

WKE
PROJECT ID: 1000-67-94
WITH:
COUNTY: SE REGION WIDE

MAY 2014

ORDER OF SHEETS

Section No.	1	Title
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	6	Standard Detail Drawings

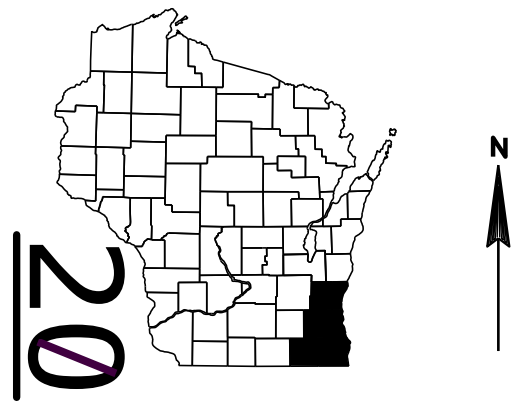
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

HIGHWAY LIGHTING MAINTENANCE 2014
VARIOUS HIGHWAYS
SE REGION - WIDE

TOTAL SHEETS = 36

STATE PROJECT NUMBER
1000-67-95



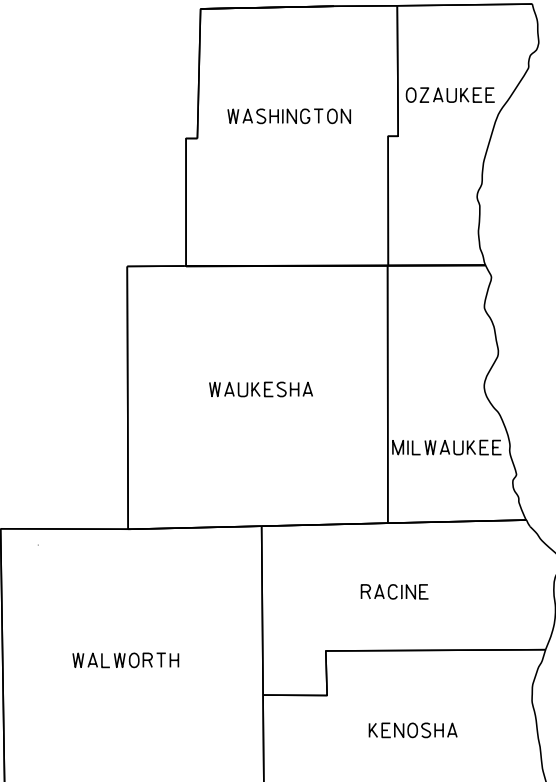
DESIGN DESIGNATION

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

CONVENTIONAL SYMBOLS

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

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



LAYOUT
SCALE 0 * MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

--Coordinates on this plan are referenced to the Wisconsin County Coordinate System (WCCS), 'countyname' County.--

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1000-67-95		

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	
Designer	ERIC PEREA
Project Manager	ERIC PEREA
Region Examiner	
Region Supervisor	JOHN HAUG
C.O. Examiner	

APPROVED FOR REGION OFFICE
DATE: 12/26/13

(Signature)

E

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



Call 811 Three Work Days Before You Dig
or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

MILWAUKEE COUNTY - HIGHWAY MAINTENANCE

MR. GREG HEISEL
HIGHWAY MAINTENANCE MANAGER
10190 WATERTOWN PLK ROAD
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414-257-6566
GREG.HEISEL@MILWCNTY.COM

MILWAUKEE COUNTY - HIGHWAY MAINTENANCE

MILWAUKEE COUNTY - HIGHWAY MAINTENANCE
MR. STANLEY L. JACKSON
ELECTRICAL MECHANIC SUPERVISOR
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STANLEY.JACKSON@MILWCNTY.COM

WISCONSIN DEPT. OF TRANSPORTATION

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SE REGION ELECTRICAL FIELD UNIT (EFU)
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414-266-1167
RHONDA.MOGILKA@DOT.WI.GOV

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

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DNR SOUTHEAST REGION HQ
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KRISTINA.BETZOLD@WISCONSIN.GOV

WISCONSIN DEPARTMENT OF TRANPORTATION

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ERIC.PEREA@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION

MS. JULIE JENKS - PROJECT MANAGER
141 NW BARSTOW ST
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




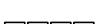






WISCONSIN DEPARTMENT OF TRANSPORTATION

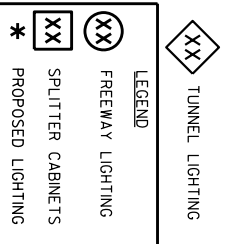
MS. LAURA LONGLEY - SE REGION UTILITY COORDINATOR
141 NW BARSTOW ST
WAUKESHA, WI 53187-0798
(262) 548-6425
LAURA.LONGLEY@DOT.WI.GOV

GENERAL NOTES

- 1. THE LOCATIONS ON EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. SEE UTILITY OCCUPATION PLANS FOR ADDITIONAL INFORMATION.
- 2. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
- 3. TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- 4. ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXITING STRUCTURES SHALL BE FILLED WITH GRANULAR SUBGRADE.
- 5. TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS
- 6. DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE TOPSOILED, FERTILIZED, AND SEEDED WITHIN 7 DAYS AFTER PLACEMENT OF SALVAGED TOPSOIL AS DIRECTED BY THE ENGINEER.
- 7. REMOVAL OF EROSION ONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.
- 8. RE-TOPSOIL OF GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND MULCH/EROSION MAT TOPSOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN 5 CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN 14 CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED.
- 9. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS, AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN 14 CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED.
- 10. EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

TRAFFIC CONTROL PLAN 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
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	TYPE A WARNING LIGHT (FLASHING)
	TYPE B WARNING LIGHT (HIGH INTENSITY FLASHING)
	TYPE C WARNING LIGHT (STEADY BURN)
	CONCRETE BARRIER TEMPORARY PRECAST
	WORK AREA
	TEMPORARY RAISED PAVEMENT MARKER (ONE WAY REFLECTOR)
	TEMPORARY RAISED PAVEMENT MARKER (TWO WAY REFLECTOR)
	FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
	DIRECTION OF TRAFFIC
	PORTABLE CHAGEABLE MESSAGE BOARD





HIGHWAY LIGHTING DISTRIBUTION CENTERS

(UPDATED OCTOBER 2009)

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TUNNEL LIGHTING

xx

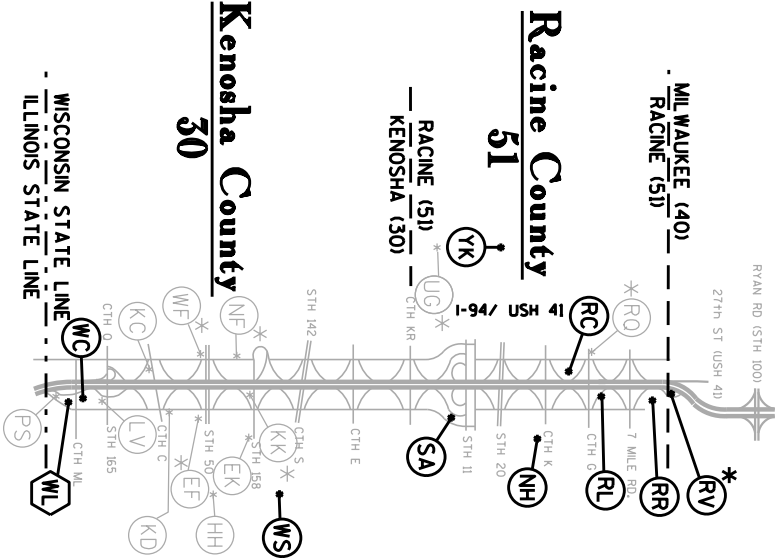
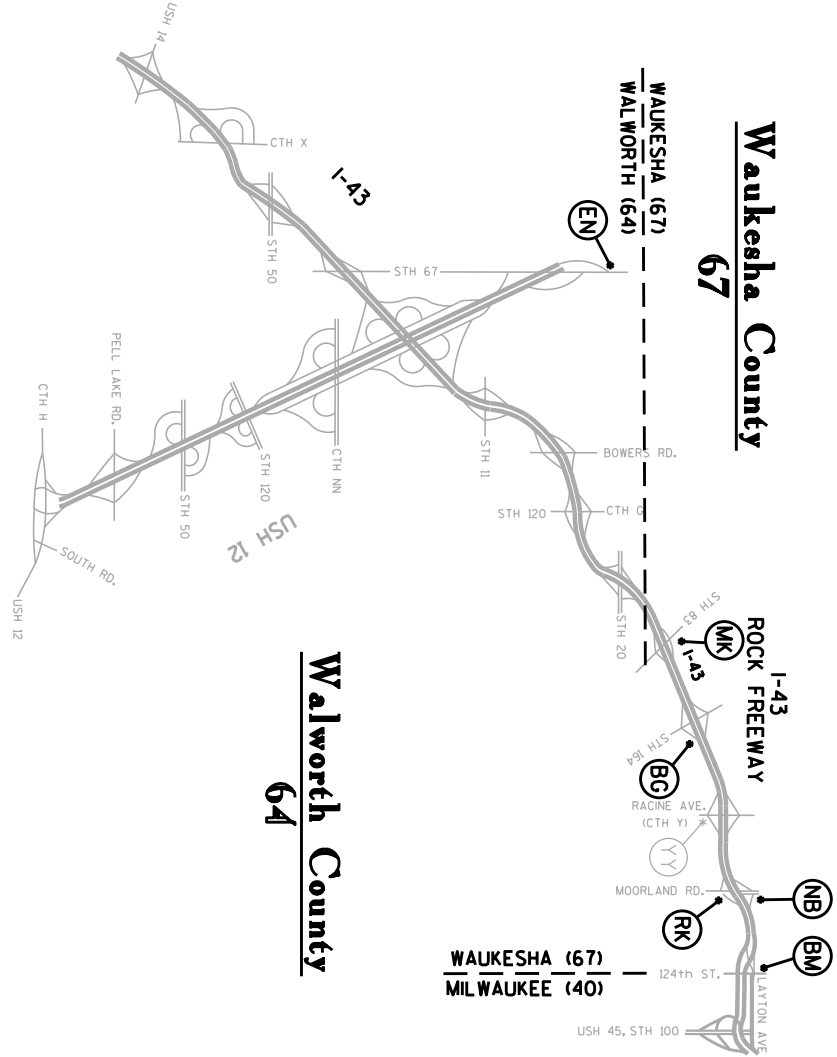
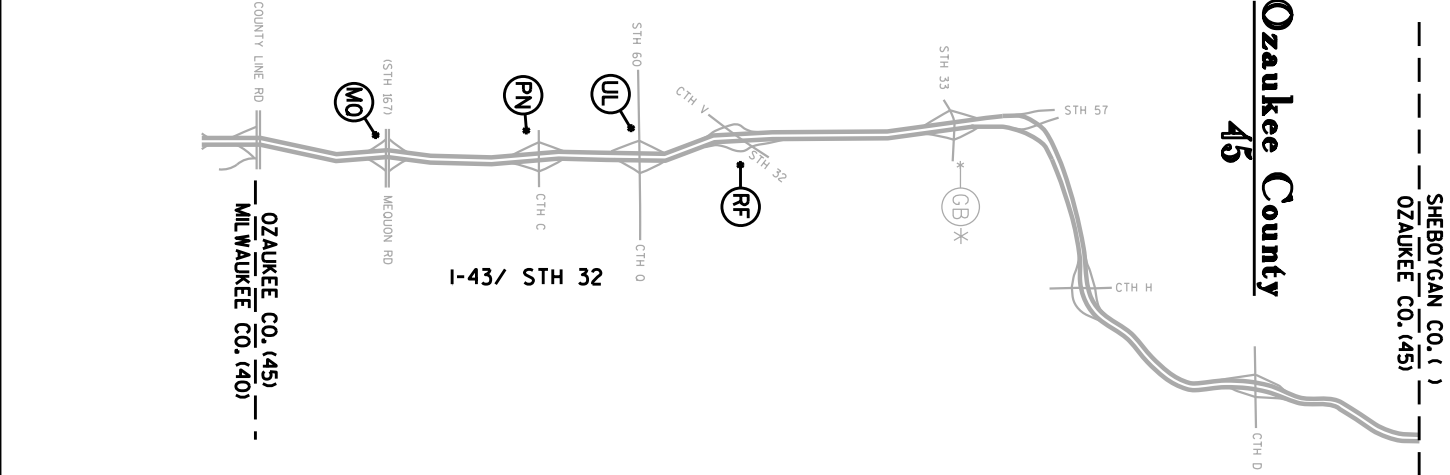
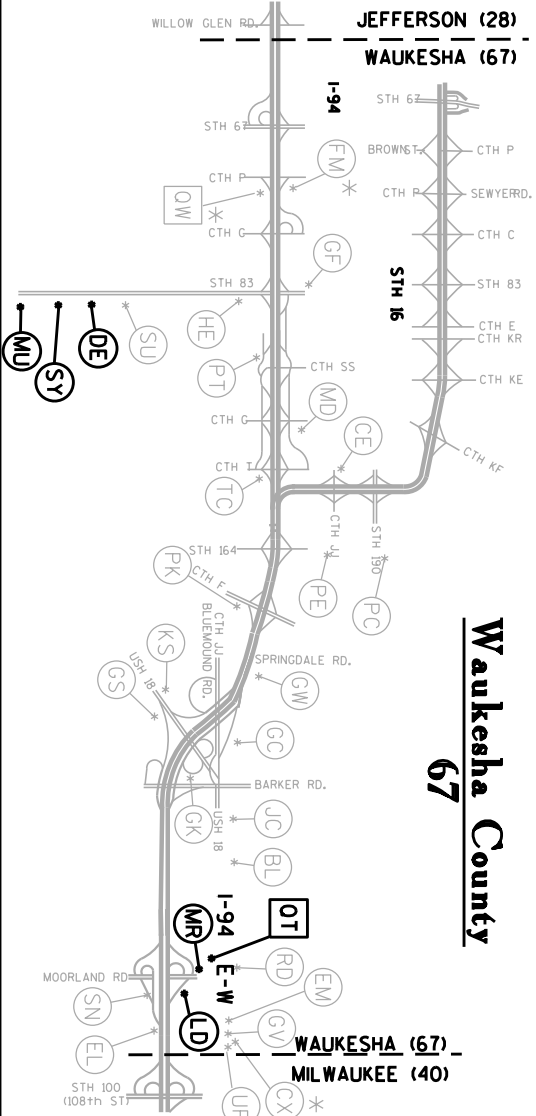
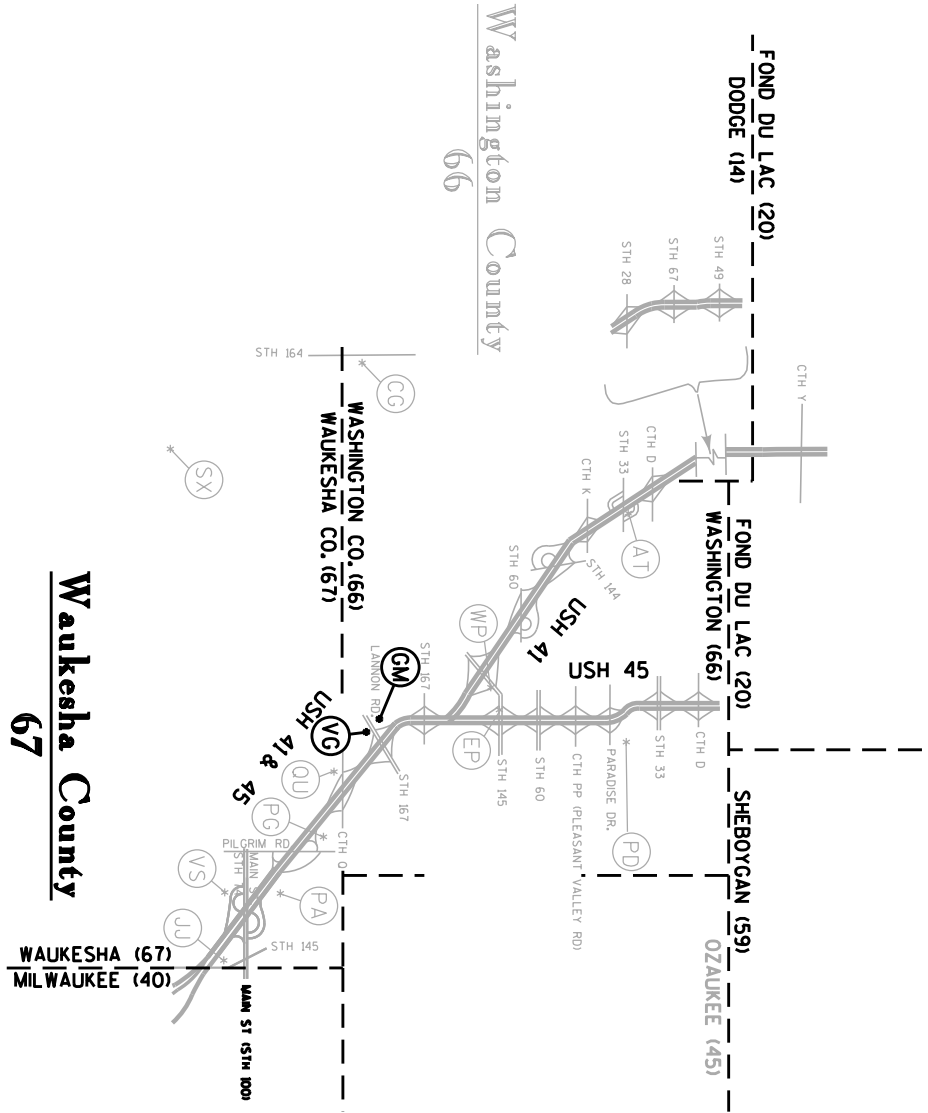
FREEMWAY LIGHTING

xx

SPLITTER CABINETS

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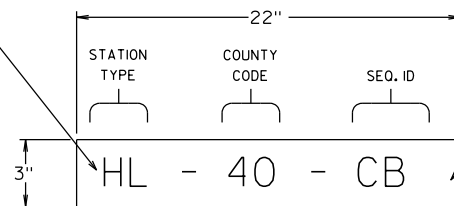
PROPOSED LIGHTING



GENERAL NOTES:

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

LETTERS AND NUMBERS 2"
SERIES "D" SELF ADHESIVE
VINYL CUTOUTS



PLAQUE FACE BACKGROUND
SELF ADHESIVE SHEETING
WHITE (NON-RETROREFLECTIVE)

BASE MATERIAL TO BE
SHEET ALUMINUM, 0.060"
MIN. THICKNESS

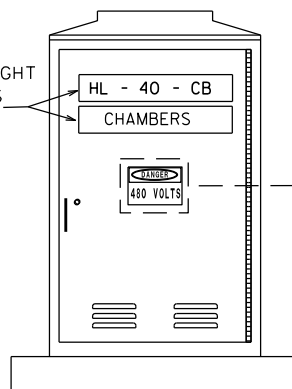
SPACING BETWEEN LETTERS
AND NUMBERS TO BE 1/2"
(IF QUANTITY OF NUMERALS
OR LETTERS IS LESS THAN
SHOWN, LEAVE SPACE AT
RIGHT SIDE OF PLAQUE)

DISTRIBUTION CENTER
IDENTIFICATION PLAQUE

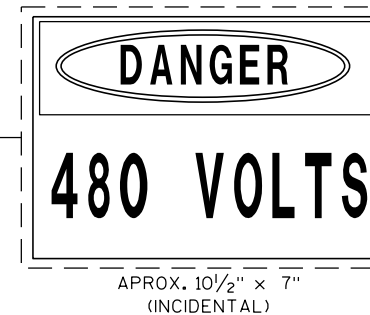
CHAMBERS

MNEMONIC
(SEE MISC. QTYS.)
(NO. OF CHARACTERS VARIES
THIRD PLAQUE MAY BE
NECESSARY)

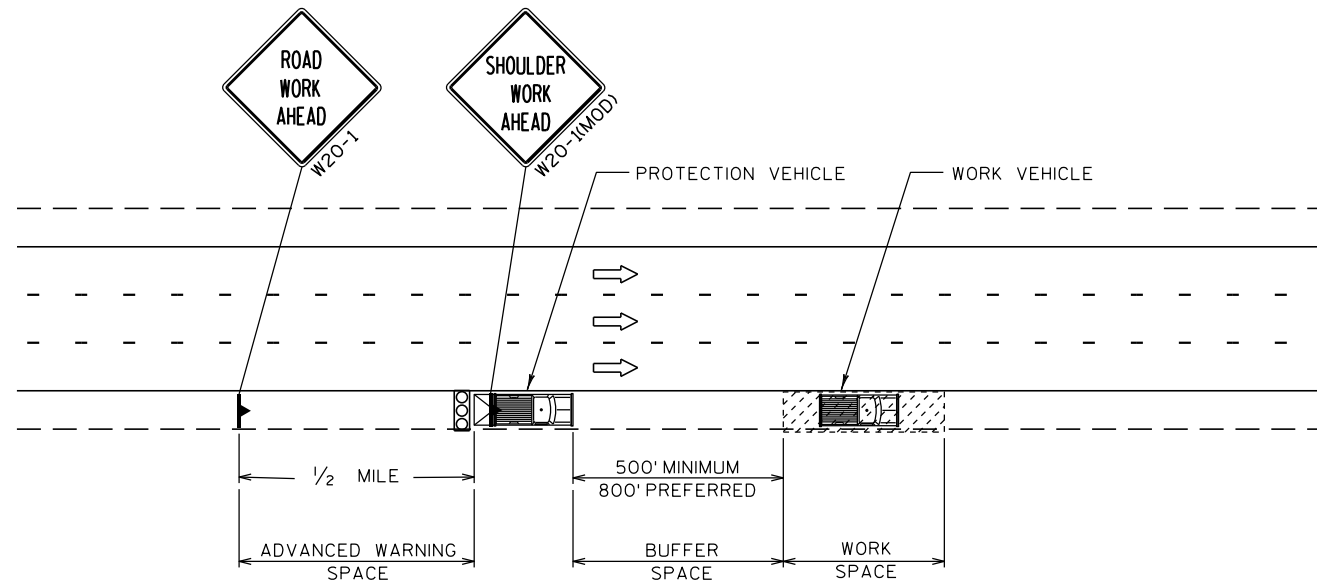
FASTEN LEFT, CENTER AND RIGHT
OF PLAQUE WITH 3 STAINLESS
STEEL POP RIVETS



NOTES:
1. TWO OR MORE PLAQUES PER
CABINET REQUIRED



DISTRIBUTION CENTER IDENTIFICATION PLAQUE
REQUIREMENTS AND PLACEMENTS
(TYPICAL ALL CONTROL CABINETS)







**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)

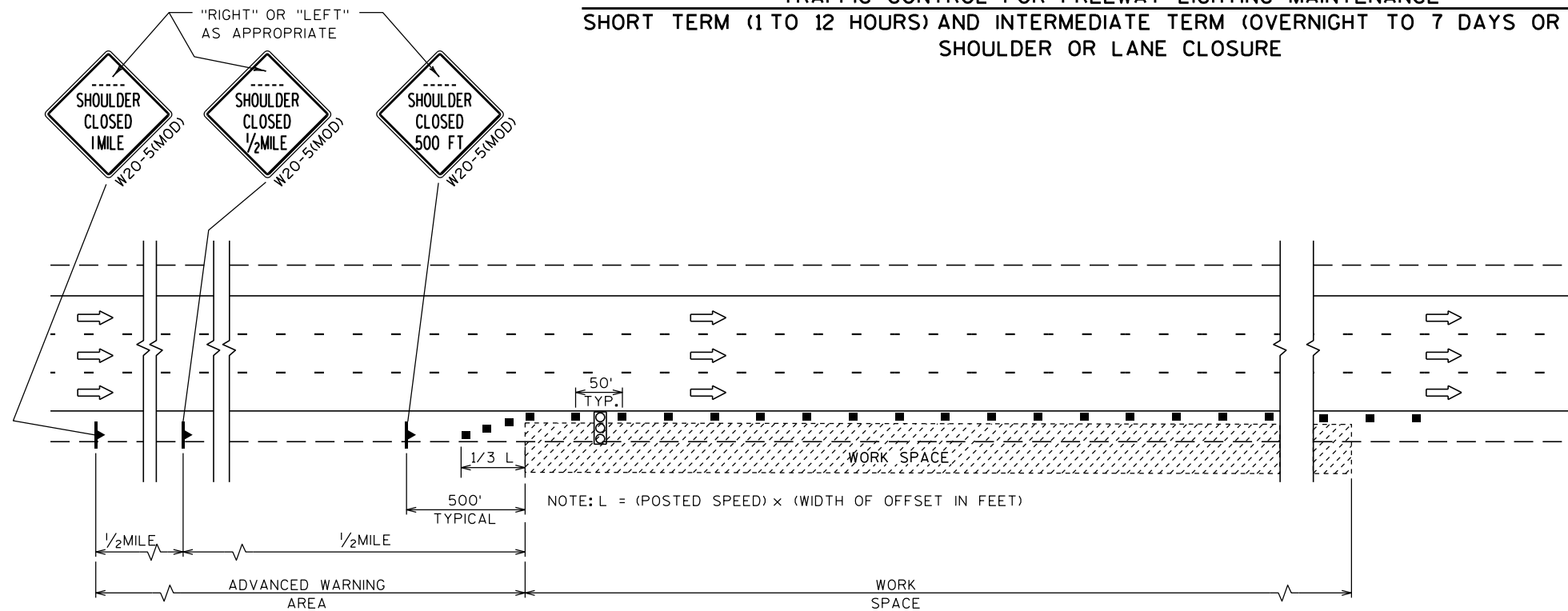
GENERAL NOTES: TRAFFIC CONTROL

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:

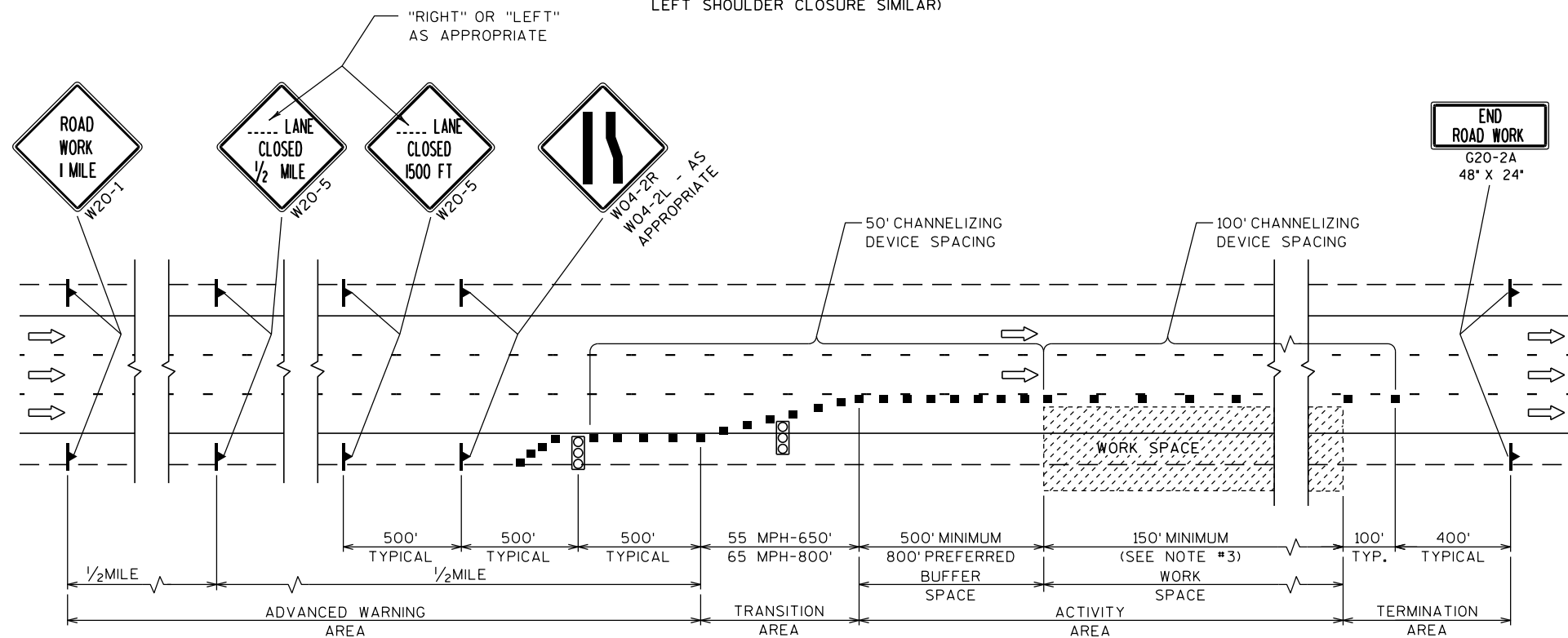
-  SIGN ON TEMPORARY SUPPORT
-  ARROW BOARD
-  TMA (TRUCK MOUNTED ATTENUATOR)
-  WORK VEHICLE

TRAFFIC CONTROL 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 50' 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. "W0" 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 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.

LEGEND:

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

DATE 18MAR14		E S T I M A T E O F Q U A N T I T I E S			
LINE				1000-67-95	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	204.0195	REMOVING CONCRETE BASES	EACH	3.000	3.000
0020	619.1000	MOBILIZATION	EACH	1.000	1.000
0030	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1000-67-95	EACH	1.000	1.000
0040	643.0300	TRAFFIC CONTROL DRUMS	DAY	200.000	200.000
0050	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	25.000	25.000
0060	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	20.000	20.000
0070	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	20.000	20.000
0080	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	65.000	65.000
0090	643.0900	TRAFFIC CONTROL SIGNS	DAY	150.000	150.000
0100	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	10.000	10.000
0110	654.0107	CONCRETE BASES TYPE 7	EACH	1.000	1.000
0120	654.0108	CONCRETE BASES TYPE 8	EACH	1.000	1.000
0130	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	200.000	200.000
0140	659.0125	LUMINAIRE UTILITY HPS 250 WATTS	EACH	4.000	4.000
0150	659.0802	PLAQUES SEQUENCE IDENTIFICATION	EACH	35.000	35.000
0160	659.1125	LUMINAIRE UTILITY LED C	EACH	8.000	8.000
0170	SPV.0045	SPECIAL 01. TRUCK MOUNTED ATTENUATOR	DAY	55.000	55.000
0180	SPV.0045	SPECIAL 02. ZONE 2 DISTANCE PREMIUM	DAY	5.000	5.000
0190	SPV.0045	SPECIAL 03. ZONE 3 DISTANCE PREMIUM	DAY	3.000	3.000
0200	SPV.0060	SPECIAL 01. LAMP DISPOSAL HIGH INTENSITY DISCHARGE	EACH	2,028.000	2,028.000
0210	SPV.0060	SPECIAL 02. LIGHT TOWER RAT SCREENS	EACH	2.000	2.000
0220	SPV.0060	SPECIAL 03. REMOVING LUMINAIRE	EACH	14.000	14.000
0230	SPV.0060	SPECIAL 04. REMOVING LIGHTING UNITS	EACH	1.000	1.000
0240	SPV.0060	SPECIAL 05. FUSE HOLDERS	EACH	20.000	20.000
0250	SPV.0060	SPECIAL 06. FUSE TYPE FNQ	EACH	90.000	90.000
0260	SPV.0060	SPECIAL 07. INSTALLING STATE FURNISHED LUMINAIRE UTILITY HPS	EACH	14.000	14.000
0270	SPV.0060	SPECIAL 08. INSTALLING STATE FURNISHED LIGHTING UNITS	EACH	1.000	1.000
0280	SPV.0060	SPECIAL 09. PLUMBING LIGHT POLES	EACH	1.000	1.000
0290	SPV.0060	SPECIAL 10. DISTRIBUTION CENTER PREVENTIVE MAINTENANCE	EACH	59.000	59.000
0300	SPV.0060	SPECIAL 11. GROUP LUMINAIRE MAINTENANCE FLOOD 175 W MH	EACH	2.000	2.000
0310	SPV.0060	SPECIAL 12. GROUP LUMINAIRE MAINTENANCE UNDERDECK 70 W HPS	EACH	18.000	18.000
0320	SPV.0060	SPECIAL 13. GROUP LUMINAIRE MAINTENANCE UNDERDECK 100 W HPS	EACH	78.000	78.000
0330	SPV.0060	SPECIAL 14. GROUP LUMINAIRE MAINTENANCE SIGN LIGHT 175 W MV	EACH	24.000	24.000
0340	SPV.0060	SPECIAL 15. GROUP LUMINAIRE MAINTENANCE SIGN LIGHT 250 W MV	EACH	35.000	35.000
0350	SPV.0060	SPECIAL 16. GROUP LUMINAIRE MAINTENANCE PROBEAM 150 W HPS	EACH	29.000	29.000
0360	SPV.0060	SPECIAL 17. GROUP LUMINAIRE MAINTENANCE 20-FOOT 100 W HPS	EACH	11.000	11.000
0370	SPV.0060	SPECIAL 18. GROUP LUMINAIRE MAINTENANCE 20-FOOT 250 W HPS	EACH	7.000	7.000
0380	SPV.0060	SPECIAL 19. GROUP LUMINAIRE MAINTENANCE 20-FOOT 400 W HPS	EACH	2.000	2.000
0390	SPV.0060	SPECIAL 20. GROUP LUMINAIRE MAINTENANCE 30-FOOT 100 W HPS	EACH	65.000	65.000
0400	SPV.0060	SPECIAL 21. GROUP LUMINAIRE MAINTENANCE 30-FOOT 150 W HPS	EACH	113.000	113.000

DATE 18MAR14		E S T I M A T E O F Q U A N T I T I E S							1000-67-95
LINE	NUMBER	ITEM	ITEM DESCRIPTION				UNIT	TOTAL	QUANTITY
	0410	SPV. 0060	SPECIAL 22.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	120. 000	120. 000
			30-FOOT 250	W HPS					
	0420	SPV. 0060	SPECIAL 23.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	2. 000	2. 000
			40-FOOT 100	W HPS					
	0430	SPV. 0060	SPECIAL 24.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	12. 000	12. 000
			40-FOOT 150	W HPS					
	0440	SPV. 0060	SPECIAL 25.	GROUP	LUMI NI ARE	MAI NTENANCE	EACH	75. 000	75. 000
			40-FOOT 200	W HPS					
	0450	SPV. 0060	SPECIAL 26.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	199. 000	199. 000
			40-FOOT 250	W HPS					
	0460	SPV. 0060	SPECIAL 27.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	28. 000	28. 000
			40-FOOT 310	W HPS					
	0470	SPV. 0060	SPECIAL 28.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	29. 000	29. 000
			40-FOOT 400	W HPS					
	0480	SPV. 0060	SPECIAL 29.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	5. 000	5. 000
			50-FOOT 200	W HPS					
	0490	SPV. 0060	SPECIAL 30.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	163. 000	163. 000
			50-FOOT 250	W HPS					
	0500	SPV. 0060	SPECIAL 31.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	99. 000	99. 000
			50-FOOT 310	W HPS					
	0510	SPV. 0060	SPECIAL 32.	GROUP	LUMI NAI RE	MAI NTENANCE	EACH	295. 000	295. 000
			50-FOOT 400	W HPS					
	0520	SPV. 0060	SPECIAL 33.	TUNNEL	LUMI NAI RE		EACH	15. 000	15. 000
			MAI NTENANCE 150	WATT HPS					
	0530	SPV. 0060	SPECIAL 34.	TUNNEL	LUMI NAI RE		EACH	10. 000	10. 000
			MAI NTENANCE 200	WATT HPS					
	0540	SPV. 0060	SPECIAL 35.	TUNNEL	LUMI NAI RE		EACH	4. 000	4. 000
			MAI NTENANCE 250	WATT HPS					
	0550	SPV. 0060	SPECIAL 36.	TUNNEL	LUMI NAI RE		EACH	588. 000	588. 000
			MAI NTENANCE 400	WATT HPS					
	0560	SPV. 0060	SPECIAL 37.	GROUP	CLEAN TUNNEL		EACH	2, 584. 000	2, 584. 000
			LUMI NAI RES						
	0570	SPV. 0090	SPECIAL 01.	INSTALLING	STATE FURNISHED		LF	400. 000	400. 000
			CABLE I N DUCT						
	0580	SPV. 0090	SPECIAL 02.	INSTALLING	STATE FURNISHED		LF	400. 000	400. 000
			MEDIAN CABLE I N DUCT						
	0590	SPV. 0090	SPECIAL 03.	REMOVING	MEDIAN CABLE I N		LF	350. 000	350. 000
			DUCT						
	0600	SPV. 0090	SPECIAL 04.	REMOVING	TEMPORARY OVERHEAD		LF	250. 000	250. 000
			LINES						

WISCONSIN DEPARTMENT OF TRANSPORTATION - SOUTHEAST REGION - WAUKESHA
HIGHWAY LIGHTING DISTRIBUTION CENTERS

LABEL HL- OR AS SHOWN	FORMAT	MAINTENANCE \ FRST RESPONSE	COUNTY	HIGHWAY	DISTRIBUTION CENTER LOCATION	BRANCH CIRCUIT VOLTAGE	FIELD WIRING METHOD	ZONE
40-BA	SERVICE	MILW CO\ MILW CO	MILW	IH 94	SW QUADRANT LAYTON AVENUE	240/480	ISOL NEUTRAL	1
40-BC	SERVICE	MILW CO\ MILW CO	MILW	IH 43-94	HWY 43-94 NORTH OF BECHER	240/480	GRND NEUTRAL	1
40-BQ	SERVICE	MILW CO\ MILW CO	MILW	IH 43	BROWN DEER PARK-RIDE	120/240	ISOL NEUTRAL	1
40-BR	SERVICE	MILW CO\ MILW CO	MILW	IH 43	BROWN DEER PARK-RIDE	240/480	ISOL NEUTRAL	1
40-BV	SERVICE	MILW CO\ MILW CO	MILW	IH 94	NW QUADRANT, IH 94 AND MITCHELL BLVD	240/480	ISOL NEUTRAL	1
40-BW	SERVICE	MILW CO\ MILW CO	MILW	STADIUM	IH 94 AT 44TH STREET SW QUADRANT	240/480	ISOL NEUTRAL	1
40-CU	PART OF TUNNEL NO. 2 HUT	MILW CO\ MILW CO	MILW	IH 94	WEST OF 15TH PLACE & CUDAHY AVENUE	240/480	GRND NEUTRAL	1
40-GH	SERVICE WITH RAMP GATE DERIVED	MILW CO\ MILW CO	MILW	IH 43	IH 43 NB GOOD HOPE EXIT RAMP	240/480	ISOL NEUTRAL	1
40-HA	SERVICE	MILW CO\ MILW CO	MILW	IH 43-94	WEST SIDE IH 43-94 AT ARTHUR	240/480	GRND NEUTRAL	1
40-HO	SERVICE WITH ITS DERIVED	MILW CO\ MILW CO	MILW	STH 38	WEST SIDE STH 38 AT NORTH TUNNEL PORTAL	480Y/277	ISOL NEUTRAL	1
40-HT	SERVICE WITH DERIVED	MILW CO\ MILW CO	MILW	IH 43-94	IH 43-94 HOLT PARK-RIDE	240/480	GRND NEUTRAL	1
40-JL	SERVICE	MILW CO\ MILW CO	MILW	MARQUETTE	ST. PAUL/ JAMES LOVELL	240/480	ISOL NEUTRAL	1
40-KI	SERVICE	MILW CO\ MILW CO	MILW	IH 43	CIVIC CENTER GARAGE	480 delta	PHASE-PHASE	1
40-MO	SERVICE	MILW CO\ MILW CO	MILW	IH 43-94	IH 43-94 NB EXIT RAMP TO HOLT	240/480	GRND NEUTRAL	1
40-NM	SERVICE WITH RAMP GATE DERIVED	MILW CO\ MILW CO	MILW	IH43	SE QUADRANT BROWN DEER ROAD	240/480	ISOL NEUTRAL	1
40-PL	SERVICE	MILW CO\ MILW CO	MILW	IH 43-94	WEST SIDE IH 43-94 AT 5TH/PLAINFIELD	240/480	GRND NEUTRAL	1
40-QA	SERVICE WITH ITS DERIVED	MILW CO\ MILW CO	MILW	MARQUETTE	NE QUADRANT IH 43 AND WELLS	480Y/277	ISOL NEUTRAL	1
40-QZ	SERVICE WITH SUBPANELS	MILW CO\ MILW CO	MILW	MARQUETTE	11TH/ TORY HILL	240/480		1
40-TH	SUBPANEL TO QZ	MILW CO\ MILW CO	MILW	MARQUETTE	11TH/ TORY HILL	240/480	ISOL NEUTRAL	1
40-TX	SERVICE WITH DERIVED/HUT	MILW CO\ MILW CO	MILW	MITCHELL	20TH WEST SIDE NORTH OF FREEWAY	480Y/277	ISOL NEUTRAL	1
40-TY	SERVICE WITH DERIVED/HUT	MILW CO\ MILW CO	MILW	MITCHELL	15TH PLACE AT VAN NORMAN	480Y/277	ISOL NEUTRAL	1
40-TZ	SERVICE WITH DERIVED/HUT	MILW CO\ MILW CO	MILW	MITCHELL	16TH STREET AND CUDAHY AVENUE	480Y/277	ISOL NEUTRAL	1
40-VA	PART OF TUNNEL NO. 1 HUT	MILW CO\ MILW CO	MILW	IH 43-894	NORTH SIDE IH 43-894 AT 17TH STREET	240/480	GRND NEUTRAL	1
40-WD	SUBPANEL TO ITS	MILW CO\ MILW CO	MILW	IH 94	HAWLEY EB ON-RAMP	120/240	ISOL NEUTRAL	1
40-WH	SERVICE	MILW CO\ MILW CO	MILW	IH 43	IH 43 HALES CORNERS PARK-RIDE	240/480	GRND NEUTRAL	1
40-WK	SERVICE	MILW CO\ MILW CO	MILW	IH 43-94	WEST SIDE IH 43-94 AT 9TH AND WALKER	240/480	GRND NEUTRAL	1
40-XA	SERVICE WITH ITS	MILW CO\ MILW CO	MILW	IH 43-94	NAVLITES - 43/94 & BURNHAMS. MENOMONEE	120/240	GRND NEUTRAL	1
40-XB	SERVICE	MILW CO\ MILW CO	MILW	IH 43-94	NAVLITES - 43/94 & N. MENOMONEE	120/240	GRND NEUTRAL	1
40-XY	SERVICE	MILW CO\ MILW CO	MILW	MQIC	SOUTH BOX GIRDERS 8TH/ MENOMONEE RIVER	240/480	PHASE-PHASE	1
40-XZ	SUBPANEL TO QZ	MILW CO\ MILW CO	MILW	MQIC	NORTH BOX GIRDERS 11TH/ TORY HILL	240/480	PHASE-PHASE	1
67-BM	SERVICE	MILW CO\ MILW CO	WAUK	IH 43	LAYTON RAMP WEST OF 124TH STREET	240/480	GRND NEUTRAL	1
40-RH	SERVICE WITH ITS	MILW CO\ STATE	MILW	IH 43	IH 43 COUNTY LINE SB ON-RAMP	120/240	ISOL NEUTRAL	1
51-RR	SUBPANEL TO ITS	MILW CO\ STATE	RACI	IH 94	IH 94 NB OFF- RAMP TO STH 241	120/240	GRND NEUTRAL	1
51-RV	SERVICE	MILW CO\ STATE	RACI	IH 94	AT ROOT RIVER ROUNDABOUT	240/480	ISOL NEUTRAL	1
67-LD	SUBPANEL TO HL-67-QT	MILW CO\ STATE	WAUK	IH 94	NE QUADRANT MOORLAND AND IH 94	240/480	ISOL NEUTRAL	2
67-MR	SERVICE	MILW CO\ STATE	WAUK	IH 94	IH 94 MOORLAND AND WB ON-RAMP	240/480	ISOL NEUTRAL	2
67-NB	SERVICE	MILW CO\ STATE	WAUK	IH 43	43/ MOORLAND NORTH	240/480	ISOL NEUTRAL	2
67-RK	SERVICE WITH ITS	MILW CO\ STATE	WAUK	IH 43	43/ MOORLAND SOUTH	240/480	ISOL NEUTRAL	2
67-QT	SERVICE WITH SUBPANELS	MILW CO\ STATE	WAUK	IH 94	NW QUADRANT MOORLAND AND IH 94	240/480	ISOL NEUTRAL	2
30-WC	SUBPANEL TO WAYSIDE	STATE\ STATE	KENO	STH 165	MECHANICAL ROOM WIS. INFORMATION CENTER	208Y/120	ISOL NEUTRAL	3
30-WL	SERVICE	STATE\ STATE	KENO	IH 94	IH 94 EAST FRONTAGE ROAD (120TH AVENUE)	120/240	ISOL NEUTRAL	3
30-WS	SERVICE	STATE\ STATE	KENO	STH 31	NW QUADRANT STH 31 AND CTH S	120/240	ISOL NEUTRAL	3
45-MQ	SERVICE WITH ITS	STATE\ STATE	OZAU	IH 43	IH 43 MEQUON ROAD SB ON-RAMP	120/240	ISOL NEUTRAL	2
45-PN	SERVICE WITH ITS	STATE\ STATE	OZAU	IH 43	IH 43 PIONEER ROAD SB ON-RAMP	120/240	ISOL NEUTRAL	2
45-RF	SERVICE	STATE\ STATE	OZAU	STH 32	SE QUADRANT HWY 32-43	120/240	ISOL NEUTRAL	2
45-UL	SERVICE WITH ITS	STATE\ STATE	OZAU	IH 43	IH 43 STH 60 SB ON-RAMP	120/240	ISOL NEUTRAL	2
51-NH	SERVICE	STATE\ STATE	RACI	STH 38	EAST SIDE OF ROUNDABOUT	240/480	ISOL NEUTRAL	2
51-RC	PART OF SCALE HOUSE	STATE\ STATE	RACI	IH 94	RACINE SCALE	240 2-FUSE	PHASE-PHASE	2
51-RL	SERVICE	STATE\ STATE	RACI	IH 94	NE QUADRANT IH 94 AND CTH G	240/480	ISOL NEUTRAL	2
51-SA	SERVICE WITH ITS	STATE\ STATE	RACI	IH94	IH 94/ STH 11 SYLVANIA PARK-RIDE	120/240	ISOL NEUTRAL	2
51-YK	SERVICE	STATE\ STATE	RACI	USH 45	NW QUADRANT 45/ 20 EAST INTERSECTION	240/480	ISOL NEUTRAL	2
64-EN	SERVICE	STATE\ STATE	WALW	USH 12	USH 12 ELKHORN PARK-RIDE	120/240	ISOL NEUTRAL	3
66-GM	SERVICE	STATE\ STATE	WASH	USH 41-45	USH 41-45 GERMANTOWN PARK-RIDE	120/240	ISOL NEUTRAL	3
66-VG	SERVICE	STATE\ STATE	WASH	USH 41-45	SW QUADRANT USH 45/ LANNON ROAD	240/480	ISOL NEUTRAL	3
67-BG	SERVICE WITH ITS	STATE\ STATE	WAUK	IH 43	IH 43 BIG BEND PARK-RIDE	120/240	ISOL NEUTRAL	2
67-DE	SERVICE	STATE\ STATE	WAUK	STH 83	SW QUADRANT STH 83/ STH 59	240/480	ISOL NEUTRAL	3
67-MU	SERVICE	STATE\ STATE	WAUK	STH 83	NW QUADRANT STH 83/ CTH I	240/480	ISOL NEUTRAL	3
67-MK	SERVICE	STATE\ STATE	WAUK	STH 83	STH 83 & I-43 NE QUADRANT	240/480	ISOL NEUTRAL	3
67-SY	SERVICE	STATE\ STATE	WAUK	STH 83	NW QUADRANT STH 83/ CTH X	240/480	ISOL NEUTRAL	3

GROUP CABINET AND LUMINAIRE MAINTENANCE
SPV.0060.01 LAMP DISPOSAL HIGH INTENSITY DISCHARGE *
SPV.0060.10 DISTRIBUTION CENTER PREVENTIVE MAINTENANCE
SPV.0060.11 - .32 GROUP LUMINAIRE MAINTENANCE (VAR.)
* ADDITIONAL QUANTITIES FOUND ELSEWHERE

LABEL	HIGHWAY	COMMENTS	SPV.0060.01	SPV.0060.10	SPV.0060.11	SPV.0060.12	SPV.0060.13	SPV.0060.14	SPV.0060.15	SPV.0060.16	SPV.0060.17	SPV.0060.18	SPV.0060.19	SPV.0060.20	SPV.0060.21	SPV.0060.22	SPV.0060.23	SPV.0060.24	SPV.0060.25	SPV.0060.26	SPV.0060.27	SPV.0060.28	SPV.0060.29	SPV.0060.30	SPV.0060.31	SPV.0060.32
HL-	AND		LAMP	DISTRIB	FLOOD	UDL	UDL	SIGN	SIGN	PROBEAM	20 FT	20 FT	20 FT	30 FT	30 FT	30 FT	40 FT	40 FT	40 FT	40 FT	40 FT	40 FT	50 FT	50 FT	50 FT	50 FT
	SEGMENT		DISPOSAL	CENTER	175 W	70 W	100 W	LIGHT	LIGHT	150 W	100 W	250 W	400 W	100 W	150 W	250 W	100 W	150 W	200 W	250 W	310 W	400 W	200 W	250 W	310 W	400 W
			H.I.D.	MAINT	MH	HPS	HPS	175 MV	250 MV	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS	HPS
			EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
40-BA	IH 94		68	1	--	18	--	--	--	--	--	1	2	--	--	--	--	--	--	16	--	--	--	--	--	31
40-BC	IH 43-94		2	1	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-BQ	IH 43		16	1	--	--	--	--	--	--	7	--	--	--	--	--	2	--	7	--	--	--	--	--	--	--
40-BR	IH 43		37	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21	--	--	--	--	--	16
40-BV	IH 94		32	1	--	--	--	--	--	12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20
40-BW	STADIUM	CABINET MAINTENANCE ONLY	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-CU	IH 94		77	1	--	--	--	--	--	--	4	--	--	--	--	--	--	--	--	20	--	--	--	--	--	53
40-GH	IH 43		56	1	--	--	8	--	--	--	--	--	--	--	17	--	--	--	--	--	--	1	--	--	--	30
40-HA	IH 43-94		53	1	--	--	10	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42	--	--
40-HO	STH 38	SEE TUNNEL TABLE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-HT	IH 43-94		37	1	--	--	--	--	2	--	--	--	--	11	1	--	--	--	--	--	--	--	--	13	--	10
40-JL	MARQUETTE	UDLs ARE PROBEAM 150W HPS	82	1	--	--	--	--	11	17	--	--	--	--	6	10	--	--	--	22	8	--	--	--	8	--
40-KI	IH 43	SEE TUNNEL TABLE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-MO	IH 43-94		70	1	--	--	6	--	3	--	--	--	--	18	--	--	--	--	13	2	--	--	--	27	--	1
40-NM	IH43		46	1	--	--	8	--	--	--	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	16
40-PL	IH 43-94		74	1	--	--	--	--	4	--	--	--	--	17	--	--	--	--	2	--	--	--	--	45	--	6
40-QA	MARQUETTE	SEE TUNNEL TABLE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-QZ	MARQUETTE	CABINET MAINTENANCE ONLY	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-TH	MARQUETTE		22	1	--	--	2	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	16	--	--
40-TX	MITCHELL	SEE TUNNEL TABLE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-TY	MITCHELL	SEE TUNNEL TABLE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-TZ	MITCHELL	SEE TUNNEL TABLE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-VA	IH 43-894		54	1	--	--	8	--	--	--	--	6	--	--	--	13	--	--	--	8	--	--	--	--	--	19
40-WD	IH 94		3	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--
40-WH	IH 43		95	1	--	--	2	6	6	--	--	--	--	--	9	15	--	--	--	--	--	--	--	19	34	4
40-WK	IH 43-94		49	1	--	--	6	13	2	--	--	--	--	8	--	--	--	--	--	--	--	--	--	--	--	20
40-XA	IH 43-94	CABINET MAINTENANCE ONLY	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-XB	IH 43-94	CABINET MAINTENANCE ONLY	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-XY	MQIC	CABINET MAINTENANCE ONLY	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
40-XZ	MQIC	CABINET MAINTENANCE ONLY	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
67-BM	IH 43		73	1	--	--	1	5	--	--	--	--	--	--	--	--	--	--	--	13	--	--	2	--	52	--
40-RH	IH 43		4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	2
51-RR	IH 94		18	1	--	--	4	--	--	--	--	--	--	11	--	--	--	--	2	--	--	--	1	--	--	--
51-RV	IH 94		20	1	--	--	9	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--	--	--	--
67-LD	IH 94		38	1	--	--	--	--	--	--	--	--	--	--	--	10	--	--	--	4	--	--	--	--	--	24
67-MR	IH 94		47	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	26	--	--	--	--	--	--	21
67-NB	IH 43		17	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	--	6	--	--	--	--
67-QT	IH 94	CABINET MAINTENANCE ONLY	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
67-RK	IH 43		51	1	--	--	14	--	--	--	--	--	--	--	--	--	--	--	20	--	10	--	--	--	--	7
30-WC	STH 165		32	1	--	--	--	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--	--	--	--
30-WL	IH 94		2	1	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30-WS	STH 31		16	1	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	8	--	--	--	--	--
45-MQ	IH 43		4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	2
45-PN	IH 43		4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	--	2	--	--	--	--
45-RF	STH 32		8	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	--	--	--	--	--
45-UL	IH 43		4	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--	--	--	--	--	--	--
51-NH	STH 38		15	1	--	--	--	--	--	--	--	--	--	--	--	15	--	--	--	--	--	--	--	--	--	--
51-RC	IH 94		12	1	--	--	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	10
51-RL	IH 94		20	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	--	10	--	--	--	--
51-SA	IH94		5	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	5	--	--	--	--	--	--	--
51-YK	USH 45		27	1	--	--	--	--	--	--	--	--	--	--	27	--	--	--	--	--	--	--	--	--	--	--
64-EN	USH 12		3	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--
66-GM	USH 41-45		8	1	--	--	--	--	--	--	--	--	--	--	8	--	--	--	--	--	--	--	--	--	--	--
66-VG	USH 41-45		19	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	1	--	--	3	--	5	3
67-BG	IH 43		8	1	--	--	--	--	--	--	--	--	--	--	--	--	--	4	4	--	--	--	--	--	--	--
67-DE	STH 83		18	1	--	--	--	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--	--	--
67-MK	STH 83		26	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	--	12	--	--	--	--	--
67-MU	STH 83		21	1	--	--	--	--	--	--	--	--	--	--	--	21	--	--	--	--	--	--				

UNDISTRIBUTED HIGHWAY LIGHTING MAINTENANCE

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

ITEM	QTY.	UNIT	DESCRIPTION
204.0195	3	EACH	REMOVING CONCRETE BASES
654.0107	1	EACH	CONCRETE BASES TYPE 7
654.0108	1	EACH	CONCRETE BASES TYPE 8
655.0610	200	L.F.	ELECTRICAL WIRE LIGHTING 12 AWG (POLE WIRE)
659.0125	4	EACH	LUMINAIRES UTILITY HPS 250 WATTS
659.0802	27	* EACH	PLAQUES SEQUENCE IDENTIFICATION
SPV.0060.02	2	EACH	LIGHT TOWER RAT SCREENS
SPV.0060.03	6	* EACH	REMOVING LUMINAIRES
SPV.0060.04	1	EACH	REMOVING LIGHTING UNITS
SPV.0060.05	20	EACH	FUSE HOLDERS
SPV.0060.06	90	EACH	FUSES TYPE FNQ
SPV.0060.08	1	EACH	INSTALLING STATE FURNISHED LIGHTING UNITS
SPV.0060.09	1	EACH	PLUMBING LIGHT POLES
SPV.0090.01	400	L.F.	INSTALLING STATE-FURNISHED CABLE IN DUCT
SPV.0090.02	400	L.F.	INSTALLING STATE-FURNISHED MEDIAN CABLE IN DUCT
SPV.0090.03	350	L.F.	REMOVING MEDIAN CABLE IN DUCT
SPV.0090.04	250	L.F.	REMOVING TEMPORARY OVERHEAD LINES

WORK ZONE TRAFFIC CONTROL

ITEM	ITEM	UNIT	QUANTITY
643.0100	TRAFFIC CONTROL PROJECT 1000-67-95	EACH	1
643.0300	TRAFFIC CONTROL DRUMS ***	DAY	200
643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	25
643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	20
643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	20
643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	65
643.0900	TRAFFIC CONTROL SIGNS	DAY	150
643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	10
SPV.0045.01	TRUCK MOUNTED ATTENUATOR	DAY	55

*** 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.

MOBILIZATION ITEMS

ITEM	ITEM	UNIT	QUANTITY
619.1000	MOBILIZATION	EACH	1
SPV.0045.02	ZONE 2 DISTANCE PREMIUM	DAY	5
SPV.0045.03	ZONE 3 DISTANCE PREMIUM	DAY	3

CHANGEOUT OF METAL HALIDE LUMINAIRES

- 659.0802 PLAQUES SEQUENCE IDENTIFICATION *
- 659.1125 LUMINAIRES UTILITY LED C
- SPV.0060.01 LAMP DISPOSAL HIGH INTENSITY DISCHARGE *
- SPV.0060.03 REMOVING LUMINAIRES *

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

SYSTEM	HIGHWAY SEGMENT	RAMP OR PARK-RIDE	659.0802 PLAQUES SEQUENCE IDENTIFICATION EACH	659.1125 LUMINAIRES UTILITY LED C EACH	SPV.0060.01 LAMP DISPOSAL H.I.D. EACH	SPV.0060.03 REMOVING LUMINAIRES EACH
HL-40-BC	IH 43 NB	IH 43/94 NB OFF TO BECHER; IH 43/94 SB OFF TO BECHER	4	4	4- INCLUDED IN GROUP CABINET TABLE	4
HL-40-BQ	IH 43 NB	BROWN DEER PARK-RIDE	2	2	2 - INCLUDED IN GROUP CABINET TABLE	2
HL-40-JL	MARQUETTE IC	EB ST. PAUL AVE EXIT RAMP	2	2	2 - INCLUDED IN GROUP CABINET TABLE	2
TOTAL			8	8	0	8
			*		*	*

TUNNEL LUMINAIRE MAINTENANCE

- SPV.0060.01 LAMP DISPOSAL HIGH INTENSITY DISCHARGE *
- SPV.0060.33 TO SPV.0060 .36 TUNNEL LUMINAIRE MAINTENANCE (VARIOUS)
- SPV.0060.37 GROUP CLEAN TUNNEL LUMIANIRES

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE

LABEL	TUNNEL	SPV.0060.01 LAMP DISPOSAL H.I.D. EACH	SPV.0060.33 TUNNEL 150 W EACH	SPV.0060.34 TUNNEL 200 W EACH	SPV.0060.35 TUNNEL 250 W EACH	SPV.0060.36 TUNNEL 400 W EACH	SPV.0060.37 TUNNEL GROUP CLEAN EACH
HL-40-QA	KILBOURN EB EXIT	40	--	10	--	30	195
HL-40-KI	KILBOURN NB ENTRANCE	12	--	--	4	8	56
HL-40-TX	MITCHELL IC TUNNEL #1 W-N	161	--	--	--	161	644
HL-40-TY	MITCHELL IC TUNNEL #2 W-N	151	--	--	--	151	604
HL-40-TZ	MITCHELL IC TUNNEL #3 N-W	178	--	--	--	178	712
HL-40-HO	HOWELL TUNNEL BOTH WAYS	75	15	--	--	60	373
TOTAL		617	15	10	4	588	2,584
		*					

CHANGEOUT/REPLACEMENT OF POLE PLAQUES

659.0802 PLAQUES SEQUENCE IDENTIFICATION

* ADDITIONAL QUANTITIES FOUND ELSEWHERE

SYSTEM	LOCATION	PLAQUE ID	LUMINAIRE WATTAGE
HL-67-RK	IH 43 @MOORLAND RD.	BRK3	250
HL-67-RK	IH 43 @MOORLAND RD.	DRK21	250
HL-67-RK	IH 43 @MOORLAND RD.	BRK5	250
HL-67-RK	IH 43 @MOORLAND RD.	BRK9	250
HL-67-RK	IH 43 @MOORLAND RD.	BRK10	400
HL-67-RK	IH 43 @MOORLAND RD.	ERK11	400
HL-67-RK	IH 43 @MOORLAND RD.	FRK11	400
HL-67-RK	IH 43 @MOORLAND RD.	ERK12	400
HL-67-RK	IH 43 @MOORLAND RD.	FRK12	400
HL-67-RK	IH 43 @MOORLAND RD.	CRK29	400
HL-67-RK	IH 43 @MOORLAND RD.	DRK30	400
HL-67-RK	IH 43 @MOORLAND RD.	CRK31	400
HL-67-RK	IH 43 @MOORLAND RD.	FRK15	250
HL-67-RK	IH 43 @MOORLAND RD.	ERK16	250
HL-67-RK	IH 43 @MOORLAND RD.	FRK17	250
HL-67-RK	IH 43 @MOORLAND RD.	DRK32	400
HL-67-NB	IH 43 @MOORLAND RD.	DNB8	400
HL-67-NB	IH 43 @MOORLAND RD.	DNB7	400
HL-67-NB	IH 43 @MOORLAND RD.	DNB4	250
HL-67-NB	IH 43 @MOORLAND RD.	BNB6	250
HL-67-NB	IH 43 @MOORLAND RD.	CNB2	250
HL-67-BM	IH 43 @ 124TH ST.	CBM6	250
HL-67-BM	IH 43 @ 124TH ST.	DBM5	250
HL-67-BM	IH 43 @ 124TH ST.	DBM7	250
HL-67-BM	IH 43 @ 124TH ST.	BBM4	250
HL-67-BM	IH 43 @ 124TH ST.	BBM3	310
HL-67-BM	IH 43 @ 124TH ST.	CBM1	310
TOTAL			27

*

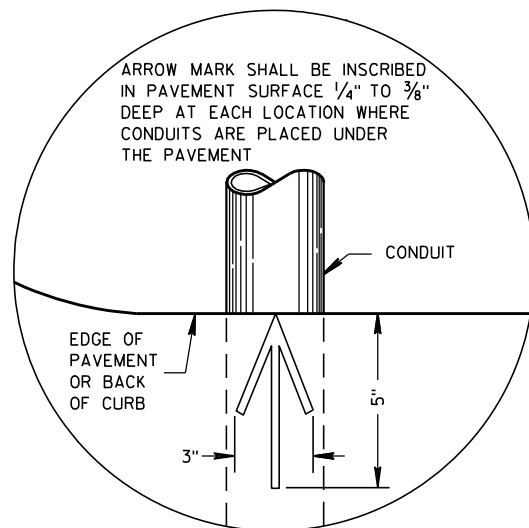
INSTALLING STATE-FURNISHED LUMINAIRES UTILITY HPS

SPV.0060.07 INSTALLING STATE-FURNISHED LUMINAIRES UTILITY HPS

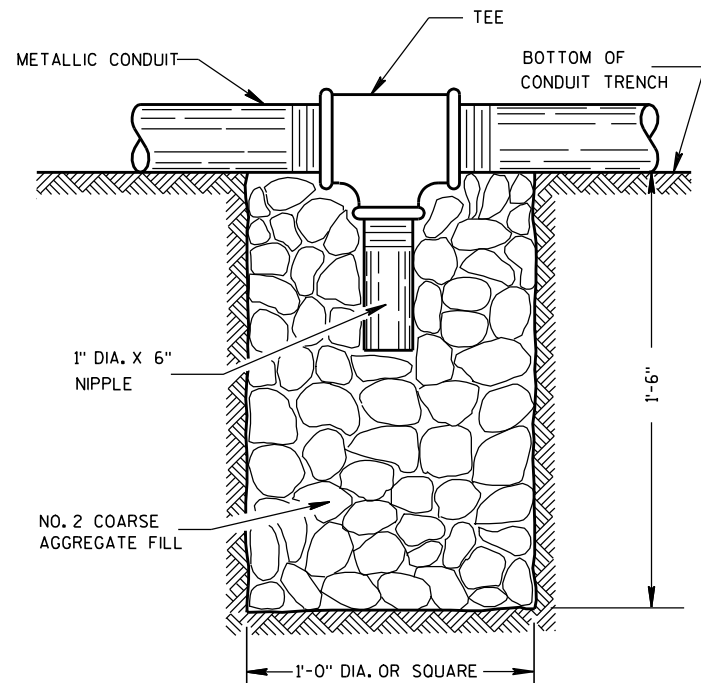
SYSTEM	LOCATION	SPV.0060.07 INSTALLING STATE-FURNISHED LUMINAIRES UTILITY HPS
HL-67-BM	IH 43 @ 124TH ST.	BBM6
HL-67-BM	IH 43 @ 124TH ST.	DBM6
HL-67-BM	IH 43 @ 124TH ST.	CBM6
HL-67-BM	IH 43 @ 124TH ST.	DBM5
HL-67-BM	IH 43 @ 124TH ST.	BBM4
HL-67-BM	IH 43 @ 124TH ST.	CBM4
HL-67-BM	IH 43 @ 124TH ST.	DBM3
HL-67-BM	IH 43 @ 124TH ST.	BBM7
HL-67-BM	IH 43 @ 124TH ST.	ABM8
HL-67-BM	IH 43 @ 124TH ST.	CBM3
HL-67-BM	IH 43 @ 124TH ST.	CBM1
HL-67-BM	IH 43 @ 124TH ST.	BBM1
HL-67-BM	IH 43 @ 124TH ST.	DBM1
HL-67-BM	IH 43 @ 124TH ST.	ABM1
TOTAL		14

Standard Detail Drawing List

09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C08-04	CONCRETE BASE, TYPE 7
09C09-04	CONCRETE BASE, TYPE 8
10A01-02	ELECTRICAL HANDHOLE WIRING
10A02-02	IDENTIFICATION PLAQUES LIGHT POLES
10A05-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES ISOLATED NEUTRAL SYSTEMS
10A06-02	ELECTRICAL DETAILS GROUND MOUNT LIGHT POLES GROUNDED NEUTRAL SYSTEMS
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D12-03	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
15D14-02	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-02	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

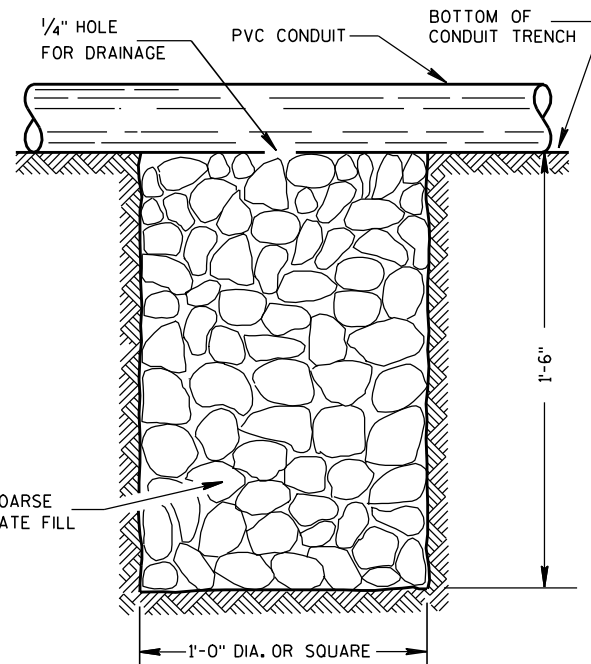


**PLAN VIEW
ARROW MARK**



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

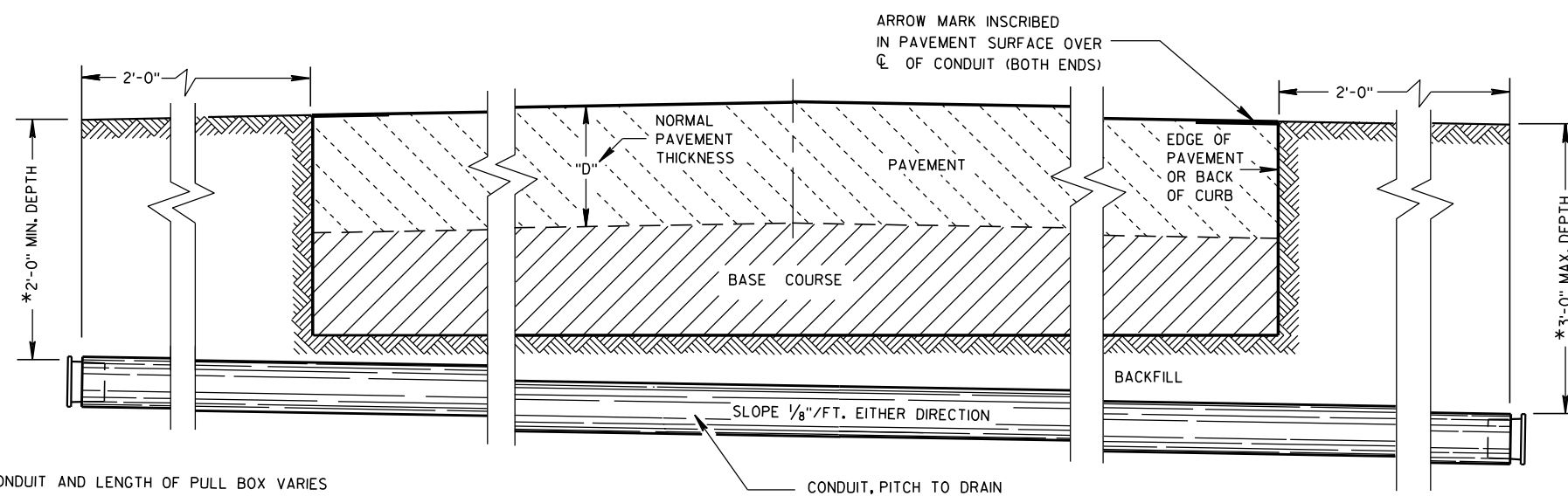
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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



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

**SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS**

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03

DATE

FHWA

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGINEER FOR HWYS

6

S.D.D. 9 B 4-10

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

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

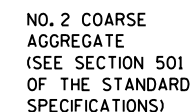
PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

ELECTRICAL USE) ON ALL NONMETALLIC
CONDUIT BEFORE INSTALLATION OF _____
WIRE AND/OR CABLE.



PULL BOX

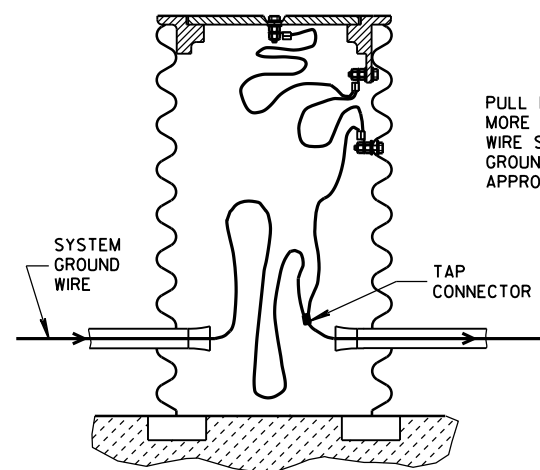
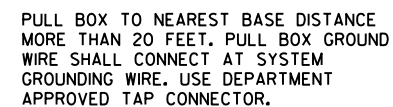


Diagram illustrating an alternate cover (locking) tightening bar type. The top view shows a cylindrical cover with a central locking bar and a hook. The bottom view shows the internal components, including the hook and the locking bar.

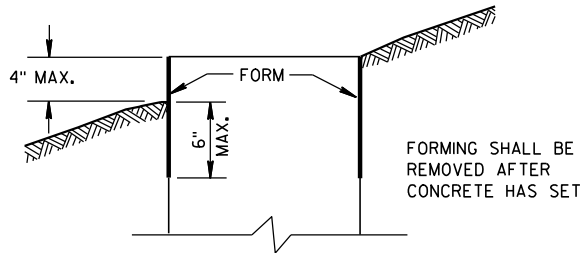
Labels: BAR, BOTTOM, SECTION, HOOK.

ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE



PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>2-7-2013</u> DATE	<u>/S/ Ahmet Demirbilek</u> STATE ELECTRICAL ENGINEER
FHWA	

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

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

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

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

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD, ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

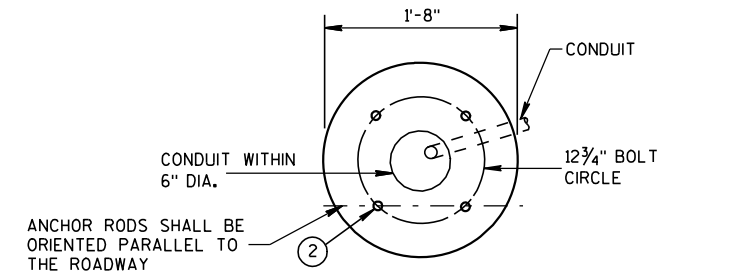
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

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

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

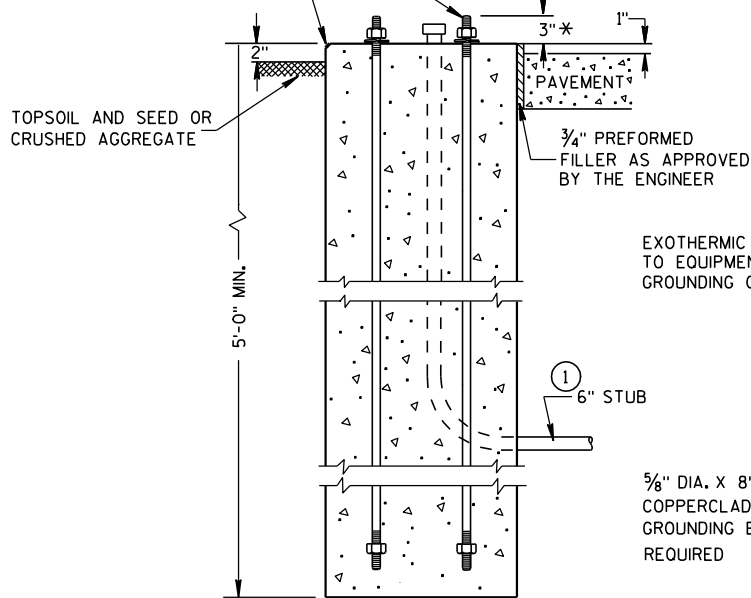
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.
- 2 (4) 1" DIA. X 3'-6" ANCHOR RODS.
- 3 (4) 1" DIA. X 5'-0" ANCHOR RODS.
- 4 (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
- 5 (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.
- 6 (4) 1" DIA. X 3'-6" ANCHOR RODS.
- 7 (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.
- 8 (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

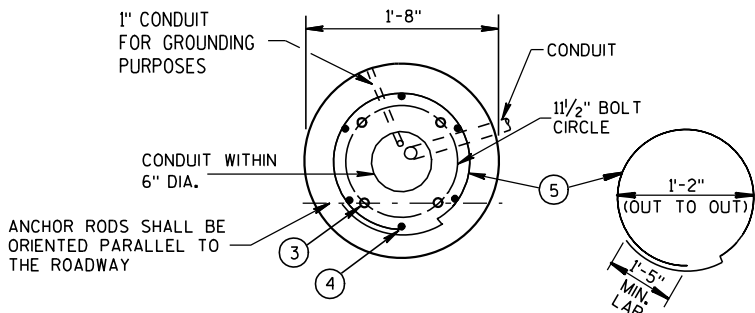


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

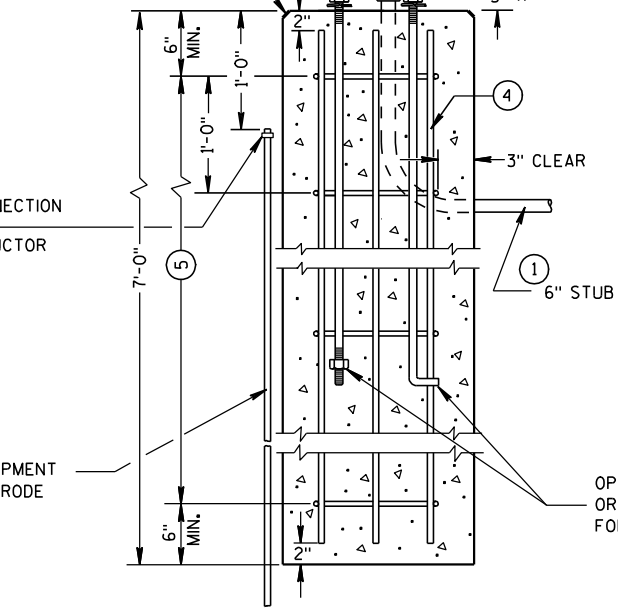
HALF SECTION IN UNPAVED AREA (TYPICAL FOR TYPES 1, 2 & 5)



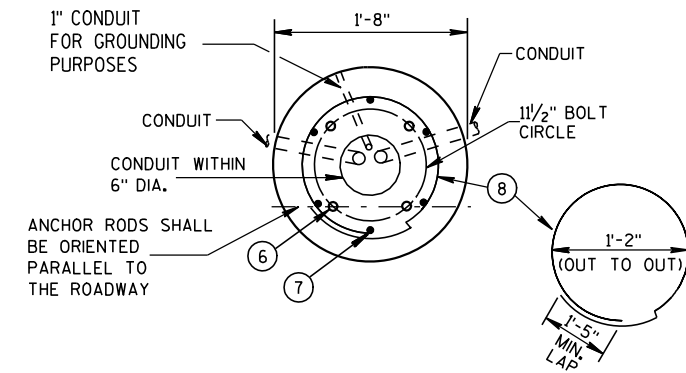
TYPE 1



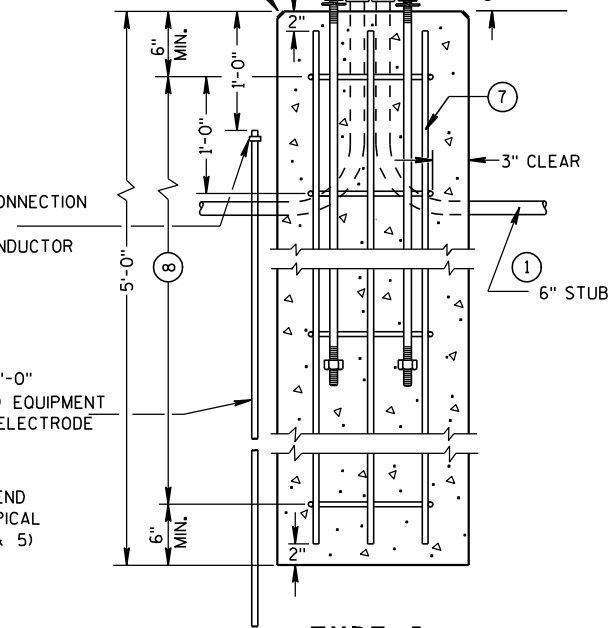
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 2



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 5

CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2 & 5

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10

DATE

FHWA

/S/ Joanna L. Bush

STATE ELECTRICAL ENGINEER FOR HWYS

6

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

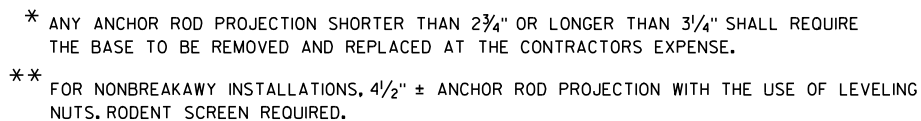
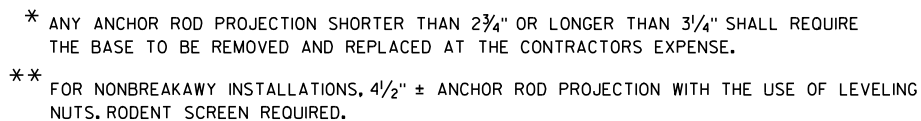
S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4

S.D.D. 9 C 8-4



* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS, RODENT SCREEN REQUIRED.



NON-BREAKAWAY INSTALLATION (LEVELING NUT)



NON-BREAKAWAY INSTALLATION (LEVELING NUT)

- ② (4) 1" DIA. X 5'-0" ANCHOR RODS
- ③ (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.
- ④ (7) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

(4) (7) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

(4) (7) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

(4) (7) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

CONCRETE BASE, TYPE 7

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

DATE _____

— — — — —

— — — — —

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

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

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

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

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

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

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

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

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

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

ANCHOR RODS SHALL BE 1" X 60".

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS.

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

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

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

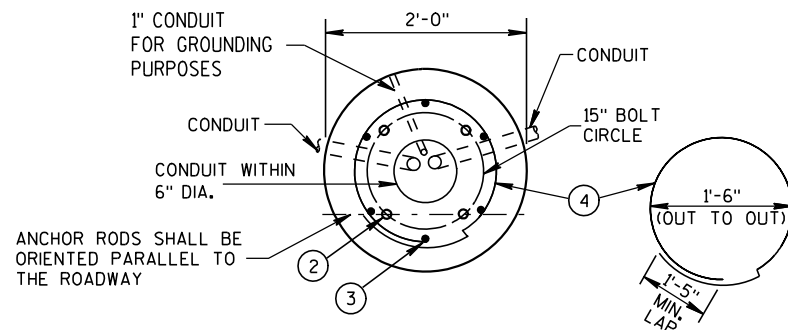
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

② (4) 1" DIA. X 5'-0" ANCHOR RODS

③ (6) NO. 6 X 9'-8" BAR STEEL REINFORCEMENT.

④ (10) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



WASHERS AND LOCK WASHERS REQUIRED (TYPICAL)

FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

EXOTHERMIC WELD TO EQUIPMENT GROUNDING CONDUCTOR

5/8" DIA. X 8'-0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED

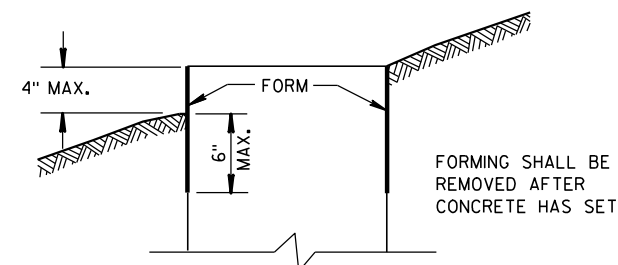
OPTIONAL 4" L BEND OR HEX NUT (TYPICAL)

CONCRETE BASE, TYPE 8 (FOR 50' LIGHT POLES)

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

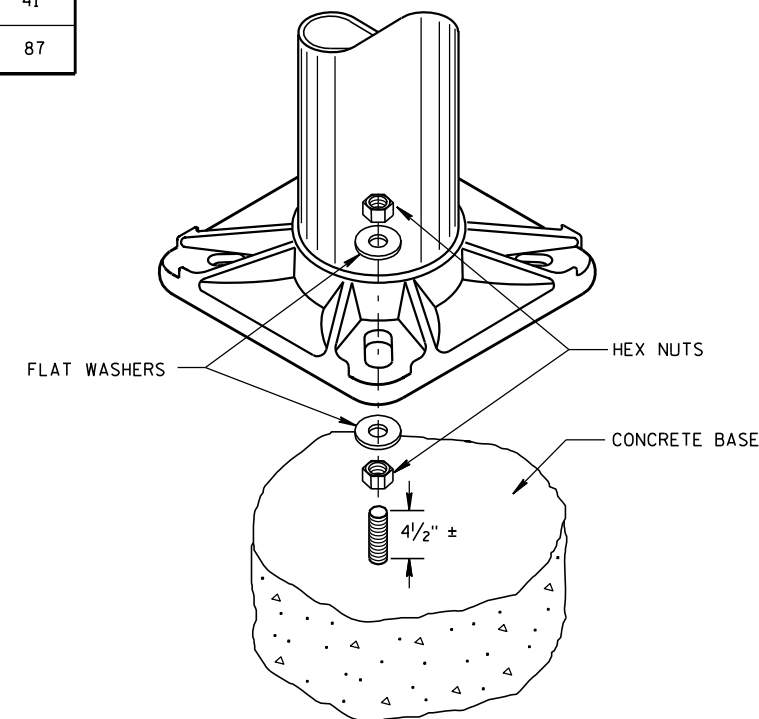
** FOR NONBREAKAWY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	1.2
LBS. OF HOOP BAR STEEL	41
LBS. OF VERTICAL BAR STEEL	87

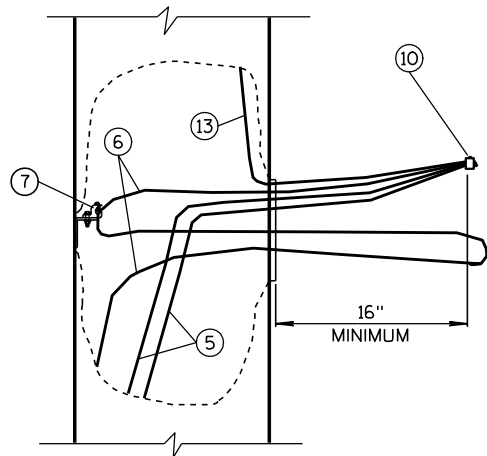


NON-BREAKAWAY INSTALLATION (LEVELING NUT)

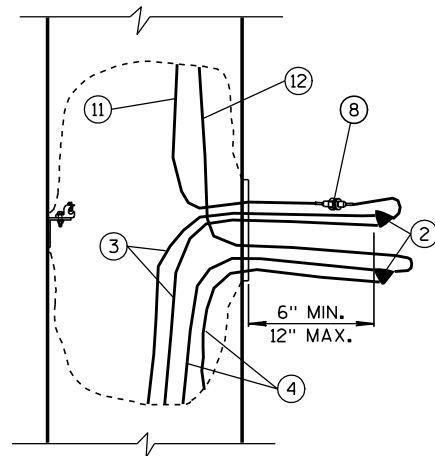
CONCRETE BASE, TYPE 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/3/10
DATE
/S/ Joanna L. Bush
STATE ELECTRICAL ENGINEER FOR HWYS
FHWA

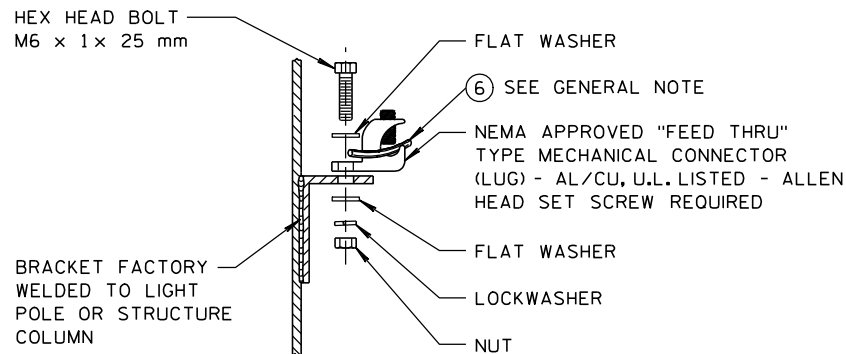


EQUIPMENT GROUNDING
CONDUCTOR SLACK



UNGROUND CONDUCTOR SLACK
(AND GROUNDED NEUTRAL SLACK
IN GROUNDED NEUTRAL SYSTEM)

TYPICAL CONDUCTOR SLACK AT HANDHOLES



HANDHOLE GROUNDING LUG

(NUT, BOLT, WASHERS, AND LOCK WASHERS
SHALL BE STAINLESS STEEL)

CONDUCTOR COLOR CODES

KEY	CONDUCTOR	COLOR
3	UNGROUND LINE WIRE	*
4	GROUNDED LINE WIRE	WHITE
5	SYSTEM GROUNDING LINE WIRE	GREEN
6	GROUNDING ELECTRODE CONDUCTOR	BARE
11	UNGROUND POLE WIRE	*
12	GROUNDED POLE WIRE	WHITE
13	EQUIPMENT GROUNDING POLE WIRE	GREEN

* FOLLOW COLOR CODING SHOWN IN THE PLANS.
WHERE THE PLANS DO NOT SHOW COLOR CODING,
USE BLACK FOR SINGLE LUMINAIRE POLES; BLACK
AND RED FOR TWIN LUMINAIRE POLES.

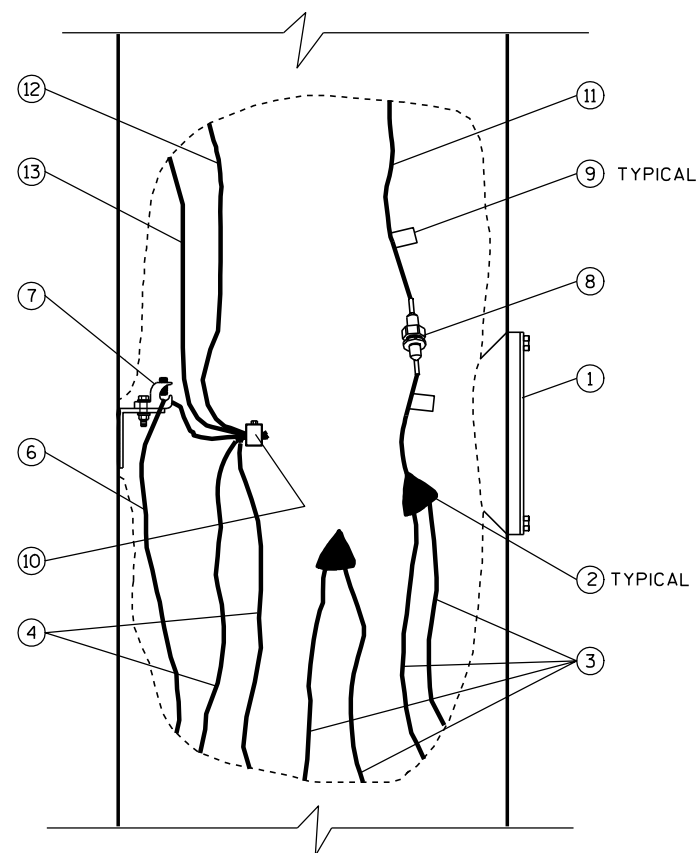


1 POLE (1P)



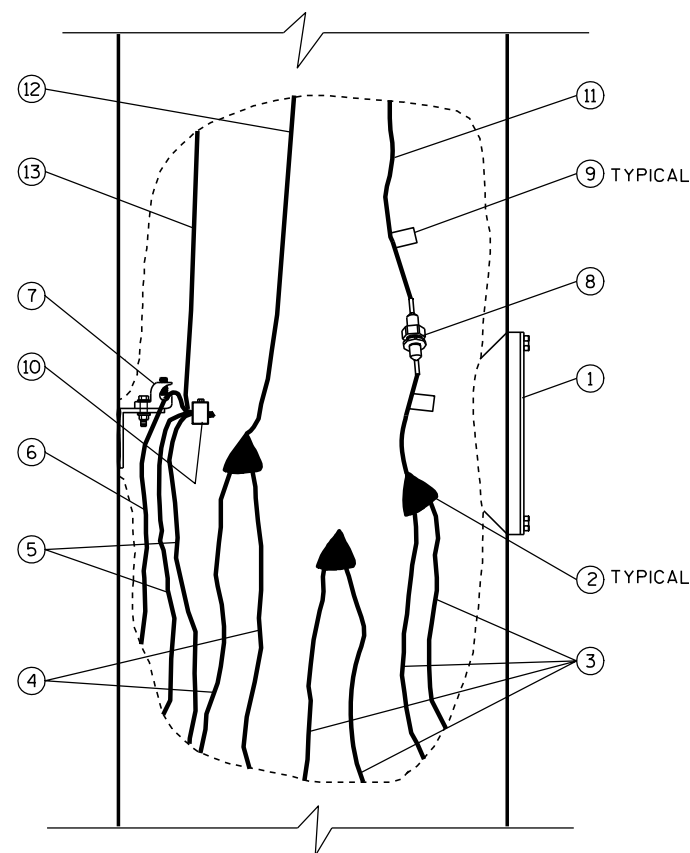
2 POLE (2P)

FUSE ASSEMBLIES



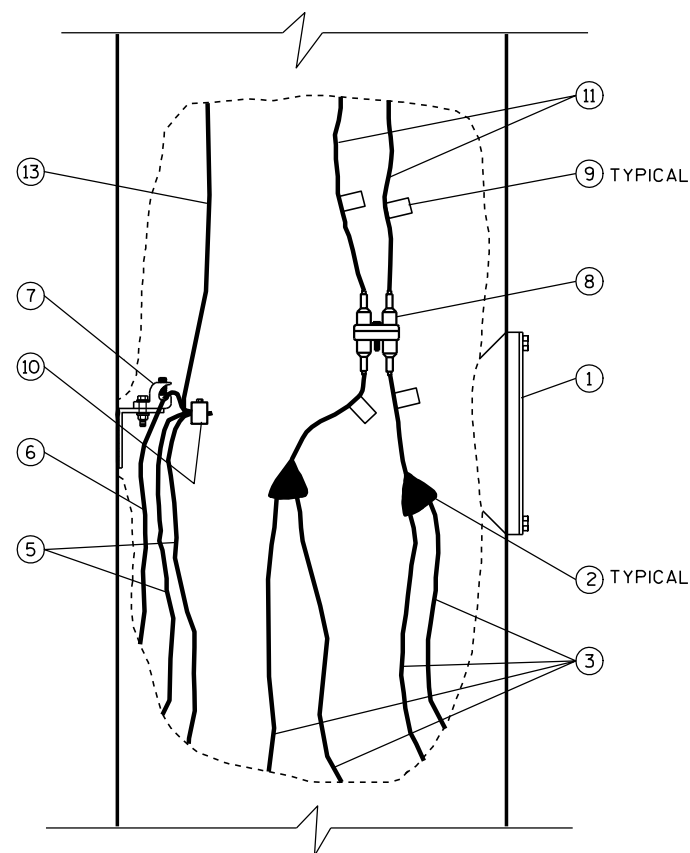
CUTAWAY HANDHOLE DETAIL

GROUND NEUTRAL SYSTEMS
1-φ



CUTAWAY HANDHOLE DETAIL

ISOLATED NEUTRAL SYSTEMS
1-φ SHOWN; 3-φ WYE SIMILAR
(SEE GENERAL NOTE)



CUTAWAY HANDHOLE DETAIL

PHASE-TO-PHASE SYSTEMS
1-φ SHOWN; 3-φ DELTA SIMILAR
(SEE GENERAL NOTE)

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE ELECTRICAL DETAILS FOR THE
APPLICATION, WHICH MAY BE A LIGHT POLE, SIGN BRIDGE, ETC.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT
SPICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING
LUG TO THE CONNECTOR.

THREE POLE WIRES ARE SHOWN FOR A SINGLE LUMINAIRE LIGHT POLE.
THREE ADDITIONAL POLE WIRES REQUIRED FOR TWIN LUMINAIRE LIGHT POLES
ARE OMITTED FROM THE DRAWING FOR CLARITY. IN THE TWIN POLE CASE,
BUNDLE EACH SET OF THREE WIRES WITH A NYLON CABLE TIE.

IN 3-PHASE SYSTEMS, THERE WILL BE ONE MORE UNGROUNDED LINE WIRE,
WHICH IS OMITTED FROM THE DRAWING FOR CLARITY.

CIRCUIT TAGS SHALL BE INSTALLED ONLY WHERE REQUIRED IN THE SPECIAL
PROVISIONS.

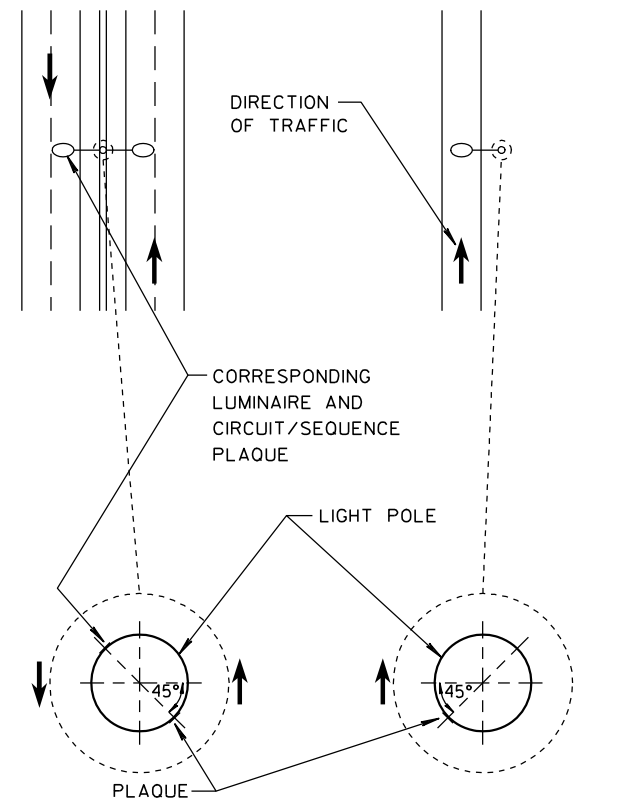
- ① HANDHOLE AND COVER
- ② INSULATED SPLICE
- ③ UNGROUND LINE WIRE
- ④ GROUNDED LINE WIRE
- ⑤ SYSTEM GROUNDING LINE WIRE
- ⑥ GROUNDING ELECTRODE CONDUCTOR
- ⑦ HANDHOLE GROUNDING LUG
- ⑧ FUSE ASSEMBLY, 1P OR 2P AS REQUIRED
- ⑨ CIRCUIT TAG (SEE GENERAL NOTE)
- ⑩ REVERSIBLE PRESSURE OR COMPRESSION
GROUNDING CONNECTOR (NOT INSULATED)
- ⑪ UNGROUND POLE WIRE
- ⑫ GROUNDED POLE WIRE
- ⑬ EQUIPMENT GROUNDING POLE WIRE

ELECTRICAL HANDHOLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010 /S/ John Corbin
DATE STATE ELECTRICAL ENGINEER FOR HWYS
FHWA

NOTE: REQUIRED CONDUCTOR SLACK NOT SHOWN ON "CUTAWAY HAND HOLE" DETAILS FOR
DRAWING CLARITY, SEE "TYPICAL CONDUCTOR SLACK AT HANDHOLES" ON THIS SHEET.



MEDIAN POLE SINGLE ARM POLE

LOCATION OF LIGHT POLE
CIRCUIT/SEQUENCE PLAQUE

GENERAL NOTES

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

PLAQUES SHALL BE INCIDENTAL TO ALL NEW INSTALLATIONS.

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

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

GALVANIZED STEEL SHAFT - STAINLESS STEEL POP RIVETS

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

ALUMINUM SHAFTS - ALUMINUM POP RIVETS

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

PLAQUE MATERIALS:

BASE - SHEET ALUMINUM, 0.060" THICK.

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

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

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

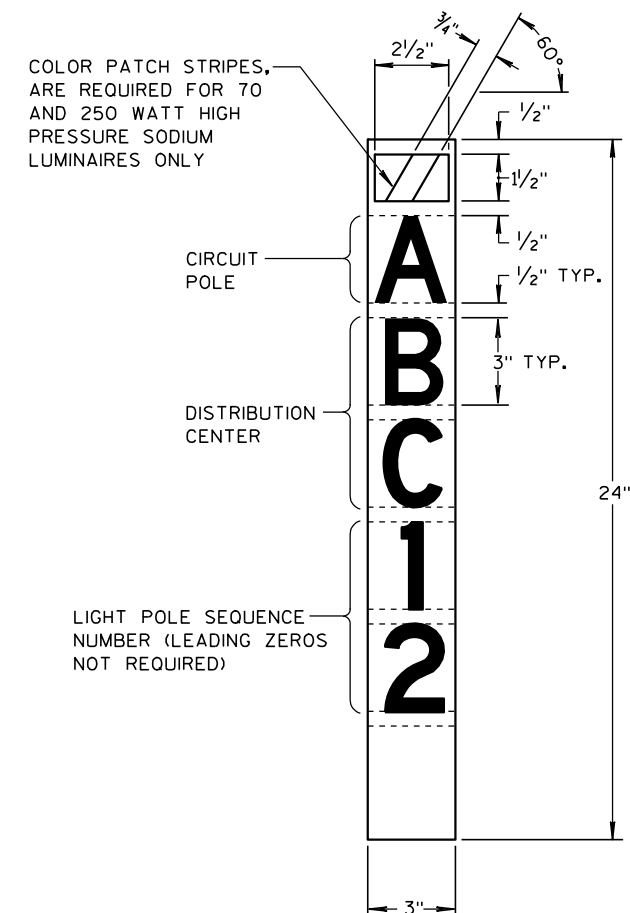
COLOR PATCHES - VARIOUS COLORS, SELF-ADHESIVE VINYL SHEETING

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

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

COLOR PATCH CODE FOR HPS LUMINAIRES

1000 WATT - NO PATCH
400 WATT - ORANGE
310 WATT - BLUE
250 WATT - ORANGE WITH WHITE STRIPE
200 WATT - RED
150 WATT - GREEN
100 WATT - BROWN
70 WATT - BROWN WITH WHITE STRIPE



LIGHT POLE CIRCUIT/SEQUENCE
PLAQUE

IDENTIFICATION PLAQUES
LIGHT POLES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/25/2010
DATE
FHWA

/S/ John Corbin
STATE ELECTRICAL ENGINEER FOR HWYS

GENERAL NOTES

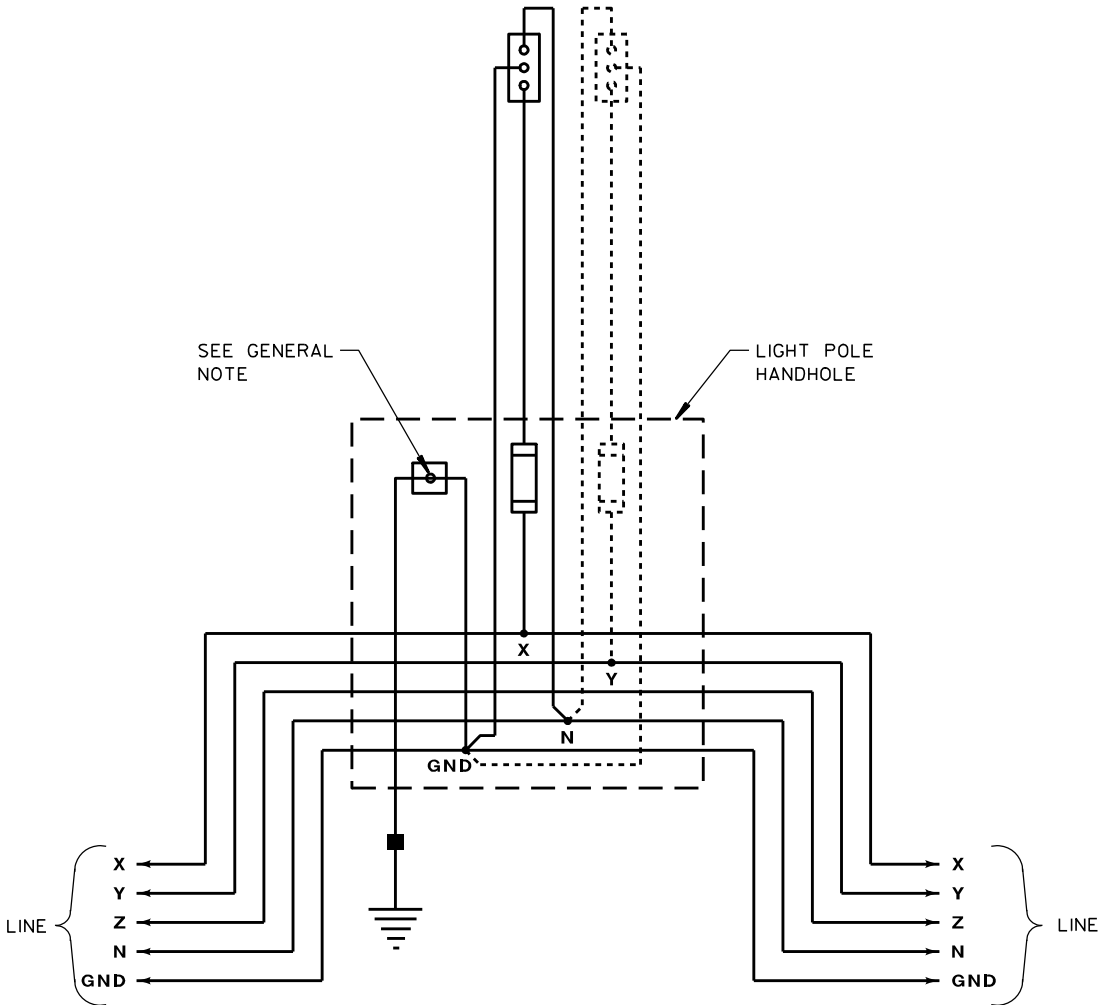
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

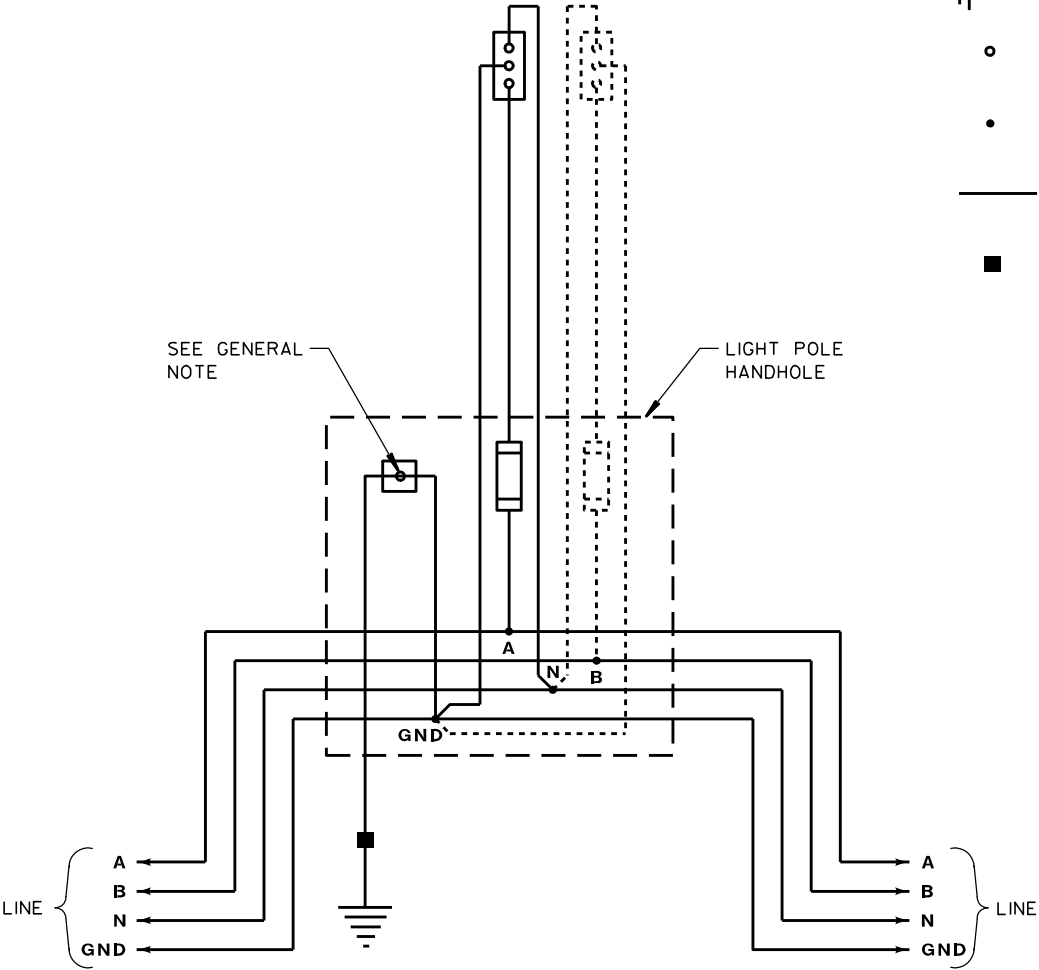
THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
3- ϕ 208Y/120VAC OR 480Y/277VAC 4 WIRE

HANDHOLE FUSE SCHEDULES

LINE VOLTAGE ϕ -GROUND	BALLAST WATTAGE	
	70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A



TYPICAL WIRING DIAGRAM
ISOLATED NEUTRAL SYSTEM
1- ϕ 120/240VAC OR 240/480VAC 3 WIRE

LEGEND

- A, B, X, Y, Z UNGROUNDED CIRCUIT CONDUCTORS
- N GROUNDED CIRCUIT CONDUCTORS
- GND EQUIPMENT GROUNDING CONDUCTOR
- P POLE (ELECTRICAL CIRCUIT)
- ϕ PHASE (ELECTRICAL CURRENT)
- [Symbol] HANDHOLE GROUND LUG
- [Symbol] SINGLE-POLE (1P) FUSE ASSEMBLY
- [Symbol] TWO-POLE (2P) FUSE ASSEMBLY
- [Symbol] UNFUSED LUMINAIRE
- [Symbol] EQUIPMENT GROUNDING ELECTRODE
- [Symbol] TERMINAL
- [Symbol] SPLICE
- [Symbol] CONDUCTOR
- [Symbol] EXOTHERMIC WELD

ELECTRICAL DETAILS
GROUND MOUNT LIGHT POLES
ISOLATED NEUTRAL SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DATE STATE ELECTRICAL ENGINEER FOR HWYS
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GENERAL NOTES

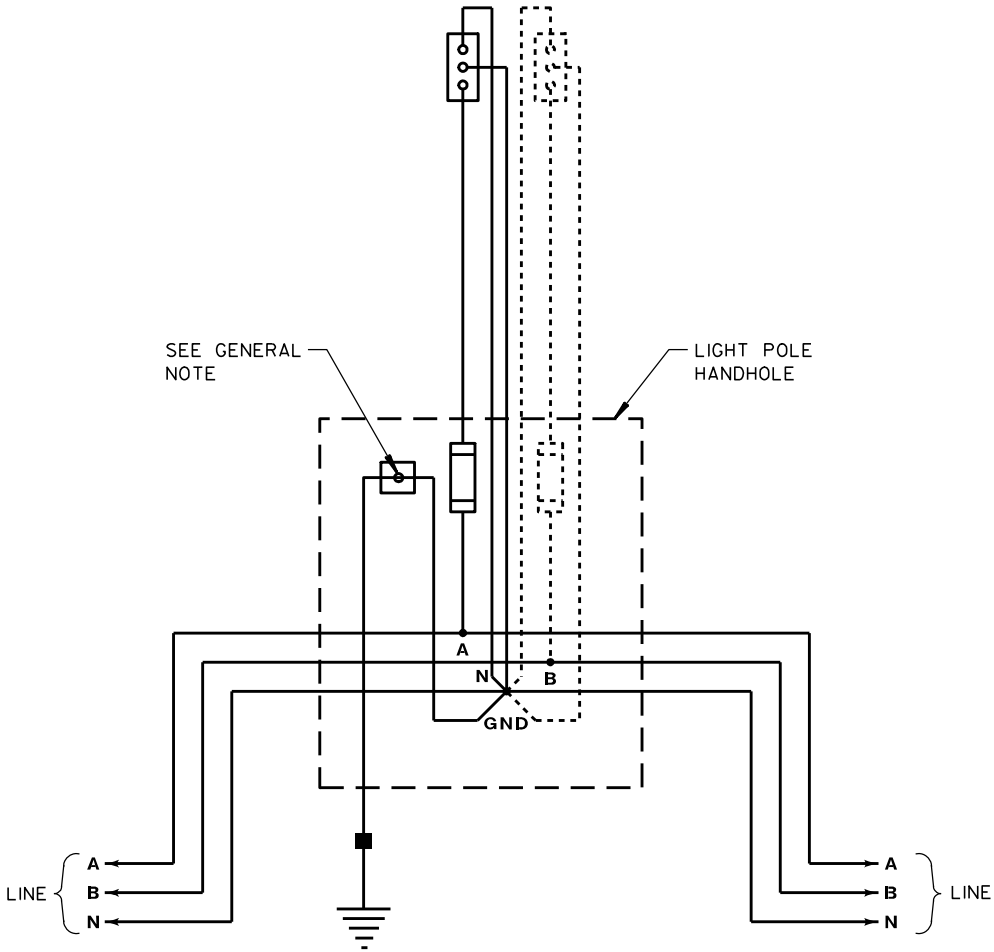
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN IN THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

WIRING FOR SINGLE LUMINAIRE POLES IS SHOWN WITH SOLID LINES. WIRING FOR THE SECOND LUMINAIRE OF TWIN LUMINAIRE POLES IS SHOWN WITH DOTTED LINES.

THE PLANS WILL SHOW WHICH CIRCUIT LEG(S) ARE CONNECTED TO EACH INSTALLATION.





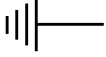






TYPICAL WIRING DIAGRAM
GROUNDED NEUTRAL SYSTEM
1- ϕ 240/480VAC 3 WIRE OR 480VAC 2 WIRE

HANDHOLE FUSE SCHEDULES

LINE VOLTAGE ϕ -GROUND	BALLAST WATTAGE	
	70-200 W	250-400 W
120 VAC	5 A	10 A
240 VAC	5 A	5 A
277 VAC	5 A	5 A
480 VAC	3 A	5 A

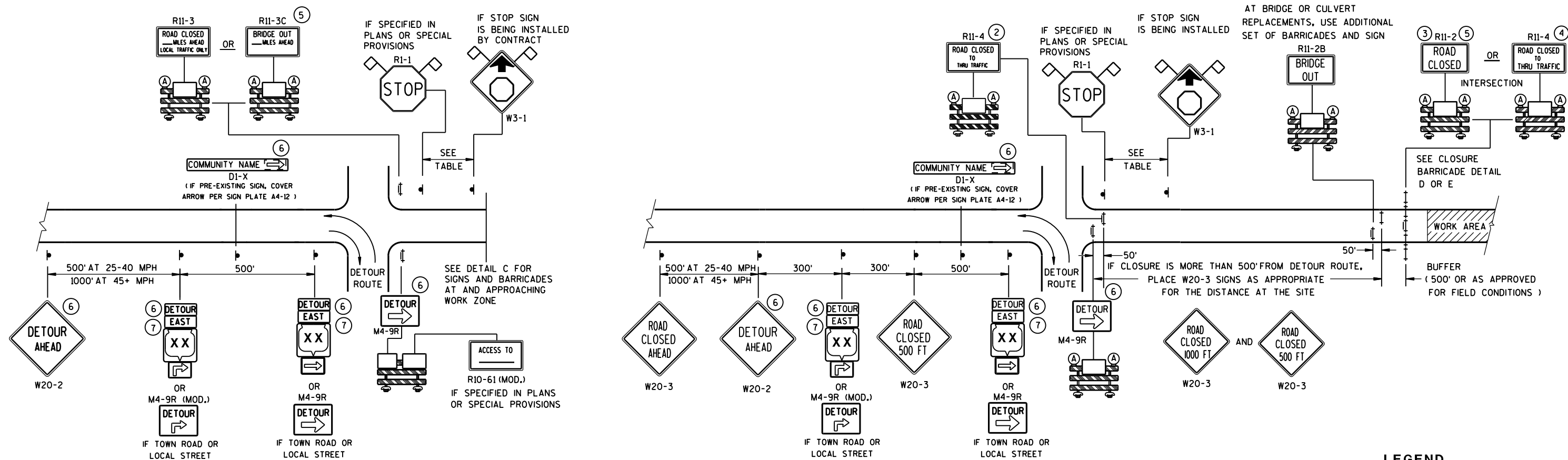
LEGEND

- A, B, X, Y, Z UNGROUNDED CIRCUIT CONDUCTORS
- N GROUNDED CIRCUIT CONDUCTORS
- GND EQUIPMENT GROUNDING CONDUCTOR
- P POLE (ELECTRICAL CIRCUIT)
- ϕ PHASE (ELECTRICAL CURRENT)
-  HANDHOLE GROUND LUG
-  SINGLE-POLE (1P) FUSE ASSEMBLY
-  TWO-POLE (2P) FUSE ASSEMBLY
-  UNFUSED LUMINAIRE
-  EQUIPMENT GROUNDING ELECTRODE
-  TERMINAL
-  SPLICE
-  CONDUCTOR
-  EXOTHERMIC WELD

ELECTRICAL DETAILS
GROUND MOUNT LIGHT POLES
GROUNDED NEUTRAL SYSTEMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

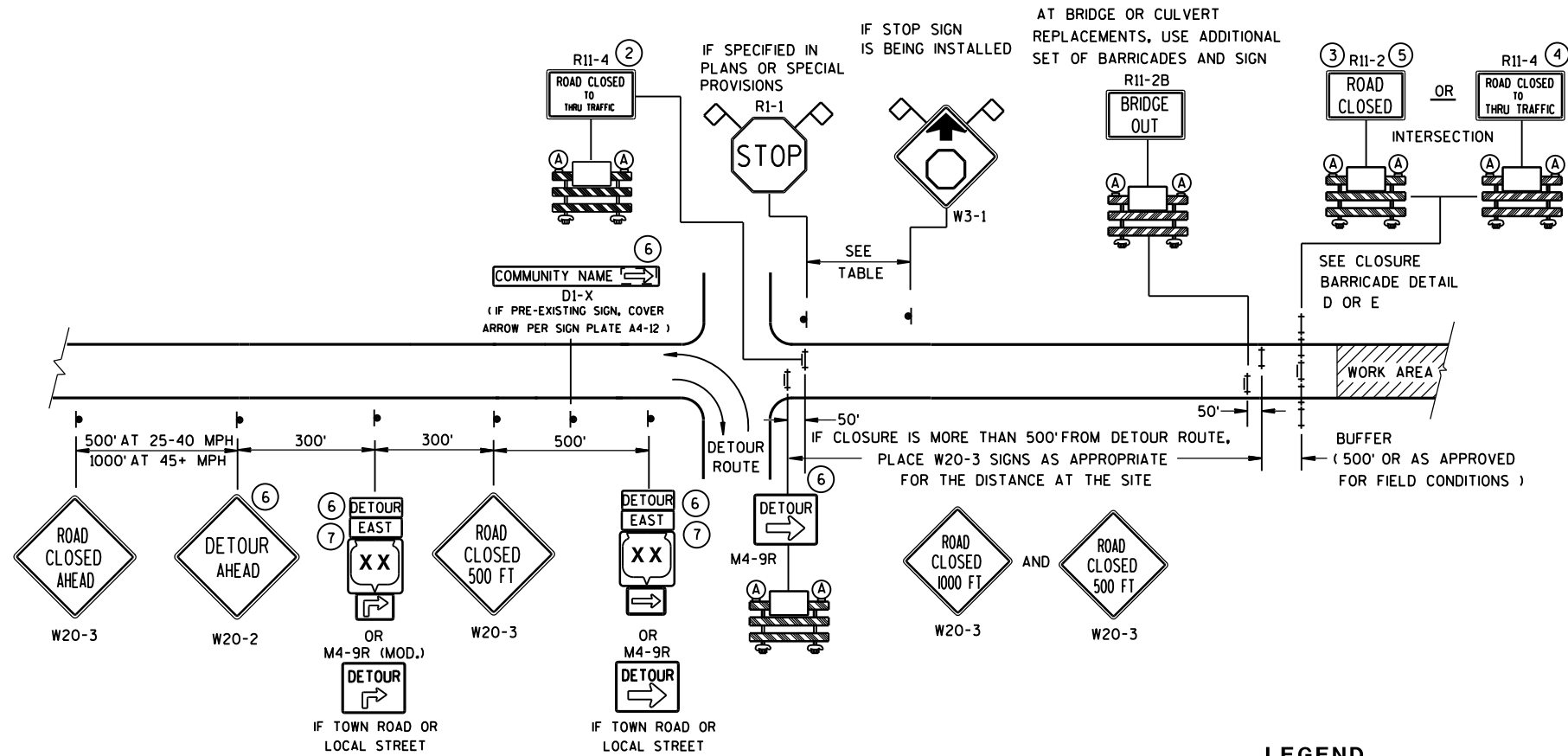
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DATE STATE ELECTRICAL ENGINEER FOR HWYS
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DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

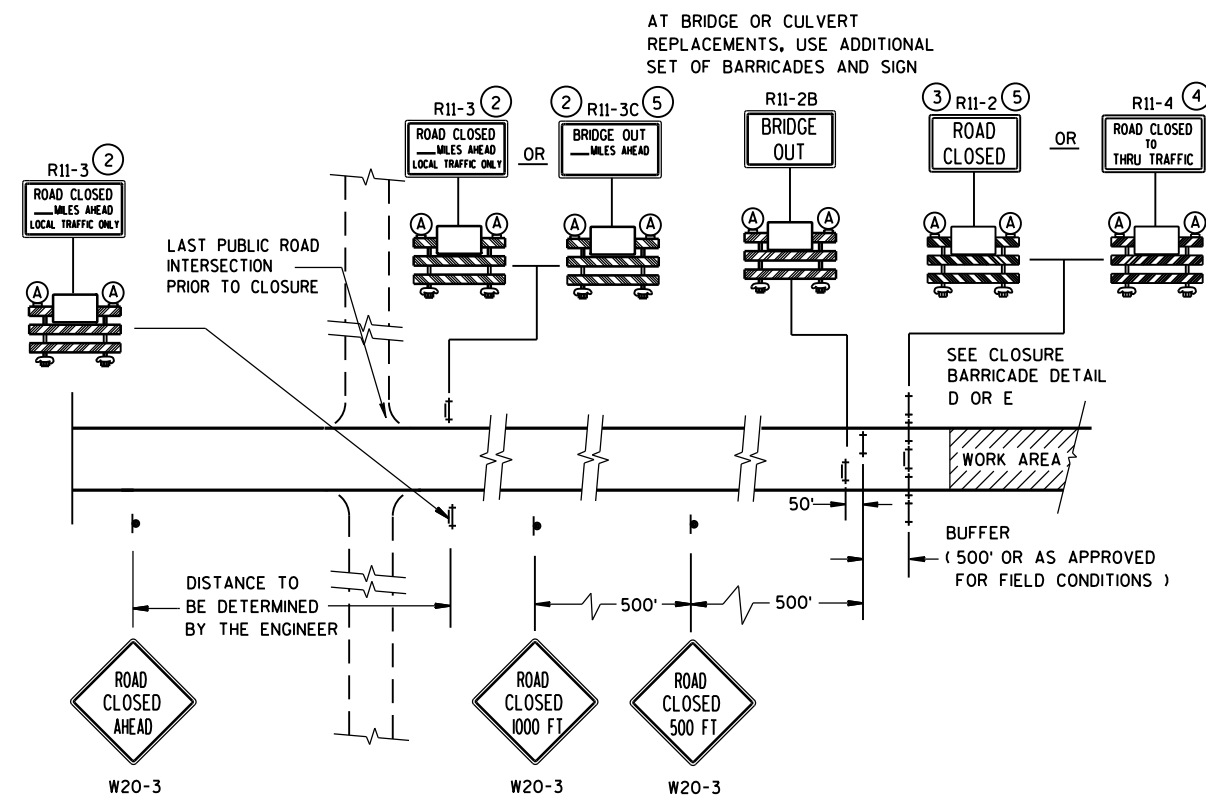
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B








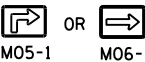

MAINLINE CLOSURE WITH POSTED DETOUR

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



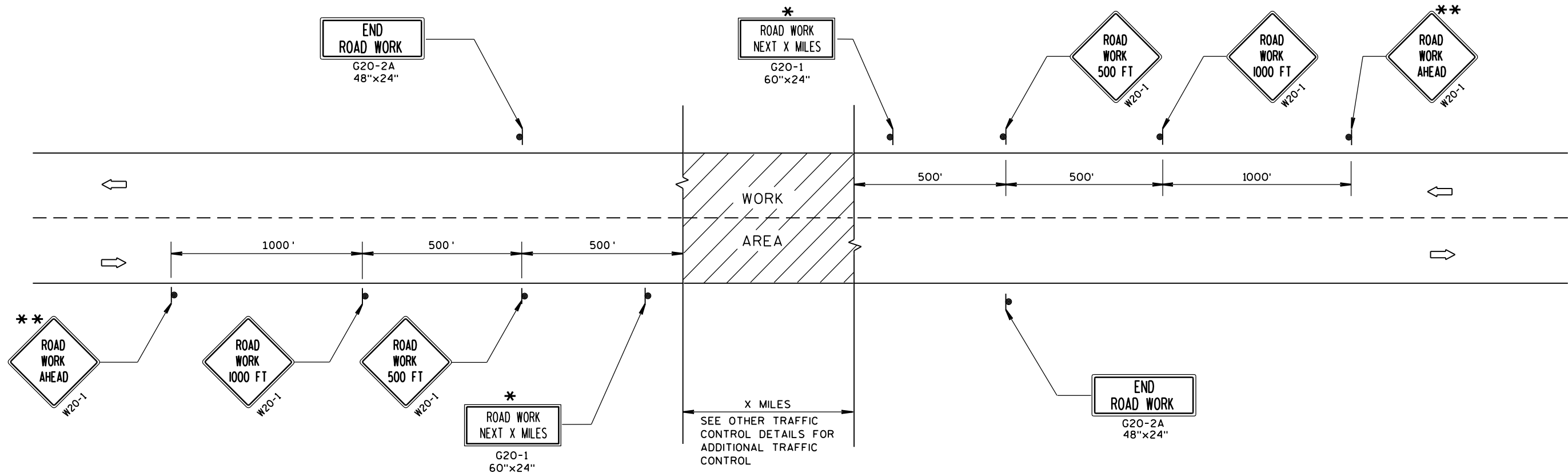
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

- ## LEGEND
- | | |
|---|---------------------------------------|
|  | SIGN ON PERMANENT SUPPORT |
|  | TYPE III BARRICADE |
|  | TYPE III BARRICADE WITH ATTACHED SIGN |
|  | TYPE "A" WARNING LIGHT (FLASHING) |
|  | WORK AREA |
|  | M4-8
M3-X |
|  | MI-4 OR COUNTY XX OR MI-6 |
|  | M05-1 OR M06-1 |
|  | FLAGS, 16" X 16" MIN., (ORANGE) |

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

<p>BARRICADES AND SIGNS FOR MAINLINE CLOSURES</p>	
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p><u>8/2013</u> DATE</p>	<p><u>/S/ Travis Feltes</u> STATE TRAFFIC ENGINEER OF DESIGN</p>
<p>FHWA</p>	



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

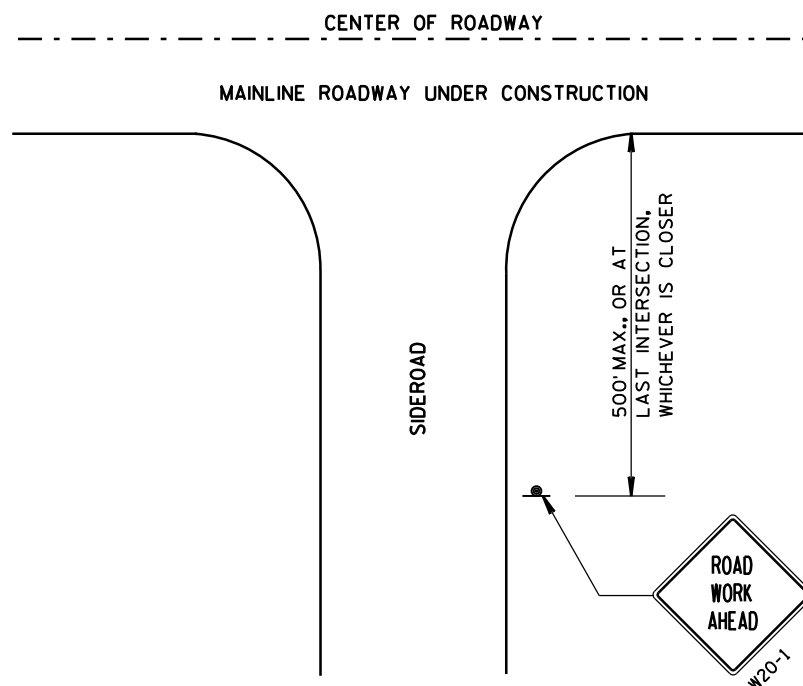
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



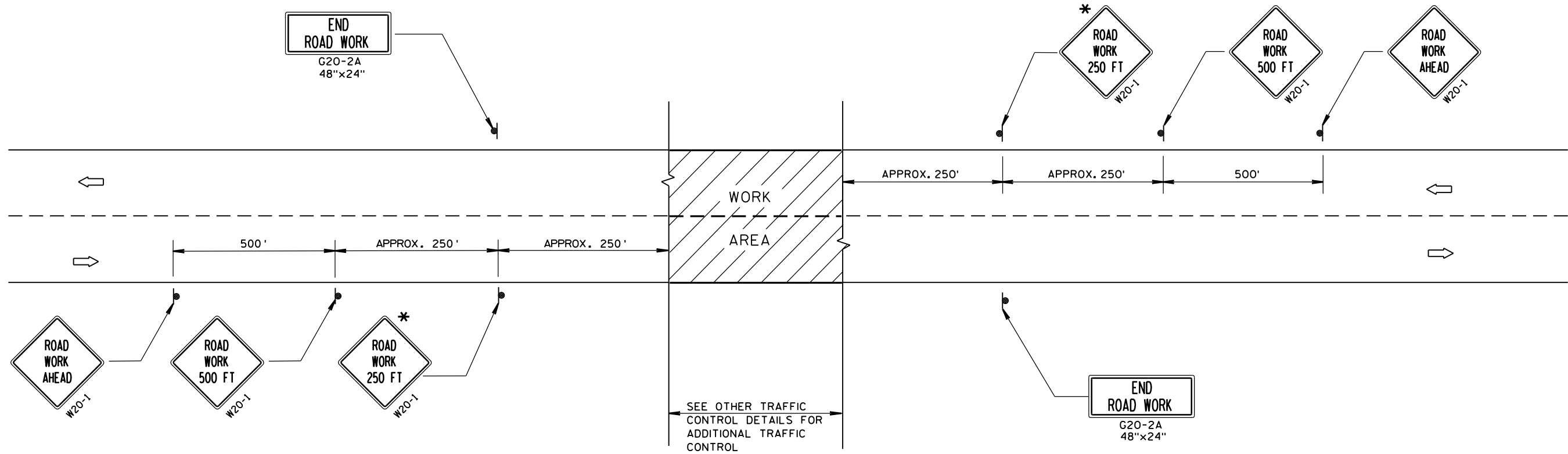
LEGEND

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

TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
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TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

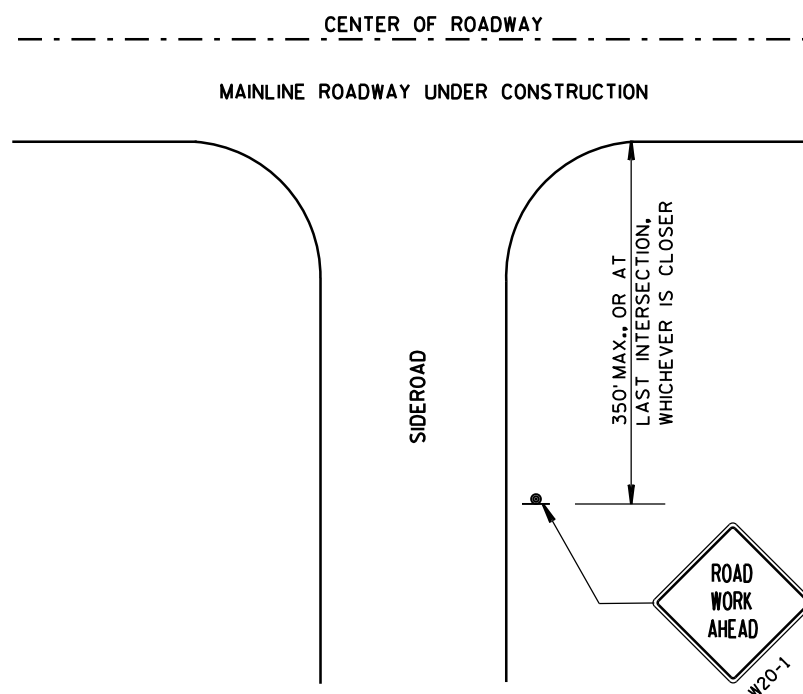
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" 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

TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 40 M.P.H.
OR LESS TWO-WAY UNDIVIDED
ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED





8/2013

DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN

LEGEND

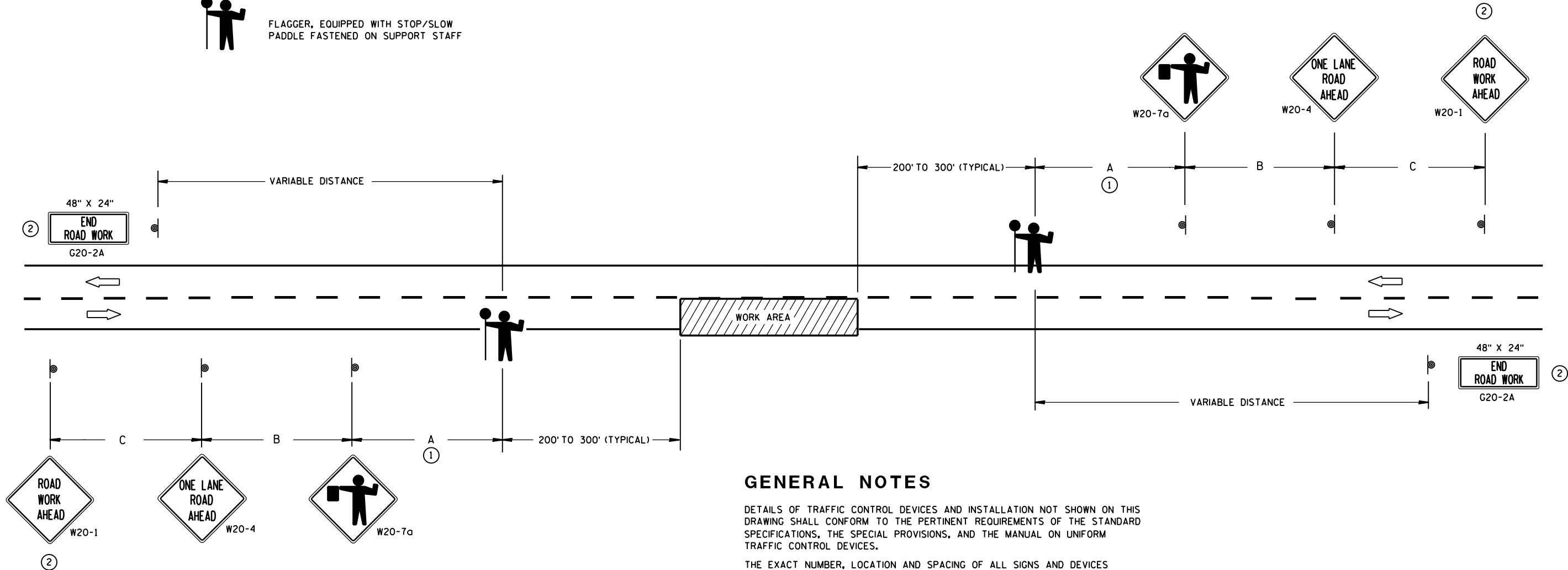
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



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.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE 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.

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, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT 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.

TRAFFIC CONTROL FOR LANE
CLOSURE (SUITABLE FOR
MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

LEGEND

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

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 DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"x48" 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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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 FEET IN FRONT OF DRUMS.

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

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

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

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST 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 1/2 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.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

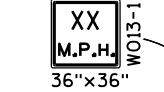


LOCATED 500 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.

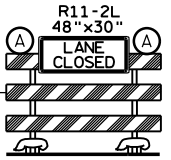


R2-1 48"x60" (BLACK AND WHITE)

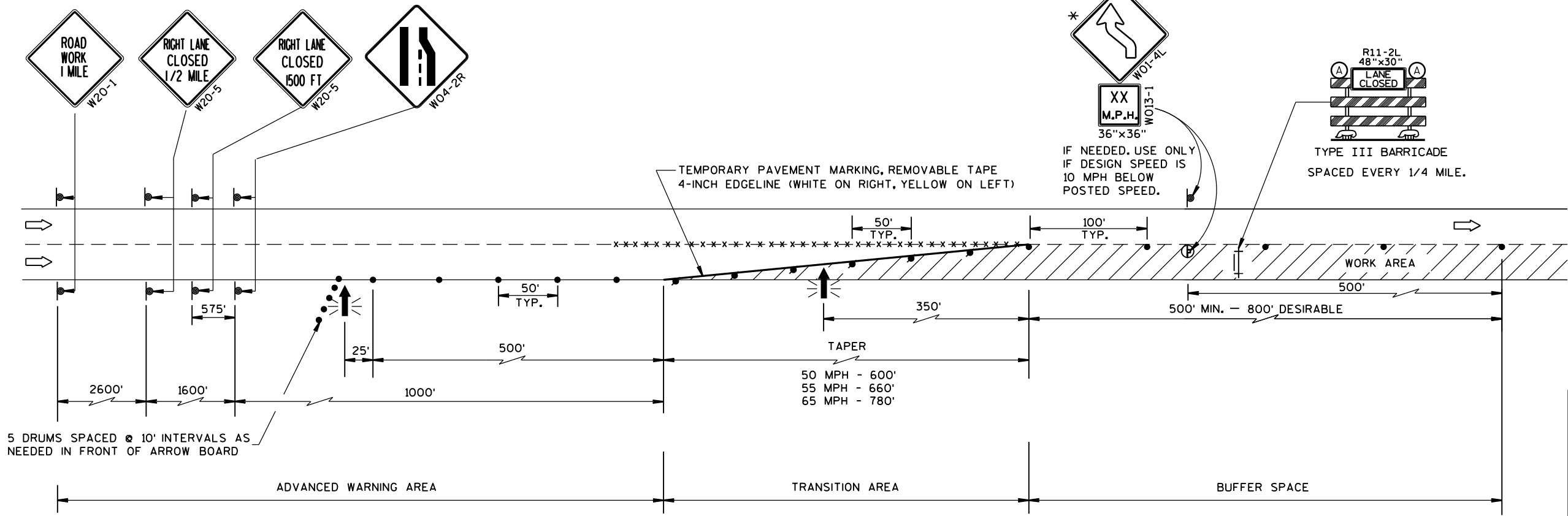
IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.



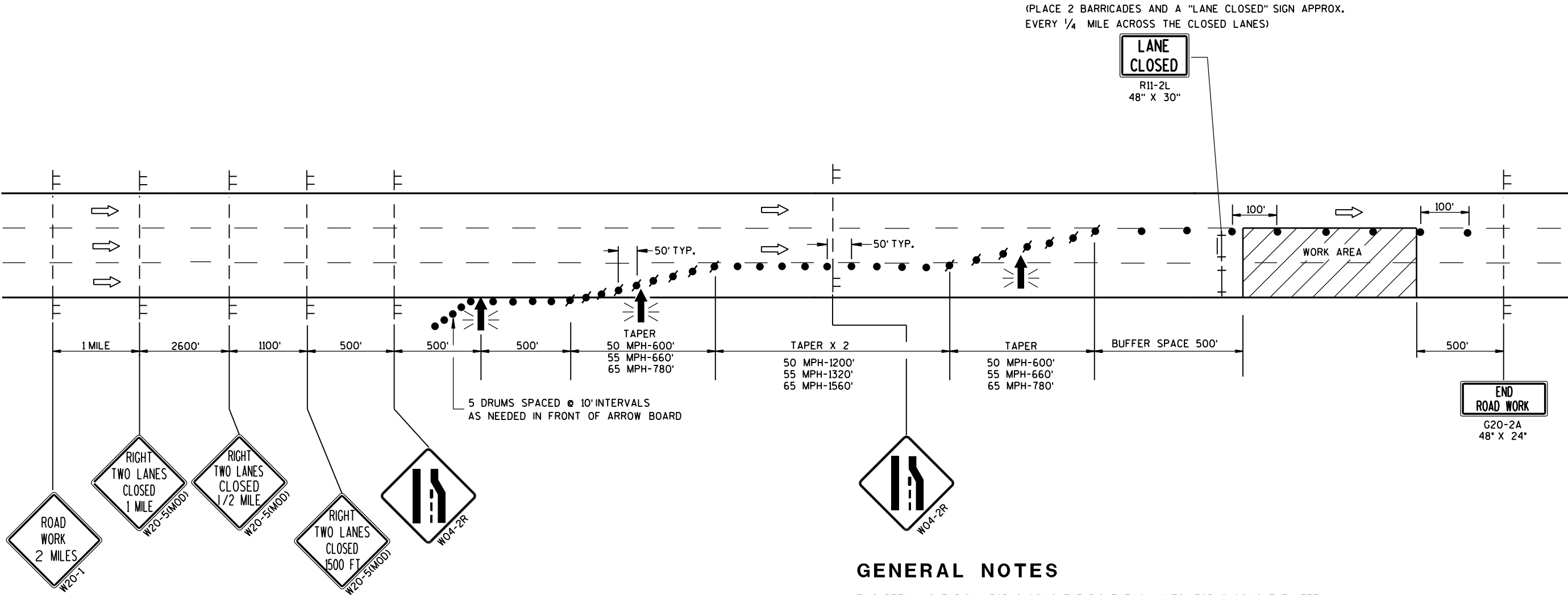
IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.



TYPE III BARRICADE SPACED EVERY 1/4 MILE.



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



GENERAL NOTES

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

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

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

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF 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 RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

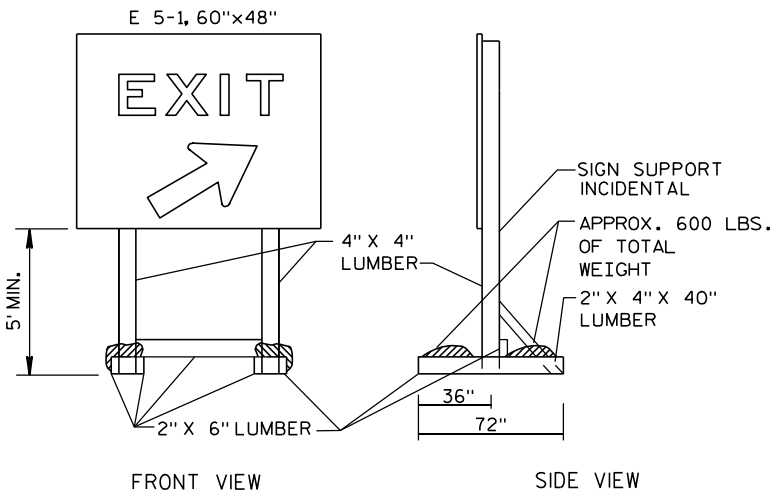
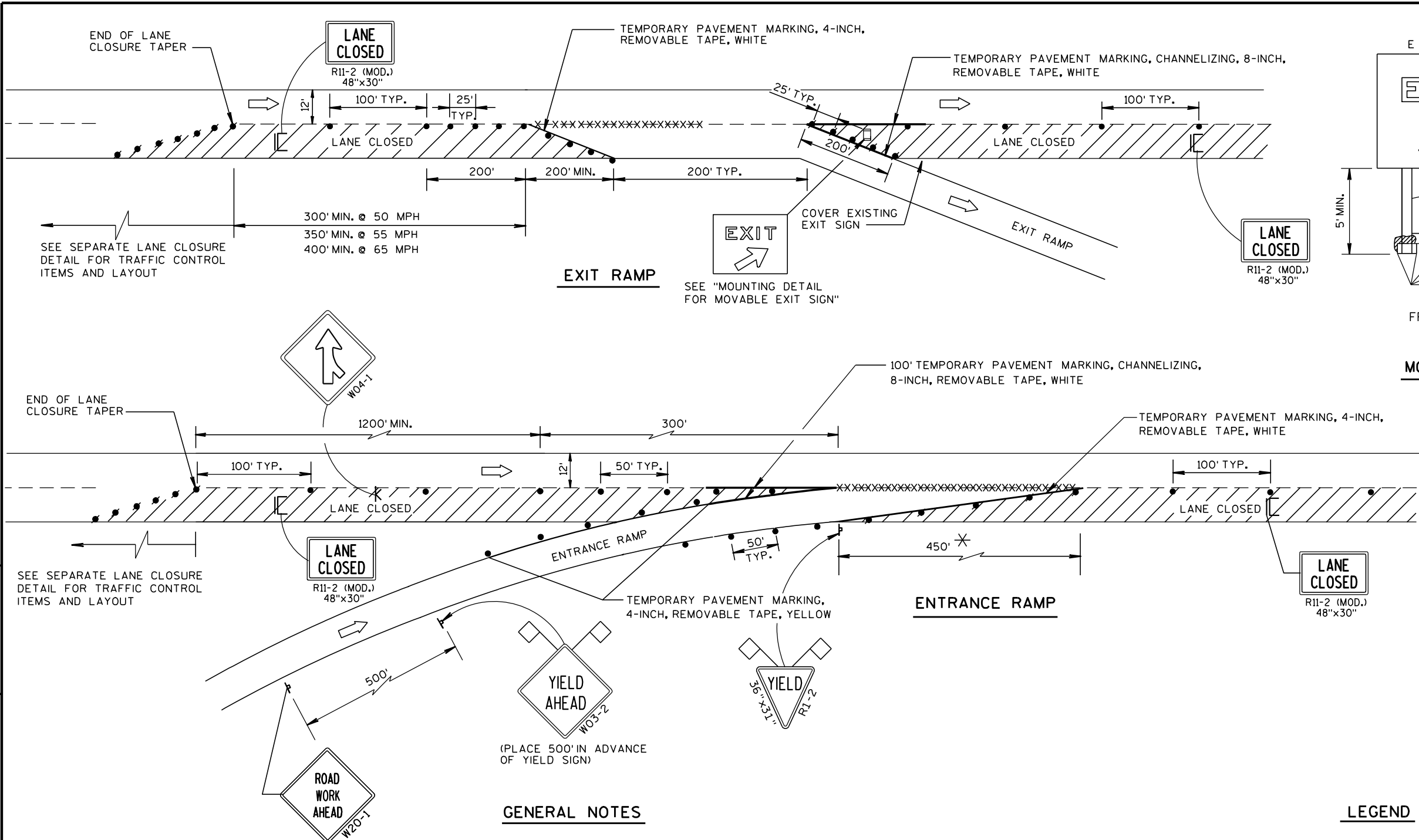
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

TRAFFIC CONTROL.
TWO LANE CLOSURE ON
FREEWAY OR EXPRESSWAY.
SHORT TERM (LESS THAN 24 HOURS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



FRONT VIEW SIDE VIEW
NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL
MOUNTING DETAIL FOR MOVABLE EXIT SIGN

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"x48" 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 R11-2 (MOD.) "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 CONTINUOUS 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 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 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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







* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/24/2000 DATE	/S/ Chester J. Spang CHIEF SIGNS AND MARKING 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.

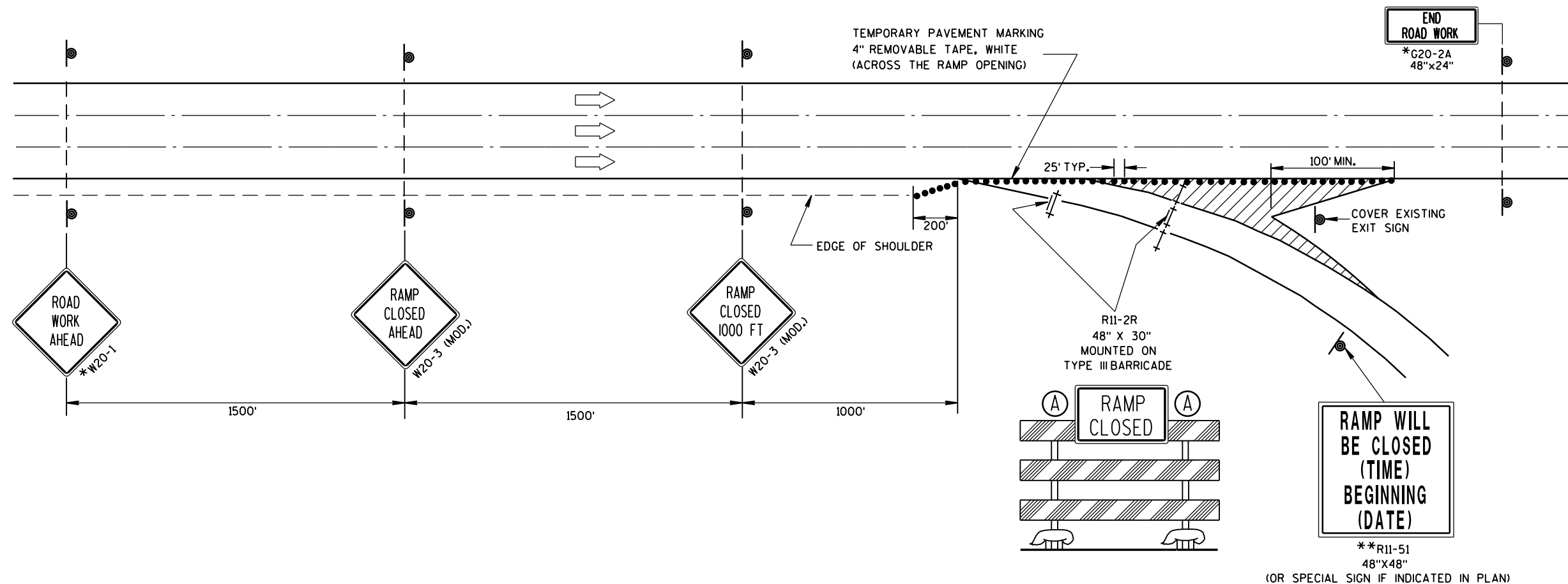
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF 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 THE 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.

*W20-1 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 WILL BE CLOSED" SIGN 10 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

8/2013

DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN

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.

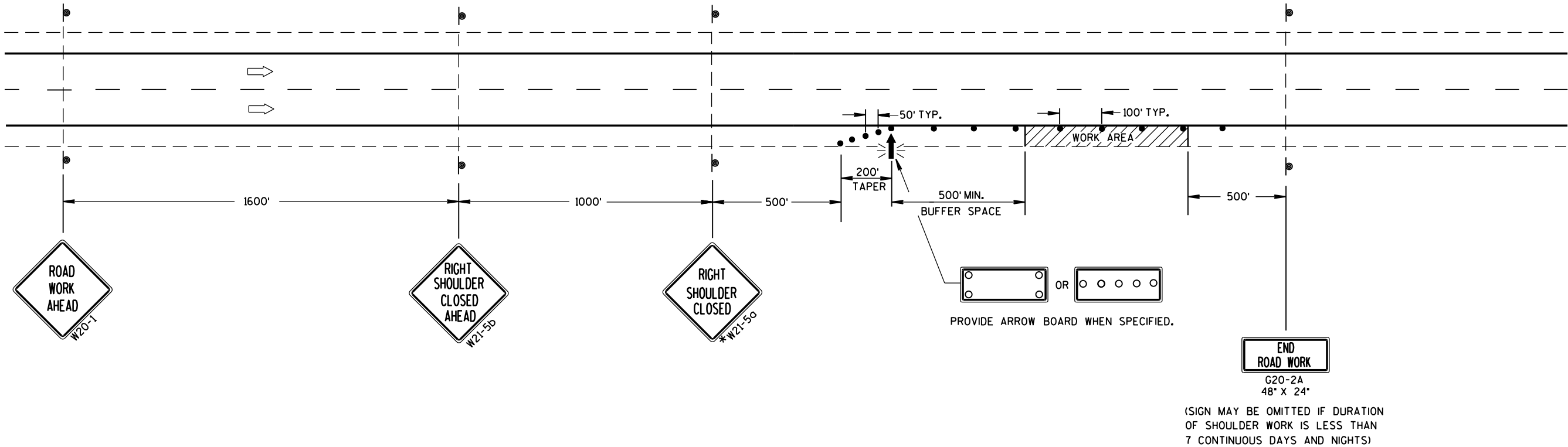
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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
8/2013 /S/ Travis Feltz
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

Notes



Wisconsin Department of Transportation

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through innovation and exceptional service.

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