

GRE JUN 2013

PROJECT ID: 4065-15-71
WITH: 4180-07-71 & 9210-14-71

COUNTY: WINNEBAGO

ORDER OF SHEETS

- Section No. 1 Title
- Section No. 2 Typical Sections and Details (Inc Erosion Control)
- Section No. 3 Estimate of Quantities
- Section No. 3 Miscellaneous Quantities
- ~~Section No. 4 Right of Way Plot~~
- 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 = 68



09

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
TAYCO STREET BRIDGE
TAYCO STREET BRIDGE
STH 114
WINNEBAGO COUNTY

STATE PROJECT NUMBER
4065-15-71

PROJECT LOCATION
B-70-0097



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
- ROCK

LABEL

E

FO

G

SAN

SS

T

W

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), WINNEBAGO COUNTY."

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4065-15-71		

ORIGINAL PLANS PREPARED BY
HARDESTY & HANOVER, LLP
ENGINEERING
1501 BROADWAY NEW YORK, NY 10036



02.19.13
Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor EMCS, INC.
Designer HARDESTY & HANOVER, LLP
Project Manager JASON LAHM
Regional Examiner JASON LAHM
Regional Supervisor KURT WRANOVSKY
C.O. Examiner

APPROVED FOR THE DEPARTMENT
DATE: 2/20/13
Signature

E

GENERAL NOTES

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

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

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

THE LIMITS OF PAVEMENT REMOVAL ARE APPROXIMATE AND SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

OTHER CONTACTS

WISCONSIN DNR	U.S. ARMY CORPS OF ENGINEERS	UNITED STATES COAST GUARD
BOBBIJO FISCHER WAUTOMA SERVICE CENTER 427 EAST TOWER DRIVE, SUITE 100 WAUTOMA, WI 54982 PHONE: 920-787-3015	JOEY SHOEMAKER OLD FORT SQUARE 211 N BROADWAY, SUITE 221 GREEN BAY, WI 54303 PHONE: 920-448-2824	MR. LEE SOULE COMMANDER (DPB) NINTH COAST GUARD DISTRICT 1240 EAST 9TH STREET CLEVELAND, OH 44199-2060 OFFICE: (216) 902-6085 FAX: (216) 902-6088 LEE.D.SOULE@USCG.MIL

DESIGNER NOTES

TITLE SHEET, GENERAL NOTES, ROADWAY PLANS, ROADWAY QUANTITIES, AND UTILITY COORDINATION COMPLETED BY EMCS, INC.

TRAFFIC CONTROL PLANS AND QUANTITIES COMPLETED BY MEAD & HUNT

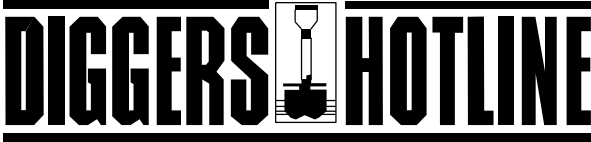
STRUCTURE PLANS COMPLETED BY HARDESTY AND HANOVER, LLP AND EMCS, INC.

ORDER OF SECTION 2 SHEETS

- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERSECTION DETAILS
- TRAFFIC CONTROL

UTILITIES

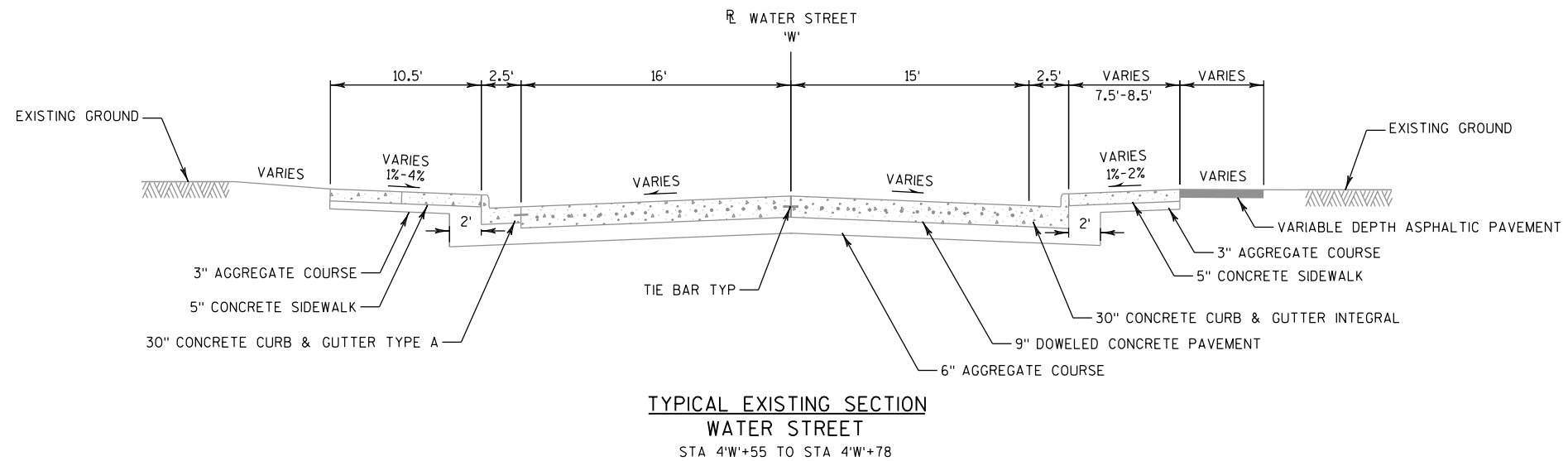
AT&T WISCONSIN	TDS METROCOM
(TELECOMMUNICATIONS) VINCENT LEBRUN AT&T WISCONSIN 221 WEST WASHINGTON STREET 4TH FLR APPLETON, WI 54911 PHONE: 920-735-3076 v1253@att.com	(COMMUNICATION LINE) STEVE JAKUBIEC 10 COLLEGE AVENUE, SUITE 218A APPLETON, WI 54911 PHONE: 920-882-4166 MOBILE: 920-562-7221 steve.jakubiec@tdstelecom.com
CITY OF MENASHA	TIME WARNER CABLE
(STREET LIGHTING & SEWER) TIM MONTOUR ENG. SUPERVISOR 140 MAIN STREET MENASHA, WI 54952 PHONE: 920-967-3610 MOBILE: 920-209-9563 tmontour@ci.menasha.wi.us	(COMMUNICATION LINE) VINCE ALBIN 3520 DESTINATION DRIVE APPLETON, WI 54911 PHONE: 920-831-9249 MOBILE: 920-378-0444 vince.albin@twcable.com
MENASHA ELECTRIC & WATER UTILITIES	US SIGNAL COMPANY
(ELECTRIC) GREG SHULL 321 MILWAUKEE STREET PO BOX 340 MENASHA, WI 54952-0340 PHONE: 920-967-3422 MOBILE: 920-475-4733 gshull@wppienergy.org	(COMMUNICATION LINE) CHRIS LENTINE 201 IONIA AVE GRAND RAPIDS, MI 49503 PHONE: 616-988-7194 CELL: 616-295-8490 clentine@ussignalcom.com
(WATER)	WE ENERGIES
SCOTT MAURER 321 MILWAUKEE STREET PO BOX 340 MENASHA, WI 54952-0340 PHONE: 920-967-3430 MOBILE: 920-707-3733 smaurer@wppienergy.org	(GAS) <u>SEND ALL CORRESPONDENCE TO</u> DAN SANDE 333 WEST EVERETT STREET, A299 MILWUAKEE, WI 53203 PHONE: 414-550-4993 Dan.Sande@we-energies.com
	FIELD CONTACT
	KENNETH VAN OSS 800 S LYNDAL DRIVE PO BOX 1699 APPLETON, WI 54912-1699 PHONE: 920-380-3318 kenneth.van-oss@we-energies.com

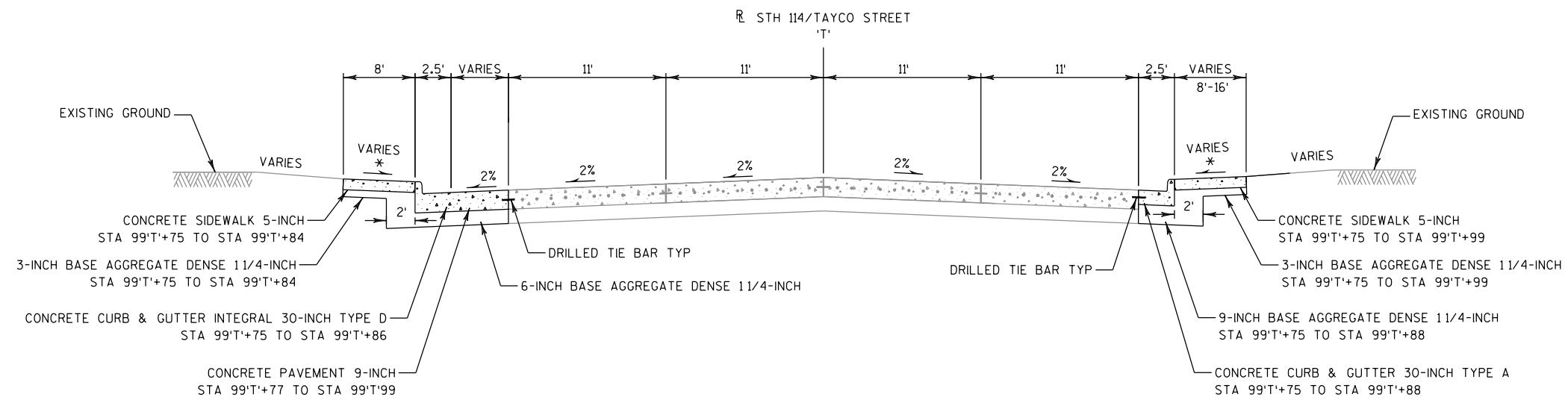


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or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

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

WISCONSIN STATUTE 182.0175 (1974) REQUIRES MINIMUM OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.



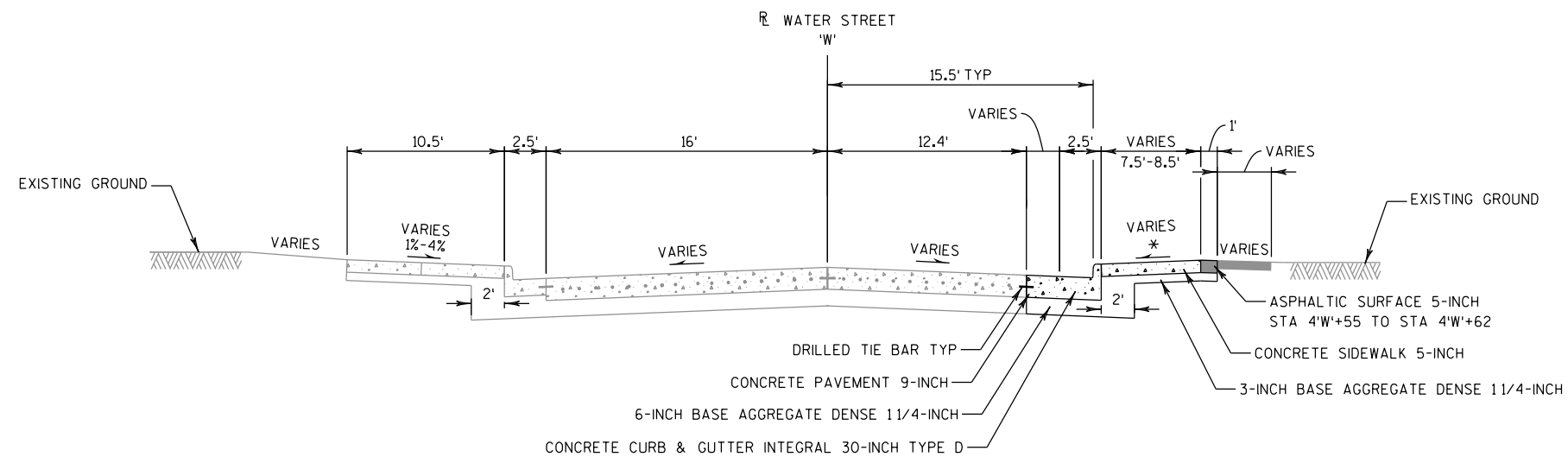


TYPICAL FINISHED SECTION
STH 114/TAYCO STREET
 STA 99'T+75 TO STA 99'T+99

NOTES

ALL DISTURBED AREAS NOT PAVED SHALL BE FINISHED WITH TOPSOIL, FERTILIZER, AND SEED UNDER THE GRADING, SHAPING AND FINISHING INTERSECTION BID ITEM AND COVERED WITH EMAT.

* 2% MAXIMUM CROSS SLOPE, 12:1 MAXIMUM LONGITUDINAL SLOPE FOR CURB RAMPS

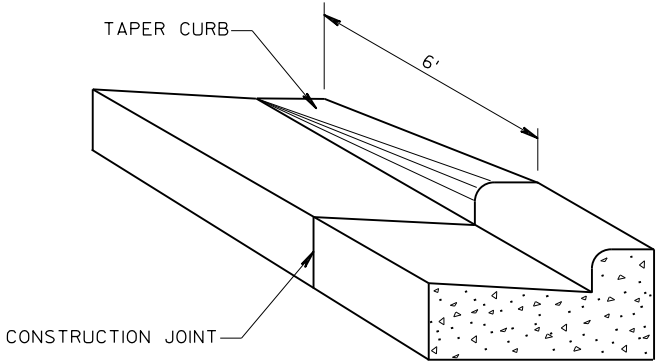


TYPICAL FINISHED SECTION
WATER STREET
 STA 4'W+55 TO STA 4'W+78

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.16 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.06 ACRES

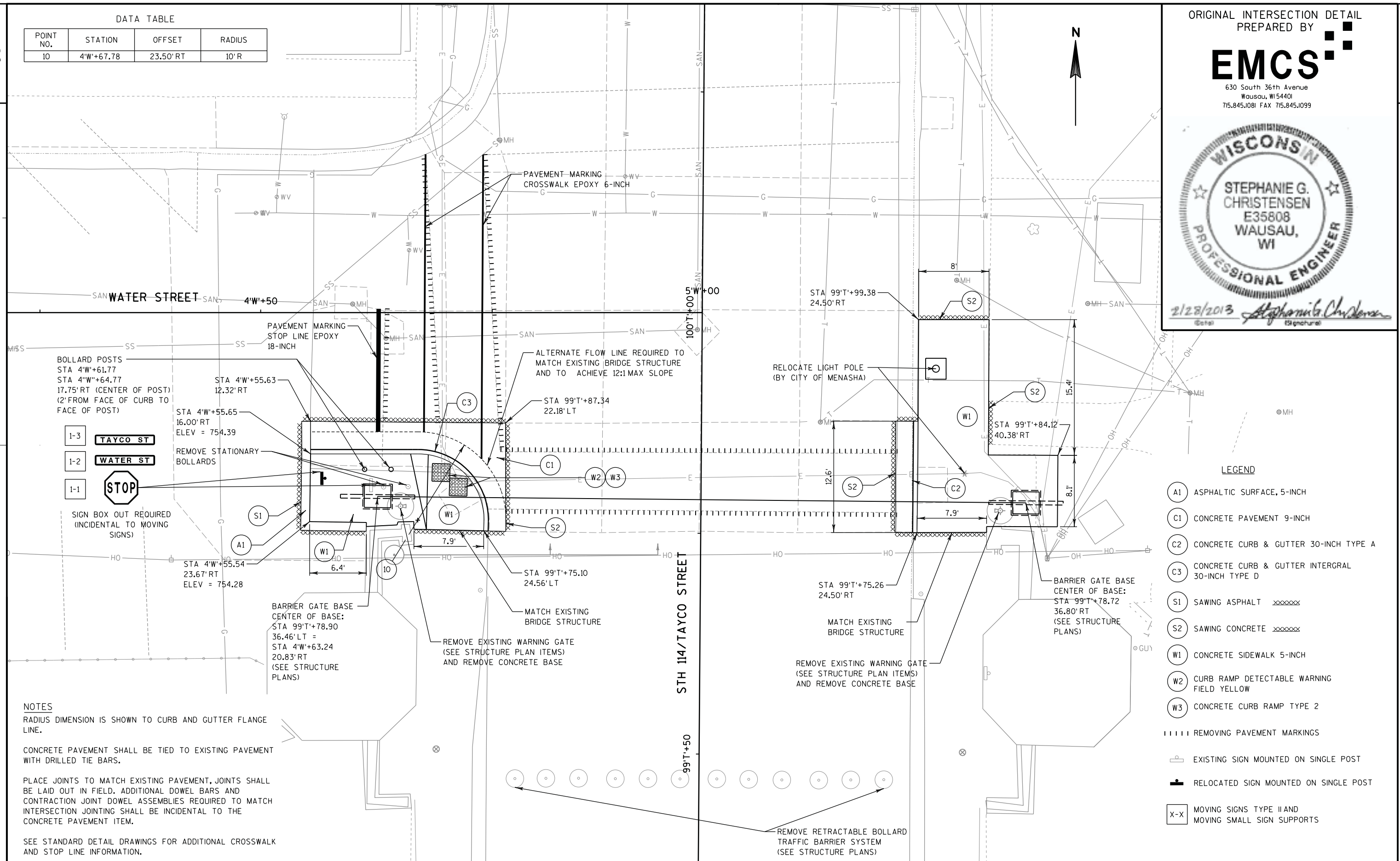


CURB & GUTTER TERMINI DETAIL

STA 4'W'+56 - STA 4'W'+62 RT

DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
10	4'W+67.78	23.50' RT	10' R



ORIGINAL INTERSECTION DETAIL
PREPARED BY

EMCS

630 South 36th Avenue
Wausau, WI 54401
715.845.1081 FAX 715.845.1099



2/28/2013 *Stephanie G. Christensen*
(Date) (Signature)

LEGEND

- A1 ASPHALTIC SURFACE, 5-INCH
- C1 CONCRETE PAVEMENT 9-INCH
- C2 CONCRETE CURB & GUTTER 30-INCH TYPE A
- C3 CONCRETE CURB & GUTTER INTERGRAL 30-INCH TYPE D
- S1 SAWING ASPHALT
- S2 SAWING CONCRETE
- W1 CONCRETE SIDEWALK 5-INCH
- W2 CURB RAMP DETECTABLE WARNING FIELD YELLOW
- W3 CONCRETE CURB RAMP TYPE 2

REMOVING PAVEMENT MARKINGS

EXISTING SIGN MOUNTED ON SINGLE POST

RELOCATED SIGN MOUNTED ON SINGLE POST

X-X MOVING SIGNS TYPE II AND
MOVING SMALL SIGN SUPPORTS

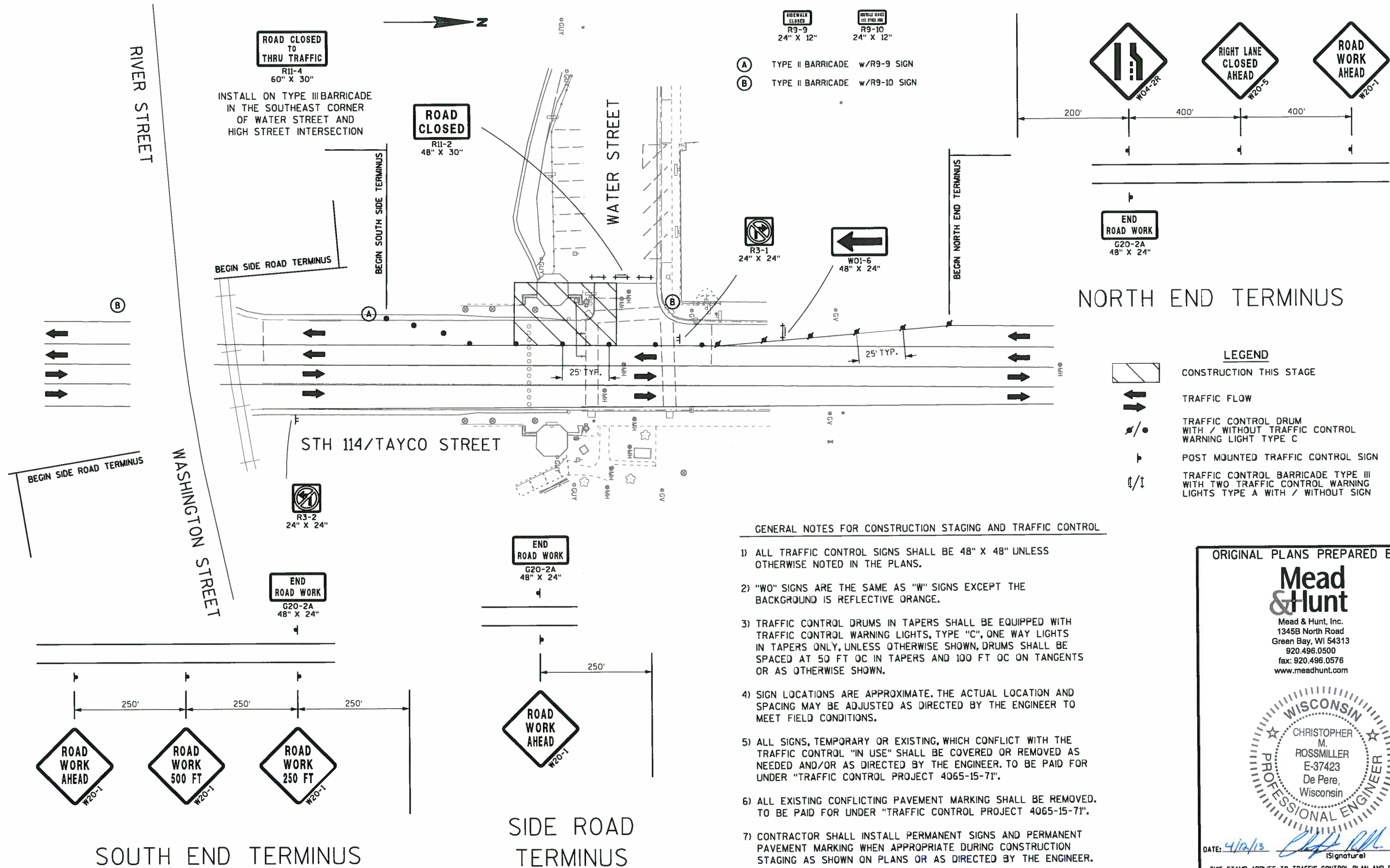
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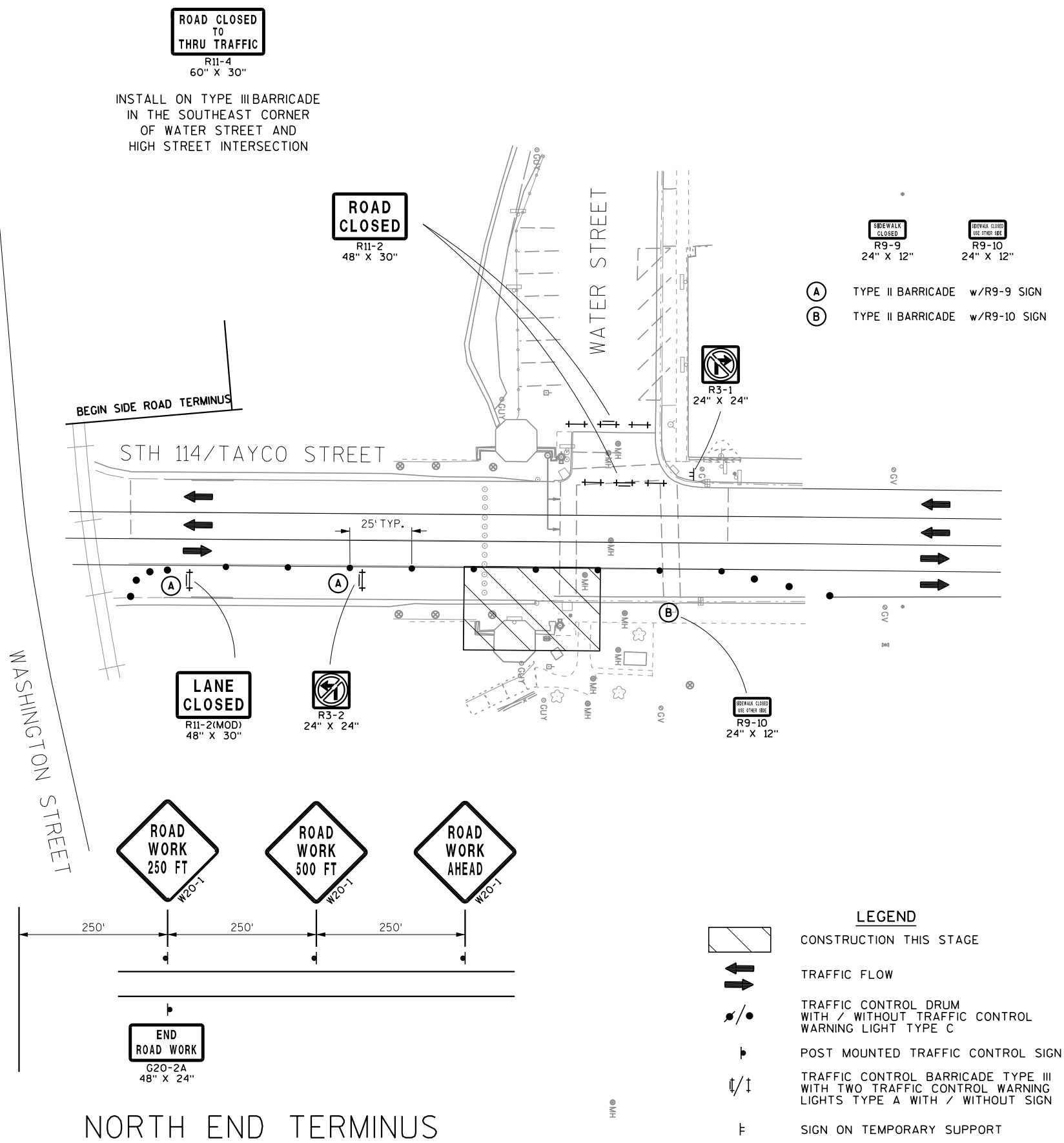
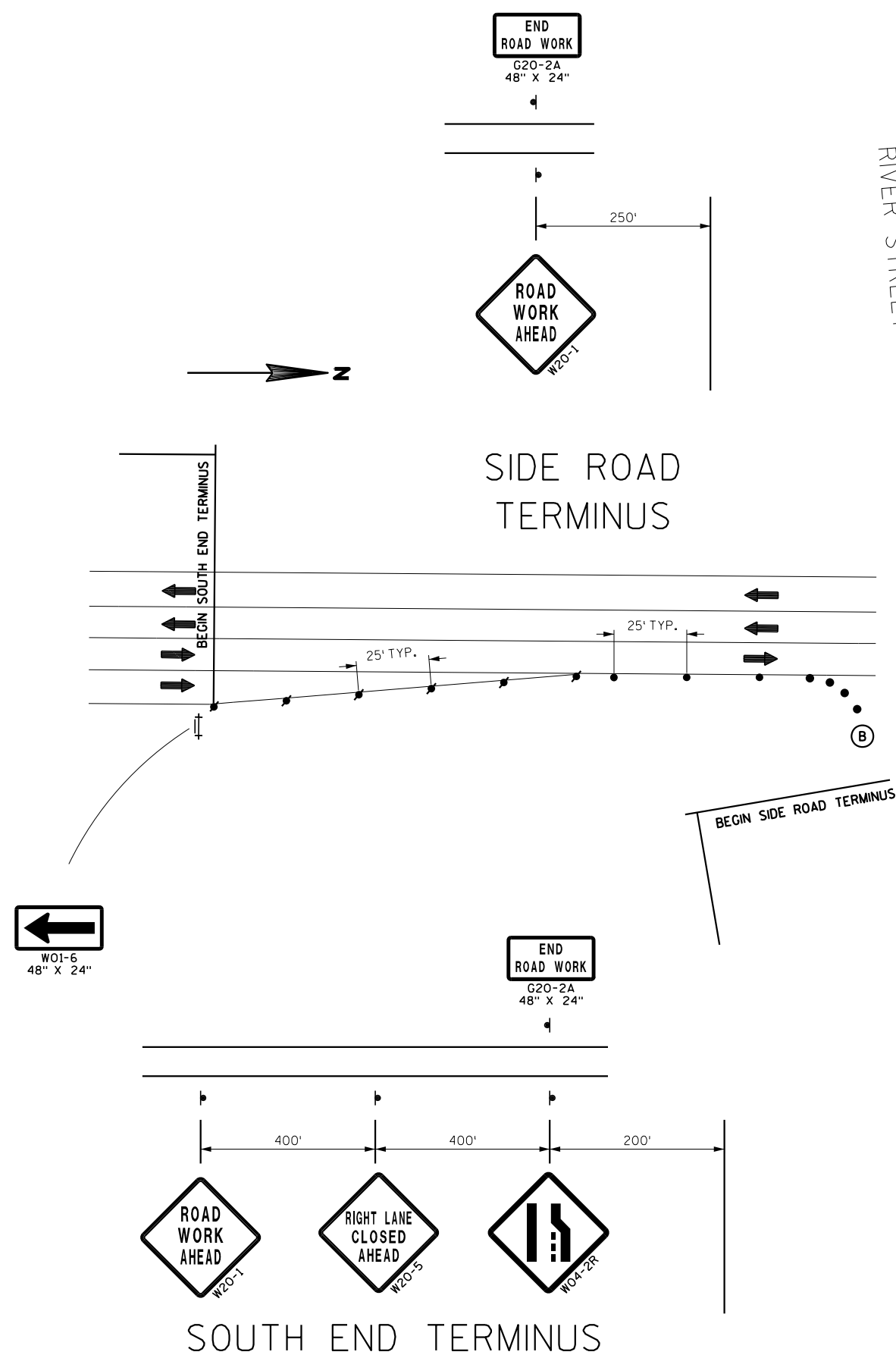
RADIUS DIMENSION IS SHOWN TO CURB AND GUTTER FLANGE LINE.

CONCRETE PAVEMENT SHALL BE TIED TO EXISTING PAVEMENT WITH DRILLED TIE BARS.

PLACE JOINTS TO MATCH EXISTING PAVEMENT. JOINTS SHALL BE LAID OUT IN FIELD. ADDITIONAL DOWEL BARS AND CONTRACTION JOINT DOWEL ASSEMBLIES REQUIRED TO MATCH INTERSECTION JOINTING SHALL BE INCIDENTAL TO THE CONCRETE PAVEMENT ITEM.

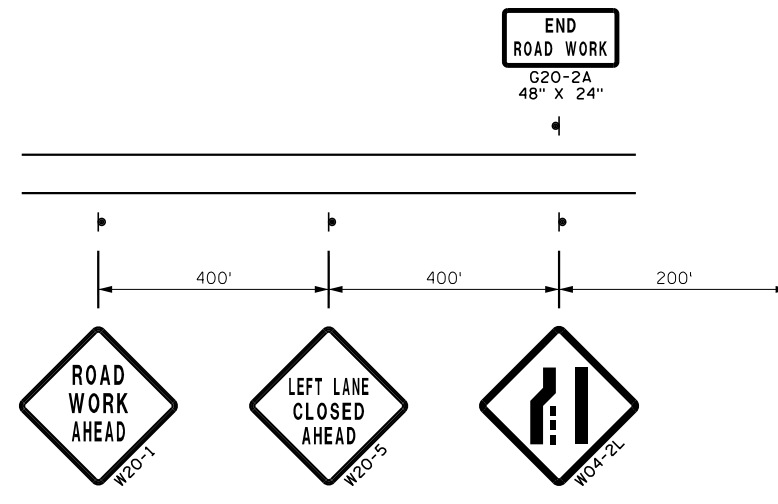
SEE STANDARD DETAIL DRAWINGS FOR ADDITIONAL CROSSWALK AND STOP LINE INFORMATION.



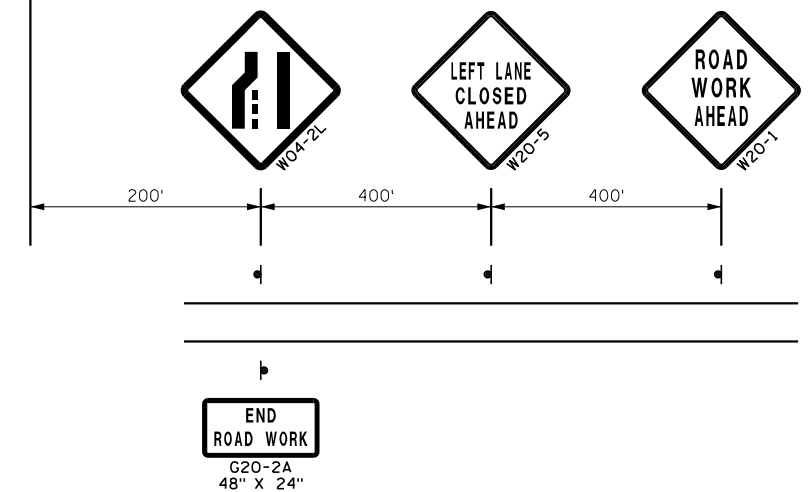


LEGEND

- CONSTRUCTION THIS STAGE
- TRAFFIC FLOW
- TRAFFIC CONTROL DRUM
WITH / WITHOUT TRAFFIC CONTROL
WARNING LIGHT TYPE C
- POST MOUNTED TRAFFIC CONTROL SIGN
- TRAFFIC CONTROL BARRICADE TYPE III
WITH TWO TRAFFIC CONTROL WARNING
LIGHTS TYPE A WITH / WITHOUT SIGN
- SIGN ON TEMPORARY SUPPORT

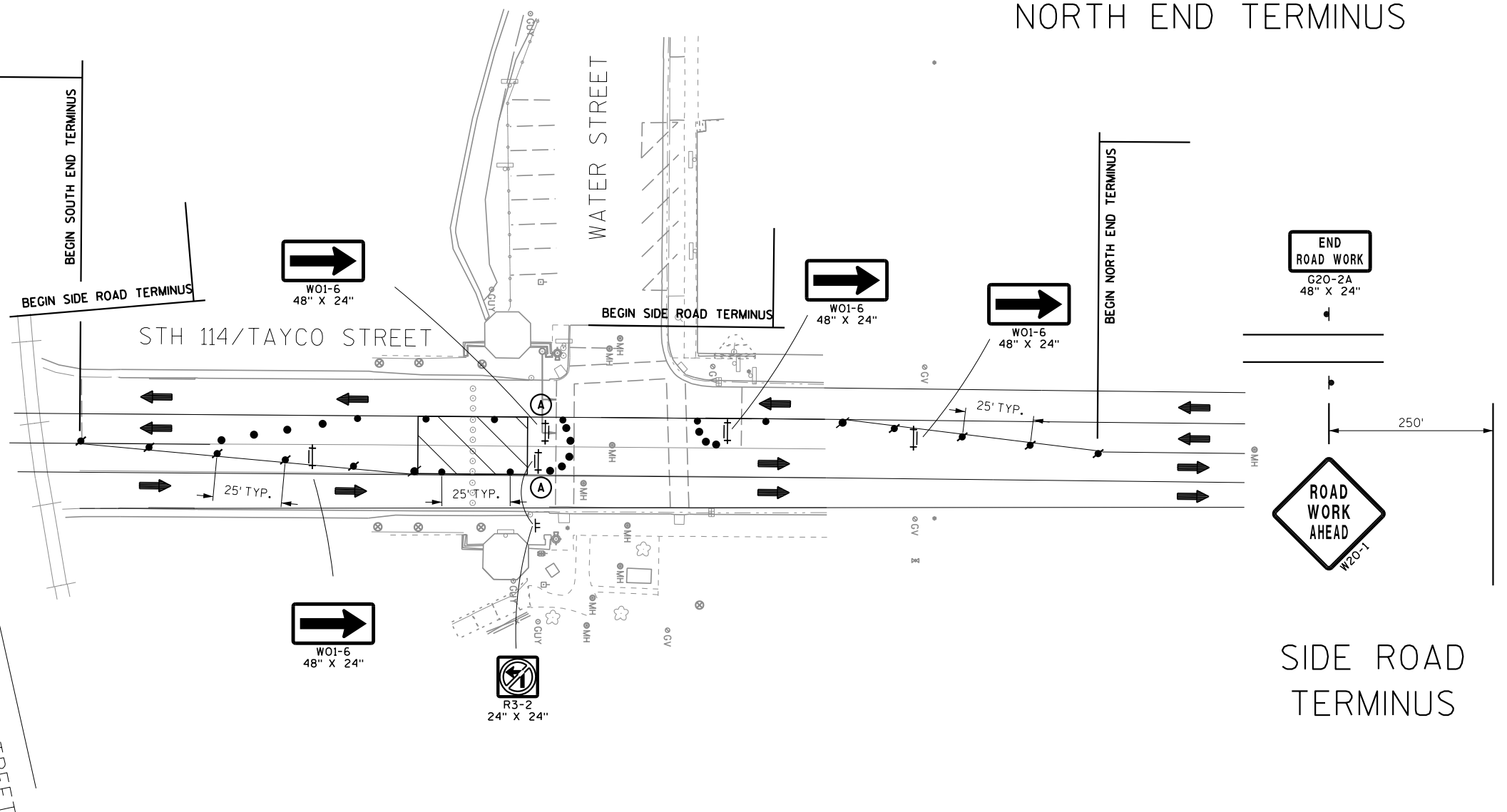


- TYPE II BARRICADE w/R9-9 SIGN
- TYPE II BARRICADE w/R9-10 SIGN



SOUTH END TERMINUS

NORTH END TERMINUS



3

DATE 16APR13		E S T I M A T E O F Q U A N T I T I E S			
LINE		4065-15-71			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0030	204.0100	REMOVING PAVEMENT	SY	20.000	20.000
0040	204.0110	REMOVING ASPHALTIC SURFACE	SY	2.000	2.000
0050	204.0150	REMOVING CURB & GUTTER	LF	15.000	15.000
0060	204.0155	REMOVING CONCRETE SIDEWALK	SY	40.000	40.000
0070	204.0195	REMOVING CONCRETE BASES	EACH	2.000	2.000
0080	204.9060.S	REMOVING (ITEM DESCRIPTION) 01. STATIONARY BALLARDS	EACH	2.000	2.000
0090	205.9015.S	GRADING SHAPING & FINISHING INTERSECTION (LOCATION) 01. WATER STREET	LS	1.000	1.000
0100	213.0100	FINISHING ROADWAY (PROJECT) 01. 4065-15-71	EACH	1.000	1.000
0110	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	20.000	20.000
0120	415.0090	CONCRETE PAVEMENT 9-INCH	SY	5.000	5.000
0130	416.0610	DRILLED TIE BARS	EACH	16.000	16.000
0140	465.0105	ASPHALTIC SURFACE	TON	1.000	1.000
0240	601.0409	CONCRETE CURB & GUTTER 30-INCH TYPE A	LF	14.000	14.000
0250	601.0452	CONCRETE CURB & GUTTER INTEGRAL 30-INCH TYPE D	LF	26.000	26.000
0260	602.0410	CONCRETE SIDEWALK 5-INCH	SF	410.000	410.000
0270	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	8.000	8.000
0320	619.1000	MOBILIZATION	EACH	0.250	0.250
0330	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	2.000	2.000
0340	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	1.000	1.000
0350	628.2006	EROSION MAT URBAN CLASS I TYPE A	SY	20.000	20.000
0360	628.7015	INLET PROTECTION TYPE C	EACH	1.000	1.000
0370	638.2102	MOVING SIGNS TYPE II	EACH	3.000	3.000
0380	638.4000	MOVING SMALL SIGN SUPPORTS	EACH	1.000	1.000
0390	643.0100	TRAFFIC CONTROL (PROJECT) 01. 4065-15-70	EACH	1.000	1.000
0420	643.0300	TRAFFIC CONTROL DRUMS	DAY	986.000	986.000
0430	643.0410	TRAFFIC CONTROL BARRICADES TYPE II	DAY	151.000	151.000
0440	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	325.000	325.000
0450	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	650.000	650.000
0460	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	274.000	274.000
0470	643.0900	TRAFFIC CONTROL SIGNS	DAY	964.000	964.000
0480	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	14.000	14.000
0490	646.0600	REMOVING PAVEMENT MARKINGS	LF	380.000	380.000
0500	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	15.000	15.000
0510	647.0766	PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	LF	67.000	67.000
0530	690.0150	SAWING ASPHALT	LF	21.000	21.000
0540	690.0250	SAWING CONCRETE	LF	84.000	84.000
0570	SPV.0060	SPECIAL 01. BARRIER GATE BASE	EACH	2.000	2.000
0580	SPV.0060	SPECIAL 02. BOLLARD POSTS	EACH	2.000	2.000
0610	SPV.0105	SPECIAL 03. TAYCO STREET BRIDGE ELECTRICAL WORK, B-70-097	LS	1.000	1.000
0640	SPV.0105	SPECIAL 06. TAYCO STREET BRIDGE CCTV SYSTEM, B-70-097	LS	1.000	1.000
0660	SPV.0105	SPECIAL 08. REMOVING RETRACTABLE BOLLARD TRAFFIC BARRIER SYSTEM	LS	1.000	1.000
0670	SPV.0105	SPECIAL 09. SURVEY PROJECT 4065-15-71	LS	1.000	1.000

3

3

REMOVING PAVEMENT

STATION - STATION		LOCATION	204.0100 SY
CAT 0010			
4'W'+55 - 4'W'+78		RT	20
TOTAL			20

REMOVING CURB & GUTTER

STATION - STATION		LOCATION	204.0150 LF
CAT 0010			
99'T'+75 - 99'T'+88		RT	15
TOTAL			15

REMOVING CONCRETE BASES

STATION	LOCATION	204.0195 EACH	COMMENTS
CAT 0010			
4'W'+66	RT	1	EXISTING WARNING GATE LOCATION
99'T'+78	RT	1	EXISTING WARNING GATE LOCATION
TOTAL		2	

3

REMOVING ASPHALTIC SURFACE

STATION - STATION		LOCATION	204.0110 SY
CAT 0010			
4'W'+54 - 4'W'+62		RT	2
TOTAL			2

REMOVING CONCRETE SIDEWALK

STATION - STATION		LOCATION	204.0155 SY
CAT 0010			
4'W'+55 - 4'W'+76		RT	14
99'T'+75 - 99'T'+99		RT	26
TOTAL			40

REMOVING STATIONARY BOLLARDS

STATION	LOCATION	204.9060.S.01 EACH
CAT 0010		
4'W'+64	RT	1
4'W'+67	RT	1
TOTAL		2

BASE AGGREGATE DENSE 1 1/4-INCH

		305.0120
STATION - STATION	LOCATION	TON
CAT 0010		
4'W'+56 - 4'W'+76	RT	10
99'T'+75 - 99'T'+99	RT	10
TOTAL		20

GRADING, SHAPING AND FINISHING INTERSECTION WATER STREET

LOCATION	205.9015.S.01	**COMMON	**FILL	**TOPSOIL	**FERTILIZER	**SEEDING #40
	LS	EXC. CY	CY	SY	TYPE B CWT	LB
CAT 0010						
PROJECT	1	11	--	15	0.1	1
SUBTOTALS						
	1	11	0	15	0.1	1
UNDISTRIBUTED						
	--	--	--	5	0.0	--
TOTALS						
	1	11	0	20	0.1	1

**NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY. ITEMS INCIDENTAL TO GRADING SHAPING FINISHING REPAIR AREAS.

CONCRETE ITEMS

STATION - STATION	LOCATION	415.0090		601.0409	601.0452		602.0505
		CONCRETE	416.0610	CONCRETE	CONCRETE CURB	602.0410	CURB RAMP
		PAVEMENT	DRILLED	CURB & GUTTER	& GUTTER INTEGRAL	CONCRETE	DETECTABLE WARNING
		9-INCH	TIE BARS	30-INCH TYPE A	30-INCH TYPE D	SIDEWALK 5-INCH	FIELD YELLOW
		SY	EACH	LF	LF	SF	SF
CAT 0010							
4'W'+56 - 4'W'+76	RT	5	8	--	26	150	8
99'T'+75 - 99'T'+99	RT	--	4	14	--	260	--
99'T'+75 - 99'T'+88	LT	--	4	--	--	--	--
TOTALS		5	16	14	26	410	8

ASPHALTIC SURFACE

		465.0105
STATION - STATION	LOCATION	TON
CAT 0010		
4'W'+54 - 4'W'+62	RT	1
TOTAL		1

3

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905 EACH	628.1910 EMERGENCY EACH
CAT 0010		
PROJECT	2	1
TOTALS	2	1

EROSION MAT URBAN CLASS I TYPE A

STATION - STATION	LOCATION	628.2006 SY
CAT 0010		
99'T'+72 - 99'T'+85	RT	10
99'T'+90 - 100'T'+01	RT	5
UNDISTRIBUTED	--	5
TOTAL		20

INLET PROTECTION TYPE C

STATION	LOCATION	628.7015 EACH
CAT 0010		
100'T'+34	RT	1
TOTAL		1

3

SIGNING ITEMS

SIGN NO.	STATION	LOCATION	638.2102 MOVING SIGNS TYPE II EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH
CAT 0010				
1-1	4'W'+57	RT	1	1
1-2	4'W'+57	RT	1	--
1-3	4'W'+57	RT	1	--
TOTALS			3	1

TRAFFIC CONTROL ITEMS

ROADWAY	STAGE	DAYS	643.0300 DRUMS NO.	DAY	643.0410 BARRICADES TYPE II NO.	DAY	643.0420 BARRICADES TYPE III NO.	DAY	643.0705 WARNING LIGHTS TYPE A NO.	DAY	643.0715 WARNING LIGHTS TYPE C NO.	DAY	643.0900 SIGNS NO.	DAY
CAT 0010														
STH 114	1	21	15	315	3	63	5	105	10	210	6	126	21	441
STH 114	2	21	29	609	4	84	10	210	20	420	6	126	23	483
STH 114	3	2	31	62	2	4	5	10	10	20	11	22	20	40
TOTALS				986		151		325		650		274		964

TRAFFIC CONTROL SIGNS PCMS

643.1050					
ROADWAY	STAGE	DAYS	NO.	DAY	
CAT 0010					
STH 114	1	7	2	14	
TOTAL				14	

PAVEMENT MARKING ITEMS

		646.0600 REMOVING PAVEMENT MARKINGS	647.0566 STOP LINE EPOXY 18-INCH (WHITE)	647.0766 CROSSWALK EPOXY 6-INCH (WHITE)	
STATION - STATION	LOCATION	LF	LF	LF	COMMENTS
CAT 0010					
4'W'+64	RT	55	--	--	STOP LINE REMOVAL
4'W'+70	LT & RT	70	--	--	CROSSWALK REMOVAL
4'W'+76	LT & RT	70	--	--	CROSSWALK REMOVAL
4'W'+63	RT	--	15	--	
4'W'+67	LT & RT	--	--	32	
4'W'+75	LT & RT	--	--	35	
99'T'+78	LT & RT	95	--	--	CROSSWALK REMOVAL
99'T'+84	LT & RT	90	--	--	CROSSWALK REMOVAL
TOTALS		380	15	67	

SAWING ITEMS

		690.0150 ASPHALT	690.0250 CONCRETE
STATION - STATION	LOCATION	LF	LF
CAT 0010			
4'W'+54 - 4'W'+62	RT	21	--
4'W'+56 - 4'W'+78	RT	--	45
99'T'+75 - 99'T'+88	RT	--	26
99'T'+85 - 99'T'+90	RT	--	5
99'T'+99	RT	--	8
TOTALS		21	84

BOLLARD POSTS

		SPV.0060.02 EACH
STATION	LOCATION	
CAT 0010		
4'W'+61.77	RT	1
4'W'+64.77	RT	1
TOTAL		2

SURVEY PROJECT

		SPV.0105.09 4065-15-71 LS
LOCATION		
CAT 0010		
PROJECT		1
TOTAL		1

ORIGINAL ROADWAY
PLAN PREPARED BY

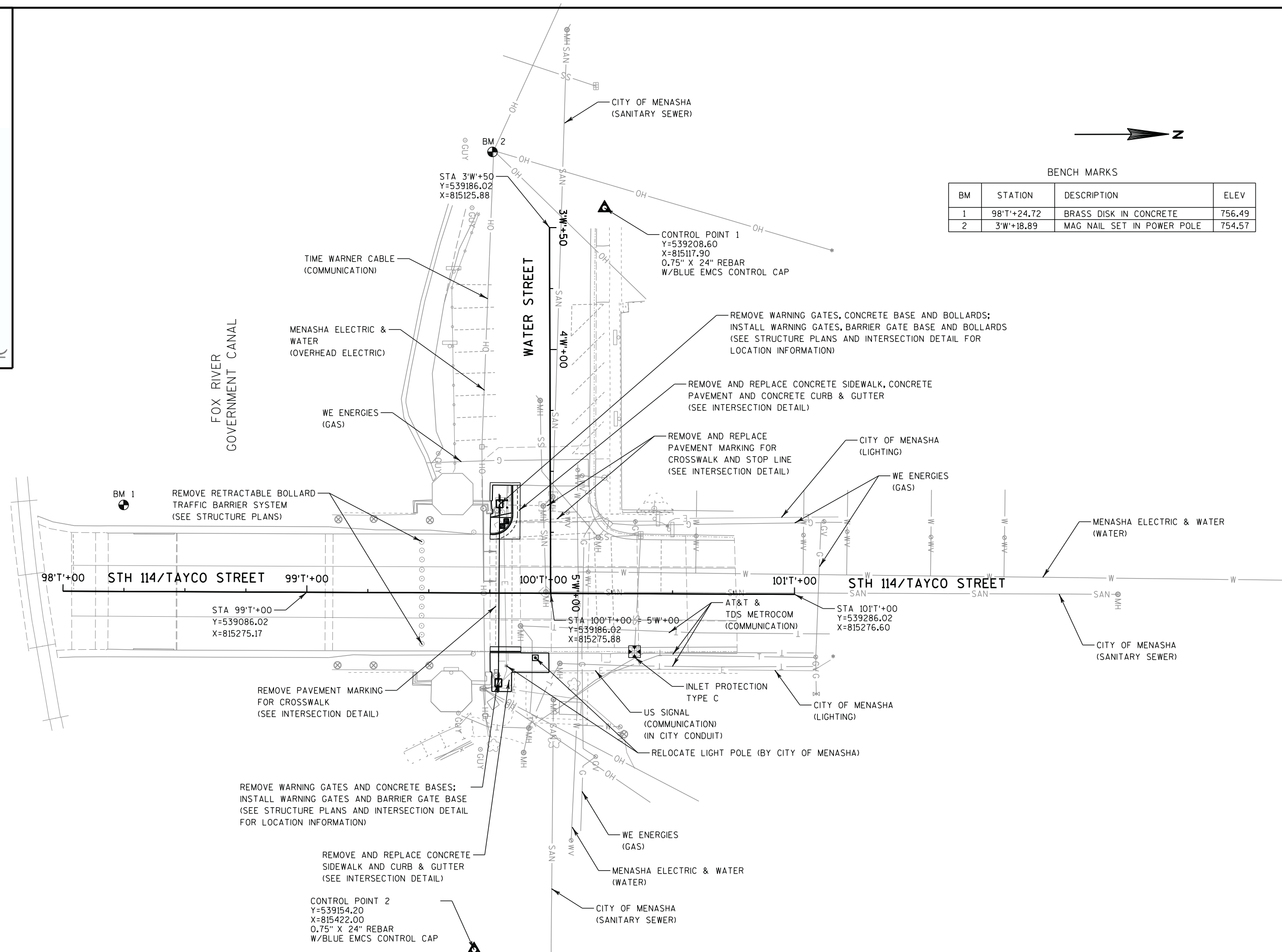
EMCS

630 South 36th Avenue
Wausau, WI 54401
715.845.1081 FAX 715.845.1099



2/28/2013 *Stephanie G. Christensen*
(Date) (Signature)

5



5

PROJECT NO: 4065-15-71

HWY: STH 114

COUNTY: WINNEBAGO

PLAN

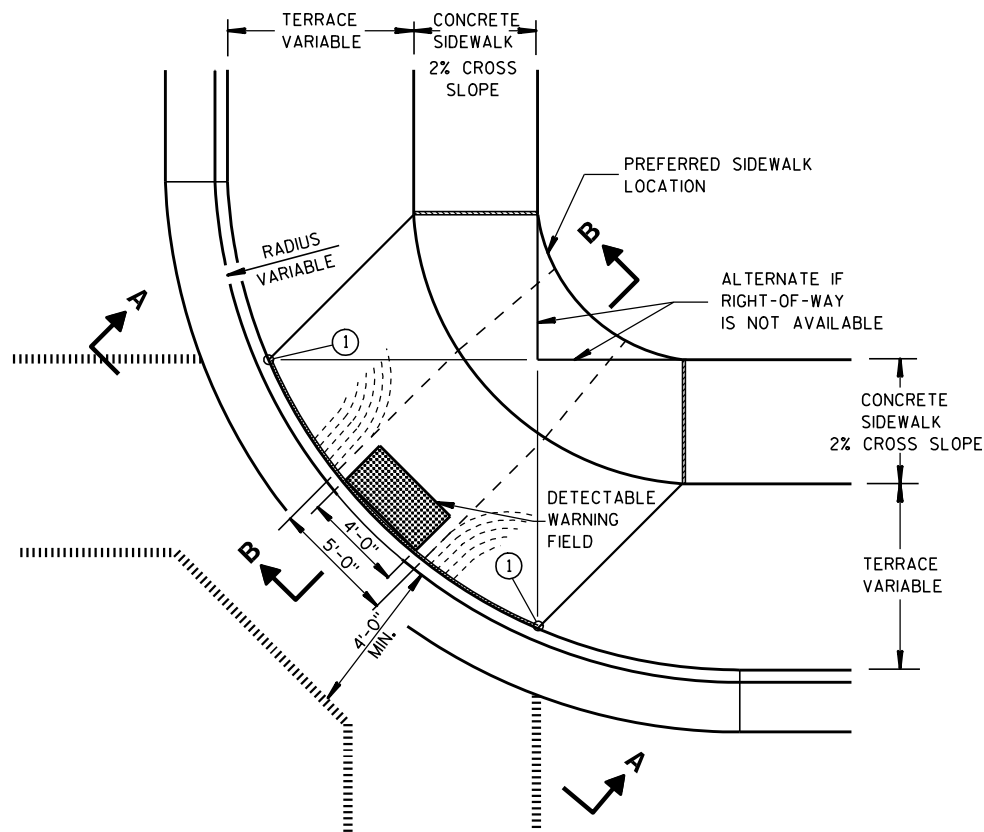
SHEET

15

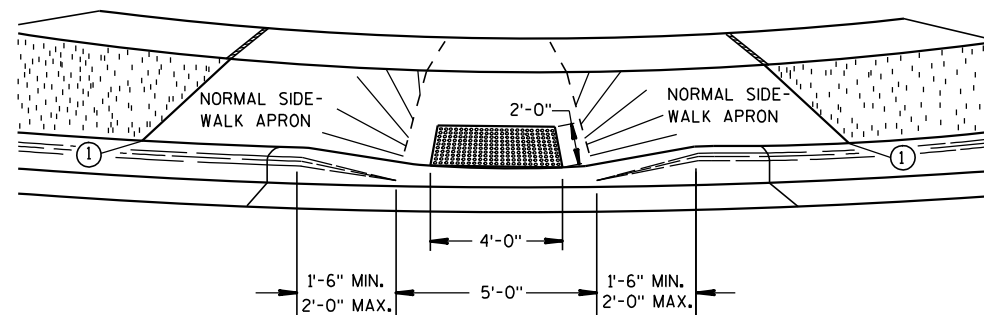
E

Standard Detail Drawing List

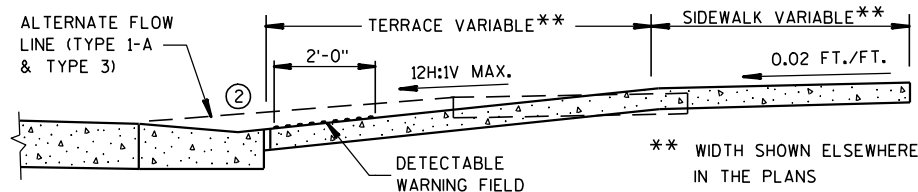
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-14A	CURB RAMPS TYPES 1 AND 1-A
08D05-14B	CURB RAMPS TYPES 2 AND 3
08D05-14C	CURB RAMPS TYPE 4A
08D05-14D	CURB RAMPS TYPE 4B
08D05-14E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E10-02	INLET PROTECTION TYPE A, B, C AND D
13A03-05	CONCRETE PAVEMENT SHOULDERS
13C01-15	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-07	URBAN DOWELED CONCRETE PAVEMENT
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C05-01	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C08-15F	PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)
15D20-01	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-01	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D29-02	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE



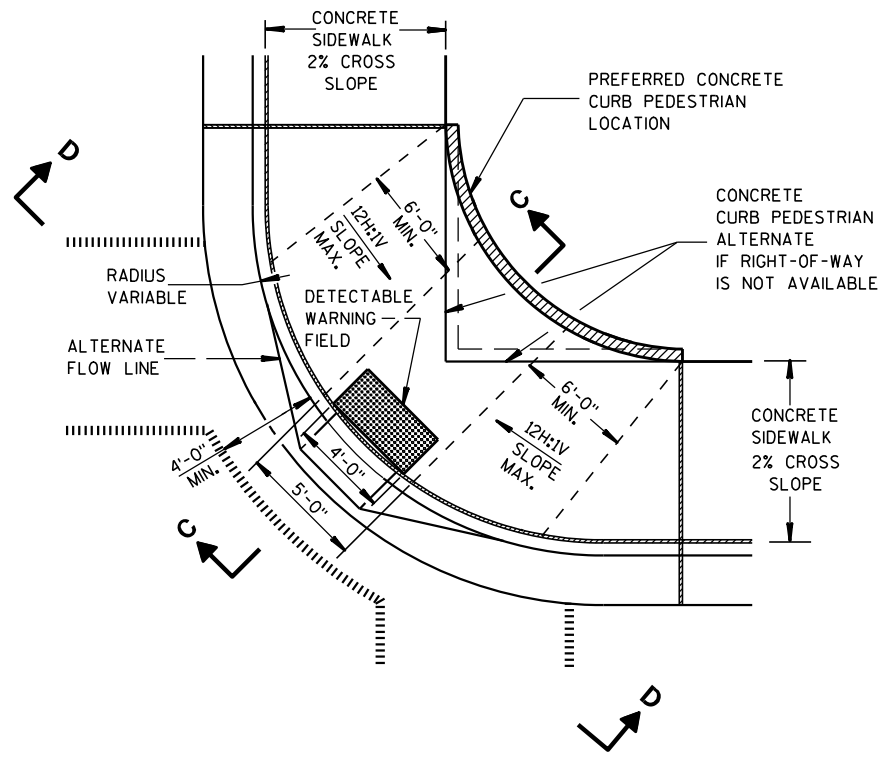
PLAN VIEW
TYPE 1 RAMP
(CENTER OF CORNER RADIUS)



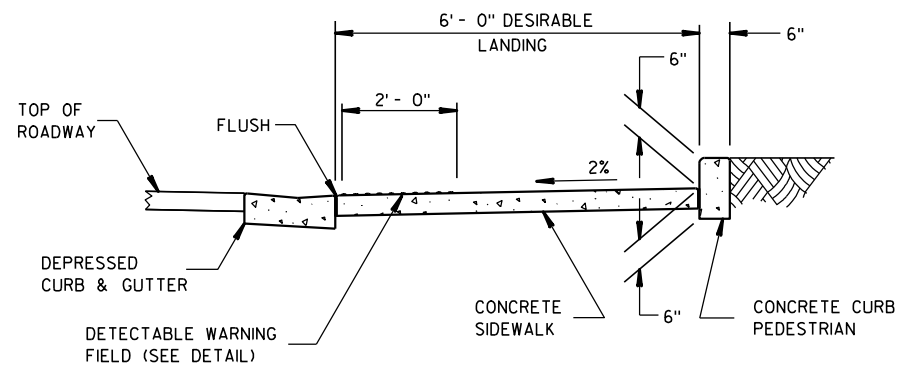
VIEW A-A



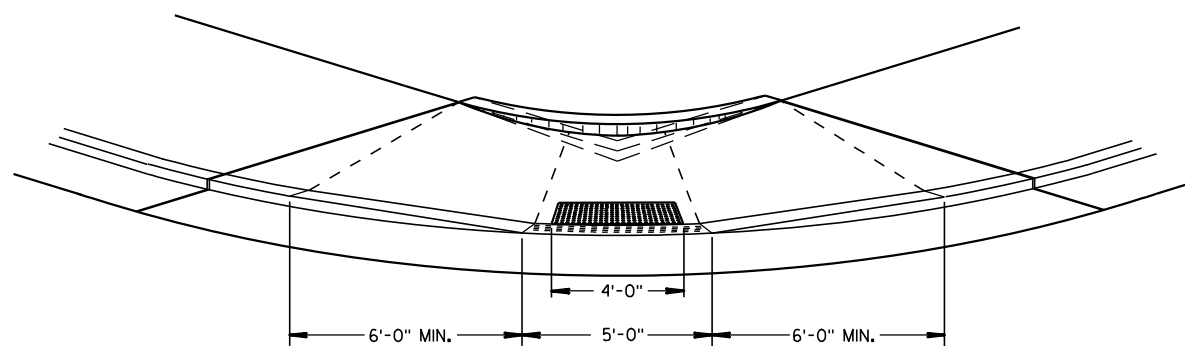
SECTION B-B



PLAN VIEW
TYPE 1-A RAMP
(NO TERRACE)



SECTION C-C



VIEW D-D

GENERAL NOTES

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

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

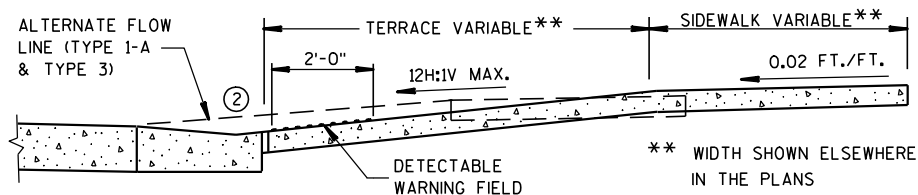
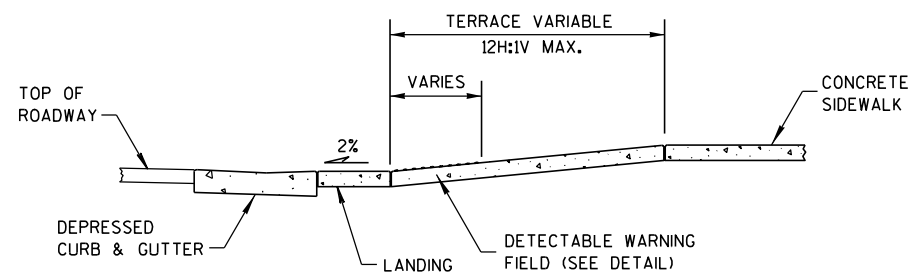
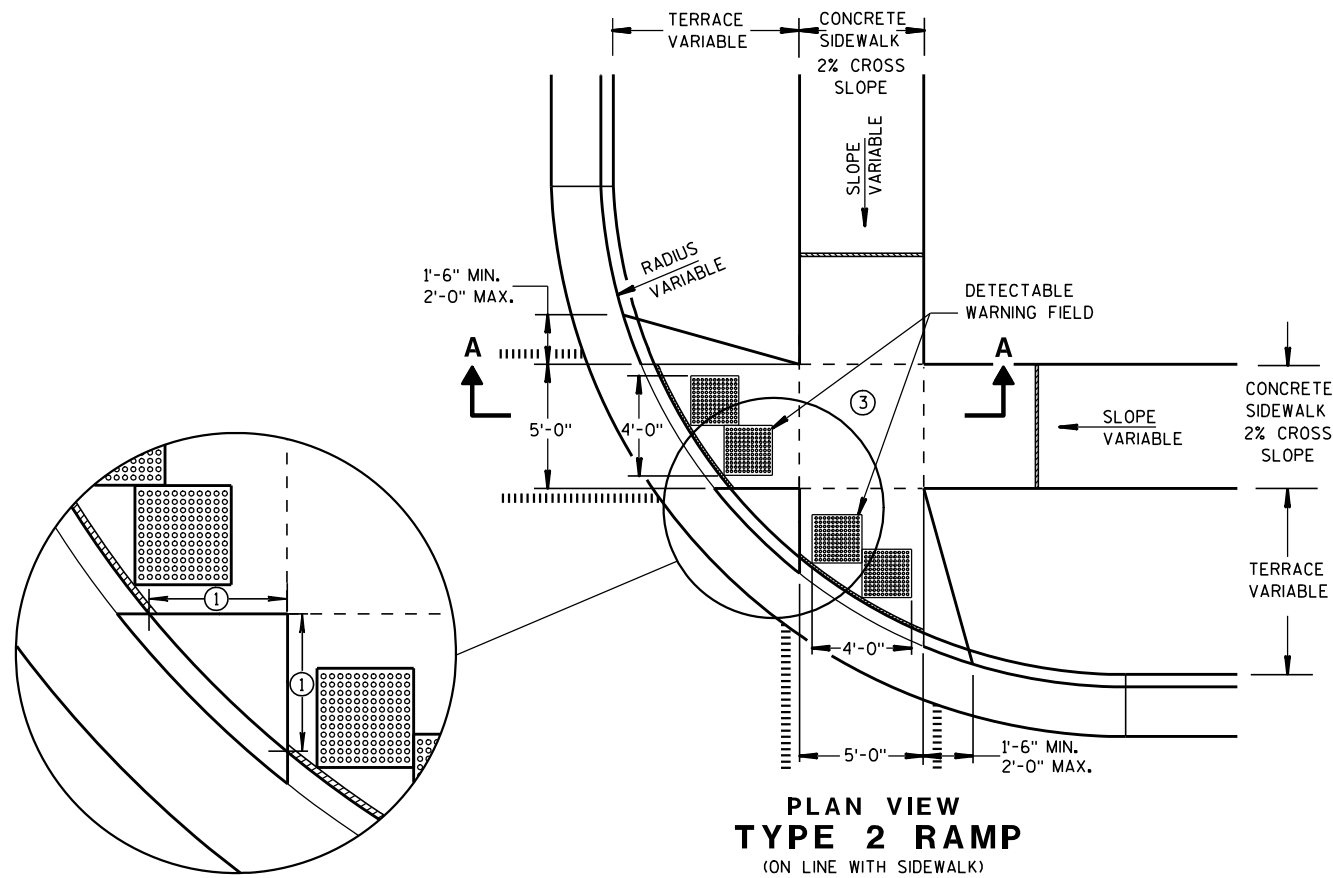
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



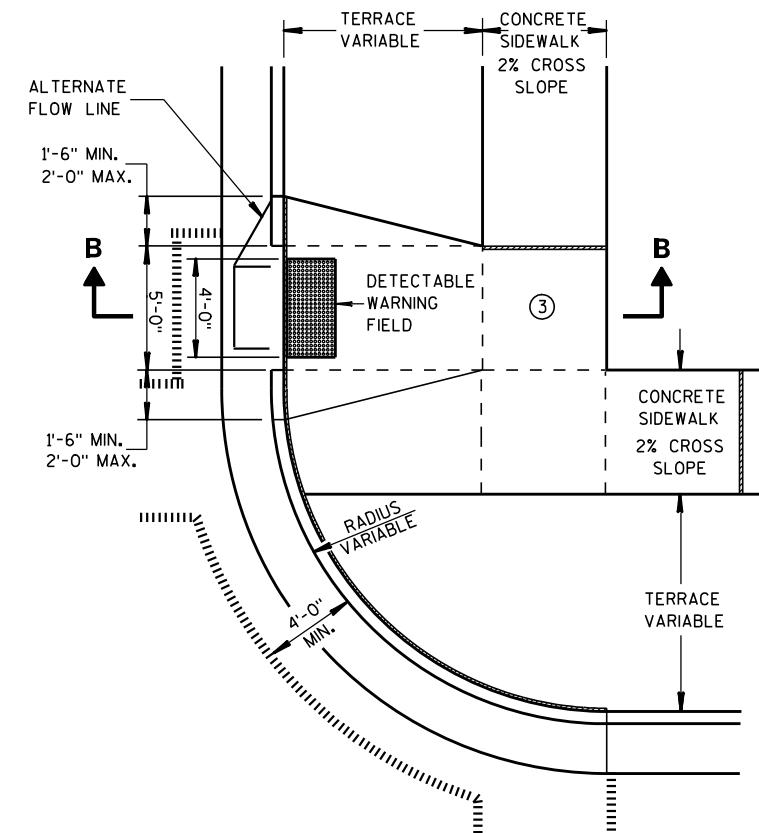
GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

- ① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP, REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③ PROVIDE LANDING AT TOP OF RAMP WITH NO MORE THAN 2% SLOPE IN ANY DIRECTION.

LEGEND

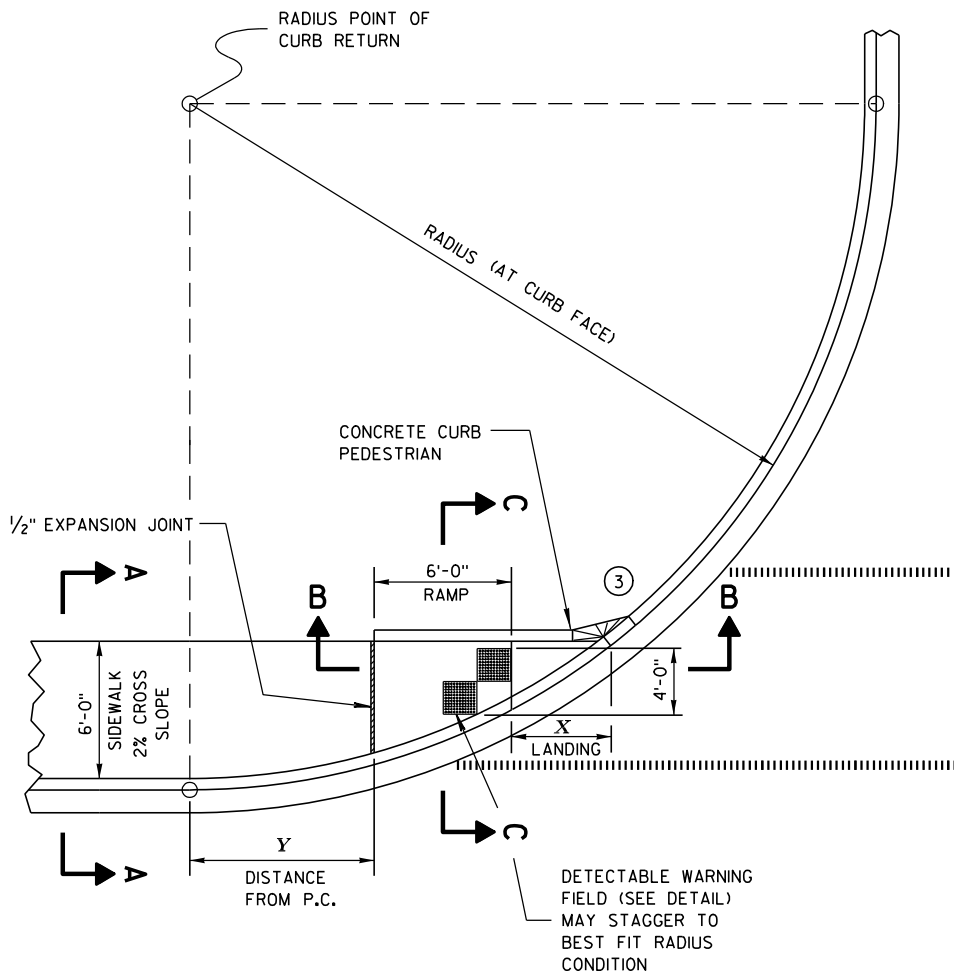
- ===== 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



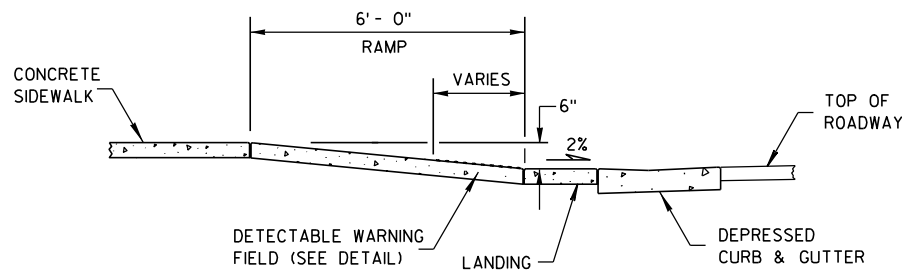
**PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)**

**CURB RAMPS
TYPES 2 AND 3**

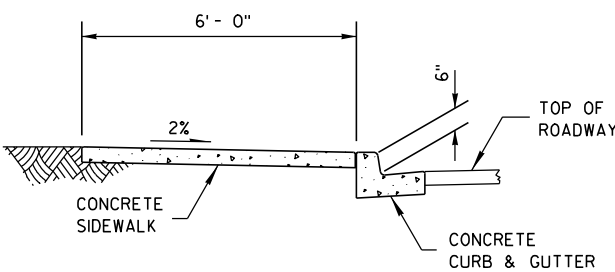
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



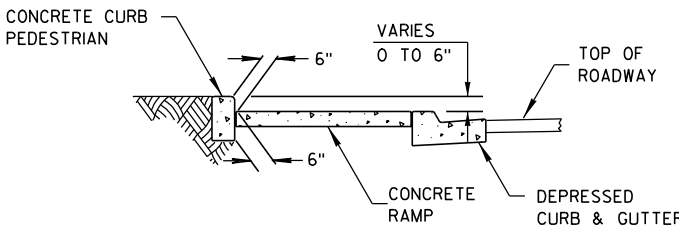
CURB RAMP TYPE 4A
PLAN VIEW



SECTION B-B



SECTION A-A



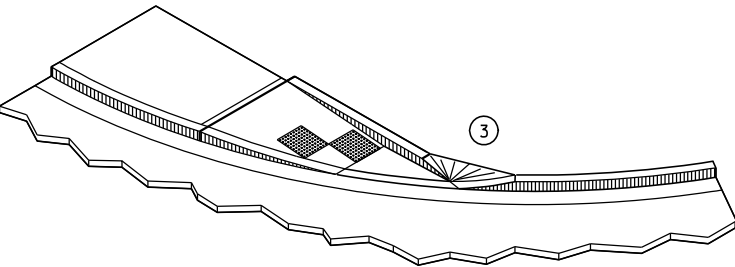
SECTION C-C

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1 $\frac{3}{4}$ "	2'-7 $\frac{1}{4}$ "
30 FEET	7'-11 $\frac{3}{4}$ "	4'-8 $\frac{1}{4}$ "
40 FEET	9'-5 $\frac{1}{4}$ "	6'-5"
50 FEET	10'-8 $\frac{3}{4}$ "	7'-11 $\frac{1}{4}$ "
60 FEET	11'-10 $\frac{1}{4}$ "	9'-3 $\frac{1}{2}$ "

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.
- SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- ③ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

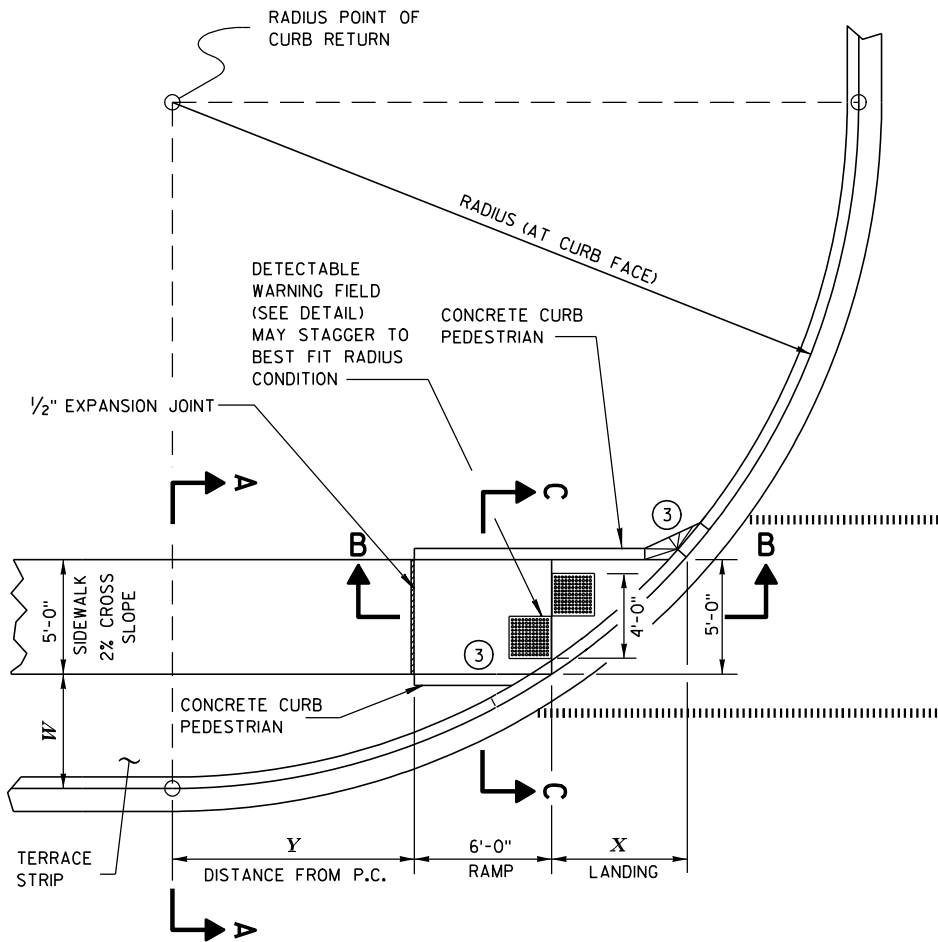


ISOMETRIC VIEW

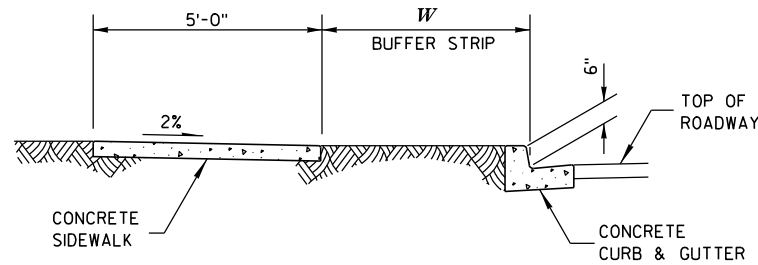
- LEGEND**
- 1/2" EXPANSION JOINT-SIDEWALK
 - CONTRACTION JOINT FIELD LOCATED
 - PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPE 4A

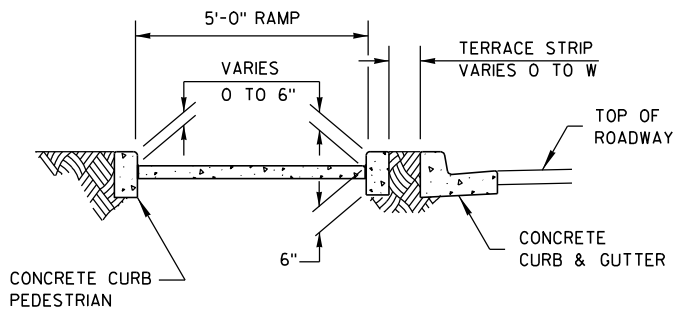
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



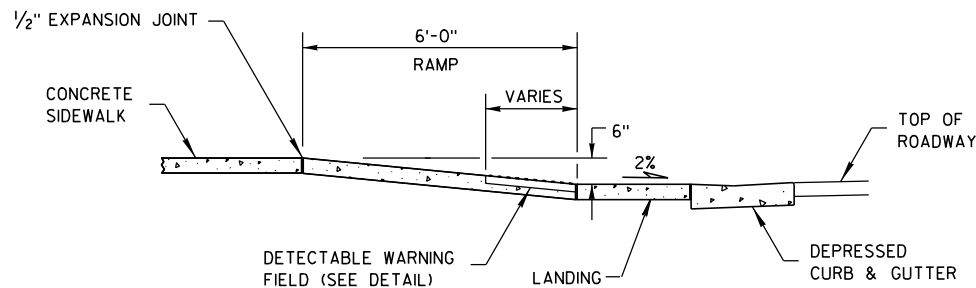
CURB RAMP TYPE 4B
PLAN VIEW



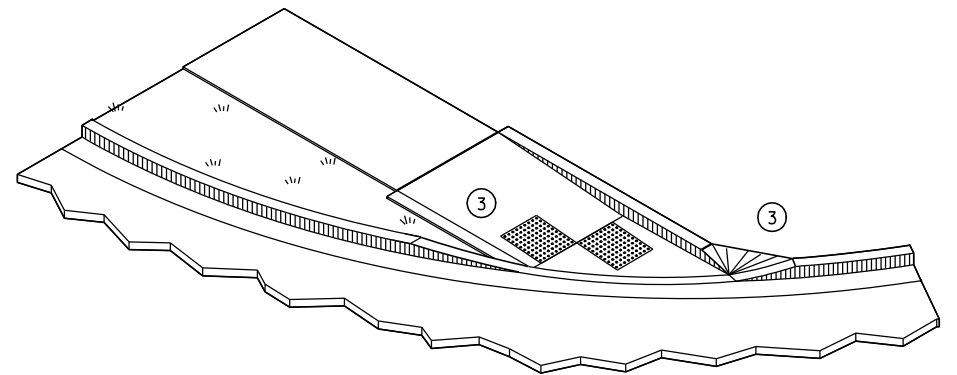
SECTION A-A



SECTION C-C



SECTION B-B



ISOMETRIC VIEW

LEGEND

- 1/2" EXPANSION JOINT-SIDWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

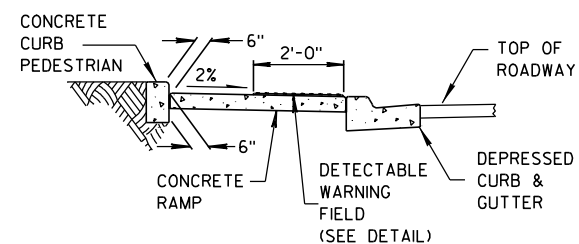
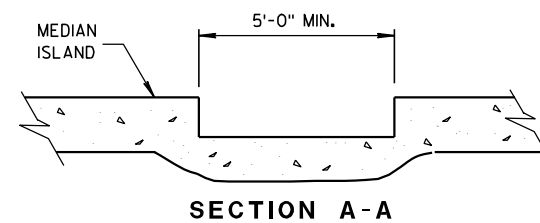
- 3 INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

RADIUS (AT CURB FACE)	W = 3'- 0"		W = 4'- 0"		W = 5'- 0"		W = 6'- 0"		W = 7'- 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5 1/2"	4'-6 1/2"	4'-8 1/2"	6'-0"	4'-1"	7'-2 3/4"	3'-7"	8'-3 1/2"	3'-1 1/2"	9'-2 1/2"
30 FEET	7'-3 3/4"	7'-1"	6'-5 1/2"	8'-11 1/2"	5'-9 1/4"	10'-7"	5'-2 1/2"	12'-0"	4'-8 3/4"	13'-3 1/4"
40 FEET	8'-9 1/2"	9'-2 1/2"	7'-10"	11'-5 1/4"	7'-1"	13'-4 1/2"	6'-5 3/4"	15'-3 1/4"	5'-11 1/2"	16'-7 1/4"
50 FEET	10'-3 1/4"	11'-3 1/4"	9'-1 1/4"	13'-7 1/4"	8'-2 1/2"	15'-9 1/2"	7'-6 1/2"	17'-9"	6'-11 3/4"	19'-6 1/4"
60 FEET	11'-2 1/2"	12'-8 3/4"	10'-3 1/4"	15'-6 1/2"	9'-2 1/4"	17'-11 3/4"	8'-5 3/4"	20'-1 3/4"	7'-10 1/2"	22'-1 1/2"
70 FEET	12'-2 3/4"	14'-3 1/4"	11'-1 1/4"	17'-4"	10'-1"	19'-11 3/4"	9'-3 3/4"	22'-4 1/4"	8'-8 1/4"	24'-6 1/4"
80 FEET	13'-2"	15'-8 1/2"	11'-10 1/2"	18'-11 3/4"	10'-10 3/4"	21'-10"	10'-1"	24'-4 3/4"	9'-5"	26'-8 3/4"
90 FEET	14'-1 1/2"	17'-1 1/2"	12'-8 1/4"	20'-6 1/2"	11'-7 3/4"	23'-7"	10'-9 3/4"	26'-3 3/4"	10'-1 1/4"	28'-9 1/2"
100 FEET	14'-10 1/2"	18'-3 3/4"	13'-5 1/2"	22'-0"	12'-4 1/4"	25'-2 3/4"	11'-5 3/4"	28'-1 1/2"	10'-9"	30'-9"

INTERMEDIATE RADII CAN BE INTERPOLATED

CURB RAMPS
TYPE 4B

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SECTION B-B



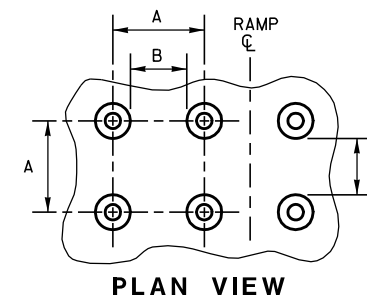
NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS
MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

- ① SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ② THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET $\pm$ 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- ③ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.)
DO NOT MARK TRANSITION NOSE.

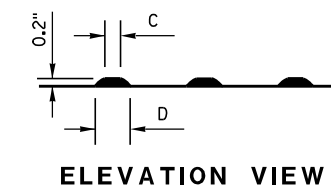
LEGEND

- | | |
|---------|------------------------------------|
| ===== | 1/2" EXPANSION JOINT-SIDEWALK |
| - - - - | CONTRACTION JOINT FIELD LOCATED |
| | PAVEMENT MARKING CROSSWALK (WHITE) |



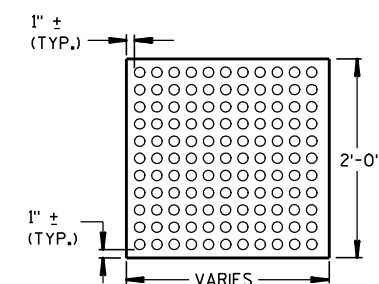
	MIN.	MAX
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL



PLAN VIEW
DETECTABLE WARNING
FIELD (TYPICAL)

CURB RAMPS

TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

2-9-10

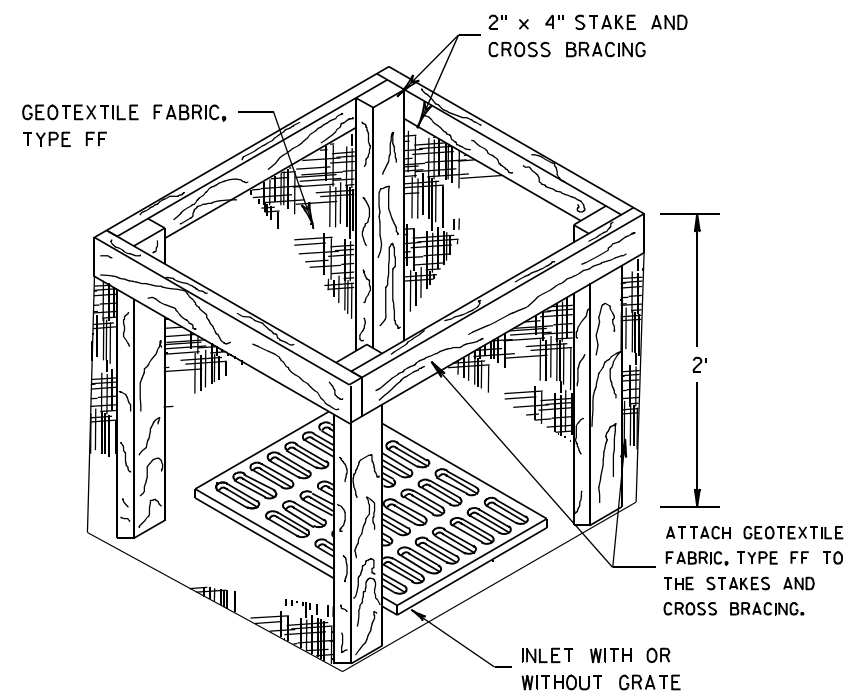
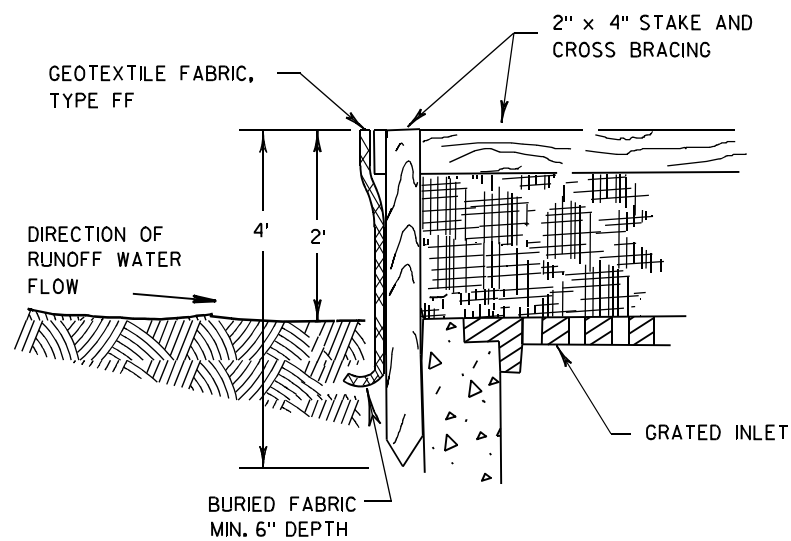
DATE _____

/S/ Jerry H. Zook

ROADWAY STANDARDS 22
ENGINEER

FHWA

ENGINEER



INLET PROTECTION, TYPE A

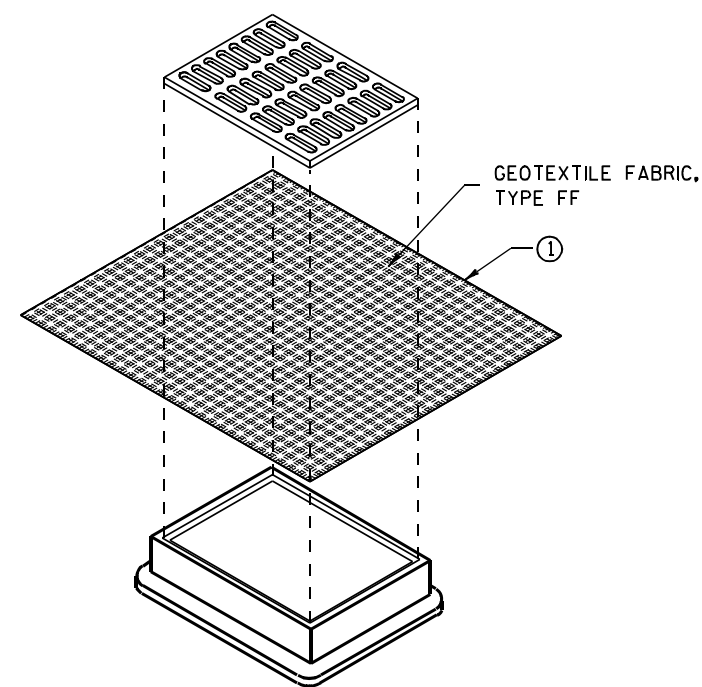
GENERAL NOTES

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

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

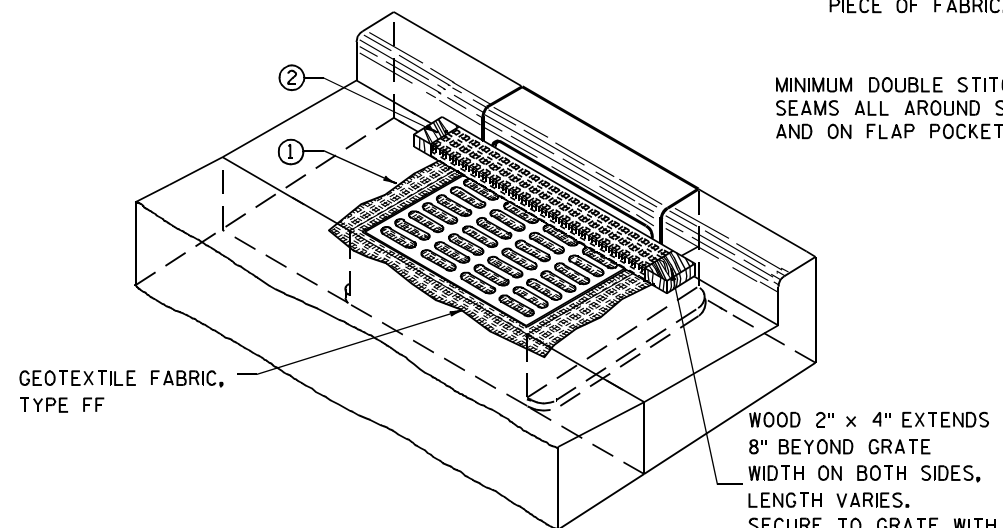
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

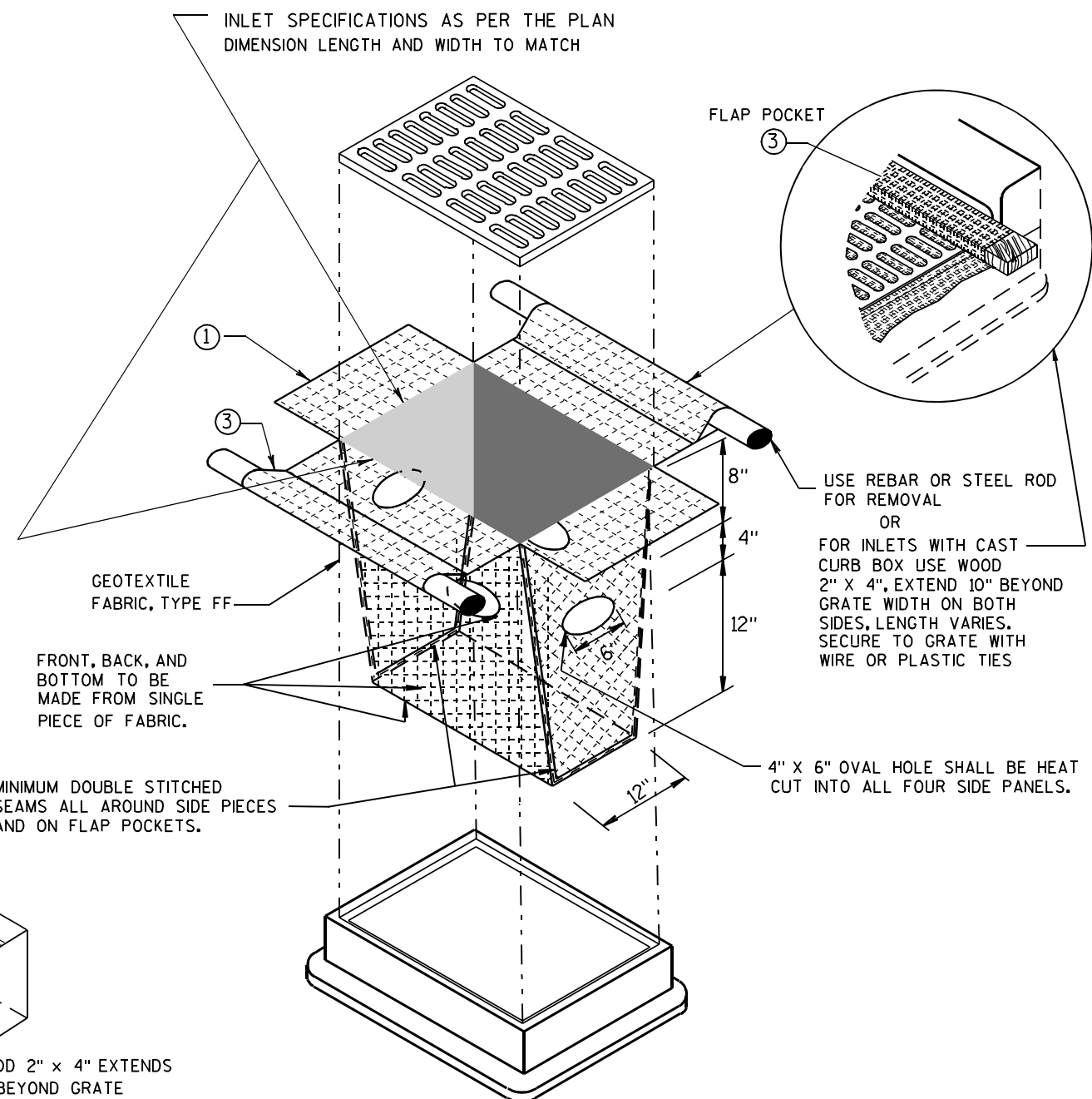
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



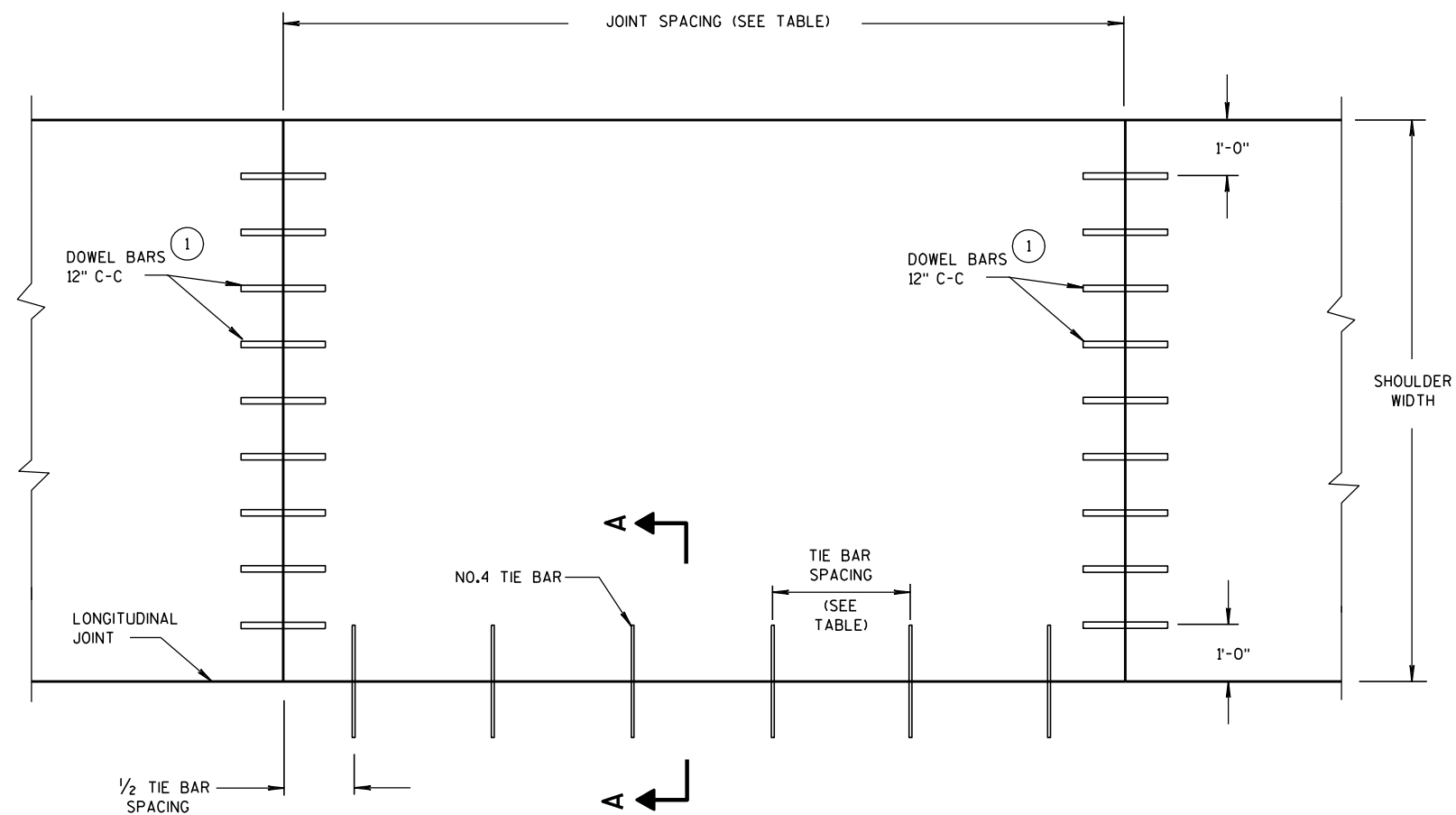
INLET PROTECTION, TYPE D

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 23
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



PLAN VIEW
CONCRETE PAVEMENT SHOULDER

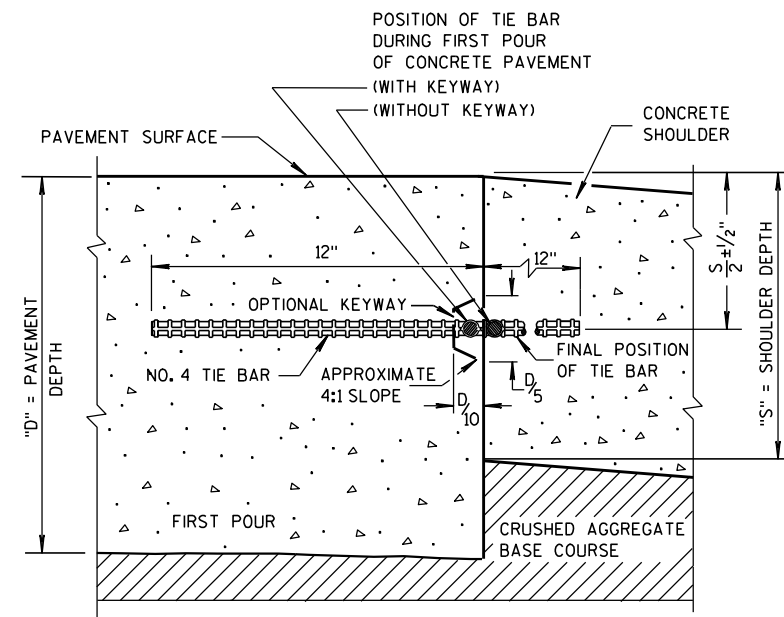
GENERAL NOTES

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

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT

1
PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

PAVEMENT TYPE OF TRAFFIC LANES	TIE BAR SPACING	SHOULDER JOINT SPACING
NON-REINFORCED	30"	MATCH JOINT SPACING OF ADJACENT TRAFFIC LANE
CONTINUOUSLY REINFORCED	30"	15' FOR 6' TO 10' WIDE SHOULDER
CONTINUOUSLY REINFORCED	36"	12' FOR 3' WIDE SHOULDER

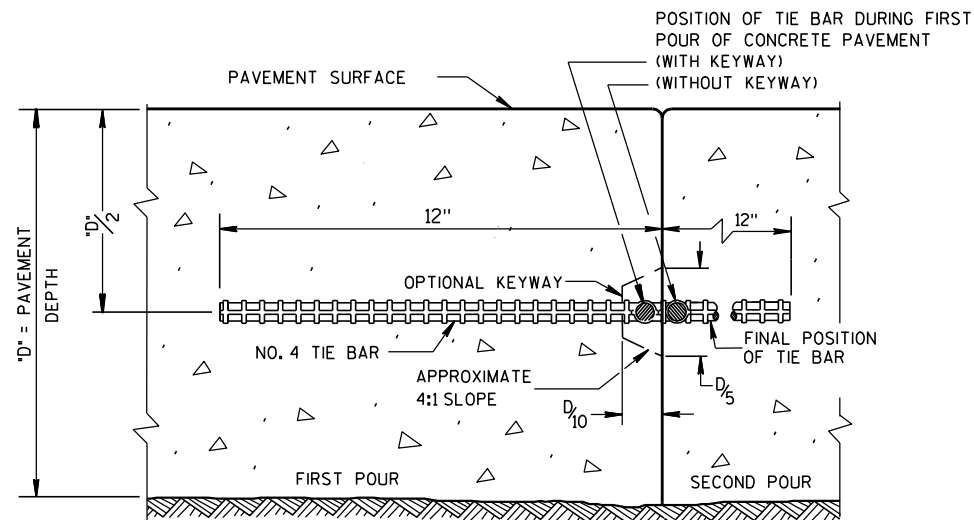
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

FOR DOWELED CONCRETE SHOULDER WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

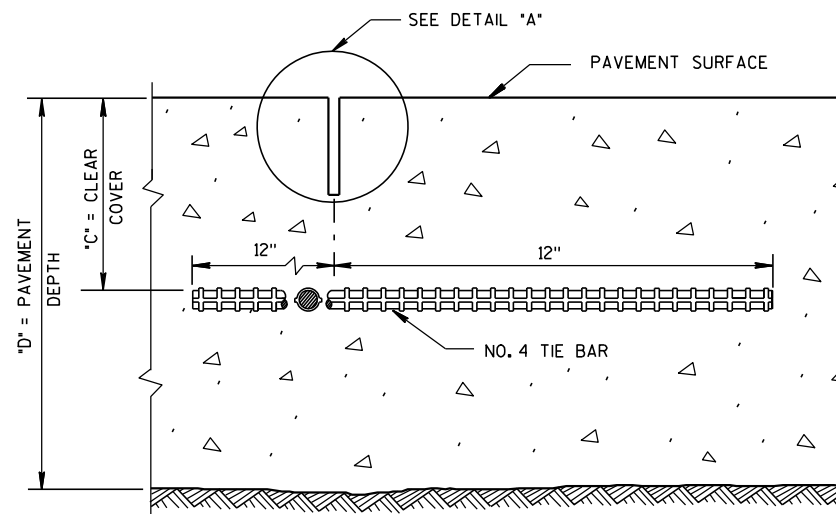
CONCRETE PAVEMENT SHOULDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/15/2011 /S/ Deb Bischoff
DATE PAVEMENT POLICY & D 24 INEER
FHWA



CONSTRUCTION JOINT



SAWED JOINT

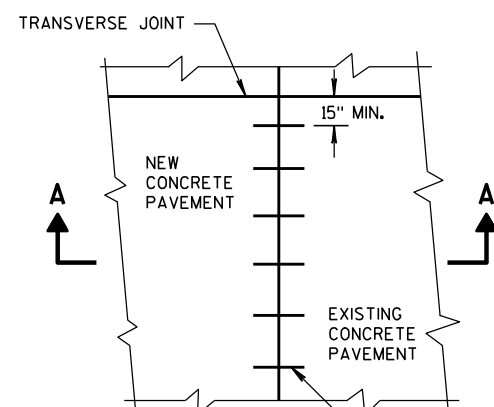
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

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

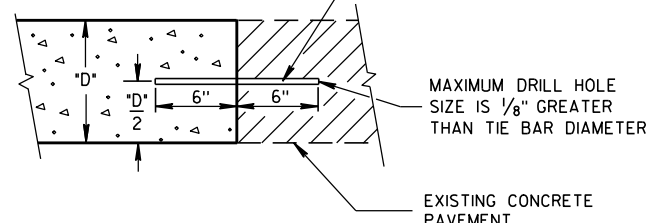
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW

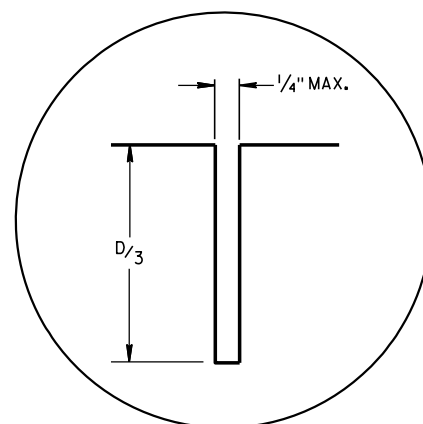
NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

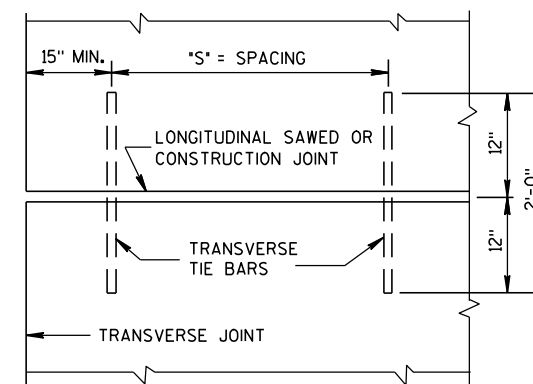
EXISTING CONCRETE PAVEMENT

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



DETAIL "A"

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH 24' OR 26'	≥ 30'
6, 6 1/2"	3" ± 1/2"	48"	42"
7, 7 1/2"	3 1/4" ± 1"	45"	36"
8, 8 1/2"	3 3/4" ± 1"	39"	30"
9, 9 1/2"	4 1/4" ± 1"	33"	27"
10, 10 1/2"	4 3/4" ± 1"	30"	24"
11, 11 1/2"	5 1/4" ± 1"	27"	21"
12"	5 3/4" ± 1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

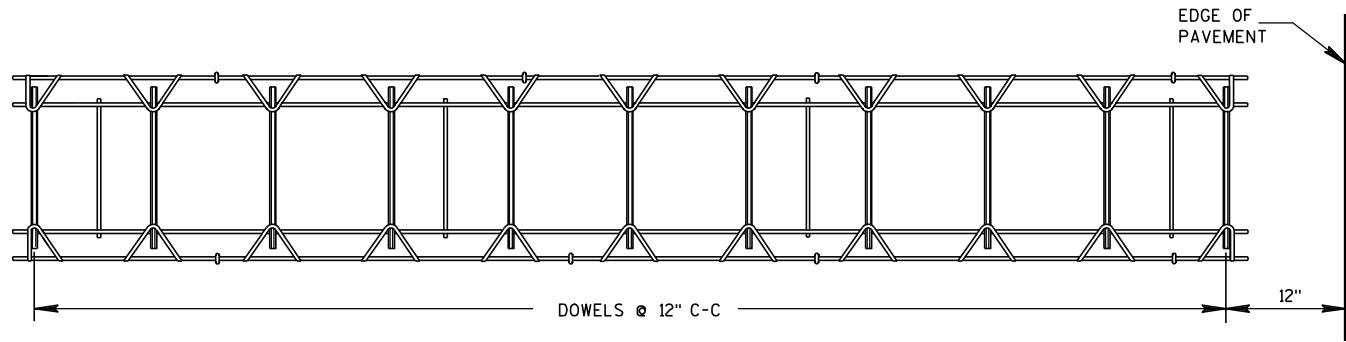
APPROVED

10-5-2010
DATE

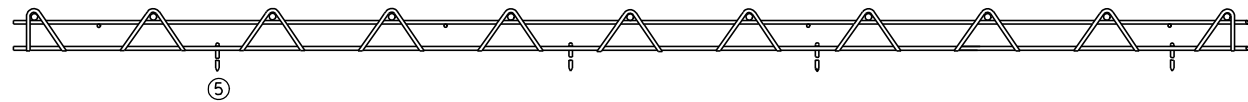
FHWA

/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN

INEER



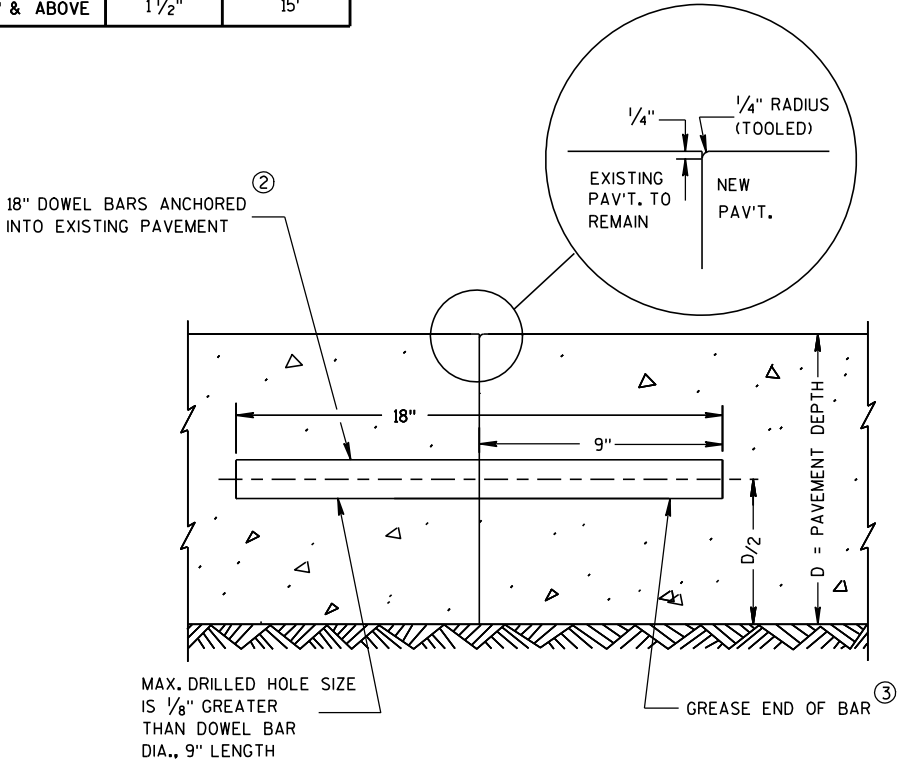
PLAN VIEW



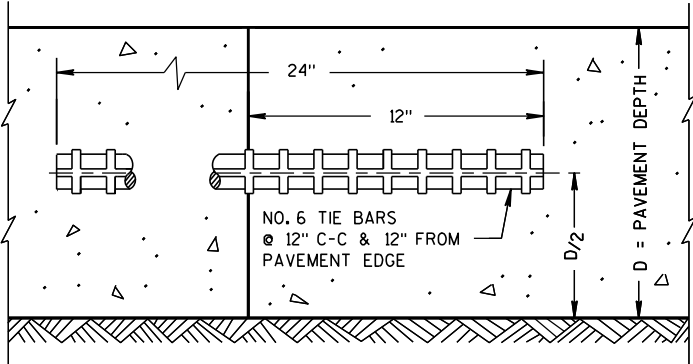
SIDE VIEW
CONTRACTION JOINT DOWEL ASSEMBLY

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

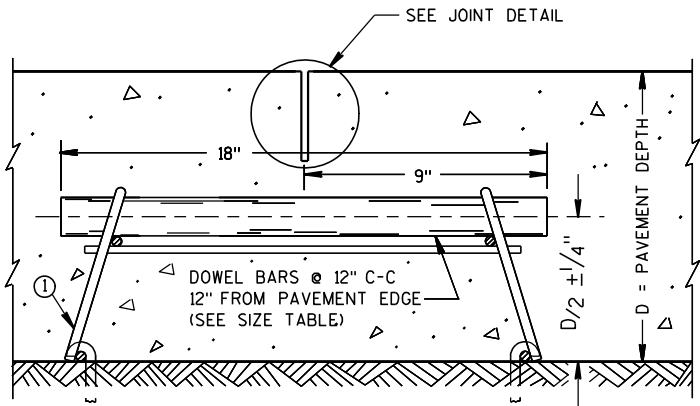
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'



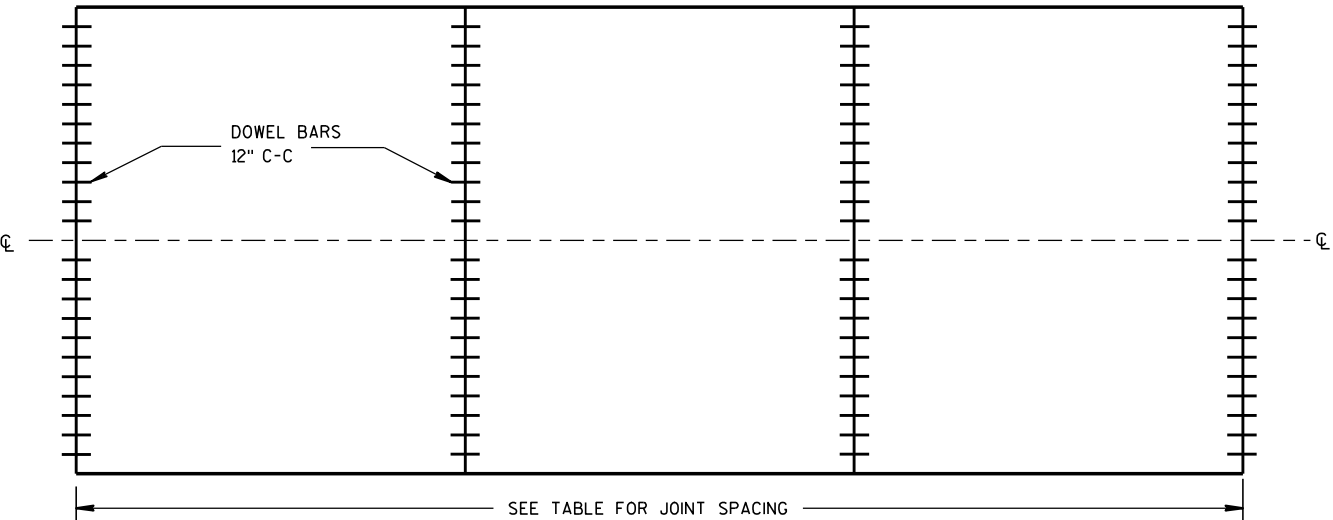
TRANSVERSE CONTRACTION JOINTS ABUTTING
EXISTING PAVEMENT
DOWEL BAR DETAIL



TRANSVERSE CONSTRUCTION JOINT



DOWELED CONTRACTION JOINT



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

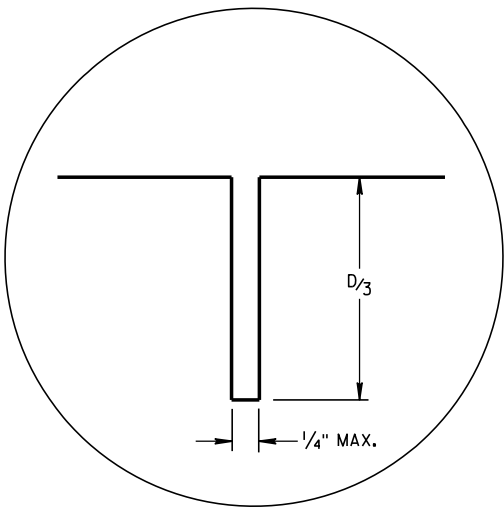
FOR PAVEMENT SLABS OF VARYING WIDTHS, CENTER THE DOWEL ASSEMBLY ACROSS THE LANES. LOCATE THE INNER AND OUTER MOST DOWEL BARS SO THAT THE CENTER OF THE BARS ARE A MINIMUM OF 6 INCHES AND A MAXIMUM OF 12 INCHES FROM THE LONGITUDINAL JOINT AND THE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.

- THE ENGINEER MAY APPROVE THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. THE CONTRACTOR MAY USE MECHANICAL DOWEL BAR INSERTERS INSTEAD OF DOWEL ASSEMBLIES.
- ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.
- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- SPACE DOWEL BARS INSTALLED BY DRILLING 1'-3" ON CENTER. CENTER THE GROUPING OF DOWEL BARS INSIDE THE SLAB BASED ON ALL THE FOLLOWING SITUATIONS:
 - BETWEEN THE EDGES OF PAVEMENTS WITHOUT LONGITUDINAL JOINTS OR BETWEEN THE EDGE OF PAVEMENT AND NEAREST LONGITUDINAL JOINT OR BETWEEN TWO ADJACENT LONGITUDINAL JOINTS.
- SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

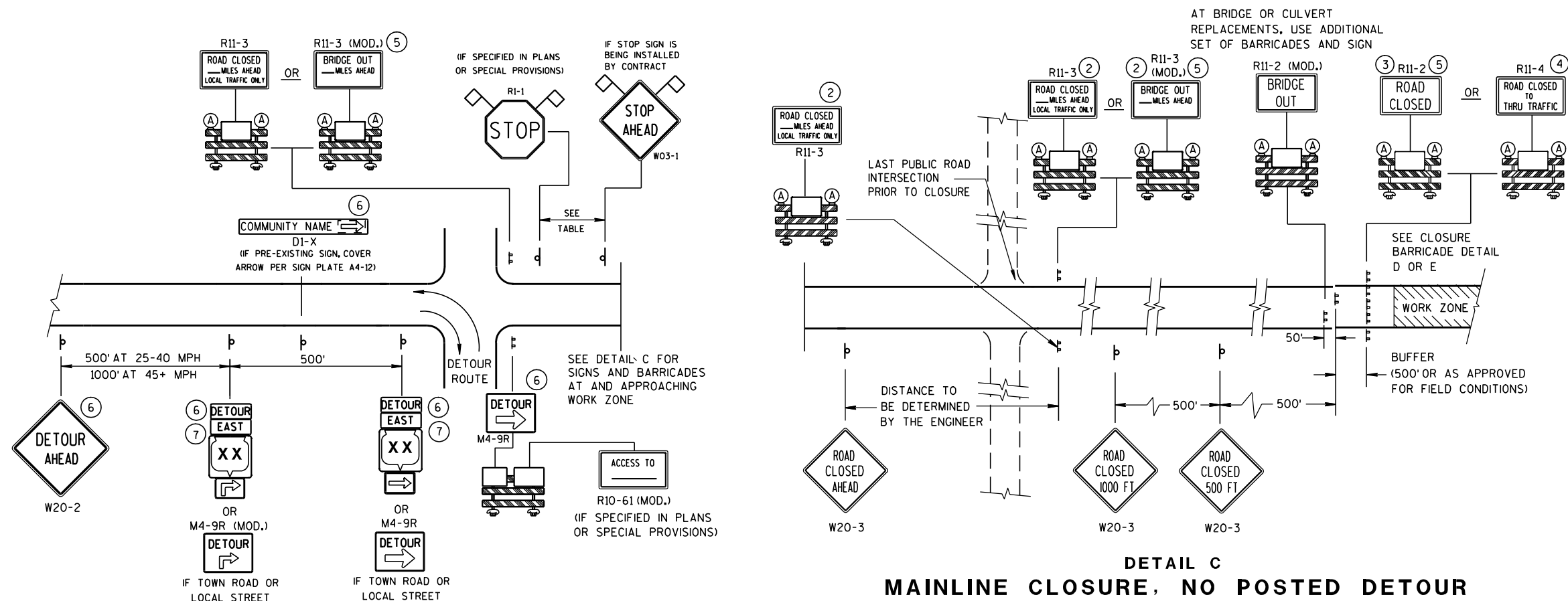


JOINT DETAIL

URBAN DOWELED
CONCRETE PAVEMENT

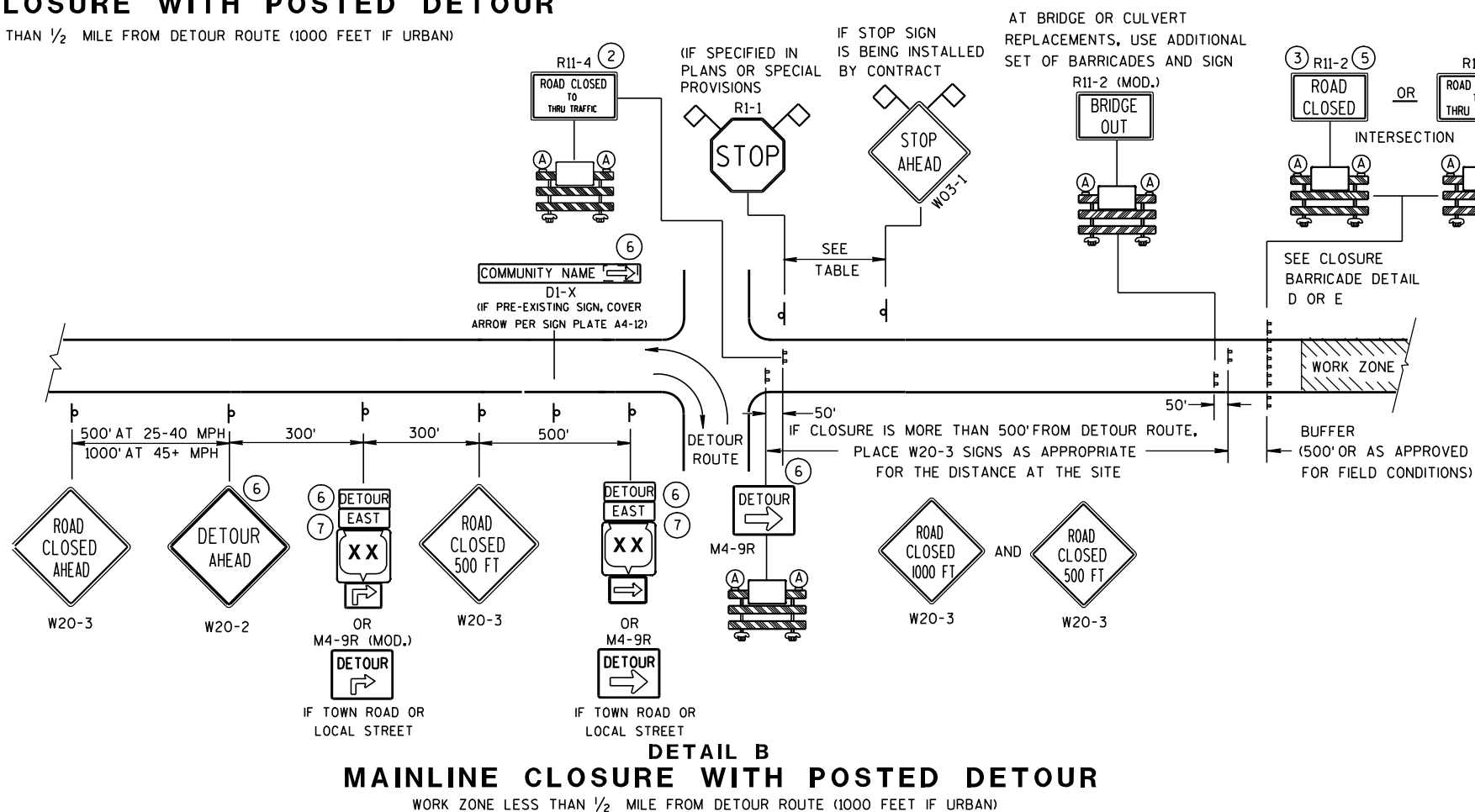
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 /S/ Deb Bischoff
DATE PAVEMENT POLICY & DE 26
FHWA NEER



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

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

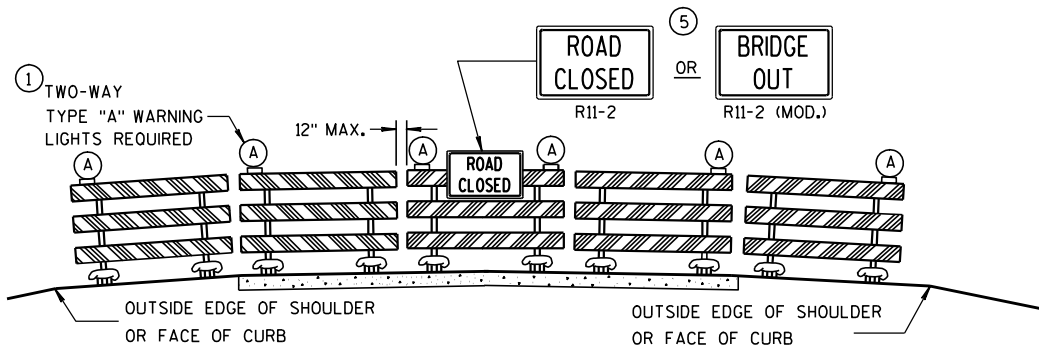


LEGEND

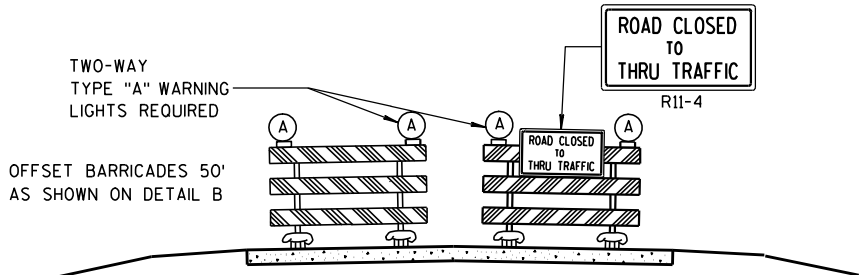
-  POST MOUNTED SIGN
 TYPE III BARRICADES
 (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
 WORK ZONE
 M4-8
 M3-X
 OR  OR 
 M1-4 M1-5A M1-6
 OR 
 M05-1 M06-1
 FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-4a 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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

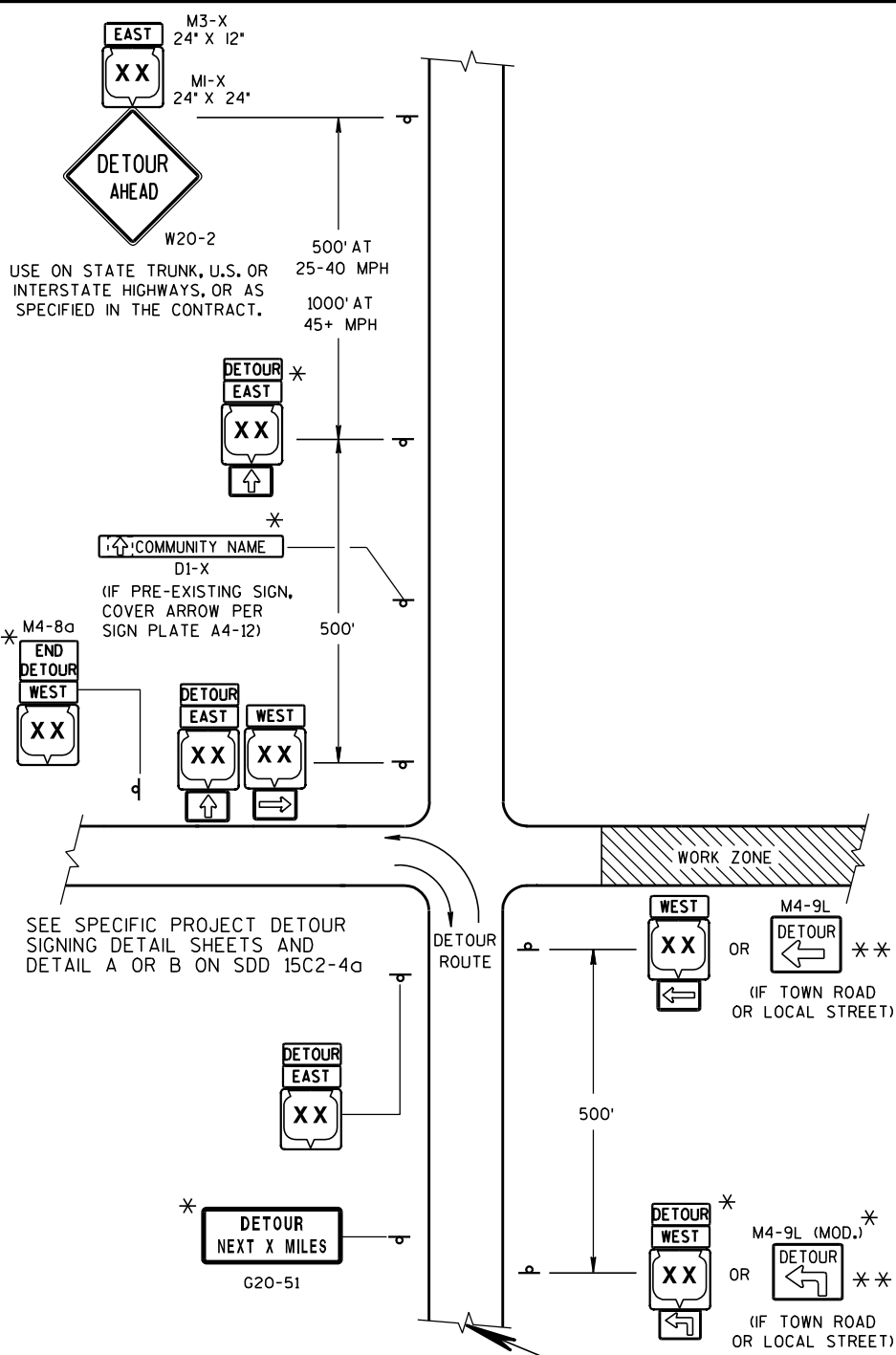
"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- 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 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 LANE 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 MAINLINE CLOSURES		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED		
9/16/03 DATE	/S/ Thomas N. N CHIEF SIGNS AND MAR 28	INEER
FHWA		



LEGEND

POST MOUNTED SIGN

WORK ZONE

DETOUR EAST M4-8 M3-X

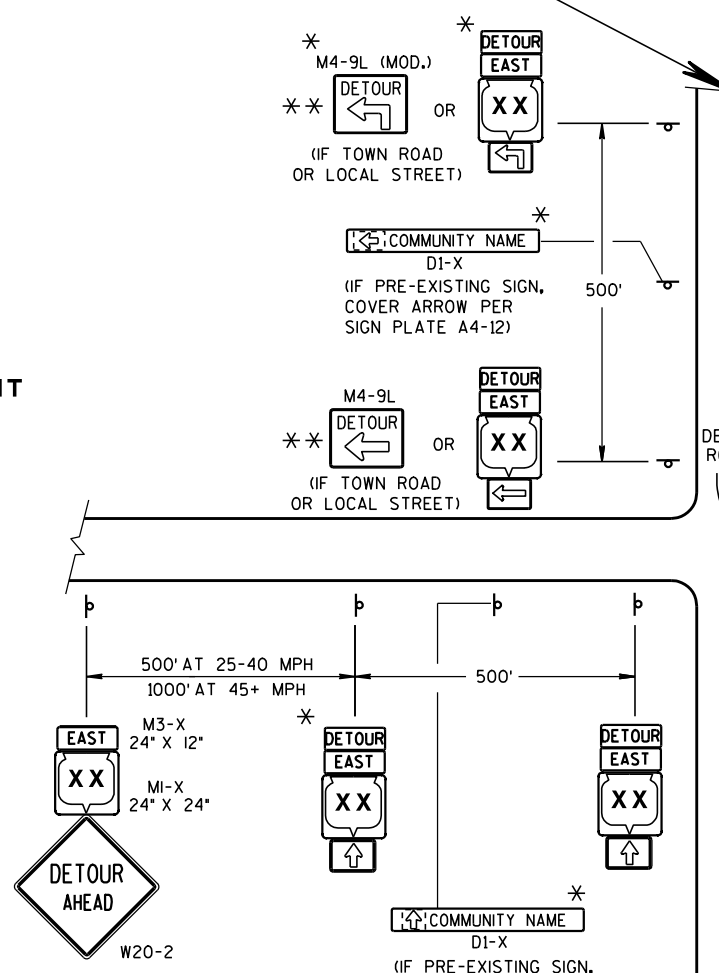
M1-4 OR COUNTY M1-5A OR M1-6

M05-1 OR M06-1 OR M06-1

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

MATCH POINT

DETAIL F
DETOUR SIGNING



USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT.

GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

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

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-9 SHALL BE 30" X 24".

M4-8a SHALL BE 24" X 18".

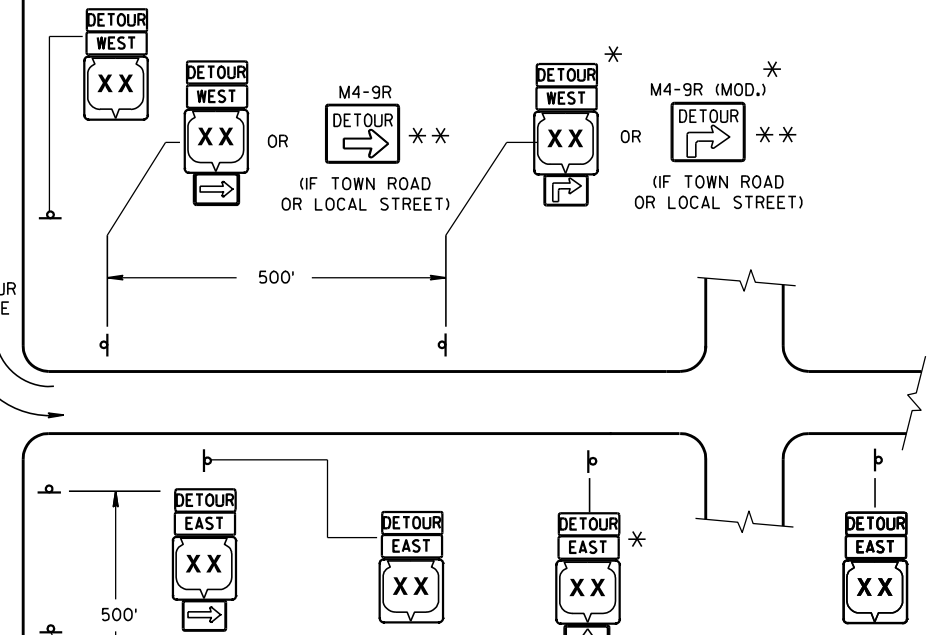
G20-51 SHALL BE 60" X 24".

W20-2 SHALL BE 48" X 48".

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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



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

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

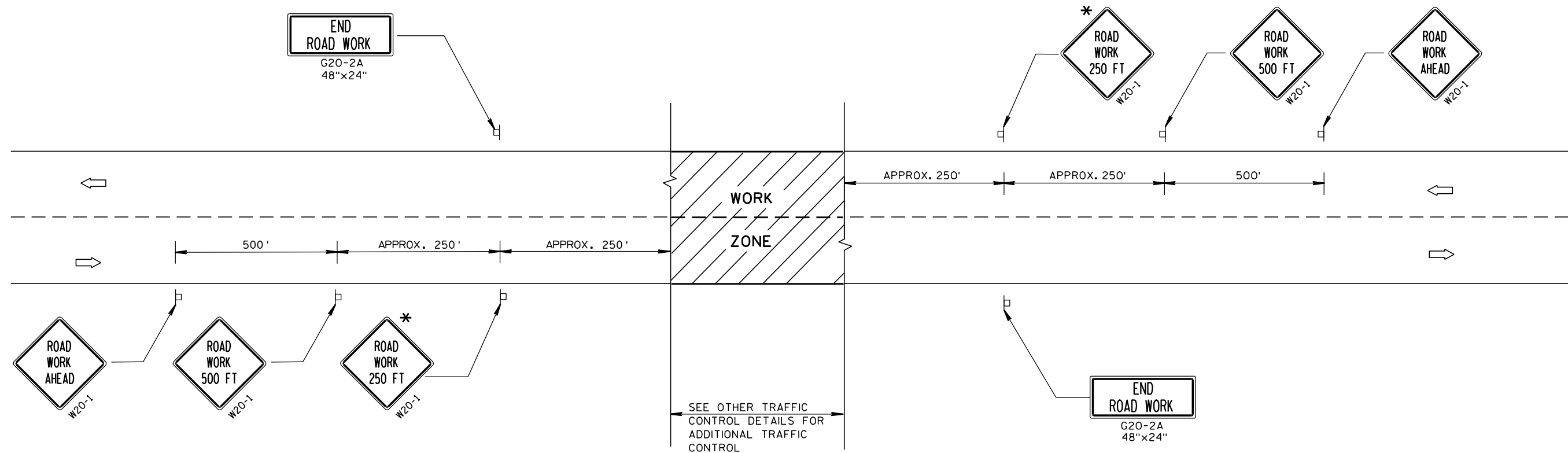
APPROVED
9-16-03 DATE /S/ Thomas N. N... CHIEF SIGNS AND MAR 29 INEER
FHWA



R11-4 AND R11-3 SHALL BE 60" X 30".

 WORK AREA

S.D.D. 15 C 3-1



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.

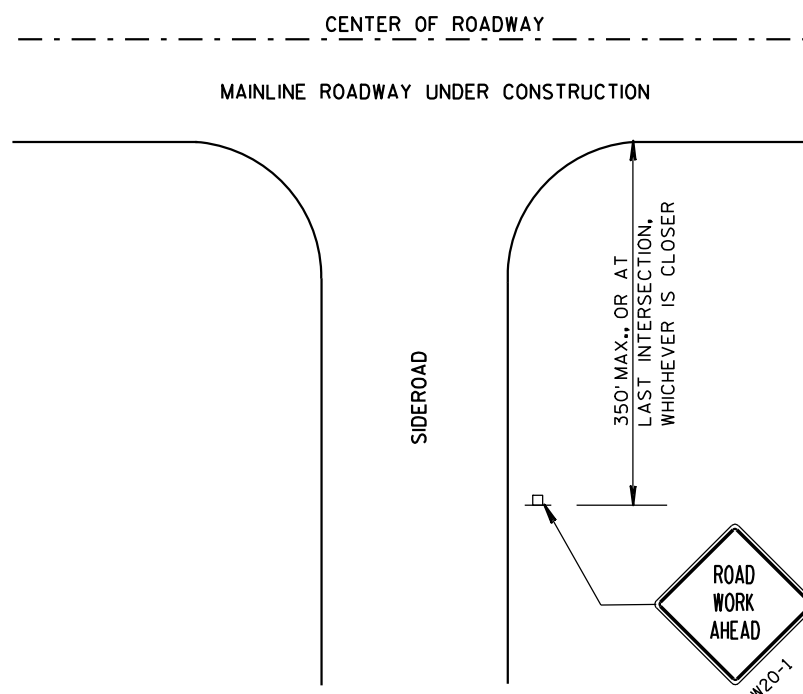
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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.

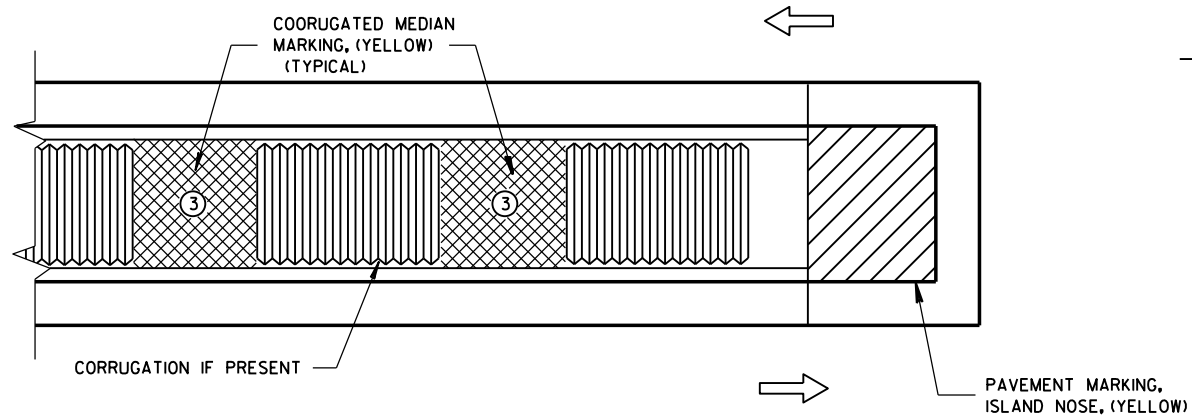
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



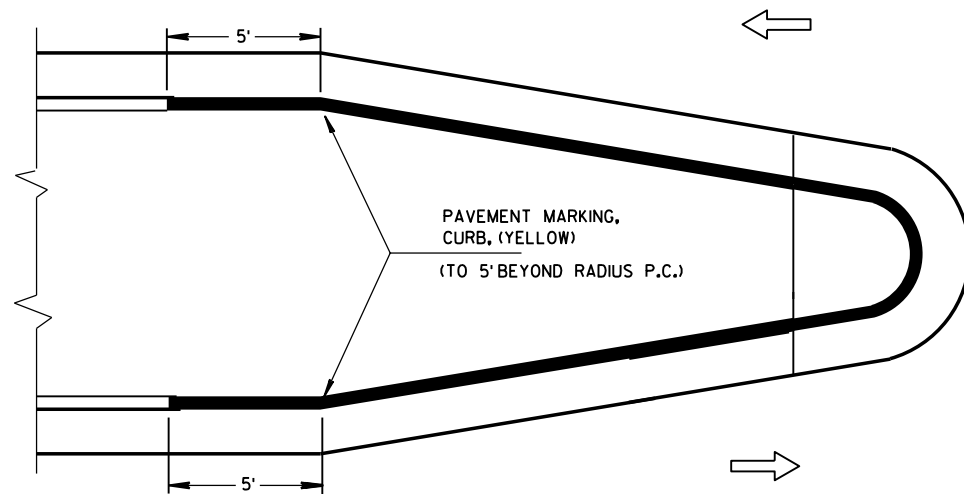
LEGEND

- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

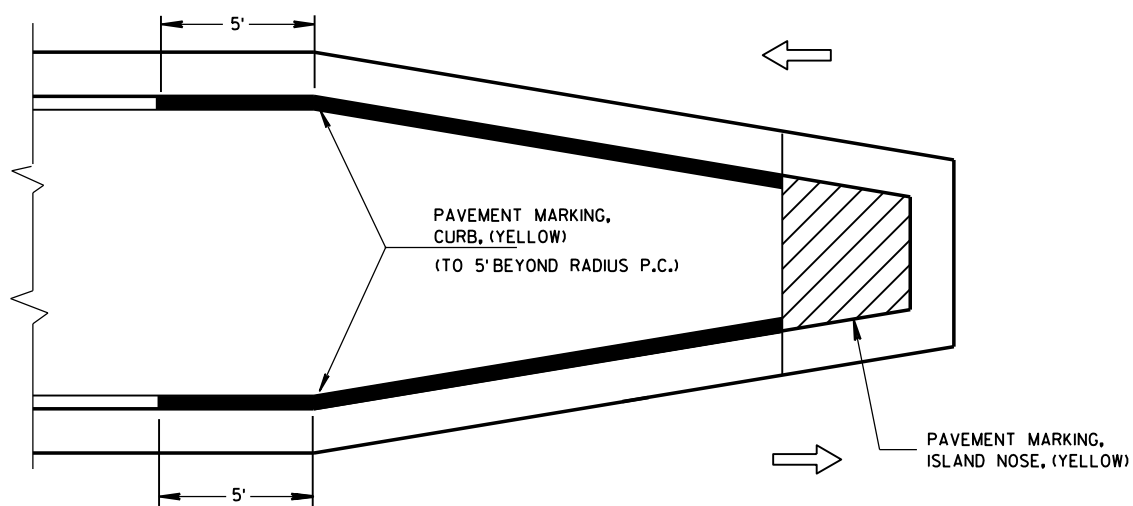
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/23/00 DATE	/S/ Chester J. CHIEF SIGNS AND MARKING ENGINEER



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

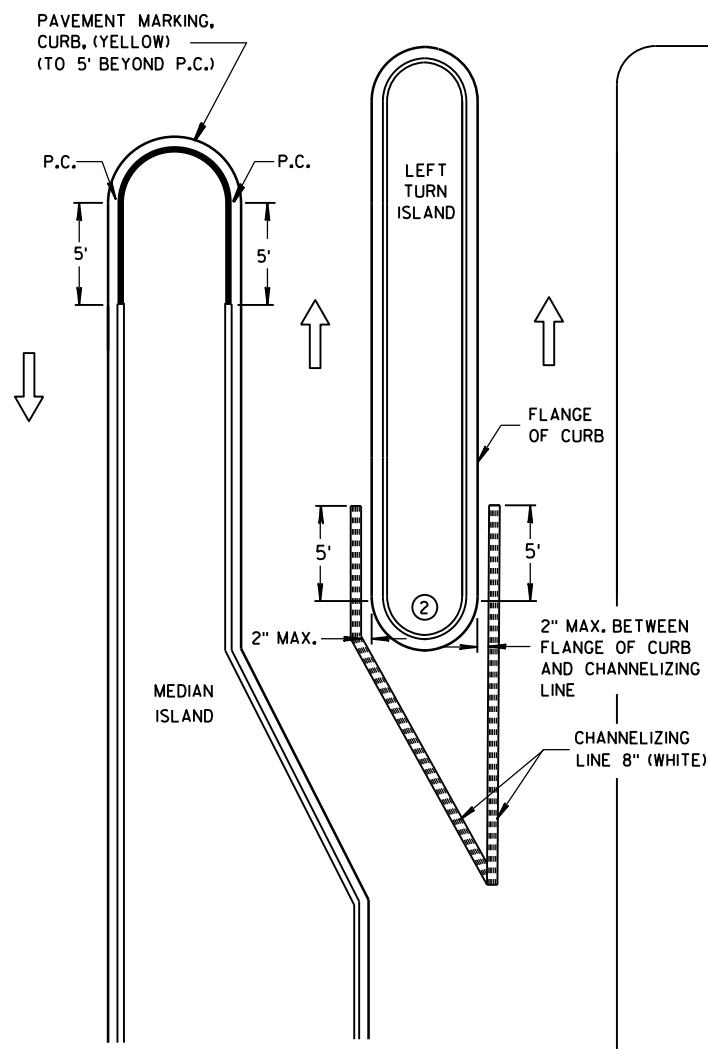


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

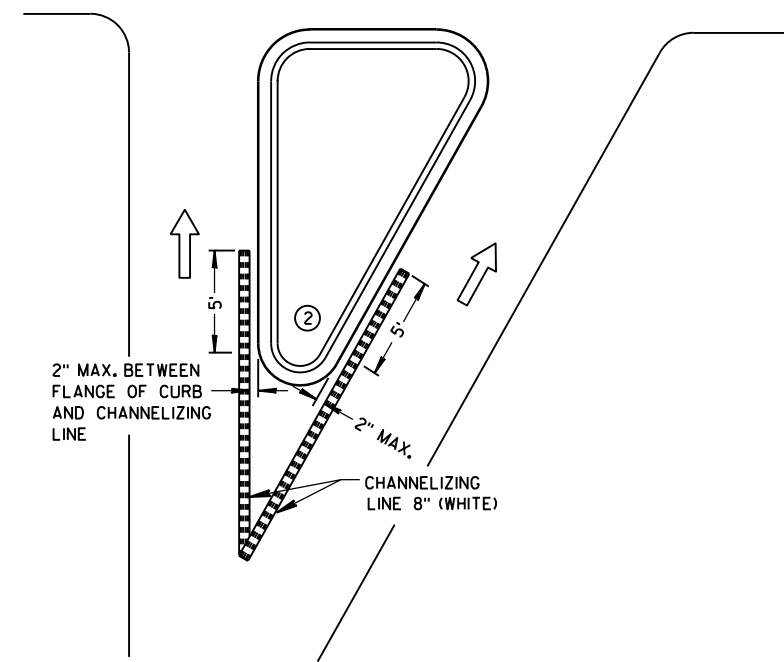
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



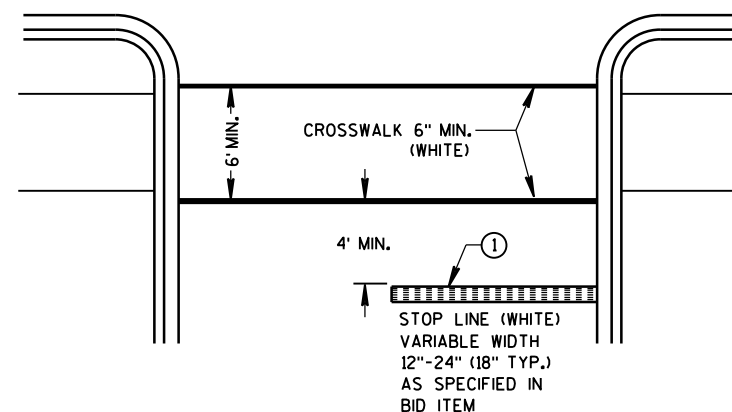
LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

- ① STOP LINE IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- ② DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
- ③ WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND



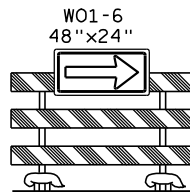
STOP LINE AND CROSSWALK

LEGEND

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

PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



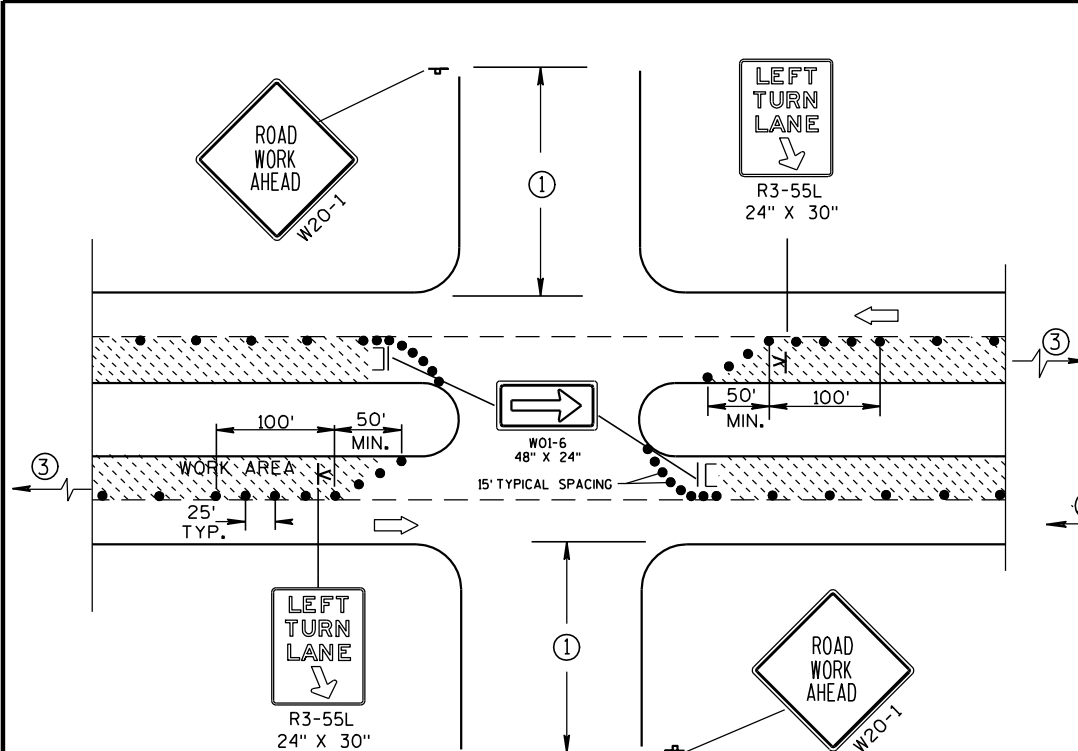
S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

LEGEND

- | | |
|---|---|
|  | DRUM WITH/WITHOUT WARNING LIGHT, TYPE C
(STEADY-BURN) |
|  | POST MOUNTED SIGN |
|  | ARROW BOARD |
|  | TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHTS,
TYPE A (FLASHING) WITH/WITHOUT SIGN |
|  | DIRECTION OF TRAFFIC FLOW |
|  | REMOVING PAVEMENT MARKING (SEE GENERAL NOTES) |

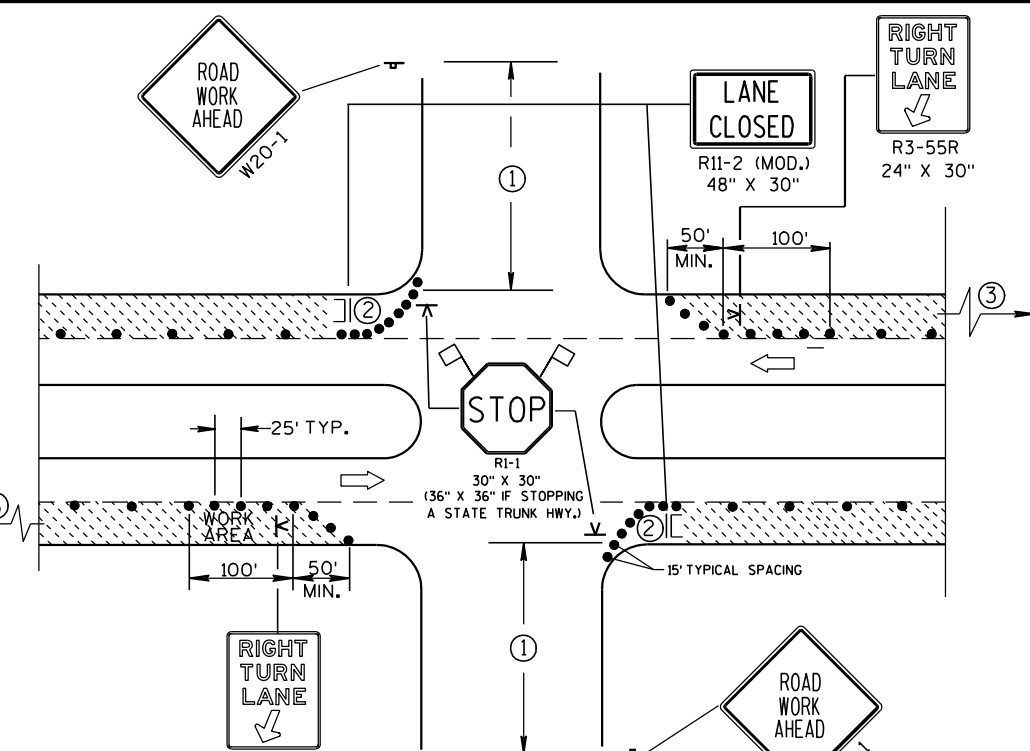
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

APPROVED
5/23/00 /S/ Chester J. -----
DATE CHIEF SIGNS AND MARKS 33 NEED



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

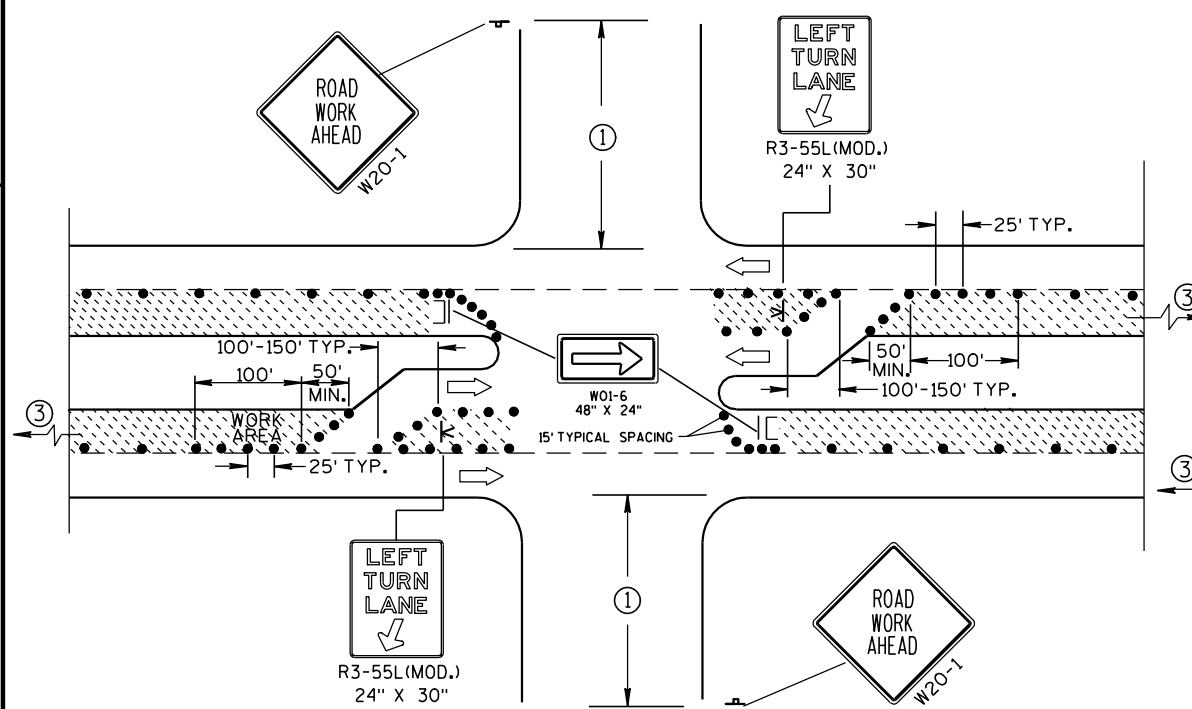
PROVIDE TURN LANES AT
INTERSECTIONS WHENEVER
STAGING OF WORK ALLOWS.
TAPER AND TURN LANE
LENGTHS BASED ON FIELD
CONDITIONS AS APPROVED
BY THE ENGINEER.



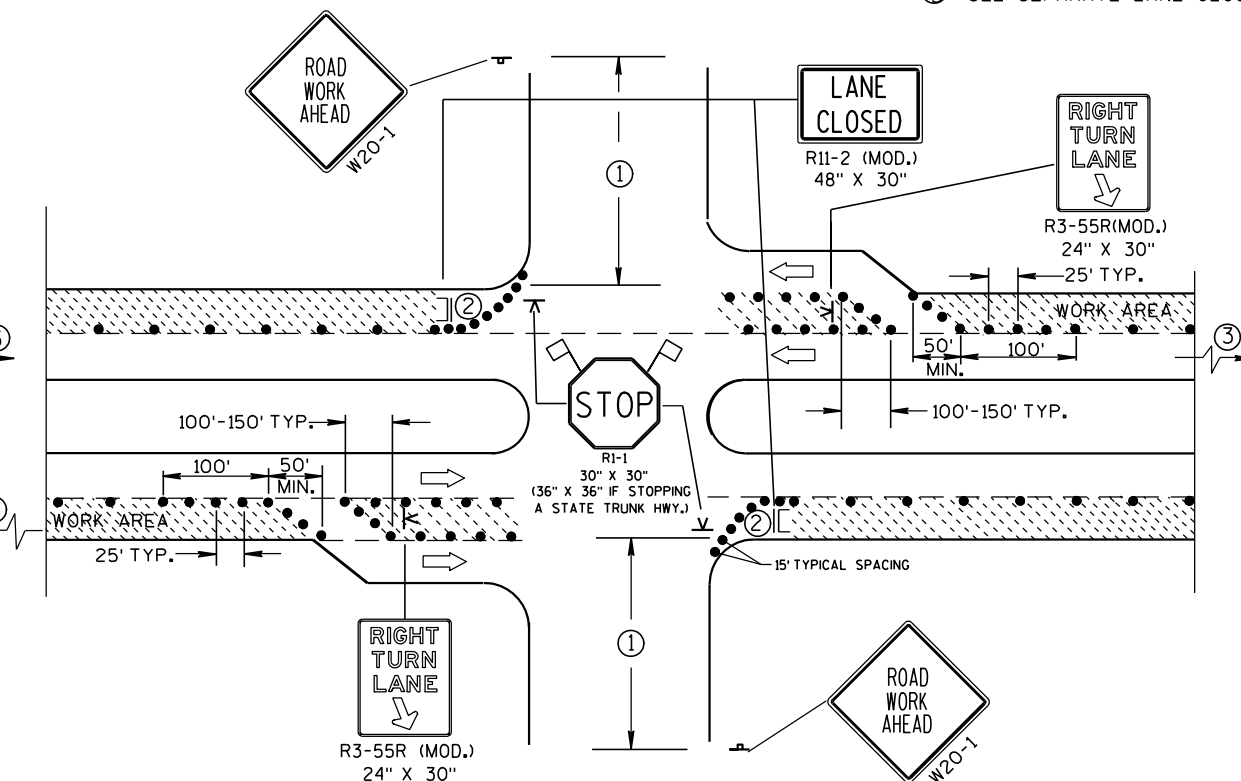
DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

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 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 IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 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, OR THAT WILL BE PLACED IN A CLOSED LANE, 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 WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.
- 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.
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
 - ② ALSO USE BARRICADE AND 15' TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
 - ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



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



DETAIL D
FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)

LEGEND

- DRUM
- ⊥ POST MOUNTED SIGN
- K SIGN ON PORTABLE SUPPORT (5' MIN. MOUNTING HEIGHT)
- || TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHT, TYPE A (FLASHING) WITH SIGN
- ➡ DIRECTION OF TRAFFIC FLOW
- 🚩 FLAGS, 16" X 16" MIN., ORANGE

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 5/23/00 DATE	/S/ Chester J. Spang CHIEF SIGNS AND MAR 34 ENGINEER		
FHWA			

GENERAL NOTES

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

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

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

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.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

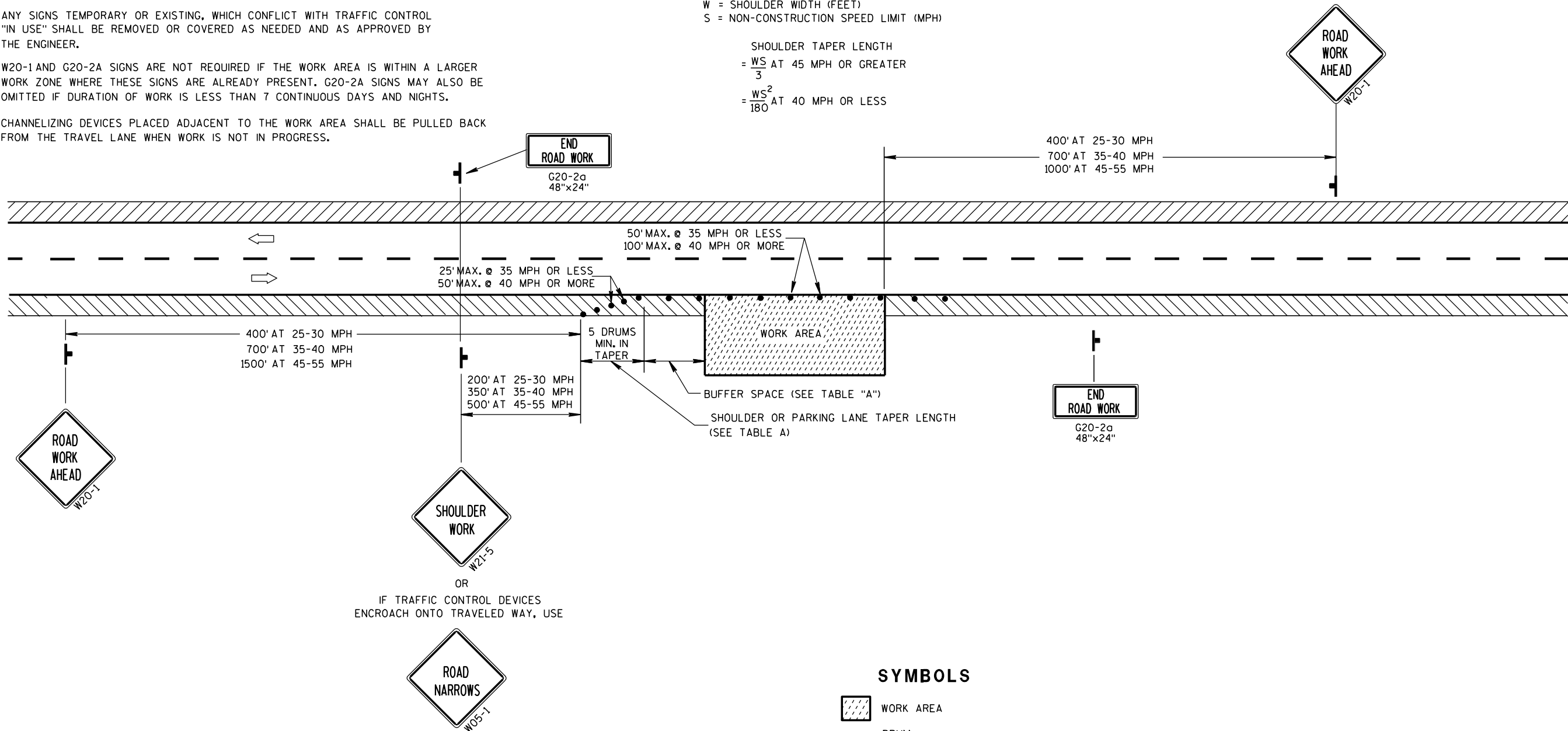
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= $\frac{WS}{3}$ AT 45 MPH OR GREATER
= $\frac{WS^2}{180}$ AT 40 MPH OR LESS



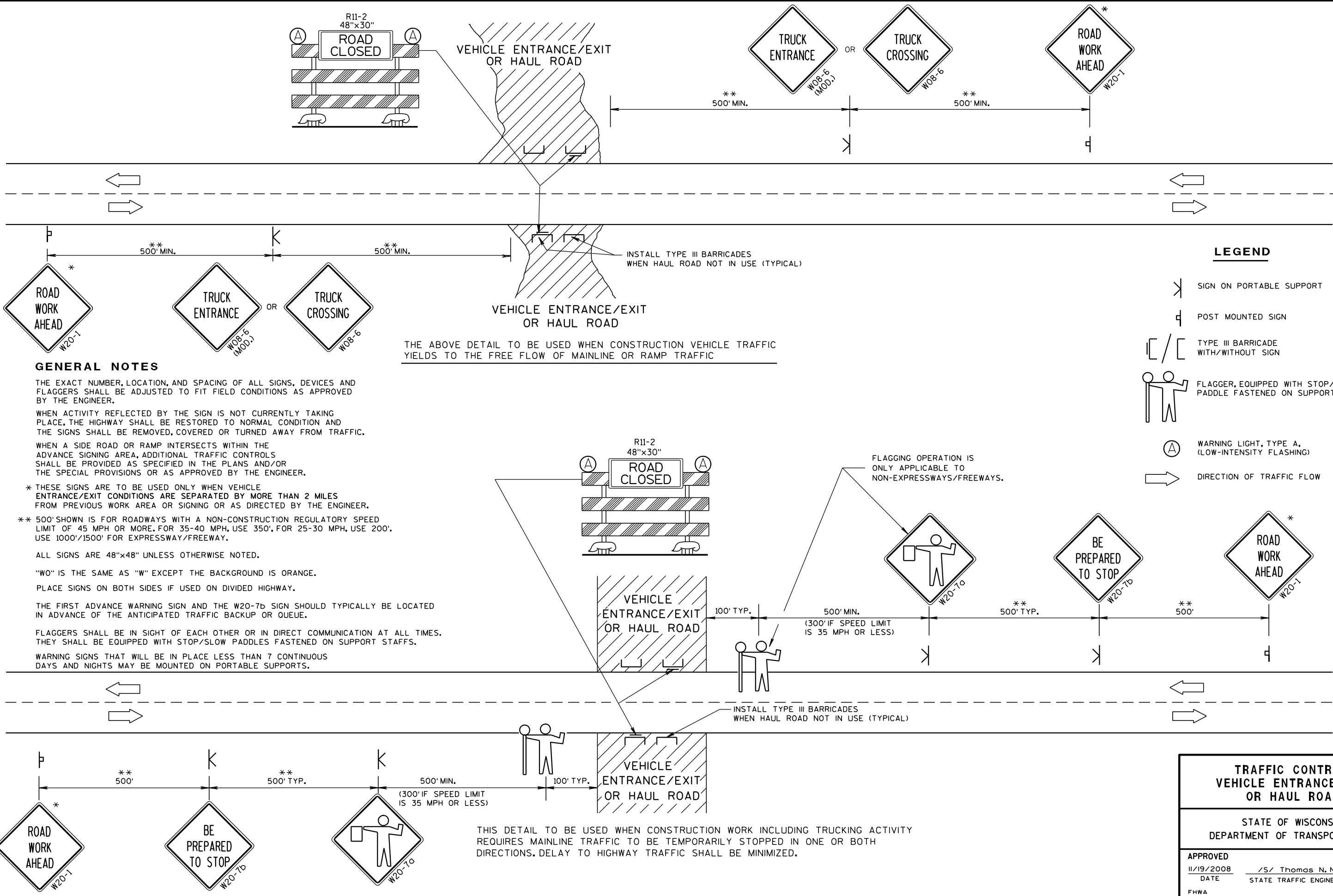
SYMBOLS

- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

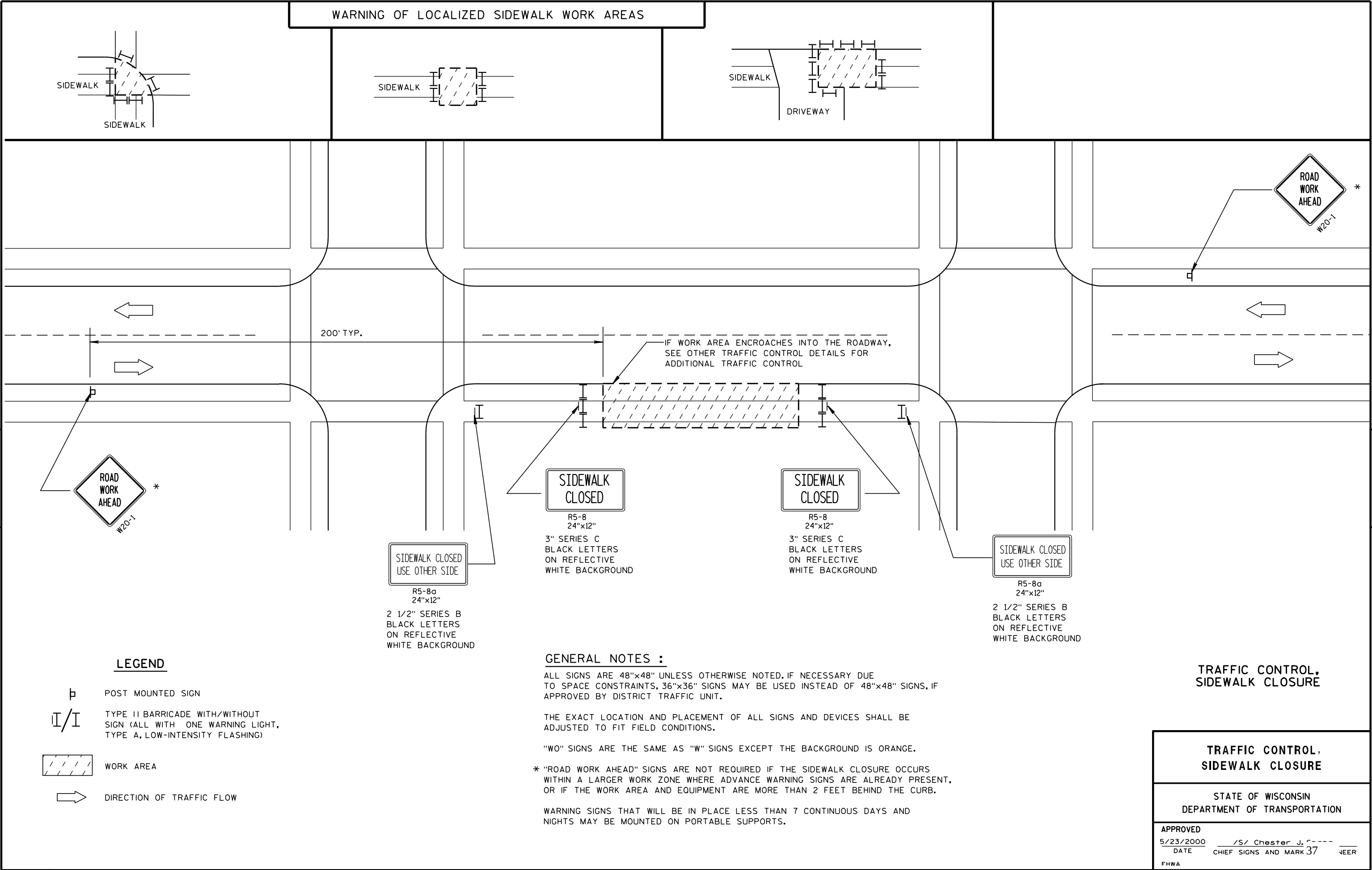
TRAFFIC CONTROL,
WORK ON SHOULDER OR
PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

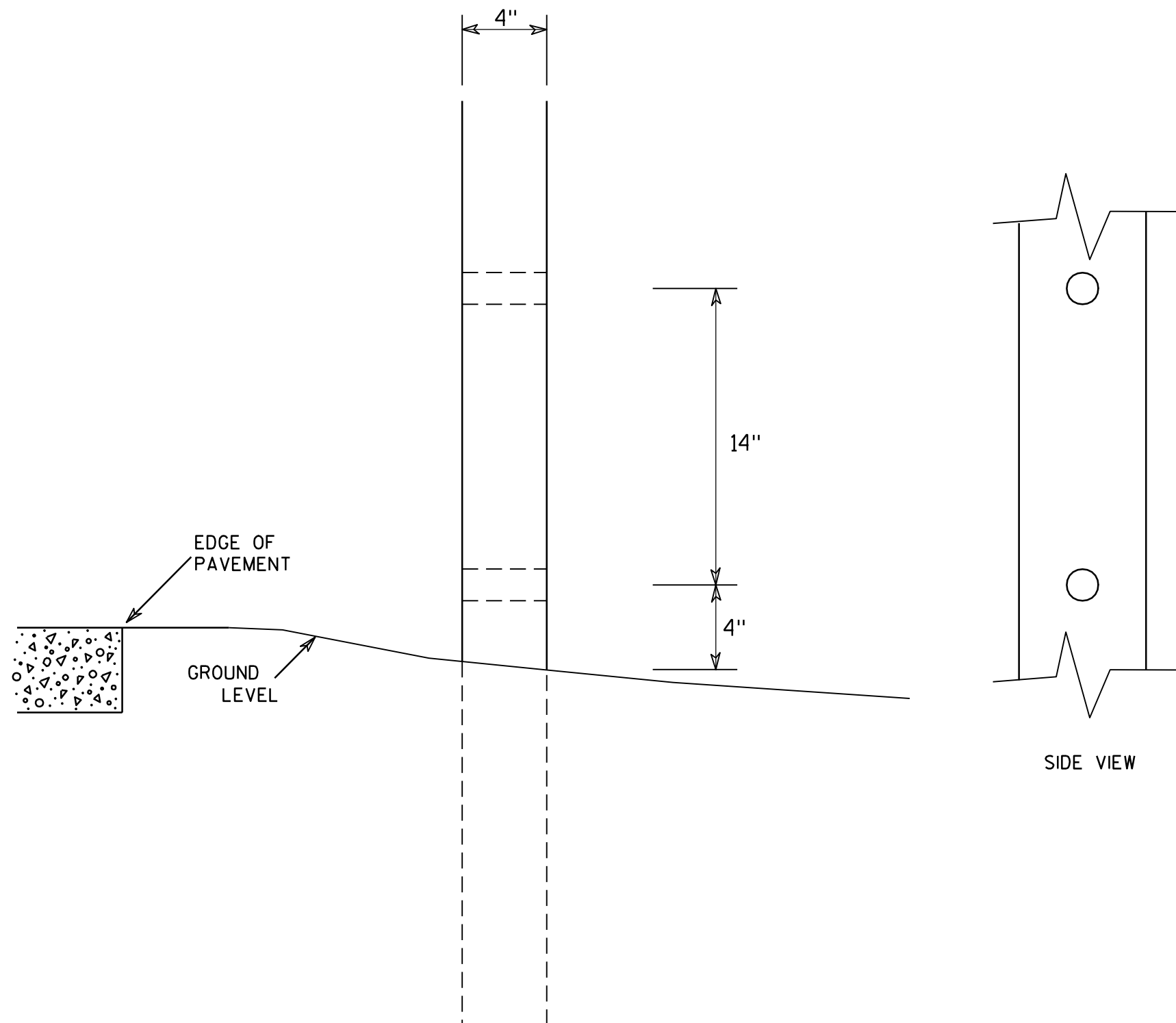
APPROVED
5/23/00 /S/ Chester J. NNEER
DATE CHIEF SIGNS AND MARK 35
FHWA



TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 11/19/2008 DATE	/S/ Thomas N. N STATE TRAFFIC ENGINE 36 SIGN
FHWA	



7

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

**4 X 6 WOOD POST
MODIFICATIONS**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

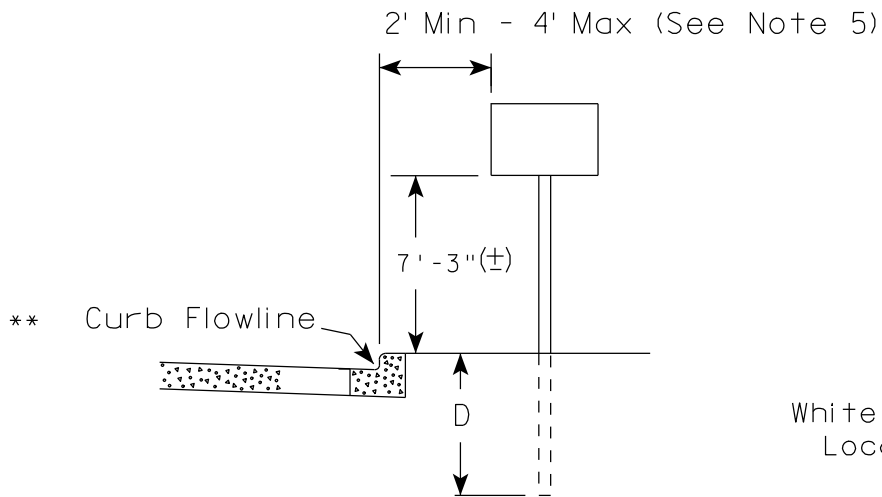
HWY:

COUNTY:

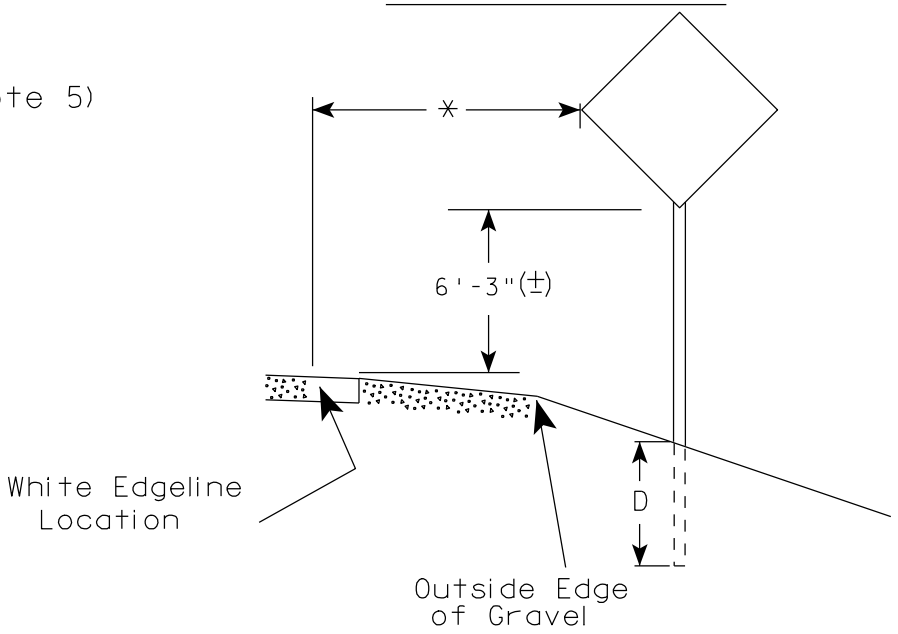
SHEET NO: 38

E

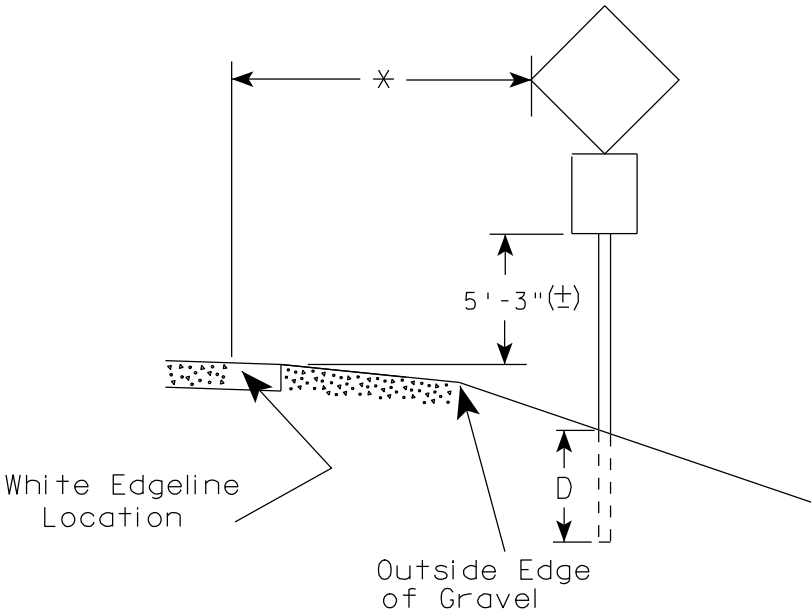
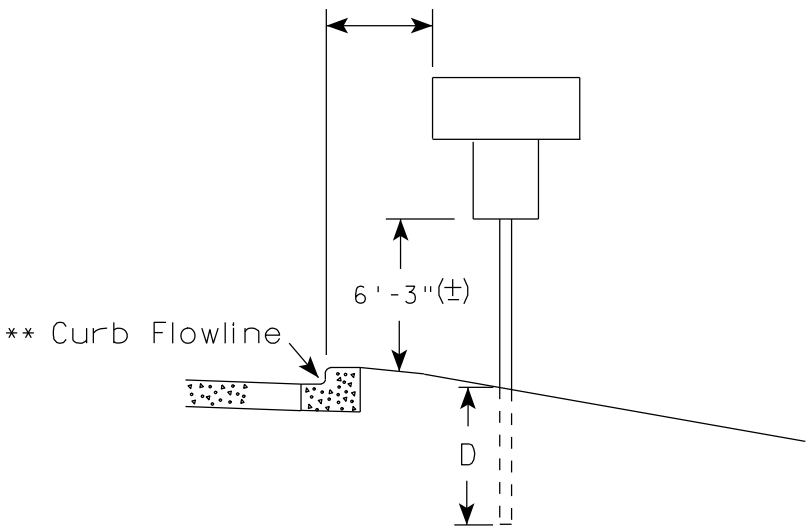
URBAN AREA



RURAL AREA (See Note 2)



2' Min - 4' Max (See Note 5)



- GENERAL NOTES
1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
 2. If signs are mounted on barrier wall, see A4-10 sign plate.
 3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
 4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. The (±) tolerance for mounting height is 3 inches.
 8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
 9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

GENERAL NOTES

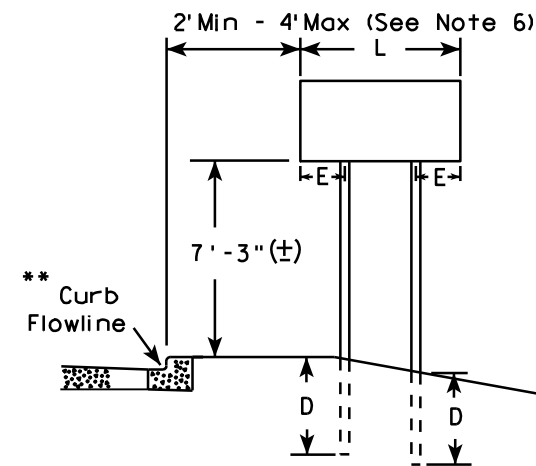
- For multiple post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

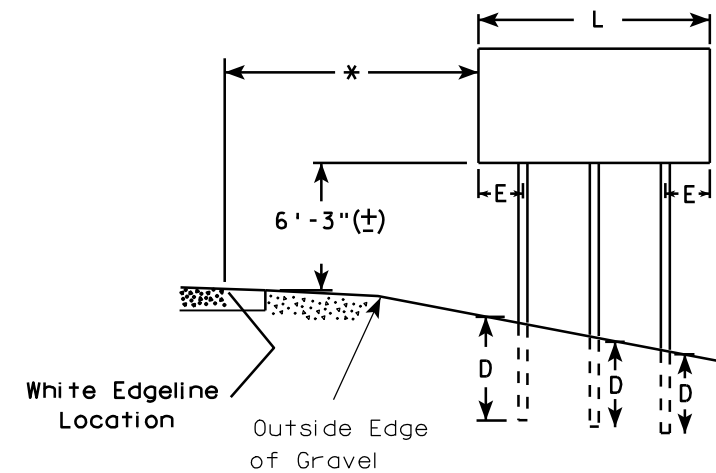
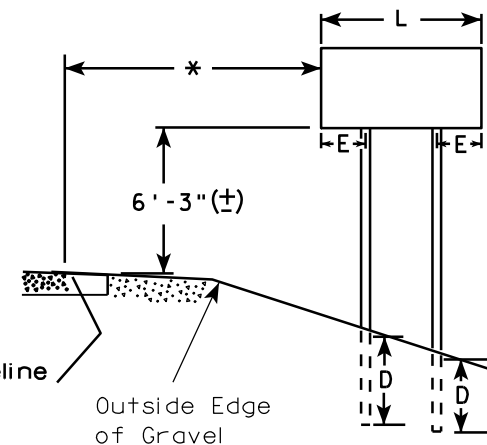
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

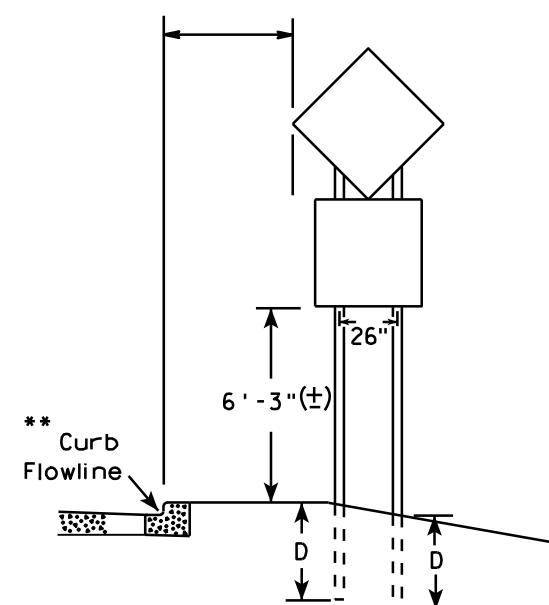
URBAN AREA



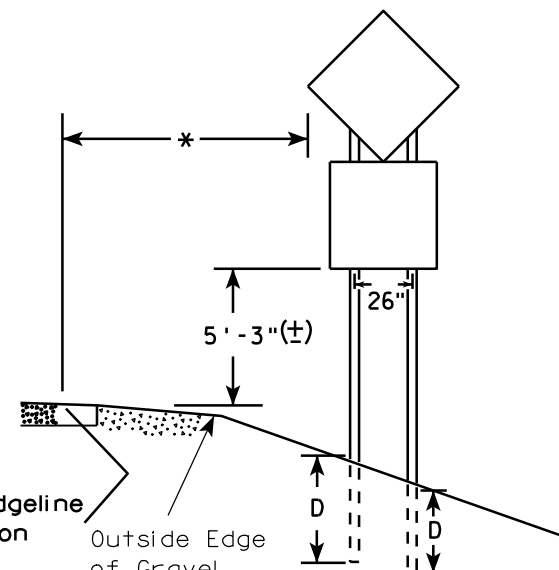
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

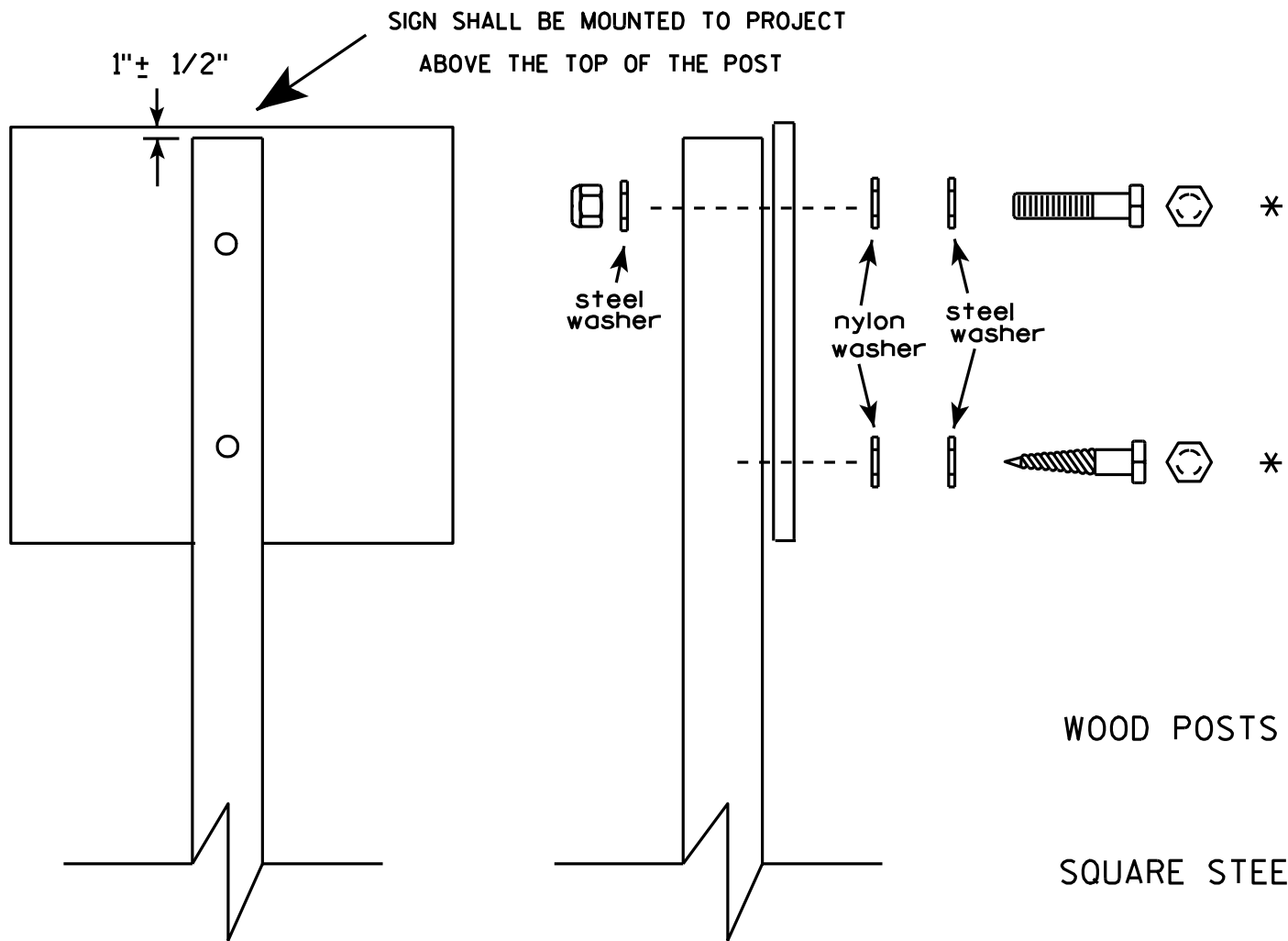
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 40

E

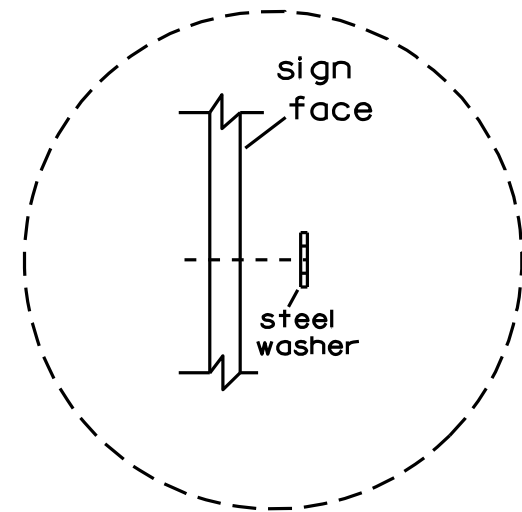


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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 POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

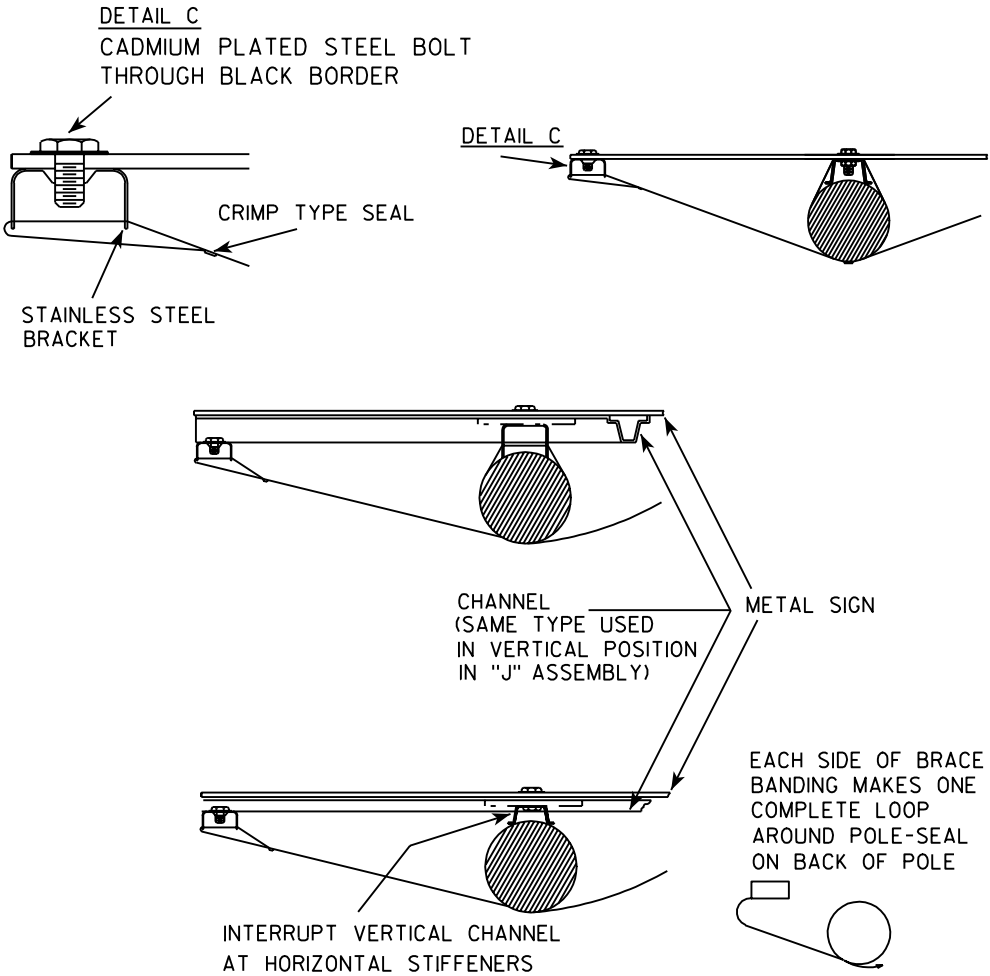


Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

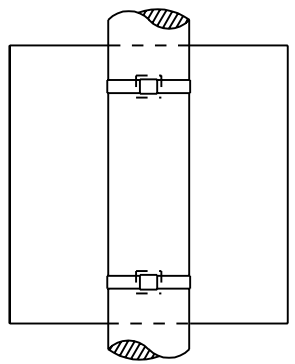
BRACE BANDING



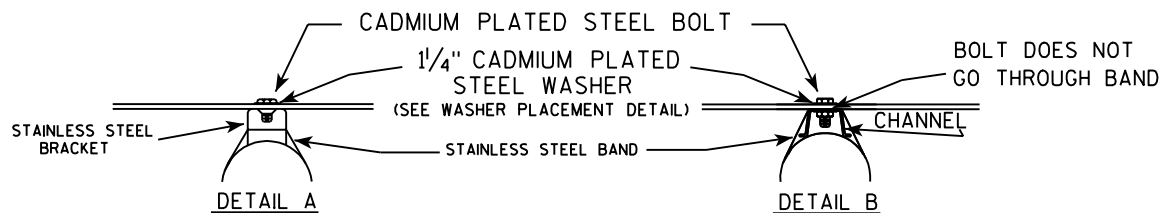
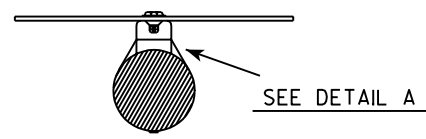
BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY
BUT NOT SO TIGHT AS TO APPRECIABLY
CURVE FACE OF SIGN.

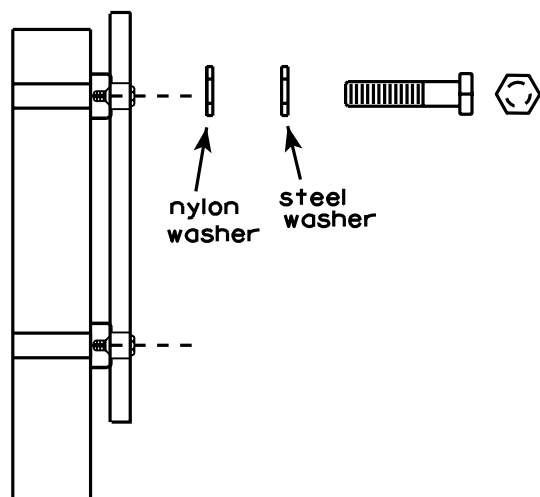
SINGLE SIGN



BRACKET BANDING

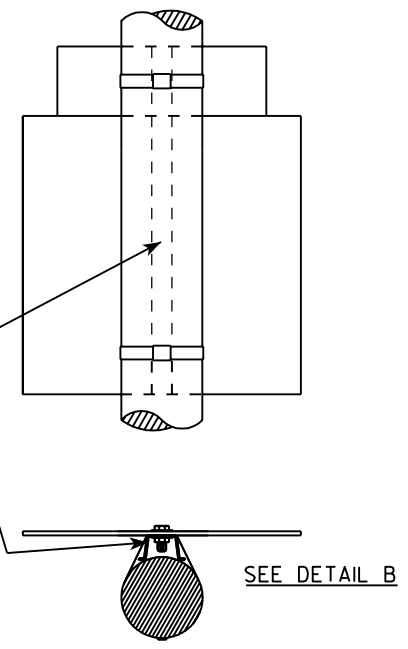


WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

"J" ASSEMBLY

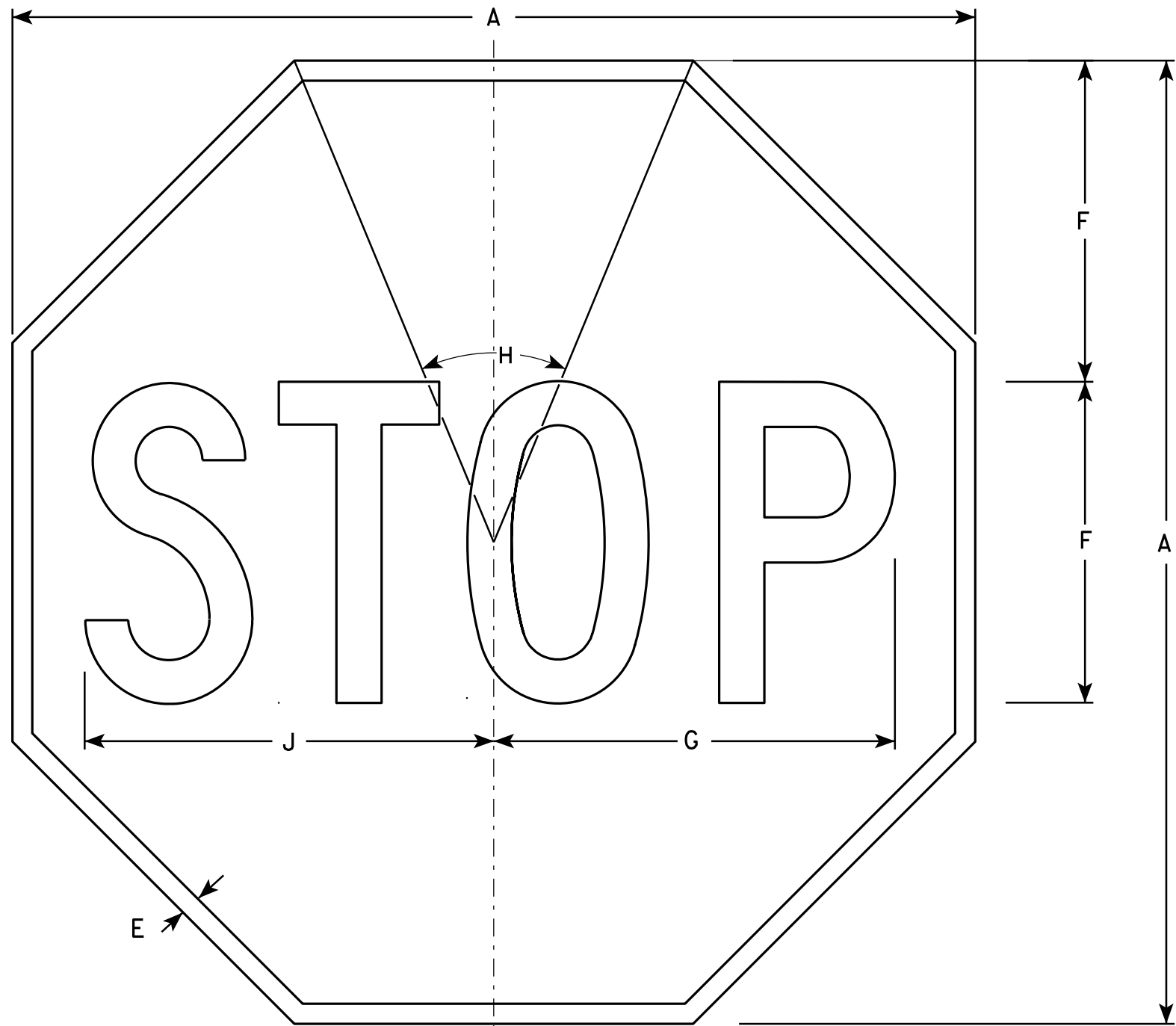


GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 11/08/05 PLATE NO. A5-9.2



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Red
Message - White
3. Message Series - C

R1-1

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

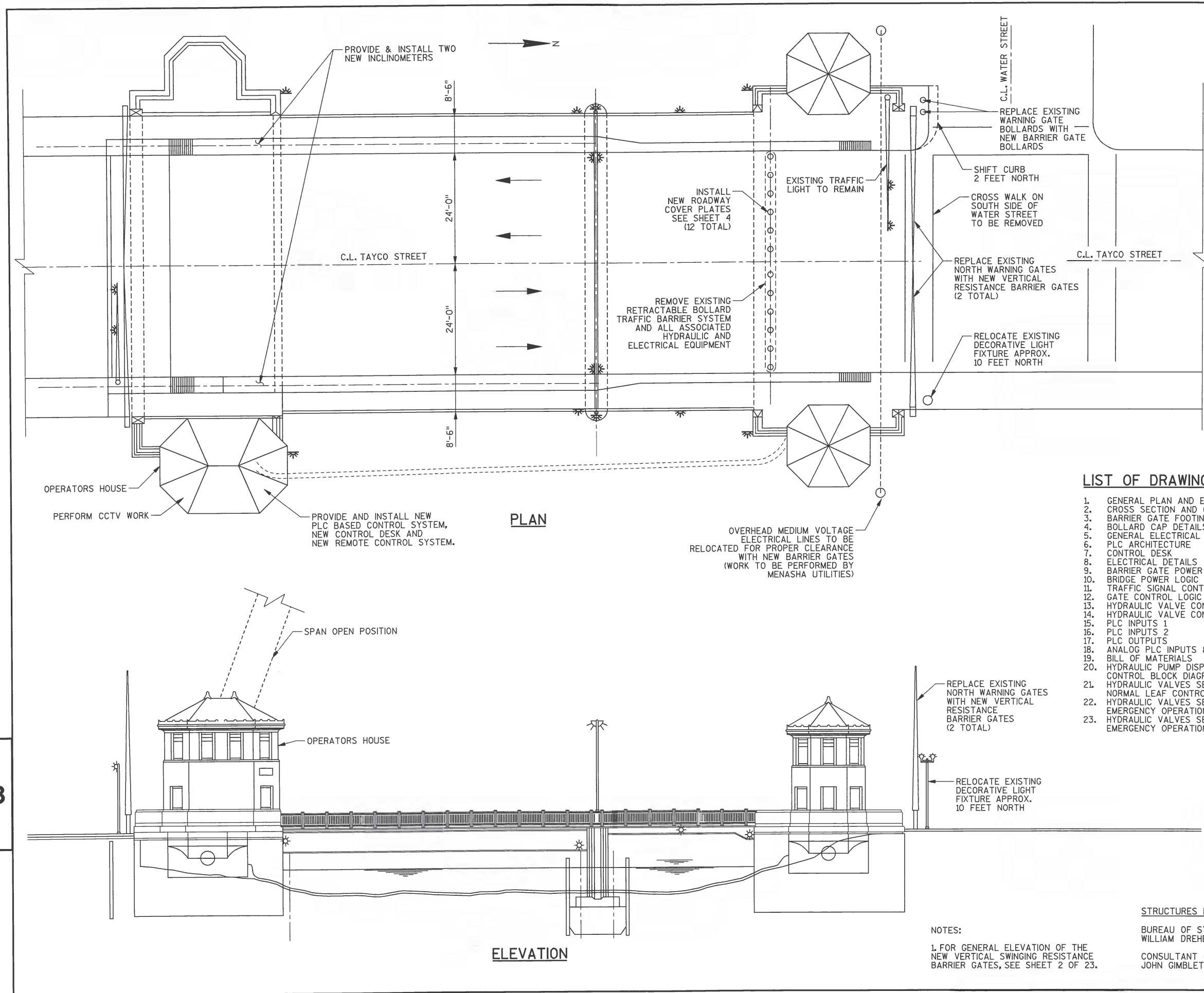
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 43	E
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STATE PROJECT NUMBER

4065-15-71

HARDESTY & HANOVER, LLC

WISCONSIN

ROBERT S. MOSES
No. 34612-006
NEW YORK NY

PROFESSIONAL ENGINEER

2/27/13 (DATE) [Signature] (SIGNATURE)

SHEETS 3 & 4 PREPARED BY:
EMCS, INC.

WISCONSIN

SARAH K. ROBKE
E-41770-6
MUKWONAGO WI

PROFESSIONAL ENGINEER

2/29/13 (DATE) [Signature] (SIGNATURE)

Hardesty & Hanover

1501 BROADWAY
NEW YORK, NY 10036
(212) 944-1150

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED *William C. Dreher* KAR **03/01/13**
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-70-097

STH 114 OVER FOX RIVER GOVERNMENT CANAL

COUNTY WINNEBAGO TOWN/CITY/VILLAGE MENASHA

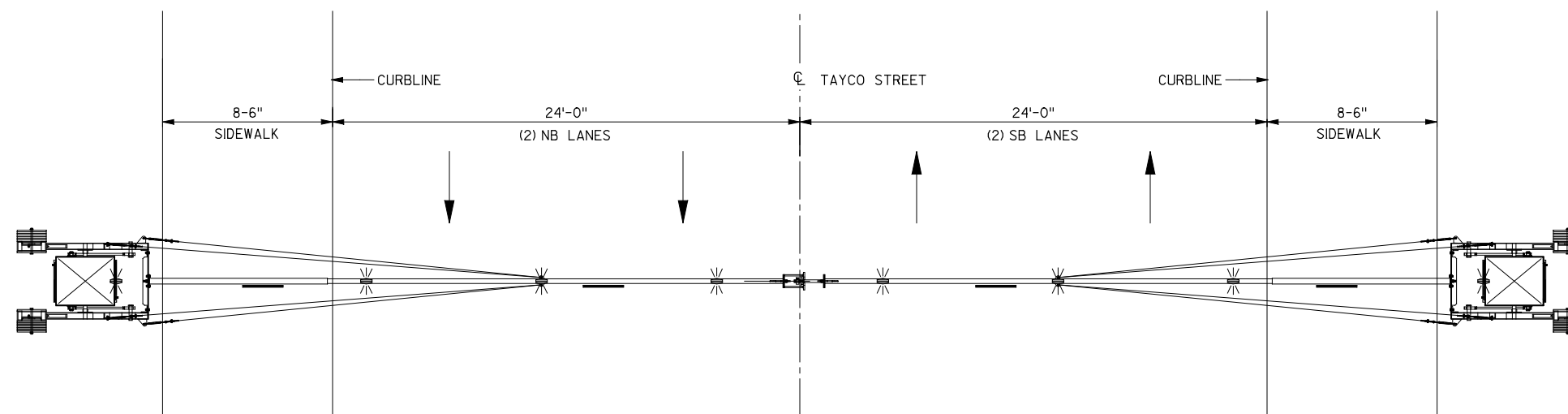
DESIGN SPEC. REHABILITATION N/A

DESIGNED BY RL DESIGN CK'D. AHN DRAWN BY RKP PLANS CK'D. JAG

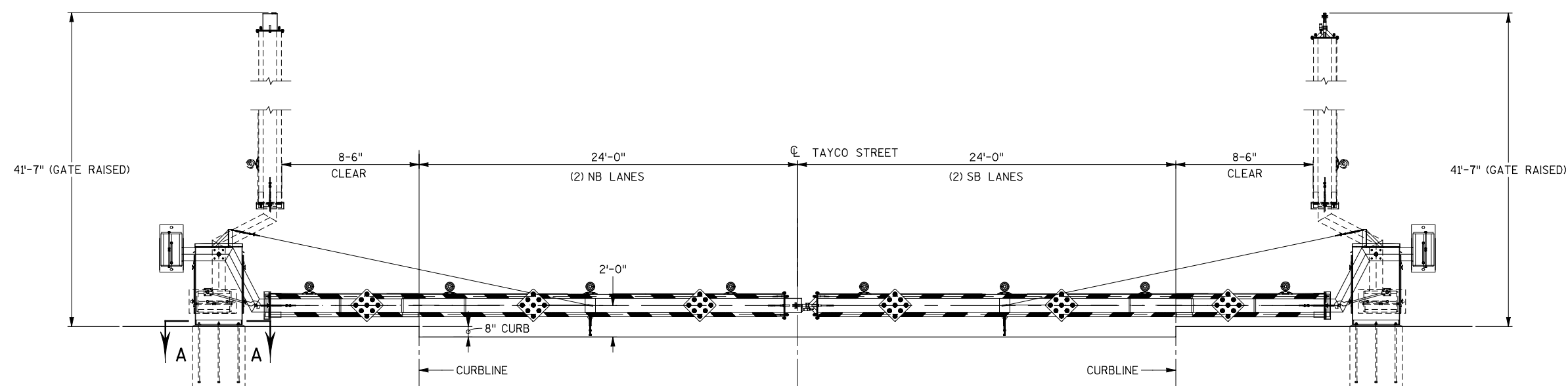
GENERAL PLAN AND ELEVATION

SHEET 1 OF 23

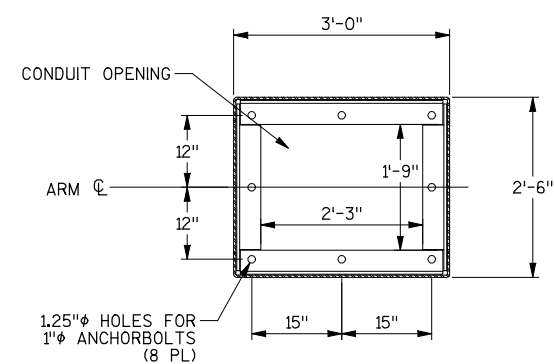
44



PLAN



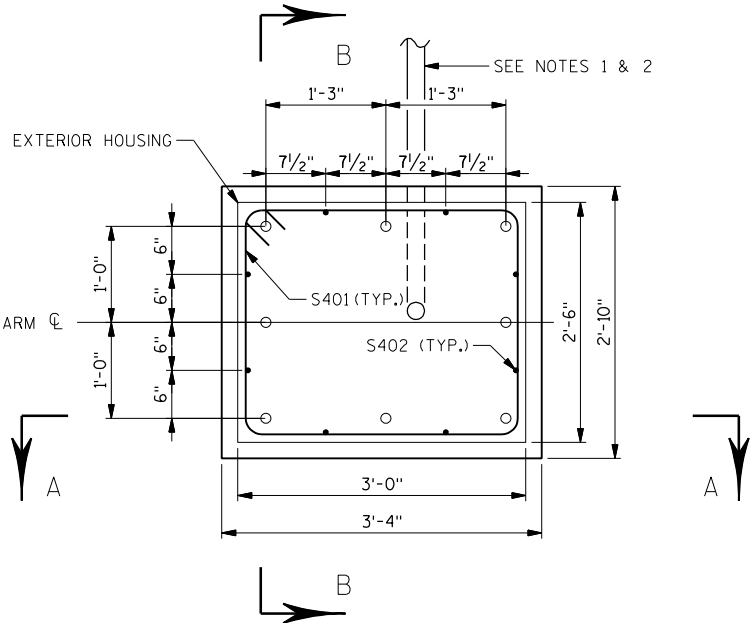
ELEVATION

SECTION A-A
MOUNTING DIMENSIONS (TYP.)

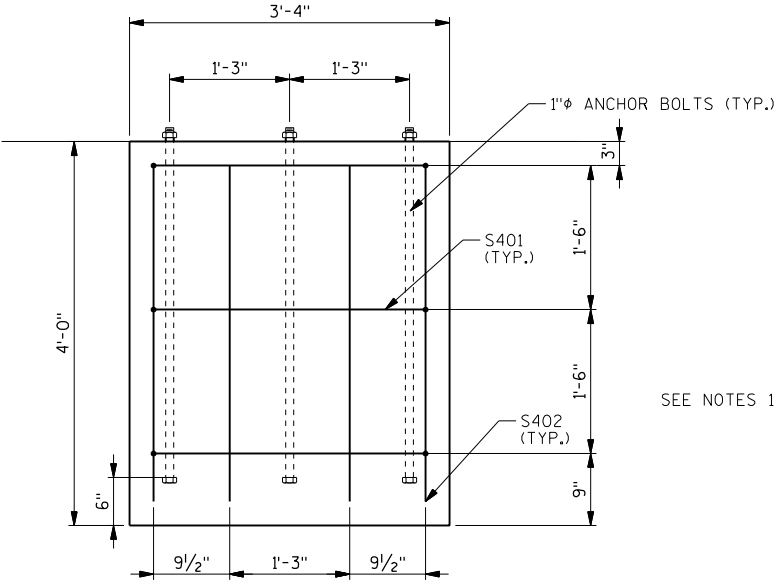
TOTAL ESTIMATED QUANTITIES

NO.	BID ITEMS	UNIT	TOTAL
SPV.0060	BARRIER GATE BASE	EA	2
SPV.0105	TAYCO STREET BRIDGE ELECTRICAL WORK, B-70-097	LS	1
SPV.0105	TAYCO STREET BRIDGE CCTV SYSTEM, B-70-097	LS	1
SPV.0105	REMOVING RETRACTABLE BOLLARD TRAFFIC BARRIER SYSTEM	LS	1

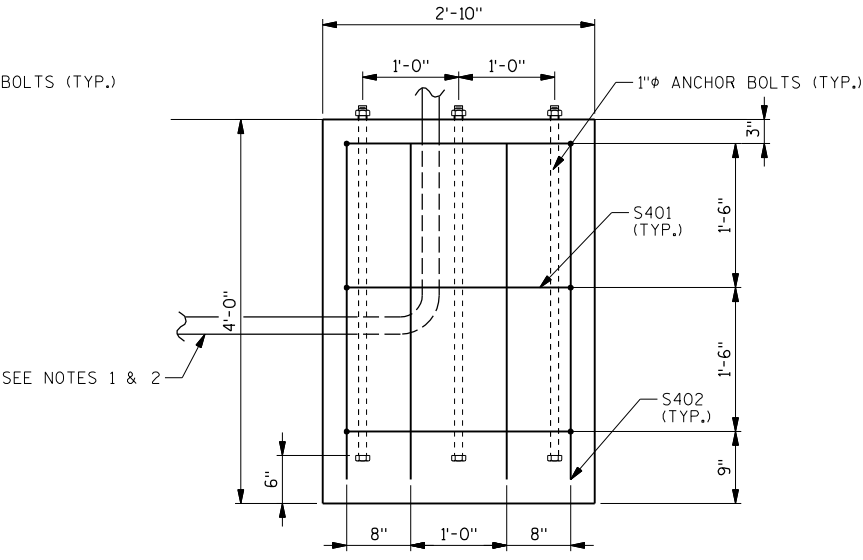
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY RKP		PLANS CK'D. JAG	
CROSS SECTION AND QUANTITIES			SHEET 2 OF 23
			45



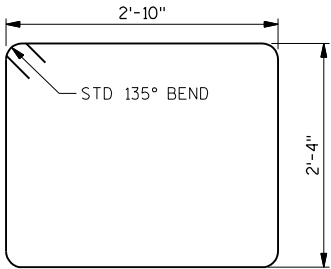
FOOTING PLAN



FOOTING ELEVATION
(SECTION A-A)



FOOTING ELEVATION
(SECTION B-B)



S401

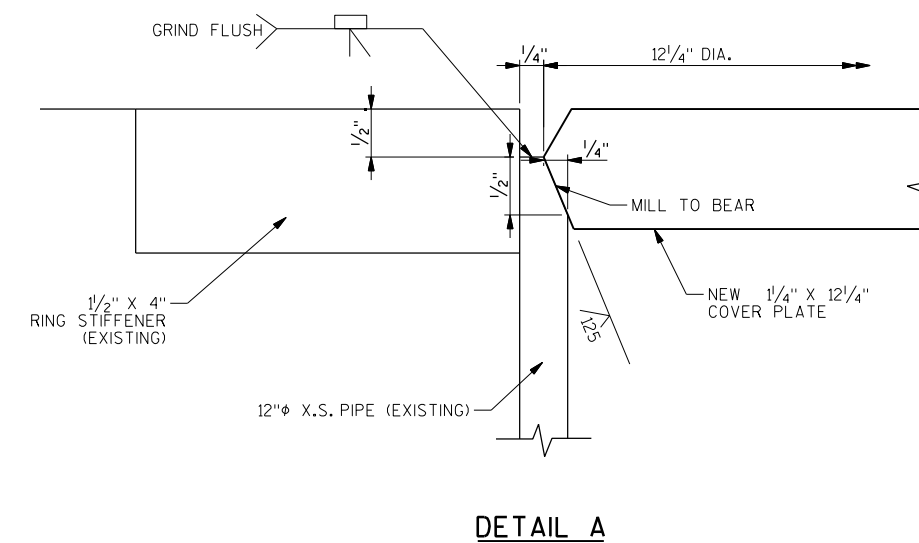
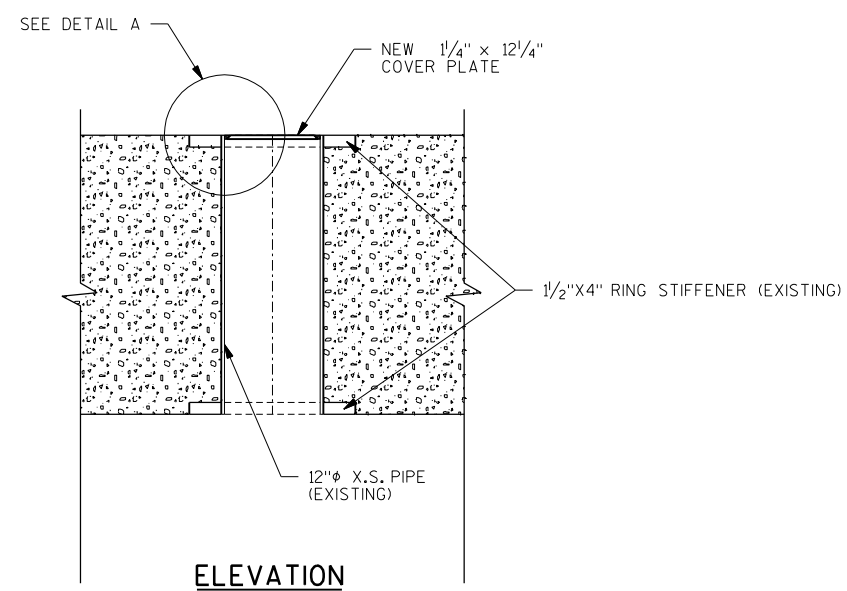
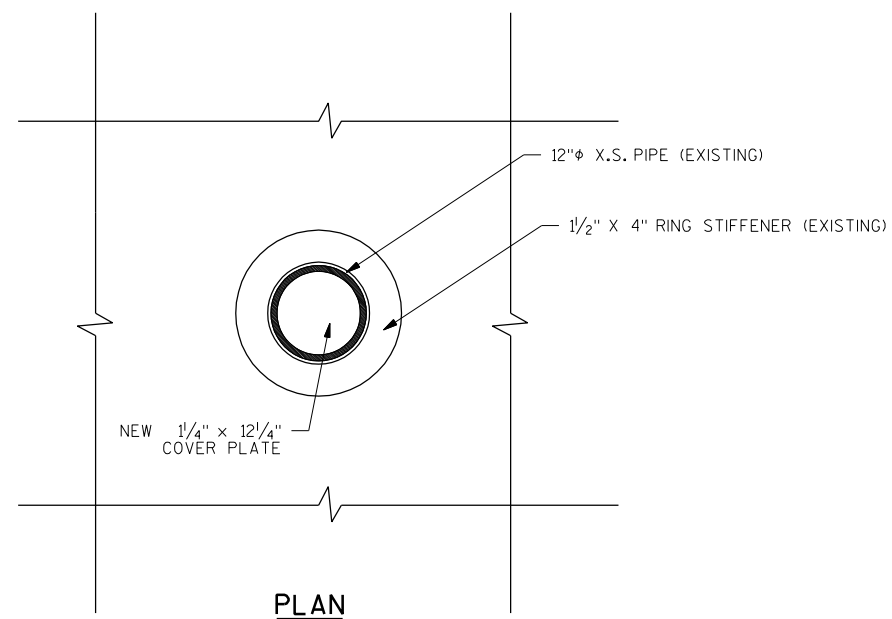
BAR MARK	COAT	EAST FOOTING	WEST FOOTING	LENGTH	BENT	LOCATION
S401	X	3	3	10'-6"	X	FOOTING - HORIZONTAL
S402	X	8	8	3'-6"		FOOTING - VERTICAL

BILL OF BARS

NOTES

1. PROVIDE AND INSTALL 1 1/2" CONDUIT ROUTED FROM THE NEW BARRIER GATE BASE TO THE EXISTING WARNING GATE CONDUIT. PROVIDE AND INSTALL 23 NO.12 AWG TYPE XHW-2 CONDUCTORS BETWEEN THE BARRIER GATE HOUSING AND SUBMARINE TERMINAL BOX.
2. FURNISHING AND INSTALLATION OF CONDUIT AND CONDUCTORS WILL BE PAID UNDER TAYCO STREET BRIDGE ELECTRICAL WORK.
3. ALL WORK FOR THE CONCRETE BASE SHOWN ON THIS DRAWING WILL BE PAID UNDER BARRIER GATE BASE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY		SKR	PLANS CK'D. DRB
BARRIER GATE FOOTING		SHEET 3 OF 19	

**NOTES**

1. EXISTING DIMENSIONS ARE BASED ON ORIGINAL STRUCTURE PLANS.
2. CONTRACTOR TO VERIFY DIMENSIONS IN THE FIELD.
3. ALL WORK ON THIS DRAWING WILL BE PAID UNDER REMOVING RETRACTABLE BOLLARD TRAFFIC BARRIER SYSTEM.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY		SKR	PLANS CK'D. DRB
BOLLARD CAP DETAILS			SHEET 4 OF 23
			47

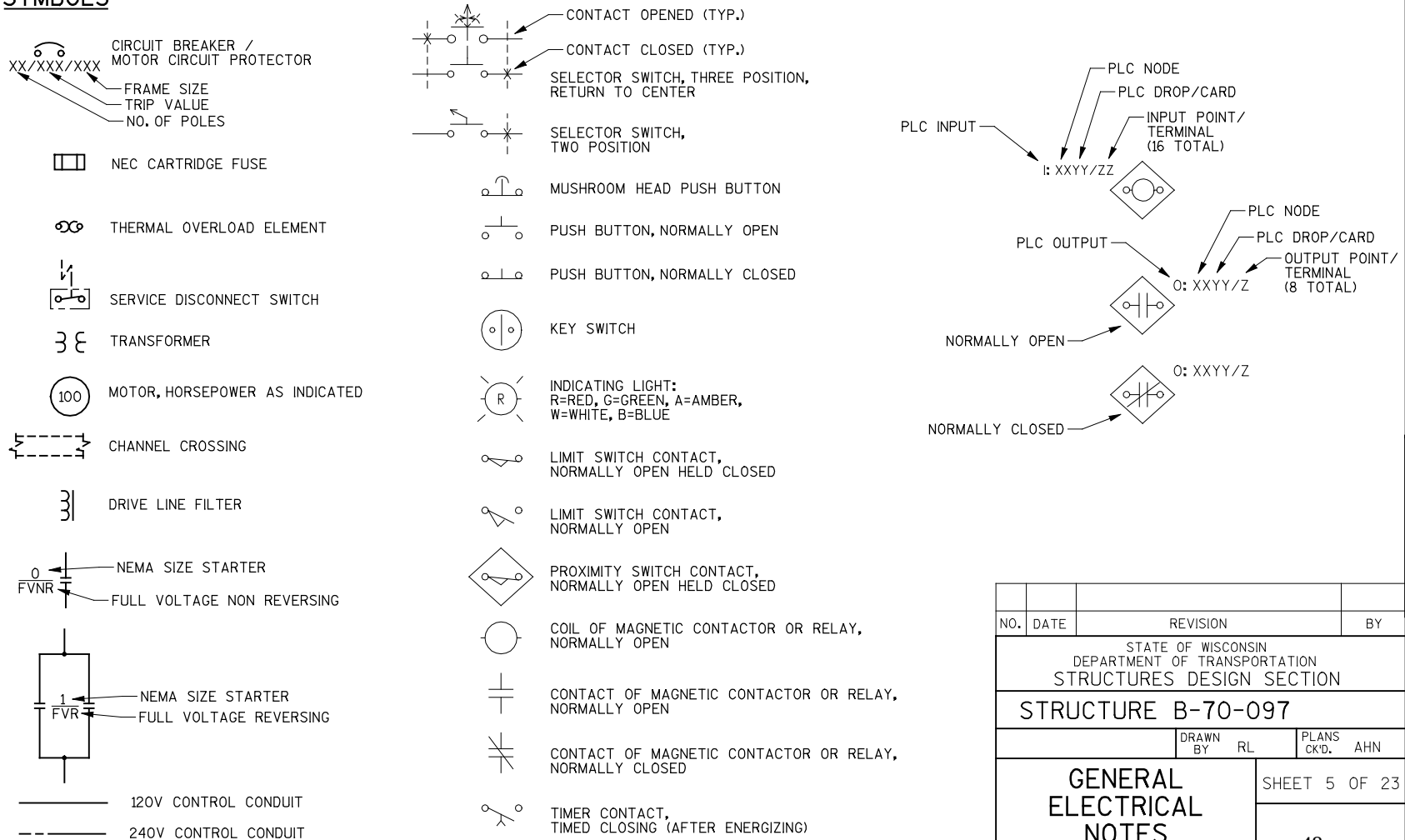
DESCRIPTION OF ELECTRICAL FACILITIES: SCOPE OF WORK SUMMARY

- THE EXISTING UTILITY ELECTRICAL SERVICE AND POWER DISTRIBUTION SYSTEM SHALL REMAIN AND BE MAINTAINED.
- THE EXISTING MOTOR CONTROL CENTER (MCC) SHALL REMAIN AND BE MODIFIED. STARTERS FOR THE EXISTING HYDRAULIC BOLLARD HPUS SHALL BE REMOVED. THE EXISTING STARTERS FOR THE NORTH TRAFFIC GATES SHALL BE PROVIDED WITH NEW OVERLOAD THERMAL ELEMENTS TO OPERATE THE NEW BARRIER GATES.
- THE EXISTING RELAY LOGIC SYSTEM, CONTROL DESK AND REMOTE CONTROL SYSTEM SHALL BE REMOVED. PROVIDE AND INSTALL NEW PLC BASED CONTROL SYSTEM WITHIN EXISTING RELAY PANEL. PROVIDE AND INSTALL NEW CONTROL DESK WITH HMI.
- THE EXISTING REMOTE CONTROL SYSTEM AND ASSOCIATED HMISCREENS SHALL BE USED TO DEVELOP A NEW UNIFIED CONTROL SYSTEM WITH DISPLAY SCREENS FOR BOTH LOCAL AND REMOTE CONTROL OPERATION. THE INTENT OF THIS PORTION OF THE WORK IS TO PROVIDE A FULLY FUNCTIONING CONTROL SYSTEM ALLOWING FOR LOCAL OR REMOTE OPERATION.
- REMOVE AND SALVAGE THE EXISTING NORTH SIDE TRAFFIC GATES.
- DEMOLISH AND REMOVE ALL ELECTRICAL EQUIPMENT RELATED TO THE EXISTING HYDRAULICALLY OPERATED BOLLARDS.
- PROVIDE AND INSTALL NEW VERTICAL RESISTANCE TYPE BARRIER GATES.
- PROVIDE AND INSTALL ALL CONDUIT, CONDUCTORS AND RACEWAYS TO COMPLETE THE ELECTRICAL WORK.

GENERAL ELECTRICAL NOTES

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STATE STANDARD SPECIFICATIONS, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND THE ELECTRICAL REQUIREMENTS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) STANDARD SPECIFICATIONS.
- ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE.
- THE PLANS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. THE LOCATIONS OF EQUIPMENT AND ROUTING OF CONDUITS SHOWN ON THE CONTRACT DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS IN THE FIELD AND PREPARING SCALED SHOP DRAWING.
- ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.
- EXISTING ELECTRICAL CABLE, WIRES, CONDUIT, CONDUIT HANGERS, SUPPORTS, CLAMPS, ETC., WHICH ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE REMOVED AND PROPERLY DISPOSED OF.
- ALL NEW CONDUIT AND FITTINGS SHALL BE 3/4" MINIMUM PVC COATED HOT DIPPED GALVANIZED RIGID STEEL UNLESS OTHERWISE NOTED, AND SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION, AND INSTALLATION CONTAINED IN THE SPECIFICATION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION, WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.
- NEW ELECTRICAL CONDUCTORS SHALL BE MINIMUM SIZE NO. 12 AWG STRANDED TYPE XHHW, EXCEPT FOR INTERNAL WIRING IN CONTROL CABINETS AND CONTROL DESK WHICH SHALL BE MINIMUM SIZE NO. 14 AWG TYPE SIS. ALL WIRES AND CABLES SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION AND INSTALLATION CONTAINED IN THE RELEVANT SPECIFICATIONS.
- ALL SWITCHES, RELAYS, CONTACTORS AND STARTERS ARE SHOWN ON THE DRAWINGS AS DE-ENERGIZED AND WITH THE SPAN FULLY CLOSED, GATES RASIED, AND TRAFFIC SIGNALS GREEN, OPEN TO VEHICULAR TRAFFIC.
- ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. MINIMUM SIZE GROUND CONDUCTOR SHALL BE NO. 12 AWG. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.
- ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES. SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES, OR CONDUIT FITTINGS.
- THE CONTRACTOR IS REFERRED TO THE AVAILABLE DRAWINGS FROM THE 1989 CONSTRUCTION CONTRACT FOR MECHANICAL, ELECTRICAL, AND STRUCTURAL DETAILS NOT PROVIDED IN THIS PLAN SET. THESE DRAWINGS ARE AVAILABLE FROM WISDOT UPON REQUEST.

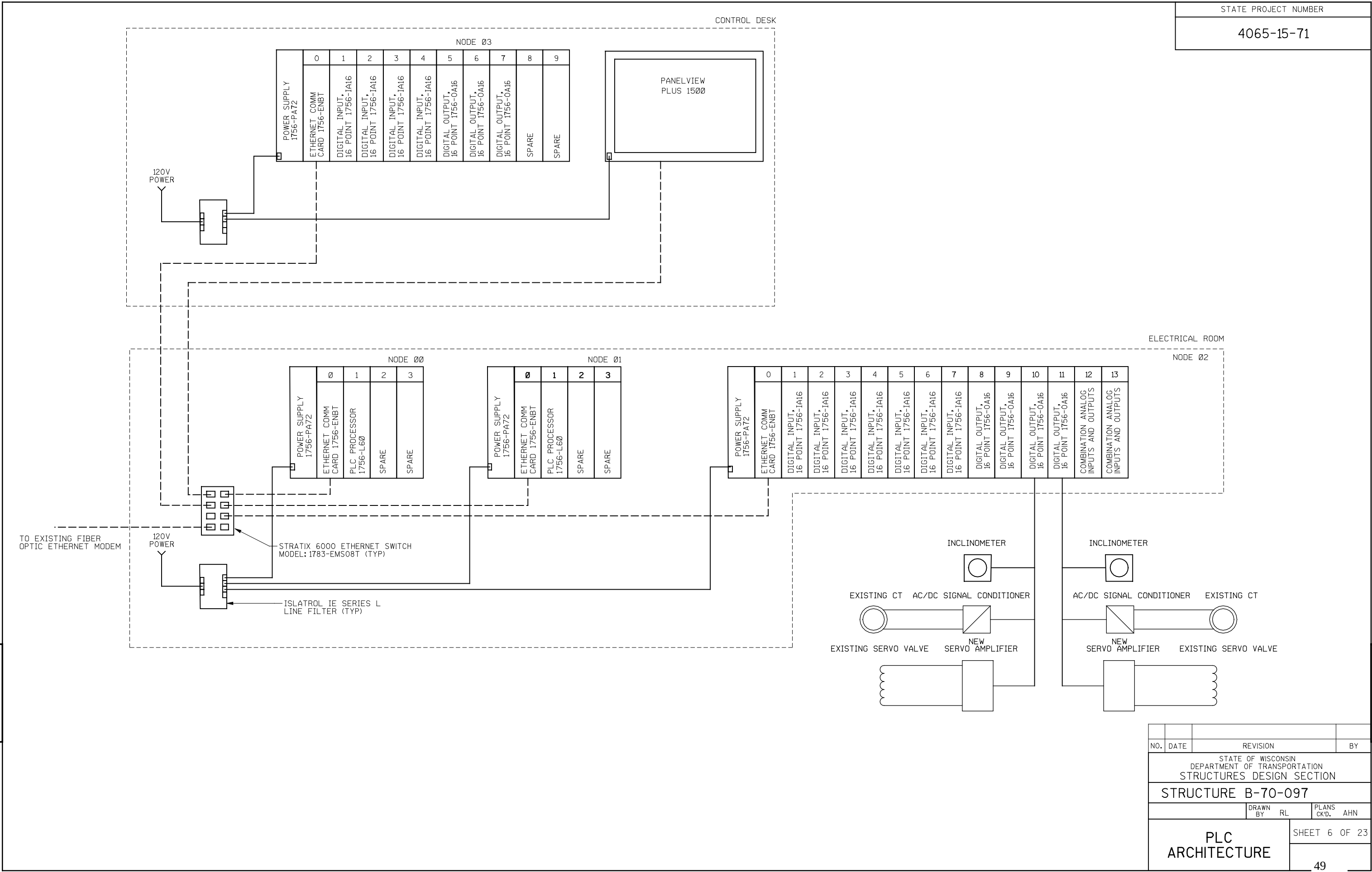
SYMBOLS



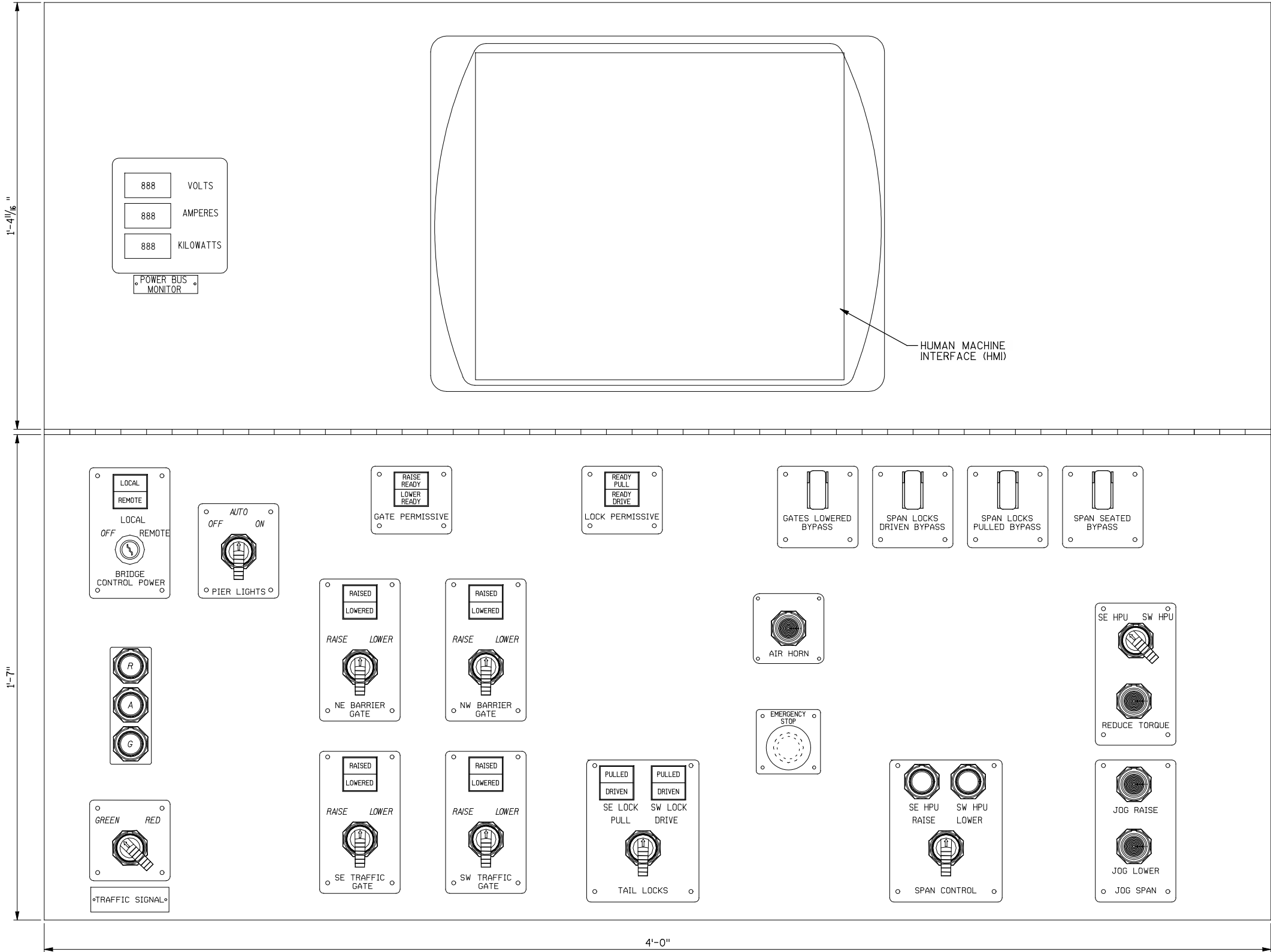
AH	AIR HORN	NW	NORTHWEST
ANN	ANNUNCIATOR	OCR	OVER CURRENT RELAY
AM	AUXILIARY MOTOR	OL	OVERLOAD RELAY
ATS	AUTOMATIC TRANSFER SWITCH	OP	OPPOSED MODE SENSOR
AUX	AUXILIARY	OS	OVERSPEED
AWG	AMERICAN WIRE GAGE	OT	OVER TRAVEL
UVR	UNDERVOLTAGE RELAY	PB	PUSHBUTTON
CB	CIRCUIT BREAKER	PBL	ILLUMINATED PUSHBUTTON
CPU	CENTRAL PROCESSING UNIT	PF	POWER FACTOR
CR	CONTROL RELAY	PFR	PHASE FAILURE/ REVERSAL RELAY
CS	CONTROL / SELECTOR SWITCH	PH	PHASE
CT	CURRENT TRANSFORMER	PL	PILOT LIGHT
DRV	DRIVE	PDP	POWER DISTRIBUTION PANELBOARD
DS	DISCONNECT SWITCH	PS	POWER SUPPLY
E	EAST	PT	POTENTIAL TRANSFORMER
FU	FUSE	R	RAISE
GEN	GENERATOR	RCS	REMOTE CONTROLLED SWITCH
HP	HORSEPOWER	REG	REGULATOR
HR	HAND RELEASE	REL	RELEASE
HTR	HEATER	RMT	REMOTE
JB	JUNCTION BOX	S	SOUTH
KS	KEY SWITCH	SA	SECURITY ALARM
L	LOWER	SC	SUBMARINE CABLE
LC	LINE CONTACTOR	SC	SIGNAL CONDITIONER
LCL	LOCAL	SCTC	SUBMARINE CABLE TERMINAL CABINET
LTG	LIGHTING	STD	CLOSED
LP	LIGHTING PANELBOARD	SE	SOUTHEAST
LS	LIMIT SWITCH	SW	SOUTHWEST
M	MAGNETIC CONTACTOR	SW	SWITCH
MB	MOTOR BRAKE	T	POWER TRANSFORMER
MCP	MOTOR CIRCUIT PROTECTOR	TB	TERMINAL BLOCK
MM	MAIN MOTOR	TC	TERMINAL CABINET
MOI	MANUALLY OPERATED INTERLOCK	TG	TACHOMETER GENERATOR
MYB	MACHINERY BRAKE	TR	TIMER
NRM	NORMAL	TSP	TWISTED SHEILDED PAIR
N	NORTH	UTIL	UTILITY
NAV	NAVIGATION LIGHT	W	WEST
NE	NORTHEAST	XFMR	TRANSFORMER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY RL		PLANS CK'D. AHN	
GENERAL ELECTRICAL NOTES			SHEET 5 OF 23
			48

8



8

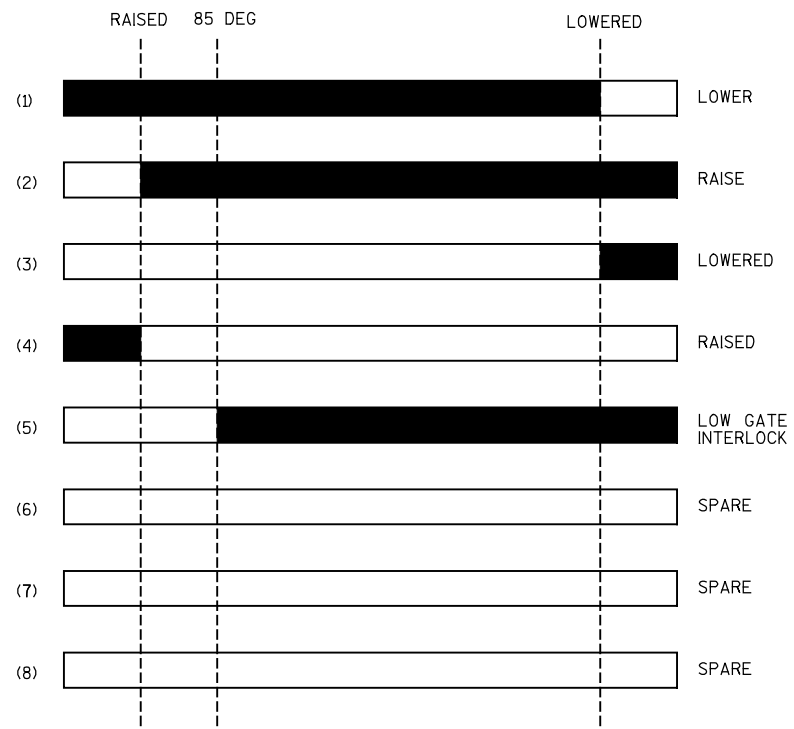


NOTES FOR CONTROL DESK CONSTRUCTION:

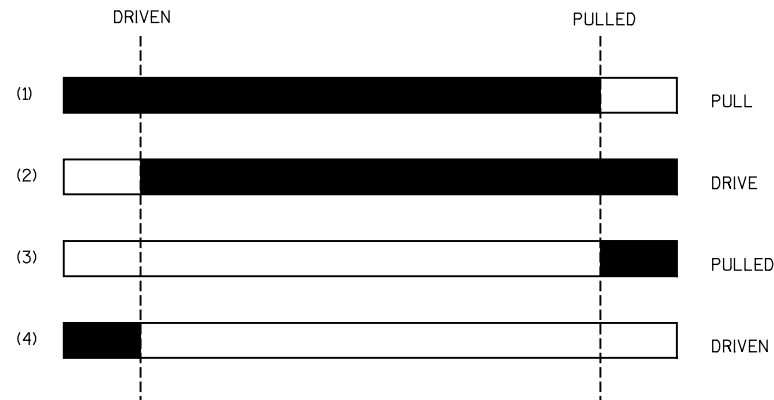
- CONTROL DESK FRAMES SHALL BE OF 11 GAUGE SHEET STEEL PROPERLY FORMED AND SUITABLY REINFORCED TO PROVIDE ADEQUATE STRENGTH.
- THE INCLINED PINNACLE AND DESK TOP SHALL BE FABRICATED OF 11 GAUGE STAINLESS STEEL WITH A NON-GLARE SATIN FINISH.
- PUSHBUTTONS, SELECTOR SWITCHES, TUMBLER SWITCHES, AND INDICATING LIGHTS SHALL BE OF HEAVY DUTY, OILTIGHT CONSTRUCTION FURNISHED WITH NAMEPLATE PER CONTRACT DOCUMENTS. ALL INDICATING LAMPS SHALL BE LED TYPE, RATED 120 VOLTS.
- CONTROL DESK DOORS SHALL BE SECURED BY FLUSH HANDLES AND A 3-POINT LOCKING BAR MECHANISM.
- CONTROL DESK INTERIOR SHALL CONTAIN THERMO-STATICALLY CONTROLLED HEATER WITH DISCONNECT MEANS: SPECIFICATION GRADE, 125-VOLT, 20-AMP DUPLEX RECEPTACLE AND INTERIOR LIGHT CONTROLLED BY SPECIFICATION GRADE SINGLE POLE, TOGGLE SWITCH WITH LIGHTED HANDLE.
- DUAL FIELD LIGHTS COLORS ARE AS FOLLOWS:
STATUS "READY" LIGHTS: BLUE
GATE RAISED LIGHTS: GREEN
SPAN LOCKS DRIVEN LIGHT: GREEN
GATE LOWERED LIGHTS: WHITE
SPAN LOCKS PULLED LIGHT: WHITE
- INCLUDE PROVISION TO HOLD DESK TOP OPEN FOR MAINTENANCE PURPOSES.
- PROVIDE HANDLES TO OPEN DESK TOP.

CONTROL DESK LAYOUT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
		DRAWN BY RL	PLANS CK'D. AHN
CONTROL DESK		SHEET 7 OF 23	
		50	



GATE ROTARY CAM LIMIT SWITCH
(EXISTING LS-SEWG, -SWWG, NEW NEBG, NWBG)

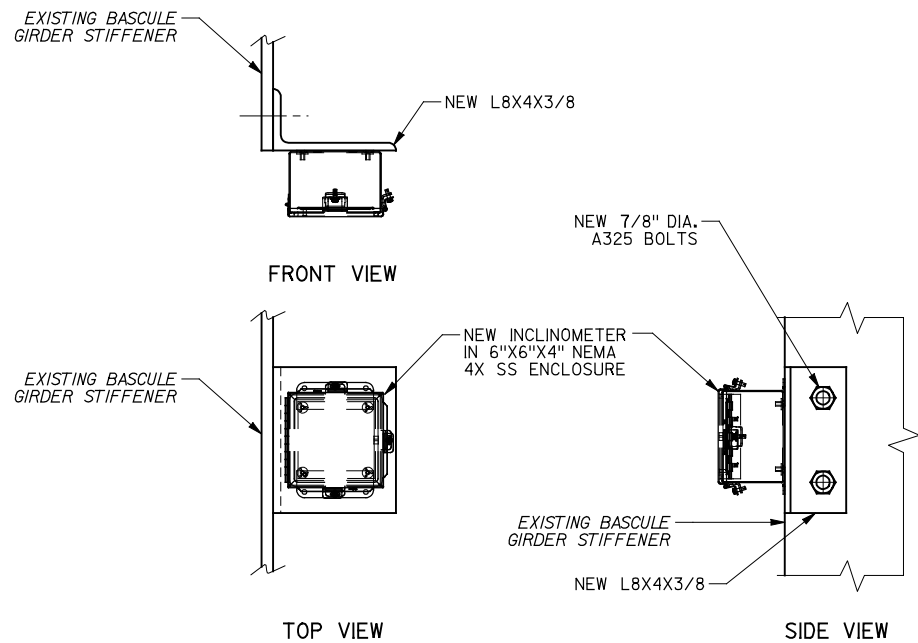


EXISTING TAIL LOCK LIMIT SWITCH
(LS3, 4, 5, 6)



FULLY SEATED LIMIT SWITCH
(LS1, 25)

LIMIT SWITCH DEVELOPMENT

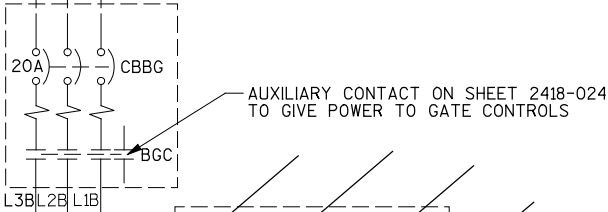
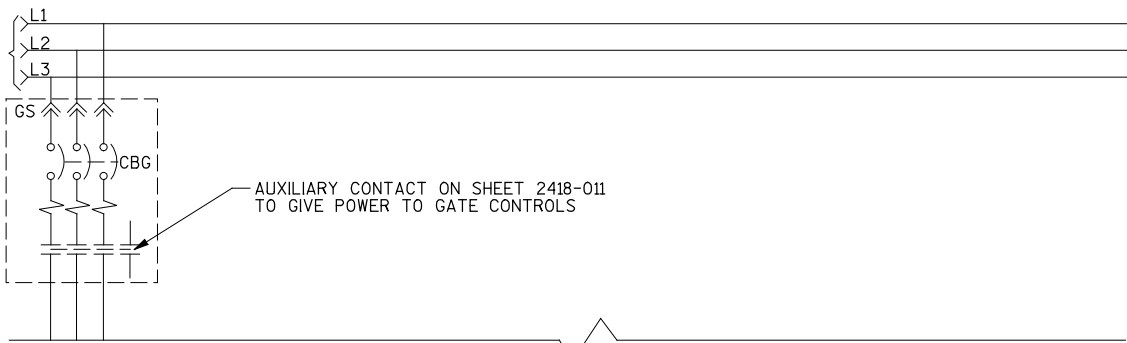


INCLINOMETER DETAIL
(TWO REQUIRED)

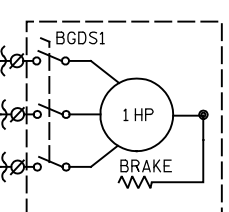
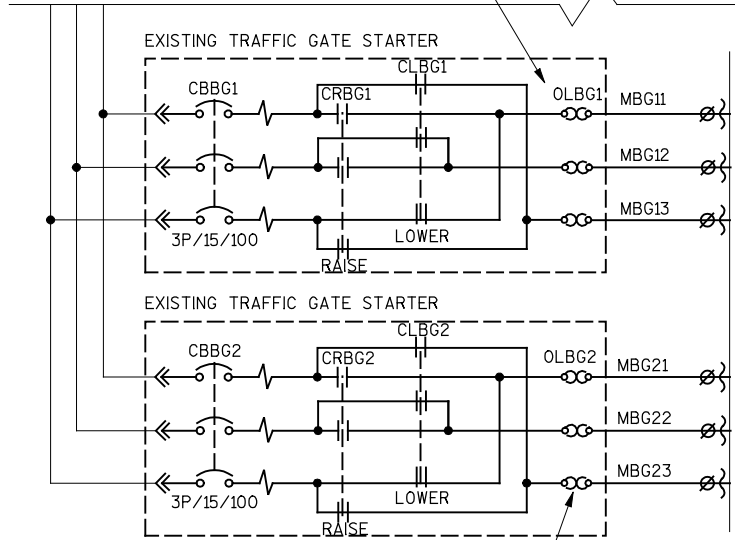
- NOTES:
1. PROVIDE NEW 6"X6"X4" NEMA 4X FIXED TERMINAL BOXES ADJACENT TO EXISTING FIXED TERMINAL BOXES.
 2. PROVIDE AND INSTALL NEW #16 AWG SOUTHWIRE HLX01-POS-16/P1 TWISTED SHIELDED PAIR BETWEEN NEW FIXED BOXES & EXISTING CONTROL CABINET.
 3. PROVIDE AND INSTALL NEW #16 AWG FLEXIBLE TWISTED SHIELDED PAIR BETWEEN NEW FIXED TERMINAL BOXES AND NEW INCLINOMETERS.

NO.	DATE	REVISION	BY
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STRUCTURE B-70-097			
DRAWN BY RL		PLANS CK'D. AHN	
ELECTRICAL DETAILS		SHEET 8 OF 23	
		51	

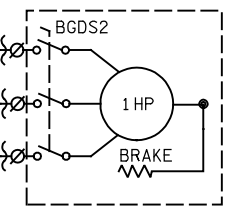
CONTINUED
FROM
DWG #2418-000



PROVIDE AND INSTALL NEW
THERMAL ELEMENTS BASED
ON PROVIDED MOTOR FLA.



1 H.P.
VERTICAL
BARRIER GATE NO. 1
(OFFGOING)



1 H.P.
VERTICAL
BARRIER GATE NO. 2
(ONGOING)

BARRIER GATE MOTORS

RECREATED FROM PANATROL DRAWING 2418-009,
"ELECTRICAL SCHEMATIC FOR THE TAYCO ST. BRIDGE"

PROVIDE AND INSTALL NEW
THERMAL ELEMENTS BASED ON
PROVIDED MOTOR FLA.

EXISTING STARTERS FOR BOLLARDS HPU AND HEATER TO BE REMOVED.

5 H.P. 1750 RPM
7.6 FLA HTR AR12.4
NORTHEAST
HYDRAULIC
POWER UNIT
MOTOR FOR
TRAFFIC BARRIER

5 H.P. 1750 RPM
7.6 FLA HTR AR12.4
NORTHWEST
HYDRAULIC
POWER UNIT
MOTOR FOR
TRAFFIC BARRIER

BGIH1
0.75 KW
NORTHEAST IMMERSION
HEATER FOR BARRIER GATE
HYDRAULIC POWER UNIT

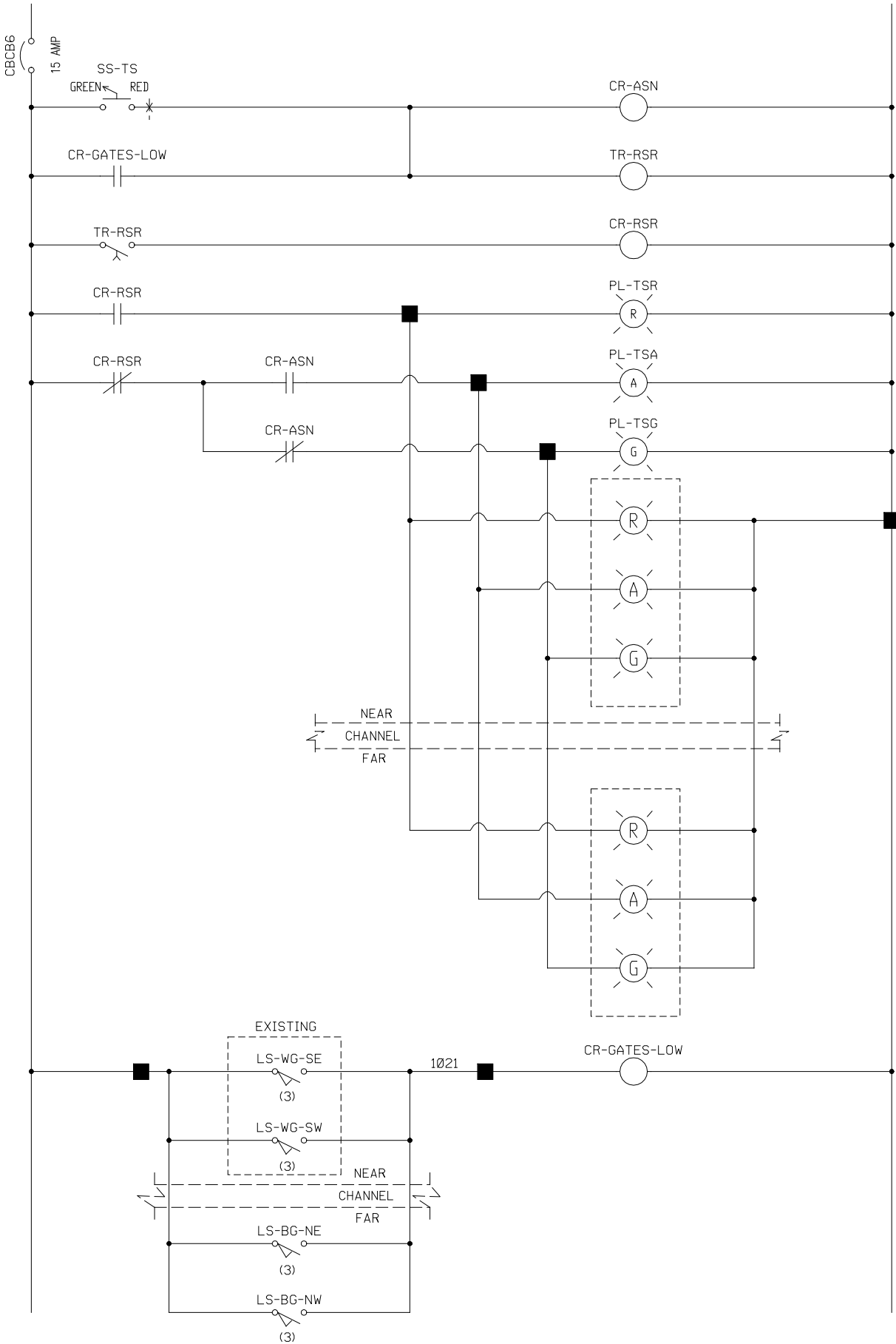
BGIH1
0.75 KW
NORTHWEST IMMERSION
HEATER FOR BARRIER GATE
HYDRAULIC POWER UNIT

- NOTES:
1. FOR COMPLETE DETAILS AND INFORMATION, REFER TO PANATROL DRAWING 2418-009, "ELECTRICAL SCHEMATIC FOR THE TAYCO ST. BRIDGE"
 2. EXISTING HYDRAULIC POWER UNITS AND HEATERS TO BE REMOVED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY RL		PLANS CK'D. AHN	
BARRIER GATE POWER WIRING DIAGRAM		SHEET 9 OF 23	
		52	



- | | | | | | |
|---|------|-------------|----|----------------|-----|
| | | | | | |
| NO. | DATE | REVISION | | | BY |
| STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION | | | | | |
| STRUCTURE B-70-097 | | | | | |
| | | DRAWN
BY | RL | PLANS
CK'D. | AHN |
| BRIDGE
POWER LOGIC | | | | SHEET 10 OF 23 | |
| | | | | 53 | |



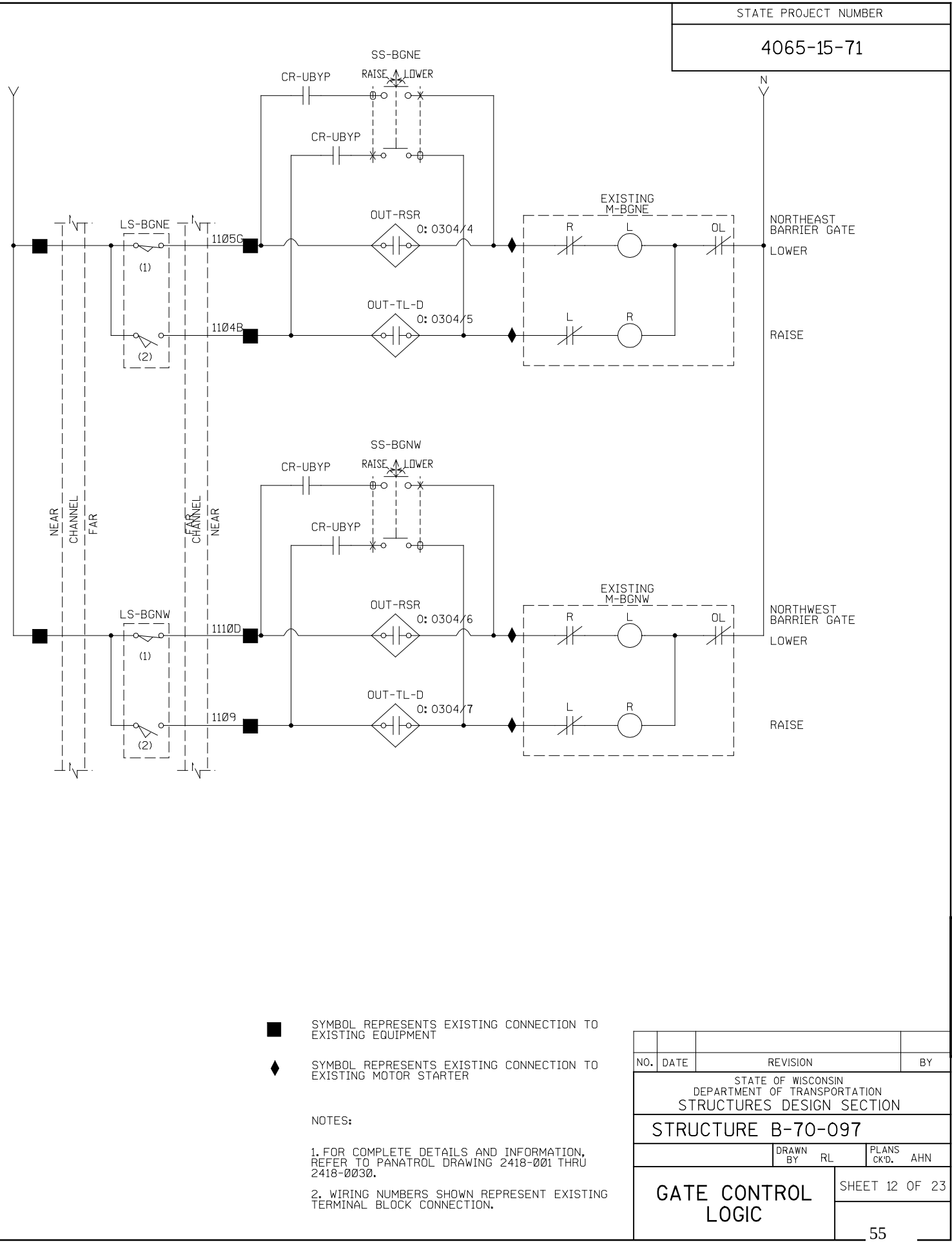
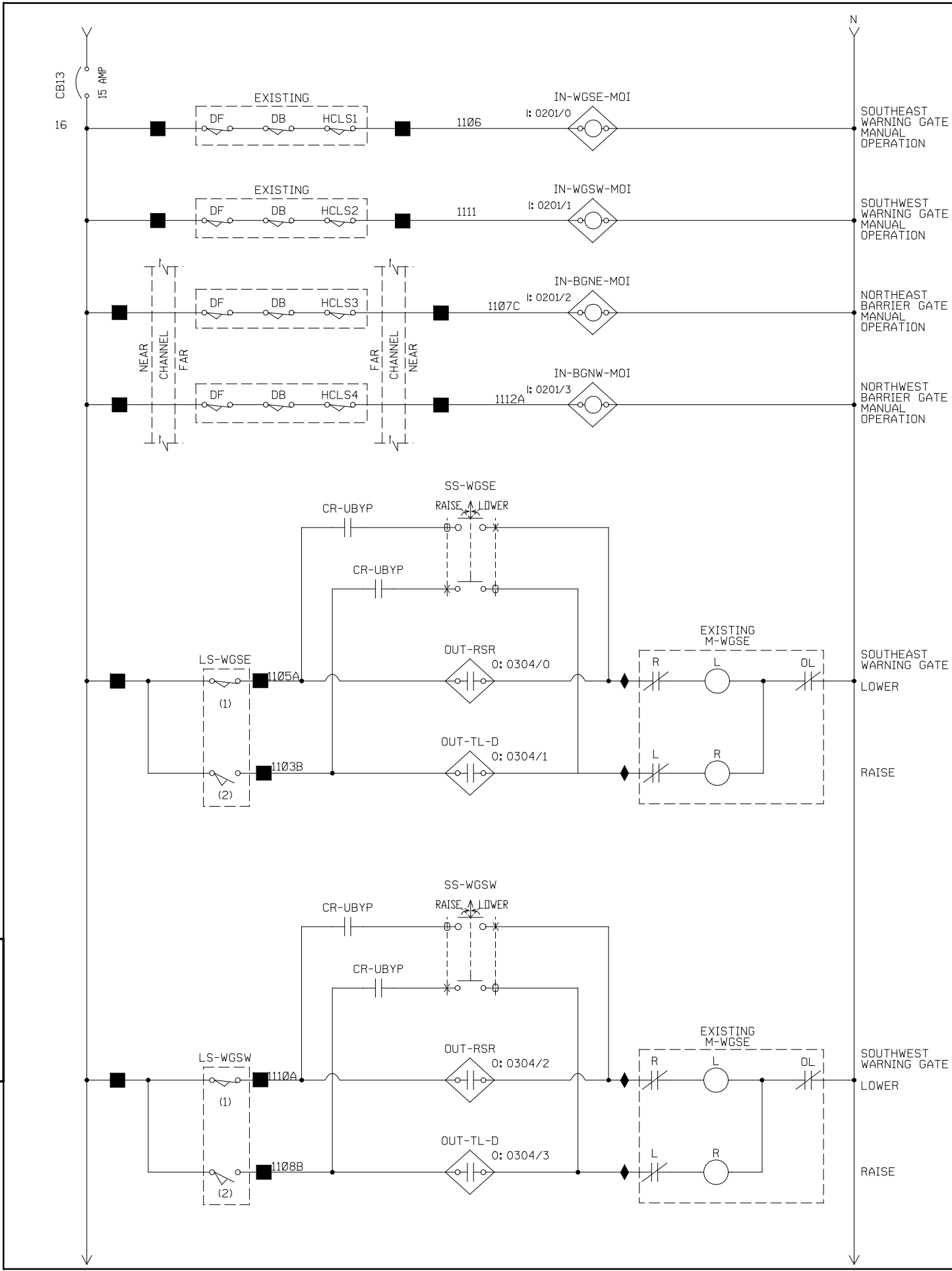
■ SYMBOL REPRESENTS EXISTING CONNECTION TO EXISTING EQUIPMENT

NOTES:

1. FOR COMPLETE DETAILS AND INFORMATION, REFER TO PANATROL DRAWING 2418-001 THRU 2418-0030.
2. WIRING NUMBERS SHOWN REPRESENT EXISTING TERMINAL BLOCK CONNECTION.

NO.		DATE	REVISION		BY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION						
STRUCTURE B-70-097						
			DRAWN BY RL		PLANS CK'D. AHN	
TRAFFIC SIGNAL CONTROL LOGIC					SHEET 11 OF 23	
					54	

8



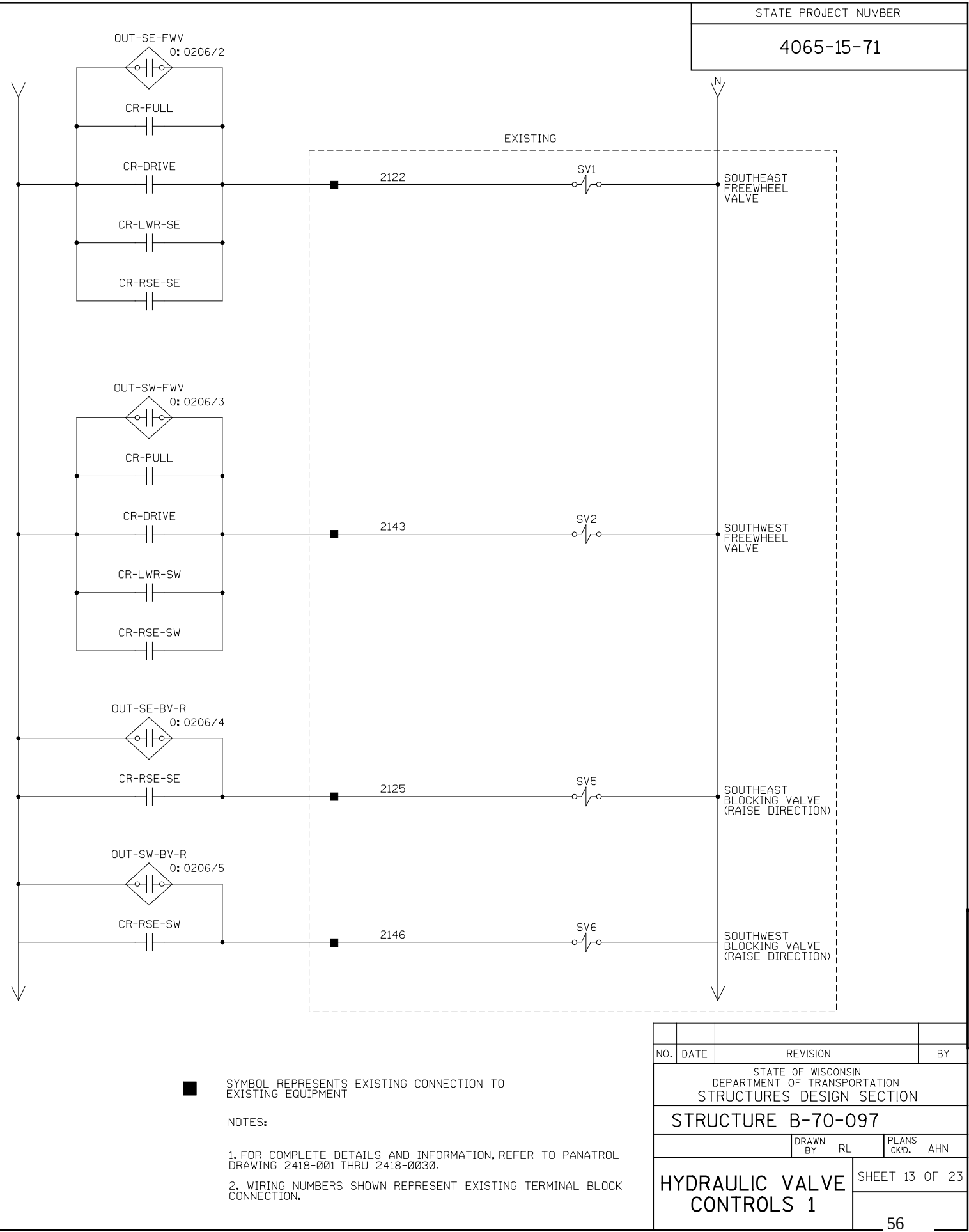
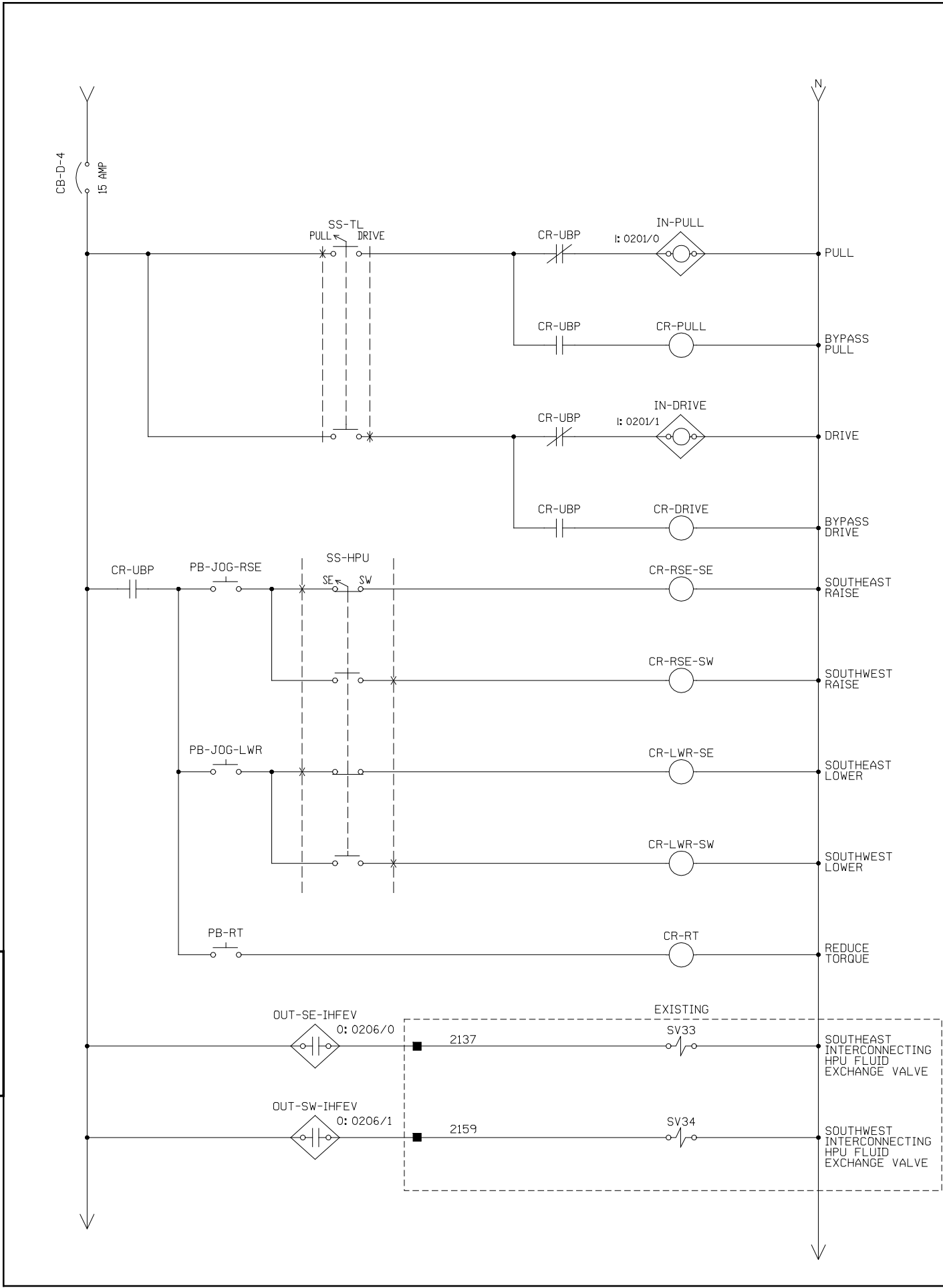
- SYMBOL REPRESENTS EXISTING CONNECTION TO EXISTING EQUIPMENT
- ◆ SYMBOL REPRESENTS EXISTING CONNECTION TO EXISTING MOTOR STARTER

NOTES:

1. FOR COMPLETE DETAILS AND INFORMATION, REFER TO PANATROL DRAWING 2418-001 THRU 2418-0030.

2. WIRING NUMBERS SHOWN REPRESENT EXISTING TERMINAL BLOCK CONNECTION.

8



STATE PROJECT NUMBER
4065-15-71

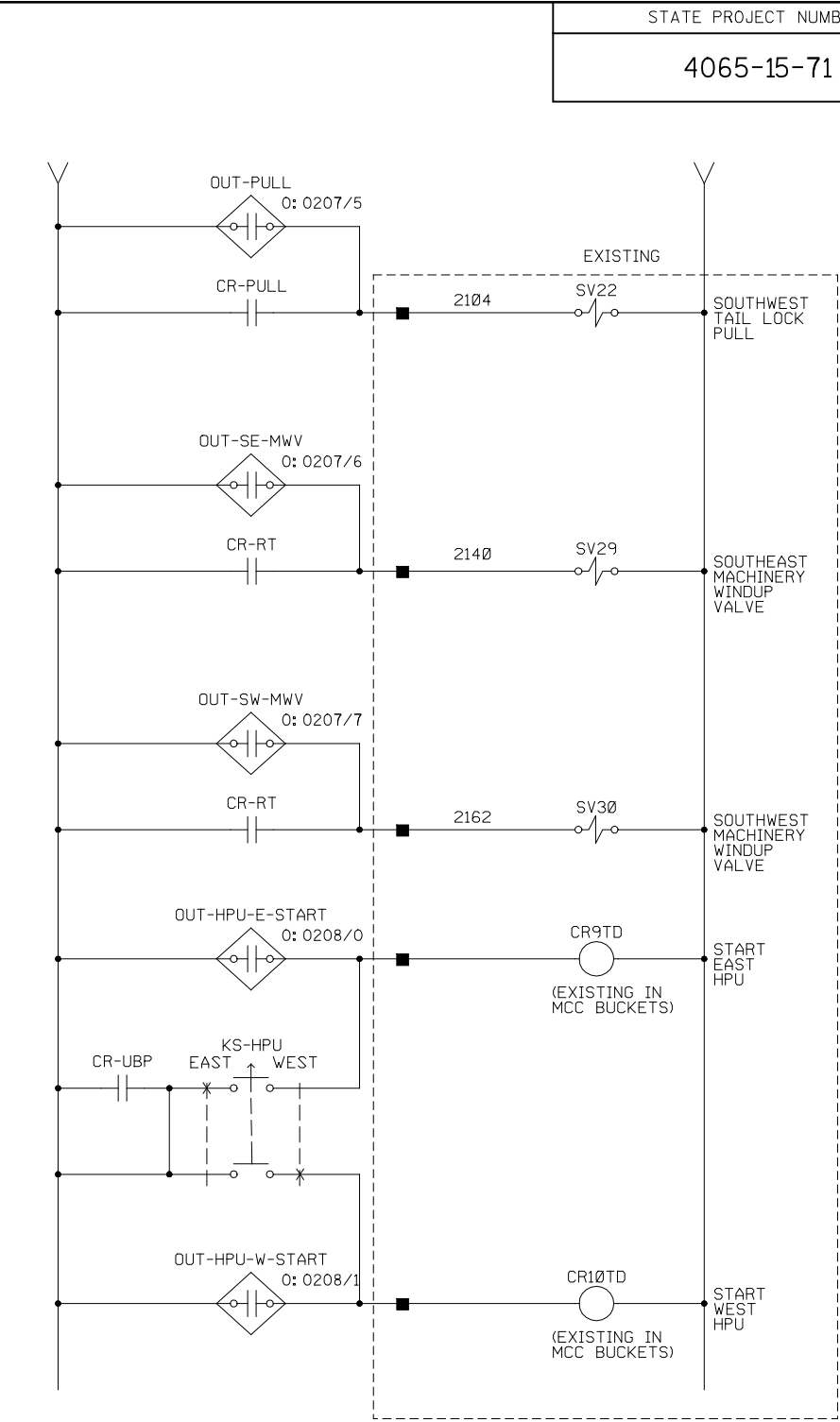
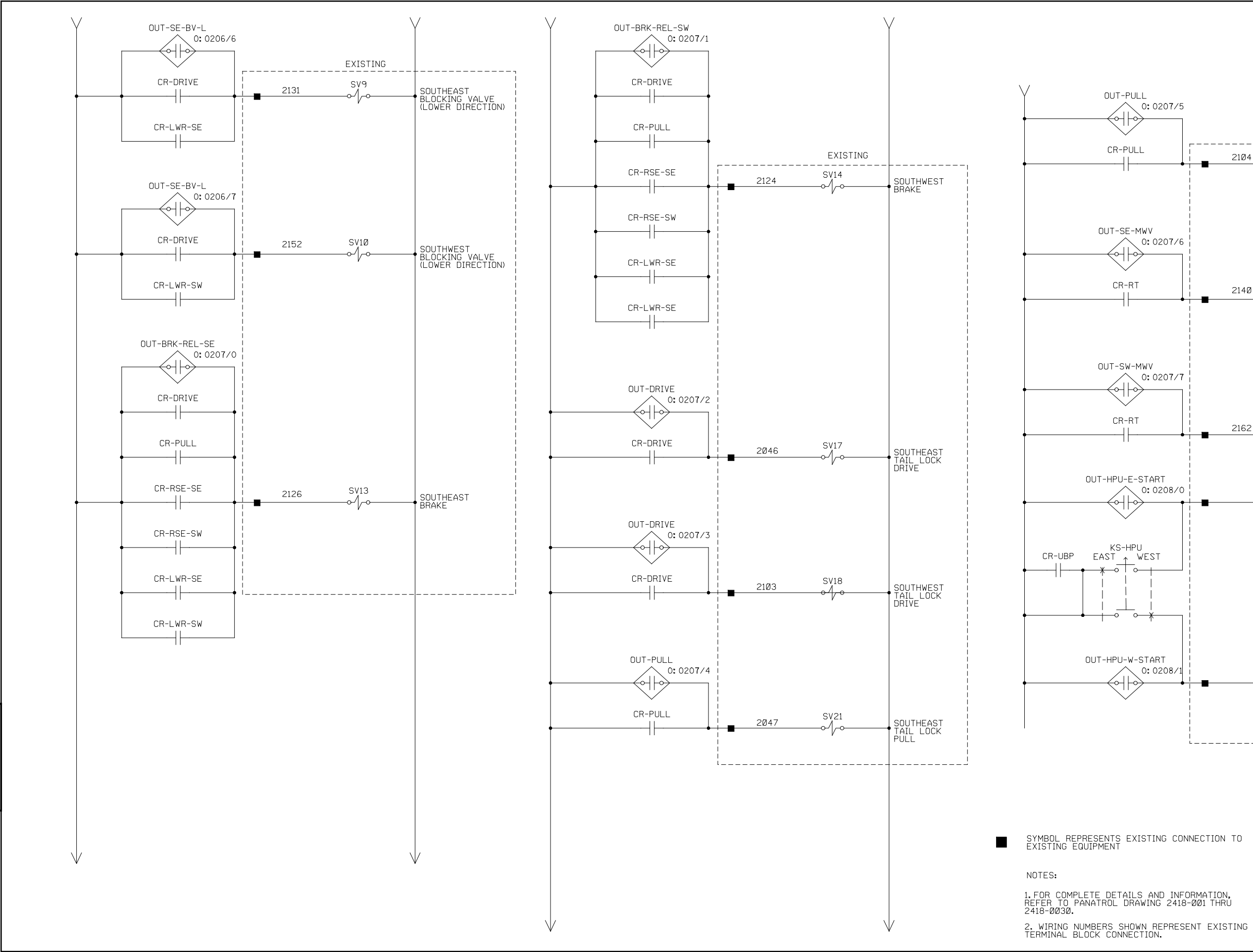
■ SYMBOL REPRESENTS EXISTING CONNECTION TO EXISTING EQUIPMENT

NOTES:

1. FOR COMPLETE DETAILS AND INFORMATION, REFER TO PANATROL DRAWING 2418-001 THRU 2418-0030.
2. WIRING NUMBERS SHOWN REPRESENT EXISTING TERMINAL BLOCK CONNECTION.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY RL		PLANS CK'D. AHN	
HYDRAULIC VALVE CONTROLS 1			SHEET 13 OF 23
			56

8



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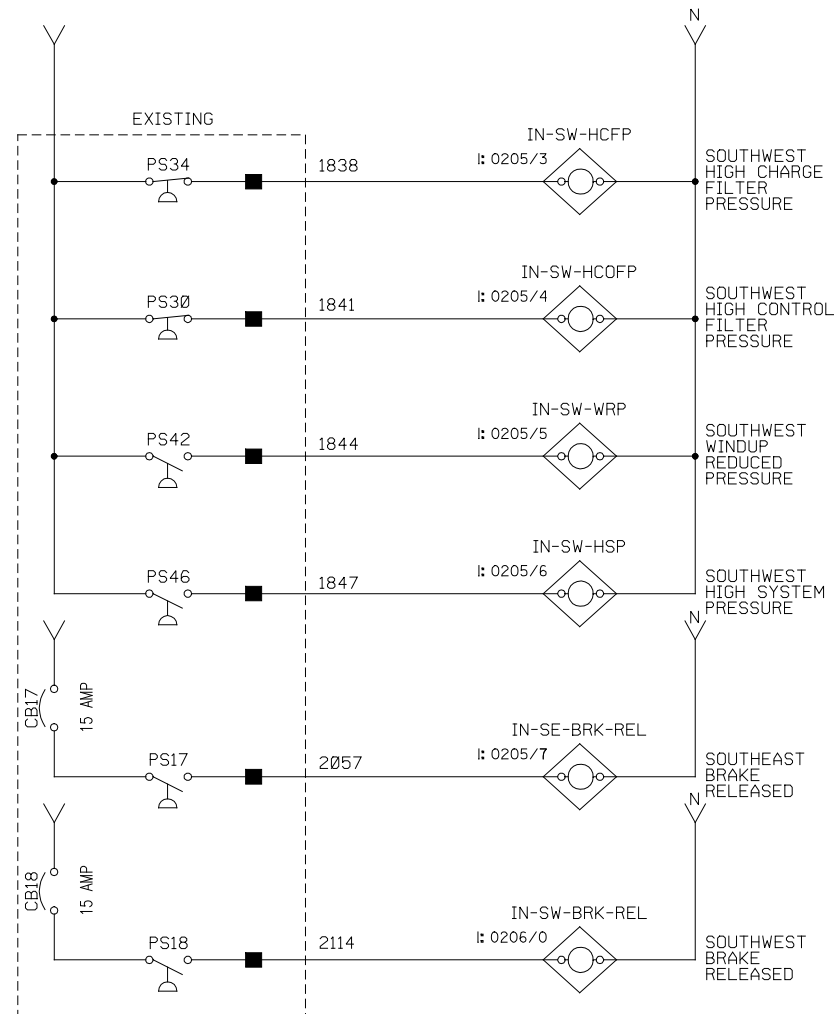
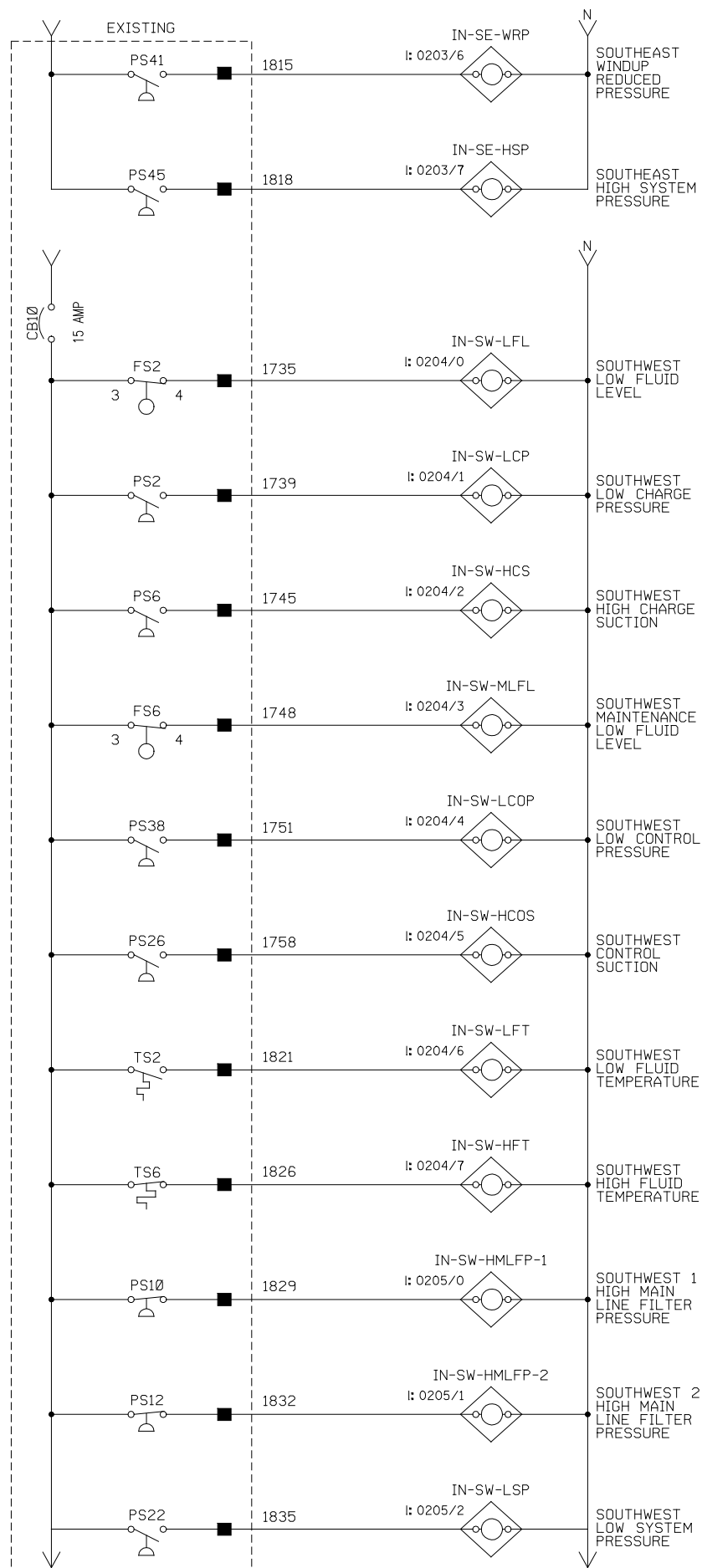
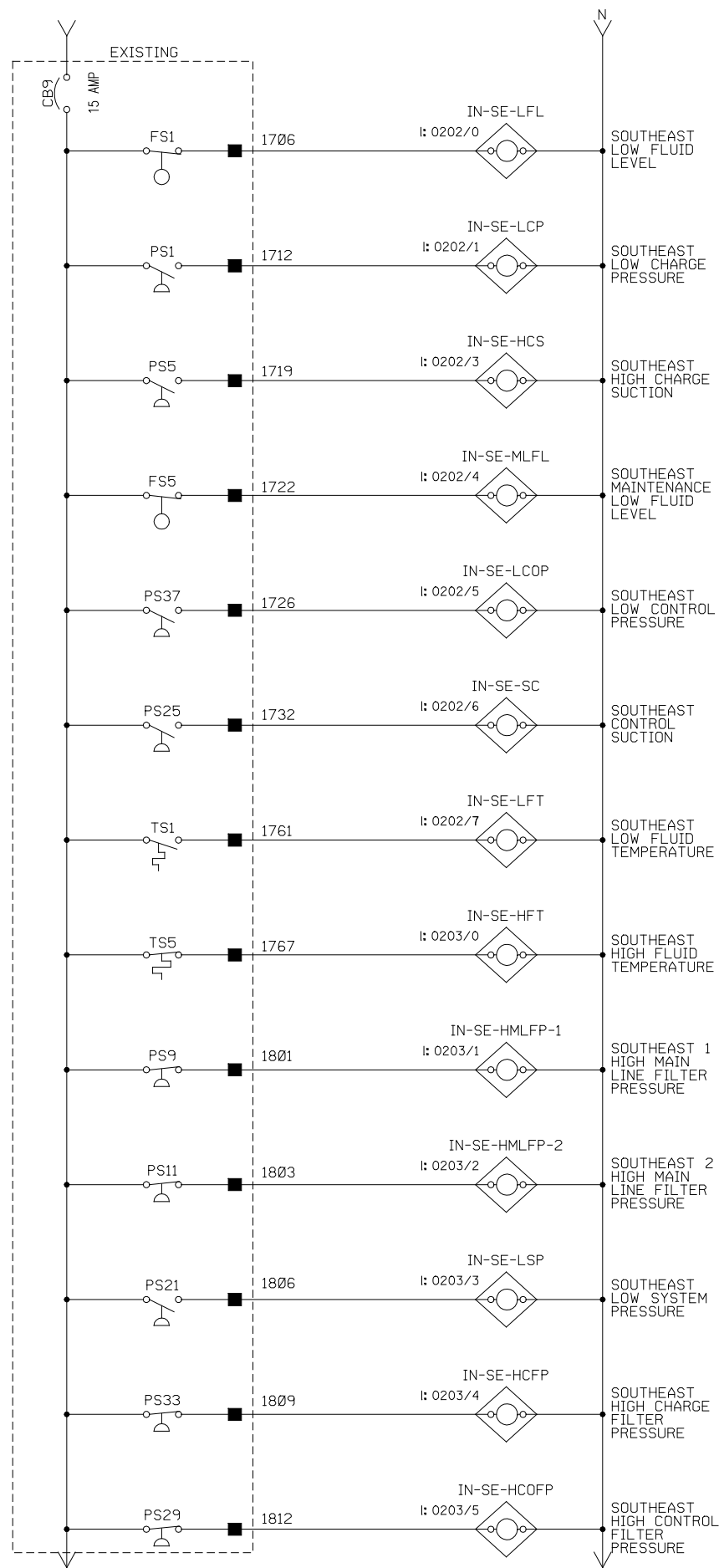
■ SYMBOL REPRESENTS EXISTING CONNECTION TO EXISTING EQUIPMENT

NOTES:

1. FOR COMPLETE DETAILS AND INFORMATION, REFER TO PANATROL DRAWING 2418-001 THRU 2418-0030.

2. WIRING NUMBERS SHOWN REPRESENT EXISTING TERMINAL BLOCK CONNECTION.

STATE PROJECT NUMBER			
4065-15-71			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY		RL	PLANS CK'D. AHN
HYDRAULIC VALVE CONTROLS 2			SHEET 14 OF 23
			57



■ SYMBOL REPRESENTS EXISTING CONNECTION TO EXISTING EQUIPMENT

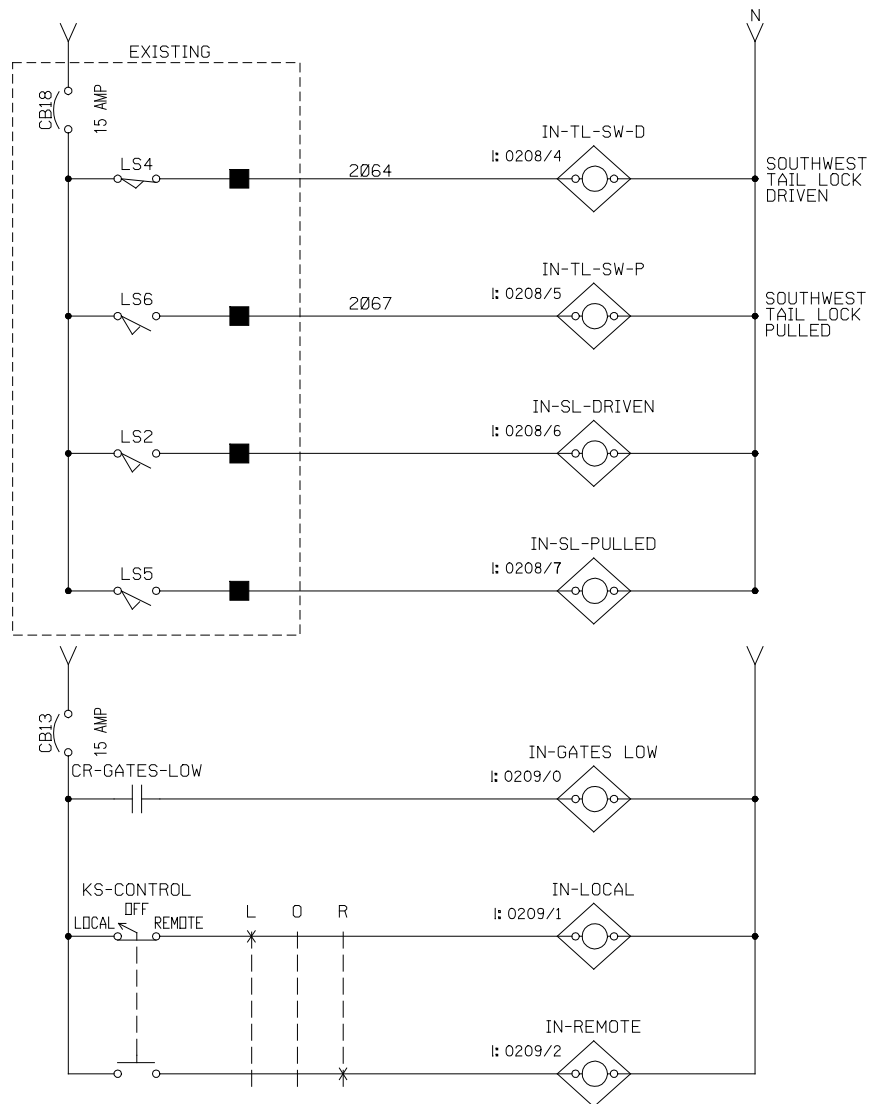
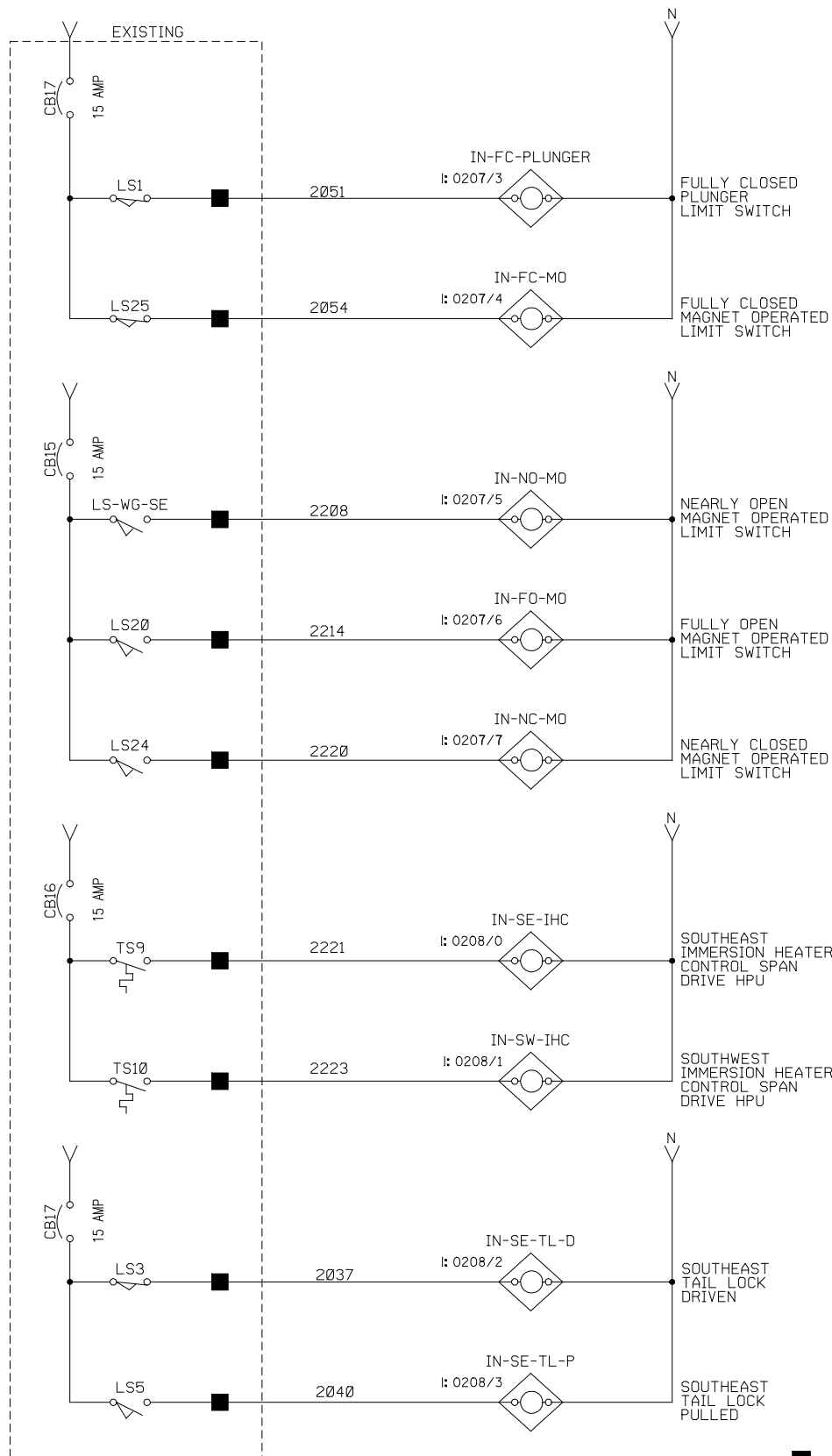
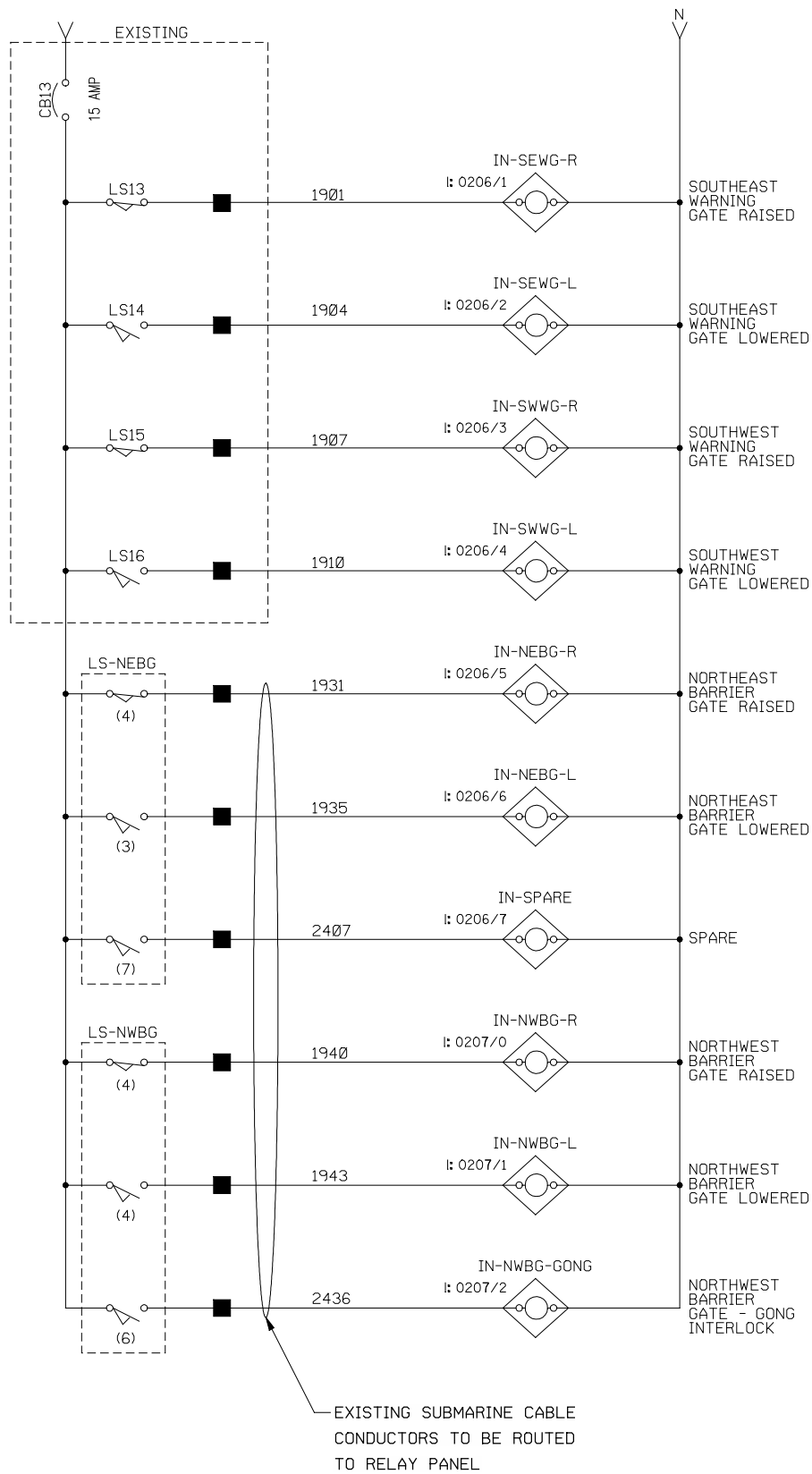
NOTES:

1. FOR COMPLETE DETAILS AND INFORMATION, REFER TO PANATROL DRAWING 2418-001 THRU 2418-0030.
2. WIRING NUMBERS SHOWN REPRESENT EXISTING TERMINAL BLOCK CONNECTION.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY RL		PLANS CK'D. AHN	
PLC INPUTS 1			SHEET 15 OF 23
			58



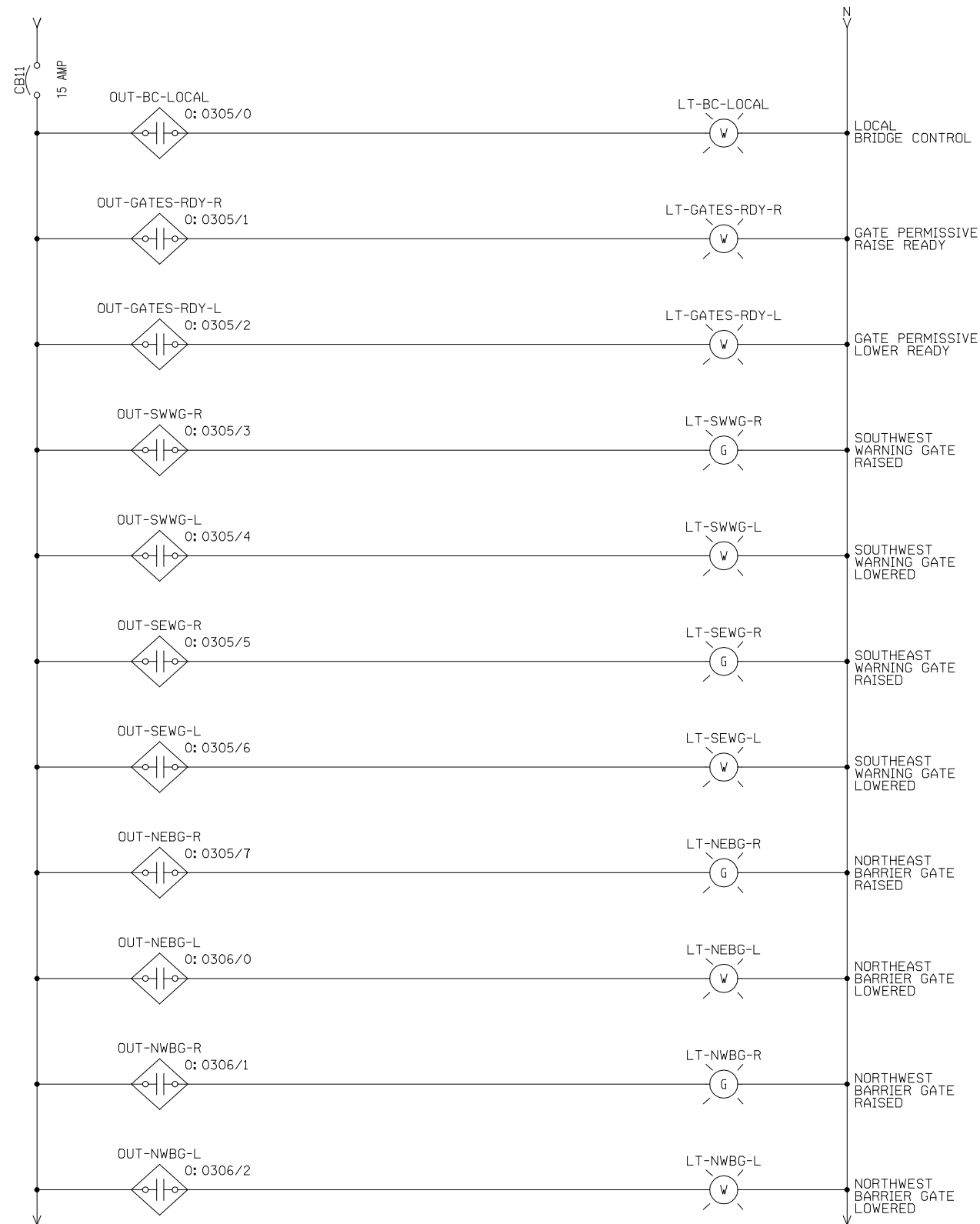
SYMBOL REPRESENTS EXISTING CONNECTION TO EXISTING EQUIPMENT

NOTES:

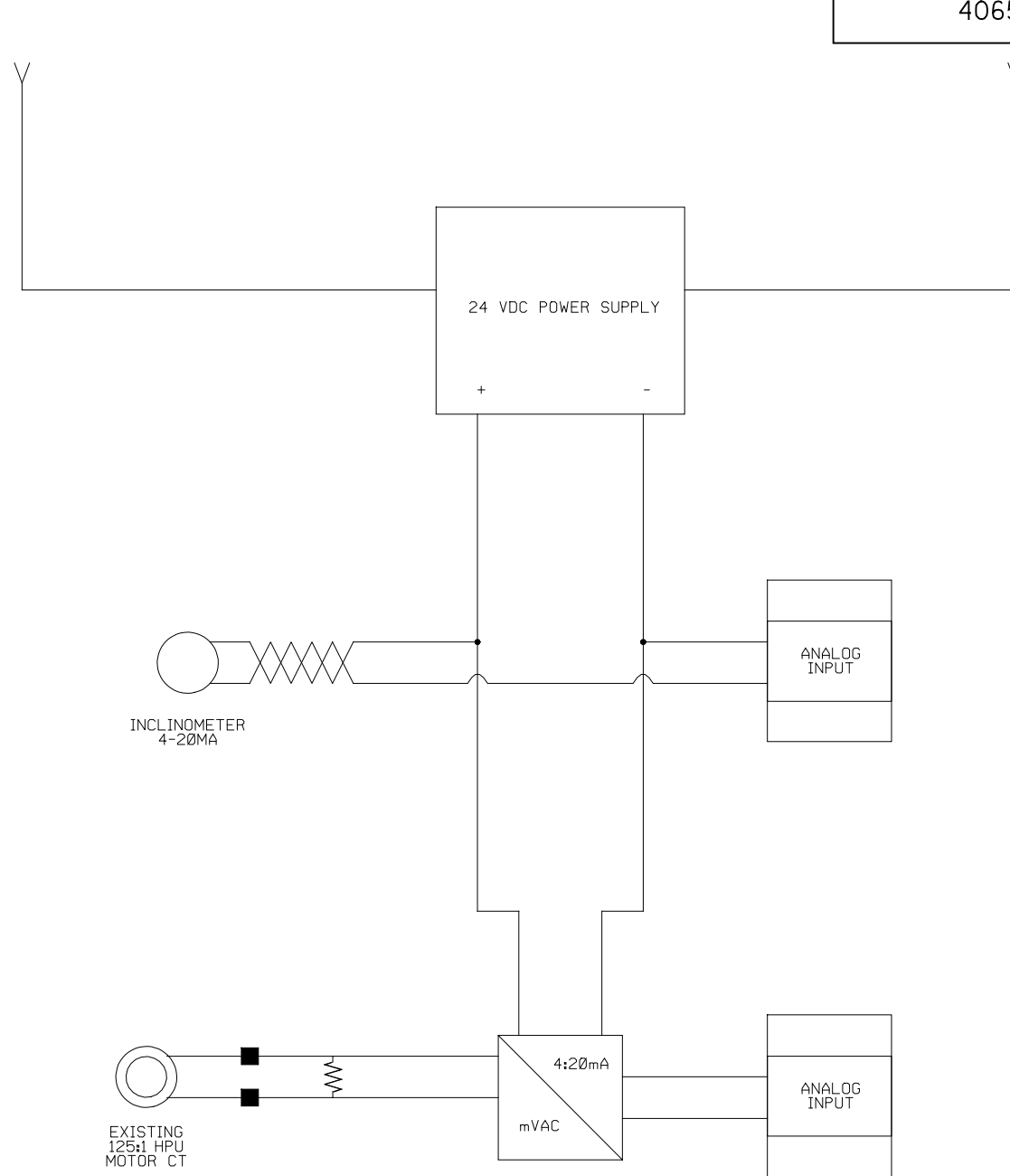
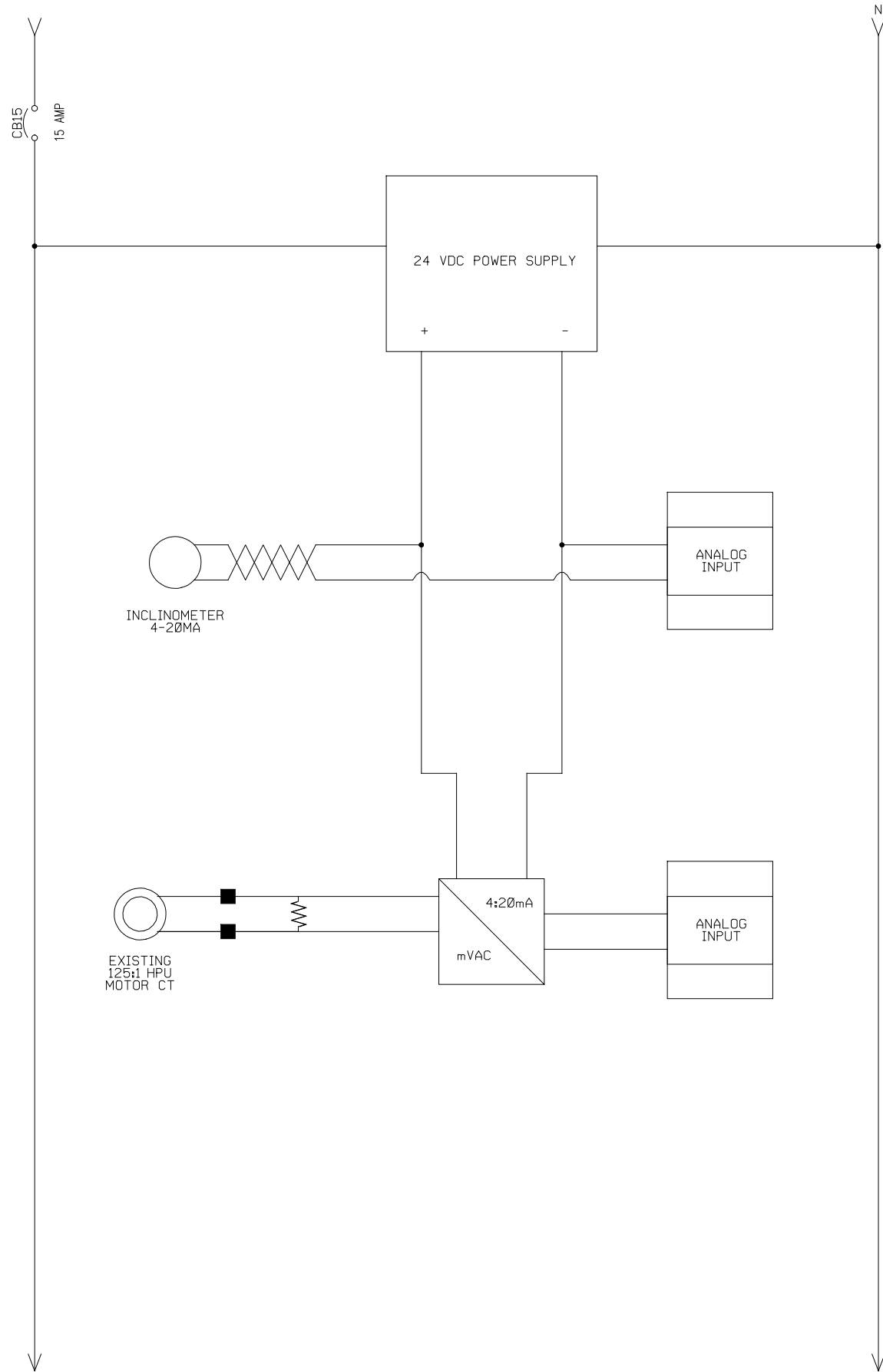
1. FOR COMPLETE DETAILS AND INFORMATION, REFER TO PANATROL DRAWING 2418-001 THRU 2418-0030.
2. WIRING NUMBERS SHOWN REPRESENT EXISTING TERMINAL BLOCK CONNECTION.

STATE PROJECT NUMBER			
4065-15-71			

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY RL		PLANS CK'D. AHN	
PLC INPUTS 2		SHEET 16 OF 23	
		59	



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY		RL	PLANS CK'D. AHN
PLC OUTPUTS			SHEET 17 OF 23
			60



NOTES:

1. FOR COMPLETE DETAILS AND INFORMATION,
REFER TO PANATROL DRAWING 2418-001 THRU
2418-0030.

STATE PROJECT NUMBER

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY		RL	PLANS CK'D. AHN
ANALOG PLC INPUTS & OUTPUTS		SHEET 18 OF 23	
		61	

QTY	ABBREVIATION	NAME	DESCRIPTION	LINE
1	KS-CONTROL	CONTROL POWER SWITCH	THREE POSITION NEMA SELECTOR SWITCH KEYED SELECTOR SWITCH - CONTACTS AS REQUIRED	7102
1	KS-HPU	MANUAL OPERATION HPU SELECTOR SWITCH	TWO POSITION NEMA KEYED SELECTOR SWITCH - CONNTACTS AS REQUIRED	5110
6	LT-BC-LOCAL	LOCAL OPERATION PILOT LIGHT	30.5 MM NEMA 4 LED PILOT LIGHT	806
	LT-SE-HPU-RDY	SE HPU READY PILOT LIGHT		865
	LT-SW-HPU-RDY	SW HPU REDAY PILOT LIGHT		868
	PL-TSA	AMBER SIGNAL PILOT LIGHT		216
	PL-TSG	GREED SIGNAL PILOT LIGHT		219
	PL-TSR	RED SIGNAL PILOT LIGHT		213
8	LT-BGNE	SOUTH WEST WARNING GATE PILOT LIGHTS	30.5 MM DUAL FIELD NEMA 4 LED PILOT LIGHT	827
	LT-BGNE	SOUTH WEST WARNING GATE PILOT LIGHTS		833
	LT-GATES-RDY	GATES READY PILOT LIGHTS		809
	LT-TL-RDY	TAIL LOCK READY PILOT LIGHTS		847
	LT-TL-SE	SOUTH EAST SPAN LOCK PILOT LIGHTS		853
	LT-TL-SW	SOUTH WEST SPAN LOCK PILOT LIGHTS		862
	LT-WGSE	SOUTH WEST WARNING GATE PILOT LIGHTS		821
	LT-WGSW	SOUTH WEST WARNING GATE PILOT LIGHTS		815
3	PB-JOG-LWR	JOG LOWER PUSHBUTTON	NEMA 30.5 MM PUSH BUTTON - CONTACTS AS REQUIRED	425
	PB-JOG-RSE	JOG RAISE PUSHBUTTON		419
	PB-RT	JOG REDUCED TORQUE PUSHBUTTON		432
5	SS-BGNE	NORTH EAST BARRIER GATE CONTROL SWITCH	THREE POSITION NEMA SELECTOR SWITCH - SPRING RETURN TO CENTER - CONTACTS AS REQUIRED	344
	SS-BGNW	NORTH WEST BARRIER GATE CONTROL SWITCH		357
	SS-TL	TAIL LOCK CONTROL SWITCH		408
	SS-WGSE	SOUTH EAST WARNING GATE CONTROL SWITCH		317
	SS-WGSW	SOUTH WEST WARNING GATE CONTROL SWITCH		330
2	SS-HPU	JOG HPU SELECTOR SWITCH	TWO POSITION NEMA SELECTOR SWITCH - CONNTACTS AS REQUIRED	419
	SS-TS	TRAFIC SIGNAL SELECTOR SWITCH		204
1		7 SLOT CHASSIS		
1		POWER SUPPLY		
3		16 POINT AC INPUT MODULE		
3		16 POINT REALY OUTPUT MODULE		
1		ETHERNET MODULE		
1		LINE FILTER		
1		15" TOUCH SCREEN HMI		
1		CONTROL DESK		

CONTROL DESK

QTY	ABBREVIATION	NAME	DESCRIPTION	LINE
10	CR-ASN	AMBER SIGNAL RELAY	NEMA A600 MACHINE TOOL RELAY	204
	CR-DRIVE	BYPASS DRIVE RELAY		417
	CR-GATES-LOW	LOW GATE RELAY		232
	CR-LWR-SE	SOUTHEAST LOWER RELAY		425
	CR-PULL	BYPASS PULL RELAY		411
	CR-RSE-SE	SOUTHEAST RAISE RELAY		419
	CR-RSE-SW	SOUTHWEST RAISE RELAY		422
	CR-LWR-SW	SOUTHWEST LOWER RELAY		428
	CR-RSR	RED SIGNAL RELAY		210
	CR-RT	MANUAL OPERATION REDUCED TORQUE RELAY		431
1	TR-RSR	RED SIGNAL TIMER	NEMA A600 TIMER	207
2	SA-SE	SE SERVO AMPLIFIER	JUPITER 500 DRIVER CARD S20-11712-0, DENISON HYDRAULICS	
	SA-SW	SW SERVO AMPLIFIER		
2	SA-PWR-SE	SE CARD HOLDER/POWER SUPPLY	POWER SUPPLY S20-11715-0, DENISON HYDRAULICS	
	SA-PWR-SW	SW CARD HOLDER/POWER SUPPLY		
2	SC-SE	SE HPU CURRENT SIGNAL CONDITIONER	AC/DC SIGNAL CONDITIONER - AC CURRENT IN, 4 - 20 MA DC OUT	
	SC-SW	SE HPU CURRENT SIGNAL CONDITIONER		
2	PS-SE	SE 24 VDC POWER SUPPLY	24 VDC DIN RAIL MOUNT 2 AMP POWER SUPPLY	
	PS-SW	SW 24 VDC POWER SUPPLY		
2		4 SLOT RACK		
3		POWER SUPPLY		
2		CPU		
3		ETHERNET MODULE		
5		16 POINT AC DIGITAL INPUT MODULE		
4		16 POINT REALY OUTPUT MODULE		
2		COMBINATION ANALOG INPUT/OUTPUT MODULE		
1		ETERNET SWITCH		
1		LINE FILTER MODULE		

RELAY CABINET

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY DH		PLANS CK'D. AHN	
BILL OF MATERIALS		SHEET 19 OF 23	
		62	

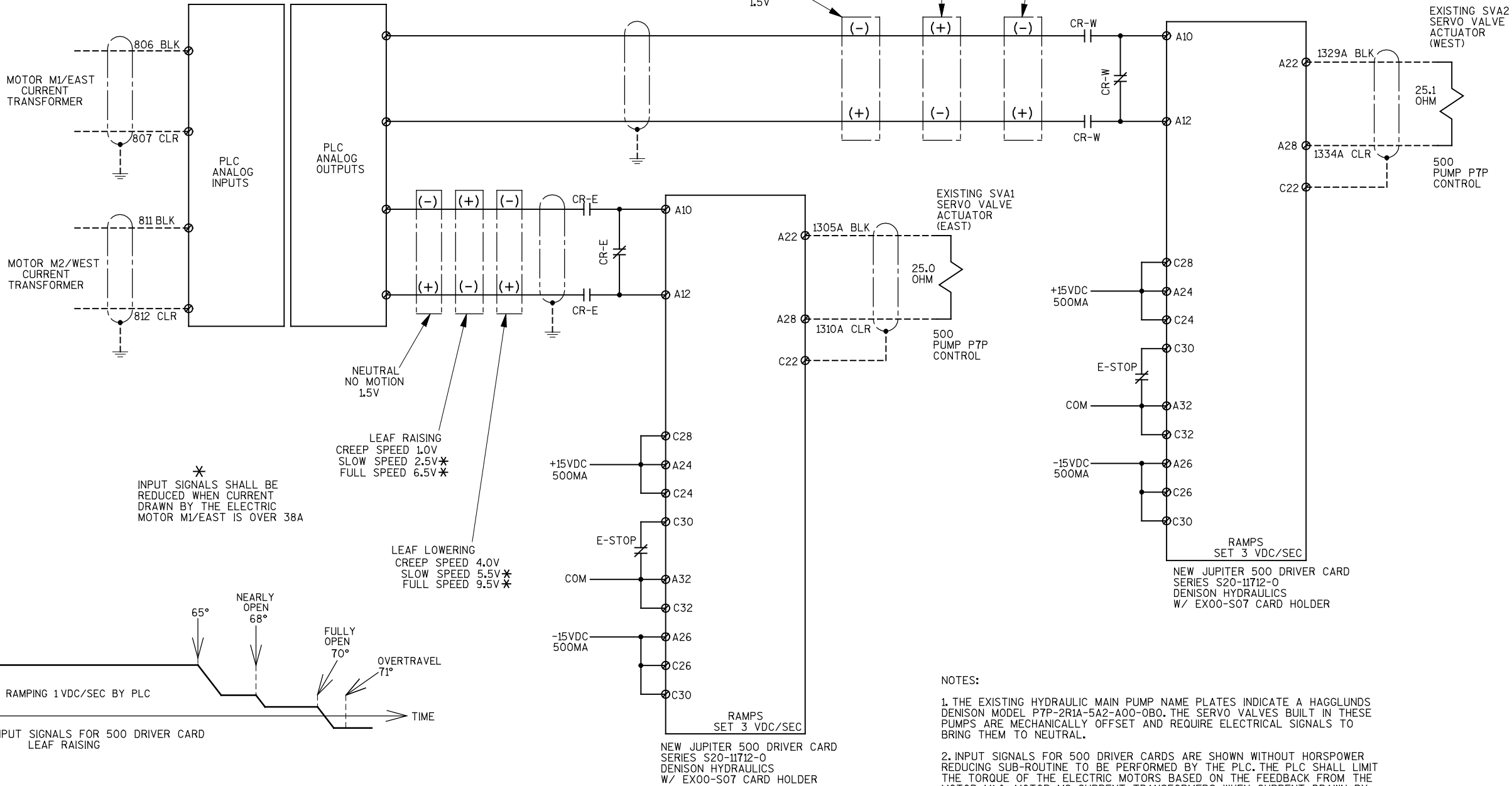
INPUT SIGNALS SHALL BE REDUCED WHEN CURRENT DRAWN BY THE ELECTRIC MOTOR M2/WEST IS OVER 38A

*

LEAF RAISING
CREEP SPEED 1.0V
SLOW SPEED 2.5V *
FULL SPEED 6.5V *

LEAF LOWERING
CREEP SPEED 4.0V
SLOW SPEED 5.5V *
FULL SPEED 9.5V *

NEUTRAL
NO MOTION
1.5V



INPUT SIGNALS SHALL BE REDUCED WHEN CURRENT DRAWN BY THE ELECTRIC MOTOR M1/EAST IS OVER 38A

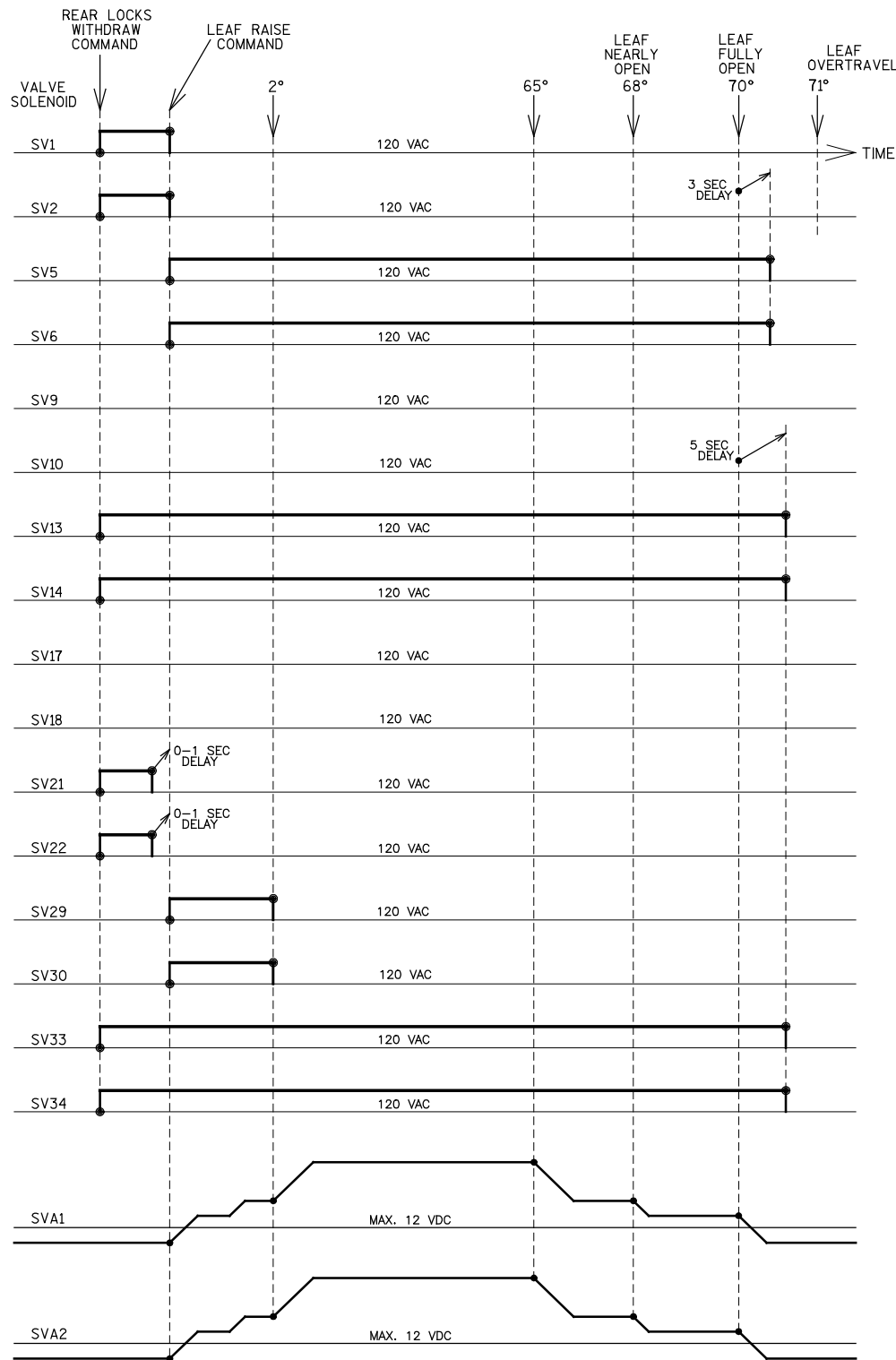
LEAF RAISING
CREEP SPEED 1.0V
SLOW SPEED 2.5V *
FULL SPEED 6.5V *

LEAF LOWERING
CREEP SPEED 4.0V
SLOW SPEED 5.5V *
FULL SPEED 9.5V *

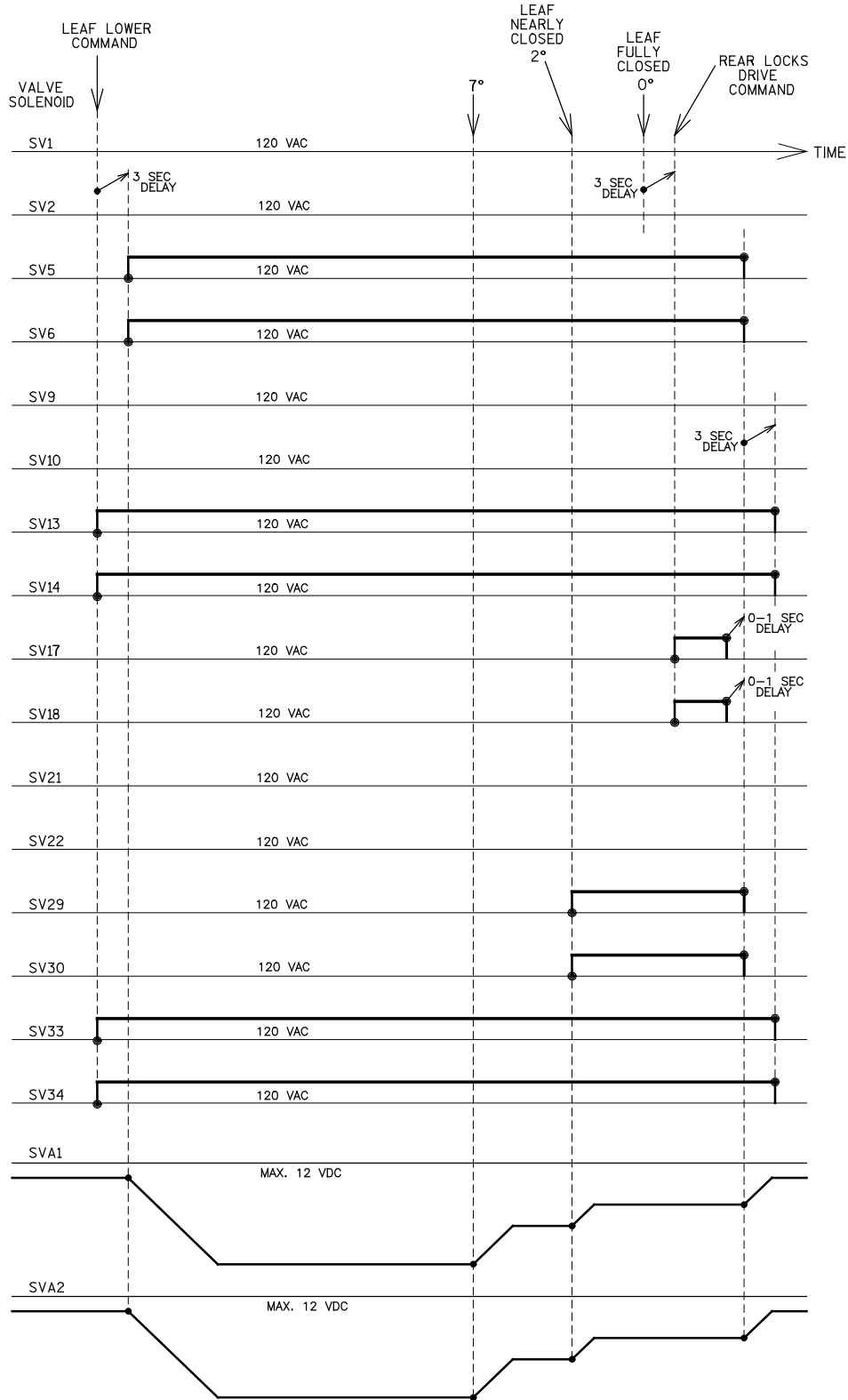
NOTES:

1. THE EXISTING HYDRAULIC MAIN PUMP NAME PLATES INDICATE A HAGGLUNDS DENISON MODEL P7P-2R1A-5A2-A00-0B0. THE SERVO VALVES BUILT IN THESE PUMPS ARE MECHANICALLY OFFSET AND REQUIRE ELECTRICAL SIGNALS TO BRING THEM TO NEUTRAL.
2. INPUT SIGNALS FOR 500 DRIVER CARDS ARE SHOWN WITHOUT HORSPPOWER REDUCING SUB-ROUTINE TO BE PERFORMED BY THE PLC. THE PLC SHALL LIMIT THE TORQUE OF THE ELECTRIC MOTORS BASED ON THE FEEDBACK FROM THE MOTOR M1 & MOTOR M2 CURRENT TRANSFORMERS. WHEN CURRENT DRAWN BY THE MOTORS IS OVER 38A, THE PLC SHALL REDUCE THE INPUT VOLTAGE OF THE 500 DRIVER CARD TO REDUCE THE PUMP DISPLACEMENT (SPEED OF THE BRIDGE LEAF). OVERHAULING LOADS SHALL BE TAKEN INTO CONSIDERATION. ALL 1VDC/SEC RAMPES ARE GENERATED BY PLC. INPUT SIGNALS SHALL BE SWITCHED USING RELAYS WITH GOLD PLATED DRY CONTACTS SUITABLE FOR SMALL CURRENT 1MILLIAMPERE. RELAY CR-E CAN BE ENERGIZED ONLY WHEN PRESSURE SWITCH PS37 IS CLOSED, RELAY CR-W CAN BE ENERGIZED ONLY WHEN PRESSURE SWITCH PS38 IS CLOSED (CONTROL PRESSURE IS HIGHER THAN 50 PSI).
3. OUTPUT CURRENT FROM 500 DRIVER CARDS (A22/A28): 400 MILLIAMPERE MAX. LIMIT. ACTUAL VOLTAGE BETWEEN WIRES (I329A BLK-I334A CLR) & (I305A BLK-I310A CLR) ON THE EXISTING SYSTEM DURING LEAF RAISING AND LOWERING SHALL BE MEASURED AND RECORDED. USE ONLY SHIELDED (SCREEN) CABLES WITH A DRAIN WIRE FOR THESE SIGNALS. CONNECT CARD END OF SHIELD/DRAIN WIRE TO GROUND, LEAVE OTHER END OF SHIELD/DRAIN WIRE OPEN AND INSULATE FROM CONTACT WITH METAL PARTS.
4. CONTRACTOR SHALL NOT START THE ELECTRIC MOTORS THAT DRIVE THE PUMPS UNTIL ALL OF THE DRIVER CARD WIRING HAS BEEN CHECKED AND IS OPERATING CORRECTLY.
5. CONTRACTOR SHALL VERIFY ALL SIGNALS AND WIRING BEFORE ASSEMBLY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
		DRAWN BY WK	PLANS CK'D. AHN
HYDRAULIC PUMP DISPLACEMENT CONTROL BLOCK DIAGRAM		SHEET 20 OF 23	
		63	



ENERGIZING SEQUENCE OF VALVES
DURING NORMAL BRIDGE OPENING
(2) ELECTRIC MOTORS /HYDRAULIC PUMPS ARE WORKING
(2) HYDRAULIC MOTORS ARE WORKING



ENERGIZING SEQUENCE OF VALVES
DURING NORMAL BRIDGE CLOSING
(2) ELECTRIC MOTORS /HYDRAULIC PUMPS ARE WORKING
(2) HYDRAULIC MOTORS ARE WORKING

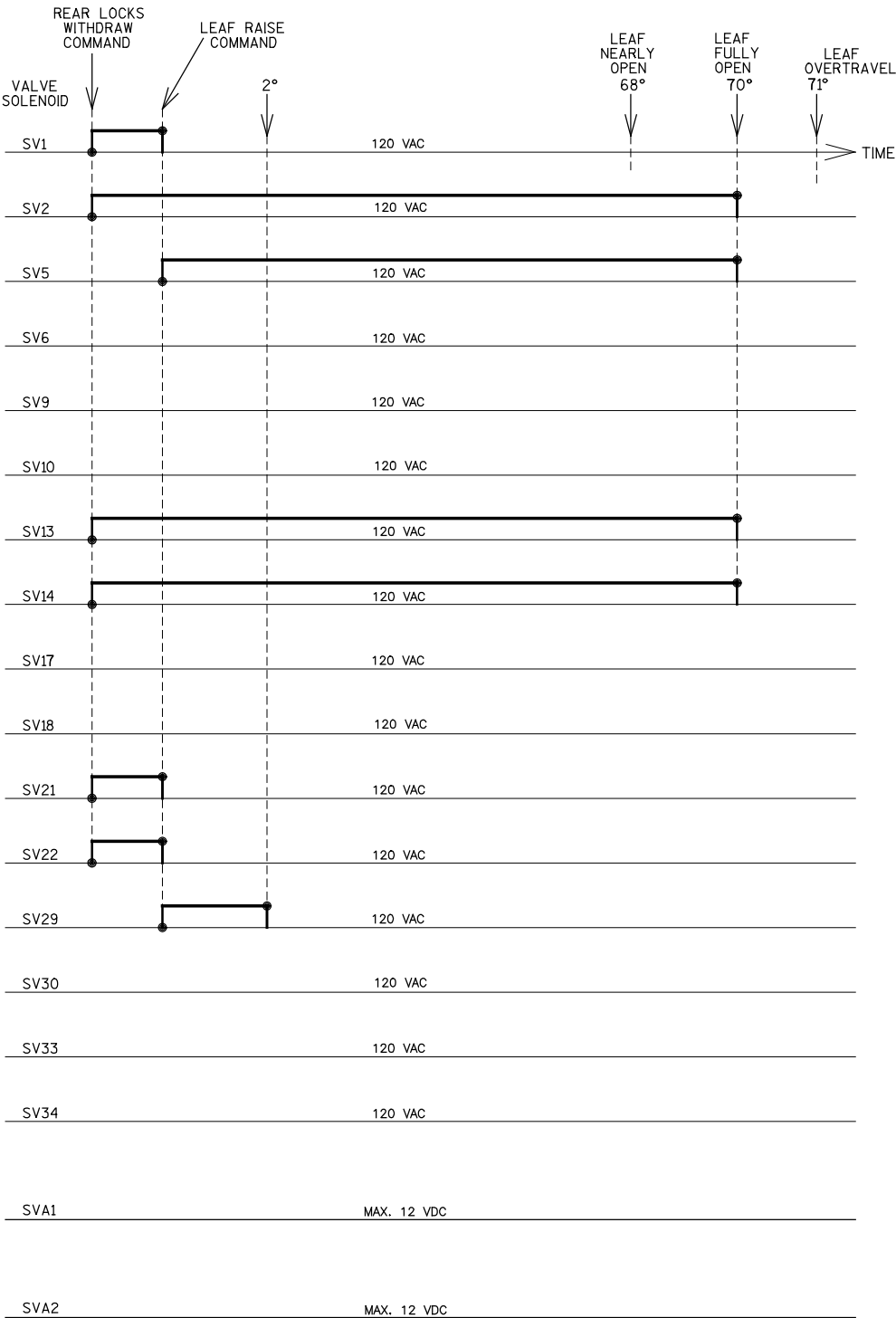
NOTES:

1. CONTRACTOR SHALL NOT START THE ELECTRIC MOTORS THAT DRIVE THE PUMPS UNTIL ALL OF THE SIGNALS AND WIRING HAVE BEEN CHECKED AND ARE OPERATING CORRECTLY.
2. CONTRACTOR SHALL VERIFY ALL INFORMATION ON THIS DRAWING BEFORE ASSEMBLY. SEE SHEET 20 FOR MORE DETAILS.

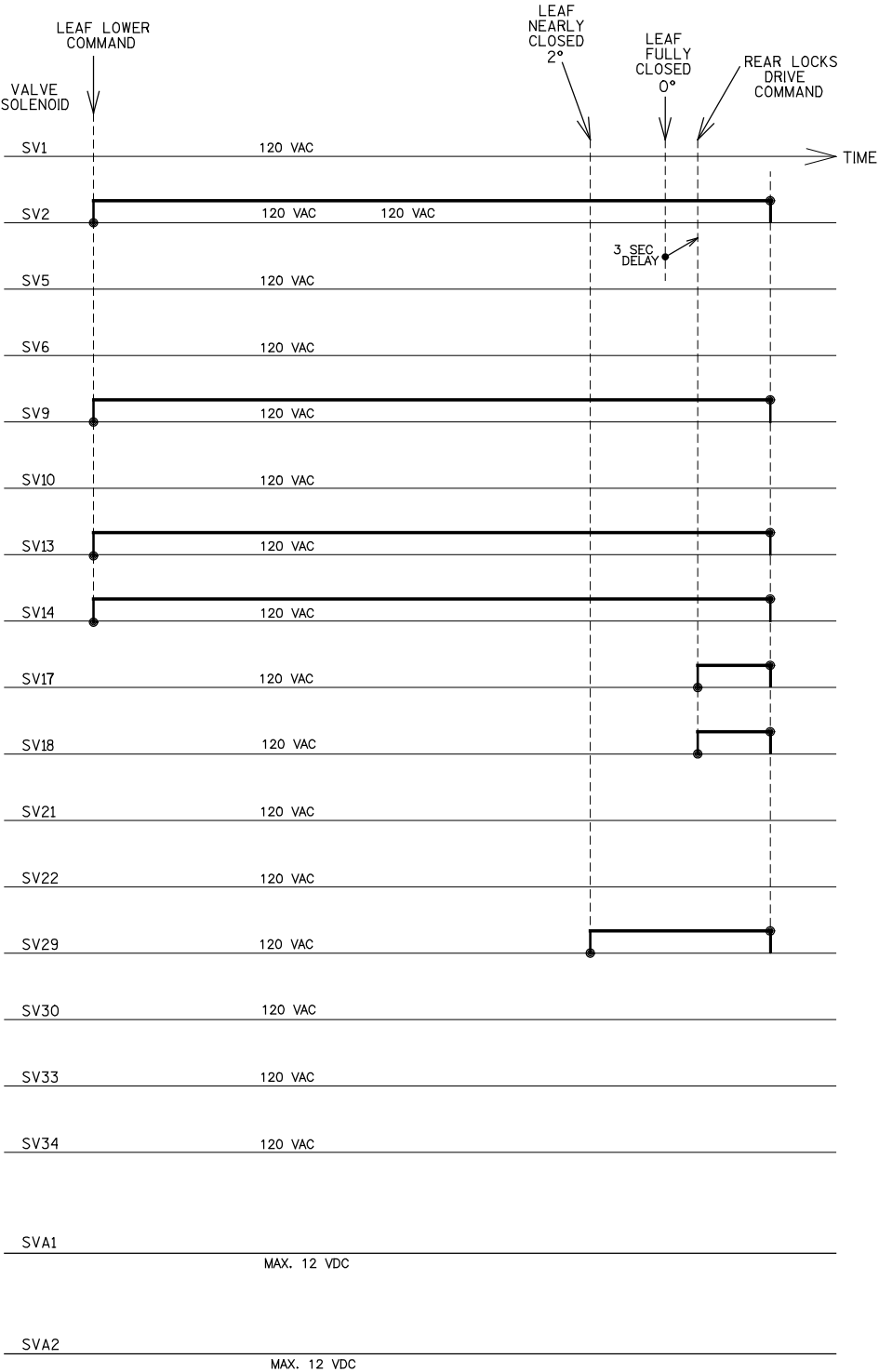
VALVE SOLENOID DESCRIPTION

- SV1 -E. FREEWHEEL VALVE
- SV2 -W. FREEWHEEL VALVE
- SV5 -E. BLOCKING VALVE (RAISE)
- SV6 -W. BLOCKING VALVE (RAISE)
- SV9 -E. BLOCKING VALVE (LOWER)
- SV10 -W. BLOCKING VALVE (LOWER)
- SV13 -E. BRAKE RELEASE VALVE
- SV14 -W. BRAKE RELEASE VALVE
- SV17 -E. TAIL LOCK DRIVE VALVE
- SV18 -W. TAIL LOCK DRIVE VALVE
- SV21 -E. TAIL LOCK PULL VALVE
- SV22 -W. TAIL LOCK PULL VALVE
- SV29 -E. LEAF WINDUP VALVE
- SV30 -W. LEAF WINDUP VALVE
- SV33 -E. HPU OIL EXCHANGE VALVE
- SV34 -W. HPU OIL EXCHANGE VALVE
- SVA1 -E. PUMP CONTROL SERVO VALVE
- SVA2 -W. PUMP CONTROL SERVO VALVE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY WK		PLANS CK'D. AHN	
HYDRAULIC VALVES SEQUENCE DIAGRAM NORMAL LEAF CONTROL			SHEET 21 OF 23
			64



ENERGIZING SEQUENCE OF VALVES DURING EMERGENCY BRIDGE OPENING
(WITHOUT PLC & WITHOUT SERVOS)
ONLY EAST ELECTRIC MOTOR /HYDRAULIC PUMP IS WORKING
ONLY EAST HYDRAULIC MOTOR IS WORKING



ENERGIZING SEQUENCE OF VALVES DURING EMERGENCY BRIDGE CLOSING
(WITHOUT PLC & WITHOUT SERVOS)
ONLY EAST ELECTRIC MOTOR /HYDRAULIC PUMP IS WORKING
ONLY EAST HYDRAULIC MOTOR IS WORKING

NOTES:

1. CONTRACTOR SHALL NOT START THE ELECTRIC MOTORS THAT DRIVE THE PUMPS UNTIL ALL OF THE SIGNALS AND WIRING HAVE BEEN CHECKED AND ARE OPERATING CORRECTLY.

2. CONTRACTOR SHALL VERIFY ALL INFORMATION ON THIS DRAWING BEFORE ASSEMBLY. SEE SHEET 20 FOR MORE DETAILS.

STATE PROJECT NUMBER
4065-15-71

VALVE SOLENOID DESCRIPTION

SV1 -E. FREEWHEEL VALVE
SV2 -W. FREEWHEEL VALVE

SV5 -E. BLOCKING VALVE (RAISE)
SV6 -W. BLOCKING VALVE (RAISE)

SV9 -E. BLOCKING VALVE (LOWER)
SV10 -W. BLOCKING VALVE (LOWER)

(*) SV13 -E. BRAKE RELEASE VALVE
(*) SV14 -W. BRAKE RELEASE VALVE

(*) SV17 -E. TAIL LOCK DRIVE VALVE
(*) SV18 -W. TAIL LOCK DRIVE VALVE

(*) SV21 -E. TAIL LOCK PULL VALVE
(*) SV22 -W. TAIL LOCK PULL VALVE

SV29 -E. LEAF WINDUP VALVE
SV30 -W. LEAF WINDUP VALVE

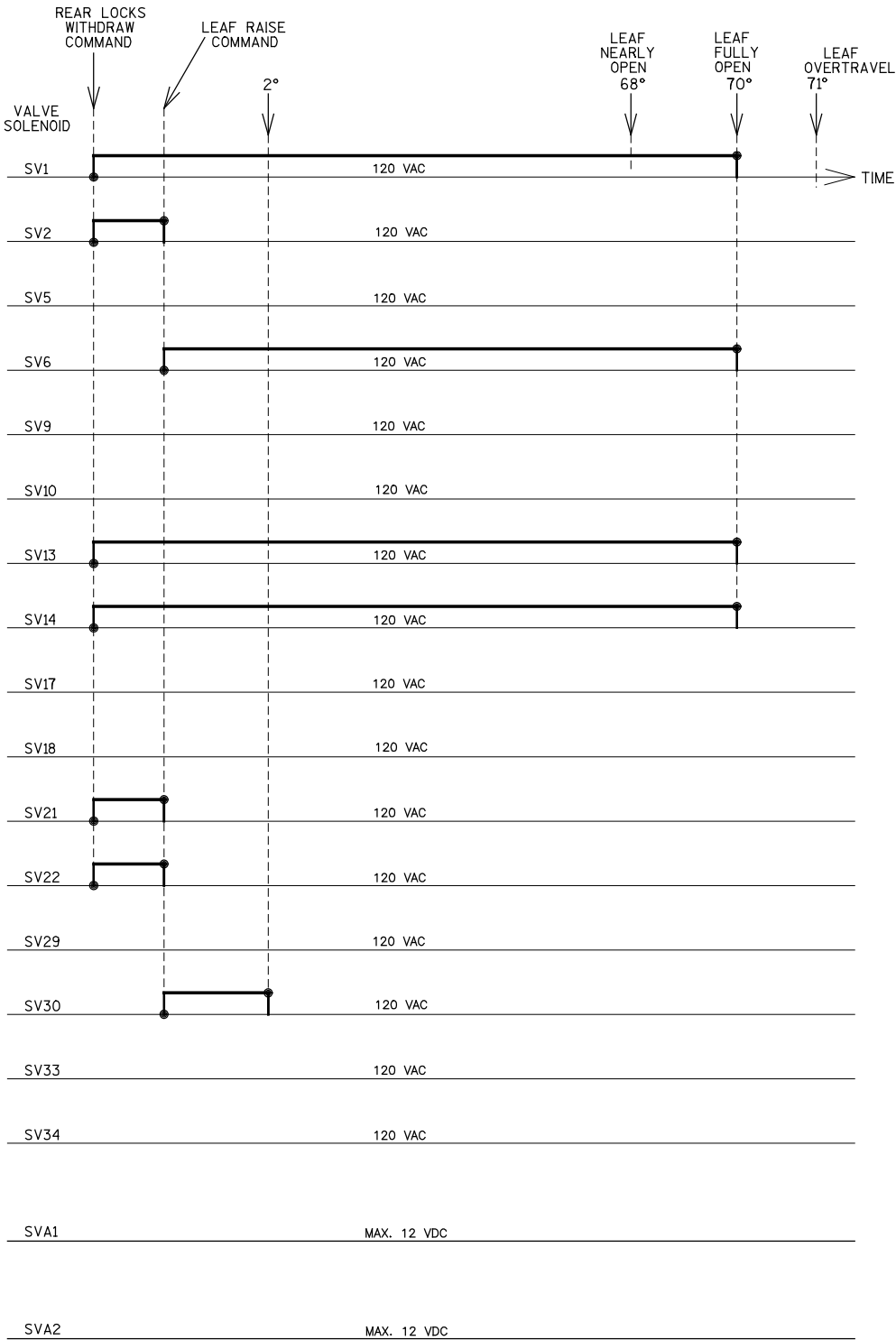
SV33 -E. HPU OIL EXCHANGE VALVE
SV34 -W. HPU OIL EXCHANGE VALVE

SVA1 -E. PUMP CONTROL SERVO VALVE
SVA2 -W. PUMP CONTROL SERVO VALVE

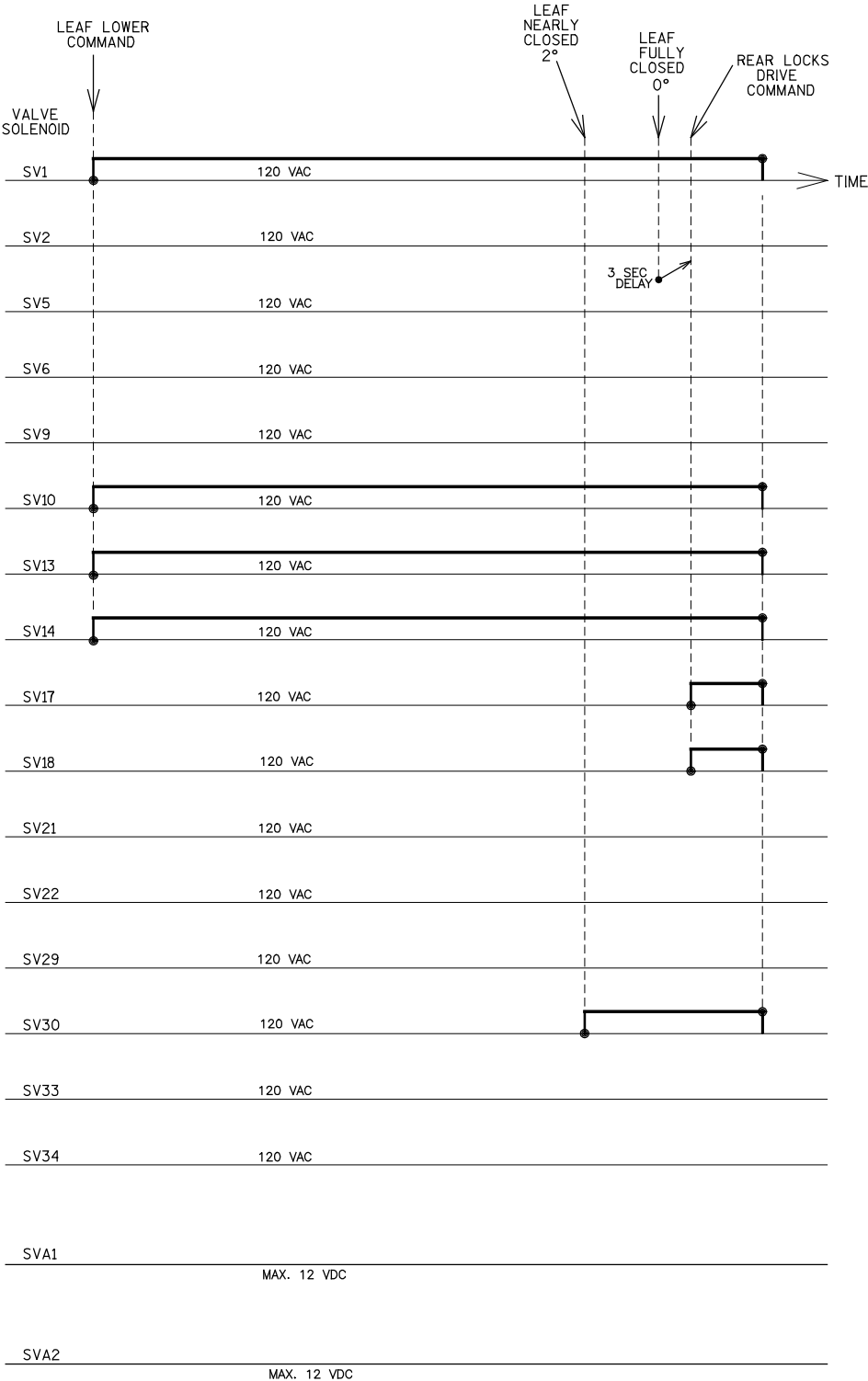
(*) TAIL LOCKS AND BRAKES CAN BE OPERATED MANUALLY BY HAND HYDRAULIC PUMPS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY WK		PLANS CK'D. AHN	
HYDRAULIC VALVES SEQUENCE DIAGRAM EMERGENCY OPERATION 1		SHEET 22 OF 23	

65



ENERGIZING SEQUENCE OF VALVES DURING EMERGENCY BRIDGE OPENING
(WITHOUT PLC & WITHOUT SERVOS)
ONLY WEST ELECTRIC MOTOR /HYDRAULIC PUMP IS WORKING
ONLY WEST HYDRAULIC MOTOR IS WORKING



ENERGIZING SEQUENCE OF VALVES DURING EMERGENCY BRIDGE CLOSING
(WITHOUT PLC & WITHOUT SERVOS)
ONLY WEST ELECTRIC MOTOR /HYDRAULIC PUMP IS WORKING
ONLY WEST HYDRAULIC MOTOR IS WORKING

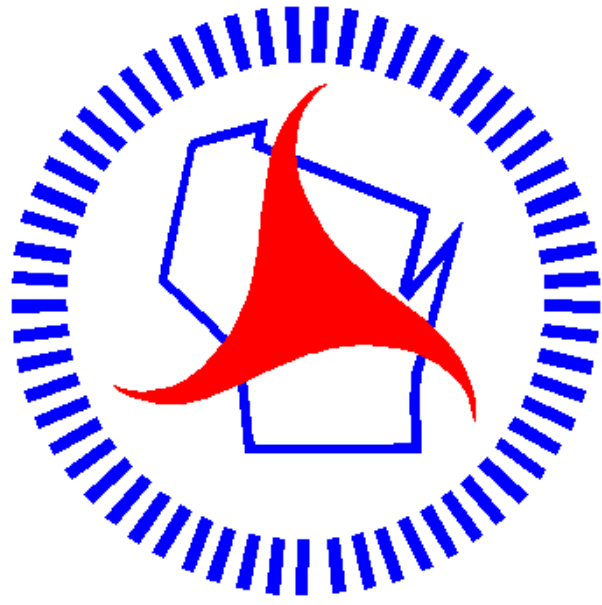
NOTES:
1. CONTRACTOR SHALL NOT START THE ELECTRIC MOTORS THAT DRIVE THE PUMPS UNTIL ALL OF THE SIGNALS AND WIRING HAVE BEEN CHECKED AND ARE OPERATING CORRECTLY.
2. CONTRACTOR SHALL VERIFY ALL INFORMATION ON THIS DRAWING BEFORE ASSEMBLY. SEE SHEET 20 FOR MORE DETAILS.

VALVE SOLENOID DESCRIPTION	
SV1	-E. FREEWHEEL VALVE
SV2	-W. FREEWHEEL VALVE
SV5	-E. BLOCKING VALVE (RAISE)
SV6	-W. BLOCKING VALVE (RAISE)
SV9	-E. BLOCKING VALVE (LOWER)
SV10	-W. BLOCKING VALVE (LOWER)
(*) SV13	-E. BRAKE RELEASE VALVE
(*) SV14	-W. BRAKE RELEASE VALVE
(*) SV17	-E. TAIL LOCK DRIVE VALVE
(*) SV18	-W. TAIL LOCK DRIVE VALVE
(*) SV21	-E. TAIL LOCK PULL VALVE
(*) SV22	-W. TAIL LOCK PULL VALVE
SV29	-E. LEAF WINDUP VALVE
SV30	-W. LEAF WINDUP VALVE
SV33	-E. HPU OIL EXCHANGE VALVE
SV34	-W. HPU OIL EXCHANGE VALVE
SVA1	-E. PUMP CONTROL SERVO VALVE
SVA2	-W. PUMP CONTROL SERVO VALVE

(*) TAIL LOCKS AND BRAKES CAN BE OPERATED MANUALLY BY HAND HYDRAULIC PUMPS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-70-097			
DRAWN BY WK		PLANS CK'D. AHN	
HYDRAULIC VALVES SEQUENCE DIAGRAM EMERGENCY OPERATION 2		SHEET 23 OF 23	

Notes



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

GRE JUN 2013

PROJECT ID: 4180-07-71
WITH: 4065-15-71 & 9210-14-71

COUNTY: BROWN

ORDER OF SHEETS

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

TOTAL SHEETS = 28



09

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WALNUT STREET BRIDGE

WALNUT STREET BRIDGE

STH 29

BROWN COUNTY

STATE PROJECT NUMBER
4180-07-71

PROJECT LOCATION
B-05-0269



LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY
COORDINATE SYSTEM (WCCS), BROWN COUNTY."

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4180-07-71		

ORIGINAL PLANS PREPARED BY



HARDESTY & HANOVER, LLP
ENGINEERING
1501 BROADWAY NEW YORK, NY 10036



02.19.13 *[Signature]*

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	N/A
Designer	HARDESTY & HANOVER, LLP
Project Manager	JASON LAHM
Regional Examiner	JASON LAHM
Regional Supervisor	KURT MIRANOVSKY
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 2/20/13 *[Signature]*
(Signature)

E

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE NOT SHOWN ON THE PLANS DUE TO THE LIMITED NATURE OF DISTURBANCE. THE UTILITY LOCATIONS ARE DESCRIBED IN THE SPECIAL PROVISIONS AND THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE DESCRIBED.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

OTHER CONTACTS

WISCONSIN DNR

JIM DOPERALSKI, JR.
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
PHONE: 920-662-5119

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TODD VESPERMAN.
OLD FORT SQUARE
211N BROADWAY, SUITE 221
GREEN BAY, WI 54303
PHONE: 920-448-2824

UNITED STATES COAST GUARD

MR. LEE SOULE
COMMANDER (DPB)
NINTH COAST GUARD DISTRICT
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060
OFFICE: (216) 902-6085
FAX: (216) 902-6088
LEE.D.SOULE@USCG.MIL

DESIGNER NOTES

TITLE SHEET, GENERAL NOTES, AND UTILITY COORDINATION COMPLETED BY EMCS, INC.
STRUCTURE PLANS COMPLETED BY HARDESTY AND HANOVER, LLP

UTILITIES

ATC MANAGEMENT, INC.

(ELECTRIC-TRANSMISSION)
MIKE OLSEN
801 O'KEEFE ROAD
PO BOX 6113
DE PERE, WI 54115-6113
PHONE: 920-338-6582
MOBILE: 920-660-2390
molsen@atcillc.com

GREEN BAY WATER UTILITY

(WATER)
BRIAN POWELL
631 SOUTH ADAMS STREET
GREEN BAY, WI 54301
PHONE: 920-448-3480
MOBILE: 920-621-0468
brianpw@greenbaywi.gov

AT&T WISCONSIN

(TELECOMMUNICATIONS)
ERIC ADAIR
AT&T WI DESIGN ENGINEERING
205 SOUTH JEFFERSON STREET
GREEN BAY, WI 54301
PHONE: 920-433-4155
AZ9216@att.com

WISCONSIN PUBLIC SERVICE

(ELECTRIC - DISTRIBUTION & GAS)
GENERAL CONTACT:
LORIBUTRY
700 NORTH ADAMS STREET
PO BOX 19001
GREEN BAY, WI 54307-9001
PHONE: 920-433-1703
FAX: 920-433-1360
LAButry@integrysgruop.com

CITY OF GREEN BAY

(LIGHTING & SANITARY SEWER)
KRISTIN ROMANOWICZ
ASSISTANT CITY ENGINEER
100 NORTH JEFFERSON STREET
ROOM 300
GREEN BAY, WI 54301
PHONE: 920-448-3094
MOBILE: 920-680-3529
kristinro@ci.green-bay.wi.us

ELECTRIC CONTACT:

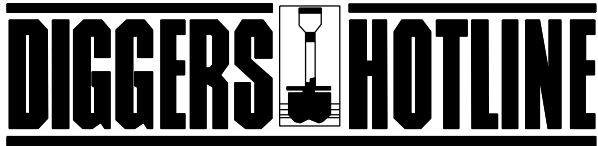
RANDY STEIER
2850 S. ASHLAND AVENUE
PO BOX 19001
GREEN BAY, WI 54307-9001
PHONE: 920-617-5167
MOBILE: 920-655-1596
rdsteier@wisconsinpublicservice.com

GREEN BAY METROPOLITAN
SEWERAGE DISTRICT

(SANITARY SEWER)
ROBERT REINHART
2231 NORTH QUINCY STREET
GREEN BAY, WI 54302-1248
PHONE: 920-438-1035
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GAS CONTACT:

PHIL MAUERMANN
2850 S. ASHLAND AVENUE
PO BOX 19001
GREEN BAY, WI 54307-9001
PHONE: 920-617-5092
MOBILE: 920-606-8448
pgmauermann@wisconsinpublicservice.com



Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

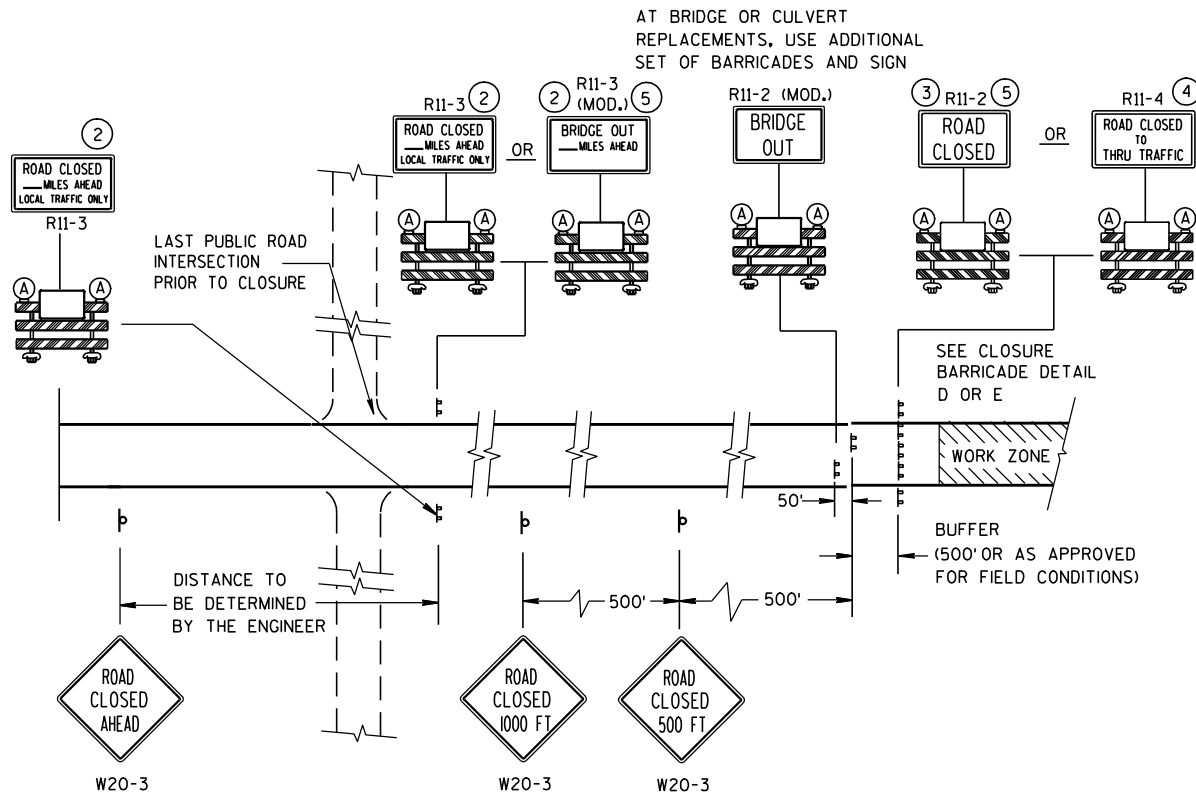
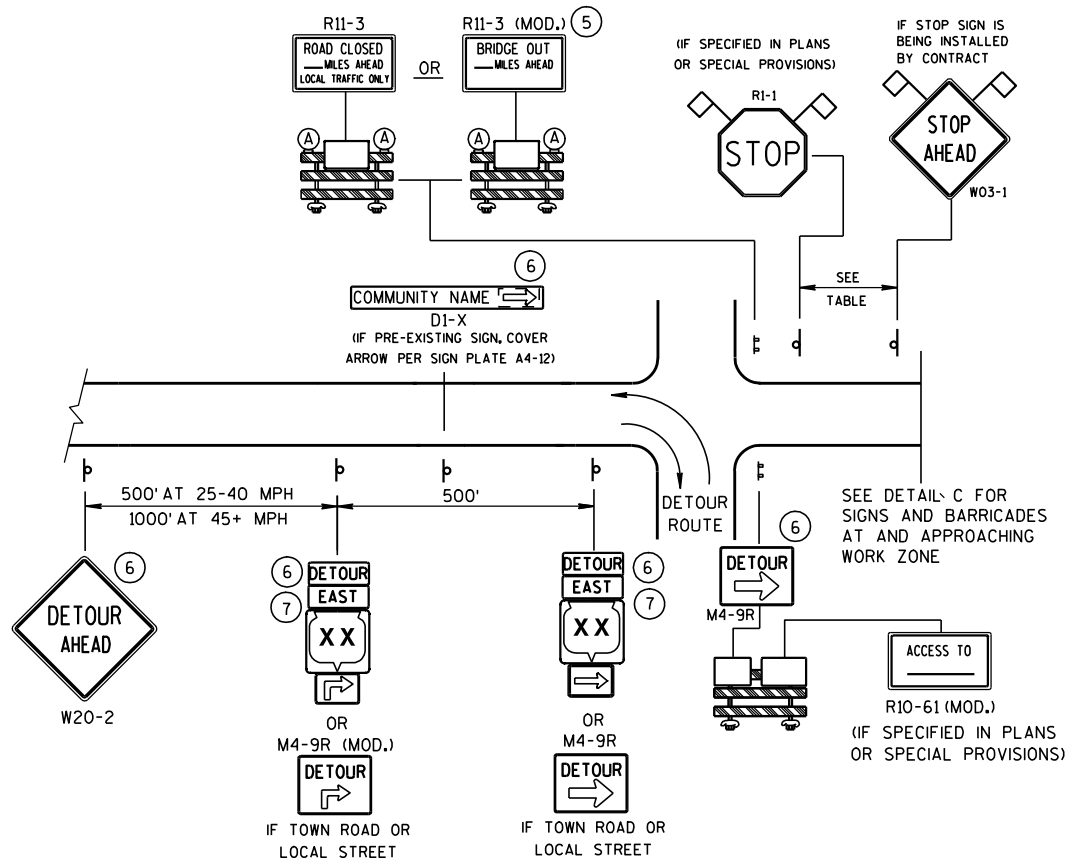
TO OBTAIN LOCATION OF
PARTICIPANTS UNDERGROUND
FACILITIES BEFORE YOU
DIG IN WISCONSIN

WISCONSIN STATUTE 182.0175 (1974)
REQUIRES MINIMUM OF 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE.

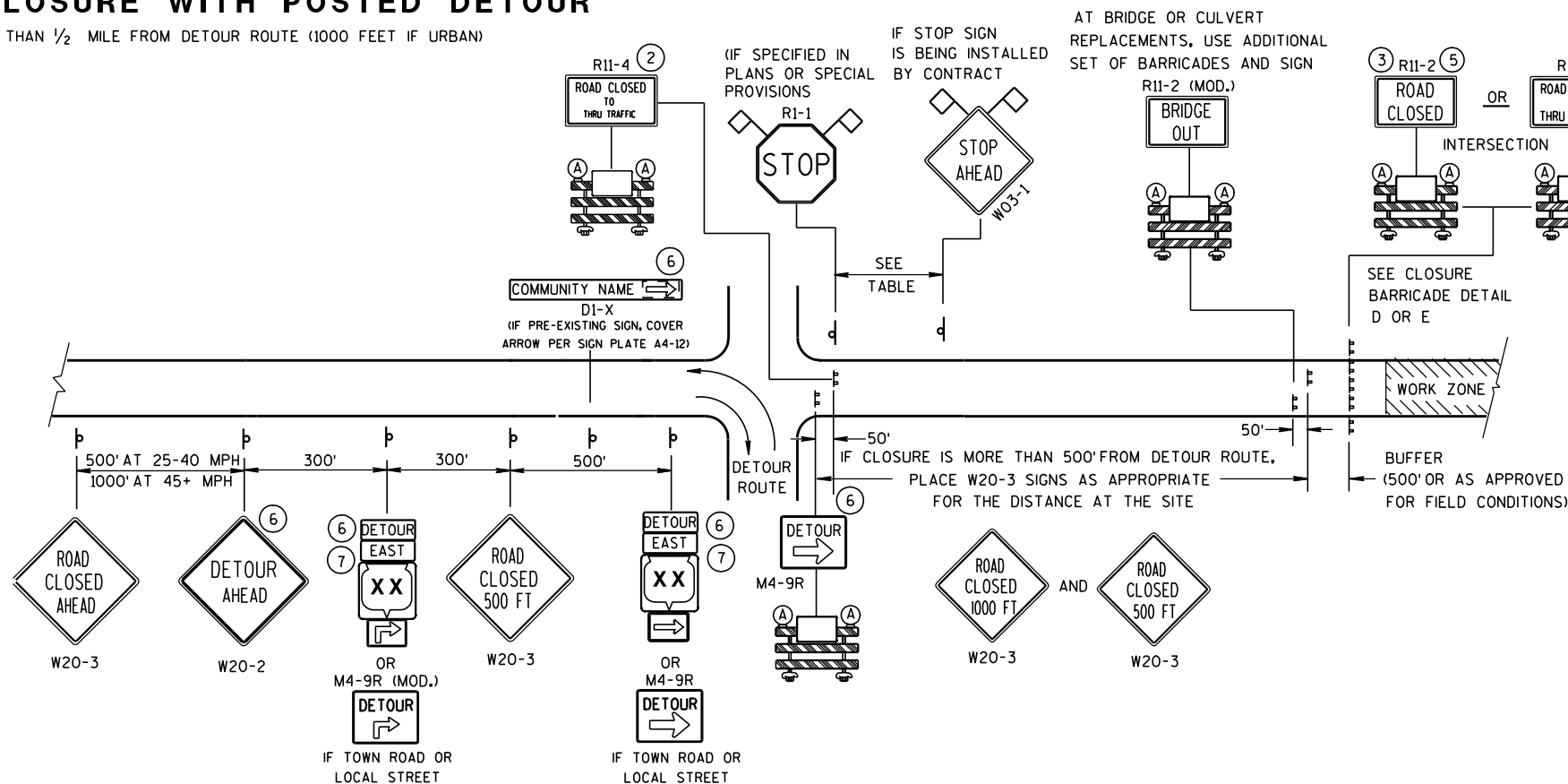
DATE 16APR13			E S T I M A T E O F Q U A N T I T I E S			
LINE			4180-07-71			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0320	619.1000	MOBILIZATION	EACH	0.150	0.150	
0400	643.0100	TRAFFIC CONTROL (PROJECT) 02. 4180-07-71	EACH	1.000	1.000	
0600	SPV.0105	SPECIAL 02. WALNUT STREET BRIDGE	LS	1.000	1.000	
		ELECTRICAL WORK, B-05-269				
0630	SPV.0105	SPECIAL 05. WALNUT STREET BRIDGE CCTV	LS	1.000	1.000	
		SYSTEM, B-05-269				

Standard Detail Drawing List

15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C05-01	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15D20-01	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-01	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D29-02	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

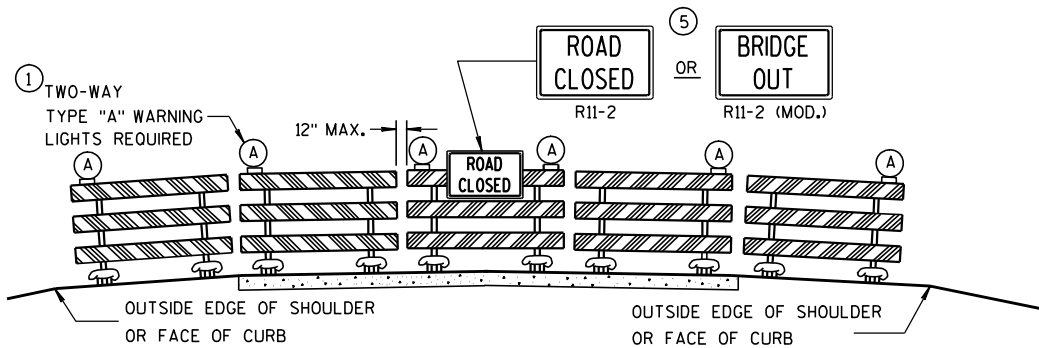
SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

LEGEND

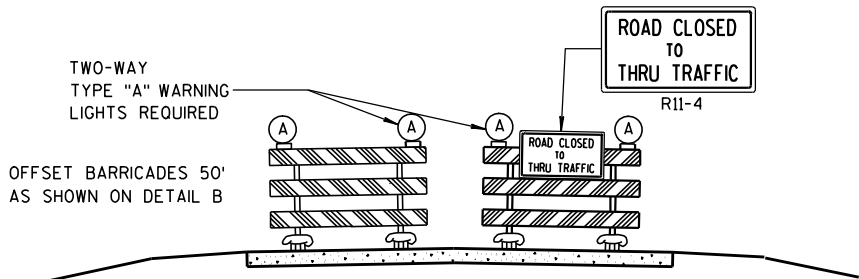
- POST MOUNTED SIGN
- TYPE III BARRICADES
- TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR EAST M4-8 M3-X
- MI-4 OR MI-5A OR MI-6
- MO5-1 OR MO6-1
- FLAGS, 16" X 16" MIN., (ORANGE)

**BARRICADES AND SIGNS
FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-4a 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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

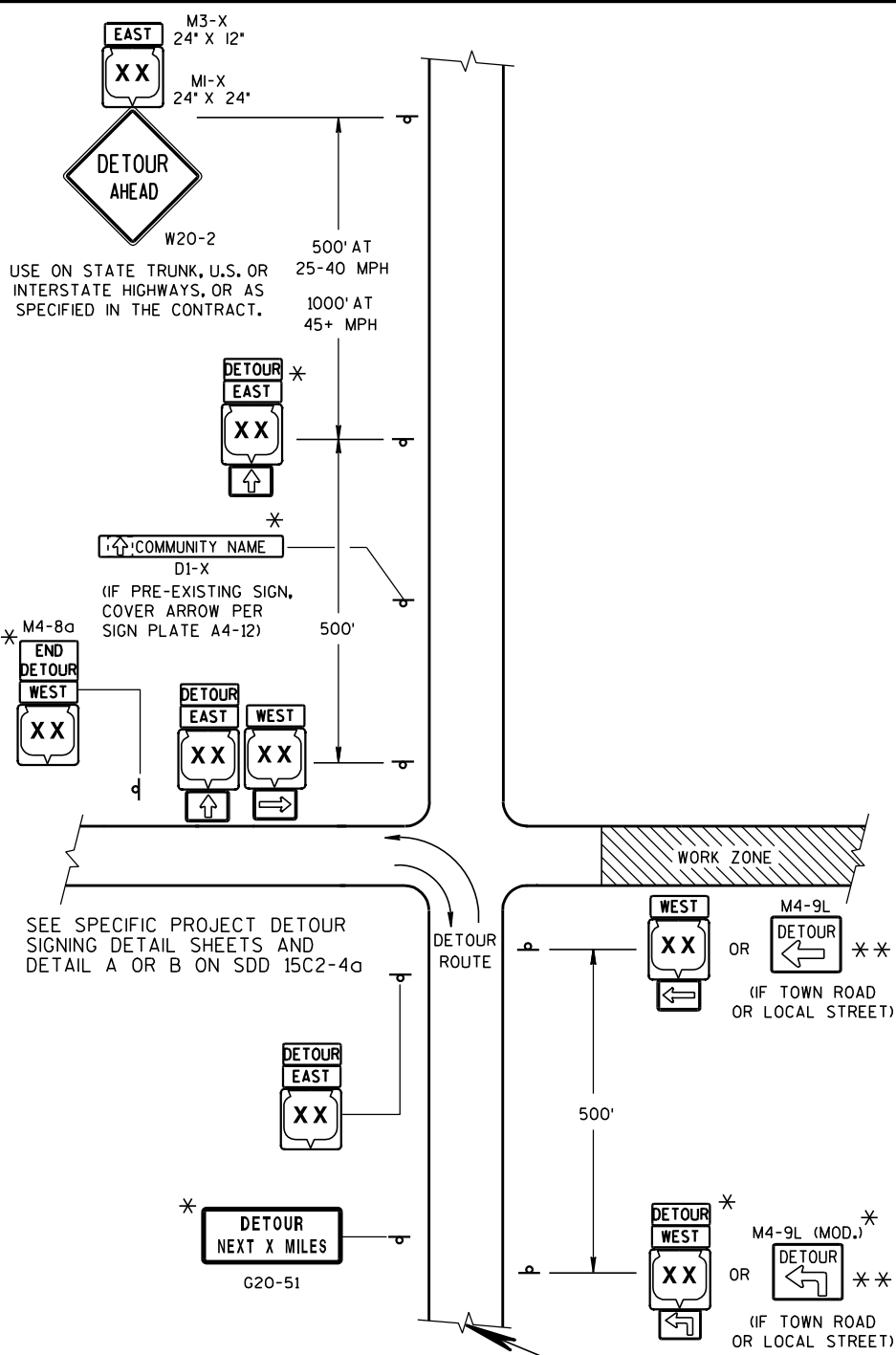
"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- 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 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 LANE 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 MAINLINE CLOSURES		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED		
9/16/03 DATE	/S/ Thomas N. N CHIEF SIGNS AND MAR 6	INEER
FHWA		



LEGEND

POST MOUNTED SIGN

WORK ZONE

DETOUR EAST M4-8 M3-X

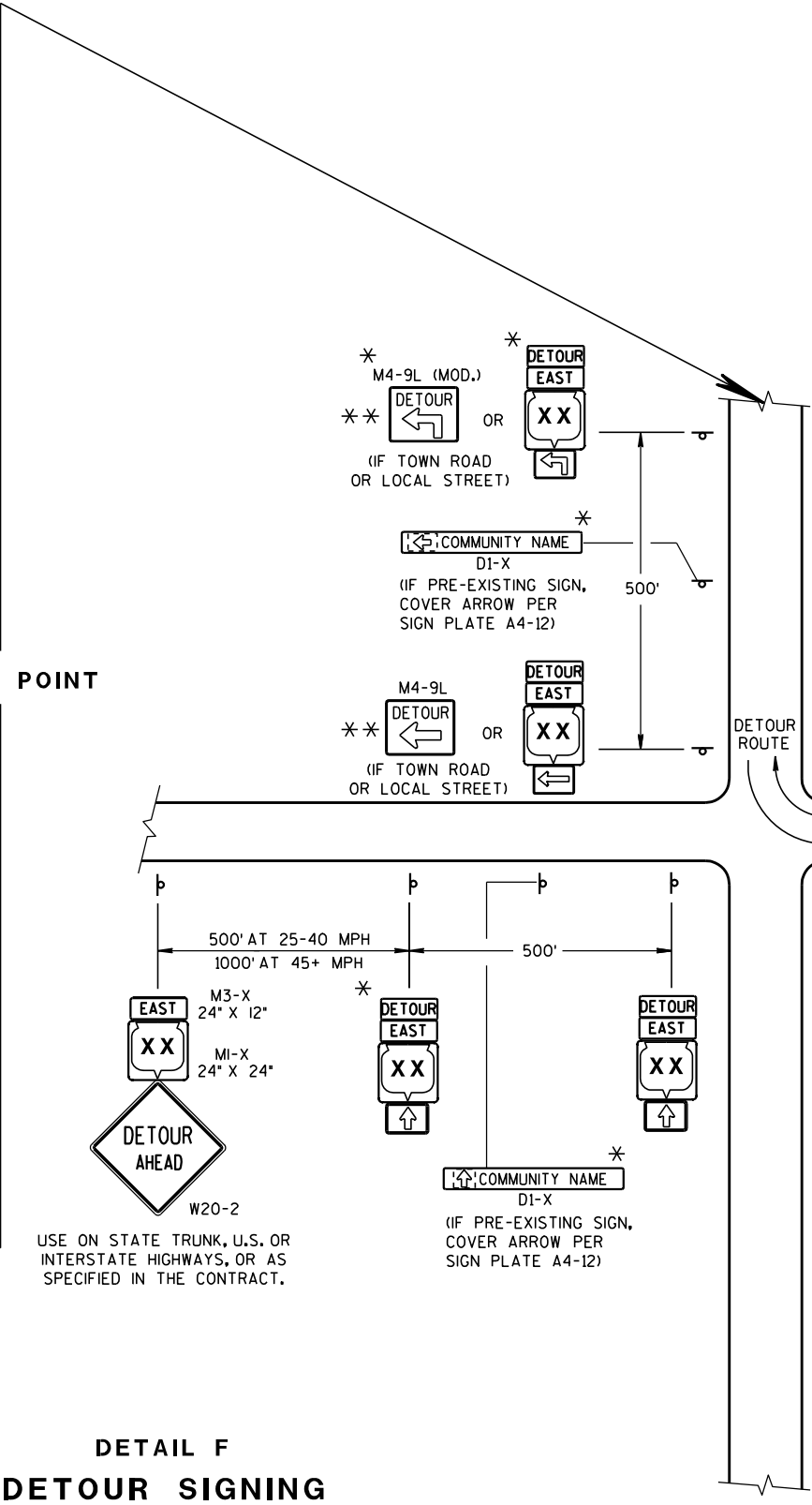
M1-4 OR COUNTY M1-5A OR M1-6

M05-1 OR M06-1 OR M06-1

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

MATCH POINT

DETAIL F
DETOUR SIGNING



GENERAL NOTES

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

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

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

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

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

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

SIGN SIZES SHALL BE AS FOLLOWS:

M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

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

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-9 SHALL BE 30" X 24".

M4-8a SHALL BE 24" X 18".

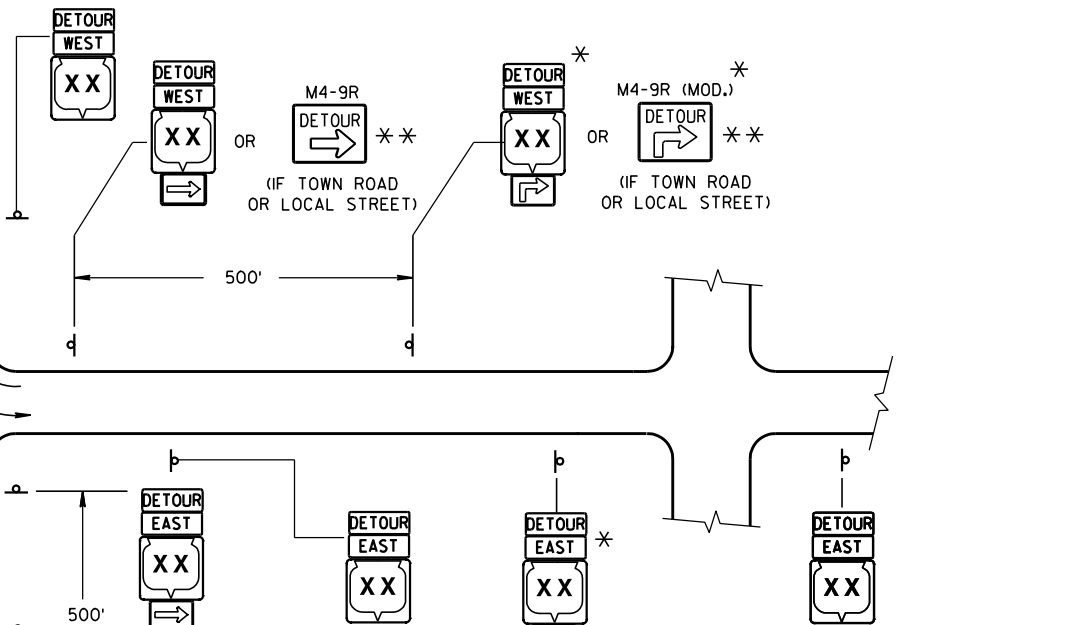
G20-51 SHALL BE 60" X 24".

W20-2 SHALL BE 48" X 48".

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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

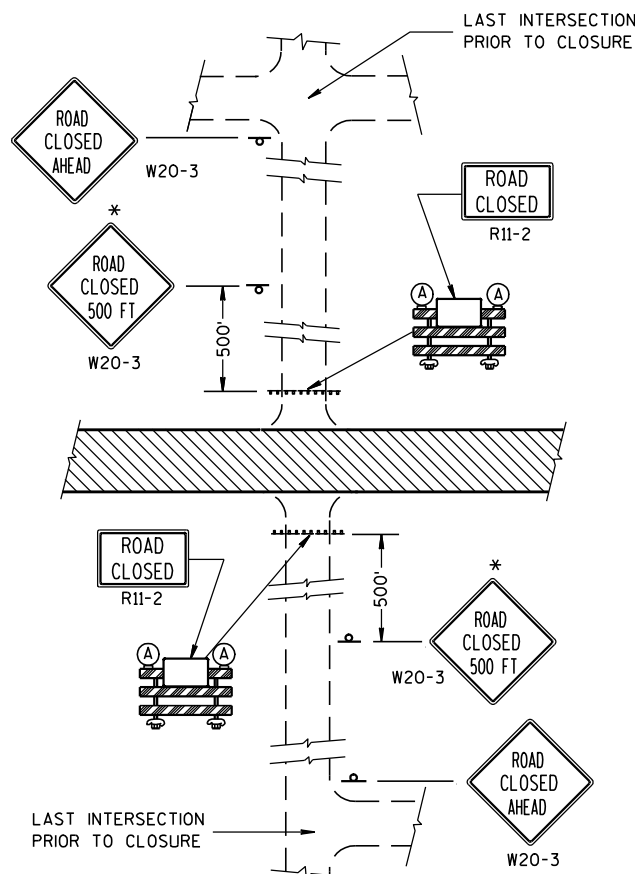


PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA.)

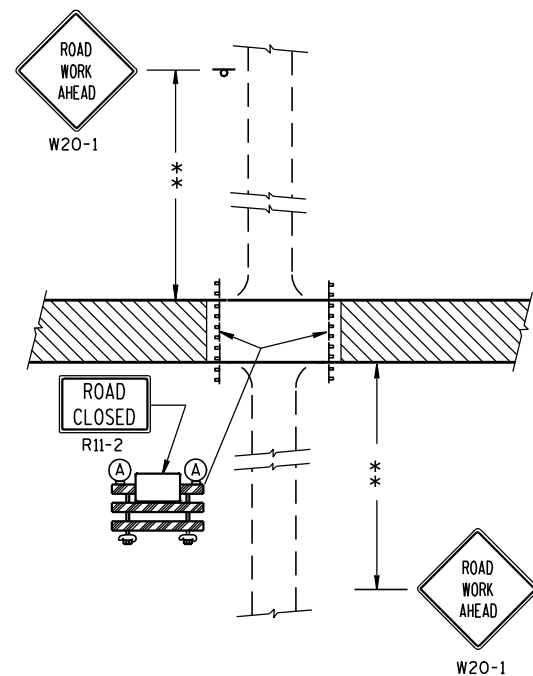
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

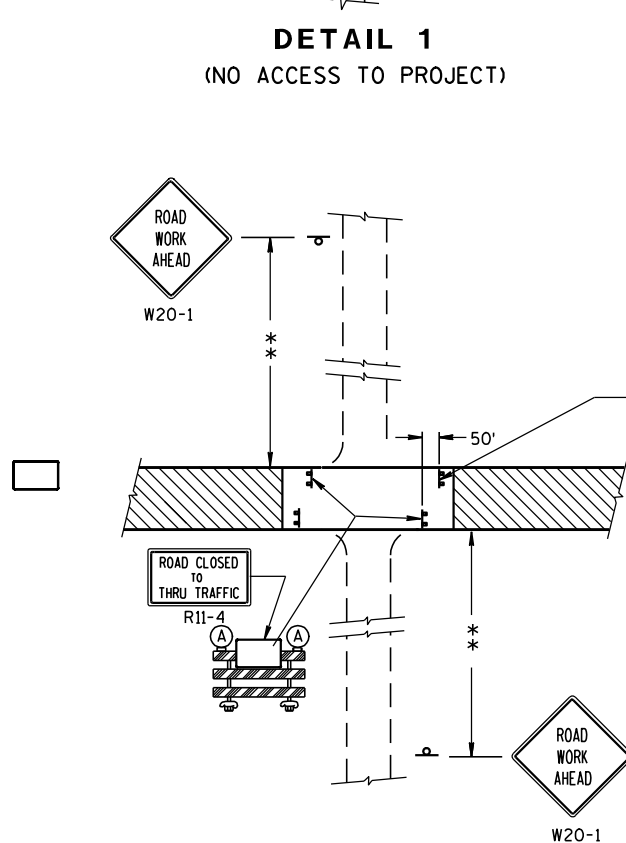
APPROVED
9-16-03 DATE /S/ Thomas N. N... CHIEF SIGNS AND MAR 7 INEER
FHWA



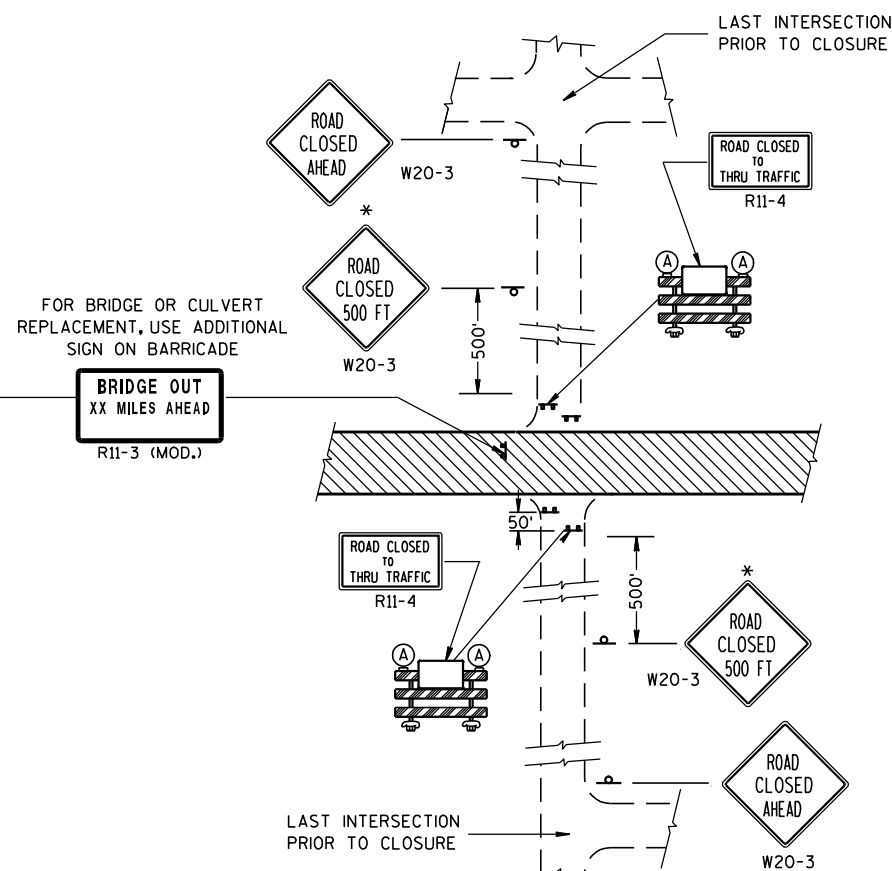
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

⌋ POST MOUNTED WARNING SIGN

⌋ TYPE III BARRICADES

Ⓐ TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)

▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

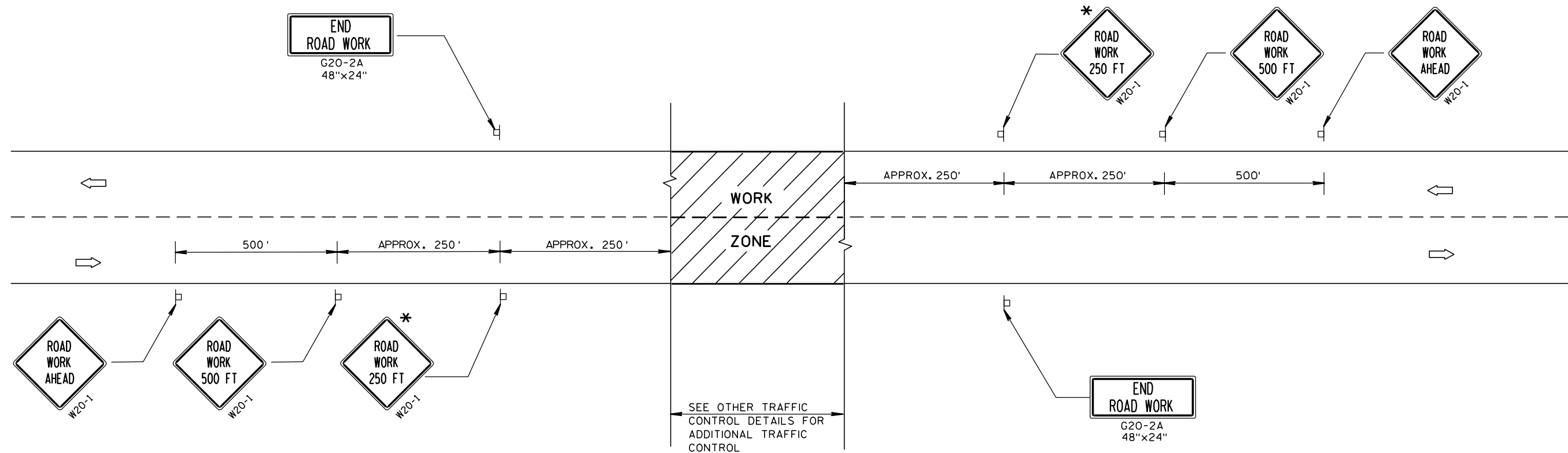
APPROVED

9-16-03

DATE

FHWA

/S/ Thomas N. N...
CHIEF SIGNS AND MAR 8 INEER



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.

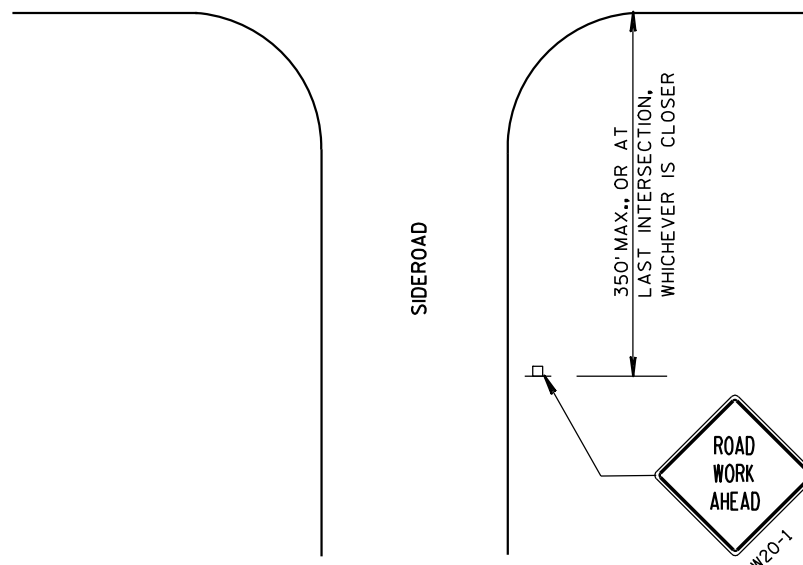
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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.

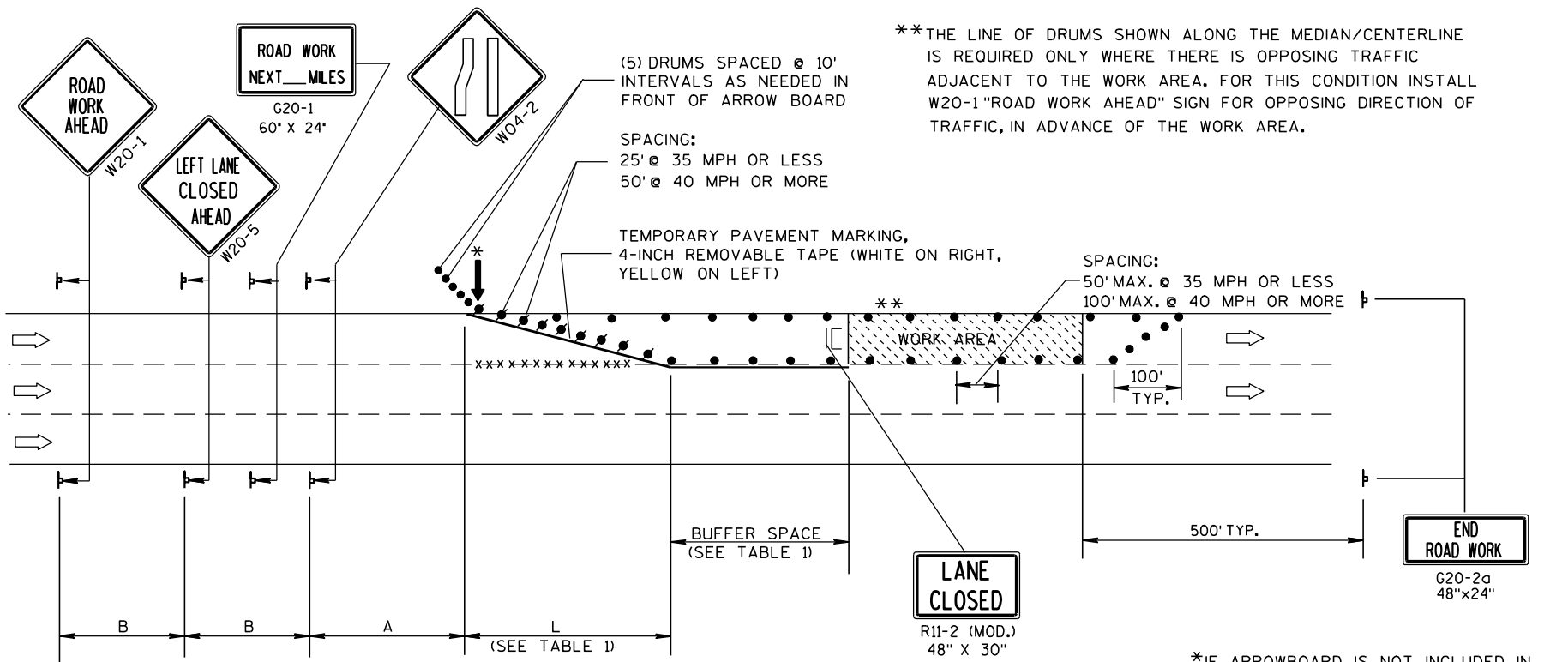
CENTER OF ROADWAY
MAINLINE ROADWAY UNDER CONSTRUCTION



LEGEND

- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

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 5/23/00 DATE	/S/ Chester J. 9 CHIEF SIGNS AND MARKING ENGINEER
FHWA	



B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

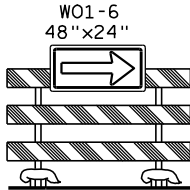
L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

(PLACE BARRICADE AND SIGN APPROX.
EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN
MISCELLANEOUS QUANTITIES, SUBSTITUTE
A TYPE III BARRICADE WITH W01-6 SIGN
IN THE LANE CLOSURE TAPER.



LEGEND

- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- POST MOUNTED SIGN
- ↑ ARROW BOARD
- IC/C TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHTS, TYPE A (FLASHING) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW
- xxxx REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

GENERAL NOTES

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

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

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 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 IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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.

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.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

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

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

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

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

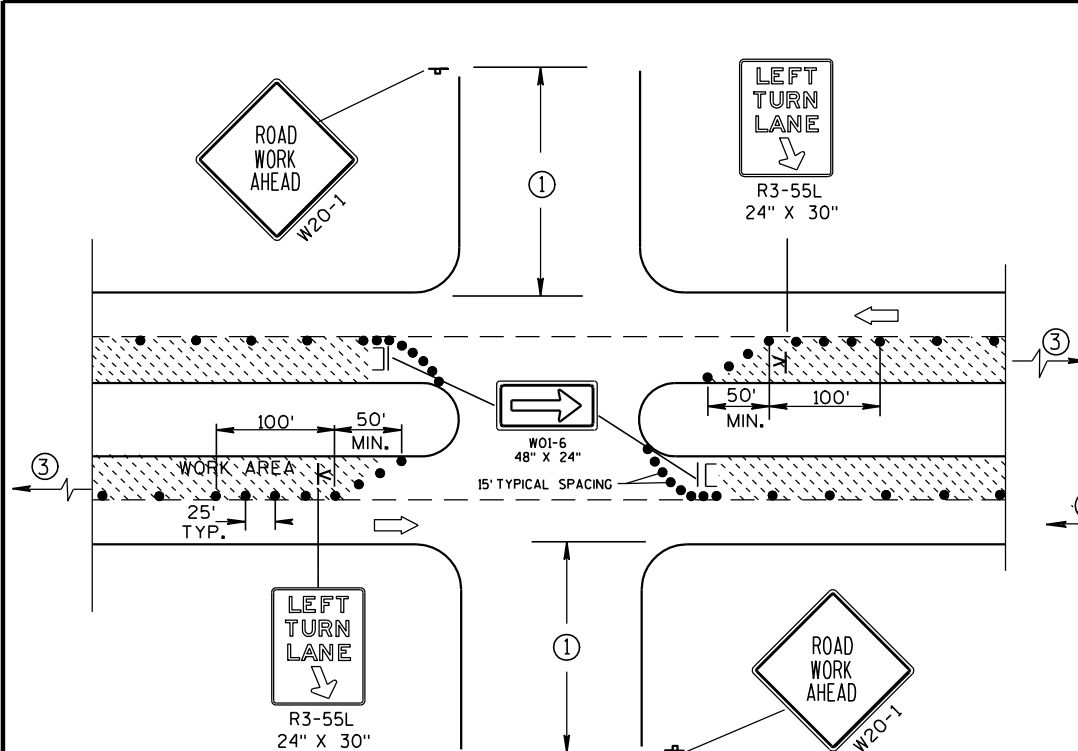
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

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

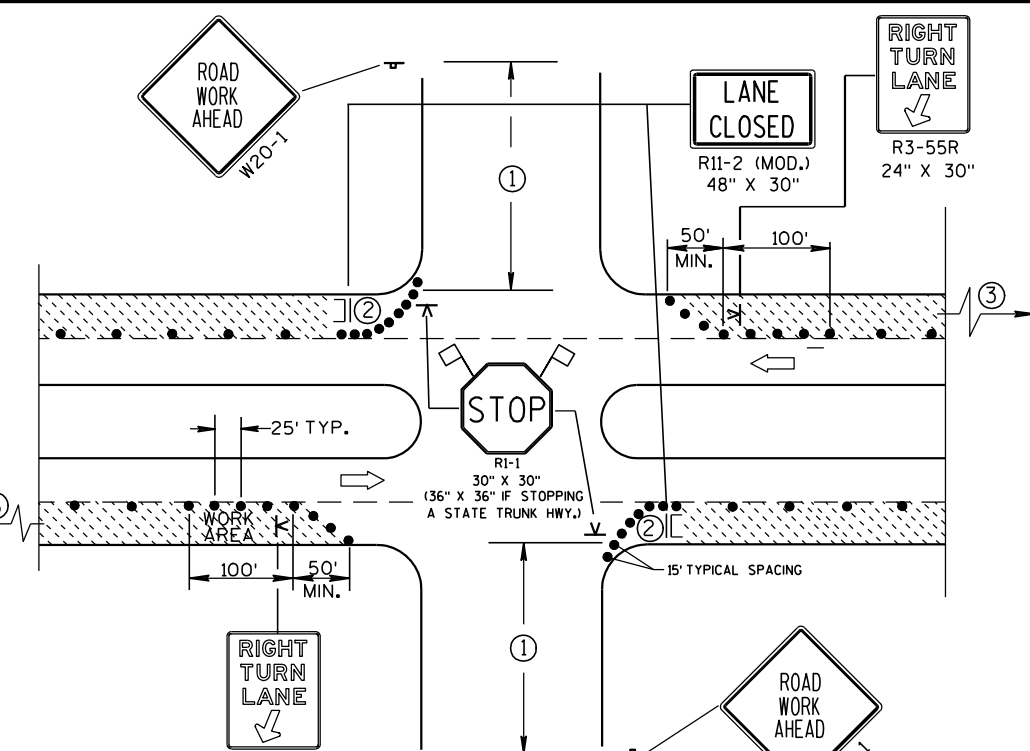
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. ...
DATE CHIEF SIGNS AND MARKINGS 10 INEER
FHWA



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

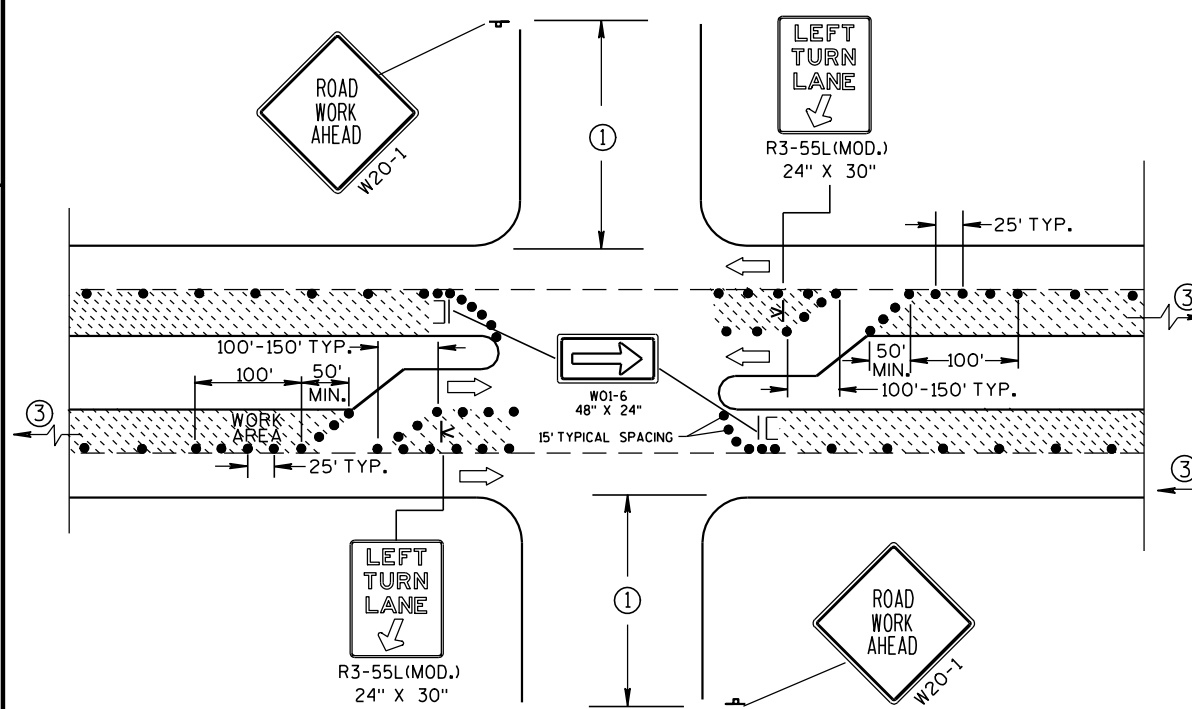
PROVIDE TURN LANES AT
INTERSECTIONS WHENEVER
STAGING OF WORK ALLOWS.
TAPER AND TURN LANE
LENGTHS BASED ON FIELD
CONDITIONS AS APPROVED
BY THE ENGINEER.



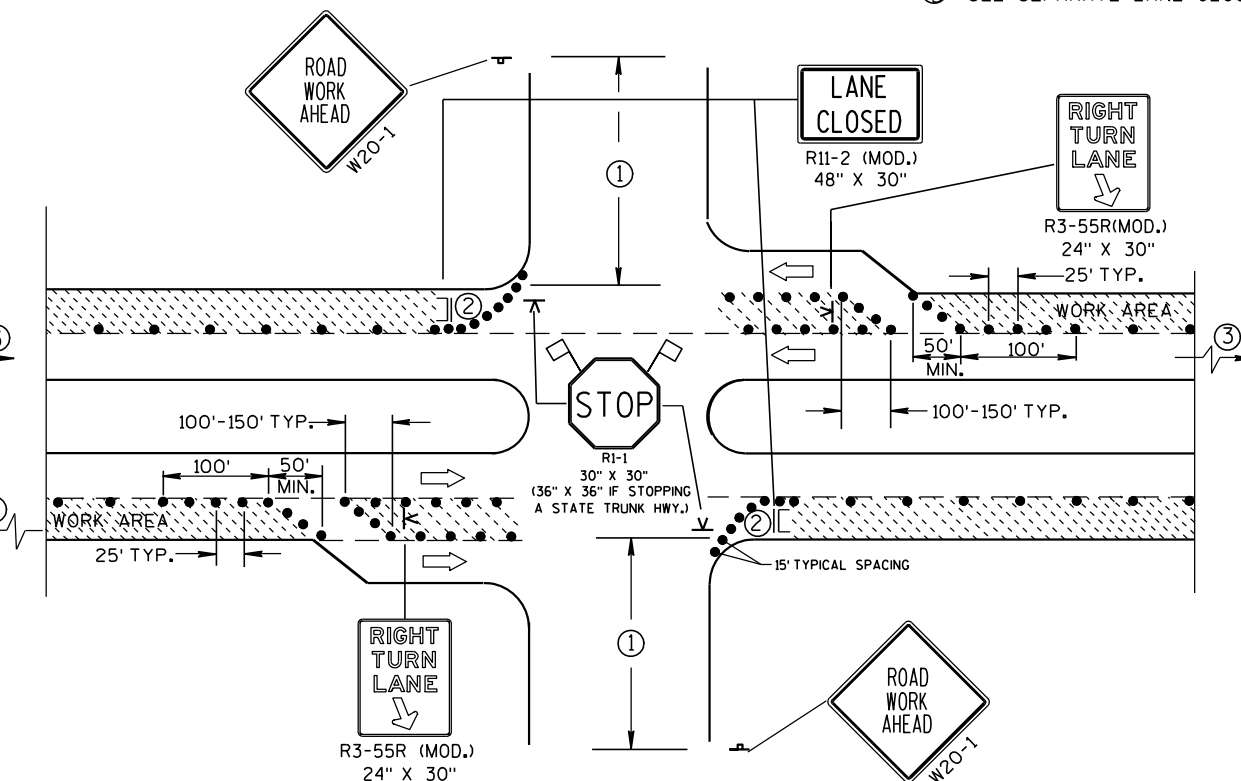
DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

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 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 IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 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, OR THAT WILL BE PLACED IN A CLOSED LANE, 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 WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.
- 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.
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
 - ② ALSO USE BARRICADE AND 15' TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
 - ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



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



DETAIL D
FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)

LEGEND

- DRUM
- ⊥ POST MOUNTED SIGN
- K SIGN ON PORTABLE SUPPORT (5' MIN. MOUNTING HEIGHT)
- || TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHT, TYPE A (FLASHING) WITH SIGN
- ➡ DIRECTION OF TRAFFIC FLOW
- 🚩 FLAGS, 16" X 16" MIN., ORANGE

TRAFFIC CONTROL,
INTERSECTION WITHIN
SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. Spang
DATE CHIEF SIGNS AND MAR 11 INEER
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.

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

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

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.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

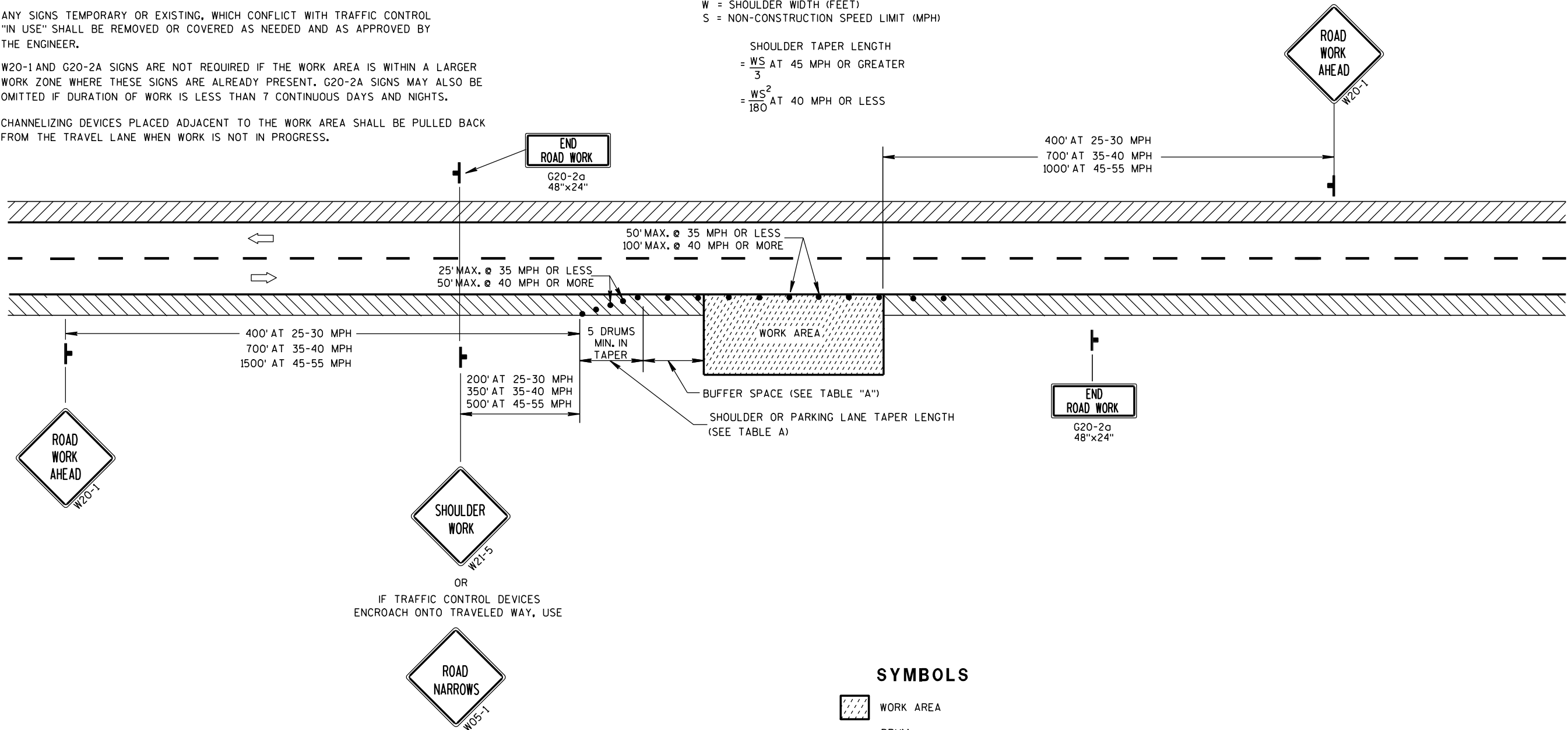
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= $\frac{WS}{3}$ AT 45 MPH OR GREATER
= $\frac{WS^2}{180}$ AT 40 MPH OR LESS



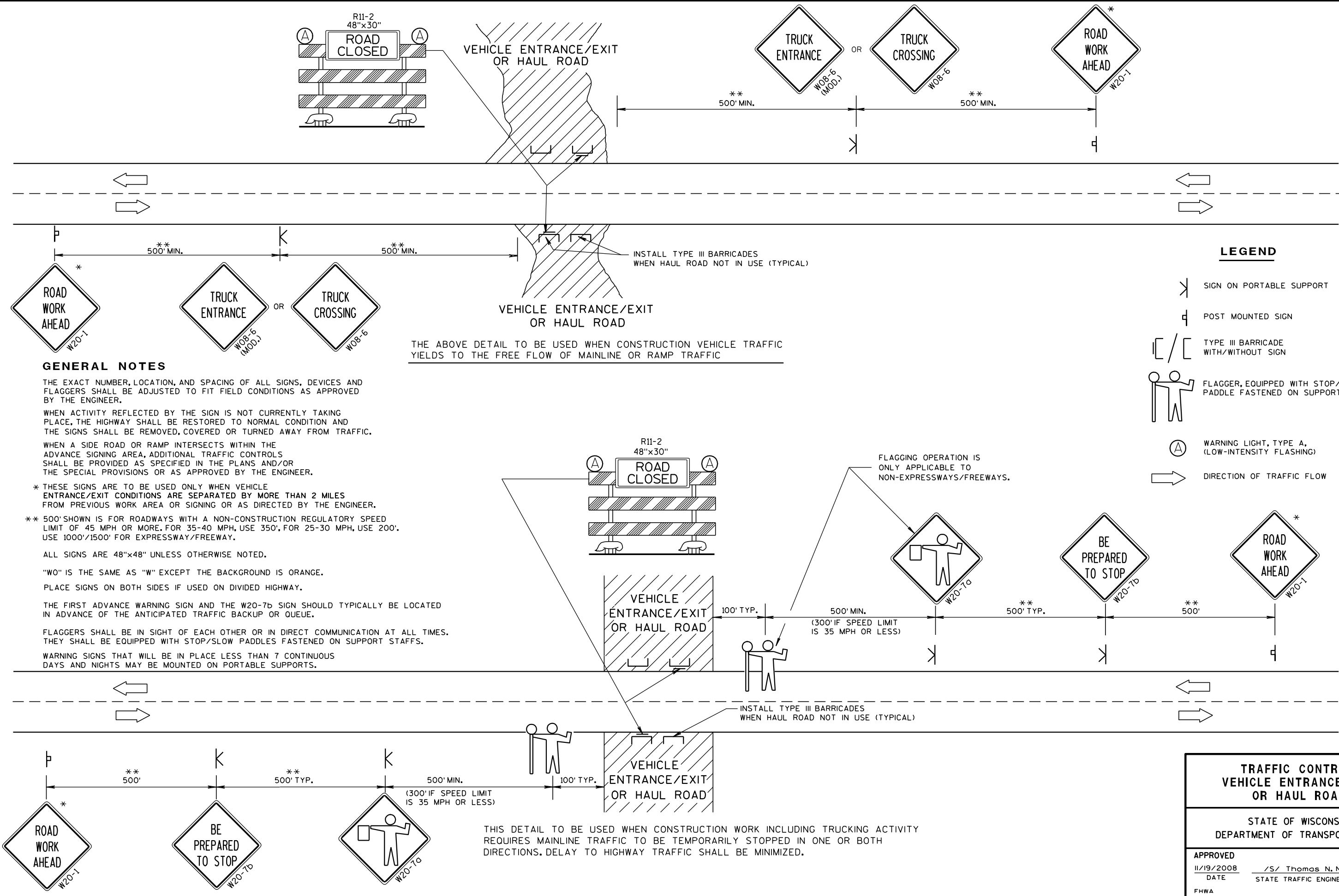
SYMBOLS

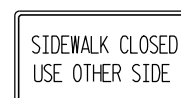
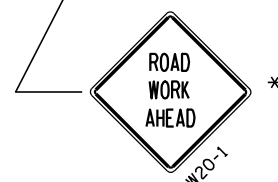
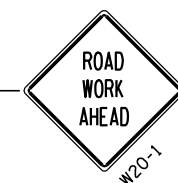
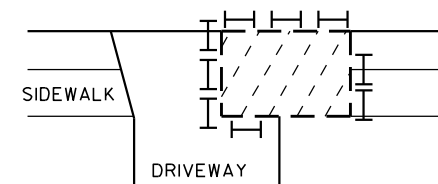
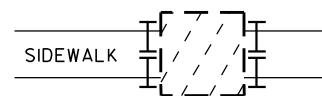
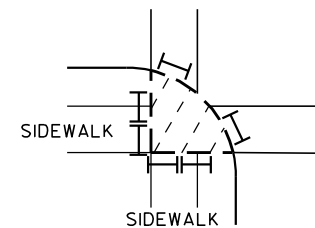
- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL,
WORK ON SHOULDER OR
PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. NNEER
DATE CHIEF SIGNS AND MARK 12
FHWA





R5-8a
24"x12"
2 1/2" SERIES B
BLACK LETTERS
ON REFLECTIVE
WHITE BACKGROUND



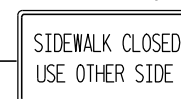
R5-8
24"x12"

3" SERIES C
BLACK LETTERS
ON REFLECTIVE
WHITE BACKGROUND



R5-8
24"x12"

3" SERIES C
BLACK LETTERS
ON REFLECTIVE
WHITE BACKGROUND



R5-8a
24"x12"
2 1/2" SERIES B
BLACK LETTERS
ON REFLECTIVE
WHITE BACKGROUND

LEGEND

b POST MOUNTED SIGN

II/I	TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
------	--

 WORK AREA

 DIRECTION OF TRAFFIC FLOW

GENERAL NOTES :

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, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

* "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

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

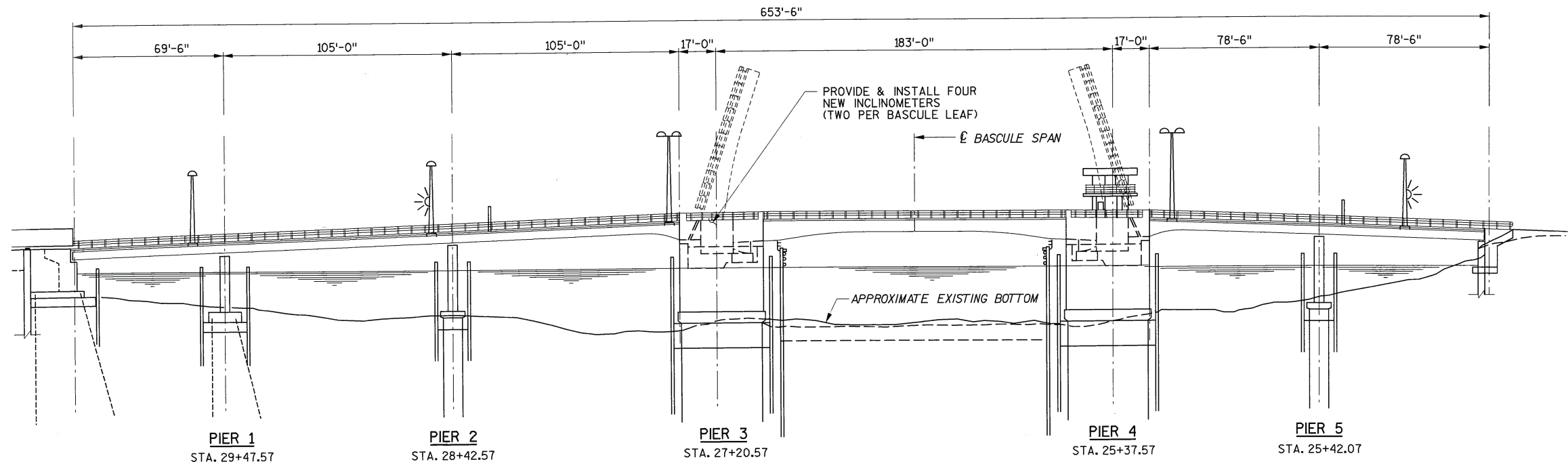
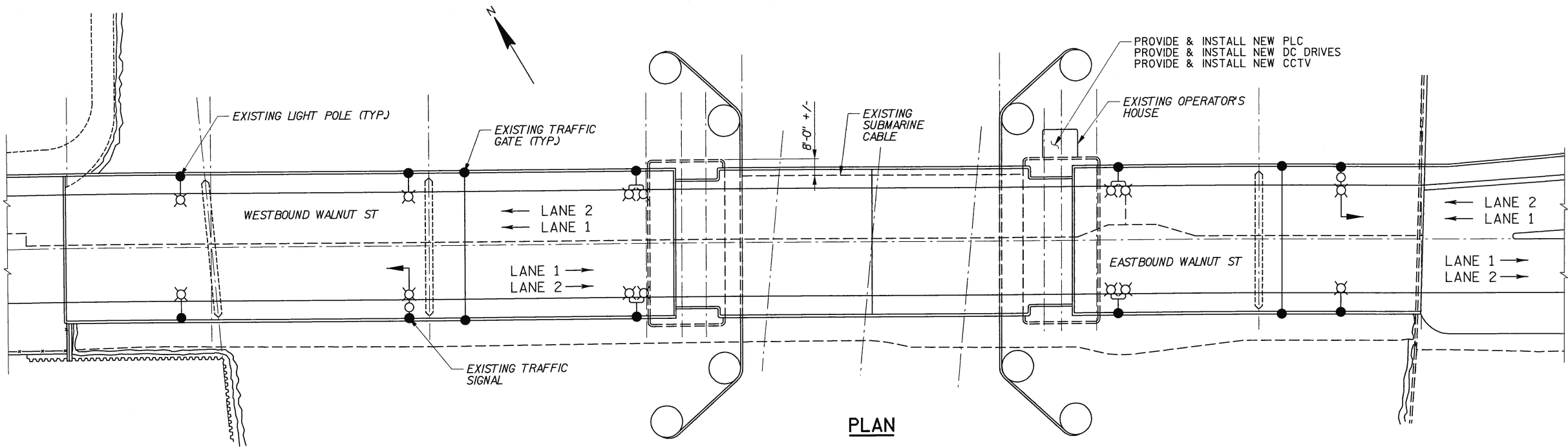
TRAFFIC CONTROL,
SIDEWALK CLOSURE

**TRAFFIC CONTROL,
SIDEWALK CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2000 DATE /S/ Chester J. [Signature]
CHIEF SIGNS AND MARK 14 NEER
FHWA

8



LIST OF DRAWINGS

1. GENERAL PLAN AND ELEVATION AND QUANTITIES
2. GENERAL ELECTRICAL NOTES
3. OPERATORS HOUSE LAYOUT PLAN
4. ONE LINE DIAGRAM
5. PLC ARCHITECTURE
6. DC DRIVE WIRING DIAGRAM
7. CONTROL DESK
8. EXISTING PLC RACKS
9. PROPOSED PLC RACKS
10. ELECTRICAL DETAILS
11. WALNUT STREET CCTV LAYOUT
12. OPERATOR HOUSE LAYOUT & VIDEO DIAGRAM

TOTAL ESTIMATED QUANTITIES

NO.	BID ITEMS	UNIT	TOTAL
SPV.0105	WALNUT STREET BRIDGE ELECTRICAL WORK, B-05-269	LS	1
SPV.0105	WALNUT STREET BRIDGE CCTV SYSTEM, B-05-269	LS	1

STRUCTURES DESIGN CONTACTS:

BUREAU OF STRUCTURES:
WILLIAM DREHER (608) 266-8489

CONSULTANT CONTACT:
JOHN GIMBLETT (212) 944-1150

STATE PROJECT NUMBER

4180-07-71



NO.	DATE	REVISION	BY
HH Hardesty & Hanover 1501 BROADWAY NEW YORK, NY 10036 (212) 944-1150			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	William C. Dreher CHIEF STRUCTURES DESIGN ENGINEER		KAR 04/08/13 DATE
STRUCTURE B-05-269			
STH 29 OVER FOX RIVER			
COUNTY	BROWN	TOWN/CITY/VILLAGE	GREEN BAY
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	RL	DESIGN CK'D. AHN	DRAWN BY RL PLANS CK'D. AHN
GENERAL PLAN AND ELEVATION AND QUANTITIES			SHEET 1 OF 12
			15

8

DESCRIPTION OF ELECTRICAL FACILITIES: SCOPE OF WORK SUMMARY

PROGRAMMABLE LOGIC CONTROLLER

PROVIDE AND INSTALL NEW CONTROLLOGIX INPUT AND OUTPUT CARDS IN EXISTING PLC5 RACKS USING ALLEN-BRADLEY MIGRATION HARDWARE. PROVIDE AND INSTALL REDUNDANT CONTROLLOGIX PROCESSORS CONFIGURED IN COLD BACKUP MODE. PROVIDE AND INSTALL NEW HMI IN EXISTING CONTROL DESK. CONVERT/MODIFY EXISTING PLC SOFTWARE TO OPERATE BRIDGE.

DC DRIVES

PROVIDE AND INSTALL FOUR NEW ALLEN BRADLEY POWERFLEX MODEL 20P41AD100RA0NNN DC DRIVES WITH ETHERNET COMMUNICATIONS.

LIMIT SWITCHES

PROVIDE AND INSTALL REDUNDANT INCLINOMETERS FOR PLC SPAN POSITION FEEDBACK.

CCTV

PROVIDE AND INSTALL NEW CCTV SYSTEM

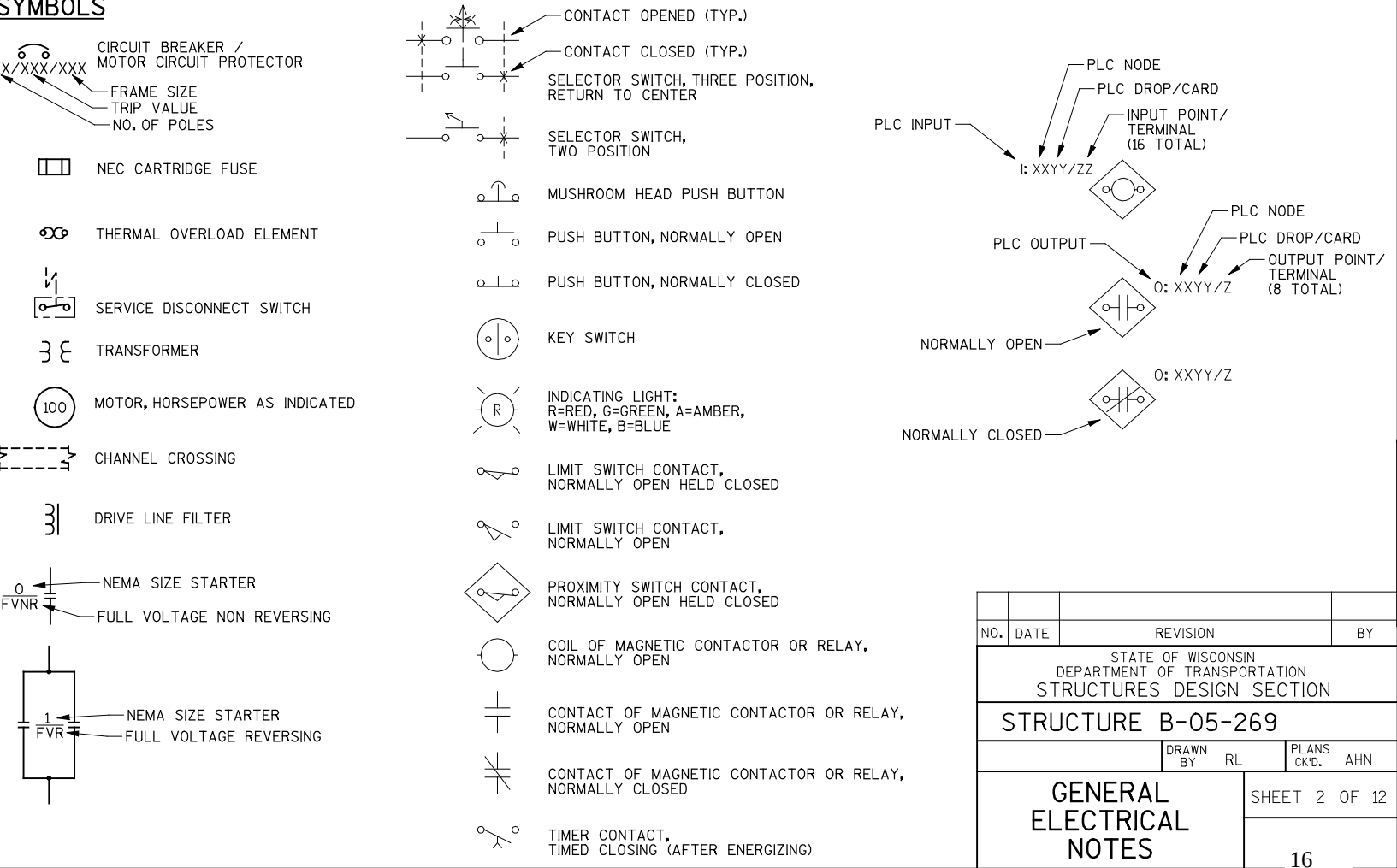
DEMOLITION

ALL EXISTING DC DRIVES & PLC HARDWARE SHALL BE REMOVED AND PROPERLY DISPOSED OF.

GENERAL ELECTRICAL NOTES

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STATE STANDARD SPECIFICATIONS, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), AND THE ELECTRICAL REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).
- ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE.
- THE PLANS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. THE LOCATIONS OF EQUIPMENT AND ROUTING OF CONDUITS SHOWN ON THE CONTRACT DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS IN THE FIELD AND PREPARING SCALED SHOP DRAWINGS.
- ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.
- EXISTING ELECTRICAL CABLE, WIRES, CONDUIT, CONDUIT HANGERS, SUPPORTS, CLAMPS, ETC, WHICH ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE REMOVED AND PROPERLY DISPOSED OF.
- ALL NEW CONDUIT AND FITTINGS SHALL BE 3/4" MINIMUM PVC COATED HOT DIPPED GALVANIZED RIGID STEEL UNLESS OTHERWISE NOTED, AND SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION, AND INSTALLATION CONTAINED IN THE SPECIFICATION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION, WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.
- NEW ELECTRICAL CONDUCTORS SHALL BE MINIMUM SIZE NO. 12 AWG STRANDED TYPE XHHW, EXCEPT FOR INTERNAL WIRING IN CONTROL CABINETS AND CONTROL DESK WHICH SHALL BE MINIMUM SIZE NO. 14 AWG TYPE SIS. ALL WIRES AND CABLES SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION AND INSTALLATION CONTAINED IN THE RELEVANT SPECIFICATIONS.
- ALL SWITCHES, RELAYS, CONTACTORS AND STARTERS ARE SHOWN ON THE DRAWINGS AS DE-ENERGIZED AND WITH THE SPAN FULLY CLOSED, GATES RAISED, AND TRAFFIC SIGNALS GREEN, OPEN TO VEHICULAR TRAFFIC.
- ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. MINIMUM SIZE GROUND CONDUCTOR SHALL BE NO. 12 AWG. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.
- ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES. SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES, OR CONDUIT FITTINGS.
- THE CONTRACTOR IS REFERRED TO THE AVAILABLE DRAWINGS FROM THE 1989 CONSTRUCTION CONTRACT FOR MECHANICAL AND STRUCTURAL DETAILS NOT PROVIDED IN THIS PLAN SET. THESE DRAWINGS ARE AVAILABLE FROM WISDOT UPON REQUEST.

SYMBOLS



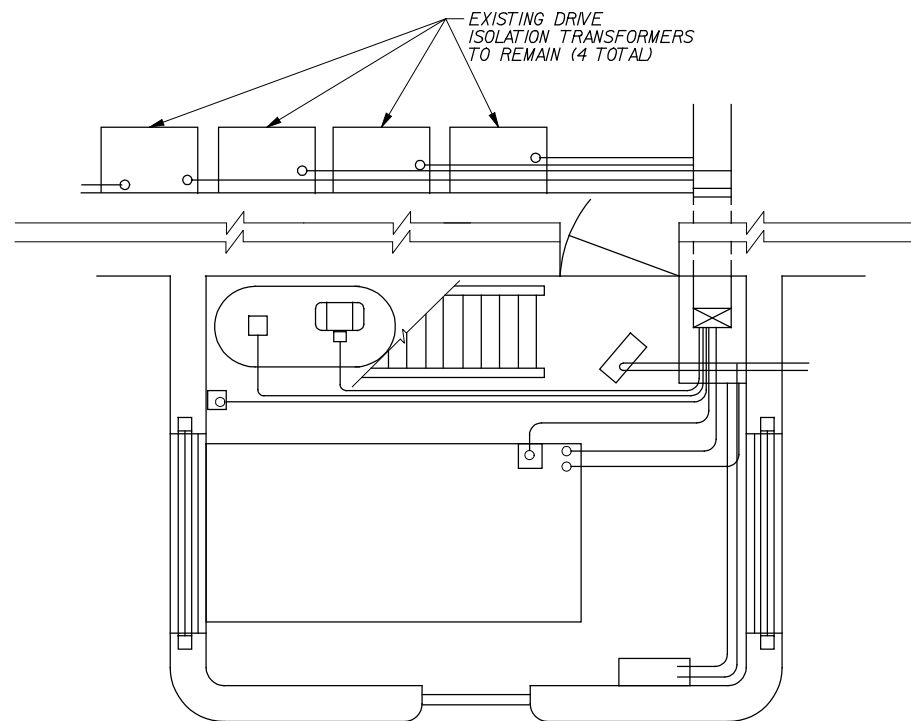
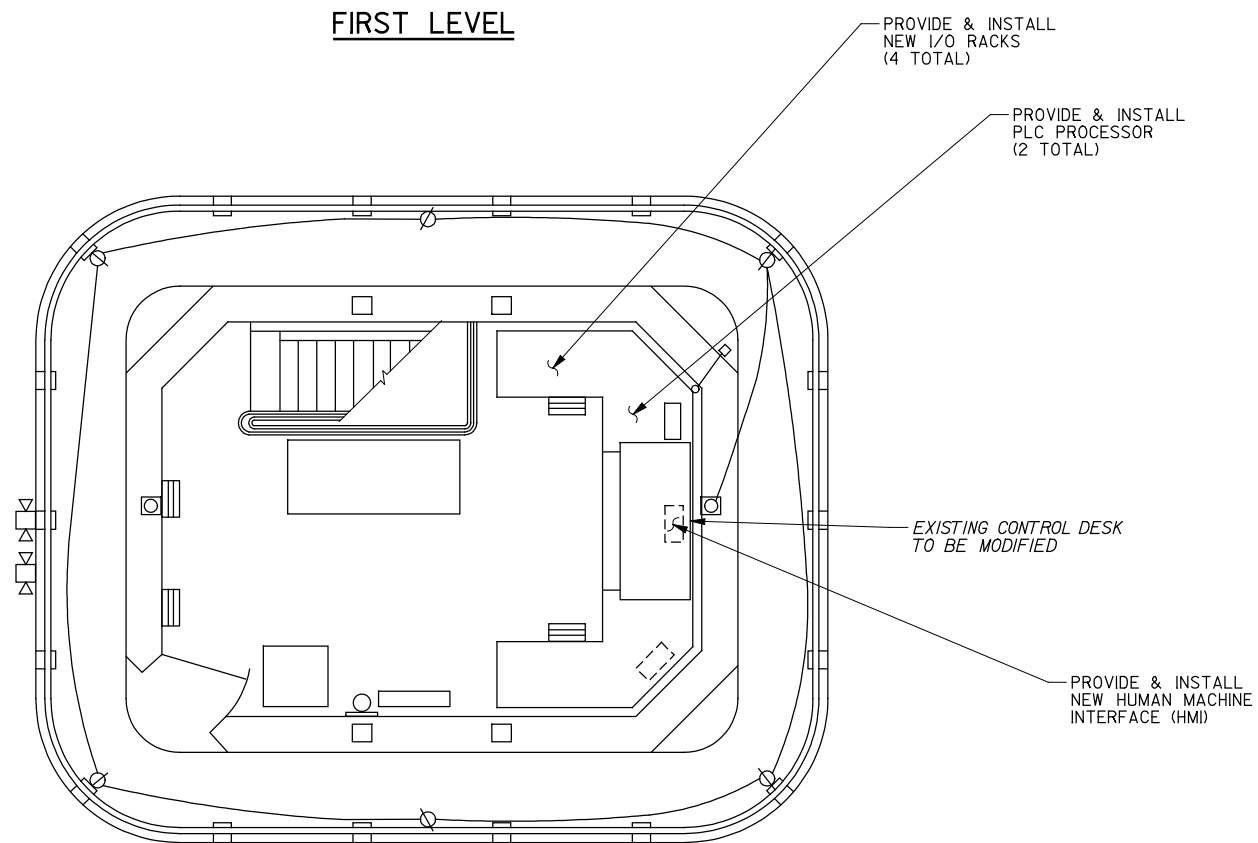
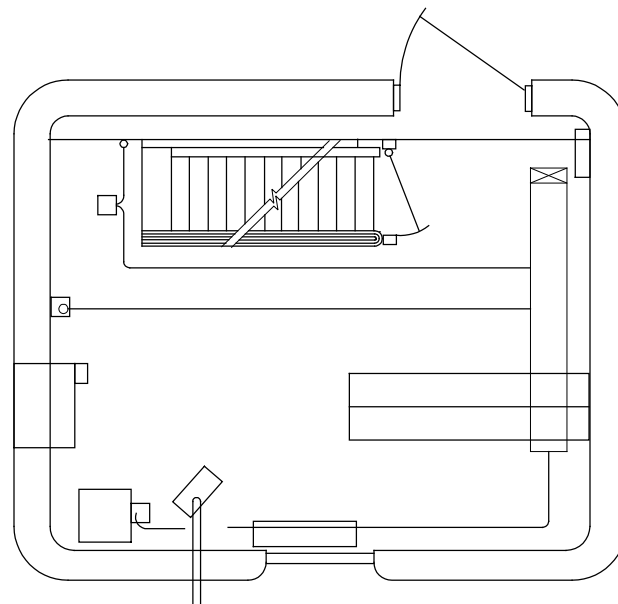
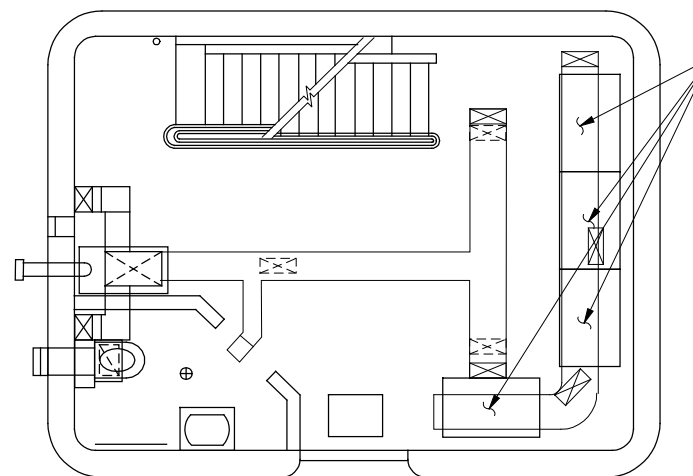
ABBREVIATIONS

AH	AIR HORN	NW	NORTHWEST
ANN	ANNUNCIATOR	OCR	OVER CURRENT RELAY
AM	AUXILIARY MOTOR	OL	OVERLOAD RELAY
ATS	AUTOMATIC TRANSFER SWITCH	OP	OPPOSED MODE SENSOR
AUX	AUXILIARY	OS	OVERSPEED
AWG	AMERICAN WIRE GAGE	OT	OVER TRAVEL
UVR	UNDERVOLTAGE RELAY	PB	PUSHBUTTON
CB	CIRCUIT BREAKER	PBL	ILLUMINATED PUSHBUTTON
CPU	CENTRAL PROCESSING UNIT	PF	POWER FACTOR
CR	CONTROL RELAY	PFR	PHASE FAILURE/ REVERSAL RELAY
CS	CONTROL / SELECTOR SWITCH	PH	PHASE
CT	CURRENT TRANSFORMER	PL	PILOT LIGHT
DRV	DRIVE	PDP	POWER DISTRIBUTION PANELBOARD
DS	DISCONNECT SWITCH	PS	POWER SUPPLY
E	EAST	PT	POTENTIAL TRANSFORMER
FU	FUSE	R	RAISE
GEN	GENERATOR	RCS	REMOTE CONTROLLED SWITCH
HP	HORSEPOWER	REG	REGULATOR
HR	HAND RELEASE	REL	RELEASE
HTR	HEATER	RMT	REMOTE
JB	JUNCTION BOX	S	SOUTH
KS	KEY SWITCH	SA	SECURITY ALARM
L	LOWER	SC	SUBMARINE CABLE
LCL	LINE CONTACTOR	SC	SIGNAL CONDITIONER
LOC	LOCAL	SCTC	SUBMARINE CABLE TERMINAL CABINET
LTG	LIGHTING	STD	CLOSED
LP	LIGHTING PANELBOARD	SE	SOUTHEAST
LS	LIMIT SWITCH	SW	SOUTHWEST
M	MAGNETIC CONTACTOR	SW	SWITCH
MB	MOTOR BRAKE	T	POWER TRANSFORMER
MCP	MOTOR CIRCUIT PROTECTOR	TB	TERMINAL BLOCK
MM	MAIN MOTOR	TC	TERMINAL CABINET
MOI	MANUALLY OPERATED INTERLOCK	TG	TACHOMETER GENERATOR
MYB	MACHINERY BRAKE	TR	TIMER
NRM	NORMAL	TSP	TWISTED SHIELDED PAIR
N	NORTH	UTIL	UTILITY
NAV	NAVIGATION LIGHT	W	WEST
NE	NORTHEAST	XFMR	TRANSFORMER

STATE PROJECT NUMBER

4180-07-71

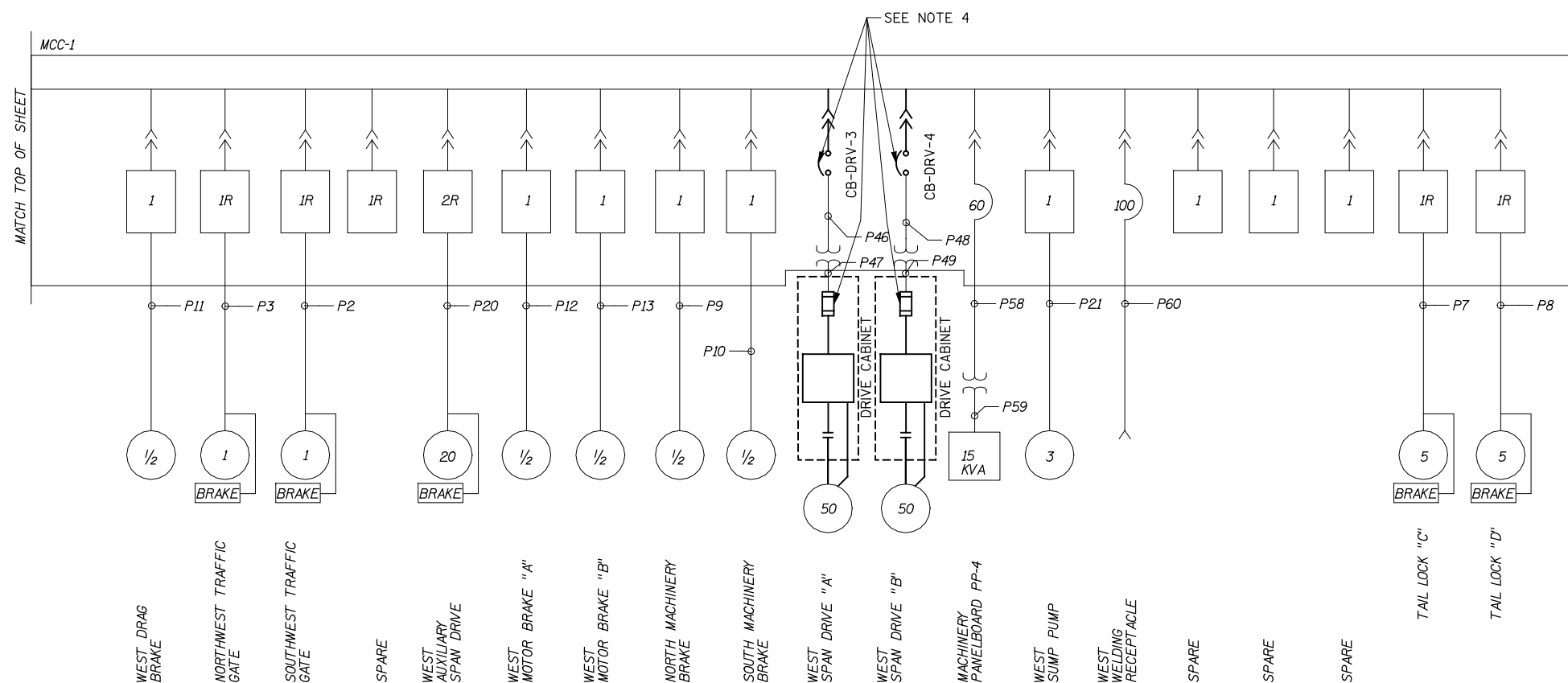
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY		RL	PLANS CK'D. AHN
GENERAL ELECTRICAL NOTES			SHEET 2 OF 12
			16

FIRST LEVELFOURTH LEVELTHIRD LEVEL

NOTES:

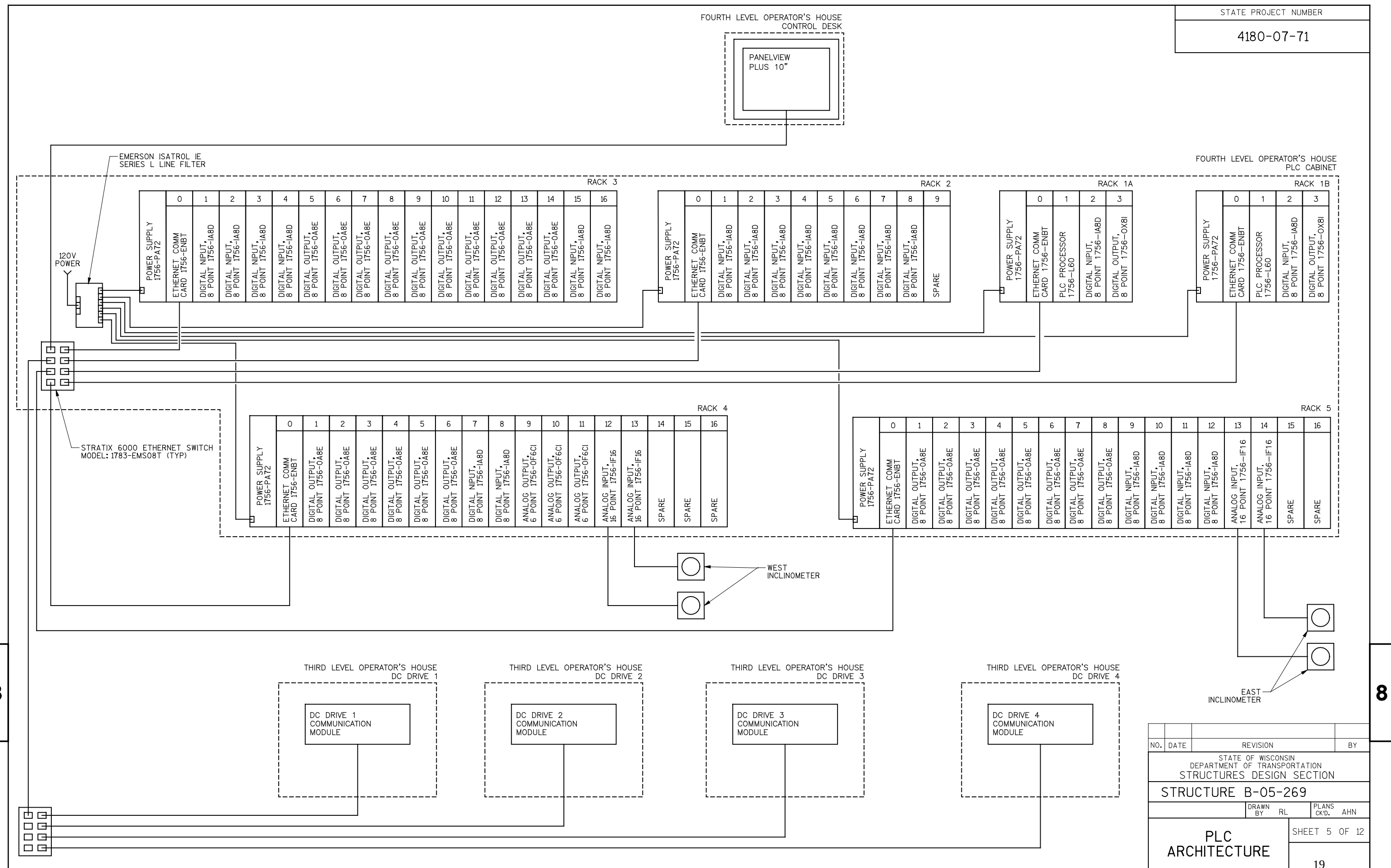
1. NEW BACKPANEL TO BE INSTALLED IN EXISTING ENCLOSURES.
2. NEW DC DRIVE, LOCATED IN EXISTING CABINETS FOR EXISTING MOTORS, TO BE PROVIDED.

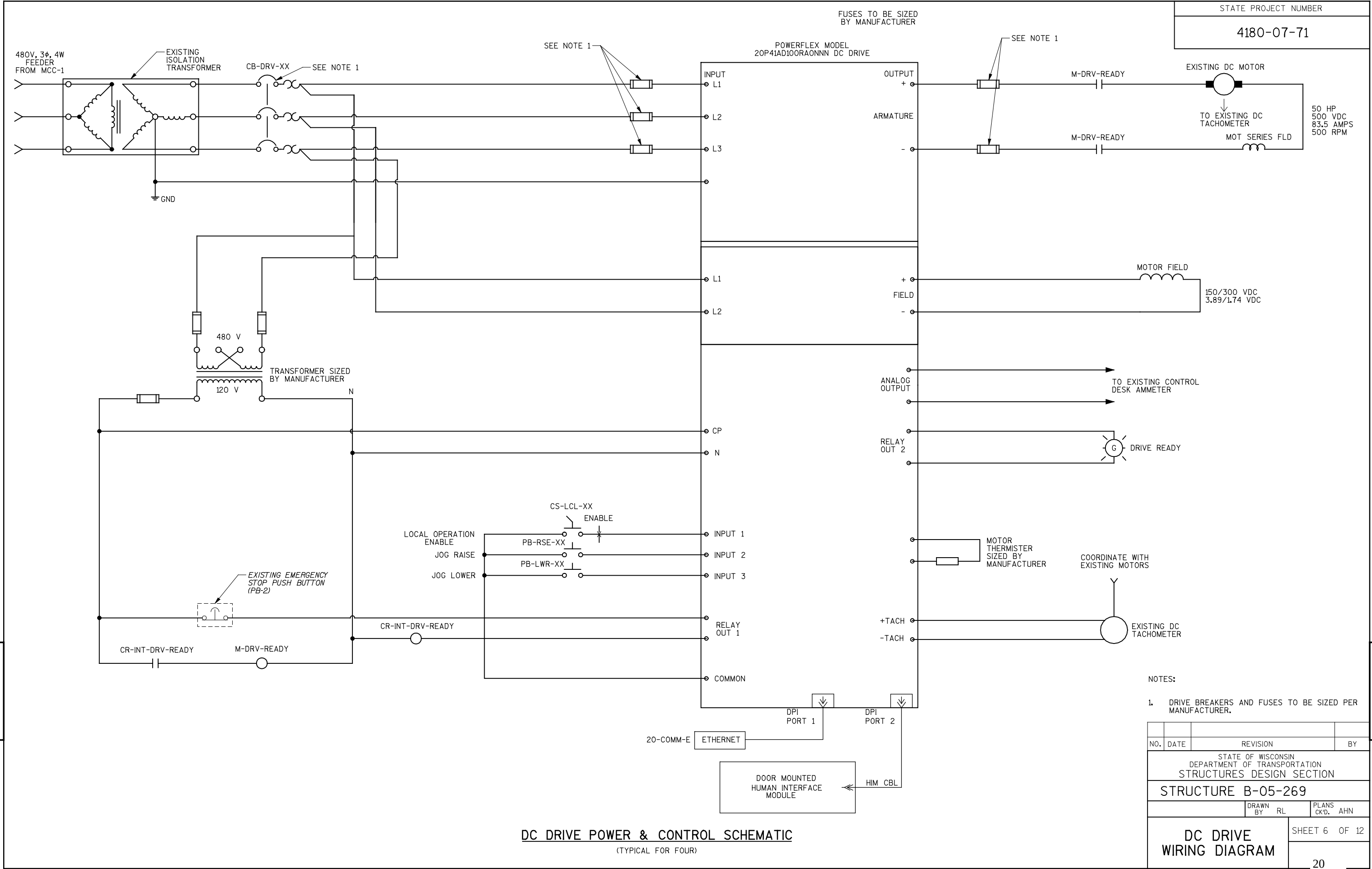
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY RL		PLANS CK'D. AHN	
OPERATORS HOUSE LAYOUT PLAN			SHEET 3 OF 12
			17



- NOTES:
1. EXISTING ONE LINE DIAGRAM RECREATED FOR REFERENCE PURPOSES.
 2. NEW DC DRIVE, LOCATED IN EXISTING CABINETS FOR EXISTING MOTORS, TO BE PROVIDED.
 3. DC DRIVES ARE TO BE ALLEN BRADLEY POWERFLEX MODEL 20P41AD100RAONNN DC DRIVES WITH ETHERNET COMMUNICATIONS.
 4. DRIVE BREAKERS AND FUSES TO BE SIZED PER MANUFACTURER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY		RL	PLANS CK'D. AHN
ONE LINE DIAGRAM		SHEET 4 OF 12	
		18	





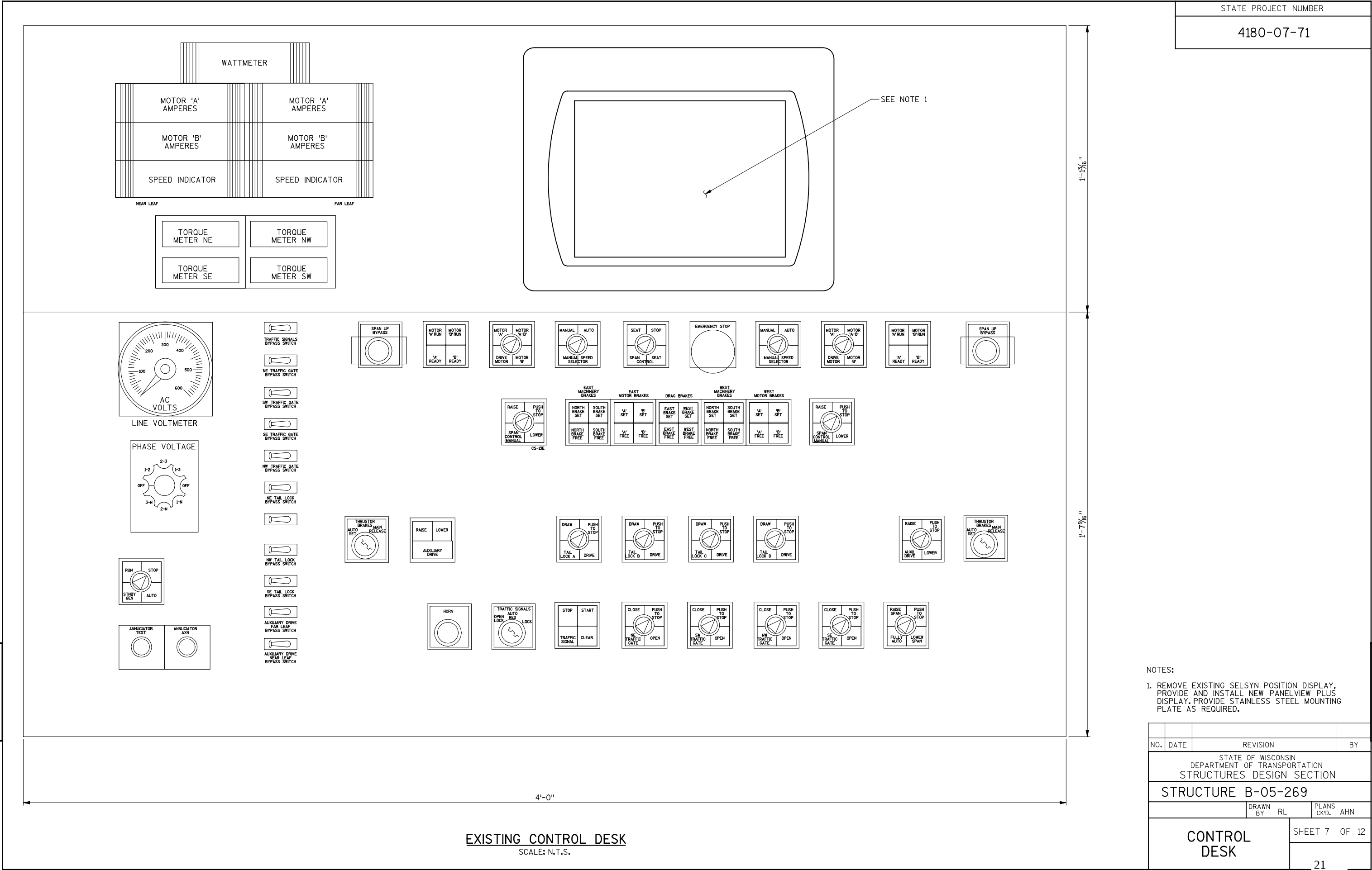
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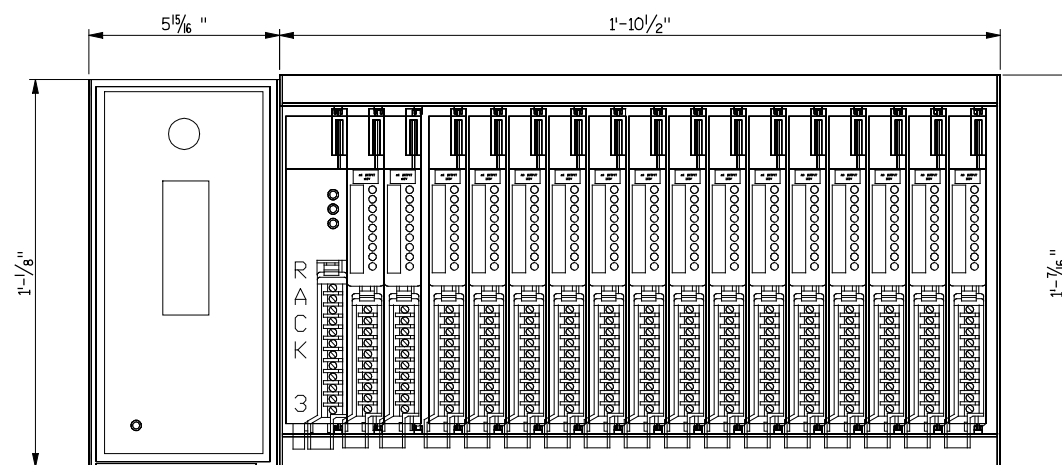
1. DRIVE BREAKERS AND FUSES TO BE SIZED PER MANUFACTURER.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY RL		PLANS CK'D. AHN	
DC DRIVE WIRING DIAGRAM		SHEET 6 OF 12	
		20	

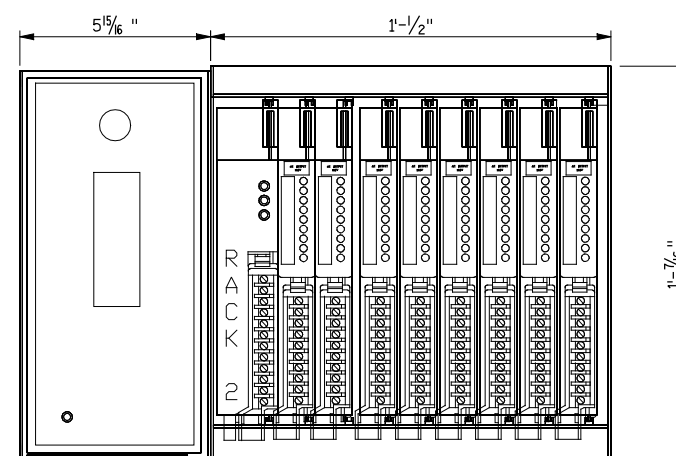
DC DRIVE POWER & CONTROL SCHEMATIC
(TYPICAL FOR FOUR)

8

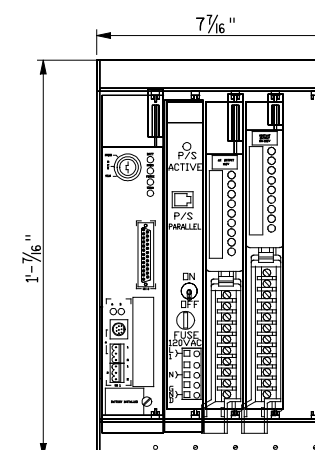


RACK 5

— SEE NOTE 2

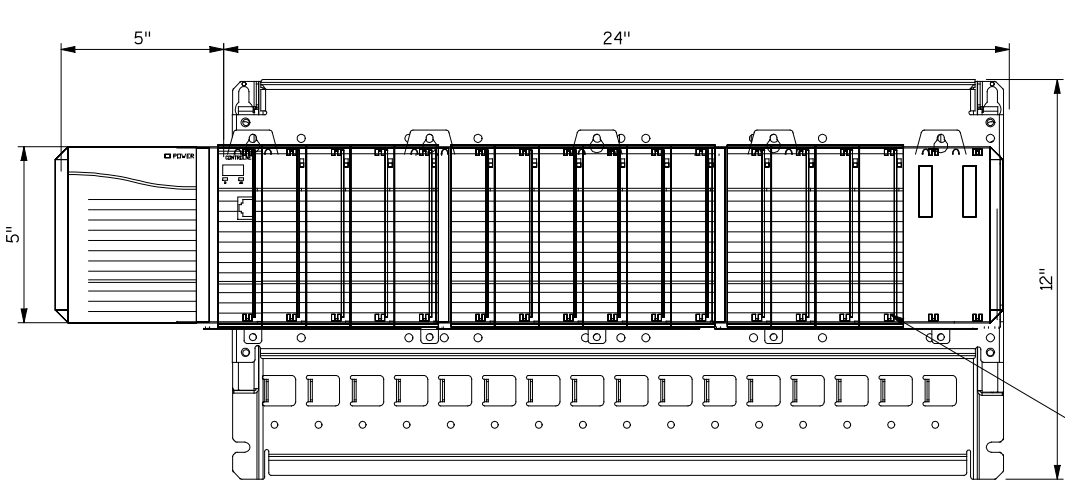
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SEE NOTE 2

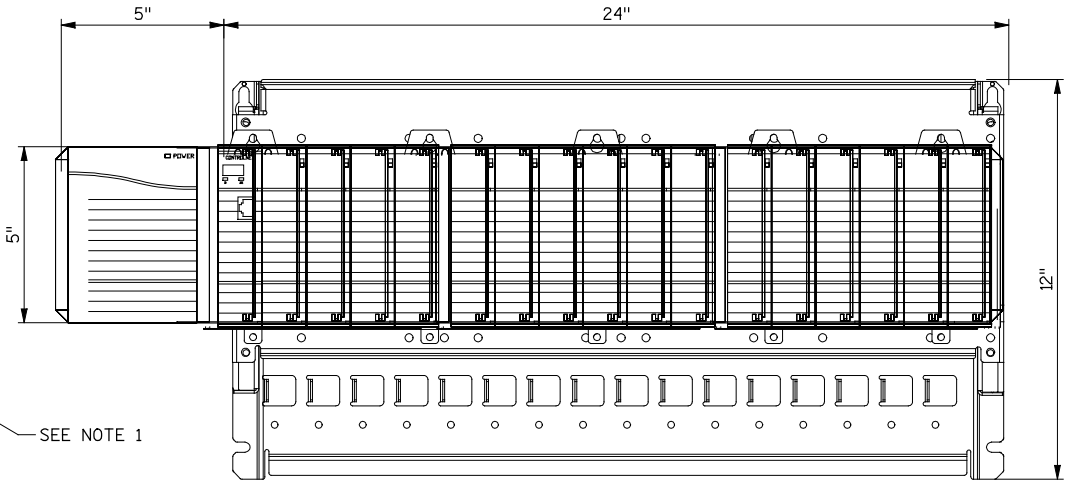
RACK 2RACK 1

1. EXISTING PLC RACKS TO REMAIN AND BE MIGRATED TO NEW CONTROLLOGIX SYSTEM.
2. EXISTING RESOLVER INPUT MODULES TO BE REMOVED.

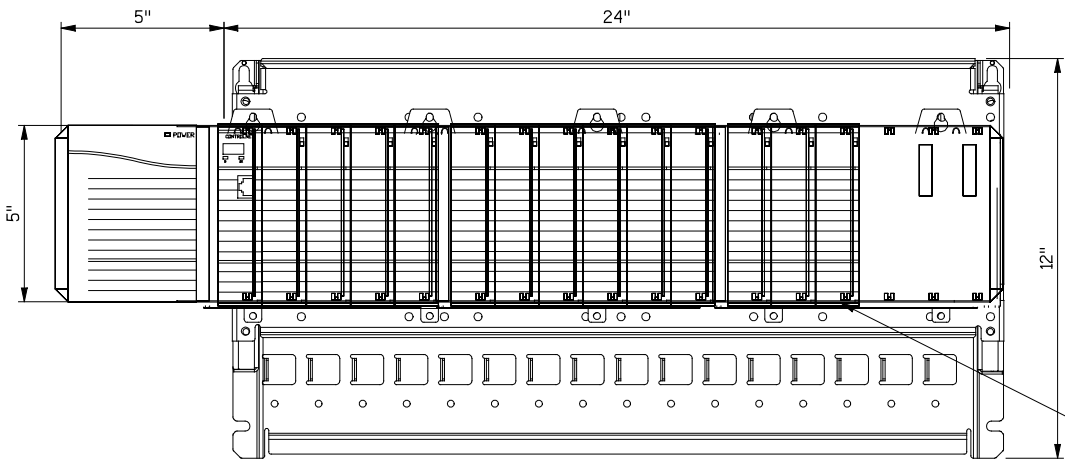
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY		RL	PLANS CK'D. AHN
EXISTING PLC RACKS		SHEET 8 OF 1	
		22	



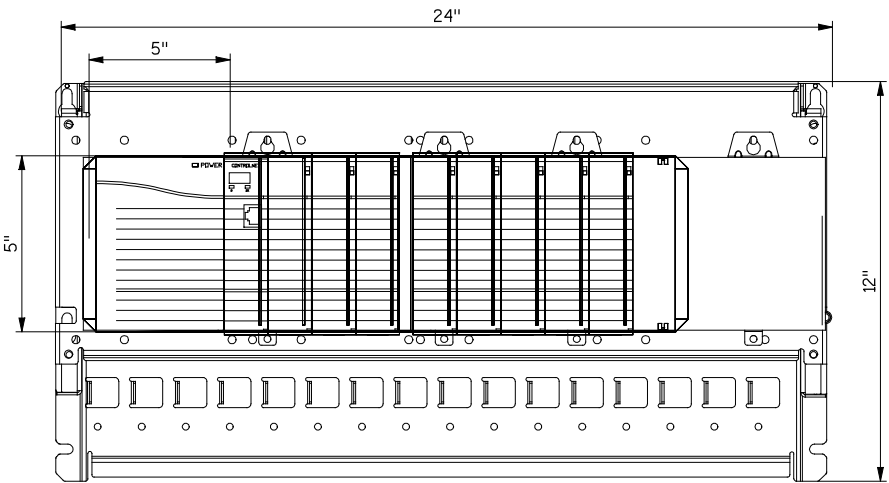
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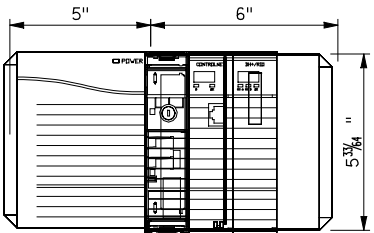
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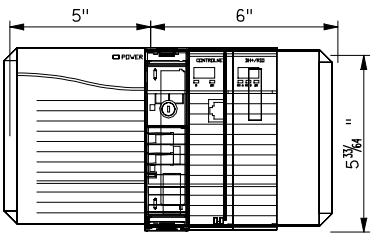
RACK 4



RACK 2



RACK 1A



RACK 1B

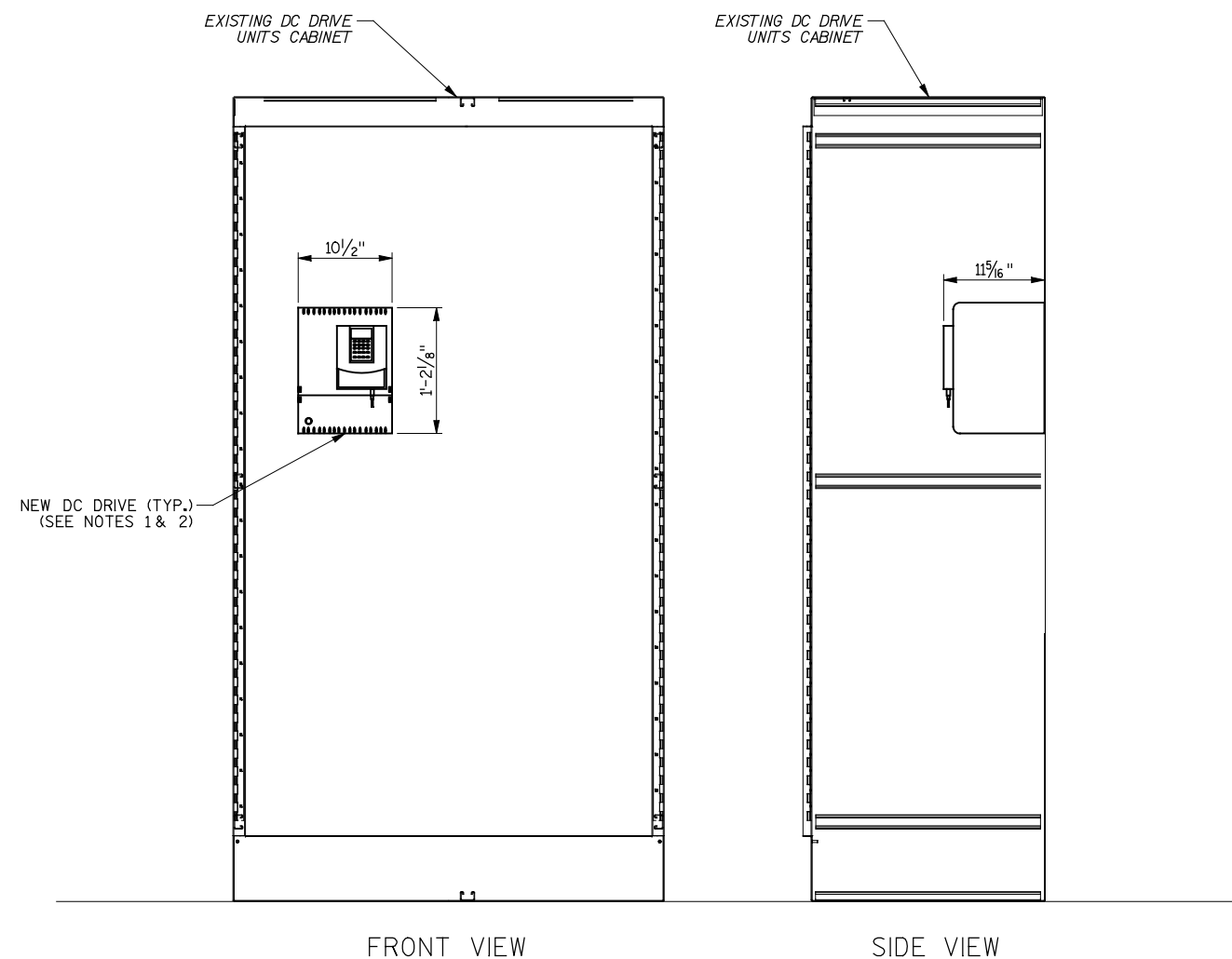
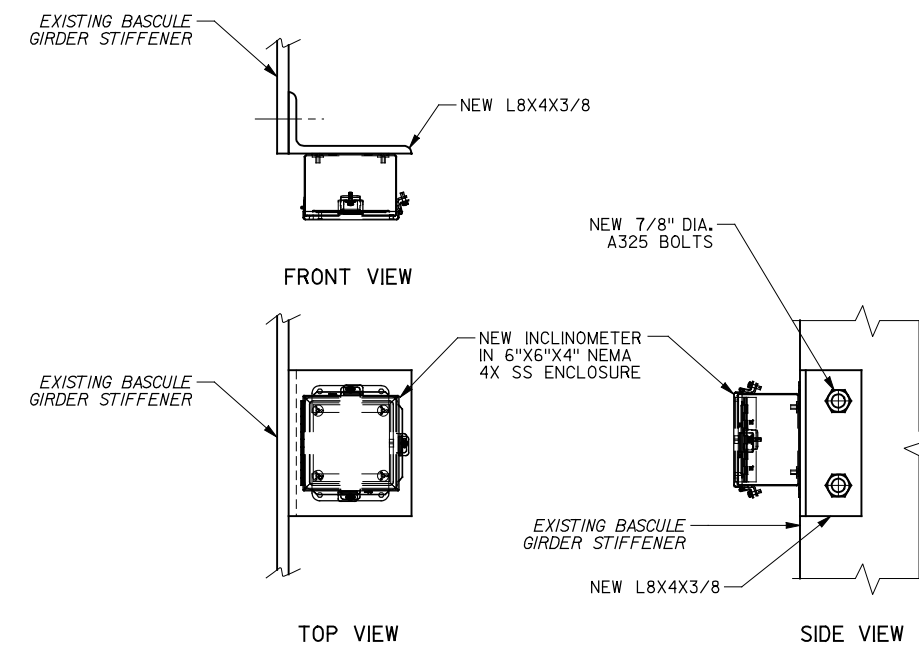
SEE NOTE 2

CONTROLLOGIX MIGRATION BILL OF MATERIALS		
QUANTITY	PART NO.	COMPONENT DESCRIPTION
4	1492-CM1771-LA0	CONVERSION MODULE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 1771-IFE TO 1756-IF16 (DIFFERENTIAL VOLTAGE/CURRENT MODES)
3	1492-CM1771-LA0	CONVERSION MODULE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 1771-OF61 TO 1756-OF6V1 OR 1771-OF62 TO 1756-OF6C1
1	1492-CM1771-LD00	CONVERSION MODULE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 1771-IAD TO 1756-IA16 OR 1771-IBD TO 1756-IB16
20	1492-CM1771-LD0	CONVERSION MODULE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, (2) 1771-IA TO 1756-IA16 OR (2) 1771-IA2 TO 1756-IA16
1	1492-CM1771-LD01	CONVERSION MODULE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 1771-OW TO 1756-0X81
24	1492-CM1771-LD01	CONVERSION MODULE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 1771-OA TO 1756-OA8E
4	1492-CONACAB005	CONVERSION CABLE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 0.5 METERS
3	1492-CONACAB005	CONVERSION CABLE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 0.5 METERS
24	1492-CONCAB005U	CONVERSION CABLE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 0.5 METERS
1	1492-CONCAB005X	CONVERSION CABLE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 0.5 METERS
1	1492-CONCAB005Y	CONVERSION CABLE FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 0.5 METERS
1	1492-MUA1B-A4-A	MOUNTING ASSEMBLY FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 4 OR 7 SLOT CHASSIS
1	1492-MUA2B-A7-A	MOUNTING ASSEMBLY FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 7 OR 10 SLOT CHASSIS
3	1492-MUA4-A13-A1	MOUNTING ASSEMBLY FOR 1771 TO 1756 I/O FIELD WIRING CONVERSION SYSTEM, 13 OR 17 SLOT CHASSIS
1	1756-A10	1756 CHASSIS 10 SLOTS
3	1756-A17	1756 CHASSIS 17 SLOTS
2	1756-A4	1756 CHASSIS 4 SLOTS
2	1756-DNB	DEVICENET BRIDGE/SCANNER MODULE
4	1756-EN2T	ETHERNET 10-100M BRIDGE MODULE
12	1756-IA16	79-132 VAC INPUT 16 PTS (20 PIN)
4	1756-IF16	ANALOG INPUT - CURRENT/VOLTAGE 16 PTS (36 PIN)
2	1756-L64	LOGIX5564 PROCESSOR WITH 16 MBYTES MEMORY
24	1756-OA8E	74-132 VAC ELEC FUSED 2A OUTPUT 8 PTS (20 PIN)
3	1756-OF6C1	ISOLATED ANALOG OUTPUT - CURRENT 6 PTS (20 PIN)
2	1756-0X81	N.O./N.C. ISOLATED RELAY OUTPUT 8 PTS (36 PIN)
3	1756-PA72	85-265 VAC POWER SUPPLY (5V @ 10 AMP)
1	1756-PA75	85-265V AC POWER SUPPLY (5V @ 13 AMP)
2	1756-PAR2	85-256 VAC REDUNDANT POWER SUPPLY ASSEMBLY

NOTES:

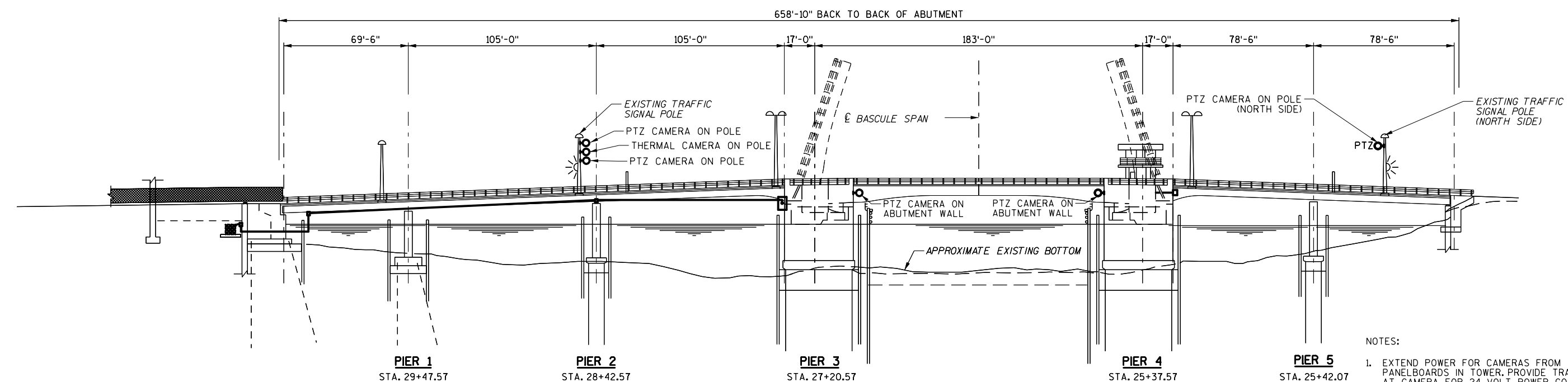
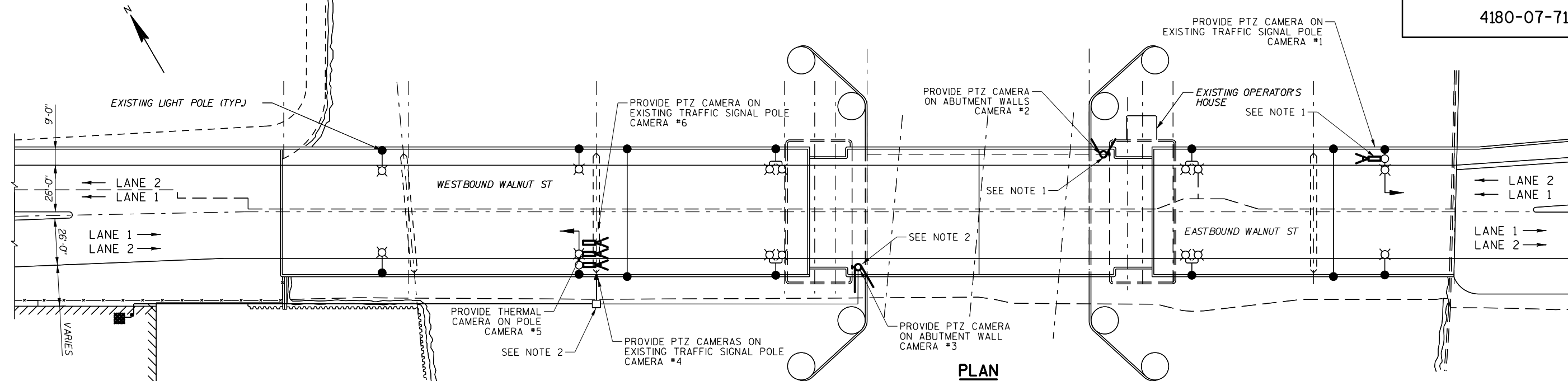
- EXISTING PLC RACKS TO REMAIN AND BE MIGRATED TO NE CONTROLLOGIX SYSTEM.
- EXISTING RESOLVER INPUT MODULES TO BE REMOVED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
		DRAWN BY RL	PLANS CK'D. AHN
PROPOSED PLC RACKS		SHEET 9 OF 12	
		23	

**TYPICAL EXISTING DC DRIVE CABINET DETAIL**FOUR NEW DRIVES REQUIRED
N.T.S.**INCLINOMETER DETAIL**N.T.S.
(TYPICAL FOR FOUR)**NOTES:**

1. NEW BACKPANEL TO BE INSTALLED IN EXISTING ENCLOSURES.
2. NEW DC DRIVE IN EXISTING CABINETS FOR EXISTING MOTORS TO BE PROVIDED.
3. PROVIDE NEW 6"X6"X4" NEMA 4X FIXED TERMINAL BOXES ADJACENT TO EXISTING FIXED TERMINAL BOXES.
4. PROVIDE AND INSTALL NEW #16 AWG SOUTHWIRE HLX01-POS-16/P1 TWISTED SHIELDED PAIR BETWEEN NEW FIXED BOXES & EXISTING CONTROL CABINET.
5. PROVIDE AND INSTALL NEW #16 AWG FLEXIBLE TWISTED SHIELDED PAIR BETWEEN NEW FIXED TERMINAL BOXES AND NEW INCLINOMETERS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY RL		PLANS CK'D. AHN	
ELECTRICAL DETAILS		SHEET 10 OF 12	
		24	

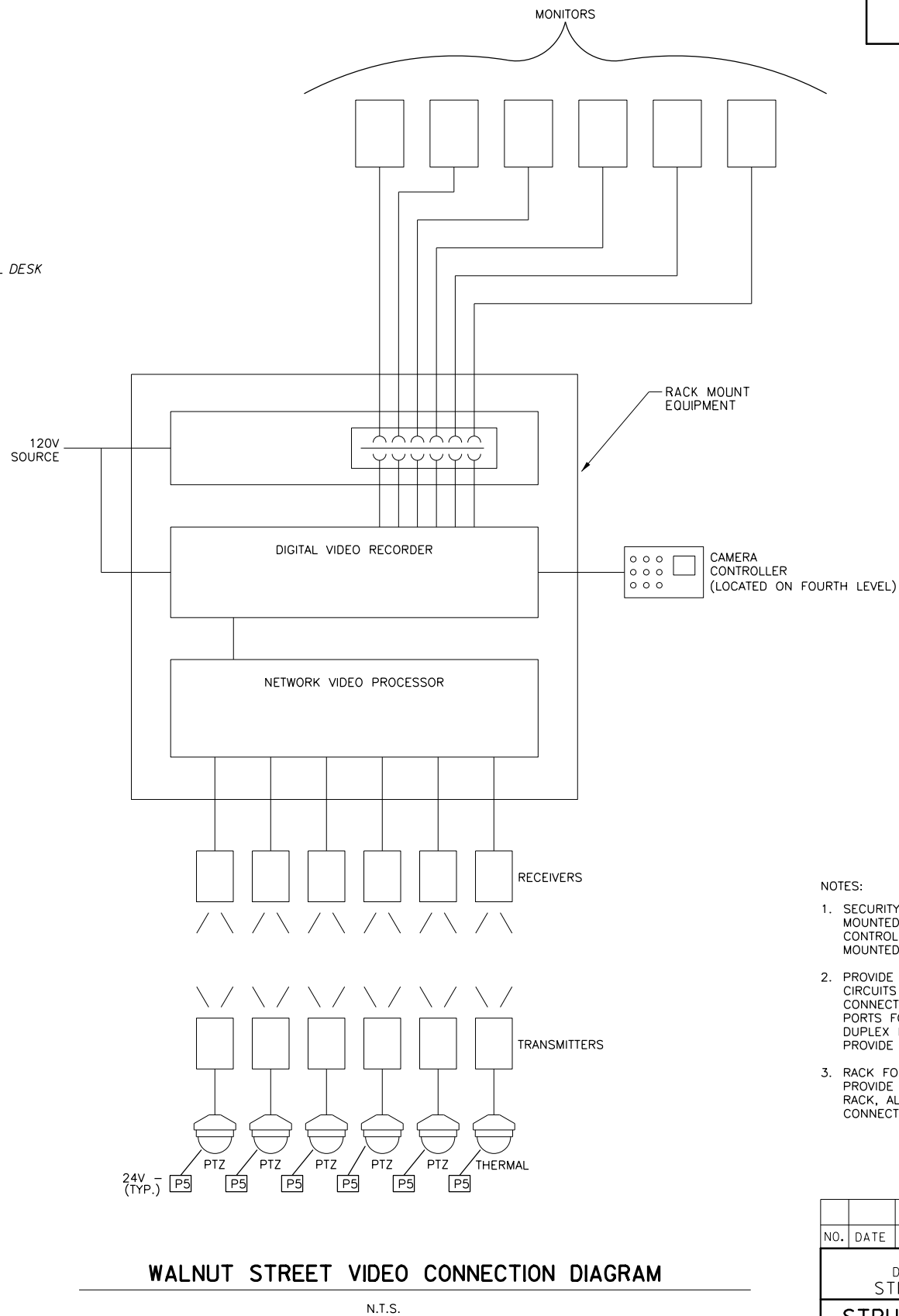
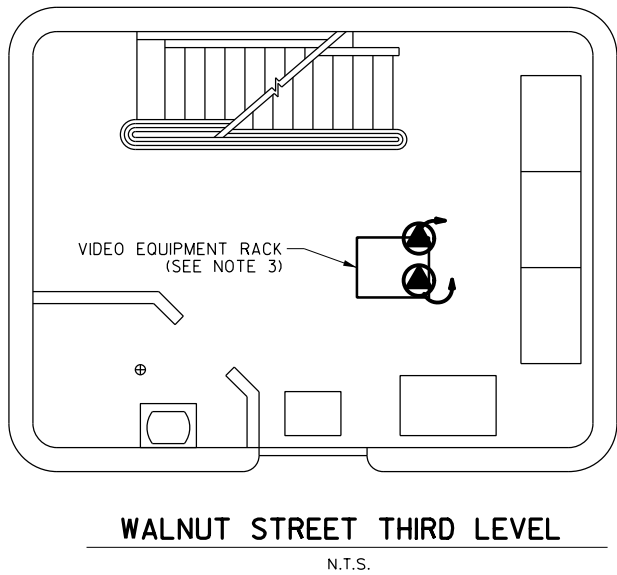
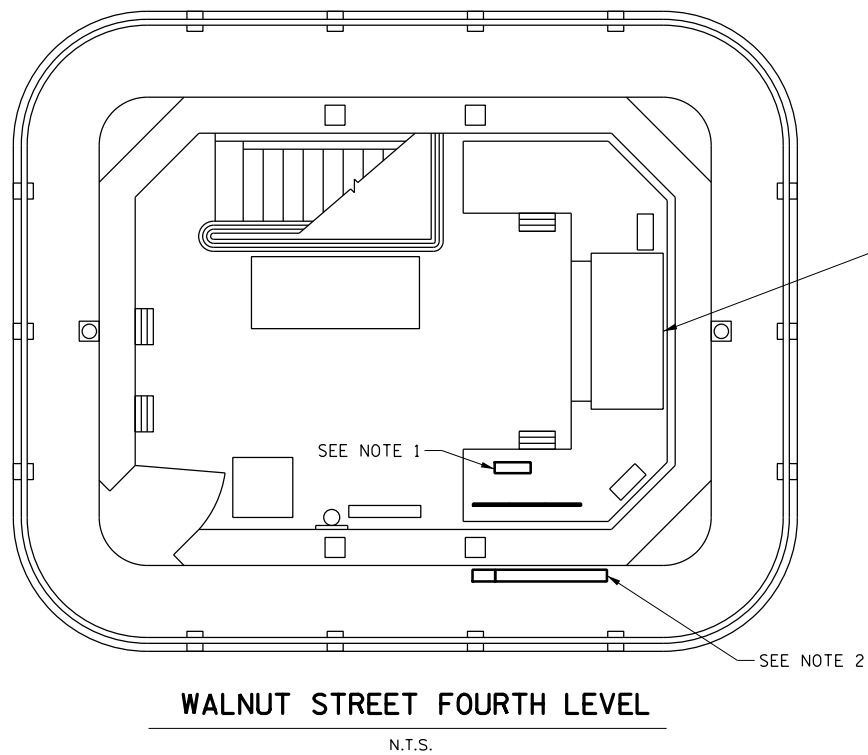
**WALNUT STREET BRIDGE CCTV LAYOUT**

N.T.S.

NOTES:

1. EXTEND POWER FOR CAMERAS FROM PANELBOARDS IN TOWER. PROVIDE TRANSFORMER AT CAMERA FOR 24 VOLT POWER CONNECTION.
2. PROVIDE UTILITY TRANSFORMER AND METER AND 30A/1P FUSIBLE DISCONNECT, NEMA 4X ENCLOSURE AND EXTEND CONDUIT AND CONDUCTORS TO CAMERAS #4, #5, #6 AND #3. PROVIDE TRANSFORMER FOR CAMERAS TO PROVIDE 24 VOLT POWER.

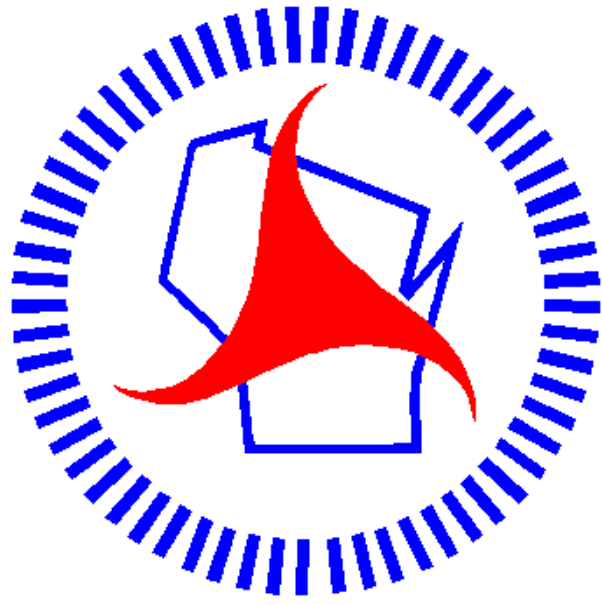
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY	DH	PLANS CK'D.	DS
WALNUT STREET CCTV LAYOUT			SHEET 11 OF 12
			25



- NOTES:
1. SECURITY CAMERA MONITORS AND KEYBOARD MOUNTED ON TOP OF THE CONTROL DESK. CONTROLLER MOUNTED ON DESKTOP AND PC TOWER MOUNTED UNDER THE DESK.
 2. PROVIDE WIREMOLD 4000 WITH (2) 120 VOLT, 20A CIRCUITS FOR MONITORS AND WORK STATION. CONNECT TO PANELBOARD IN SPACE. PROVIDE DATA PORTS FOR MONITORS TO PLUG INTO. PROVIDE DUPLEX RECEPTACLES ONE FOOT ON CENTER. PROVIDE FRAME FOR 6 MONITORS
 3. RACK FOR SECURITY CAMERA CONTROL EQUIPMENT. PROVIDE 120 VOLT, 20A/1P CIRCUITS FOR THE RACK, ALONG WITH PLUG-IN STRIP FOR EQUIPMENT CONNECTIONS.

STATE PROJECT NUMBER			
4180-07-71			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-269			
DRAWN BY DH		PLANS CK'D. DS	
OPERATOR HOUSE LAYOUT & VIDEO DIAGRAM			SHEET 12 OF 12
			26

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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

GRE JUN 2013

PROJECT ID: 9210-14-71
WITH: 4065-15-71 & 4180-07-71

COUNTY: BROWN

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 Plot
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 = 84



09

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MASON STREET BRIDGE

MASON STREET BRIDGE

STH 54

BROWN COUNTY

STATE PROJECT NUMBER
9210-14-71

PROJECT LOCATION
B-05-0134



LAYOUT
SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.000 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), BROWN COUNTY."

STATE PROJECT

9210-14-71

FEDERAL PROJECT

PROJECT

WISC 2013308

CONTRACT

1

ORIGINAL PLANS PREPARED BY



HARDESTY & HANOVER, LLP
ENGINEERING
1501 BROADWAY NEW YORK, NY 10036



02.19.13 *[Signature]*

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	N/A
Designer	HARDESTY & HANOVER, LLP
Project Manager	JASON LAHM
Regional Examiner	JASON LAHM
Regional Supervisor	KURT MIRANOVSKY
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 2/20/13 *[Signature]*
(Signature)

E

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE NOT SHOWN ON THE PLANS DUE TO THE LIMITED NATURE OF DISTURBANCE. THE UTILITY LOCATIONS ARE DESCRIBED IN THE SPECIAL PROVISIONS AND THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE DESCRIBED.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

OTHER CONTACTS

WISCONSIN DNR

JIM DOPERALSKI, JR.
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
PHONE: 920-662-5119

U.S. ARMY CORPS OF ENGINEERS

TODD VESPERMAN.
OLD FORT SQUARE
211N BROADWAY, SUITE 221
GREEN BAY, WI 54303
PHONE: 920-448-2824

UNITED STATES COAST GUARD

MR. LEE SOULE
COMMANDER (DPB)
NINTH COAST GUARD DISTRICT
1240 EAST 9TH STREET
CLEVELAND, OH 44199-2060
OFFICE: (216) 902-6085
FAX: (216) 902-6088
LEE.D.SOULE@USCG.MIL

DESIGNER NOTES

TITLE SHEET, GENERAL NOTES, AND UTILITY COORDINATION COMPLETED BY EMCS, INC.
TRAFFIC CONTROL PLANS AND QUANTITIES COMPLETED BY MEAD & HUNT
STRUCTURE PLANS COMPLETED BY HARDESTY AND HANOVER, LLP AND K. SINGH & ASSOCIATES, INC.

UTILITIES

ATC MANAGEMENT, INC.

(ELECTRIC-TRANSMISSION)
MIKE OLSEN
801 O'KEEFE ROAD
PO BOX 6113
DE PERE, WI 54115-6113
PHONE: 920-338-6582
MOBILE: 920-660-2390
molsen@atccllc.com

AT&T WISCONSIN

(TELECOMMUNICATIONS)
ERIC ADAIR
AT&T WI DESIGN ENGINEERING
205 SOUTH JEFFERSON STREET
GREEN BAY, WI 54301
PHONE: 920-433-4155
AZ9216@att.com

CITY OF GREEN BAY

(LIGHTING & SANITARY SEWER)
KRISTIN ROMANOWICZ
ASSISTANT CITY ENGINEER
100 NORTH JEFFERSON STREET
ROOM 300
GREEN BAY, WI 54301
PHONE: 920-448-3094
MOBILE: 920-680-3529
kristinro@ci.green-bay.wi.us

GREEN BAY METROPOLITAN
SEWERAGE DISTRICT

(SANITARY SEWER)
ROBERT REINHART
2231 NORTH QUINCY STREET
GREEN BAY, WI 54302-1248
PHONE: 920-438-1035
rreinhart@gbmsd.org

GREEN BAY WATER UTILITY

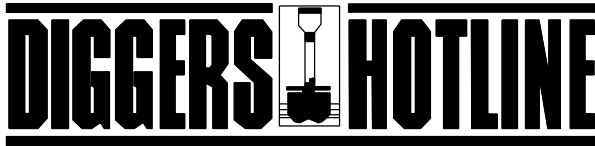
(WATER)
BRIAN POWELL
631 SOUTH ADAMS STREET
GREEN BAY, WI 54301
PHONE: 920-448-3480
MOBILE: 920-621-0468
brianpw@greenbaywi.gov

WISCONSIN PUBLIC SERVICE

(ELECTRIC - DISTRIBUTION & GAS)
GENERAL CONTACT:
LORIBUTRY
700 NORTH ADAMS STREET
PO BOX 19001
GREEN BAY, WI 54307-9001
PHONE: 920-433-1703
FAX: 920-433-1360
LAButry@integrysgrout.com

ELECTRIC CONTACT:
RANDY STEIER
2850 S. ASHLAND AVENUE
PO BOX 19001
GREEN BAY, WI 54307-9001
PHONE: 920-617-5167
MOBILE: 920-655-1596
rdsteier@wisconsinpublicservice.com

GAS CONTACT:
PHIL MAUERMANN
2850 S. ASHLAND AVENUE
PO BOX 19001
GREEN BAY, WI 54307-9001
PHONE: 920-617-5092
MOBILE: 920-606-8448
pgmauermann@wisconsinpublicservice.com



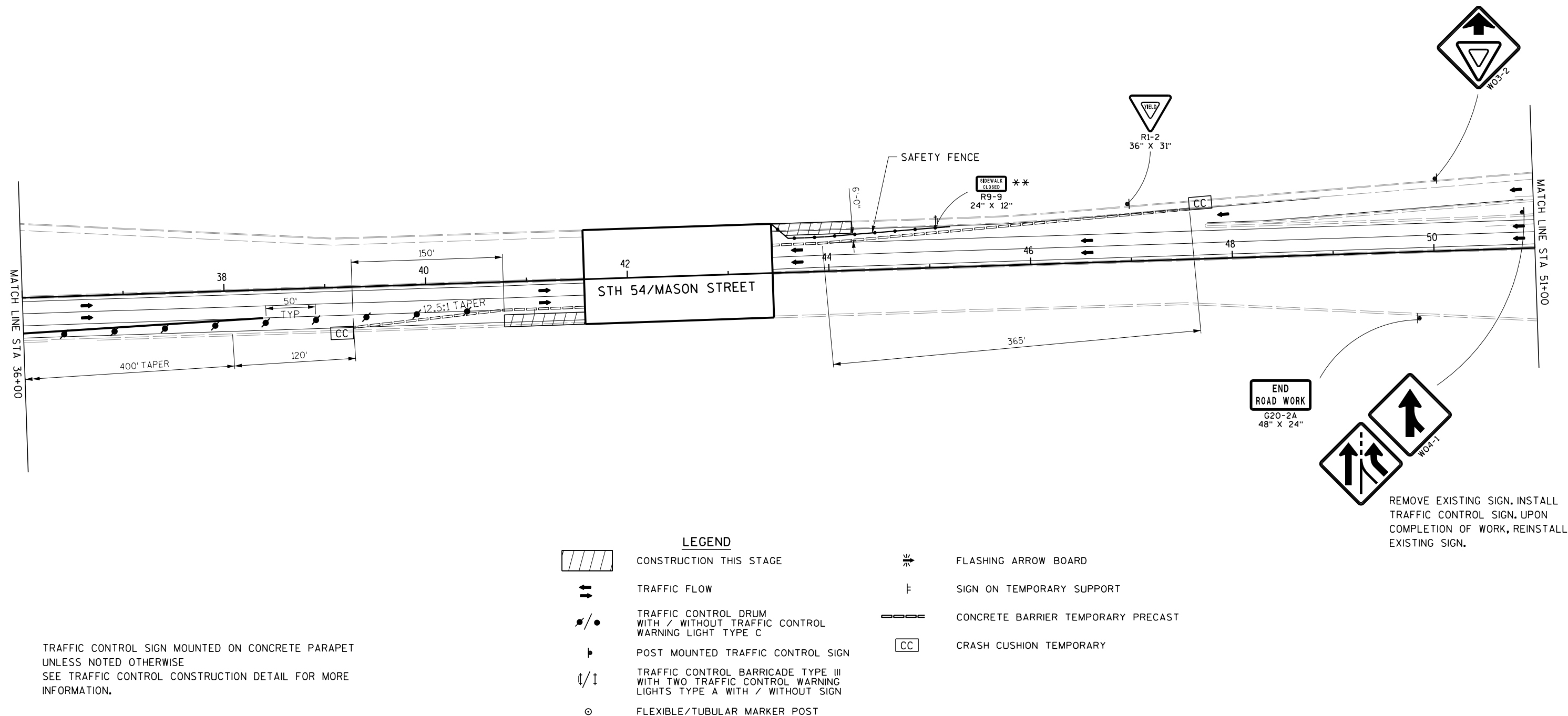
Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

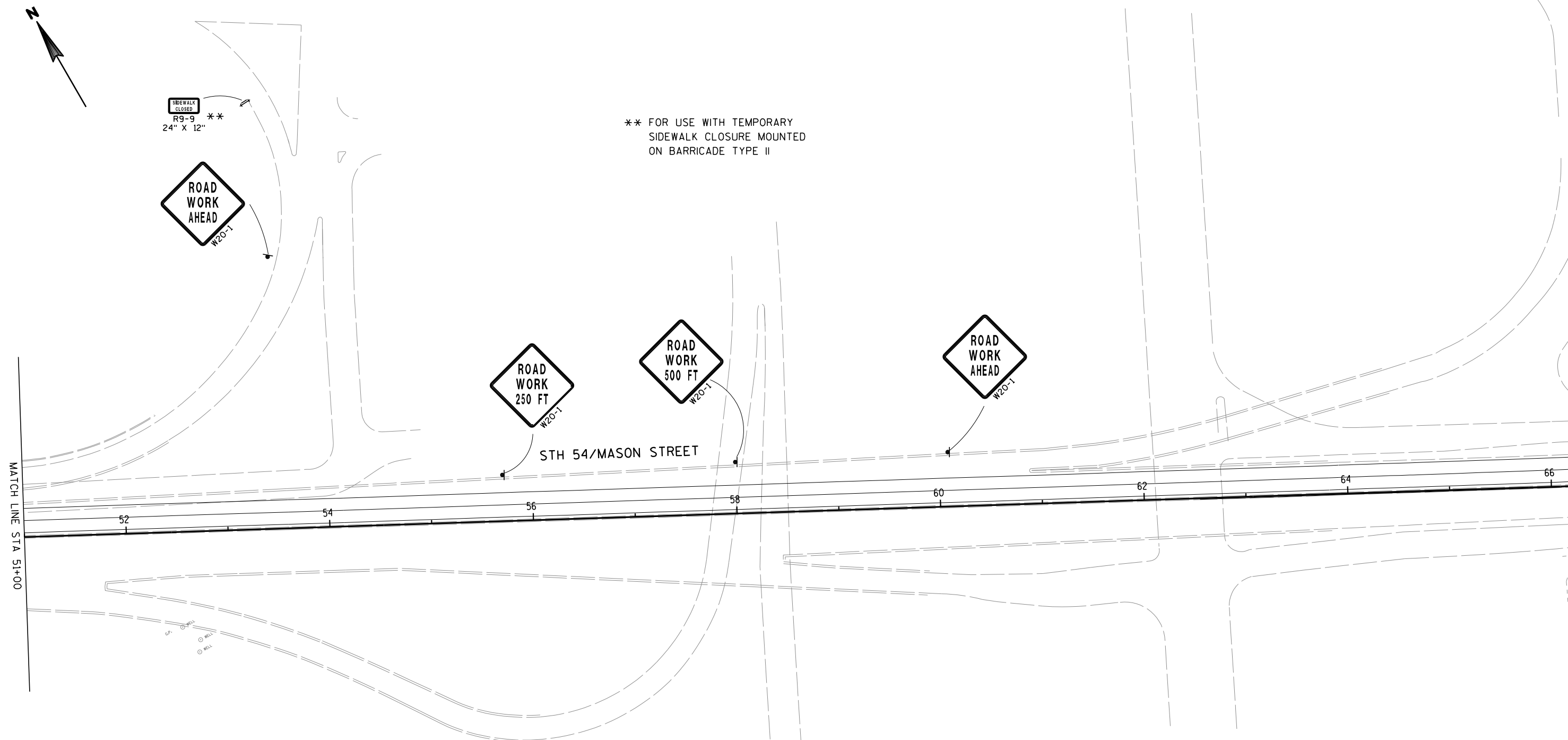
TO OBTAIN LOCATION OF
PARTICIPANTS UNDERGROUND
FACILITIES BEFORE YOU
DIG IN WISCONSIN

WISCONSIN STATUTE 182.0175 (1974)
REQUIRES MINIMUM OF 3 WORK DAYS
NOTICE BEFORE YOU EXCAVATE.

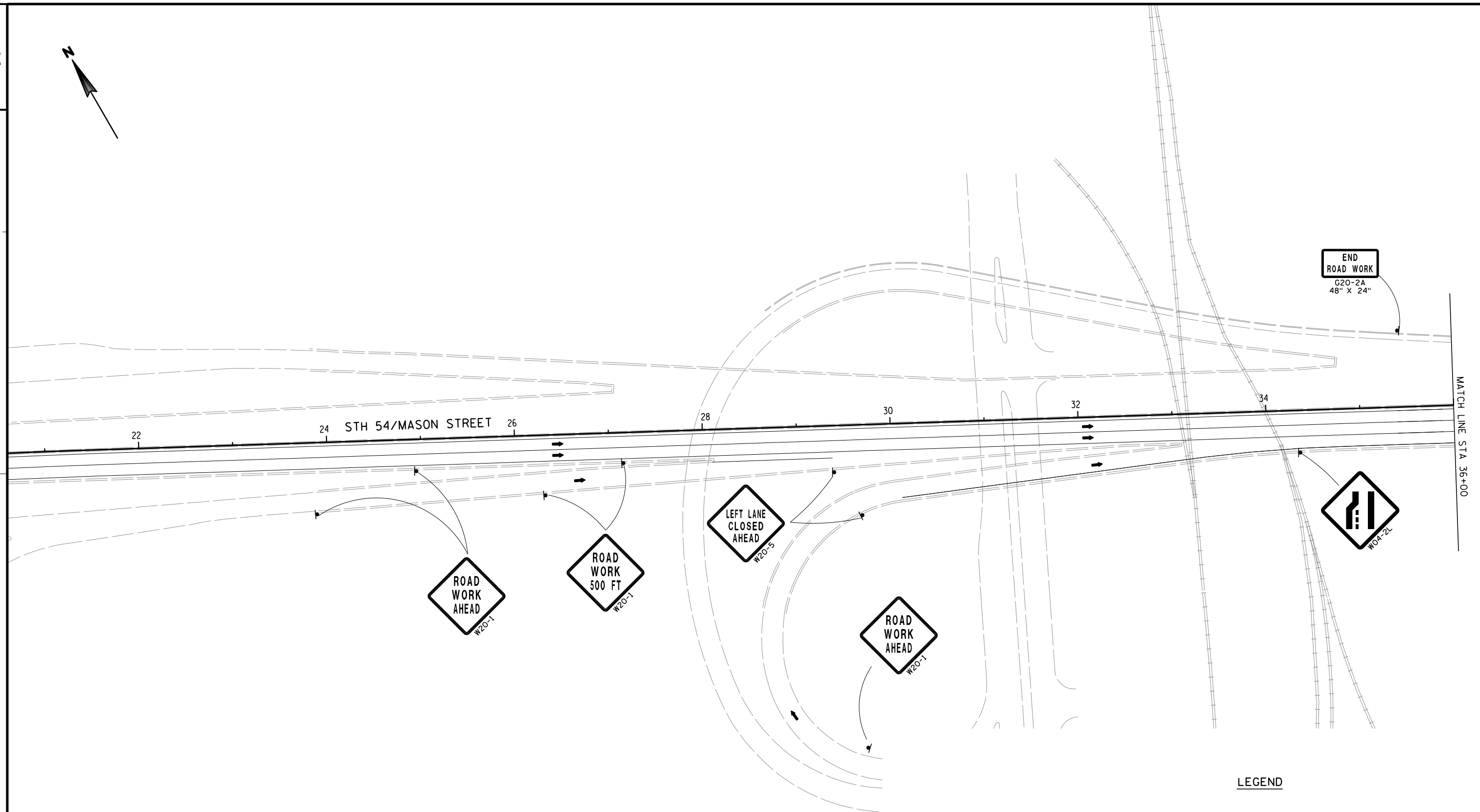


** FOR USE WITH TEMPORARY
SIDEWALK CLOSURE MOUNTED
ON BARRICADE TYPE II

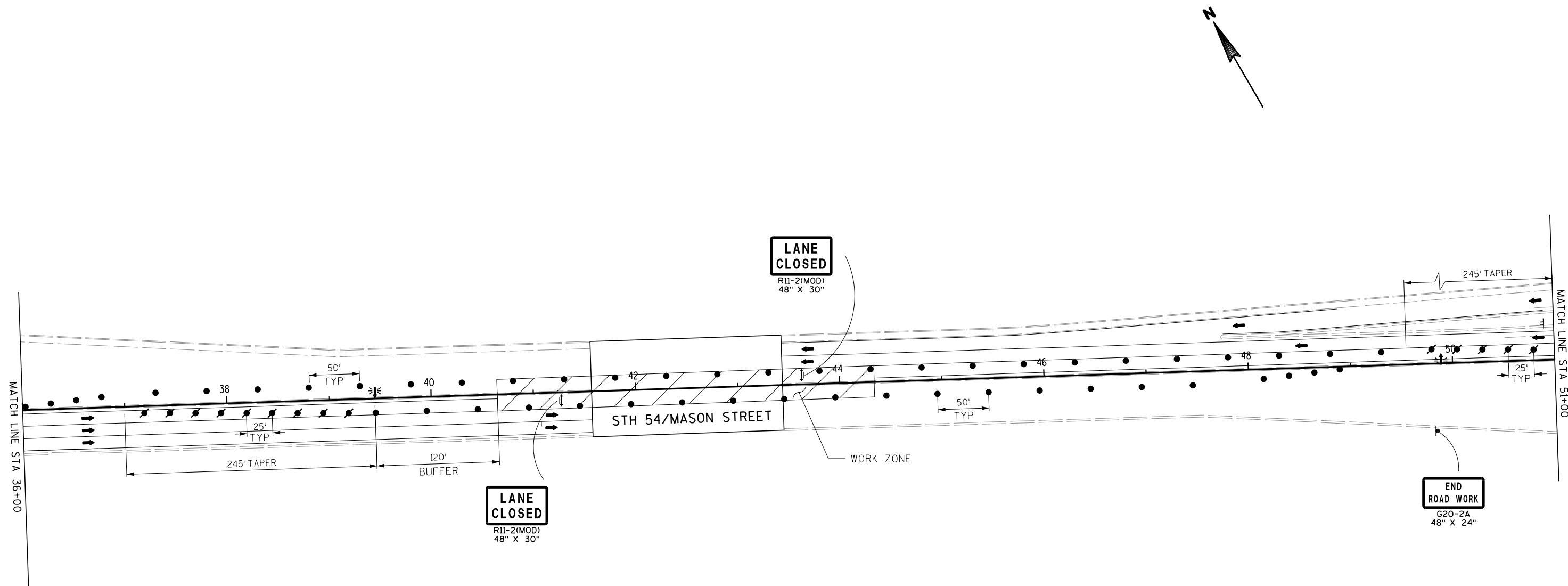


**LEGEND**

- ▬ POST MOUNTED TRAFFIC CONTROL SIGN
- ⌄ SIGN ON TEMPORARY SUPPORT
- ⌄/⌄ TRAFFIC CONTROL BARRICADE TYPE III WITH TWO TRAFFIC CONTROL WARNING LIGHTS TYPE A WITH / WITHOUT SIGN



TRAFFIC CONTROL SIGN MOUNTED ON CONCRETE PARAPET
UNLESS NOTED OTHERWISE
SEE TRAFFIC CONTROL CONSTRUCTION DETAIL FOR MORE
INFORMATION.

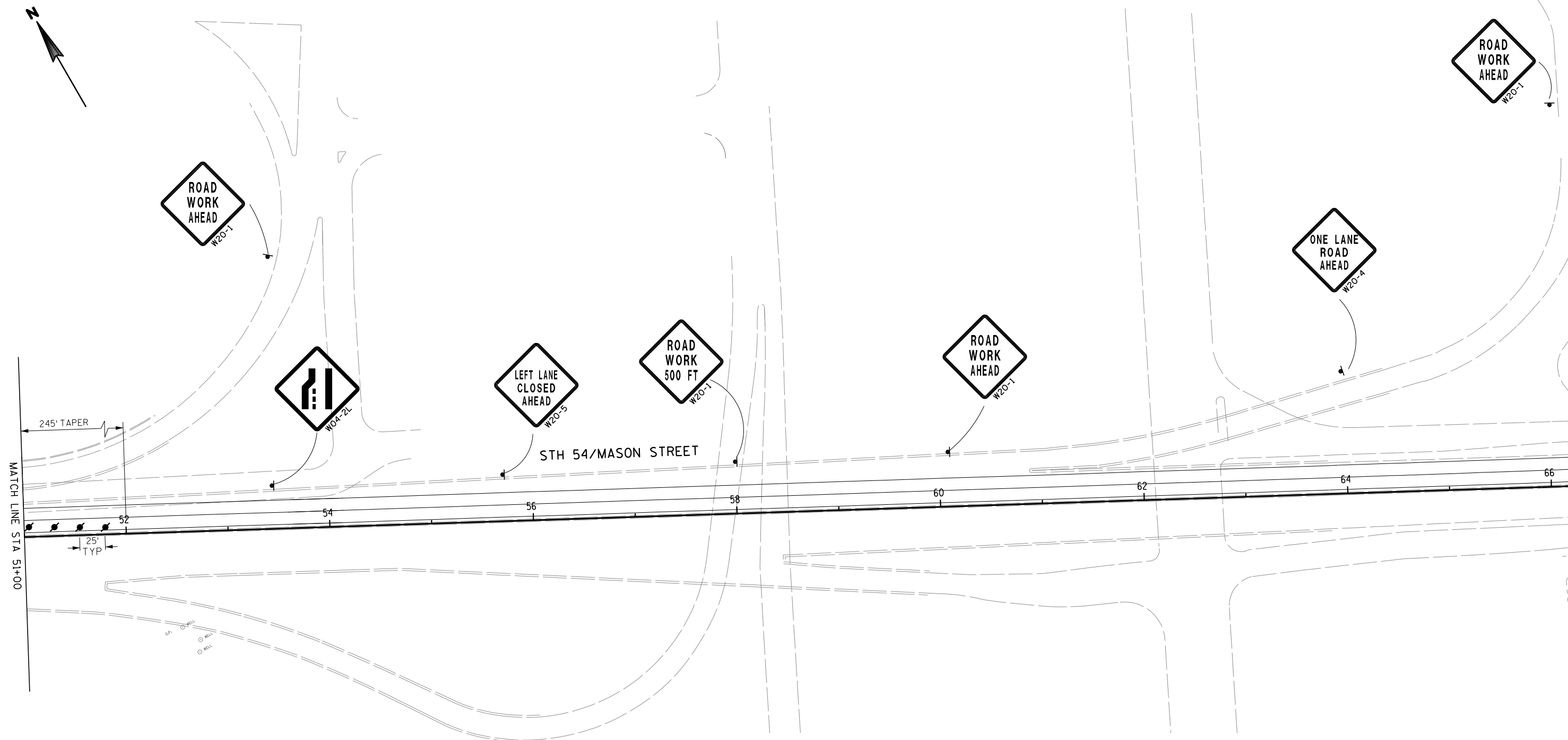


TRAFFIC CONTROL SIGN MOUNTED ON CONCRETE PARAPET
UNLESS NOTED OTHERWISE
SEE TRAFFIC CONTROL CONSTRUCTION DETAIL FOR MORE
INFORMATION.

LEGEND			
	CONSTRUCTION THIS STAGE		FLASHING ARROW BOARD
	TRAFFIC FLOW		SIGN ON TEMPORARY SUPPORT
	TRAFFIC CONTROL DRUM WITH / WITHOUT TRAFFIC CONTROL WARNING LIGHT TYPE C		
	POST MOUNTED TRAFFIC CONTROL SIGN		
	TRAFFIC CONTROL BARRICADE TYPE III WITH TWO TRAFFIC CONTROL WARNING LIGHTS TYPE A WITH / WITHOUT SIGN		

2

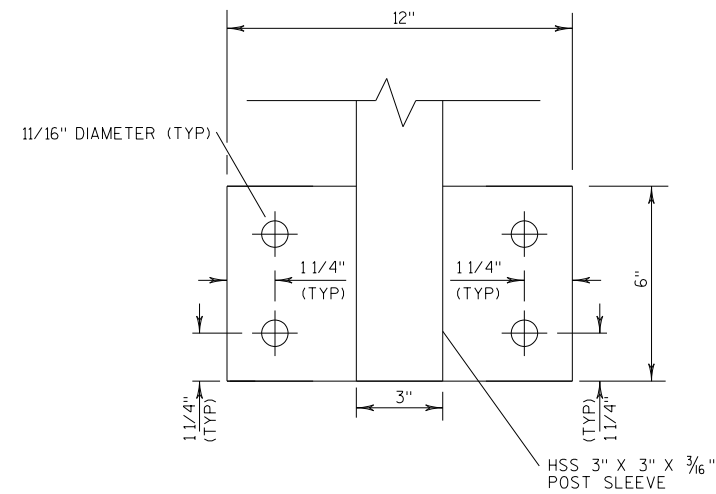
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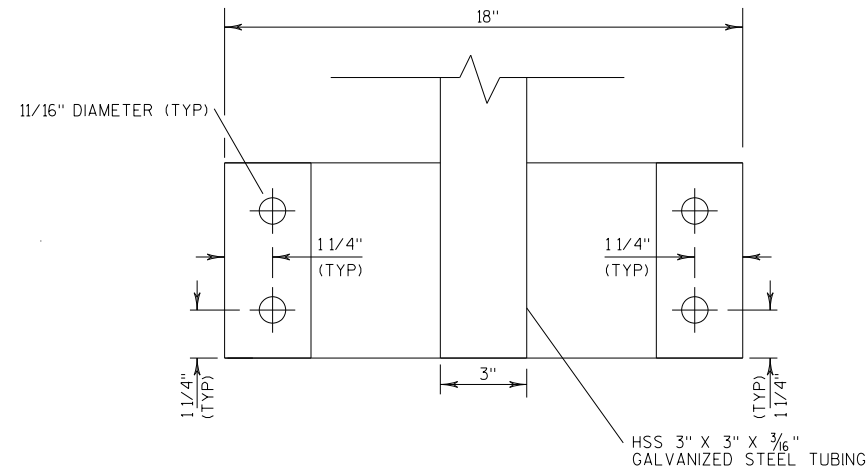
LEGEND

- | | |
|---|---|
|  | TRAFFIC CONTROL DRUM
WITH / WITHOUT TRAFFIC CONTROL
WARNING LIGHT TYPE C |
|  | SIGN ON TEMPORARY SUPPORT |
|  | POST MOUNTED TRAFFIC CONTROL SIGN |
|  | TRAFFIC CONTROL BARRICADE TYPE III
WITH TWO TRAFFIC CONTROL WARNING
LIGHTS TYPE A WITH / WITHOUT SIGN |

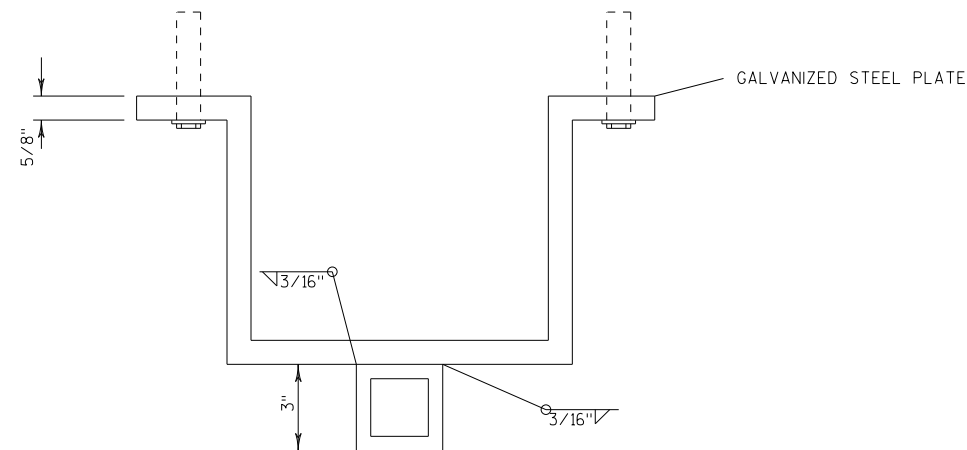
TRAFFIC CONTROL SIGN MOUNTED ON CONCRETE PARAPET
UNLESS NOTED OTHERWISE
SEE TRAFFIC CONTROL CONSTRUCTION DETAIL FOR MORE
INFORMATION.



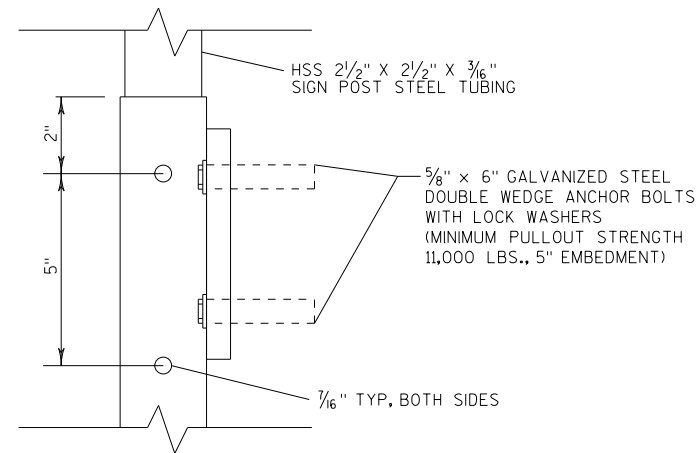
SIDE VIEW



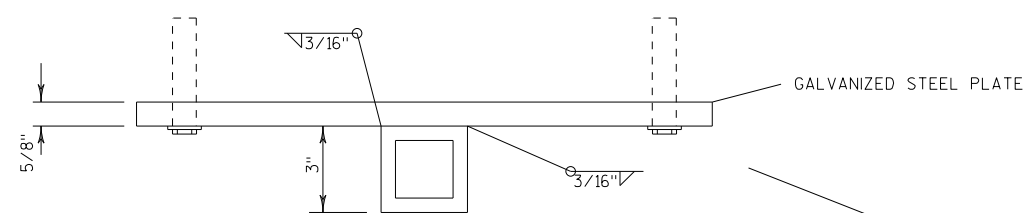
SIDE VIEW



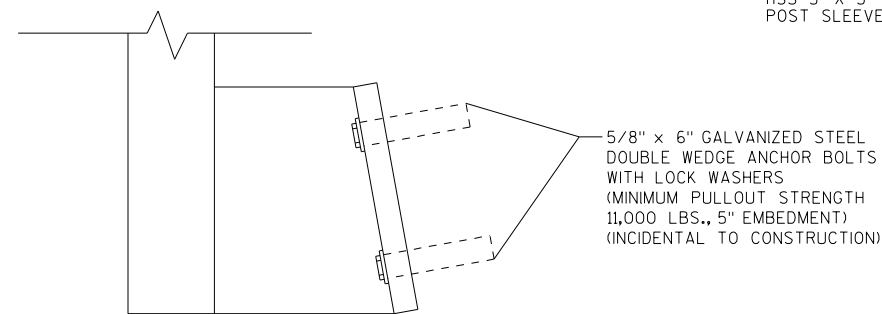
PLAN VIEW



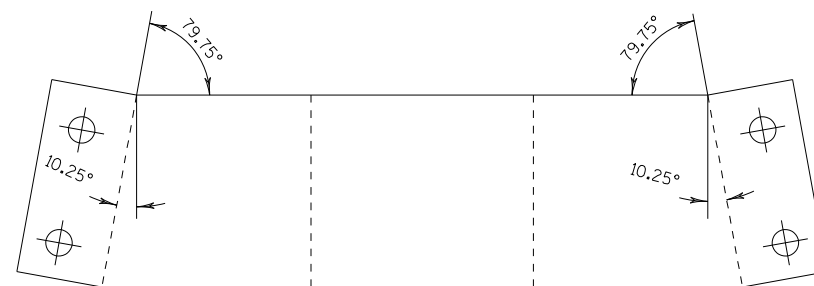
ELEVATION VIEW



PLAN VIEW



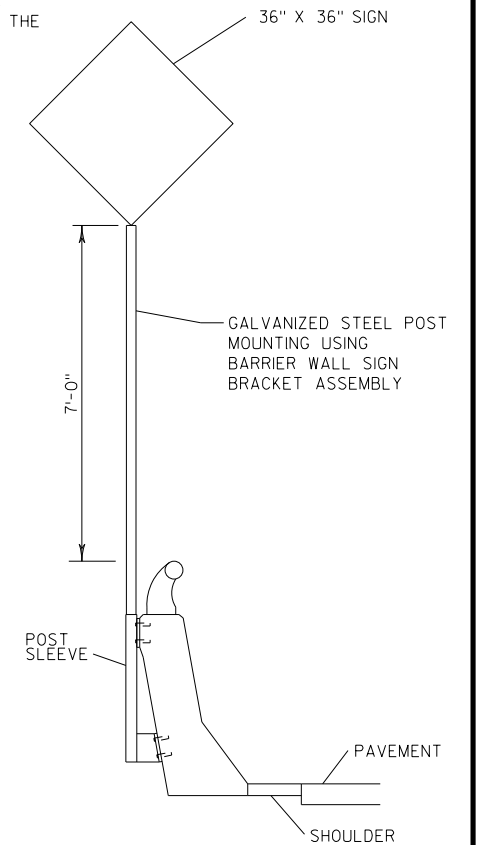
ELEVATION VIEW



STEEL PLATE BEFORE BENDING TO BRACKET SHAPE

NOTES:

- 1) ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION.
- 2) ALL MATERIAL TO BE APPROVED BY ENGINEER BEFORE INSTALLATION.
- 3) SEE SIGN PLATE A4-8 FOR BOLT REQUIREMENTS.
- 4) BARRIER WALL SIGN BRACKETS ARE TEMPORARY.
- 5) UPON REMOVAL OF THE BRACKETS AND ANCHOR BOLTS, COMPLETELY FILL REMAINING HOLES WITH A NON-SHRINK COMMERCIAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCT LIST. (INCIDENTAL TO CONSTRUCTION).
- 6) FABRICATING, FURNISHING, INSTALLATION AND REMOVAL OF THE BARRIER WALL SIGN BRACKETS ARE INCIDENTAL TO "TRAFFIC CONTROL SIGNS".



3

DATE 16APR13		E S T I M A T E O F Q U A N T I T I E S			
LINE				9210-14-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0210.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL (STRUCTURE) 01. B-05-134	LS	1.000	1.000
0020	203.0700.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM (STATION) 01. 42+50	LS	1.000	1.000
0150	502.0100	CONCRETE MASONRY BRIDGES 01. B-05-134	CY	19.000	19.000
0160	502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	74.000	74.000
0170	502.6115	MASONRY ANCHORS TYPE S 7/8-INCH	EACH	8.000	8.000
0180	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	290.000	290.000
0190	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,680.000	1,680.000
0200	506.0105	STRUCTURAL STEEL CARBON	LB	4,120.000	4,120.000
0210	506.0605	STRUCTURAL STEEL HS	LB	21,840.000	21,840.000
0220	513.4050	RAILING TUBULAR TYPE F (STRUCTURE) 01. B-05-134	LS	1.000	1.000
0230	517.0600	PAINTING EPOXY SYSTEM (STRUCTURE) 01. B-05-134	LS	1.000	1.000
0280	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	662.500	662.500
0290	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	662.500	662.500
0300	614.0905	CRASH CUSHIONS TEMPORARY	EACH	2.000	2.000
0310	616.0700.S	FENCE SAFETY	LF	200.000	200.000
0320	619.1000	MOBILIZATION	EACH	0.600	0.600
0370	638.2102	MOVING SIGNS TYPE II	EACH	1.000	1.000
0410	643.0100	TRAFFIC CONTROL (PROJECT) 03. 9210-14-71	EACH	1.000	1.000
0420	643.0300	TRAFFIC CONTROL DRUMS	DAY	1,265.000	1,265.000
0430	643.0410	TRAFFIC CONTROL BARRICADES TYPE II	DAY	135.000	135.000
0440	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	20.000	20.000
0450	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	40.000	40.000
0460	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	765.000	765.000
0470	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,270.000	1,270.000
0480	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	14.000	14.000
0520	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	400.000	400.000
0550	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	2,000.000	2,000.000
0560	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	1,320.000	1,320.000
0590	SPV.0105	SPECIAL 01. MASON STREET BRIDGE ELECTRICAL WORK, B-05-134	LS	1.000	1.000
0620	SPV.0105	SPECIAL 04. MASON STREET BRIDGE CCTV SYSTEM, B-05-134	LS	1.000	1.000
0650	SPV.0105	SPECIAL 07. MASON STREET BRIDGE MACHINERY WORK, B-05-134	LS	1.000	1.000
0680	SPV.0105	SPECIAL 10. MASON STREET BRIDGE STEEL THRIE BEAM, B-05-134	LS	1.000	1.000

3

3

BARRIER TEMPORARY AND FENCE SAFETY ITEMS

ROADWAY	STATION - STATION	LOCATION	STAGE	603.8000	603.8125	614.0905	616.0700.S
				CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF		CRASH CUSHIONS TEMPORARY FENCE SAFETY LF
CAT 0010							
STH 54	39+24 - 41+60	RT	1	237.5	237.5	1	--
STH 54	42+90 - 47+60	LT	1	425.0	425.0	1	200
TOTALS				662.5	662.5	2	200

3

MOVING SIGNS TYPE II

ROADWAY	STATION	LOCATION	STAGE	638.2102
				EACH
CAT 0010				
STH 54	33+00	RT	1	1
TOTAL				1

TRAFFIC CONTROL SIGNS PCMS

ROADWAY	STAGE	DAYS	643.1050	
			NO.	DAY
CAT 0010				
STH 54	1	7	2	14
TOTAL				14

TRAFFIC CONTROL ITEMS

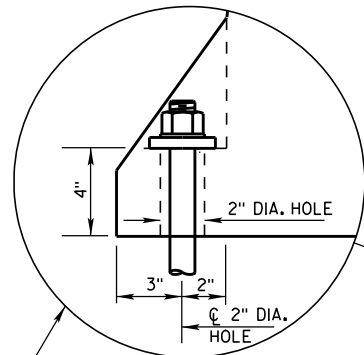
ROADWAY	STAGE	DAYS	643.0300		643.0410		643.0420		643.0705		643.0715		643.0900	
			DRUMS		BARRICADES TYPE II		BARRICADES TYPE III		WARNING LIGHTS TYPE A		WARNING LIGHTS TYPE C		SIGNS	
CAT 0010			NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY
STH 54	1	45	13	585	3	135	--	--	--	--	13	585	24	1,080
STH 54	2	10	68	680	--	--	2	20	4	40	18	180	19	190
TOTALS				1,265		135		20		40		765		1,270

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH

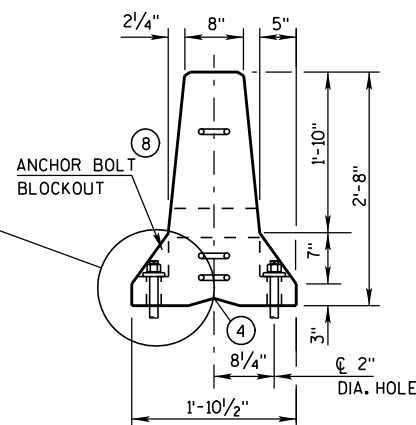
ROADWAY	STATION - STATION	LOCATION	STAGE	649.0400
				(WHITE) LF
CAT 0010				
STH 54	34+40 - 38+40	RT	1	400
TOTAL				400

Standard Detail Drawing List

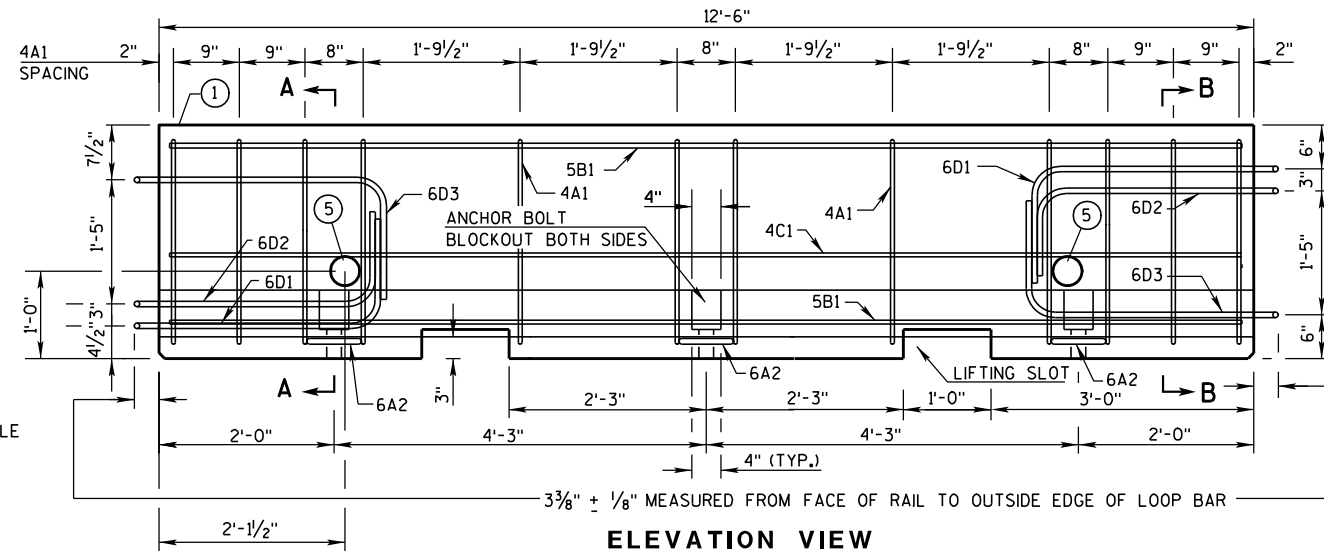
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B20-11H	STEEL THRIE BEAM STRUCTURE APPROACH, SINGLE SLOPE ATTACHMENT
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C05-01	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D20-01	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D28-01	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D29-02	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE



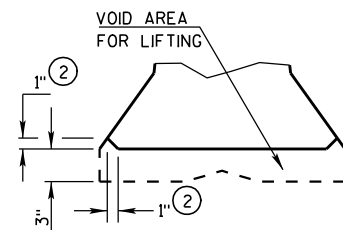
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



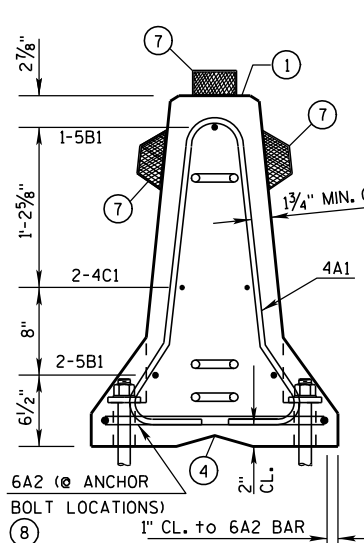
END VIEW



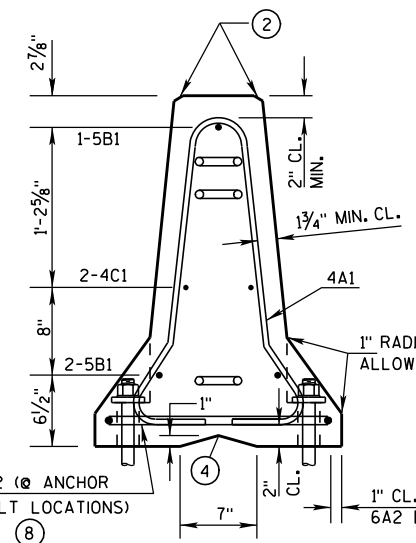
ELEVATION VIEW



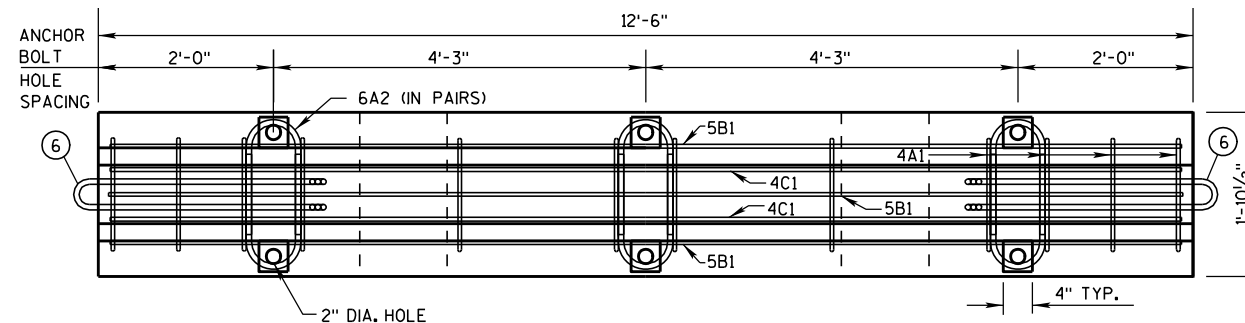
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

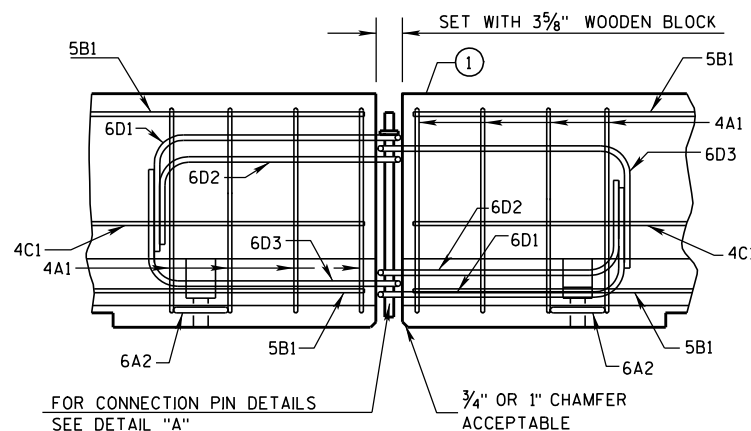


SECTION B-B
(STIRRUP PLACEMENT)

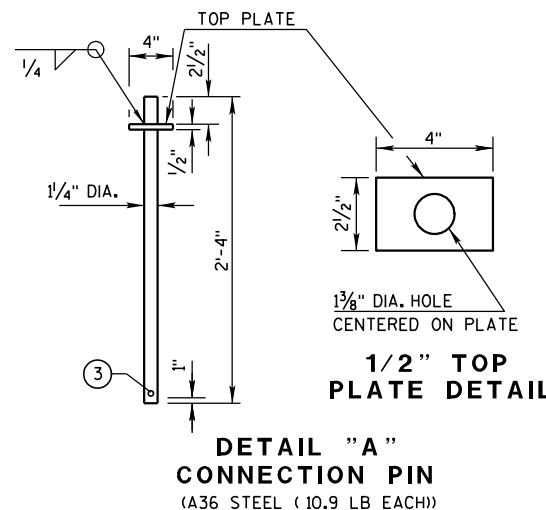


PLAN VIEW

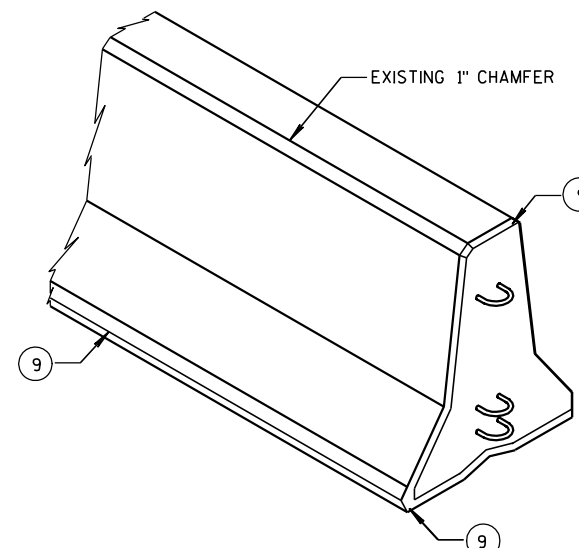
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(g) THRU 14B7-13(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

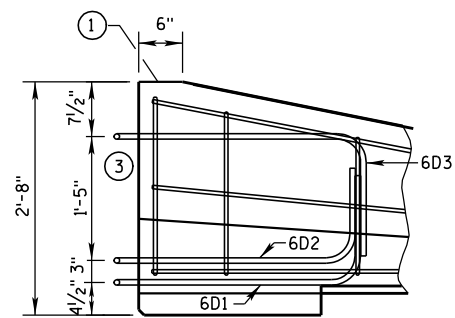
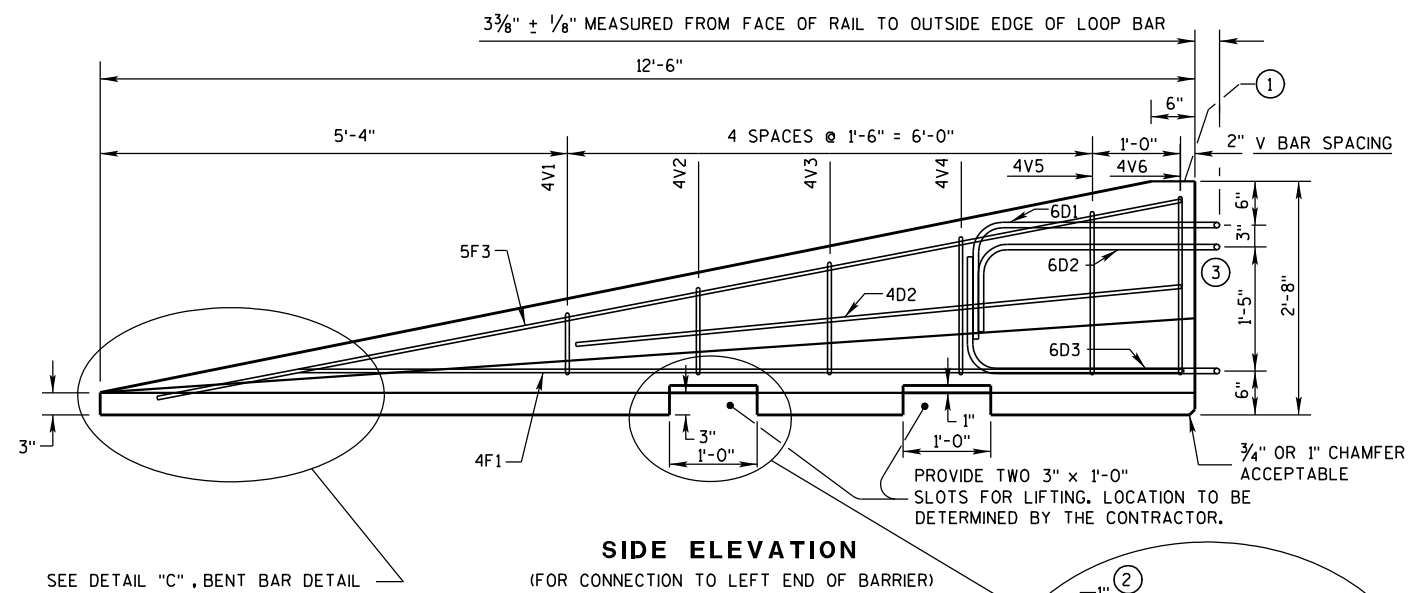
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - TYPE: WICBTP
 - MANUFACTURER
 - DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURER'S INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR ANCHORING CRITERIA.
- 1" CHAMFER OPTIONAL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

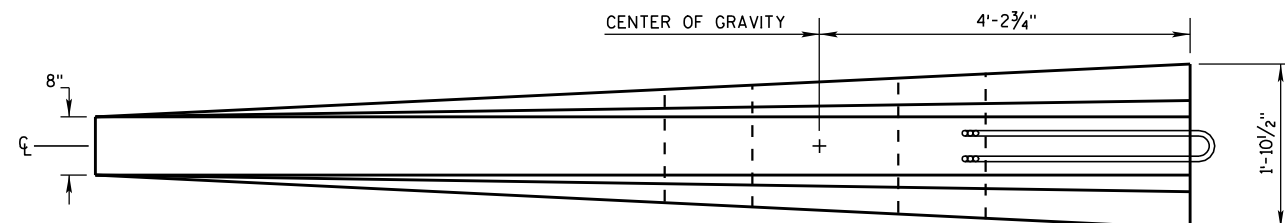
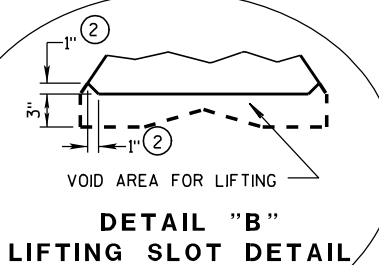


GENERAL NOTES

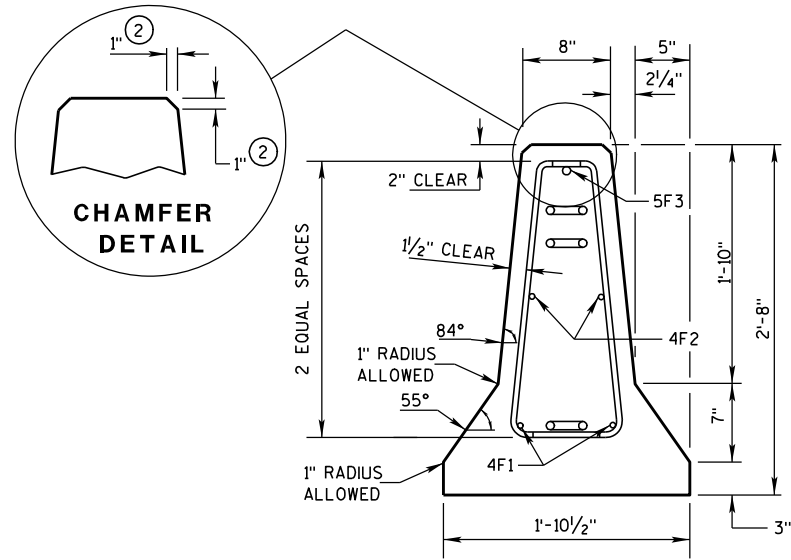
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

SIDE ELEVATION

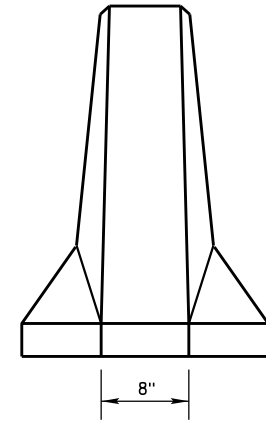
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)



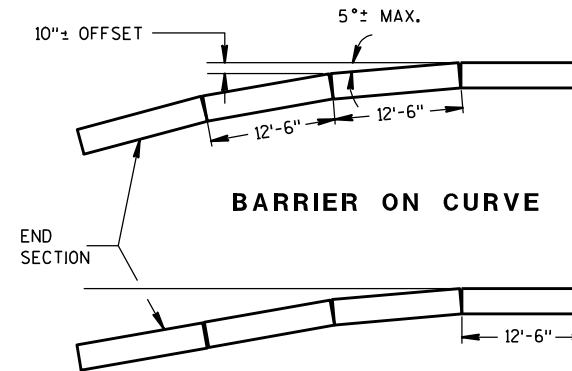
PLAN VIEW



END SECTION



FRONT ELEVATION



FLARE AT BARRIER END

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

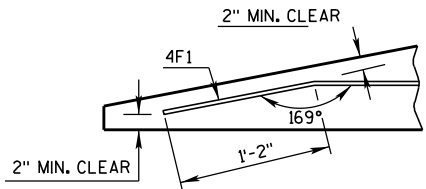
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

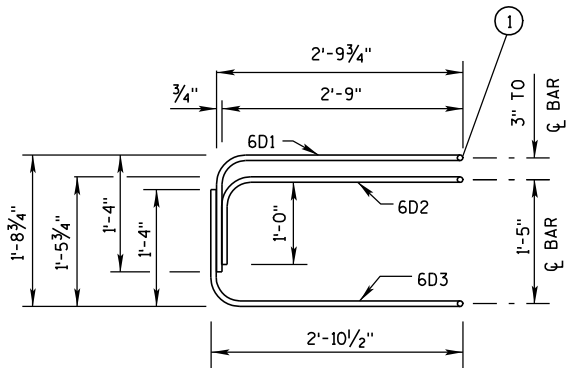
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

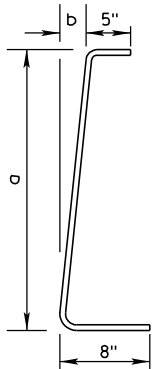
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

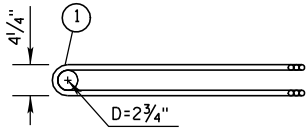
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION
BILL OF MATERIALS

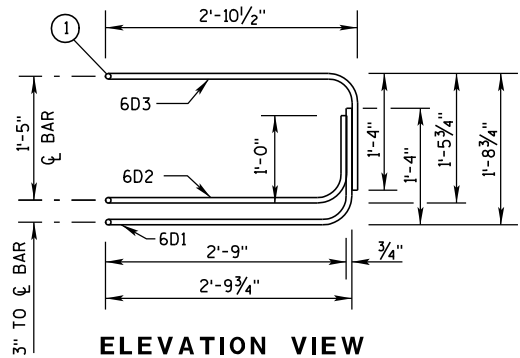
(PER 12'-6" BARRIER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"

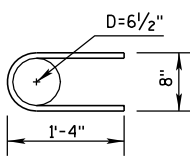


PLAN VIEW
LOOP BAR ASSEMBLY

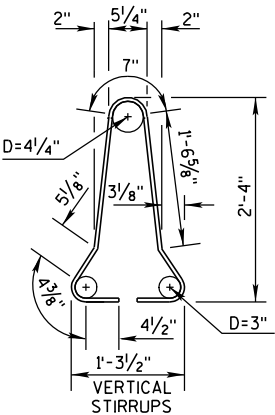
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

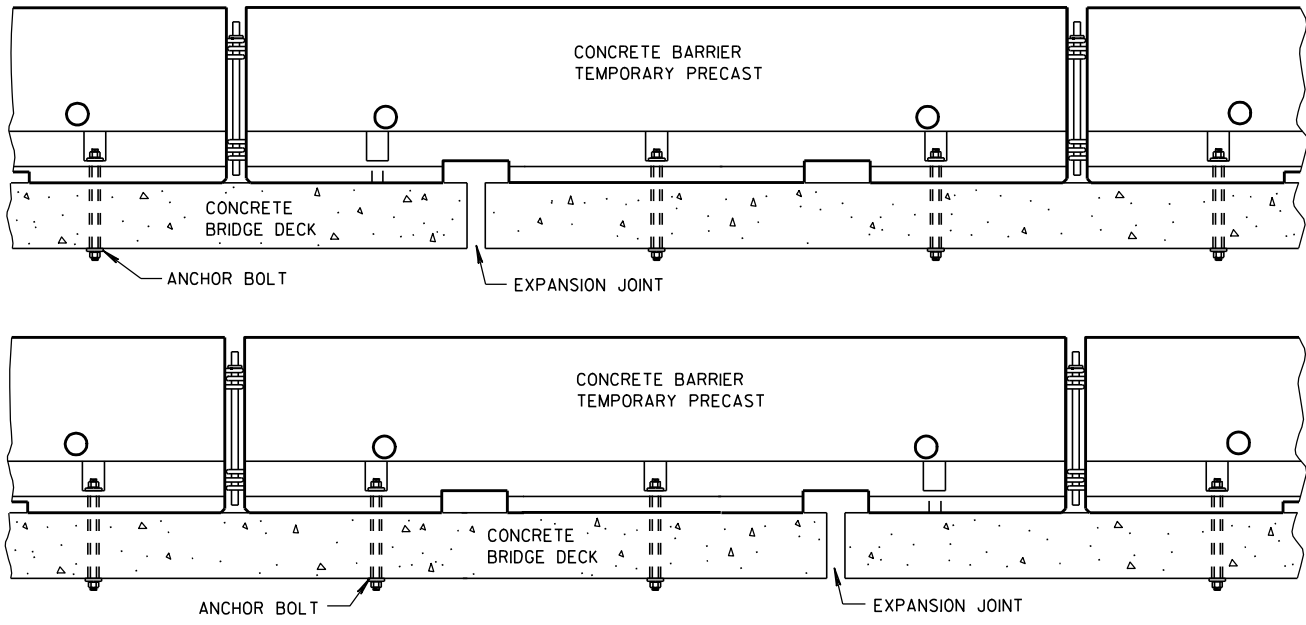


4A1

BARRIER SECTION

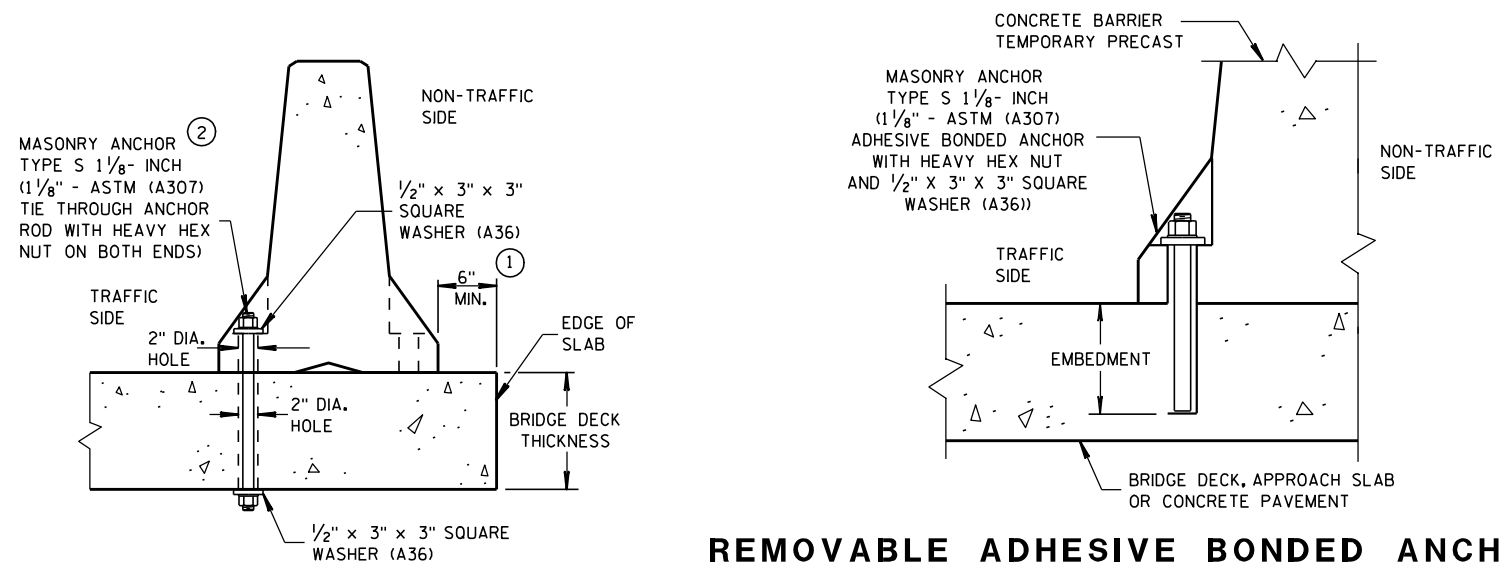
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)

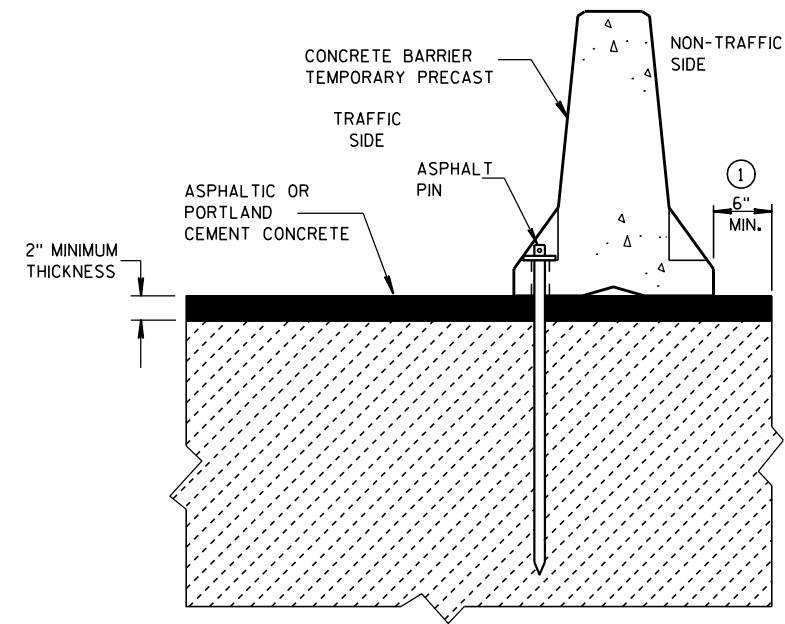


THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

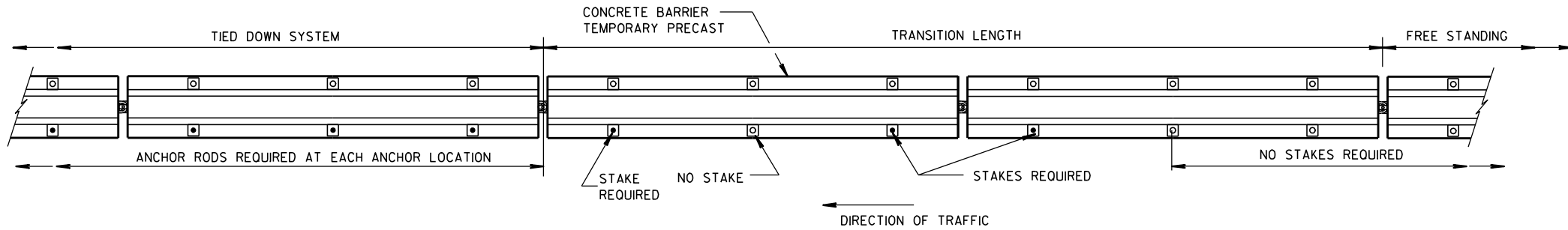
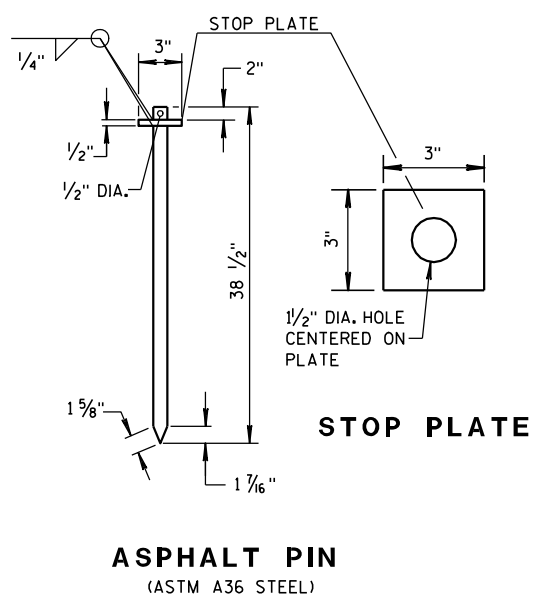
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

- 1 CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

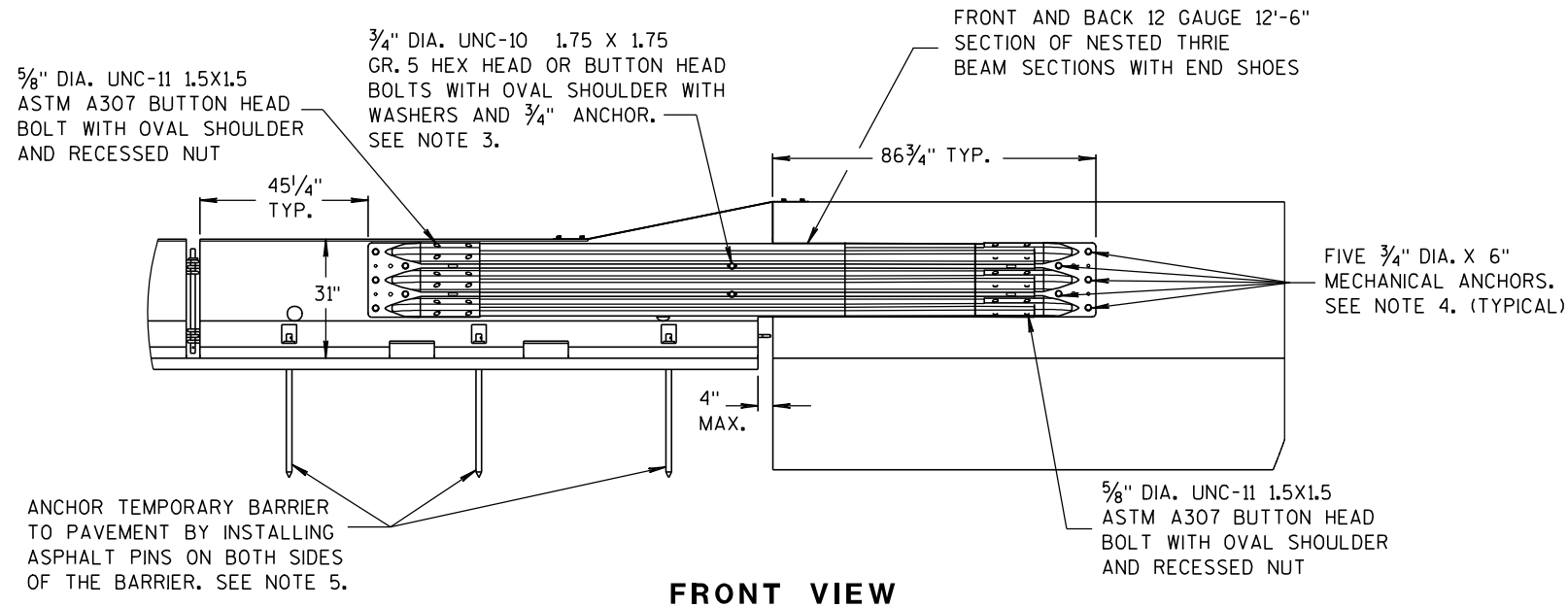
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.
- 2 ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1 1/8-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.

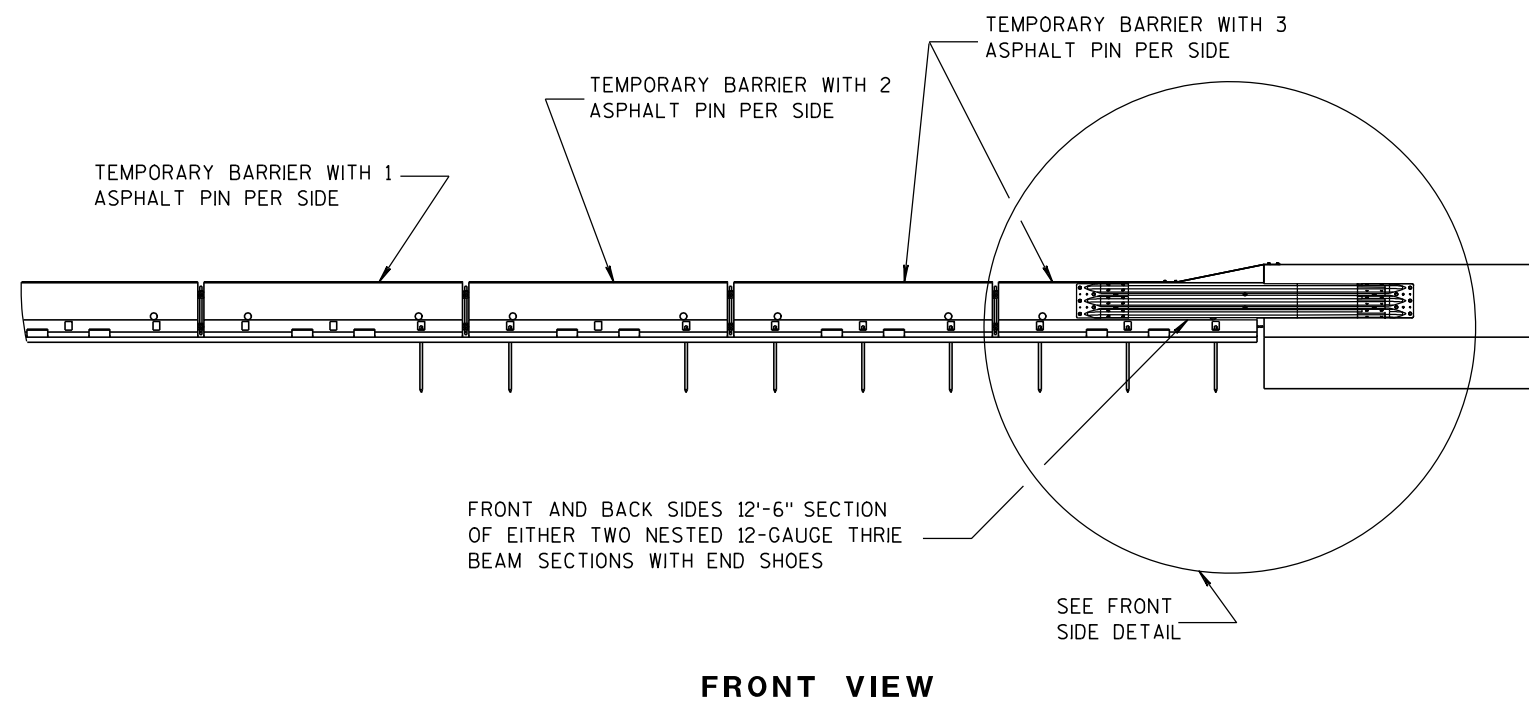
**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

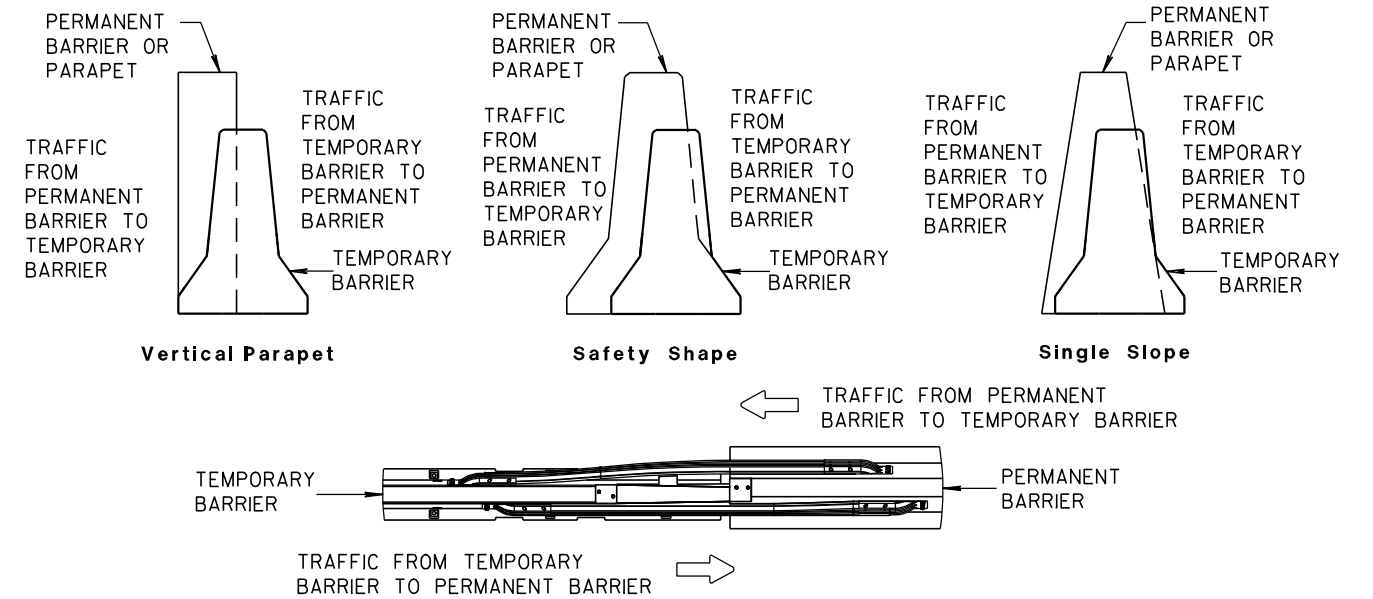


NOTES

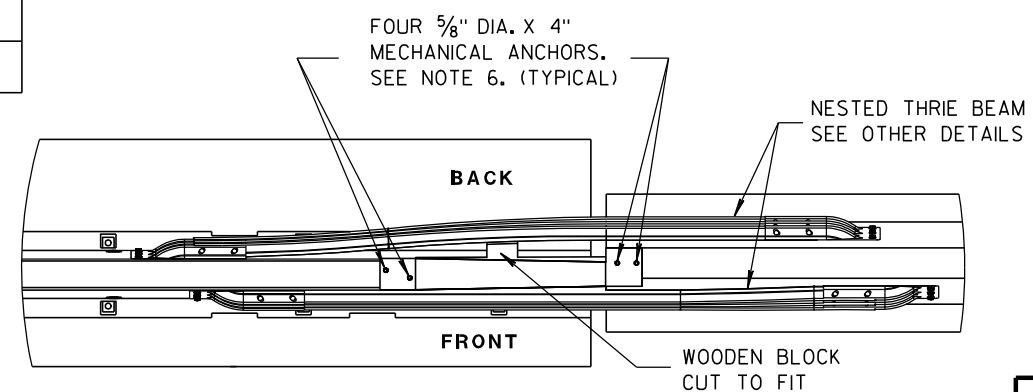
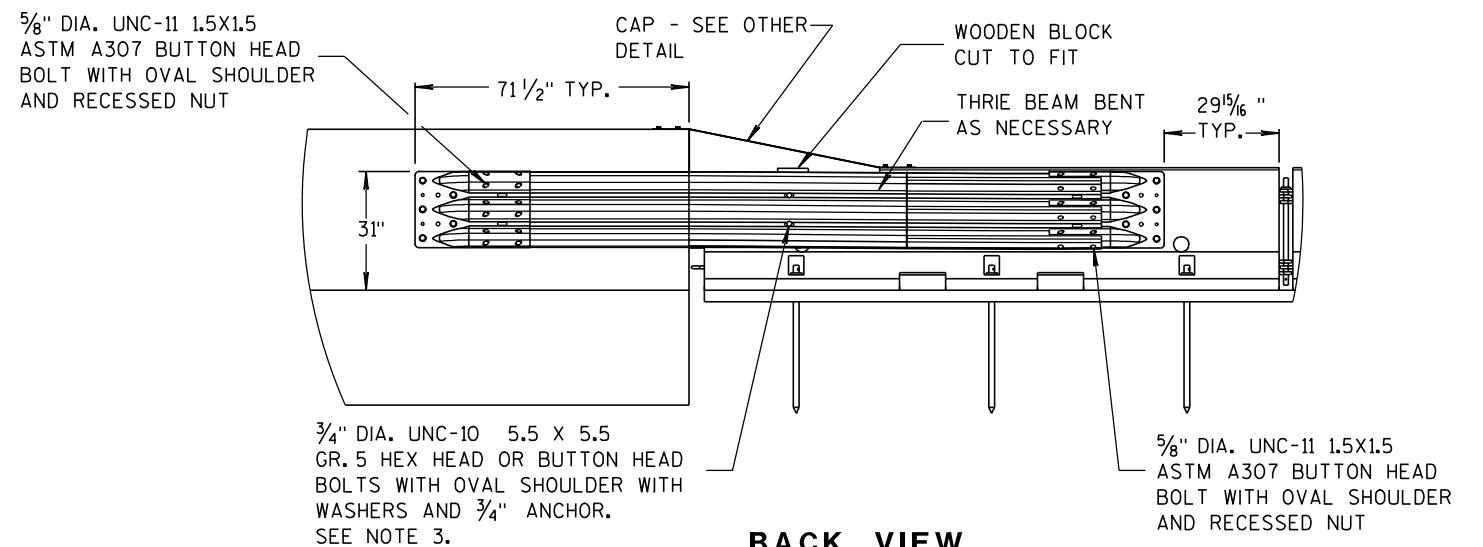
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

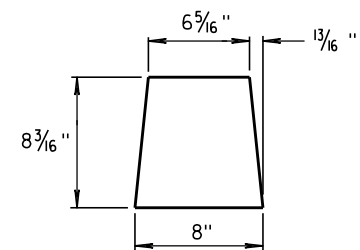
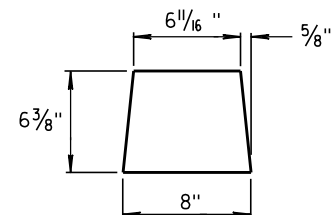
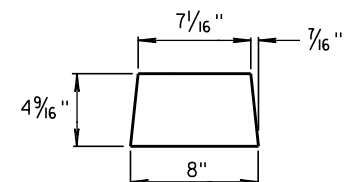
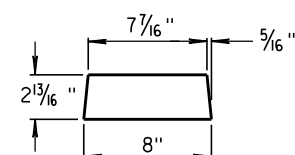
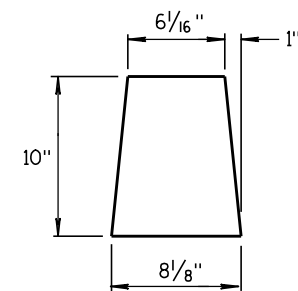
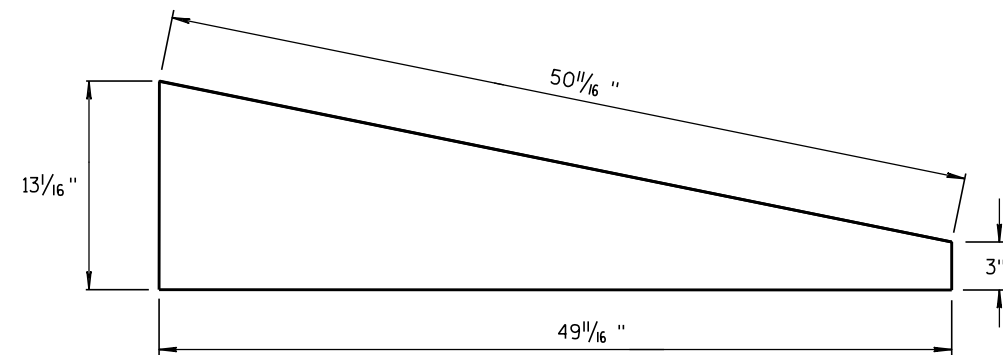
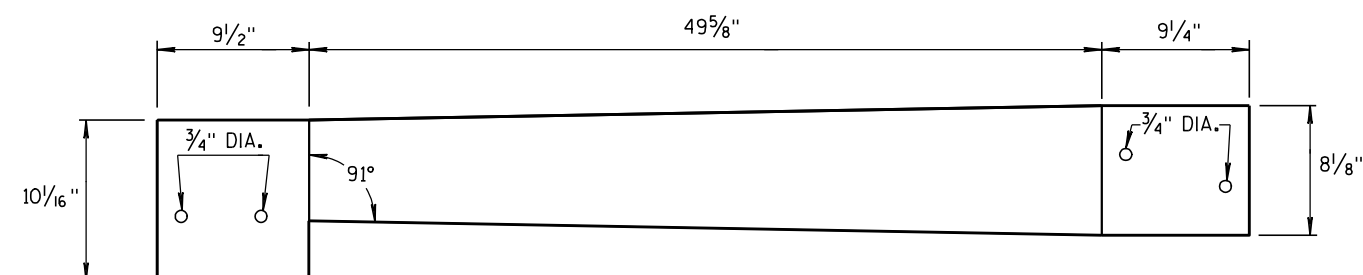
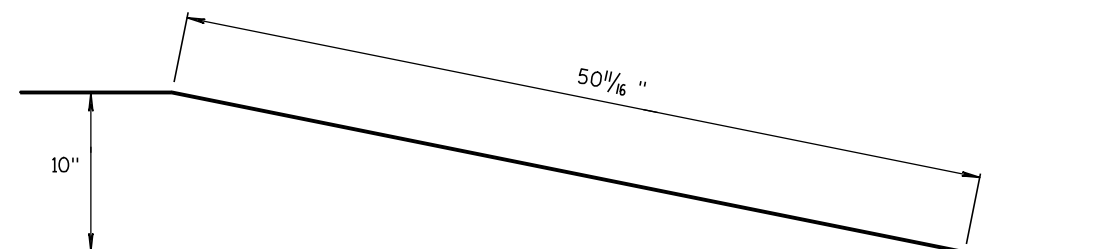


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



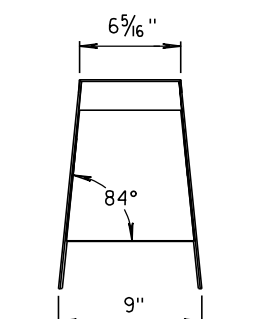
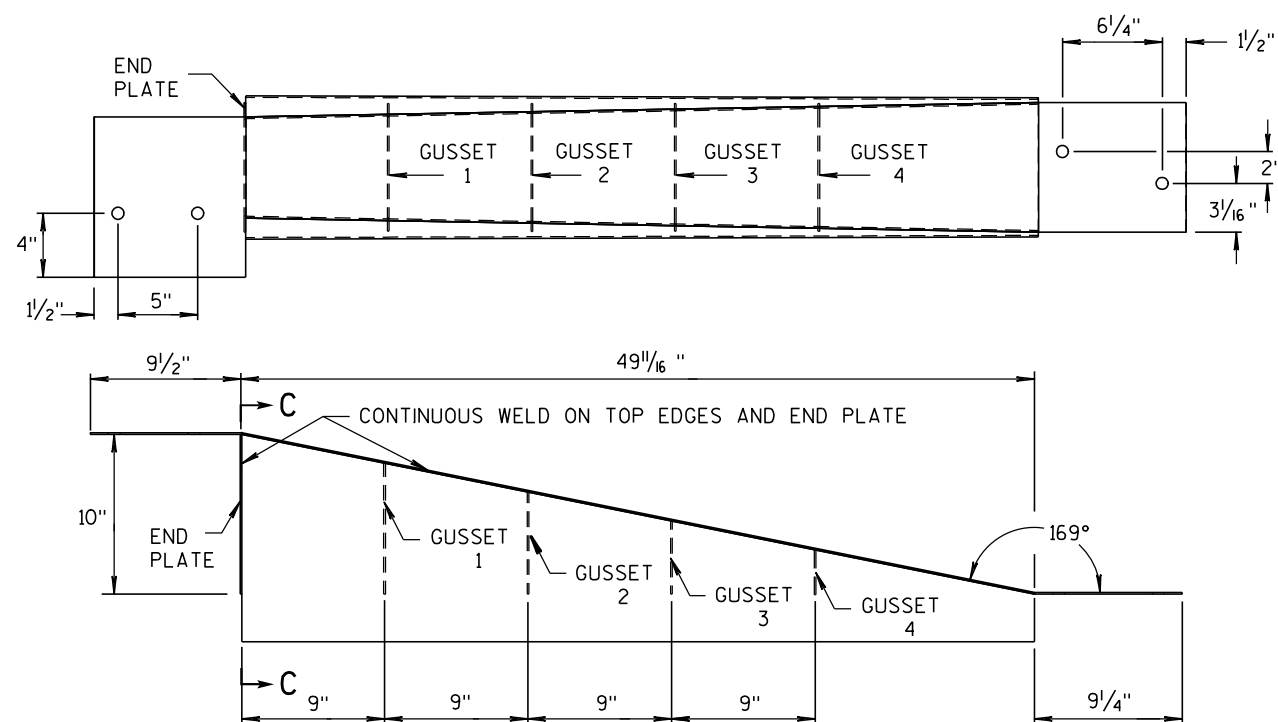
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**GUSSET 1****GUSSET 2****GUSSET 3****GUSSET 4****GUSSETS****END PLATE****SIDE PLATE****TOP PLATE**

**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

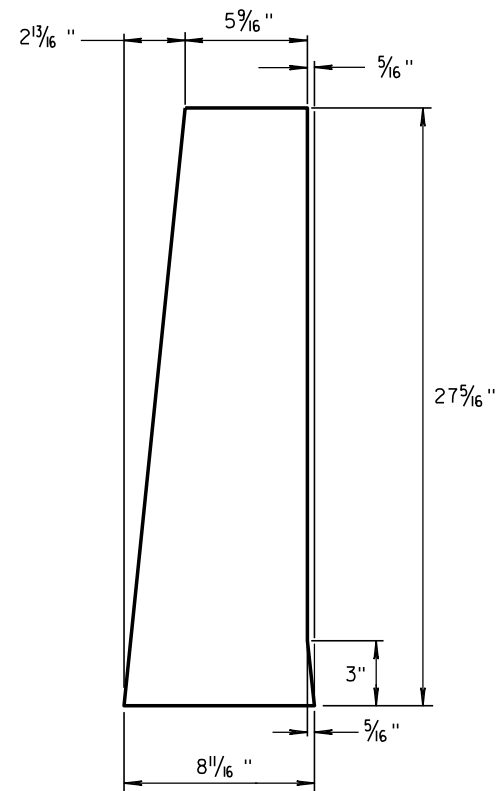
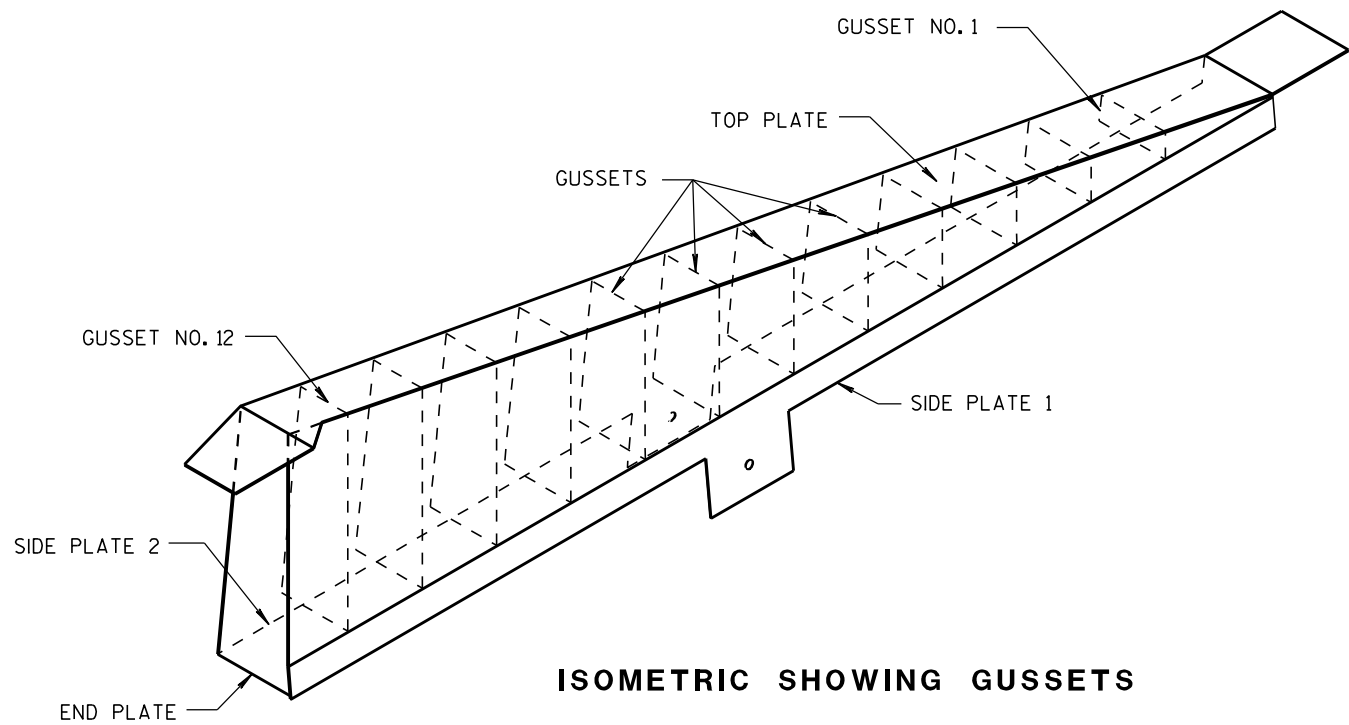
**SECTION C-C****NOTES**

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

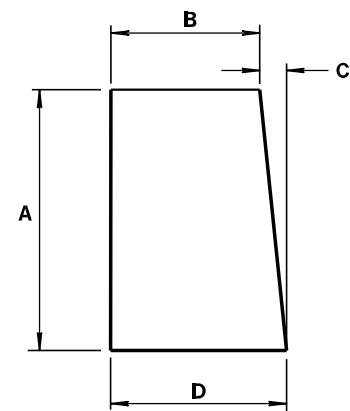
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



1/8" STEEL PLATE

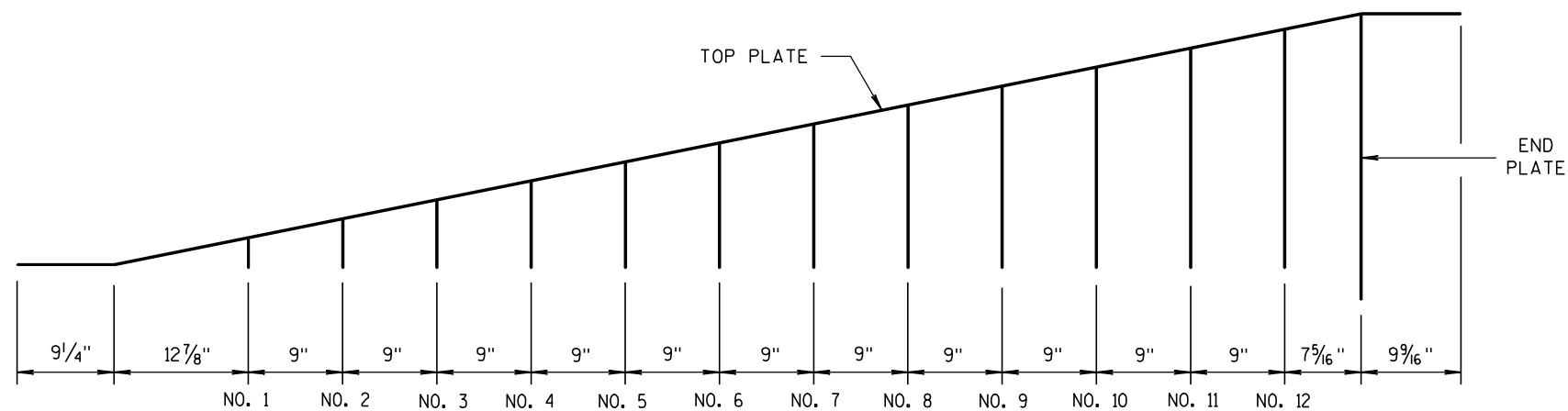


ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8 "	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

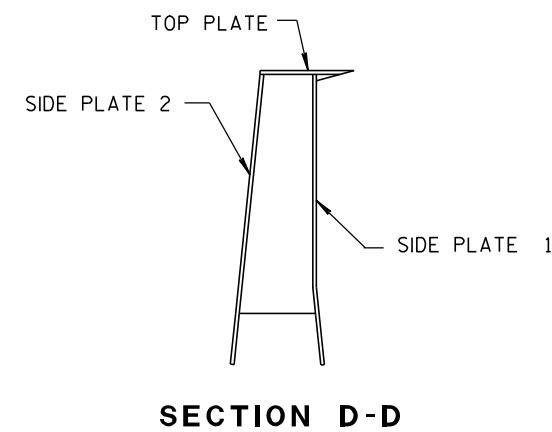
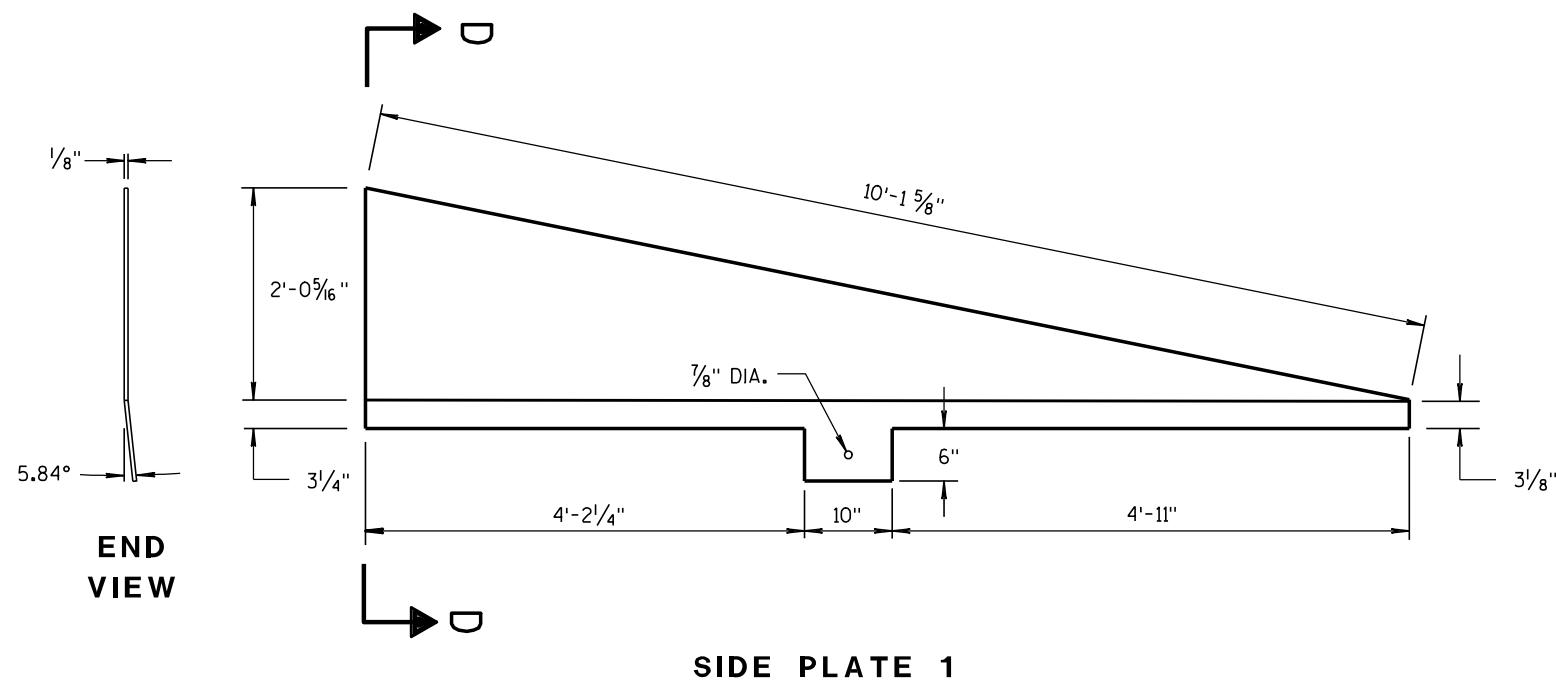
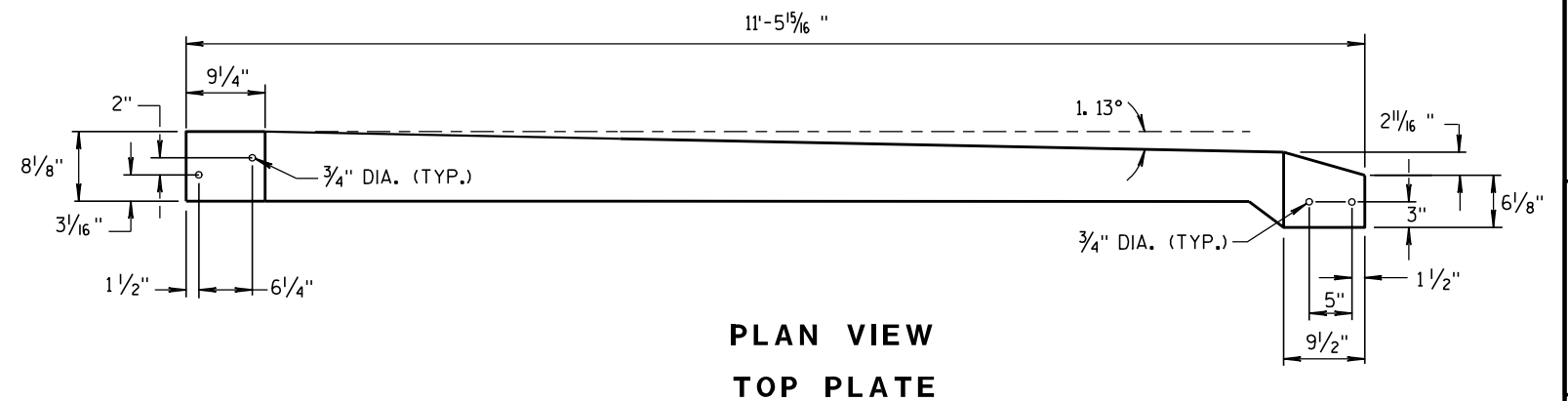
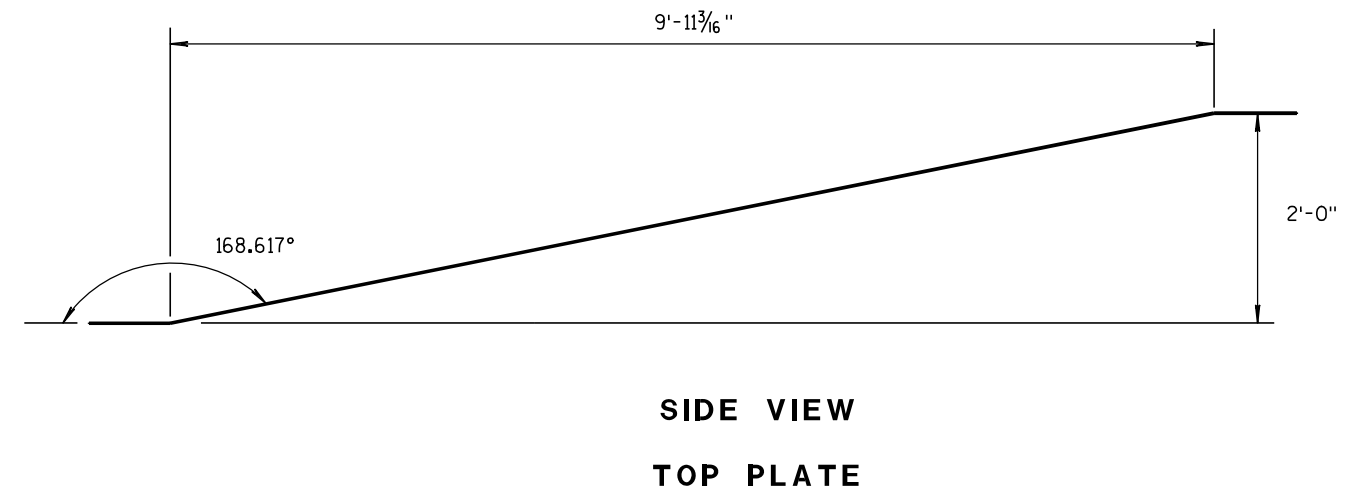
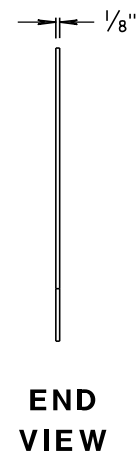
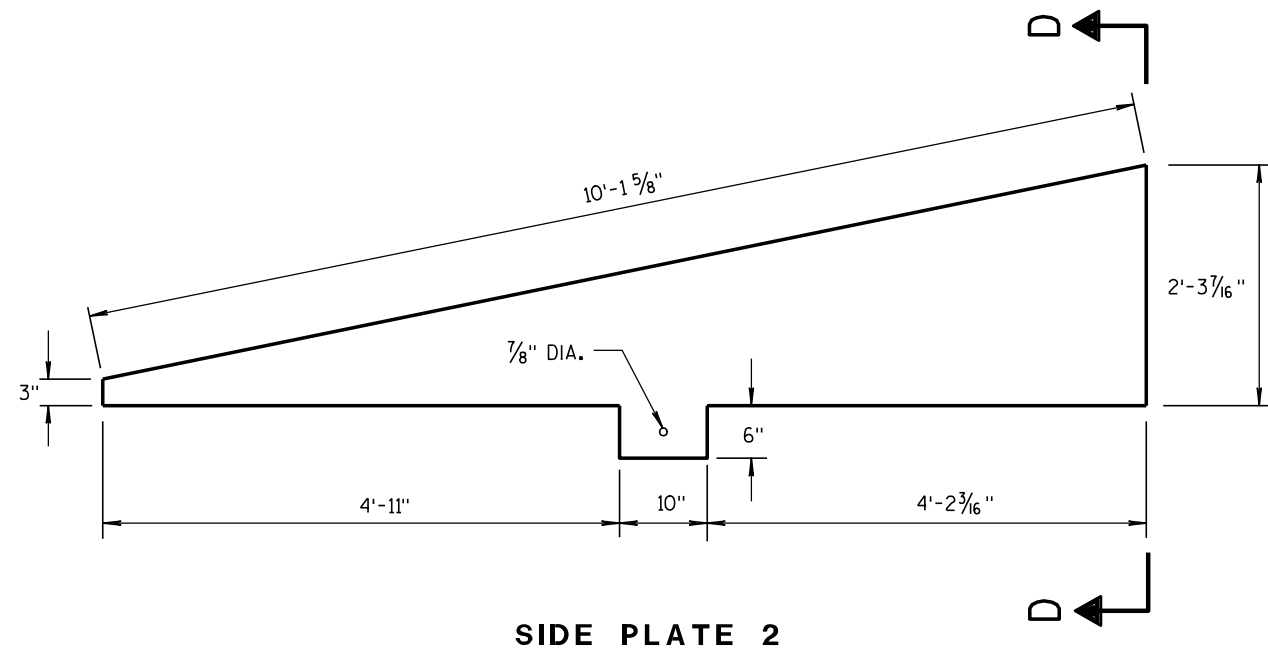
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

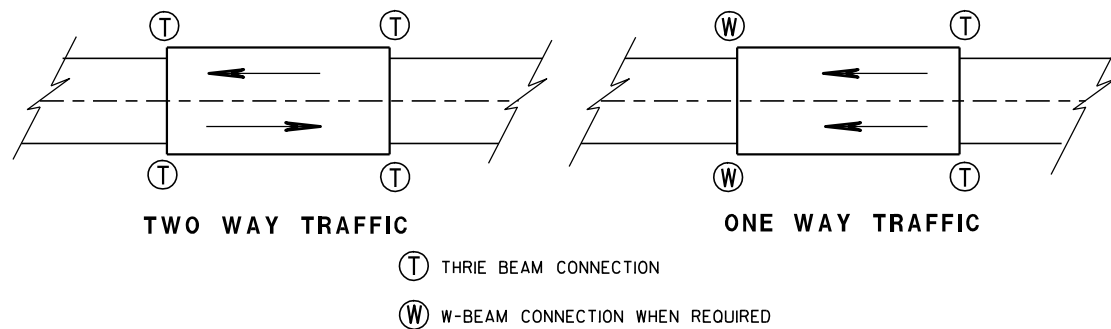
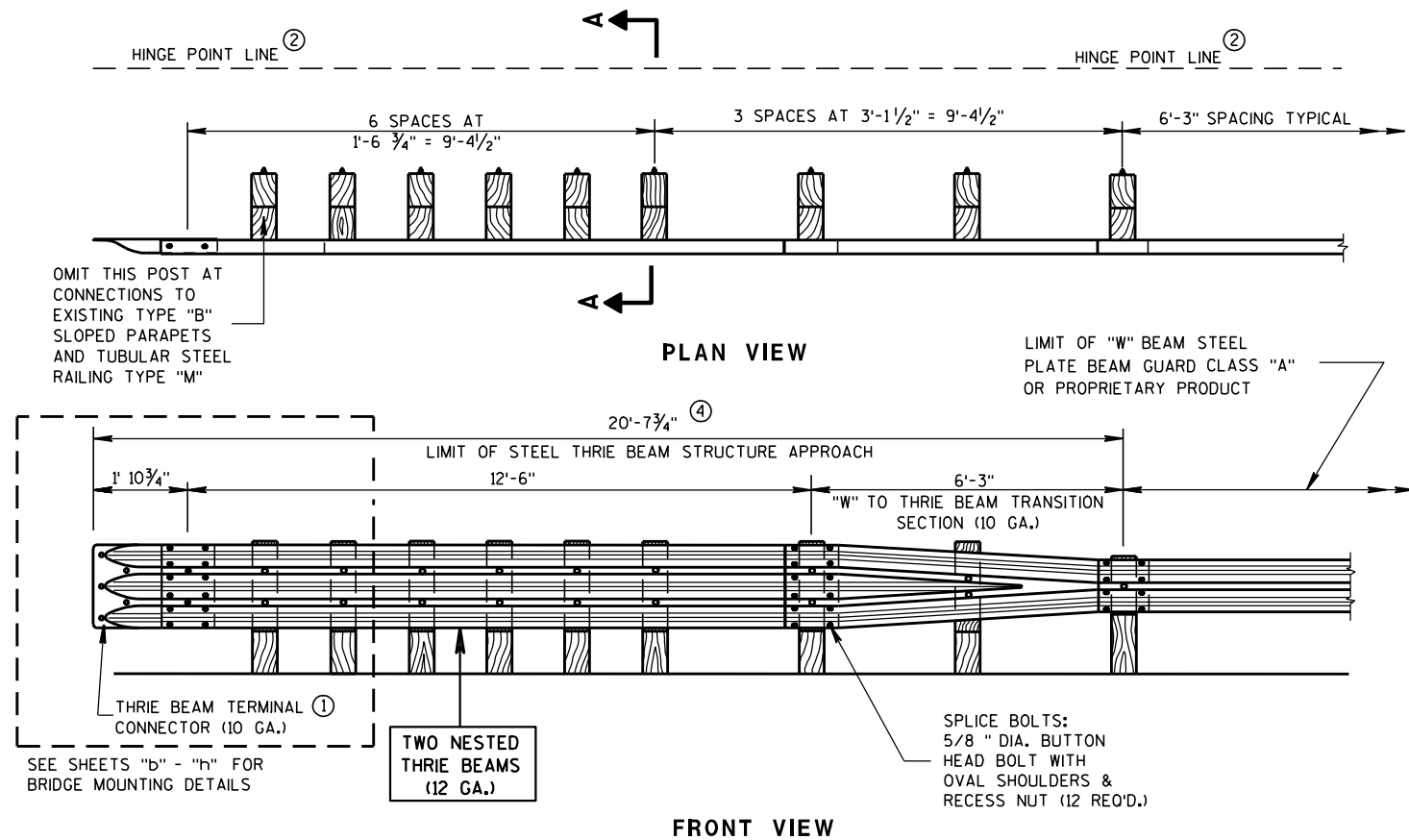
FHWA

/S/ Jerry H. 7-13h

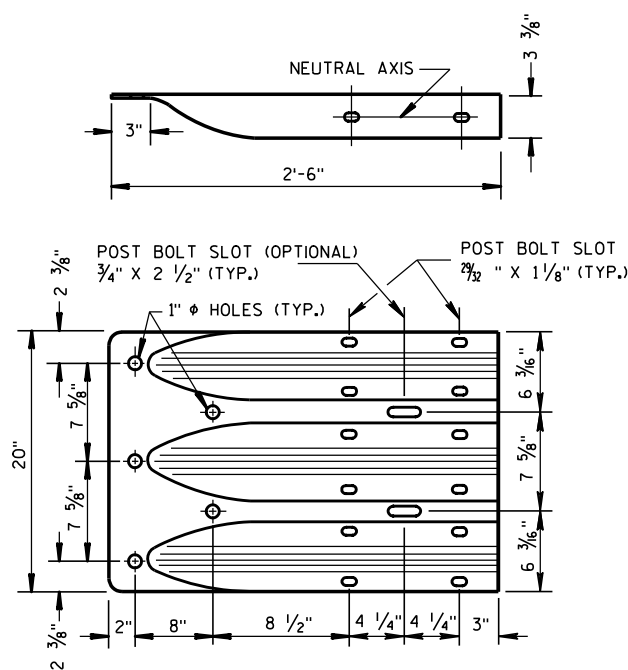
ROADWAY STANDARD 20

ENGINEER

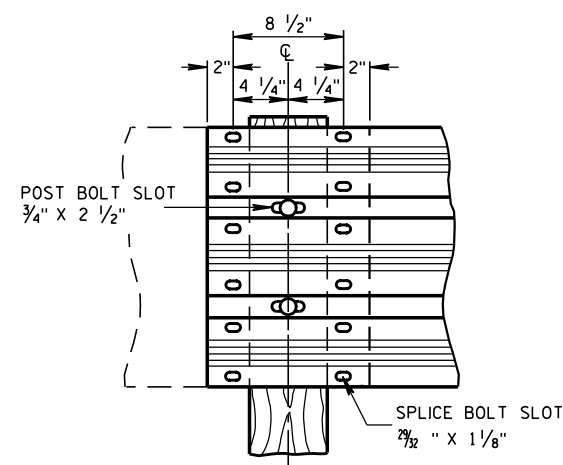
ENT



TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

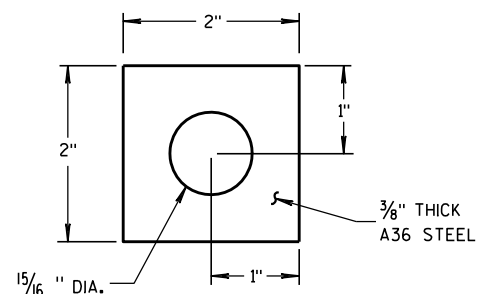
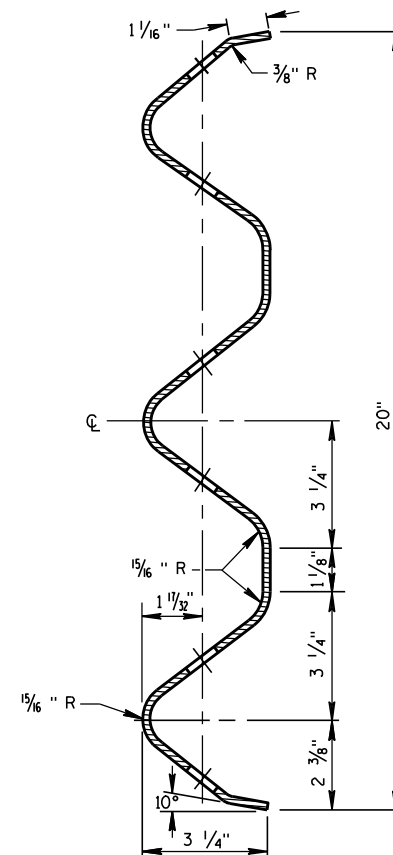


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

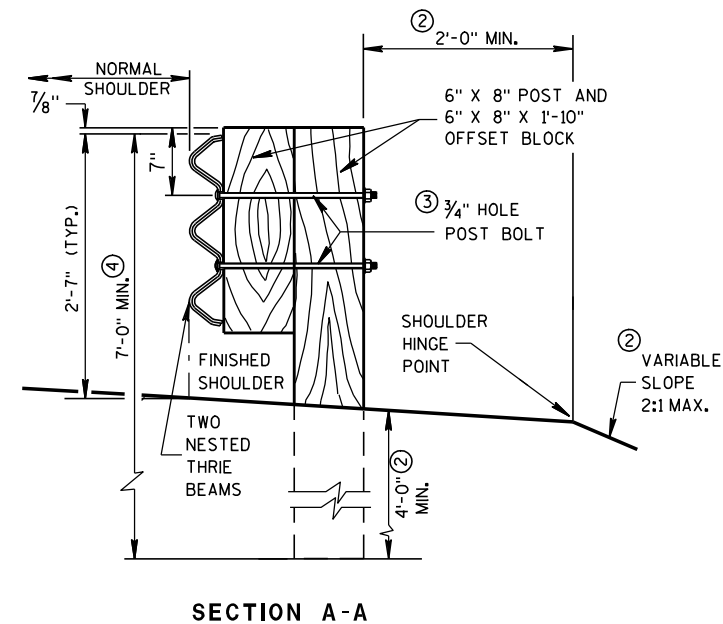
GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

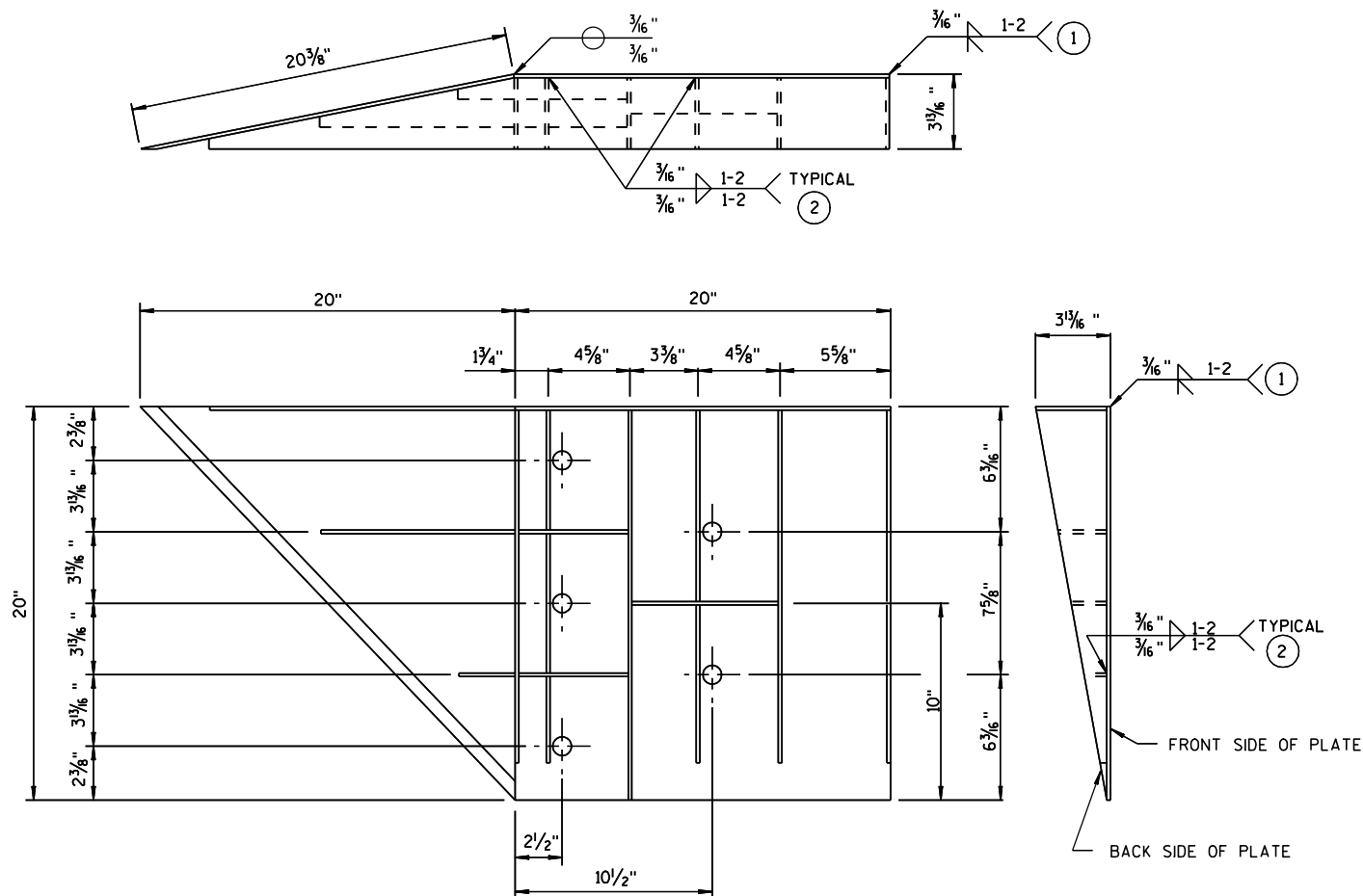
APPROVED

8/31/2012
DATE

FHWA

/s/ Jerry H. Zoon
ROADWAY STANDARDS (21) ENGINEER

ENT



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 5/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 7/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- 1 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 2 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

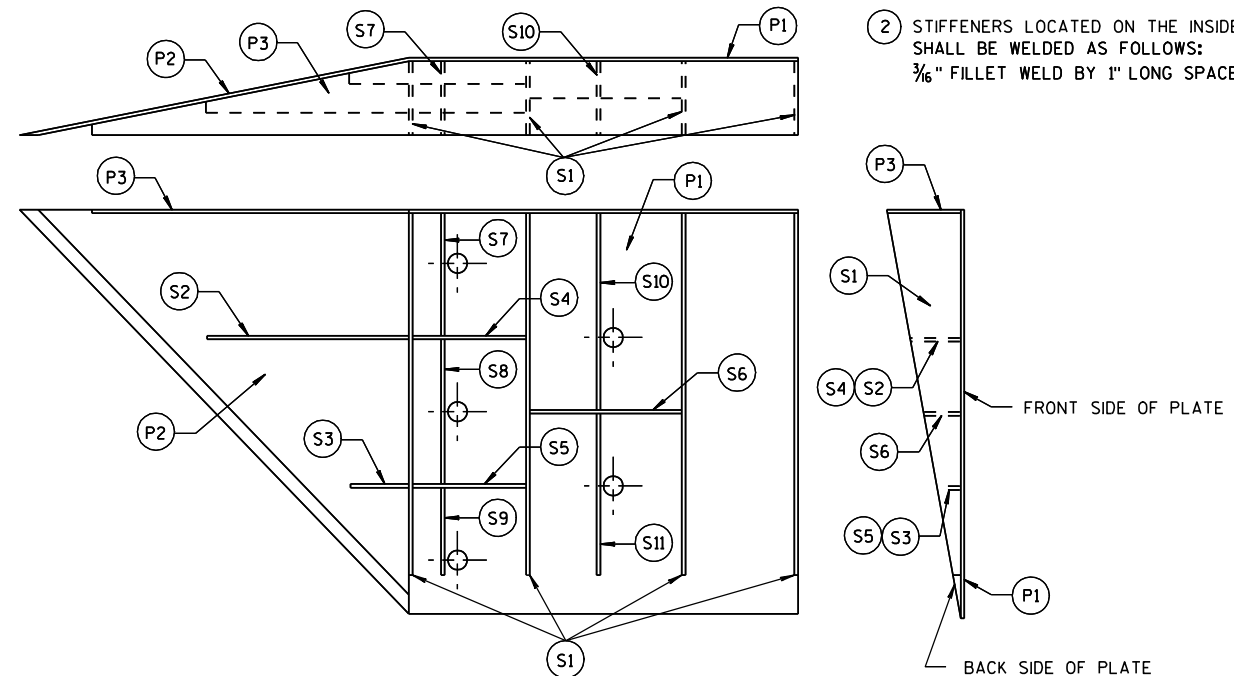
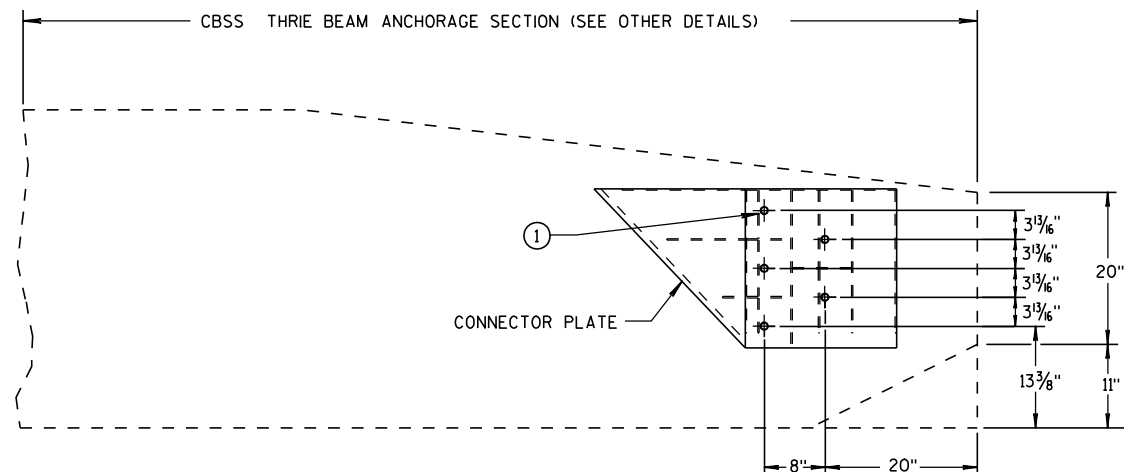
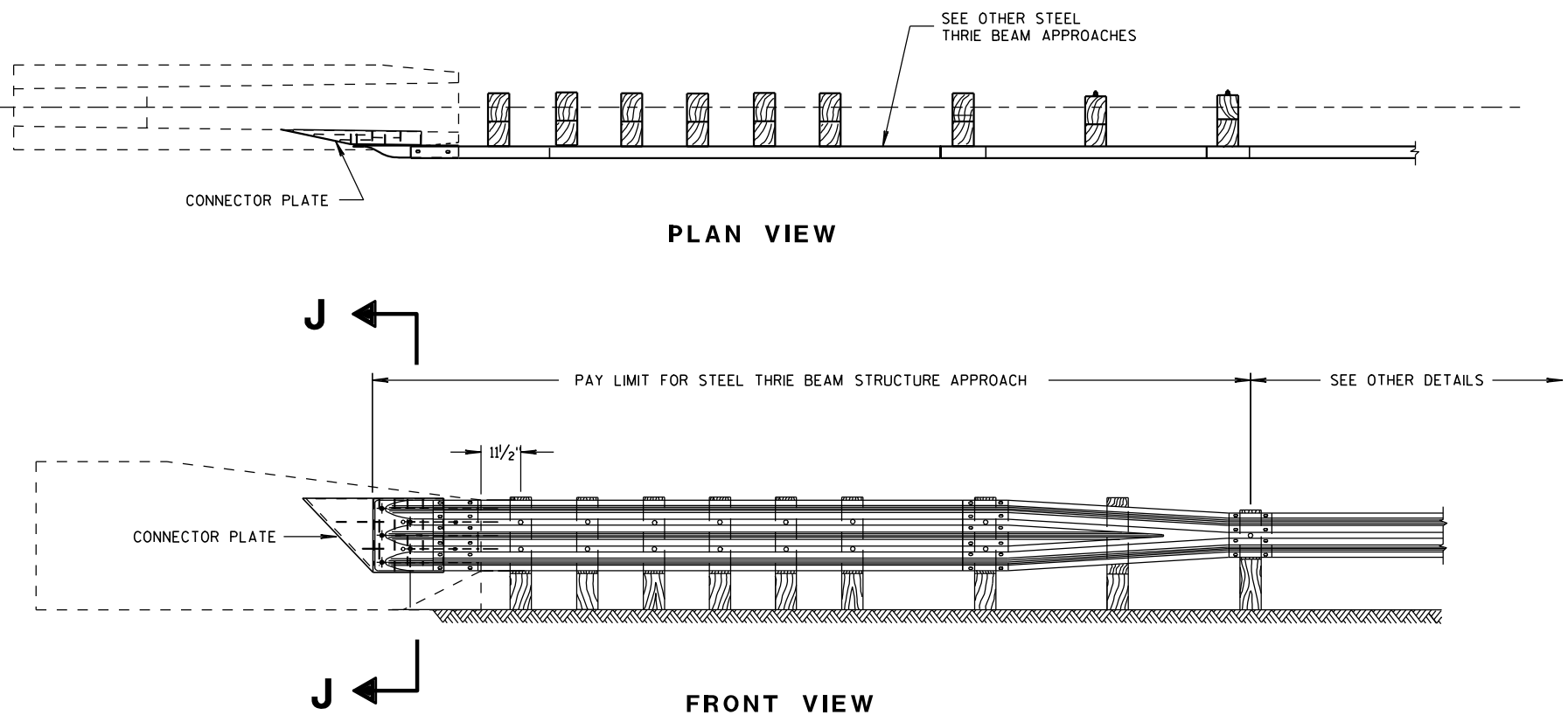
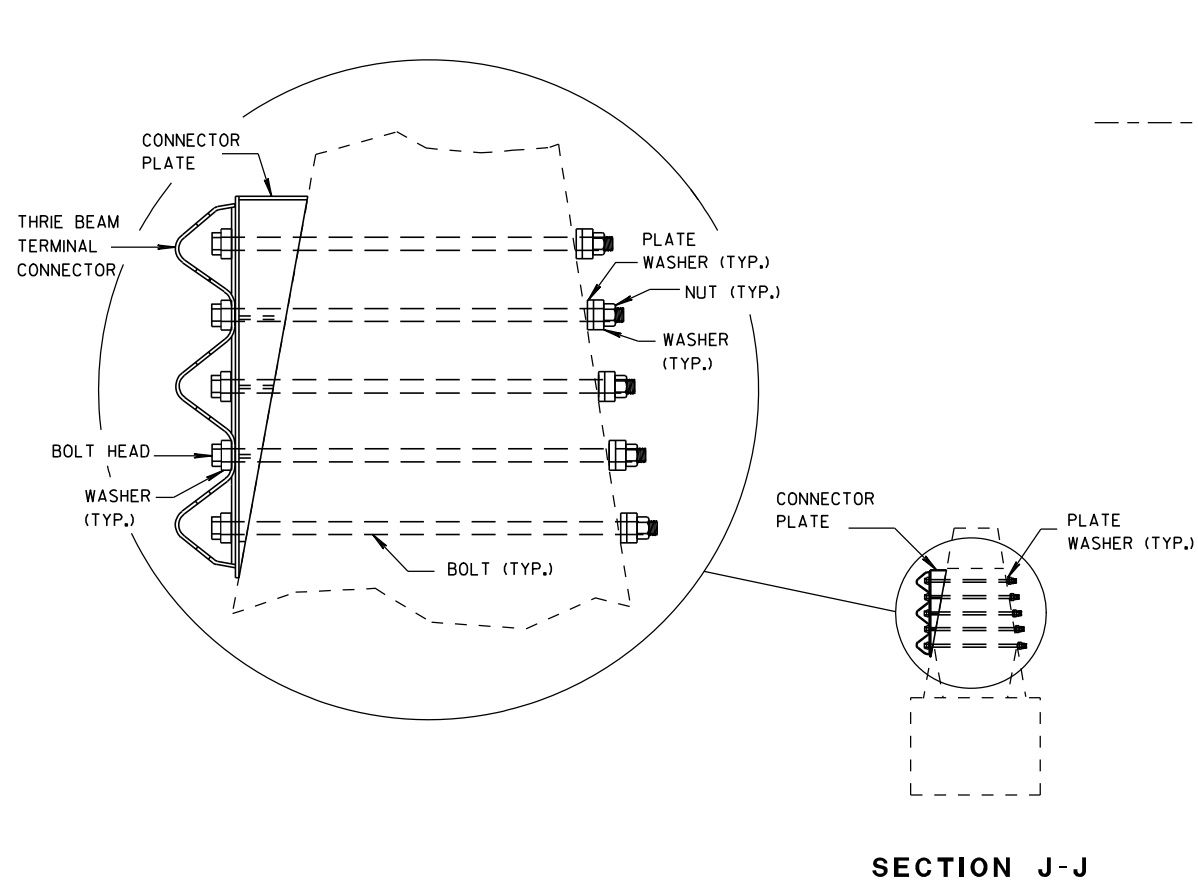


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

**STEEL THRIE BEAM
STRUCTURE APPROACH,
CONNECTOR PLATE DETAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H. Zeng
ROADWAY STANDARDS 22
ENGINEER
FHWA



CONNECTOR PLATE LOCATION

STEEL THRIE BEAM STRUCTURE APPROACH

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 614.

CONNECTOR PLATE, DRILLING HOLES THROUGH PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

- ① BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

STEEL THRIE BEAM
STRUCTURE APPROACH,
SINGLE SLOPE ATTACHMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

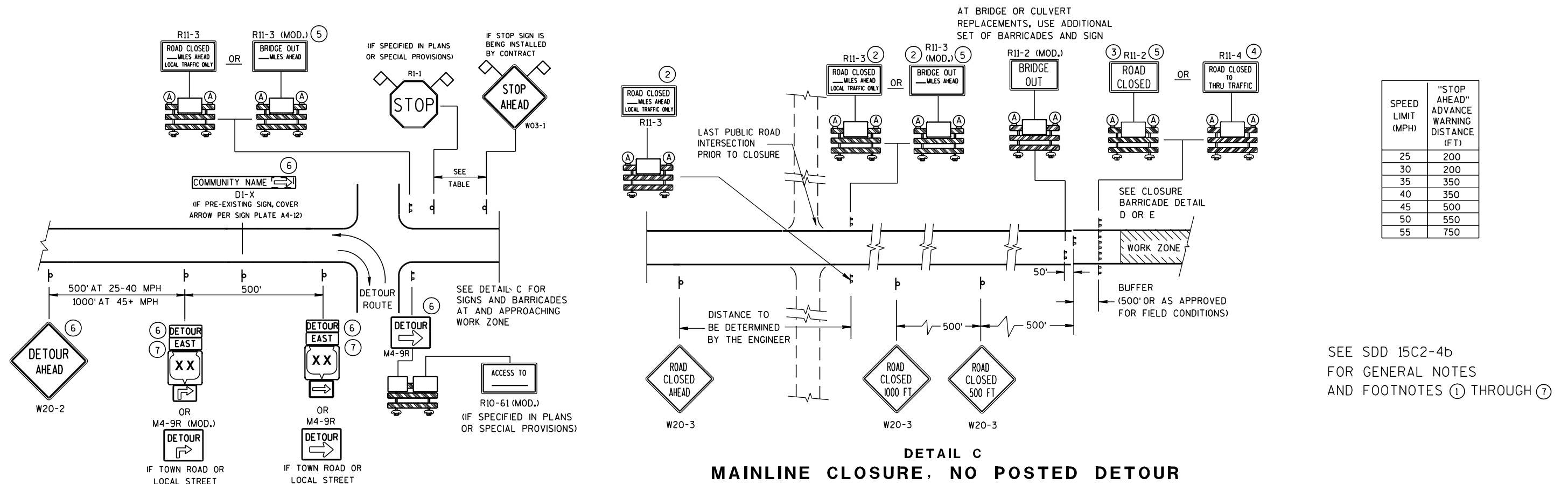
FHWA

/S/ Jerry H. Zacc

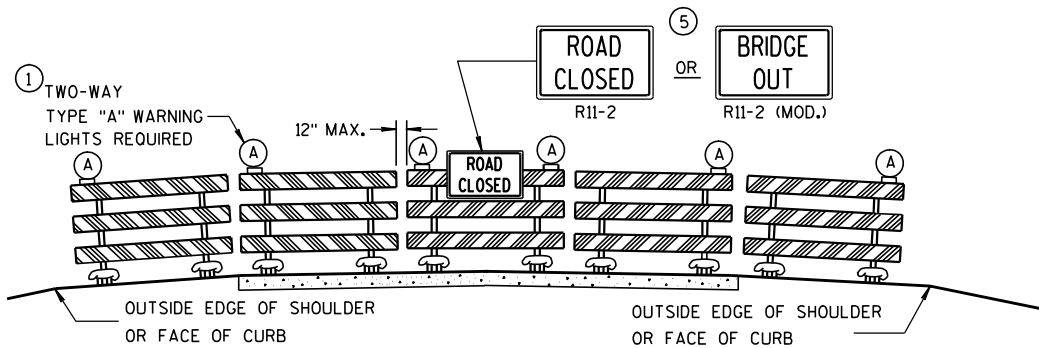
ROADWAY STANDARDS 23

ENGINEER

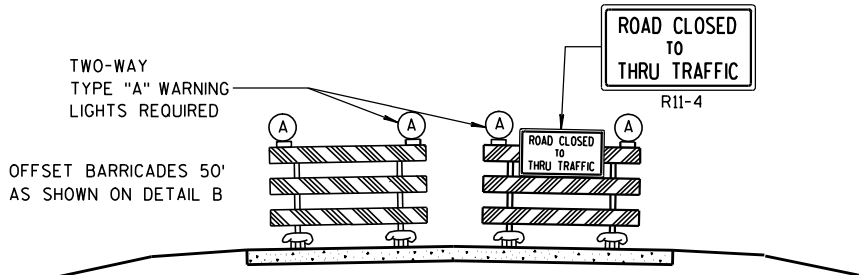
MENT



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



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-4a 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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

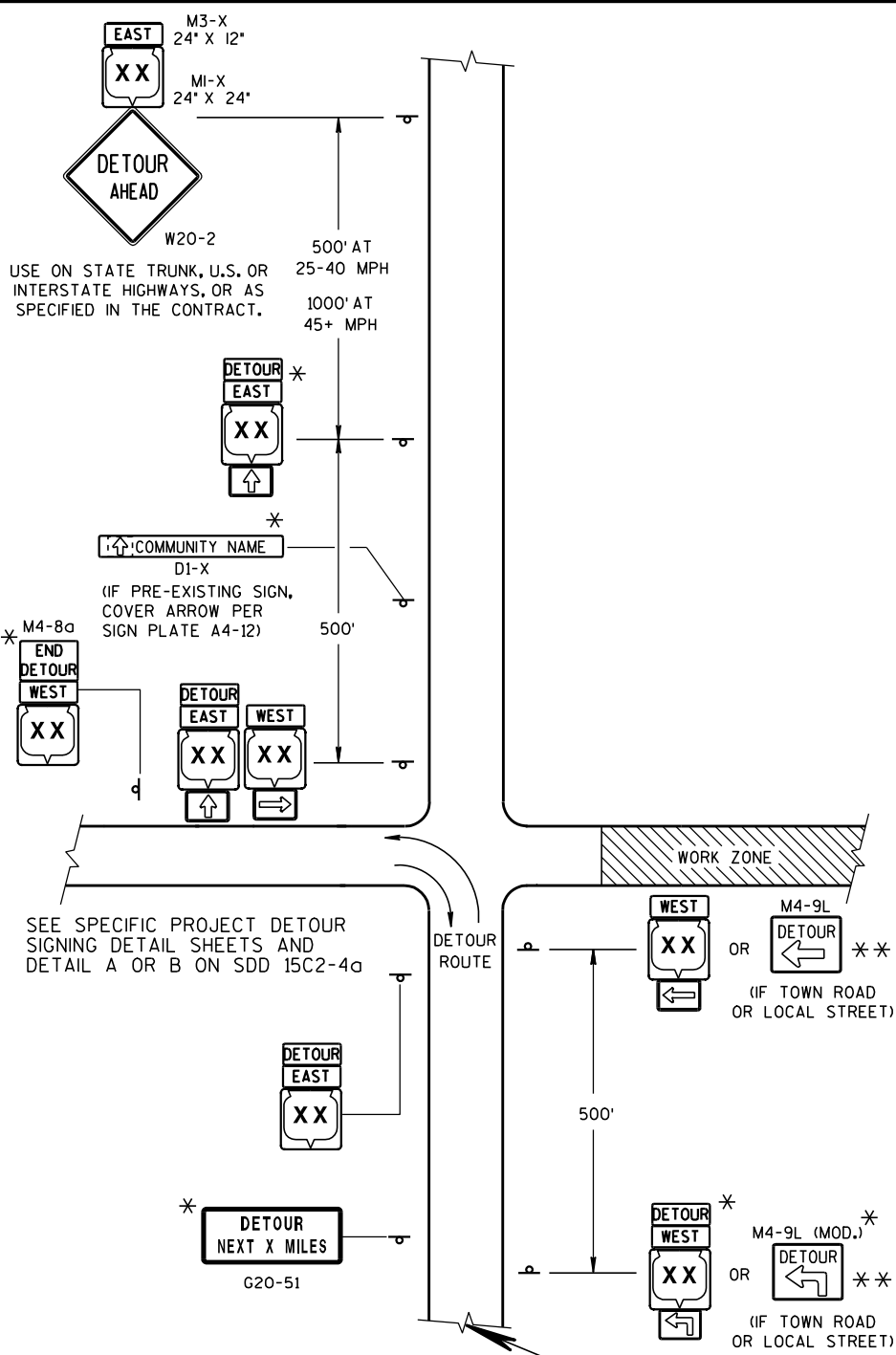
"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- 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 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 LANE 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 MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
9/16/03 DATE	/S/ Thomas N. N... CHIEF SIGNS AND MAR 25 INEER
FHWA	

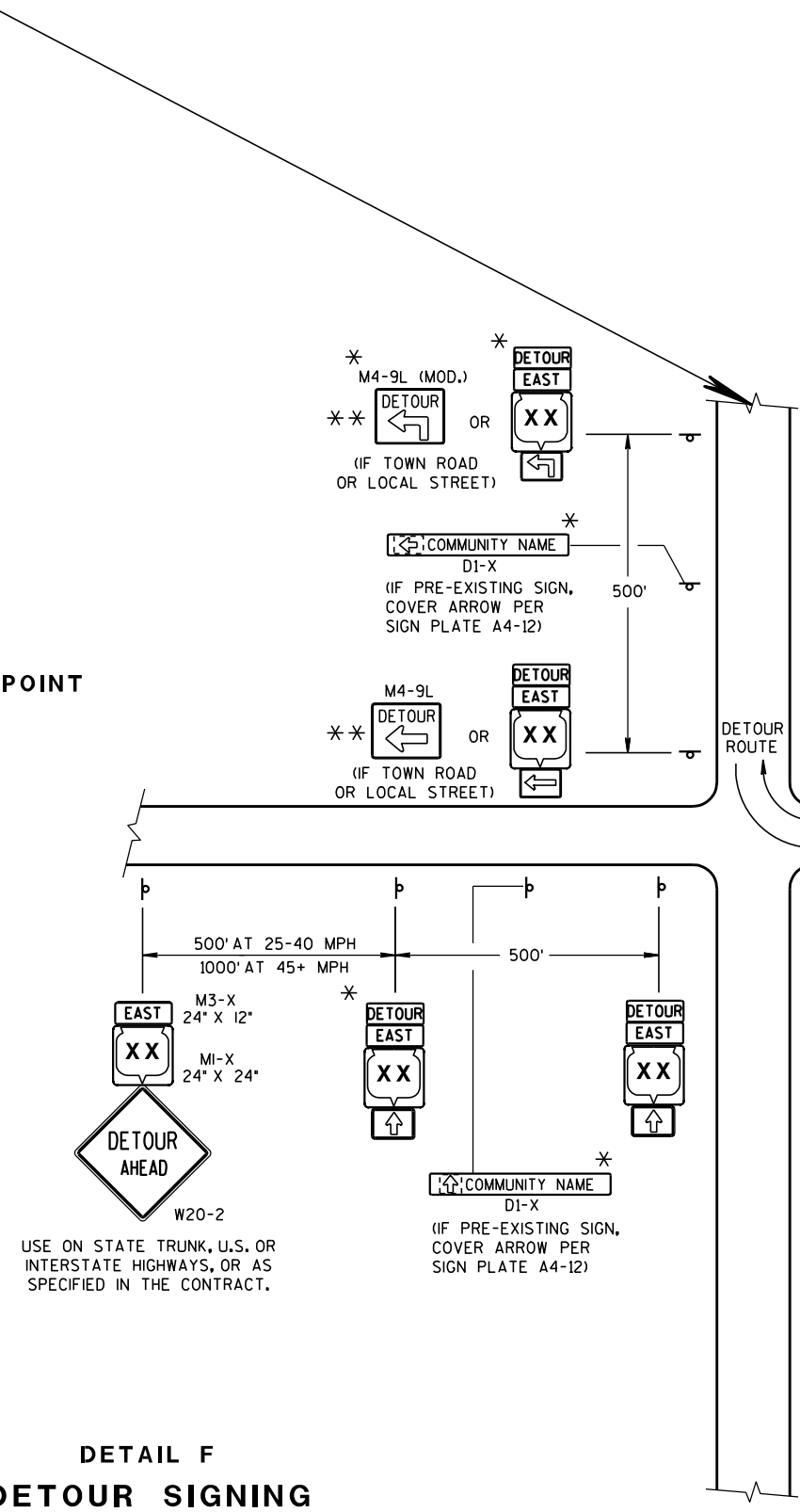


- LEGEND**
- POST MOUNTED SIGN
 - WORK ZONE
 - DETOUR EAST M4-8 M3-X
 - DETOUR WEST M4-8a
 - DETOUR NEXT X MILES G20-51
 - DETOUR ROUTE M4-9L, M4-9L MOD.
 - DETOUR AHEAD W20-2

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

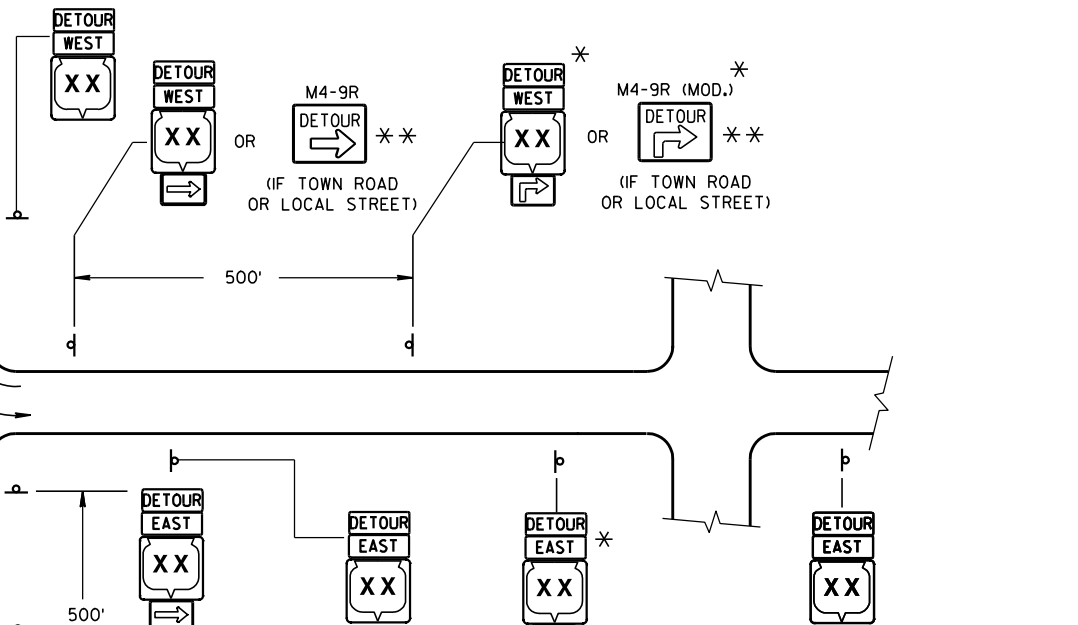
MATCH POINT

DETAIL F
DETOUR SIGNING



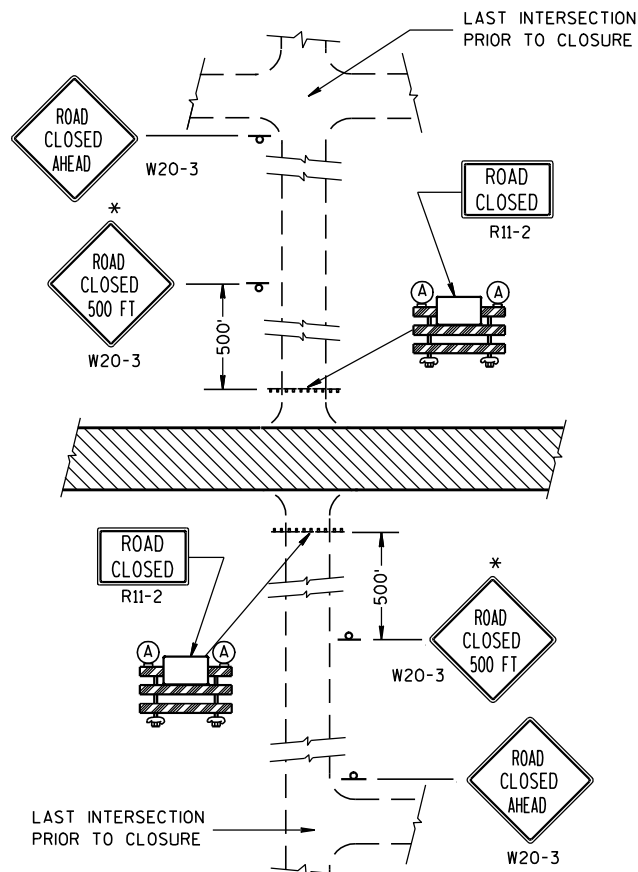
GENERAL NOTES

- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOWS:
 - M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M4-9 SHALL BE 30" X 24".
 - M4-8a SHALL BE 24" X 18".
 - G20-51 SHALL BE 60" X 24".
 - W20-2 SHALL BE 48" X 48".
 - D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

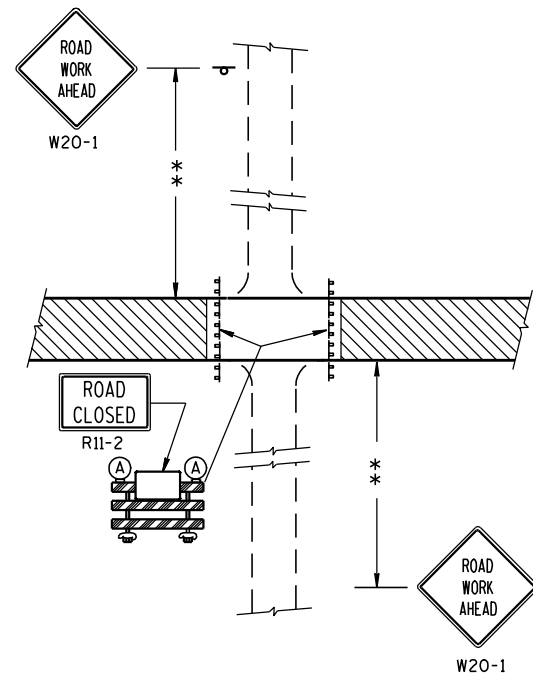


PLACE SIGNS BEYOND INTERSECTIONS WITH STATE OR COUNTY TRUNK HIGHWAYS OR AT 4 MILE MAXIMUM SPACING (4 BLOCKS IF URBAN AREA.)

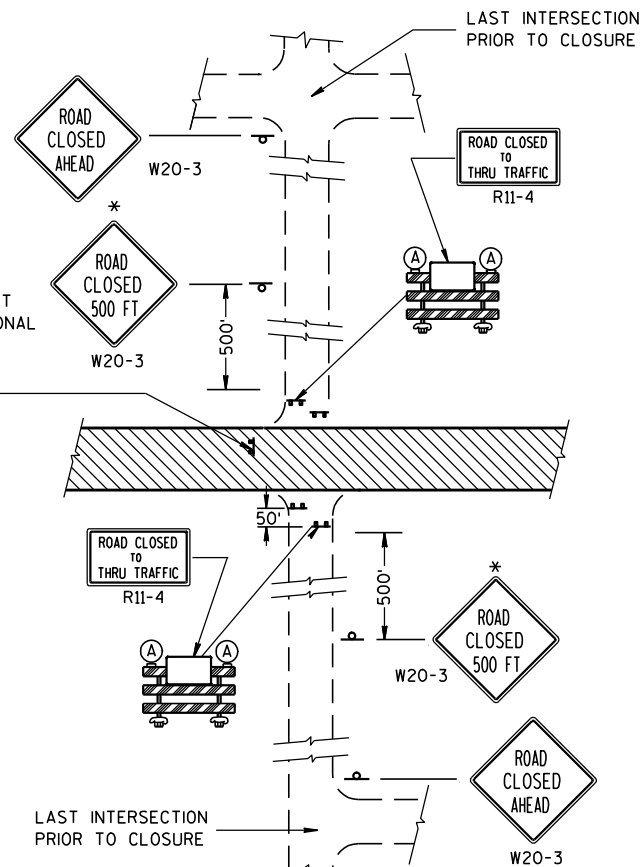
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 9-16-03 DATE	/S/ Thomas N. N... CHIEF SIGNS AND MAR 26 INER
FHWA	



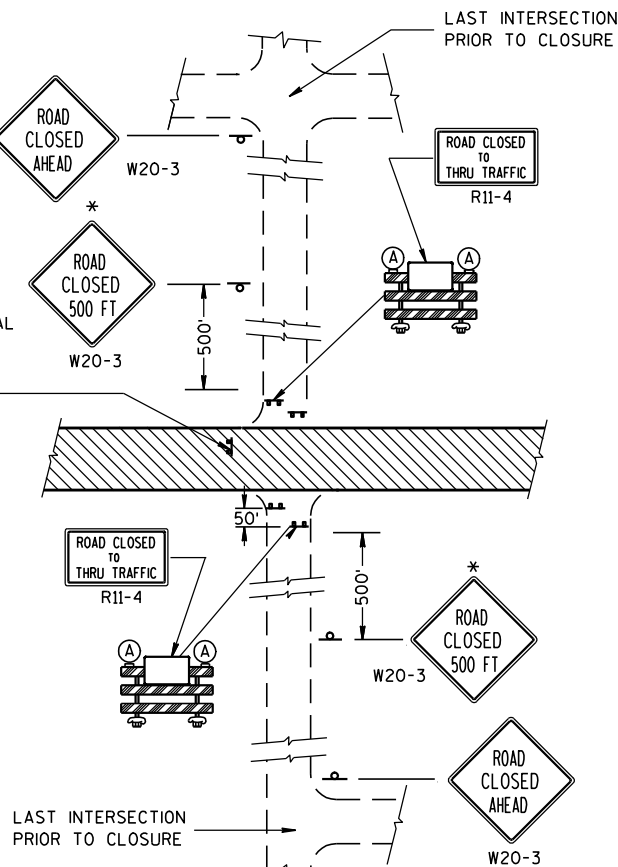
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

⌋ POST MOUNTED WARNING SIGN

⌋ TYPE III BARRICADES

Ⓐ TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)

▨ WORK AREA

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

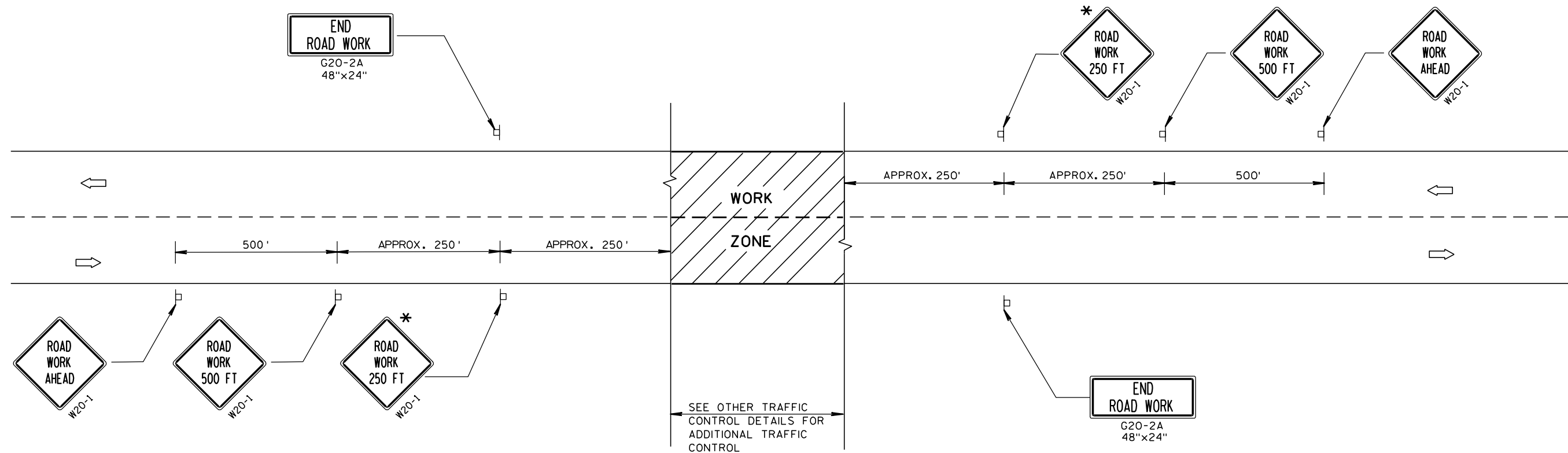
9-16-03

DATE

FHWA

/S/ Thomas N. N...
CHIEF SIGNS AND MAR 27

INEER



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.

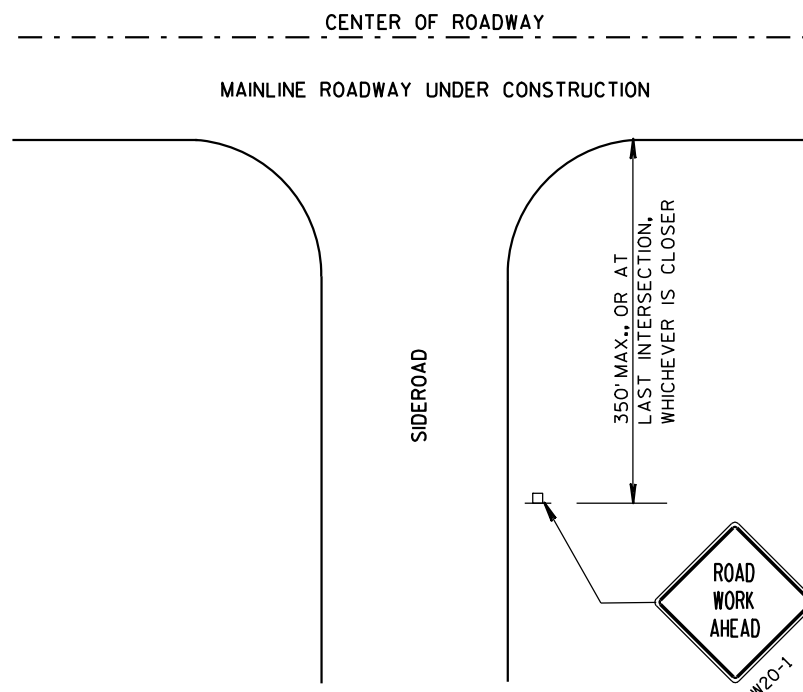
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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, IF APPROVED BY DISTRICT TRAFFIC UNIT.

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.

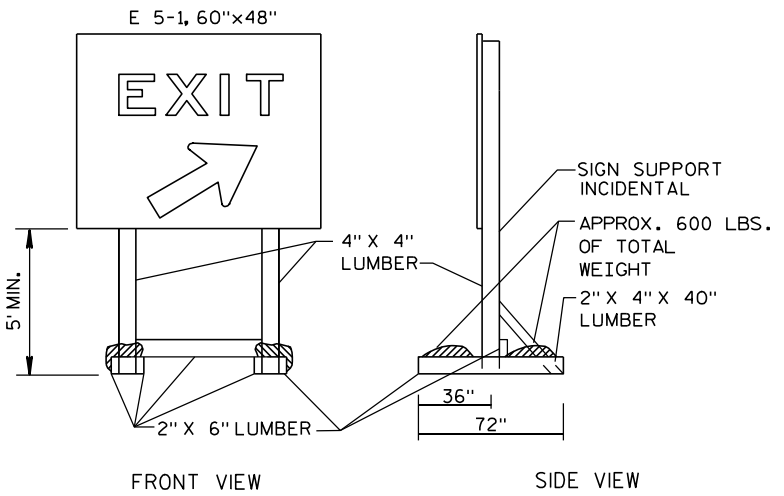
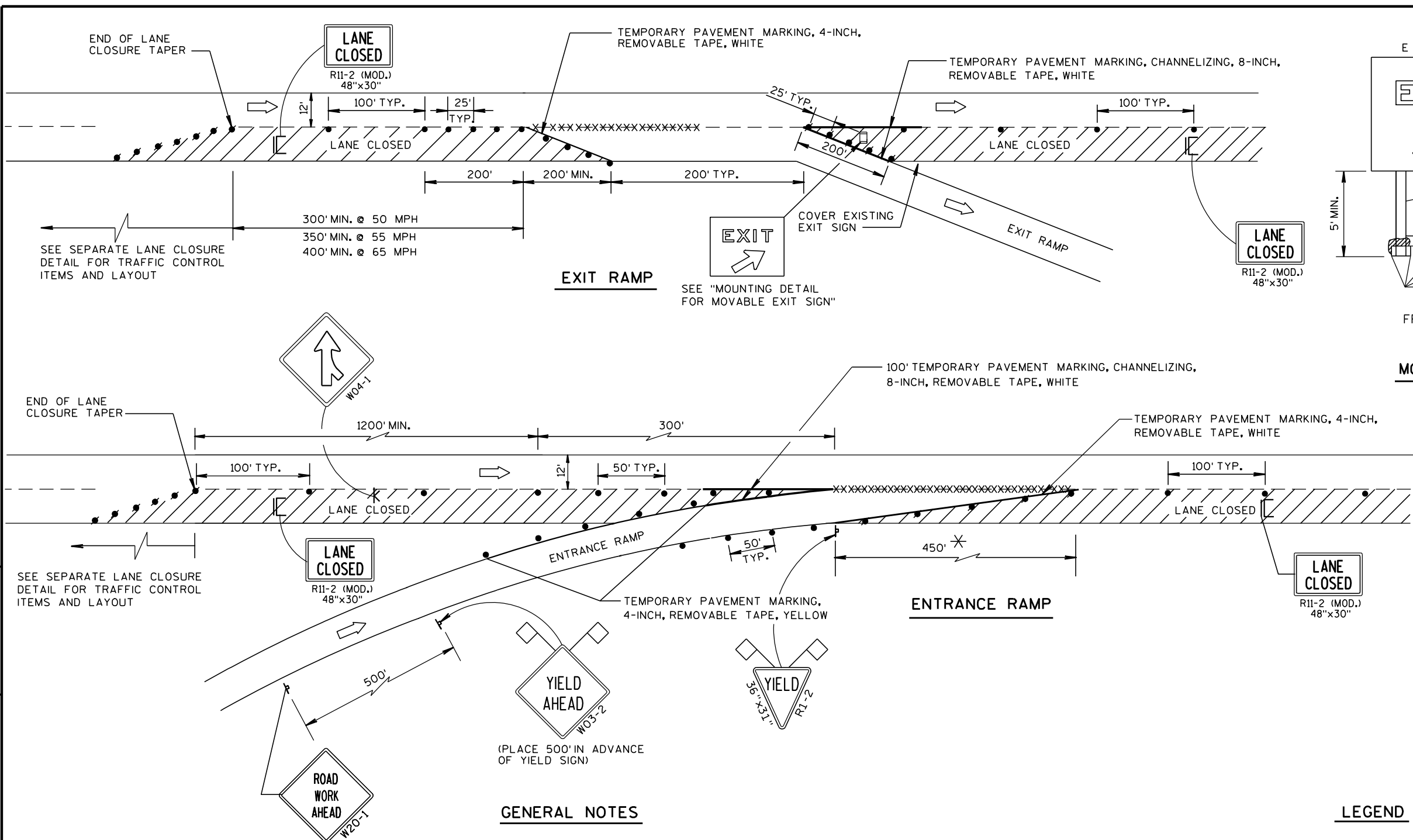
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



LEGEND

- POST MOUNTED SIGN
- ➡ DIRECTION OF TRAFFIC FLOW

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 5/23/00 DATE	/S/ Chester J. 28 CHIEF SIGNS AND MARKING ENGINEER
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.

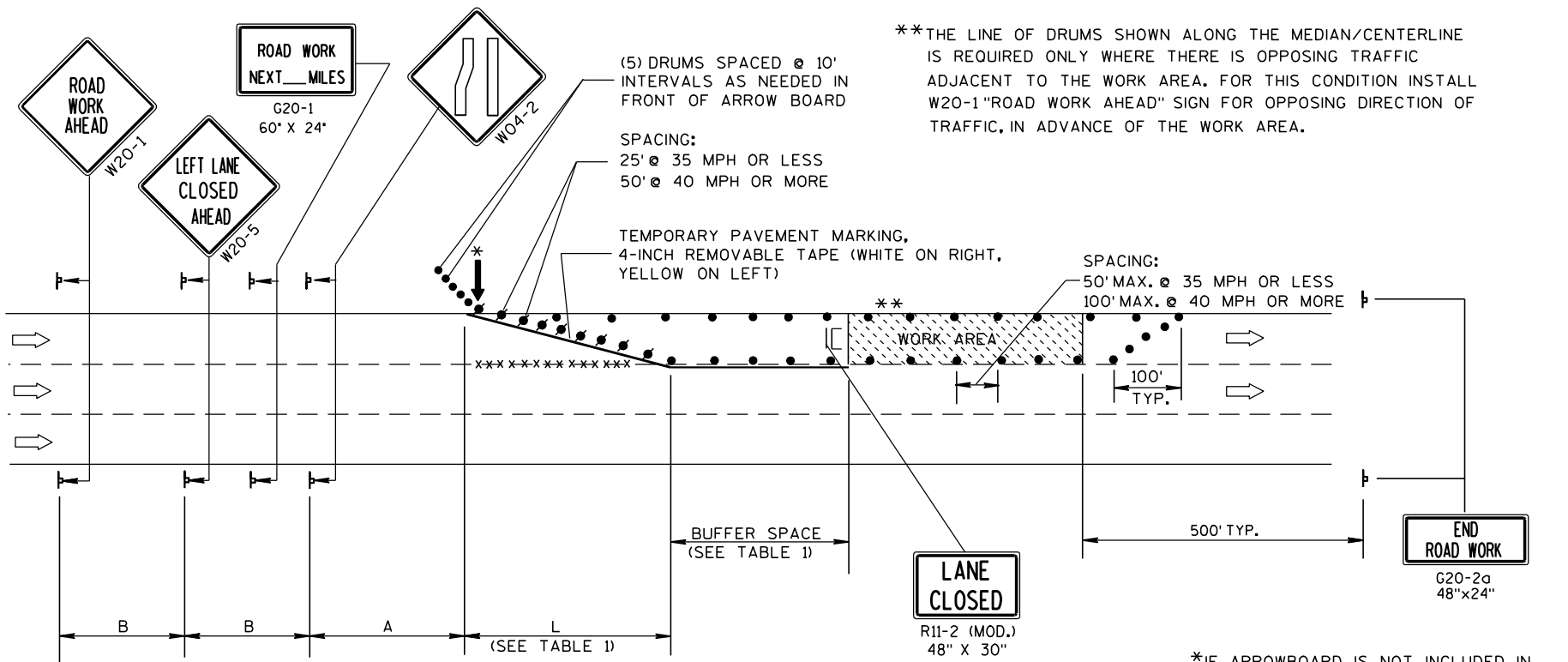
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* 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	/S/ Chester J. ...	CHIEF SIGNS AND MAR 29
DATE			INER
FHWA			



B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

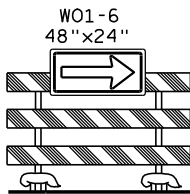
L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

(PLACE BARRICADE AND SIGN APPROX.
EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN
MISCELLANEOUS QUANTITIES, SUBSTITUTE
A TYPE III BARRICADE WITH W01-6 SIGN
IN THE LANE CLOSURE TAPER.



LEGEND

- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- ⌵ POST MOUNTED SIGN
- ↑ ARROW BOARD
- IC/C TYPE III BARRICADE (8' EQUIVALENT) AND WARNING LIGHTS, TYPE A (FLASHING) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW
- x x x x REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)

GENERAL NOTES

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

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

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 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 IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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.

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.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

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

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

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

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

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.

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. [Signature]
DATE CHIEF SIGNS AND MARKINGS INEER
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.

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

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

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.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

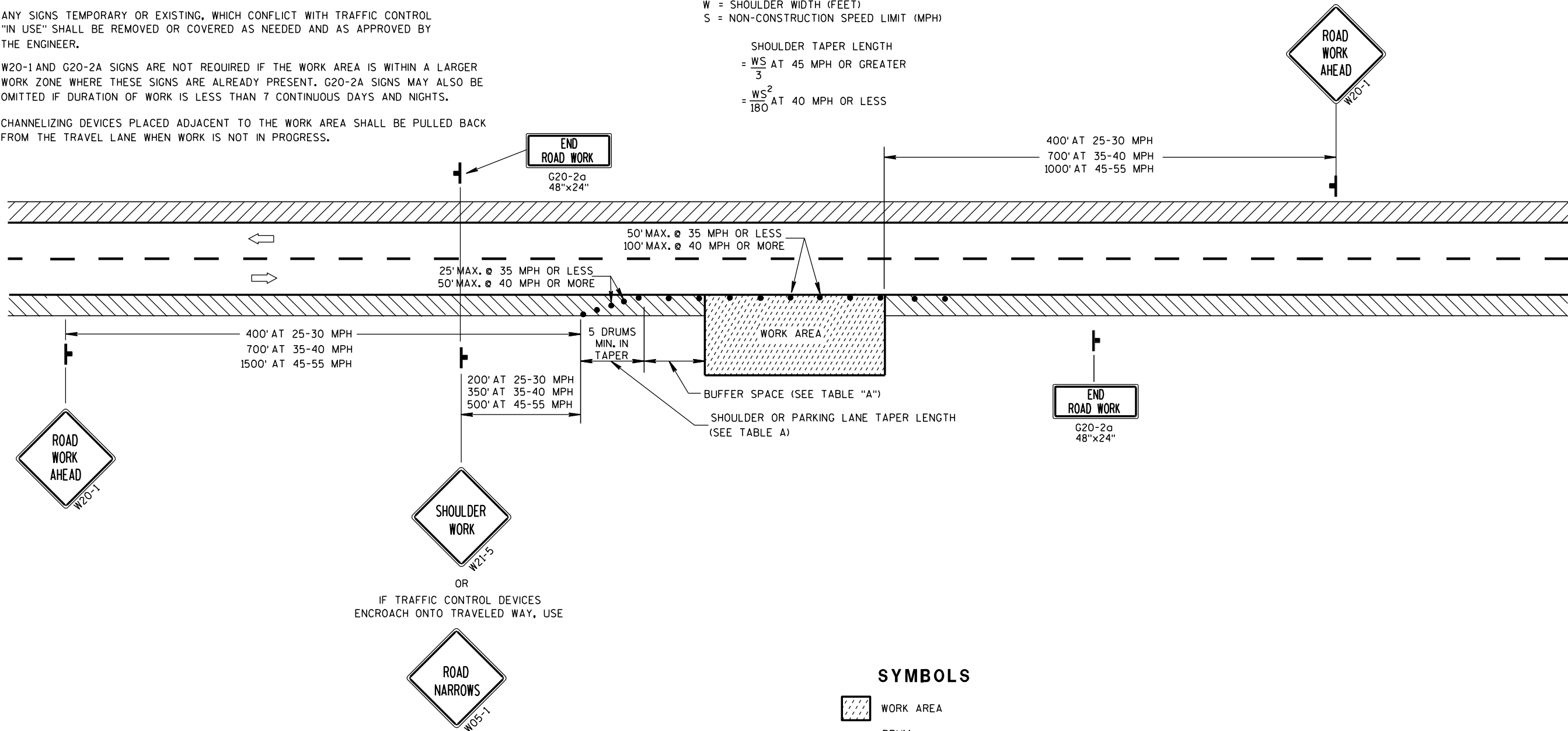
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= $\frac{WS}{3}$ AT 45 MPH OR GREATER
= $\frac{WS^2}{180}$ AT 40 MPH OR LESS



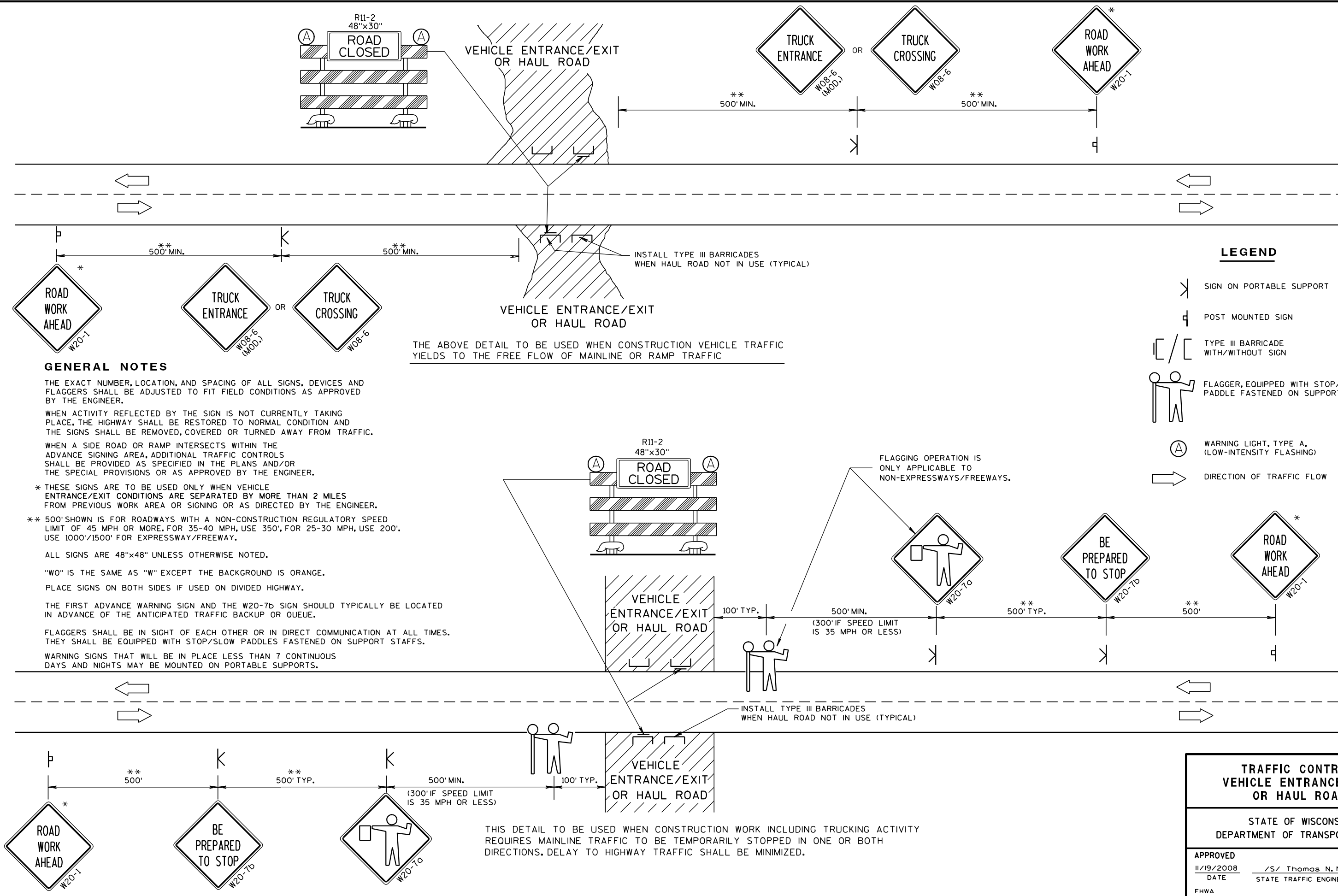
SYMBOLS

- WORK AREA
- DRUM
- POST MOUNTED SIGN
- DIRECTION OF TRAFFIC FLOW

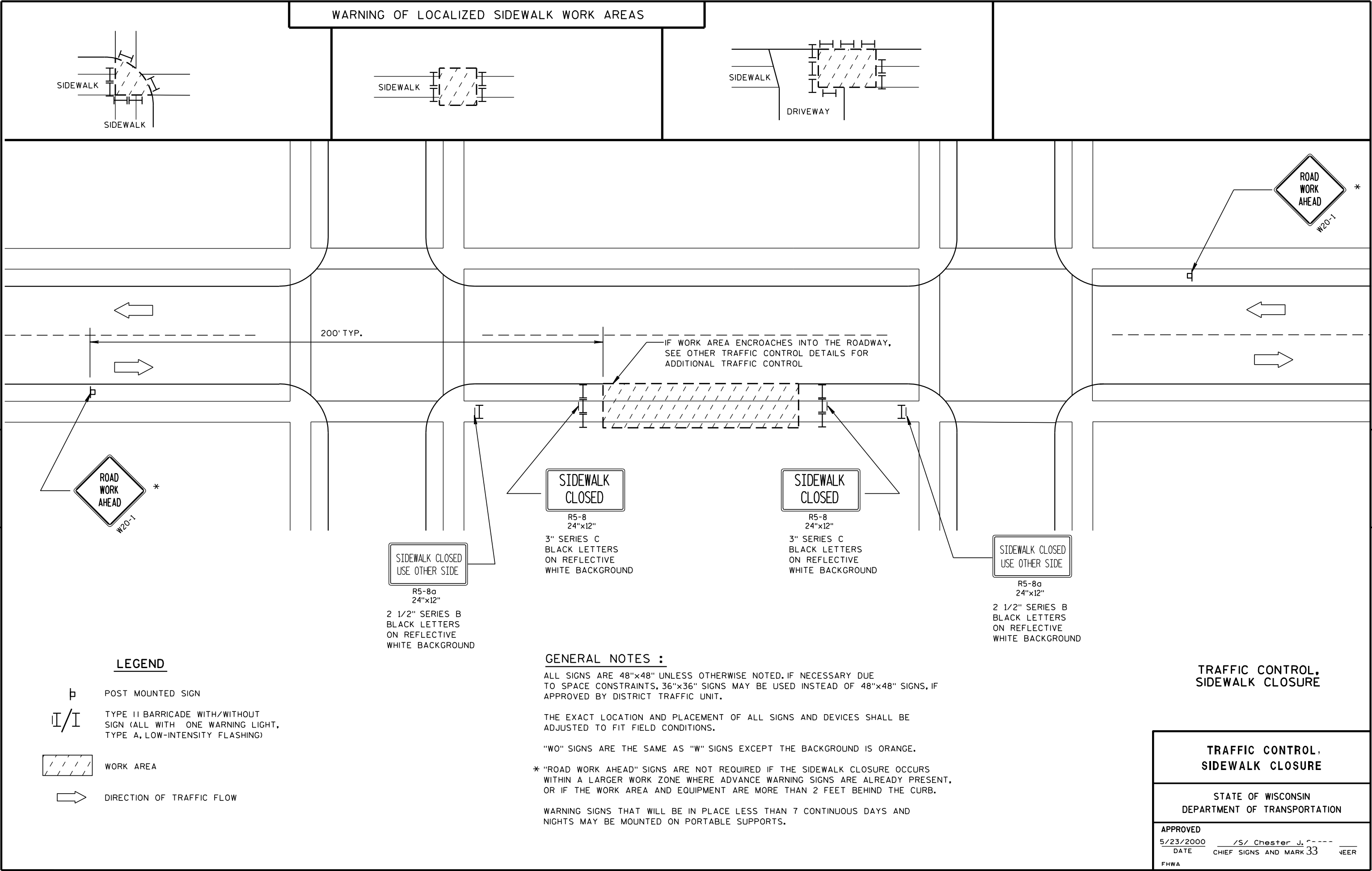
TRAFFIC CONTROL,
WORK ON SHOULDER OR
PARKING LANE,
UNDIVIDED ROADWAY

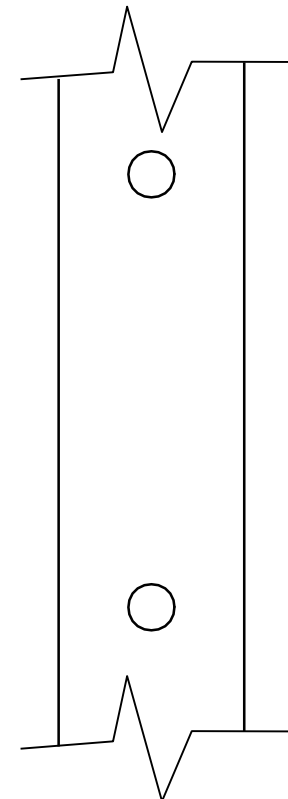
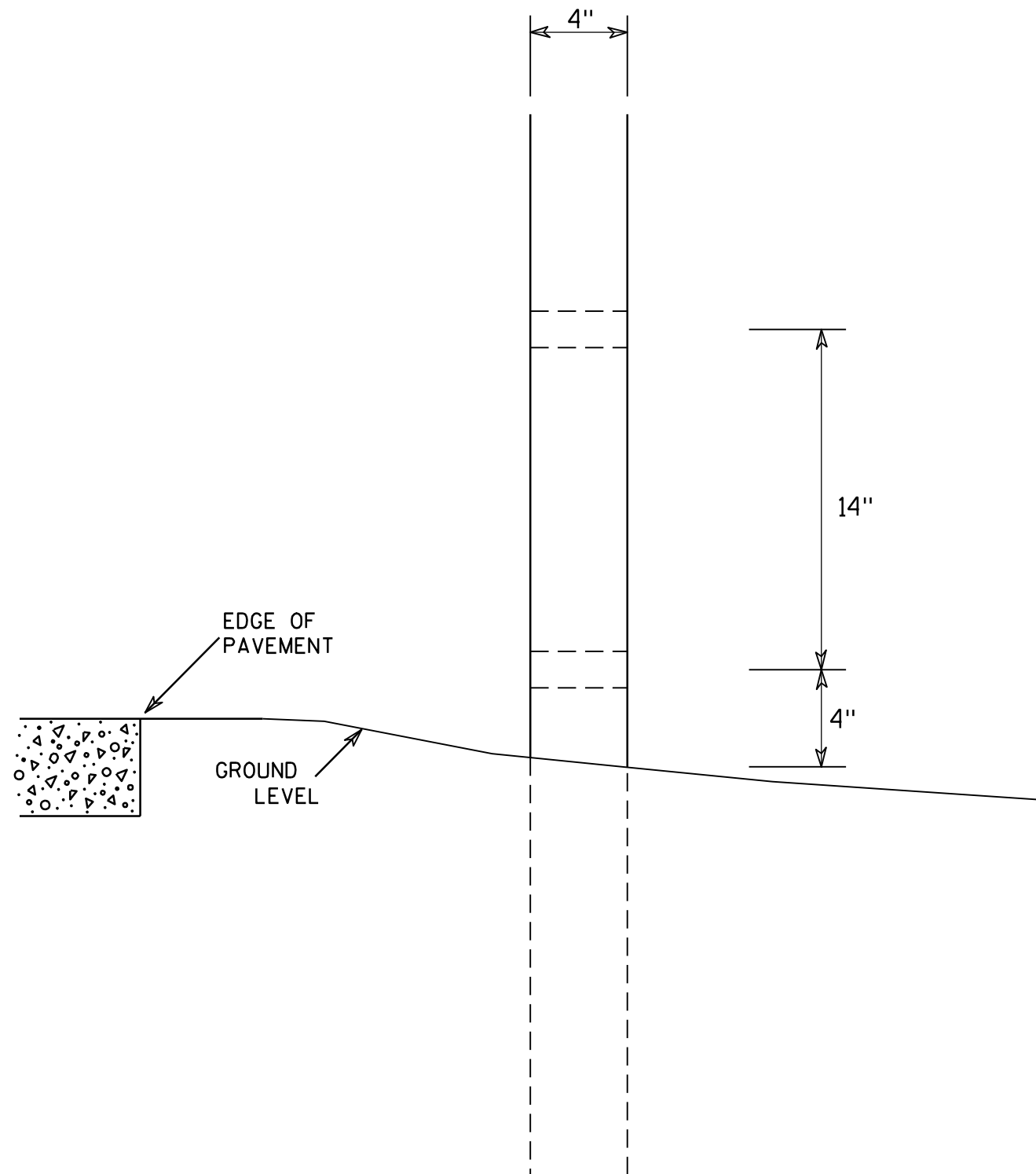
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/00 /S/ Chester J. [Signature]
DATE CHIEF SIGNS AND MARKS
FHWA NNEER



TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/19/2008 DATE		/S/ Thomas N. N STATE TRAFFIC ENGINE 32 SIGN	
FHWA			





SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

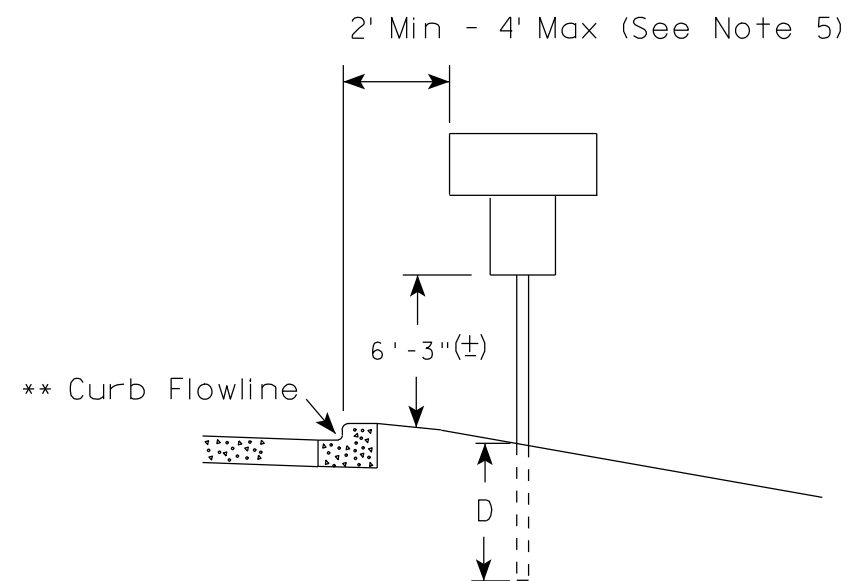
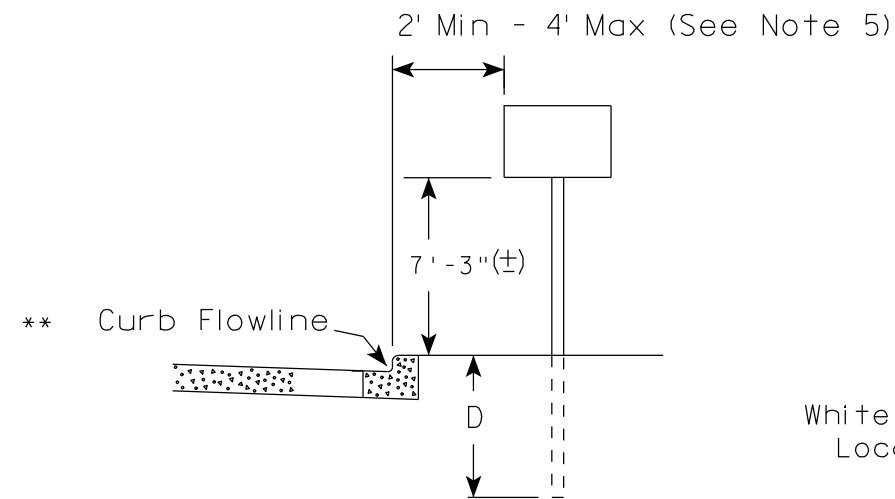
HWY:

COUNTY:

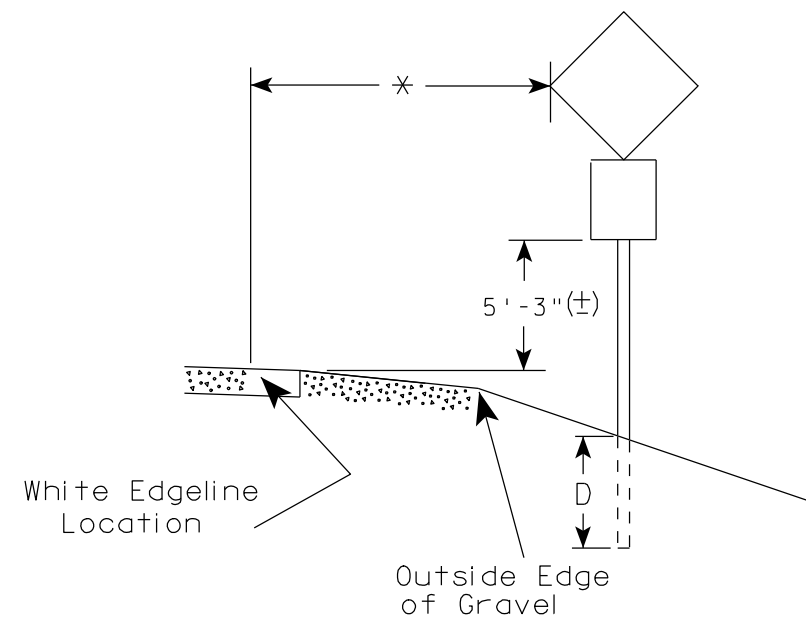
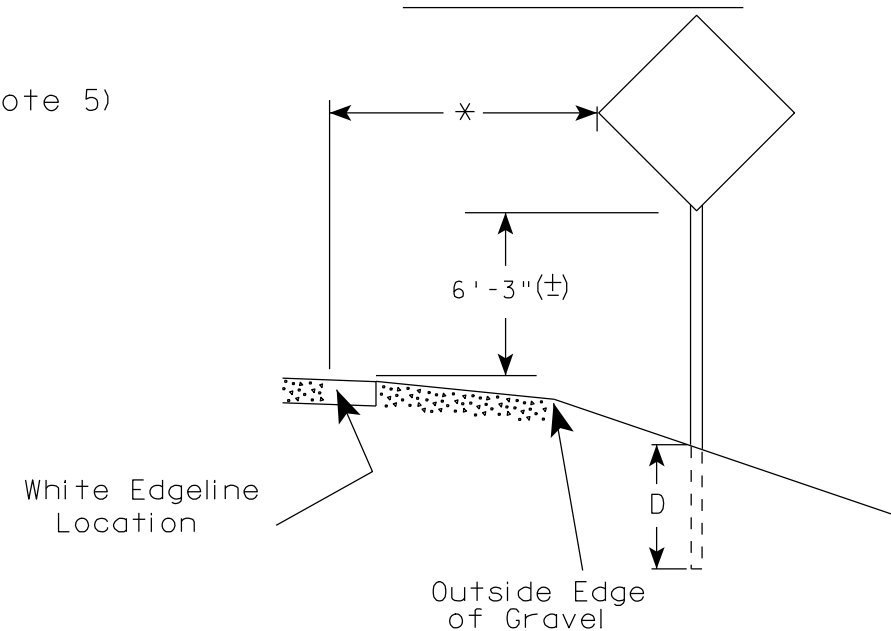
SHEET NO: 34

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

✱✱ The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 35

E

GENERAL NOTES

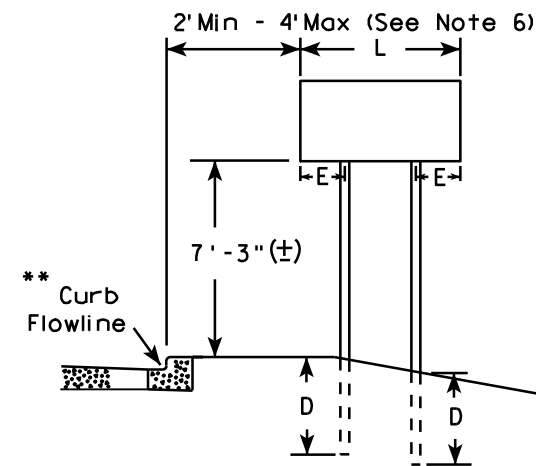
- For multiple post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

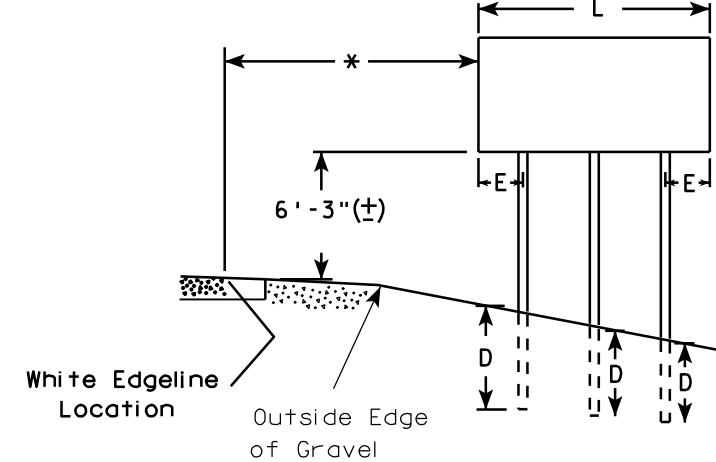
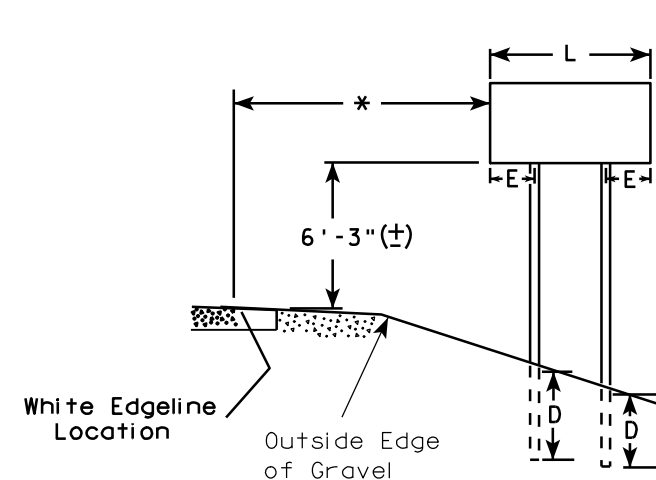
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

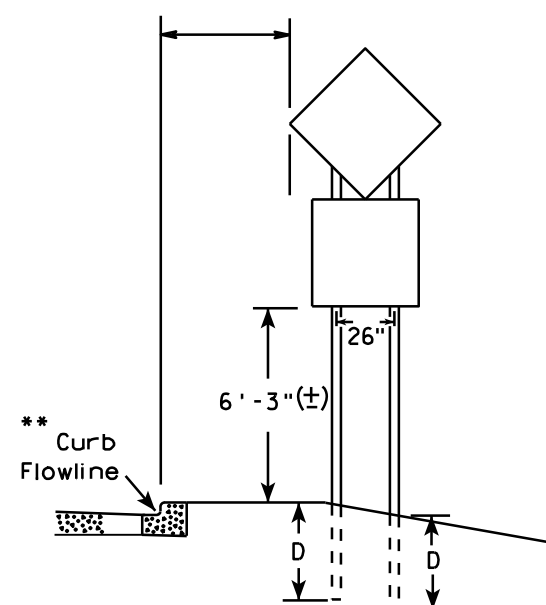
URBAN AREA



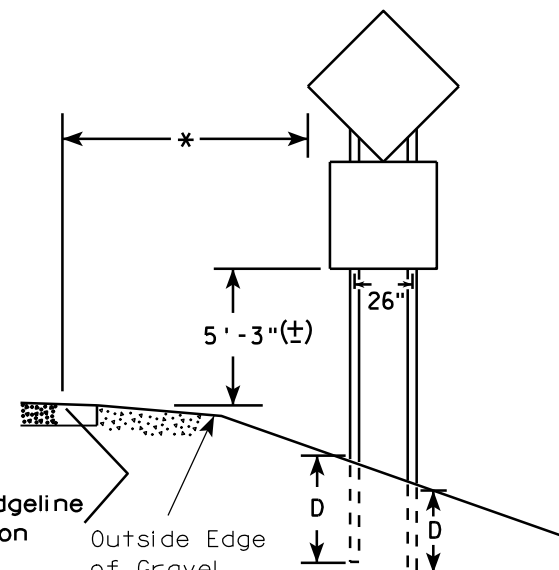
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

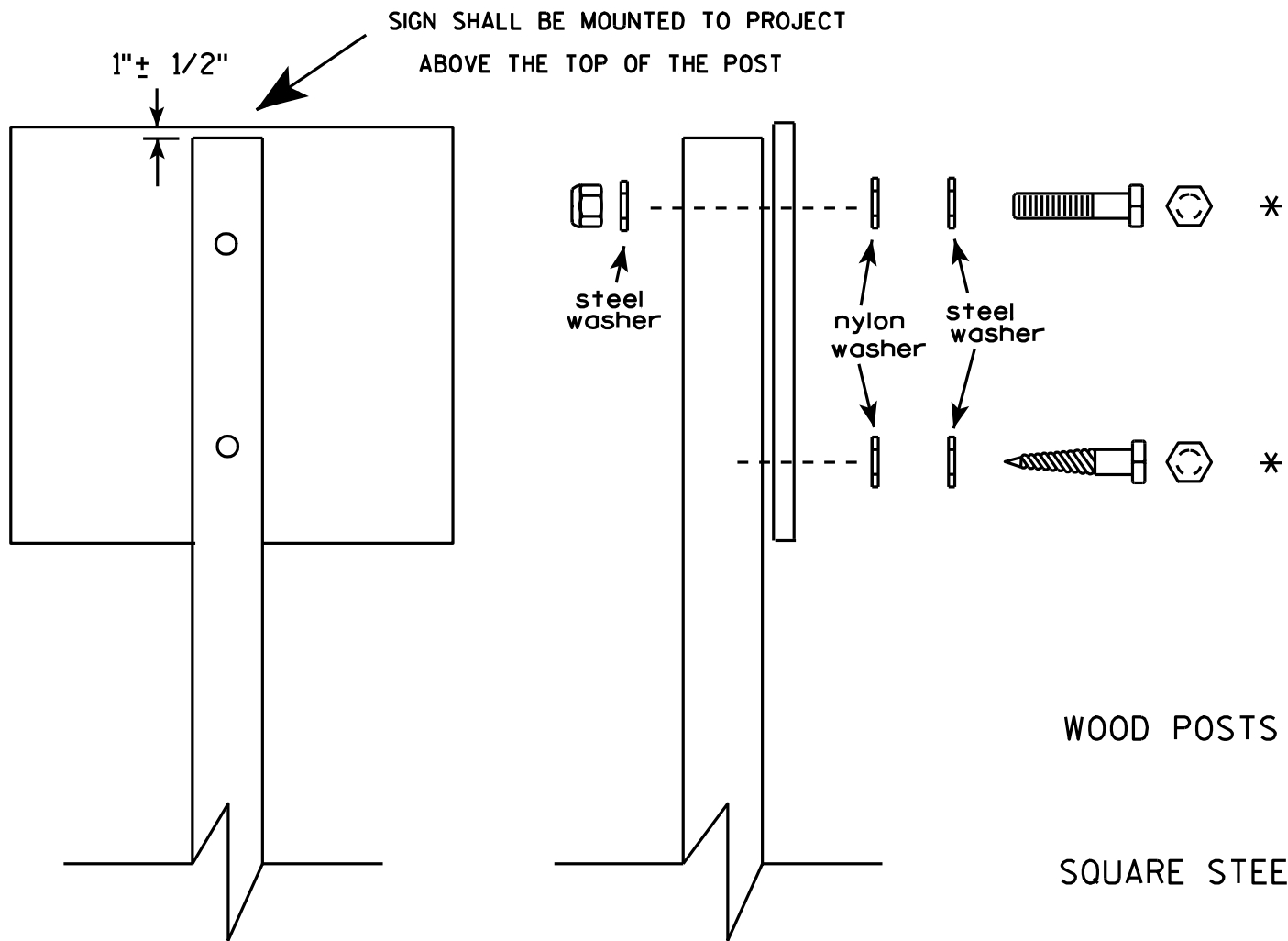
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 36

E

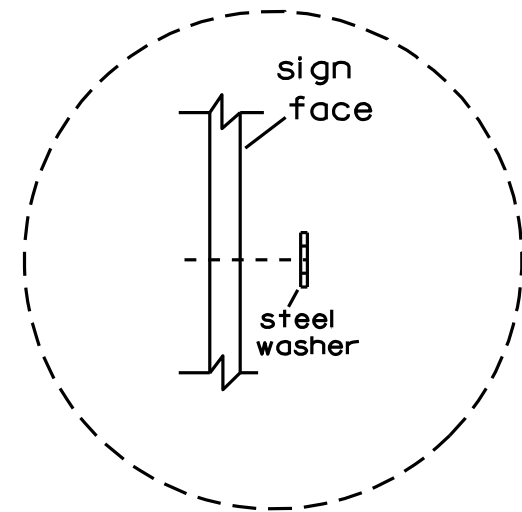


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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 POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
- MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
- 1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.

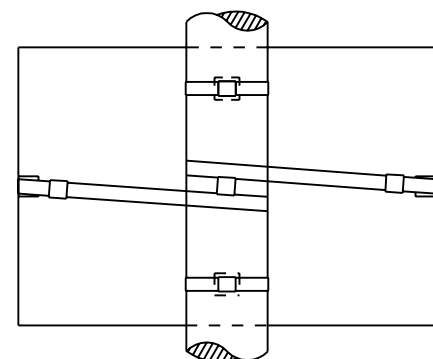
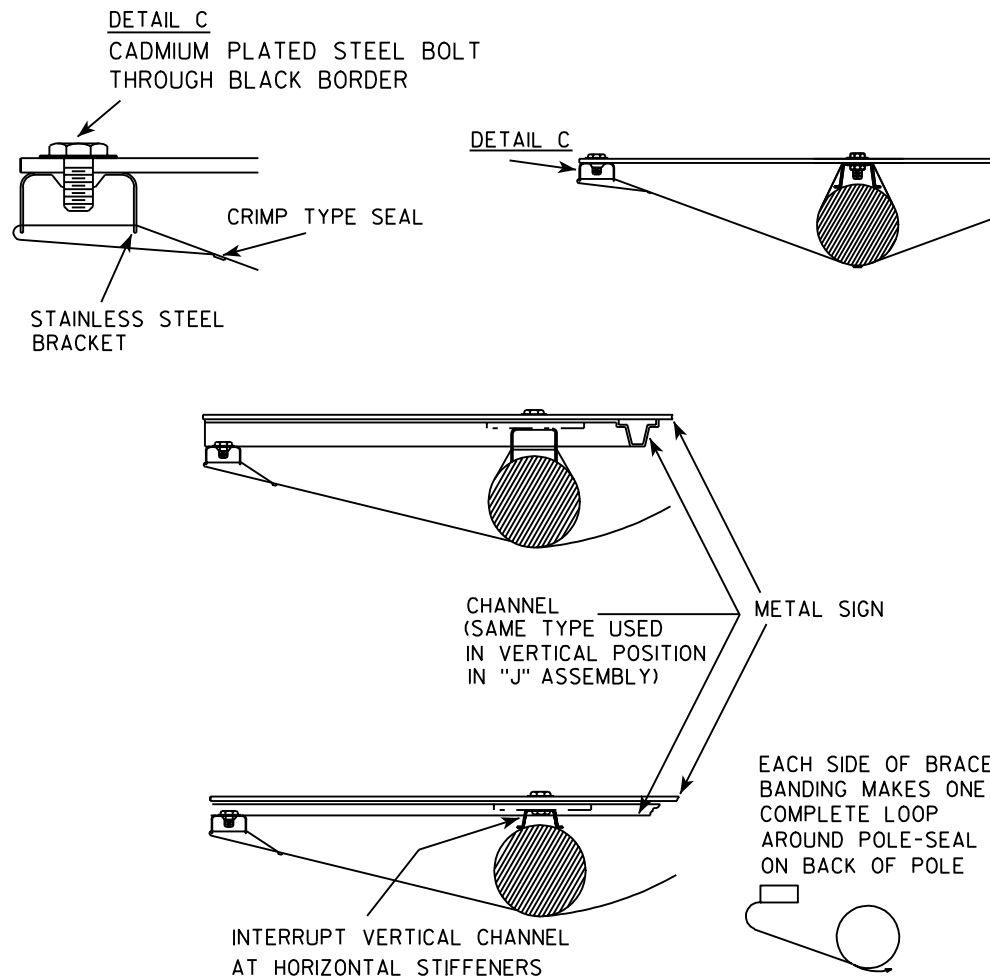


Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

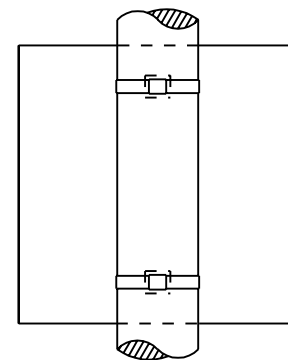
BRACE BANDING



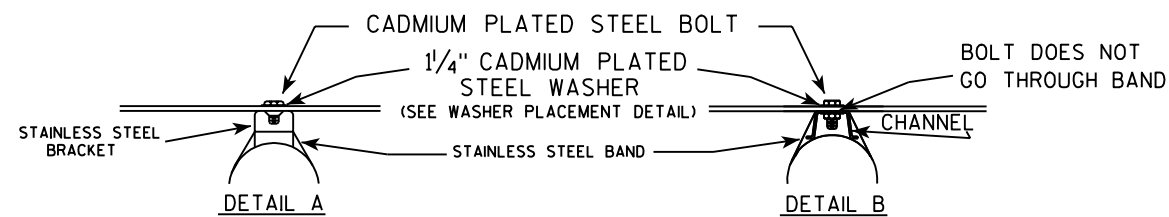
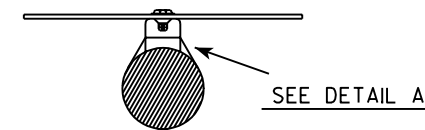
BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF SIGN.

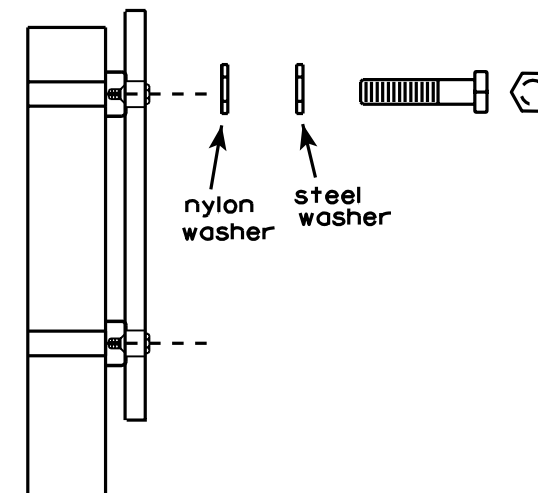
SINGLE SIGN



BRACKET BANDING



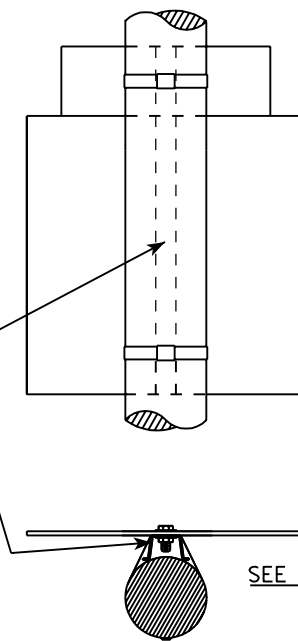
WASHER PLACEMENT



WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

"J" ASSEMBLY



SEE DETAIL B

GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

STANDARD SIGN SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

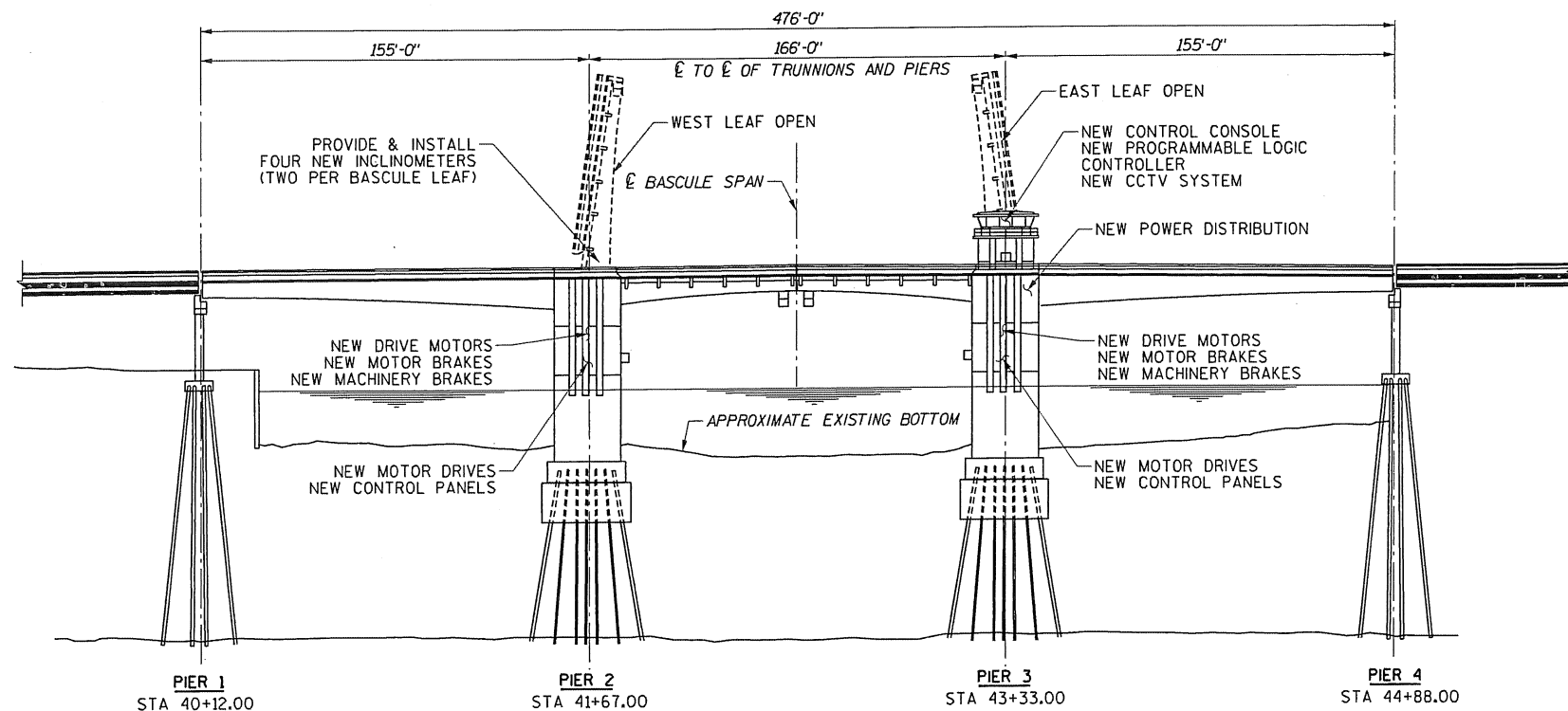
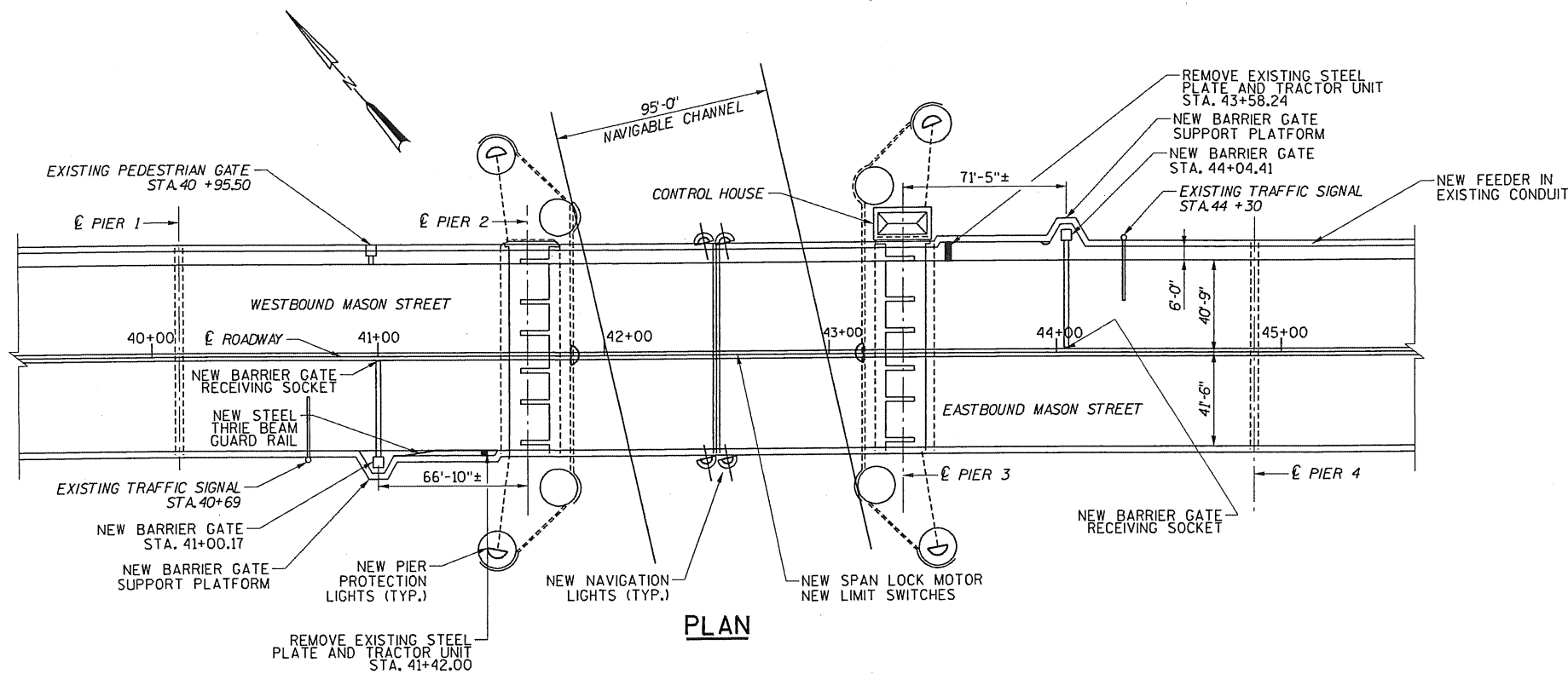
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 38

E



DESIGN DATA

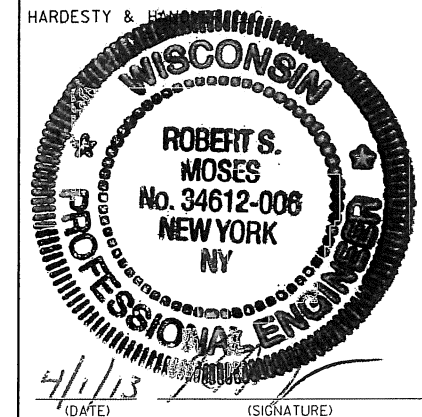
ULTIMATE DESIGN STRESSES (NEW WORK):
 CONCRETE MASONRY, DECK-----f'c = 4,000 psi
 CONCRETE MASONRY, ALL OTHER-----f'c = 3,500 psi
 HIGH STRENGTH BAR STEEL REINFORCEMENT GRADE 60-----fy = 60,000 psi
 STRUCTURAL CARBON STEEL (ASTM A709, GRADE 36)-----fy = 36,000 psi
 HIGH STRENGTH STRUCTURAL STEEL (ASTM A709, GRADE 50)-----fy = 50,000 psi

LIST OF DRAWINGS

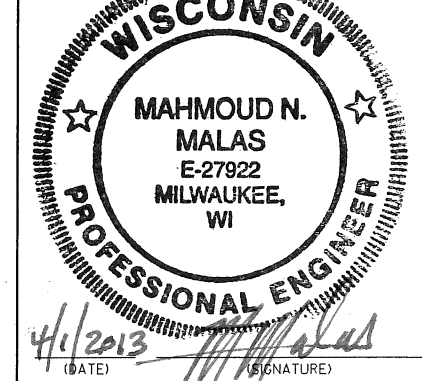
1. GENERAL PLAN AND ELEVATION
2. CROSS SECTION AND QUANTITIES
3. BARRIER GATE DETAILS
4. BARRIER GATE RECEIVING SOCKET DETAILS
5. PLATFORM OVERHANG DETAIL WB LANE
6. PLATFORM OVERHANG DETAIL EB LANE
7. STEEL GIRDER DETAILS
8. STEEL GIRDER DETAILS 2
9. PARAPET DETAILS EB LANE
10. PARAPET DETAILS WB LANE
11. TUBULAR STEEL RAILING, TYPE F
12. GENERAL ELECTRICAL NOTES
13. ONE LINE DIAGRAM
14. PLC ARCHITECTURE
15. DRIVE MACHINERY
16. OPERATORS HOUSE LAYOUT
17. CONTROL DESK
18. CABINET ELEVATIONS
19. CONDUIT BLOCK DIAGRAM
20. POWER CONDUIT AND CABLE SCHEDULE
21. CONTROL CONDUIT AND CABLE SCHEDULE
22. ELECTRICAL BILL OF MATERIALS 1
23. ELECTRICAL BILL OF MATERIALS 2
24. LIMIT SWITCH DEVELOPMENTS
25. INSTRUMENTATION DETAILS
26. ELECTRICAL DETAILS 1
27. ELECTRICAL DETAILS 2
28. POWER WIRING DIAGRAM NEAR SIDE
29. POWER WIRING DIAGRAM FAR SIDE
30. BRIDGE POWER LOGIC
31. TRAFFIC SIGNAL & SPAN POSITION LOGIC
32. GATES, SPAN LOCK & JOG CONTROL LOGIC
33. BRAKE CONTROL LOGIC
34. NEAR DRIVES LOGIC
35. FAR DRIVES LOGIC
36. DESK INPUTS
37. DESK OUTPUTS
38. NEAR SIDE INPUTS 1
39. NEAR SIDE INPUTS 2
40. FAR SIDE INPUTS 1
41. FAR SIDE INPUTS 2
42. NEAR LIGHTING PANEL
43. MASON STREET CCTV LAYOUT
44. OPERATOR HOUSE LAYOUT & VIDEO DIAGRAM

STATE PROJECT NUMBER

9210-14-71



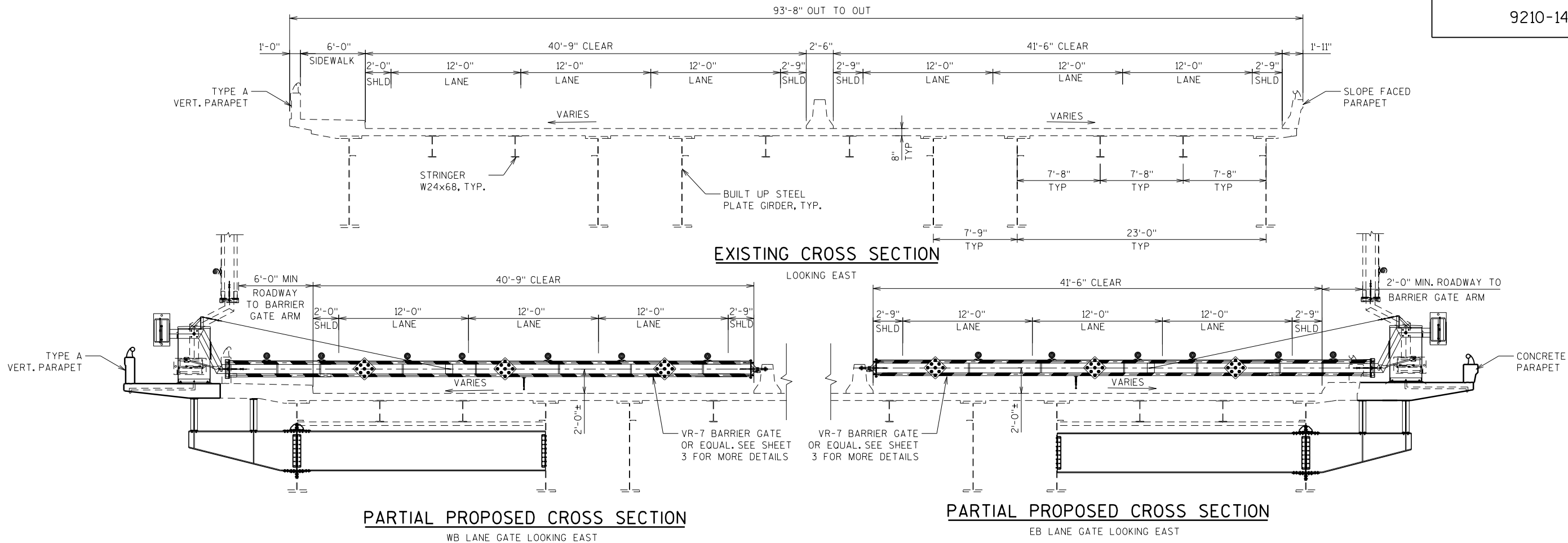
SHEETS 2, 3 & 5 PREPARED BY:
K. SINGH & ASSOCIATES, INC.



NO.	DATE	REVISION	BY
1501 BROADWAY NEW YORK, NY 10036 (212) 944-1150			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED		04/08/13 DATE	
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-05-134			
STH 54 OVER FOX RIVER			
COUNTY BROWN		TOWN/CITY/VILLAGE GREEN BAY	
DESIGN SPEC. AASHTO LRFD DESIGN SPECIFICATION			
DESIGNED BY DH	DESIGN CK'D. AHN	DRAWN BY DH	PLANS CK'D. AHN
GENERAL PLAN AND ELEVATION			SHEET 1 OF 44
93			

STRUCTURES DESIGN CONTACTS:

BUREAU OF STRUCTURES:
 WILLIAM DREHER (608) 266-8489
 CONSULTANT CONTACT:
 JOHN GIMBLETT (212) 944-1150



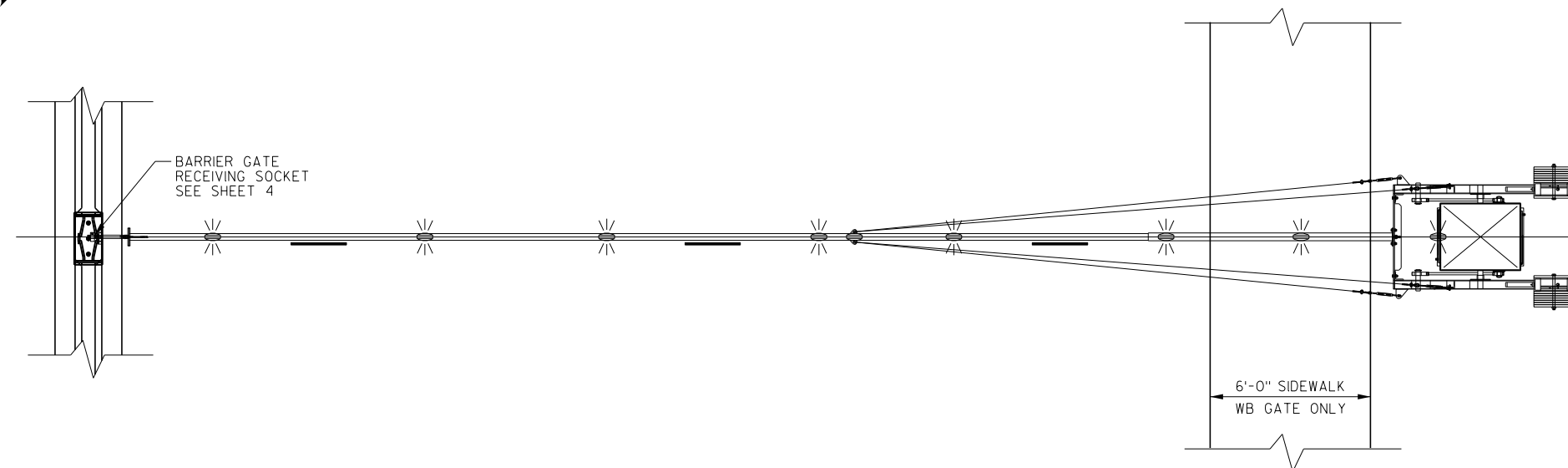
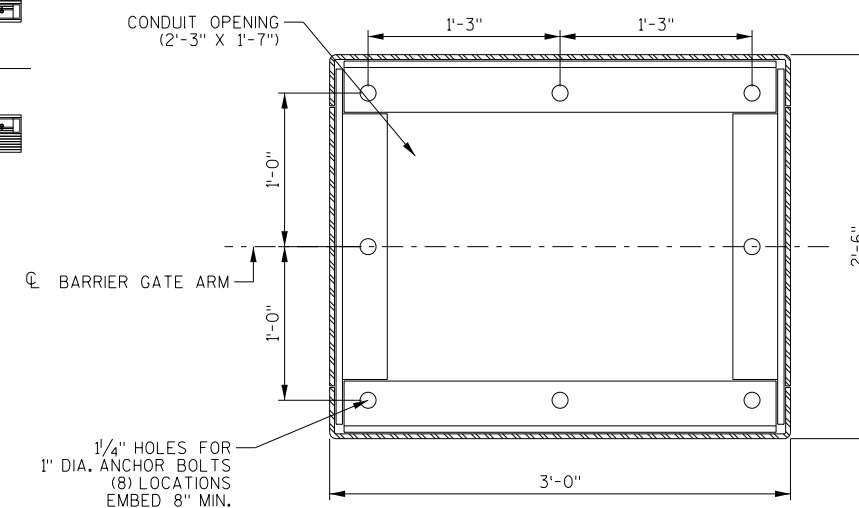
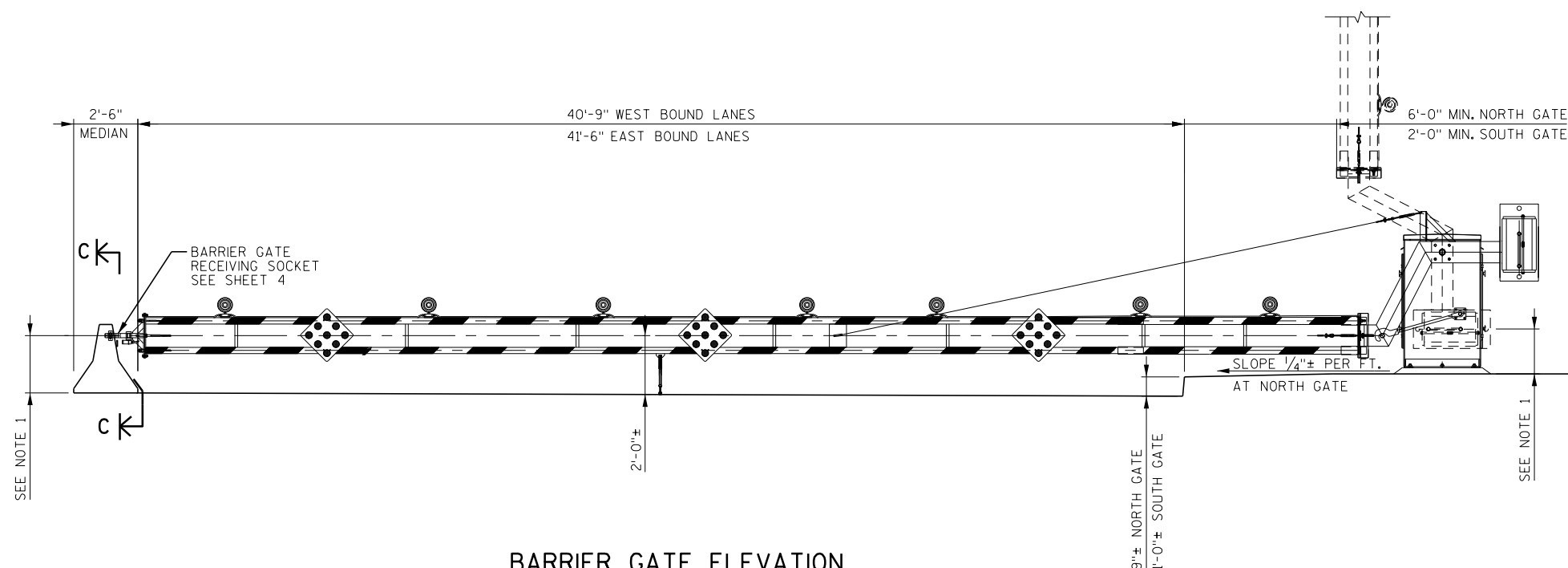
TOTAL ESTIMATED QUANTITIES

NO.	BID ITEMS	UNIT	TOTAL
203.0700.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM, STA. 42+50	LS	1
502.0100	CONCRETE MASONRY BRIDGES, B-05-134	CY	19
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	74
502.6115	MASONRY ANCHORS TYPE S 7/8-INCH	EACH	8
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	290
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,680
506.0105	STRUCTURAL STEEL CARBON	LB	4,120
506.0605	STRUCTURAL STEEL HS	LB	21,840
513.4050	RAILING TUBULAR TYPE F, B-05-134	LS	1
517.0600	PAINTING EPOXY SYSTEM, B-05-134	LS	1
SPV.0105	MASON STREET BRIDGE ELECTRICAL WORK, B-05-134	LS	1
SPV.0105	MASON STREET BRIDGE CCTV SYSTEM, B-05-134	LS	1
SPV.0105	MASON STREET BRIDGE MACHINERY WORK, B-05-134	LS	1
SPV.0105	MASON STREET BRIDGE STEEL THRIE BEAM, B-05-134	LS	1

GENERAL NOTES

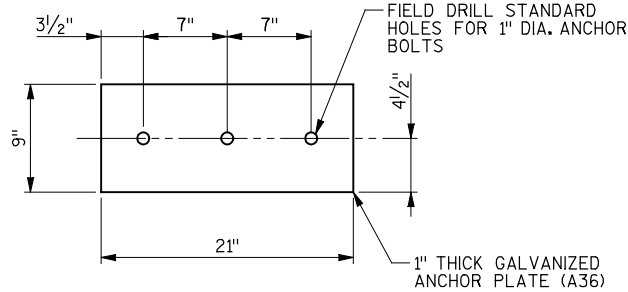
- DRAWINGS SHALL NOT BE SCALED.
- ALL STATIONS AND ELEVATIONS ARE IN FEET.
- THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.
- BEVEL EXPOSED EDGES OF CONCRETE $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.
- ALL CONCRETE REMOVAL SHALL BE DEFINED BY A 1-INCH DEEP SAW CUT.
- THE LOCATION OF PUBLIC AND PRIVATE UTILITIES ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. PRIOR TO BEGINNING WORK, THE CONTRACTOR IS REQUIRED TO NOTIFY ALL UTILITY COMPANIES TO VERIFY THE LOCATION OF EXISTING FACILITIES. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES DONE BY THE CONTRACTOR TO ANY UTILITY FOUND WITHIN THE LIMITS OF THE PROJECT. DAMAGES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- ALL DETAILS, MATERIALS AND FABRICATION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE SPECIFICATIONS OF THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION, EDITION OF 2012.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM THE ORIGINAL STRUCTURE PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION OR A CHANGE IN SCOPE OF WORK.
- INFORMATION ON THESE DRAWINGS RELATED TO THE EXISTING BRIDGE IS BASED UPON AVAILABLE DRAWINGS FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION. NO GUARANTEE OR WARRANTY IS MADE THAT THE INFORMATION IS ALL INCLUSIVE OR TOTALLY ACCURATE. THEREFORE, THE CONTRACTOR SHALL MAKE ITS OWN DETERMINATION OF THE ACTUAL CONDITIONS TO BE ENCOUNTERED.
- CLEAN, STRAIGHTEN, AND INCORPORATE EXISTING BAR STEEL REINFORCEMENT 24 BAR DIAMETERS INTO NEW WORK, WHERE APPLICABLE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
		DRAWN BY AJC	PLANS CK'D. MNM
CROSS SECTIONS AND QUANTITIES		SHEET 2 OF 44	
		40	

**BARRIER GATE PLAN**(WESTBOUND GATE SHOWN,
EASTBOUND GATE SIMILAR)**BARRIER GATE HOUSING
BASE DETAIL****BARRIER GATE ELEVATION**(WESTBOUND GATE SHOWN, LOOKING
WEST, EASTBOUND GATE SIMILAR)

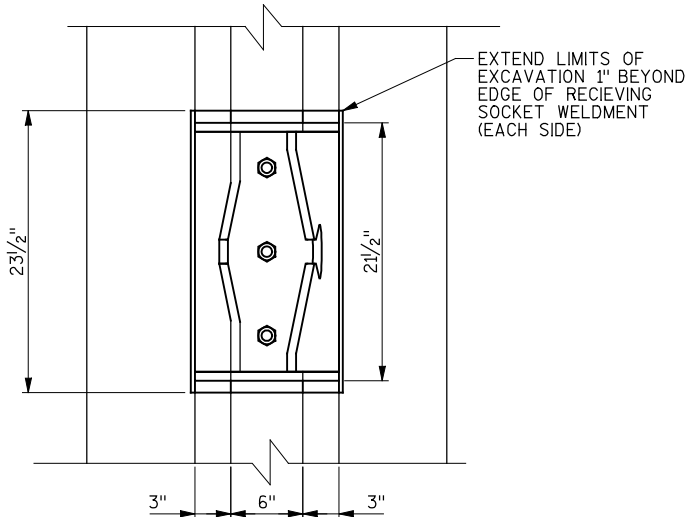
- NOTES:
1. ROADWAY SLOPE IS APPROXIMATELY FLAT AT BOTH GATE LOCATIONS. FIELD VERIFY MAXIMUM ELEVATION CHANGE ACROSS ROADWAY IS LESS THAN 1'.
 2. THE CONTRACTOR SHALL FURNISH AND INSTALL TWO VEHICLE BARRIER GATES. GATES SHALL BE TYPE VR-7 MANUFACTURED BY B&B ROADWAY OR EQUAL AND WILL BE PAID UNDER BID ITEM, "MASON STREET BRIDGE ELECTRICAL WORK, B-05-134".
 3. TWO NEW GATES ARE REQUIRED. SEE SHEET 4 FOR MORE DETAILS.
 4. MANUFACTURER SPECIFICATIONS AND RECOMMENDATIONS SHALL BE REFERENCED AS SUPPLEMENTAL REQUIREMENTS.
 5. STEEL ANCHOR BOLTS SHALL BE AASHTO M314-90 GRADE 105 F_y= 105,000 psi. TACK WELD NUT @ BOTTOM OF EACH BOLT. WORK SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "CONCRETE MASONRY BRIDGES, B-05-134".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		AJC	PLANS CK'D. MNM
BARRIER GATE DETAILS		SHEET 3 OF 44	
		41	



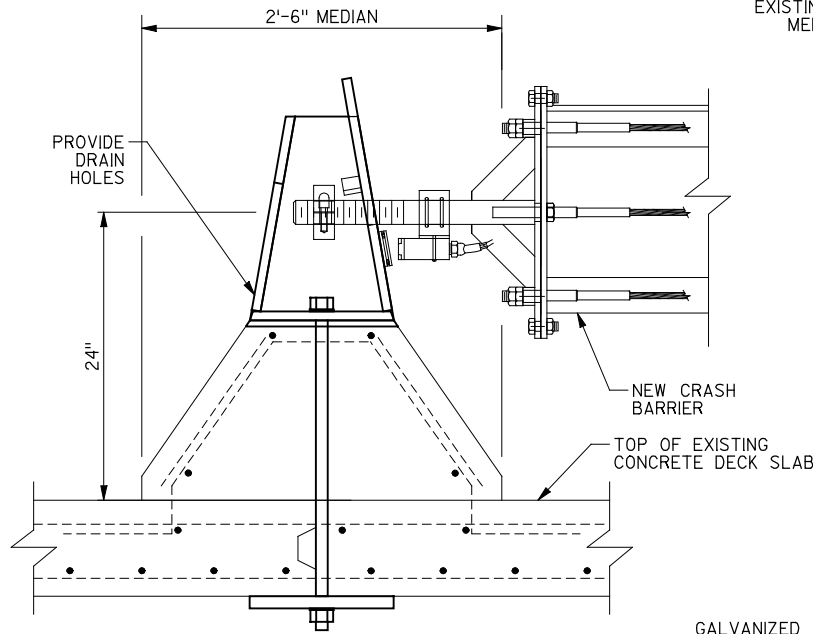
ANCHOR PLATE DETAIL

SCALE: 1/2" = 1'-0"



RECEIVING SOCKET PLAN

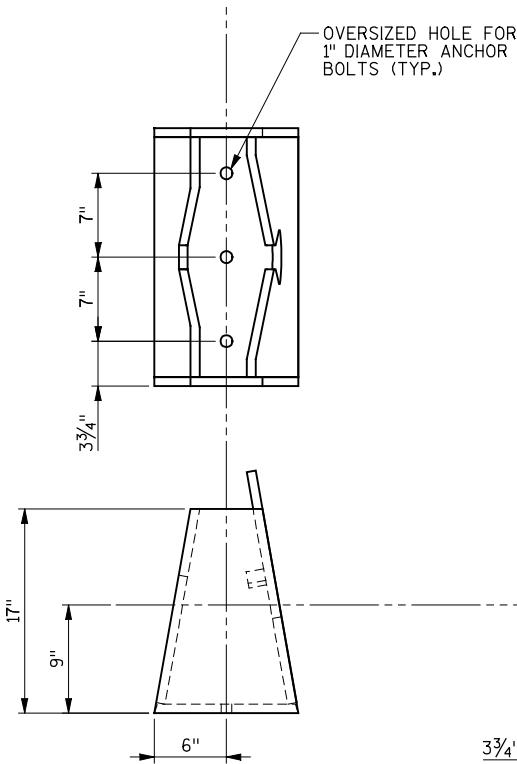
SCALE: 1/2" = 1'-0"



RECEIVING SOCKET SECTION

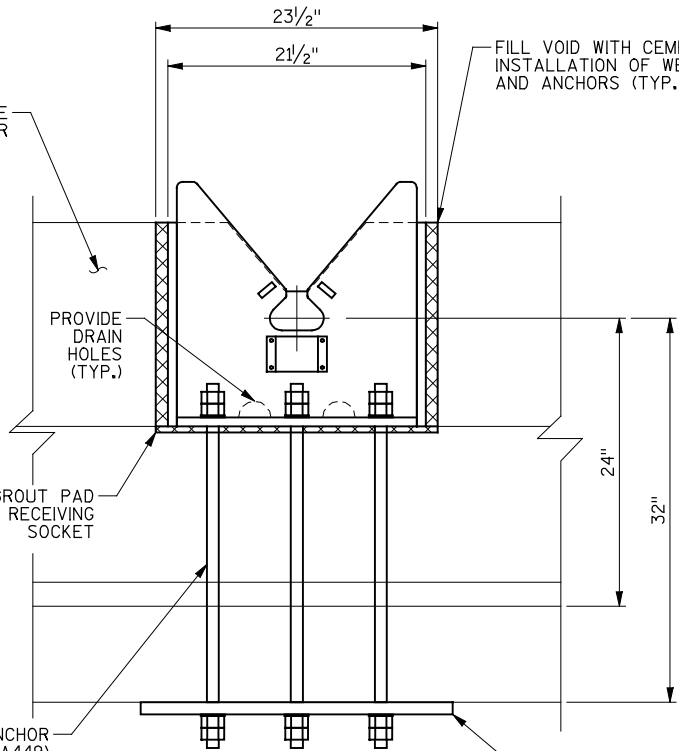
SCALE: 1/2" = 1'-0"

GALVANIZED MASONRY ANCHOR TYPE S 1-INCH (1"φ - ASTM (A449) TIE THROUGH ANCHOR ROD WITH DOUBLE HEAVY HEX NUTS ON BOTH ENDS) FILL VOIDS WITH CEMENT GROUT (TYP.)



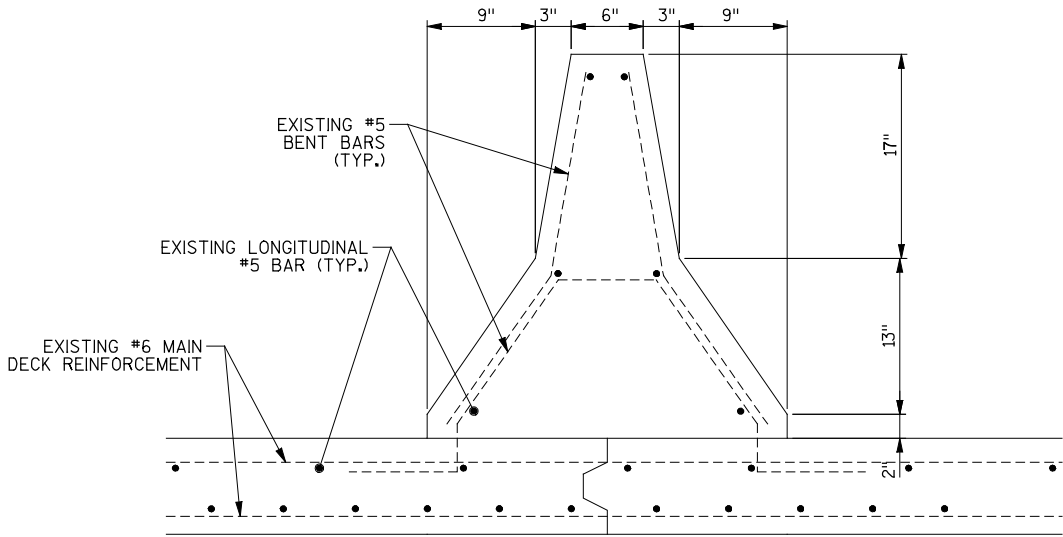
RECEIVING SOCKET DETAILS

SCALE: 1/2" = 1'-0"



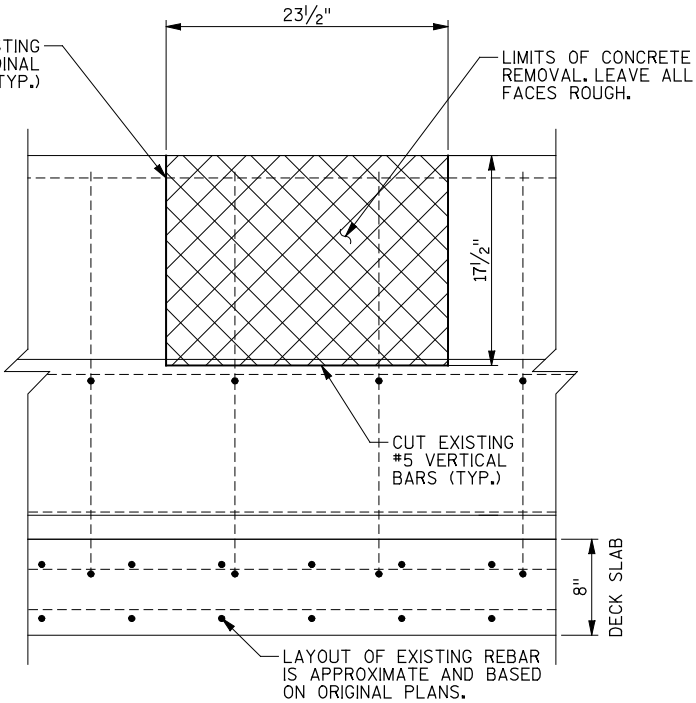
RECEIVING SOCKET ELEVATION

SCALE: 1/2" = 1'-0"



EXISTING MEDIAN BARRIER DETAILS

SCALE: 1/2" = 1'-0"



CONCRETE DEMOLITION

SCALE: 1/2" = 1'-0"

NOTES:

1. STEEL RECEIVING SOCKET SHALL BE FABRICATED AND FURNISHED BY B&B ROADWAY. DETAILS AND DIMENSIONS SHALL CONFORM TO THE FINAL B&B ROADWAY DESIGN AND SECTION 506 OF THE STANDARD SPECIFICATIONS.
2. GROUT SHALL BE PAID FOR UNDER ITEM #502.0100 "CONCRETE MASONRY BRIDGES" OF THE STANDARD SPECIFICATIONS.
3. ASTM A449 ANCHOR BOLTS SHALL BE PAID FOR UNDER ITEM #502.5000 - 5099 "MASONRY ANCHORS TYPE S 1-INCH" OF THE STANDARD SPECIFICATIONS. BOLTS SHALL BE TENSIONED TO PROVIDE A SNUG FIT.
4. GALVANIZED STEEL ANCHOR PLATE SHALL CONFORM TO SECTION 506 OF THE STANDARD SPECIFICATIONS AND BE PAID FOR UNDER ITEM #506.0105 "STRUCTURAL STEEL CARBON".
5. SAW CUT ALL EDGES MINIMUM 3/4" DEEP AROUND PERIMETER OF DEMOLITION AREA.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY BSH		PLANS CK'D. SDH	
BARRIER GATE RECEIVING SOCKET DETAILS			SHEET 4 OF 44
			42



(SHOWN WITHOUT BARRIER GATE FOR CLARITY)



(SHOWN WITHOUT BARRIER GATE FOR CLARITY)

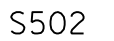


(SHOWN WITHOUT BARRIER GATE FOR CLARITY)



BAR MARK	COAT	LENGTH	NO.	BENT	BAR SERIES	LOCATION
S501	X	8'-7"	13			WB SLAB TRANSVERSE - TOP
S502	X	8'-7"	13	X		WB SLAB TRANSVERSE - BOTTOM
S403	X	11'-1"	24		▲	WB SLAB LONGITUDINAL
S504		3'-11"	26			WB TYPE L MASONRY ANCHORS
S509		2'-9"	10			SIDEWALK TYPE L MASONRY ANCHORS
S510	X	5'-8"	5			WB SIDEWALK LONGIT.
S511	X	7'-3"	4			WB SIDEWALK TRANS.

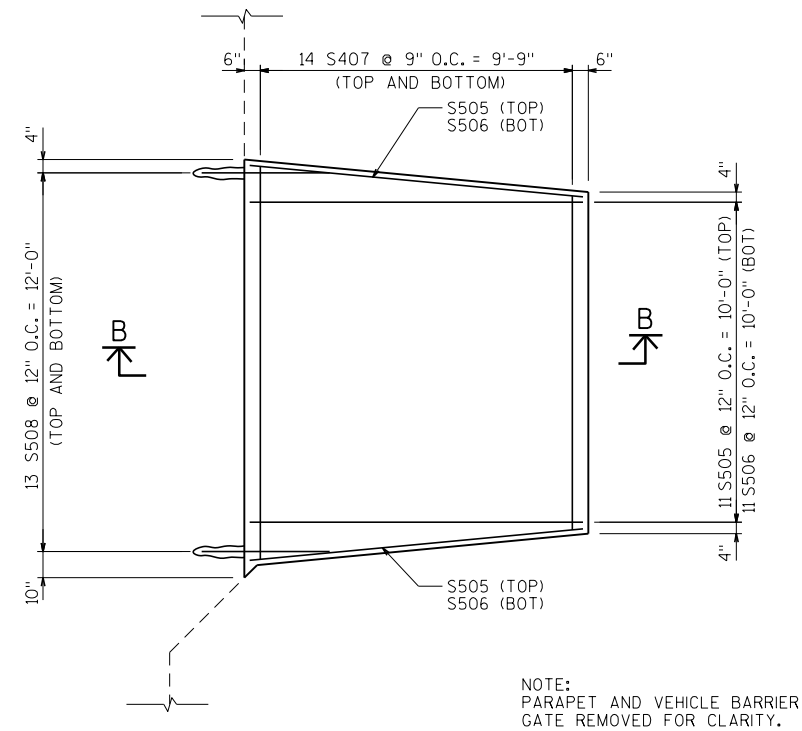
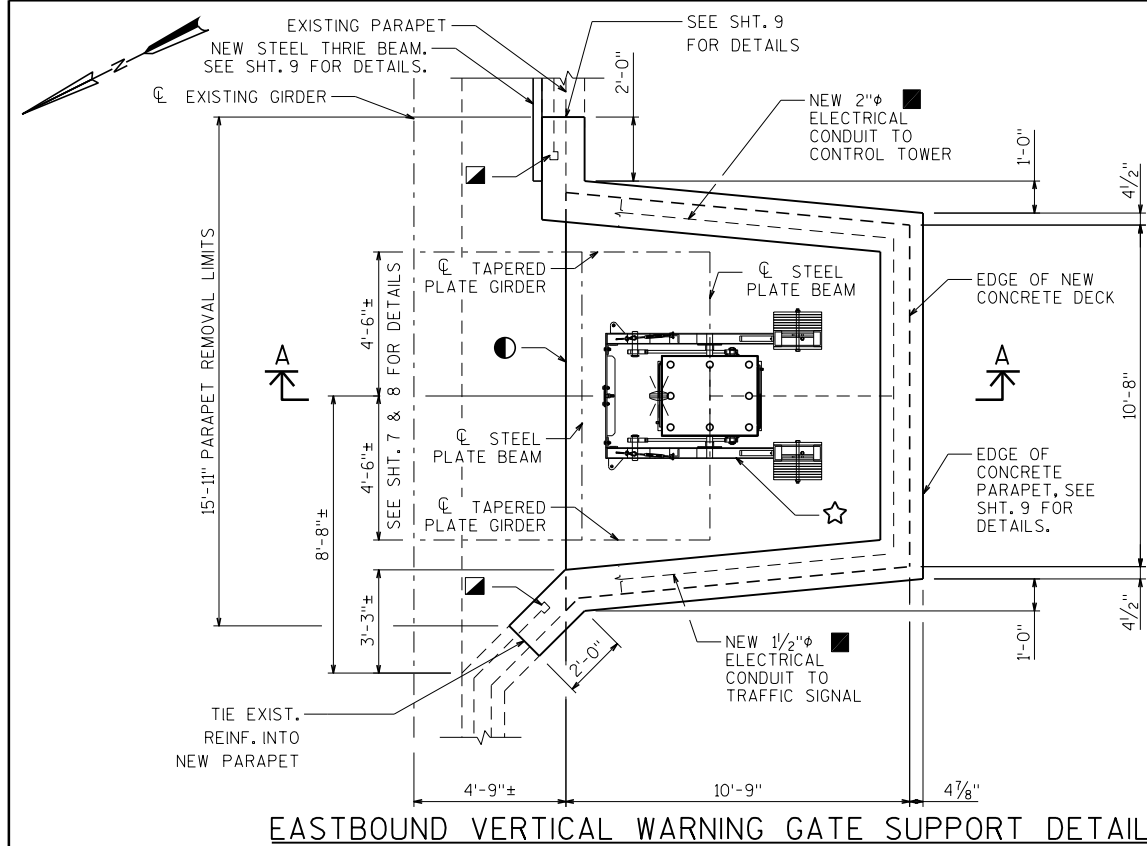
BAR MARK	NO. REQUIRED	LENGTH
S403	2 SERIES OF 12	10'-2" TO 12'-1"



LEGEND

- ☆ NEW VEHICLE BARRIER GATE BY OTHERS, CENTER GATE HOUSING ON CENTER LINE OF STEEL BEAM BELOW. SEE SHEET 3 FOR DETAILS.
- REMOVE EXISTING VEHICLE BARRIER GATE. SAW CUT 1" AND REMOVE EXISTING PARAPET.
- EXISTING CONDUIT IN PARAPET TO BE CUT AND ABANDONED. PROVIDE JUNCTION BOX AT LOCATION IN NEW PARAPET. ALL WORK TO BE PERFORMED BY ELECTRICAL CONTRACTOR. WORK SHALL BE PAID UNDER BID ITEM, "MASON STREET BRIDGE ELECTRICAL WORK, B-05-134."
- ▽ SUPPLEMENTAL MASONRY ANCHORS TYPE L NO.5 BARS. MINIMUM PULLOUT CAPACITY OF 9 KIPS. EMBED A MINIMUM OF 1'-0" IN EXISTING CONCRETE.
- NEW ELECTRICAL CONDUIT WORK TO BE PERFORMED BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS FOR DETAILS. WORK SHALL BE PERFORMED UNDER BID ITEM, "MASON STREET BRIDGE ELECTRICAL WORK, B-05-134."
- PROVIDE (8) CAST IN PLACE, 1" DIA., HOT DIPPED ZINC COATED STEEL ANCHOR BOLTS CONFORMING TO AASHTO M314-90 GRADE 105 Fy = 105,000 psi. EMBED 8" MIN. TACK WELD NUT @ BOTTOM OF EACH BOLT.

NO.	DATE	REVISION			BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION					
STRUCTURE B-05-134					
		DRAWN BY	AJC	PLANS CK'D.	MNM
PLATFORM OVERHANG DETAIL WB LANE				SHEET 5 OF 44	
				43	



BILL OF BARS

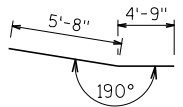
FOR EB SLAB

BAR MARK	COAT	LENGTH	NO.	BENT	BAR SERIES	LOCATION
S505	X	10'-5"	13			EB SLAB TRANSVERSE - TOP
S506	X	10'-6"	13	X		EB SLAB TRANSVERSE - BOTTOM
S407	X	11'-4"	28		▲	EB SLAB LONGITUDINAL
S508		3'-11"	26			EB TYPE L MASONRY ANCHORS
S509		2'-9"	4			SIDEWALK TYPE L MASONRY ANCHORS
S512	X	3'-2"	2			EB SIDEWALK LONGIT.
S513	X	2'-2"	3			EB SIDEWALK TRANS.

BAR SERIES TABLE

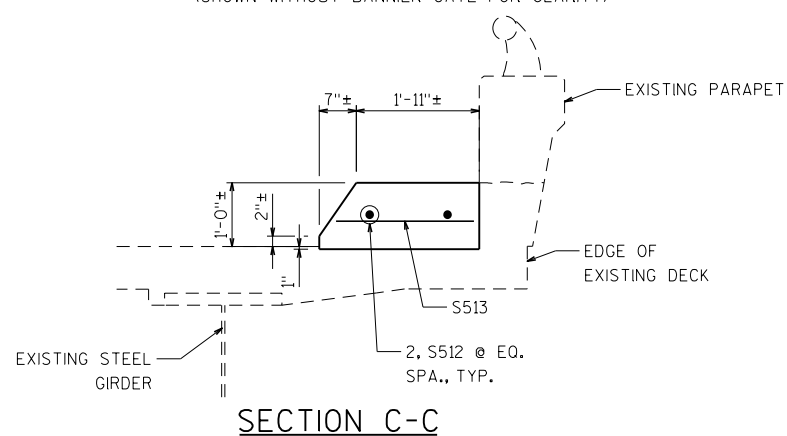
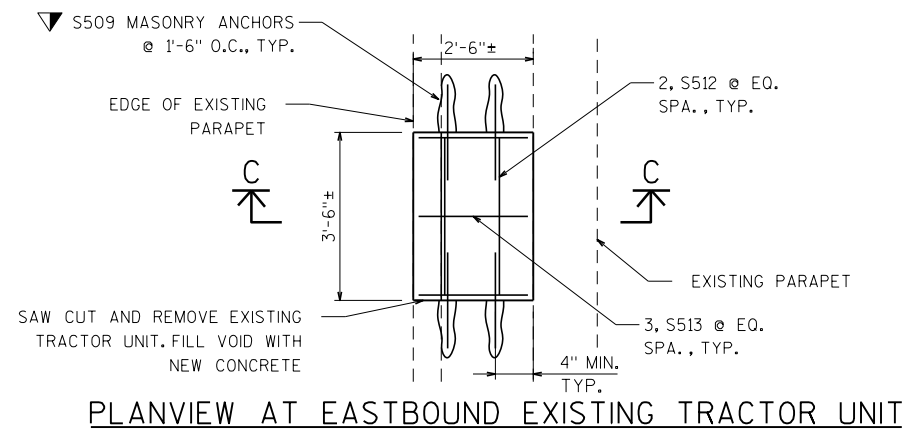
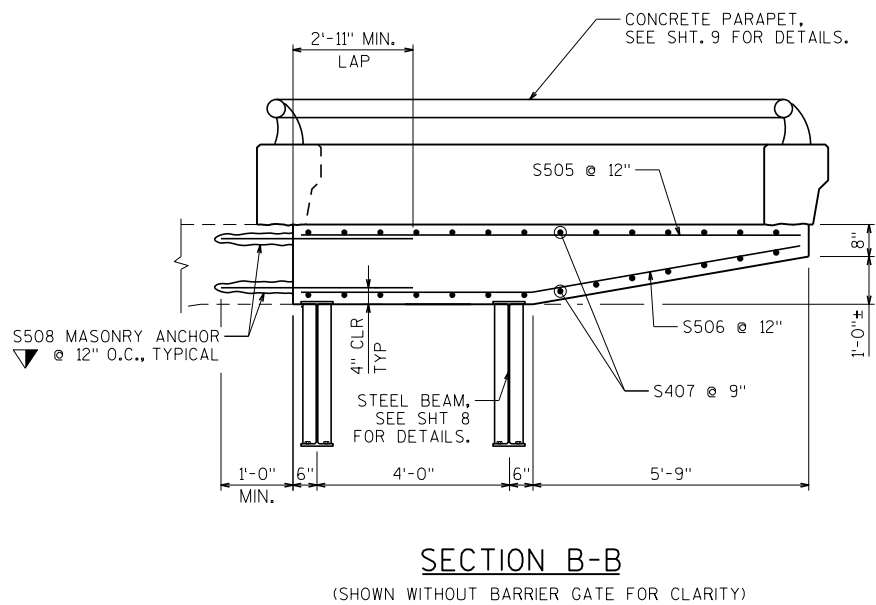
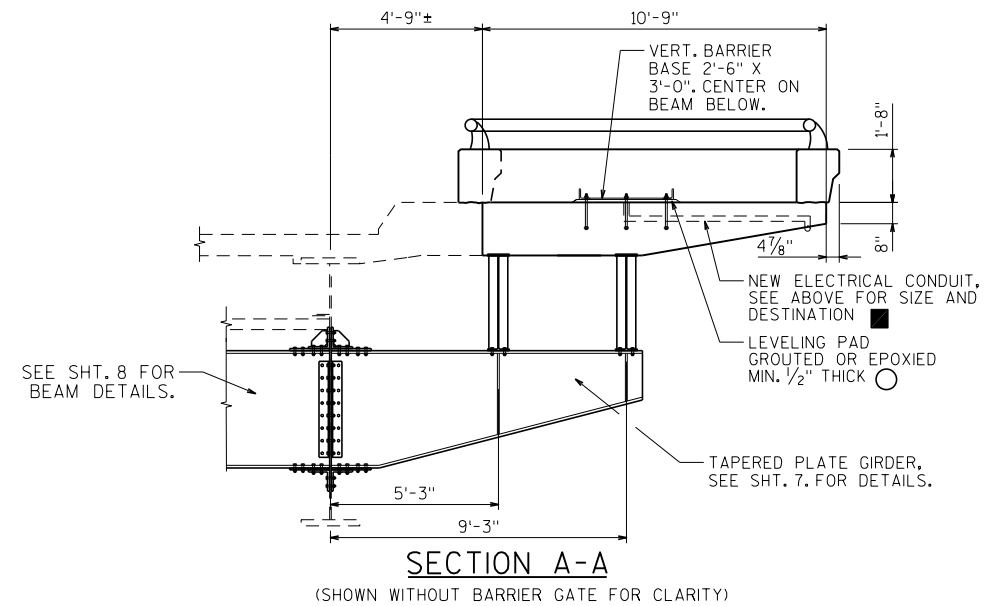
BAR MARK	NO. REQUIRED	LENGTH
S407	2 SERIES OF 14	10'-5" TO 12'-3"

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR LENGTH CALCULATIONS. SEE BAR SERIES FOR ACTUAL LENGTHS. BUNDLE AND TAG EACH SERIES SEPARATELY.

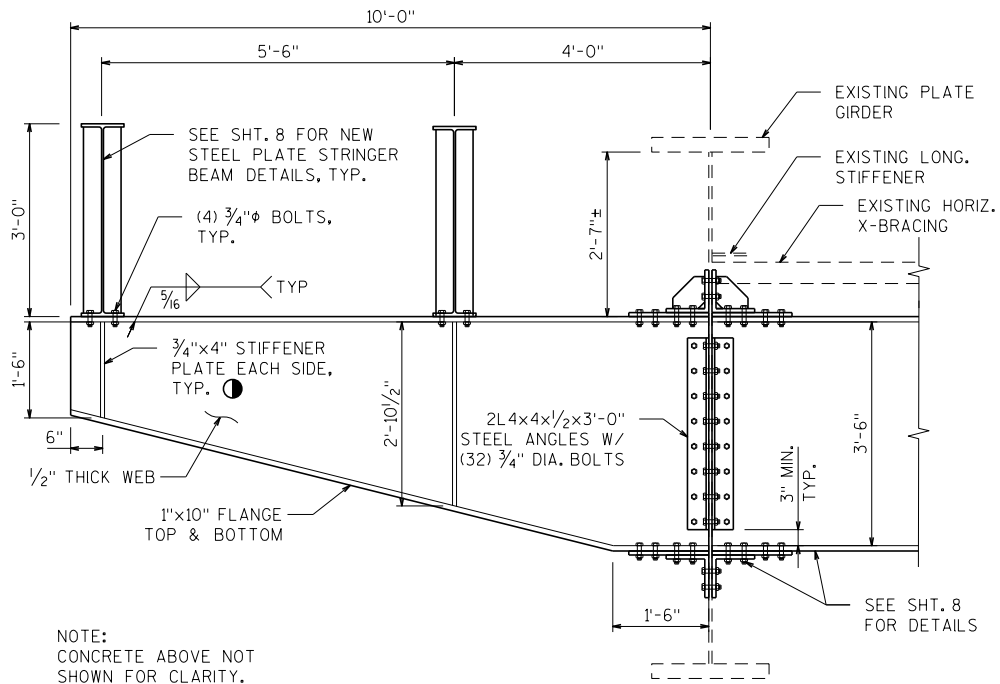


LEGEND

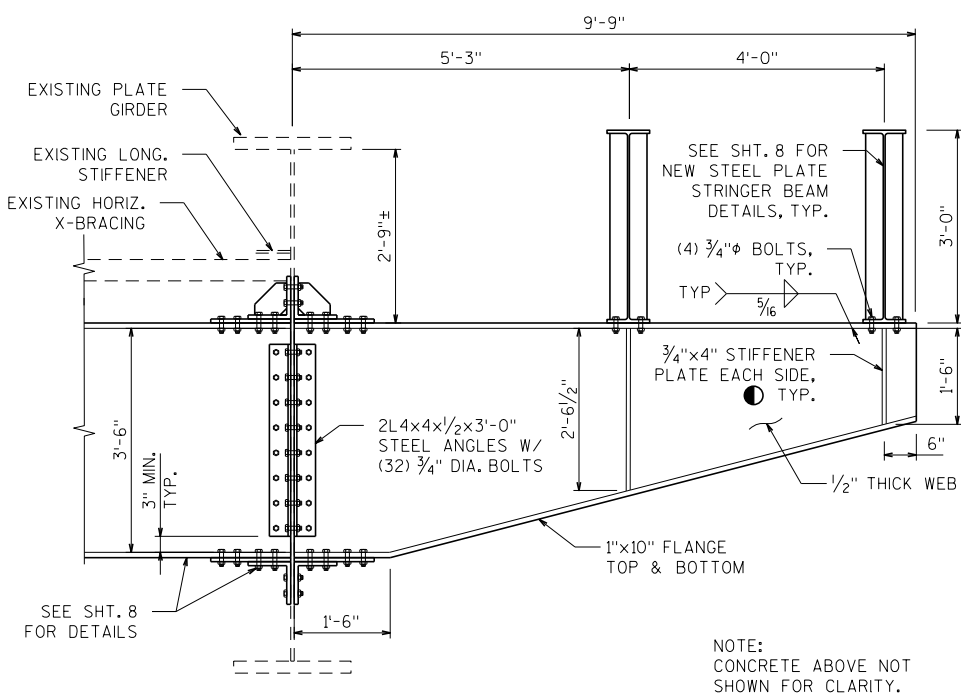
- ☆ NEW VEHICLE BARRIER GATE BY OTHERS. CENTER GATE HOUSING ON CENTER LINE OF STEEL BEAM BELOW. SEE SHEET 3 FOR DETAILS.
- REMOVE EXISTING VEHICLE BARRIER GATE. SAW CUT 1" AND REMOVE EXISTING PARAPET.
- EXISTING CONDUIT IN PARAPET TO BE CUT AND ABANDONED. PROVIDE JUNCTION BOX AT LOCATION IN NEW PARAPET. ALL WORK TO BE PERFORMED BY ELECTRICAL CONTRACTOR. WORK SHALL BE PAID UNDER BID ITEM, "MASON STREET BRIDGE ELECTRICAL WORK, B-05-134."
- ▼ SUPPLEMENTAL MASONRY ANCHORS TYPE L NO. 5 BARS. MINIMUM PULLOUT CAPACITY OF 9 KIPS. EMBED A MINIMUM OF 1'-0" IN EXISTING CONCRETE.
- NEW ELECTRICAL CONDUIT WORK TO BE PERFORMED BY ELECTRICAL CONTRACTOR. SEE ELECTRICAL DRAWINGS FOR DETAILS. WORK SHALL BE PERFORMED UNDER BID ITEM, "MASON STREET BRIDGE ELECTRICAL WORK, B-05-134."
- PROVIDE (8) CAST IN PLACE, 1" DIA., HOT DIPPED ZINC COATED STEEL ANCHOR BOLTS CONFORMING TO AASHTO M314-90 GRADE 105 Fy = 105,000 psi. EMBED 8" MIN. TACK WELD NUT @ BOTTOM OF EACH BOLT.



NO.	DATE	REVISION		BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION				
STRUCTURE B-05-134				
		DRAWN BY	AJC	PLANS CK'D. MNM
PLATFORM OVERHANG DETAIL EB LANE			SHEET 6 OF 44	
			44	



CROSS SECTION OF TAPERED BEAM
AT ∇ WB BARRIER GATE
(LOOKING EAST)



ELEVATION OF TAPERED BEAM
AT ∇ EB BARRIER GATE
(LOOKING EAST)

* TABLE OF FILLET WELD SIZES

MATERIAL THICKNESS OF THICKER PART JOINED.	∇ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	$\triangle$ 5/16"
OVER 1 1/2" TO 2 1/4"	$\triangle$ 3/8"
OVER 2 1/4" TO 6"	$\triangle$ 1/2"

∇ EXCEPT THAT THE WELD SIZE SHALL NOT
EXCEED THE THICKNESS OF THE THINNER PART
JOINED.

$\triangle$ MIN. PASS SIZE IS 5/16"

GENERAL STEEL NOTES

ALL STEEL PLATE GIRDERS TO BE CONSTRUCTED PRIOR TO THE START OF NEW CONCRETE DECK CONSTRUCTION.

ALL STRUCTURAL STEEL FOR NEW PLATE GIRDERS TO BE A709 GRADE 50. ALL OTHER STRUCTURAL STEEL TO BE ASTM A709 GRADE 36 UNLESS NOTED OTHERWISE.

ALL SUPPORT ANGLES SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS, AND WASHERS SHALL BE ASTM A325 TYPE 1 HIGH STRENGTH BOLTS AND SLIP CRITICAL CONNECTIONS.

ALL SUPPORT ANGLES SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS, AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

WELDING NOT SHOWN ON THE PLANS WILL NOT BE PERMITTED, EXCEPT BY WRITTEN PERMISSION FROM THE ENGINEER AND WITH AN APPROVED WELD PROCEDURE PROVIDED BY THE CONTRACTOR.

ALL INTERIOR AND RE-ENTRANT CUTS SHALL HAVE A MINIMUM RADIUS OF 1", UNLESS NOTED OTHERWISE ON THE PLANS, AND SHALL BE NOTED ON THE SHOP DRAWINGS WHERE THEY OCCUR.

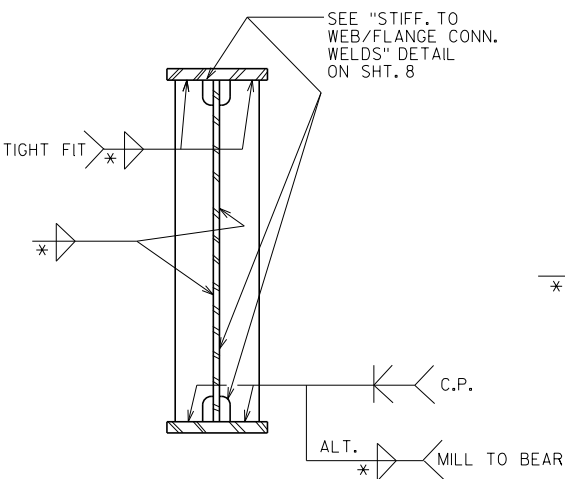
ALL STRUCTURAL STEEL SHALL BE PAINTED UNLESS OTHERWISE NOTED. PAINT COLOR TO BE LIGHT GRAY (FEDERAL COLOR NUMBER 26293) TO MATCH EXISTING GIRDERS.

ALL FLAME CUT EDGES OF PLATES THAT WILL BE PAINTED SHALL BE GROUND OR PLANED TO REMOVE THE HARDENED SURFACE CAUSED BY THE FLAME. REMOVAL OF THIS SURFACE IS NECESSARY TO OBTAIN A PROPER BLASTED SURFACE FOR THE ADHESION OF THE PAINT.

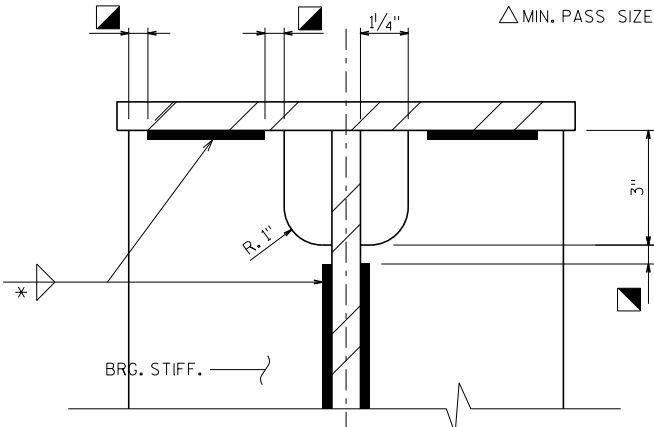
ENSURE THAT FAYING SURFACES FOR SLIP CRITICAL CONNECTIONS ARE PREPARED ACCORDING TO STANDARD SPECIFICATIONS.

CONTRACTOR SHALL LOCATE CANTILEVERED STEEL PLATE BEAMS TO AVOID INTERFERENCE WITH EXIST. HORIZ. X-BRACING AND TRANSVERSE STIFFENERS. CANTILEVERED BEAMS SHALL BE SYMMETRICAL ABOUT ∇ OF NEW BARRIER GATES.

MIN. BOLT EDGE DISTANCE IS 1 1/4" UNLESS OTHERWISE NOTED.



● BRG. STIFF. DETAILS



BRG. STIFF. TO
WEB/FLANGE CONN. WELDS

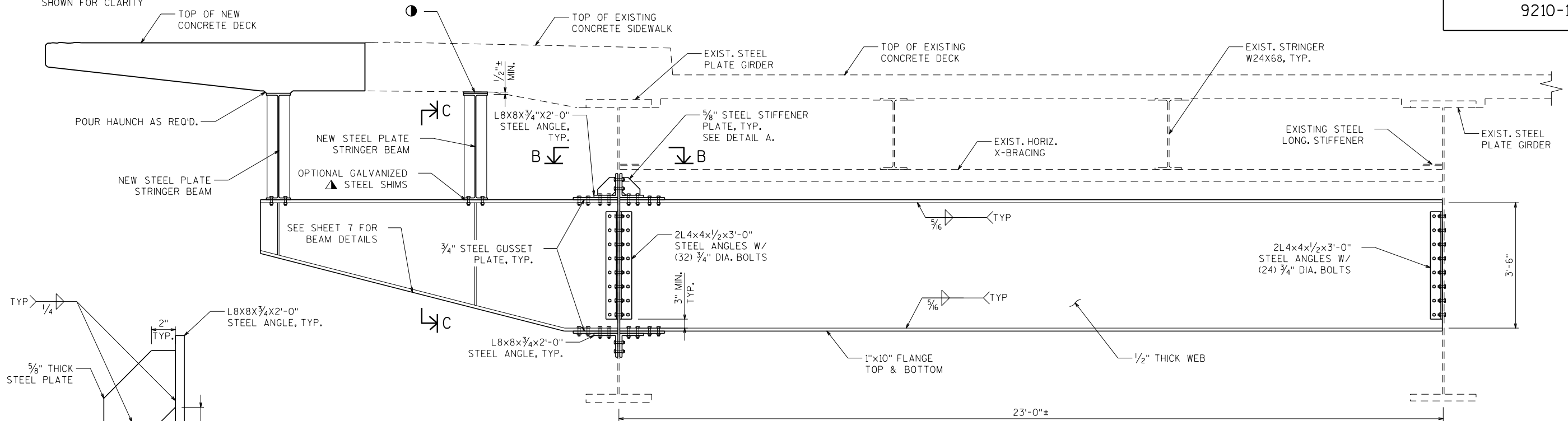
■ 1/4" MIN., 1/2" MAX. TYP.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		AJC	PLANS CK'D. MNM
STEEL GIRDER DETAILS		SHEET 7 OF 44	
		45	

NOTE: PARAPET AND GATE NOT SHOWN FOR CLARITY

STATE PROJECT NUMBER

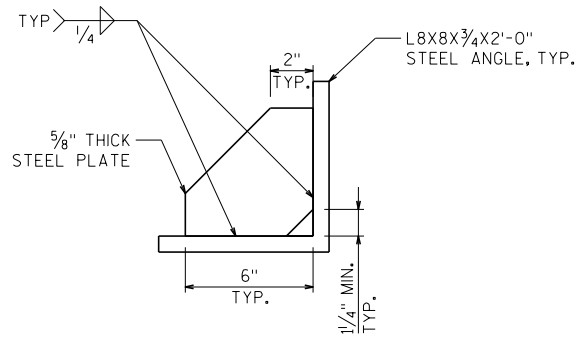
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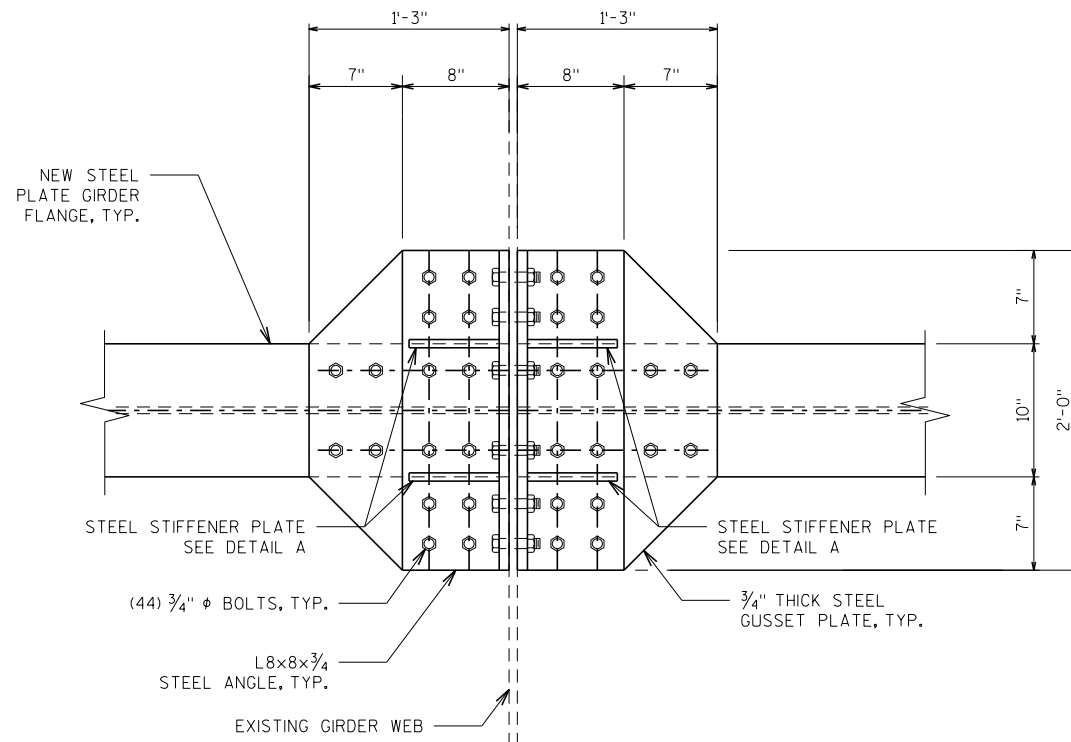
BRACING TYPICAL CROSS SECTION

WB LANE GATE LOOKING EAST, EB LANE GATE SIMILAR

GENERAL NOTE: SEE SHEET 7 FOR GENERAL STEEL NOTES

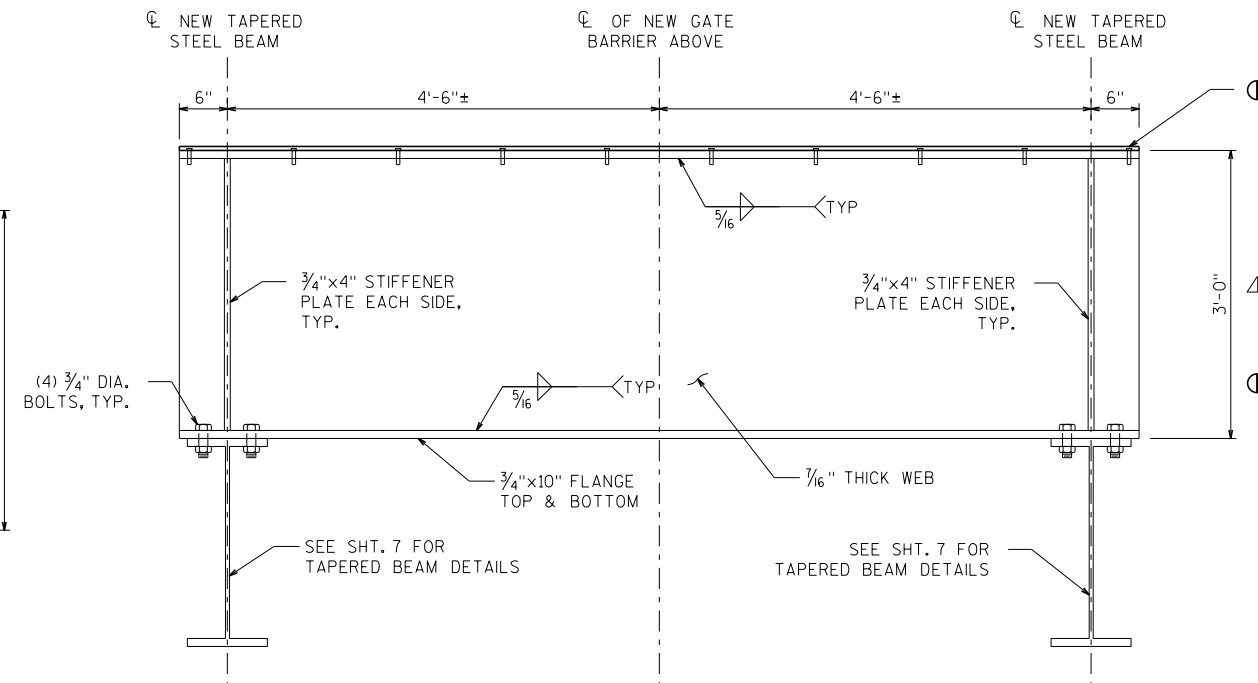


DETAIL A



SECTION B-B

BOTTOM FLANGE SIMILAR

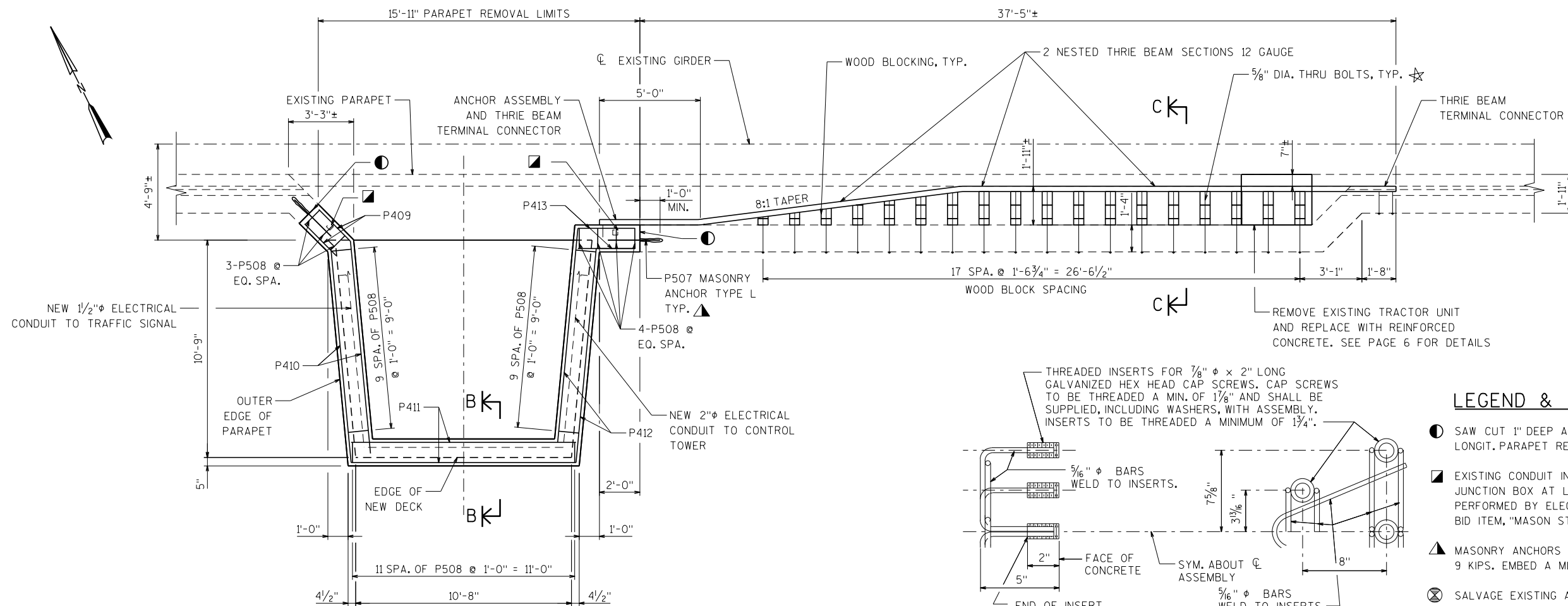


SECTION C-C

LEGEND

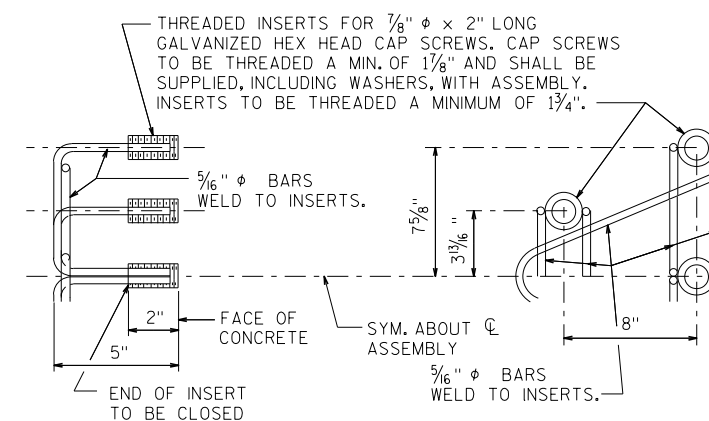
- OPTIONAL GALVANIZED SHIMS SHALL BE USED AT THE DISCRETION OF THE CONTRACTOR. COST SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "STRUCTURAL STEEL HS BRIDGE".
- PROVIDE MIN. 1/2" THICK, 10" WIDE ELASTOMERIC BEARING PAD ALONG LENGTH OF NEW STEEL PLATE STRINGER BEAMS. PAD SHALL BE PLACED BETWEEN EXIST SLAB AND NEW BEAM, TYP. CONTRACTOR SHALL USE (20) 3/8" CSK. STAINLESS STEEL BOLTS TO FASTEN THE BEARING PAD TO THE NEW BEAM. COST SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "STRUCTURAL STEEL HS BRIDGE"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		AJC	PLANS CK'D. MNM
STEEL GIRDER DETAILS 2		SHEET 8 OF 44	
		46	



EASTBOUND PARAPET PLAN VIEW

ALUMINUM RAIL J NOT SHOWN FOR CLARITY PURPOSES



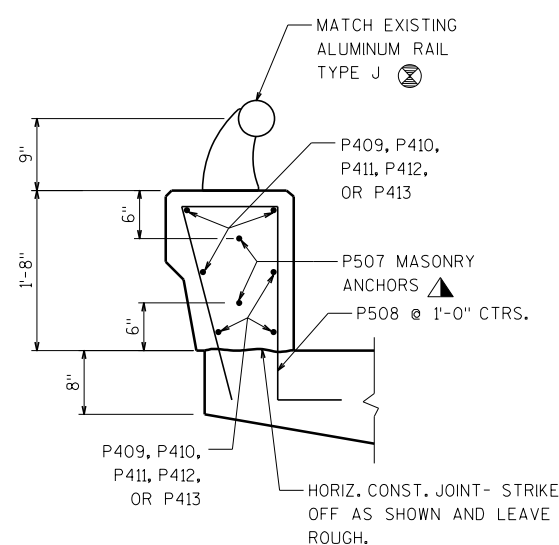
DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

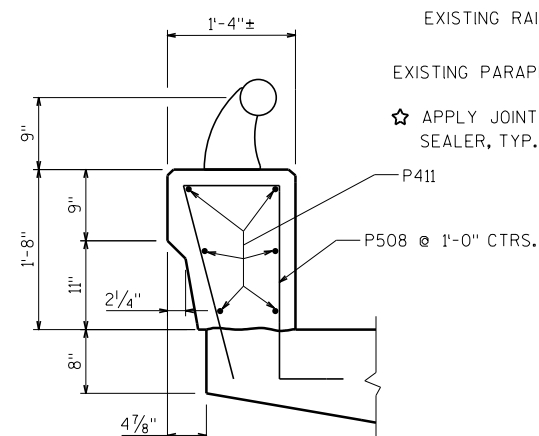
LEGEND & NOTES

- SAW CUT 1" DEEP AND REMOVE EXISTING PARAPET. SALVAGE EXISTING LONGIT. PARAPET REINFORCEMENT AND BEND TO FIT INTO NEW WORK.
- EXISTING CONDUIT IN PARAPET TO BE CUT AND ABANDONED. PROVIDE JUNCTION BOX AT LOCATION IN NEW PARAPET. ALL WORK TO BE PERFORMED BY ELECTRICAL CONTRACTOR. WORK SHALL BE PAID UNDER BID ITEM, "MASON STREET BRIDGE ELECTRICAL WORK, B-05-134."
- ▲ MASONRY ANCHORS TYPE L NO. 5 BARS. MINIMUM PULLOUT CAPACITY OF 9 KIPS. EMBED A MINIMUM OF 1'-0" IN CONCRETE.
- ⊗ SALVAGE EXISTING ALUMINUM RAIL FROM PARAPET TO BE REMOVED. BEND RAIL AS NECESSARY TO FIT ON TOP OF NEW PARAPET. CONTRACTOR IS RESPONSIBLE TO PROCURE ANY ADDITIONAL RAILING REQUIRED. WORK SHALL BE PAID UNDER BID ITEM, "REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM, STA. 42+50."
- ☒ USE 6"×8" WOOD BLOCKS WHEN POSSIBLE.
- ☆ POST BOLTS ARE TO BE 5/8" DIA. ASTM A307 BUTTON HEAD BOLT. TERMINAL CONNECTOR BOLTS ARE TO BE 5/8" DIA. ASTM A449 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIA. DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIA. FLAT OR WEDGED WASHER OF THE SAME ALLOY GROUP. LENGTH OF BOLT MAY VARY. ANCHOR ASSEMBLY AND STEEL THRIE BEAM WORK SHALL BE PAID FOR UNDER BID ITEM, "MASON STREET BRIDGE STEEL THRIE BEAM, B-05-134". SEE SPECIAL PROVISIONS FOR FURTHER DETAILS.
- ☆ APPLY NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER BETWEEN HOLE IN PARAPET AND INSTALLED BOLT ON FRONT FACE AND BACK FACE OF PARAPET. SEE SPECIAL PROVISIONS FOR FURTHER DETAIL. WORK SHALL BE CONSIDERED INCIDENTAL TO BID ITEM, "MASON STREET BRIDGE STEEL THRIE BEAM, B-05-134".

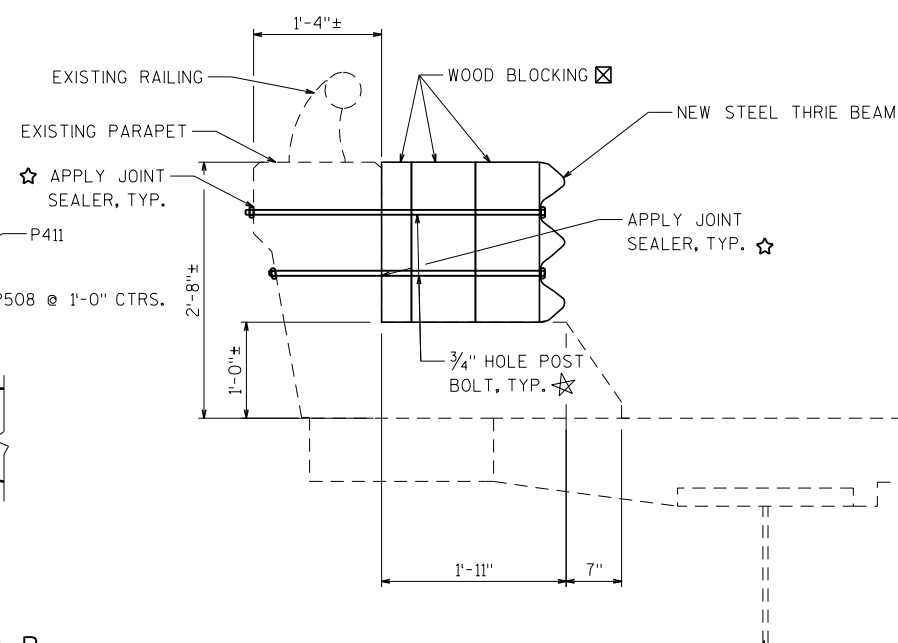
CONTRACTOR SHALL FABRICATE A CUSTOM STEEL CONNECTOR PLATE AT THE THRIE BEAM TERMINAL CONNECTOR TO PROVIDE A LEVEL SURFACE FOR THE THRIE BEAM RAILING.



TYPICAL SECTION THRU EB PARAPET

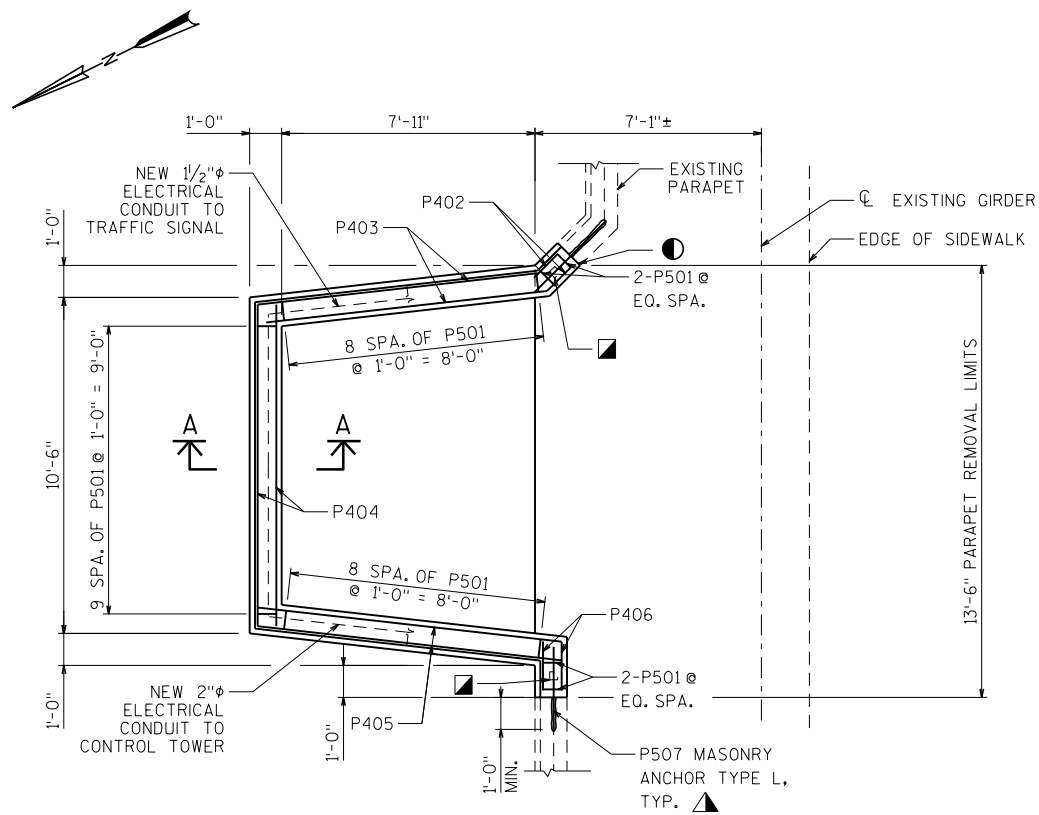


SECTION B-B



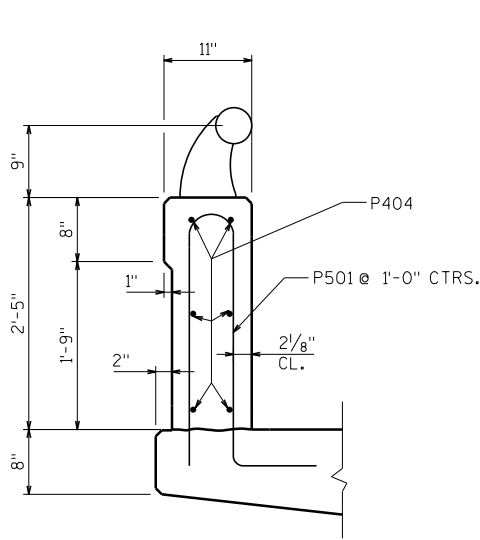
SECTION C-C

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		DRJ	PLANS CK'D. MNM
PARAPET DETAILS EB LANE			SHEET 9 OF 44
			47

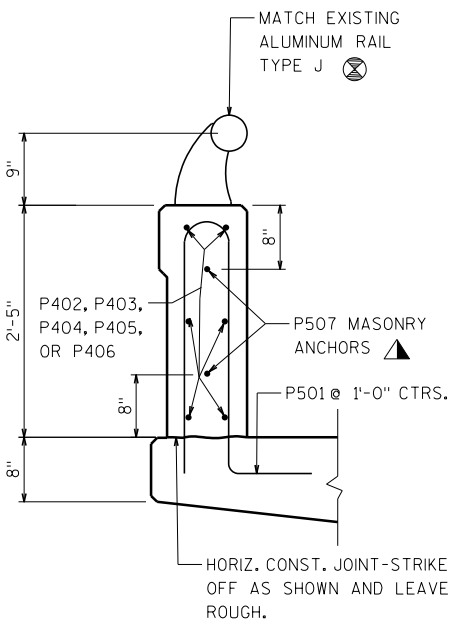


WESTBOUND PARAPET
PLAN VIEW

ALUMINUM RAIL J NOT SHOWN FOR CLARITY PURPOSES



SECTION A-A

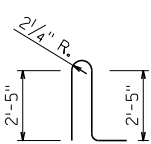


TYPICAL SECTION
THRU WB PARAPET

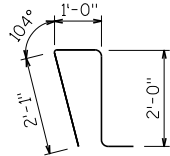
BILL OF BARS

FOR BOTH PARAPETS

BAR MARK	COAT	LENGTH	NO.	BENT	BAR SERIES	LOCATION
P501	X	6'-2"	32	X		WB PARAPET - VERT.
P402	X	1'-0"	6			WB PARAPET - HORIZ.
P403	X	8'-10"	6			WB PARAPET - HORIZ.
P404	X	10'-0"	6			WB PARAPET - HORIZ.
P405	X	9'-6"	6			WB PARAPET - HORIZ.
P406	X	1'-6"	6			WB PARAPET - HORIZ.
P507		2'-7"	8			PARAPET - HORIZ. TYPE L MASONRY ANCHORS
P508	X	5'-5"	39	X		EB PARAPET - VERT.
P409	X	2'-2"	6			EB PARAPET - HORIZ.
P410	X	10'-6"	6			EB PARAPET - HORIZ.
P411	X	11'-1"	6			EB PARAPET - HORIZ.
P412	X	10'-8"	6			EB PARAPET - HORIZ.
P413	X	2'-10"	6			EB PARAPET - HORIZ.
P714		11"	8			F RAIL MASONRY ANCHOR TYPE S



P501



P508

BENDING DIAGRAMS

LEGEND

- SAW CUT 1" DEEP AND REMOVE EXISTING PARAPET. SALVAGE EXISTING LONGIT. PARAPET REINFORCEMENT AND BEND TO FIT INTO NEW WORK.
- EXISTING CONDUIT IN PARAPET TO BE CUT AND ABANDONED. PROVIDE JUNCTION BOX AT LOCATION IN NEW PARAPET. ALL WORK TO BE PERFORMED BY ELECTRICAL CONTRACTOR. WORK SHALL BE PAID UNDER BID ITEM, "MASON STREET BRIDGE ELECTRICAL WORK, B-05-134."
- ▲ MASONRY ANCHORS TYPE L NO. 5 BARS. MINIMUM PULLOUT CAPACITY OF 9 KIPS. EMBED A MINIMUM OF 1'-0" IN CONCRETE.
- ⊗ SALVAGE EXISTING ALUMINUM RAIL FROM PARAPET TO BE REMOVED. BEND RAIL AS NECESSARY TO FIT ON TOP OF NEW PARAPET. CONTRACTOR IS RESPONSIBLE TO PROCURE ANY ADDITIONAL RAILING REQUIRED. WORK SHALL BE PAID UNDER BID ITEM, "REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM, STA. 42+50."

STATE PROJECT NUMBER
9210-14-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DRJ		PLANS CK'D. MNM	
PARAPET DETAILS WB LANE		SHEET 10 OF 44	
		48	

LEGEND

- ① W6X25 WITH 1/4" DIA. HOLES ON EACH SIDE OF POST FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF SIDEWALK. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1" X 9 1/2" X 10", WITH 1/16" X 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- ③ TS 4 X 4 X 0.25 STRUCTURAL TUBING, CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. ATTACH TO NO. 1 WITH TWO NO. 6 STUDS.
- ④ SQUARE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 1/2".
- ⑤ TS 3 X 3 X 0.25 X (2'-4" AT EXPANSION JOINTS) & (1'-10" AT FIELD JOINTS) LONG. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 5. PROVIDE 3/8" DIA. X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING TUBULAR TYPE F B-05-134", WHICH INCLUDES ALL ITEMS SHOWN.

POST BASE PLATES, NO. 2, SHALL BE FLAT WITH ALL SURFACES SMOOTH, STRAIGHT AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

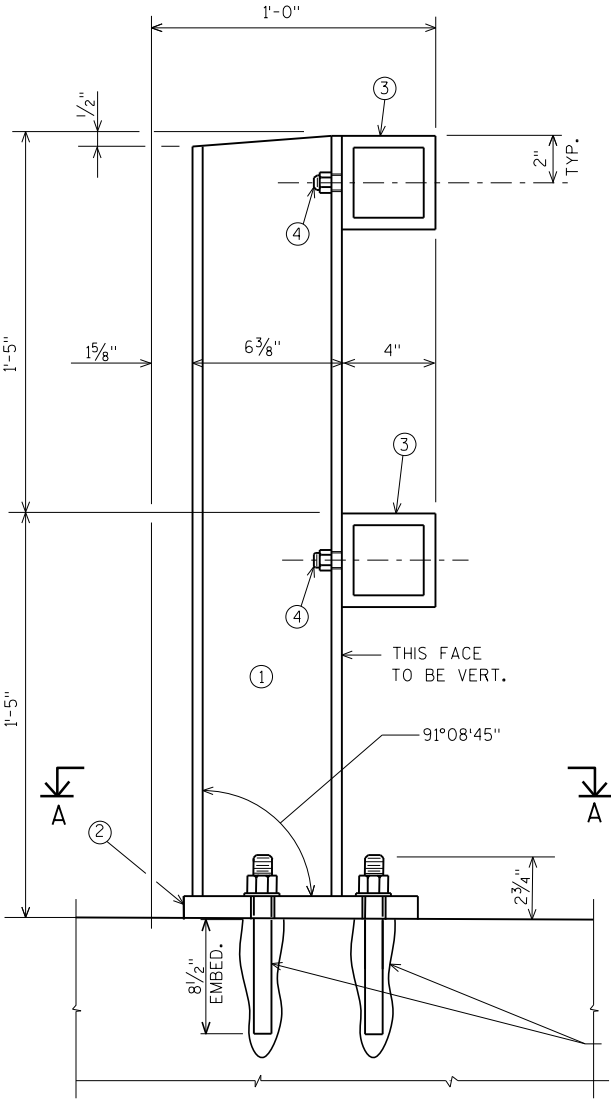
STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

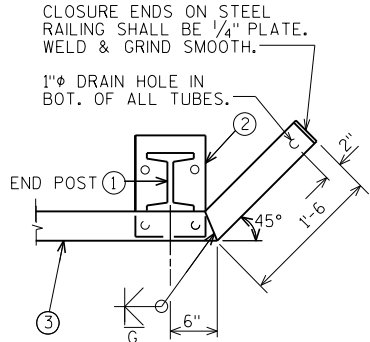
RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & 1/2" OPENING FOR A1 ABUTMENT.

F RAIL IS PLACED AT SHOWN LOCATION TO PROTECT PEDESTRIANS AND BICYCLISTS FROM THE NEW VERTICAL BARRIER GATE. IT IS NOT INTENDED TO FUNCTION AS A VEHICLE CRASH BARRIER.

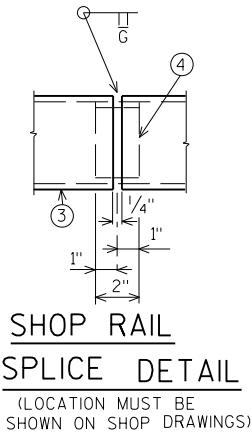
MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



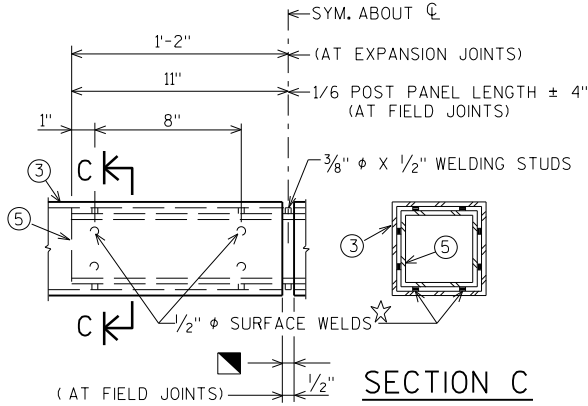
SECTION THRU RAILING ON DECK



DETAIL FOR END POSTS

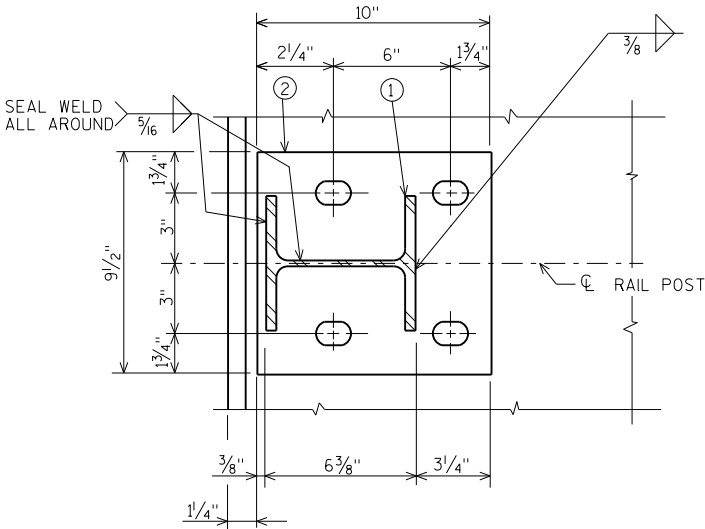


SHOP RAIL SPLICE DETAIL

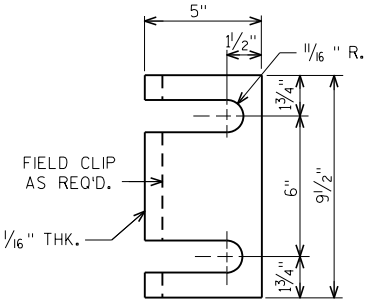


FIELD ERECTION JOINT DETAIL

SECTION C



SECTION A



POST SHIM DETAIL
4 PER POST

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		AJC	PLANS CK'D. MNM
TUBULAR STEEL RAILING TYPE F			SHEET 11 OF 44
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DESCRIPTION OF ELECTRICAL FACILITIES: SCOPE OF WORK SUMMARY

ELECTRIC POWER

NORMAL OPERATION OF THE BRIDGE SHALL BE FROM THE EXISTING LOCAL UTILITY TRANSFORMER LOCATED UNDER THE EAST APPROACH AND THE EXISTING LOCAL UTILITY TRANSFORMER LOCATED UNDER THE WEST APPROACH. A TIE BUS WILL INTERCONNECT THE TWO SIDES IN CASE THE EAST OR WEST SIDE FAILS, AND SHALL BE DONE SO AS NECESSARY BY MEANS OF ELECTRICALLY INTERLOCKED MOTOR OPERATED CIRCUIT BREAKERS.

CABLES ACROSS CHANNEL

ELECTRIC CONTROL AND POWER CIRCUIT CONNECTIONS SHALL BE CARRIED ACROSS THE NAVIGABLE CHANNEL BY MEANS OF EXISTING SUBMARINE CABLES.

LIGHTING AND ELECTRIC HEATING AND COOLING

THE EXISTING HEATING AND LIGHTING CIRCUITS ARE TO REMAIN AND BE CONNECTED TO NEW PANELBOARDS.

LOGIC CONTROL

LOGIC, CONTROL AND INTERLOCKING SHALL BE BY MEANS OF AN ETHERNET INTERCONNECTED PROGRAMMABLE LOGIC CONTROLLER SYSTEM WITH REDUNDANT PROCESSORS IN COLD BACKUP AND AN HMISCREEN FOR DIAGNOSTICS. BOTH MACHINERY AREAS SHALL BE PROVIDED WITH I/O DROPS AND ETHERNET HUBS. THE SPAN DRIVES SHALL BE CONTROLLED VIA ETHERNET. COMMUNICATION BETWEEN NEAR AND FAR SIDES SHALL BE VIA ANTENNAE.

CONTROL PANELS

POWER DISTRIBUTION, MOTOR CONTROL AND PLC EQUIPMENT SHALL BE LOCATED BELOW THE MACHINERY LEVELS IN NEMA 4X STAINLESS STEEL ENCLOSURES.

LIMIT SWITCHES

EACH SPAN SHALL BE PROVIDED WITH REDUNDANT INCLINOMETERS TO MEASURE SPAN POSITION, AND A ROTARY CAM LIMIT SWITCH TO PROVIDE SPAN POSITIONING TO THE PLC. EACH SPAN SHALL BE PROVIDED WITH REDUNDANT PROXIMITY TYPE LIMIT SWITCHES TO INDICATE SPAN FULLY CLOSED, AND A LEVER TYPE LIMIT SWITCH TO INDICATE OVERTRAVEL. THE SPAN LOCK MACHINERY SHALL BE PROVIDED WITH A ROTARY CAM LIMIT SWITCH TO PROVIDE LOCK POSITIONING TO THE PLC AND PROXIMITY TYPE LIMIT SWITCHES ON EACH SPAN LOCK JAW TO PROVIDE INTERLOCKING. ALL BRAKES SHALL BE PROVIDED WITH LEVER LIMIT SWITCHES TO INDICATE SET, RELEASED AND HAND RELEASED.

SPAN CONTROL

THE CONTROL SYSTEM OF THE SPAN MOTORS SHALL BE OF THE AC FLUX VECTOR TYPE PROVIDING POSITIVE CONTROL OF SPEED & TORQUE. THE SPAN DRIVE SHALL BE ARRANGED FOR FULL AUTOMATIC OPERATION WHEREIN THE SPAN SHALL ACCELERATE TO FULL SPEED, TRAVEL TO ITS NEARLY OPEN OR NEARLY CLOSED POSITION, DECELERATE TO CREEP SPEED, AND STOP AT FULLY OPEN OR FULLY CLOSED.

SPAN DRIVE

EACH SPAN SHALL BE PROVIDED WITH REDUNDANT 100 HP INVERTER DUTY MOTORS RATED AT A SYNCHRONOUS SPEED OF 900 RPM. EACH MOTOR SHALL BE PROVIDED WITH A THRUSTOR TYPE MOTOR BRAKE. IN ADDITION, EACH SPAN SHALL BE PROVIDED WITH TWO THRUSTOR TYPE MACHINERY BRAKES.

TRAFFIC CONTROL

THE EXISTING MAST ARM TRAFFIC SIGNALS SHALL REMAIN AND BE RECONNECTED INTO THE NEW CONTROL SYSTEM. NEW RESISTANCE TYPE TRAFFIC GATES SHALL BE PROVIDED IN THE SAME LOCATION AS THE EXISTING TRACTOR TYPE BARRIER GATES. NEW STRUCTURAL PLATFORMS SHALL BE CANTILEVERED OFF THE APPROACH GIRDERS TO MOUNT THE GATES.

NAVIGATION SIGNALS

EACH SPAN SHALL BE PROVIDED WITH RED/GREEN NAVIGATION LIGHTS AT THE TOE OF THE SPAN. THE PIERS SHALL BE PROVIDED WITH RED PIER PROTECTION LIGHTING. A NAVIGATION SIGNALING HORN SHALL BE PROVIDED AS PER USCG REGULATIONS.

CCTV SYSTEM

PROVIDE AND INSTALL A NEW CCTV SYSTEM.

DEMOLITION

ALL EXISTING ELECTRICAL MACHINERY AND CONTROL EQUIPMENT NOT TO BE REUSED OR INTENTIONALLY ABANDONED SHALL BE REMOVED AND PROPERLY DISPOSED OF.

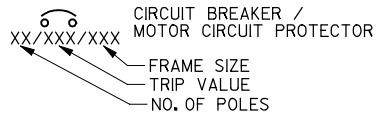
ABBREVIATIONS

AH	AIR HORN	JB	JUNCTION BOX	PFR	PHASE FAILURE/ REVERSAL RELAY
ASR	AMBER SIGNAL RELAY	KS	KEY SWITCH	PG	PEDESTRIAN GATE
AUX	AUXILIARY	L	LOWER, LOWERED	PL	PILOT LIGHT
BCP	BRIDGE CONTROL POWER	LP	LIGHTING PANELBOARD	PLC	PROGRAMMABLE LOGIC CONTROLLER
BG	BARRIER GATE	LS	LIMIT SWITCH	R	RAISE, RAISED
CB	CIRCUIT BREAKER	M	MAGNETIC CONTACTOR	RDY	READY
CHAN	CHANNEL	MB	MOTOR BRAKE	REL	RELEASE, RELEASED
CR	CONTROL RELAY	MCC	MOTOR CONTROL CENTER	RLS	ROTARY CAM LIMIT SWITCH
D	DRIVE, DRIVEN	MCP	MOTOR CIRCUIT PROTECTOR	RSR	RED SIGNAL RELAY
DB	DOOR BACK	MN	MAIN	S	SPAN
DF	DOOR FRONT	MO	IMANUALLY OPERATED INTERLOCK	SE	SOUTHEAST
DRV	DRIVE	MYB	MACHINERY BRAKE	SL	SPAN LOCK
DS	DISCONNECT SWITCH	N	NEAR	SS	SELECTOR SWITCH
E	EAST	NAV	NAVIGATION LIGHT	STD	SEATED
ESS	ELECTRONIC SPEED SWITCH	NE	NORTHEAST	SW	SWITCH
F	FAR	NW	NORTHWEST	TR	TIMING RELAY, TRANSFORMER
FS	FULLY SEATED	OL	OVERLOAD RELAY	TS	TRAFFIC SIGNAL
FU	FUSE	OP	OIL PUMP	UBP	ULTIMATE BYPASS
FVD	FLUX VECTOR DRIVE	OT	OVERTRAVEL	UPS	UNINTERRUPTIBLE POWER SUPPLY
FVNR	FULL VOLTAGE NON REVERSING	P	PULL, PULLED	VFD	VARIABLE FREQUENCY DRIVE
FVR	FULL VOLTAGE REVERSING	PB	PUSHBUTTON	W	WEST
HR	HAND RELEASE, HAND RELEASED	PEC	PHOTOELECTRIC CELL	XFMR	TRANSFORMER
HTR	HEATER	PED	PEDESTRIAN		

GENERAL ELECTRICAL NOTES

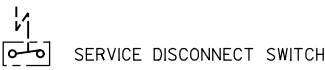
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STATE STANDARD SPECIFICATIONS, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND THE ELECTRICAL REQUIREMENTS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) STANDARD SPECIFICATIONS.
- ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE.
- THE PLANS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. THE LOCATIONS OF EQUIPMENT AND ROUTING OF CONDUITS SHOWN ON THE CONTRACT DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS IN THE FIELD AND PREPARING SCALED SHOP DRAWING.
- ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.
- EXISTING ELECTRICAL CABLE, WIRES, CONDUIT, CONDUIT HANGERS, SUPPORTS, CLAMPS, ETC, WHICH ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE REMOVED AND PROPERLY DISPOSED OF.
- ALL NEW CONDUIT AND FITTINGS SHALL BE 3/4" MINIMUM PVC COATED HOT DIPPED GALVANIZED RIGID STEEL UNLESS OTHERWISE NOTED, AND SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION, AND INSTALLATION CONTAINED IN THE SPECIFICATION.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION, WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.
- NEW ELECTRICAL CONDUCTORS SHALL BE MINIMUM SIZE NO.12 AWG STRANDED TYPE XHHW, EXCEPT FOR INTERNAL WIRING IN CONTROL CABINETS AND CONTROL DESK WHICH SHALL BE MINIMUM SIZE NO.14 AWG TYPE SIS. ALL WIRES AND CABLES SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION AND INSTALLATION CONTAINED IN THE RELEVANT SPECIFICATIONS.
- ALL SWITCHES, RELAYS, CONTACTORS AND STARTERS ARE SHOWN ON THE DRAWINGS AS DE-ENERGIZED AND WITH THE SPAN FULLY CLOSED, GATES RAISED, AND TRAFFIC SIGNALS GREEN, OPEN TO VEHICULAR TRAFFIC.
- ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. MINIMUM SIZE GROUND CONDUCTOR SHALL BE NO.12 AWG. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.
- ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES. SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES, OR CONDUIT FITTINGS.
- THE CONTRACTOR IS REFERRED TO THE AVAILABLE DRAWINGS FROM THE 1972 CONSTRUCTION CONTRACT FOR MECHANICAL AND STRUCTURAL DETAILS NOT PROVIDED IN THIS PLAN SET. THESE DRAWINGS ARE AVAILABLE FROM WISDOT UPON REQUEST.

SYMBOLS



NEC CARTRIDGE FUSE

THERMAL OVERLOAD ELEMENT

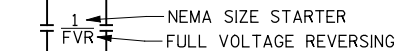
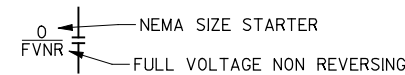


TRANSFORMER

MOTOR, HORSEPOWER AS INDICATED

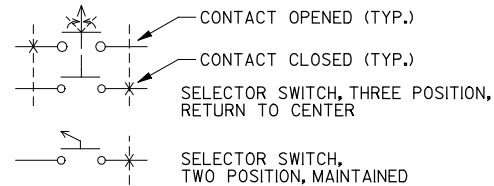


DRIVE LINE FILTER



120V CONTROL CONDUIT

240V CONTROL CONDUIT



MUSHROOM HEAD PUSH BUTTON

PUSH BUTTON, NORMALLY OPEN

PUSH BUTTON, NORMALLY CLOSED

KEY SWITCH

INDICATING LIGHT:
R=RED, G=GREEN, A=AMBER,
W=WHITE, B=BLUE

LIMIT SWITCH CONTACT,
NORMALLY OPEN HELD CLOSED

LIMIT SWITCH CONTACT,
NORMALLY OPEN

PROXIMITY SWITCH CONTACT,
NORMALLY OPEN HELD CLOSED

COIL OF MAGNETIC CONTACTOR OR RELAY,
NORMALLY OPEN

CONTACT OF MAGNETIC CONTACTOR OR RELAY,
NORMALLY OPEN

CONTACT OF MAGNETIC CONTACTOR OR RELAY,
NORMALLY CLOSED

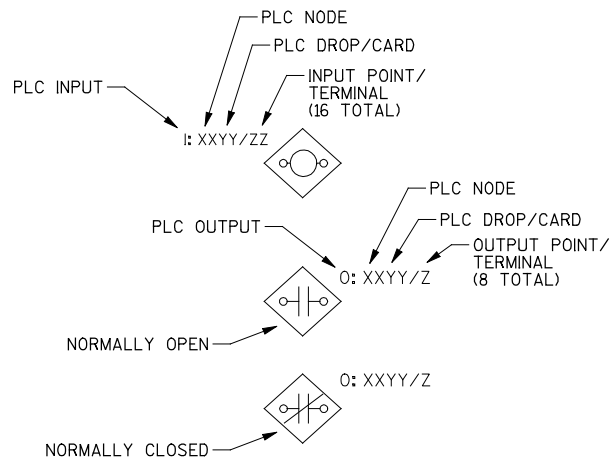
TIMER CONTACT,
TIMED CLOSING (AFTER ENERGIZING)

STATE PROJECT NUMBER

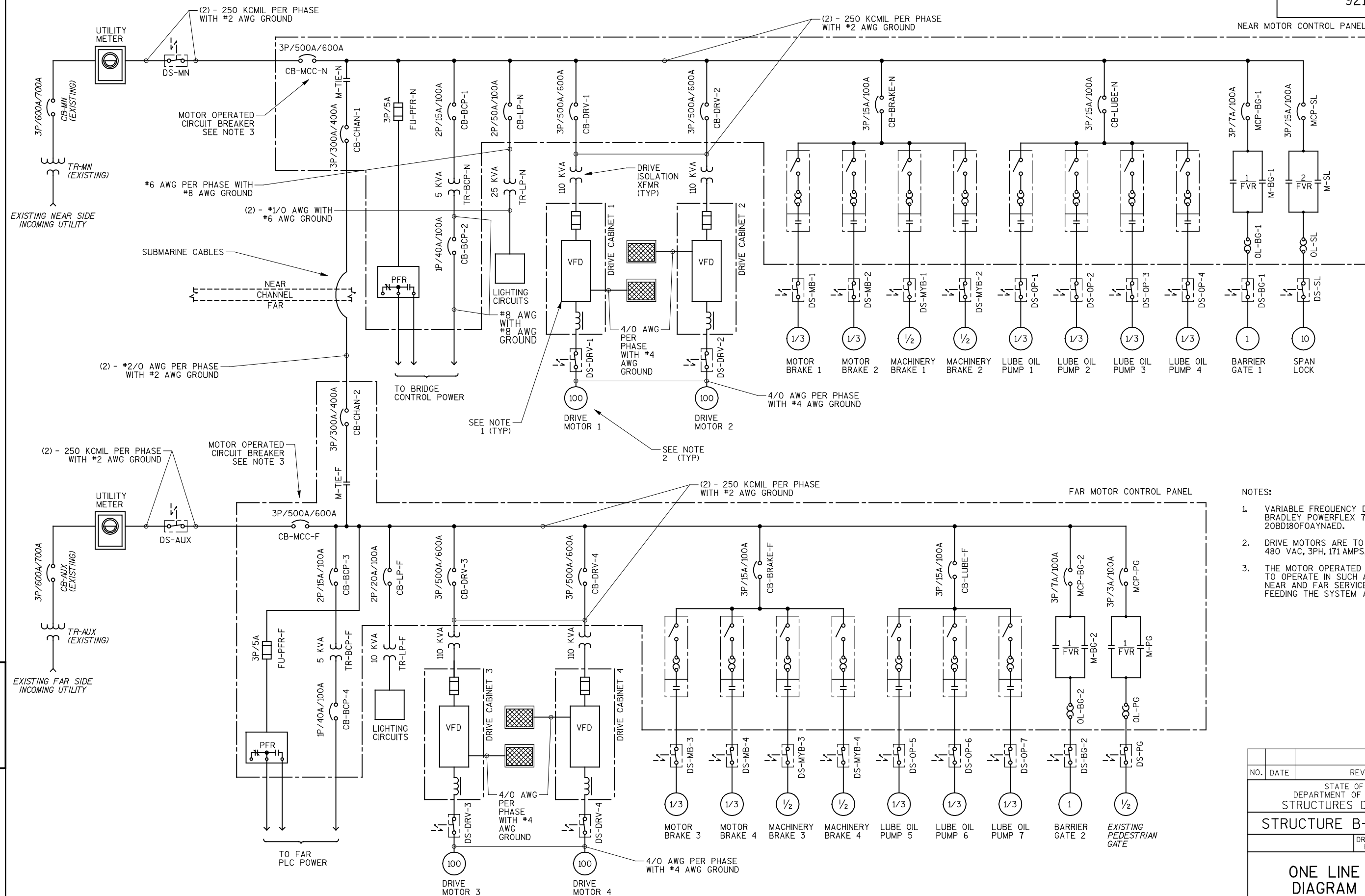
9210-14-71

TERMINAL BLOCK DESIGNATIONS

- CONTROL DESK
- NEAR PLC RELAY CABINET
- NEAR MOTOR CONTROL CENTER
- FAR PLC RELAY CABINET
- FAR MOTOR CONTROL CENTER



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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		DH	PLANS CK'D. AHN
GENERAL ELECTRICAL NOTES		SHEET 12 OF 44	
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
ONE LINE DIAGRAM		SHEET 13 OF 44	
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NOTES:

1. PLC ARCHITECTURE WAS DESIGNED USING THE ALLEN BRADLEY CONTROLLOGIX SYSTEM.
2. PLC TERMINAL DESIGNATIONS (DETAILED ON WIRING DIAGRAMS) IN THIS DESIGN SET ARE TO BE REVIEWED BY THE CONTRACTOR AND MODIFIED AS REQUIRED.

OPERATOR'S ROOM
CONTROL DESK

NODE 08

PANELVIEW
PLUS 10"

NODE 01

POWER SUPPLY 1756-PA72/C	0	1	2	3	4	5	6
ETHERNET COMM CARD 1756-ENBT					DIGITAL INPUT, 16 POINT 1756-IA16	DIGITAL OUTPUT, 8 POINT 1756-OX8I	DIGITAL OUTPUT, 8 POINT 1756-OX8I
PLC PROCESSOR 1756-L72					DIGITAL OUTPUT, 8 POINT 1756-OX8I	DIGITAL OUTPUT, 8 POINT 1756-OX8I	SPARE
							SPARE

NODE 00

POWER SUPPLY 1756-PA72/C	0	1	2	3
ETHERNET COMM CARD 1756-ENBT				
PLC PROCESSOR 1756-L72				

NODE 00

POWER SUPPLY 1756-PA72/C	0	1	2	3
ETHERNET COMM CARD 1756-ENBT				
PLC PROCESSOR 1756-L72				

120V
POWER

EMERSON ISATROL IE
SERIES L LINE FILTER
(TYP)

STRATIX 2000
ETHERNET SWITCH (TYP)

NEAR MACHINERY ROOM
PLC SPAN PANEL

NODE 02

POWER SUPPLY 1756-PA72/C	0	1	2	3	4	5	6	7	8	9
ETHERNET COMM CARD 1756-ENBT										
DIGITAL INPUT, 16 POINT 1756-IA16										
DIGITAL INPUT, 16 POINT 1756-IA16										
DIGITAL INPUT, 16 POINT 1756-IA16										
DIGITAL INPUT, 16 POINT 1756-IA16										
ANALOG INPUT, 6 POINT 1756-IF6I										
DIGITAL OUTPUT, 8 POINT 1756-OX8I										
DIGITAL OUTPUT, 8 POINT 1756-OX8I										
DIGITAL OUTPUT, 8 POINT 1756-OX8I										

INCLINOMETER
(TYP)

120V
POWER

PROSOFT
RLXIB-IHW
(TYP)

WIRELESS
HOTSPOT

NODE 04

VARIABLE FREQUENCY
DRIVE 1
COMMUNICATION
MODULE

NODE 05

VARIABLE FREQUENCY
DRIVE 2
COMMUNICATION
MODULE

NEAR
CHANNEL
FAR

FAR MACHINERY ROOM
PLC SPAN PANEL

NODE 03

POWER SUPPLY 1756-PA72/C	0	1	2	3	4	5	6	7	8	9
ETHERNET COMM CARD 1756-ENBT										
DIGITAL INPUT, 16 POINT 1756-IA16										
DIGITAL INPUT, 16 POINT 1756-IA16										
DIGITAL INPUT, 16 POINT 1756-IA16										
DIGITAL INPUT, 16 POINT 1756-IA16										
ANALOG INPUT, 6 POINT 1756-IF6I										
DIGITAL OUTPUT, 8 POINT 1756-OX8I										

120V
POWER

WIRELESS
HOTSPOT

NODE 09

POWER SUPPLY 1756-PA72/C	0	1	2	3
ETHERNET COMM CARD 1756-ENBT				
PLC PROCESSOR 1756-L72				

NODE 06

VARIABLE FREQUENCY
DRIVE 3
COMMUNICATION
MODULE

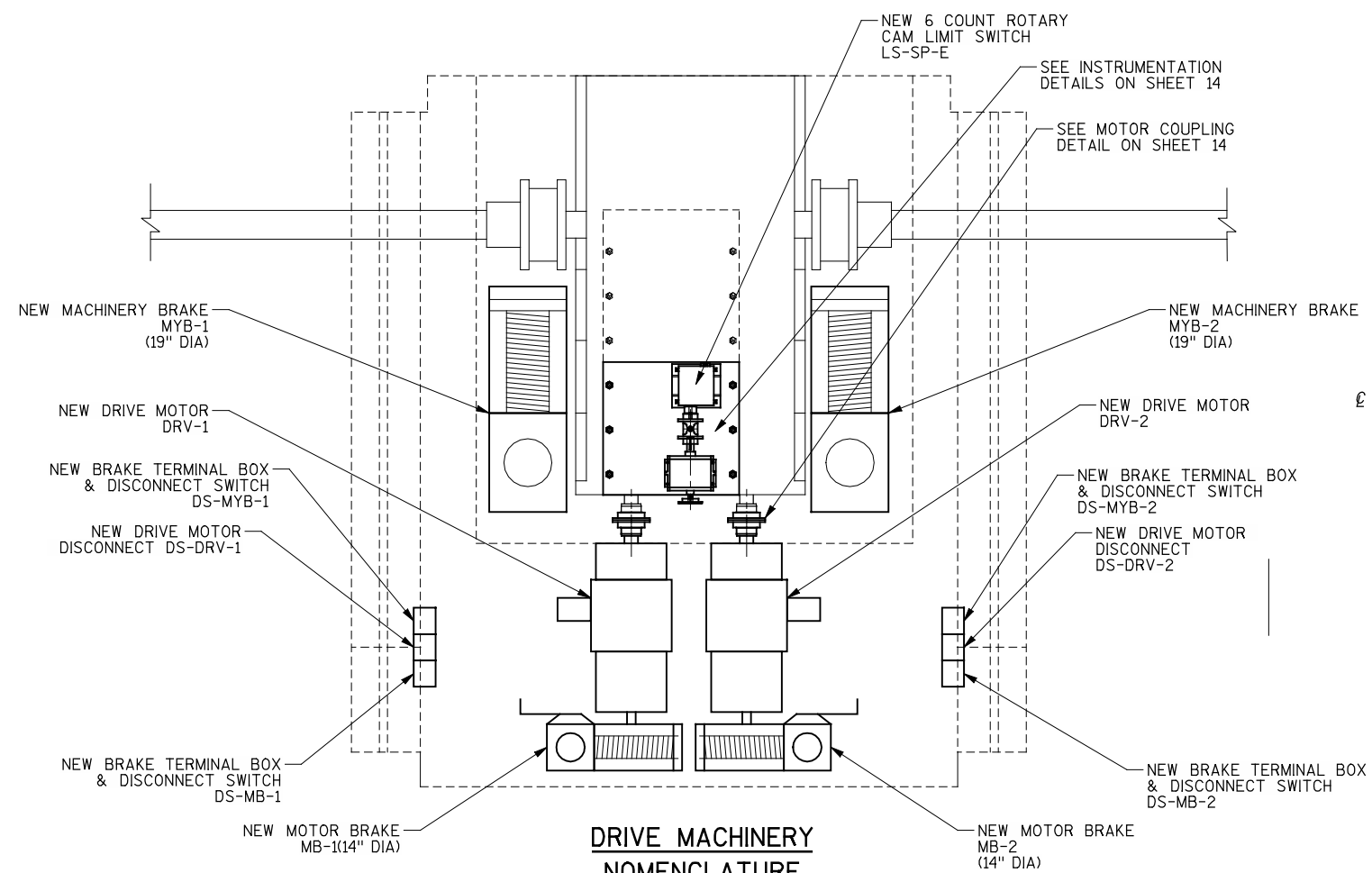
NODE 07

VARIABLE FREQUENCY
DRIVE 4
COMMUNICATION
MODULE

8

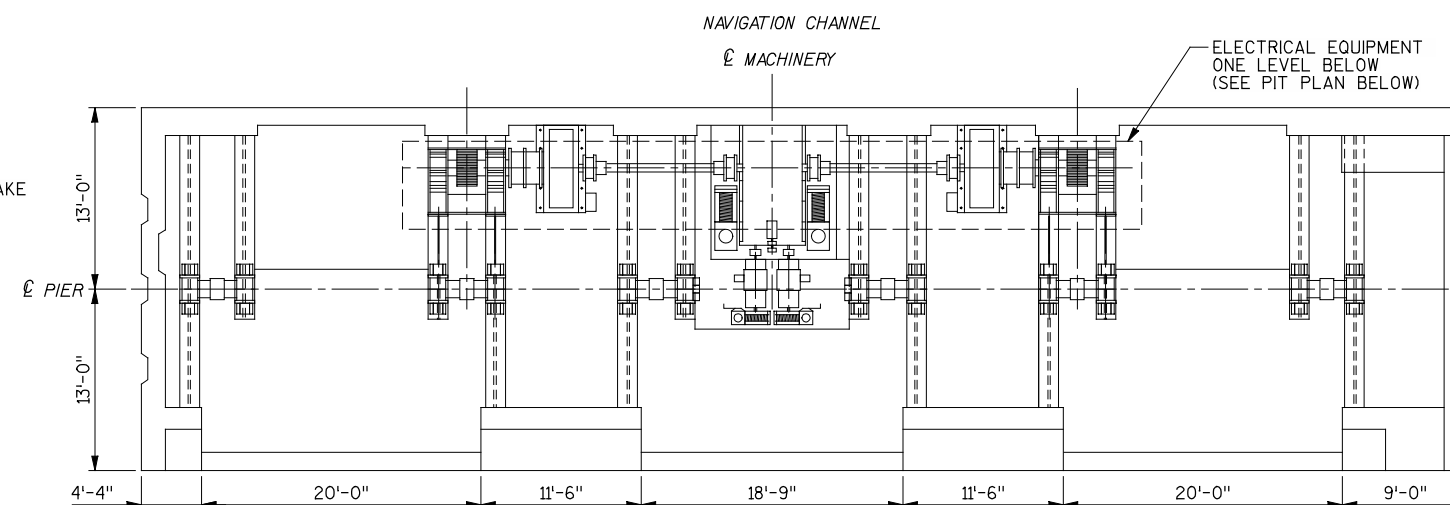
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
PLC ARCHITECTURE			SHEET 14 OF 44
52			



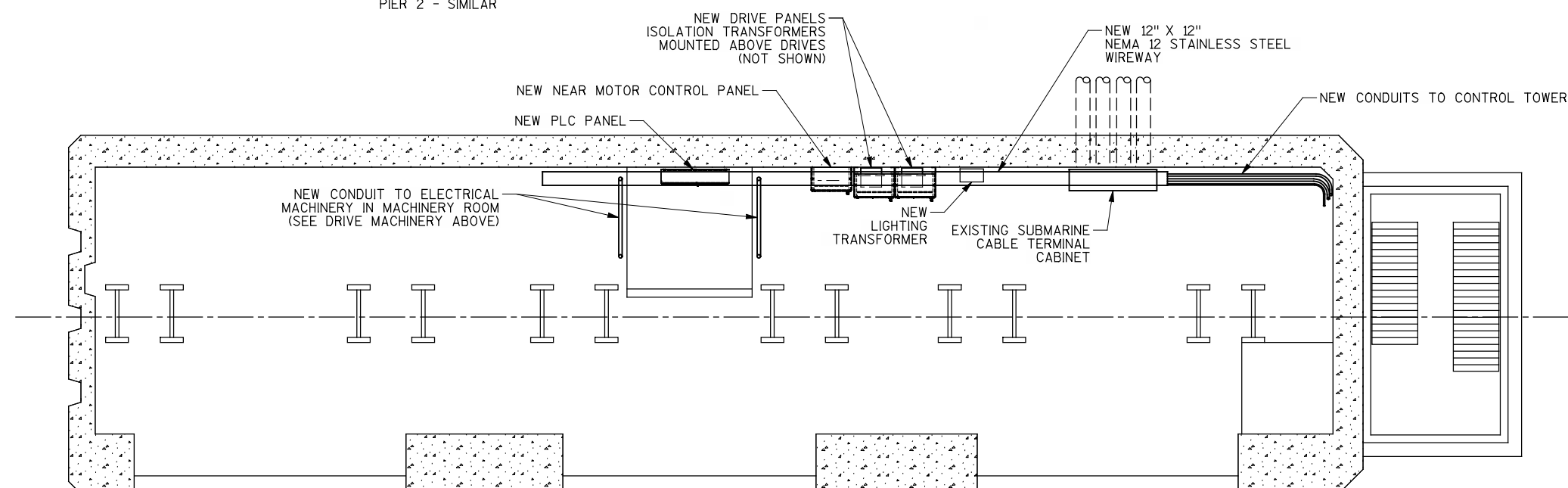
DRIVE MACHINERY NOMENCLATURE

SCALE: N.T.S.
PIER 3 - SHOWN
PIER 2 - SIMILAR



DRIVE MACHINERY

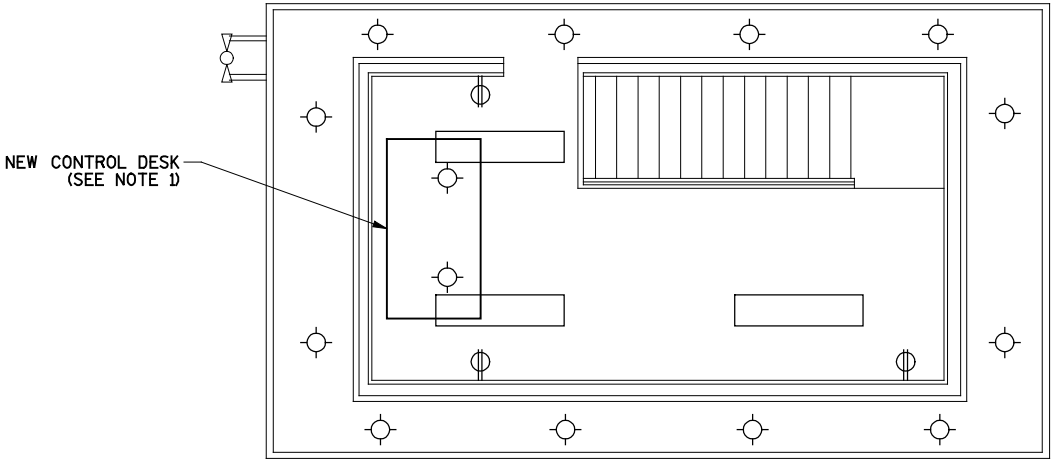
SCALE: N.T.S.
PIER 3 - SHOWN
PIER 2 - SIMILAR



PIT PLAN

SCALE: N.T.S.
PIER 3 - SHOWN
PIER 2 - SIMILAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
DRIVE MACHINERY			SHEET 15 OF 44
			53



LEGEND

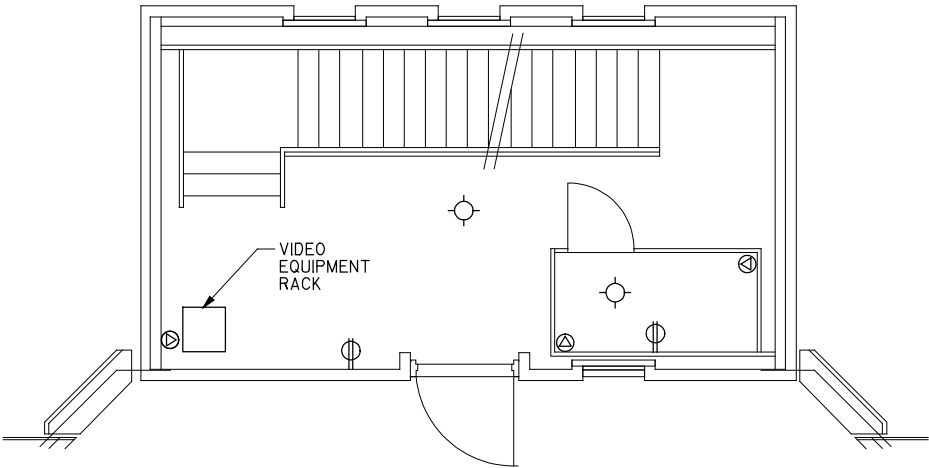
⊙ EXISTING INCANDESCENT LIGHT

⊕ EXISTING RECEPTACLE

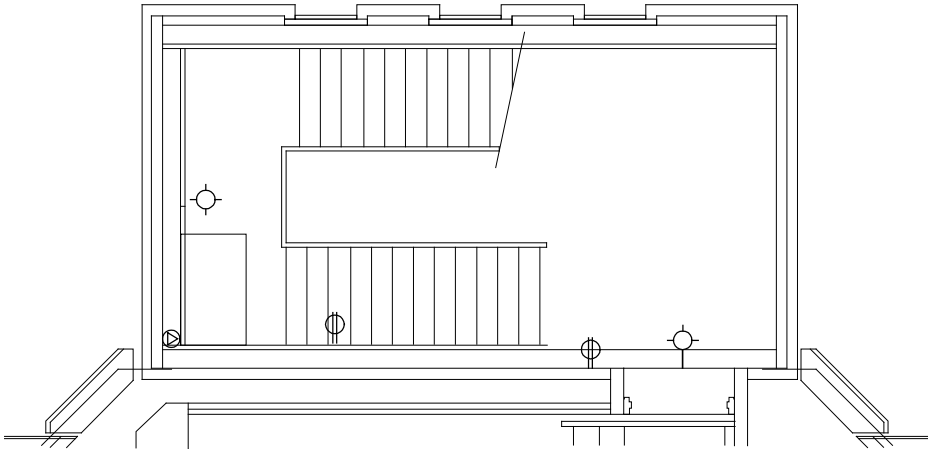
⊗ EXISTING GFCI RECEPTACLE

▭ EXISTING FLUORESCENT LIGHT

OPERATORS FLOOR

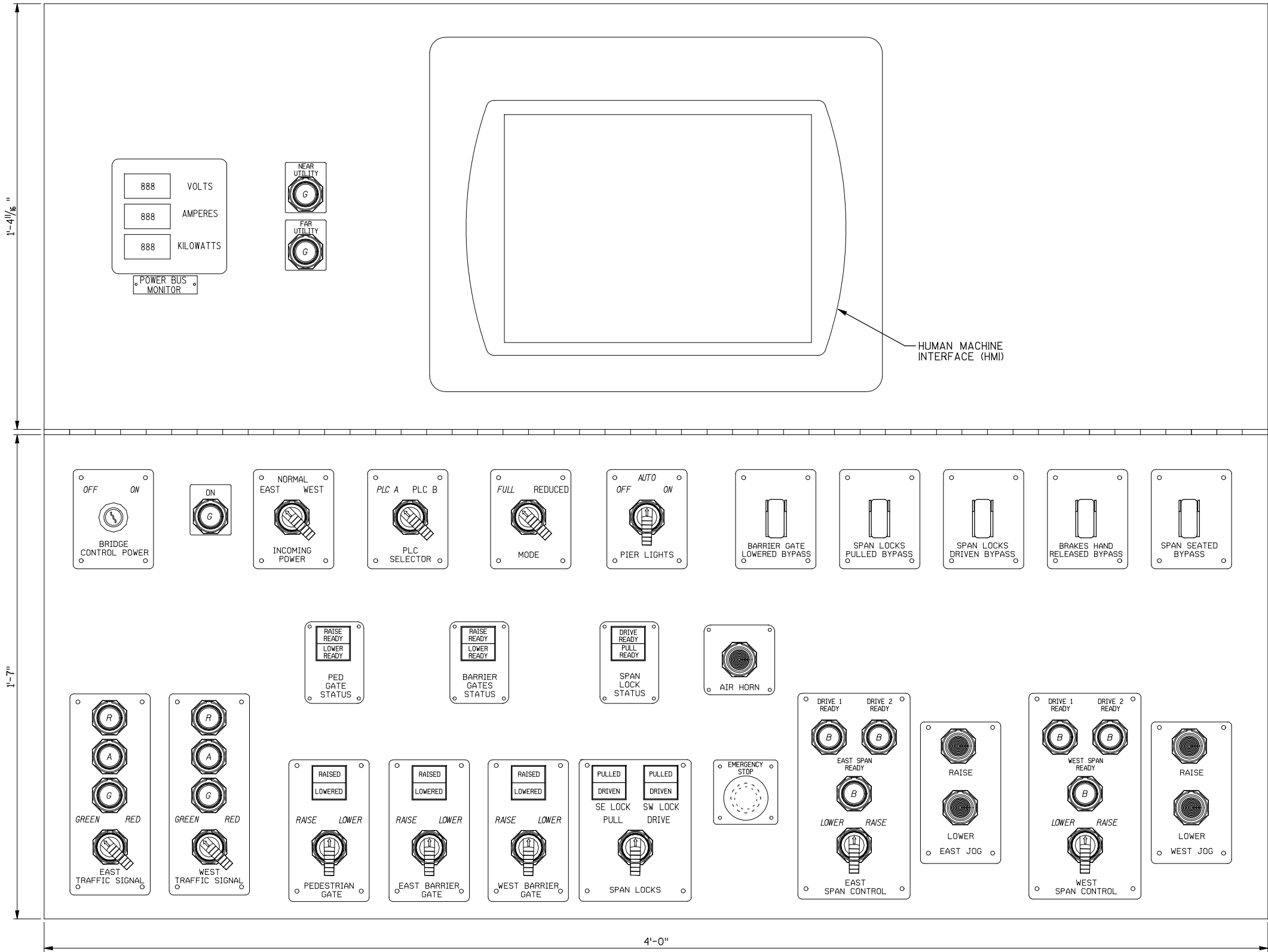


ENTRANCE FLOOR



- NOTES:
1. SECURITY CAMERA MONITORS AND KEYBOARD MOUNTED ON TOP OF THE CONTROL DESK.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
OPERATORS HOUSE LAYOUT		SHEET 16 OF 44	
		54	

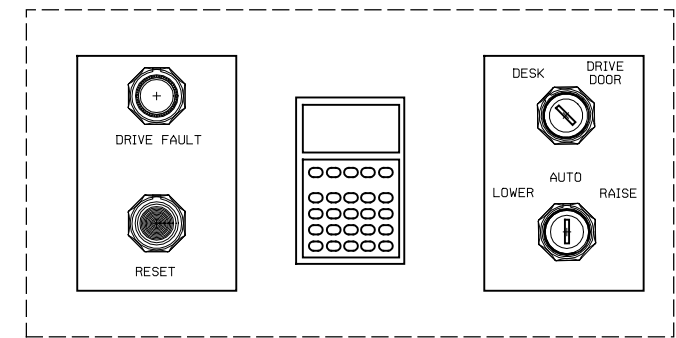


NOTES FOR CONTROL DESK CONSTRUCTION:

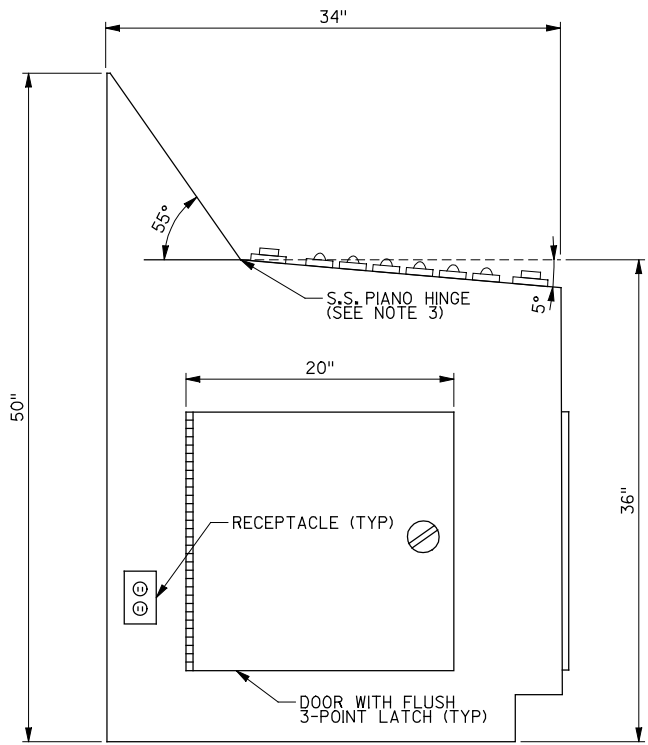
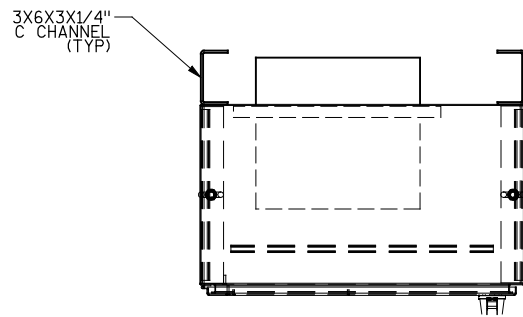
- PUSHBUTTONS, SELECTOR SWITCHES, TUMBLER SWITCHES, AND INDICATING LIGHTS SHALL BE OF HEAVY DUTY, OILTIGHT CONSTRUCTION FURNISHED WITH NAMEPLATE PER CONTRACT DOCUMENTS. INDICATOR LIGHTS SHALL CONSIST OF A CANDELABRA SCREW BASE SOCKET WITH SCREW TERMINAL, SCREW CAP, AND FLAT GLASS LENS WITH COLOR AND LEGEND AS SHOWN ON DRAWING. SWITCHES, PUSHBUTTONS, AND INDICATING LIGHTS SHALL BE SIMILAR TO CUTLER HAMMER 1250T OR APPROVED EQUAL. ALL INDICATING LAMPS SHALL BE LED TYPE, RATED 120 VOLTS.
- DUAL FIELD LIGHTS COLORS ARE AS FOLLOWS:
STATUS "READY" LIGHTS: BLUE
GATE RAISED LIGHTS: GREEN
SPAN LOCKS DRIVEN LIGHT: GREEN
GATE LOWERED LIGHTS: WHITE
SPAN LOCKS PULLED LIGHT: WHITE
- ALL PILOT AND DUAL FIELD LIGHTS ARE TO BE PUSH TO TEST.
- SEE SHEET E-18 FOR CONTROL DESK ELEVATION DETAILS.

CONTROL DESK LAYOUT

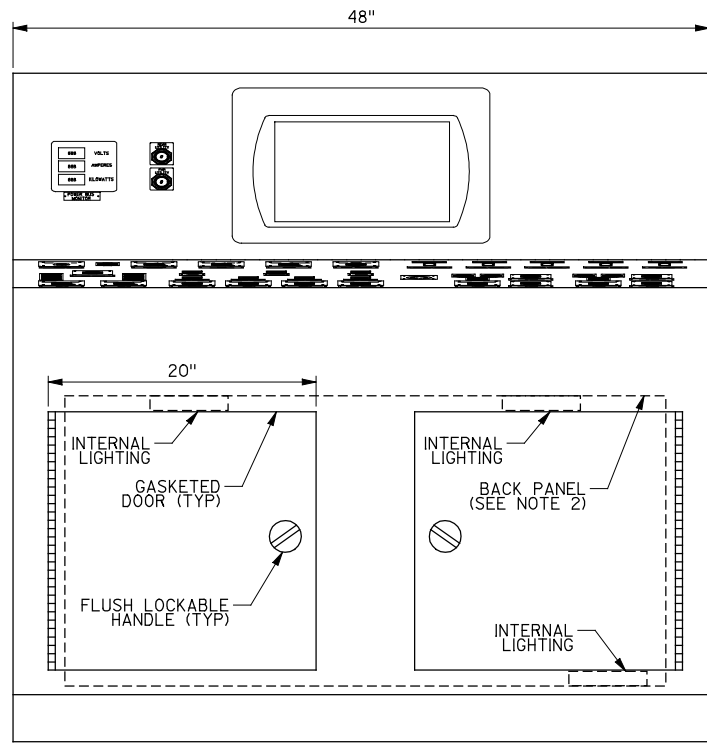
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
CONTROL DESK		SHEET 17 OF 44	
		55	



DRIVE DOOR DETAIL

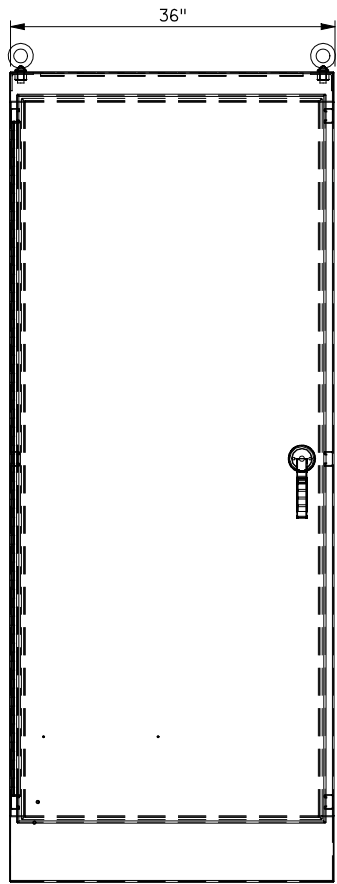


CONTROL DESK SIDE VIEW

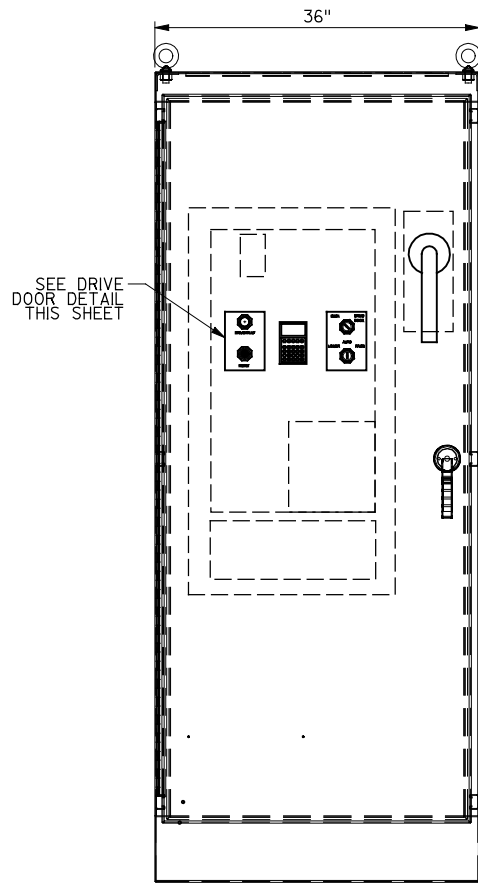


CONTROL DESK FRONT VIEW

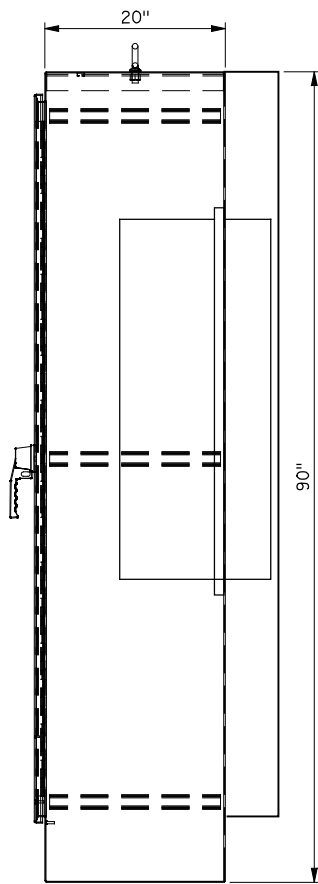
- NOTES FOR CONTROL DESK CONSTRUCTION:
- 1. CONTROL DESK FRAMES SHALL BE OF 11 GAUGE SHEET STEEL PROPERLY FORMED AND SUITABLY REINFORCED TO PROVIDE ADEQUATE STRENGTH.
 - 2. THE INCLINED METER PANEL AND DESK TOP SHALL BE FABRICATED OF 11 GAUGE STAINLESS STEEL WITH A NON-GLARE SATIN FINISH.
 - 3. CONTROL DESK DOORS SHALL BE SECURED BY FLUSH HANDLES AND A 3-POINT LOCKING BAR MECHANISM.
 - 4. CONTROL DESK INTERIOR SHALL CONTAIN THERMO-STATICALLY CONTROLLED HEATER WITH DISCONNECT MEANS: SPECIFICATION GRADE, 125-VOLT, 20-AMP DUPLEX RECEPTACLE AND INTERIOR LIGHT CONTROLLED BY SPECIFICATION GRADE SINGLE POLE, TOGGLE SWITCH WITH LIGHTED HANDLE.
 - 5. INCLUDE PROVISION TO HOLD DESK TOP OPEN FOR MAINTENANCE PURPOSES.
 - 6. PROVIDE HANDLES TO OPEN DESK TOP.
 - 7. SEE SHEET E-17 FOR CONTROL DESK DETAILS.



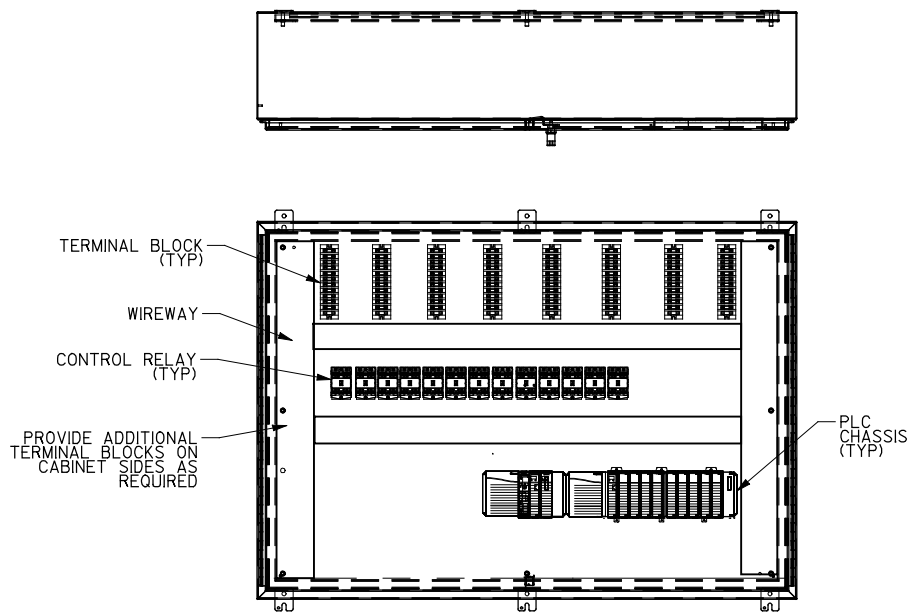
POWER PANEL ELEVATION
(TYP FOR TWO)



DRIVE PANEL ELEVATION
(TYP FOR FOUR)

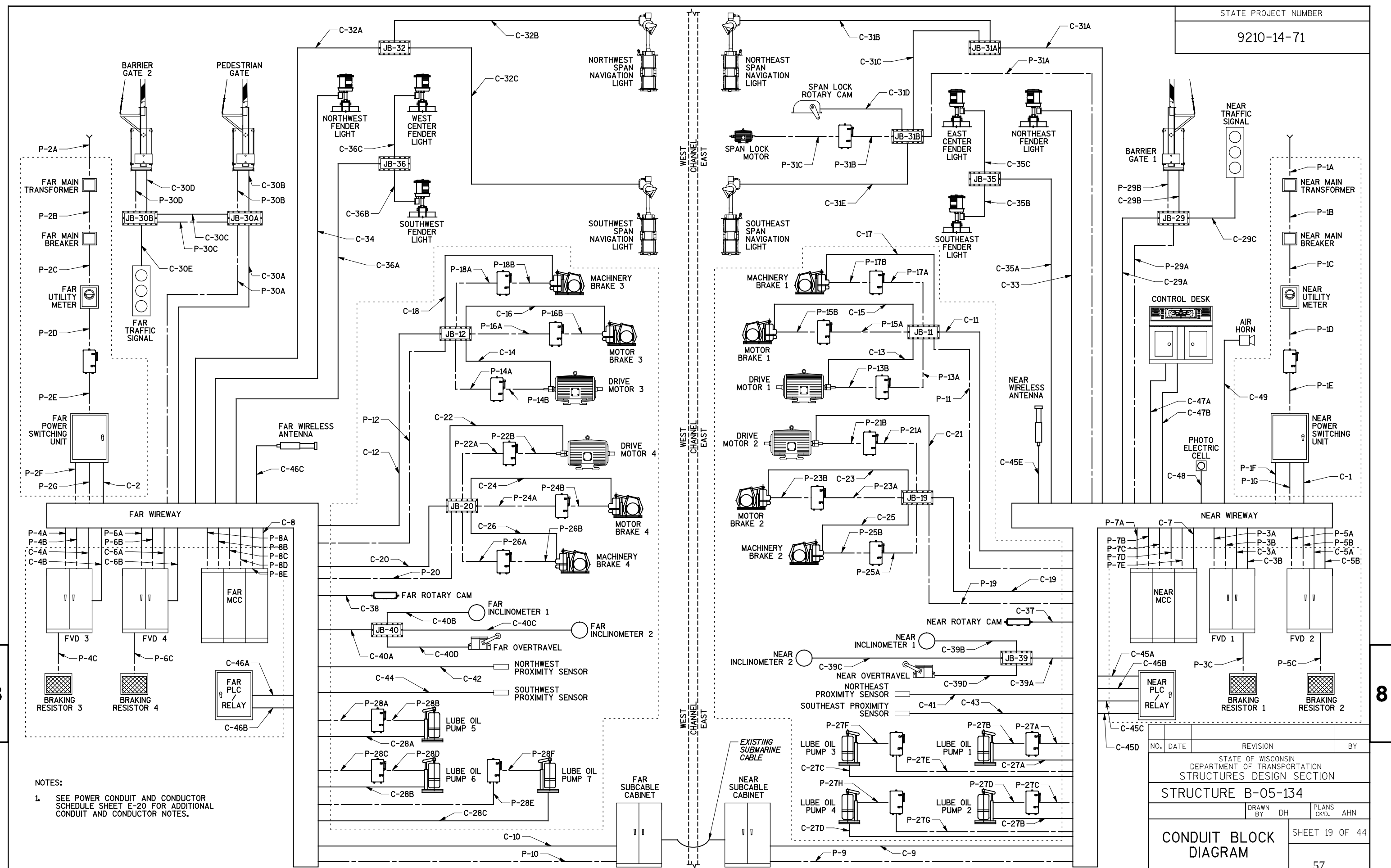


DRIVE PANEL SIDE ELEVATION
(TYP FOR FOUR)



ELECTRICAL AREA PLC PANEL
(TYP FOR TWO)

STATE PROJECT NUMBER			
9210-14-71			
NOTES FOR CONTROL DESK CONSTRUCTION:			
1. CONTROL DESK FRAMES SHALL BE OF 11 GAUGE SHEET STEEL PROPERLY FORMED AND SUITABLY REINFORCED TO PROVIDE ADEQUATE STRENGTH.			
2. THE INCLINED METER PANEL AND DESK TOP SHALL BE FABRICATED OF 11 GAUGE STAINLESS STEEL WITH A NON-GLARE SATIN FINISH.			
3. CONTROL DESK DOORS SHALL BE SECURED BY FLUSH HANDLES AND A 3-POINT LOCKING BAR MECHANISM.			
4. CONTROL DESK INTERIOR SHALL CONTAIN THERMO-STATICALLY CONTROLLED HEATER WITH DISCONNECT MEANS: SPECIFICATION GRADE, 125-VOLT, 20-AMP DUPLEX RECEPTACLE AND INTERIOR LIGHT CONTROLLED BY SPECIFICATION GRADE SINGLE POLE, TOGGLE SWITCH WITH LIGHTED HANDLE.			
5. INCLUDE PROVISION TO HOLD DESK TOP OPEN FOR MAINTENANCE PURPOSES.			
6. PROVIDE HANDLES TO OPEN DESK TOP.			
7. SEE SHEET E-17 FOR CONTROL DESK DETAILS.			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
CABINET ELEVATIONS		SHEET 18 OF 44	
		56	



COND.	FROM	TO	SIZE	CONDUCTORS	SPARES	GROUND
P-1A	UTILITY	NEAR MAIN TRANSFORMER	BY UTILITY			
P-1B	NEAR MAIN TRANSFORMER	NEAR MAIN BREAKER	BY UTILITY			
P-1C	NEAR MAIN BREAKER	NEAR UTILITY METER	BY UTILITY			
P-1D	NEAR MAIN BREAKER	NEAR MAIN DISC.	3"	(6) 250 KCMIL	-	*2 AWG
P-1E	NEAR MAIN DISC.	NEAR POWER SWITCHING UNIT	3"	(6) 250 KCMIL	-	*2 AWG
P-1F	NEAR POWER SWITCHING UNIT	NEAR WIREWAY	3"	(6) 250 KCMIL	-	*2 AWG
P-1G	NEAR POWER SWITCHING UNIT	NEAR WIREWAY	2.5"	(6) *2/Ø AWG	-	*4 AWG
P-2A	UTILITY	FAR MAIN TRANSFORMER	BY UTILITY			
P-2B	FAR MAIN TRANSFORMER	FAR MAIN BREAKER	BY UTILITY			
P-2C	FAR MAIN BREAKER	FAR UTILITY METER	BY UTILITY			
P-2D	FAR UTILITY METER	FAR MAIN DISC.	3"	(6) 250 KCMIL	-	*2 AWG
P-2E	FAR MAIN DISC.	FAR POWER SIWTCHING UNIT	3"	(6) 250 KCMIL	-	*2 AWG
P-2F	FAR POWER SWITCHING UNIT	FAR WIREWAY	3"	(6) 250 KCMIL	-	*2 AWG
P-2G	FAR POWER SWITCHING UNIT	FAR WIREWAY	2.5"	(6) *2/Ø AWG	-	*4 AWG
P-3A	NEAR WIREWAY	FLUX VECTOR DRIVE 1	3"	(6) 250 KCMIL	-	*2 AWG
P-3B	NEAR WIREWAY	FLUX VECTOR DRIVE 1	3"	(6) *4/Ø AWG	-	*2 AWG
P-3C	FLUX VECTOR DRIVE 1	BRAKING RESISTOR 1	3"	(6) *4/Ø AWG	-	*2 AWG
P-4A	FAR WIREWAY	FLUX VECTOR DRIVE 3	3"	(6) 250 KCMIL	-	*2 AWG
P-4B	FAR WIREWAY	FLUX VECTOR DRIVE 3	3"	(6) *4/Ø AWG	-	*2 AWG
P-4C	FLUX VECTOR DRIVE 3	BRAKING RESISTOR 3	3"	(6) *4/Ø AWG	-	*2 AWG
P-5A	NEAR WIREWAY	FLUX VECTOR DRIVE 2	3"	(6) 250 KCMIL	-	*2 AWG
P-5B	NEAR WIREWAY	FLUX VECTOR DRIVE 2	3"	(6) *4/Ø AWG	-	*2 AWG
P-5C	FLUX VECTOR DRIVE 2	BRAKING RESISTOR 2	3"	(6) *4/Ø AWG	-	*2 AWG
P-6A	FAR WIREWAY	FLUX VECTOR DRIVE 4	3"	(6) 250 KCMIL	-	*2 AWG
P-6B	FAR WIREWAY	FLUX VECTOR DRIVE 4	3"	(6) *4/Ø AWG	-	*2 AWG
P-6C	FLUX VECTOR DRIVE 4	BRAKING RESISTOR 4	3"	(6) *4/Ø AWG	-	*2 AWG
P-7A	NEAR WIREWAY	NEAR MCC	3"	(6) 250 KCMIL	-	*2 AWG
P-7B	NEAR WIREWAY	NEAR MCC	3"	(6) 250 KCMIL	-	*2 AWG
P-7C	NEAR WIREWAY	NEAR MCC	3"	(6) 250 KCMIL	-	*2 AWG
P-7D	NEAR WIREWAY	NEAR MCC	2.5"	(6) *2/Ø AWG	-	*4 AWG
P-7E	NEAR WIREWAY	NEAR MCC	1.5"	(21) *12 AWG	(3) *12 AWG	*12 AWG
P-8A	FAR WIREWAY	FAR MCC	3"	(6) 250 KCMIL	-	*2 AWG
P-8B	FAR WIREWAY	FAR MCC	3"	(6) 250 KCMIL	-	*2 AWG
P-8C	FAR WIREWAY	FAR MCC	3"	(6) 250 KCMIL	-	*2 AWG
P-8D	FAR WIREWAY	FAR MCC	2.5"	(6) *2/Ø AWG	-	*4 AWG
P-8E	FAR WIREWAY	FAR MCC	1.5"	(21) *12 AWG	(3) *12 AWG	*12 AWG
P-9	NEAR WIREWAY	NEAR SUBCABLE CABINET	2.5"	(6) *2/Ø AWG	-	*4 AWG
P-1Ø	FAR WIREWAY	FAR SUBCABLE CABINET	2.5"	(6) *2/Ø AWG	-	*4 AWG
P-11	NEAR WIREWAY	JB-11	2.5"	(6) *3/Ø AWG, (6) *12 AWG	(1) *12 AWG	*4 AWG
P-12	FAR WIREWAY	JB-12	2.5"	(6) *3/Ø AWG, (6) *12 AWG	(1) *12 AWG	*4 AWG
P-13A	JB-11	DRIVE MOTOR 1 DISC.	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-13B	DRIVE MOTOR 1 DISC.	DRIVE MOTOR 1	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-14A	JB-12	DRIVE MOTOR 3 DISC.	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-14B	DRIVE MOTOR 3 DISC.	DRIVE MOTOR 3	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-15A	JB-11	MOTOR BRAKE 1 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG

CONDUIT AND CONDUCTOR NOTES:

1. THE NUMBER OF WIRES AND SIZES OF CONDUCTORS SHOWN IN CONDUITS AND CABLE ARE BASED ON THE CONTRACT WIRING DIAGRAMS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL CONDUCTORS OF SUFFICIENT NUMBER AND SIZE, INCLUDING TEN PERCENT SPARES, AS MAY BE REQUIRED FOR THE INSTALLATION IN ACCORDANCE WITH THE FINAL WIRING DIAGRAMS ON HIS APPROVED WORKING DRAWINGS.
2. THE SCHEMATIC CONDUIT DIAGRAMS DO NOT PURPORT TO SHOW ALL PULL AND TERMINAL BOXES THAT MAY BE REQUIRED. THE CONTRACTOR SHALL FURNISH AND INSTALL ANY ADDITIONAL BOXES REQUIRED TO CONFORM WITH THE SPECIFIED REQUIREMENTS GOVERNING

CONDUIT AND CONDUCTOR NOTES (CONTINUED):

3. THE SCHEMATIC CONDUIT DIAGRAMS SHOW ONLY THE CIRCUITS CONCERNED WITH OPERATION OF THE BRIDGE AND ITS AUXILIARIES. OTHER CIRCUITS REQUIRED TO BE INSTALLED, BUT NOT SHOWN ON THE DIAGRAMS INCLUDE AT LEAST THE SERVICE LIGHTING, HEAT TRACE, LOCAL TELEPHONE SERVICE, FIRE/SECURITY ALARM SYSTEM, AND EQUIPMENT GROUND CONDUCTORS.
4. SECTIONS OF FLEXIBLE CONDUIT REQUIRED FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION ARE NOT INDICATED.

CONDUIT AND CONDUCTOR NOTES (CONTINUED):

- THE CONTRACTOR SHALL PROVIDE SECTIONS OF FLEXIBLE CONDUIT PER THE SPECIAL PROVISIONS FOR THE SPAN MOTORS, POSITION AND SPEED TRANSMITTERS, SPAN ROTARY CAM LIMIT SWITCHES, FULLY SEATED LIMIT SWITCHES, SPAN LOCK LIMIT SWITCHES, AND AT OTHER LOCATIONS DESIGNATED BY THE ENGINEER.
5. INSTALL AN INSULATED DIVIDER IN JUNCTION BOXES AND WIREWAYS SHARING CONDUCTORS OF VARYING VOLTAGES.
6. SUBMARINE CABLES TO HAVE MIXED 480V POWER AND 120V CONTROL CIRCUITS.

COND.	FROM	TO	SIZE	CONDUCTORS	SPARES	GROUND
P-15B	MOTOR BRAKE 1 DISC.	MOTOR BRAKE 1	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-16A	JB-12	MOTOR BRAKE 3 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-16B	MOTOR BRAKE 3 DISC.	MOTOR BRAKE 3	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-17A	JB-11	MACHINERY BRAKE 1 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-17B	MACHINERY BRAKE 1 DISC.	MACHINERY BRAKE 1	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-18A	JB-12	MACHINERY BRAKE 3 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-18B	MACHINERY BRAKE 3 DISC.	MACHINERY BRAKE 3	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-19	NEAR WIREWAY	JB-19	2.5"	(6) *3/Ø AWG, (6) *12 AWG	(1) *12 AWG	*4 AWG
P-2Ø	FAR WIREWAY	JB-2Ø	2.5"	(6) *3/Ø AWG, (6) *12 AWG	(1) *12 AWG	*4 AWG
P-21A	JB-19	DRIVE MOTOR 2 DISC.	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-21B	DRIVE MOTOR 2 DISC.	DRIVE MOTOR 2	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-22A	JB-2Ø	DRIVE MOTOR 4 DISC.	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-22B	DRIVE MOTOR 4 DISC.	DRIVE MOTOR 4	2.5"	(6) *3/Ø AWG	-	*4 AWG
P-23A	JB-19	MOTOR BRAKE 2 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-23B	MOTOR BRAKE 2 DISC.	MOTOR BRAKE 2	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-24A	JB-2Ø	MOTOR BRAKE 4 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-24B	MOTOR BRAKE 4 DISC.	MOTOR BRAKE 4	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-25A	JB-19	MACHINERY BRAKE 2 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-25B	MACHINERY BRAKE 2 DISC.	MACHINERY BRAKE 2	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-26A	JB-2Ø	MACHINERY BRAKE 4 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-26B	MACHINERY BRAKE 4 DISC.	MACHINERY BRAKE 4	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27A	NEAR WIREWAY	LUBE OIL PUMP 1 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27B	LUBE OIL PUMP 1 DISC.	LUBE OIL PUMP 1	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27C	NEAR WIREWAY	LUBE OIL PUMP 2 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27D	LUBE OIL PUMP 2 DISC.	LUBE OIL PUMP 2 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27E	NEAR WIREWAY	LUBE OIL PUMP 3 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27F	LUBE OIL PUMP 3 DISC.	LUBE OIL PUMP 3 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27G	NEAR WIREWAY	LUBE OIL PUMP 4 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-27H	LUBE OIL PUMP 4 DISC.	LUBE OIL PUMP 4 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-28A	FAR WIREWAY	LUBE OIL PUMP 5 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-28B	LUBE OIL PUMP 5 DISC.	LUBE OIL PUMP 5 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-28C	FAR WIREWAY	LUBE OIL PUMP 6 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-28D	LUBE OIL PUMP 6 DISC.	LUBE OIL PUMP 6 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-28E	FAR WIREWAY	LUBE OIL PUMP 7 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-28F	LUBE OIL PUMP 7 DISC.	LUBE OIL PUMP 7 DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-29A	NEAR WIREWAY	JB-29	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-29B	JB-29	BARRIER GATE 1	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-3ØA	FAR WIREWAY	JB-3ØA	1"	(6) *12 AWG	(1) *12 AWG	*12 AWG
P-3ØB	JB-3ØA	PEDESTRIAN GATE	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-3ØC	JB-3ØA	JB-3ØB	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-3ØD	JB-3ØB	BARRIER GATE 2	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-31A	NEAR WIREWAY	JB-31B	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-31B	JB-31B	SPAN LOCK DISC.	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG
P-31C	SPAN LOCK DISC.	SPAN LOCK MOTOR	1"	(3) *12 AWG	(1) *12 AWG	*12 AWG

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		DH	PLANS CK'D. AHN
POWER CONDUIT AND CABLE SCHEDULE		SHEET 20 OF 44	
		58	

COND.	FROM	TO	SIZE	CONDUCTORS	SPARES	GROUND
C-1	NEAR POWER SWITCHING UNIT	NEAR WIREWAY	1"	(1Ø) #12 AWG	(1) #12 AWG	#12 AWG
C-2	FAR POWER SWITCHING UNIT	FAR WIREWAY	1"	(7) #12 AWG	(1) #12 AWG	#12 AWG
C-3A	NEAR WIREWAY	FLUX VECTOR DRIVE 1	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-3B	NEAR WIREWAY	FLUX VECTOR DRIVE 1	1"	(1) CAT 6 ETHERNET	-	#12 AWG
C-4A	FAR WIREWAY	FLUX VECTOR DRIVE 3	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-4B	FAR WIREWAY	FLUX VECTOR DRIVE 3	1"	(1) CAT 6 ETHERNET	-	#12 AWG
C-5A	NEAR WIREWAY	FLUX VECTOR DRIVE 2	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-5B	NEAR WIREWAY	FLUX VECTOR DRIVE 2	1"	(1) CAT 6 ETHERNET	-	#12 AWG
C-6A	FAR WIREWAY	FLUX VECTOR DRIVE 4	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-6B	FAR WIREWAY	FLUX VECTOR DRIVE 4	1"	(1) CAT 6 ETHERNET	-	#12 AWG
C-7	NEAR WIREWAY	NEAR MCC	1.5"	(32) #12 AWG	(4) #12 AWG	#12 AWG
C-8	FAR WIREWAY	FAR MCC	1.5"	(24) #12 AWG	(3) #12 AWG	#12 AWG
C-9	NEAR WIREWAY	NEAR SUBCABLE CABINET	2"	(46) #12 AWG	(5) #12 AWG	#12 AWG
C-1Ø	FAR WIREWAY	FAR SUBCABLE CABINET	2"	(46) #12 AWG	(5) #12 AWG	#12 AWG
C-11	NEAR WIREWAY	JB-11	1"	(1Ø) #12 AWG	(1) #12 AWG	#12 AWG
C-12	FAR WIREWAY	JB-12	1"	(1Ø) #12 AWG	(1) #12 AWG	#12 AWG
C-13	JB-11	DRIVE MOTOR 1	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-14	JB-12	DRIVE MOTOR 3	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-15	JB-11	MOTOR BRAKE 1	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-16	JB-12	MOTOR BRAKE 3	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-17	JB-11	MACHINERY BRAKE 1	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-18	JB-12	MACHINERY BRAKE 3	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-19	NEAR WIREWAY	JB-19	1"	(1Ø) #12 AWG	(1) #12 AWG	#12 AWG
C-2Ø	FAR WIREWAY	JB-2Ø	1"	(1Ø) #12 AWG	(1) #12 AWG	#12 AWG
C-21	JB-19	DRIVE MOTOR 2	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-22	JB-2Ø	DRIVE MOTOR 4	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-23	JB-19	MOTOR BRAKE 2	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-24	JB-2Ø	MOTOR BRAKE 4	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-25	JB-19	MACHINERY BRAKE 2	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-26	JB-2Ø	MACHINERY BRAKE 4	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-27A	NEAR WIREWAY	LUBE OIL PUMP 1	1"	TO BE DETERMINED		#12 AWG
C-27B	NEAR WIREWAY	LUBE OIL PUMP 2	1"	TO BE DETERMINED		#12 AWG
C-27C	NEAR WIREWAY	LUBE OIL PUMP 3	1"	TO BE DETERMINED		#12 AWG
C-27D	NEAR WIREWAY	LUBE OIL PUMP 4	1"	TO BE DETERMINED		#12 AWG
C-28A	FAR WIREWAY	LUBE OIL PUMP 5	1"	TO BE DETERMINED		#12 AWG
C-28B	FAR WIREWAY	LUBE OIL PUMP 6	1"	TO BE DETERMINED		#12 AWG
C-28C	FAR WIREWAY	LUBE OIL PUMP 7	1"	TO BE DETERMINED		#12 AWG
C-29A	NEAR WIREWAY	JB-29	1.5"	(2Ø) #12 AWG	(2) #12 AWG	#12 AWG
C-29B	JB-29	BARRIER GATE 1	1"	(16) #12 AWG	(2) #12 AWG	#12 AWG
C-29C	JB-29	NEAR TRAFFIC SIGNAL	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-3ØA	FAR WIREWAY	JB-3ØA	1.5"	(36) #12 AWG	(4) #12 AWG	#12 AWG
C-3ØB	JB-3ØA	PEDESTRIAN GATE	1"	(16) #12 AWG	(2) #12 AWG	#12 AWG
C-3ØC	JB-3ØA	JB-3ØB	1.5"	(2Ø) #12 AWG	(2) #12 AWG	#12 AWG
C-3ØD	JB-3ØB	BARRIER GATE 2	1"	(16) #12 AWG	(2) #12 AWG	#12 AWG

NOTES:

1. SEE POWER CONDUIT AND CONDUCTOR SCHEDULE SHEET E-20 FOR ADDITIONAL CONDUIT AND CONDUCTOR NOTES.

COND.	FROM	TO	SIZE	CONDUCTORS	SPARES	GROUND
C-3ØE	JB-3ØB	FAR TRAFFIC SIGNAL	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-31A	NEAR WIREWAY	JB-31A	1"	(14) #12 AWG	(2) #12 AWG	#12 AWG
C-31B	JB-31A	NORTHEAST SPAN NAV. LIGHT	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-31C	JB-31A	JB-31B	1"	(11) #12 AWG	(2) #12 AWG	#12 AWG
C-31D	JB-31B	SPAN LOCK LIMIT SWITCH	1"	(8) #12 AWG	(1) #12 AWG	#12 AWG
C-31E	JB-31B	SOUTHEAST SPAN NAV. LIGHT	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-32A	FAR WIREWAY	JB-32	1"	(6) #12 AWG	(1) #12 AWG	#12 AWG
C-32B	JB-32	NORTHWEST SPAN NAV. LIGHT	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-32C	JB-32	SOUTHWEST SPAN NAV. LIGHT	1"	(3) #12 AWG	(1) #12 AWG	#12 AWG
C-33	NEAR WIREWAY	NORTHEAST FENDER LIGHT	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-34	FAR WIREWAY	NORTHWEST FENDER LIGHT	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-35A	NEAR WIREWAY	JB-35	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-35B	JB-35	SOUTHEAST FENDER LIGHT	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-35C	JB-35	EAST CENTER FENDER LIGHT	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-36A	FAR WIREWAY	JB-36	1"	(4) #12 AWG	(1) #12 AWG	#12 AWG
C-36B	JB-36	SOUTHWEST FENDER LIGHT	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-36C	JB-36	WEST CENTER FENDER LIGHT	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-37	NEAR WIREWAY	NEAR ROTARY CAM	1"	(7) #12 AWG	(1) #12 AWG	#12 AWG
C-38	FAR WIREWAY	FAR ROTARY CAM	1"	(7) #12 AWG	(1) #12 AWG	#12 AWG
C-39A	NEAR WIREWAY	JB-39	1"	(6) #12 AWG	(1) #12 AWG	#12 AWG
C-39B	JB-39	NEAR INCLINOMETER 1	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-39C	JB-39	NEAR INCLINOMETER 2	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-39D	JB-39	NEAR OVERTRAVEL	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-4ØA	FAR WIREWAY	JB-4Ø	1"	(6) #12 AWG	(1) #12 AWG	#12 AWG
C-4ØB	JB-4Ø	FAR INCLINOMETER 1	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-4ØC	JB-4Ø	FAR INCLINOMETER 2	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-4ØD	JB-4Ø	FAR OVERTRAVEL	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-41	NEAR WIREWAY	NORTHEAST PROX. SENSOR	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-42	FAR WIREWAY	NORTHWEST PROX. SENSOR	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-43	NEAR WIREWAY	SOUTHEAST PROX. SENSOR	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-44	FAR WIREWAY	SOUTHWEST PROX. SENSOR	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-45A	NEAR WIREWAY	NEAR PLC/RELAY CABINET	2"	(51) #12 AWG	(6) #12 AWG	#12 AWG
C-45B	NEAR WIREWAY	NEAR PLC/RELAY CABINET	2"	(51) #12 AWG	(6) #12 AWG	#12 AWG
C-45C	NEAR WIREWAY	NEAR PLC/RELAY CABINET	2"	(54) #12 AWG	(6) #12 AWG	#12 AWG
C-45D	NEAR WIREWAY	NEAR PLC/RELAY CABINET	1"	(1) CAT 6 , (1) LMR-195	-	#12 AWG
C-45E	NEAR WIREWAY	NEAR WIRELESS ANTENNA	1"	(1) LMR-195 CABLE	-	#12 AWG
C-46A	FAR WIREWAY	FAR PLC/RELAY CABINET	2"	(53) #12 AWG	(6) #12 AWG	#12 AWG
C-46B	FAR WIREWAY	FAR PLC/RELAY CABINET	1"	(1) CAT 6 , (1) LMR-195	-	#12 AWG
C-46C	FAR WIREWAY	FAR WIRELESS ANTENNA	1"	(1) LMR-195 CABLE	-	#12 AWG
C-47A	NEAR WIREWAY	CONTROL DESK	2"	(6Ø) #12 AWG	(6) #12 AWG	#12 AWG
C-47B	NEAR WIREWAY	CONTROL DESK	1"	(1) CAT 6 ETHERNET	-	#12 AWG
C-48	NEAR WIREWAY	PHOTOELECTRIC CELL	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG
C-49	NEAR WIREWAY	AIR HORN	1"	(2) #12 AWG	(1) #12 AWG	#12 AWG

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CONTROL CONDUIT AND CABLE SCHEDULE			SHEET 21 OF 44
			59

NEAR MCC

QTY	NAME	DESCRIPTION
1	CB-MCC-N	3 POLE, 600 AMPERE FRAME, 500 AMPERE TRIP, MOTOR OPERATED CIRCUIT BREAKER WITH 4 FORM C AUXILIARY CONTACTS
2	CB-DRV-1	3 POLE, 400 AMPERE FRAME, 400 AMPERE TRIP CIRCUIT BREAKER WITH 2 FORM C AUXILIARY CONTACTS
	CB-DRV-2	
1	CB-CHAN-1	3 POLE, 400 AMPERE FRAME, 300 AMPERE TRIP CIRCUIT BREAKER WITH 2 FORM C AUXILIARY CONTACTS
2	CB-BRAKE-N	3 POLE, 100 AMPERE FRAME, 15 AMPERE TRIP CIRCUIT BREAKER WITH 2 FORM C AUXILIARY CONTACTS
	CB-LUBE-N	
2	PFR	INCLUDE 3 POLE, 5A, 600V FUSES AND HOLDERS
1	CB-BCP-1	2 POLE, 100 AMPERE FRAME, 15 AMPERE TRIP CIRCUIT BREAKER
1	CB-BCP-2	1POLE, 100 AMPERE FRAME, 40 AMPERE TRIP CIRCUIT BREAKER
1	CB-LP-F	3 POLE, 100 AMPERE FRAME, 50 AMPERE TRIP CIRCUIT BREAKER
2	MCP-BG-1	3 POLE, 100 AMPERE FRAME, 7 AMPERE TRIP MOTOR CIRCUIT PROTECTOR WITH 2 FORM C AUXILIARY CONTACTS
	MCP-SL	
1	M-TIE-N	500 AMPERE, 3 POLE, NON REVERSING, IEC CONTACTOR WITH 2 SETS OF AUXILIARY CONTACTS
2	M-BG-1	NEMA SIZE 1REVERSING STARTER, OVERLOADS SIZED FOR MOTOR FLA, WITH 2 SETS OF FORM C CONTACTS ON BOTH CONTACTORS AND THE OVERLOAD RELAY
	M-SL	
8	M-LUBE-1	9 AMP IEC CONTACTOR WITH TERMAL MAGNETIC OVERCURRENT
	M-LUBE-2	
	M-LUBE-3	
	M-LUBE-4	
	M-MB-1	
	M-MB-2	
	M-MYB-1	
	M-MYB-2	
1	ENCLOSURE	NEMA 4X STAINLESS STEEL, FLOOR MOUNT, FREESTANDING 90" X 36" X 20" DEEP ENCLOSURE
		TERMINAL AND POWER BLOCKS AS REQUIRED
1	CR-CB0-N	NEMA B 300 CONTROL RELAY
1	TR-CB-N	500 VA, 480-120 CONTROL TRANSFORMER WITH PRIMARY & SECONDARY FUSES

FAR MCC

QTY	NAME	DESCRIPTION
1	CB-MCC-F	3 POLE, 600 AMPERE FRAME, 500 AMPERE TRIP, MOTOR OPERATED CIRCUIT BREAKER WITH 4 FORM C AUXILIARY CONTACTS
2	CB-DRV-3	3 POLE, 400 AMPERE FRAME, 400 AMPERE TRIP CIRCUIT BREAKER WITH 2 FORM C AUXILIARY CONTACTS
	CB-DRV-4	
1	CB-CHAN-2	3 POLE, 400 AMPERE FRAME, 300 AMPERE TRIP CIRCUIT BREAKER WITH 2 FORM C AUXILIARY CONTACTS
2	CB-BRAKE-F	3 POLE, 100 AMPERE FRAME, 15 AMPERE TRIP CIRCUIT BREAKER WITH 2 FORM C AUXILIARY CONTACTS
	CB-LUBE-F	
2	CB-BCP-F	2 POLE, 100 AMPERE FRAME, 15 AMPERE TRIP CIRCUIT BREAKER
	CB-BCP-3	
1	CB-BCP-4	2 POLE, 100 AMPERE FRAME, 40 AMPERE TRIP CIRCUIT BREAKER
1	CB-LP-F	3 POLE, 100 AMPERE FRAME, 50 AMPERE TRIP CIRCUIT BREAKER
1	MCP-BG-2	3 POLE, 100 AMPERE FRAME, 7 AMPERE TRIP MOTOR CIRCUIT PROTECTOR WITH 2 FORM C AUXILIARY CONTACTS
1	MCP-PG	3 POLE, 100 AMPERE FRAME, 3 AMPERE TRIP MOTOR CIRCUIT PROTECTOR WITH 2 FORM C AUXILIARY CONTACTS
1	M-TIE-F	500 AMPERE, 3 POLE, NON REVERSING, IEC CONTACTOR WITH 2 SETS OF AUXILIARY CONTACTS
2	M-BG-2	NEMA SIZE 1REVERSING STARTER, OVERLOADS SIZED FOR MOTOR FLA, WITH 2 SETS OF FORM C CONTACTS ON BOTH CONTACTORS AND THE OVERLOAD RELAY
	M-PG	
8	M-LUBE-6	9 AMP IEC CONTACTOR WITH TERMAL MAGNETIC OVERCURRENT
	M-LUBE-7	
	M-LUBE-F	
	M-MB-3	
	M-MB-4	
	M-MYB-3	
	M-MYB-4	
1	ENCLOSURE	NEMA 4X STAINLESS STEEL, FLOOR MOUNT, FREESTANDING 90" X 36" X 20" DEEP ENCLOSURE
		TERMINAL AND POWER BLOCKS AS REQUIRED
2	PFR	INCLUDE 3 POLE, 5A, 600V FUSES AND HOLDERS
1	CR-CB0-F	NEMA B 300 CONTROL RELAY
1	TR-CB-F	500 VA, 480-120 CONTROL TRANSFORMER WITH PRIMARY & SECONDARY FUSES

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QTY	ITEM	DESCRIPTION
5	BP-BG-L	GUARDED TOOGLE SWITCHES - DPDT
	BP-BR-HR	
	BP-SL-D	
	BP-SL-P	
	BP-S-STD	
4	CB-DESK-1A	SUPPLEMETAL CIRCUIT BREAKER, RATING AS REQUIRED.
	CB-DESK-1B	
	CB-IL	
	CB-PLC-DESK	
7	PB-AH	30.5 MM PUSH BUTTON, CONTACTS AND CAP COLOR AS REQUIRED.
	PB-ESTOP	
	PB-JOG-E-L	
	PB-JOG-E-R	
	PB-JOG-W-L	
	PB-JOG-W-R	
	PB-UBP	
14	PL-BCP	30.5 MM PILOT LIGHT, 120 VAC LED LAMP, COLOR AS SHOWN ON THE PLANS.
	PL-BG-1-L	
	PL-RDY-DRV-1	
	PL-RDY-DRV-2	
	PL-RDY-DRV-3	
	PL-RDY-DRV-4	
	PL-TSA-F	
	PL-TSA-N	
	PL-TSG-F	
	PL-TSG-N	
	PL-TSR-F	
	PL-TSR-N	
	PL-UP-N	
	PL-UP-F	

QTY	ITEM	DESCRIPTION
7	PL-BG-1	30.5 MM DUAL FIELD PILOT LIGHT, 120 VAC LED LAMP, CLOUR AS SHOWN ON THE PLANS.
	PL-BG-2	
	PL-PED	
	PL-SL	
	PL-RDY-BG	
	PL-RDY-PED	
	PL-RDY-SL	
6	SS-BG-1	THREE POSITION, SPRING RETURN TO CENTER 30.5 MM SSELECTRO SWITCH WITH GLOVE LEVER HANDLE. CONTACTS AS REQUIRED.
	SS-BG-2	
	SS-PG	
	SS-S-F	
	SS-SL	
	SS-S-N	
2	SS-MODE	THREE POSITION 30.5 MM SELECTOR SWITCH WITH GLOVE LEVER HANDLE. CONTACTS AS REQUIRED.
	SS-PIER	
	SS-PWR	
3	SS-PLC	TWO POSITION 30.5 MM SELECTOR SWITCH WITH GLOVE LEVER HANDLE. CONTACTS AS REQUIRED.
	SS-TS-F	
	SS-TS-N	
1	KS-BCP	TWO POSITION 30.5 MM SELECTOR SWITCH WITH KEYED OPERATOR. CONTACTS AS REQUIRED.
1	KS-UBP	TWO POSITION, SPRING RETURN TO OFF, 30.5 MM SELECTOR SWITCH WITH KEYED OPERATOR. CONTACTS AS REQUIRED.
3	1756-PA72/C	POWER SUPPLY
3	1756-EN2T	ETHERNET CARD
2	1756-L72	PLC PROCESSOR
2	1756-A4	4 SLOT CHASSIS
1	1756-A7	7 SLOT CHASSIS
1	1756-IA16	DIGITAL INPUT CARD
3	1756-0X8I	DIGITAL OUTPUT CARD
1	ISLATROL IE SERIES L	ACTIVE TRACKING FILTER
1	PANELVIEW PLUS 1500	TOUCH SCREEN

CONTROL DESK

NOTES:

1. THE BILL OF MATERIALS IS NOT INTENDED TO BE A COMPREHENSIVE LIST OF ITEMS. THE BILL OF MATERIALS IS INTENDED TO AID THE CONTRACTOR FOR THE PURPOSES OF JOB ESTIMATION.

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
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ELECTRICAL BILL OF MATERIALS 1		SHEET 22 OF 44	
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QTY	NAME	DESCRIPTION
1	AIR HORN	UNITIZED COMBINATION AIR HORN/COMPRESSOR ASSEMBLY
2	BARRIER GATE 1	BARRIER GATES
	BARRIER GATE 2	
4	DRIVE MOTOR 1	
	DRIVE MOTOR 2	
	DRIVE MOTOR 3	SPAN DRIVE MOTORS
	DRIVE MOTOR 4	
2	DS-AUX	
	DS-MN	
15	DS-LUBE-1	INCOMING SERVICE DISCONNECT - 600 AMPERE, 3 POLE, INFUSED DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE
	DS-LUBE-2	
	DS-LUBE-3	
	DS-LUBE-4	
	DS-LUBE-5	30 AMP, 3 POLE MANUAL MOTOR STARTER
	DS-LUBE-6	
	DS-LUBE-7	
	DS-MB-1	
	DS-MB-2	
	DS-MB-3	
	DS-MB-4	
	DS-MYB-1	
	DS-MYB-2	
	DS-MYB-3	
	DS-MYB-4	
1	DS-SL	15 AMP, 3 POLE, UNFUSED DISCONNECT IN NEMA 4X STAINLESS STEEL ENCLOSURE
4	DS-MM1	
	DS-MM2	
	DS-MM3	
	DS-MM4	200 AMP, 100 HP, 3 POLE, UNFUSED DISCONNECT IN NEMA 4X STAINLESS STEEL
24	LS-MB-1-HR	
	LS-MB-1-REL	
	LS-MB-1-SET	
	LS-MB-2-HR	INDUSTRIAL LEVER LIMIT SWITCH WITH DUAL FORM ZZ CONTACTS IN NEMA 6P ENCLOSURES AND SIX FOOT EPOXY POTTED CORDSETS
	LS-MB-2-REL	
	LS-MB-2-SET	
	LS-MB-3-HR	
	LS-MB-3-REL	
	LS-MB-3-SET	
	LS-MB-4-HR	
	LS-MB-4-REL	
	LS-MB-4-SET	
	LS-MYB-1-HR	
	LS-MYB-1-REL	
	LS-MYB-1-SET	
	LS-MYB-2-HR	

OTHER BRIDGE ITEMS

QTY	NAME	DESCRIPTION
	LS-MYB-2-REL	
	LS-MYB-2-SET	
	LS-MYB-3-HR	
	LS-MYB-3-REL	
	LS-MYB-3-SET	SPAN DRIVE MOTORS
	LS-MYB-4-HR	
	LS-MYB-4-REL	
	LS-MYB-4-SET	
2	LS-OT-F	NAVAL DUTY LEVER LIMIT SWITCHES WITH DUAL SLIDING CONTACTS IN STAINLESS
	LS-OT-N	
3	LS-SL	6 CIRCUIT ROTARY CAM LIMIT SWITCHES IN NEMA 4X STAINLESS STEEL
	RLS-F	
	RLS-N	
1	LS-SL-MOI	
4	MACHINERY BRAKE 1	SPRING SET, ELECTROHYDRAULIC THRUSTOR RELEASE 19" DRUM BRAKES
	MACHINERY BRAKE 2	
	MACHINERY BRAKE 3	
	MACHINERY BRAKE 4	
4	MOTOR BRAKE 1	SPRING SET, ELECTROHYDRAULIC THRUSTOR RELEASE 10" DRUM BRAKES
	MOTOR BRAKE 2	
	MOTOR BRAKE 3	
	MOTOR BRAKE 4	
4	NAV LTG NE	DUAL FIELD, RED/GREEN BASCULE SPAN LIGHTS WITH LED LAMPS
	NAV LTG NW	
	NAV LTG SE	
	NAV LTG SW	
1	PEC	PHOTOCELL
6	PIER LIGHT	PIER PROTECTION LIGHTS WITH LED LAMPS
	PIER LIGHT	
	PIER LIGHT	
	PIER LIGHT	
4	PS-FS-NE	INDUCTIVE PROXIMITY SWITCHES IN NEMA 6P ENCLOSURES
	PS-FS-NW	
	PS-FS-SE	
	PS-FS-SW	
4	TR-DRV-1	110 KVA DRIVE ISOLARION TRANSFORMERS
	TR-DRV-2	
	TR-DRV-3	
	TR-DRV-4	
2	TR-LP-F	25 KVA THREE PHASE LIGHTING TRANSFORMER
	TR-LP-N	

QTY	NAME	DESCRIPTION
12	CB-FLA	SINGLE POLE SUPPLEMENTAL CIRCUIT BREAKER, RATING AS REQUIRED
	CB-GATES-SL	
	CB-NEAR-1A	
	CB-NEAR-1B	
	CB-NEAR-2A	
	CB-NEAR-2B	
	CB-NEAR-3A	
	CB-NEAR-3B	
	CB-NEAR-4A	
	CB-NEAR-4B	
	CB-PLC-NEAR	
	CB-SPEED	
16	CR-AH	NEMA A600 MACHINE TOOL RELAY, 120 VAC COIL, CONTACTS AS REQUIRED
	CR-ASR-F	
	CR-ASR-N	
	CR-BCP	
	CR-BG-1-MOI	
	CR-BG-2-MOI	
	CR-DECEL-N	
	CR-ESTOP	
	CR-JOG-E-L	
	CR-JOG-E-R	
	CR-NAV	
	CR-PIER	
	CR-PLC	
	CR-RSR-LOW-E	
	CR-RSR-N	
	CR-UBP	
2	TR-BCP-N	NEMA A600 TIMING RELAY, 120 VAC COIL, CONTACTS AS REQUIRED
	TR-RSR-N	
1	ENCLOSURE	NEMA 12 STAINLESS STEEL FREESTANDING TWO DOOR ENCLOSURE, 42" X 60" X 12" DEEP WITH BACKPANEL
1	1756-A10	
1	1756-PA72/C	
1	1756-EN2T	
4	1756-IA16	DIGITAL INPUT CARD
1	1756-IF61	
3	1756-0X8I	
1	ISLATROL IE SERIES L	
1	RLX1B-IHW	PROSOFT WIRELESS ETHERNET TRANSCEIVER WITH ANTENNA
		TERMINAL BLOCKS AS REQUIRED

NEAR PLC

- NOTES:
- THE BILL OF MATERIALS IS NOT INTENDED TO BE A COMPREHENSIVE LIST OF ITEMS, THE BILL OF MATERIALS IS INTENDED TO AID THE CONTRACTOR FOR THE PURPOSES OF JOB ESTIMATION.

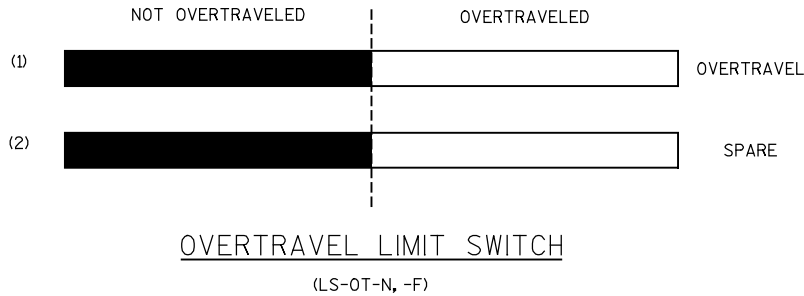
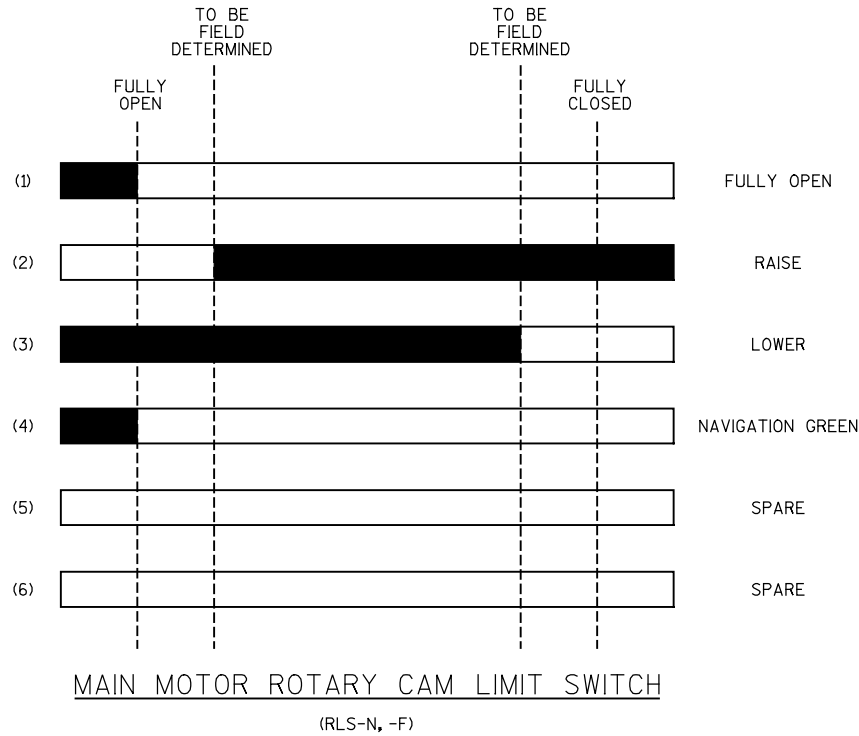
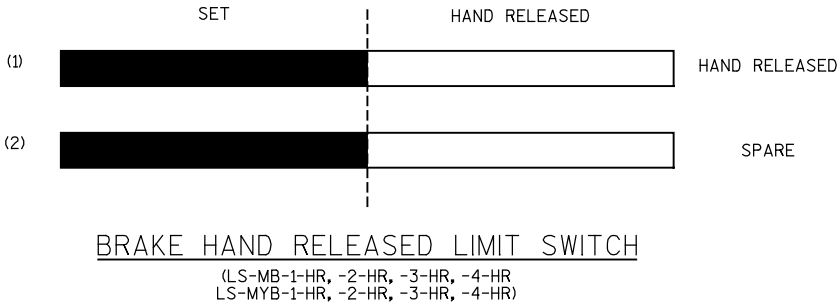
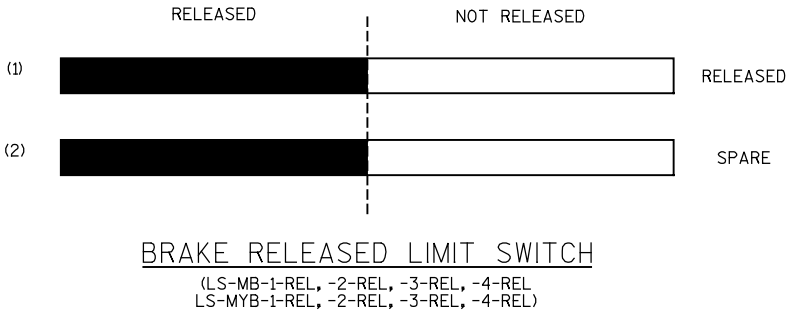
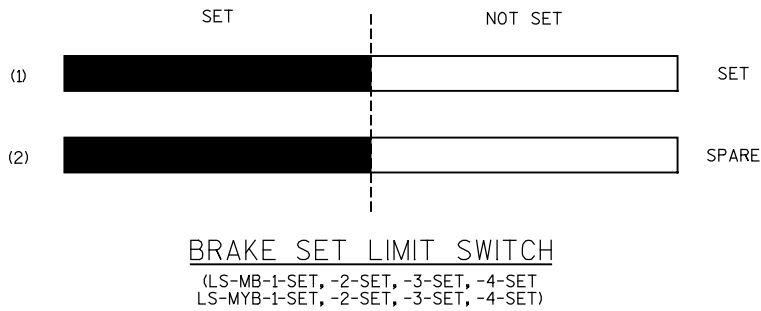
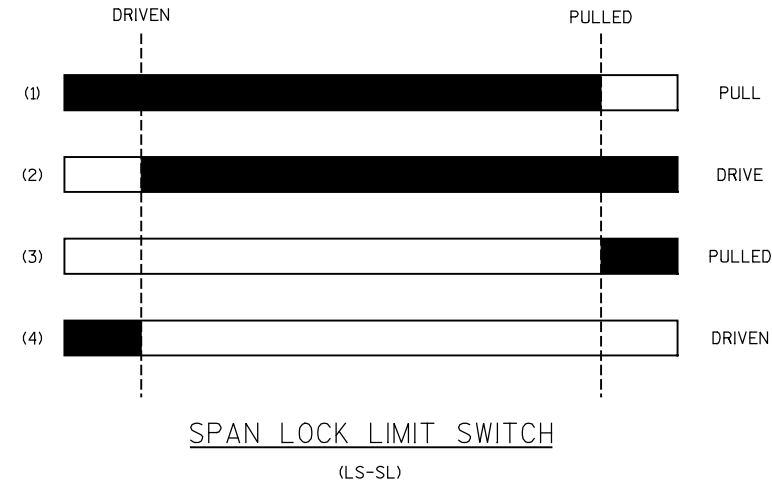
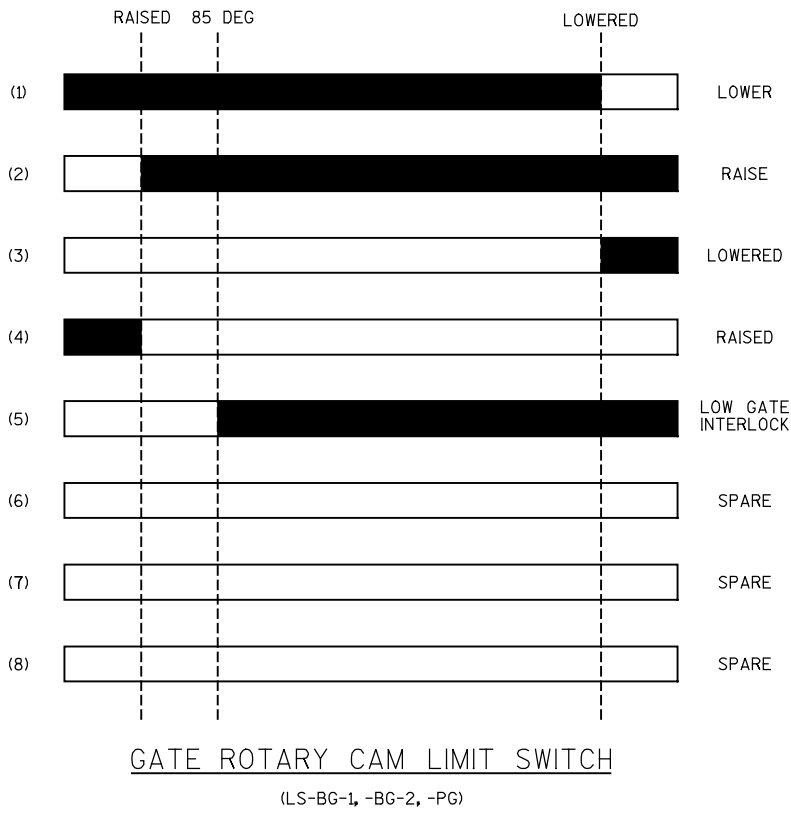
STATE PROJECT NUMBER
9210-14-71

QTY	NAME	DESCRIPTION
12	CB-FAR-1A	SUPPLEMENTAL CIRCUIT BREAKER, RATING AS REQUIRED
	CB-FAR-1B	
	CB-FAR-1C	
	CB-FAR-2A	
	CB-FAR-2B	
	CB-FAR-2C	
	CB-FAR-2D	
	CB-FAR-3A	
	CB-FAR-3B	
	CB-FAR-4A	
	CB-FAR-4B	
	CB-S-N	
6	CR-DECEL-F	NEMA A600 MACHINE TOOL RELAY, 120 VAC COIL, CONTACTS AS REQUIRED
	CR-JOG-W-L	
	CR-JOG-W-R	
	CR-PG-MOI	
	CR-RSR-F	
	CR-RSR-LOW-W	
2	TR-BCP-F	
	TR-RSR-F	
1	ENCLOSURE	NEMA 12 STAINLESS STEEL FREESTANDING TWO DOOR ENCLOSURE, 42" X 60" X 12" DEEP WITH BACKPANEL
1	1756-A10	
1	1756-PA72/C	
1	1756-EN2T	
4	1756-IA16	DIGITAL INPUT CARD
1	1756-IF61	
1	1756-0X8I	
1	ISLATROL IE SERIES L	
1	RLX1B-IHW	PROSOFT WIRELESS ETHERNET TRANSCEIVER WITH ANTENNA
		TERMINAL BLOCKS AS REQUIRED

FAR PLC

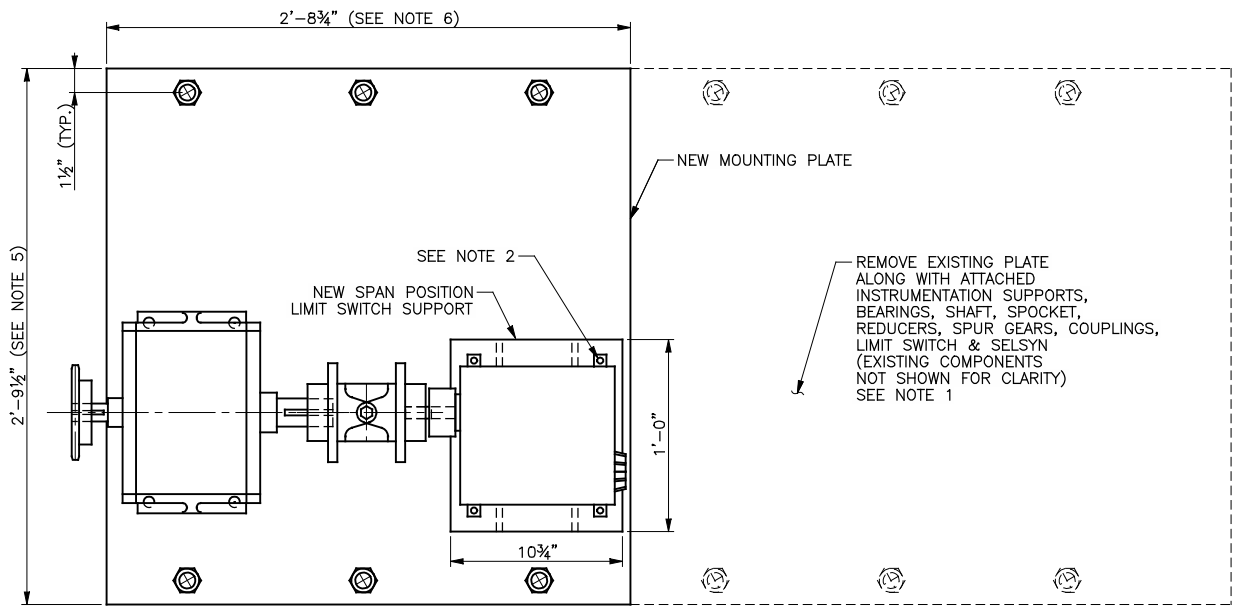
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
ELECTRICAL BILL OF MATERIALS 2		SHEET 23 OF 44	
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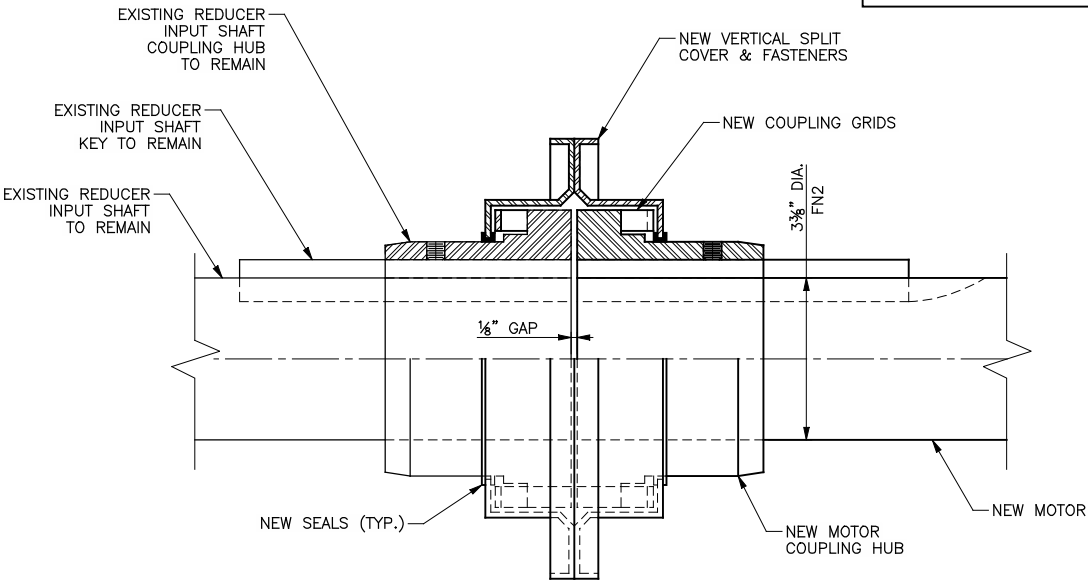


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9210-14-71			

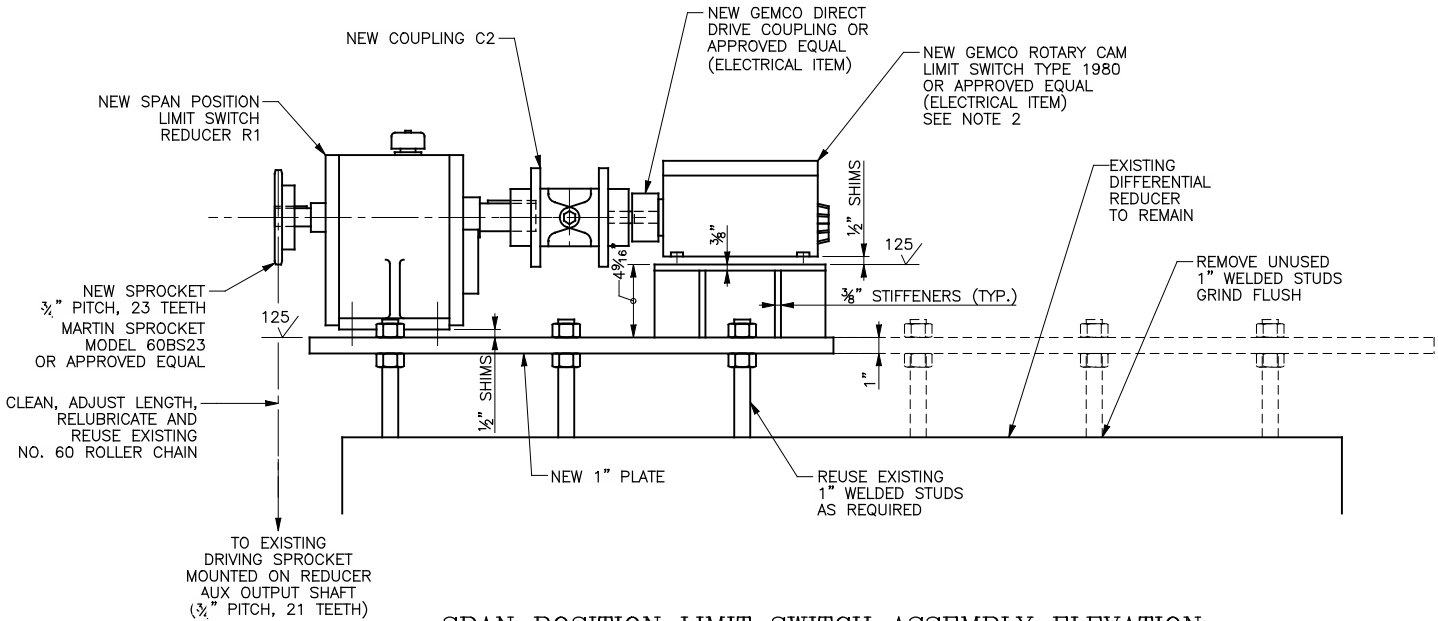
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
LIMIT SWITCH DEVELOPMENTS		SHEET 24 OF 44	
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SPAN POSITION LIMIT SWITCH ASSEMBLY PLAN
(EAST SPAN SHOWN, WEST SPAN SIMILAR)



MOTOR COUPLING C1 DETAIL
(4 LOCATIONS)



SPAN POSITION LIMIT SWITCH ASSEMBLY ELEVATION
(EAST SPAN SHOWN, WEST SPAN SIMILAR)

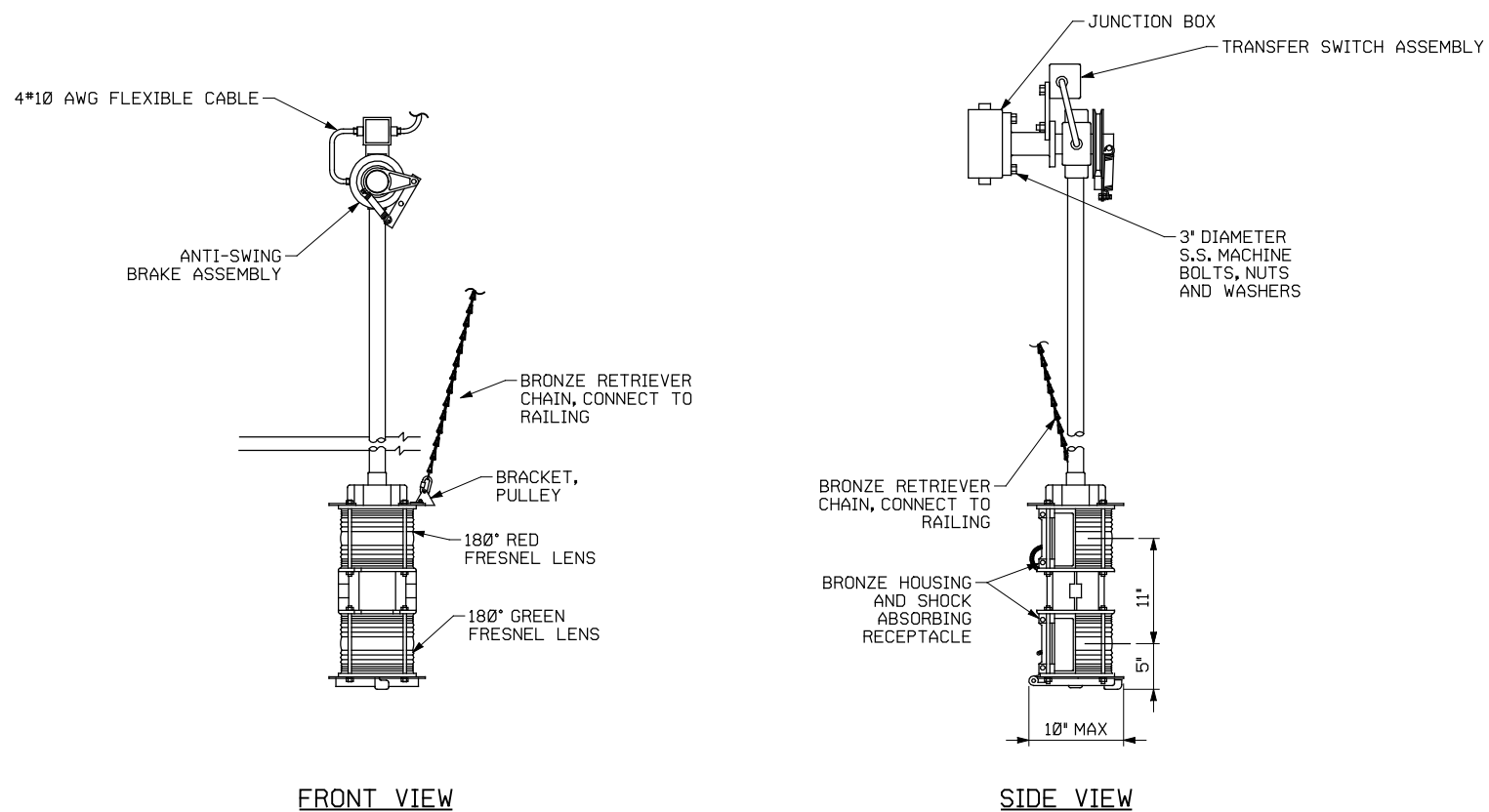
- NOTES:
- 1. REMOVAL AND PROPER DISPOSAL OF ALL EXISTING INSTRUMENTATION MACHINERY, INSTRUMENTATION AND SUPPORTS WILL BE PAID UNDER MASON STREET BRIDGE ELECTRICAL WORK.
 - 2. ALL ALIGNMENT, DRILLING FOR AND FASTENING OF NEW MOTORS, BRAKES AND LIMIT SWITCHES WILL BE COVERED AND PAID FOR UNDER MASON STREET BRIDGE MACHINERY WORK.
 - 3. FURNISHING, FABRICATING, INSTALLING AND ALIGNMENT OF NEW SPROCKETS, REDUCERS, COUPLINGS AND KEYS WILL BE COVERED AND PAID FOR UNDER MASON STREET BRIDGE MACHINERY WORK.
 - 4. NEW INSTRUMENTATION MACHINERY SUPPORTS SHALL BE OF ASTM A709 GRADE 36 OR 50 STRUCTURAL STEEL AND WELDED IN ACCORDANCE WITH AWS D1.5. SUPPORT WELDMENTS SHALL BE STRESS RELIEVED AND BLAST CLEANED PRIOR TO FINAL MACHINING.
 - 5. BASE PLATE LENGTH AND WIDTH SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE NEW SUPPORTS WITH LOCATIONS OF EXISTING WELDED STUDS AND MACHINERY BASED ON FIELD MEASUREMENTS.

TABLE OF AUXILIARY INSTRUMENT DRIVE AND LIMIT SWITCH GEARING				
MARK	RATIO	QNT'Y	DESCRIPTION	MANUFACTURER AND MODEL
RI	158.9:1	2	FLOOR MOUNTED, CONCENTRIC SHAFT SPEED REDUCER, TYPE FC, UNIT SIZE 1030 0.457 HP AT 870 RPM, SERV. FACTOR = 1.0	FALK CORPORATION

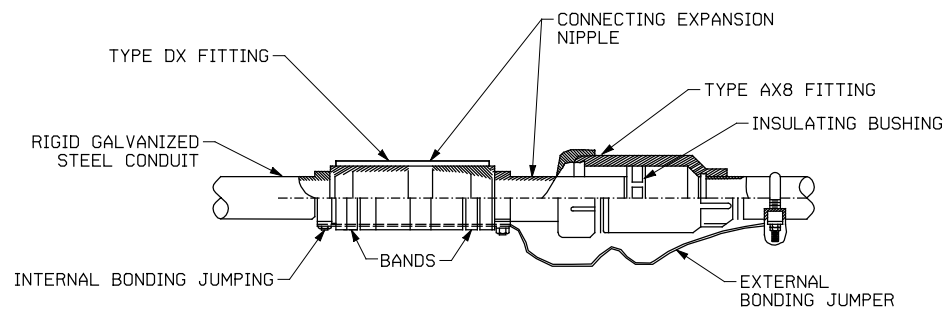
TABLE OF AUXILIARY INSTRUMENT DRIVE AND LIMIT SWITCH COUPLINGS										
MARK	QNT'Y	SIZE	TORQUE RATING LB-IN	TYPE	DRIVING HALF		DRIVEN HALF			MANUFACTURER AND MODEL
					NOMINAL BORE, In	KEY InxIn	R=RIGID F=FLEX	KEY InxIn	NOMINAL BORE, In	
C1	4	1090T20	33000	GRID	3.375	7/8x7/8	F	F	*	FALK CORPORATION
C2	2	50	1900	DELTAFLEX TYPE 2	*	*	F	F	*	LOVEJOY

* - SIZE TO MATCH COMMERCIAL COMPONENT SHAFT

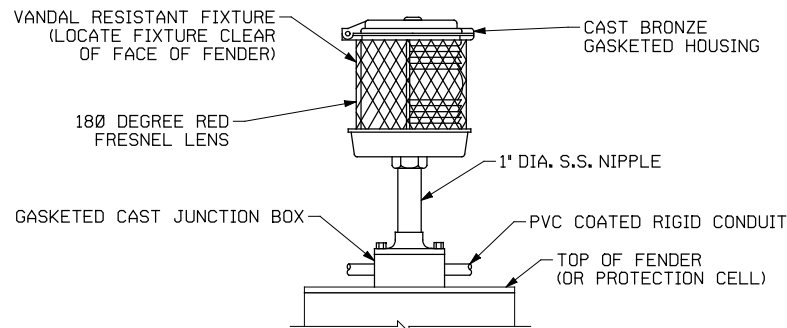
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY RKP		PLANS CK'D. JAG	
INSTRUMENTATION DETAILS			SHEET 25 OF 44
			63



SPAN NAVIGATION LIGHT

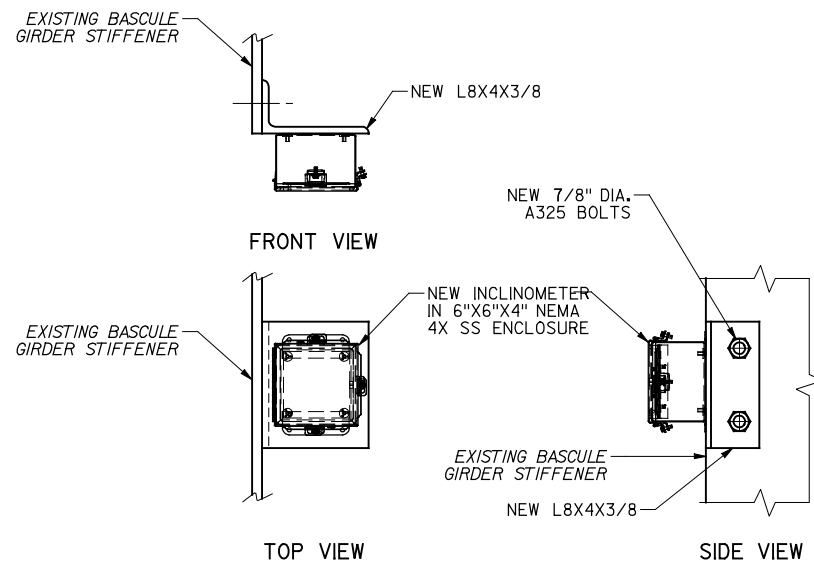
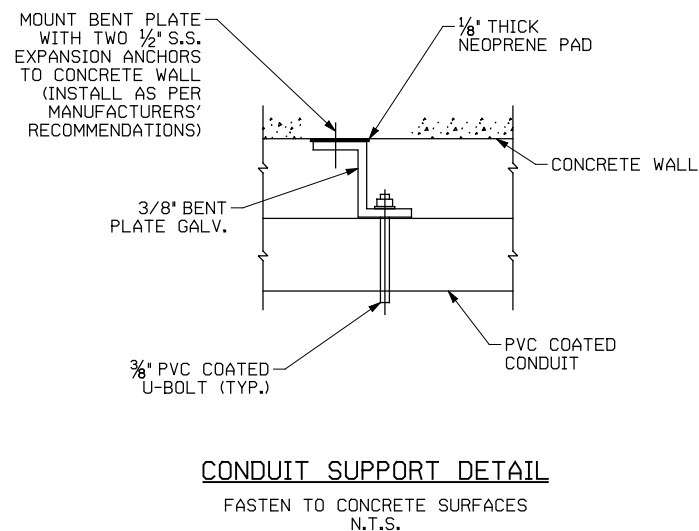
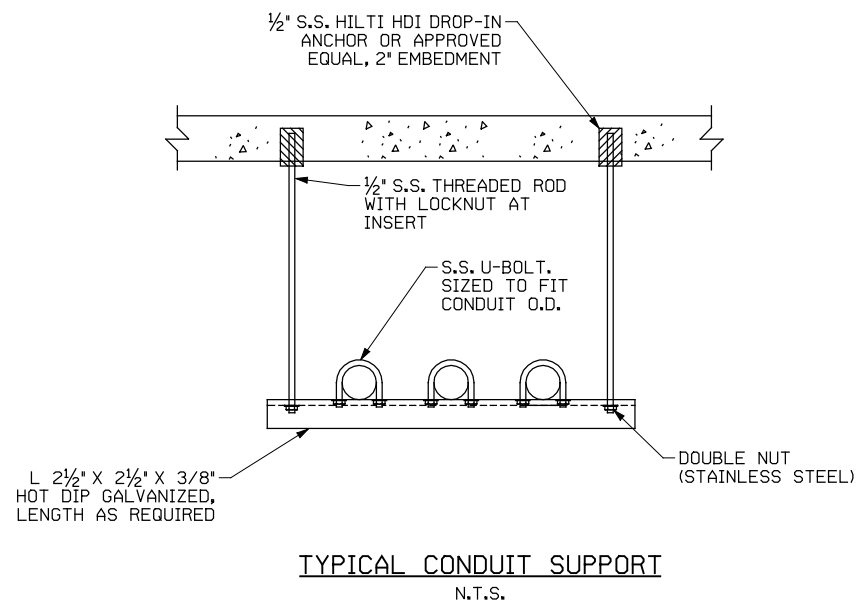
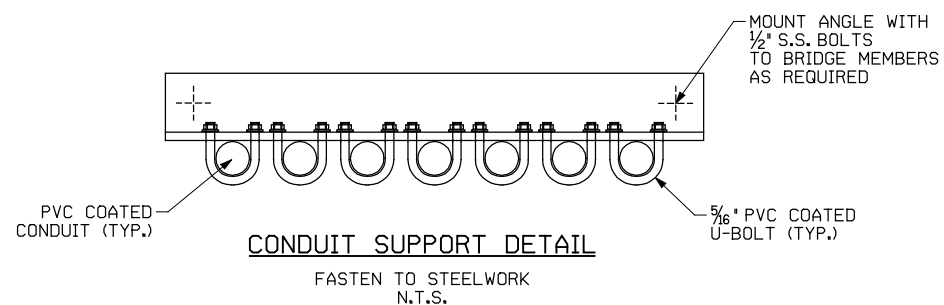


TYPICAL DEFLECTION & EXPANSION FITTINGS



FENDER PIER LIGHT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
ELECTRICAL DETAILS 1			SHEET 26 OF 44
			64

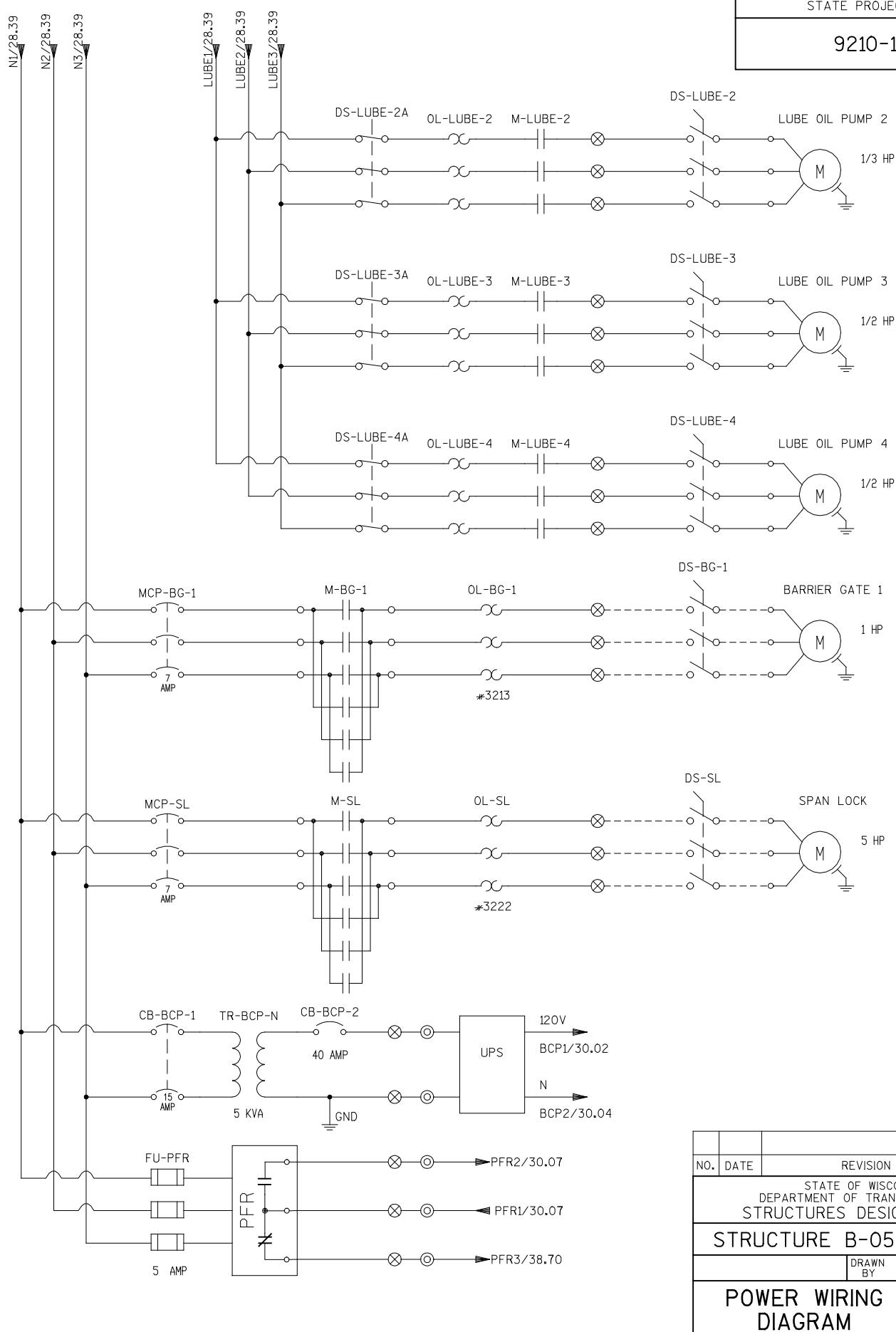
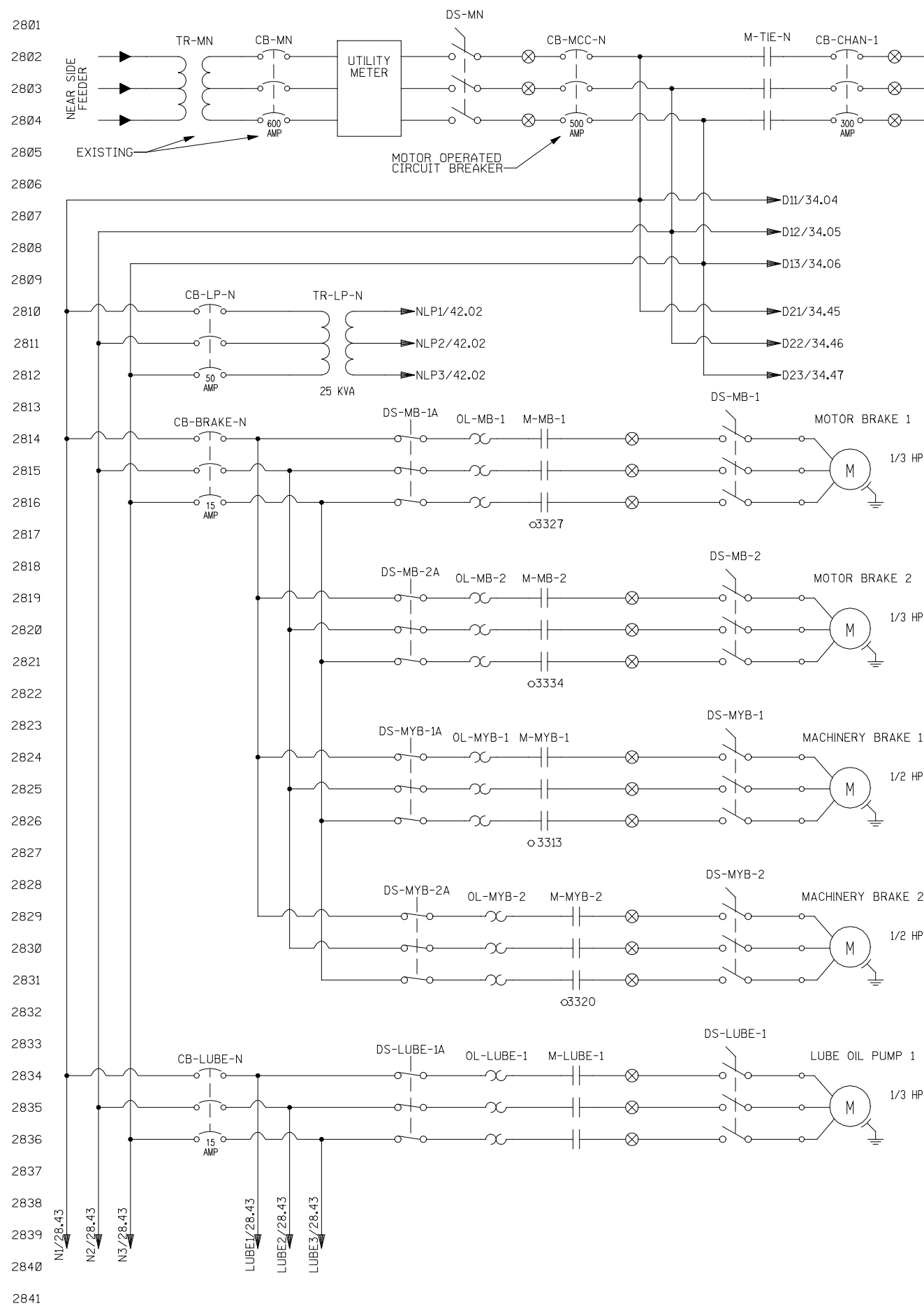


NOTE:

PROVIDE AND INSTALL A FLEXIBLE #16AWG TWISTED SHIELDED PAIR FROM INCLINOMETER ENCLOSURE TO NEW FIXED TERMINAL BOX.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
ELECTRICAL DETAILS 2		SHEET 27 OF 44	
		65	

8

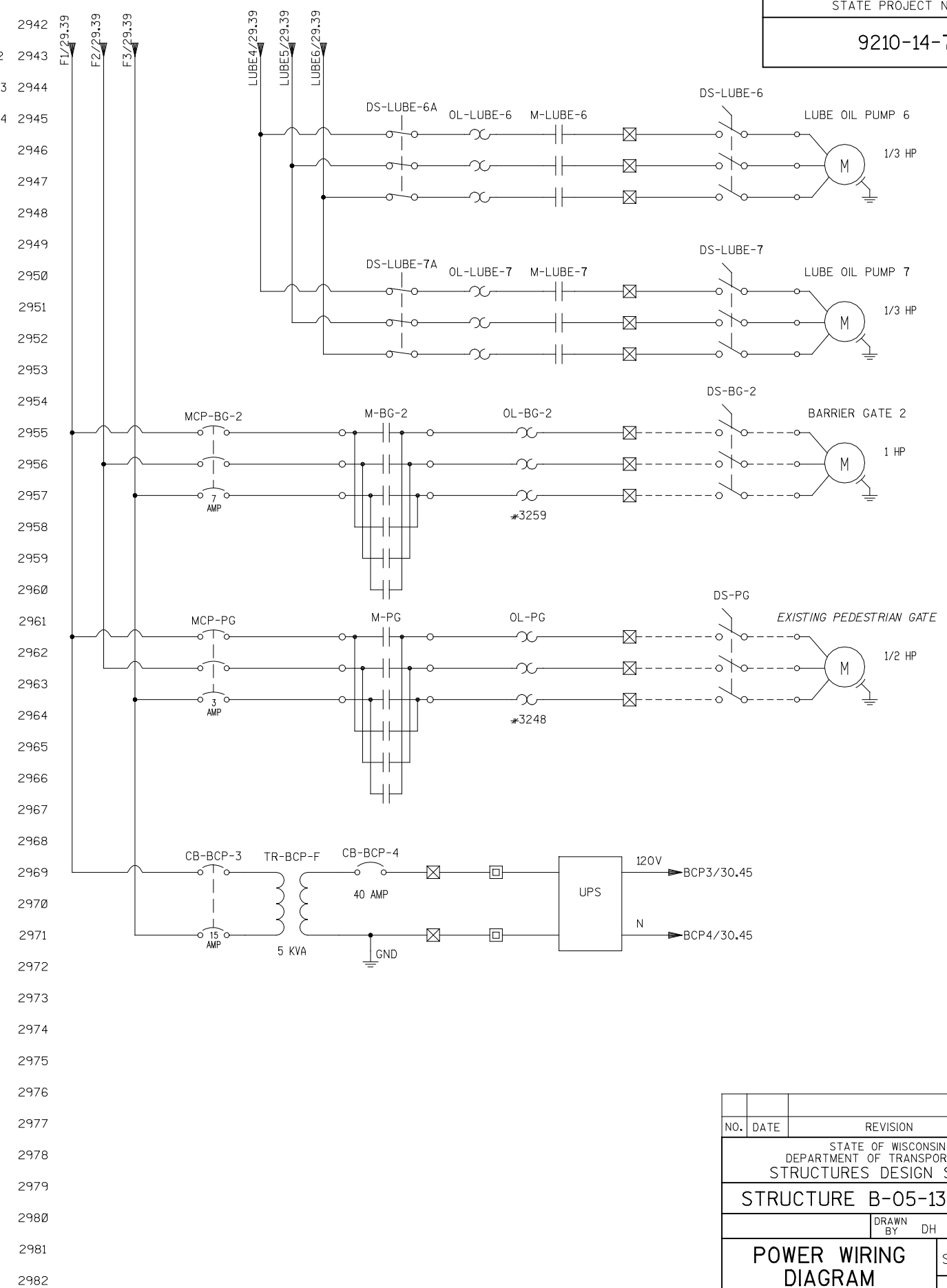
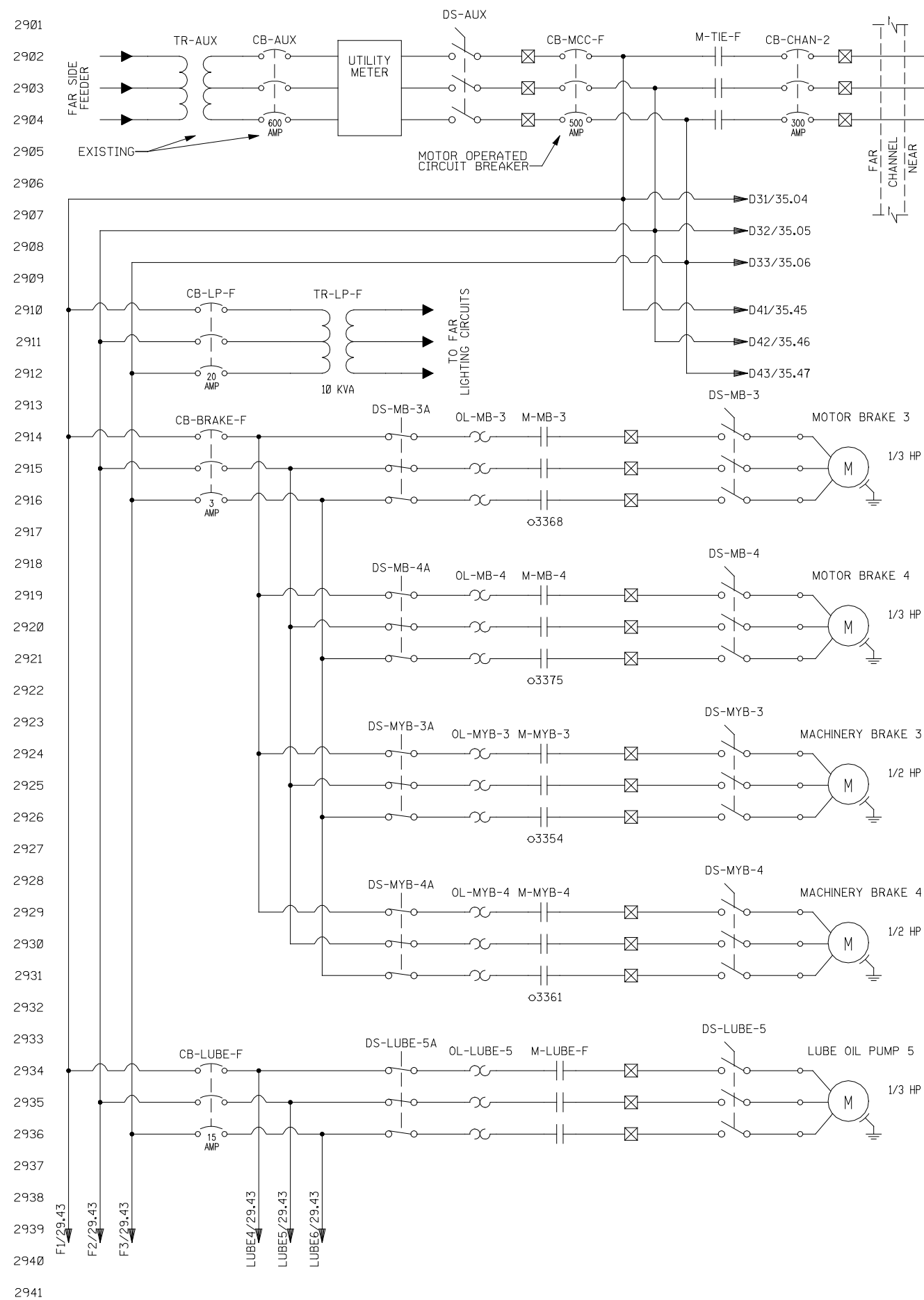


STATE PROJECT NUMBER

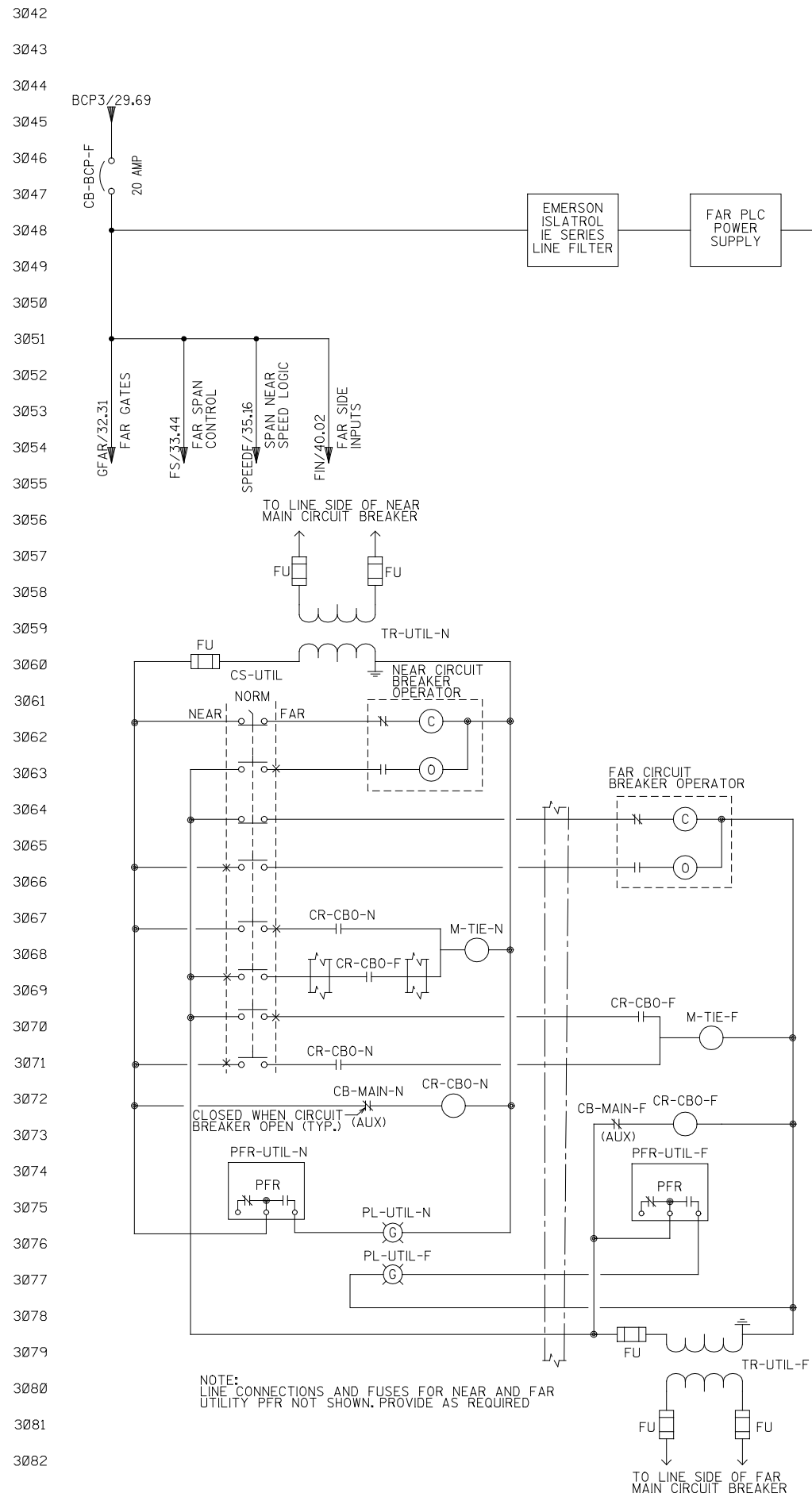
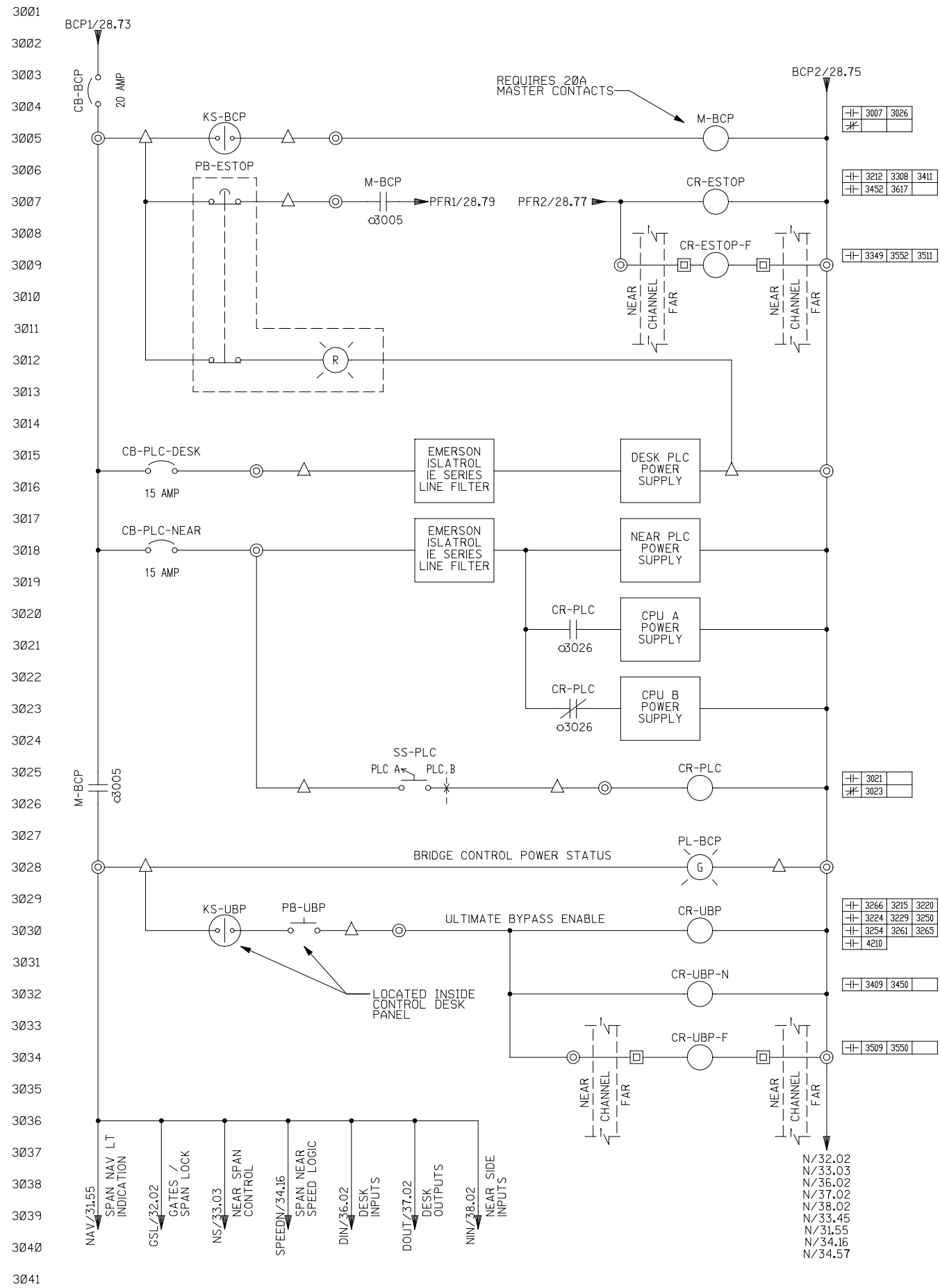
9210-14-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
POWER WIRING DIAGRAM NEAR SIDE		SHEET 28 OF 44	
		66	

8



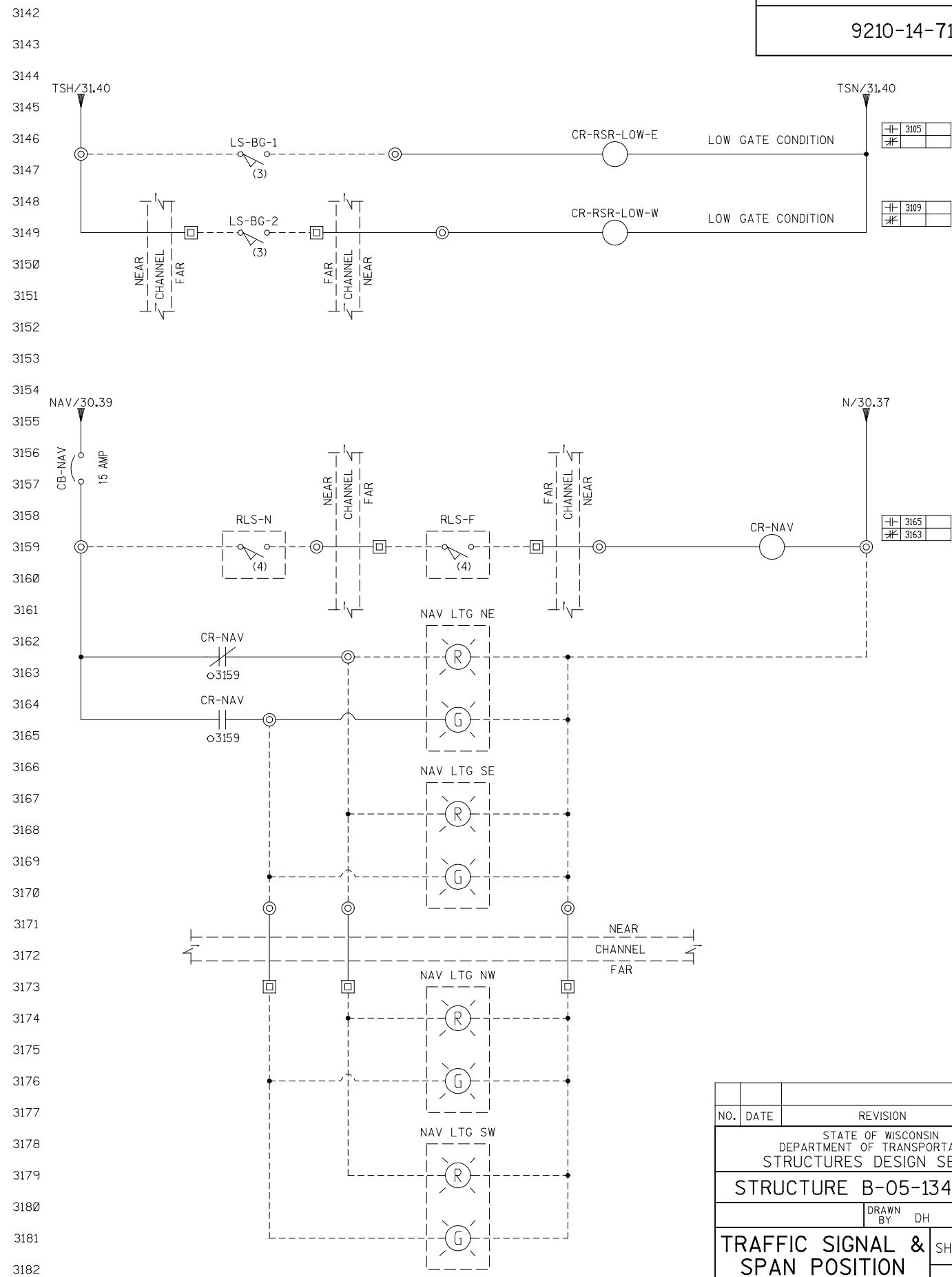
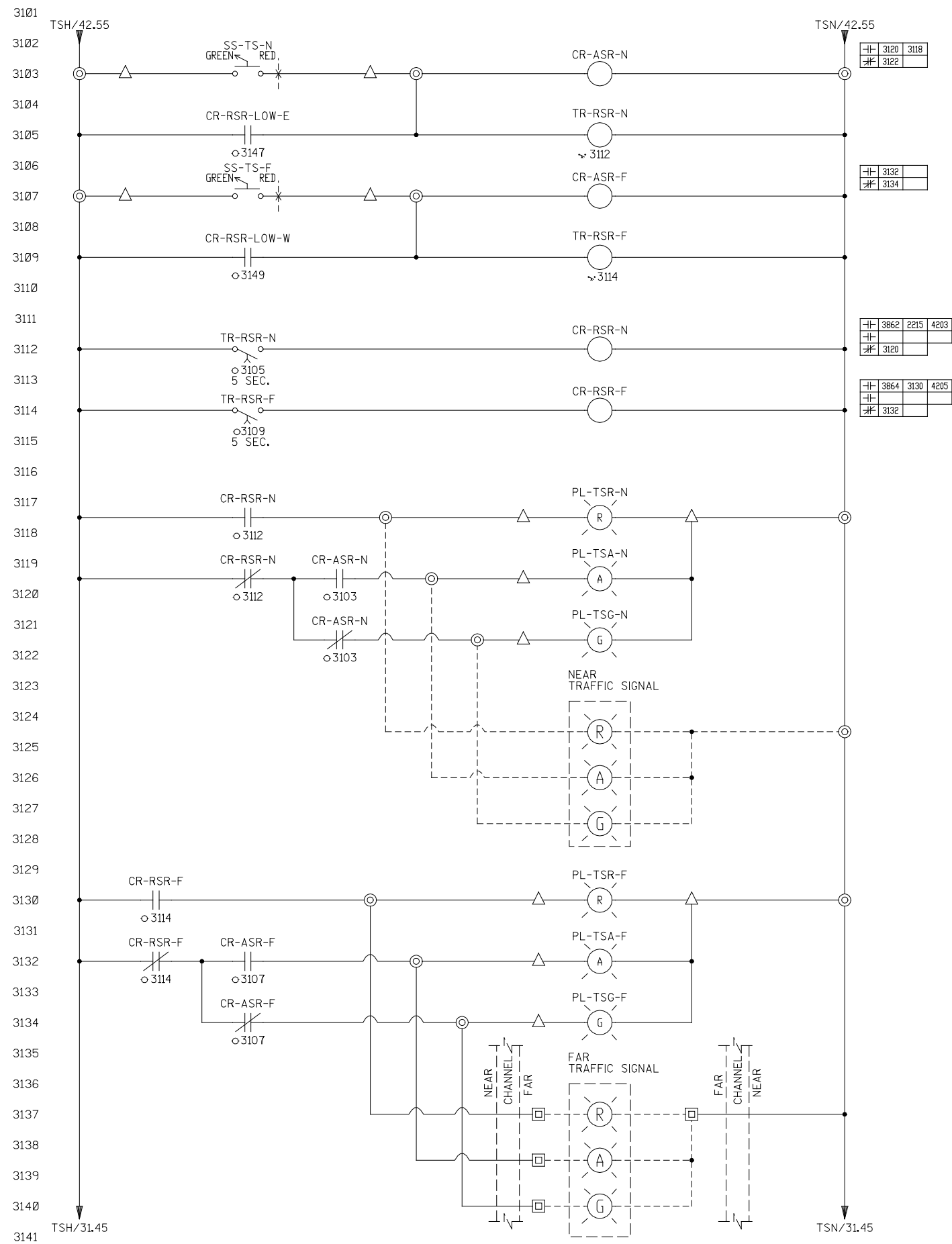
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		DH	PLANS CK'D. AHN
POWER WIRING DIAGRAM FAR SIDE			SHEET 29 OF 44
			67



BCP4/29.71
NFAR/40.02
NFAR/32.31
NFAR/35.16
NFAR/35.59

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
BRIDGE POWER LOGIC		SHEET 30 OF 44	
		68	

8



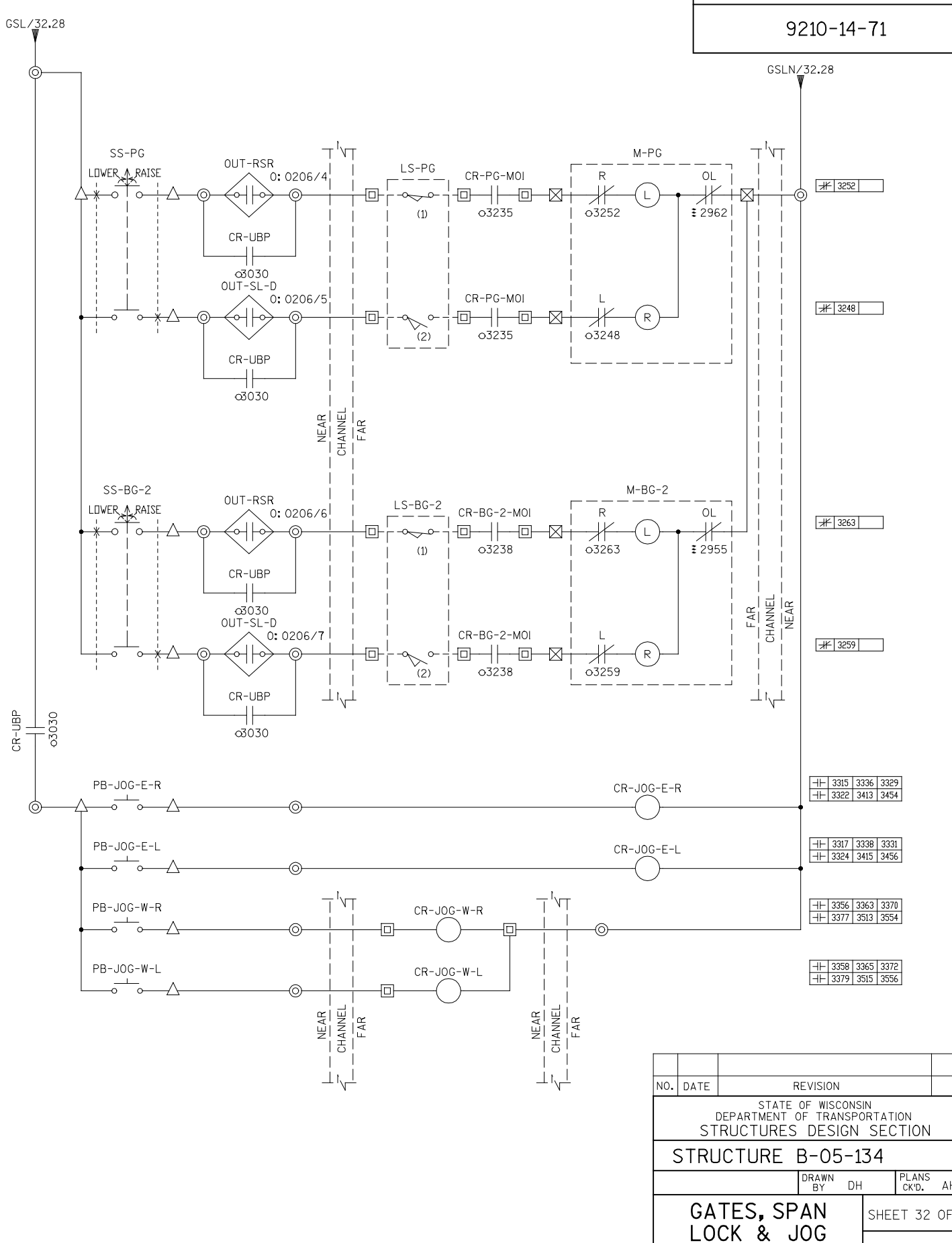
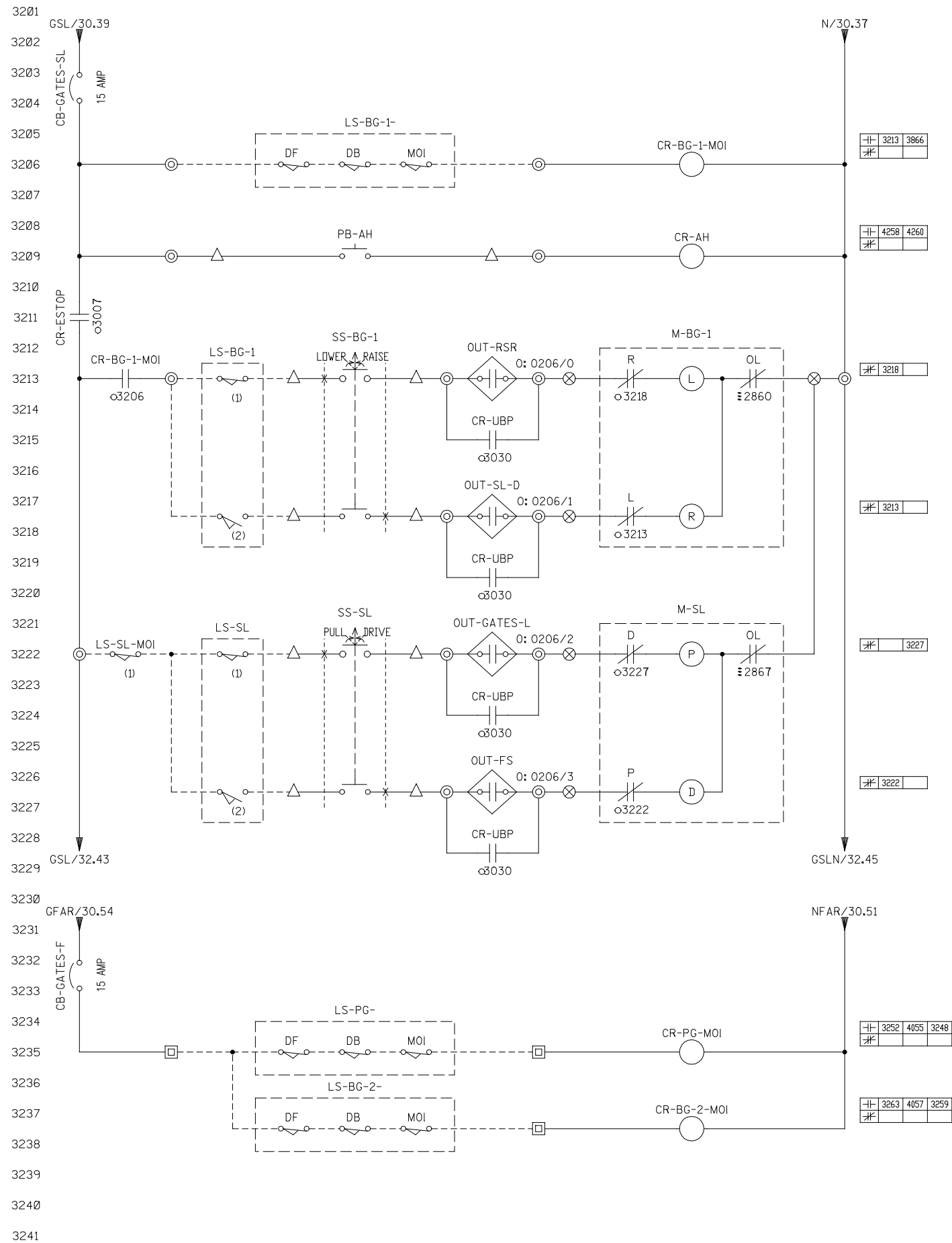
STATE PROJECT NUMBER

9210-14-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
TRAFFIC SIGNAL & SPAN POSITION LOGIC			SHEET 31 OF 44
			69

8

8



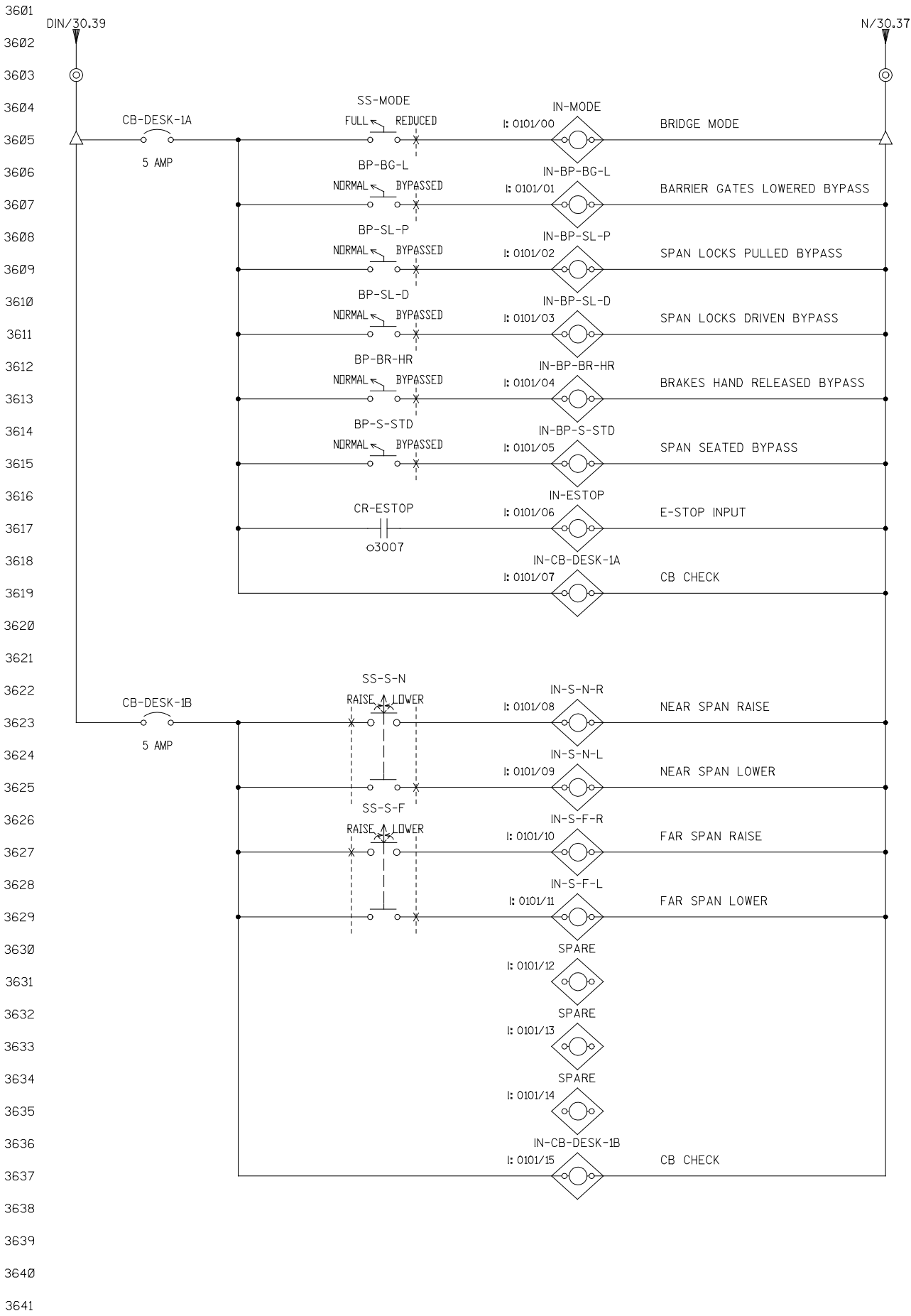
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9210-14-71			
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3252			
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3317 3338 3331			
3324 3415 3456			
3356 3363 3370			
3377 3513 3554			
3358 3365 3372			
3379 3515 3556			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
GATES, SPAN LOCK & JOG CONTROL LOGIC		SHEET 32 OF 44	
		70	

8

72

73

8



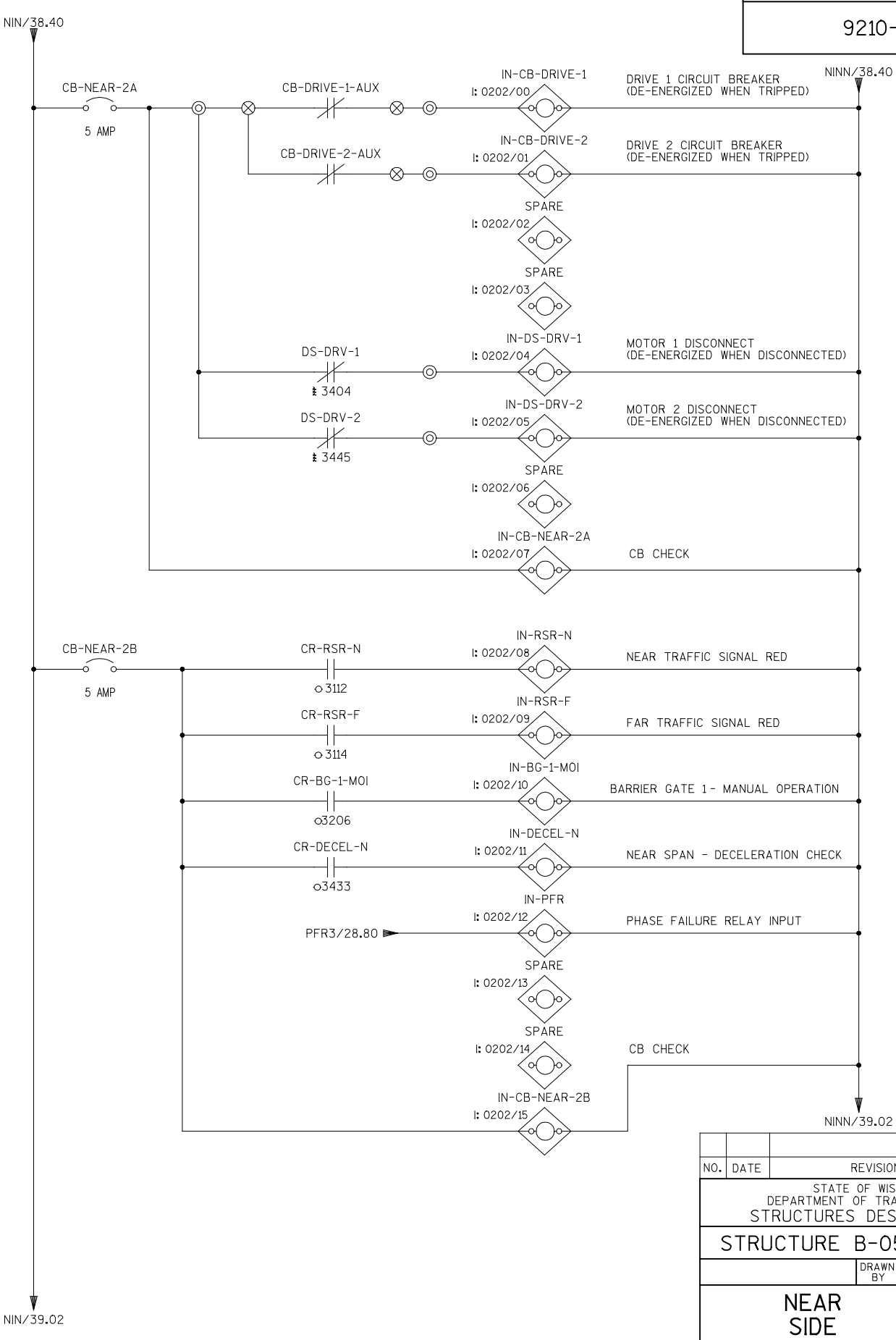
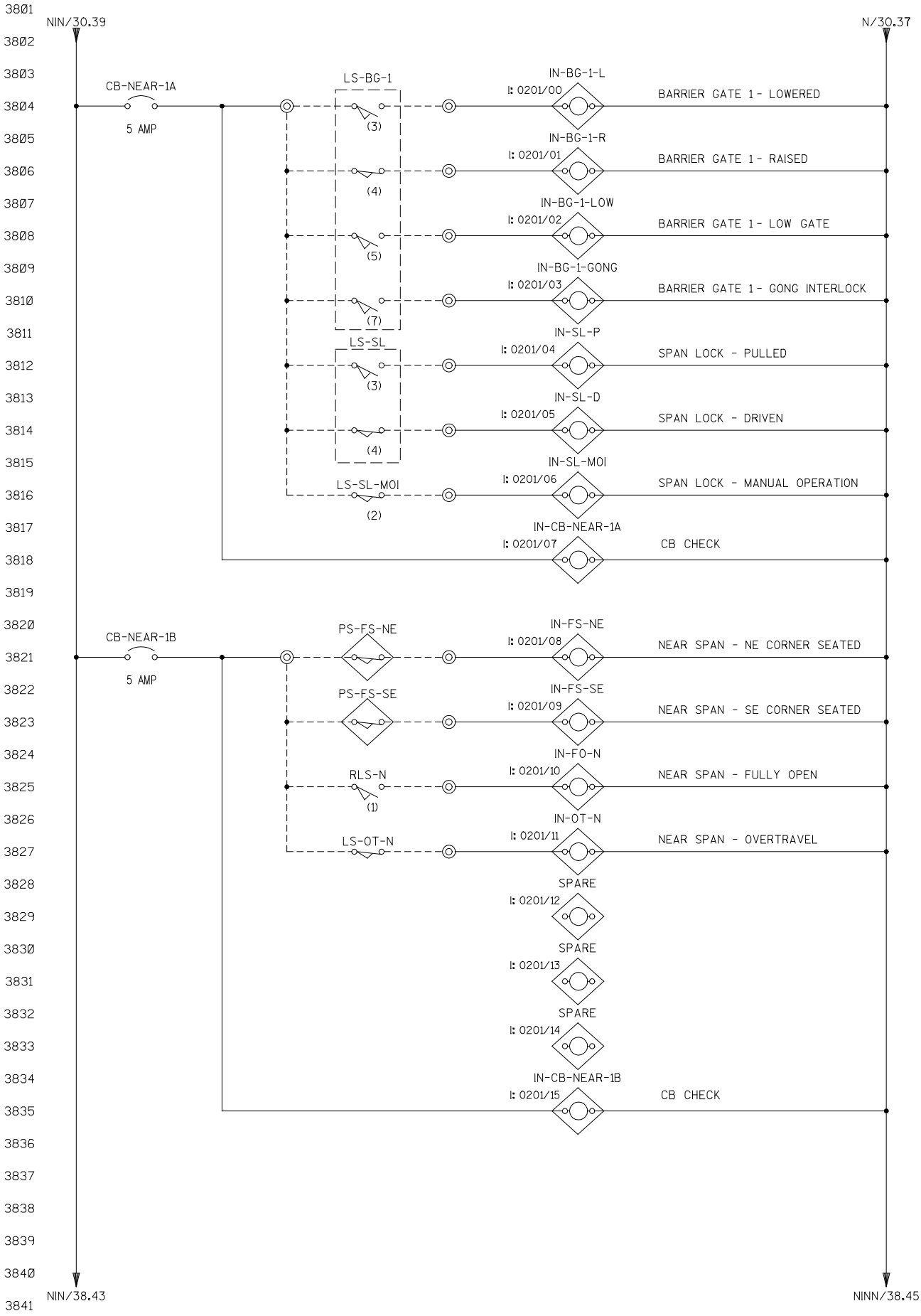
STATE PROJECT NUMBER

9210-14-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
DESK INPUTS		SHEET 36 OF 44	
		74	

8

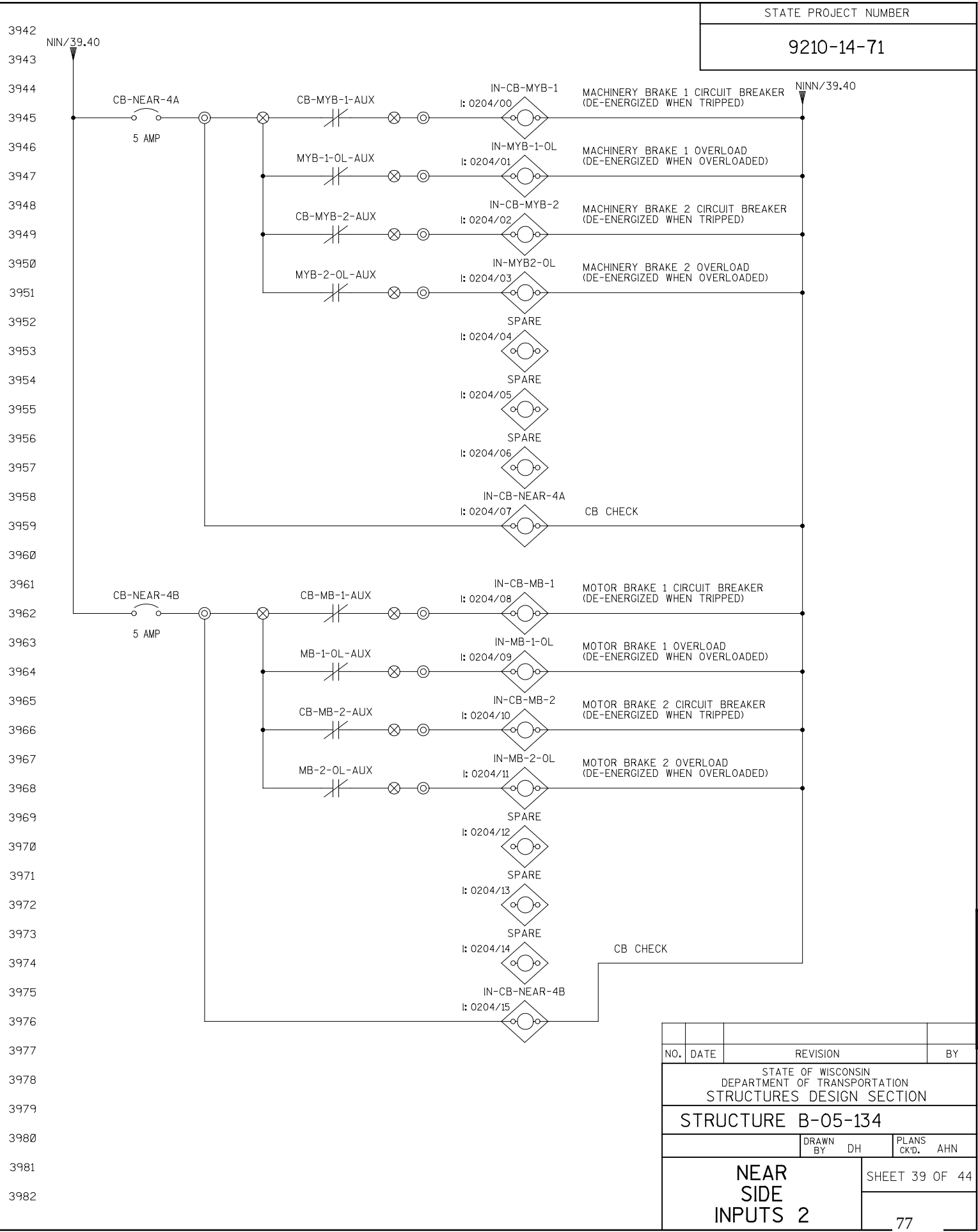
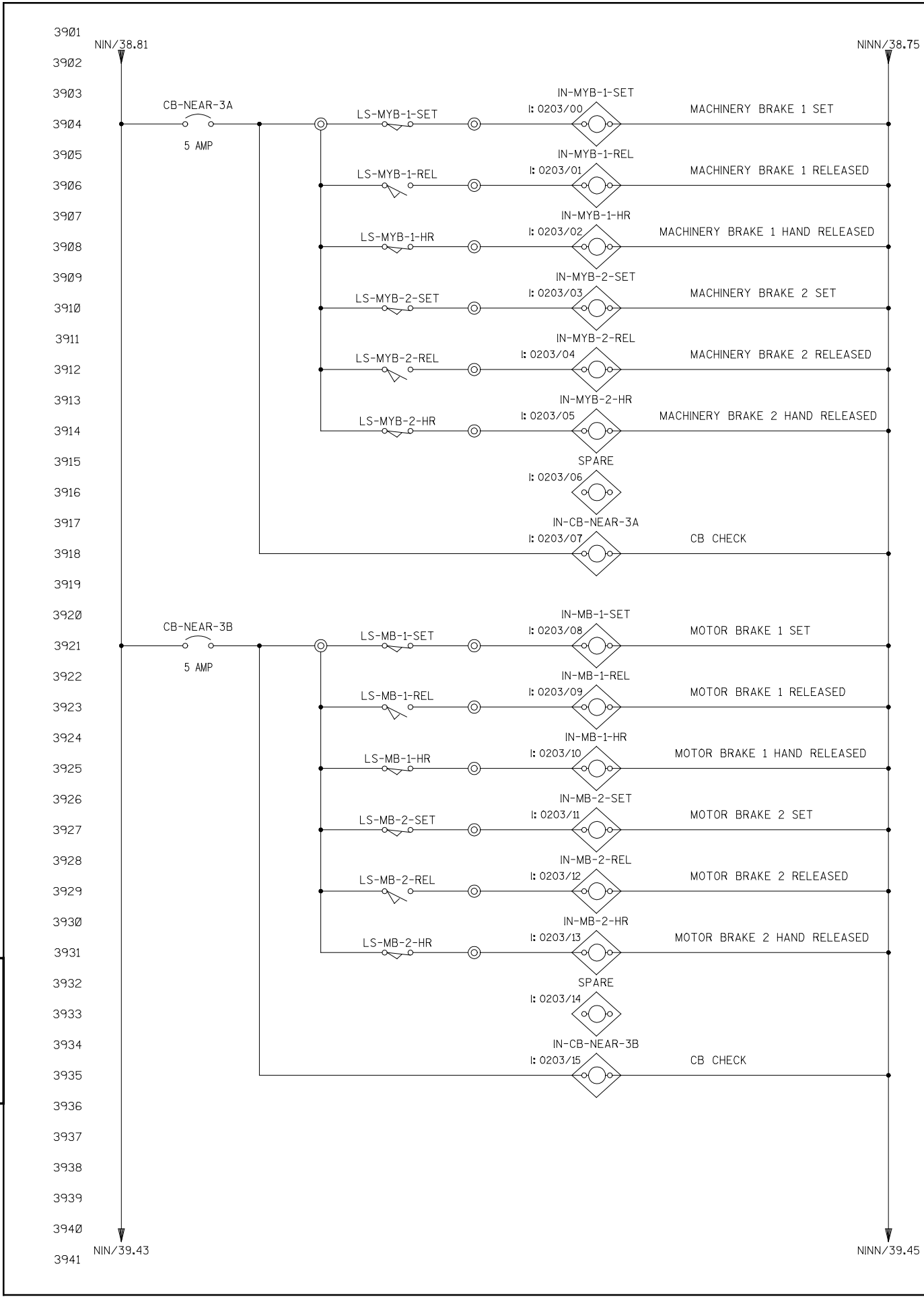
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STATE PROJECT NUMBER			
9210-14-71			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
NEAR SIDE INPUTS 1			SHEET 38 OF 44
			76

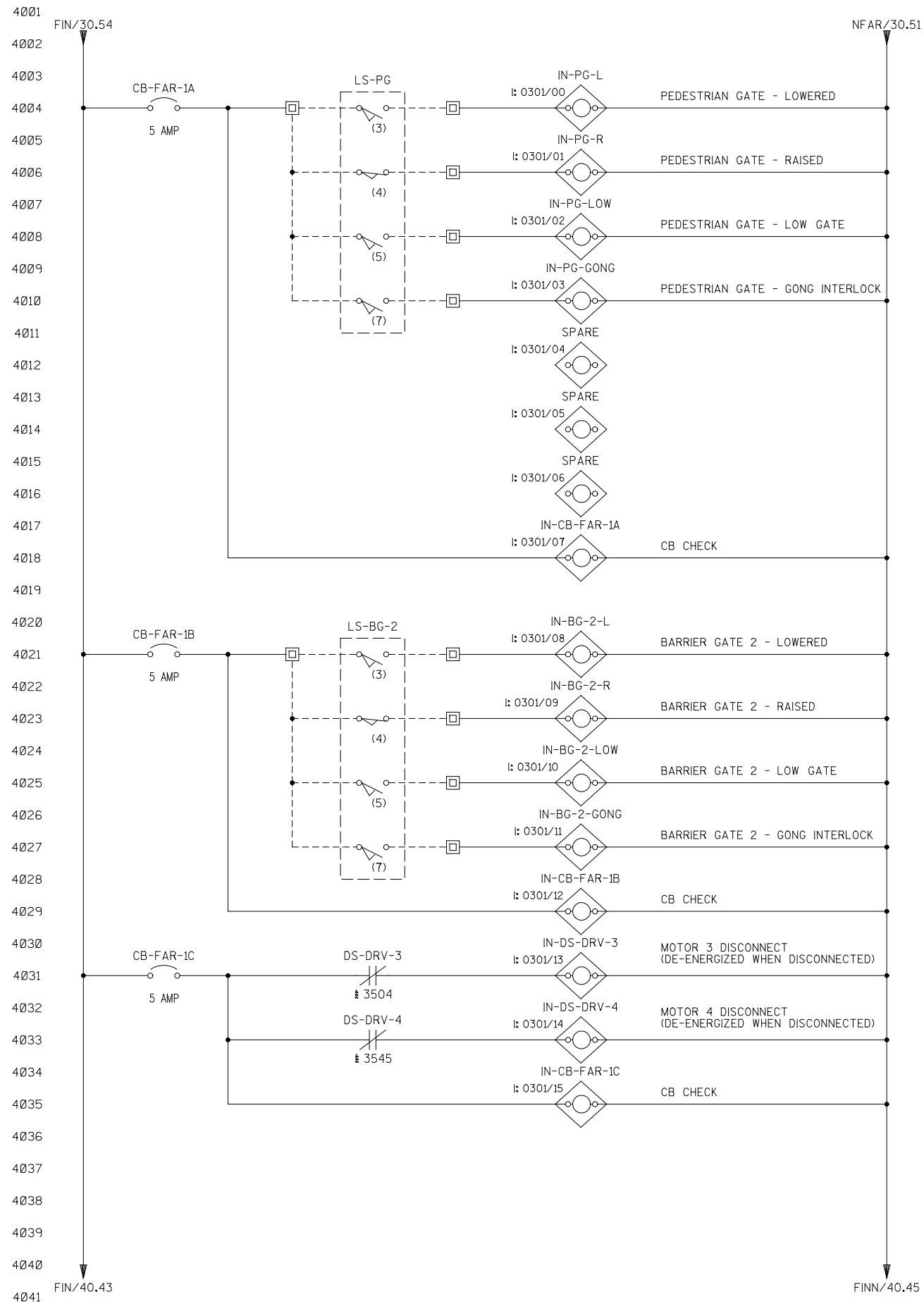
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STATE PROJECT NUMBER			
9210-14-71			
NIN/39.40			
MACHINERY BRAKE 1 CIRCUIT BREAKER (DE-ENERGIZED WHEN TRIPPED)			
MACHINERY BRAKE 1 OVERLOAD (DE-ENERGIZED WHEN OVERLOADED)			
MACHINERY BRAKE 2 CIRCUIT BREAKER (DE-ENERGIZED WHEN TRIPPED)			
MACHINERY BRAKE 2 OVERLOAD (DE-ENERGIZED WHEN OVERLOADED)			
SPARE			
SPARE			
SPARE			
IN-CB-NEAR-4A			
CB CHECK			
MOTOR BRAKE 1 CIRCUIT BREAKER (DE-ENERGIZED WHEN TRIPPED)			
MOTOR BRAKE 1 OVERLOAD (DE-ENERGIZED WHEN OVERLOADED)			
MOTOR BRAKE 2 CIRCUIT BREAKER (DE-ENERGIZED WHEN TRIPPED)			
MOTOR BRAKE 2 OVERLOAD (DE-ENERGIZED WHEN OVERLOADED)			
SPARE			
SPARE			
SPARE			
IN-CB-NEAR-4B			
CB CHECK			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. AHN	
NEAR SIDE INPUTS 2		SHEET 39 OF 44	
		77	

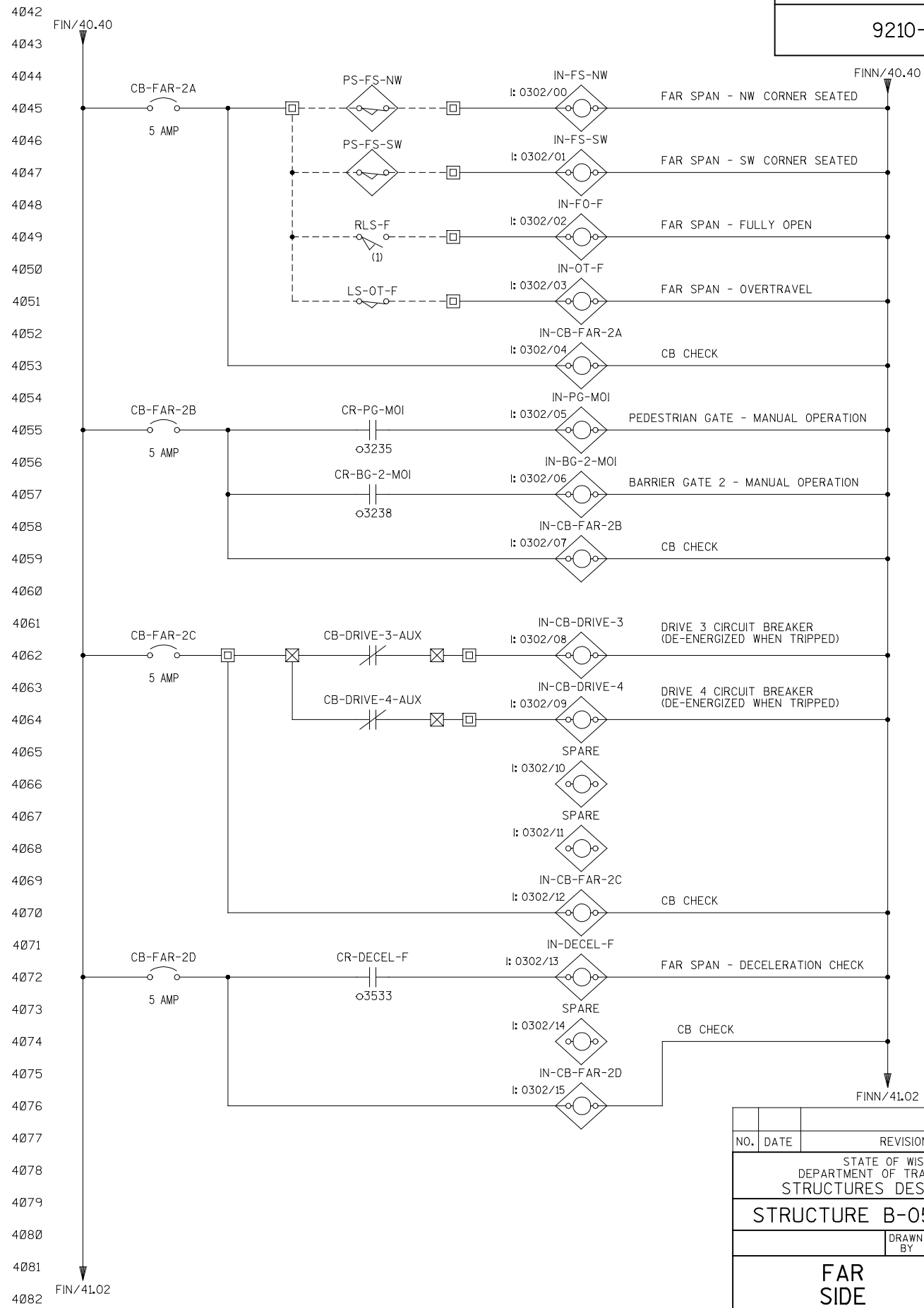
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STATE PROJECT NUMBER

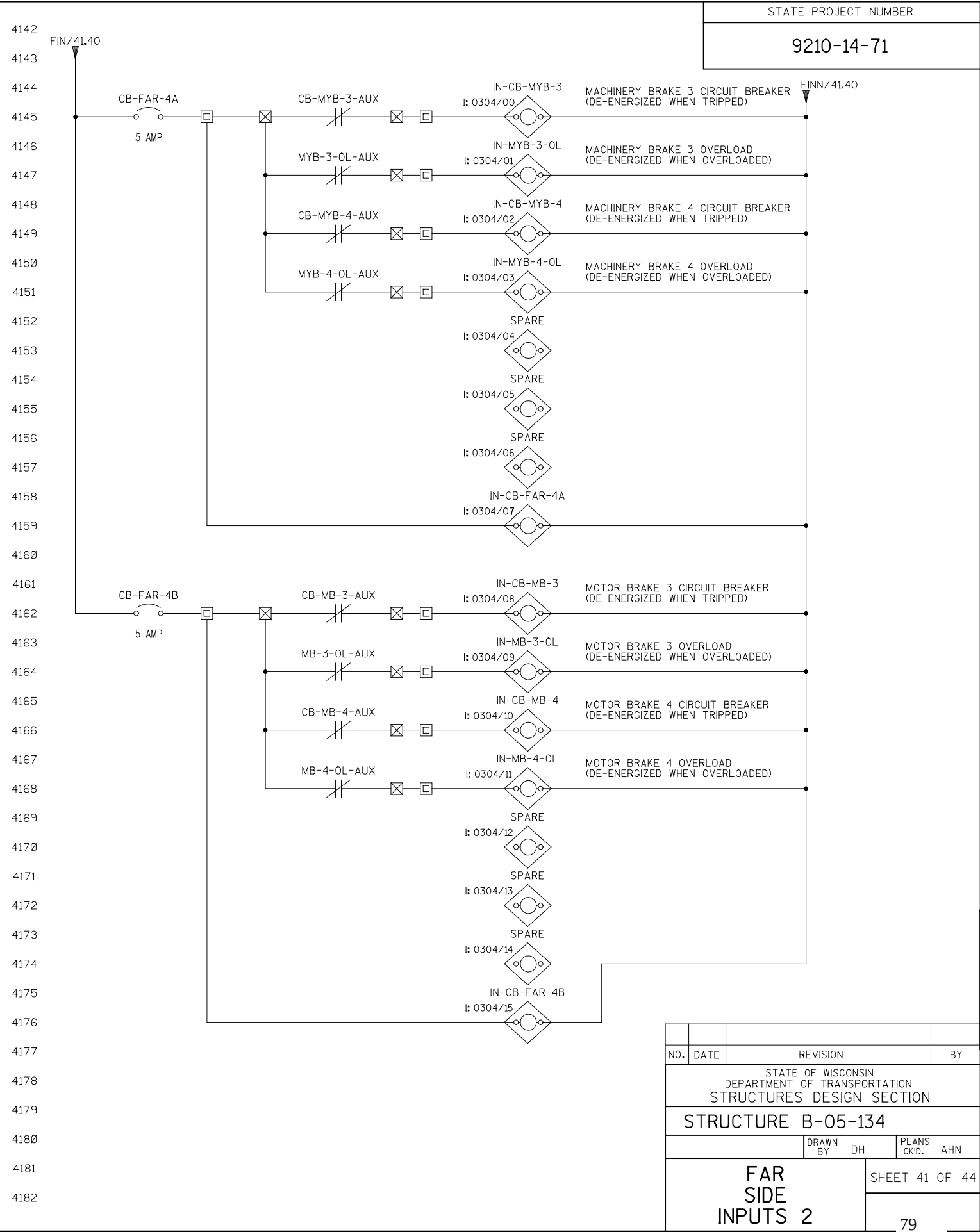
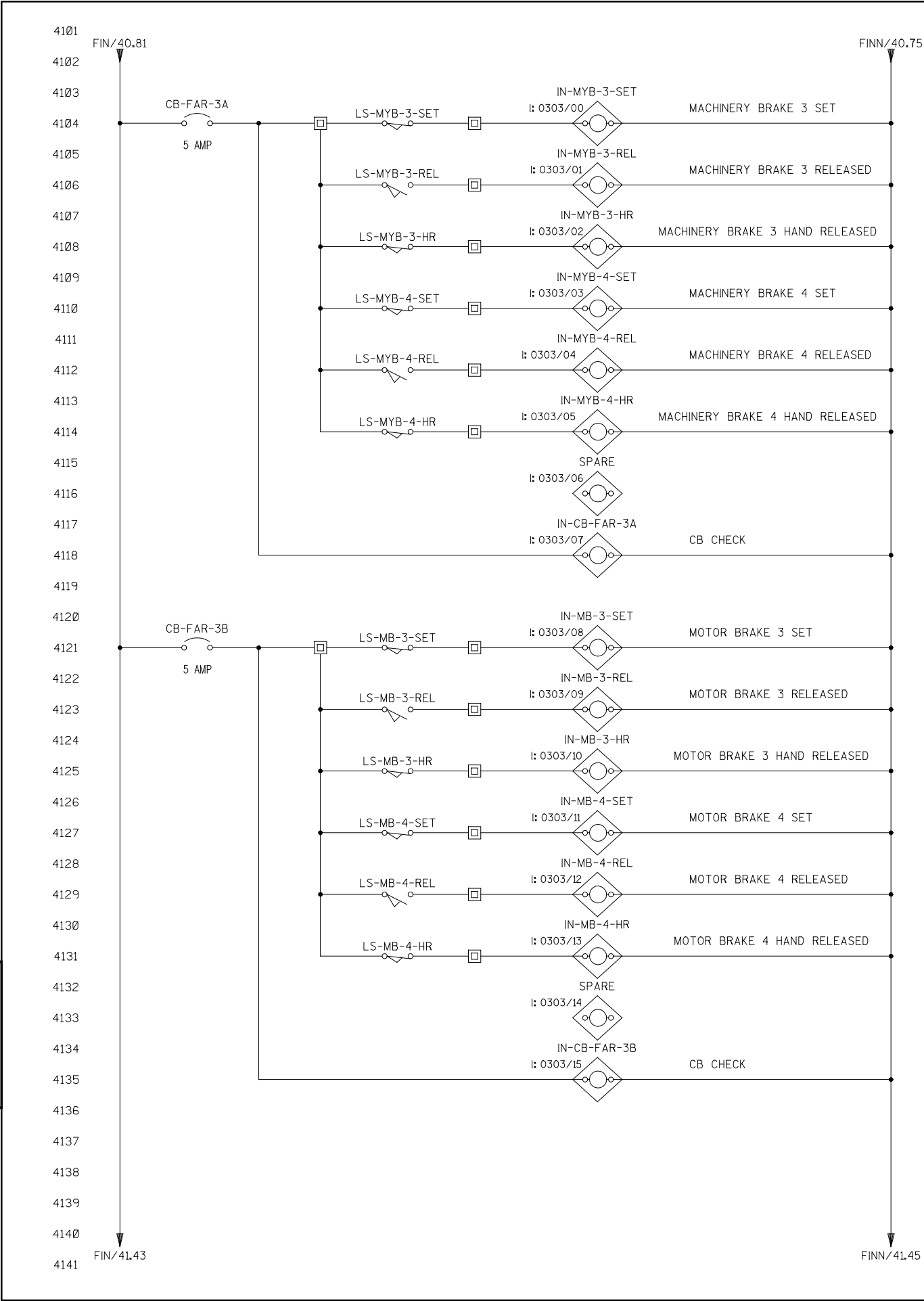
9210-14-71



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		DH	PLANS CK'D. AHN
FAR SIDE INPUTS 1			SHEET 40 OF 44
			78

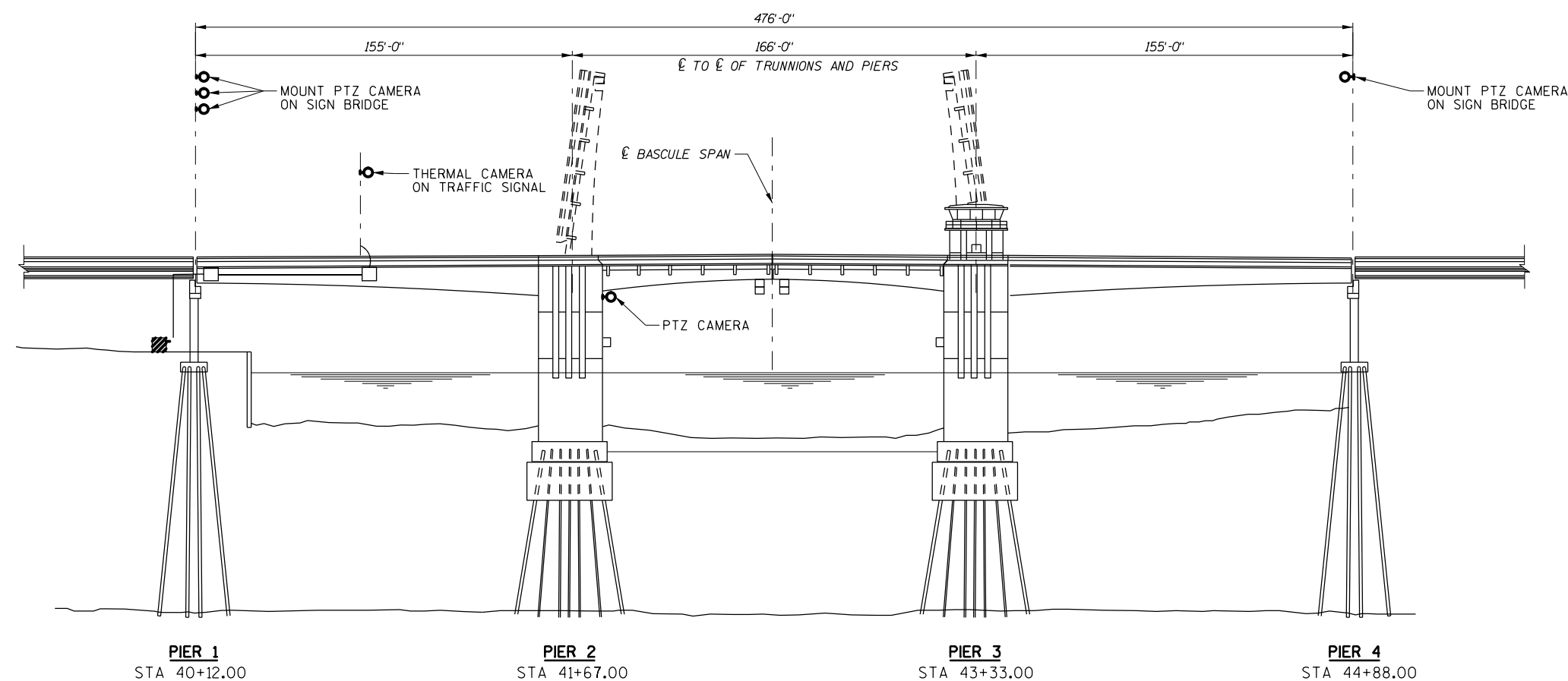
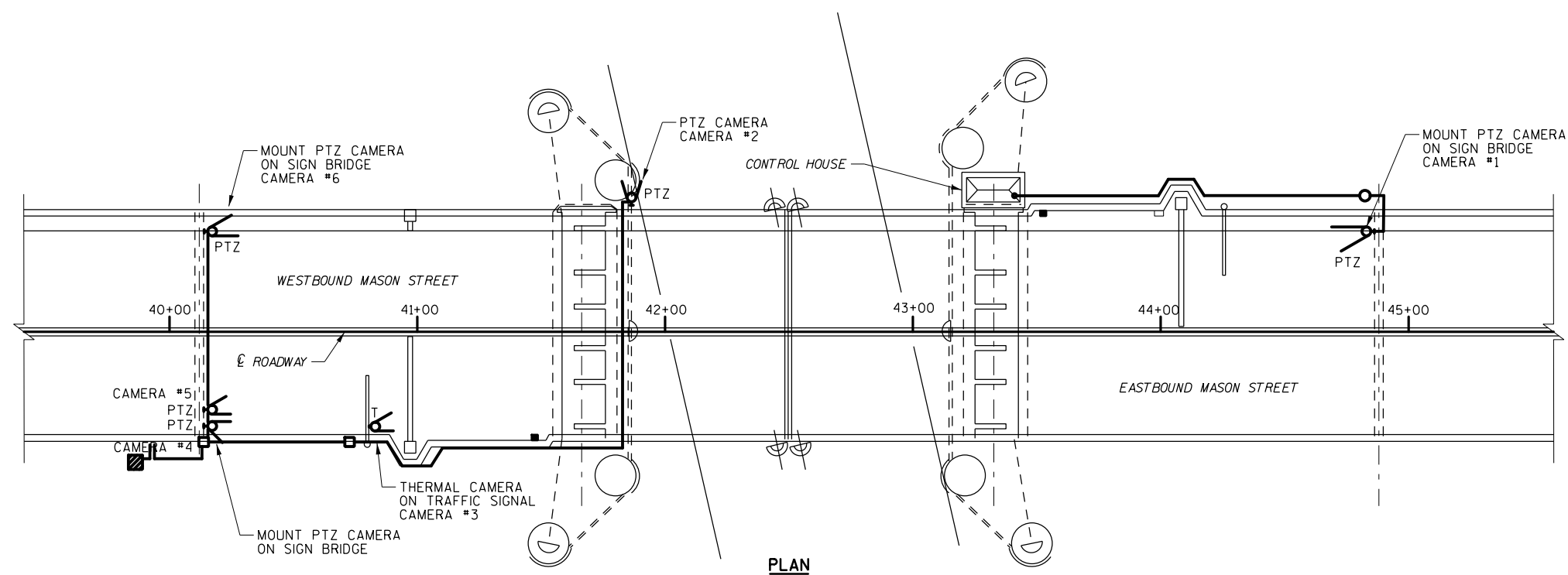
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STATE PROJECT NUMBER			
9210-14-71			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY		DH	PLANS CK'D. AHN
FAR SIDE INPUTS 2			SHEET 41 OF 44
			79

8



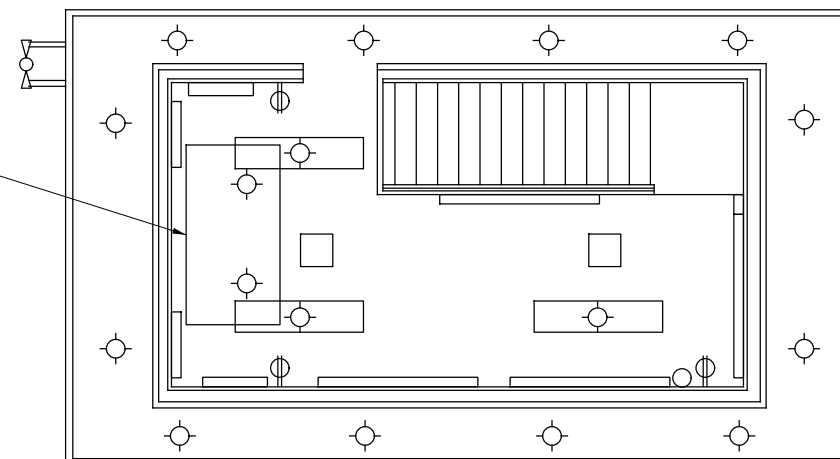
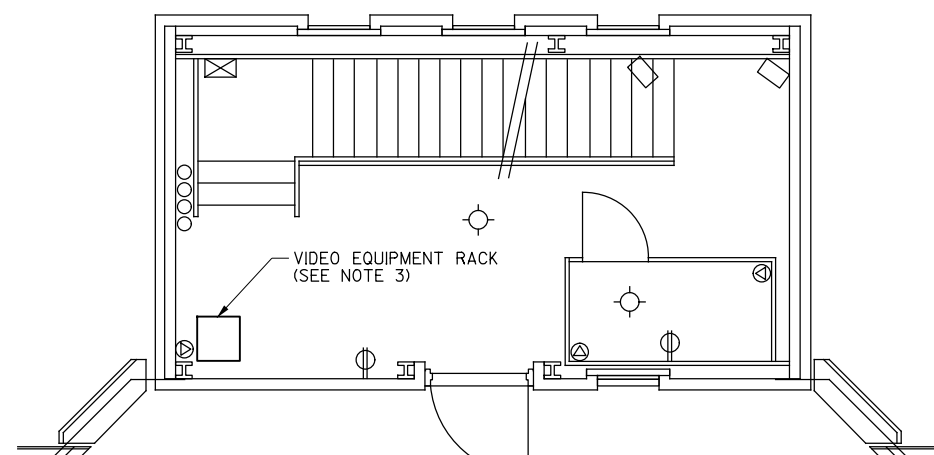
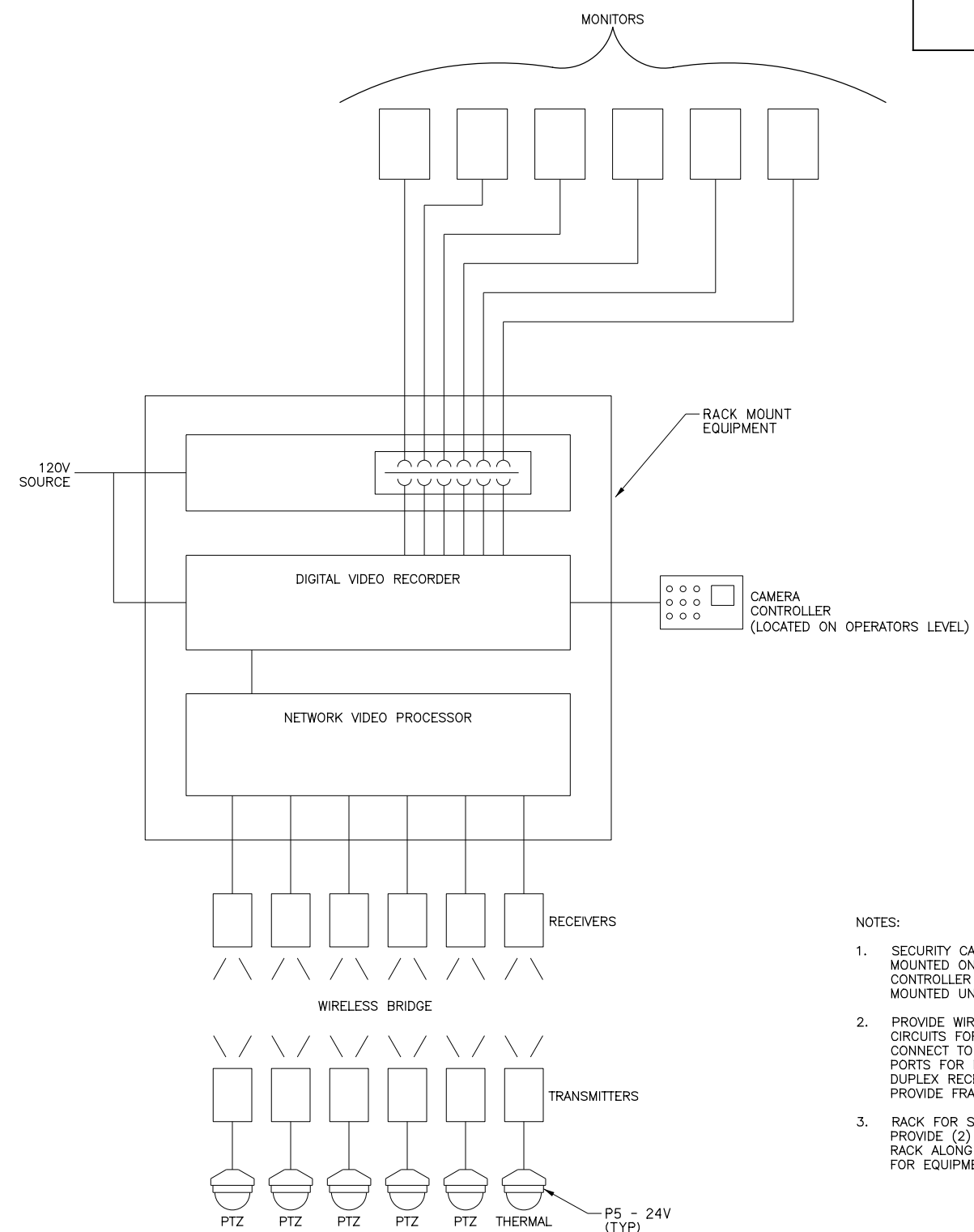
MASON STREET BRIDGE CCTV LAYOUT

N.T.S

NOTES:

1. PROVIDE UTILITY SERVICE AND 30A/3P FUSIBLE DISCONNECT SWITCH NEMA 4X AND EXTEND CIRCUIT TO CAMERAS ON SIGN, BRIDGE, TRAFFIC SIGNAL POLE AND ON BRIDGE STRUCTURE TRANSFORM POWER TO 24V FOR CAMERAS.
2. PROVIDE CIRCUIT FROM PANELBOARD IN BRIDGE TOWER AND EXTEND FEEDER TO CAMERA MOUNTED ON SIGN BRIDGE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. DS	
MASON STREET CCTV LAYOUT			SHEET 43 OF 44
			81

NEW CONTROL DESK
(SEE NOTE 1 & 2)**OPERATORS FLOOR****ENTRANCE FLOOR**

NOTES:

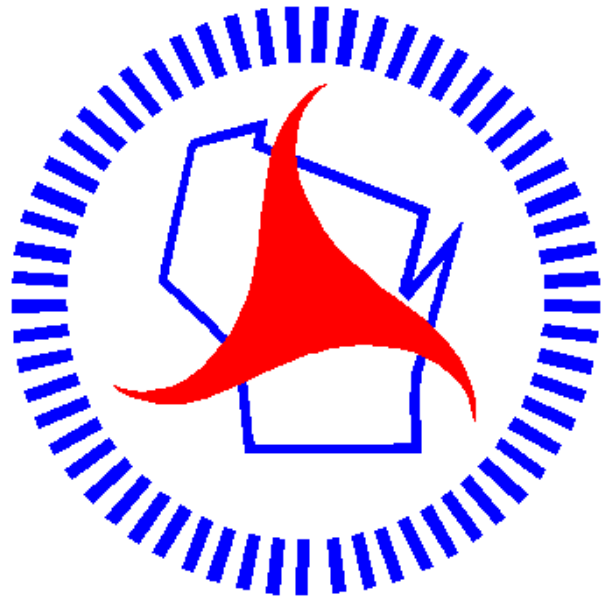
1. SECURITY CAMERA MONITORS AND KEYBOARD MOUNTED ON TOP OF THE CONTROL DESK. CONTROLLER MOUNTED ON DESKTOP AND PC TOWER MOUNTED UNDER THE DESK.
2. PROVIDE WIREMOLD 4000 WITH (2) 120 VOLT, 20 A CIRCUITS FOR MONITORS AND WORKSTATION. CONNECT TO PANELBOARD IN SPACE. PROVIDE DATA PORTS FOR MONITORS TO PLUG INTO. PROVIDE DUPLEX RECEPTACLES ONE FOOT ON CENTER. PROVIDE FRAME FOR 6 MONITORS.
3. RACK FOR SECURITY CAMERA CONTROL EQUIPMENT. PROVIDE (2) 120 VOLT, 20A/1P CIRCUITS TO THE RACK ALONG WITH PLUG-IN STRIPS IN THE RACK FOR EQUIPMENT CONNECTIONS.

MASON STREET VIDEO CONNECTION DIAGRAM

N.T.S.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-05-134			
DRAWN BY DH		PLANS CK'D. DS	
OPERATOR HOUSE LAYOUT & VIDEO DIAGRAM			SHEET 44 OF 44
			82

Notes



Wisconsin Department of Transportation

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