONDITIONS	LIGHT LEVEL (1x)	CIRCUITS ON	NUMBER OF FIXTURES ENERGIZED
BRIGHT/SUNNY	> 10,000	1 THRU 6,NT1,EM1	145
CLEAR, PARTLY CLOUDY	100 - 10,000	1,2,4,5,NT1,EM1	101
MOSTLY CLOUDY, OVERCAST, DAWN/DUSK	1 - 100	1,4,NT1,EM1	57
NIGHT	<1	NT1,EM1	12
EMERGENCY	ALWAYS ON	EM1	6

TORY HILL TUNNEL
LUMINAIRE SCHEDULE

NOTES:

1. CONTRACTOR TO COORDINATE WITH TUNNEL LIGHTING CONTROLLER VENDOR ON LIGHT LEVELS TO BE USED TO CONTROL THE 12 DAYTIME AND TWO NIGHTTIME CIRCUITS IN EACH TUNNEL. 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.



LEGEND

- ITS HUB (FOR INFORMATION ONLY)
- EMERGENCY GENERATOR
- EMERGENCY POWER DISTRIBUTION PANEL
- TUNNEL LIGHTING DISTRIBUTION PANEL
277/480V, 3-PHASE, 4-WIRE ISOLATED NEUTRAL
- PULLBOX 24" x 36"
- PULLBOX 24" x 48"
- ELECTRICAL MANHOLE
- TUNNEL LIGHTING SENSOR
PRIMARY (FACES TUNNEL PORT-L)
- TUNNEL LIGHTING SENSOR
BACKUP (FACES NORTH)

S. 20TH STREET

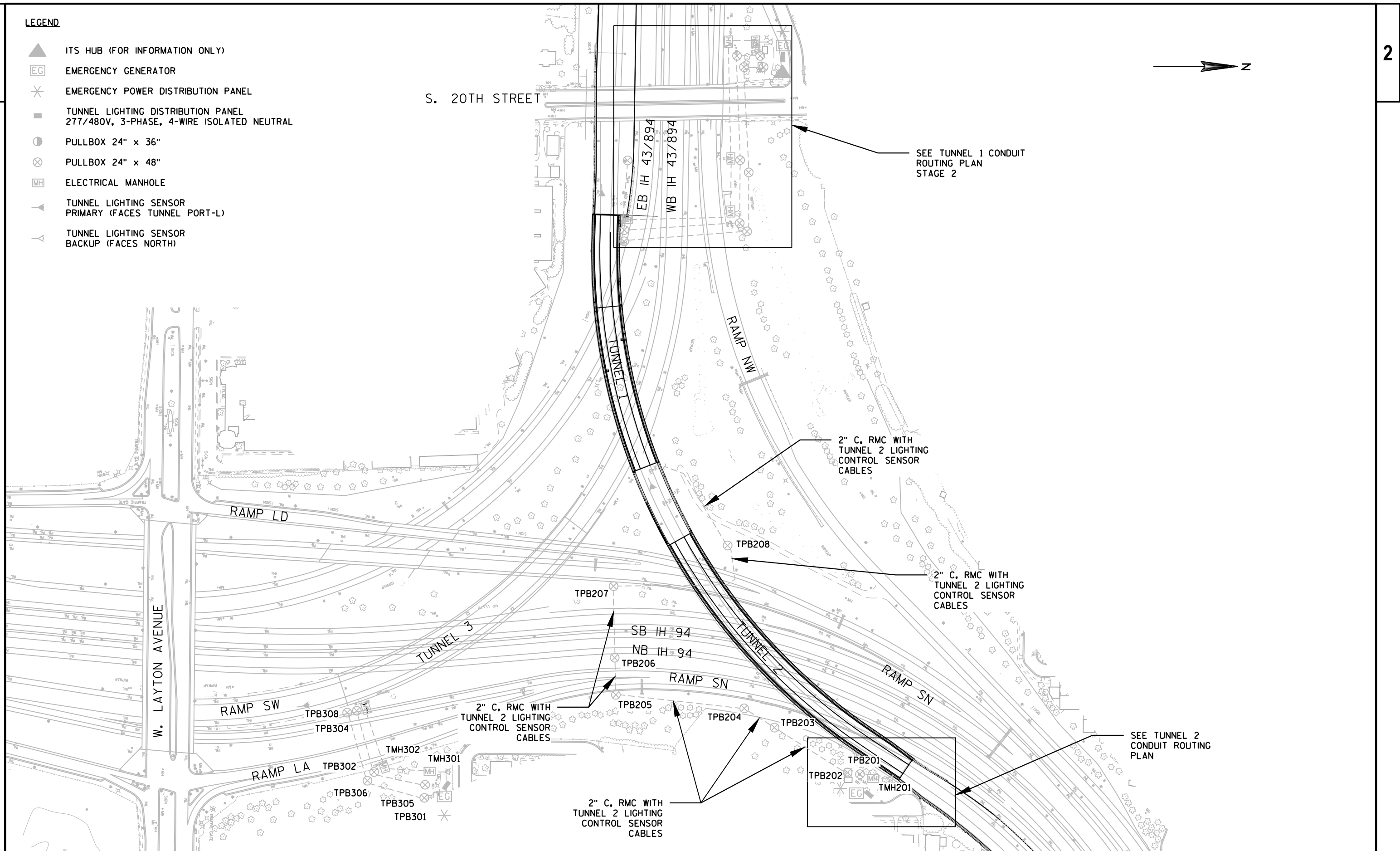


SEE TUNNEL 1 CONDUIT
ROUTING PLAN
STAGE 2

2" C. RMC WITH
TUNNEL 2 LIGHTING
CONTROL SENSOR
CABLES

2" C. RMC WITH
TUNNEL 2 LIGHTING
CONTROL SENSOR
CABLES

SEE TUNNEL 2
CONDUIT ROUTING
PLAN



PROJECT NO: 1000-13-75

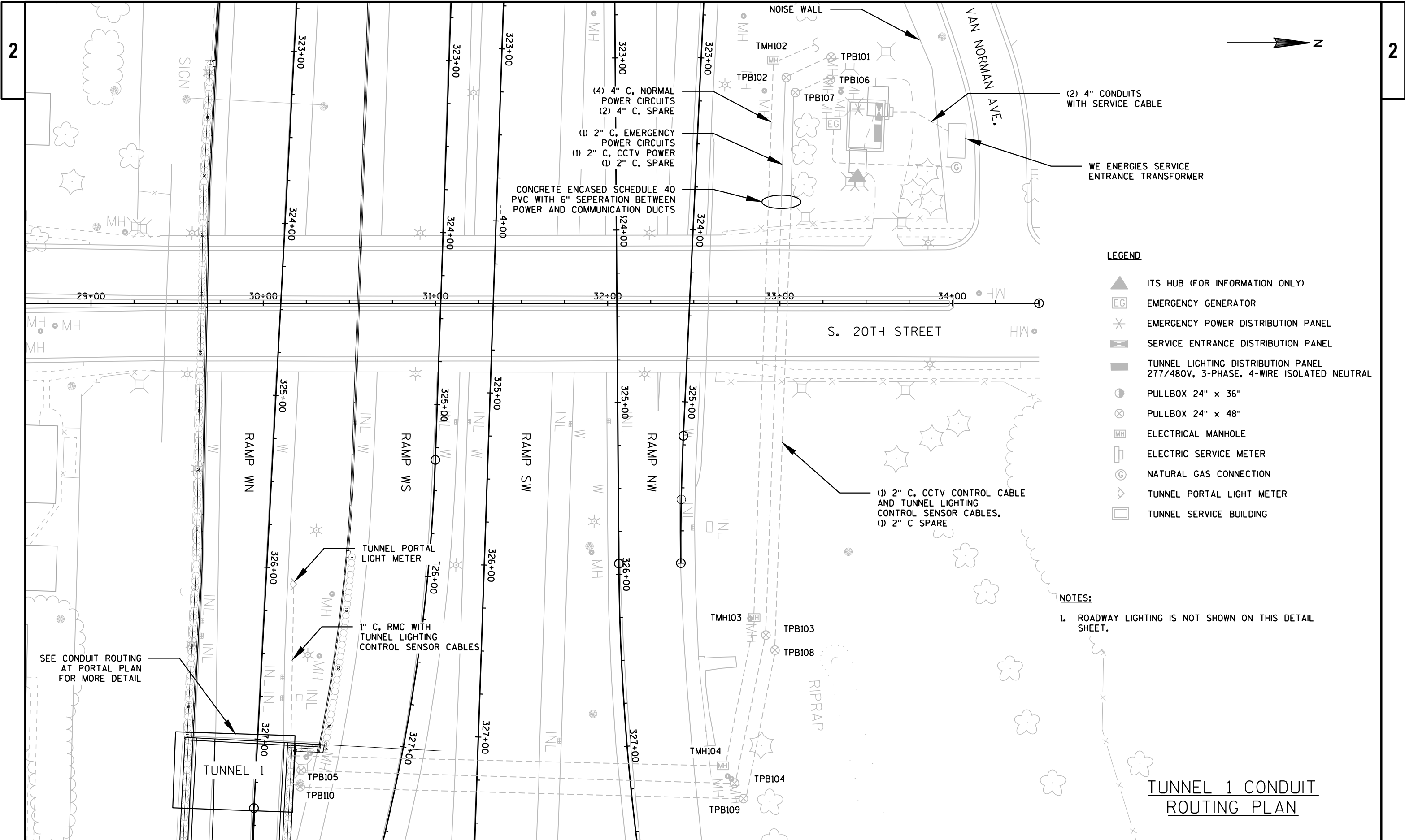
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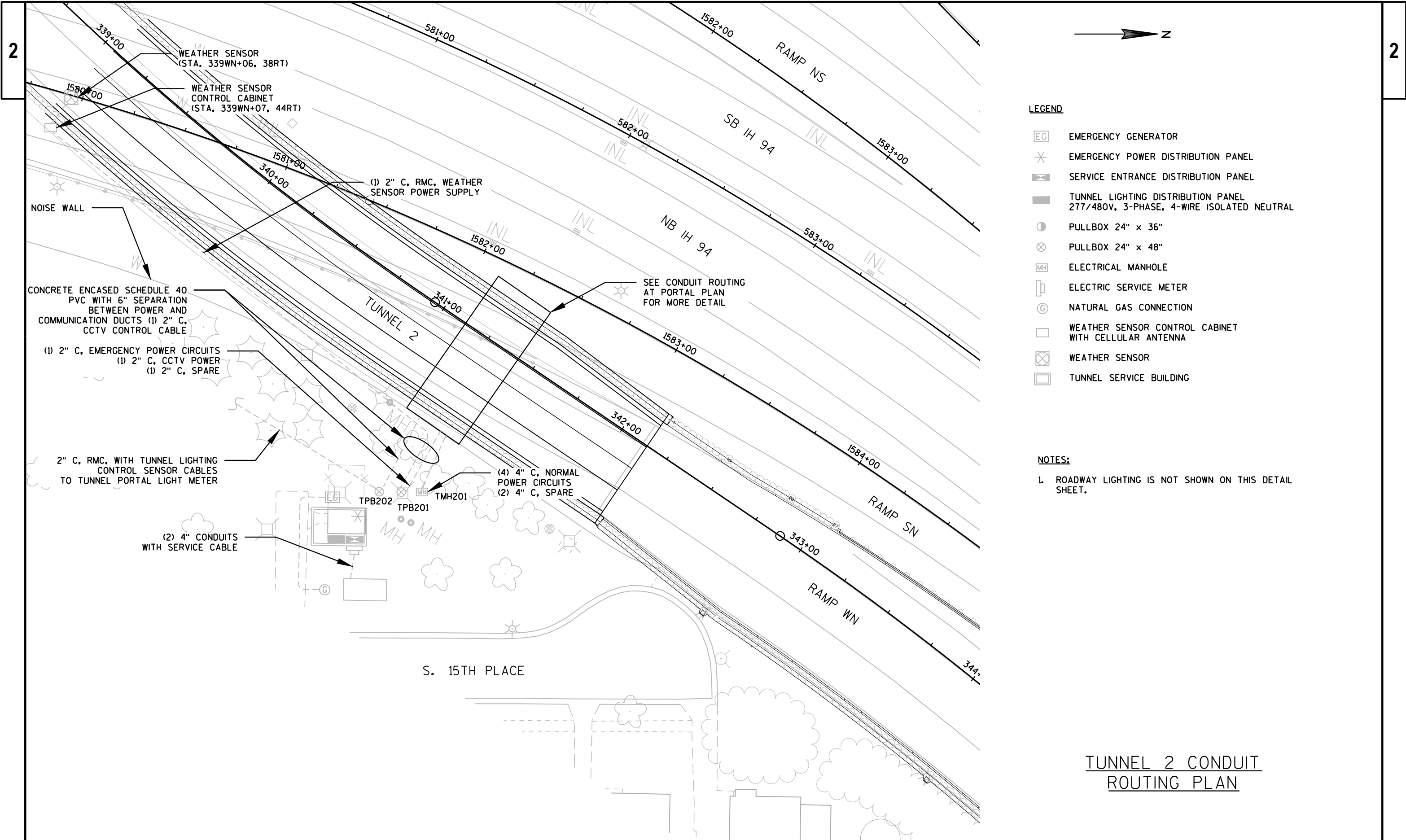
COUNTY: MILWAUKEE

LIGHTING PLANS - DETAIL

SHEET

E

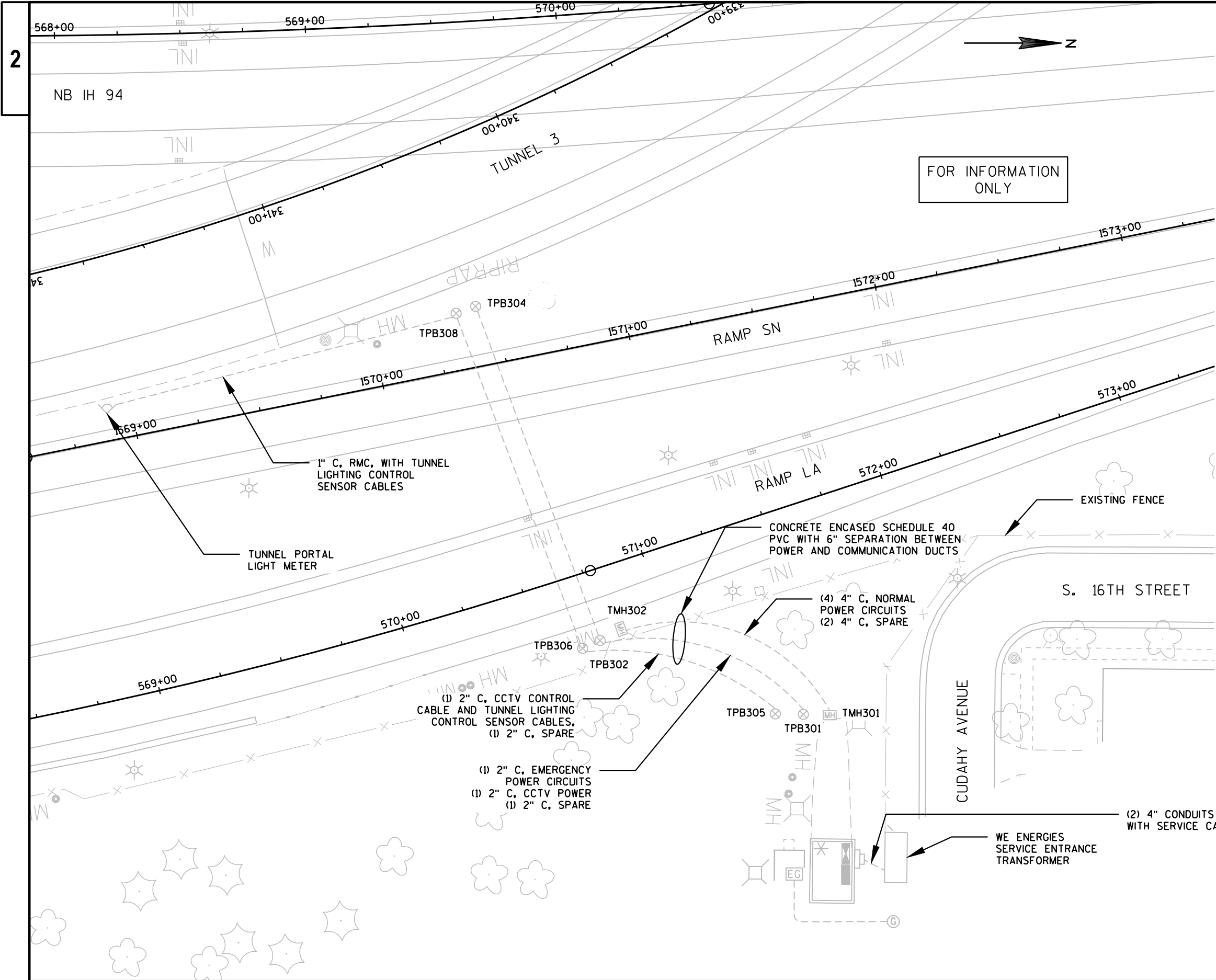




- LEGEND**
- EG EMERGENCY GENERATOR
 - ✱ EMERGENCY POWER DISTRIBUTION PANEL
 - ▢ SERVICE ENTRANCE DISTRIBUTION PANEL
 - TUNNEL LIGHTING DISTRIBUTION PANEL
277/480V, 3-PHASE, 4-WIRE ISOLATED NEUTRAL
 - PULLBOX 24" x 36"
 - ⊗ PULLBOX 24" x 48"
 - MH ELECTRICAL MANHOLE
 - ⌚ ELECTRIC SERVICE METER
 - Ⓢ NATURAL GAS CONNECTION
 - WEATHER SENSOR CONTROL CABINET
WITH CELLULAR ANTENNA
 - ⊗ WEATHER SENSOR
 - ▢ TUNNEL SERVICE BUILDING

- NOTES:**
- ROADWAY LIGHTING IS NOT SHOWN ON THIS DETAIL SHEET.

TUNNEL 2 CONDUIT
ROUTING PLAN



- LEGEND**
- ITS HUB (FOR INFORMATION ONLY)
 - EMERGENCY GENERATOR
 - EMERGENCY POWER DISTRIBUTION PANEL
 - SERVICE ENTRANCE DISTRIBUTION PANEL
 - TUNNEL LIGHTING DISTRIBUTION PANEL
277/480V, 3-PHASE, 4-WIRE ISOLATED NEUTRAL
 - PULLBOX 24" x 36"
 - PULLBOX 24" x 48"
 - ELECTRICAL MANHOLE
 - ELECTRIC SERVICE METER
 - NATURAL GAS CONNECTION
 - TUNNEL PORTAL LIGHT METER
 - TUNNEL SERVICE BUILDING

- NOTES:**
- ROADWAY LIGHTING IS NOT SHOWN ON THIS DETAIL SHEET.

**TUNNEL 3 CONDUIT
ROUTING PLAN**

LEGEND

- ⊗ ILLUMINATED EGRESS SIGN
- REFLECTIVE EGRESS SIGN (INCLUDED IN SIGNAGE PLANS)
- EMERGENCY LIGHTING UNIT

ILLUMINATED EGRESS SIGN
SHALL BE INSTALLED INSIDE THE
TUNNEL WALL, 5FT FROM PORTAL

EMERGENCY LIGHTING UNIT (TYP.)
SEE TUNNEL LIGHTING LAYOUT SHEET
FOR SPACING REQUIREMENTS

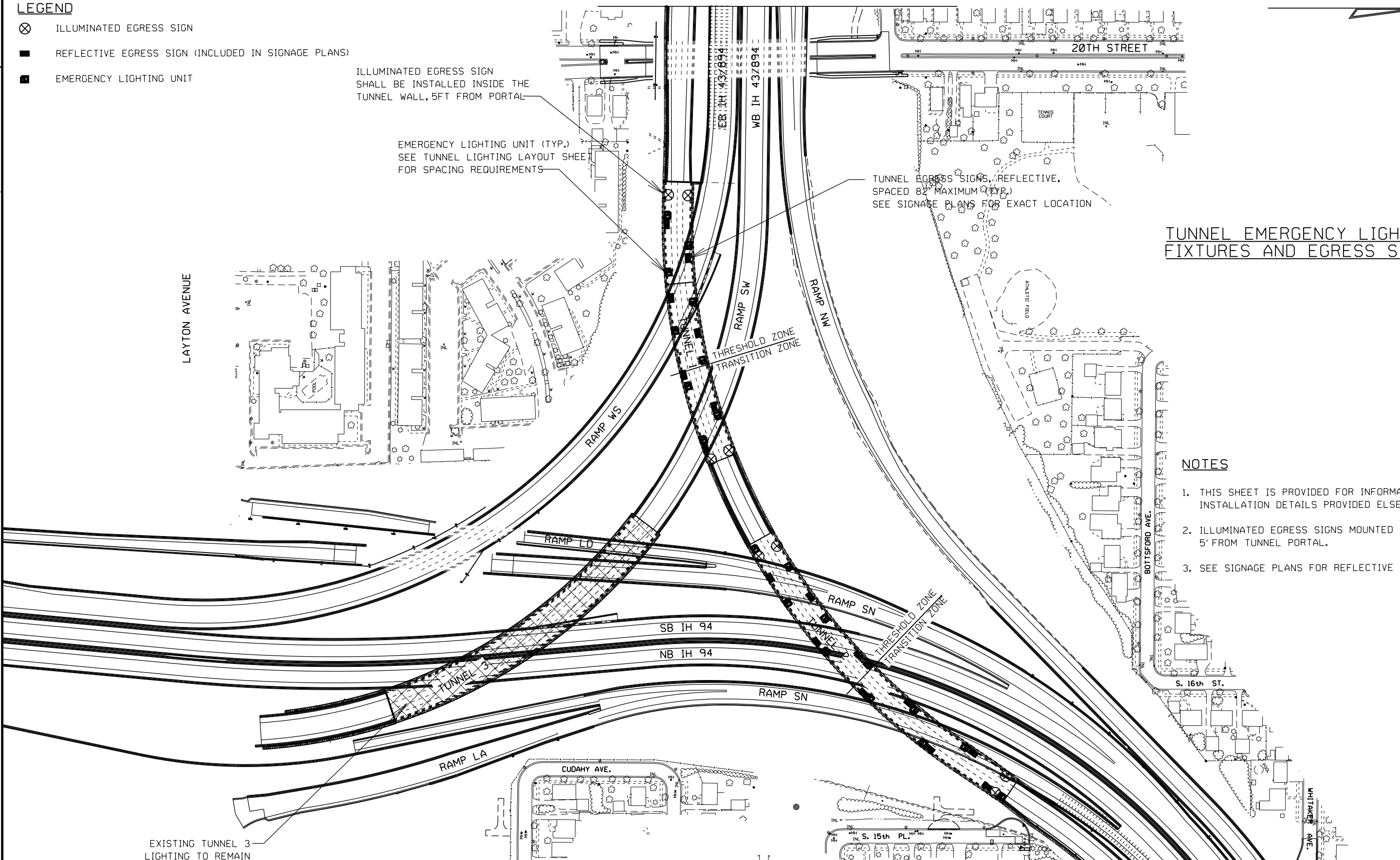
TUNNEL EGRESS SIGNS, REFLECTIVE,
SPACED 82' MAXIMUM (TYP.)
SEE SIGNAGE PLANS FOR EXACT LOCATION

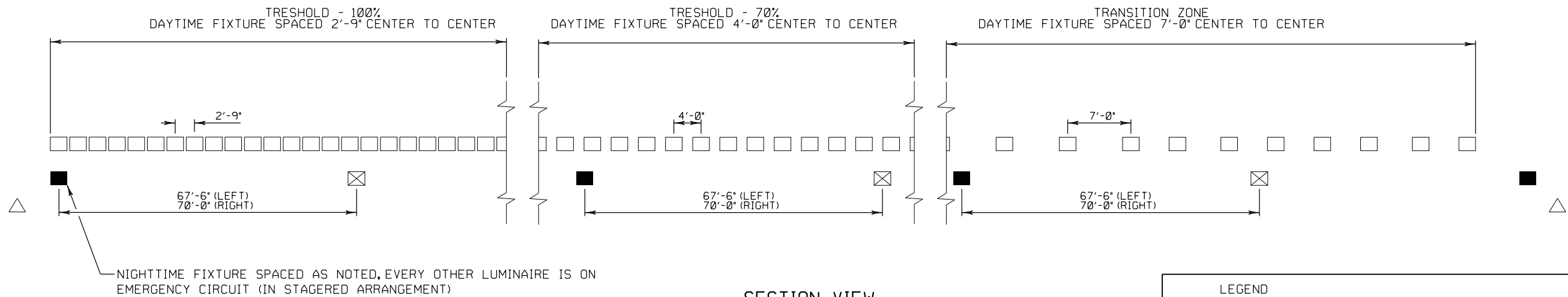
TUNNEL EMERGENCY LIGHTING
FIXTURES AND EGRESS SIGNS

NOTES

1. THIS SHEET IS PROVIDED FOR INFORMATION ONLY.
INSTALLATION DETAILS PROVIDED ELSEWHERE.
2. ILLUMINATED EGRESS SIGNS MOUNTED APPROXIMATELY
5' FROM TUNNEL PORTAL.
3. SEE SIGNAGE PLANS FOR REFLECTIVE SIGN INSTALLATION.

EXISTING TUNNEL 3
LIGHTING TO REMAIN





SECTION VIEW

TUNNEL #1 DETAILS:
STRUCTURE: B-40-832
W-N RAMP
TUNNEL STARTS AT STA. 327WN+00.00 AND ENDS AT STA. 332WN+85.00.
TWO 12' LANES
INSIDE SHOULDER 15', OUTSIDE SHOULDER 12', ALSO EACH SIDE HAS
JERSEY BARRIER 2' IN WIDTH
HEIGHT VARIES, MIN. CLEARANCE IS 16'-9" AS MEASURED AT THE
INSIDE EDGE OF THE 12' OUTSIDE SHOULDER
LENGTH OF TUNNEL IS 585'
AVERAGE ANNUAL DAILY TRAFFIC (AADT) IS 32000
POSTED SPEED LIMIT IS 50MPH
DIRECTION OF TRAFFIC AT TUNNEL PORTAL IS EAST
PORTAL HEIGHT MIN. 23' (ELEVATION: 693-670)

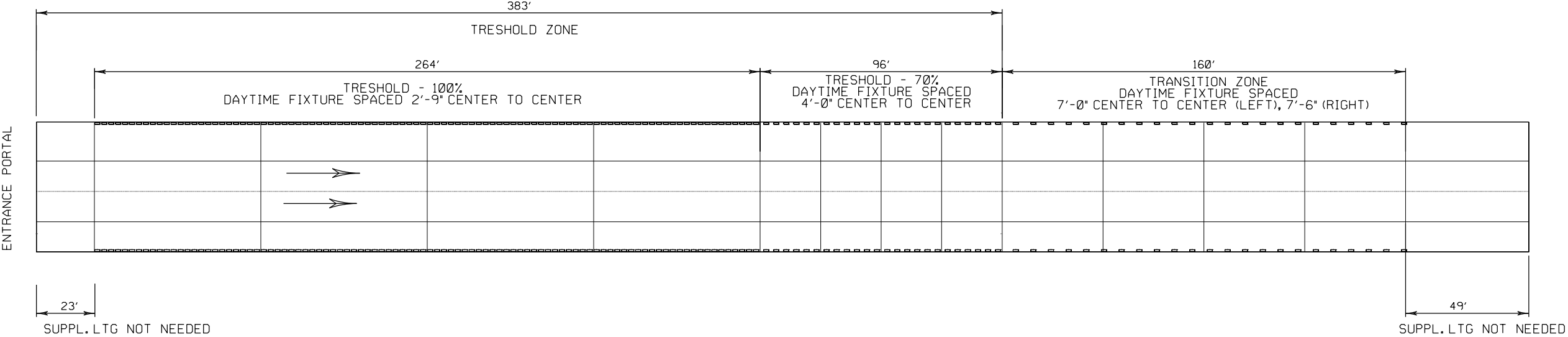
LEGEND

DAYTIME FIXTURE, LED, 435W, WALL MOUNTED, 14'
MOUNTING HEIGHT, 5° TILT, ONE ROW, TOTAL 286
FIXTURES

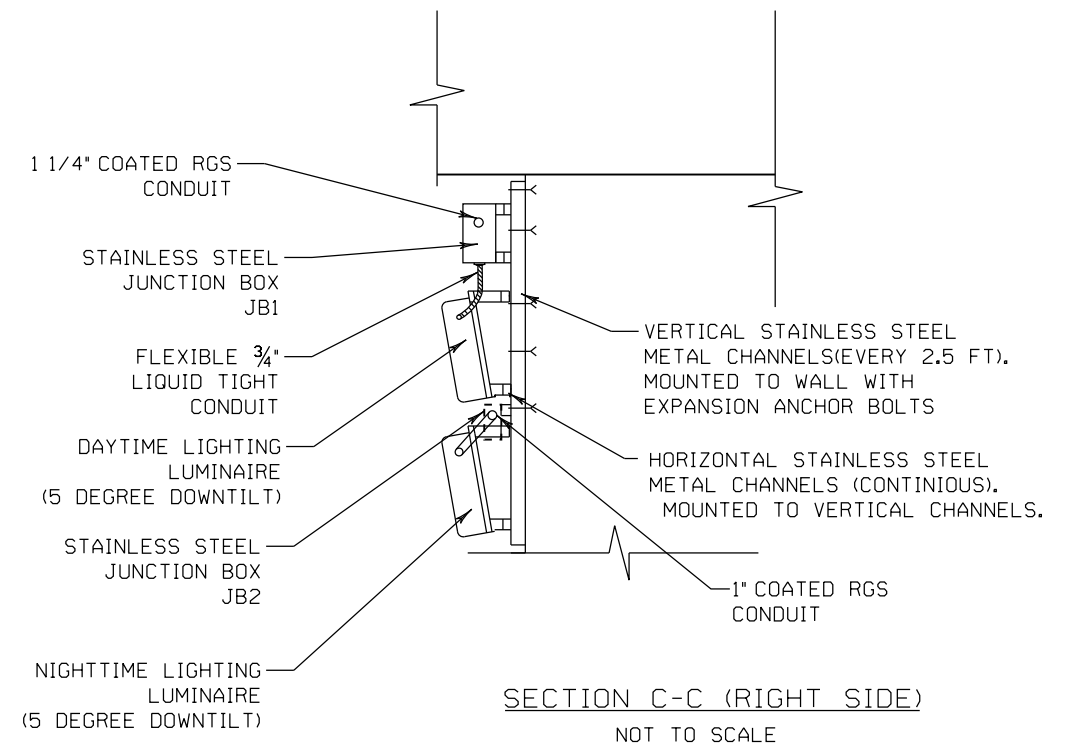
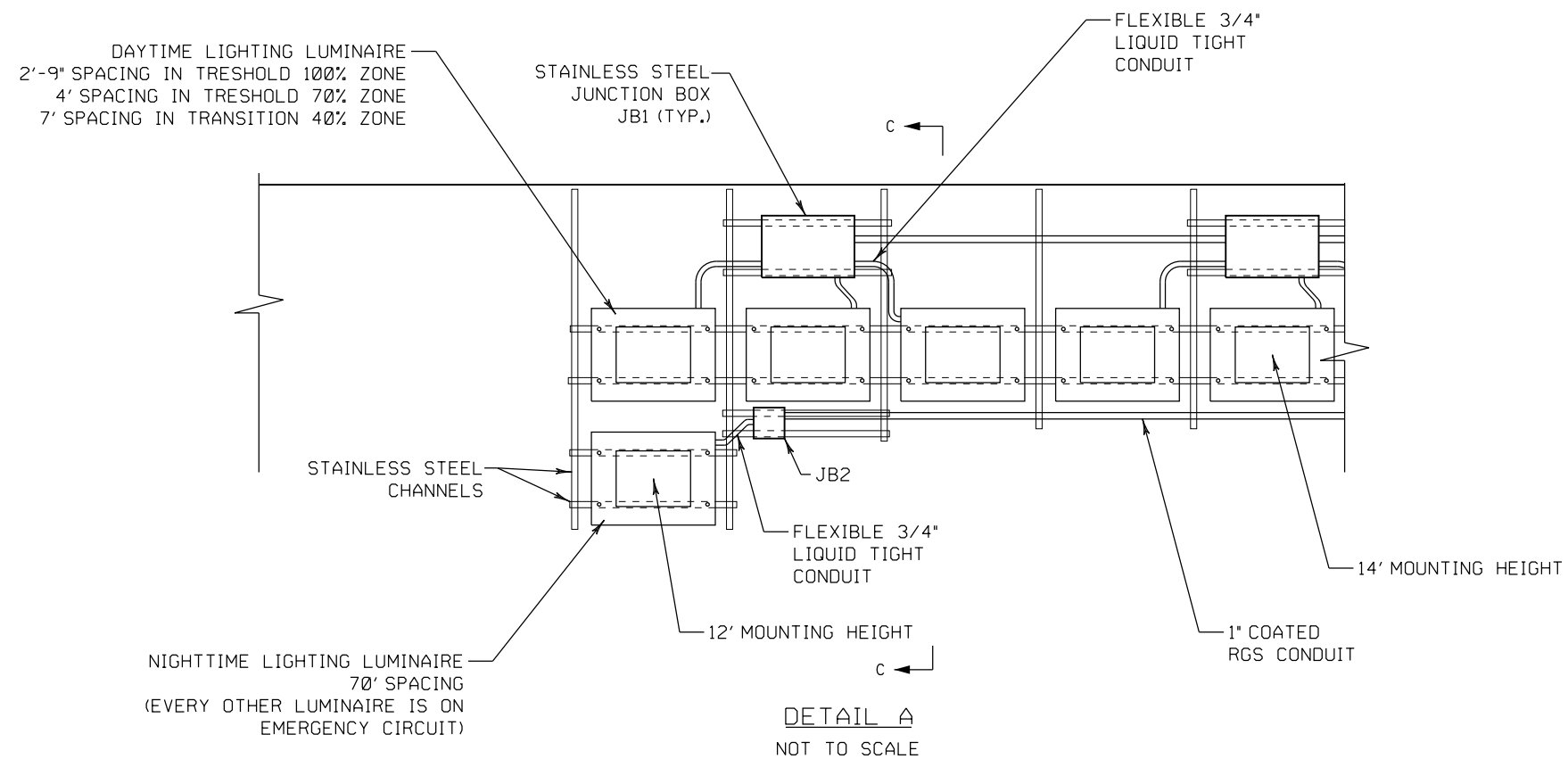
NIGHTTIME FIXTURE, LED, 125W, WALL MOUNTED, 12'
MOUNTING HEIGHT, 5° TILT, TOTAL 9 FIXTURES

EMERGENCY/NIGHTTIME FIXTURE, LED 12' MOUNTING
HEIGHT, 5° TILT, TOTAL 9 FIXTURES

EXISTING ILLUMINATED EXIT SIGN CONNECTED TO
EMERGENCY CIRCUIT



TUNNEL #1 LIGHTING LAYOUT
DAY TIME LIGHTING

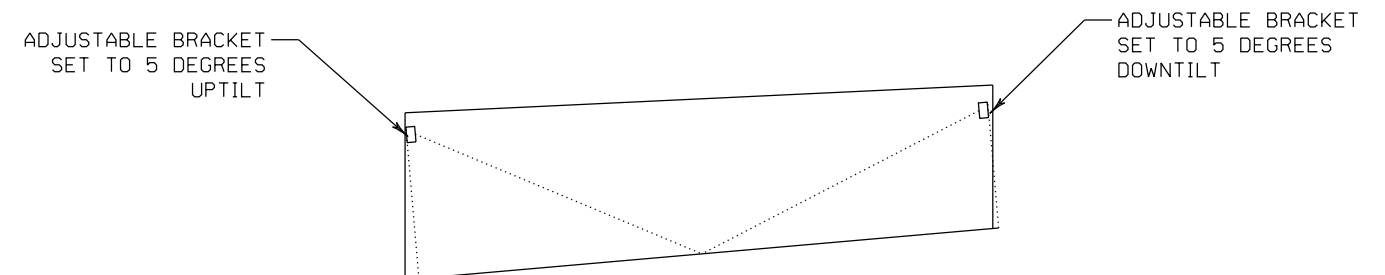
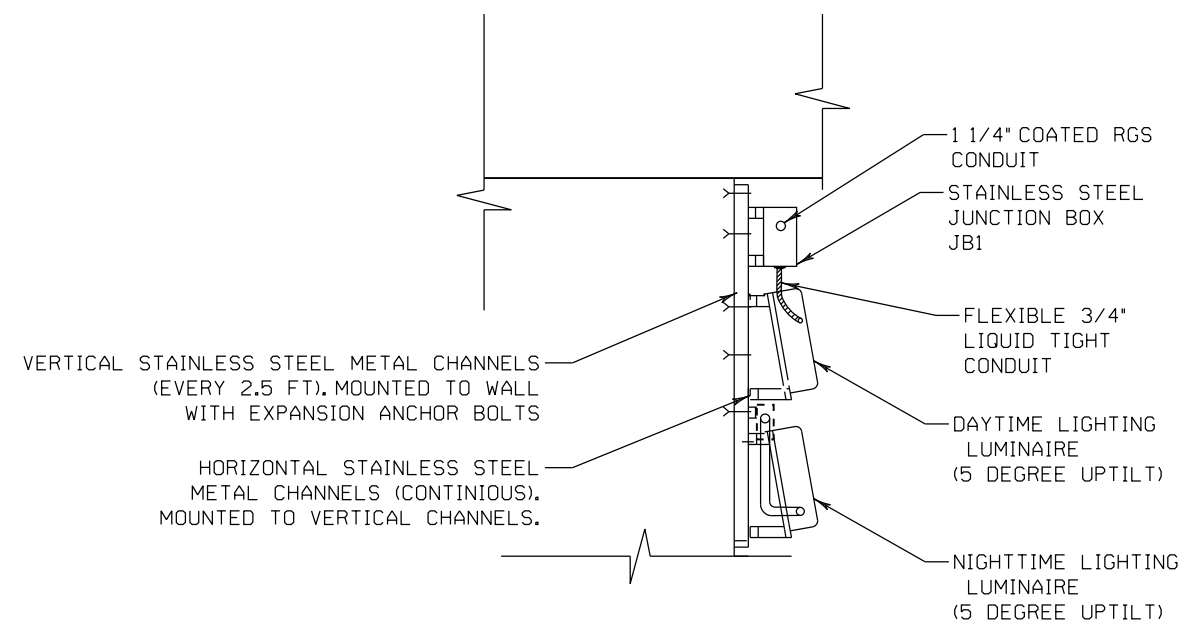


JUNCTION BOX SCHEDULE

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

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
TRESHOLD 100% ZONE (2'-9" SPACING)			
1	LEFT TOP	1	23.50
2	LEFT TOP	2	26.25
3	LEFT TOP	3	29.00
4	LEFT TOP	1	31.75
5	LEFT TOP	2	34.50
6	LEFT TOP	3	37.25
7	LEFT TOP	1	40.00
8	LEFT TOP	2	42.75
9	LEFT TOP	3	45.50
10	LEFT TOP	1	48.25
11	LEFT TOP	2	51.00
12	LEFT TOP	3	53.75
13	LEFT TOP	1	56.50
14	LEFT TOP	2	59.25
15	LEFT TOP	3	62.00
16	LEFT TOP	1	64.75
17	LEFT TOP	2	67.50
18	LEFT TOP	3	70.25
19	LEFT TOP	1	73.00
20	LEFT TOP	2	75.75
21	LEFT TOP	3	78.50
22	LEFT TOP	1	81.25
23	LEFT TOP	2	84.00
24	LEFT TOP	3	86.75
25	LEFT TOP	1	89.50
26	LEFT TOP	2	92.25
27	LEFT TOP	3	95.00
28	LEFT TOP	1	97.75
29	LEFT TOP	2	100.50
30	LEFT TOP	3	103.25
31	LEFT TOP	1	106.00
32	LEFT TOP	2	108.75
33	LEFT TOP	3	111.50
34	LEFT TOP	1	114.25
35	LEFT TOP	2	117.00
36	LEFT TOP	3	119.75
37	LEFT TOP	1	122.50
38	LEFT TOP	2	125.25
39	LEFT TOP	3	128.00
40	LEFT TOP	1	130.75
41	LEFT TOP	2	133.50
42	LEFT TOP	3	136.25
43	LEFT TOP	1	139.00
44	LEFT TOP	2	141.75
45	LEFT TOP	3	144.50
46	LEFT TOP	1	147.25

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
47	LEFT TOP	2	150.00
48	LEFT TOP	3	152.75
49	LEFT TOP	1	155.50
50	LEFT TOP	2	158.25
51	LEFT TOP	3	161.00
52	LEFT TOP	1	163.75
53	LEFT TOP	2	166.50
54	LEFT TOP	3	169.25
55	LEFT TOP	1	172.00
56	LEFT TOP	2	174.75
57	LEFT TOP	3	177.50
58	LEFT TOP	1	180.25
59	LEFT TOP	2	183.00
60	LEFT TOP	3	185.75
61	LEFT TOP	1	188.50
62	LEFT TOP	2	191.25
63	LEFT TOP	3	194.00
64	LEFT TOP	1	196.75
65	LEFT TOP	2	199.50
66	LEFT TOP	3	202.25
67	LEFT TOP	1	205.00
68	LEFT TOP	2	207.75
69	LEFT TOP	3	210.50
70	LEFT TOP	1	213.25
71	LEFT TOP	2	216.00
72	LEFT TOP	3	218.75
73	LEFT TOP	1	221.50
74	LEFT TOP	2	224.25
75	LEFT TOP	3	227.00
76	LEFT TOP	1	229.75
77	LEFT TOP	2	232.50
78	LEFT TOP	3	235.25
79	LEFT TOP	1	238.00
80	LEFT TOP	2	240.75
81	LEFT TOP	3	243.50
82	LEFT TOP	1	246.25
83	LEFT TOP	2	249.00
84	LEFT TOP	3	251.75
85	LEFT TOP	1	254.50
86	LEFT TOP	2	257.25
87	LEFT TOP	3	260.00
88	LEFT TOP	1	262.75
89	LEFT TOP	2	265.50
90	LEFT TOP	3	268.25
91	LEFT TOP	1	271.00
92	LEFT TOP	2	273.75

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
93	LEFT TOP	3	276.50
94	LEFT TOP	1	279.25
95	LEFT TOP	2	282.00
96	LEFT TOP	3	284.75
TRESHOLD 70% ZONE (4' SPACING)			
97	LEFT TOP	4	288.75
98	LEFT TOP	5	292.75
99	LEFT TOP	6	296.75
100	LEFT TOP	4	300.75
101	LEFT TOP	5	304.75
102	LEFT TOP	6	308.75
103	LEFT TOP	4	312.75
104	LEFT TOP	5	316.75
105	LEFT TOP	6	320.75
106	LEFT TOP	4	324.75
107	LEFT TOP	5	328.75
108	LEFT TOP	6	332.75
109	LEFT TOP	4	336.75
110	LEFT TOP	5	340.75
111	LEFT TOP	6	344.75
112	LEFT TOP	4	348.75
113	LEFT TOP	5	352.75
114	LEFT TOP	6	356.75
115	LEFT TOP	4	360.75
116	LEFT TOP	5	364.75
117	LEFT TOP	6	368.75
118	LEFT TOP	4	372.75
119	LEFT TOP	5	376.75
120	LEFT TOP	6	380.75
TRANSITION 40% ZONE (7' SPACING)			
121	LEFT TOP	4	387.75
122	LEFT TOP	5	394.75
123	LEFT TOP	6	401.75
124	LEFT TOP	4	408.75
125	LEFT TOP	5	415.75
126	LEFT TOP	6	422.75
127	LEFT TOP	4	429.75
128	LEFT TOP	5	436.75
129	LEFT TOP	6	443.75
130	LEFT TOP	4	450.75
131	LEFT TOP	5	457.75
132	LEFT TOP	6	464.75
133	LEFT TOP	4	471.75
134	LEFT TOP	5	478.75
135	LEFT TOP	6	485.75
136	LEFT TOP	4	492.75
137	LEFT TOP	5	499.75

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
138	LEFT TOP	6	506.75
139	LEFT TOP	4	513.8
140	LEFT TOP	5	520.8
141	LEFT TOP	6	527.8
142	LEFT TOP	4	534.8
143	LEFT TOP	5	541.8
NIGHTTIME AND EMERGENCY (67.5' SPACING)			
287	LEFT BOTTOM	NT1	20.0
288	LEFT BOTTOM	EM1	87.5
289	LEFT BOTTOM	NT1	155.0
290	LEFT BOTTOM	EM1	222.5
291	LEFT BOTTOM	NT1	290.0
292	LEFT BOTTOM	EM1	357.5
293	LEFT BOTTOM	NT1	425.0
294	LEFT BOTTOM	EM1	492.5
295	LEFT BOTTOM	NT1	560.0

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
TRESHOLD 100% ZONE (2'-9" SPACING)			
144	RIGHT TOP	7	23.50
145	RIGHT TOP	8	26.25
146	RIGHT TOP	9	29.00
147	RIGHT TOP	7	31.75
148	RIGHT TOP	8	34.50
149	RIGHT TOP	9	37.25
150	RIGHT TOP	7	40.00
151	RIGHT TOP	8	42.75
152	RIGHT TOP	9	45.50
153	RIGHT TOP	7	48.25
154	RIGHT TOP	8	51.00
155	RIGHT TOP	9	53.75
156	RIGHT TOP	7	56.50
157	RIGHT TOP	8	59.25
158	RIGHT TOP	9	62.00
159	RIGHT TOP	7	64.75
160	RIGHT TOP	8	67.50
161	RIGHT TOP	9	70.25
162	RIGHT TOP	7	73.00
163	RIGHT TOP	8	75.75
164	RIGHT TOP	9	78.50
165	RIGHT TOP	7	81.25
166	RIGHT TOP	8	84.00
167	RIGHT TOP	9	86.75
168	RIGHT TOP	7	89.50
169	RIGHT TOP	8	92.25
170	RIGHT TOP	9	95.00
171	RIGHT TOP	7	97.75
172	RIGHT TOP	8	100.50
173	RIGHT TOP	9	103.25
174	RIGHT TOP	7	106.00
175	RIGHT TOP	8	108.75
176	RIGHT TOP	9	111.50
177	RIGHT TOP	7	114.25
178	RIGHT TOP	8	117.00
179	RIGHT TOP	9	119.75
180	RIGHT TOP	7	122.50
181	RIGHT TOP	8	125.25
182	RIGHT TOP	9	128.00
183	RIGHT TOP	7	130.75
184	RIGHT TOP	8	133.50
185	RIGHT TOP	9	136.25
186	RIGHT TOP	7	139.00
187	RIGHT TOP	8	141.75
188	RIGHT TOP	9	144.50
189	RIGHT TOP	7	147.25

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
190	RIGHT TOP	8	150.00
191	RIGHT TOP	9	152.75
192	RIGHT TOP	7	155.50
193	RIGHT TOP	8	158.25
194	RIGHT TOP	9	161.00
195	RIGHT TOP	7	163.75
196	RIGHT TOP	8	166.50
197	RIGHT TOP	9	169.25
198	RIGHT TOP	7	172.00
199	RIGHT TOP	8	174.75
200	RIGHT TOP	9	177.50
201	RIGHT TOP	7	180.25
202	RIGHT TOP	8	183.00
203	RIGHT TOP	9	185.75
204	RIGHT TOP	7	188.50
205	RIGHT TOP	8	191.25
206	RIGHT TOP	9	194.00
207	RIGHT TOP	7	196.75
208	RIGHT TOP	8	199.50
209	RIGHT TOP	9	202.25
210	RIGHT TOP	7	205.00
211	RIGHT TOP	8	207.75
212	RIGHT TOP	9	210.50
213	RIGHT TOP	7	213.25
214	RIGHT TOP	8	216.00
215	RIGHT TOP	9	218.75
216	RIGHT TOP	7	221.50
217	RIGHT TOP	8	224.25
218	RIGHT TOP	9	227.00
219	RIGHT TOP	7	229.75
220	RIGHT TOP	8	232.50
221	RIGHT TOP	9	235.25
222	RIGHT TOP	7	238.00
223	RIGHT TOP	8	240.75
224	RIGHT TOP	9	243.50
225	RIGHT TOP	7	246.25
226	RIGHT TOP	8	249.00
227	RIGHT TOP	9	251.75
228	RIGHT TOP	7	254.50
229	RIGHT TOP	8	257.25
230	RIGHT TOP	9	260.00
231	RIGHT TOP	7	262.75
232	RIGHT TOP	8	265.50
233	RIGHT TOP	9	268.25
234	RIGHT TOP	7	271.00
235	RIGHT TOP	8	273.75

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
236	RIGHT TOP	9	276.50
237	RIGHT TOP	7	279.25
238	RIGHT TOP	8	282.00
239	RIGHT TOP	9	284.75
TRESHOLD 70% ZONE (4' SPACING)			
240	RIGHT TOP	10	288.75
241	RIGHT TOP	11	292.75
242	RIGHT TOP	12	296.75
243	RIGHT TOP	10	300.75
244	RIGHT TOP	11	304.75
245	RIGHT TOP	12	308.75
246	RIGHT TOP	10	312.75
247	RIGHT TOP	11	316.75
248	RIGHT TOP	12	320.75
249	RIGHT TOP	10	324.75
250	RIGHT TOP	11	328.75
251	RIGHT TOP	12	332.75
252	RIGHT TOP	10	336.75
253	RIGHT TOP	11	340.75
254	RIGHT TOP	12	344.75
255	RIGHT TOP	10	348.75
256	RIGHT TOP	11	352.75
257	RIGHT TOP	12	356.75
258	RIGHT TOP	10	360.75
259	RIGHT TOP	11	364.75
260	RIGHT TOP	12	368.75
261	RIGHT TOP	10	372.75
262	RIGHT TOP	11	376.75
263	RIGHT TOP	12	380.75
TRANSITION 40% ZONE (7.5' SPACING)			
264	RIGHT TOP	10	388.00
265	RIGHT TOP	11	395.50
266	RIGHT TOP	12	403.00
267	RIGHT TOP	10	410.50
268	RIGHT TOP	11	418.00
269	RIGHT TOP	12	425.50
270	RIGHT TOP	10	433.00
271	RIGHT TOP	11	440.50
272	RIGHT TOP	12	448.00
273	RIGHT TOP	10	455.50
274	RIGHT TOP	11	463.00
275	RIGHT TOP	12	470.50
276	RIGHT TOP	10	478.00
277	RIGHT TOP	11	485.50
278	RIGHT TOP	12	493.00
279	RIGHT TOP	10	500.50
280	RIGHT TOP	11	508.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
281	RIGHT TOP	12	515.50
282	RIGHT TOP	10	523.0
283	RIGHT TOP	11	530.5
284	RIGHT TOP	12	538.0
285	RIGHT TOP	10	545.5
286	RIGHT TOP	11	553.0
NIGHTTIME AND EMERGENCY (70' SPACING)			
296	RIGHT BOTTOM	EM2	20.0
297	RIGHT BOTTOM	NT2	90.0
298	RIGHT BOTTOM	EM2	160.0
299	RIGHT BOTTOM	NT2	230.0
300	RIGHT BOTTOM	EM2	300.0
301	RIGHT BOTTOM	NT2	370.0
302	RIGHT BOTTOM	EM2	440.0
303	RIGHT BOTTOM	NT2	510.0
304	RIGHT BOTTOM	EM2	580.0

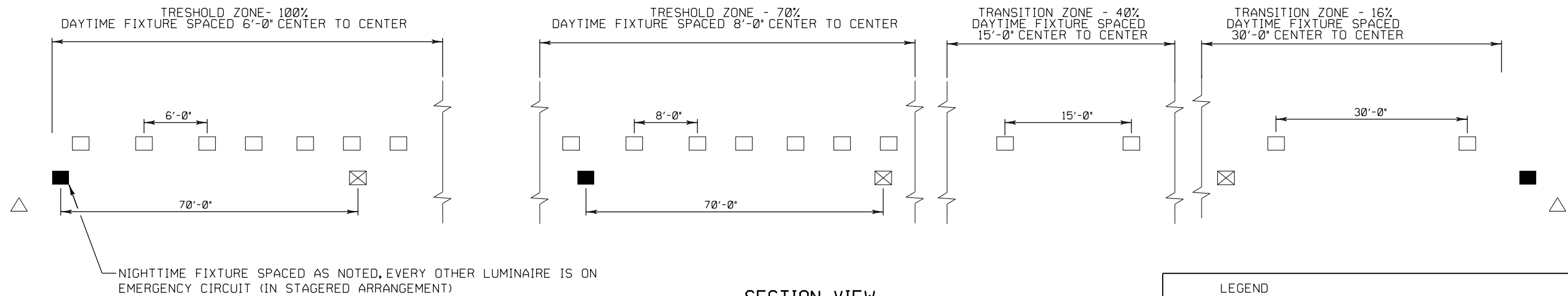
LEFT WALL		RIGHT WALL	
CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT	CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT
1	32	7	32
2	32	8	32
3	32	9	32
4	16	10	16
5	16	11	16
6	15	12	15
NIGHTTIME1 (NT1)	5	NIGHTTIME2 (NT2)	4
EMERGENCY1 (EM1)	4	EMERGENCY2 (EM2)	5

LIGHT METER CONDITION		ILLUMINATION	
SKY CONDITIONS	LIGHT LEVEL (lx)	CIRCUITS ON	NUMBER OF FIXTURES ENERGIZED
BRIGHT/SUNNY	> 10,000	1 THRU 12,NT1,NT2,EM1,EM2	304
CLEAR, PARTLY CLOUDY	100 -10,000	1,2,4,5,7,8,10,11,NT1,NT2,EM1,EM2	210
MOSTLY CLOUDY, OVERCAST, DAWN/DUSK	1 -100	1,4,7,10,NT1,NT2,EM1,EM2	114
NIGHT	<1	NT1,NT2,EM1,EM2	18
EMERGENCY	ALWAYS ON	EM1,EM2	9

TUNNEL #1
LUMINAIRE SCHEDULE

NOTES:

1.
- CONTRACTOR TO COORDINATE WITH TUNNEL LIGHTING CONTROLLER VENDOR ON LIGHT LEVELS TO BE USED TO CONTROL THE 12 DAYTIME AND TWO NIGHTTIME CIRCUITS IN EACH TUNNEL.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.

**TUNNEL #2 DETAILS:**

STRUCTURE: B-40-827

W-N RAMP

TUNNEL STARTS AT STA. 334WN+69.00 AND ENDS AT STA. 342WN+13.00.

TWO 12' LANES

INSIDE SHOULDER VARIES FROM 15' TO 12', OUTSIDE SHOULDER 12', ALSO EACH SIDE HAS JERSEY BARRIER 2' IN WIDTH
HEIGHT VARIES, MIN. CLEARANCE IS 16'-9" AS MEASURED AT THE

INSIDE EDGE OF THE 12' OUTSIDE SHOULDER

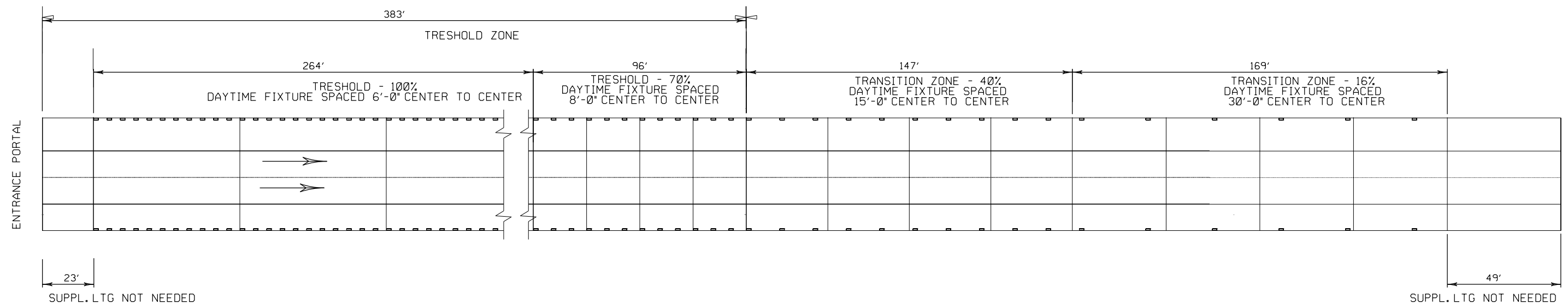
LENGTH OF TUNNEL IS 744'

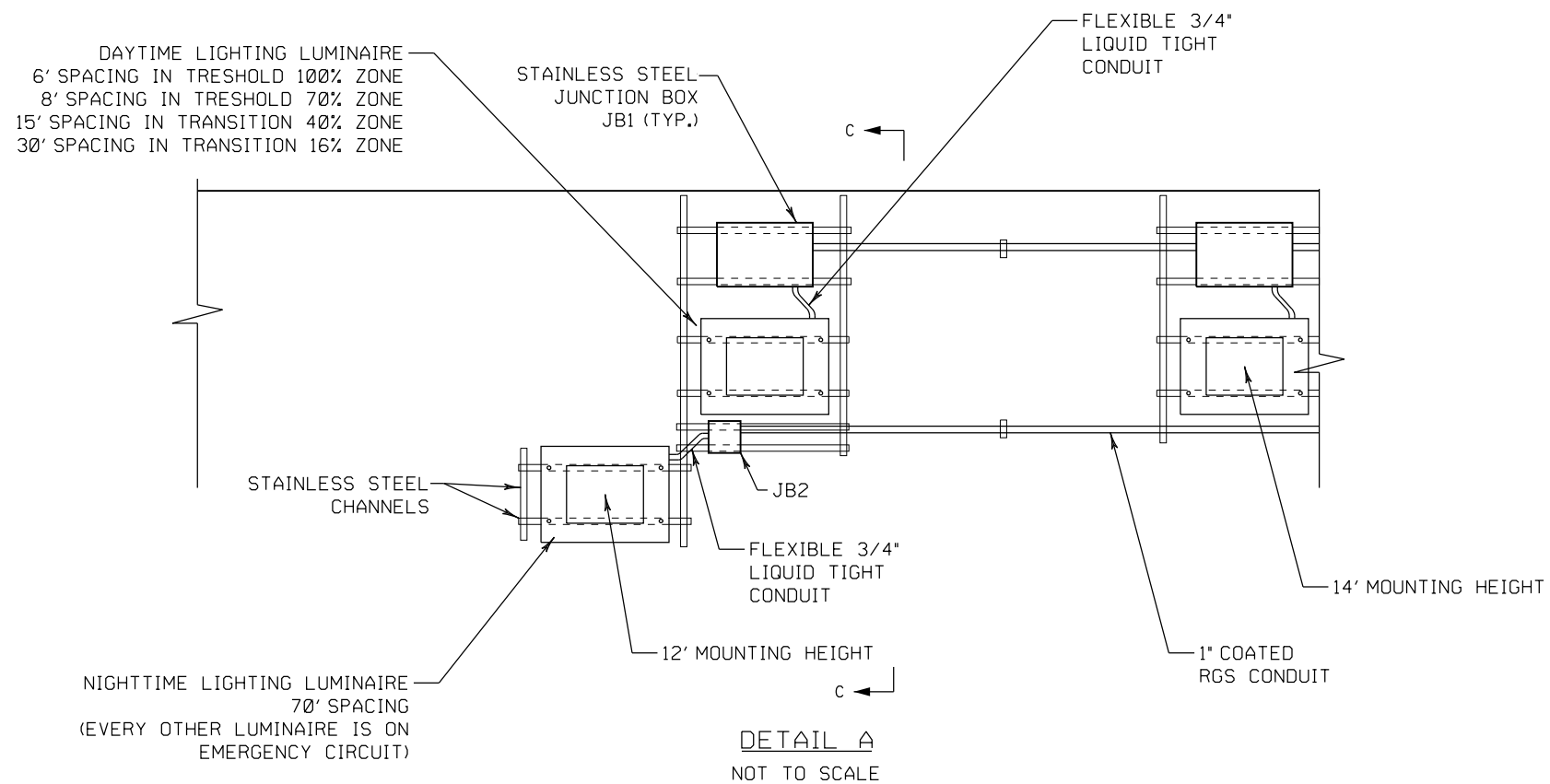
AVERAGE ANNUAL DAILY TRAFFIC (AADT) IS 32000

POSTED SPEED LIMIT IS 50MPH

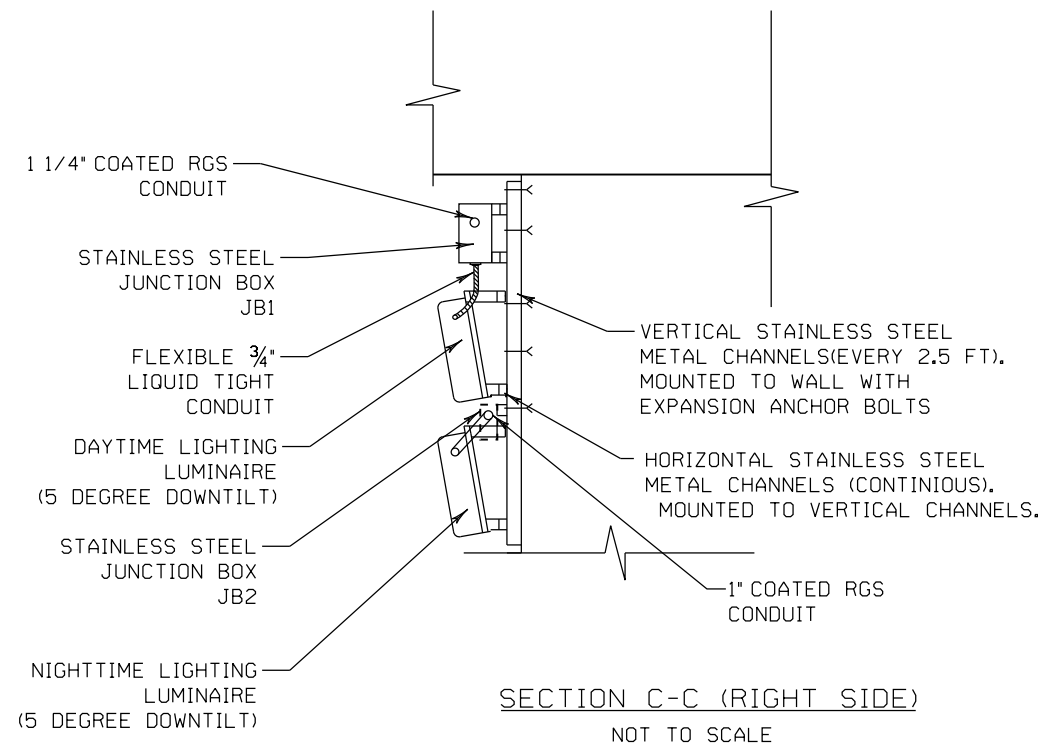
DIRECTION OF TRAFFIC AT TUNNEL PORTAL IS NORTHEAST

PORTAL HEIGHT MIN. 30' (ELEVATION: 695-665)

**TUNNEL #2 LIGHTING LAYOUT****DAY TIME LIGHTING**



DETAIL A
NOT TO SCALE



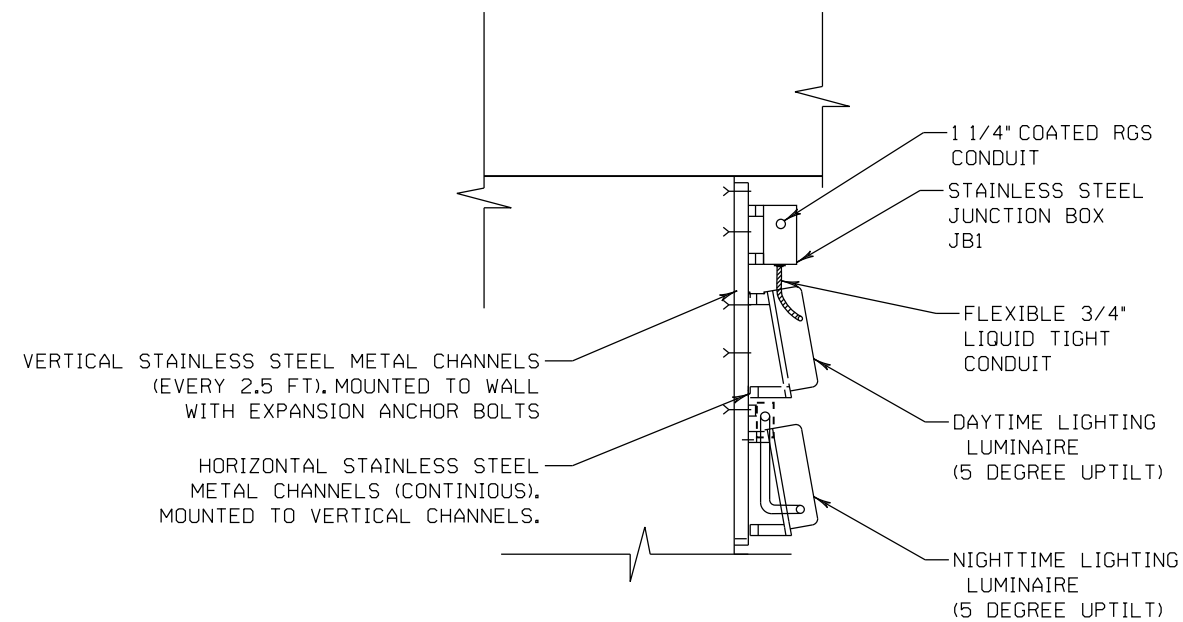
SECTION C-C (RIGHT SIDE)
NOT TO SCALE

JUNCTION BOX SCHEDULE

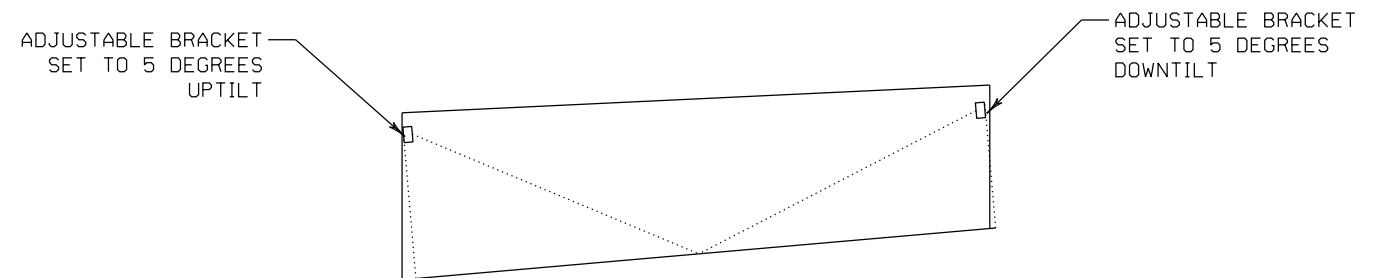
JB1	12" x 10" x 6"
JB2	6" x 6" x 4"

NOTES:

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



SECTION C-C (LEFT SIDE)
NOT TO SCALE



MOUNTING ANGLE SCHEMATICS
NOT TO SCALE

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
TRESHOLD 100% ZONE (6' SPACING)			
1	LEFT TOP	1	24.00
2	LEFT TOP	2	30.00
3	LEFT TOP	3	36.00
4	LEFT TOP	1	42.00
5	LEFT TOP	2	48.00
6	LEFT TOP	3	54.00
7	LEFT TOP	1	60.00
8	LEFT TOP	2	66.00
9	LEFT TOP	3	72.00
10	LEFT TOP	1	78.00
11	LEFT TOP	2	84.00
12	LEFT TOP	3	90.00
13	LEFT TOP	1	96.00
14	LEFT TOP	2	102.00
15	LEFT TOP	3	108.00
16	LEFT TOP	1	114.00
17	LEFT TOP	2	120.00
18	LEFT TOP	3	126.00
19	LEFT TOP	1	132.00
20	LEFT TOP	2	138.00
21	LEFT TOP	3	144.00
22	LEFT TOP	1	150.00
23	LEFT TOP	2	156.00
24	LEFT TOP	3	162.00
25	LEFT TOP	1	168.00
26	LEFT TOP	2	174.00
27	LEFT TOP	3	180.00
28	LEFT TOP	1	186.00
29	LEFT TOP	2	192.00
30	LEFT TOP	3	198.00
31	LEFT TOP	1	204.00
32	LEFT TOP	2	210.00
33	LEFT TOP	3	216.00
34	LEFT TOP	1	222.00
35	LEFT TOP	2	228.00
36	LEFT TOP	3	234.00
37	LEFT TOP	1	240.00
38	LEFT TOP	2	246.00
39	LEFT TOP	3	252.00
40	LEFT TOP	1	258.00
41	LEFT TOP	2	264.00
42	LEFT TOP	3	270.00
43	LEFT TOP	1	276.00
44	LEFT TOP	2	282.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
TRESHOLD 70% ZONE (8' SPACING)			
45	LEFT TOP	4	290.00
46	LEFT TOP	5	298.00
47	LEFT TOP	6	306.00
48	LEFT TOP	4	314.00
49	LEFT TOP	5	322.00
50	LEFT TOP	6	330.00
51	LEFT TOP	4	338.00
52	LEFT TOP	5	346.00
53	LEFT TOP	6	354.00
54	LEFT TOP	4	362.00
55	LEFT TOP	5	370.00
56	LEFT TOP	6	378.00
TRANSITION 40% ZONE (15' SPACING)			
57	LEFT TOP	4	393.00
58	LEFT TOP	5	408.00
59	LEFT TOP	6	423.00
60	LEFT TOP	4	438.00
61	LEFT TOP	5	453.00
62	LEFT TOP	6	468.00
63	LEFT TOP	4	483.00
64	LEFT TOP	5	498.00
65	LEFT TOP	6	513.00
66	LEFT TOP	4	528.00
67	LEFT TOP	5	543.00
TRANSITION 16% ZONE (30' SPACING)			
68	LEFT TOP	6	573.00
69	LEFT TOP	4	603.00
70	LEFT TOP	5	633.00
71	LEFT TOP	6	663.00
72	LEFT TOP	4	693.00
NIGHTTIME AND EMERGENCY (70' SPACING)			
145	LEFT BOTTOM	NT1	25.0
146	LEFT BOTTOM	EM1	95.0
147	LEFT BOTTOM	NT1	165.0
148	LEFT BOTTOM	EM1	235.0
149	LEFT BOTTOM	NT1	305.0
150	LEFT BOTTOM	EM1	375.0
151	LEFT BOTTOM	NT1	445.0
152	LEFT BOTTOM	EM1	515.0
153	LEFT BOTTOM	NT1	585.0
154	LEFT BOTTOM	EM1	655.0
155	LEFT BOTTOM	NT1	725.0

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
TRESHOLD 100% ZONE (6' SPACING)			
73	RIGHT TOP	7	24.00
74	RIGHT TOP	8	30.00
75	RIGHT TOP	9	36.00
76	RIGHT TOP	7	42.00
77	RIGHT TOP	8	48.00
78	RIGHT TOP	9	54.00
79	RIGHT TOP	7	60.00
80	RIGHT TOP	8	66.00
81	RIGHT TOP	9	72.00
82	RIGHT TOP	7	78.00
83	RIGHT TOP	8	84.00
84	RIGHT TOP	9	90.00
85	RIGHT TOP	7	96.00
86	RIGHT TOP	8	102.00
87	RIGHT TOP	9	108.00
88	RIGHT TOP	7	114.00
89	RIGHT TOP	8	120.00
90	RIGHT TOP	9	126.00
91	RIGHT TOP	7	132.00
92	RIGHT TOP	8	138.00
93	RIGHT TOP	9	144.00
94	RIGHT TOP	7	150.00
95	RIGHT TOP	8	156.00
96	RIGHT TOP	9	162.00
97	RIGHT TOP	7	168.00
98	RIGHT TOP	8	174.00
99	RIGHT TOP	9	180.00
100	RIGHT TOP	7	186.00
101	RIGHT TOP	8	192.00
102	RIGHT TOP	9	198.00
103	RIGHT TOP	7	204.00
104	RIGHT TOP	8	210.00
105	RIGHT TOP	9	216.00
106	RIGHT TOP	7	222.00
107	RIGHT TOP	8	228.00
108	RIGHT TOP	9	234.00
109	RIGHT TOP	7	240.00
110	RIGHT TOP	8	246.00
111	RIGHT TOP	9	252.00
112	RIGHT TOP	7	258.00
113	RIGHT TOP	8	264.00
114	RIGHT TOP	9	270.00
115	RIGHT TOP	7	276.00
116	RIGHT TOP	8	282.00

FIXTURE NO.	POSITION	CKT. NO.	FT TO ENTRANCE
TRESHOLD 70% ZONE (8' SPACING)			
117	RIGHT TOP	10	290.00
118	RIGHT TOP	11	298.00
119	RIGHT TOP	12	306.00
120	RIGHT TOP	10	314.00
121	RIGHT TOP	11	322.00
122	RIGHT TOP	12	330.00
123	RIGHT TOP	10	338.00
124	RIGHT TOP	11	346.00
125	RIGHT TOP	12	354.00
126	RIGHT TOP	10	362.00
127	RIGHT TOP	11	370.00
128	RIGHT TOP	12	378.00
TRANSITION 40% ZONE (15' SPACING)			
129	RIGHT TOP	10	393.00
130	RIGHT TOP	11	408.00
131	RIGHT TOP	12	423.00
132	RIGHT TOP	10	438.00
133	RIGHT TOP	11	453.00
134	RIGHT TOP	12	468.00
135	RIGHT TOP	10	483.00
136	RIGHT TOP	11	498.00
137	RIGHT TOP	12	513.00
138	RIGHT TOP	10	528.00
139	RIGHT TOP	11	543.00
TRANSITION 16% ZONE (30' SPACING)			
140	RIGHT TOP	12	573.00
141	RIGHT TOP	10	603.00
142	RIGHT TOP	11	633.00
143	RIGHT TOP	12	663.00
144	RIGHT TOP	12	693.00
NIGHTTIME AND EMERGENCY (70' SPACING)			
156	RIGHT BOTTOM	EM2	25.0
157	RIGHT BOTTOM	NT2	95.0
158	RIGHT BOTTOM	EM2	165.0
159	RIGHT BOTTOM	NT2	235.0
160	RIGHT BOTTOM	EM2	305.0
161	RIGHT BOTTOM	NT2	375.0
162	RIGHT BOTTOM	EM2	445.0
163	RIGHT BOTTOM	NT2	515.0
164	RIGHT BOTTOM	EM2	585.0
165	RIGHT BOTTOM	NT2	655.0
166	RIGHT BOTTOM	EM2	725.0

LEFT WALL		RIGHT WALL	
CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT	CIRCUIT #	NUMBER OF FIXTURES ON CIRCUIT
1	15	7	15
2	15	8	15
3	14	9	14
4	10	10	10
5	9	11	9
6	9	12	9
NIGHTTIME1 (NT1)	6	NIGHTTIME2 (NT2)	5
EMERGENCY1 (EM1)	5	EMERGENCY2 (EM2)	6

LIGHT METER CONDITION		ILLUMINATION	
SKY CONDITIONS	LIGHT LEVEL (lx)	CIRCUITS ON	NUMBER OF FIXTURES ENERGIZED
BRIGHT/SUNNY	> 10,000	1 THRU 12,NT1,NT2,EM1,EM2	166
CLEAR, PARTLY CLOUDY	100 -10,000	1,2,4,5,7,8,10,11,NT1,NT2,EM1,EM2	120
MOSTLY CLOUDY, OVERCAST, DAWN/DUSK	1-100	1,4,7,10,NT1,NT2,EM1,EM2	72
NIGHT	<1	NT1,NT2,EM1,EM2	22
EMERGENCY	ALWAYS ON	EM1,EM2	11

TUNNEL #2
LUMINAIRE SCHEDULE

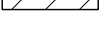
NOTES:

1. CONTRACTOR TO COORDINATE WITH TUNNEL LIGHTING CONTROLLER VENDOR ON LIGHT LEVELS TO BE USED TO CONTROL THE 12 DAYTIME AND TWO NIGHTTIME CIRCUITS IN EACH TUNNEL.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.

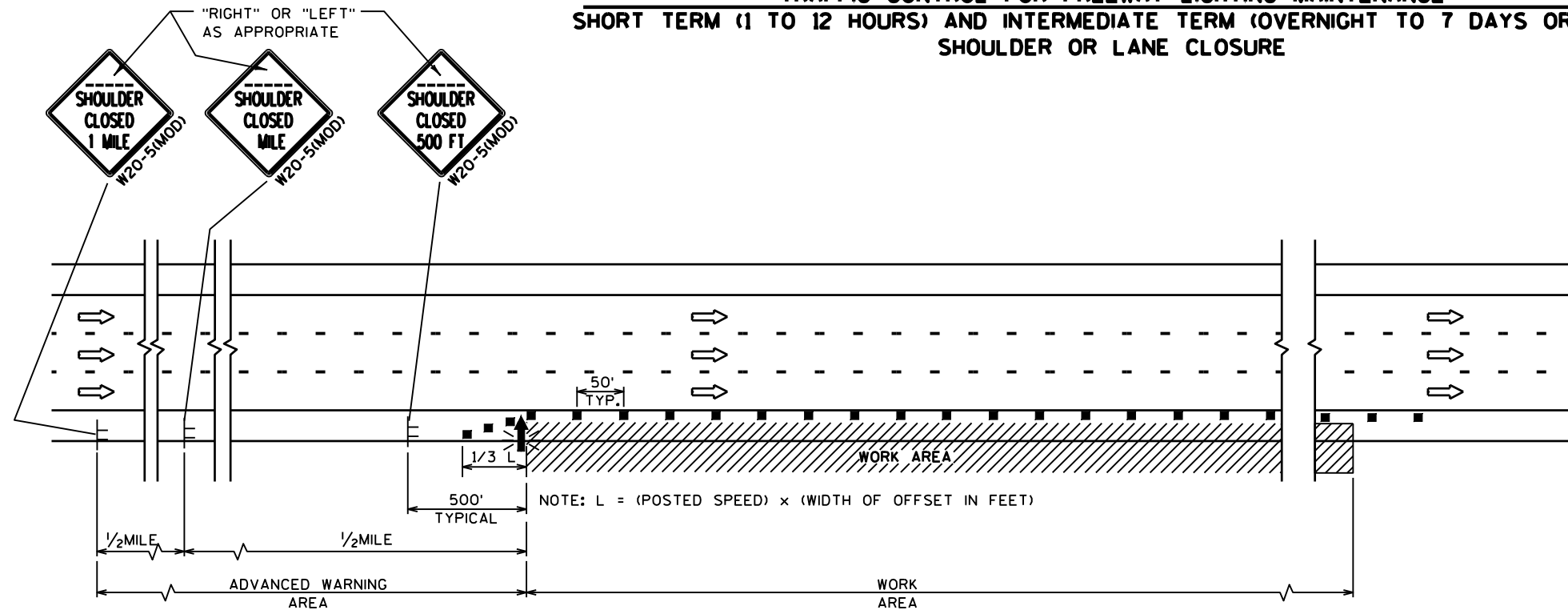
GENERAL NOTES FOR TRAFFIC CONTROL

- 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

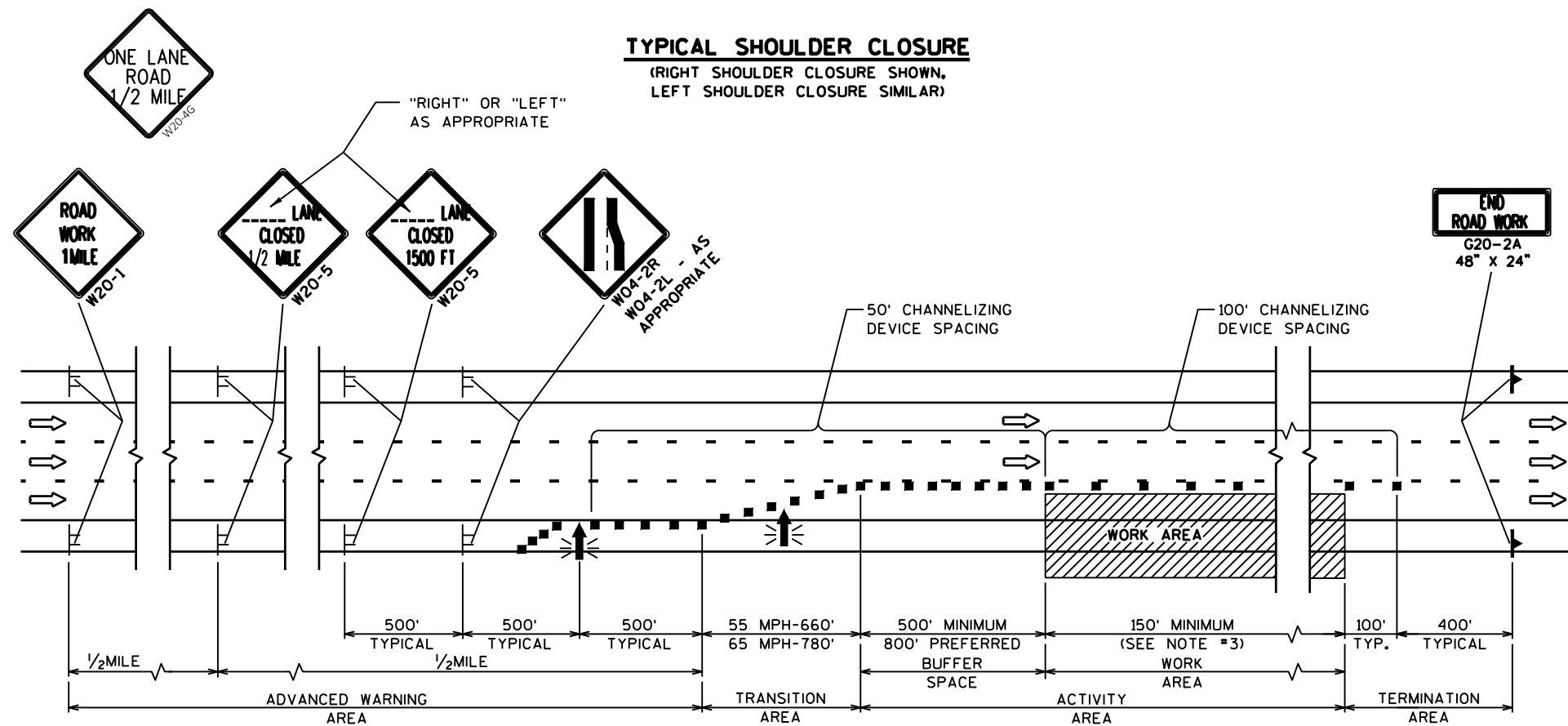
-  TYPE III BARRICADE
-  TYPE III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  PORTABLE CHANGEABLE MESSAGE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

TRAFFIC CONTROL FOR FREEWAY LIGHTING MAINTENANCE
SHORT TERM (1 TO 12 HOURS) AND INTERMEDIATE TERM (OVERNIGHT TO 7 DAYS OR LESS)
SHOULDER OR LANE CLOSURE



TYPICAL SHOULDER CLOSURE

(RIGHT SHOULDER CLOSURE SHOWN,
LEFT SHOULDER CLOSURE SIMILAR)



TYPICAL ONE-LANE CLOSURE

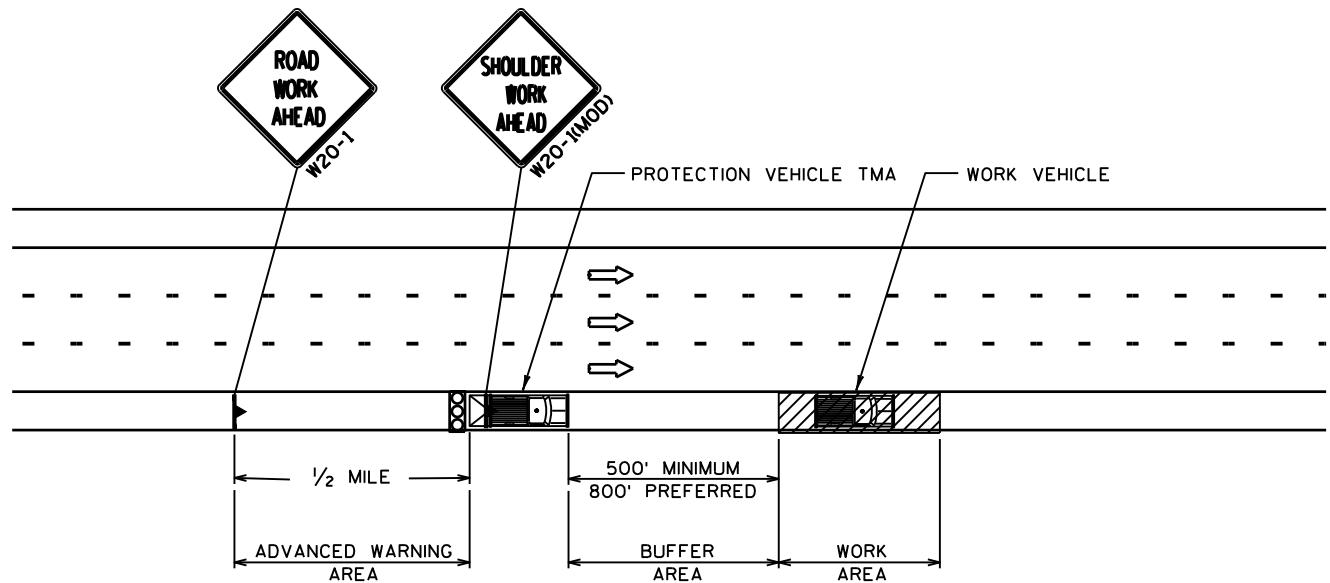
(RIGHT LANE CLOSURE SHOWN,
LEFT LANE CLOSURE SIMILAR)

GENERAL NOTES: TRAFFIC CONTROL

1. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN, MOVE AND REMOVE ALL TRAFFIC CONTROL SIGNS, SIGN SUPPORTS, CHANNELIZING DEVICES, ARROW BOARDS, WARNING LIGHTS, ETC. AS SPECIFIED IN THIS DETAIL, THE STANDARD SPECIFICATIONS, THE PLANS AND/OR THE SPECIAL PROVISIONS AND/OR AS DIRECTED BY THE ENGINEER.
2. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND CHANNELIZING DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AND/OR AS DIRECTED BY THE ENGINEER.
3. IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE CHANNELIZING DEVICE SPACING MAY BE DECREASED TO 25' IN THE WORK SPACE.
4. FOR DAYTIME ONLY OPERATION: WARNING LIGHTS ARE NOT REQUIRED. ALL LANE CLOSURE SIGNS SHALL BE COVERED OR TURNED FROM THE MOTORIST'S VIEW AND CHANNELIZING DEVICES SHALL BE REMOVED BEYOND THE SHOULDER AT THE END OF THE WORKDAY IF THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.
5. FOR NIGHT TIME OPERATION: CHANNELIZING DEVICES IN THE TRANSITION SPACE SHALL HAVE TYPE "C" (STEADY BURN) WARNING LIGHTS, BARRICADES SHIELDING AN ISOLATED HAZARD, SHALL HAVE TYPE "A" (LOW INTENSITY FLASHING) WARNING LIGHTS.
6. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
7. "WO" SIGN DESIGNATIONS ARE THE SAME AS "W" SIGN DESIGNATIONS EXCEPT THAT BACKGROUND IS ORANGE.
8. IF LANE CLOSURE IS MORE THAN 1 MILE, PLACE TYPE III BARRICADES WITH CLOSED SIGNS APPROXIMATELY EVERY 1000' ACROSS THE CLOSED LANE TO HELP ENFORCE THE DELINEATION.
9. CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500' IN FRONT OF DRUMS.
10. REMOVE/REPLACE OR COVER EXISTING SIGNS THAT CONFLICT WITH TRAFFIC CONTROL SIGNS IN USE.

LEGEND:

-  SIGN ON TEMPORARY SUPPORT
-  CHANNELIZING DEVICE (CONE OR DRUM)
-  ARROW BOARD



**MOBILE OPERATION ON SHOULDER
FOR 10' OR WIDER SHOULDERS ONLY**
(RIGHT SHOULDER CLOSURE SHOWN,
LEFT SHOULDER CLOSURE SIMILAR)

TRAFFIC CONTROL FOR FREEWAY LIGHTING MAINTENANCE
MOBILE OPERATIONS - SHOULDER CLOSURE
CONTINUOUS OR INTERMITTENT MOVEMENT (STOPS LESS THAN 15 MINUTES)

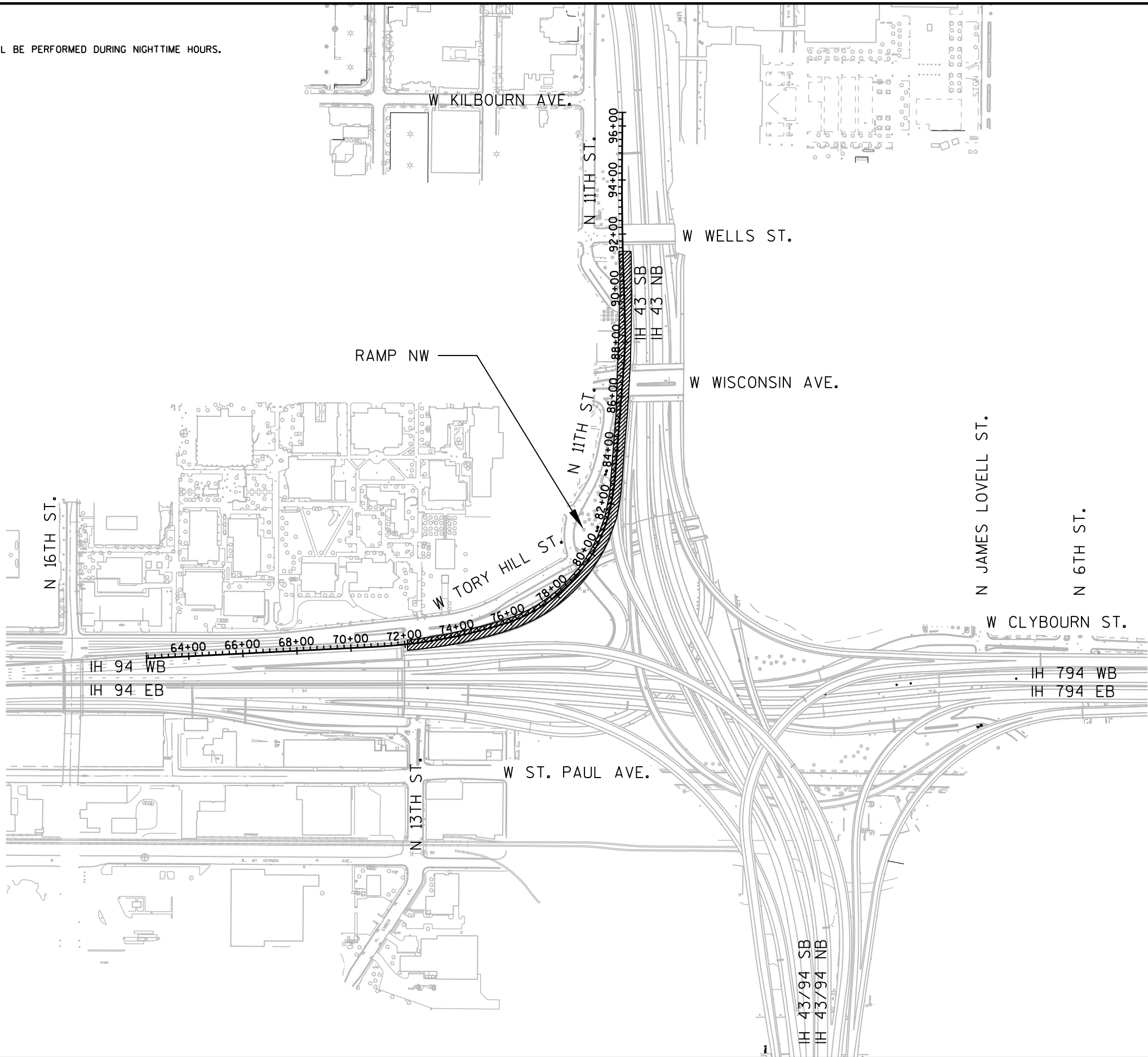
GENERAL NOTES: TRAFFIC CONTROL

- 1. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN, MOVE AND REMOVE ALL TRAFFIC CONTROL SIGNS, SIGN SUPPORTS, CHANNELIZING DEVICES, TMAs, ARROW BOARDS, WARNING LIGHTS, ETC. AS SPECIFIED IN THIS DETAIL, THE STANDARD SPECIFICATIONS, THE PLANS AND/OR THE SPECIAL PROVISIONS AND/OR AS DIRECTED BY THE ENGINEER.
- 2. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND CHANNELIZING DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AND/OR AS DIRECTED BY THE ENGINEER.
- 3. IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE REDUCES VISIBILITY, PROTECTION VEHICLE OPERATORS SHOULD INCREASE THE LENGTH OF THE BUFFER SPACE TO MAINTAIN VISIBILITY TO VEHICLES APPROACHING FROM THE REAR.
- 4. MOBILE OPERATIONS ARE PERMITTED FOR DAYTIME OPERATIONS ONLY.
- 5. THE ENGINEER IN THE FIELD MAY PROHIBIT MOBILE OPERATIONS DURING RAIN OR WHEN FOGGY.
- 6. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- 7. "WO" SIGN DESIGNATIONS ARE THE SAME AS "W" SIGN DESIGNATIONS EXCEPT THAT BACKGROUND IS ORANGE.

LEGEND:

-  SIGN ON TEMPORARY SUPPORT
-  ARROW BOARD
-  TMA (TRUCK MOUNTED ATTENUATOR)
-  WORK VEHICLE

TRAFFIC CONTROL NOTES:
LIGHTING WORK COMPLETED DURING THIS STAGE WILL BE PERFORMED DURING NIGHTTIME HOURS.



LEGEND
SIGN ON TEMPORARY SUPPORT

①

WEST
M3-4
36"X18"

INTERSTATE
94
M1-1
36"X36"

ROAD
WORK
1 MILE
W20-1F

②

WEST
M3-4
36"X18"

INTERSTATE
94
M1-1
36"X36"

RIGHT LANE
CLOSED
1/2 MILE
W20-5G

③

WEST
M3-4
36"X18"

INTERSTATE
94
M1-1
36"X36"

RIGHT LANE
CLOSED
1500 FT
W20-5B

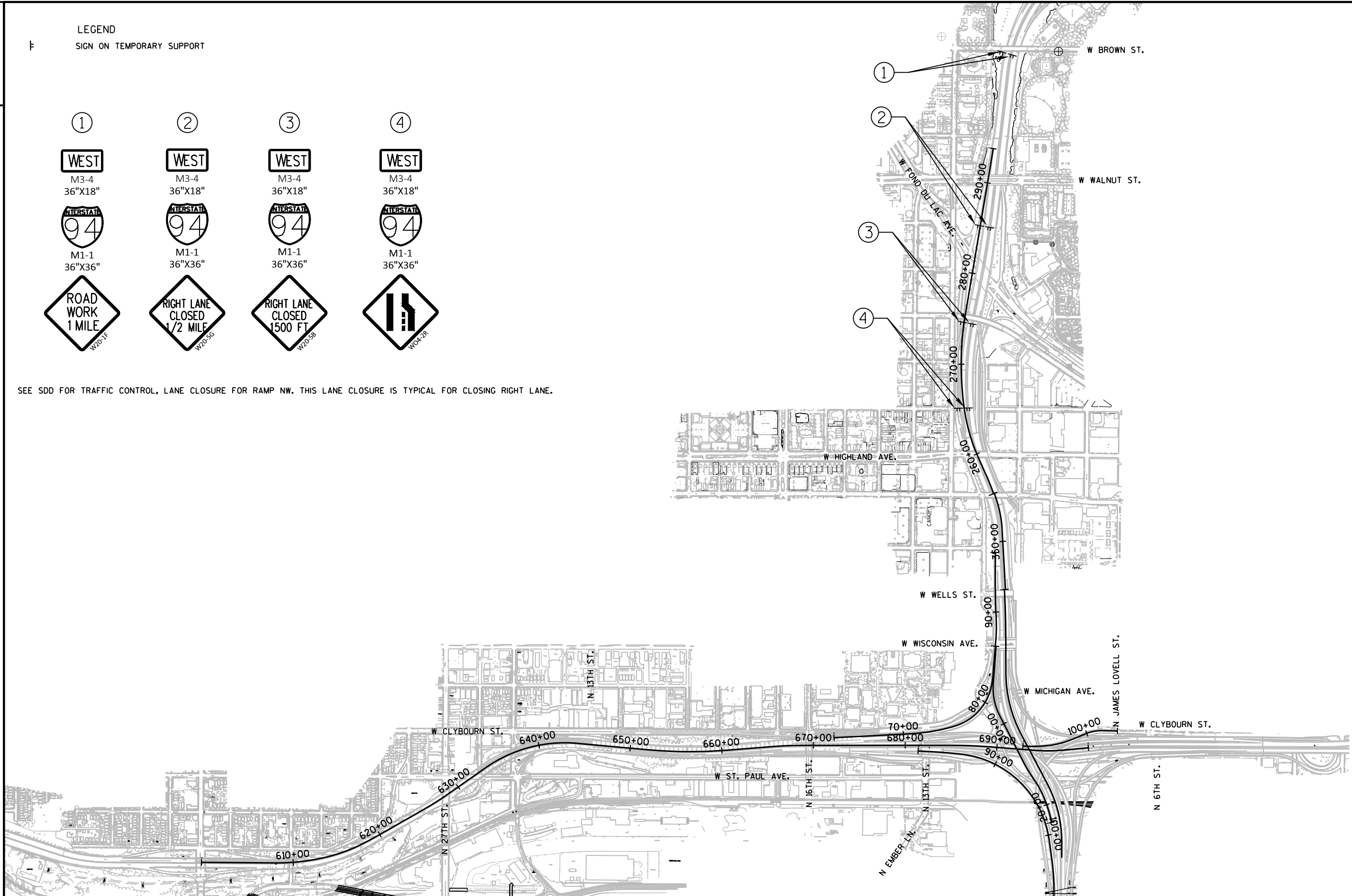
④

WEST
M3-4
36"X18"

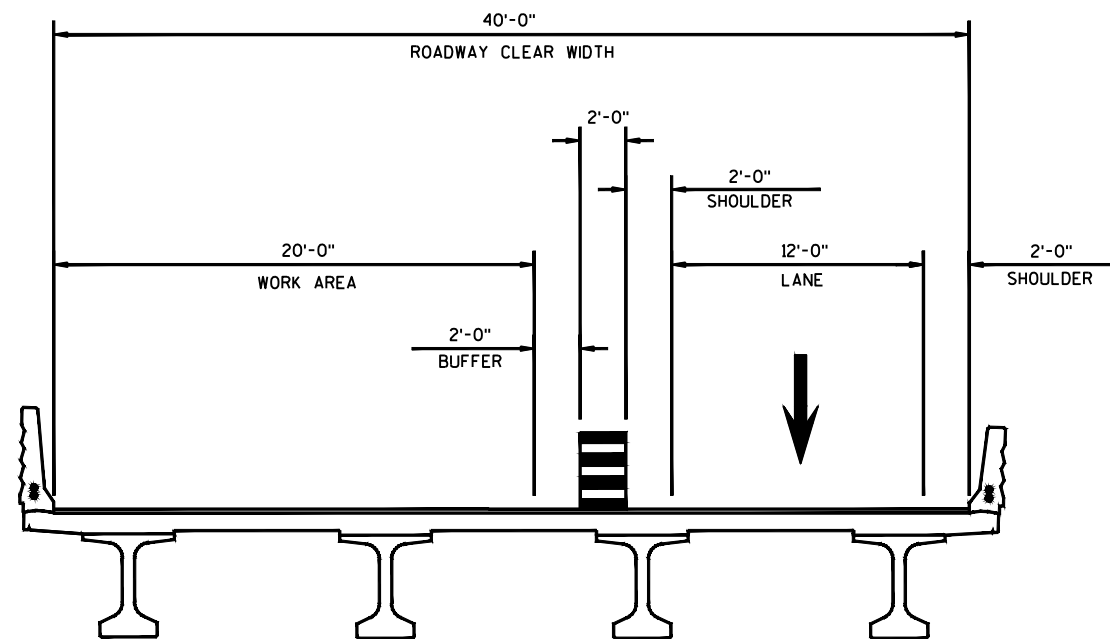
INTERSTATE
94
M1-1
36"X36"

W04-2R

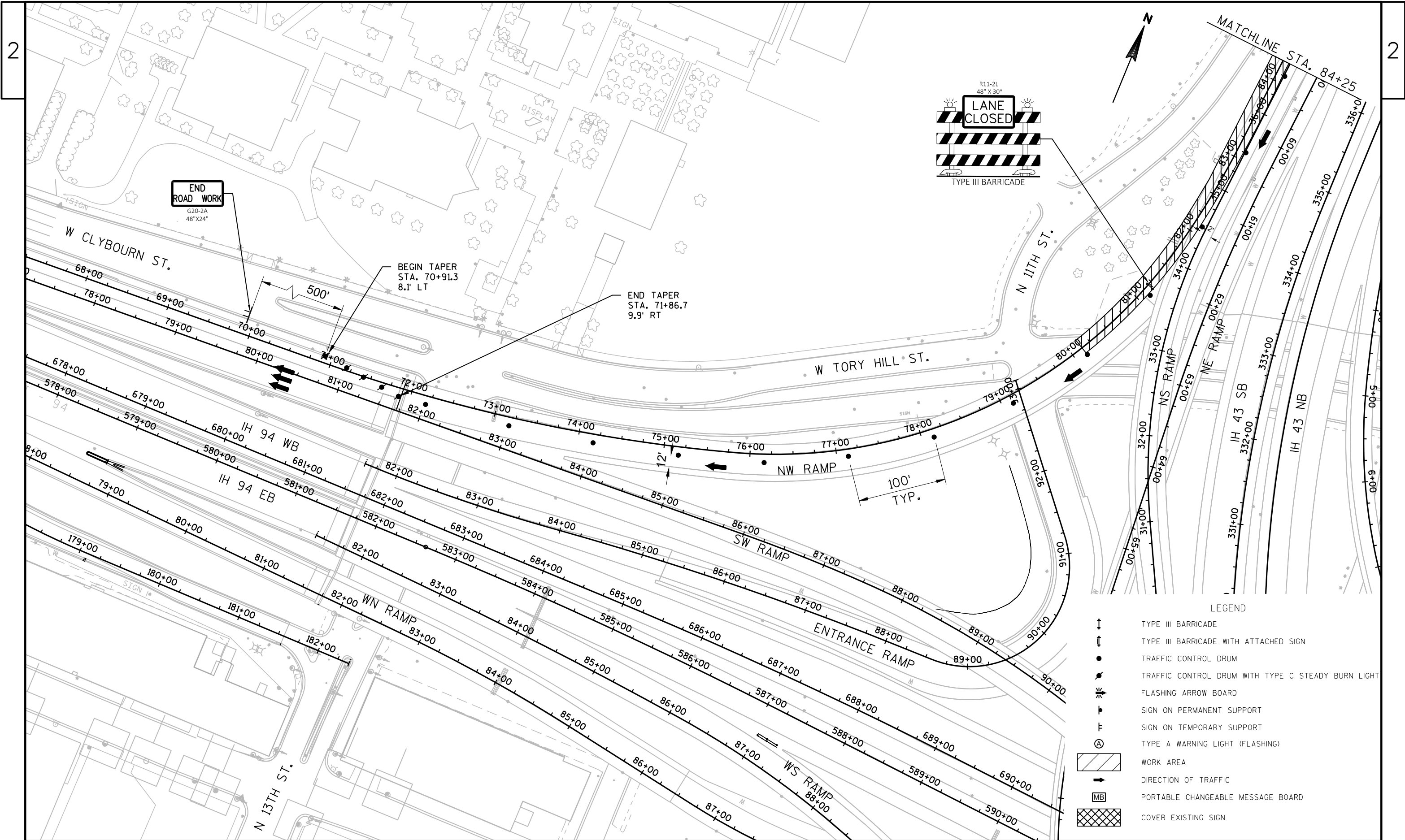
SEE SDD FOR TRAFFIC CONTROL, LANE CLOSURE FOR RAMP NW. THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE.

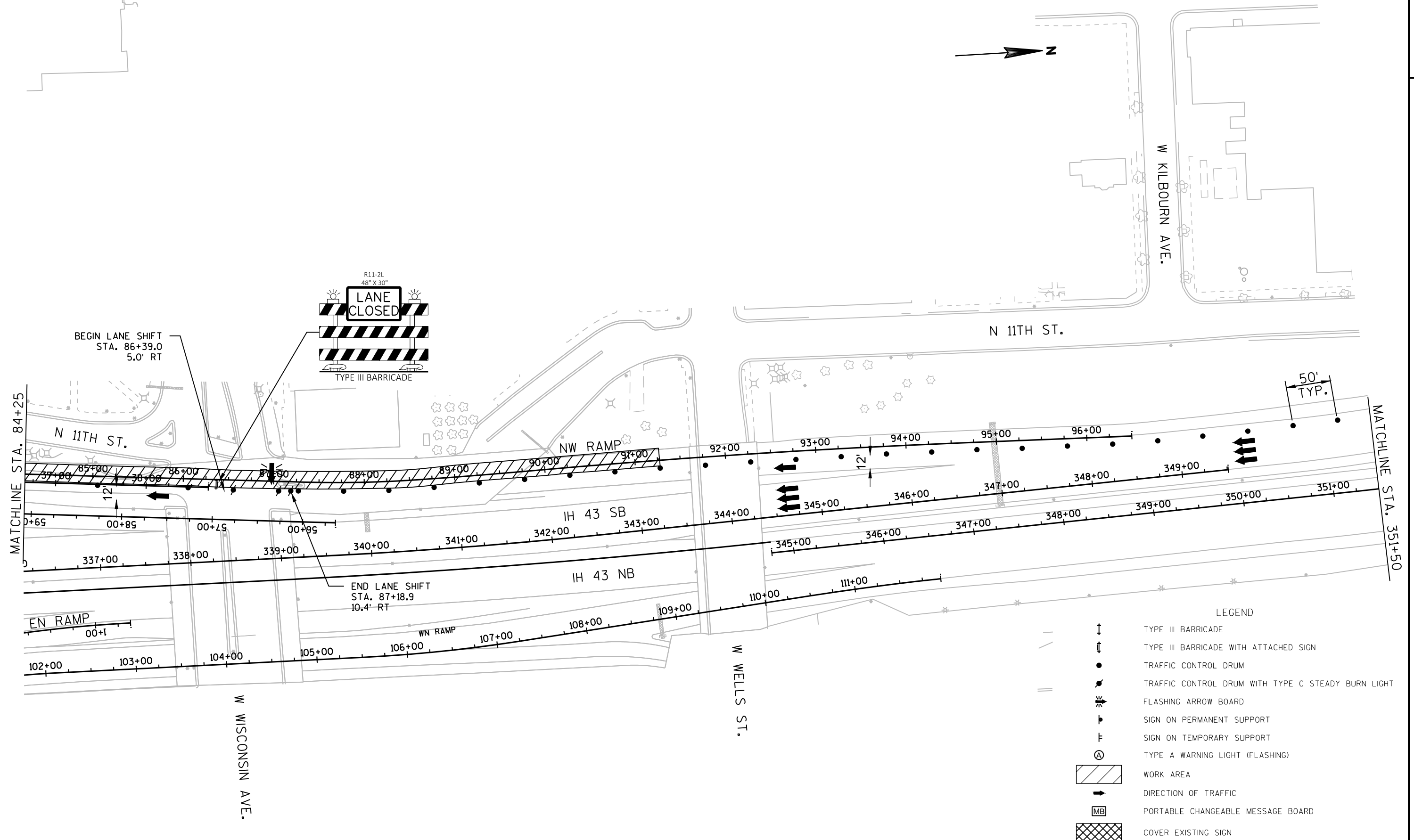


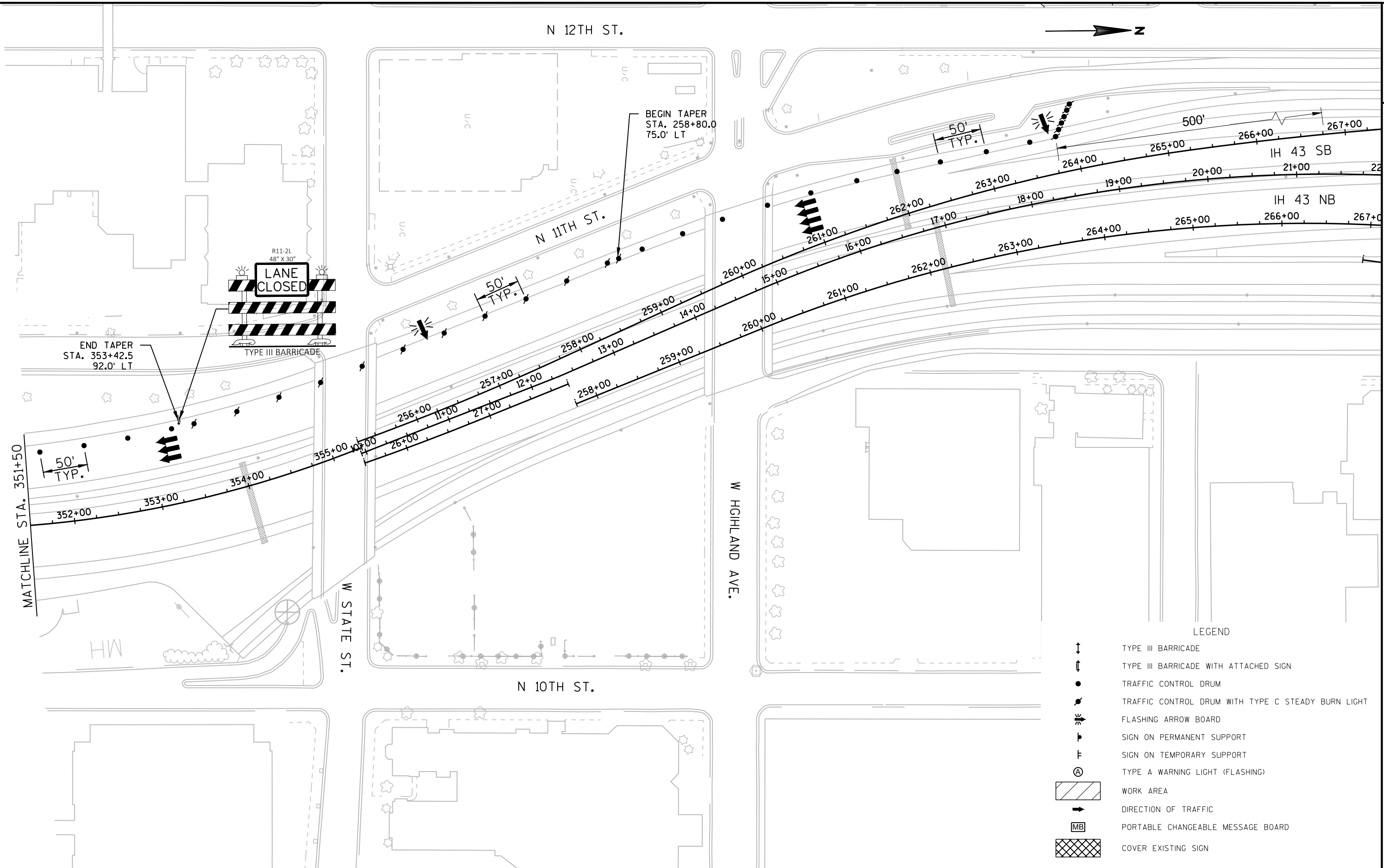
PROJECT NO: 1000-13-75	HWY: IH 43/94/794	COUNTY: MILWAUKEE	TRAFFIC CONTROL - ADVANCED SIGNING STAGE 1	SHEET	E
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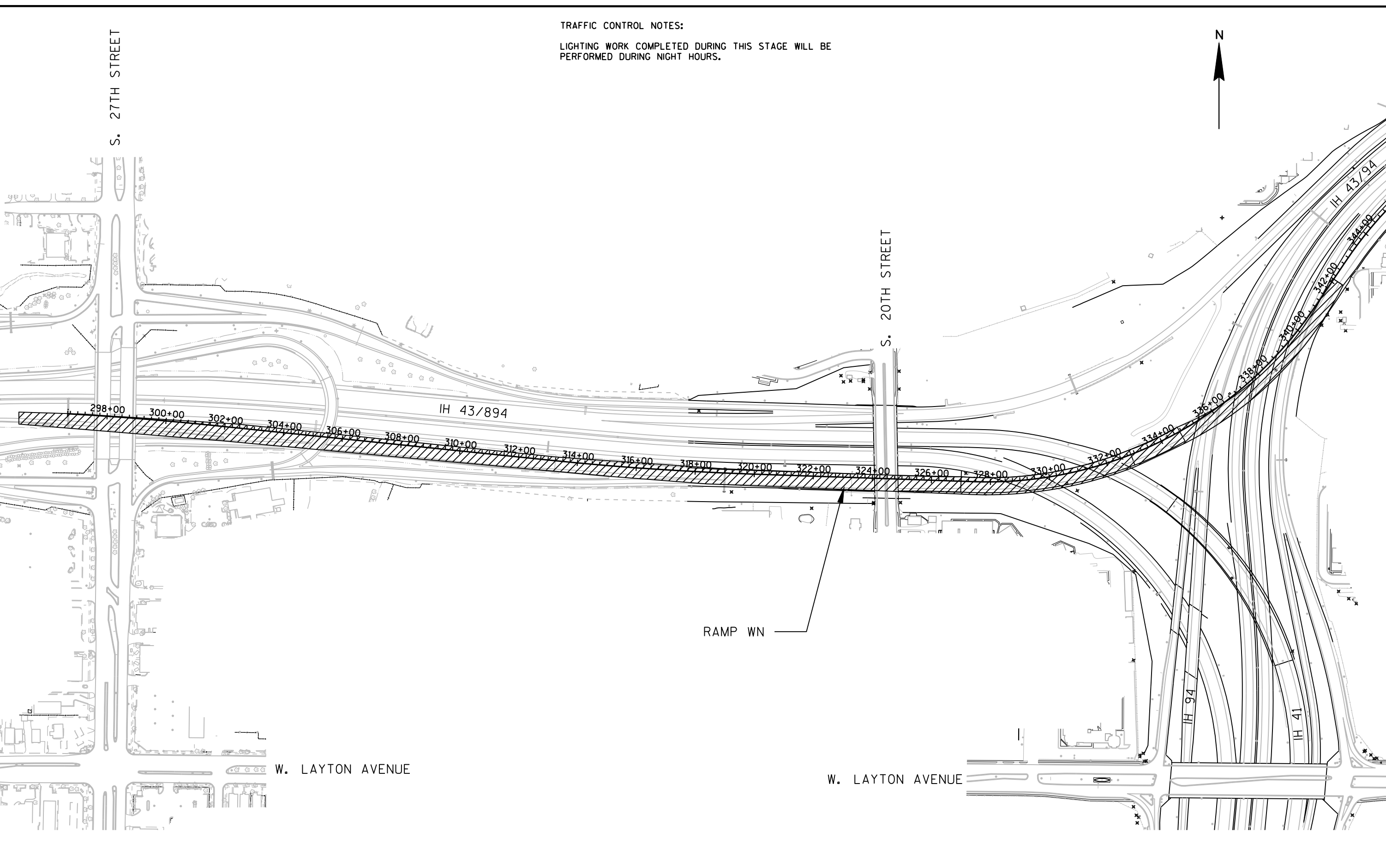


TYPICAL SECTION
(LOOKING UP STATION)
STA. 80+25.0 TO STA. 91+25.0
TORY HILL TUNNEL (N-W RAMP)









S. 27TH STREET

S. 20TH STREET

W. LAYTON AVENUE

W. LAYTON AVENUE

IH 43/894

IH 43/94

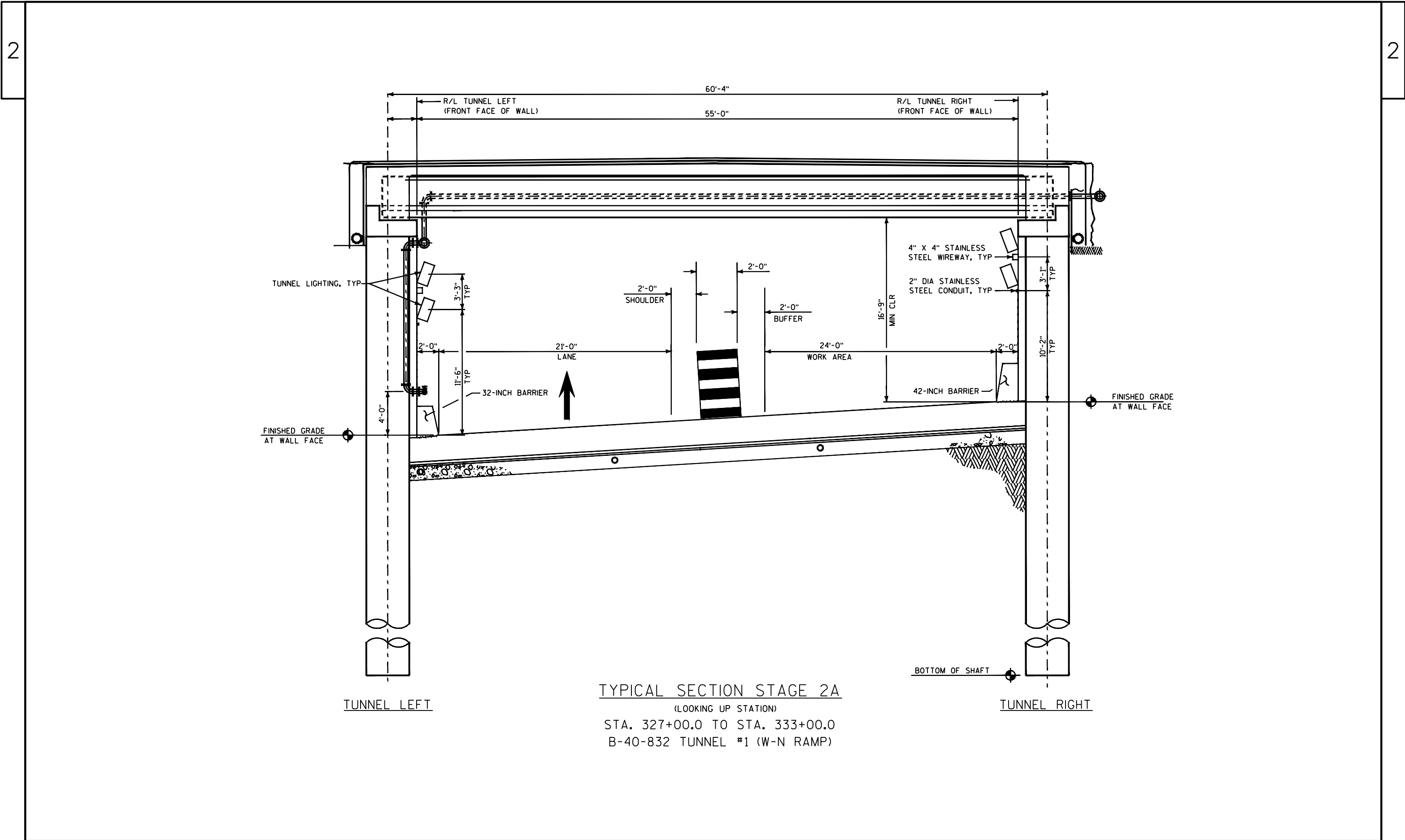
IH 94

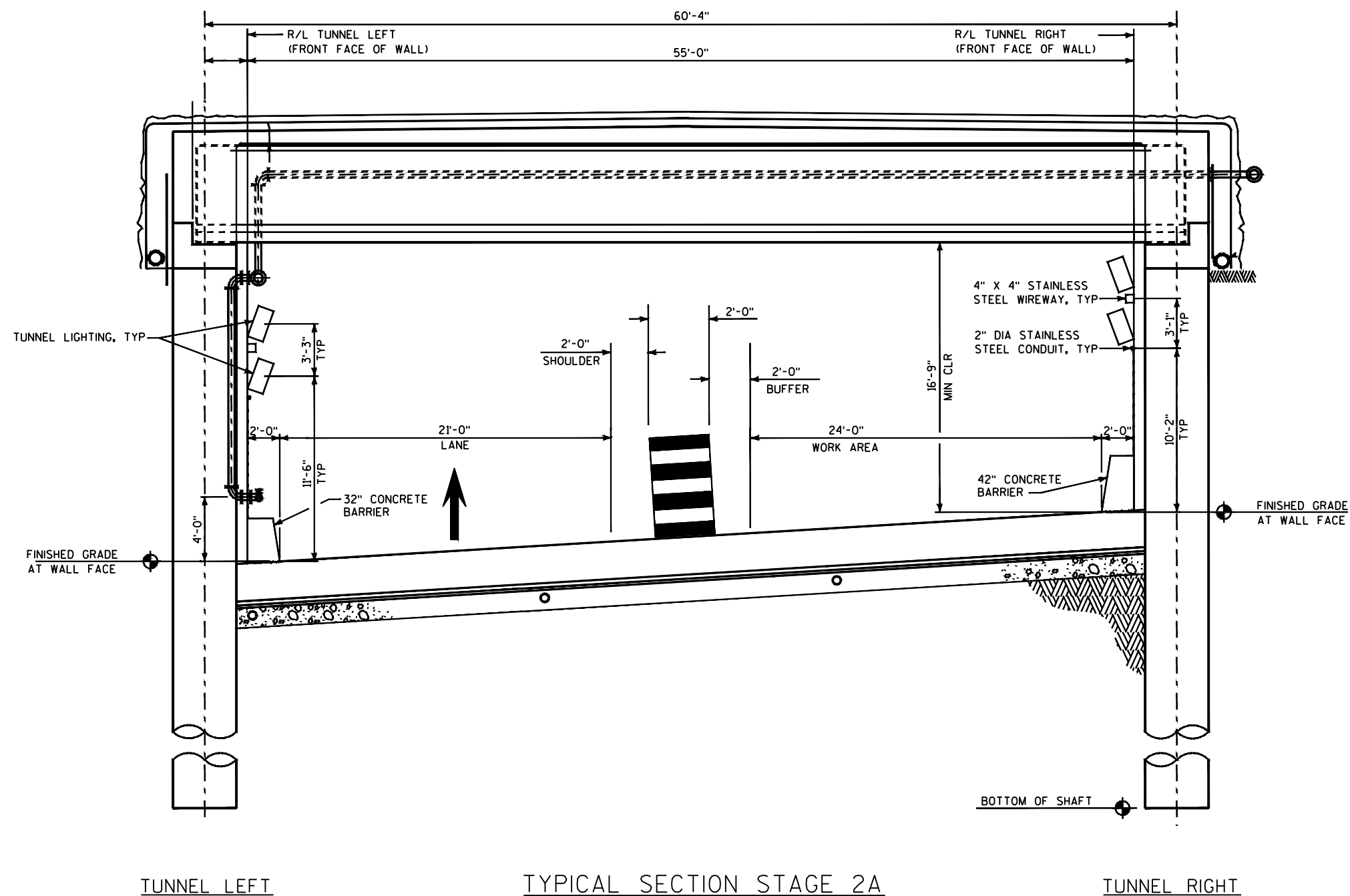
IH 41

RAMP WN

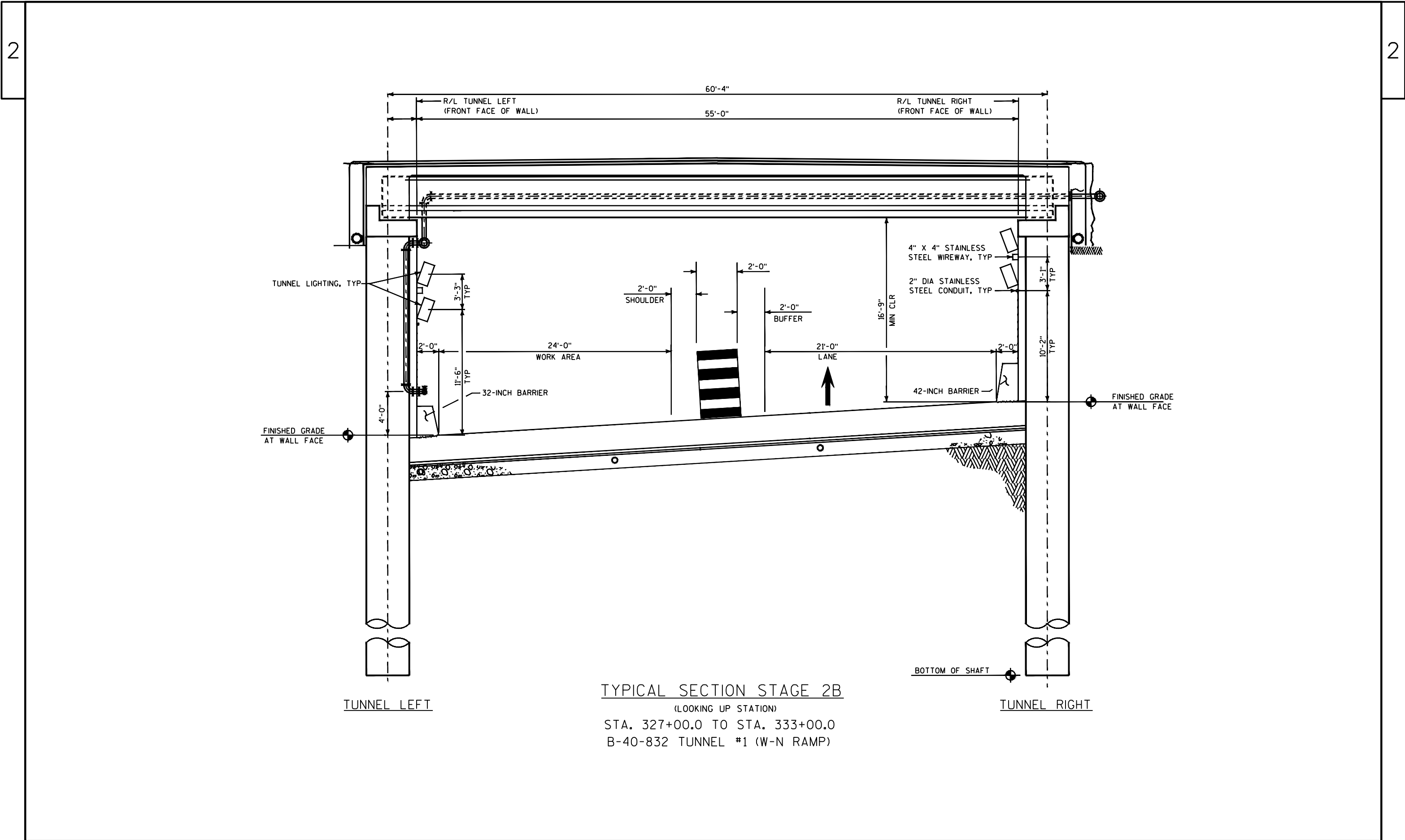
TRAFFIC CONTROL NOTES:
LIGHTING WORK COMPLETED DURING THIS STAGE WILL BE
PERFORMED DURING NIGHT HOURS.

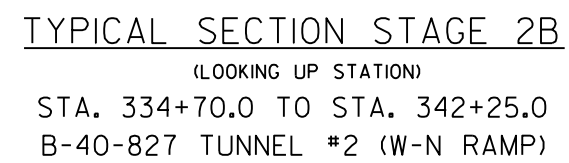






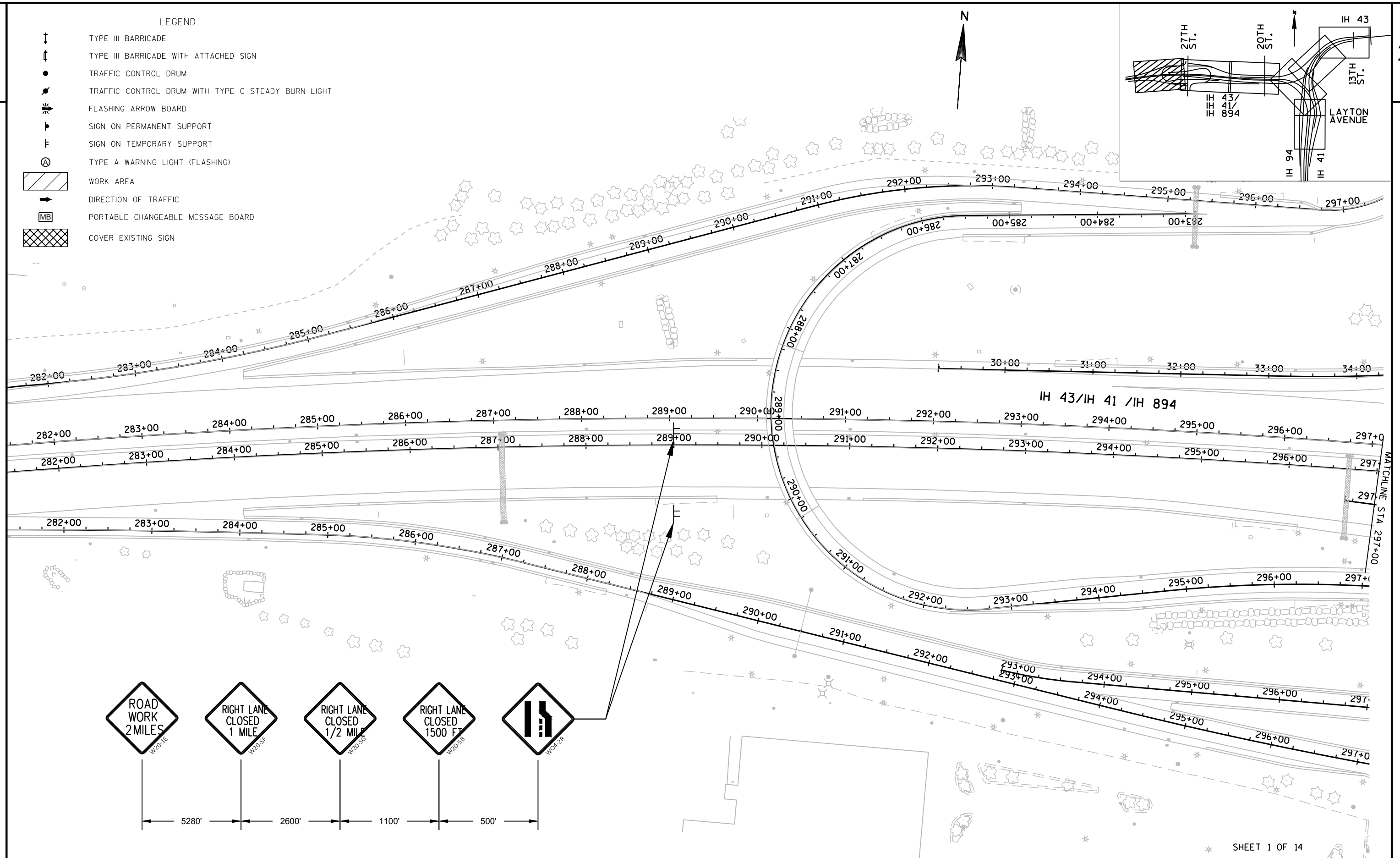
TYPICAL SECTION STAGE 2A
(LOOKING UP STATION)
STA. 334+70.0 TO STA. 342+25.0
B-40-827 TUNNEL #2 (W-N RAMP)





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
	TYPE A WARNING LIGHT (FLASHING)
	WORK AREA
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	COVER EXISTING SIGN



SHEET 1 OF 14

PROJECT NO: 1000-13-75

HWY: IH 41/43/894

COUNTY: MILWAUKEE

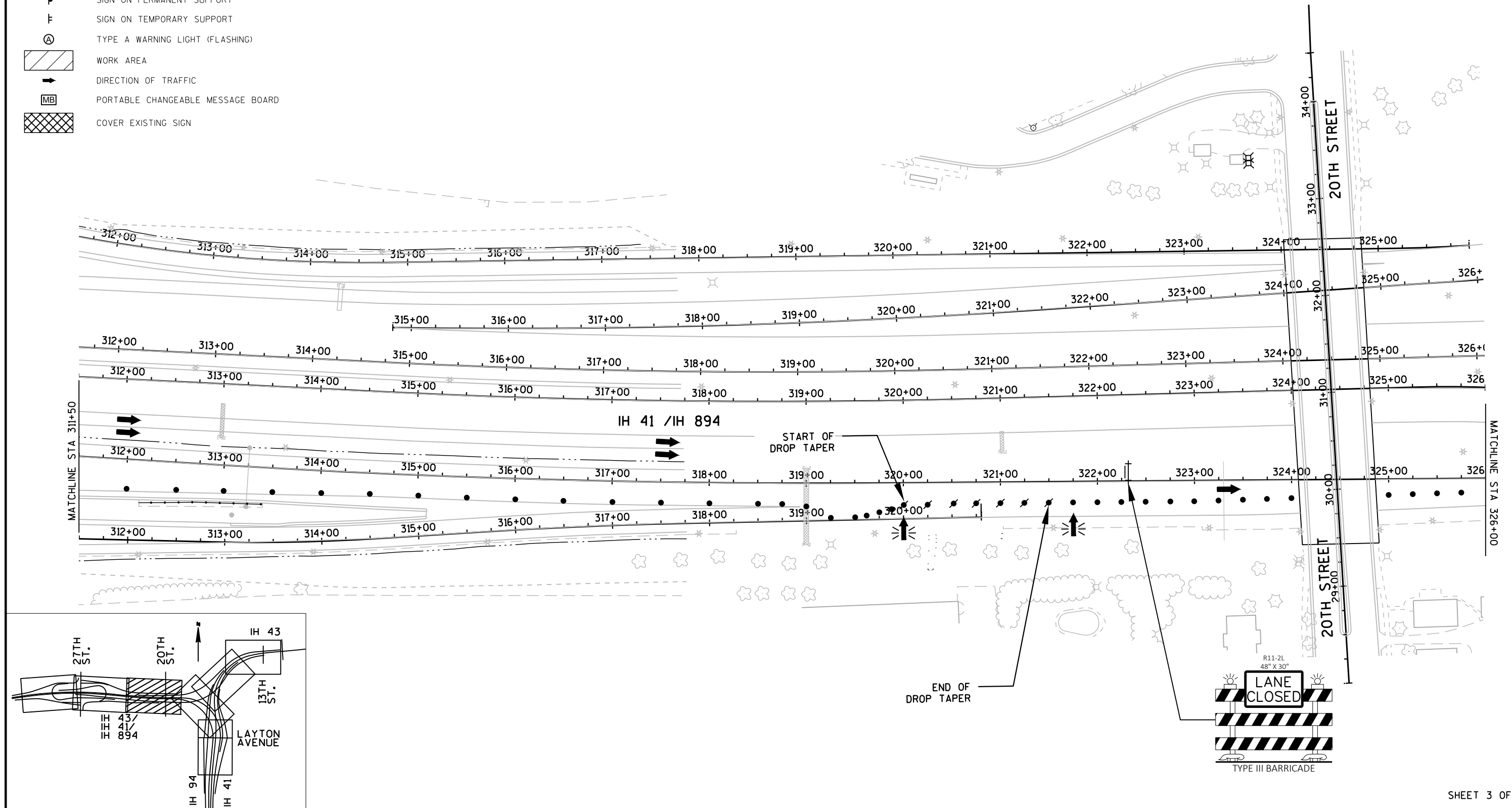
TRAFFIC CONTROL PLAN - STAGE 2A

SHEET

E

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
	TYPE A WARNING LIGHT (FLASHING)
	WORK AREA
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	COVER EXISTING SIGN



PROJECT NO: 1000-13-75

HWY: IH 41/43/894

COUNTY: MILWAUKEE

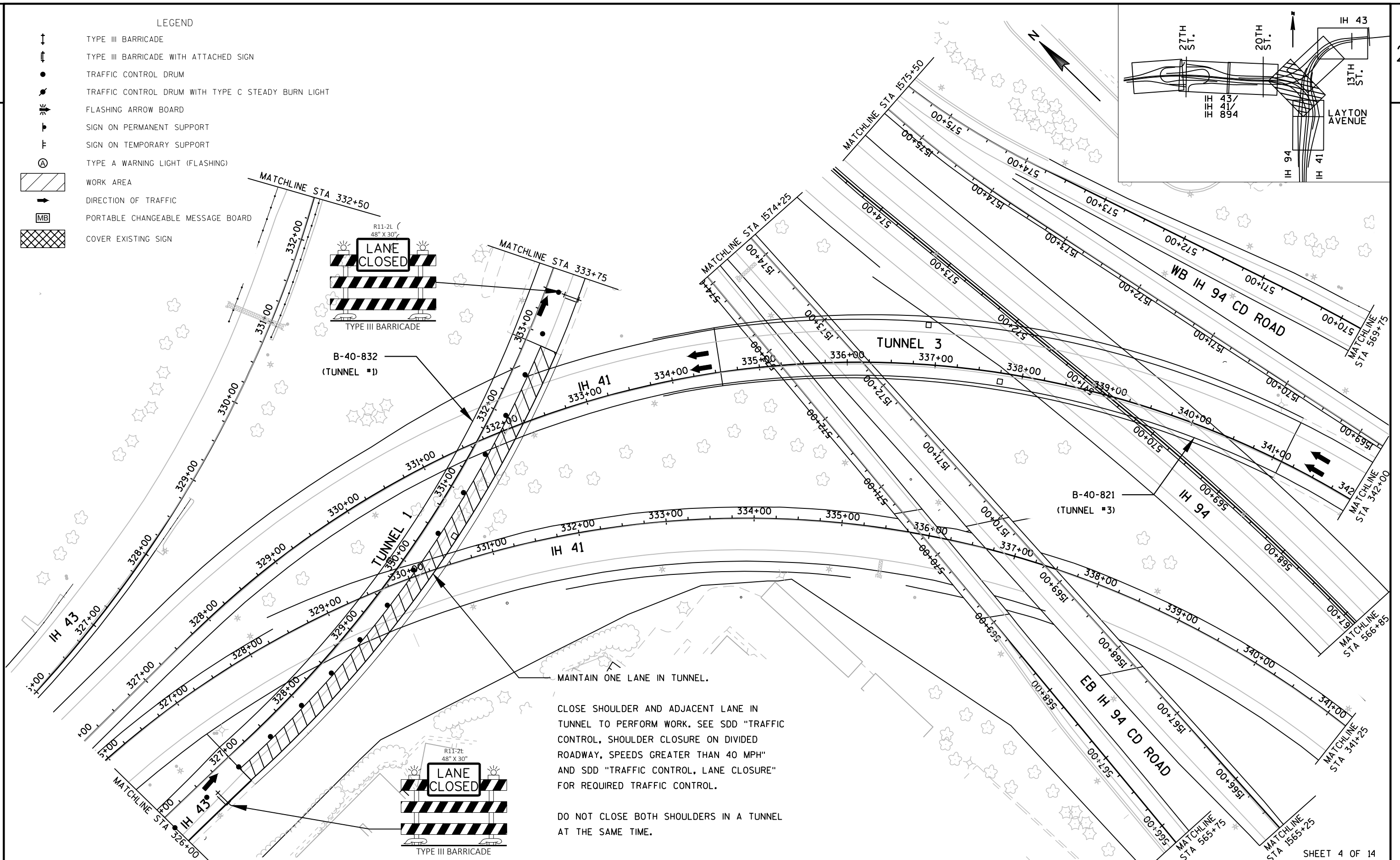
TRAFFIC CONTROL PLAN - STAGE 2A

SHEET

E

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
	TYPE A WARNING LIGHT (FLASHING)
	WORK AREA
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	COVER EXISTING SIGN



PROJECT NO: 1000-13-75

HWY: IH 41/43/894

COUNTY: MILWAUKEE

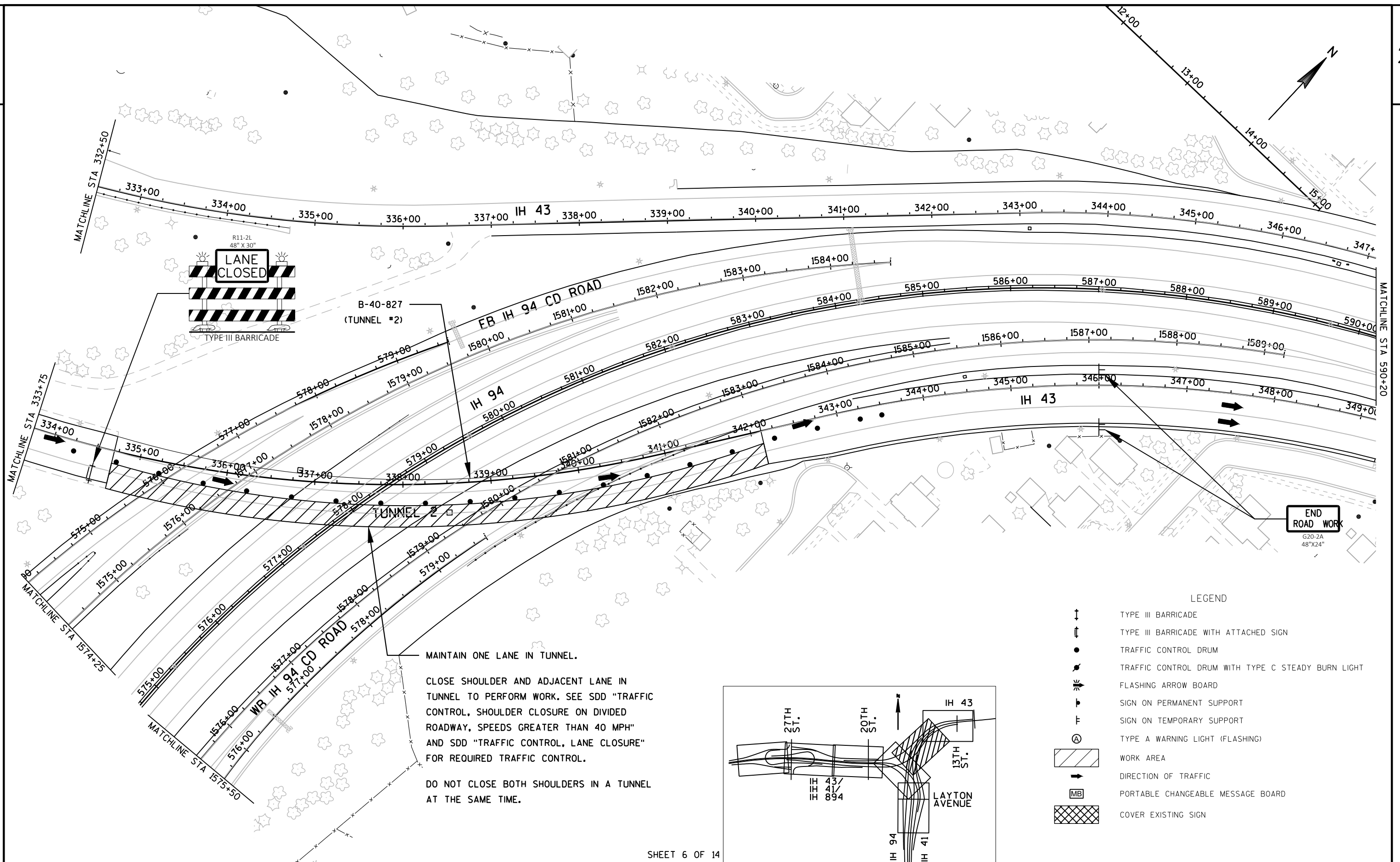
TRAFFIC CONTROL PLAN - STAGE 2A

SHEET

E



	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
	TYPE A WARNING LIGHT (FLASHING)
	WORK AREA
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	COVER EXISTING SIGN



SHEET 6 OF 14

PROJECT NO: 1000-13-75

HWY: IH 41/43/894

COUNTY: MILWAUKEE

TRAFFIC CONTROL PLAN - STAGE 2A

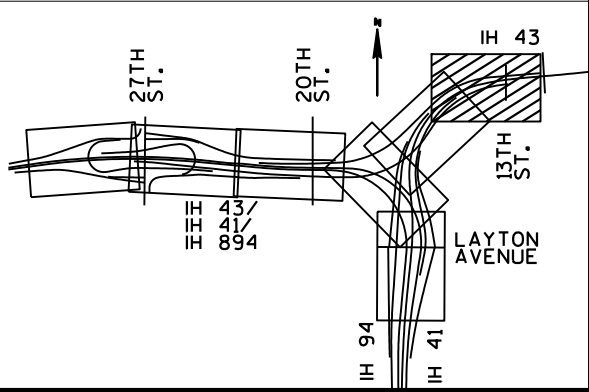
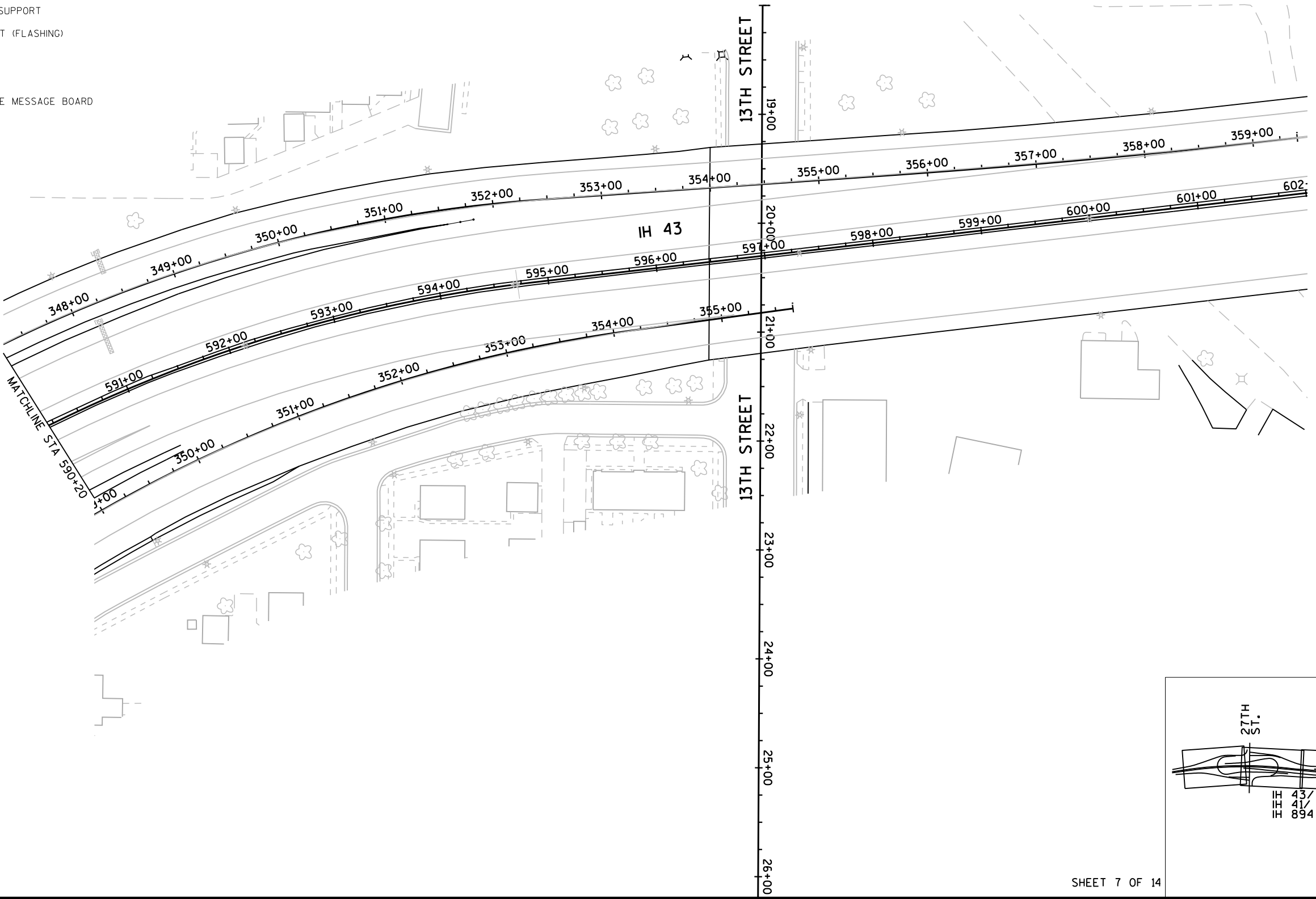
SHEET

E

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
- TYPE A WARNING LIGHT (FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- COVER EXISTING SIGN

FOR INFORMATION ONLY

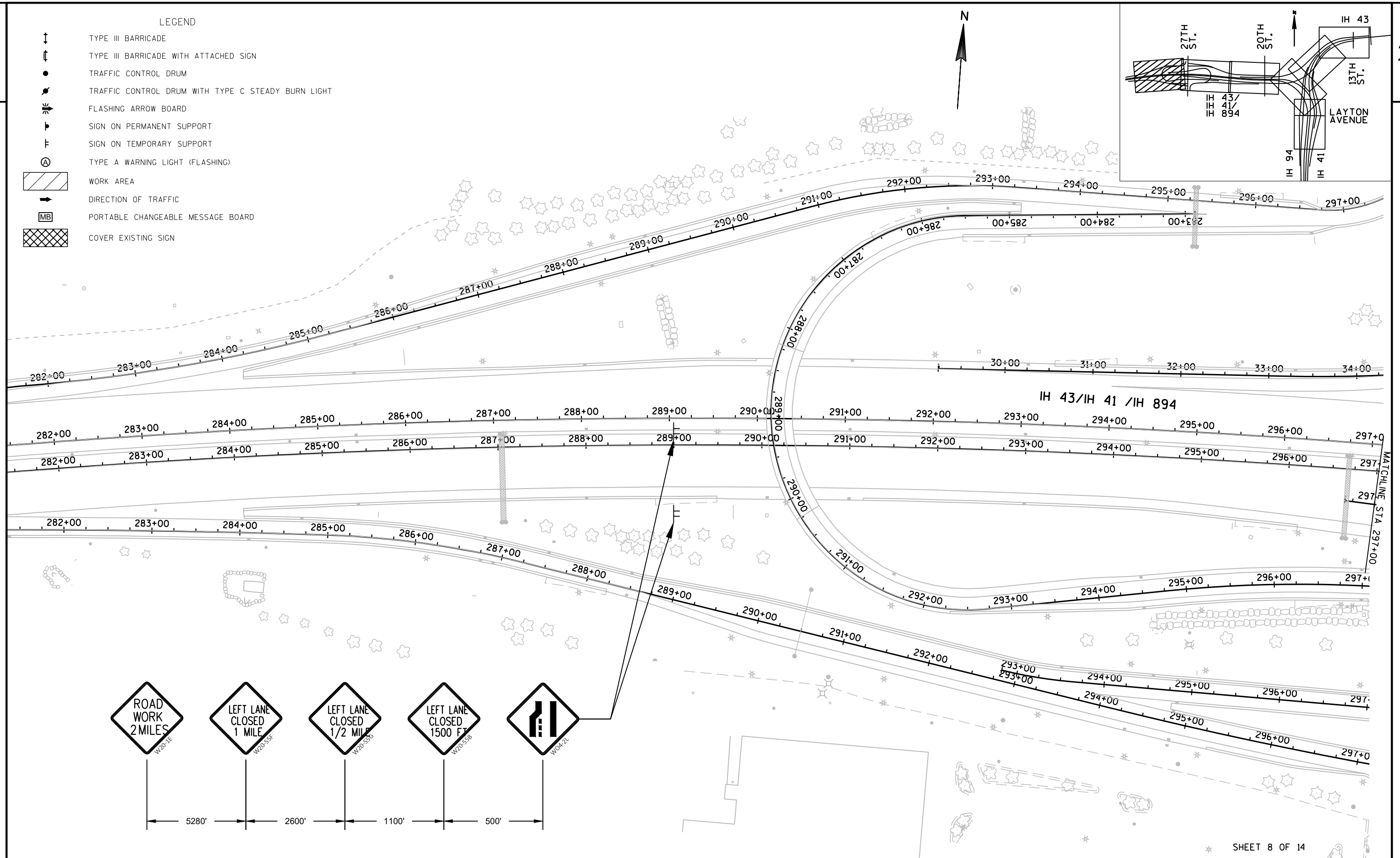


SHEET 7 OF 14

PROJECT NO: 1000-13-75	HWY: IH 41/IH 43/IH 894	COUNTY: MILWAUKEE	TRAFFIC CONTROL PLAN - STAGE 2A	SHEET	E
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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
	TYPE A WARNING LIGHT (FLASHING)
	WORK AREA
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	COVER EXISTING SIGN



PROJECT NO: 1000-13-75

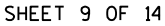
HWY: IH 41/43/894

COUNTY: MILWAUKEE

TRAFFIC CONTROL PLAN - STAGE 2B

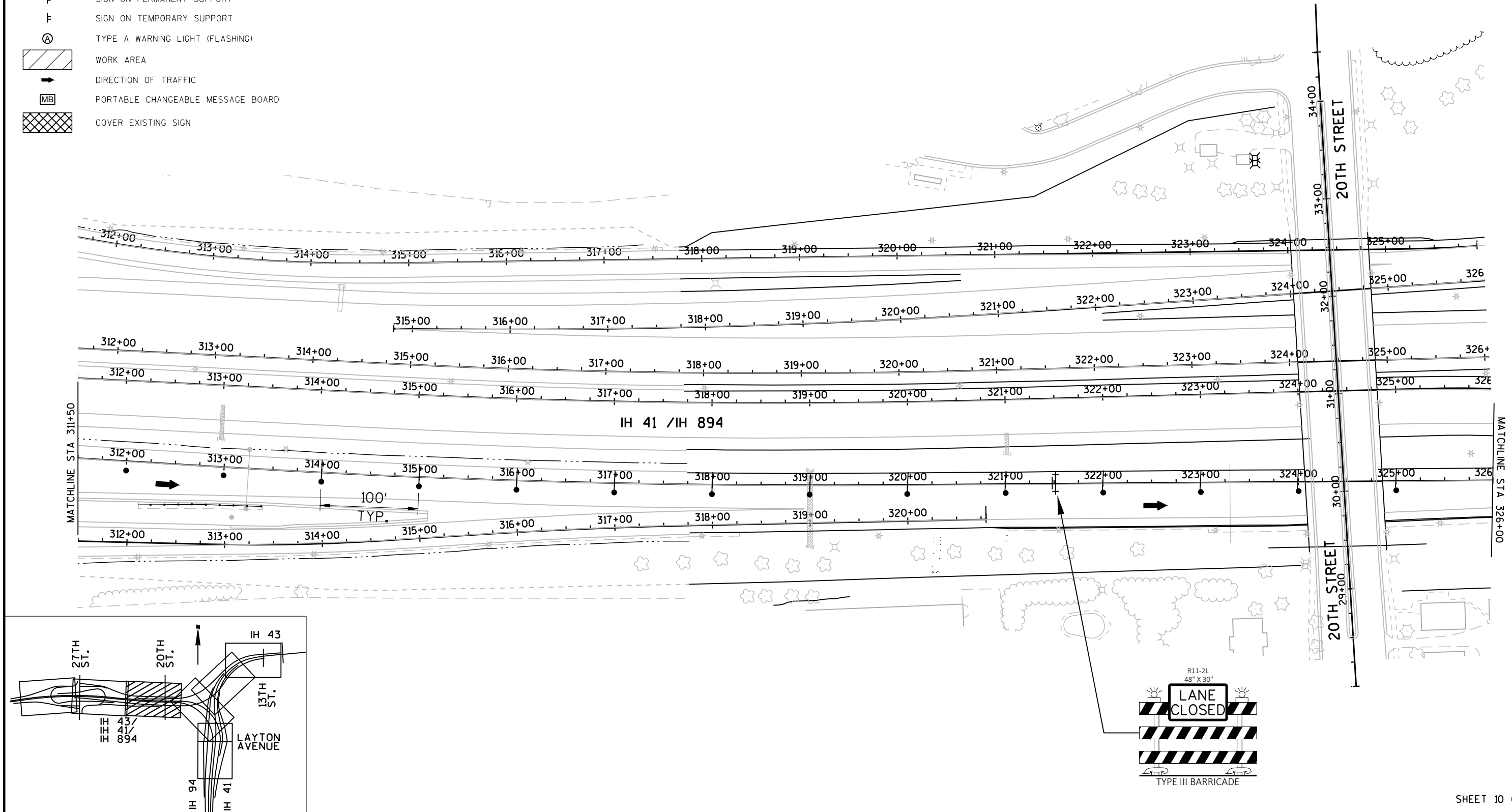
SHEET

E



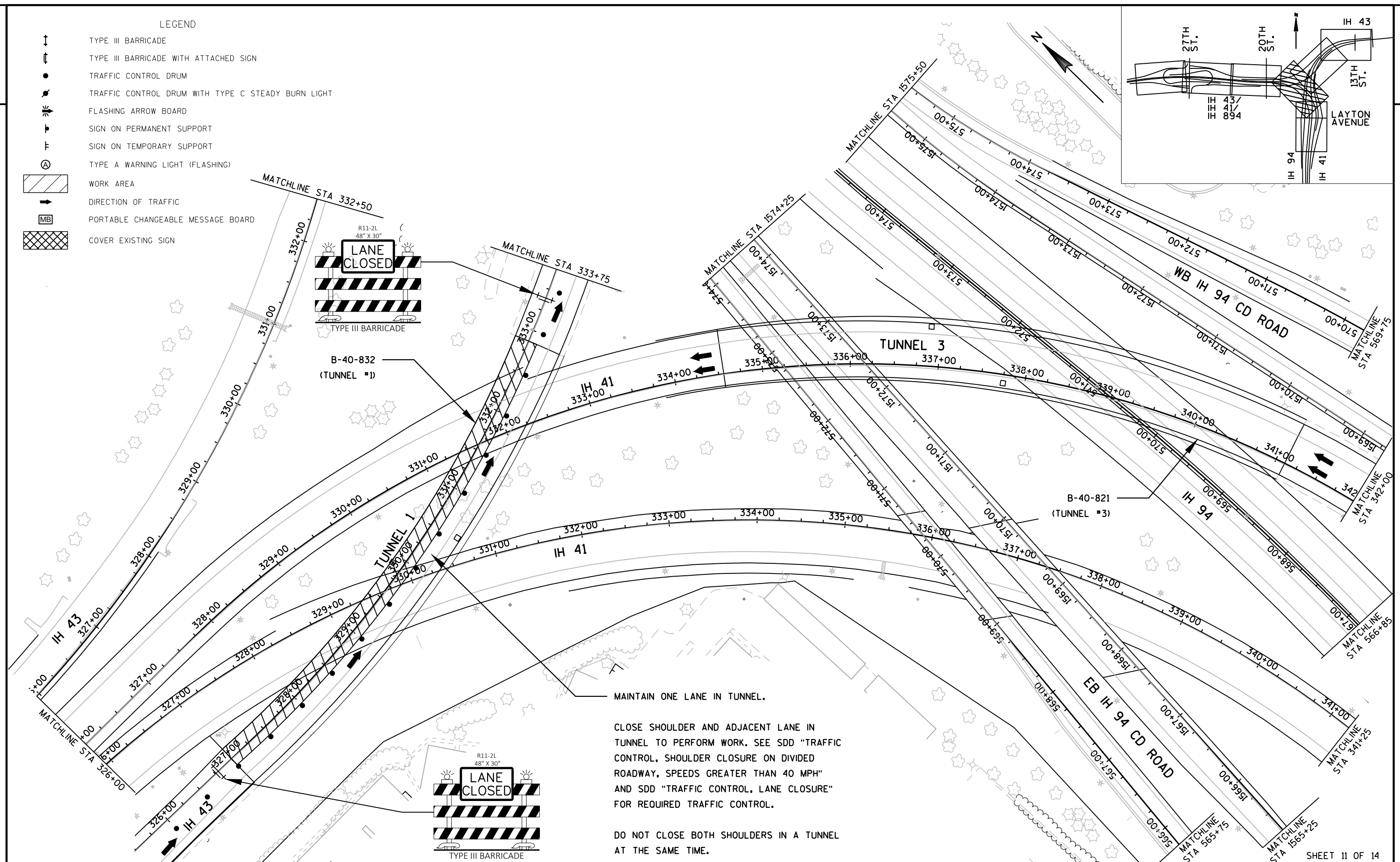
LEGEND

- 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
- TYPE A WARNING LIGHT (FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC
- PORTABLE CHANGEABLE MESSAGE BOARD
- COVER EXISTING SIGN



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
	TYPE A WARNING LIGHT (FLASHING)
	WORK AREA
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE BOARD
	COVER EXISTING SIGN



PROJECT NO: 1000-13-75

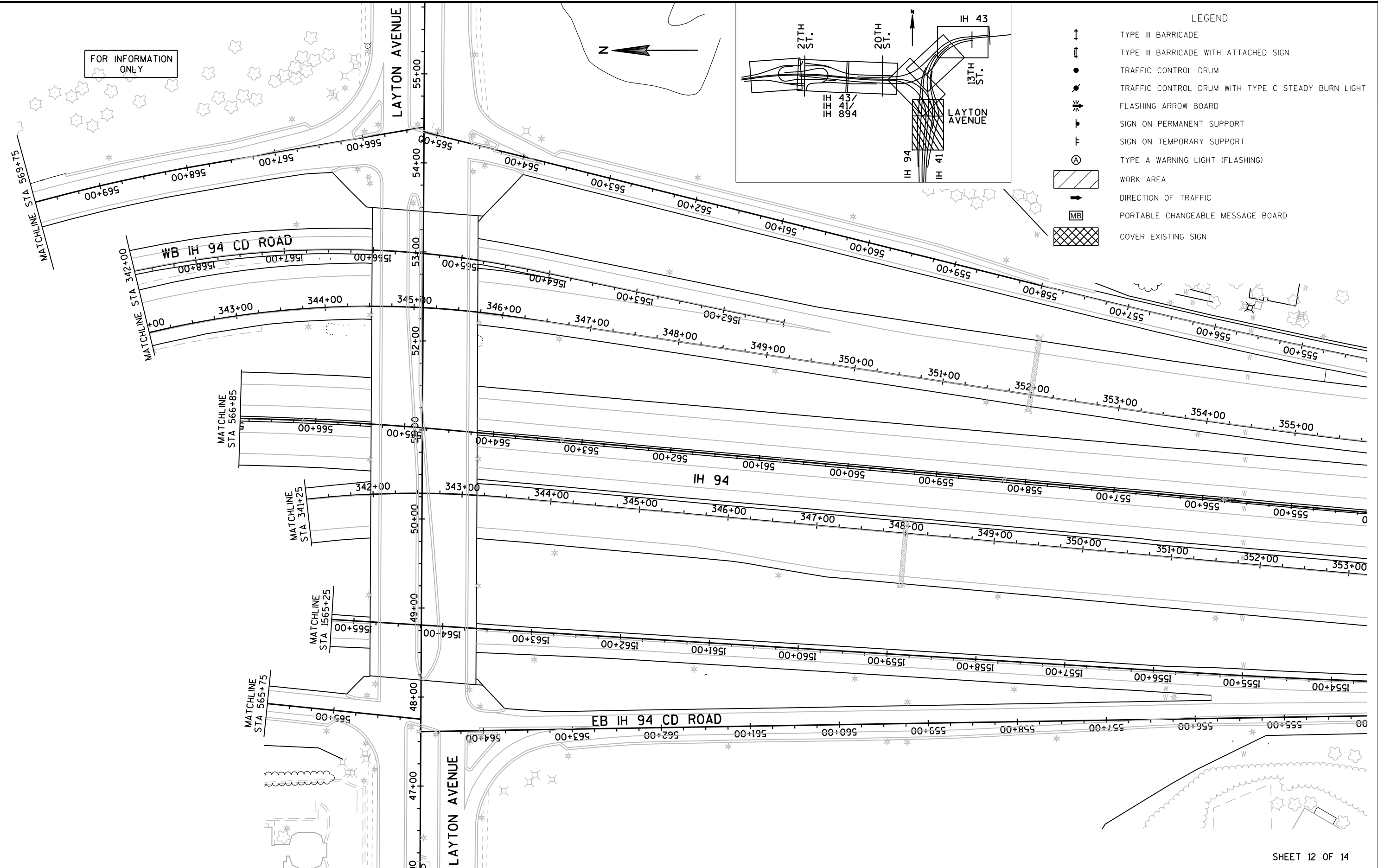
HWY: IH 41/43/894

COUNTY: MILWAUKEE

TRAFFIC CONTROL PLAN - STAGE 2B

SHEET

E



PROJECT NO: 1000-13-75

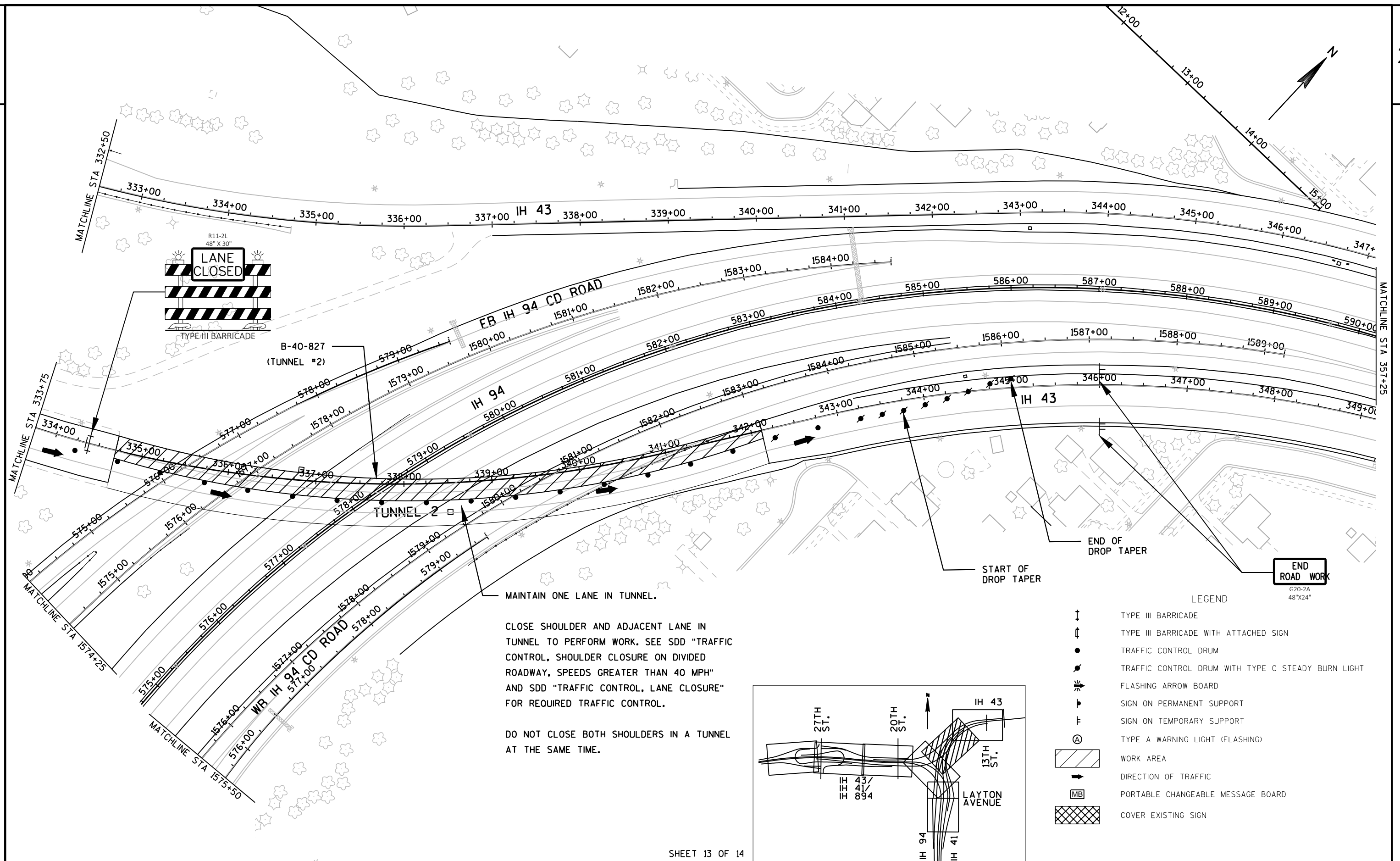
HWY: IH 41/43/894

COUNTY: MILWAUKEE

TRAFFIC CONTROL PLAN - STAGE 2B

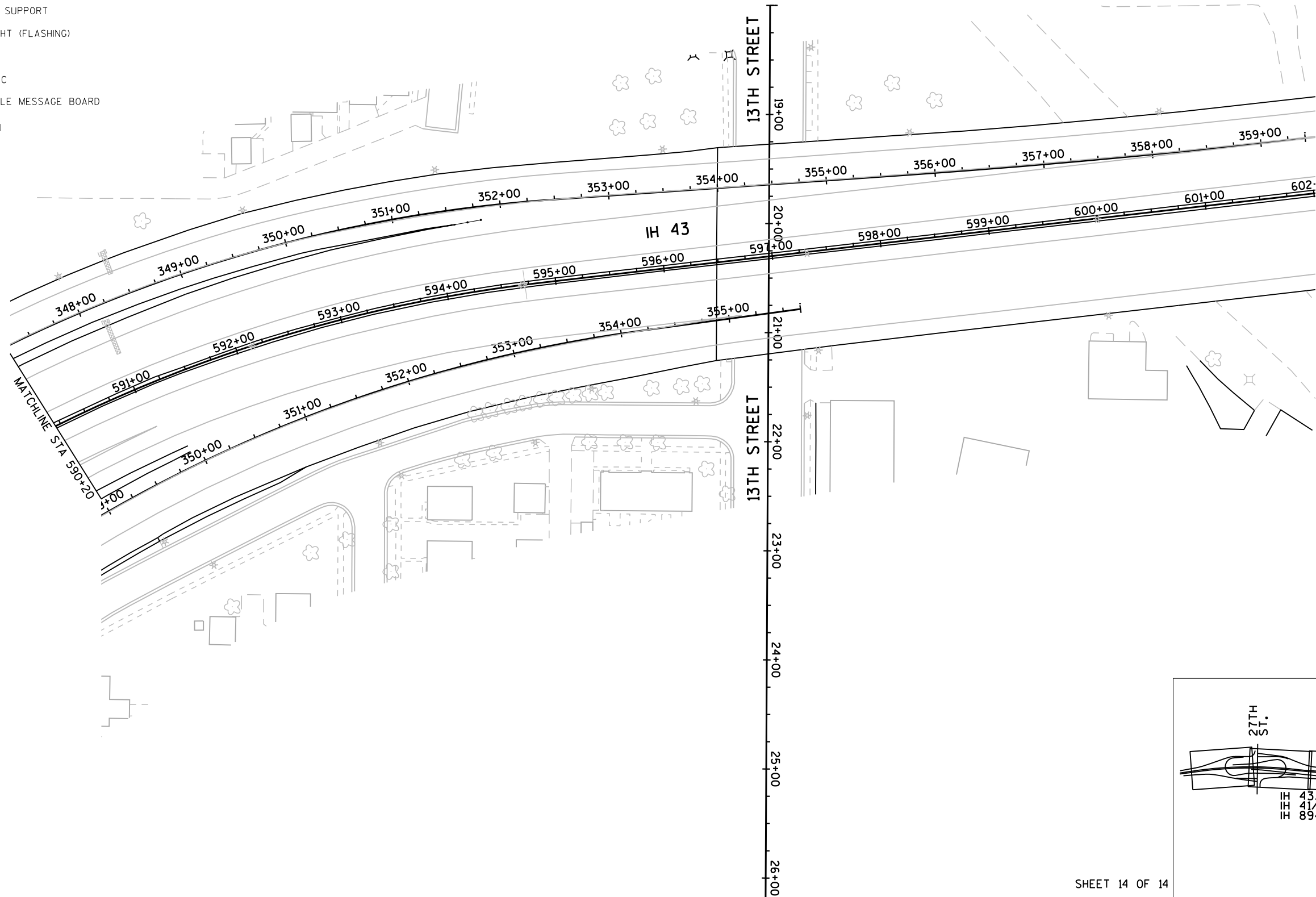
SHEET

E

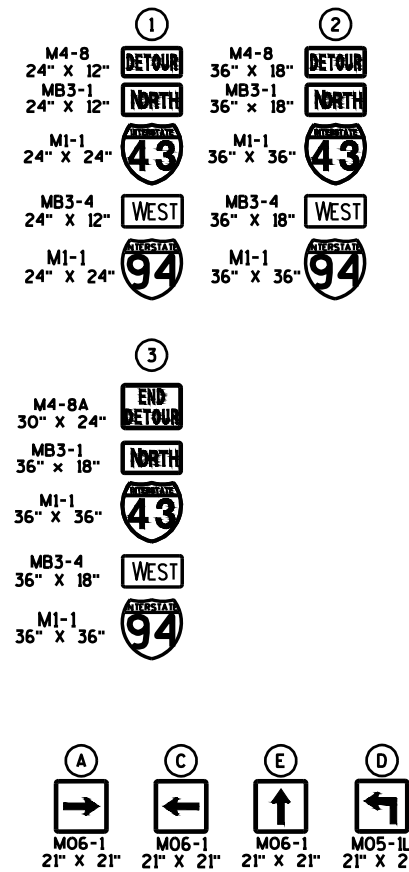


- LEGEND
- TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - FLASHING ARROW BOARD
 - SIGN ON PERMANENT SUPPORT
 - SIGN ON TEMPORARY SUPPORT
 - TYPE A WARNING LIGHT (FLASHING)
 - WORK AREA
 - DIRECTION OF TRAFFIC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

FOR INFORMATION ONLY



SHEET 14 OF 14



	PROPOSED SIGN MOUNTED ON POST(S)
	TRAFFIC CONTROL DETOUR SIGNS
	DETOUR ROUTE
XXX	CLOSURE
	TRAFFIC FLOW ARROW
	TRAFFIC CONTROL SIGN PORTABLE CHANGEABLE MESSAGE
	WORK ZONE

Estimate Of Quantities

1000-13-75					
Line	Item	Item Description	Unit	Total	Qty
0002	204.9060.S	Removing (item description) 1001. Luminaires Tunnel Lighting	EACH	1,378.000	1,378.000
0004	204.9060.S	Removing (item description) 1002. Luminaires Underdeck Lighting	EACH	7.000	7.000
0006	619.1000	Mobilization	EACH	1.000	1.000
0008	643.0300	Traffic Control Drums	DAY	6,280.000	6,280.000
0010	643.0420	Traffic Control Barricades Type III	DAY	1,200.000	1,200.000
0012	643.0705	Traffic Control Warning Lights Type A	DAY	1,020.000	1,020.000
0014	643.0715	Traffic Control Warning Lights Type C	DAY	8,600.000	8,600.000
0016	643.0800	Traffic Control Arrow Boards	DAY	140.000	140.000
0018	643.0900	Traffic Control Signs	DAY	1,780.000	1,780.000
0020	643.0920	Traffic Control Covering Signs Type II	EACH	100.000	100.000
0022	643.1050	Traffic Control Signs PCMS	DAY	70.000	70.000
0024	643.1055.S	Truck or Trailer Mounted Attenuator	DAY	70.000	70.000
0026	643.5000	Traffic Control	EACH	1.000	1.000
0028	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	1,000.000	1,000.000
0030	655.0610	Electrical Wire Lighting 12 AWG	LF	14,000.000	14,000.000
0032	655.0615	Electrical Wire Lighting 10 AWG	LF	60,000.000	60,000.000
0034	655.0640	Electrical Wire Lighting 1 AWG	LF	54.000	54.000
0036	SPV.0060	Special 1001. Luminaires Tunnel Lighting LED (DAYTIME)	EACH	563.000	563.000
0038	SPV.0060	Special 1002. Luminaires Tunnel Lighting LED (NIGHTIME)	EACH	52.000	52.000
0040	SPV.0060	Special 1003. Luminaires Probeam LED	EACH	7.000	7.000
0042	SPV.0060	Special 1004. Tunnel Lighting Mounting Brackets	EACH	615.000	615.000
0044	SPV.0060	Special 1005. Junction Boxes Steel 18x12x6-Inch Coated	EACH	20.000	20.000
0046	SPV.0060	Special 1006. Junction Boxes Steel 6x6x4-Inch Coated	EACH	20.000	20.000
0048	SPV.0060	Special 1007. Distribution Center Preventative Maintenance	EACH	3.000	3.000
0050	SPV.0060	Special 1008. Tunnel Cleaning - Marquette Interchange Tory Hill Tunnel	EACH	1.000	1.000
0052	SPV.0060	Special 1009. Tunnel Cleaning - Mitchell Interchange Tunnel 1	EACH	1.000	1.000
0054	SPV.0060	Special 1010. Tunnel Cleaning - Mitchell Interchange Tunnel 2	EACH	1.000	1.000
0056	SPV.0090	Special 1001. Liquid Tight Flexible Metallic Conduit 3/4-Inch	LF	3,600.000	3,600.000
0058	SPV.0090	Special 1002. Rigid Galvanized Steel Conduit 1-Inch Coated	LF	500.000	500.000
0060	SPV.0090	Special 1003. Rigid Galvanized Steel Conduit 1 1/4-Inch Coated	LF	500.000	500.000

Estimate Of Quantities

1000-13-75

Line	Item	Item Description	Unit	Total	Qty
0062	SPV.0105	Special 1001. Control System Preventive and Maintenance	LS	1.000	1.000
0064	SPV.0105	Special 1002. Lighting System Intergrator	LS	1.000	1.000

WISCONSIN DEPARTMENT OF TRANSPORTATION - SOUTHEAST REGION - WAUKESHA

LIGHTING MAINTENANCE - HIGHWAY LIGHTING DISTRIBUTION CENTERS

CATEGORY	STAGE	SYSTEM/ LABEL	FORMAT / DESCRIPTION	MAINTENANCE / FIRST RESPONSE	COUNTY	HIGHWAY	DISTRIBUTION CENTER LOCATION	BRANCH CIRCUIT VOLTAGE	FIELD WARNING METHOD	COMMENTS
0010	1	HL-40-QC	SERVICE	MILW CO / MILW CO	MILWAUKEE	IH 43	N. 11TH ST. - NE CORNER WITH W. WELLS ST.	480Y / 277	ISOLATED NEUTRAL	TORY HILL TUNNEL (STRUCTURE B-40-1222)
		HL-40-TX	SERVICE WITH DERIVED HUT	MILW CO / MILW CO	MILWAUKEE	IH 41 / IH 43 / IH 894	S. 20TH ST. - SOUTH OF W. VAN NORMAN AVE.	480Y / 277	ISOLATED NEUTRAL	MITCHELL TUNNEL #1 (STRUCTURE B-40-832)
		HL-40-TY	SERVICE WITH DERIVED HUT	MILW CO / MILW CO	MILWAUKEE	IH 41 / IH 43 / IH 894	S. 15TH PL. - NORTH OF W. VAN NORMAN AVE.	480Y / 277	ISOLATED NEUTRAL	MITCHELL TUNNEL #2 (STRUCTURE B-40-827)

LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
204.9060.S.1002 REMOVING LUMINAIRES UNDERDECK LIGHTING

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001			204.9060.S.1002	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 100 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	REMOVING LUMINAIRES UNDERDECK LIGHTING	
							EACH	EACH	EACH	EACH	
0010	HL-40-QC	1	36	DAY (D)	--	--	--	--	1	--	--
			37	B	--	--	--	--	1	--	--
			38	B	--	--	--	--	1	--	--
			39	B1	--	--	--	--	1	--	--
			40	B2	--	--	--	--	1	--	--
			41	B	--	--	--	--	1	--	--
			42	B	--	--	--	--	1	--	--
			43	B1	--	--	--	--	1	--	--
			44	B2	--	--	--	--	1	--	--
			45	B	--	--	--	--	1	--	--
			46	B1	--	--	--	--	1	--	--
			47	B	--	--	--	--	1	--	--
			48	DAY (D)	--	--	--	--	1	--	--
			49	B2	--	--	--	--	1	--	--
			50	B	--	--	--	--	1	--	--
			51	B1	--	--	--	--	1	--	--
			52	B	--	--	--	--	1	--	--
			53	B2	--	--	--	--	1	--	--
			54	B	--	--	--	--	1	--	--
			55	B	--	--	--	--	1	--	--
			56	B1	--	--	--	--	1	--	--
			57	NIGHT (N)	--	--	--	1	--	--	--
			58	B	--	--	--	--	1	--	--
			59	B1	--	--	--	--	1	--	--
			60	B	--	--	--	--	1	--	--
			61	B	--	--	--	--	1	--	--
			62	B	--	--	--	--	1	--	--
			63	B1	--	--	--	--	1	--	--
			64	B2	--	--	--	--	1	--	--
			65	B	--	--	--	--	1	--	--
			66	B	--	--	--	--	1	--	--
			67	B1	--	--	--	--	1	--	--
			68	B2	--	--	--	--	1	--	--
			69	B	--	--	--	--	1	--	--
			70	B	--	--	--	--	1	--	--
1			SUBTOTAL				0	1	34	0	

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LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
204.9060.S.1002 REMOVING LUMINAIRES UNDERDECK LIGHTING

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001		204.9060.S.1002		COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 100 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	REMOVING LUMINAIRES UNDERDECK LIGHTING	
							EACH	EACH	EACH	EACH	
0010	HL-40-QC	1	71	B1	--	--	--	--	1	--	--
			72	DAY (D)	--	--	--	--	1	--	--
			73	NIGHT (N)	--	--	--	1	--	--	--
			74	B	--	--	--	--	1	--	--
			75	B1	--	--	--	--	1	--	--
			76	B2	--	--	--	--	1	--	--
			77	B	--	--	--	--	1	--	--
			78	B	--	--	--	--	1	--	--
			79	B1	--	--	--	--	1	--	--
			80	B2	--	--	--	--	1	--	--
			81	B	--	--	--	--	1	--	--
			82	B	--	--	--	--	1	--	--
			83	B	--	--	--	--	1	--	--
			84	DAY (D)	--	--	--	--	1	--	--
			85	B	--	--	--	--	1	--	--
			86	B	--	--	--	--	1	--	--
			87	B	--	--	--	--	1	--	--
			88	B1	--	--	--	--	1	--	--
			89	B2	--	--	--	--	1	--	--
			90	B	--	--	--	--	1	--	--
			91	B	--	--	--	--	1	--	--
			92	B1	--	--	--	--	1	--	--
			93	B2	--	--	--	--	1	--	--
			94	NIGHT (N)	--	--	--	1	--	--	--
			95	B1	--	--	--	--	1	--	--
			96	DAY (D)	--	--	--	--	1	--	--
			97	B	--	--	--	--	1	--	--
			98	B	--	--	--	--	1	--	--
			99	B1	--	--	--	--	1	--	--
			100	B2	--	--	--	--	1	--	--
			101	B	--	--	--	--	1	--	--
			102	B	--	--	--	--	1	--	--
			103	B1	--	--	--	--	1	--	--
			104	B2	--	--	--	--	1	--	--
			105	B	--	--	--	--	1	--	--
1			SUBTOTAL				0	2	33	0	

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LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
204.9060.S.1002 REMOVING LUMINAIRES UNDERDECK LIGHTING

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001			204.9060.S.1002	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 100 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	REMOVING LUMINAIRES UNDERDECK LIGHTING	
							EACH	EACH	EACH	EACH	
0010	HL-40-QC	1	106	B	--	--	--	--	1	--	--
			107	B1	--	--	--	--	1	--	--
			108	DAY (D)	--	--	--	--	1	--	--
			109	B	--	--	--	--	1	--	--
			110	B1	--	--	--	--	1	--	--
			111	B	--	--	--	--	1	--	--
			112	B2	--	--	--	--	1	--	--
			113	NIGHT (N)	--	--	--	1	--	--	--
			114	B	--	--	--	--	1	--	--
			115	B	--	--	--	--	1	--	--
			116	B1	--	--	--	--	1	--	--
			117	B2	--	--	--	--	1	--	--
			118	B	--	--	--	--	1	--	--
			119	B1	--	--	--	--	1	--	--
			120	DAY (D)	--	--	--	--	1	--	--
			121	B	--	--	--	--	1	--	--
			122	B1	--	--	--	--	1	--	--
			123	B2	--	--	--	--	1	--	--
			124	B1	--	--	--	--	1	--	--
			125	B2	--	--	--	--	1	--	--
			126	B1	--	--	--	--	1	--	--
			127	B2	--	--	--	--	1	--	--
			128	B1	--	--	--	--	1	--	--
			129	DAY (D)	--	--	--	--	1	--	--
			130	B1	--	--	--	--	1	--	--
			131	B2	--	--	--	--	1	--	--
			132	B1	--	--	--	--	1	--	--
			133	B1	--	--	--	--	1	--	--
			134	NIGHT (N)	--	--	--	1	--	--	--
			135	B2	--	--	--	--	1	--	--
			136	B1	--	--	--	--	1	--	--
			137	DAY (D)	--	--	--	--	1	--	--
			138	B2	--	--	--	--	1	--	--
			139	B1	--	--	--	--	1	--	--
			140	B2	--	--	--	--	1	--	--
1			SUBTOTAL				0	2	33	0	

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LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
204.9060.S.1002 REMOVING LUMINAIRES UNDERDECK LIGHTING

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001			204.9060.S.1002	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 100 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	REMOVING LUMINAIRES UNDERDECK LIGHTING	
							EACH	EACH	EACH	EACH	
0010	HL-40-QC	1	141	B1	--	--	--	--	1	--	--
			142	B2	--	--	--	--	1	--	--
			143	B1	--	--	--	--	1	--	--
			144	DAY (D)	--	--	--	--	1	--	--
			145	B1	--	--	--	--	1	--	--
			146	B2	--	--	--	--	1	--	--
			147	B1	--	--	--	--	1	--	--
			148	B2	--	--	--	--	1	--	--
			149	B1	--	--	--	--	1	--	--
			150	B2	--	--	--	--	1	--	--
			151	NIGHT (N)	--	--	--	1	--	--	--
			152	DAY (D)	--	--	--	--	1	--	--
			153	B2	--	--	--	--	1	--	--
			154	DAY (D)	--	--	--	--	1	--	--
			155	NIGHT (N)	--	--	--	--	--	1	200 WATT HPS
			156	DAY (D)	--	--	--	--	--	1	400 WATT HPS
			157	NIGHT (N)	--	--	--	--	--	1	200 WATT HPS
			158	DAY (D)	--	--	--	--	--	1	400 WATT HPS
			159	NIGHT (N)	--	--	--	--	--	1	200 WATT HPS
			160	NIGHT (N)	--	--	--	--	--	1	200 WATT HPS
			161	NIGHT (N)	--	--	--	--	--	1	200 WATT HPS
		1	SUBTOTAL				0	1	13	7	
HL-40-QC		SUBTOTAL					0	8	146	7	

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LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
204.9060.S.1002 REMOVING LUMINAIRES UNDERDECK LIGHTING

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001			204.9060.S.1002	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 100 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	REMOVING LUMINAIRES UNDERDECK LIGHTING	
							EACH		EACH	EACH	
0010	HL-40-TX	2A	1	--	--	--	--	46	--	--	
			2	--	--	--	--	53	--	--	
			3	--	--	--	--	45	--	--	
			4	--	--	--	--	53	--	--	
			5	--	--	--	--	45	--	--	
			6	--	--	--	--	53	--	--	
			NIGHTTIME 1	--	--	15	--	--	--	--	
			EMERGENCY 1	--	--	5	--	--	--	--	
		2A			20	0	295	0			
		2B	7	--	--	--	--	44	--	--	
			8	--	--	--	--	52	--	--	
			9	--	--	--	--	44	--	--	
			10	--	--	--	--	52	--	--	
			11	--	--	--	--	43	--	--	
			12	--	--	--	--	52	--	--	
			NIGHTTIME 2	--	--	14	--	--	--	--	
			EMERGENCY 2	--	--	6	--	--	--	--	
		2B			20	0	287	0			
		HL-40-TX	SUBTOTAL			40	0	582	0		

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LIGHTING - REMOVALS

204.9060.S.1001 REMOVING LUMINAIRES TUNNEL LIGHTING
204.9060.S.1002 REMOVING LUMINAIRES UNDERDECK LIGHTING

CATEGORY	SYSTEM	STAGE	LUMINAIRE NUMBER	DESCRIPTION / SEQUENCE	LOCATION		204.9060.S.1001			204.9060.S.1002	COMMENTS
					STATION	OFFSET	REMOVING LUMINAIRES TUNNEL LIGHTING 100 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 200 WATT HPS	REMOVING LUMINAIRES TUNNEL LIGHTING 400 WATT HPS	REMOVING LUMINAIRES UNDERDECK LIGHTING	
							EACH		EACH	EACH	
0010	HL-40-TY	2A	1	--	--	--	--	42	--	--	
			2	--	--	--	--	53	--	--	
			3	--	--	--	--	41	--	--	
			4	--	--	--	--	53	--	--	
			5	--	--	--	--	41	--	--	
			6	--	--	--	--	53	--	--	
			NIGHTTIME 1	--	--	16	--	--	--	--	
			EMERGENCY 1	--	--	7	--	--	--	--	
		2A		23	0	283	0				
		2B	7	--	--	--	--	39	--	--	
			8	--	--	--	--	52	--	--	
			9	--	--	--	--	39	--	--	
			10	--	--	--	--	52	--	--	
			11	--	--	--	--	39	--	--	
			12	--	--	--	--	52	--	--	
			NIGHTTIME 2	--	--	17	--	--	--	--	
			EMERGENCY 2	--	--	6	--	--	--	--	
		2B		23	0	273	0				
	HL-40-TY	SUBTOTAL		46	0	556	0				
0010		TOTAL		86	8	1,284	7				

LIGHTING - TORY HILL TUNNEL LIGHTING (HL-40-QC)
480Y/277 VAC 4-WIRE

- 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
- 655.0610 ELECTRICAL WIRE LIGHTING 12 AWG
- 655.0615 ELECTRICAL WIRE LIGHTING 10 AWG
- SPV.0060.1001 LUMNAIRES TUNNEL LIGHTING LED (DAYTIME)
- SPV.0060.1002 LUMNAIRES TUNNEL LIGHTING LED (NIGHTTIME)
- SPV.0060.1003 LUMNAIRES PROBEAM LED
- SPV.0060.1004 TUNNEL FIXTURE MOUNTING BRACKET
- SPV.0060.1005 JUNCTION BOXES STEEL 18 X 12 X 6-INCH COATED
- SPV.0060.1006 JUNCTION BOXES STEEL 6 X 6 X 4-INCH
- SPV.0090.1001 LIQUID TIGHT 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	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	SPV.0060.1001 LUMNAIRES TUNNEL LIGHTING LED (DAYTIME)	SPV.0060.1002 LUMNAIRES TUNNEL LIGHTING LED (NIGHTTIME)	SPV.0060.1003 LUMNAIRES PROBEAM LED	SPV.0060.1004 TUNNEL FIXTURE MOUNTING BRACKET	SPV.0060.1005 JUNCTION BOXES STEEL 18X12X6-INCH COATED	SPV.0060.1006 JUNCTION BOXES STEEL 6X6X4-INCH COATED	SPV.0090.1001 LIQUID TIGHT 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	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LF	LF	LF	
0010	1	HL-40-QC	B-40-1222	TO TUNNEL	200	--	500	--	--	--	--	--	--	--	--	--	FROM THE CONTROLLER HL-40-QC
				POWER IN TUNNEL	--	2,000	3,500	133	12	7	145	4	4	800	100	100	FROM JB-C17 TO LIGHT FIXTURES
				DIMMING IN TUNNEL	--	--	--	--	--	--	--	--	--	--	--	--	FIXTURE WITH DIMMING CAPABILITIES
		HL-40-QC		SUBTOTAL	200	2,000	4,000	133	12	7	145	4	4	800	100	100	

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LIGHTING - MITCHELL TUNNEL 1 LIGHTING (HL-40-TX)
480Y/277 VAC 4-WIRE

- 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
- 655.0610 ELECTRICAL WIRE LIGHTING 12 AWG
- 655.0615 ELECTRICAL WIRE LIGHTING 10 AWG
- SPV.0060.1001 LUMNAIRES TUNNEL LIGHTING LED (DAYTIME)
- SPV.0060.1002 LUMNAIRES TUNNEL LIGHTING LED (NIGHTTIME)
- SPV.0060.1003 LUMNAIRES PROBEAM LED
- SPV.0060.1004 TUNNEL FIXTURE MOUNTING BRACKET
- SPV.0060.1005 JUNCTION BOXES STEEL 18 X 12 X 6-INCH COATED
- SPV.0060.1006 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	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	SPV.0060.1001 LUMNAIRES TUNNEL LIGHTING LED (DAYTIME)	SPV.0060.1002 LUMNAIRES TUNNEL LIGHTING LED (NIGHTTIME)	SPV.0060.1003 LUMNAIRES PROBEAM LED	SPV.0060.1004 TUNNEL FIXTURE MOUNTING BRACKET	SPV.0060.1005 JUNCTION BOXES STEEL 18X12X6-INCH COATED	SPV.0060.1006 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	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LF	LF	LF	
0010	1	HL-40-TX	B-40-832	TO TUNNEL	200	--	8,000	--	--	--	--	--	--	--	--	--	FROM THE CONTROLLER HL-40-TX
					200	--	8,000	--	--	--	--	--	--	--	--	--	--
				POWER IN TUNNEL	--	3,000	6,000	143	9	--	152	4	4	800	100	100	--
					--	3,000	6,000	143	9	--	152	4	4	800	100	100	--
				DIMMING IN TUNNEL	--	--	--	--	--	--	--	--	--	--	--	--	FIXTURE WITH DIMMING CAPABILITIES
		HL-40-TX		SUBTOTAL	400	6,000	28,000	286	18	0	304	8	8	1,600	200	200	

CONTINUED ON NEXT PAGE

LIGHTING - MITCHELL TUNNEL 2 LIGHTING (HL-40-TY)
480Y/277 VAC 4-WIRE

- 652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
- 655.0610 ELECTRICAL WIRE LIGHTING 12 AWG
- 655.0615 ELECTRICAL WIRE LIGHTING 10 AWG
- SPV.0060.1001 LUMNAIRES TUNNEL LIGHTING LED (DAYTIME)
- SPV.0060.1002 LUMNAIRES TUNNEL LIGHTING LED (NIGHTTIME)
- SPV.0060.1003 LUMNAIRES PROBEAM LED
- SPV.0060.1004 TUNNEL FIXTURE MOUNTING BRACKET
- SPV.0060.1005 JUNCTION BOXES STEEL 18 X 12 X 6-INCH COATED
- SPV.0060.1006 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	655.0610 ELECTRICAL WIRE LIGHTING 12 AWG	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG	SPV.0060.1001 LUMNAIRES TUNNEL LIGHTING LED (DAYTIME)	SPV.0060.1002 LUMNAIRES TUNNEL LIGHTING LED (NIGHTTIME)	SPV.0060.1003 LUMNAIRES PROBEAM LED	SPV.0060.1004 TUNNEL FIXTURE MOUNTING BRACKET	SPV.0060.1005 JUNCTION BOXES STEEL 18X12X6-INCH COATED	SPV.0060.1006 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	EACH	EACH	EACH	EACH	EACH	EACH	EACH	LF	LF	LF	
0010	1	HL-40-TY	B-40-827	TO TUNNEL	200	--	8,000	--	--	--	--	--	--	--	--	--	FROM THE CONTROLLER HL-40-TY
				POWER IN TUNNEL	200	--	8,000	--	--	--	--	--	--	--	--	--	--
					--	3,000	6,000	72	11	--	83	4	4	600	100	100	--
					--	3,000	6,000	72	11	--	83	4	4	600	100	100	--
				DIMMING IN TUNNEL	--	--	--	--	--	--	--	--	--	--	--	--	FIXTURE WITH DIMMING CAPABILITIES
		HL-40-TY		SUBTOTAL	400	6,000	28,000	144	22	0	166	8	8	1,200	200	200	
0010		TOTAL			1,000	14,000	66,000	563	52	7	615	20	20	3,600	500	500	

PROJECT - MOBILIZATION

619.1000 MOBILIZATION

CATEGORY	STAGE	PROJECT	619.1000 MOBILIZATION	COMMENTS
EACH				
0010	1 / 2A / 2B	1000-13-75	1	--
0010	TOTAL		1	

PROJECT - TRAFFIC CONTROL

643.5000 TRAFFIC CONTROL

CATEGORY	STAGE	PROJECT	643.5000 TRAFFIC CONTROL	COMMENTS
EACH				
0010	1 / 2A / 2B	1000-13-75	1	--
0010	TOTAL		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
- 643.1055.S TRUCK OR TRAILER-MOUNTED ATTENUATOR

CATEGORY	STAGE	DESCRIPTION /LOCATION	STAGE DURATION DAYS	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	643.1055.S TRUCK OR TRAILER - MOUNTED ATTENUATOR	COMMENTS										
				EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	CYCLES**	SIGNS**	EACH	EACH**	DAY	EACH**	DAY			
0010	1	TORYHILL TUNNEL - RAMP NW	20	64	1,280	10	200	6	120	80	1,600	2	40	14	280	--	--	--	1	20	1	20	IH 43 NW RAMP
	STAGE 1	SUBTOTAL			1,280		200		120		1,600		40		280	--	--	0		20		20	
	2A	MITCHELL TUNNEL #1	25	80	2,000	16	400	10	250	100	2,500	1	25	20	500	10	5	50	1	25	1	25	IH 41 / 43 / 94 WN RAMP
		MITCHELL TUNNEL #2	25	20	500	4	100	8	200	40	1,000	1	25	10	250	10	5	50	0	0	0	0	IH 41 / 43 / 94 WN RAMP
	STAGE 2A	SUBTOTAL			2,500		500		450		3,500		50		750			100		25		25	
	2B	MITCHELL TUNNEL #1	25	80	2,000	16	400	10	250	100	2,500	1	25	20	500	--	--	--	1	25	1	25	IH 41 / 43 / 94 WN RAMP
		MITCHELL TUNNEL #2	25	20	500	4	100	8	200	40	1,000	1	25	10	250	--	--	--	0	0	0	0	IH 41 / 43 / 94 WN RAMP
	STAGE 2B	SUBTOTAL			2500		500		450		3500		50		750			0		25		25	
0010		TOTAL			6,280		1,200		1,020		8,600		140		1,780			100		70		70	

** 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.

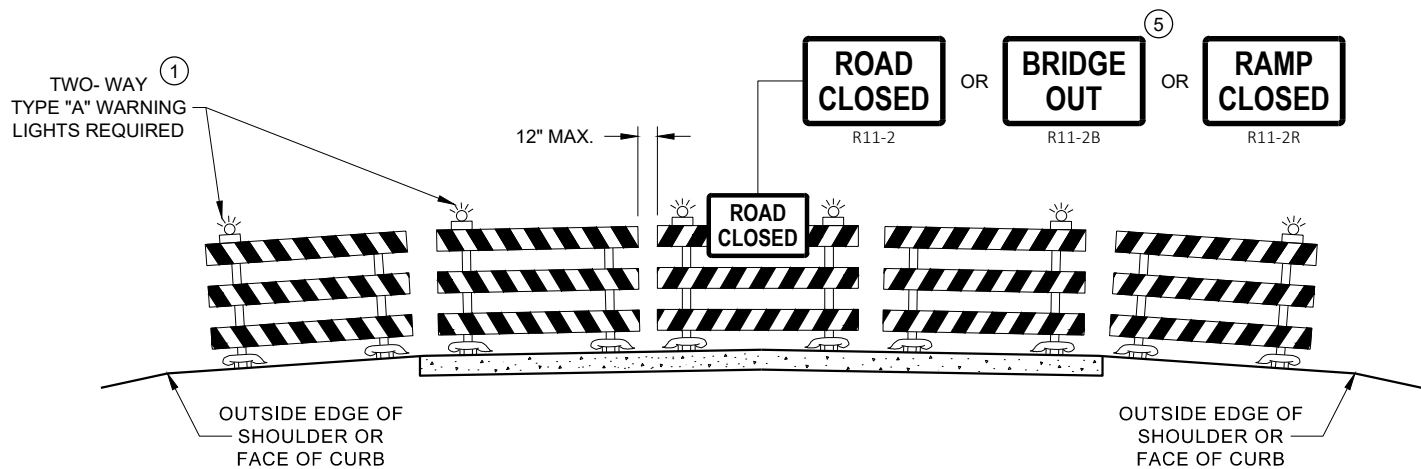
LIGHTING - CONTROL AND SERVICES
480Y/277 VAC 4-WIRE

- 655.0640 ELECTRICAL WIRE LIGHTING 1 AWG
- SPV.0060.1007 DISTRIBUTION CENTER PREVENTIVE AND MAINTENANCE
- SPV.0060.1008 TUNNEL CLEANING - MARQUETTE INTERCHANGE TORY HILL TUNNEL
- SPV.0060.1009 TUNNEL CLEANING - MITCHELL INTERCHANGE TUNNEL 1
- SPV.0060.1010 TUNNEL CLEANING - MITCHELL INTERCHANGE TUNNEL 2
- SPV.0105.1001 CONTROL SYSTEM PREVENTIVE AND MAINTENANCE
- SPV.0105.1002 LIGHTING SYSTEM INTEGRATOR

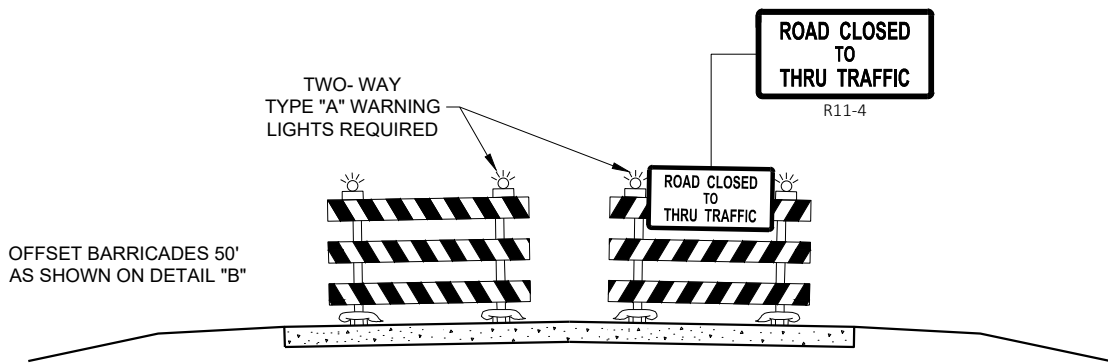
CATEGORY	STAGE	DESCRIPTION / SEQUENCE	LOCATION STATION	OFFSET	655.0640 ELECTRICAL WIRE LIGHTING 1 AWG	SPV.0060.1007 DISTRIBUTION CENTER PREVENTIVE AND MAINTENANACE	SPV.0060.1008 TUNNEL CLEANING MARQUETTE INTERCHANGE TORY HILL TUNNEL	SPV.0060.1009 TUNNEL CLEANING MITCHELL INTERCHANGE TUNNEL 1	SPV.0060.1010 TUNNEL CLEANING MITCHELL INTERCHANGE TUNNEL 2	SPV.0105.1001 CONTROL SYSTEM PREVENTIVE AND MAINTENANCE	SPV.0105.1002 LIGHTING SYSTEM INTEGRATOR	COMMENTS
					LF	EACH	EACH	EACH	EACH	LS	LS	
0010	1 / 2A / 2B	HL-40-QC	--	--	18	1	1	--	--	0.2	0.2	TORY HILL TUNNEL (STRUCTURE B-40-1222)
		HL-40-TX	--	--	18	1	--	1	--	0.4	0.4	MITCHELL TUNNEL #1 (STRUCTURE B-40-832)
		HL-40-TY	--	--	18	1	--	--	1	0.4	0.4	MITCHELL TUNNEL #2 (STRUCTURE B-40-827)
0010				TOTAL	54	3	1	1	1	1	1	

Standard Detail Drawing List

15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08D	ON RAMP LANE CLOSURE
15C02-08E	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
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D03-05	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER
15D04-01	TRAFFIC CONTROL, RAMP CONSTRUCTION STAGING
15D12-08A	TRAFFIC CONTROL, LANE CLOSURE
15D14-03	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D15-05C	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-05E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D16-04	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

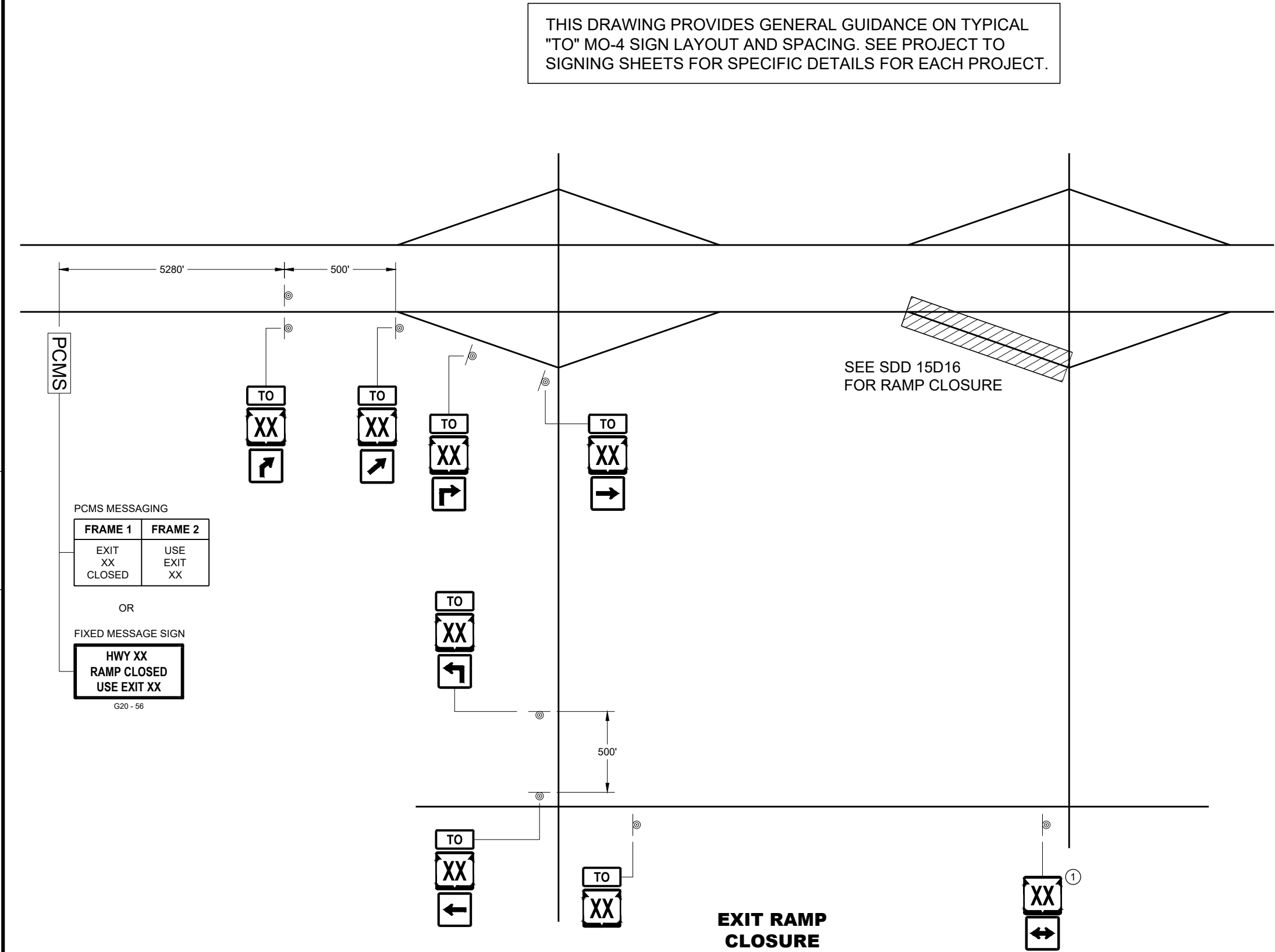
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



LEGEND

- SIGN ON PERMANENT SUPPORT
- PORTABLE CHANGEABLE MESSAGE SIGN

- MO4 - 5
- M1 - 4 OR M1 - 6 OR 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.

OFF RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /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.

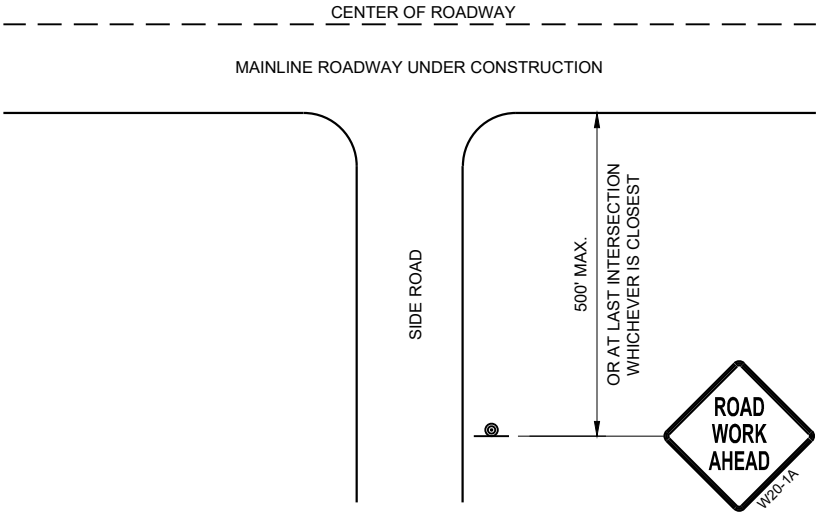
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

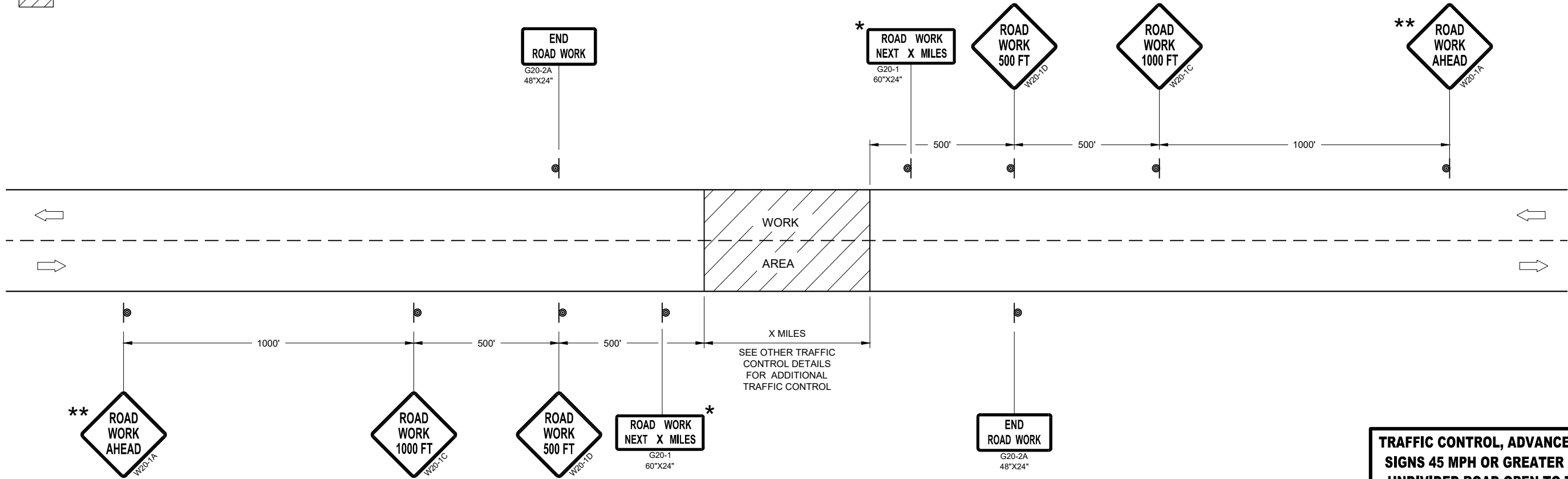
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

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 TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

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

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

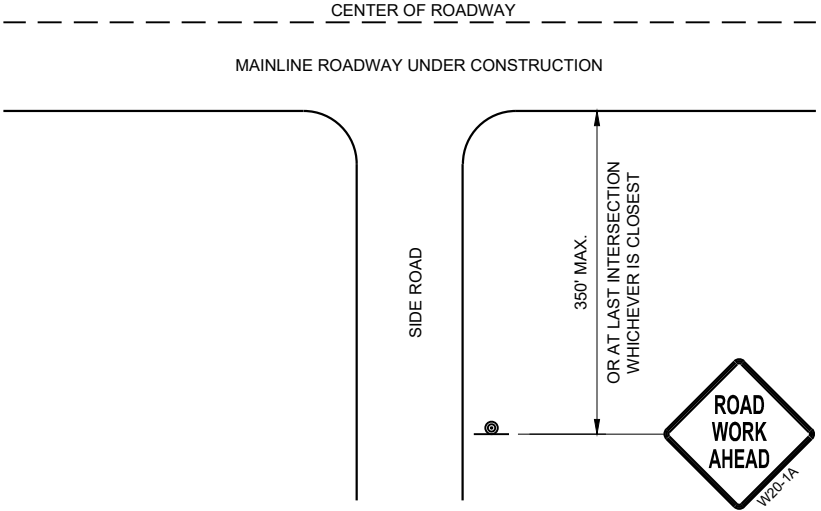
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

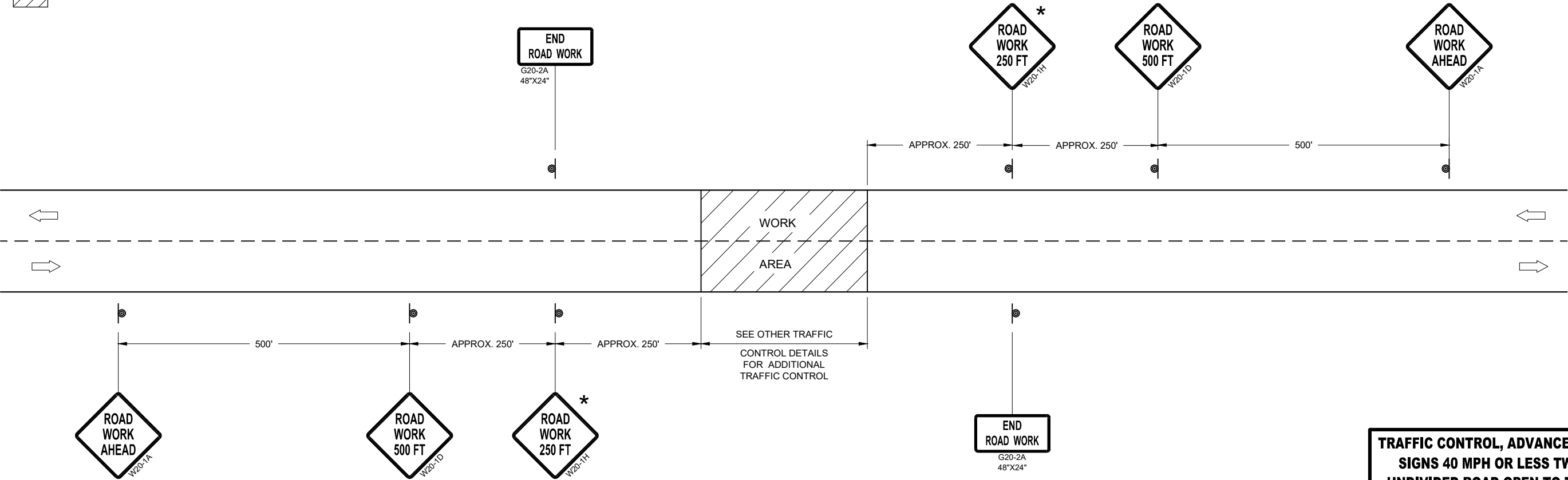
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

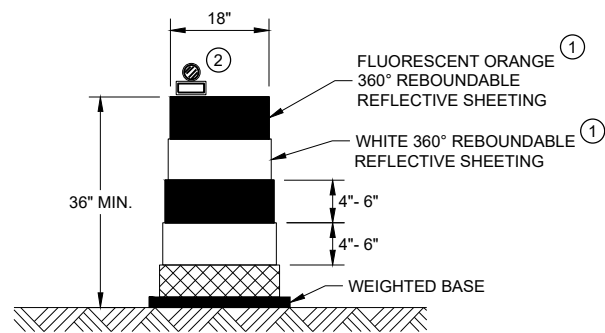


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

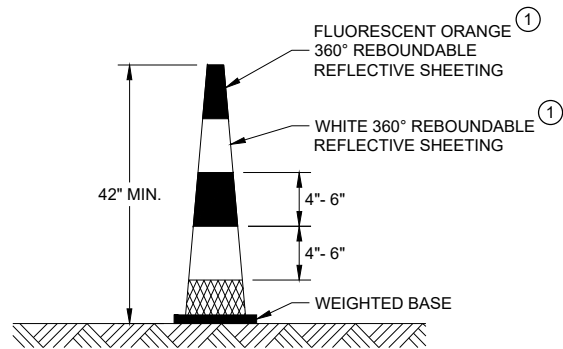
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

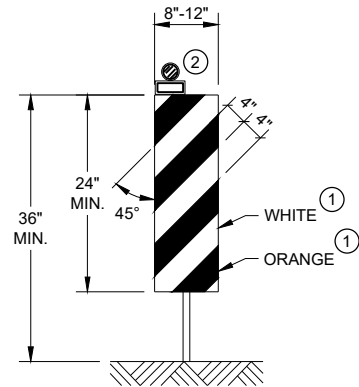


DRUM



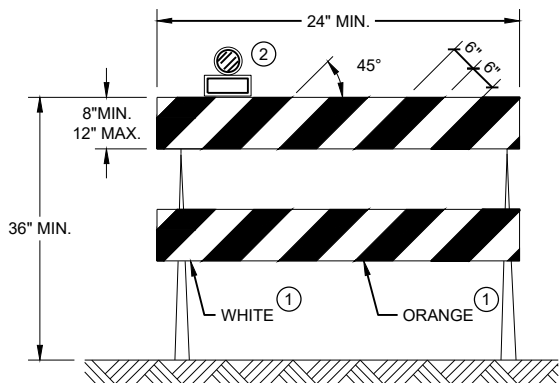
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



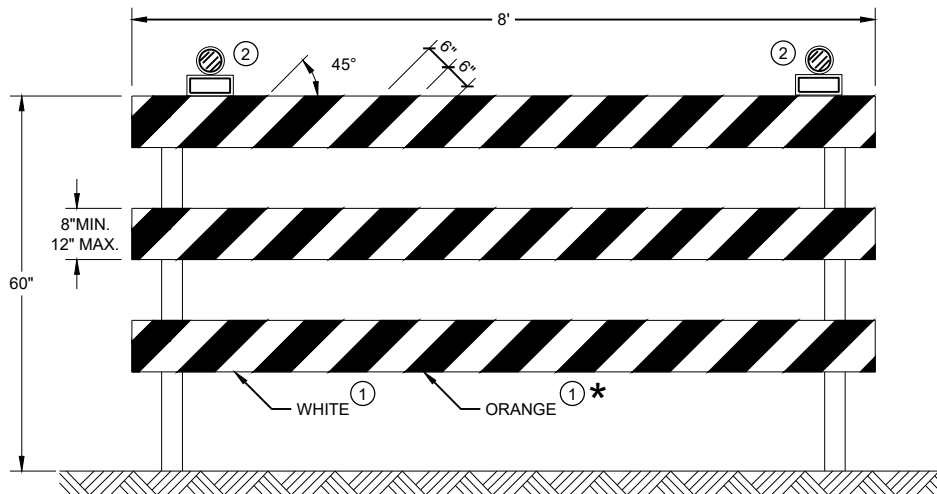
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /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

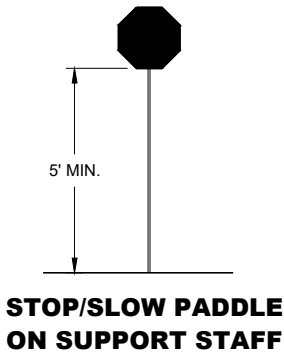
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- 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 SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

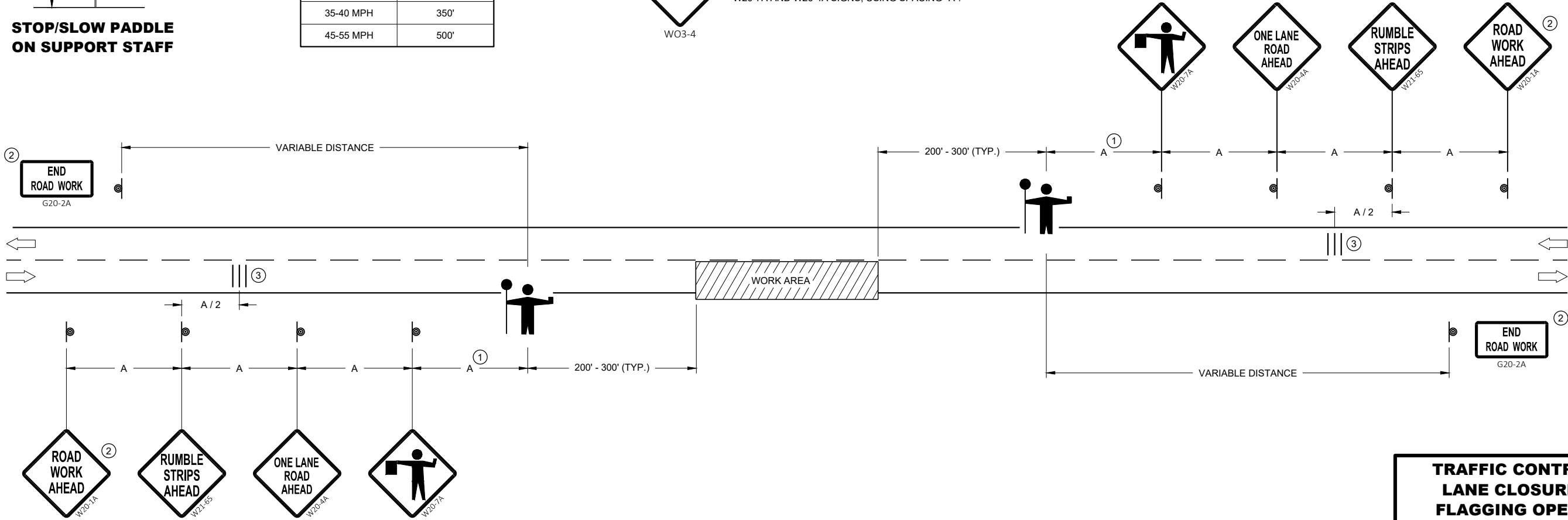


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

TRAFFIC CONTROL FOR
LANE CLOSURE WITH
FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

GENERAL NOTES

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

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

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

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

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

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

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

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

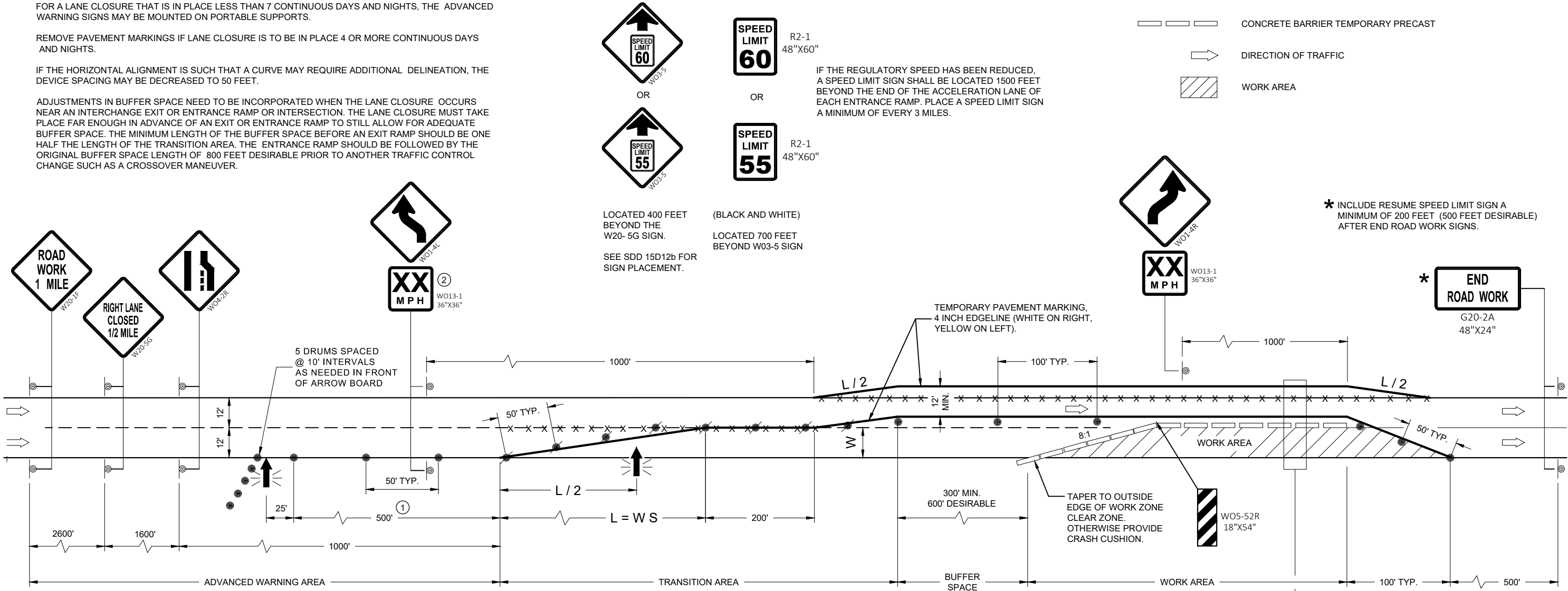
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

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.

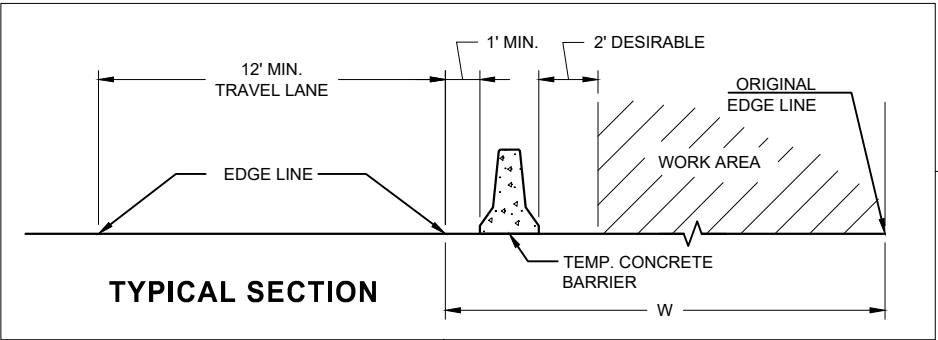
- ①
- CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.
- ②
- IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH LESS THAN POSTED SPEED.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA



L, TAPER LENGTH (MPH)												
SPEED (MPH)	W, LATERAL OFFSET (FT)											
	1	2	3	4	5	6	7	8	9	10	11	12
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840



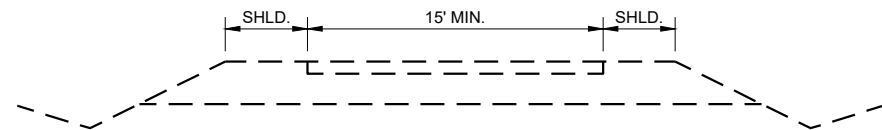
TRAFFIC CONTROL
LANE CLOSURE, SPEEDS
GREATER THAN 40 MPH
WITH BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

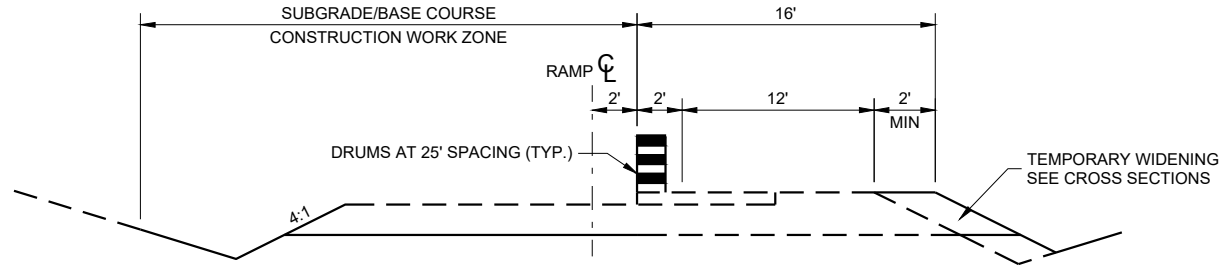


INITIAL RAMP - TYPICAL

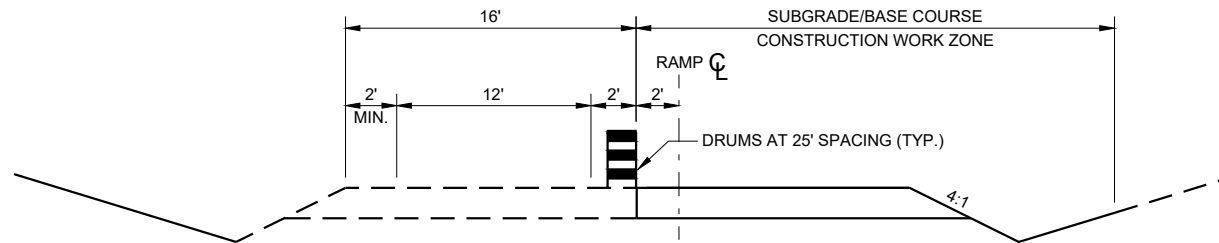
GENERAL NOTES

WORK SHALL BE SCHEDULED FOR ALL STAGES TO MINIMIZE INCONVENIENCE TO THE TRAFFIC USING THE RAMP WHILE IT IS ONLY BASE COURSE.

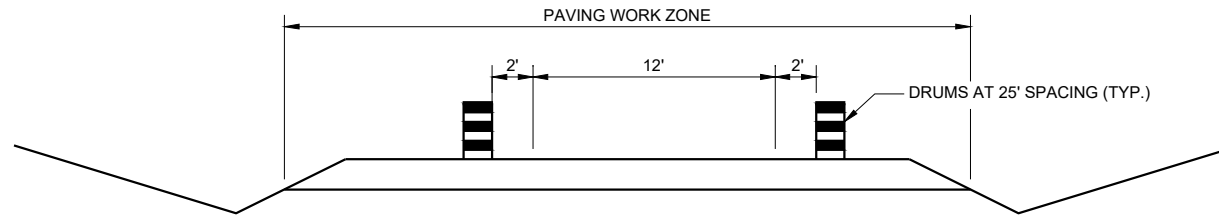
IN STATE III, A MINIMUM 12' LANE WIDTH SHALL BE DELINEATED WITH DRUMS ALONG BOTH EDGES AT ALL TIMES UNTIL PAVED AND PAVEMENT MARKINGS ARE PLACED.



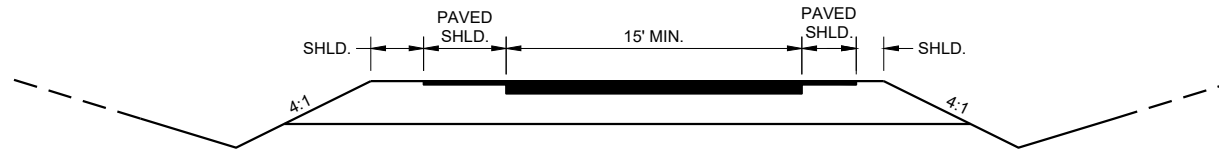
STAGE I - CONSTRUCTION TO SUBGRADE, LEFT



STAGE II - CONSTRUCTION TO SUBGRADE, RIGHT



STAGE III - TRAFFIC ON BASE COURSE



STAGE IV - PAVING

TRAFFIC CONTROL,
RAMP CONSTRUCTION STAGING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 1994 /S/ Chester J. Spang
DATE DIRECTOR, OFFICE OF TRAFFIC

FHWA

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

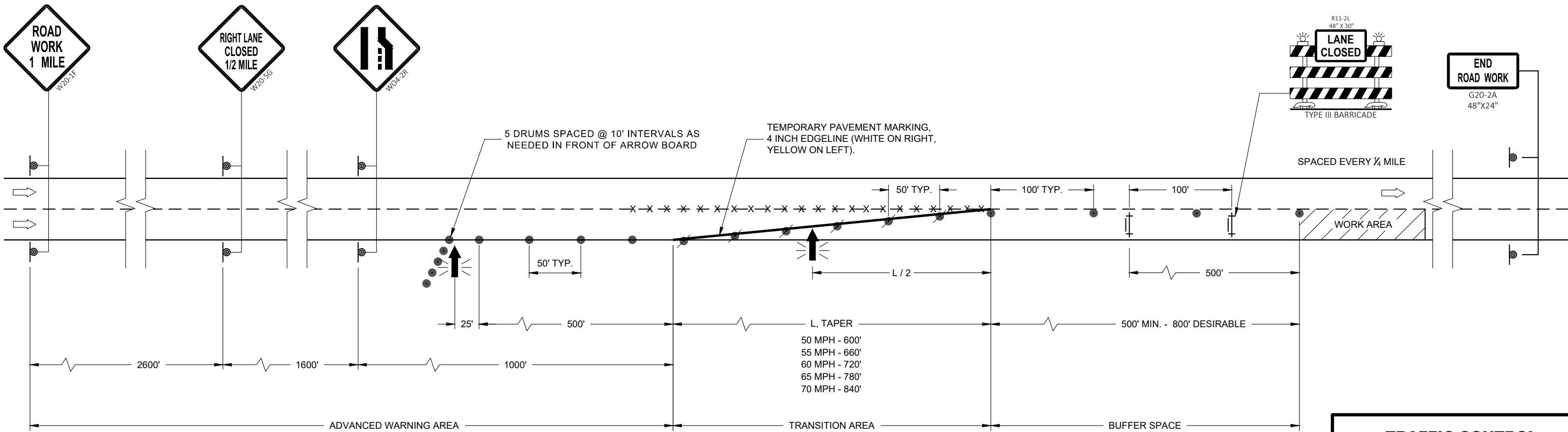
NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE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

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

LEGEND

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

6



6

SDD 15D12 - 08a

SDD 15D12 - 08a

TRAFFIC CONTROL LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

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

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

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

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

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

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

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

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

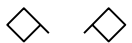
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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



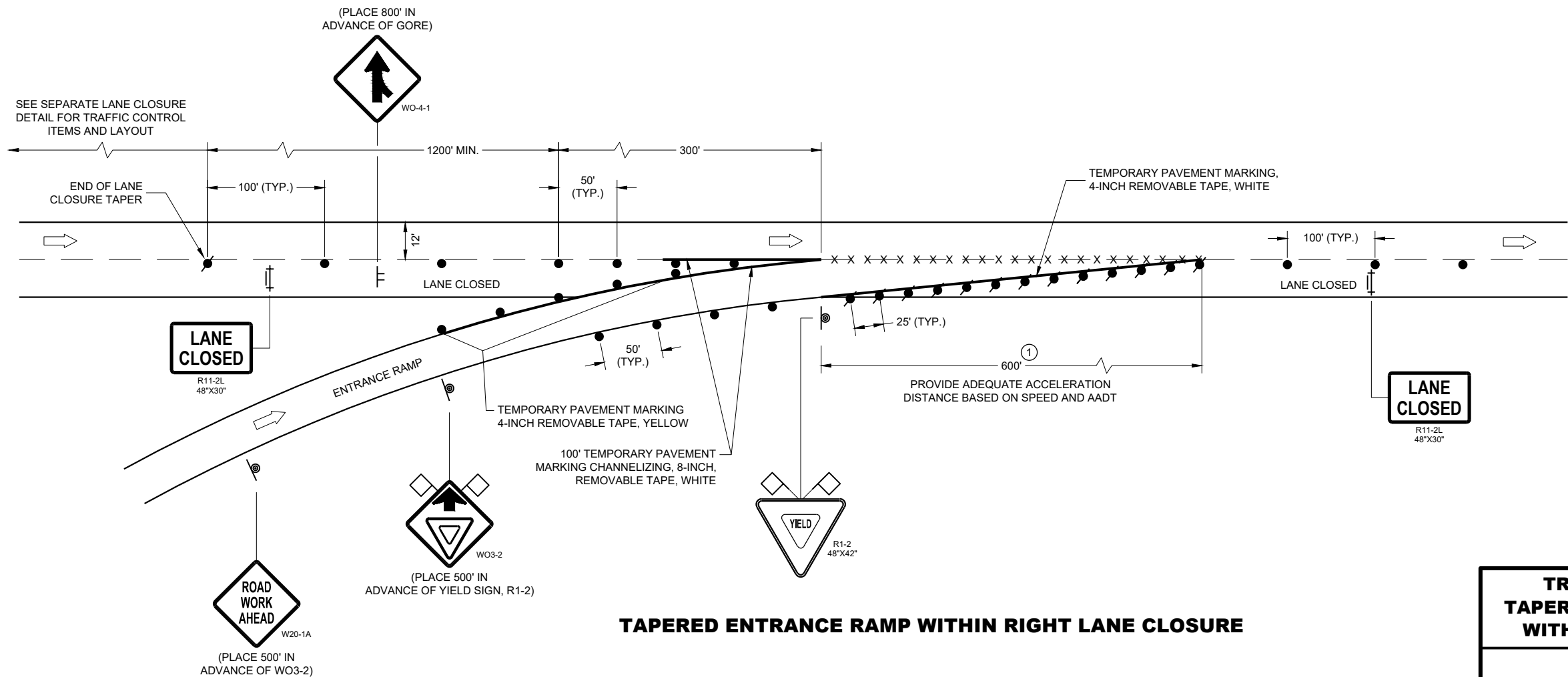
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>July 2015</u> DATE	<u>/S/ Andrew Heidtke</u> STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

LEGEND

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

GENERAL NOTES

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



TAPERED ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

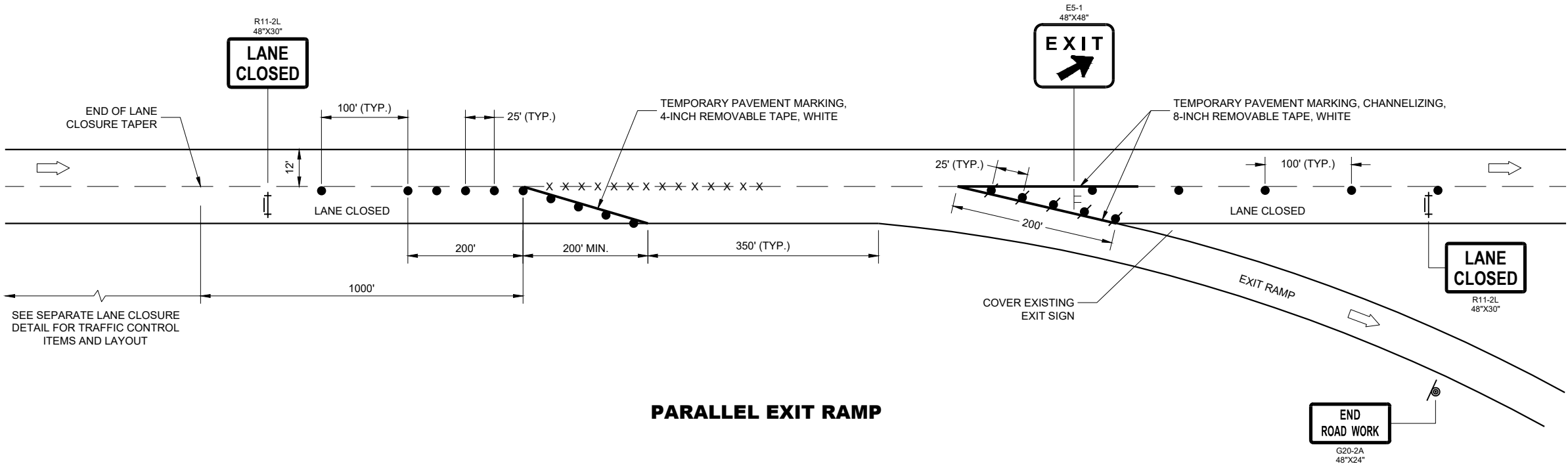
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



PARALLEL EXIT RAMP

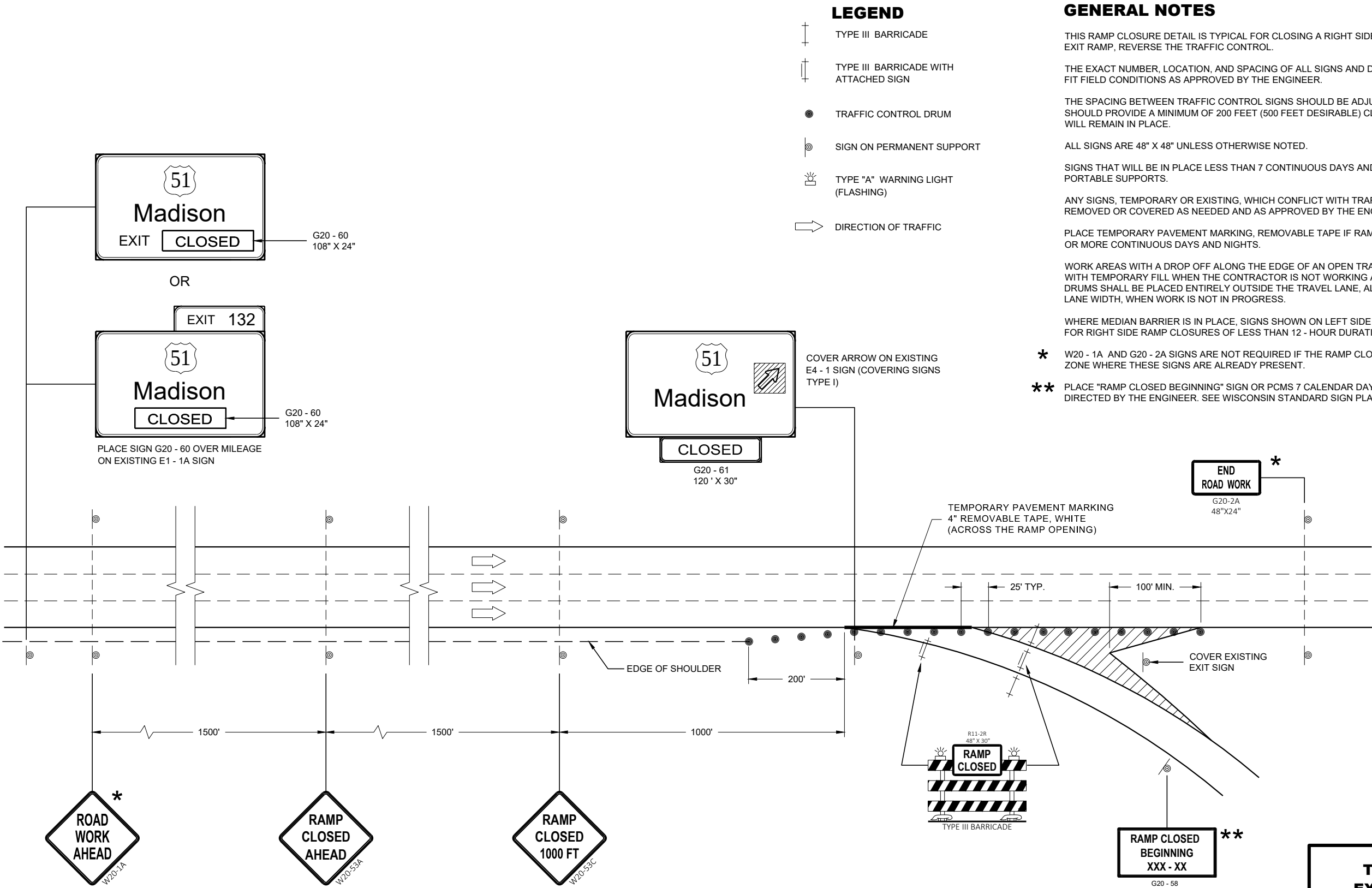
**TRAFFIC CONTROL,
PARALLEL EXIT RAMP
WITHIN LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2019
DATE

/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, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.

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

** PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

TRAFFIC CONTROL
EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

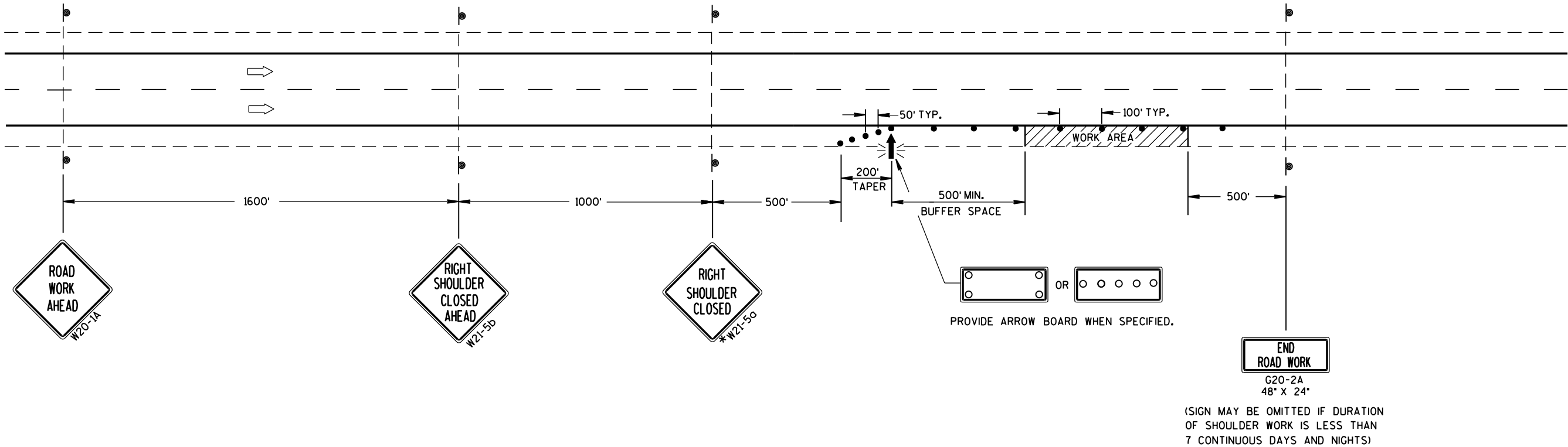
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

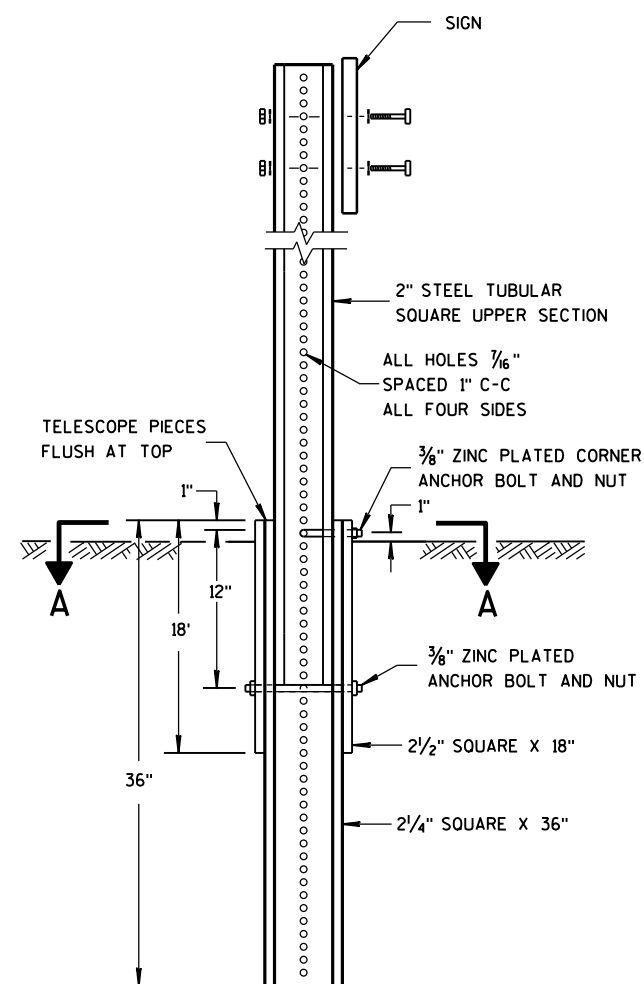
*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL
SHOULDER CLOSURE ON DIVIDED
ROADWAY, SPEEDS GREATER
THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



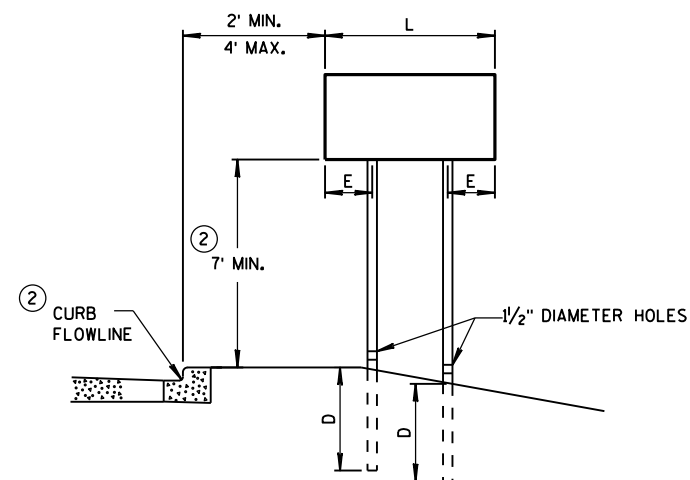
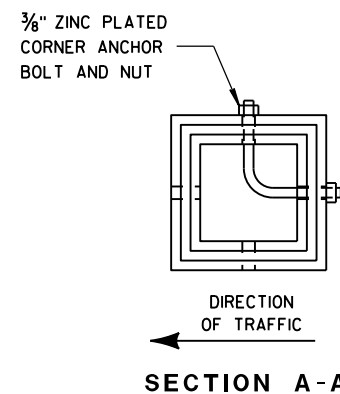
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ.FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

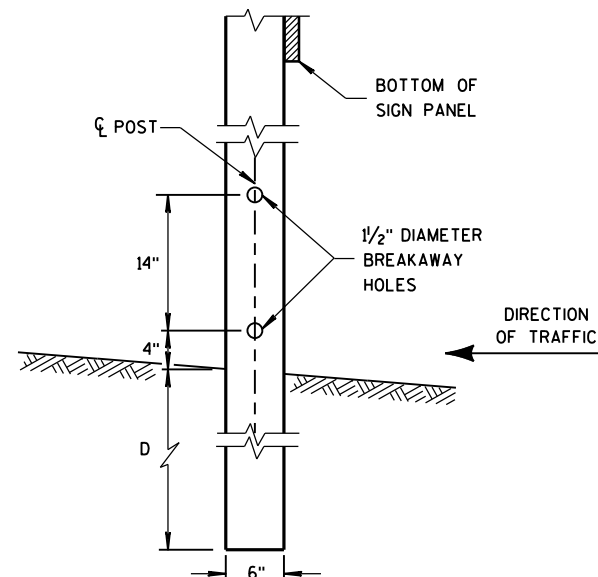


URBAN AREA

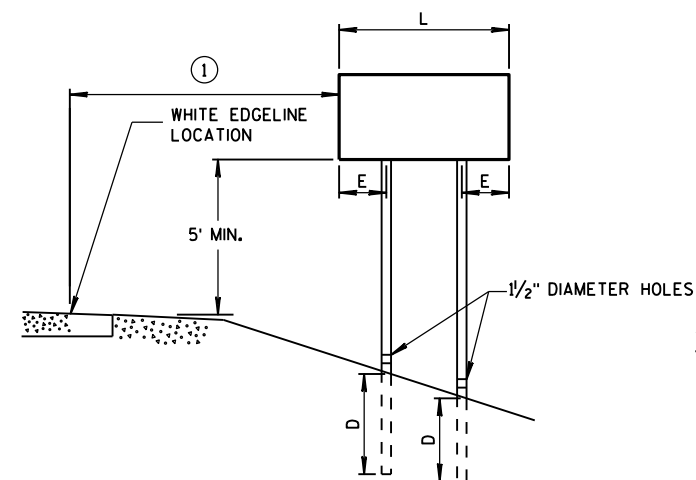
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

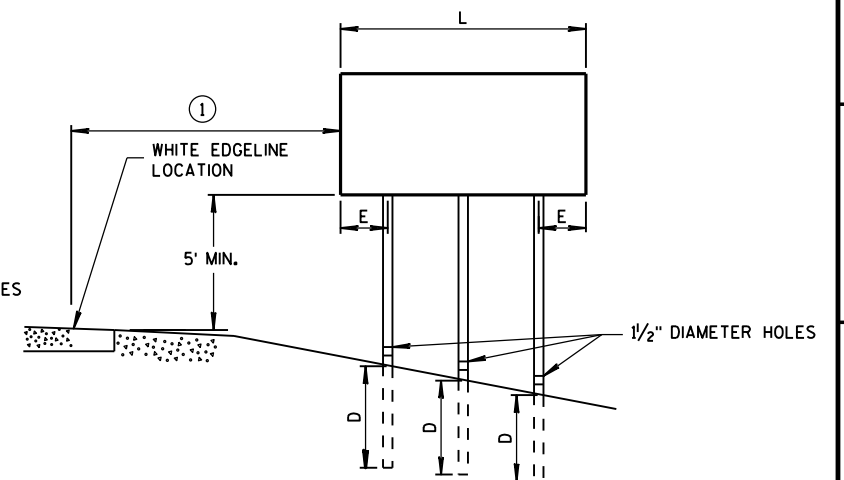
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

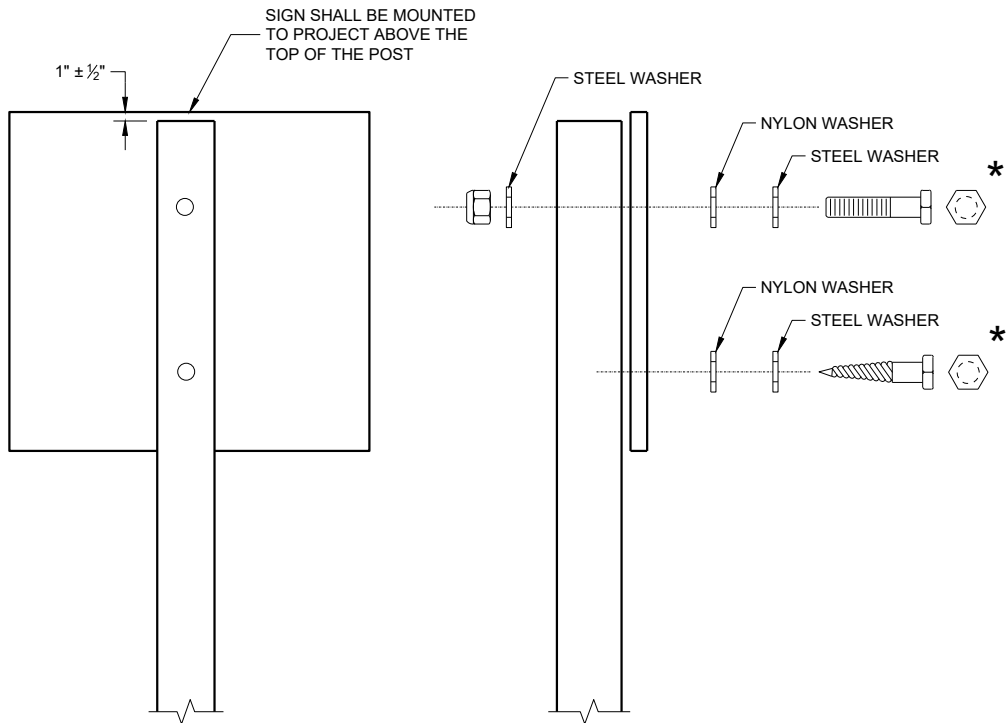
SEE NOTE (3)

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
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NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS
SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM
DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM
DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH
SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED
COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POST (4" x 6")
LAG SCREWS - 3/8" x 3"
MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL
1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

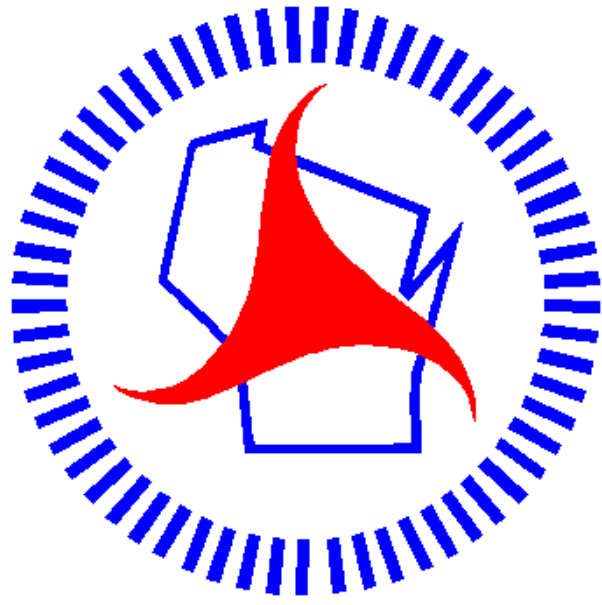
ATTACHMENT OF SIGNS
TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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