NWL

APRIL 2017

PROJECT ID: 7995-02-46

COUNTY: EAU CLAIRE

33

ORDER OF SHEETS

TOTAL SHEETS =

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CITY OF EAU CLAIRE, GRAND AVENUE

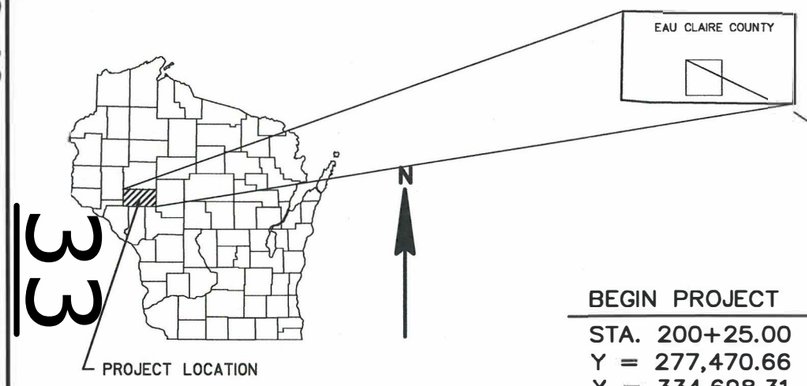
HALF MOON LAKE BRIDGE B-18-0230

LOC STR

EAU CLAIRE COUNTY

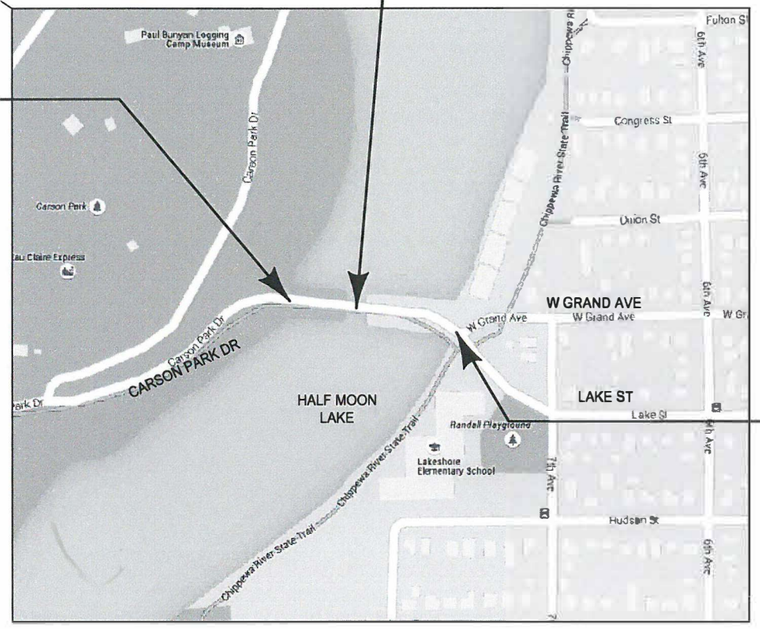
STATE PROJECT NUMBER
7995-02-46

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7995-02-46		



BEGIN PROJECT
STA. 200+25.00
Y = 277,470.66
X = 334,698.31

STRUCTURE B-18-0230



END PROJECT
STA. 206+25.00

DESIGN DESIGNATION

A.A.D.T.	(2017)	= 1,800
A.A.D.T.	(2037)	= 2,100
D.H.V.		= 180
D.D.		= 59/41
T.		= 3.3%
DESIGN SPEED		= 30 MPH
ESALS		= 94,900

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	
PROPERTY LINE		ORIGINAL GROUND	
LOT LINE		MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT		SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY		GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE		CULVERT (Profile View)	
SLOPE INTERCEPT		UTILITIES	
REFERENCE LINE		ELECTRIC	E
EXISTING CULVERT		FIBER OPTIC	FO
PROPOSED CULVERT (Box or Pipe)		GAS	G
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	SAN
		STORM SEWER	SS
		TELEPHONE	T
MARSH AREA		WATER	W
		UTILITY PEDESTAL	
		POWER POLE	
WOODED OR SHRUB AREA		TELEPHONE POLE	

LAYOUT
SCALE 0 500 FT

TOTAL NET LENGTH OF CENTERLINE = 0.114 MI

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

ACCEPTED FOR
City of Eau Claire
10/24/16 Date
City Engineer

ORIGINAL PLANS PREPARED BY

AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER

DATE 10/24/2016

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	CITY OF EAU CLAIRE
Designer	AYRES ASSOCIATES INC
Management Consultant	KNIGHT E/A INC.
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 10/28/16
(Management Consultant Signature)

E

GENERAL NOTES

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

COORDINATES AND BEARINGS ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), EAU CLAIRE COUNTY, NAD83/2011 ADJUSTMENT. THE COORDINATES SHOWN ARE X,Y COORDINATES AND ARE USED AS GRID OR GROUND VALUES.

PLAN ELEVATIONS ARE REFERENCED TO NGVD88 (2012).

EROSION CONTROL FEATURES ARE AT SUGGESTED LOCATIONS AS SHOWN IN THE PLANS. EXACT LOCATIONS ARE TO BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY AND WASTE AREAS, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 110 LBS/SY-IN.

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

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

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 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP- TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE- TURF			.25 .32			.27 .34			.28 .36			.30 .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 = 3.22 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.82 ACRES

UTILITY CONTACTS

AT&T WISCONSIN - DISTRIBUTION

RICK PODOLAK
304 S DEWEY STREET
EAU CLAIRE, WI 54701
(715) 839-5565
RP4514@ATT.COM

CHARTER - COMMUNICATION

SHANE YODER
1201 McCANN DRIVE
ALTOONA, WI 54720
(715) 831-8940
SHANE.YODER@CHARTER.COM

XCEL ENERGY

DAN KLEIN
1414 W HAMILTON AVENUE
P.O. BOX 8
EAU CLAIRE, WI 54702
(715) 737-4205
DANIEL.J.KLEIN@XCELENERGY.COM

CITY OF EAU CLAIRE - UTILITIES

JEFF PIPPENGER
1040 FOREST STREET
EAU CLAIRE, WI 54701
(715) 839-5045
JEFF.PIPPENGER@CI.EAU-CLAIRE.WI.US

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

OTHER CONTACTS

PROJECT DESIGNER - AYRES ASSOCIATES

DAN SYDOW
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701-7500
(715) 834-7593
SYDOWDL@AYRESASSOCIATES.COM

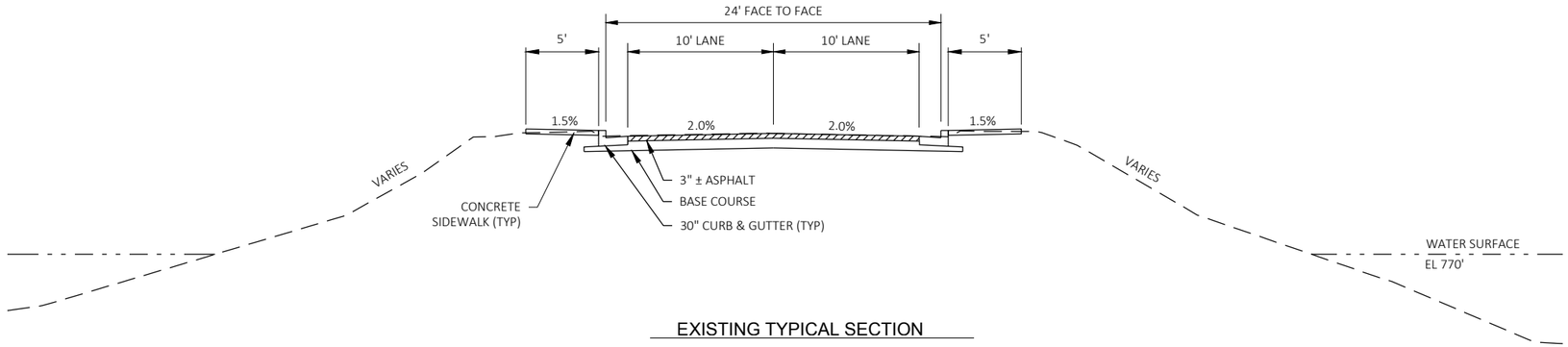
WDNR WEST CENTRAL REGION

CHRIS WILLGER
1300 CLAIREMONT AVENUE
EAU CLAIRE, WI 54702
(715) 839-1609
CHRISTOPHERJ.WILLGER@WISCONSIN.GOV

CITY OF EAU CLAIRE

DAVID SOLBERG
203 S FARWELL STREET
EAU CLAIRE, WI 54701
(715) 684-2914
DAVE.SOLBERG@EAUCLAIREWI.GOV

2

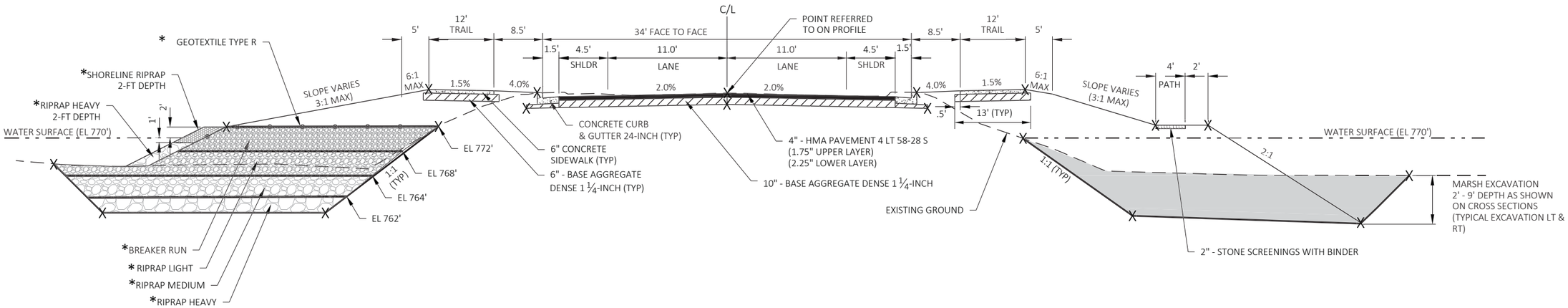


EXISTING TYPICAL SECTION

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	TYPICAL SECTIONS	SHEET 3	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0203_TS.DWG
LAYOUT NAME - 0203_TS-01
PLOT DATE : 10/14/2016 12:08 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2



NOTES:

* BACKFILL MATERIALS ARE TYPICAL FOR LT & RT EMBANKMENTS

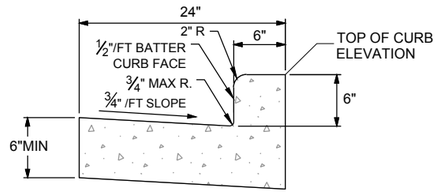
X POINT REFERENCED TO ON CROSS SECTION

EROSION CONTROL AND TOPSOIL SURFACE TREATMENTS ARE SHOWN ON THE LANDSCAPE PLANS

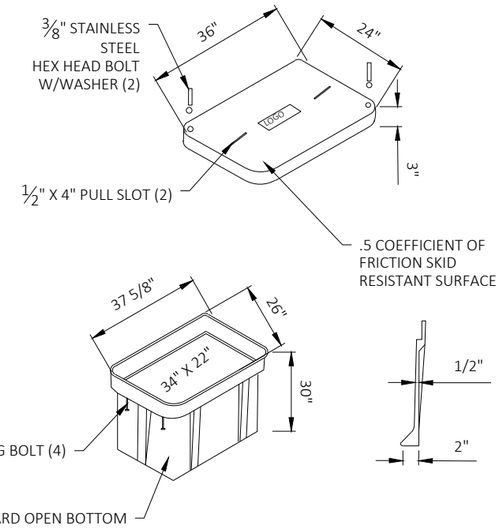
FINISHED TYPICAL SECTION

(STA 200+25.00 TO STA 202+44.72)
(STA 202+92.88 TO STA 206+25.00)

2

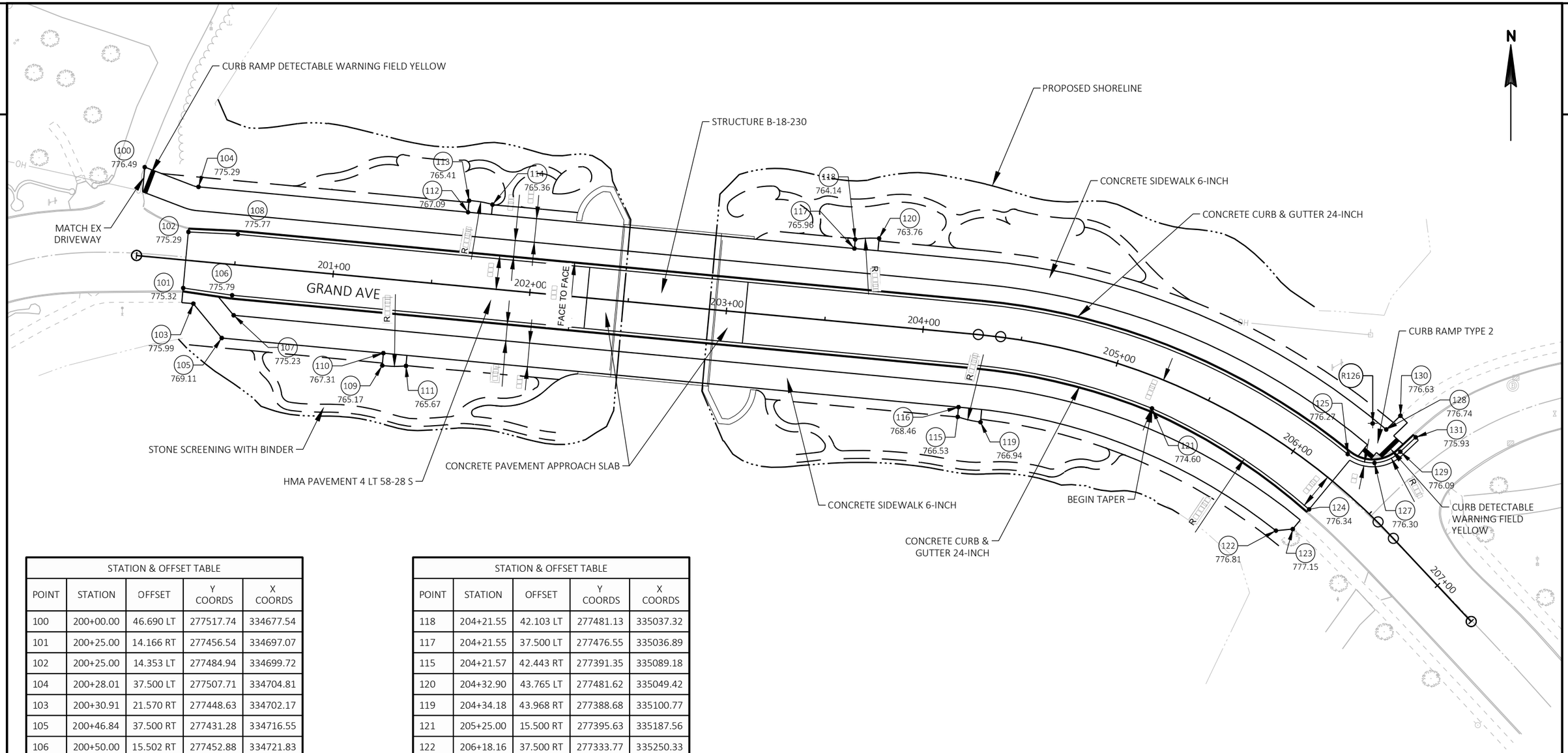


CONCRETE CURB AND GUTTER 24-INCH



CINC PULLBOX

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CONSTRUCTION DETAILS	SHEET 5	E



STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
100	200+00.00	46.690 LT	277517.74	334677.54
101	200+25.00	14.166 RT	277456.54	334697.07
102	200+25.00	14.353 LT	277484.94	334699.72
104	200+28.01	37.500 LT	277507.71	334704.81
103	200+30.91	21.570 RT	277448.63	334702.17
105	200+46.84	37.500 RT	277431.28	334716.55
106	200+50.00	15.502 RT	277452.88	334721.83
108	200+50.00	15.502 LT	277483.75	334724.72
107	200+51.81	25.500 RT	277442.76	334722.62
112	201+29.05	37.500 LT	277494.91	334841.25
110	201+29.05	37.500 RT	277423.60	334798.40
113	201+29.05	43.394 LT	277500.77	334841.80
109	201+29.07	43.779 RT	277417.34	334797.84
114	201+41.05	42.513 LT	277498.78	334853.67
111	201+41.07	42.858 RT	277417.14	334809.87
116	204+21.55	37.500 RT	277396.27	335089.62

STATION & OFFSET TABLE				
POINT	STATION	OFFSET	Y COORDS	X COORDS
118	204+21.55	42.103 LT	277481.13	335037.32
117	204+21.55	37.500 LT	277476.55	335036.89
115	204+21.57	42.443 RT	277391.35	335089.18
120	204+32.90	43.765 LT	277481.62	335049.42
119	204+34.18	43.968 RT	277388.68	335100.77
121	205+25.00	15.500 RT	277395.63	335187.56
122	206+18.16	37.500 RT	277333.77	335250.33
R126	206+22.42	35.500 LT	277388.05	335299.32
125	206+22.42	15.500 LT	277372.53	335286.70
124	206+25.00	18.543 RT	277344.58	335267.10
123	206+25.00	31.500 RT	277334.58	335258.86
128	206+28.90	37.500 LT	277385.00	335306.13
130	206+29.81	47.479 LT	277391.95	335313.37
127	206+34.96	20.835 LT	277368.07	335300.25
129	206+40.46	33.788 LT	277373.77	335313.32
131	206+41.24	44.419 LT	277381.04	335321.12

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	LAYOUT DETAILS	SHEET 6	E

N

EXISTING SHORELINE

PROPOSED SHORELINE

HALF MOON LAKE

LIMITS OF MARSH EXCAVATION

GRAND AVE

201+00

202+00

203+00

204+00

205+00

206+00

207+00

BUCKSHOT MARINER

EXISTING SHORELINE

PROPOSED SHORELINE

HALF MOON LAKE

LIMITS OF MARSH EXCAVATION

NOTES

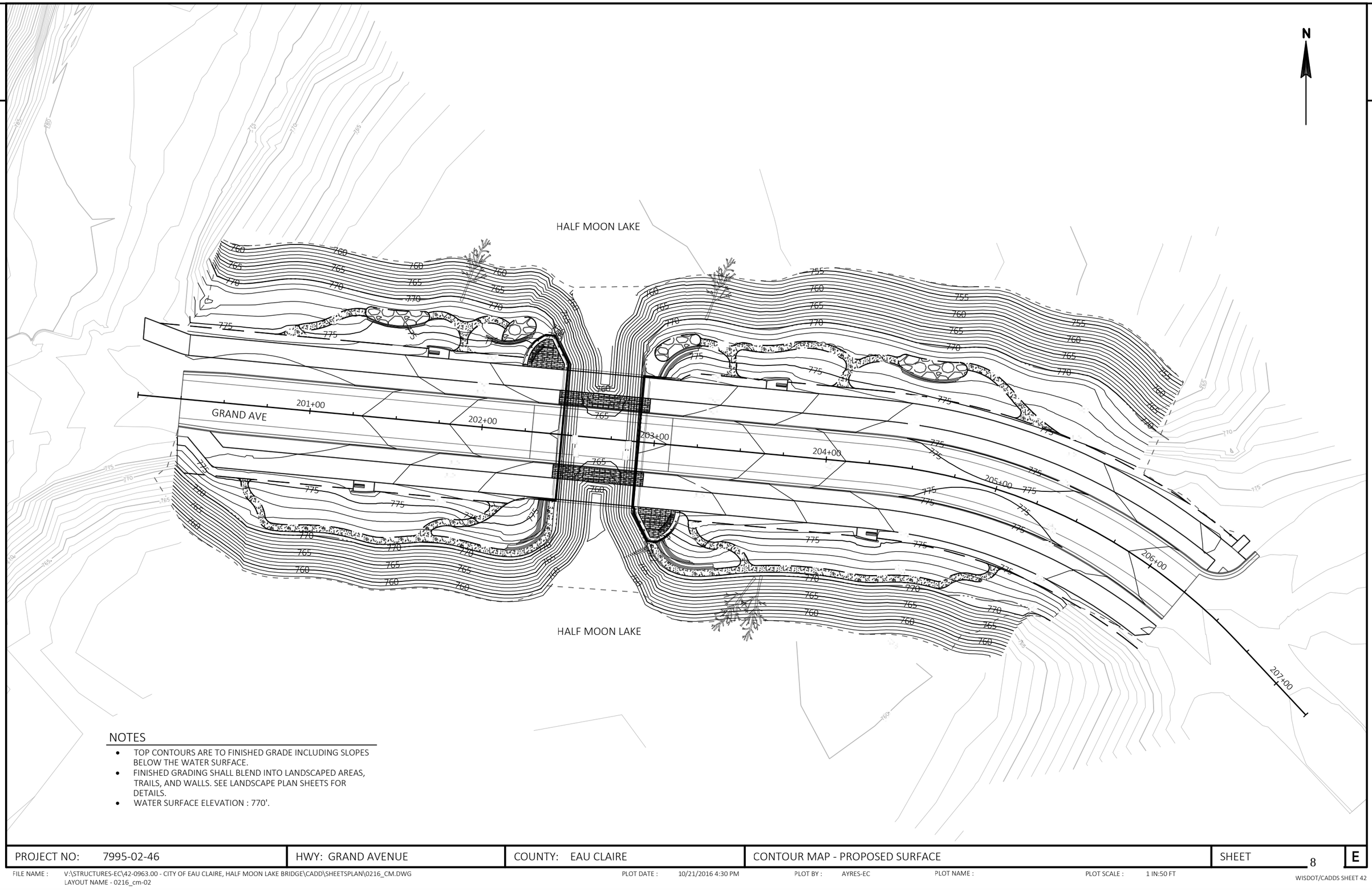
- MARSH EXCAVATION CONTOURS ARE APPROXIMATE EXCAVATION DEPTHS BELOW EXISTING GROUND.
- SEE CROSS SECTIONS FOR STATION AND OFFSETS FOR MARSH EXCAVATION LIMITS.

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CONTOUR MAP - MARSH EXCAVATION	SHEET 7	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0216_CM.DWG
LAYOUT NAME - 0216_cm-01

PLOT DATE : 10/14/2016 12:08 PM PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42



NOTES

- TOP CONTOURS ARE TO FINISHED GRADE INCLUDING SLOPES BELOW THE WATER SURFACE.
- FINISHED GRADING SHALL BLEND INTO LANDSCAPED AREAS, TRAILS, AND WALLS. SEE LANDSCAPE PLAN SHEETS FOR DETAILS.
- WATER SURFACE ELEVATION : 770'.

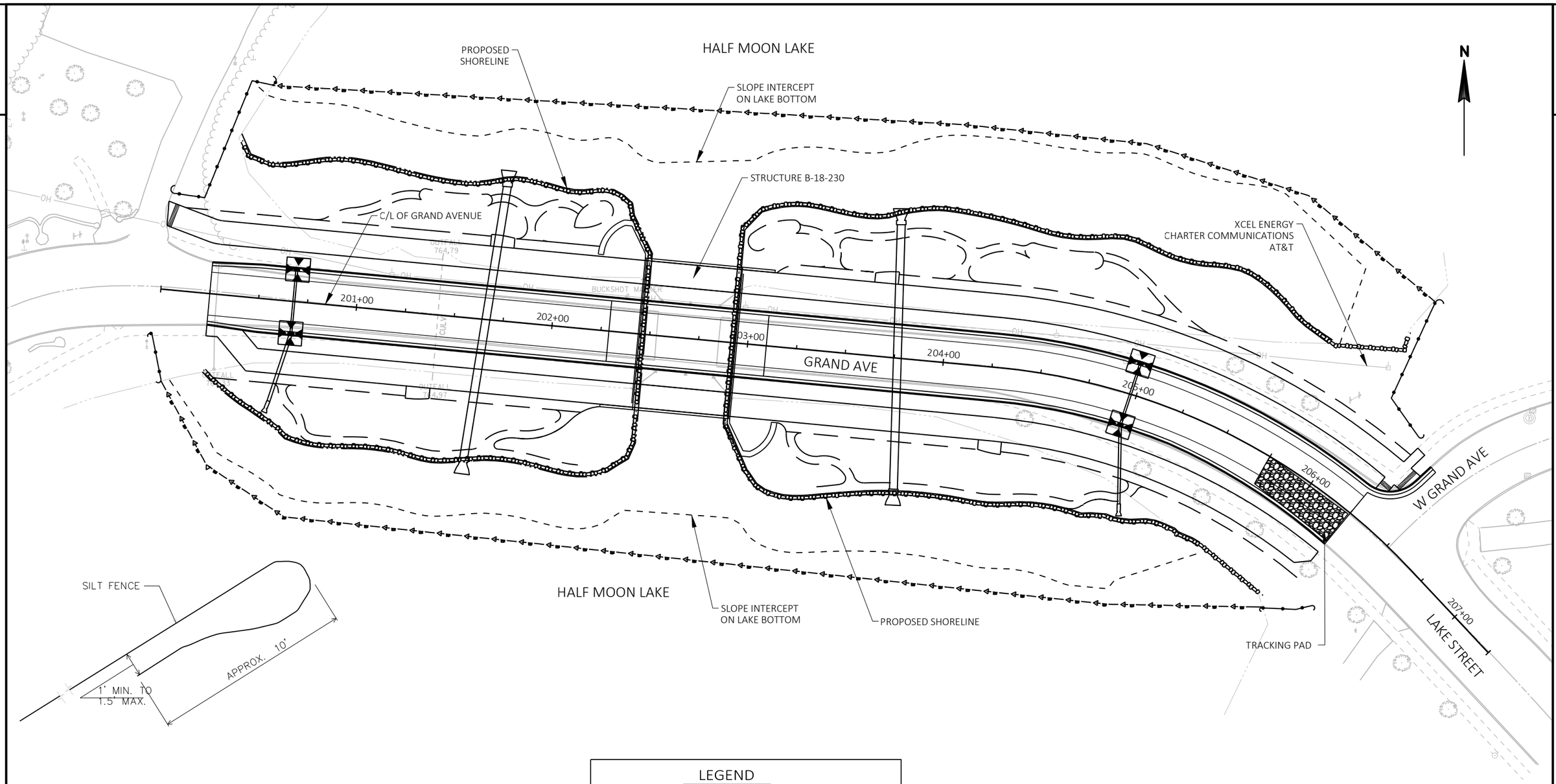
PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CONTOUR MAP - PROPOSED SURFACE	SHEET 8	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0216_CM.DWG
LAYOUT NAME - 0216_cm-02

PLOT DATE : 10/21/2016 4:30 PM PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42

2



SILT FENCE END DETAIL

(TURNAROUNDS – TO REDIRECT AMPHIBIANS AND REPTILES AWAY FROM CONSTRUCTION ZONE)

LEGEND

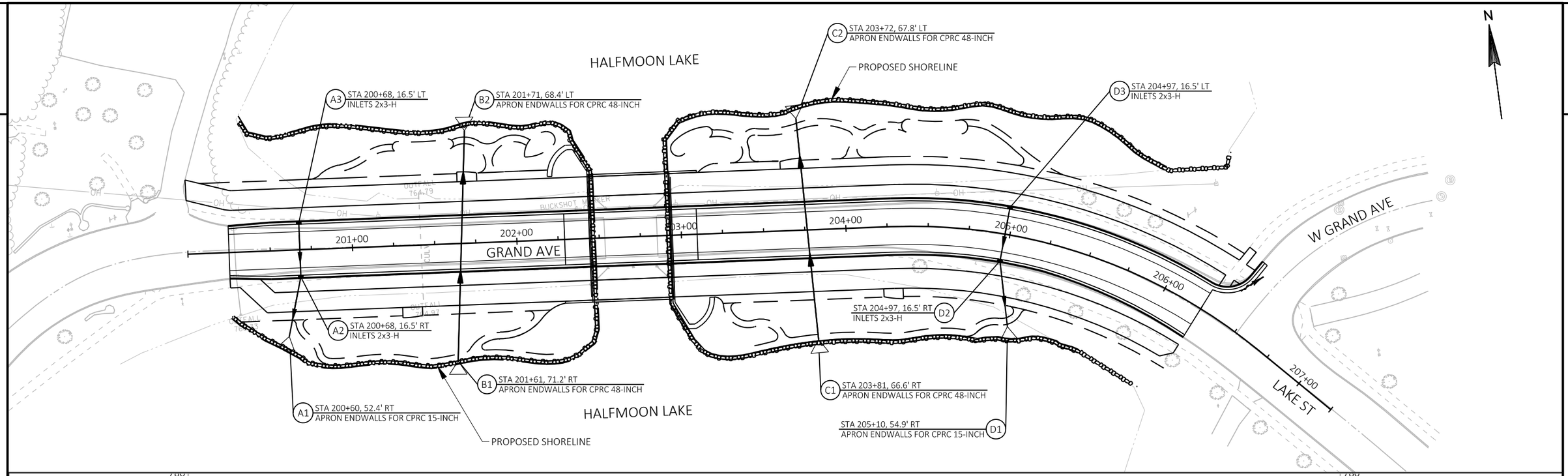
- SILT FENCE
- SHORELINE RIPRAP
- SLOPE INTERCEPT
- TURBIDITY BARRIER
- INLET PROTECTION TYPES A & D

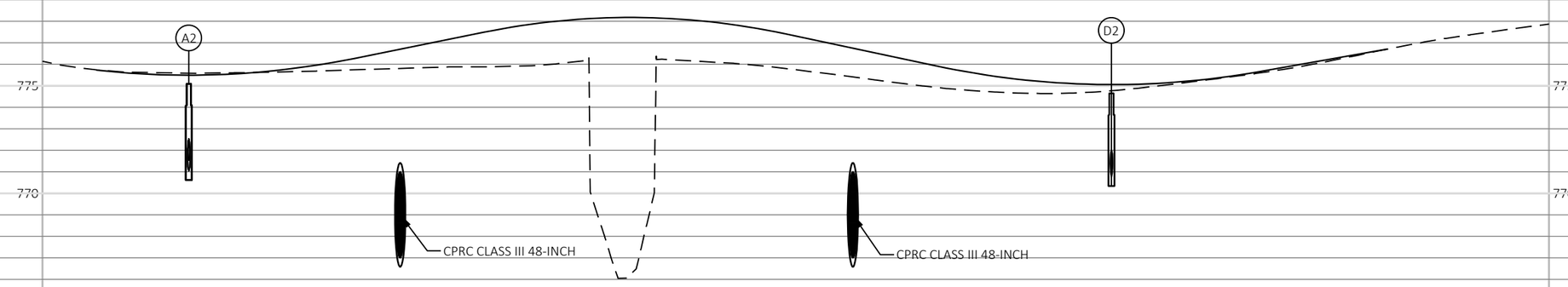
NOTE: SEE LANDSCAPE PLAN FOR ADDITIONAL EROSION CONTROL

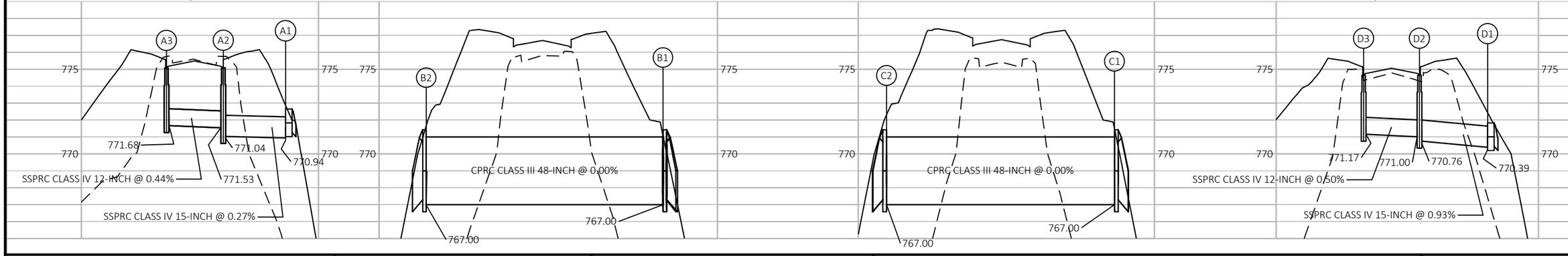
PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	EROSION CONTROL	SHEET 9	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0220_EC.DWG
LAYOUT NAME - 0220_EC-01

PLOT DATE : 10/24/2016 3:36 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:50 FT

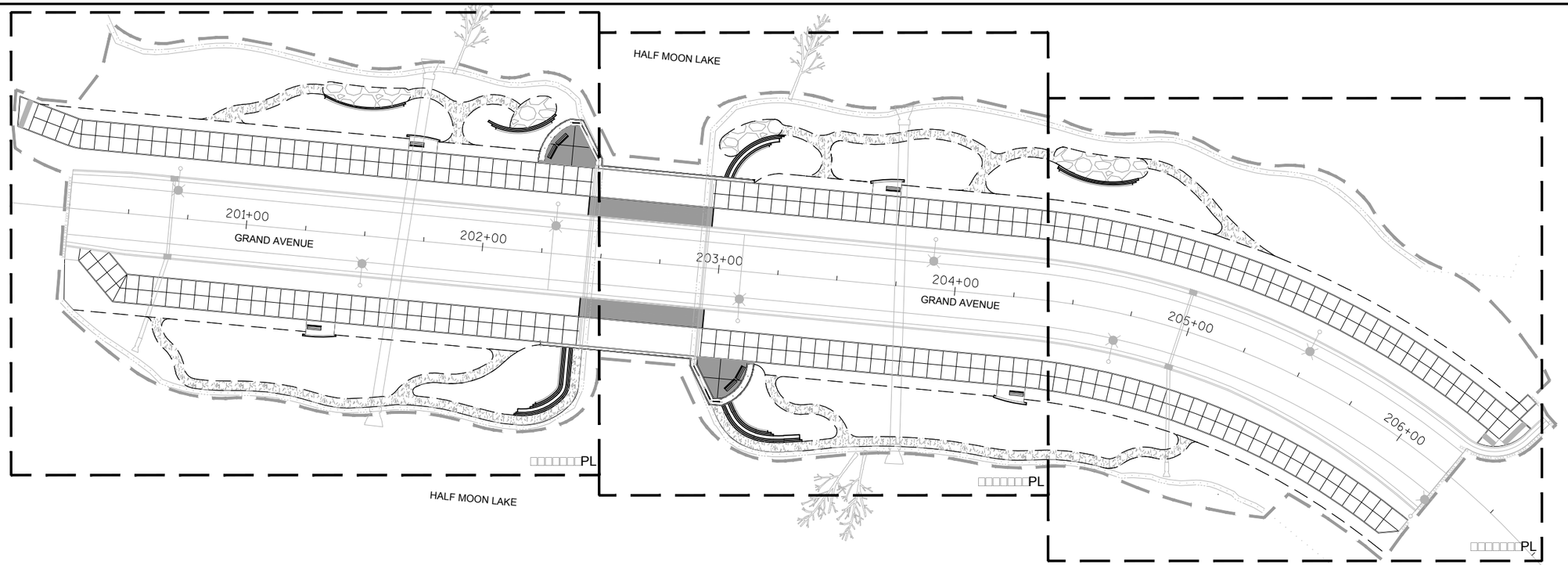






PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	STORM SEWER	SHEET 10	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0225_SS.DWG
LAYOUT: 0225_SS-01
PLOT DATE : 2/7/2017 7:46 AM
PLOT BY : AYRES-EC
PLOT NAME :
PLOT SCALE : 1IN:50FT
WISDOT/CADDS SHEET 41



PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	OVERALL LANDSCAPE LAYOUT	SHEET 11	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\LANDSCAPE\023100_PL.DWG
LAYOUT NAME - 00

PLOT DATE : 10/24/2016 3:01 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1:50

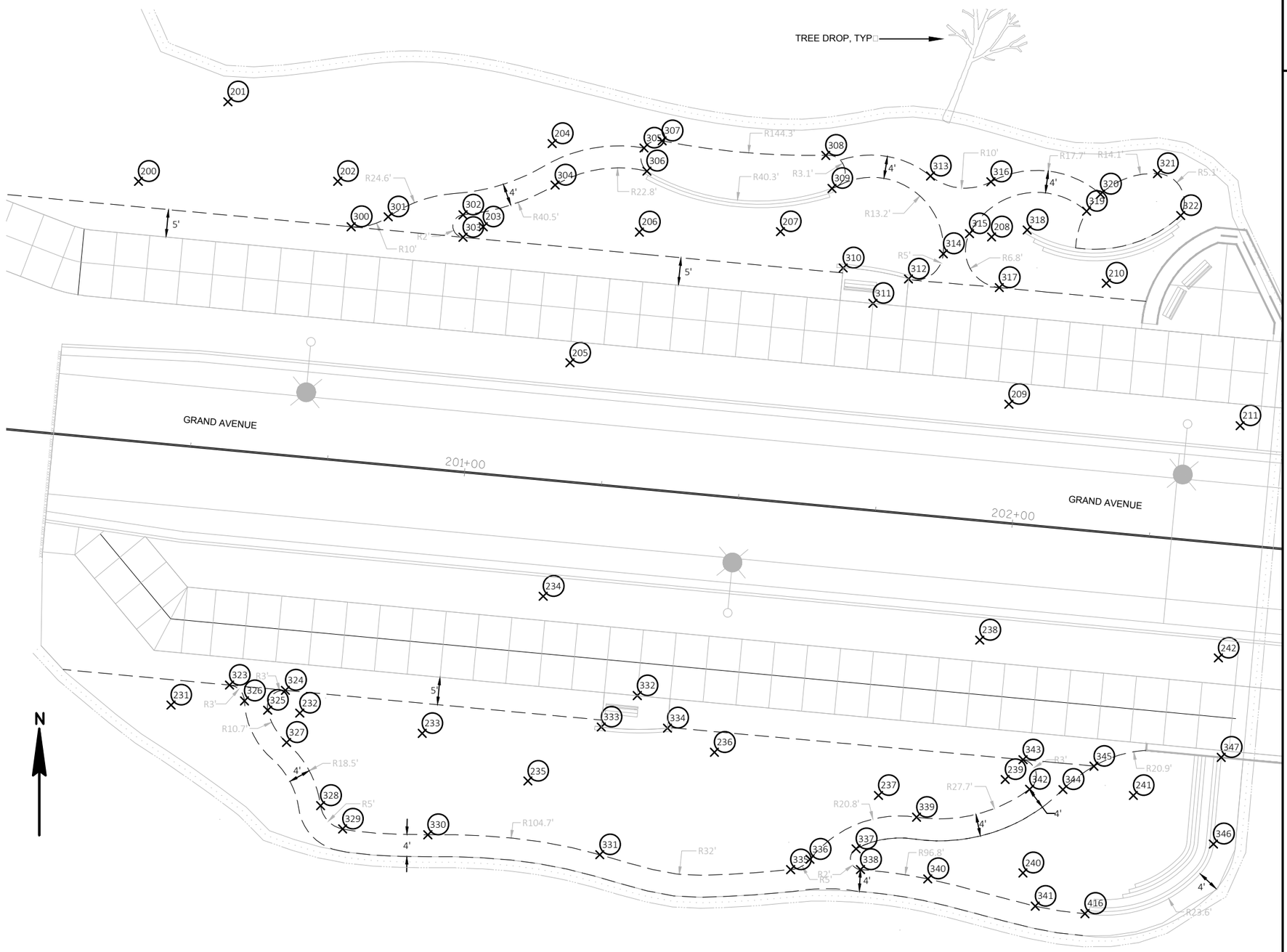
WISDOT/CADDS SHEET 42

TREES

Point #	STATION	OFFSET
200	200+36.06	47.11 LT
201	200+50.90	63.03 LT
202	200+72.13	50.51 LT
203	200+99.21	44.74 LT
204	201+10.29	60.96 LT
205	201+17.23	21.60 LT
206	201+27.57	46.43 LT
207	201+53.08	48.91 LT
208	201+91.37	51.54 LT
209	201+97.35	21.56 LT
210	202+12.92	45.10 LT
211	202+39.55	21.60 LT
231	200+50.84	47.11 RT
232	200+74.29	46.37 RT
233	200+96.78	47.97 RT
234	201+16.34	21.11 RT
235	201+16.72	54.79 RT
236	201+49.98	46.43 RT
237	201+80.39	51.45 RT
238	201+96.08	21.63 RT
239	202+03.04	46.42 RT
240	202+07.84	63.03 RT
241	202+26.52	47.12 RT
242	202+39.55	20.80 RT

LAYOUT

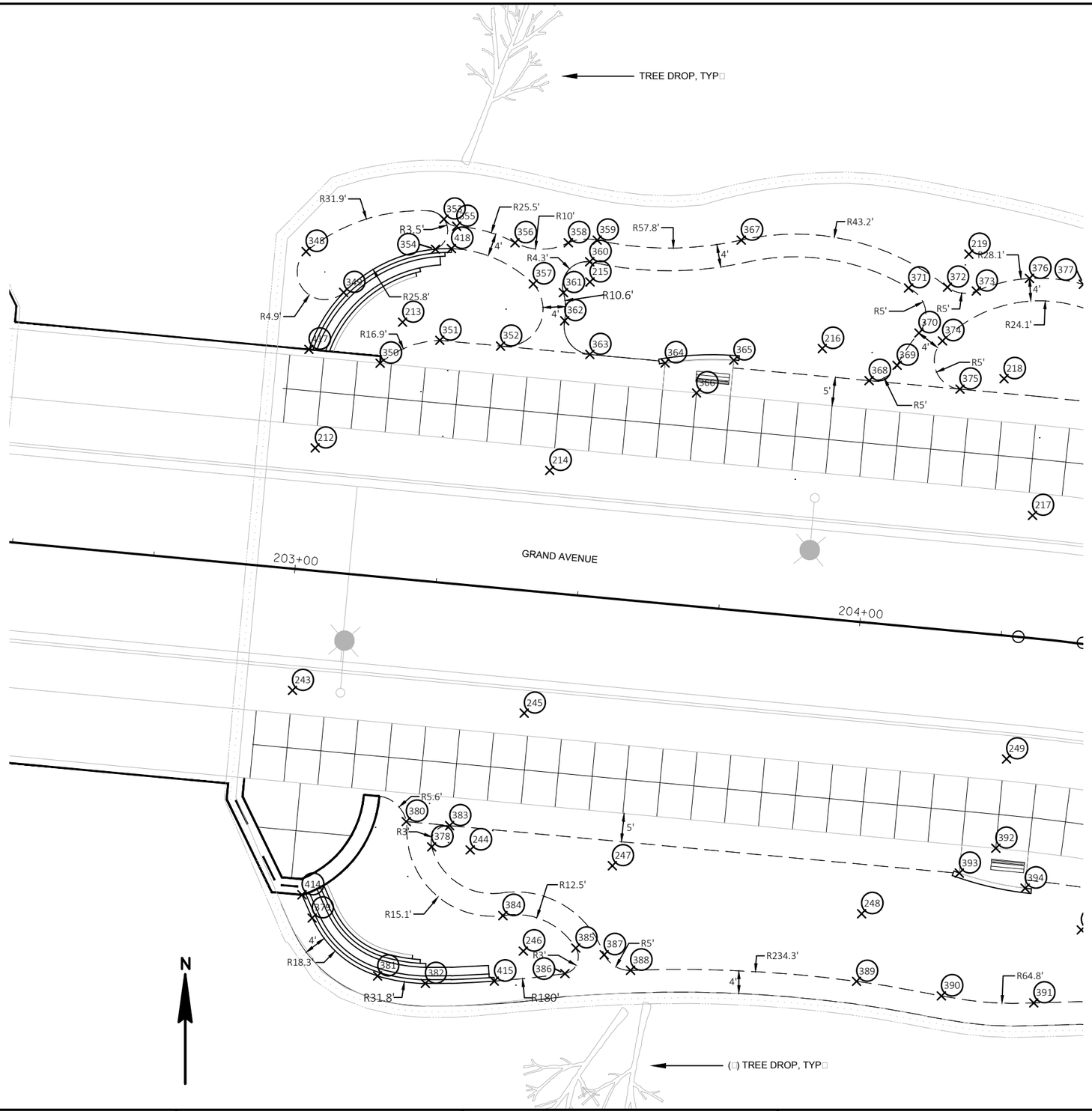
Point #	STATION	OFFSET
300	200+75.32	42.50 LT
301	200+81.85	44.93 LT
302	200+95.37	46.56 LT
303	200+95.75	42.50 LT
304	201+11.52	53.50 LT
305	201+26.97	61.72 LT
306	201+27.89	57.60 LT
307	201+30.14	63.32 LT
308	201+59.98	63.47 LT
309	201+61.68	57.60 LT
310	201+65.05	43.39 LT
311	201+71.05	37.50 LT
312	201+77.05	42.51 LT
313	201+79.28	61.53 LT
314	201+82.93	47.66 LT
315	201+87.32	51.74 LT
316	201+90.33	61.51 LT
317	201+93.62	42.50 LT
318	201+97.70	53.40 LT
319	202+08.13	57.80 LT
320	202+10.35	61.13 LT
321	202+20.32	65.82 LT
322	202+25.22	58.63 LT
323	200+61.10	42.50 RT
324	200+71.29	42.50 RT
325	200+68.43	46.39 RT
326	200+64.07	45.11 RT
327	200+72.40	51.92 RT
328	200+79.62	62.77 RT
329	200+84.00	66.61 RT
330	200+99.52	66.22 RT
331	201+30.97	66.92 RT
332	201+35.05	37.48 RT
333	201+29.07	43.79 RT
334	201+41.07	42.86 RT
335	201+65.75	66.38 RT
336	201+69.09	64.17 RT
337	201+77.25	61.50 RT
338	201+78.40	65.17 RT
339	201+87.66	54.74 RT
340	201+90.73	65.71 RT
341	202+10.64	68.82 RT
342	202+07.64	47.76 RT
343	202+05.94	42.54 RT
344	202+13.67	47.25 RT
345	202+18.89	42.50 RT
346	202+41.82	54.56 RT
347	202+41.76	38.75 RT
416	202+19.75	69.35 RT



PL

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	LANDSCAPE LAYOUT 1	SHEET 12	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\LANDSCAPE\023101_PL.DWG
LAYOUT NAME - 01
PLOT DATE : 10/24/2016 3:01 PM
PLOT BY : AYRES ASSOCIATES
PLOT NAME :
PLOT SCALE : 1:20
WISDOT/CADDS SHEET 42



TREES

Point #	STATION	OFFSET
212	203+01.55	21.57 LT
213	203+14.81	45.07 LT
214	203+43.07	21.48 LT
215	203+47.01	55.23 LT
216	203+88.87	47.36 LT
217	204+28.48	21.54 LT
218	204+21.26	45.05 LT
219	204+13.05	66.33 LT
243	203+01.55	21.35 RT
244	203+35.36	46.44 RT
245	203+42.59	21.53 RT
246	203+46.35	63.32 RT
247	203+60.57	46.87 RT
248	204+05.10	51.19 RT
249	204+27.96	21.65 RT

LAYOUT

Point #	STATION	OFFSET
348	202+96.72	55.89 LT
349	203+03.98	49.33 LT
350	203+11.55	37.50 LT
351	203+21.64	42.50 LT
352	203+32.39	42.50 LT
353	203+20.37	63.85 LT
354	203+19.38	58.44 LT
355	203+22.73	62.81 LT
356	203+33.23	60.88 LT
357	203+37.11	53.93 LT
358	203+42.59	61.75 LT
359	203+47.60	62.69 LT
360	203+46.64	58.76 LT
361	203+42.55	52.91 LT
362	203+43.22	48.00 LT
363	203+48.19	42.50 LT
364	203+61.55	42.23 LT
365	203+73.55	43.85 LT
366	203+67.55	37.50 LT
367	203+72.88	65.06 LT
368	203+97.63	42.50 LT
369	204+02.28	45.65 LT
370	204+05.57	51.69 LT
371	204+03.03	59.43 LT
372	204+09.84	60.19 LT
373	204+14.96	59.99 LT
374	204+09.85	50.69 LT
375	204+13.70	42.50 LT
376	204+24.09	63.09 LT
377	204+32.73	62.98 LT
378	203+28.55	46.54 RT
379	203+08.76	60.98 RT
380	203+23.68	42.50 RT
381	203+21.20	70.08 RT
382	203+29.70	70.61 RT
383	203+31.37	42.50 RT
384	203+42.19	57.43 RT
385	203+55.52	61.91 RT
386	203+54.02	66.58 RT
387	203+60.60	62.63 RT
388	203+65.49	64.92 RT
389	204+05.31	63.13 RT
390	204+20.44	64.30 RT
391	204+38.85	63.86 RT
392	204+27.55	37.48 RT
393	204+21.57	42.44 RT
394	204+34.18	43.97 RT
414	203+06.60	57.08 RT
415	203+41.76	69.07 RT
417	202+98.84	38.75 LT
418	203+22.17	58.79 LT

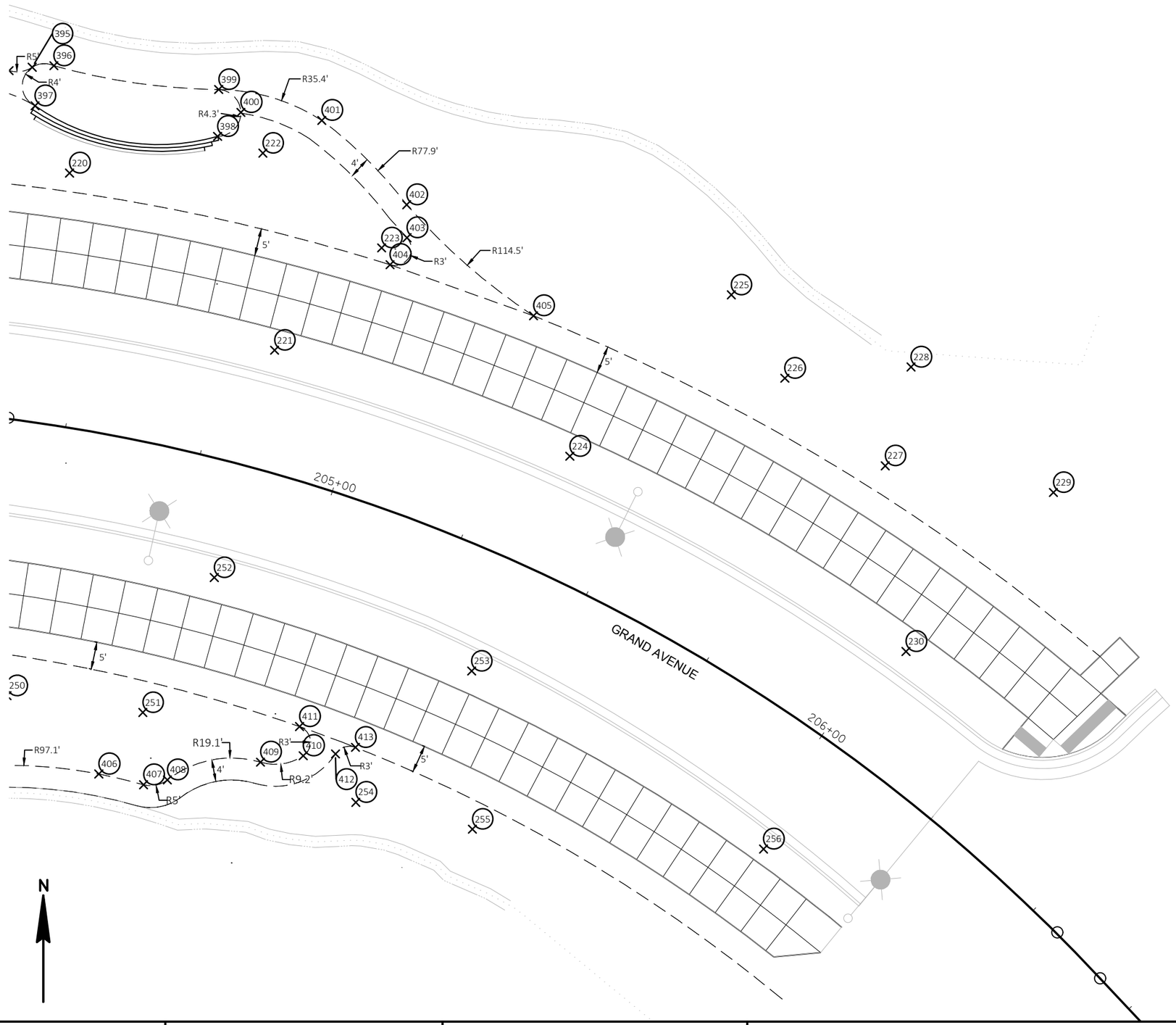
□□□□□□□PL

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	LANDSCAPE LAYOUT 2	SHEET 13	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\LANDSCAPE\023102_PL.DWG
LAYOUT NAME - 02

PLOT DATE : 10/24/2016 3:00 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1:20

WISDOT/CADDS SHEET 42



TREES

Point #	STATION	OFFSET
220	204+44.13	45.84 LT
221	204+83.21	21.68 LT
222	204+73.53	55.97 LT
223	204+95.56	44.98 LT
224	205+36.89	21.53 LT
225	205+49.35	60.68 LT
226	205+62.74	51.75 LT
227	205+83.48	47.30 LT
228	205+78.76	65.06 LT
229	206+07.56	60.63 LT
230	206+03.49	21.41 LT
250	204+46.75	49.95 RT
251	204+75.97	48.17 RT
252	204+83.26	21.14 RT
253	205+36.64	21.46 RT
254	205+25.46	51.77 RT
255	205+50.57	47.41 RT
256	206+03.49	22.94 RT

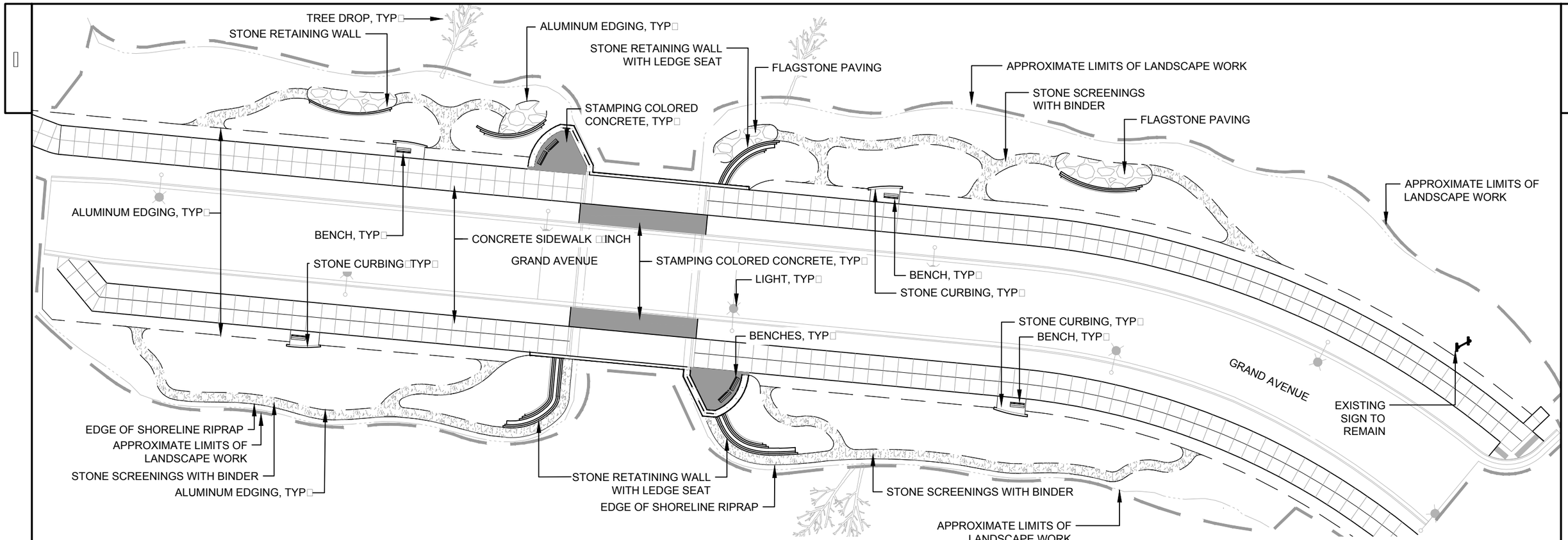
LAYOUT

Point #	STATION	OFFSET
395	204+36.20	64.06 LT
396	204+39.45	64.82 LT
397	204+37.35	57.16 LT
398	204+66.09	57.14 LT
399	204+64.78	65.53 LT
400	204+68.82	62.31 LT
401	204+81.14	64.33 LT
402	204+97.34	53.83 LT
403	204+98.93	48.12 LT
404	204+97.65	42.50 LT
405	205+22.24	42.50 LT
406	204+69.67	60.89 RT
407	204+79.95	60.90 RT
408	204+84.79	58.94 RT
409	205+03.16	50.93 RT
410	205+11.35	47.29 RT
411	205+08.55	42.50 RT
412	205+17.61	44.93 RT
413	205+21.02	42.50 RT

PL

PROJECT NO: 7995-02-46	HWY:GRAND AVENUE	COUNTY:EAU CLAIRE	LANDSCAPE LAYOUT 3	SHEET 14	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\LANDSCAPE\023103_PL.DWG
LAYOUT NAME - 03
PLOT DATE : 10/24/2016 11:01 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1:30
WISDOT/CADDS SHEET 42



LEGEND

- FLAGSTONE PAVING
- STONE SCREENINGS WITH BINDER
- STAMPING COLORED CONCRETE
- ALUMINUM EDGING

N

NOTES

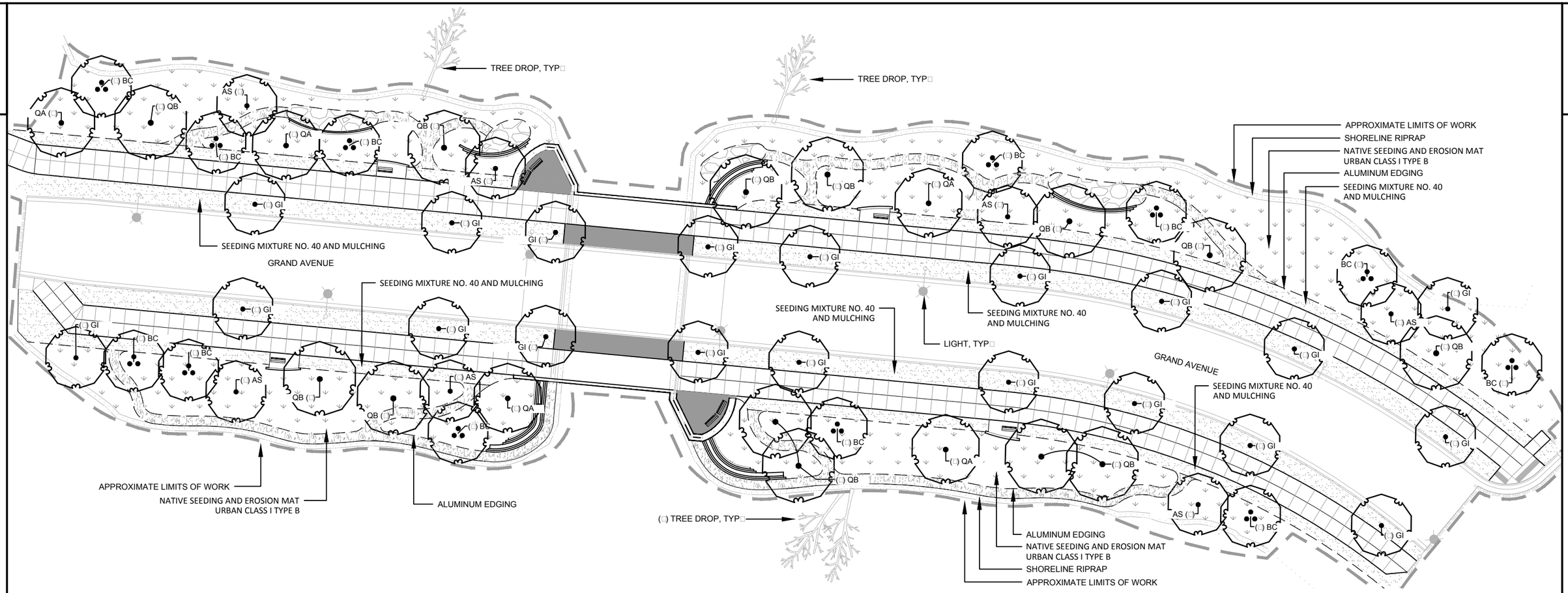
1. WHERE STONE SCREENINGS WITH BINDER RUNS ALONG RIP RAP, NO ALUMINUM EDGING SHALL BE USED BETWEEN THOSE TWO MATERIALS TERMINATE ALUMINUM EDGING WHEN TRAIL EDGE MEETS RIP RAP

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	SITE MATERIALS PLAN	SHEET 15	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\LANDSCAPE\023104_PL.DWG
LAYOUT NAME - 04

PLOT DATE : 10/24/2016 2:53 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1:50

WISDOT/CADDS SHEET 42



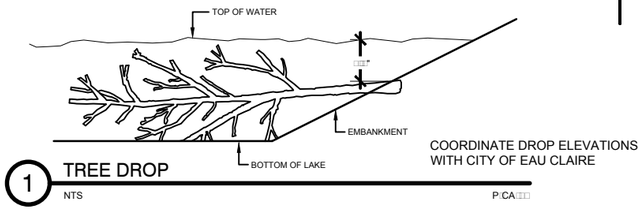
PLANT DATA CHART

COMMON NAME	SCIENTIFIC NAME	TYPE	AVG. MATURE HEIGHT	SIZE (CAL. OR HT.) WHEN PLANTED	MODE	ROOT ZONE DIAM.	MINIMUM SIZE BALL/POT DEPTH	BALL/POT SPREAD	ROOT DIAM.	PLANT HOLE DEPTH	BRACE OR GUY REQ'D GUY	BRACE	FERT. UNITS REQ'D	RODENT PROTECT DIAM.	MULCH RING DIA. OR BED
DECIDUOUS TREES															
SIENNA GLEN MAPLE	ACER FREEMANII 'SIENNA GLEN'	1	40	2.5" Cal.	B&B	28"	17"	28"	42"	17"	NO	NO	0	NO	4'
HERITAGE RIVER BIRCH CLUMP	BETULAR NIGRA 'CULLY' TM	1	40	6-8'	B&B	40"	19"	40"	40"	20"	NO	NO	0	NO	4'
SKYLINE THORNLESS HONEYLOCUST	GLEDITSIA TRIACANTHOS f. INERMIS 'SKYCOLE	1	40	2.5" Cal.	B&B	28"	17"	28"	42"	17"	NO	NO	0	NO	4'
WHITE OAK	QUERCUS ALBA	1	50	2.5" Cal.	B&B	28"	17"	28"	42"	17"	NO	NO	0	NO	4'
SWAMP WHITE OAK	QUERCUS BICOLOR	1	50	2.5" Cal.	B&B	28"	17"	28"	42"	17"	NO	NO	0	NO	4'

LEGEND

- SEEDING MIXTURE NO□□□ AND MULCH
- NATIVE SEEDING AND EROSION MAT URBAN CLASS □ TYPE B
- ALUMINUM EDGING

N



1 TREE DROP
NTS

COORDINATE DROP ELEVATIONS WITH CITY OF EAU CLAIRE

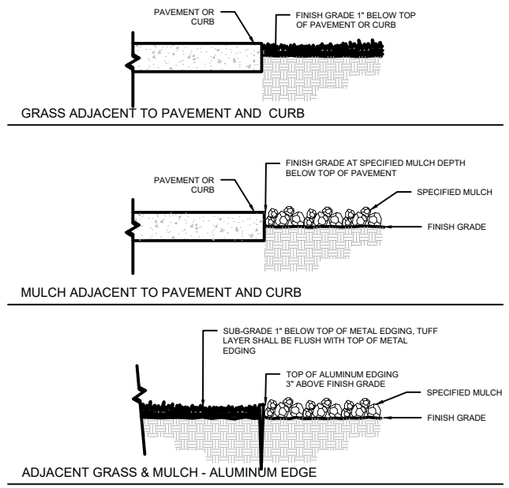
PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SI E
	AS	□	ACER FREEMANII □SIENNA GLEN□	SIENNA GLEN MAPLE	B □ B	□□"CAL
	BC	□□	BETULA NIGRA □CULLY□TM	HERITAGE BIRCH	B □ B	□□CLUMP
	GI	□□	GLEDITSIA TRIACANTHOS INERMIS □SKYCOLE□TM	SKYLINE THORNLESS HONEY LOCUST	B □ B	□□"CAL
	QA	□	QUERCUS ALBA	WHITE OAK	B □ B	□□"CAL
	QB	□□	QUERCUS BICOLOR	SWAMP WHITE OAK	B □ B	□□"CAL

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	PLANTING PLAN	SHEET 16	E

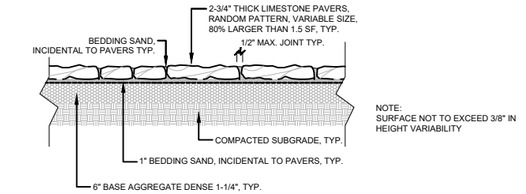
FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\LANDSCAPE\023105_PL.DWG
LAYOUT NAME - 05
PLOT DATE : 10/24/2016 2:53 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1:50

WISDOT/CADDS SHEET 42



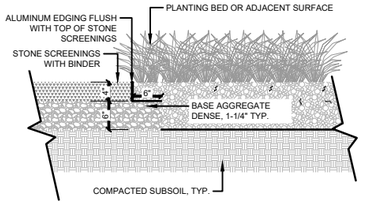
1 ALUMINUM MULCH BED EDGING

N.T.S. P-CA-13



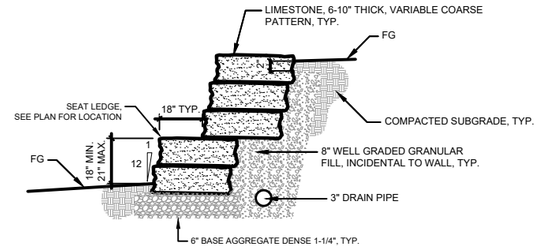
2 FLAGSTONE PAVING

NTS P-CA-06



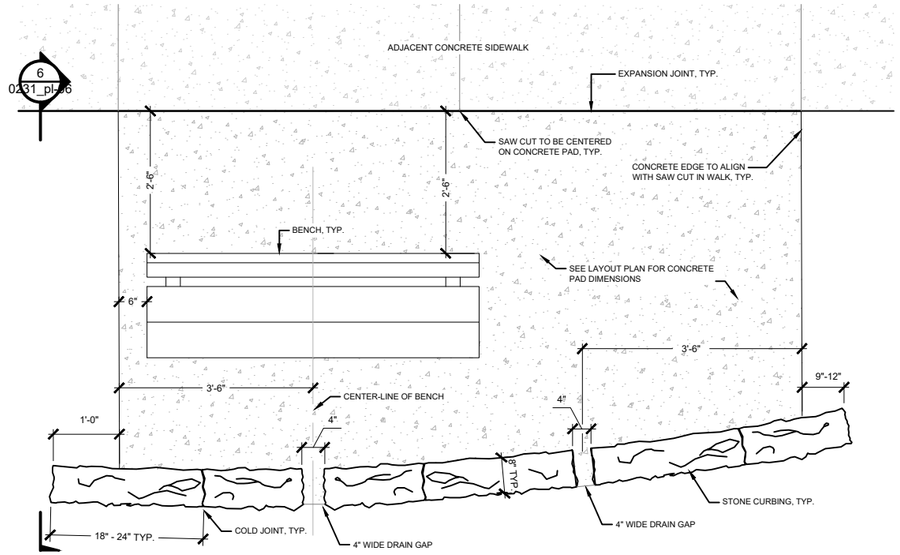
3 STONE SCREENINGS WITH BINDER

NTS P-CA-14



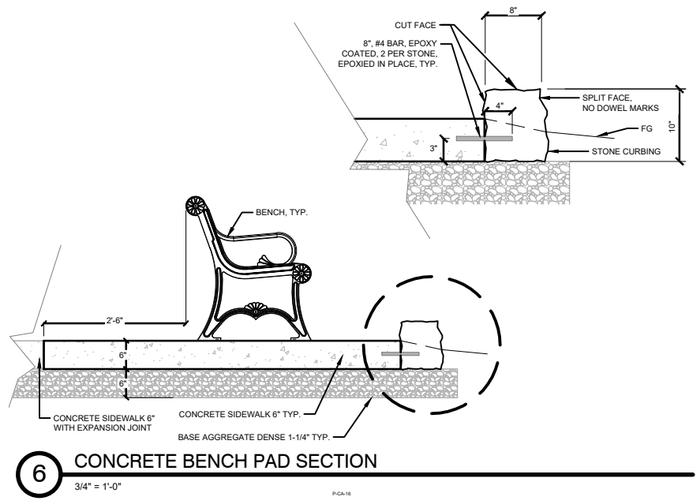
4 STONE RETAINING WALL

NTS P-CA-07



5 CONCRETE BENCH PAD PLAN

3/4" = 1'-0" P-CA-12



6 CONCRETE BENCH PAD SECTION

3/4" = 1'-0"

P-CA-16

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	DETAILS	SHEET 17	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\LANDSCAPE\023106_PL.DWG
LAYOUT NAME - 06
PLOT DATE : 2/7/2017 8:16 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE :
WISDOT/CADDS SHEET 42

2

N

9
NO MOTOR VEHICLES
R5-3
24"X24"

PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

PAVEMENT MARKING ARROWS EPOXY TYPE 1

SALVAGE BUCKSHOT RUN STONE MARKER (TO BE REMOVED BY CITY OF EAU CLAIRE)

REMOVE
NO PARKING ANY TIME
2
NO PARKING ANY TIME
R7-1D
18"X24"

EPOXY 4-INCH, CENTERLINE DOUBLE YELLOW

EPOXY 4-INCH, EDGE LINE WHITE

REMOVE
SPEED LIMIT 2
R2-1
24"X30"

REMOVE
NO PARKING ANY TIME
BIKE LANE
R7-9a
18"X24"

8

PAVEMENT MARKING ARROWS EPOXY TYPE 1

PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

REMOVE
R5-2
24"X24"

REMOVE
NO THRU TRUCKS

7

NO MOTOR VEHICLES
R5-3
24"X24"

5

201+00

202+00

203+00

204+00

205+00

206+00

207+00

OUTFALL
764.79

OUTFALL
766.33

OUTFALL
764.97

CULVERT

BUCKSHOT MARKER

OH

1

REMOVE
NO PARKING ANY TIME
BIKE LANE
R7-9a
18"X24"

PAVEMENT MARKING ARROWS EPOXY TYPE 1

PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

10
NO PARKING ANY TIME
R7-1D
18"X24"

PAVEMENT MARKING SYMBOLS BIKE LANE EPOXY

PAVEMENT MARKING ARROWS EPOXY TYPE 1

3

REMOVE

W11-15
30"X30"

TRAIL XING
REMOVE

4

REMOVE

S1-1
36"X36"

AHEAD
REMOVE

AHEAD
S16-9P
24"X12"

NO PARKING ANY TIME
REMOVE

NO PARKING ANY TIME
R7-1D
18"X24"

5

STOP
REMOVE

STOP
R1-1
30"X30"

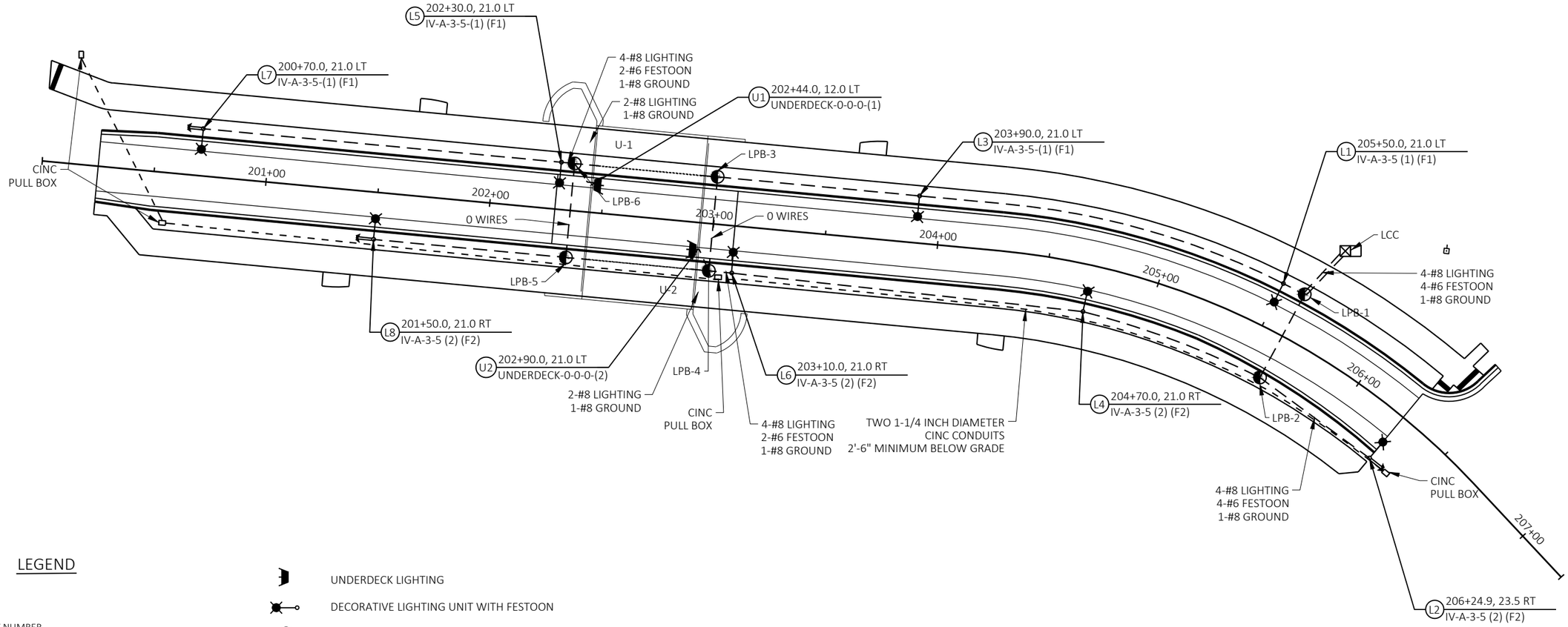
LEGEND

PROPOSED SIGN MOUNTED ON POST

XXX DENOTES SIGN NUMBER

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	PAVEMENT MARKING AND PERMANENT SIGNING	SHEET 18	E

2



LEGEND

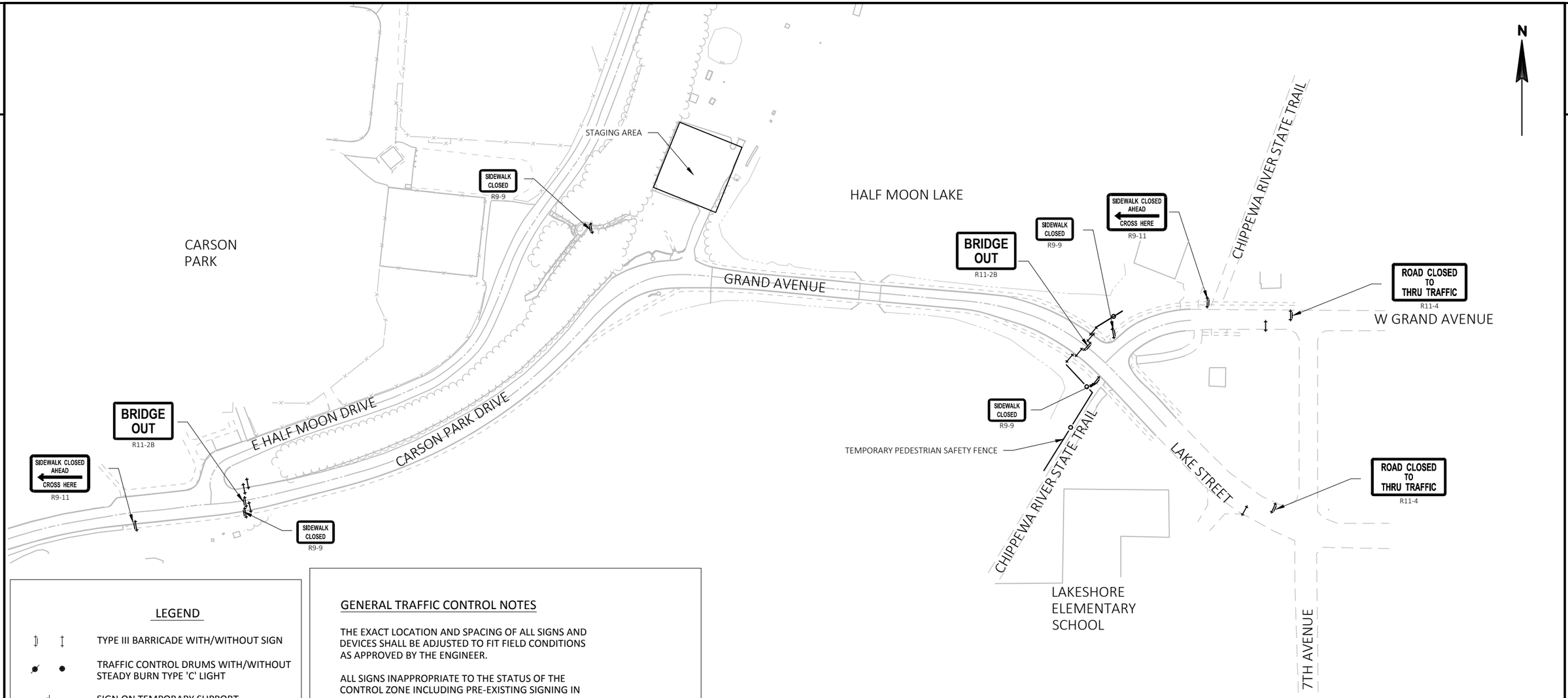
LIGHT NUMBER
STATION, OFFSET
L# IV-A-3-5-(1) (F1)
FESTOON CIRCUIT NUMBER
LIGHTING CIRCUIT NUMBER
BASE TYPE
ARM LENGTH
LED CATEGORY
DISTRIBUTION TYPE

- UNDERDECK LIGHTING
- DECORATIVE LIGHTING UNIT WITH FESTOON
- LIGHTING PULL BOX (LPB)
- CONDUIT NON-METALLIC SCHEDULE 40 2-INCH
- BRIDGE CONDUIT (SEE BRIDGE PLAN)
- LIGHTING CONTROL CABINET
- 2-#8 LIGHTING, 2-#6 FESTOON, 1-#8 GROUND — CONDUIT WIRE CONFIGURATION UNLESS NOTED
- 2-#12 LIGHTING, 2-#12 FESTOON, 1-#12 GROUND — DECORATIVE LIGHTING UNIT WIRE CONFIGURATION
- CONDUIT STUB
- CONDUIT NON-METALLIC SCHEDULE 40 1-1/4-INCH
- CINC PULL BOX

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	LIGHTING PLAN & CINC CONDUIT	SHEET 19	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0235_LP.DWG
LAYOUT NAME - 0235_lp-01
PLOT DATE : 2/9/2017 10:44 AM
PLOT BY : AYRES-EC
PLOT NAME :
PLOT SCALE : 1 IN:50 FT
WISDOT/CADDS SHEET 42

2



LEGEND

- TYPE III BARRICADE WITH/WITHOUT SIGN
- TRAFFIC CONTROL DRUMS WITH/WITHOUT STEADY BURN TYPE 'C' LIGHT
- SIGN ON TEMPORARY SUPPORT

GENERAL TRAFFIC CONTROL NOTES

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.

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

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

TEMPORARY STOP SIGNS SHALL BE SUPPORTED ON WOOD POSTS, OR AS DIRECTED BY ENGINEER.

SEE S.D.D. BARRICADES AND SIGNS FOR MAINLINE CLOSURES FOR ROAD CLOSURE AND ADVANCE WARNING SIGNS.

SEE S.D.D. TRAFFIC CONTROL PEDESTRIAN ACCOMMODATIONS FOR SIDEWALK CLOSURES.

CITY OF EAU CLAIRE TO PROVIDE DETOUR ROUTE & SIGNING.

PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	TRAFFIC CONTROL	SHEET 20	E

7995-02-46

Line	Item	Item Description	Unit	Total	Qty
0010	201.0205	Grubbing	STA	6.000	6.000
0020	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0030	203.0500.S	Removing Old Structure Over Waterway (station) 01. 202+69.30	LS	1.000	1.000
0040	204.0110	Removing Asphaltic Surface	SY	1,794.000	1,794.000
0050	204.0150	Removing Curb & Gutter	LF	1,169.000	1,169.000
0060	204.0155	Removing Concrete Sidewalk	SY	690.000	690.000
0070	204.0220	Removing Inlets	EACH	4.000	4.000
0080	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	84.000	84.000
0090	205.0100	Excavation Common	CY	596.000	596.000
0100	205.0400	Excavation Marsh	CY	10,629.000	10,629.000
0110	206.1000	Excavation for Structures Bridges (structure) 01. B-18-230	LS	1.000	1.000
0120	206.5000	Cofferdams (structure) 01. B-18-230	LS	1.000	1.000
0130	209.2100	Backfill Granular Grade 2	CY	7,410.000	7,410.000
0140	210.1500	Backfill Structure Type A	TON	900.000	900.000
0150	213.0100	Finishing Roadway (project) 01. 7995-02-46	EACH	1.000	1.000
0160	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,090.000	2,090.000
0170	311.0110	Breaker Run	TON	10,615.000	10,615.000
0180	405.1000	Stamping Colored Concrete	CY	45.000	45.000
0190	415.0410	Concrete Pavement Approach Slab	SY	102.000	102.000
0200	455.0605	Tack Coat	GAL	39.000	39.000
0210	460.2000	Incentive Density HMA Pavement	DOL	280.000	280.000
0220	460.5224	HMA Pavement 4 LT 58-28 S	TON	430.000	430.000
0230	502.0100	Concrete Masonry Bridges	CY	631.000	631.000
0240	502.3200	Protective Surface Treatment	SY	430.000	430.000
0250	502.3210	Pigmented Surface Sealer	SY	85.000	85.000
0260	505.0400	Bar Steel Reinforcement HS Structures	LB	10,720.000	10,720.000
0270	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	73,340.000	73,340.000
0280	513.7016	Railing Steel Type C3 (structure) 01. B-18-230	LF	223.000	223.000
0290	516.0500	Rubberized Membrane Waterproofing	SY	50.000	50.000
0300	517.1015.S	Concrete Staining Multi-Color (structure) 01. B-18-230	SF	2,730.000	2,730.000
0310	517.1050.S	Architectural Surface Treatment (structure) 01. B-18-230	SF	2,590.000	2,590.000
0320	522.0148	Culvert Pipe Reinforced Concrete Class III 48-Inch	LF	275.000	275.000
0330	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	2.000	2.000
0340	522.1048	Apron Endwalls for Culvert Pipe Reinforced Concrete 48-Inch	EACH	4.000	4.000
0350	550.0500	Pile Points	EACH	58.000	58.000
0360	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,160.000	1,160.000

7995-02-46

Line	Item	Item Description	Unit	Total	Qty
0370	602.0415	Concrete Sidewalk 6-Inch	SF	14,975.000	14,975.000
0380	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	60.000	60.000
0390	606.0100	Riprap Light	CY	6,798.000	6,798.000
0400	606.0200	Riprap Medium	CY	3,784.000	3,784.000
0410	606.0300	Riprap Heavy	CY	10,321.000	10,321.000
0420	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	66.000	66.000
0430	608.0415	Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	LF	78.000	78.000
0440	611.0624	Inlet Covers Type H	EACH	4.000	4.000
0450	611.3230	Inlets 2x3-FT	EACH	4.000	4.000
0460	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	360.000	360.000
0470	619.1000	Mobilization	EACH	1.000	1.000
0480	624.0100	Water	MGAL	70.000	70.000
0490	625.0100	Topsoil	SY	4,775.000	4,775.000
0500	627.0200	Mulching	SY	1,900.000	1,900.000
0510	628.1104	Erosion Bales	EACH	10.000	10.000
0520	628.1504	Silt Fence	LF	306.000	306.000
0530	628.1520	Silt Fence Maintenance	LF	306.000	306.000
0540	628.1905	Mobilizations Erosion Control	EACH	7.000	7.000
0550	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0560	628.2008	Erosion Mat Urban Class I Type B	SY	2,490.000	2,490.000
0570	628.6005	Turbidity Barriers	SY	1,485.000	1,485.000
0580	628.7005	Inlet Protection Type A	EACH	4.000	4.000
0590	628.7020	Inlet Protection Type D	EACH	4.000	4.000
0600	628.7560	Tracking Pads	EACH	1.000	1.000
0610	629.0205	Fertilizer Type A	CWT	1.200	1.200
0620	630.0140	Seeding Mixture No. 40	LB	35.000	35.000
0630	632.0101	Trees (species) (size) (root) 01. Sienna Glen Maple, B&B, 2.5" CAL	EACH	7.000	7.000
0640	632.0101	Trees (species) (size) (root) 02. Heritage Birch, B&B Clump, 6-8' H	EACH	12.000	12.000
0650	632.0101	Trees (species) (size) (root) 03. Skyline Thornless Honeylocust, B&B, 2.5" CAL	EACH	20.000	20.000
0660	632.0101	Trees (species) (size) (root) 04. White Oak, B&B, 2.5" CAL	EACH	5.000	5.000
0670	632.0101	Trees (species) (size) (root) 05. Swamp White Oak, B&B, 2.5" CAL	EACH	13.000	13.000
0680	632.9101	Landscape Planting Surveillance and Care Cycles	EACH	16.000	16.000
0690	633.5200	Markers Culvert End	EACH	6.000	6.000
0700	634.0814	Posts Tubular Steel 2x2-Inch X 14-FT	EACH	10.000	10.000

7995-02-46

Line	Item	Item Description	Unit	Total	Qty
0710	637.2210	Signs Type II Reflective H	SF	37.180	37.180
0720	637.2230	Signs Type II Reflective F	SF	15.000	15.000
0730	638.2602	Removing Signs Type II	EACH	12.000	12.000
0740	638.3000	Removing Small Sign Supports	EACH	12.000	12.000
0750	642.5001	Field Office Type B	EACH	1.000	1.000
0760	643.0100	Traffic Control (project) 01. 7995-02-46	EACH	1.000	1.000
0770	643.0420	Traffic Control Barricades Type III	DAY	2,584.000	2,584.000
0780	643.0705	Traffic Control Warning Lights Type A	DAY	4,352.000	4,352.000
0790	643.0900	Traffic Control Signs	DAY	1,904.000	1,904.000
0800	644.1616.S	Temporary Pedestrian Safety Fence	LF	300.000	300.000
0810	645.0120	Geotextile Type HR	SY	1,000.000	1,000.000
0820	645.0130	Geotextile Type R	SY	4,240.000	4,240.000
0830	646.0106	Pavement Marking Epoxy 4-Inch	LF	2,410.000	2,410.000
0840	647.0156	Pavement Marking Arrows Epoxy Type 1	EACH	4.000	4.000
0850	647.0306	Pavement Marking Symbols Bike Lane Epoxy	EACH	4.000	4.000
0860	650.4000	Construction Staking Storm Sewer	EACH	10.000	10.000
0870	650.4500	Construction Staking Subgrade	LF	600.000	600.000
0880	650.5000	Construction Staking Base	LF	600.000	600.000
0890	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	1,235.000	1,235.000
0900	650.6500	Construction Staking Structure Layout (structure) 01. B-18-230	LS	1.000	1.000
0910	650.8500	Construction Staking Electrical Installations (project) 01. 7995-02-46	LS	1.000	1.000
0920	650.9910	Construction Staking Supplemental Control (project) 01. 7995-02-46	LS	1.000	1.000
0930	650.9920	Construction Staking Slope Stakes	LF	600.000	600.000
0940	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	2,010.000	2,010.000
0950	652.0690	Conduit Special (inch) 01. 5-Inch	LF	6.000	6.000
0960	653.0140	Pull Boxes Steel 24x42-Inch	EACH	6.000	6.000
0970	654.0105	Concrete Bases Type 5	EACH	8.000	8.000
0980	654.0224	Concrete Control Cabinet Bases Type L24	EACH	1.000	1.000
0990	655.0610	Electrical Wire Lighting 12 AWG	LF	1,360.000	1,360.000
1000	655.0620	Electrical Wire Lighting 8 AWG	LF	3,587.000	3,587.000
1010	655.0625	Electrical Wire Lighting 6 AWG	LF	2,424.000	2,424.000
1020	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. Sta. 16+50	LS	1.000	1.000
1030	659.2124	Lighting Control Cabinets 120/240 24-Inch	EACH	1.000	1.000
1040	690.0150	Sawing Asphalt	LF	110.000	110.000
1050	690.0250	Sawing Concrete	LF	16.000	16.000
1060	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1070	715.0502	Incentive Strength Concrete Structures	DOL	3,786.000	3,786.000

7995-02-46

Line	Item	Item Description	Unit	Total	Qty
1080	SPV.0035	Special 01. Shoreline Riprap	CY	597.000	597.000
1090	SPV.0060	Special 01. Underdeck Lighting Unit	EACH	2.000	2.000
1100	SPV.0060	Special 02. Decorative Lighting Unit	EACH	8.000	8.000
1110	SPV.0060	Special 03. Benches	EACH	8.000	8.000
1120	SPV.0060	Special 04. Tree Drop	EACH	4.000	4.000
1130	SPV.0060	Special 05. CINC Pull Box	EACH	4.000	4.000
1140	SPV.0085	Special 01. Native Seeding	LB	12.000	12.000
1150	SPV.0090	Special 01. Aluminum Edging	LF	3,215.000	3,215.000
1160	SPV.0090	Special 02. Concrete Curb and Gutter 24-Inch	LF	1,235.000	1,235.000
1170	SPV.0090	Special 03. Stone Curbing	LF	60.000	60.000
1180	SPV.0090	Special 04. CINC Conduit 1 1/4-Inch	LF	640.000	640.000
1190	SPV.0105	Special 01. Construction Staking Landscape Layout	LS	1.000	1.000
1200	SPV.0165	Special 01. Stone Retaining Wall	SF	440.000	440.000
1210	SPV.0165	Special 02. Flagstone Paving	SF	1,070.000	1,070.000
1220	SPV.0195	Special 01. Stone Screenings With Binder	TON	90.000	90.000

3

GRUBBING

STA	TO	STA	201.0205 GRUBBING STA
200+25		202+44	2.5
202+94		206+43	3.5
TOTALS			6.0

REMOVALS

STA	TO	STA	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS EACH	204.0110 REMOVING ASPHALTIC SUFACE SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY	204.0220 REMOVING INLETS EACH	204.0245.01 REMOVING STORM SEWER (12-INCH) LF	NOTES
200+25		206+43		-	1794	-	-	-	-	
200+25		202+53	14' LT	-	-	229	-	-	-	
200+25		202+53	14' RT	-	-	229	-	-	-	
202+85		206+40	14' LT	-	-	382	-	-	-	
202+85		206+25	14' RT	-	-	329	-	-	-	
200+00		206+38	14' LT	-	-	-	364	-	-	
200+25		206+25	14' RT	-	-	-	326	-	-	
200+29			14' LT	-	-	-	-	1	-	
200+29			14' RT	-	-	-	-	1	-	
204+90			14' LT	-	-	-	-	1	-	
204+91			16' RT	-	-	-	-	1	-	
201+42				1	-	-	-	-	-	65' - 48" RCCP
200+31		200+33		-	-	-	-	-	54	
204+90		204+90		-	-	-	-	-	30	
TOTALS				1	1794	1169	690	4	84	

FINISHING ROADWAY (7995-02-46)

LOCATION	213.0100 EACH
GRAND AVE	1
TOTAL	1

BASE AGGREGATE DENSE 1/4-INCH

STA	TO	STA	305.0120 TON	COMMENTS
200+25		202+44	500	ROADWAY & CURB
202+94		206+43	780	ROADWAY & CURB
200+25		206+43	600	SIDEWALK
200+25		202+44	10	STONE RETAINED WALL
202+94		206+43	10	STONE RETAINED WALL
200+25		202+44	60	LIMESTONE SCREENING
202+94		206+43	80	LIMESTONE SCREENING
200+25		202+44	20	FLAGSTONE PAVING
202+94		206+43	30	FLAGSTONE PAVING
TOTAL			2090	

CONCRETE PAVEMENT APPROACH SLAB

STA	TO	STA	415.0410 SY
202+29		202+44	51
202+94		203+10	51
TOTAL			102

TACK COAT

STA	LOCATION	455.0605 GAL
200+25 - 202+44	GRAND AVE	16
202+94 - 206+25	GRAND AVE	23
TOTAL		39

CURB RAMP DETECTABLE WARNING FIELD YELLOW

STA	O/S	602.0505 SF
200+00	33' LT	24
206+30	22' LT	12
206+33	26' LT	24
TOTAL		60

HMA PAVEMENT 4 LT 58-28 S

STA	TO	STA	LOCATION	460.5224 TON
200+25		202+44	GRAND AVE	170
202+94		206+25	GRAND AVE	260
TOTAL				430

CULVERT PIPE REINFORCED CONCRETE CLASS III 48-INCH

STRUCTURE	TO	STRUCTURE	522.0148 LF	JOINT TIES*** EACH	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT
B2		B1	140	12	767.00	767.00	0.0000
C2		C1	135	12	767.00	767.00	0.0000
TOTALS			275				

*** JOINT TIES FOR REFERENCE ONLY

STORM SEWER STRUCTURES

STRUCTURE NUMBER	STATION	OFFSET	522.1015 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 15-INCH EACH	522.1048 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 48-INCH EACH	611.0624 INLET COVERS TYPE H EACH	611.3230 INLETS 2X3-FT EACH	633.5200 MARKERS CULVERT END EACH	RIM ELEVATION	INVERT** ELEVATION	DEPTH ***
A1	200+60	52.4' RT	1	-	-	-	1		772.64	
A2	200+68	16.5' RT	-	-	1	1	-	775.09	771.04	3.24
A3	200+68	16.5' RT	-	-	1	1	-	775.08	771.68	2.57
B1	201+61	71.2' RT	-	1	-	-	1		767.00	
B2	201+71	68.4' RT	-	1	-	-	1		767.00	
C1	203+81	66.6' RT	-	1	-	-	1		767.00	
C2	203+72	67.8' RT	-	1	-	-	1		767.00	
D1	205+10	54.9' RT	1	-	-	-	1		771.82	
D2	204+97	16.5' RT	-	-	1	1	-	774.64	770.76	3.07
D3	204+97	16.5' RT	-	-	1	1	-	774.64	771.17	2.64
TOTALS			2	4	4	4	6			

REMARKS
* STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE
** FOR STRUCTURES WITH SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE SUMP. FOR STRUCTURES WITHOUT SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE
*** DEPTH = RIM ELEV - TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6 -INCH ADJUSTMENT RING HEIGHT

CONCRETE

STA	TO	STA	LOCATION	602.0415 CONCRETE SIDEWALK 6-INCH SF	SPV.0090.02 CONCRETE CURB & GUTTER 24-INCH LF
200+00		206+40	26' LT	8050	-
200+25		206+25	26' RT	6925	-
200+25		206+40	16' LT	-	645
200+25		206+25	16' RT	-	590
200+24		202+29		-	-
303+10		206+25		-	-
TOTALS				14975	1235

3

3

EROSION CONTROL

STA	TO	STA	LOCATION	625.0100 TOPSOIL SY	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.7005 INLET PROTECTION TYPE A EACH	628.7020 INLET PROTECTION TYPE D EACH
200+25		200+40	LT	-		90	90	-	-
200+25		200+30	RT	-		25	25	-	-
205+81		206+30	LT	-		65	65	-	-
205+70		206+19	RT	-		65	65	-	-
200+25		202+44		1600		-	-	-	-
202+94		206+25		2220		-	-	-	-
200+70			GRAND AVE	-		-	-	2	2
204+97			GRAND AVE	-		-	-	2	2
			UNDISTRIBUTED	955	10	61	61		
TOTALS				4,775		306	306	4	4

EROSION CONTROL MOBILIZATION ITEMS

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT (7995-02-46)	7	4
TOTALS	7	4

WATER

LOCATION	624.0100 MGAL
BASE COMPACTION	40
DUST CONTROL	30
TOTAL	70

STORM SEWER PIPE

STRUCTURE	TO	STRUCTURE	608.0412 REINFORCED CONCRETE CLASS IV 12-INCH LF	608.0415 REINFORCED CONCRETE CLASS IV 15-INCH LF	JOINT TIES*** EACH	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT
A3		A2	33	-	-	771.68	771.53	0.0044
A2		A1	-	37	6	771.04	770.94	0.0027
D3		D2	33	41	6	771.17	771.00	0.0050
D2		D1	-	-	-	770.76	770.39	0.0093
TOTALS			66	78				

*** JOINT TIES FOR REFERENCE ONLY

PAVEMENT MARKING

STA	TO	STA	O/S	646.0106 EPOXY 4-INCH YELLOW LF	646.0106 EPOXY 4-INCH WHITE LF
200+25		206+25	11' L	-	610
200+25		206+25	11' R	-	600
200+25		206+25	C/L	1200	-
SUBTOTAL				1200	1210
TOTAL					2410

PAVEMENT MARKING ARROWS

STA	O/S	647.0156 EPOXY TYPE 1 EACH
200+65	13' R	1
205+85	13' L	1
204+65	13' R	1
201+85	13' L	1
TOTALS		4

PAVEMENT MARKING SYMBOLS

STA	O/S	647.0306 BIKE LANE EPOXY EACH
200+48	13' R	1
205+98	13' L	1
204+48	13' R	1
201+98	13' L	1
TOTALS		4

TURBIDITY BARRIERS

STA	TO	STA	LOCATION	628.6005 SY
200+00		205+77	LT	650
200+00		205+81	RT	700
UNDISTRIBUTED				135
TOTAL				1485

PERMANENT SIGNING

STATION	LOCATION	SIGN NO.	TYPE	COMMENT	INCH	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2230 SIGNS TYPE II REFLECTIVE F SF	634.0814 POST TUBULAR STEEL 2X2-INCH X 14-FT EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
200+10	27' LT	9	R5-3	NO MOTOR VEHICLES	24"X24"	4.00	-	1	-	-
200+58	21' RT	1	R7-9	NO PARKING BIKE LANE	18"X24"	3.00	-	1	1	1
202+35	18' LT	2	R7-1D	NO PARKING ANYTIME	18"X24"	3.00	-	1	1	1
203+10	18' RT	10	R7-1D	NO PARKING ANYTIME	18"X24"	3.00	-	1	-	-
205+48	21' LT	8	R2-1	SPEED LIMIT 20	24"X30"	5.00	-	1	1	1
205+48	21' LT	8	R7-9	NO PARKING BIKE LANE	18"X24"	3.00	-	-	1	1
205+55	22' RT	3	W11-15	BIKE / PED CROSSING	30"X30"	-	6.25	1	1	1
205+55	22' RT	7		TRAIL CROSSING	24"X18"	-	-	-	1	1
205+99	21' LT	7		NO THRU TRUCKS	24"X30"	-	-	-	1	1
205+99	21' LT	7	R5-2	NO TRUCKS	24"X24"	4.00	-	1	1	1
206+20	23' RT	4	S1-1	SCHOOL ZONE	36"X36"	-	6.75	1	1	1
206+20	23' RT	4	S16-9P	AHEAD	24"X12"	-	2	-	1	1
206+20	23' RT	4	R7-1D	NO PARKING ANYTIME	18"X24"	3.00	-	-	1	1
206+22	42' LT	6	R5-3	NO MOTOR VEHICLES	24"24"	4.00	-	1	-	-
206+35	39' LT	5	R1-1	STOP SIGN	30'X30"	5.18	-	1	1	1
TOTALS						37.18	15.00	10	12	12

TRAFFIC CONTROL ITEMS

LOCATION	SERVICE PERIOD DAYS	643.0420 BARRICADES TYPE III NO. IN EACH	643.0420 BARRICADES TYPE III PAY (DAY)	643.0705 WARNING LIGHTS TYPE A NO. IN EACH	643.0705 WARNING LIGHTS TYPE A PAY QUANTITY (DAY)	643.0900 SIGNS NO. IN EACH	643.0900 SIGNS PAY (DAY)
CARSON PARK DR & HALF MOON DR	136	6	816	10	1360	4	544
SIDEWALK BTW STAGING AREA & HALF MOON DR	136	1	136	2	272	1	136
LAKE ST & GRAND AVE	136	7	952	10	1360	3	408
W GRAND AVE & CHIPPEWA RIVER STATE TRAIL	136	1	136	2	272	2	272
W GRAND AVE & 7TH AVE	136	2	272	4	544	2	272
LAKE ST & 7TH AVE	136	2	272	4	544	2	272
TOTALS			2584		4352		1904

MOBILIZATION

LOCATION	619.1000 EACH
PROJECT (7995-02-46) CATEOGY 0010	0.7
PROJECT (7995-02-46) CATEOGY 0020	0.3
TOTAL	1

FIELD OFFICE TYPE B

	642.5001 EACH
PROJECT (7995-02-46)	1
TOTAL	1

RESTORATION

STA	TO	STA	627.0200 MULCHING SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	629.0205 FERTILIZER TYPE A CWT	630.0140 SEEDING MIXTURE NO. 40 LB	SPV.0085.01 NATIVE SEEDING LB
200+25		202+44	610	0	0.4	12	0
202+94		206+25	910	0	0.6	18	0
200+25		202+44	0	950	0.0	0	4
202+94		206+25	0	1310	0.0	0	5
UNDISTRIBUTED			380	230	0.2	5	3
TOTAL			1,900	2,490	1.2	35	12

EARTHWORK SUMMARY

STATION TO STATION	LOCATION	205.0100 EXCAVATION COMMON (1) (2) CY	205.0400 EXCAVATION MARSH CY	(8) SALVAGED/UNUSABLE PAVEMENT MATERIAL CY	(3) AVAILABLE MATERIAL CY	UNEXPANDED FILL CY	311.0110 BREAKER RUN (4) TON	606.0100 RIPRAP LIGHT CY	606.0200 RIPRAP MEDIUM CY	606.0300 RIPRAP HEAVY CY	(5) (6) EXPANDED FILL CY	(7) MASS ORDINATE +/- CY	WASTE CY	209.2100 BACKFILL GRANULAR GRADE 2 CY
		-	-	-	-	-	-	-	-	-	-	-	-	-
200+25 - 206+25	GRAND AVE	596	-	172	424	30152	9650	6180	3440	8910	7828	-7404	172	7410
200+25 - 206+25	LAKE BED	-	10629	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	-	-	-	-	-	-	-
UNDISTRIBUTED		-	-	-	-	-	965	618	344	891	-	-	-	-
SUBTOTALS		596	10629	172	424	30152	10615	6798	3784	9801	7828	-7404	172	7410
TOTALS		596	10629				10615	6798	3784	9801				7410

1) COMMON EXCAVATION IS THE SUM OF THE CUT EXCAVATION ABOVE THE WATER LINE. ITEM NUMBER 205.0100
2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) AVAILABLE MATERIAL = EXCAVATION COMMON - SALVAGED/UNUSABLE PAVEMENT MATERI
4) BREAKER RUN TONS TO CUBIC YARD FACTOR = 1.8 TONS/CY
5) EXPANDED FILL FACTOR = 1.25
6) EXPANDED FILL = (UNEXPANDED FILL - BREAKER RUN (CY) - RIPRAP LIGHT - RIPRAP MEDIUM - RIPRAP HEAVY) * FILL FACTOR
7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE PROJECT. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE PROJECT, MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE PROJECT
8) ASSUMED EXISTING PAVEMENT DEPTH OF 3 INCHES FOR SALVAGED/UNUSABLE PAVEMENT MATERIAL QUANTITY.
EARTHWORK CALCULATED BY TRIANGULAR IRREGULAR NETWORK COMPARISON

TRACKING PADS

STA	628.7560 EACH
206+00	1
TOTAL	1

TEMPORARY PEDESTRIAN SAFETY FENCE

LOCATION	644.1616.S LF
UNDISTRIBUTED	300
TOTAL	300

STAKING ITEMS

LOCATION	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB & GUTTER LF	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT B-18-230 LS	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (7995-02-46) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
PROJECT (7995-02-46)	10	600	600	1235	1	1	600
TOTALS	10	600	600	1,235	1	1	600

PULL BOXES STEEL 24X42-INCH

LOCATION	DESCRIPTION	653.0140 EACH
205+60, 21.5' LT	LPB-1	1
205+60, 21.5' RT	LPB-2	1
203+00, 21.5' LT	LPB-3	1
203+00, 21.5' RT	LPB-4	1
202+36, 21.5' RT	LPB-5	1
202+36, 21.5' LT	LPB-6	1
TOTAL		6

CONCRETE BASES TYPE 5

LOCATION	DESCRIPTION	654.0105 EACH
205+50, 21' LT	L1	1
206+25, 21' RT	L2	1
203+90, 23.5' LT	L3	1
240+70, 21' RT	L4	1
202+30, 21' LT	L5	1
203+10, 21' RT	L6	1
200+70, 21' LT	L7	1
201+50, 21' RT	L8	1
TOTAL		8

CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS

LOCATION	650.8500 LS
PROJECT (7995-02-46)	1
TOTAL	1

CONDUIT RIGID NONMETALLIC SCHEDULE 40 AND ELECTRICAL WIRE LIGHTING

FROM	TO	652.0225 2-INCH LF	655.0625 6 AWG LF	655.0620 8 AWG LF
LCC	LPB-1	50	124	155
LPB-1	LPB-2	45	102	153
LPB-2	L1	10	32	48
L1	L3	160	332	498
L3	LPB-3	90	192	288
LPB-3	LPB-6	65	142	213
LPB-6	L5	5	22	33
L5	L7	160	332	498
LPB-6	U-1	10	-	48
LPB-2	L2	60	264	330
LPB-2	L4	80	172	258
L4	L6	155	322	483
L6	LPB-4	10	32	48
LPB-4	LPB-5	65	142	213
LPB-5	L8	85	182	273
LPB-4	U-2	10	32	48
LPB-3	LPB-4	45	-	-
LPB-5	LPB-6	45	-	-
CONDUIT STUBS		30	-	-
TOTALS		1180	2424	3587

GEOTEXTILE TYPE R

STATION	LOCATION	645.0130 SY
200+25 - 202+44	LT	965
200+25 - 202+44	RT	970
202+94 - 205+75	LT	1425
202+94 - 206+00	RT	880
TOTAL		4240

LIGHTING CONTROL CABINET AND BASES

STATION	DESCRIPTION	CONCRETE CONTROL CABINET BASES TYPE L24 654.0224 EACH	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LCC B) 656.0200 LS	LIGHTING CONTROL CABINETS 120/240 24-INCH 659.2124 EACH
16+50, 25.0' LT	LCC B	1	1	1
TOTALS		1	1	1

3

LIGHTING UNITS AND ELECTRICAL WIRE LIGHTING

UNIT	STATION	OFFSET	DECORATIVE LIGHTING UNIT SPV.0060.02 EACH	UNDERDECK LIGHTING UNIT SPV.0060.01 EACH	12 AWG 655.0610 LF
L1	205+50	21' LT	1	-	170
L2	206+25	21' RT	1	-	170
L3	203+90	23.5' LT	1	-	170
L4	204+70	21' RT	1	-	170
L5	202+30	21' LT	1	-	170
L6	203+10	21' RT	1	-	170
L7	200+70	21' LT	1	-	170
L8	201+50	21' RT	1	-	170
U1	202+44	12' LT	-	1	-
U2	202+90	12' RT	-	1	-
TOTAL (CATEGORY 0010)			-	-	1,360
TOTAL (CATEGORY 0030)			8	2	-

STONE RETAINING WALL AND CURBING

STA	LOCATION	SPV.0165.01 STONE RETAINING WALL SF	SPV.0090.03 STONE CURBING LF
201+35	40' RT	-	15
201+75	40' LT	-	15
203+65	40' LT	-	15
204+25	40' RT	-	15
201+50	55' LT	80	-
202+15	50' LT	65	-
203+15	50' LT	120	-
203+25	50' RT	75	-
204+50	50' LT	100	-
TOTAL (CATEGORY 0030)		440	60

TREE DROP

STA	SPV.0060.04 EACH
201+75, RT	1
203+25, LT	1
203+65, RT	2
TOTAL	4

CONSTRUCTION STAKING LANDSCAPE LAYOUT

LOCATION	SPV.0105.01 LS
PROJECT (7995-02-46)	1
TOTAL	1

SAWING

LOCATION	O/S	690.0150 ASPHALT LF	690.0250 CONCRETE LF
200+25	16' L/R	32	-
200+25	17' R	-	6
206+25	20' R	20	-
206+25	44' L	58	-
206+30	48' L	-	5
206+25	27' R	-	5
TOTALS		110	16

LANDSCAPE SURFACE TREATMENTS

STA	TO	STA	SPV.0165.02 FLAGSTONE PAVING SF	SPV.0195.01 STONE SCREENINGS WITH BINDER TON	SPV.0090.01 ALUMINUM EDGING LF	405.1000 STAMPING COLORED CONCRETE CY
200+25		202+00	467	40	1750	-
202+01		203+50	-	-	-	25
203+51		206+25	603	50	1465	-
TOTAL (CATEGORY 0010)			0	0	0	25
TOTAL (CATEGORY 0030)			1070	90	3215	0

CINC PULLBOX

LOCATION		SPV.0060.05 EACH
200+12.0	48.0' LT	1
200+55.0	22.0' RT	1
203+05.0	23.4' RT	1
206+35.0	24.0' RT	1
TOTALS		4

CINC CONDUIT 1 1/4-INCH

LOCATION	SPV.0090.04 LF
200+12 LT - 200+55 RT	80
205+55 RT - 206+35 RT	560
TOTALS	640

SHORELINE RIPRAP

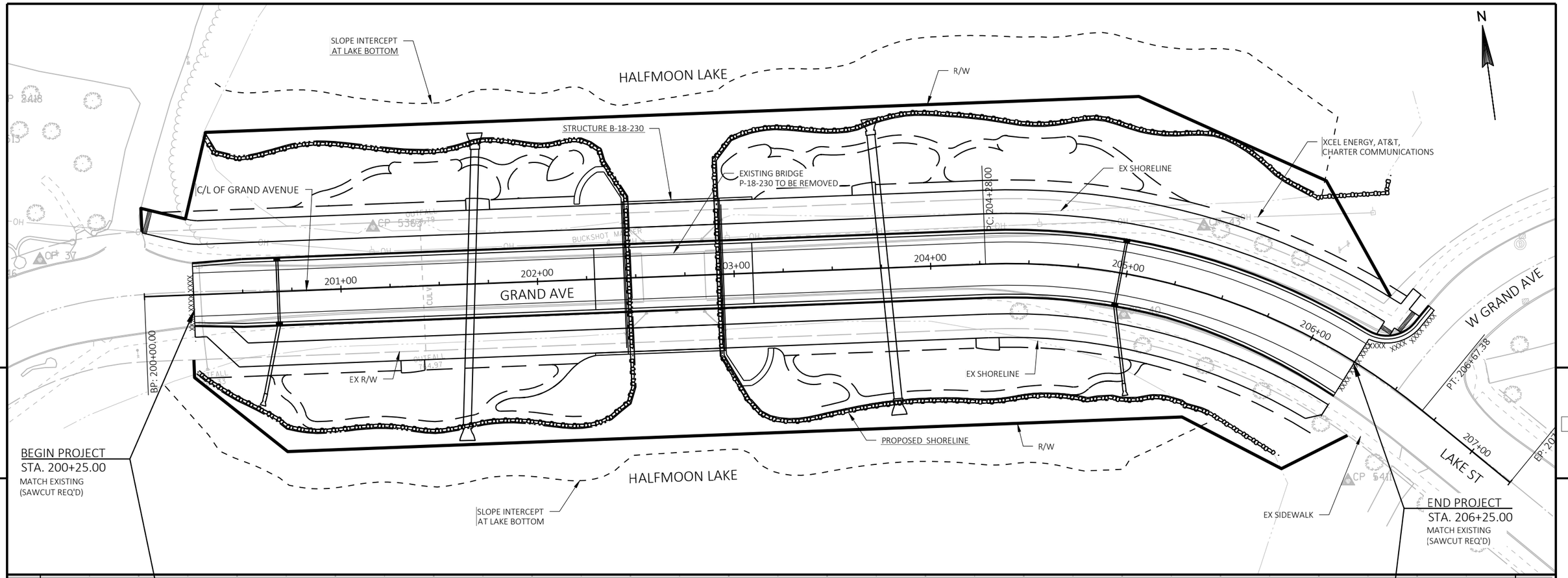
LOCATION	SPV.0035.01 CY
200+25 - 206+00 LT	314
200+25 - 206+00 RT	283
TOTALS	597

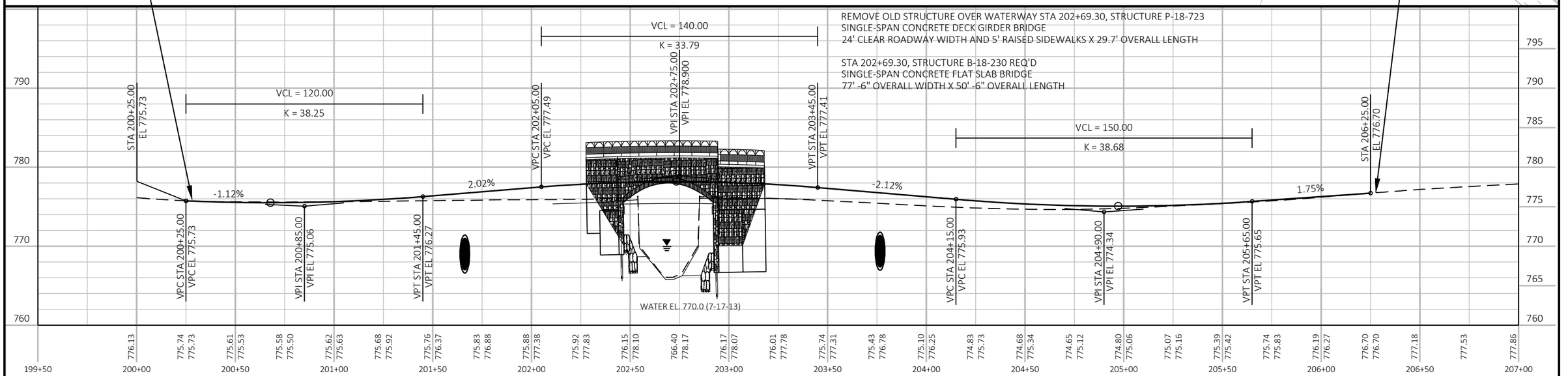
BENCHES

STA	TO	STA	SPV.0060.03 EACH
200+25		202+00	2
202+01		203+50	4
203+51		206+25	2
TOTAL (CATEGORY 0030)			8

TREES

STA	TO	STA	632.0101.01 SIENNA GLEN MAPLE B&B, 2.5" CAL. AS EACH	632.0101.02 HERITAGE BIRCH B&B, CLUMP, 6-8' H. BC EACH	632.0101.03 SKYLINE THORNLESS HONEYLOCUST B&B, 2.5" CAL. GI EACH	632.0101.04 WHITE OAK B&B, 2.5" CAL. QA EACH	632.0101.05 SWAMP WHITE OAK B&B, 2.5" CAL. QM EACH
200+25		202+44	4	6	7	3	4
202+94		206+25	3	6	13	2	9
TOTAL			7	12	20	5	13





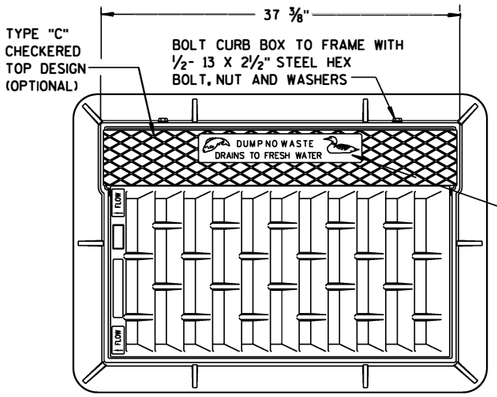
PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	PLAN AND PROFILE	SHEET 29 E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0501_PP.DWG
LAYOUT NAME - 0501_PP-01

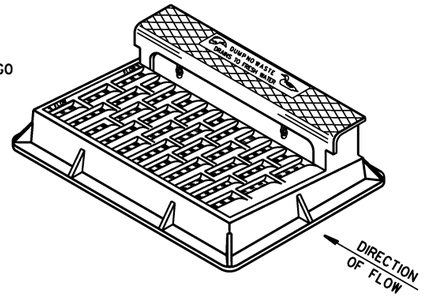
PLOT DATE : 10/14/2016 12:10 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1IN:50FT

Standard Detail Drawing List

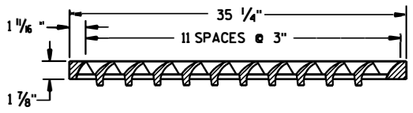
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-17A	CURB RAMPS TYPES 1 AND 1-A
08D05-17B	CURB RAMPS TYPES 2 AND 3
08D05-17C	CURB RAMPS TYPES 4A AND 4A1
08D05-17D	CURB RAMPS TYPE 4B AND 4B1
08D05-17E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-09	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C14-02	CONCRETE CONTROL CABINET BASE, TYPE L
09D04-02	LIGHTING CONTROL CABINET 120/240 VOLT
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
10A15-04A	ELECTRICAL DETAILS UNDERDECK LIGHTING
10A15-04B	ELECTRICAL DETAILS UNDERDECK LIGHTING
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14A02-01	TREE PLANTING DETAIL
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C07-13C	PAVEMENT MARKING ARROWS
15C07-13E	PAVEMENT MARKING FOR BIKE LANES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C29-04A	BICYCLE LANE MARKING
15D30-02A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-03C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

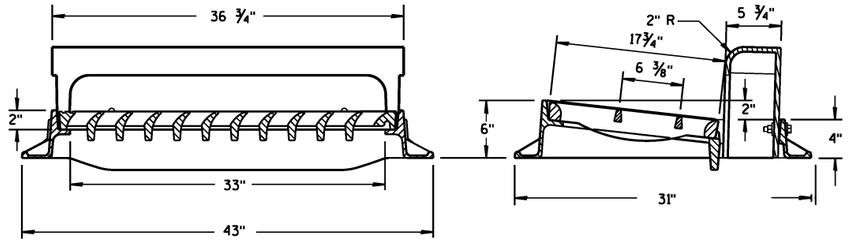


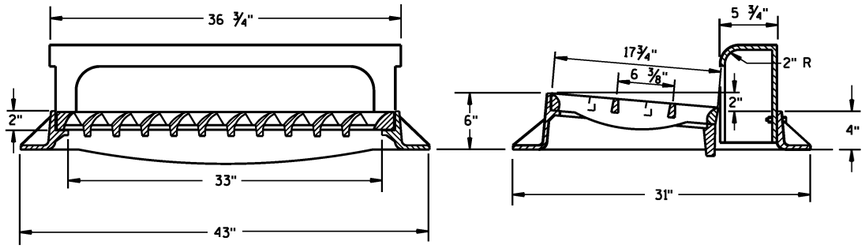
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

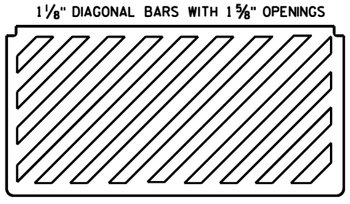






TYPE "H"

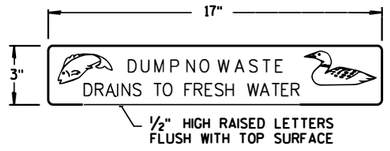
NOTE: EITHER CASTING IS ACCEPTABLE



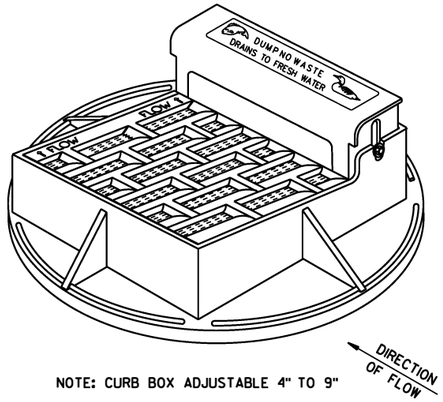
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

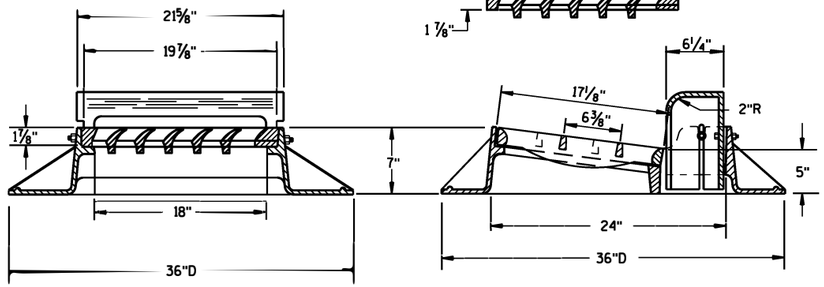


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



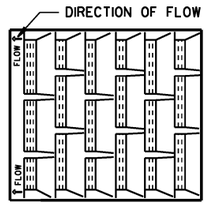
TYPE "A"

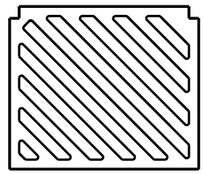
GENERAL NOTES

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

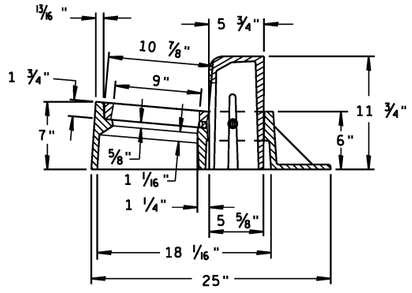


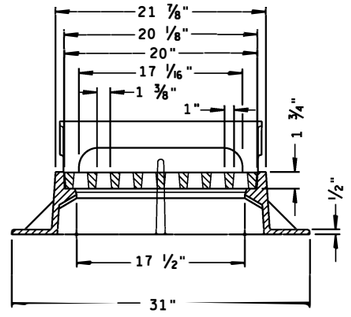


SPECIAL GRATE FOR TYPE "A" COVER

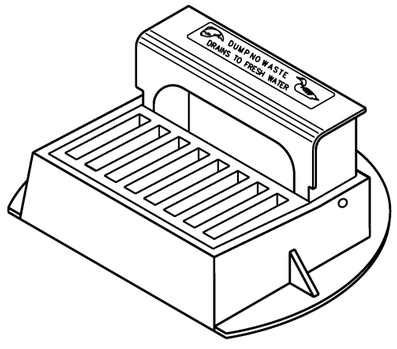
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





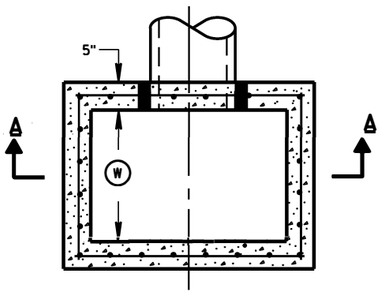
TYPE "Z"



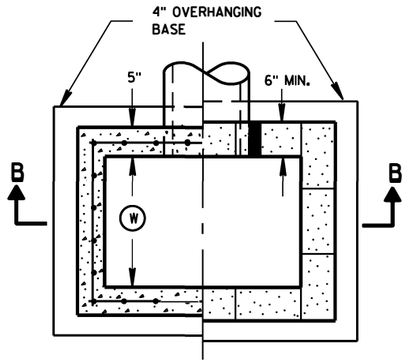
INLET COVERS
TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

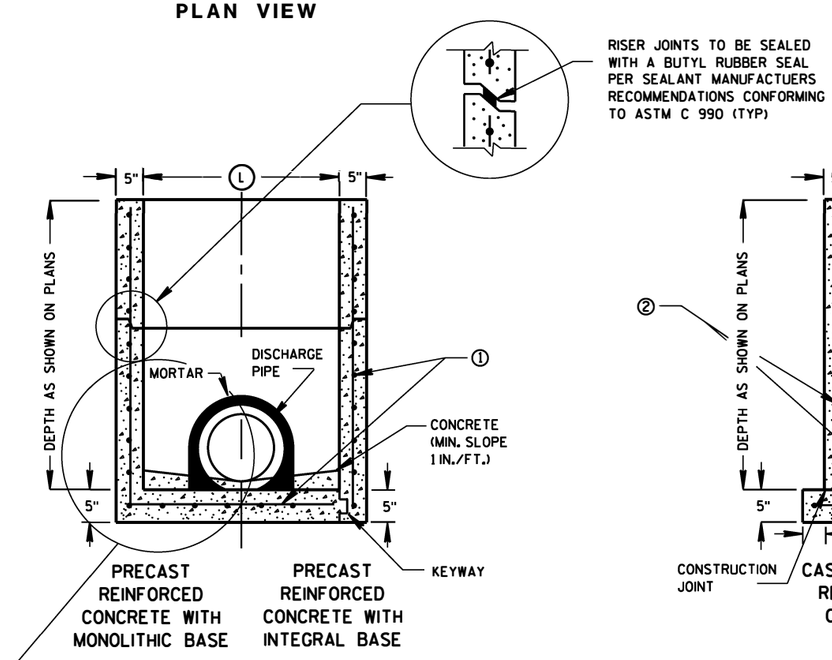
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA



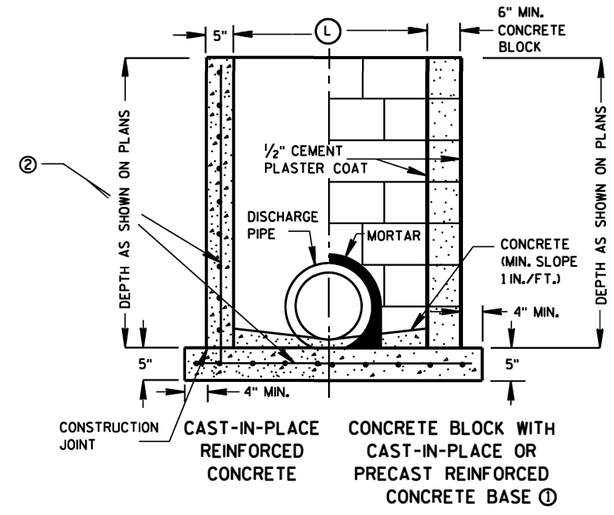
PLAN VIEW



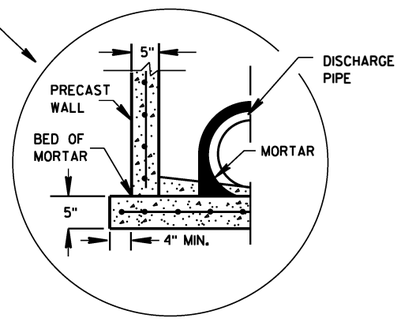
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

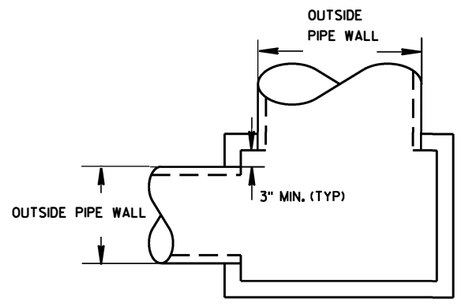
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DE
ENGINEER
FHWA

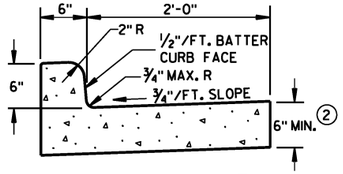
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

6

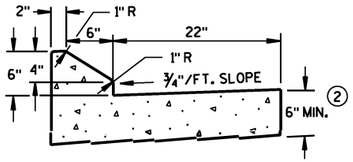
S.D.D. 8 C 7-1

6

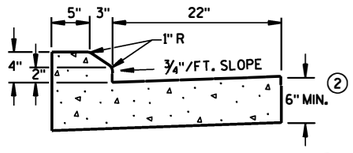
S.D.D. 8 C 7-1



TYPES A & D ①

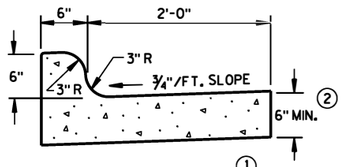


6" SLOPED CURB TYPES G & J ①

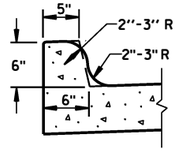


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

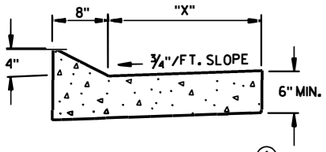


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

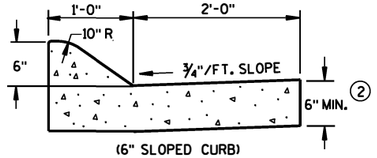
CONCRETE CURB & GUTTER 30"



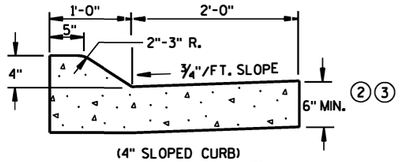
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"

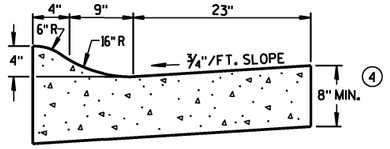


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ①⑤

CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

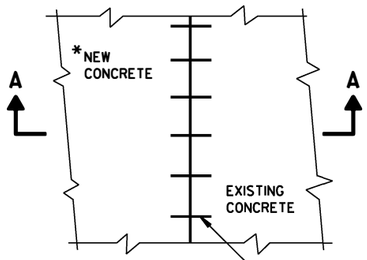
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

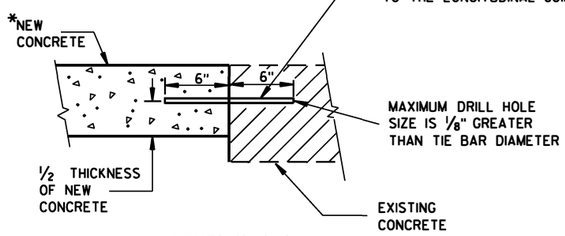
⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



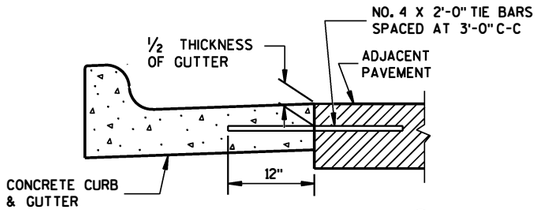
PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

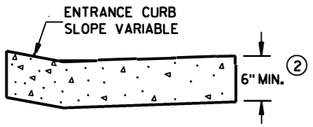


SECTION A-A

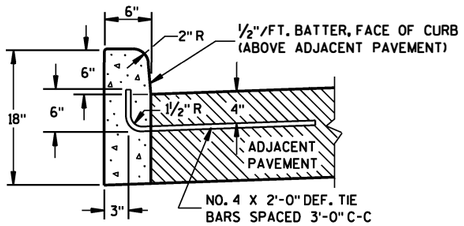
TIE BARS DRILLED INTO EXISTING PAVEMENT



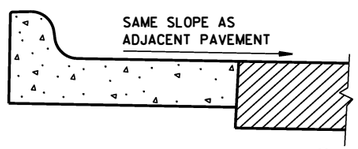
TYPICAL TIE BAR LOCATION ①



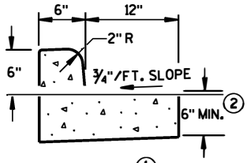
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



① TYPES A & D

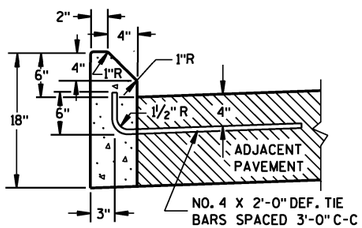


⑥ REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)



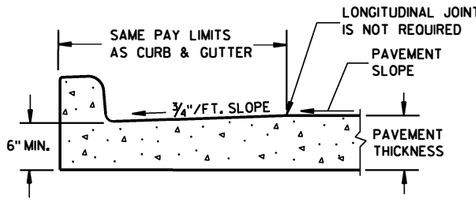
① TYPES A & D

CONCRETE CURB & GUTTER 18"

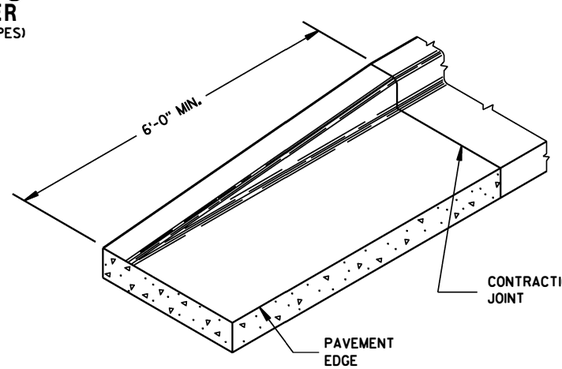


① TYPES G & J

CONCRETE CURB



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

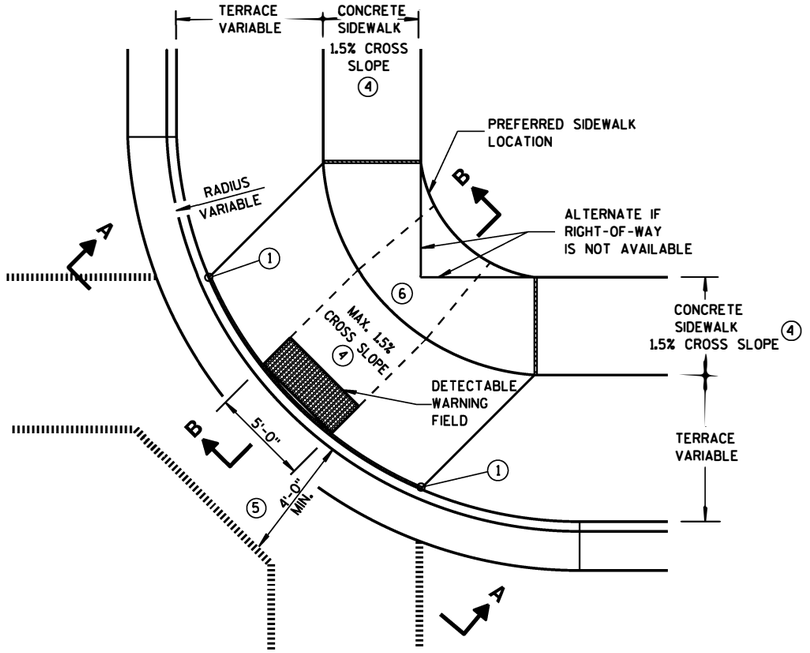
NTS

6

S.D.D. 8 D 1-19

S.D.D. 8 D 1-19

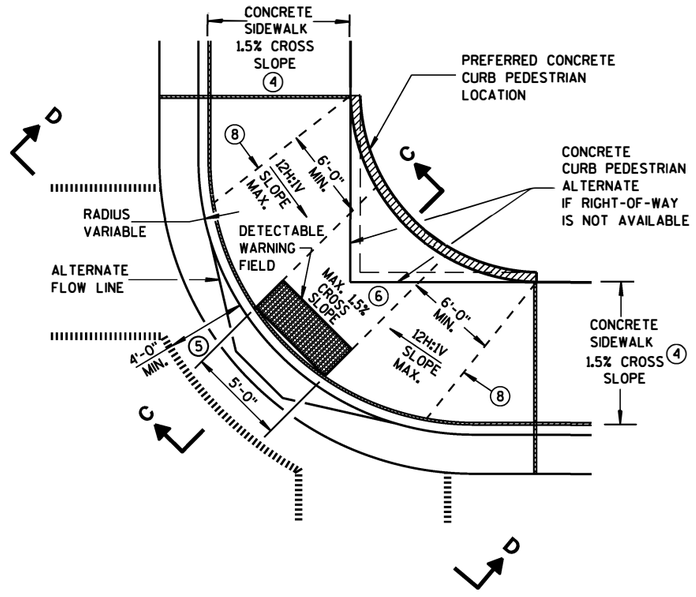
6



PLAN VIEW

TYPE 1 RAMP

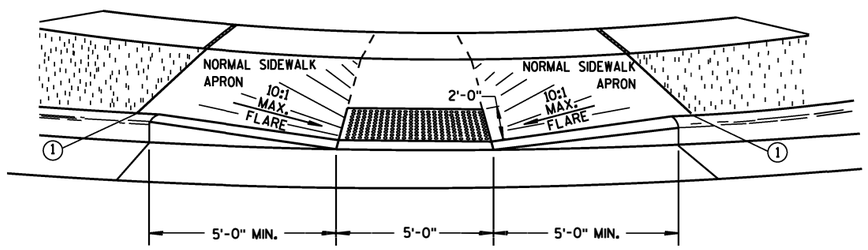
(CENTER OF CORNER RADIUS)



PLAN VIEW

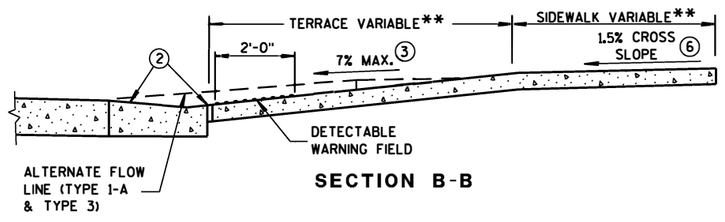
TYPE 1-A RAMP

(NO TERRACE)

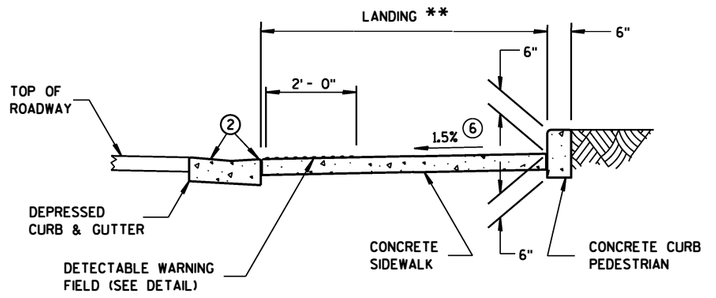


VIEW A-A

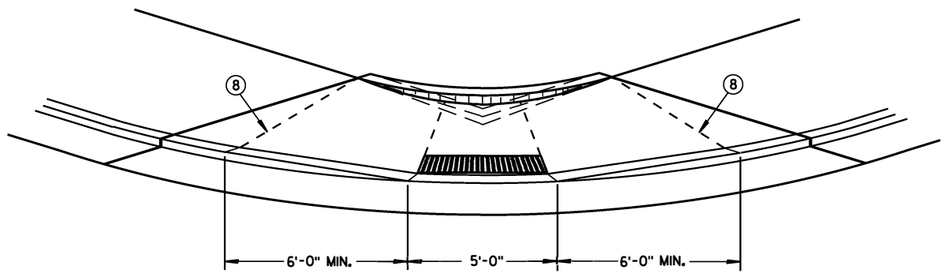
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



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.

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".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

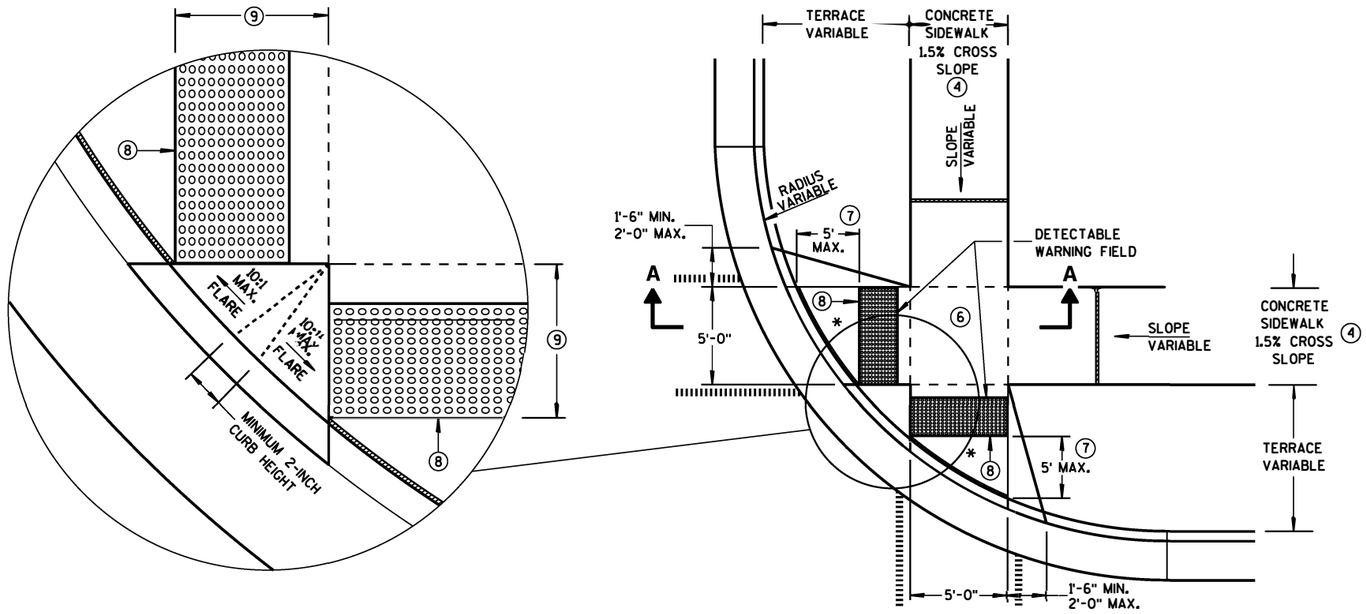
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

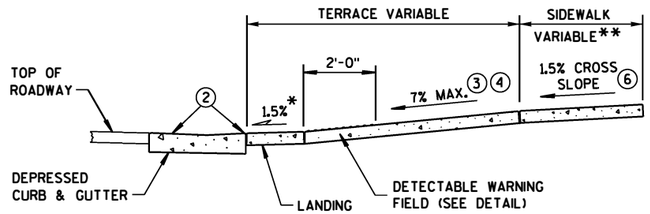
6

S.D.D. 8 D 5-17a



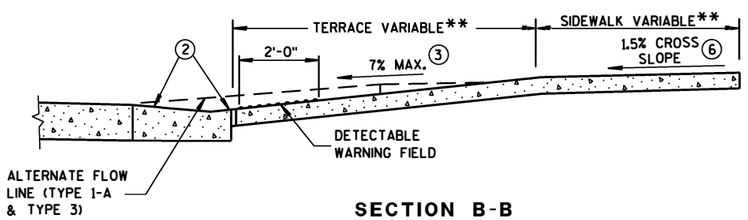
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

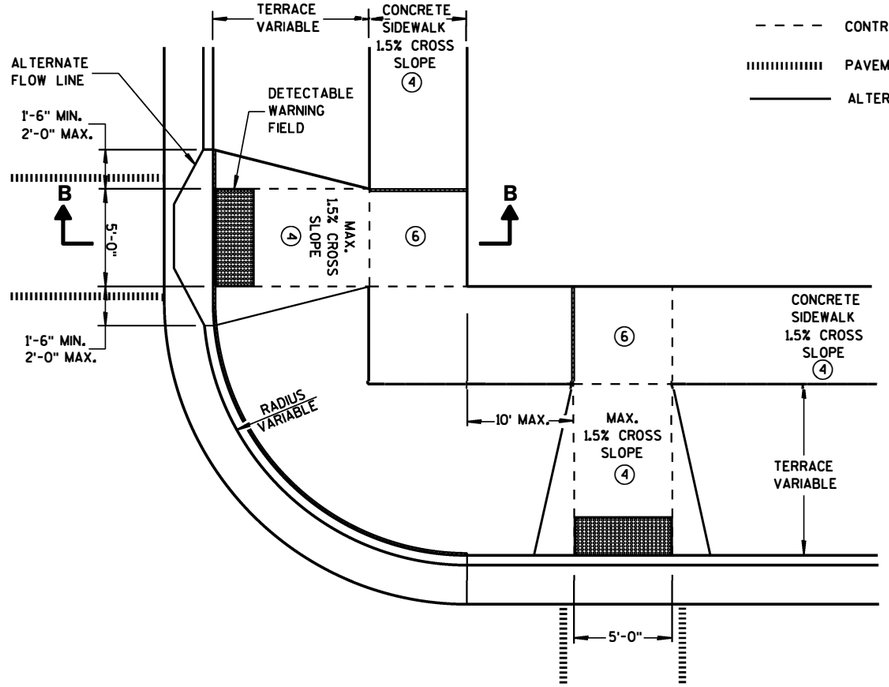
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



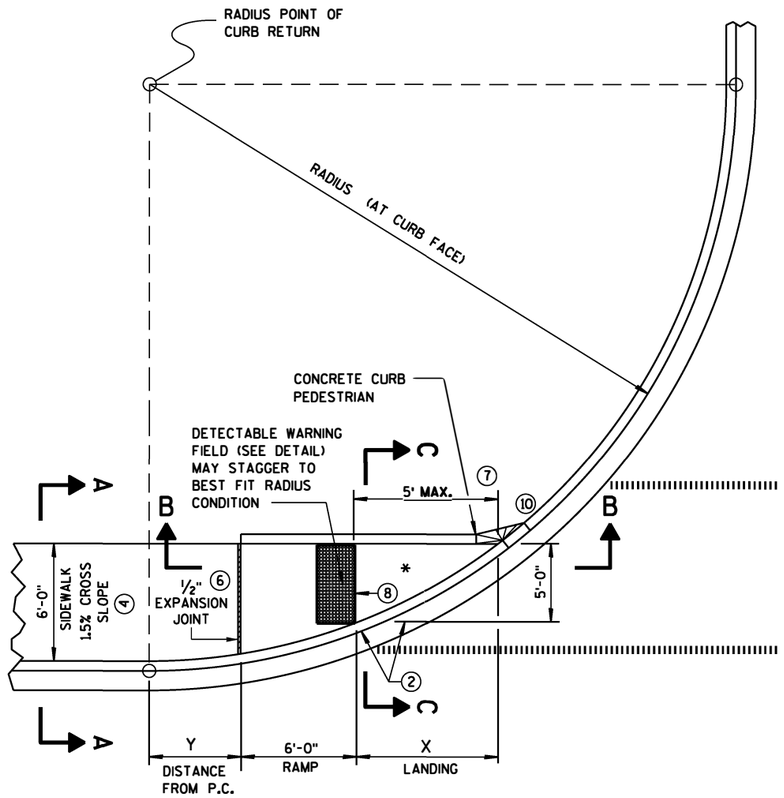
PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

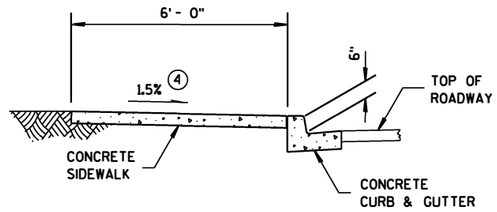
S.D.D. 8 D 5-17b



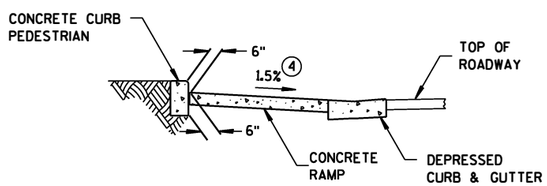
CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X	Y
20 FEET	7'-11"	0'-2"
30 FEET	10'-2¾"	1'-7½"
40 FEET	12'-1¼"	2'-10"
50 FEET	13'-8¾"	3'-10¾"
60 FEET	15'-2"	4'-10¼"

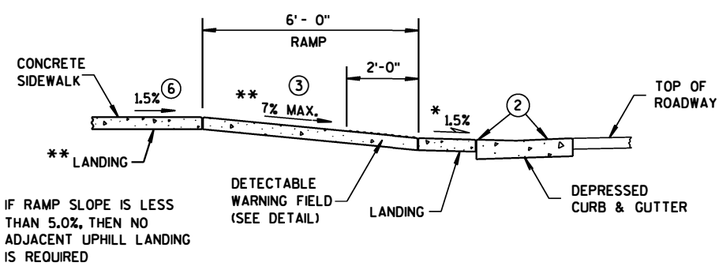
INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

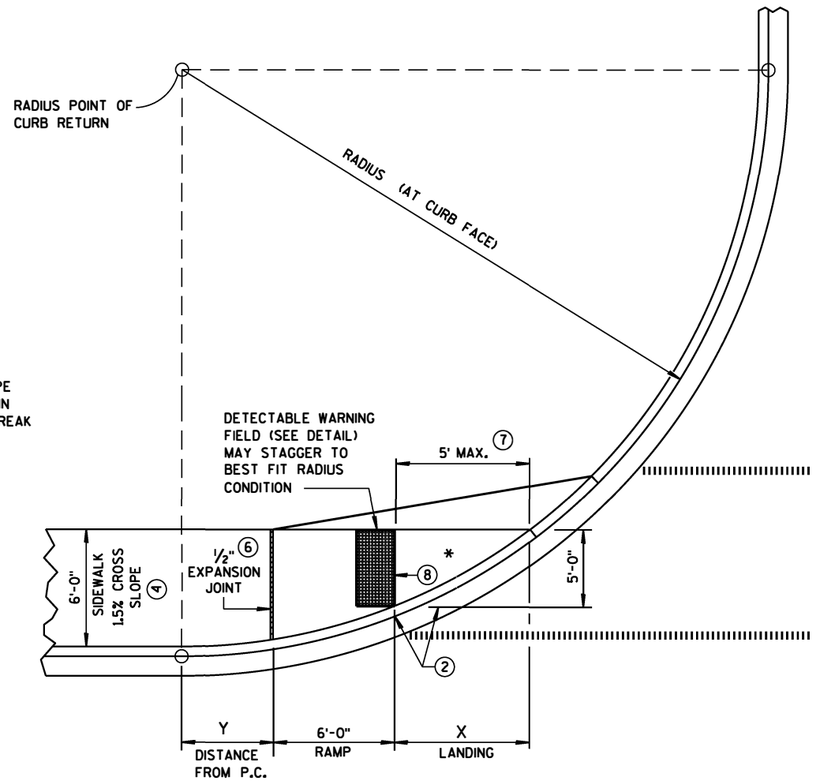


SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

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

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

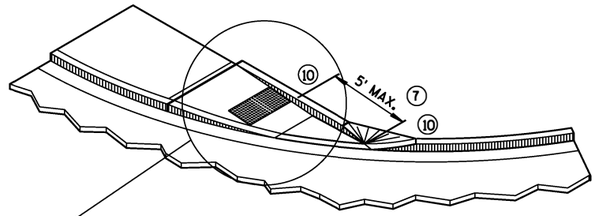
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

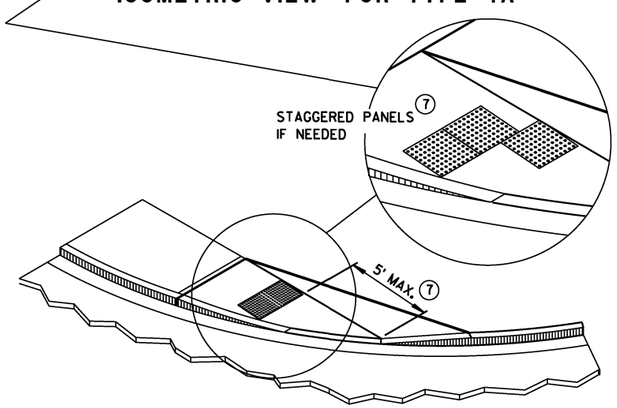
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

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



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

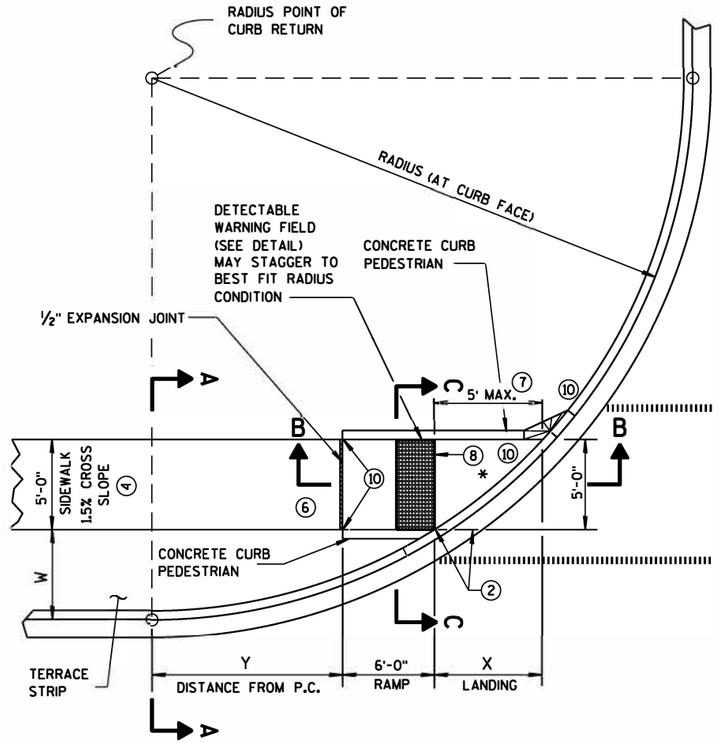
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 4A AND 4A1

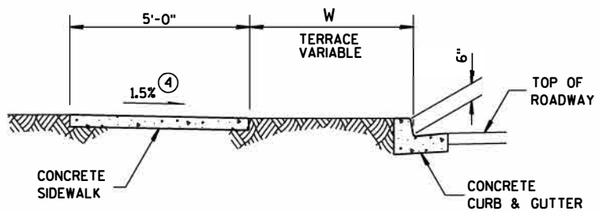
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

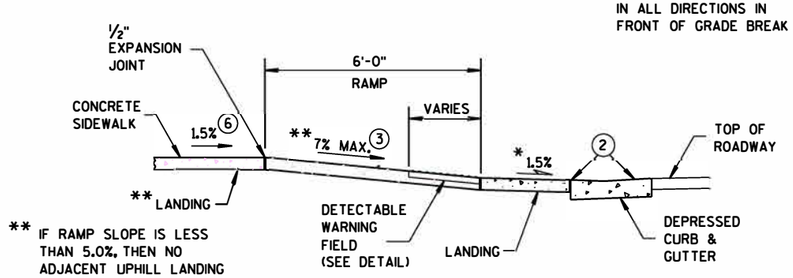
S.D.D. 8 D 5-17c



CURB RAMP TYPE 4B
PLAN VIEW



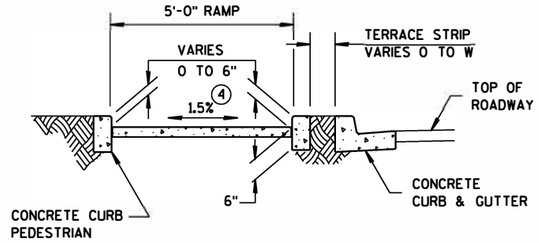
SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



SECTION C-C FOR TYPE 4B

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'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-6¾"	3'-3"	8'-6¼"
30 FEET	7'-9¼"	5'-10½"	6'-9½"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"
40 FEET	9'-4"	7'-10"	8'-2¾"	10'-3"	7'-4¾"	12'-3¾"	6'-8½"	14'-1¼"	6'-1¾"	15'-8½"
50 FEET	10'-8"	9'-6½"	9'-5½"	12'-3¼"	8'-6½"	14'-7½"	7'-9¾"	16'-8¼"	7'-2½"	18'-6¼"
60 FEET	11'-10¼"	11'-0¾"	10'-6½"	14'-1¼"	9'-6½"	16'-8½"	8'-9¼"	18'-11¾"	8'-1½"	21'-0½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

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

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

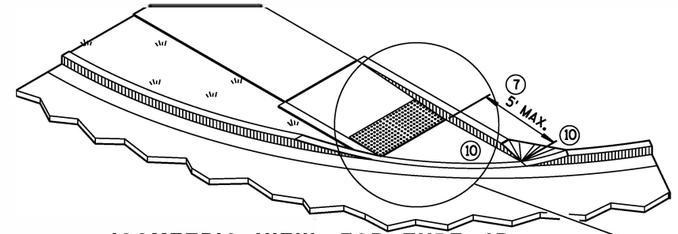
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

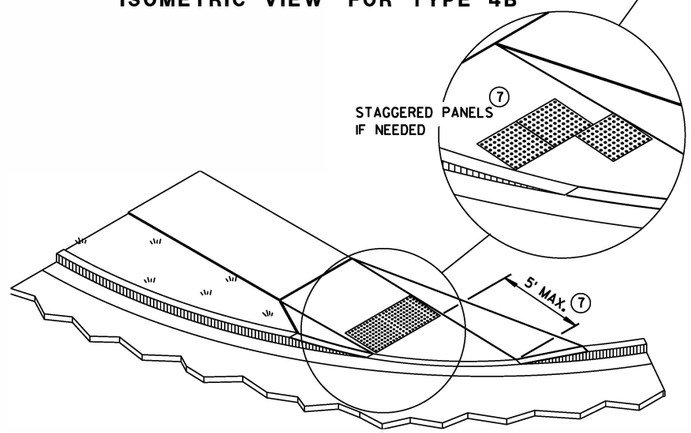
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

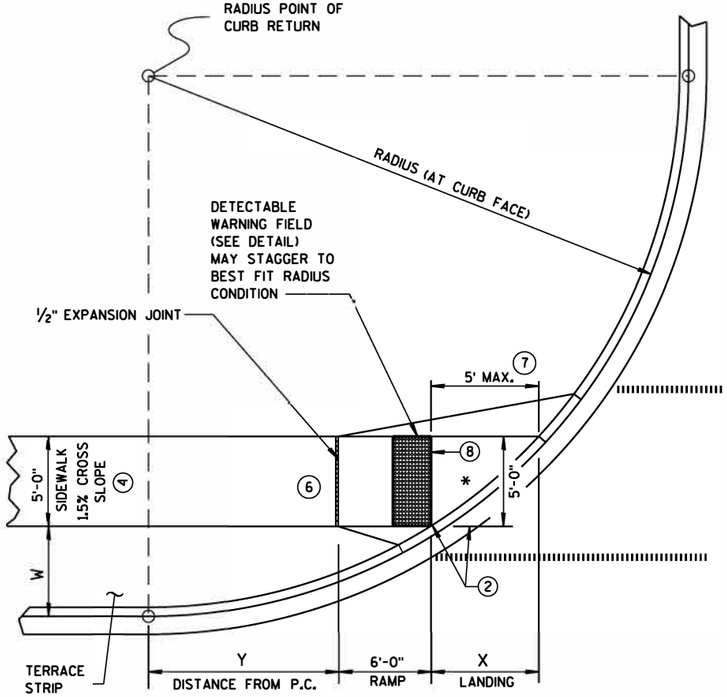
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1



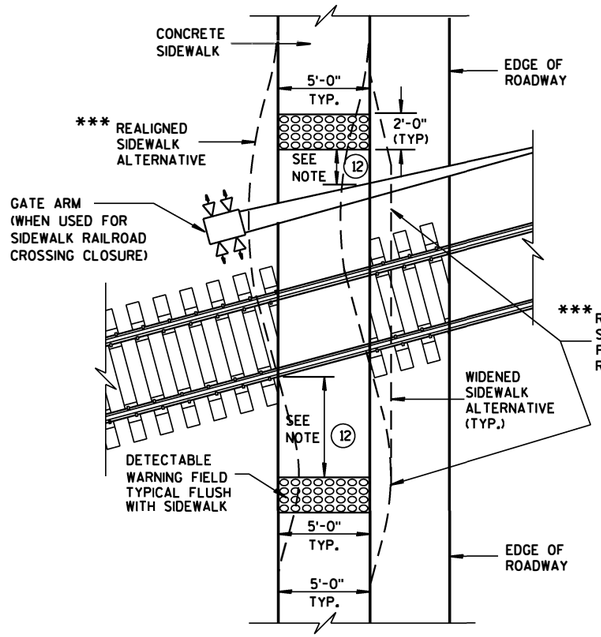
CURB RAMP TYPE 4B1
PLAN VIEW

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

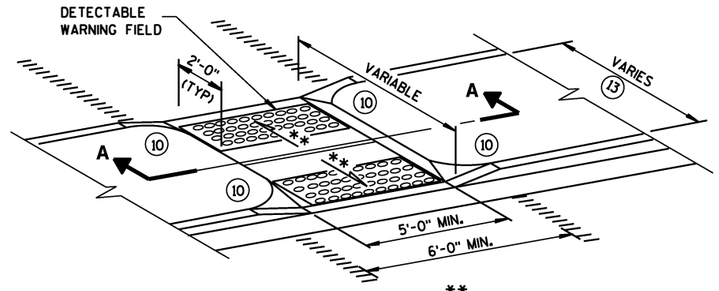
6

S.D.D. 8 D 5-17d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING

*** DETAILS TO BE DETERMINED BY DESIGNER



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

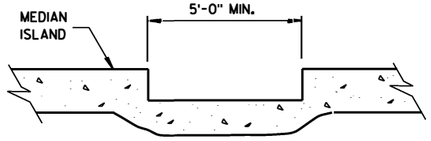
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

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

(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 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.

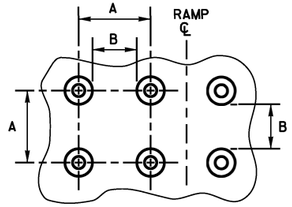
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS IF MEDIAN WIDTH BETWEEN BACK OF CURBS IS LESS THAN 6 FEET.



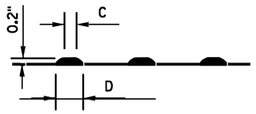
SECTION A-A

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

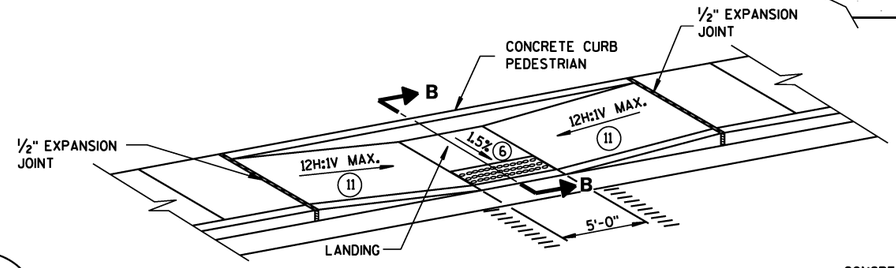
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



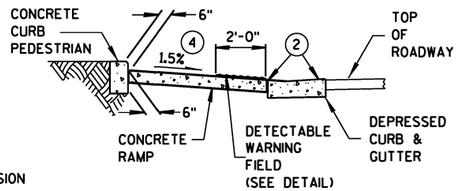
PLAN VIEW



ELEVATION VIEW

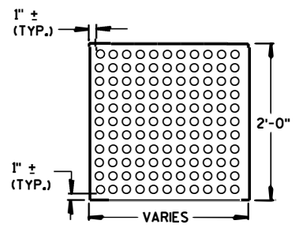


MID-BLOCK CROSSING
TYPE 7A



SECTION B-B

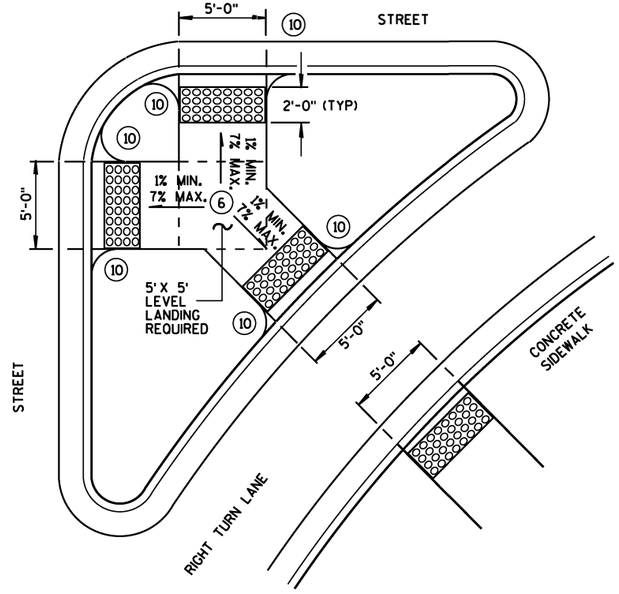
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



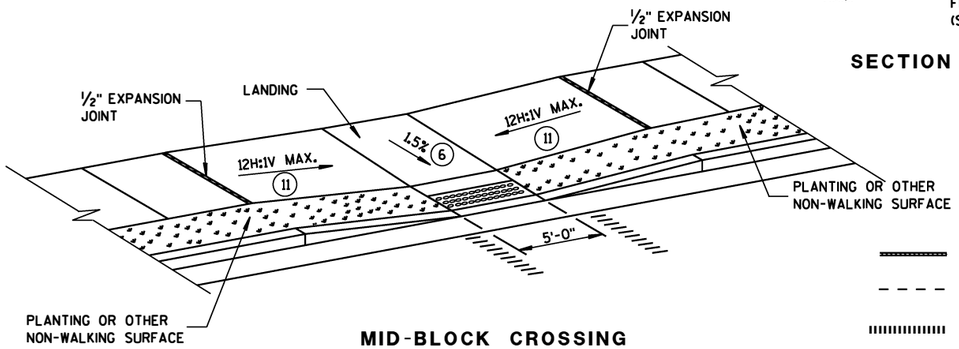
PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

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

LEGEND

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

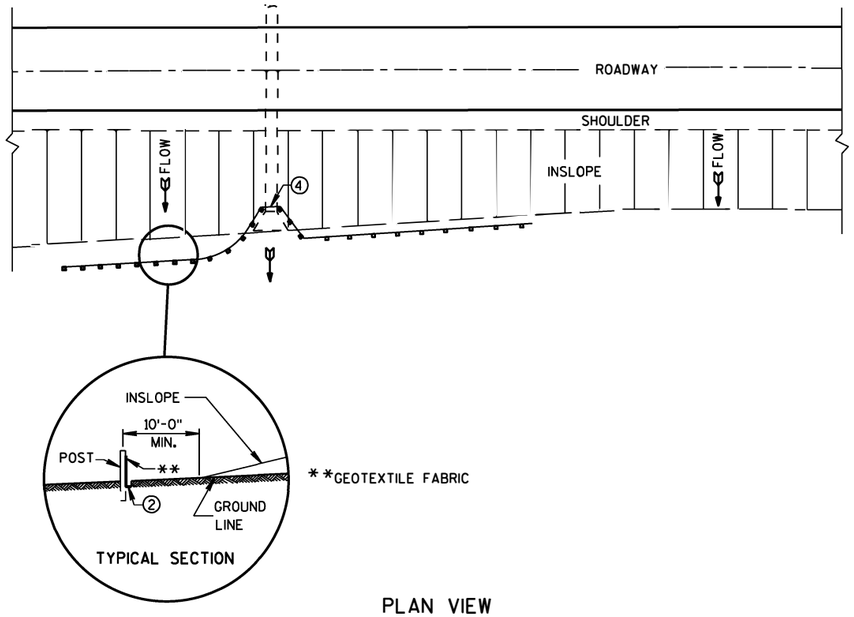
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

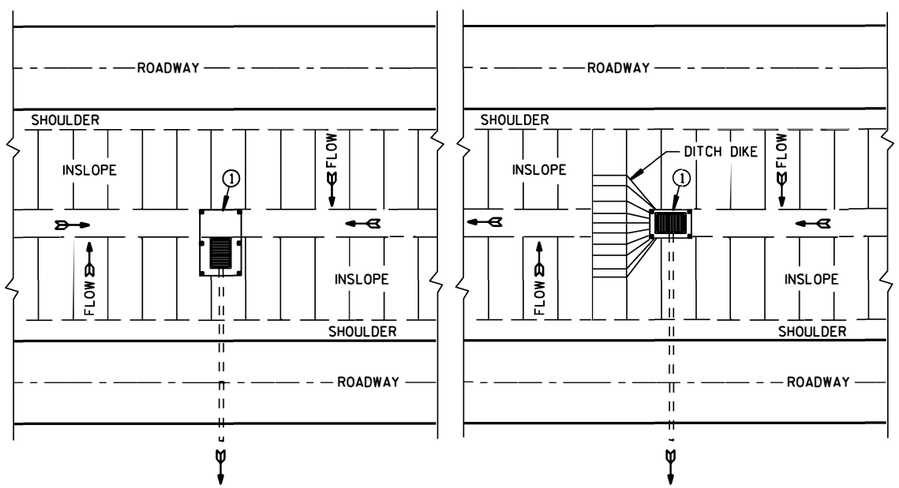
6

S.D.D. 8 D 5-17e



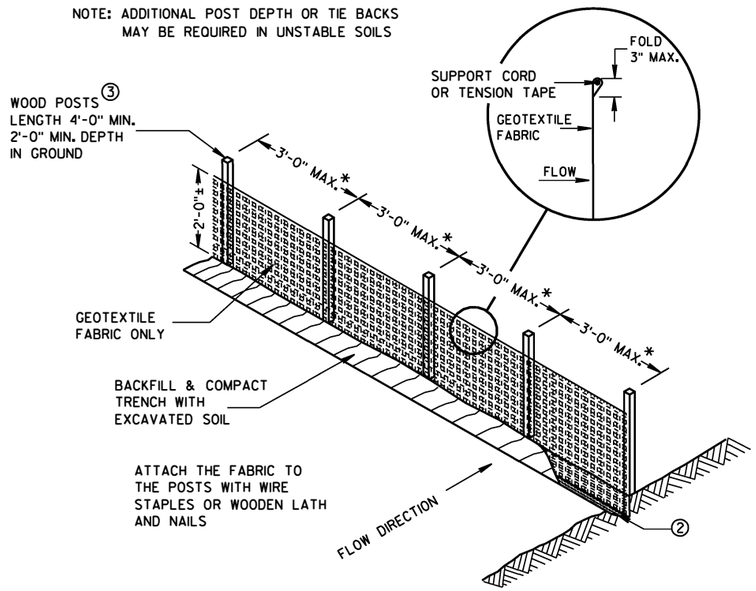
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



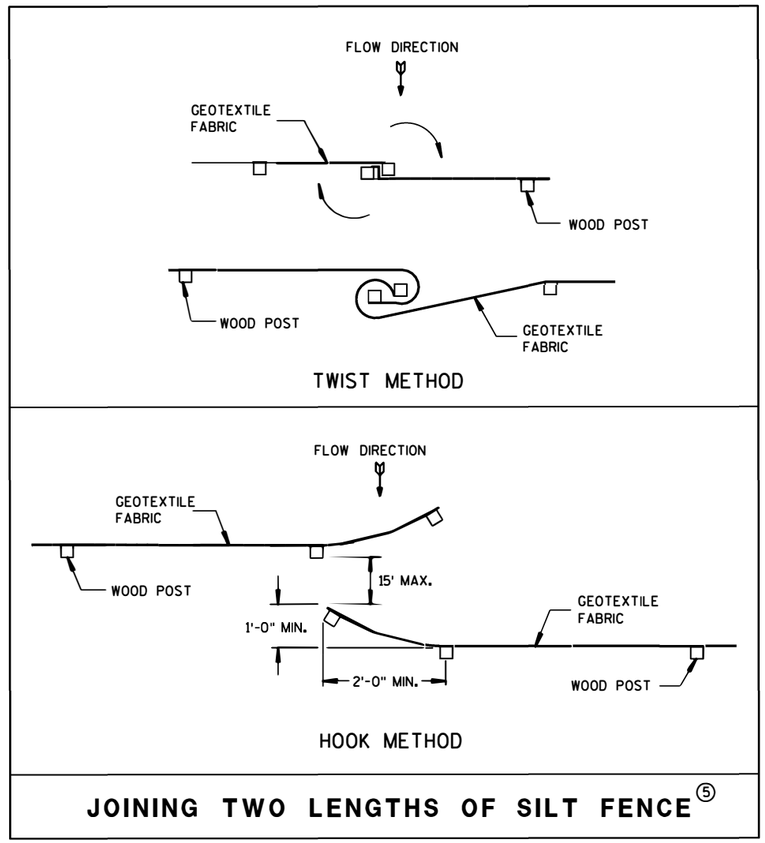
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

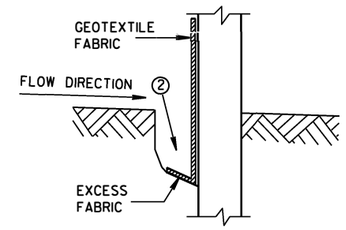


JOINING TWO LENGTHS OF SILT FENCE 5

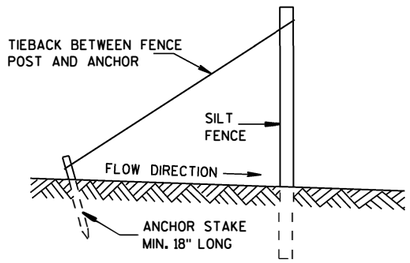
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

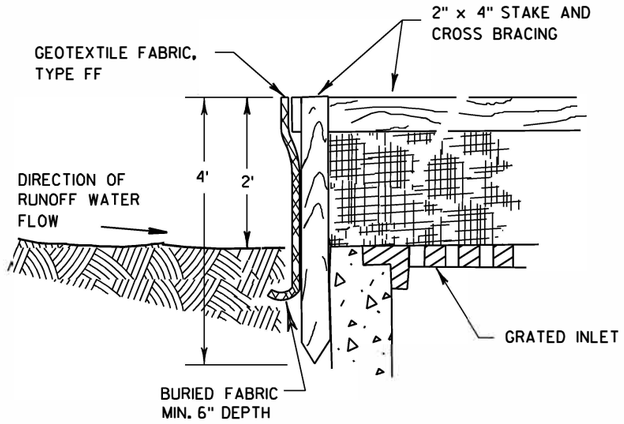
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

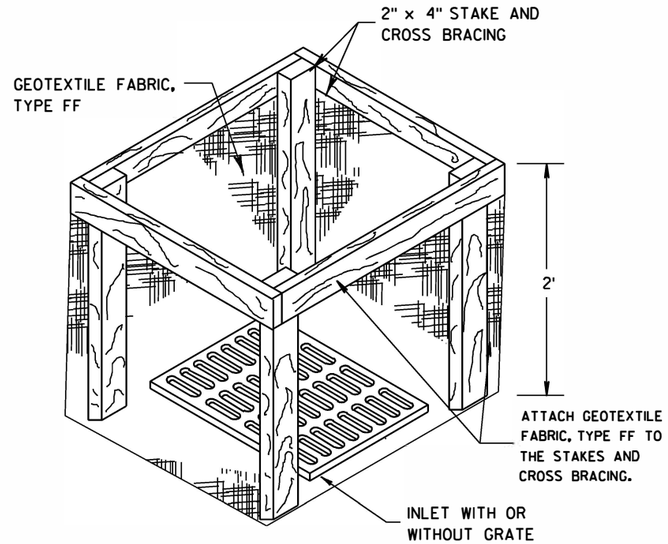
APPROVED

4-29-05 /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER

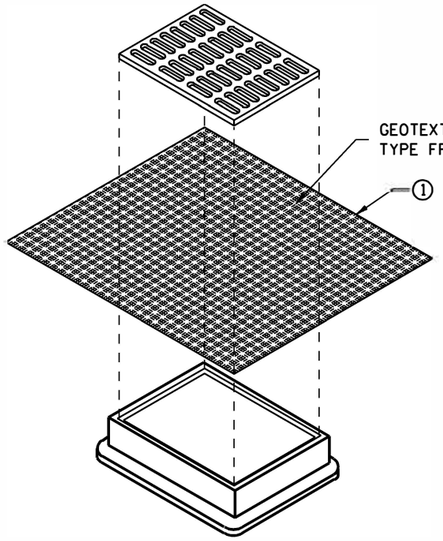
FHWA

6
SDD 8 E 9-6



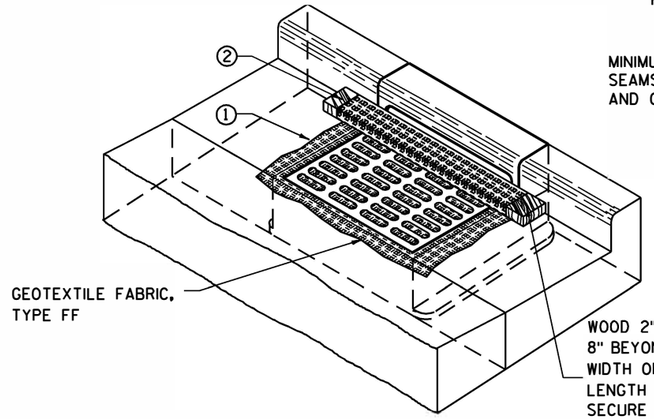


INLET PROTECTION, TYPE A

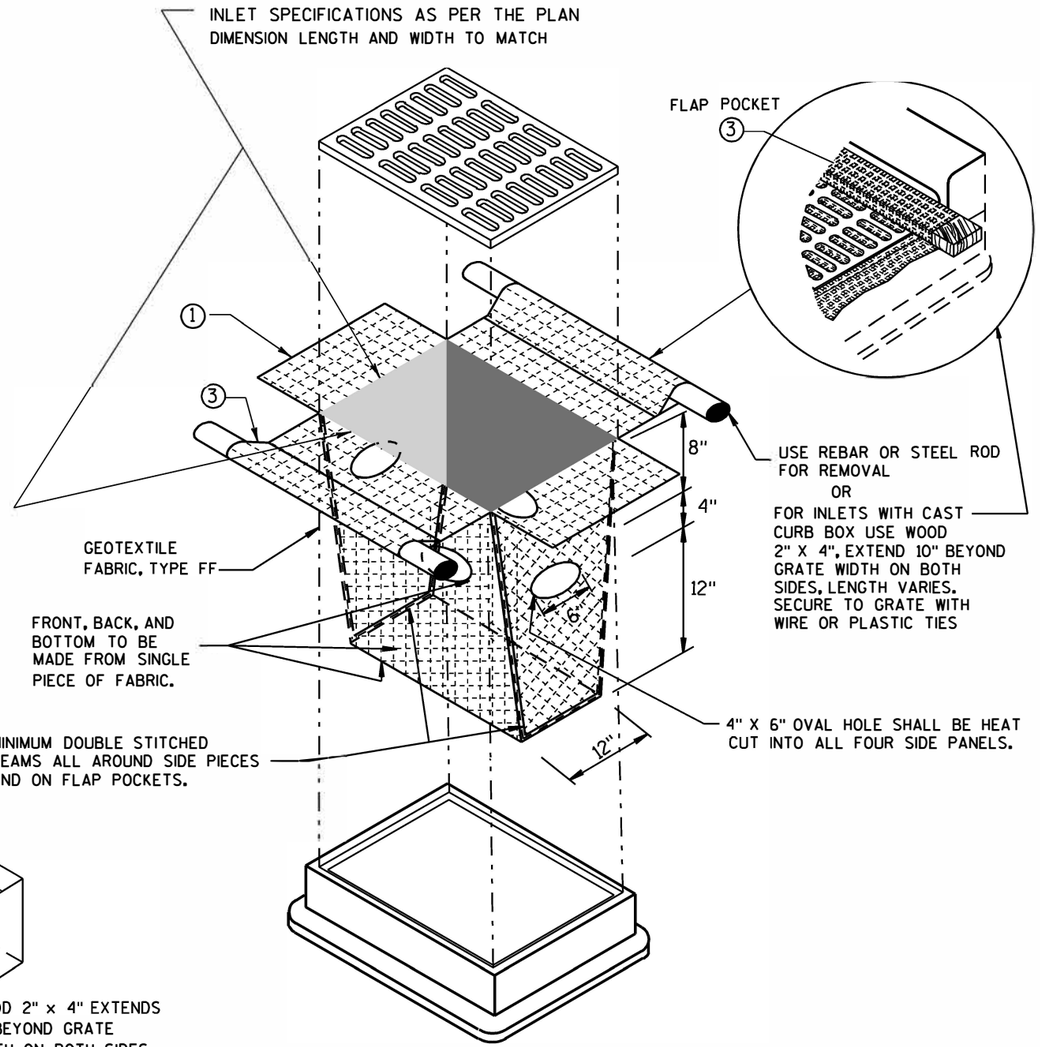


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

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.

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 A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

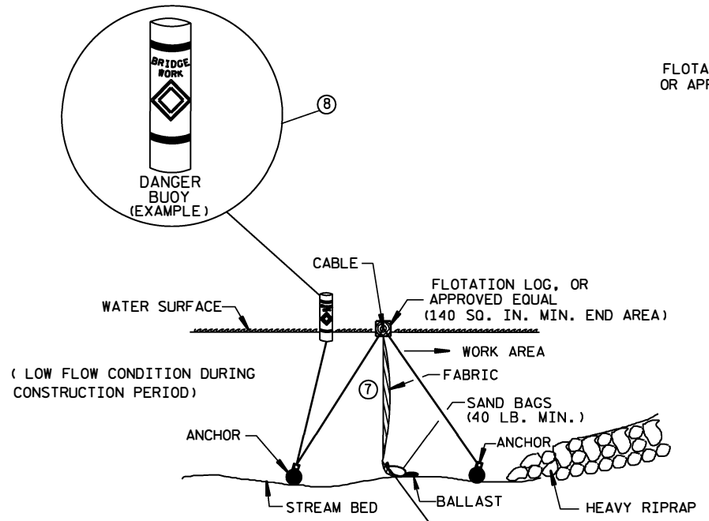
10/16/02
DATE

/S/ Beth Conn[illegible]
CHIEF ROADWAY DEVELOPMENT ENGINEER

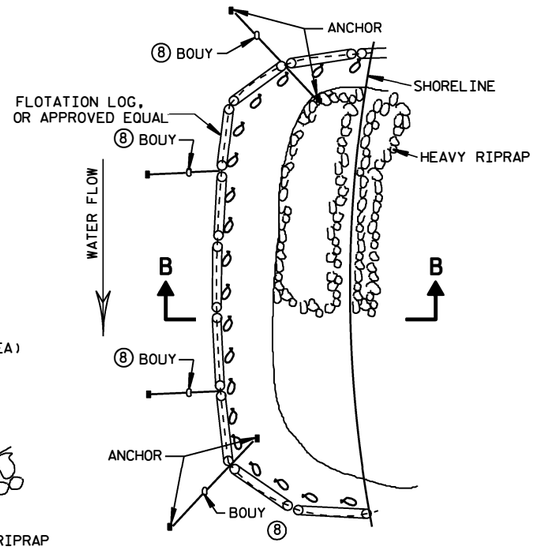
FHWA

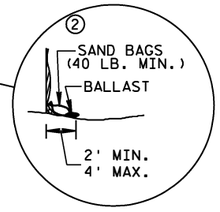
6

S.D.D. 8 E 10-2

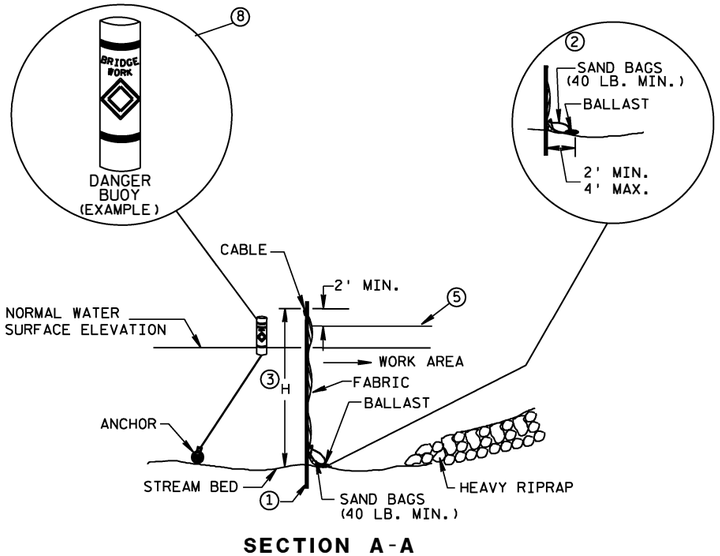


SECTION B-B

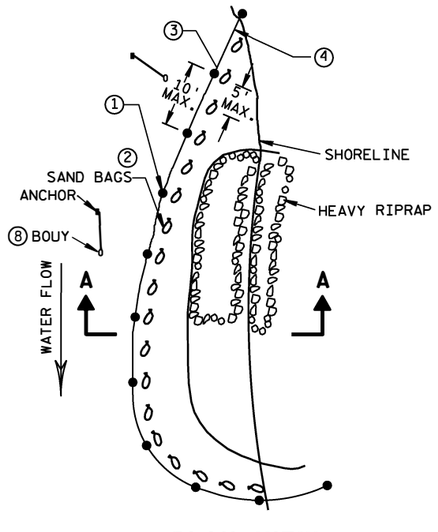




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

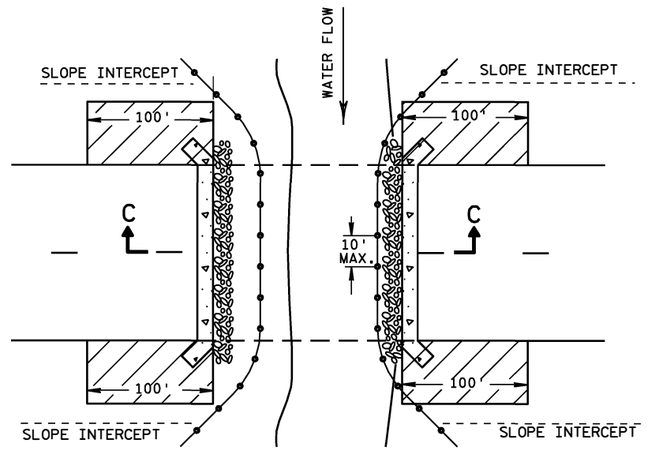
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

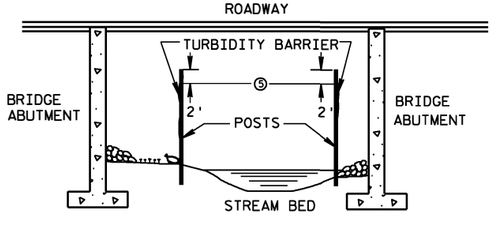
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

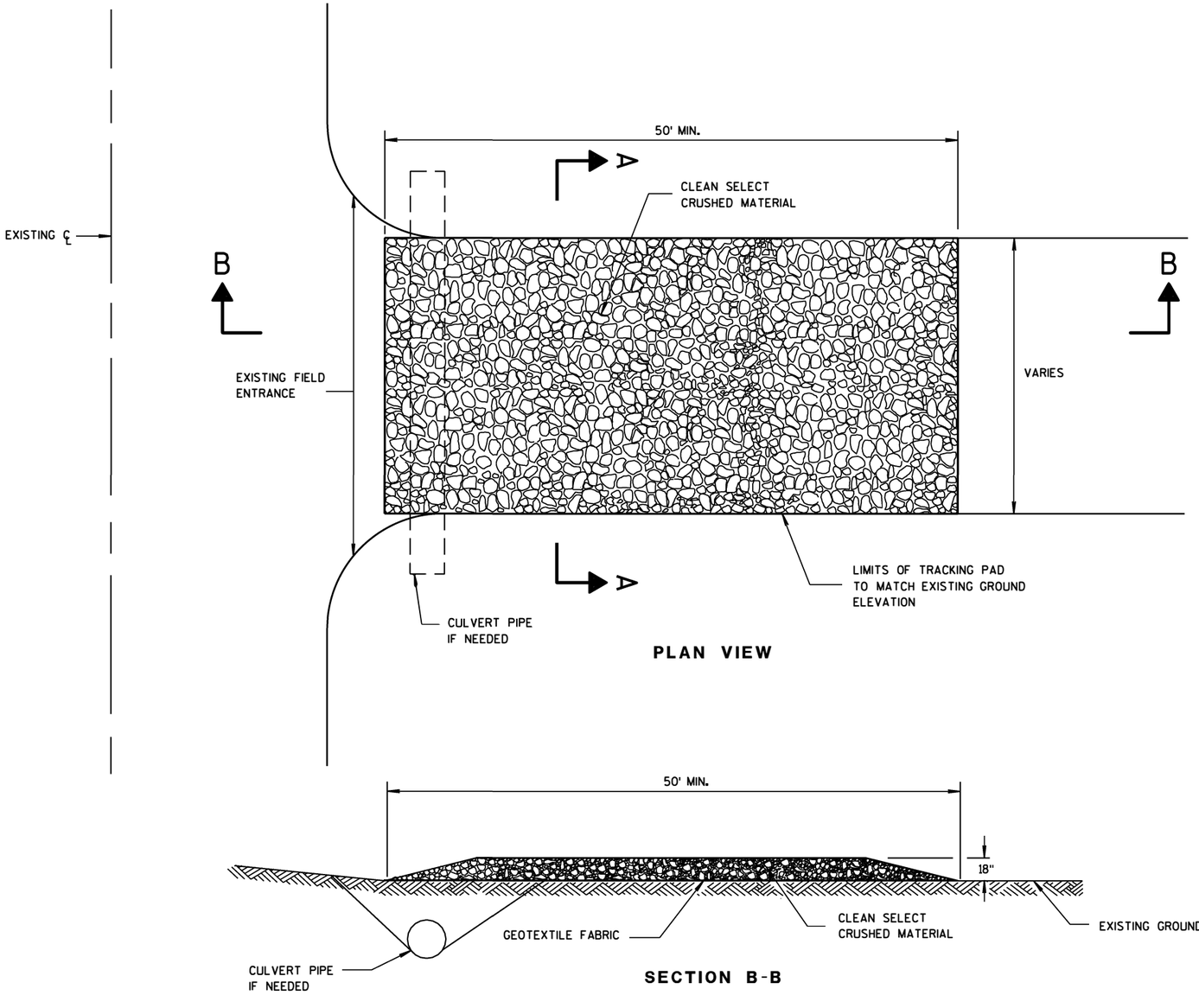
APPROVED
6/04/02 /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2



PLAN VIEW

SECTION B-B

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

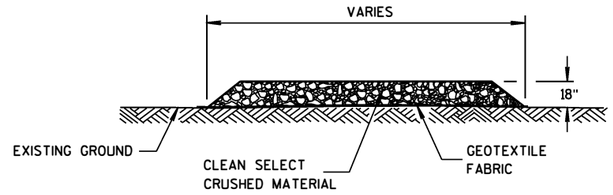
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

TRACKING PAD

TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

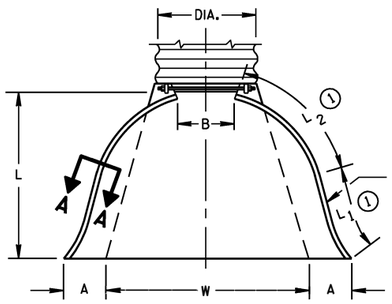
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1½")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17½	24	2½to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21¾	30	2½to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28¼	36	2½to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29⅝	42	2½to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37¼	48	2½to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52¼	60	2½to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59¾	72	2½to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75⅝	84	2½to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2¼to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85½	102	2¼to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1½to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1½to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1½to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1½to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

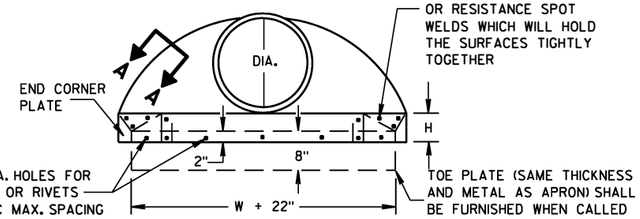
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48⅞	72⅞	24	2	3 to 1
15	2¼	6	27	46	73	30	2¼	3 to 1
18	2½	9	27	46	73	36	2½	3 to 1
21	2¾	9	36	37½	73½	42	2¾	3 to 1
24	3	9½	43½	30	73½	48	3	3 to 1
27	3¼	10½	49½	24	73½	54	3¼	3 to 1
30	3½	12	54	19¾	73½	60	3½	3 to 1
36	4	15	63	34¾	97¾	72	4	3 to 1
42	4½	21	63	35	98	78	4½	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5½	27	65	* 33¼-35 **	* 98¼- 100 **	90	5½	2⅖ to 1
60	6	* 30-35 **	60	39	99	96	5	2 to 1
66	6½	* 24-30 **	* 72-78 **	* 21-27 **	99	102	5½	2 to 1
72	7	* 24-36 **	78	21	99	108	6	2 to 1
78	7½	* 24-36 **	78	21	99	114	6½	2 to 1
84	8	36	90½	21	111½	120	6½	1½to 1
90	8½	41	87½	24	111½	132	6½	1½to 1

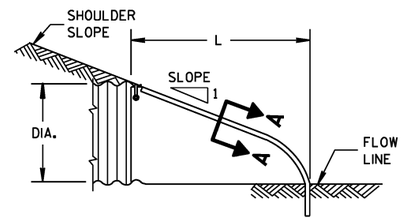
*MINIMUM
**MAXIMUM



PLAN VIEW

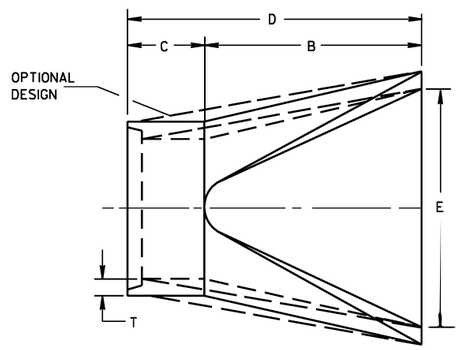


END VIEW

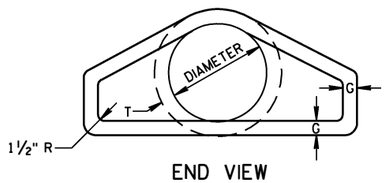


SIDE ELEVATION

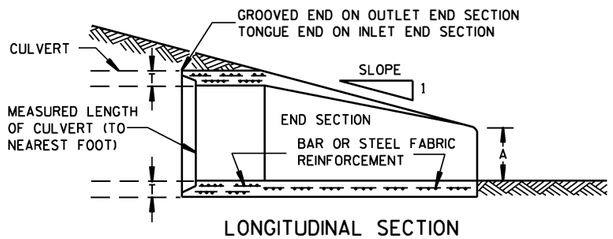
METAL ENDWALLS



PLAN

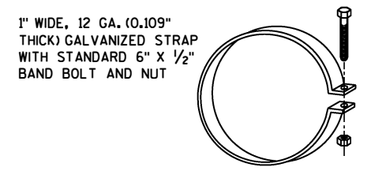


END VIEW



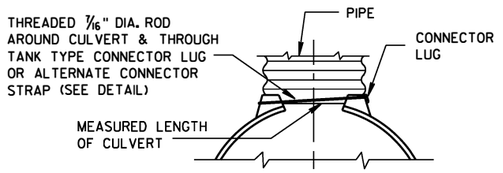
LONGITUDINAL SECTION

CONCRETE ENDWALLS

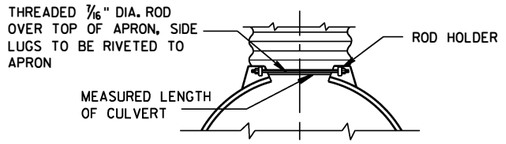


ALTERNATE FOR TYPE 1 CONNECTION

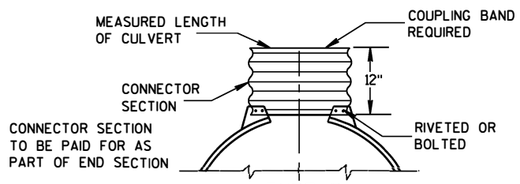
END SECTION CONNECTOR STRAP



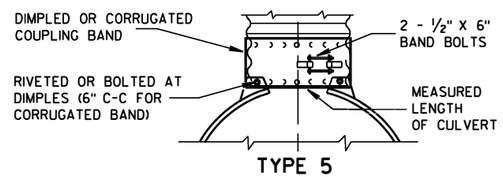
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

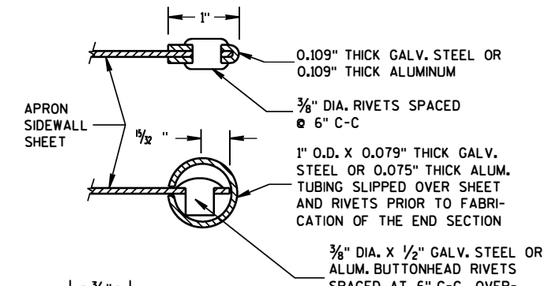
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

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.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

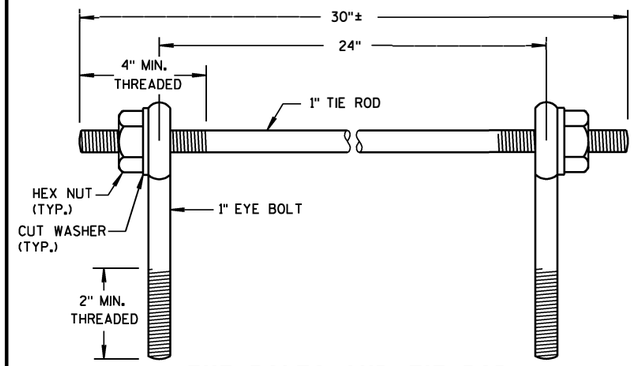
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

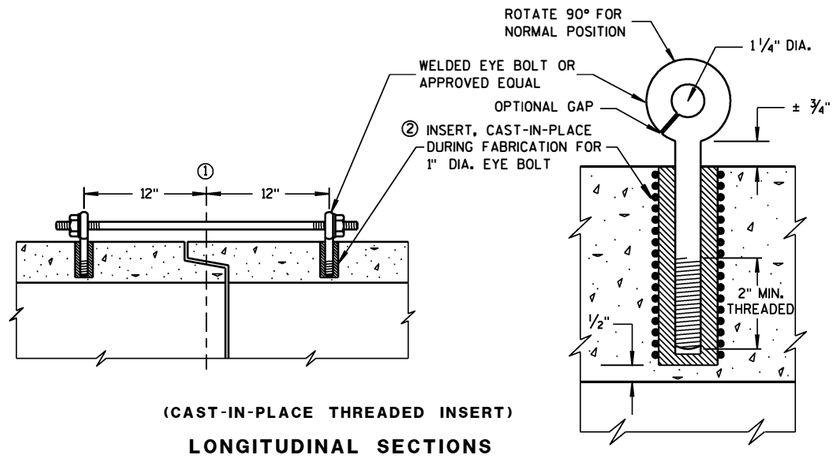
APPROVED
11/30/94 — DATE
/S/ Rory L. Rhi[illegible] — CHIEF ROADWAY DEVELOP NEER
FHWA

6

S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

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

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

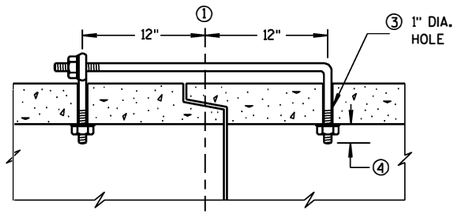
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

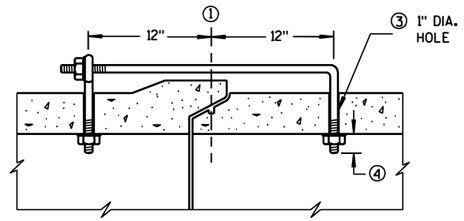
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

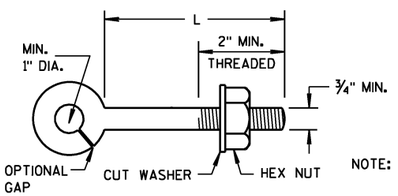


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

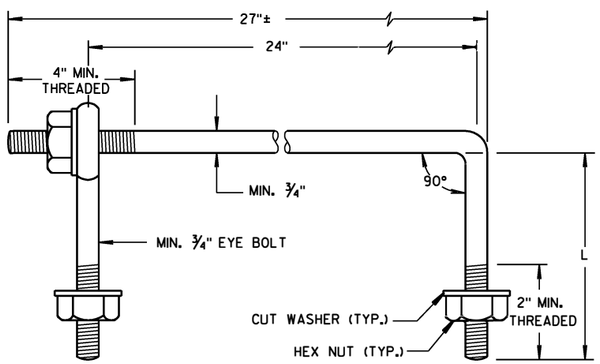
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

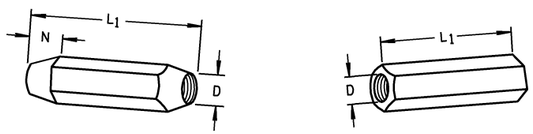
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

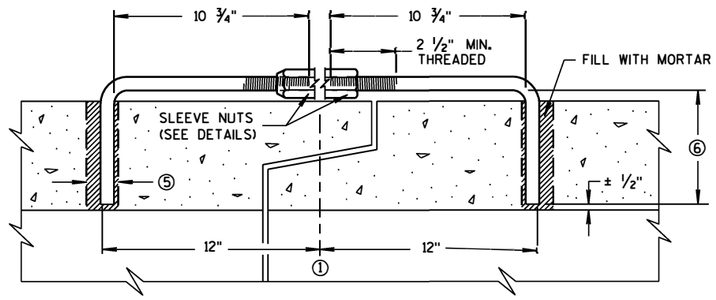
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

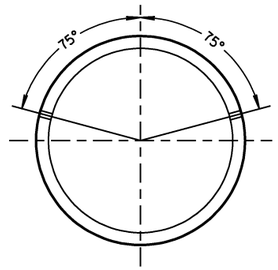
SLEEVE NUTS



LONGITUDINAL SECTION

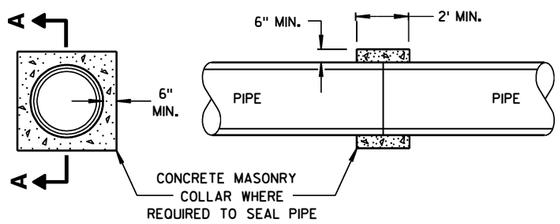
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

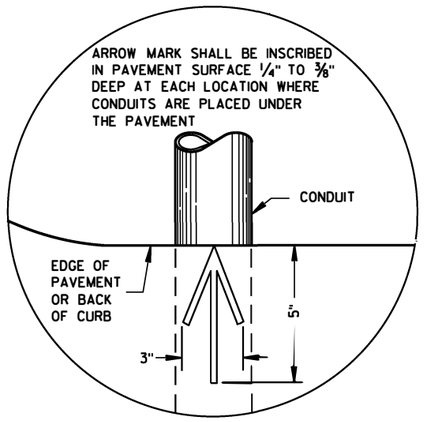
FHWA

6

S.D.D. 8 F 4-7

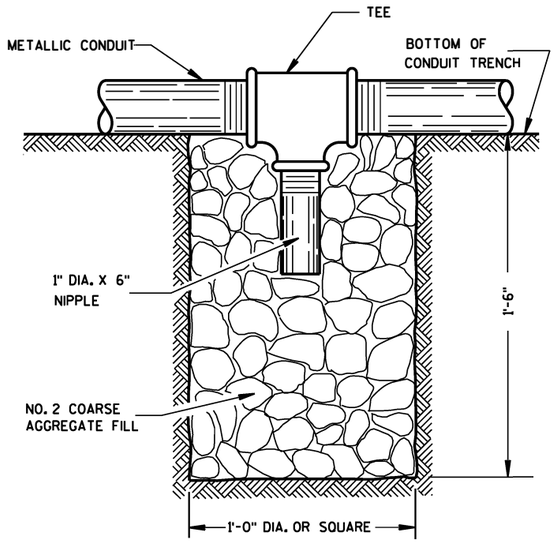
6

S.D.D. 8 F 4-7



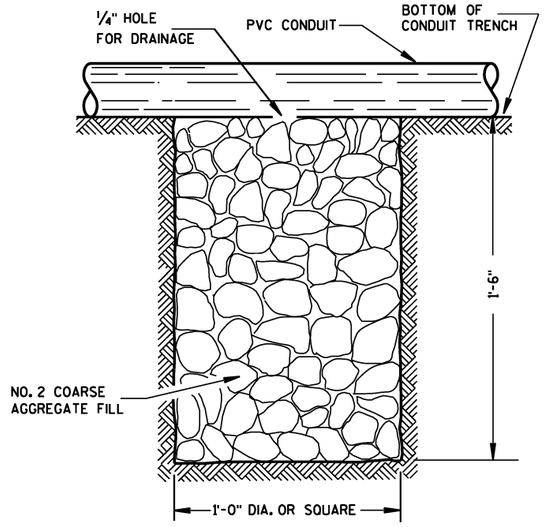
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

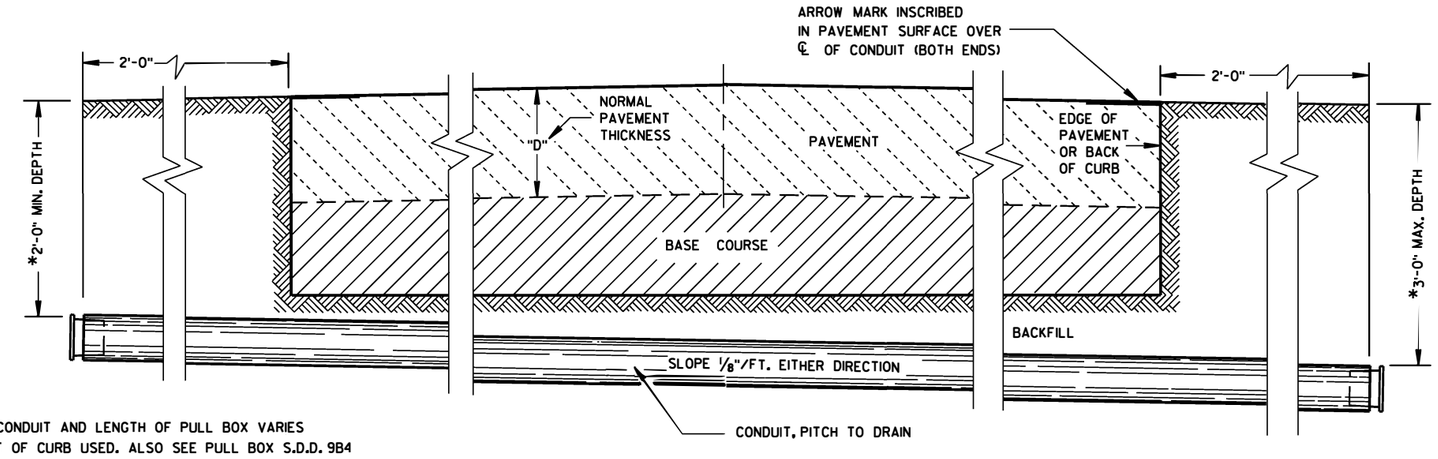
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

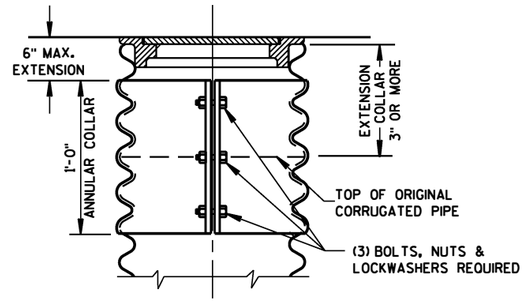
S.D.D. 9 B 2-9

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

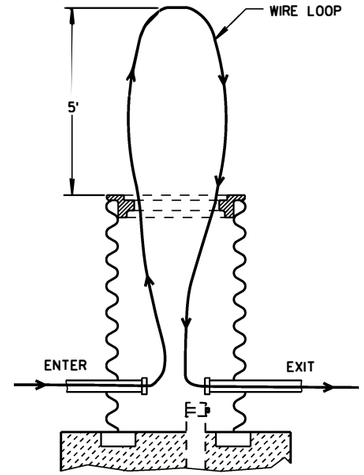
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

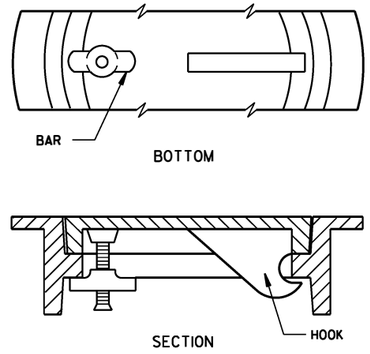
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

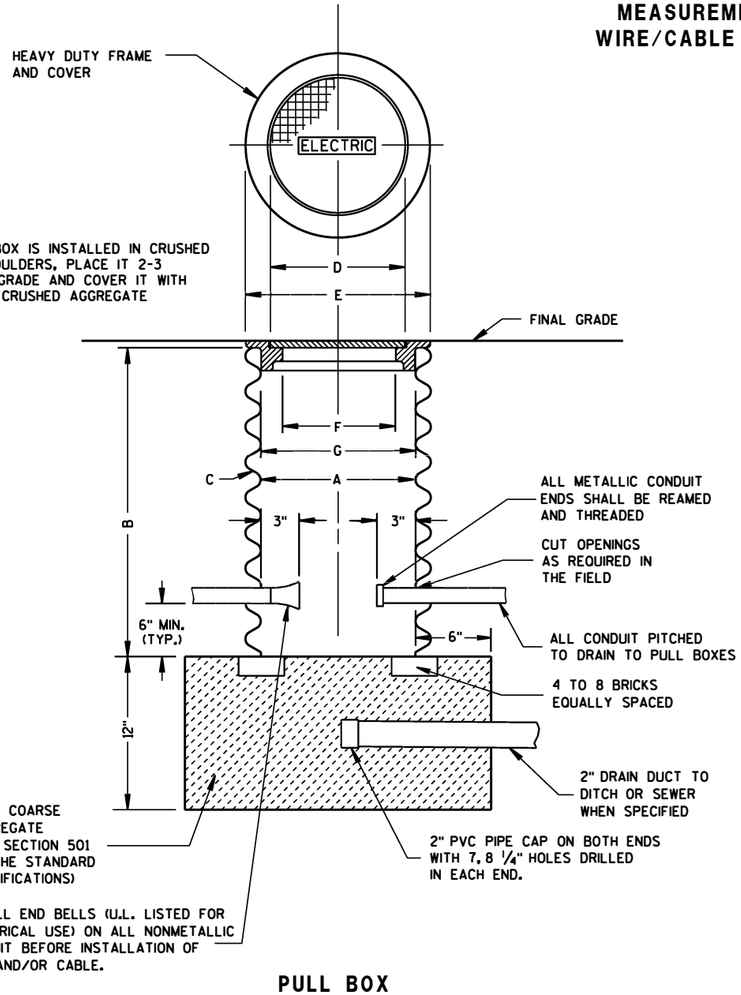


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



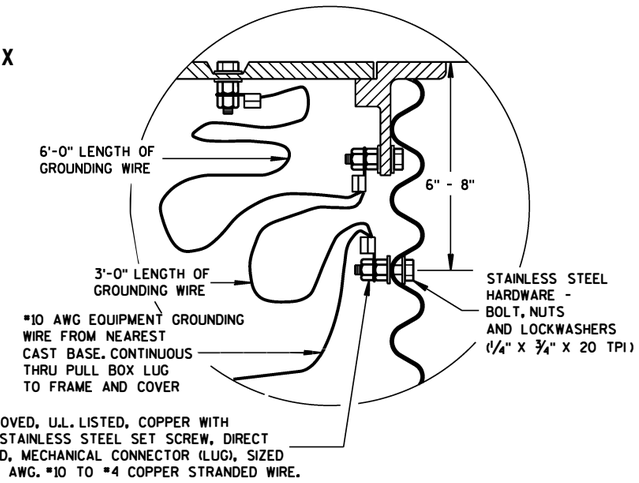
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

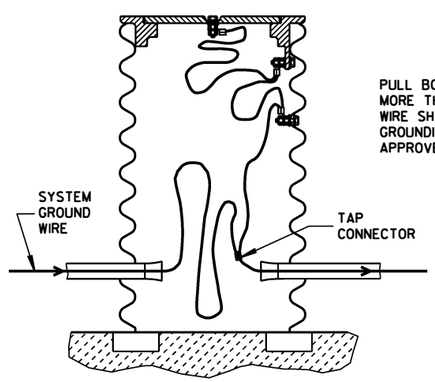


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



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

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

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

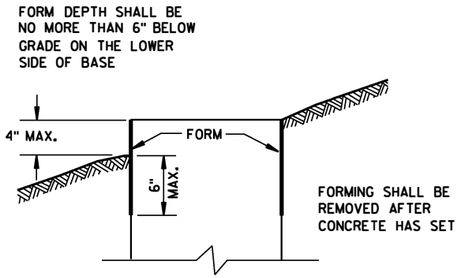
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 B 4-11



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

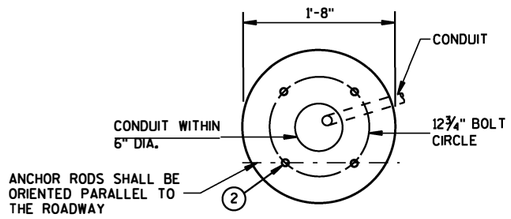
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

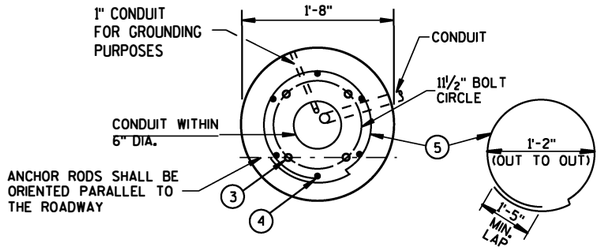
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

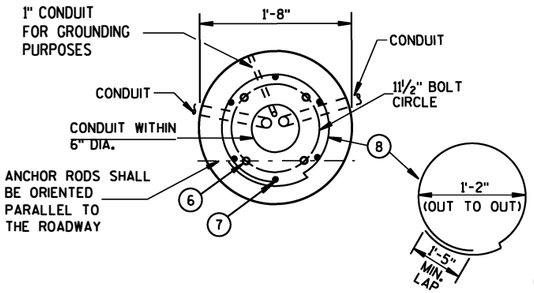
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

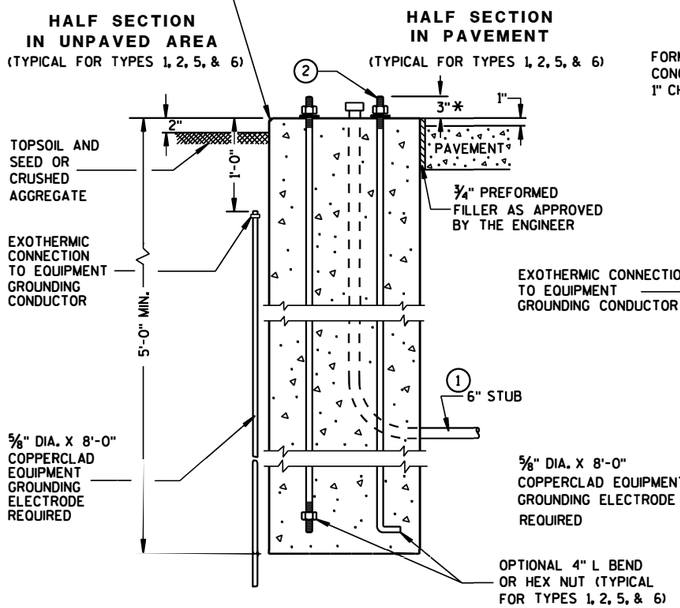
(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

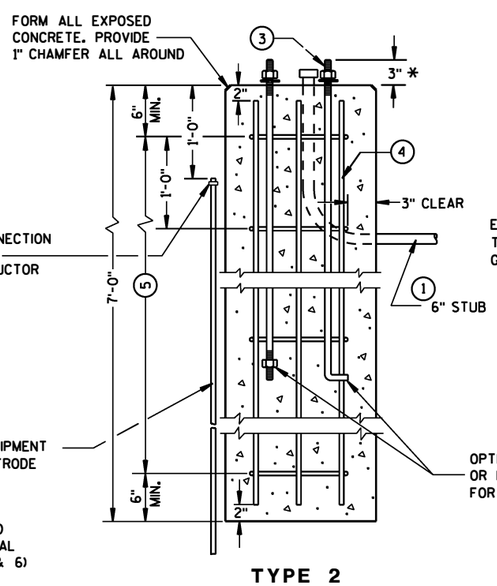
(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

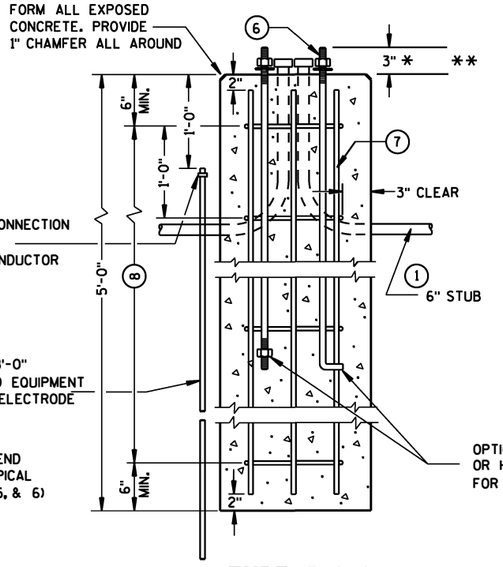












CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

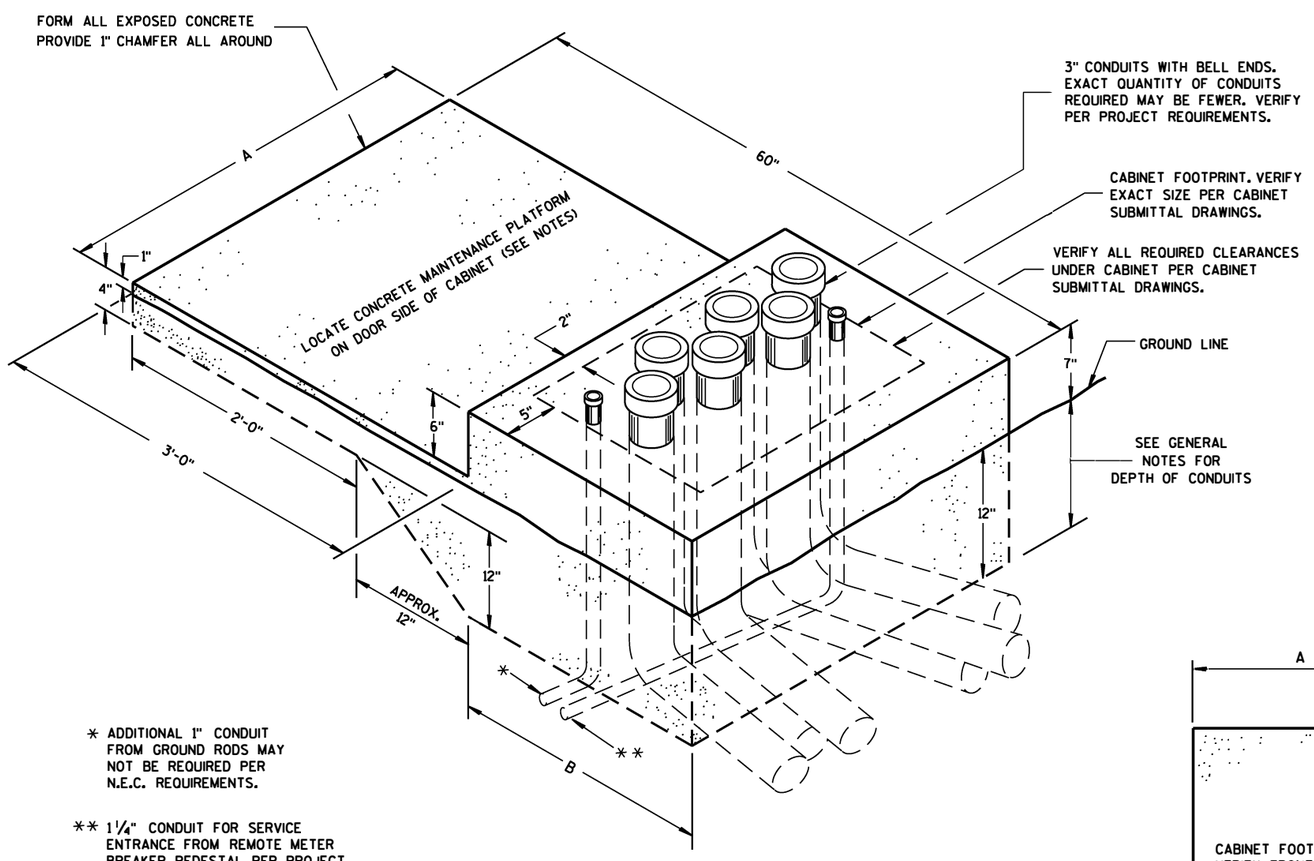
** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

S.D.D. 9 C 2-7



* ADDITIONAL 1" CONDUIT FROM GROUND RODS MAY NOT BE REQUIRED PER N.E.C. REQUIREMENTS.

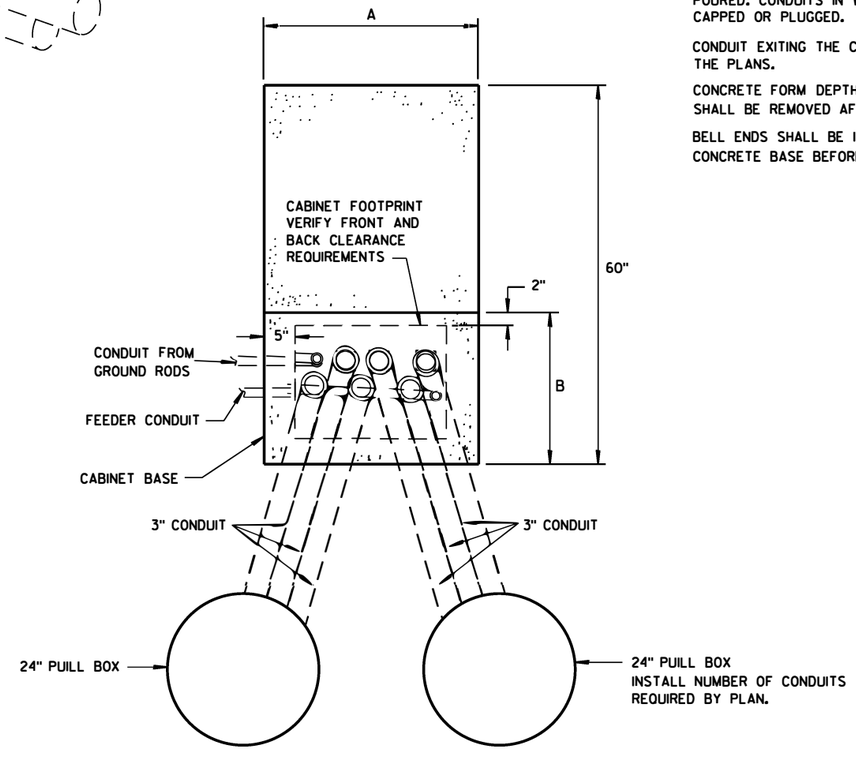
** 1¼" CONDUIT FOR SERVICE ENTRANCE FROM REMOTE METER BREAKER PEDESTAL PER PROJECT REQUIREMENTS. VERIFY LOCATION OF CONDUIT DEPENDENT UPON LOCATION OF INCOMING FEEDER AND FOR EASE OF CONNECTION TO LOAD CENTER.

ISOMETRIC VIEW

CONCRETE CONTROL CABINET BASE, TYPE L

(C.Y. CONCRETE = APPROX. 0.4)

CONCRETE BASE TYPE	CABINET WIDTH	DIMENSIONS		MAXIMUM 3" CONDUITS
		A	B	
L24	24"	34"	24"	4
L30	30"	40"	24"	6



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE L

GENERAL NOTES

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

INSTALL FOUR STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET BASES. THE ANCHORS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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

CONDUIT EXITING THE CONCRETE BASE SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

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

CONCRETE CONTROL CABINET BASE, TYPE L

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Nov. 2014 — DATE
/S/ Thomas Conring — STATE LIGHTING ENGINE
WYS
FHWA

GENERAL NOTES

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

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

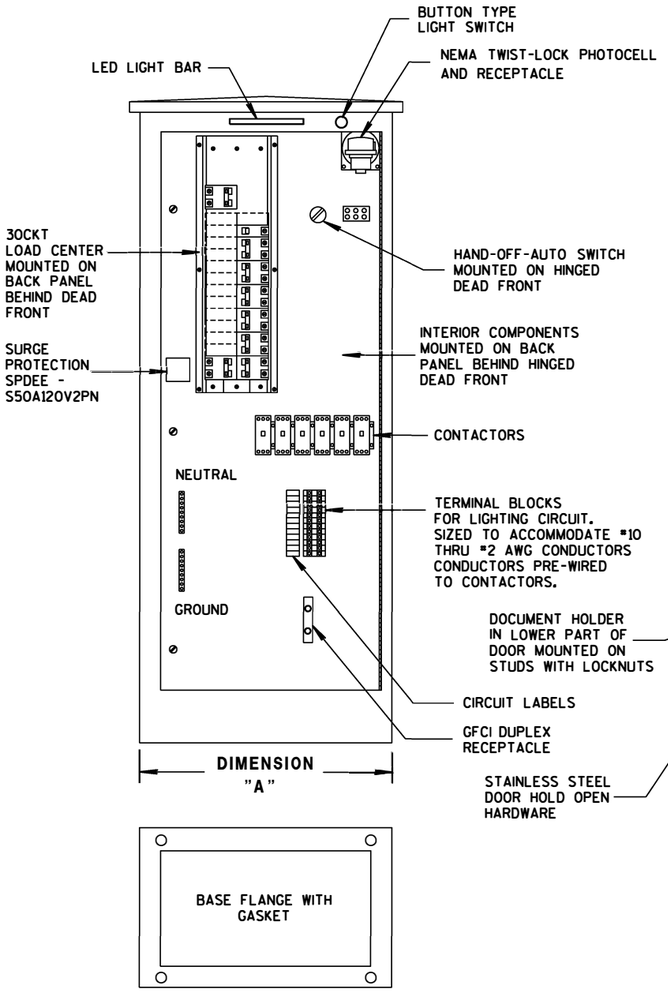
ALL CONDUIT ENTRIES SHALL BE SEALED WITH AN APPROPRIATE DUCT SEALING COMPOUND.

ORIENT PHOTOCELL AWAY FROM AMBIENT LIGHT SOURCES AND ONCOMING TRAFFIC HEADLIGHTS.

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

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

FRONT INTERIOR ELEVATION



SIDE VIEW

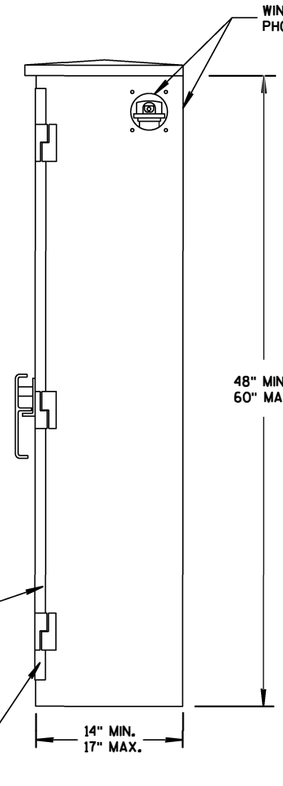
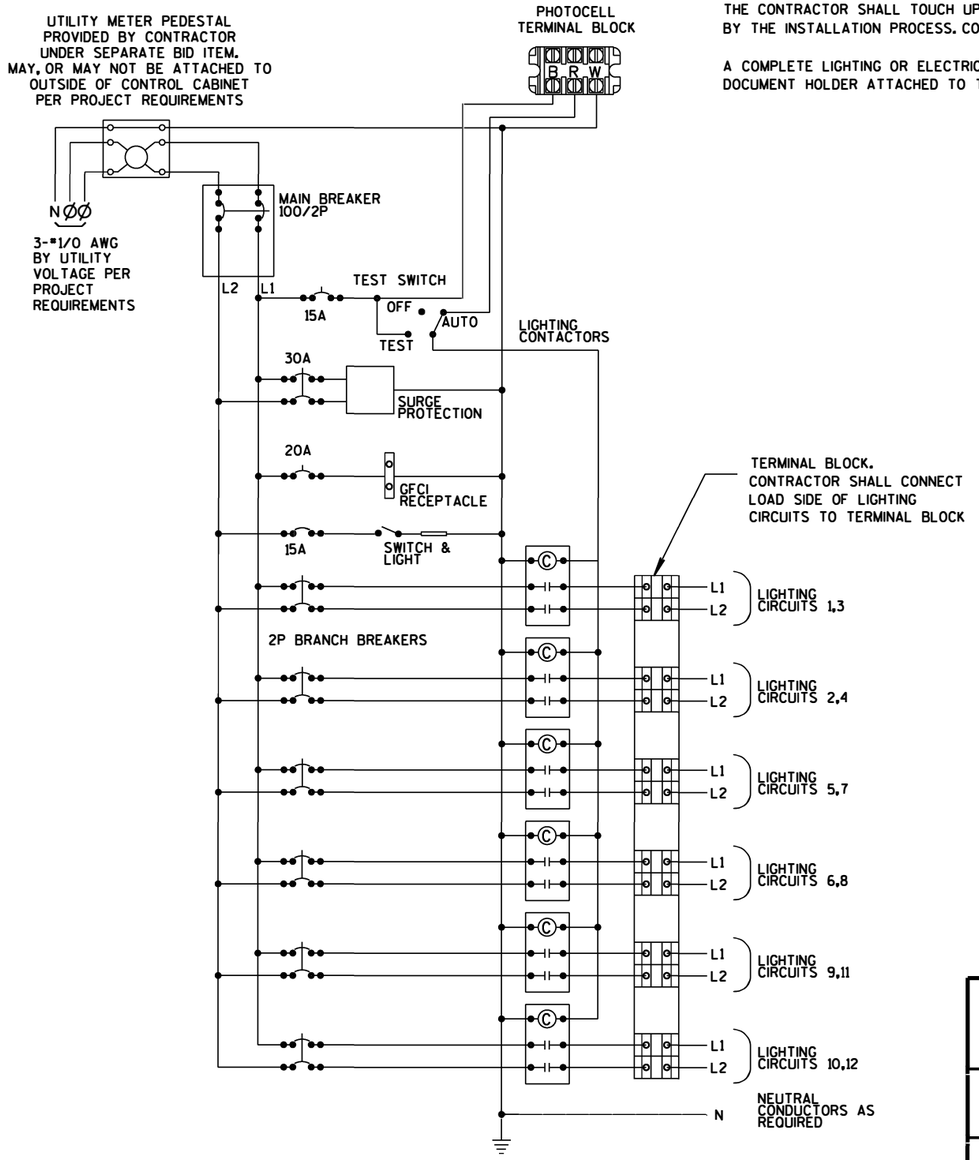


TABLE OF DIMENSIONS (INCHES)

CONCRETE BASE TYPE	CABINET WIDTH	DIMENSION "A"
L24	24"	24"
L30	30"	30"

LIGHTING CONTROL CABINET



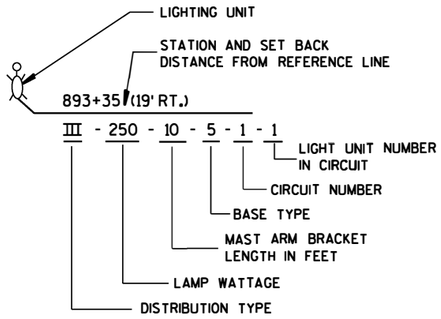
CONTROL CABINET SCHEMATIC

LIGHTING CONTROL CABINET 120/240 VOLT

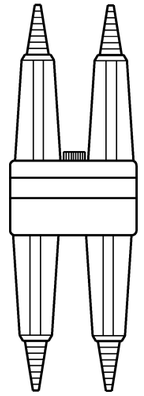
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Thomas Gonring — STATE LIGHTING ENGINEER
WYS.
FHWA

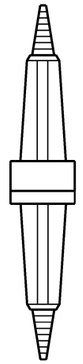
6
S.D.D. 9 D 4-2



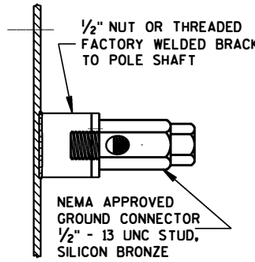
LIGHTING UNIT CODE
(TYPICAL)

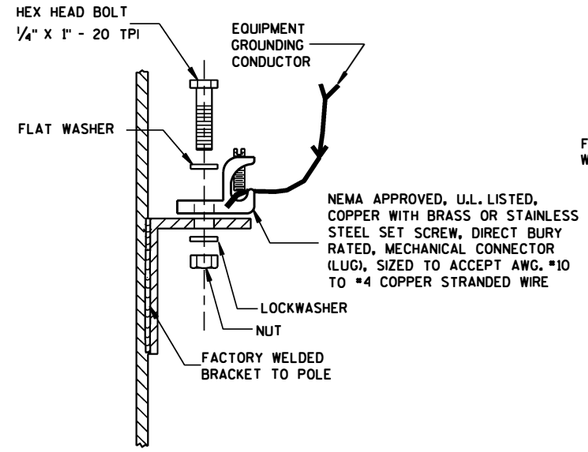


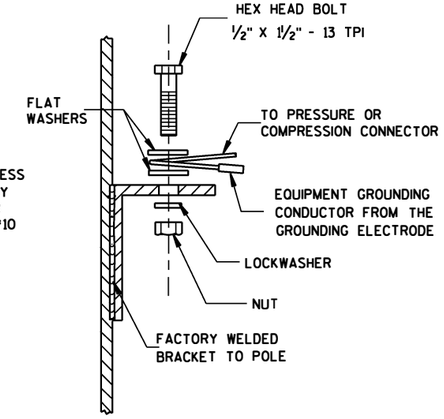
DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



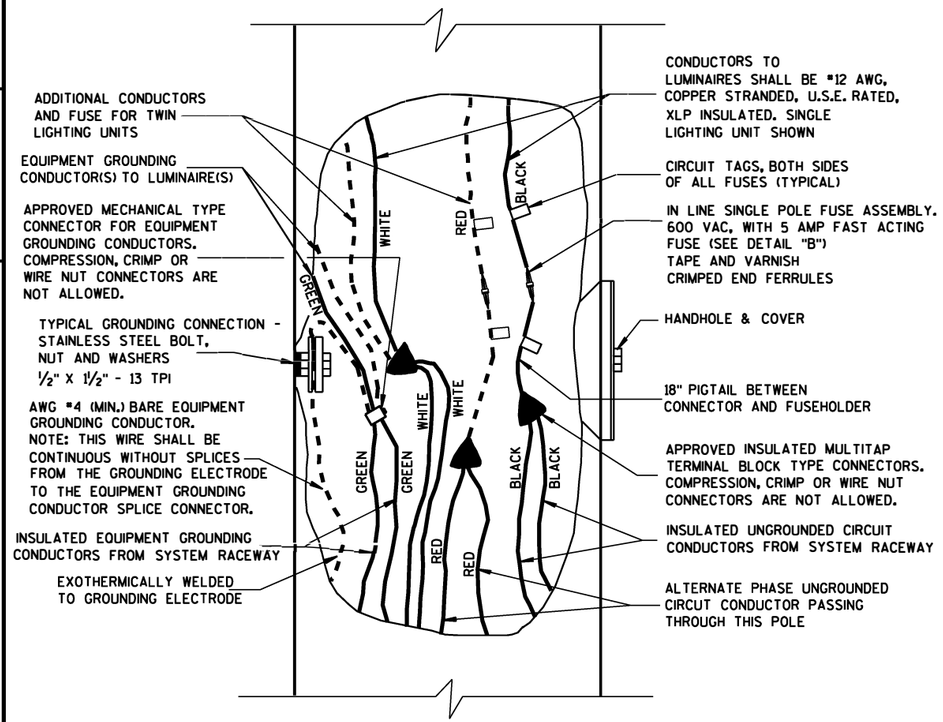
DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



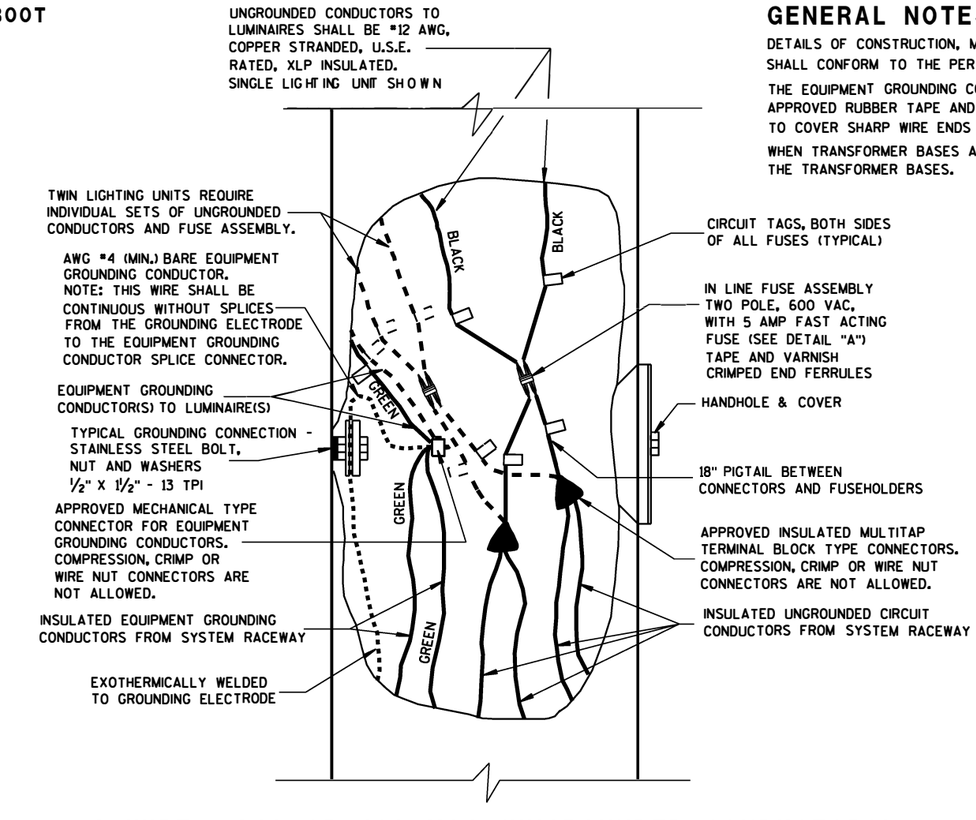




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTOR) WITH GROUNDED CONDUCTOR AND WITH EQUIPMENT GROUNDING CONDUCTOR



2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

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

THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

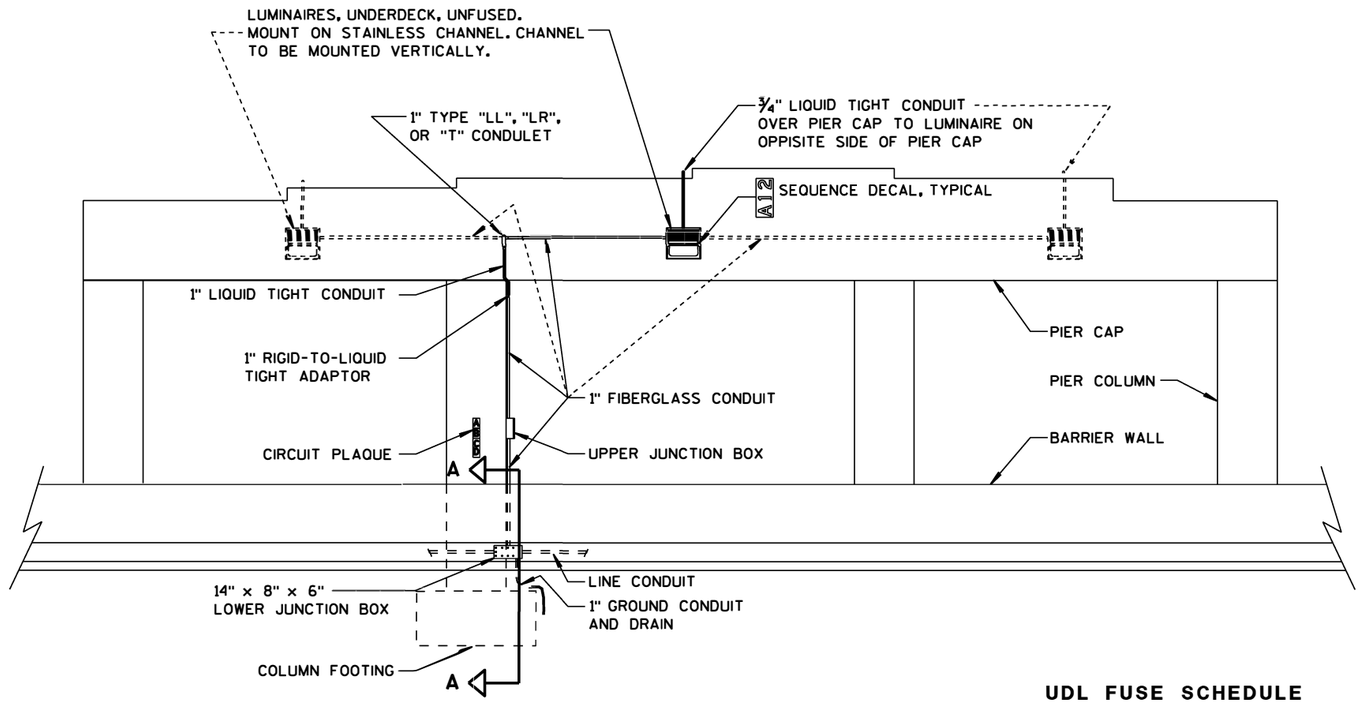
NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

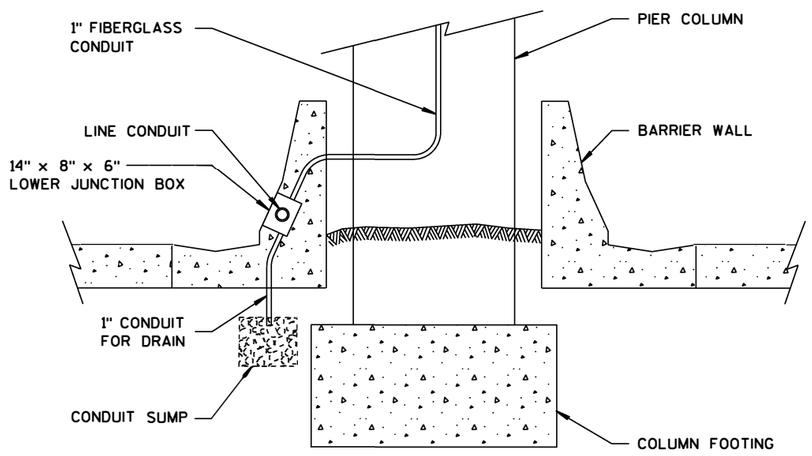
APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 E 3-5



TYPICAL UNDERDECK LIGHTING INSTALLATION



SECTION "A-A"

UDL FUSE SCHEDULE

LINE VOLTAGE ϕ-GROUND	TOP JUNCTION BOX FUSES
120VAC	5 A
208VAC	5 A
240VAC	5 A
480VAC	3 A

GENERAL NOTES

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

USE THIS DETAIL IN CONJUNCTION WITH THE DETAIL FOR ELECTRICAL HANDHOLE WIRING, SUBSTITUTING THE LOWER JUNCTION BOX FOR THE HANDHOLE SHOWN IN THAT DETAIL.

THE PLANS WILL SHOW WHICH CIRCUIT LEGS(S) ARE CONNECTED TO EACH INSTALLATION AND THE REQUIRED NUMBER OF LUMINAIRES.

THE UPPER JUNCTION BOX (FOR FUSE ASSEMBLIES) SHALL CONFORM TO THE APPLICABLE PROVISIONS OF SECTION 653.2.2 OF THE STANDARD SPECIFICATIONS; SHALL BE SUITABLE FOR SURFACE MOUNTING WITH EXTERNAL MOUNTING LUGS; AND SHALL HAVE A HINGED COVER, WING-NUT FASTENERS, AND PADLOCK HASP. ALL HARDWARE SHALL BE STAINLESS STEEL. FURNISH O-Z/GEDNEY YW-120603, SPRING CITY HC-12-06-04, CROUSE-HINDS WTB-120604, OR APPROVED EQUAL.

MEDIAN CONFIGURATIONS VARY; NOT ALL CASES CAN BE SHOWN IN THIS DETAIL.

WIRING FOR THE FIRST LUMINAIRE PAIR IS SHOWN IN SOLID LINES. WIRING FOR ADDITIONAL LUMINAIRE PAIRS, WHERE REQUIRED, IS SHOWN IN DOTTED LINES.

LEGEND

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

6

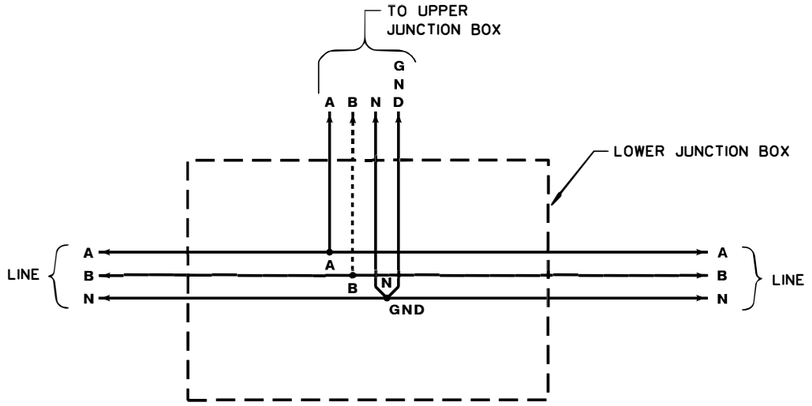
S.D.D. 10 A 15-4a

ELECTRICAL DETAILS
UNDERDECK LIGHTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

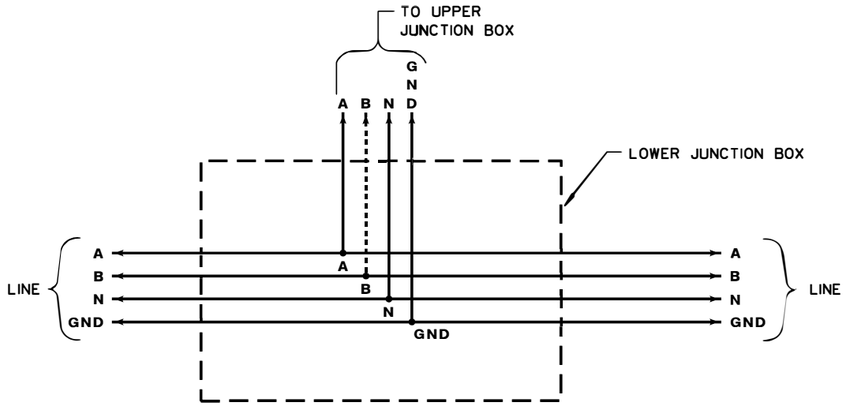
6

S.D.D. 10 A 15-4a



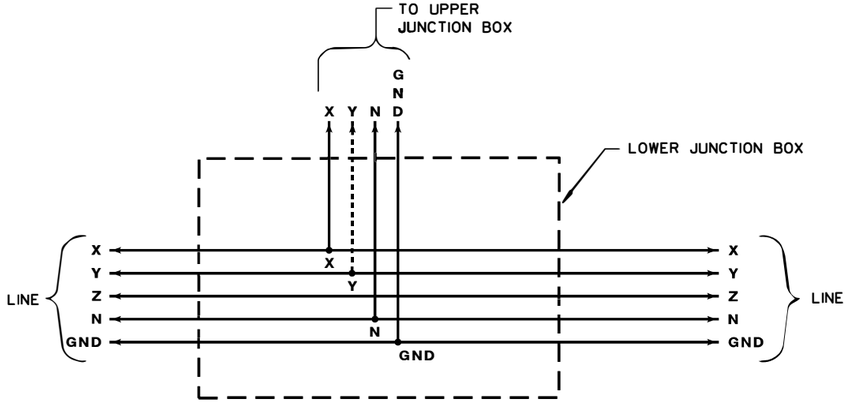
TYPICAL WIRING DIAGRAM, LOWER JUNCTION BOX

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



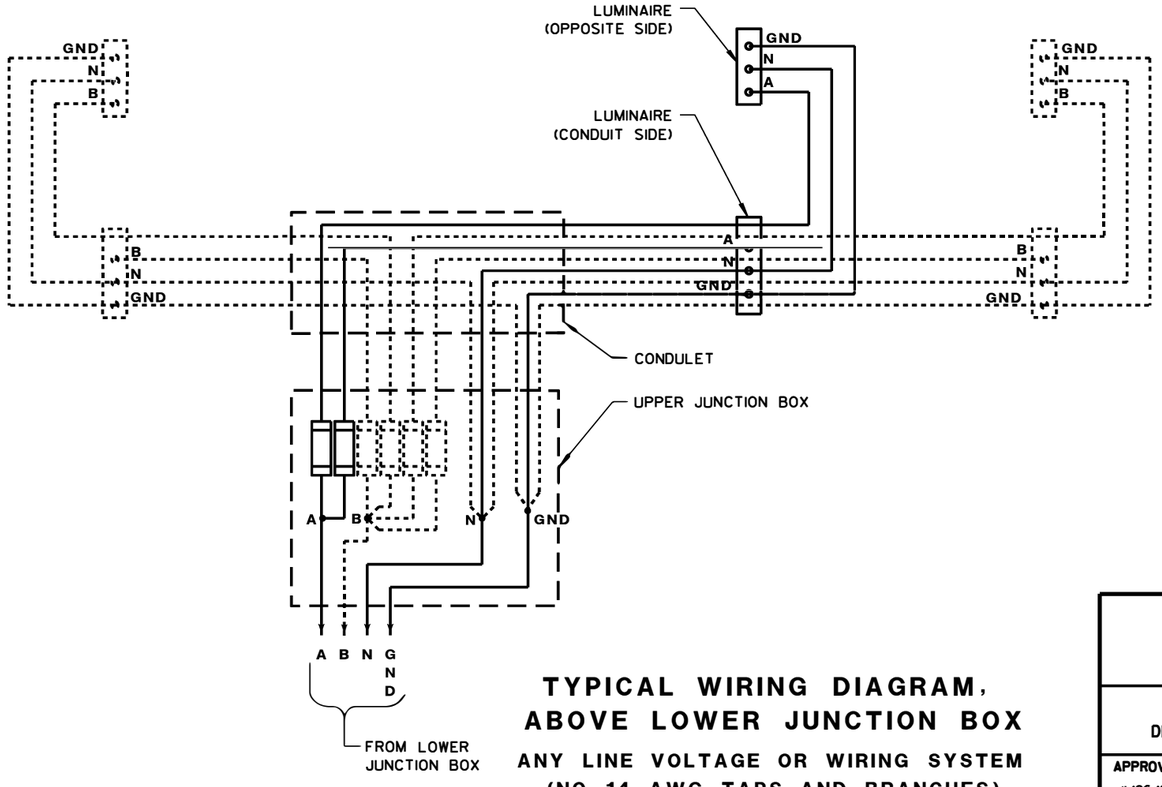
TYPICAL WIRING DIAGRAM, LOWER JUNCTION BOX

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



TYPICAL WIRING DIAGRAM, LOWER JUNCTION BOX

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



TYPICAL WIRING DIAGRAM, ABOVE LOWER JUNCTION BOX

ANY LINE VOLTAGE OR WIRING SYSTEM
(NO. 14 AWG TAPS AND BRANCHES)

ELECTRICAL DETAILS
UNDERDECK LIGHTING

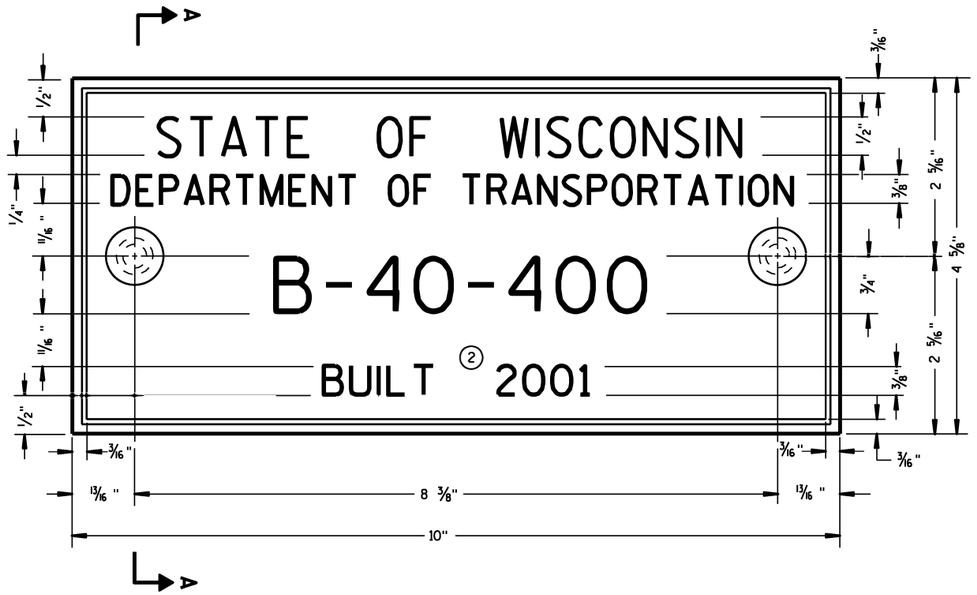
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/26/2013 DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

6

S.D.D. 10 A 15-4b



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

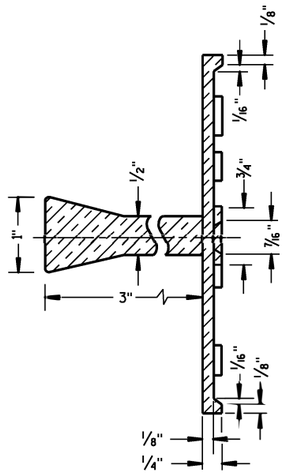
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

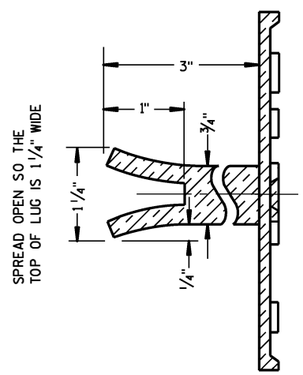
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

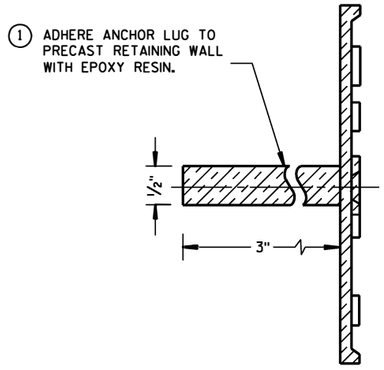
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

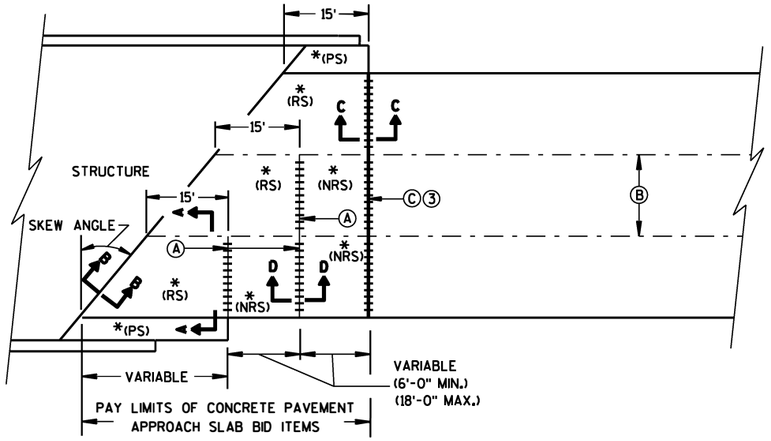
APPROVED

3/26/10 DATE — /S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER

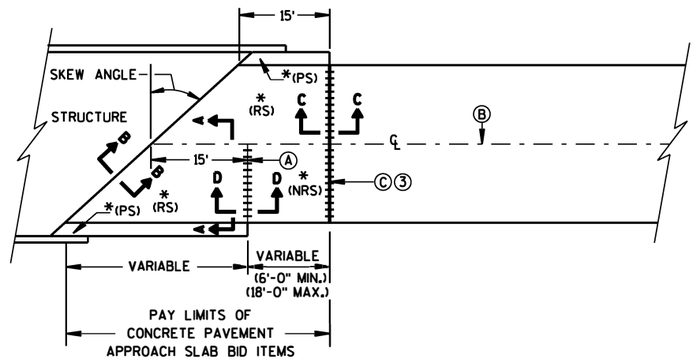
FHWA

6

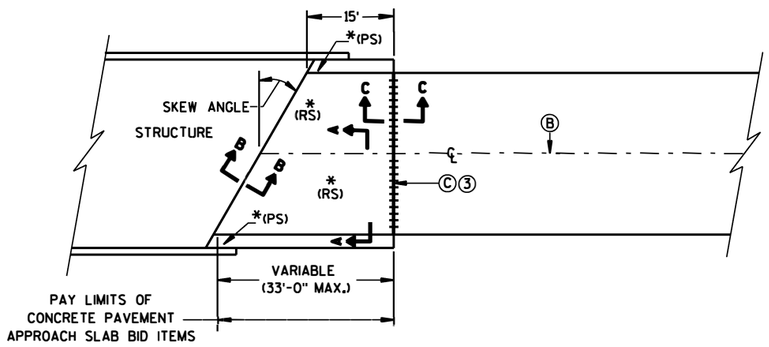
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

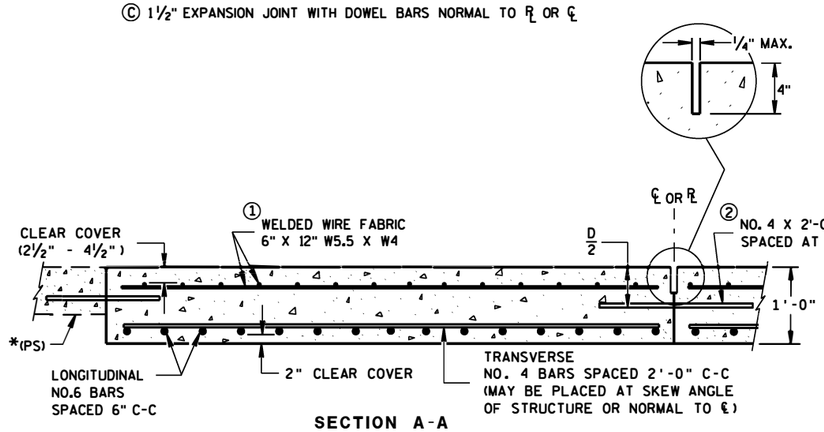
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

***STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

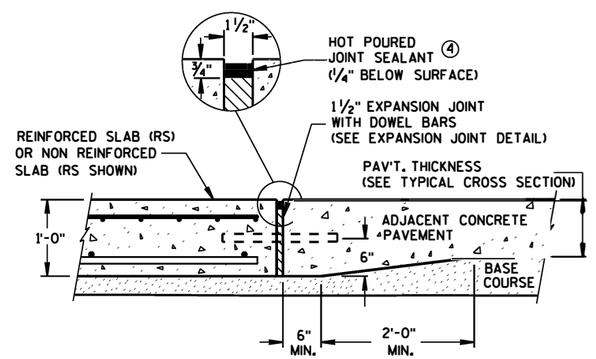
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

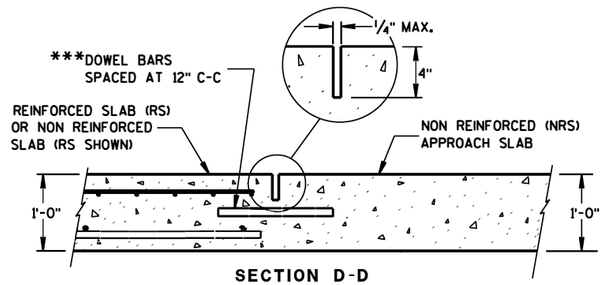
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

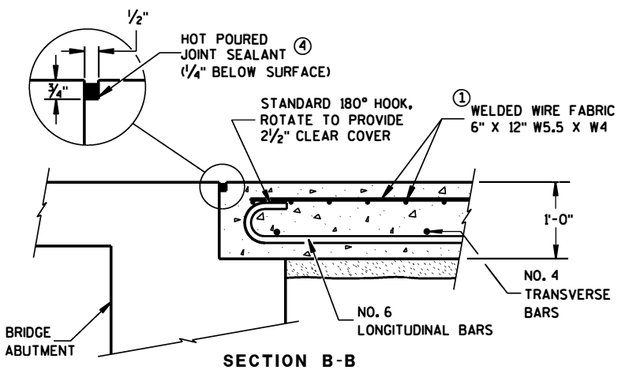
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

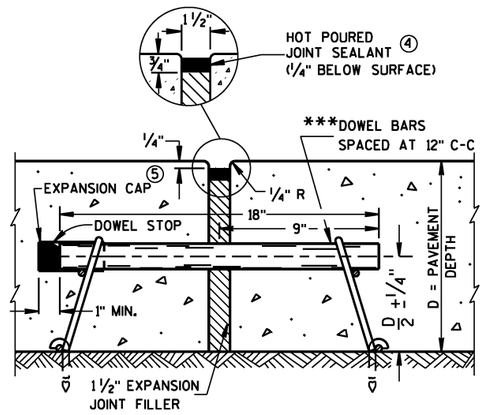
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

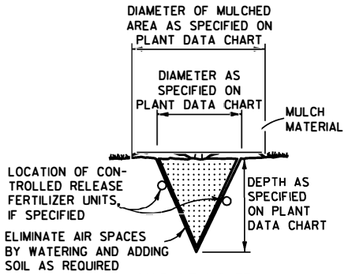
APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

6

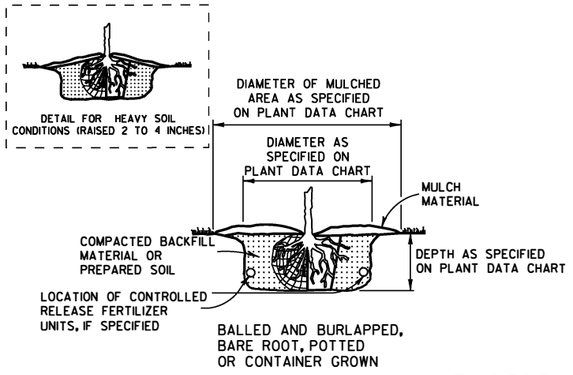
S.D.D. 13 B 2-8a

6

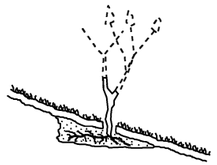
S.D.D. 13 B 2-8a



MACHINE MOVED

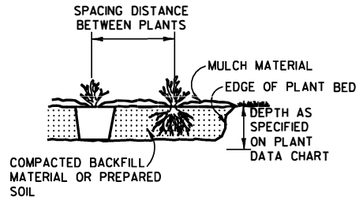


BALLED AND BURLAPPED, BARE ROOT, POTTED OR CONTAINER GROWN



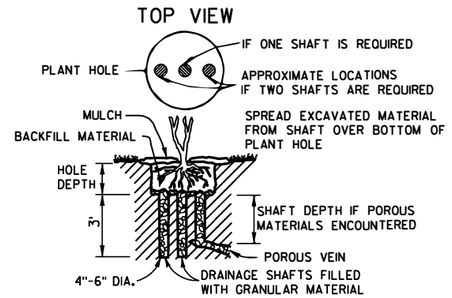
ACCOMMODATE ROOTS (SMOOTH AND STAGHORN SUMAC)

NOTE:
1) ENGINEER SHALL REQUIRE 3 SLITS IN POT TO SPEED DETERIORATION
2) METAL, PLASTIC OR OTHER NONDEGRADABLE POTS SHALL BE REMOVED PRIOR TO PLANTING



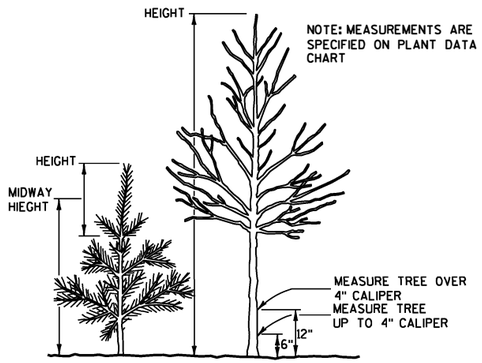
PREPARED BED (BARE ROOT AND POTTED)

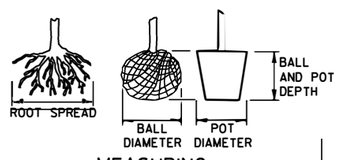
PLANTING



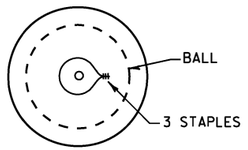
NOTE:
DRAINAGE SHAFT AS SPECIFIED ON PLANT DATA CHART

DRAINING

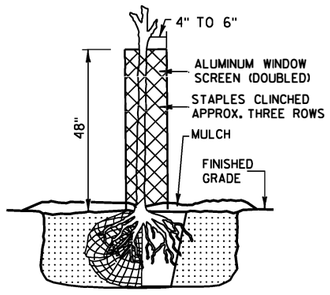




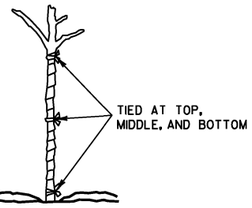
MEASURING



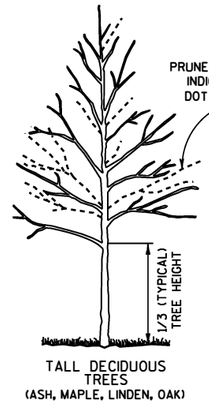
TOP VIEW



RODENT PROTECTION



WRAPPING



TALL DECIDUOUS TREES (ASH, MAPLE, LINDEN, OAK)

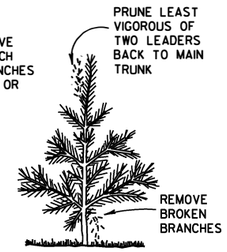
SINGLE STEMMED LOW DECIDUOUS TREES (CRABS AND OTHER SINGLE STEM TYPE)

MULTI-STEMMED LOW DECIDUOUS TREES OR LARGE SHRUBS (HAWTHORN, SERVICEBERRY)

NOTE: WHEN PRUNING, PRESERVE CHARACTER AND SHAPE OF TREE. AVOID LEAVING STUBS - REMOVE BRANCH OR TWIG BACK TO THE NEAREST CROTCH
1) PRUNE TO REMOVE DEAD AND BROKEN BRANCHES
2) PRUNE TO REMOVE BRANCHES THAT TOUCH OR ARE TOO CLOSE TO OTHER BRANCHES

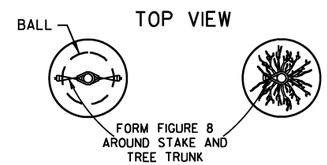
SHRUBS (GRAY DOGWOOD ARROWWOOD VIBURNUM)

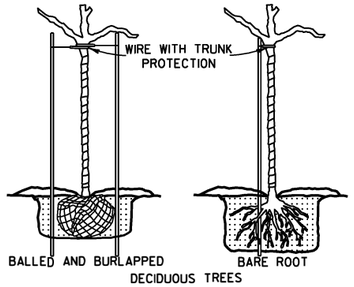
SUMAC

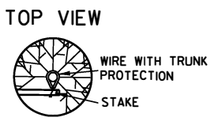


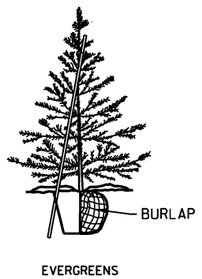
TREE TYPE EVERGREENS (PINE, SPRUCE, FIR) EVERGREENS USUALLY ARE NOT PRUNED

PRUNING



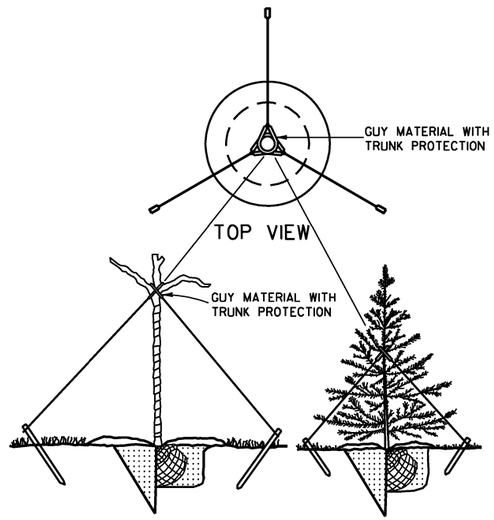






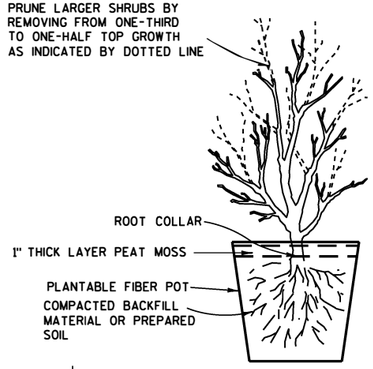
NOTE: BRACING STAKE
1) SHALL BE DRIVEN INTO THE GROUND AS CLOSE TO THE TREE AS POSSIBLE WITHOUT DAMAGING THE BRANCHES.
2) MAY BE DRIVEN AT SUCH AN ANGLE THAT IT DOES NOT PENETRATE THE BALL OR POT.
3) SHALL NOT PROTRUDE ABOVE THE TOP OF THE TREE; AND
4) SHALL HAVE A HOLE NEAR THE TOP TO HOLD THE WIRE IN PLACE.

BRACING



GUYING

PRUNE LARGER SHRUBS BY REMOVING FROM ONE-THIRD TO ONE-HALF TOP GROWTH AS INDICATED BY DOTTED LINE



POTTING

NOTES

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

BRACING, WRAPPING, GUYING, RODENT PROTECTION, FERTILIZER AND MULCH SHALL BE USED ONLY WHEN SPECIFIED ON THE PLANT DATA CHART (PART OF PLAN) OR SPECIAL PROVISIONS.

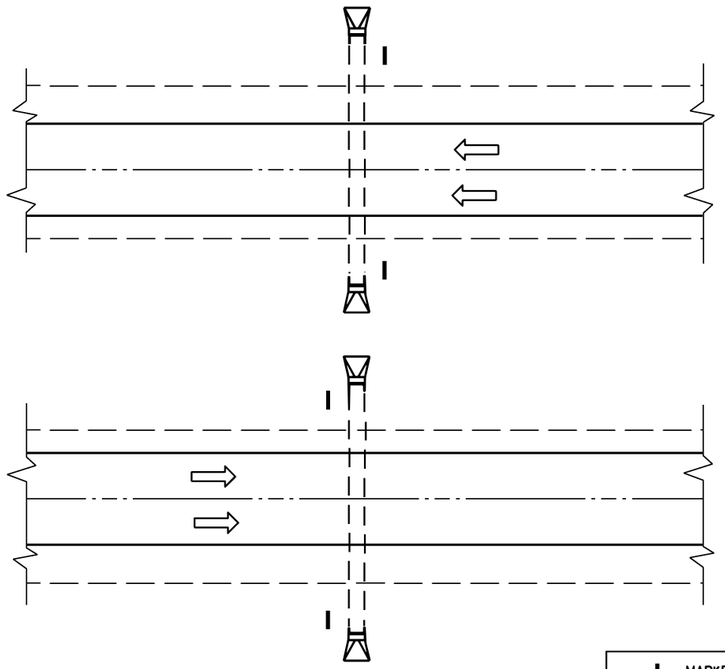
TREE PLANTING DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/11/94 DATE
/S/ Rory L. Rhi[illegible] CHIEF METHODS DEVELOPMENT ENGINEER
FHWA

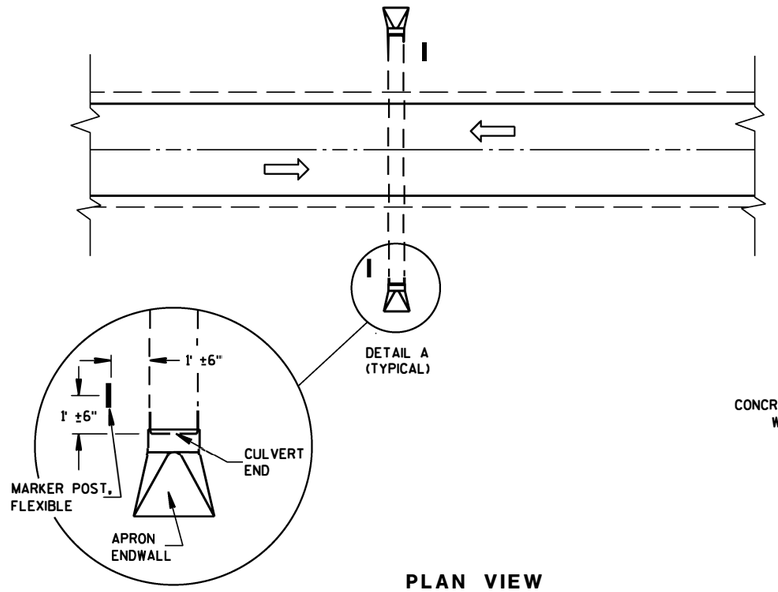
S.D.D. 14 A 2-1

S.D.D. 14 A 2-1



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

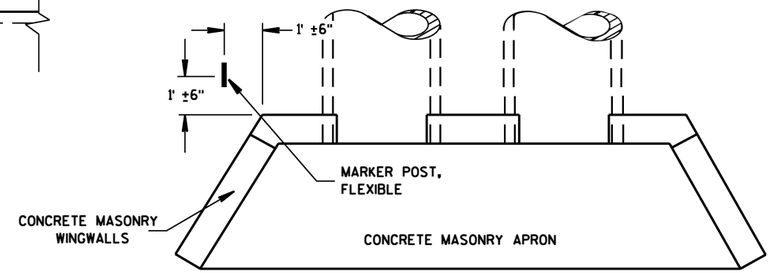
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

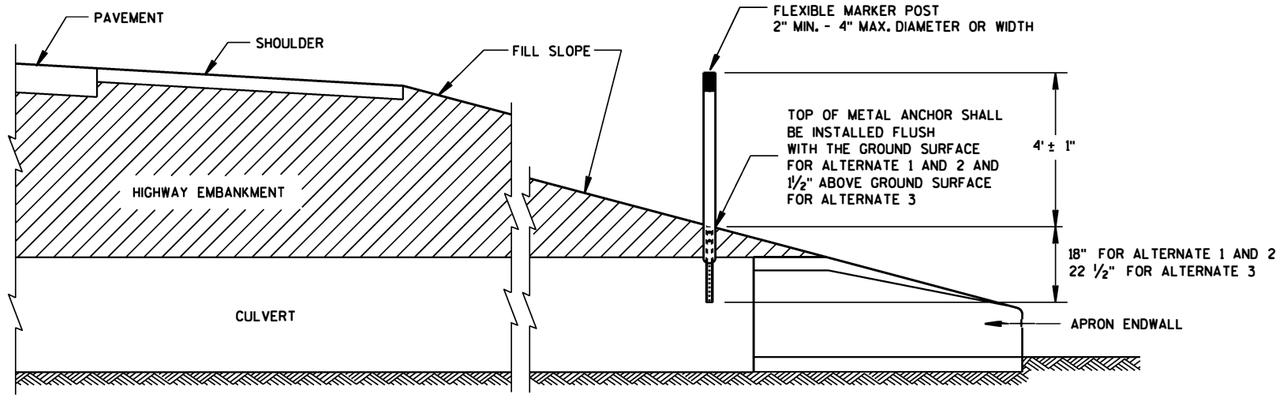
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

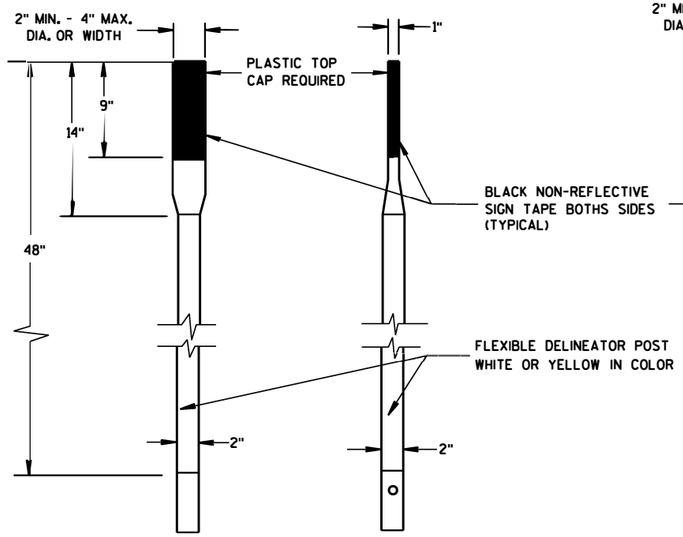
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

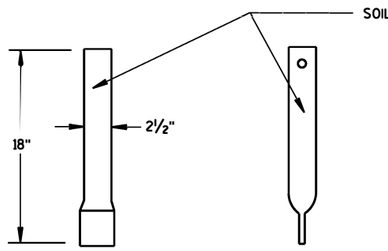
6

S.D.D. 15 A 3-2a

6

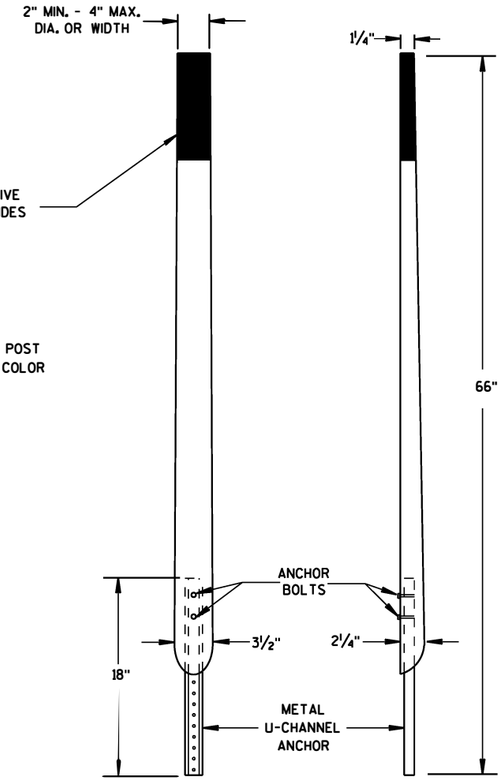
S.D.D. 15 A 3-2a





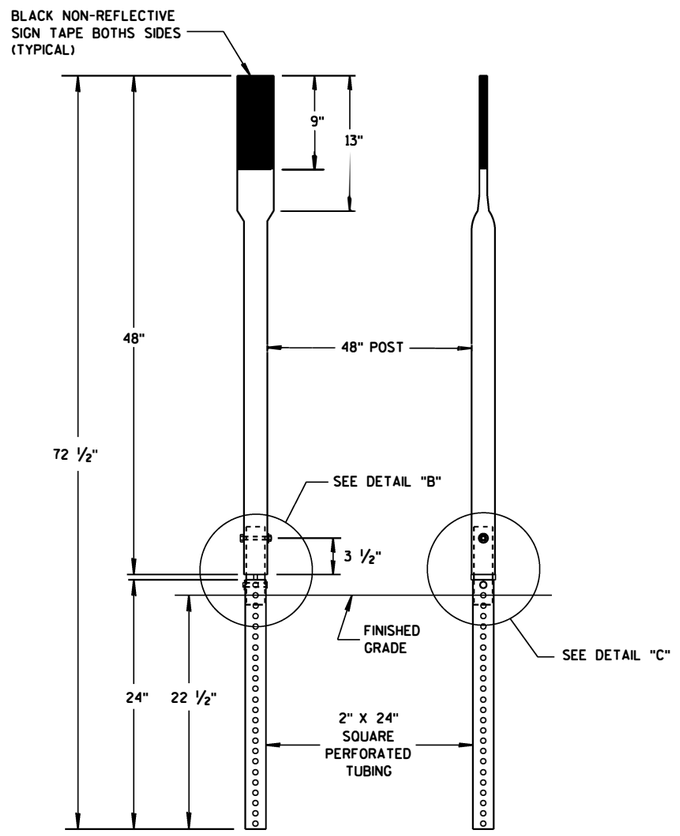
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

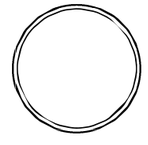
ALTERNATE 2



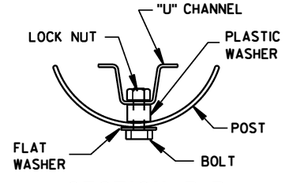
FRONT VIEW SIDE VIEW

ALTERNATE 3

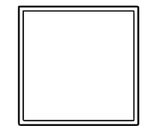
FLEXIBLE MARKER POSTS



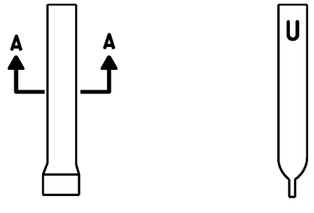
SECTION A-A



SECTION B-B

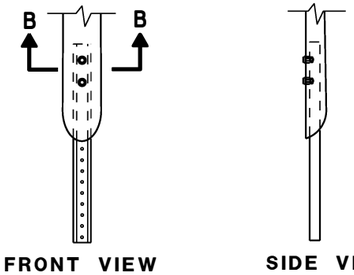


SECTION C-C



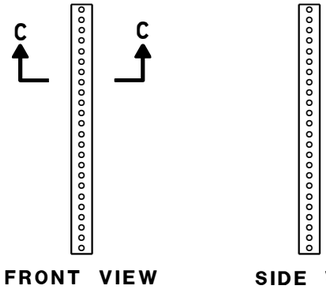
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

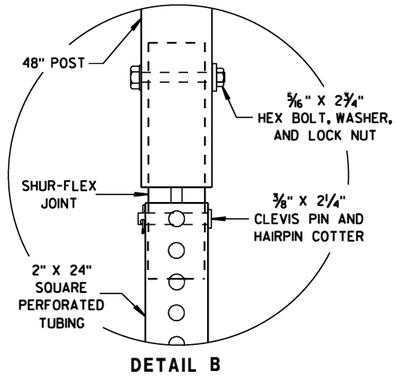
ALTERNATE 2



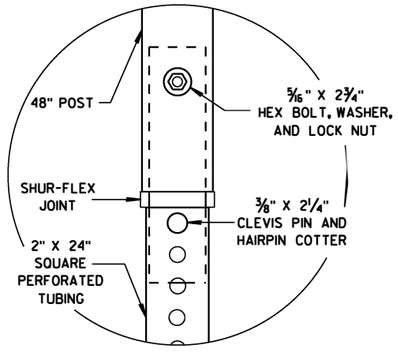
FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

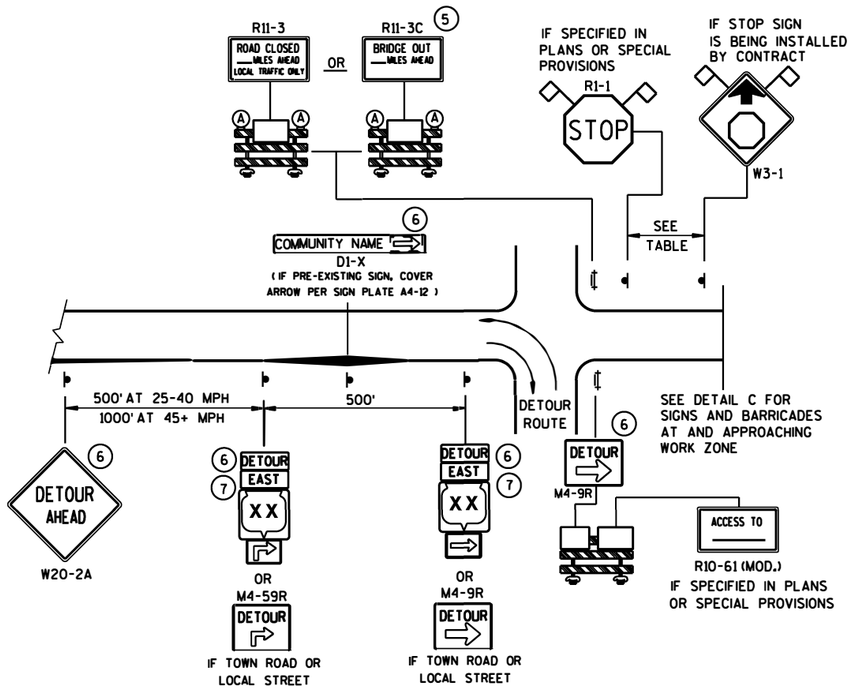
APPROVED
10/1/2012
DATE
/S/ Travis Feltes
STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 A 3-2b

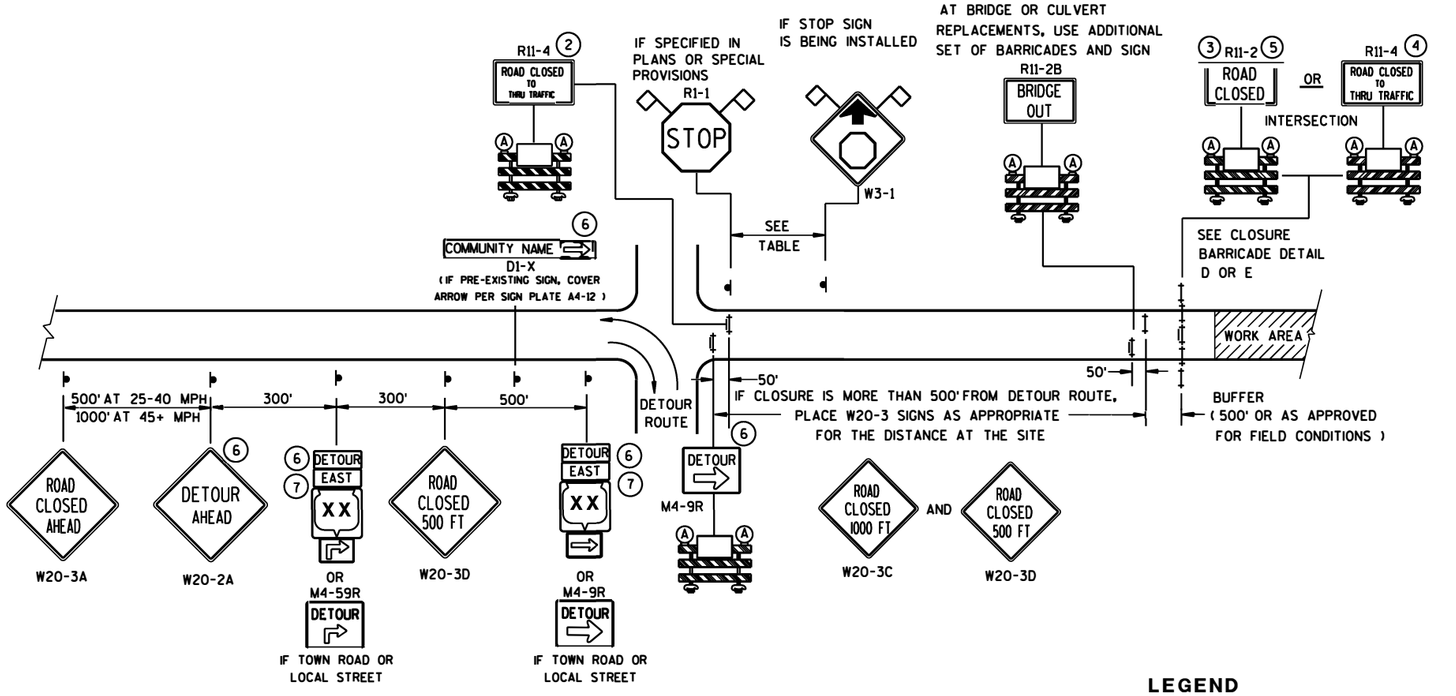
6

S.D.D. 15 A 3-2b



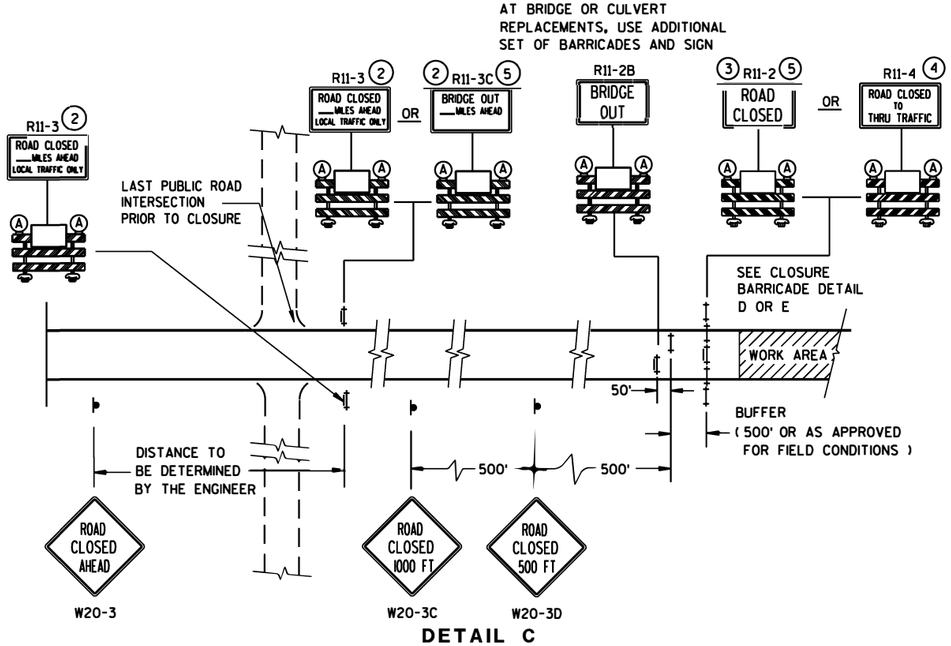
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

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

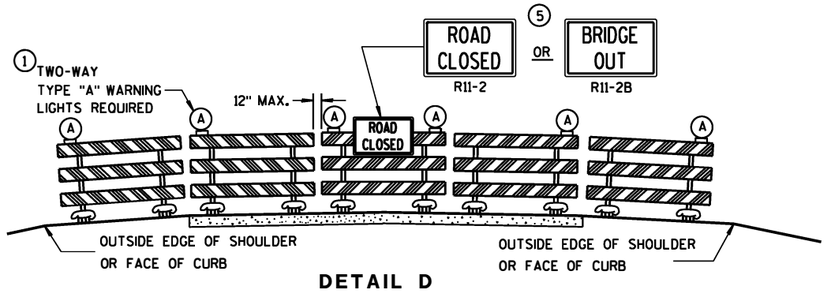
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

6

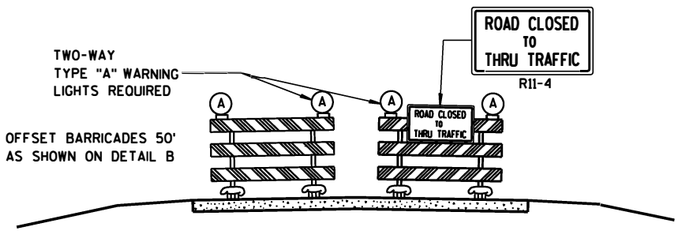
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (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

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible] FIC

FHWA

6

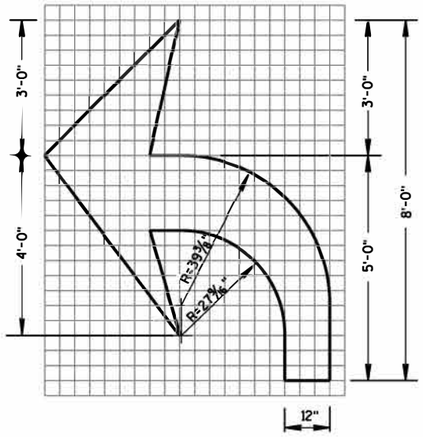
S.D.D. 15 C 2-6b

6

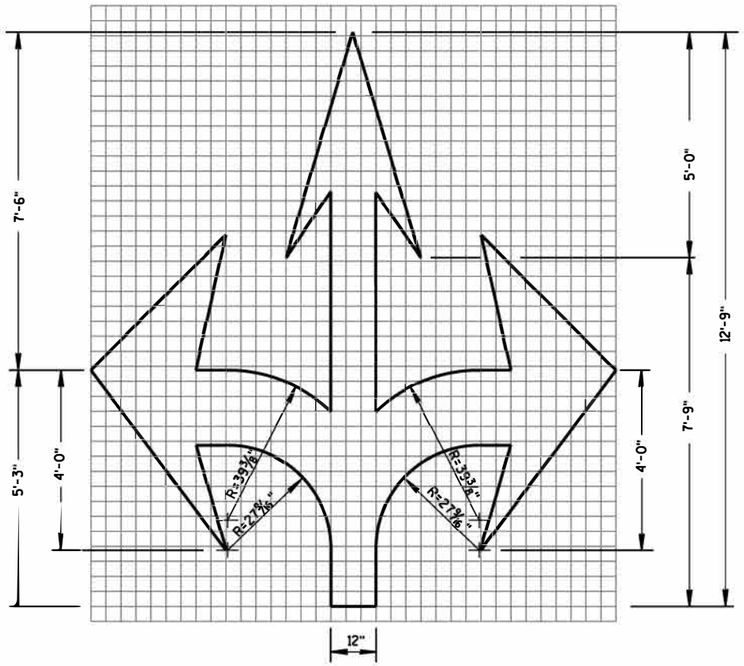
S.D.D. 15 C 2-6b

GENERAL NOTES

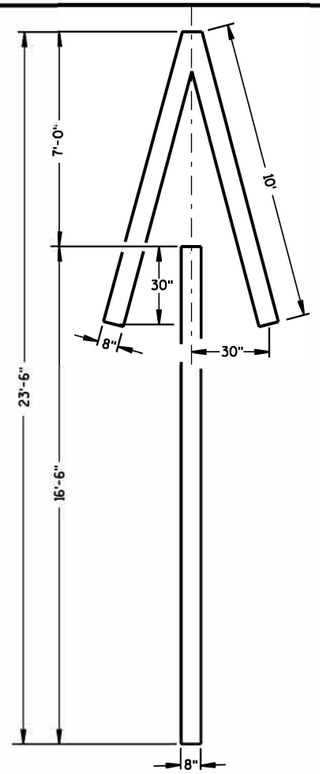
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



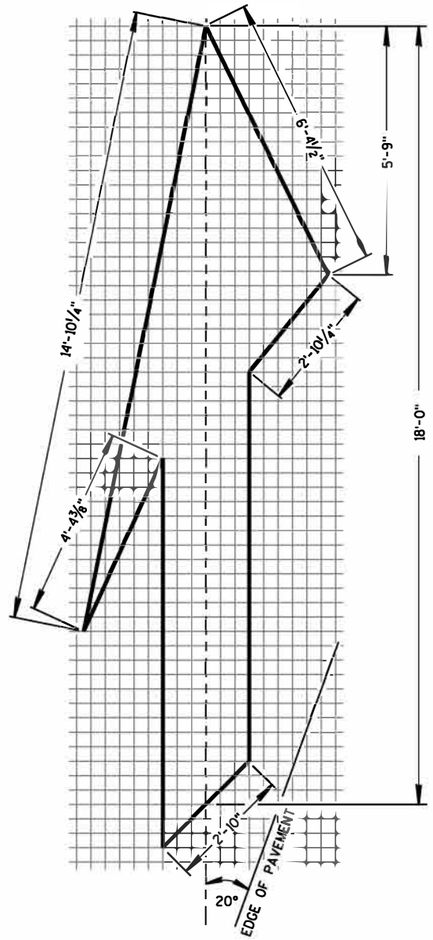
TYPE 2



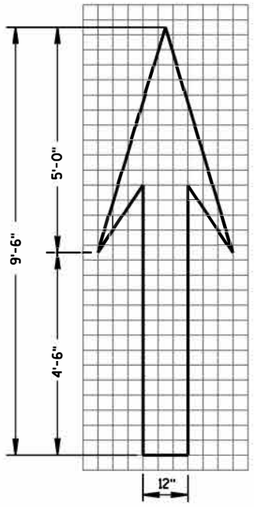
TYPE 6



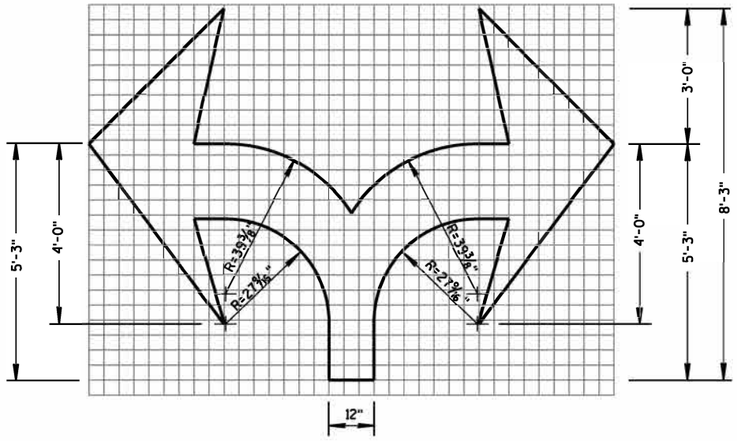
TYPE 4



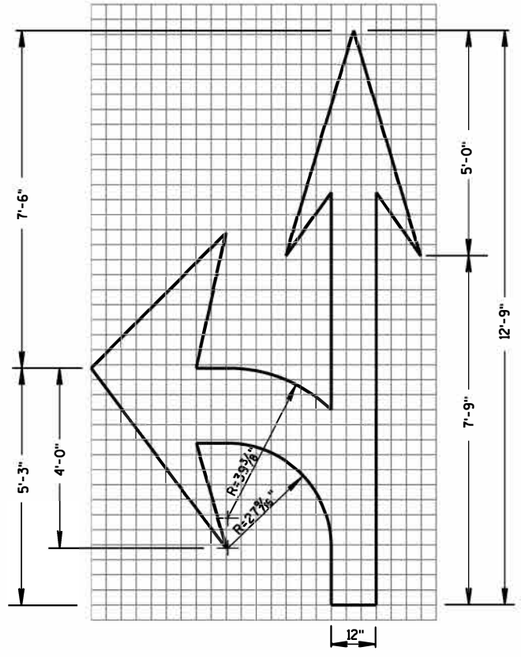
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

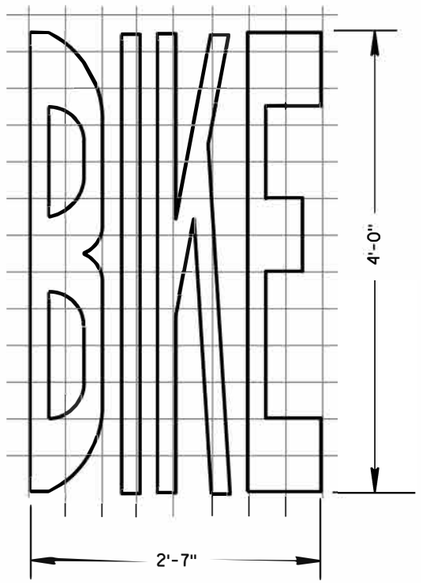
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

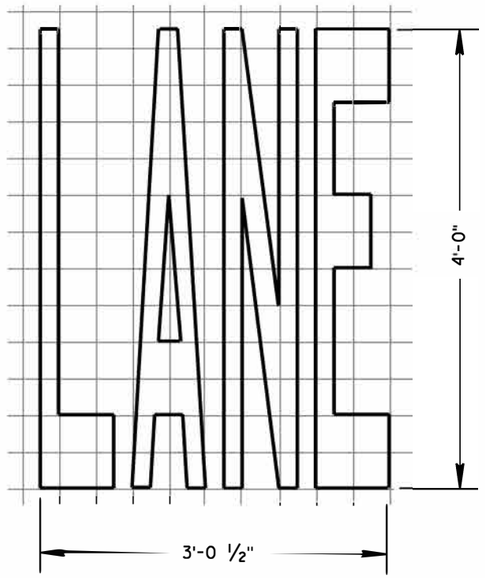
APPROVED
4-18-16 DATE
/S/ Matthew R. Rauch
STATE SIGNING AND MAR ENGINEER
FHWA

6

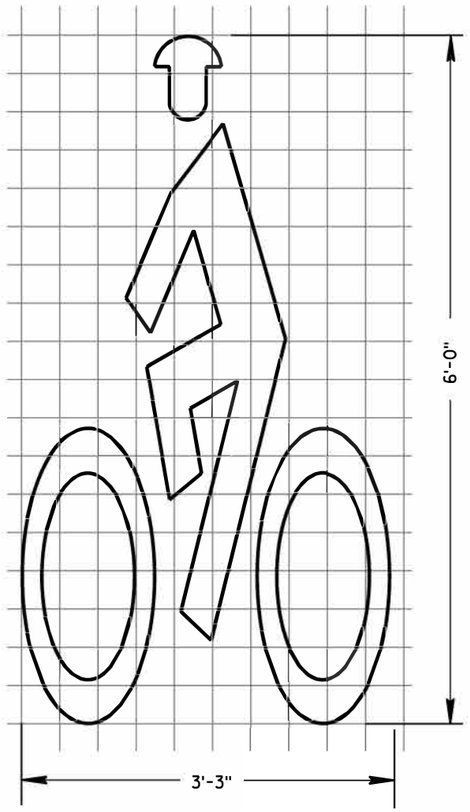
S.D.D. 15 C 7-13c

S.D.D. 15 C 7-13c

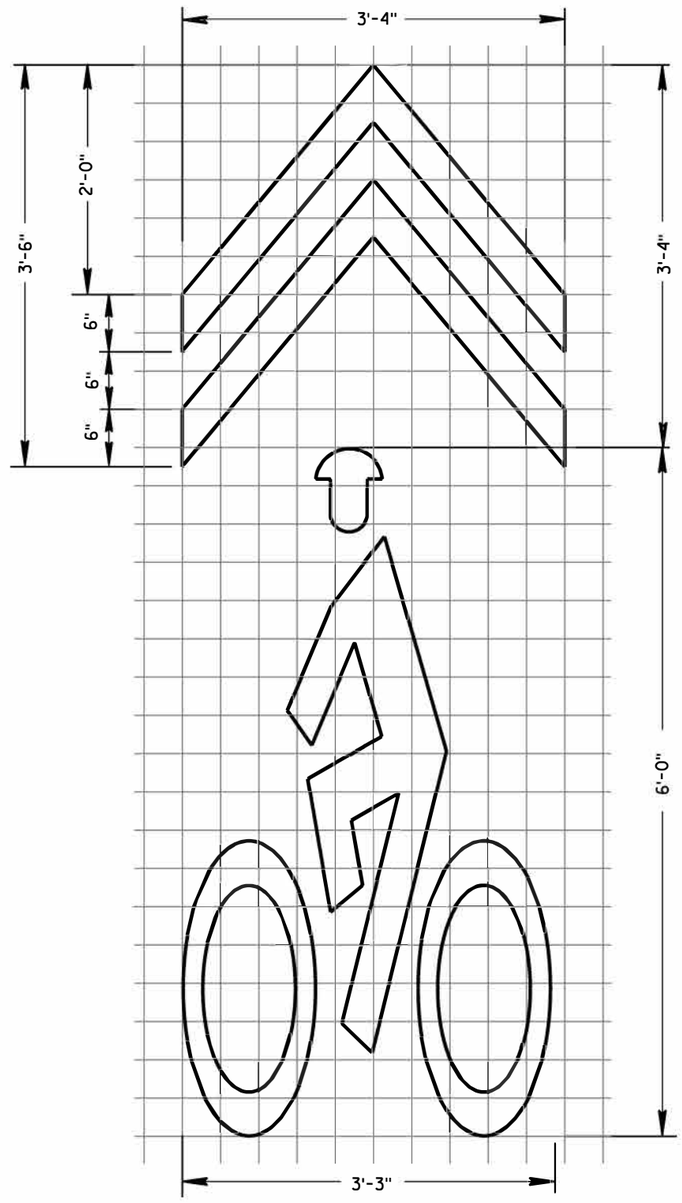




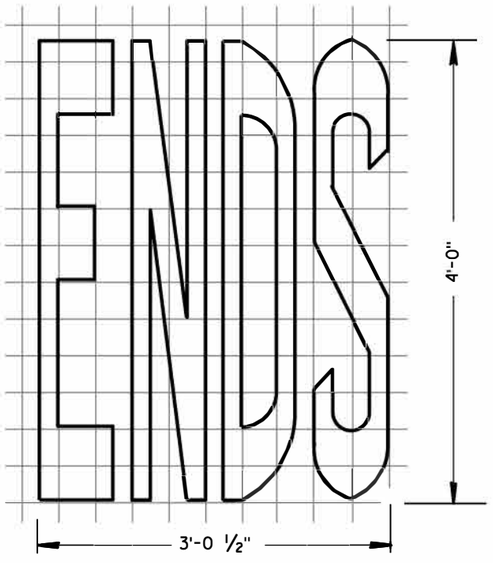
BIKE LANE WORDS



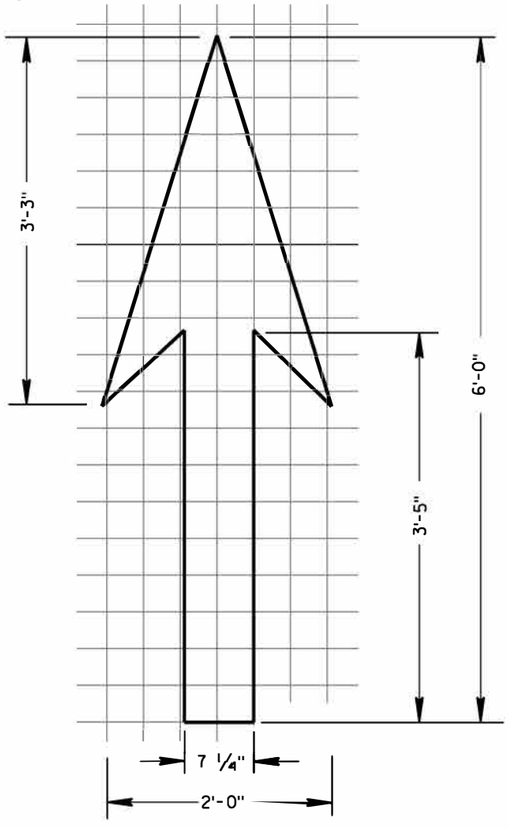
BIKE LANE SYMBOL



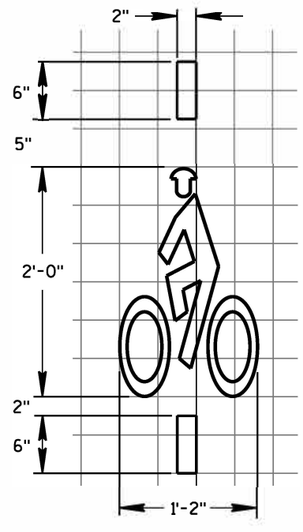
BIKE SYMBOL FOR SHARED LANE



BIKE LANE WORDS



BIKE LANE ARROW



BICYCLE DETECTOR PAVEMENT MARKING

GENERAL NOTES

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

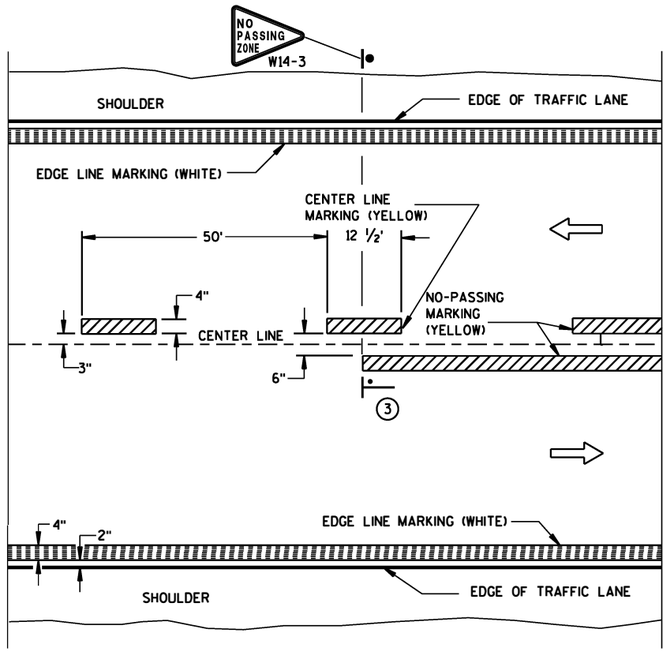
PAVEMENT MARKING FOR BIKE LANES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

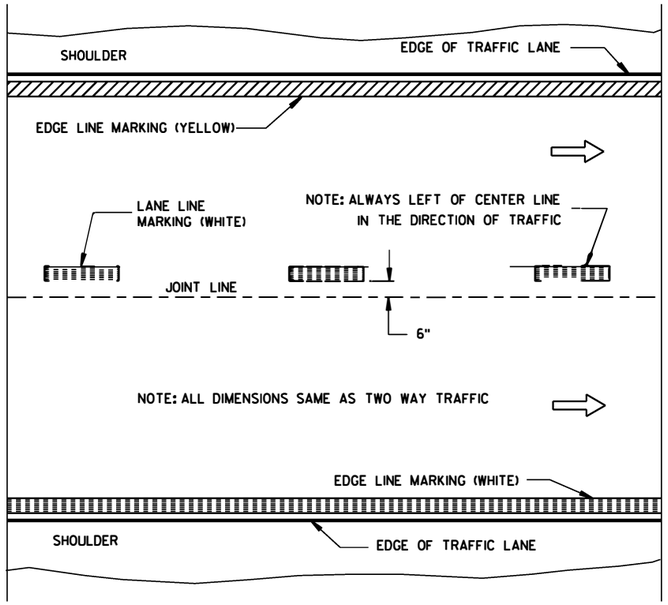
APPROVED
4-18-2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARK ENGINEER
FHWA

6

S.D.D. 15 C 7-13e

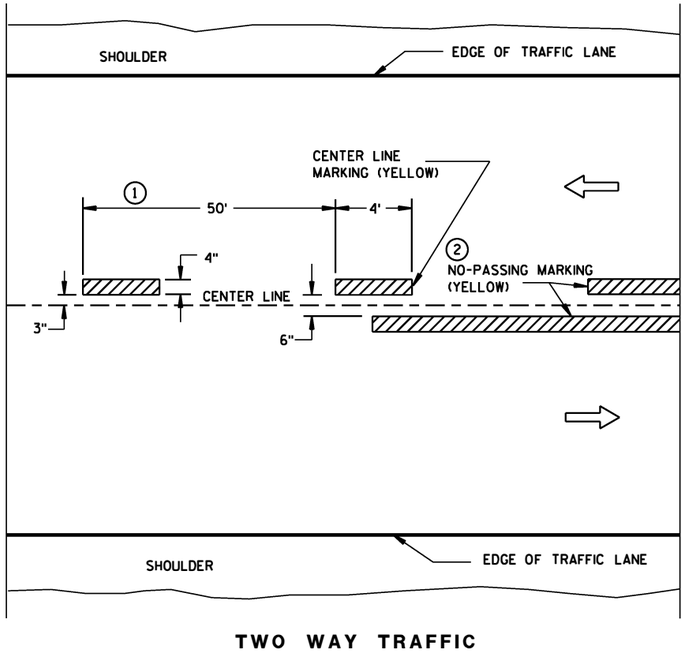


TWO WAY TRAFFIC

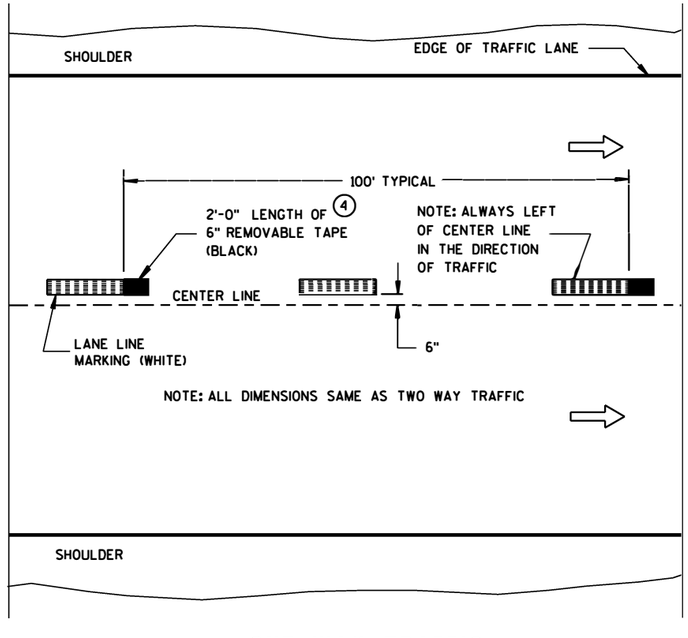


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

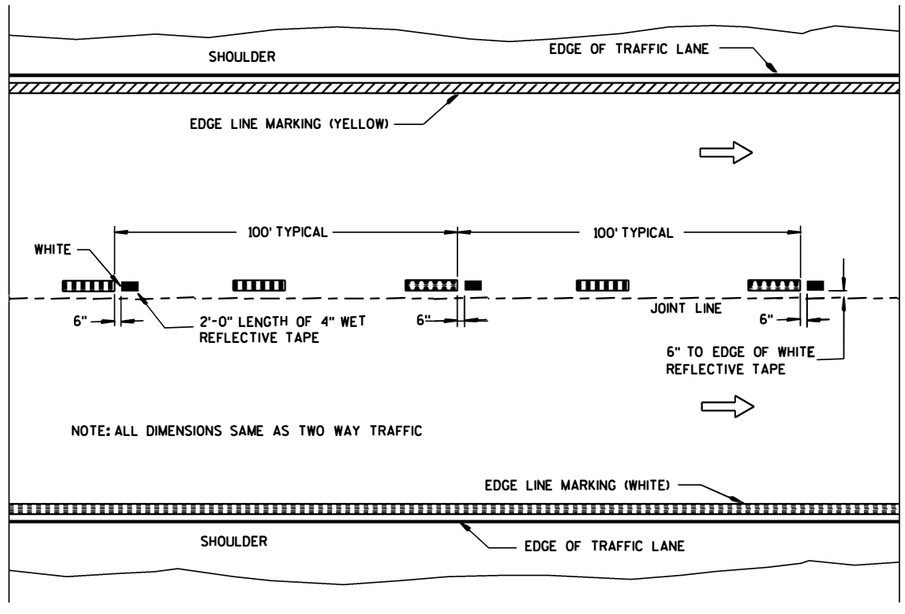
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013 DATE

/S/ Travis Feltes STATE TRAFFIC E

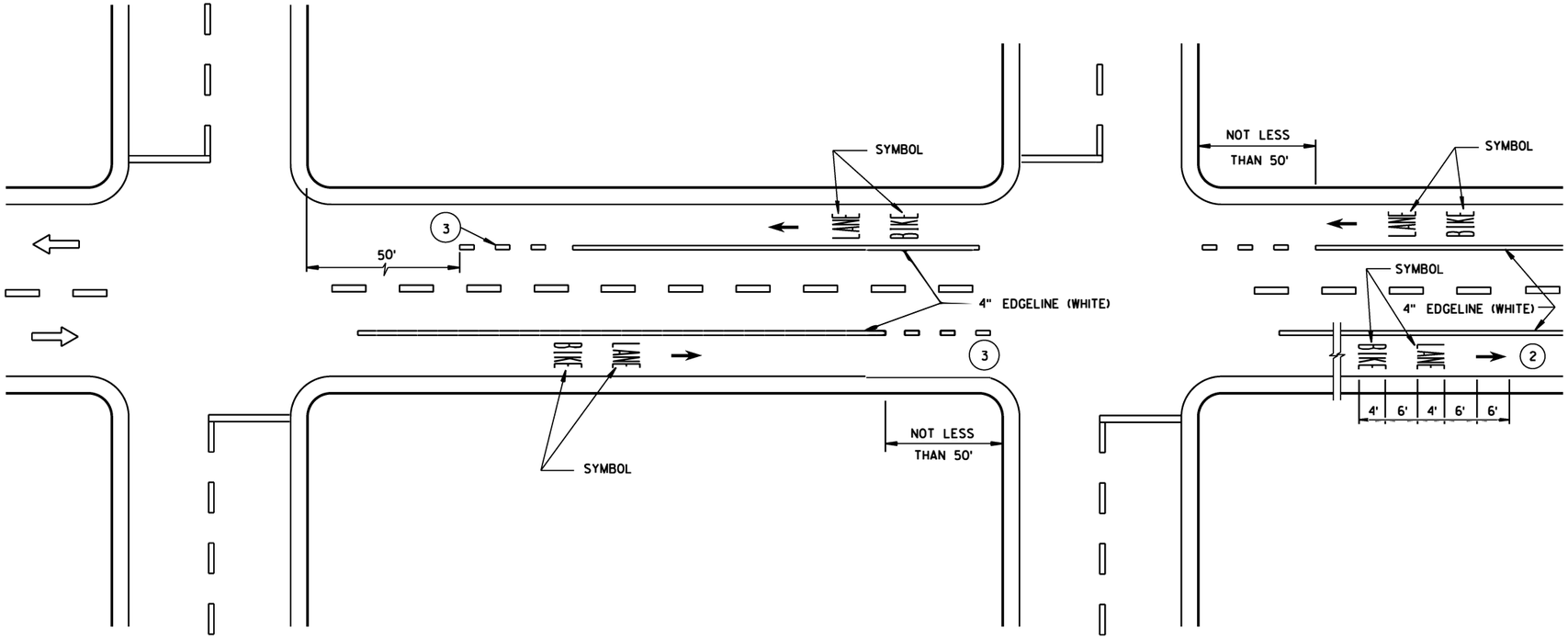
FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a

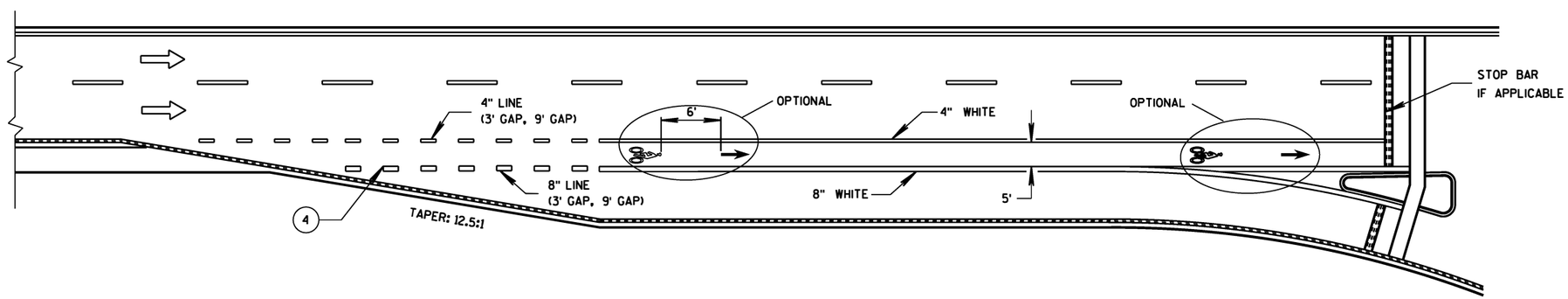


GENERAL NOTES

1. DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
2. MINIMUM OF ONE PER BLOCK. MAXIMUM OF 250 FEET.
3. DOTTED LINES (3' LINE, 9' GAP) SHOULD BE USED 50 FEET TO 200 FEET IN ADVANCE OF AN INTERSECTION WHERE THERE IS NO RIGHT TURN ONLY LANE AND THERE IS HEAVY RIGHT TURN TRAFFIC OR THERE IS A NEAR-SIDE BUS STOP. AT OTHER INTERSECTIONS WHERE RIGHT TURN TRAFFIC IS LIGHT TO MODERATE, A SOLID LINE CAN BE USED UP TO THE INTERSECTION.
4. IF SIGNED AND/OR MARKED AS A BICYCLE FACILITY INCLUDE SECOND LINE OF LINE-SPACE MARKING, OTHERWISE DO NOT.

⇨ DIRECTION OF TRAVEL

DESIGNATED BICYCLE LANE
NO PARKING



BIKE LANE - 4-LANE DIVIDED WITH RIGHT TURN LANE

BICYCLE LANE MARKING

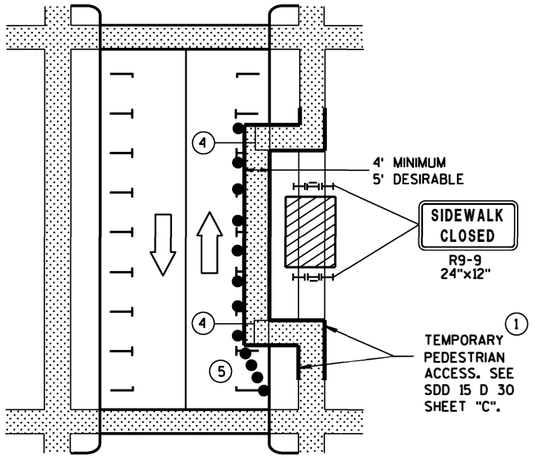
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR NEER
FHWA

6

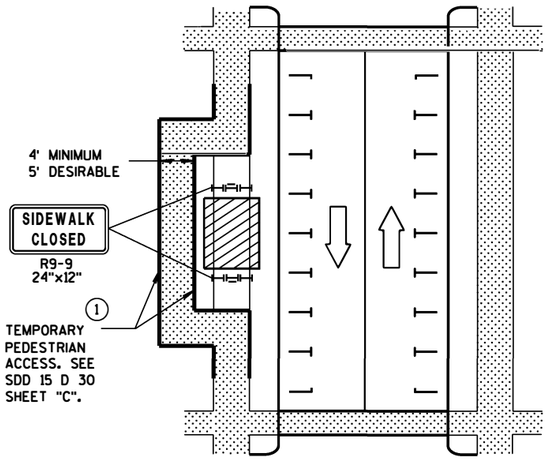
S.D.D. 15 C 29-4a

NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.

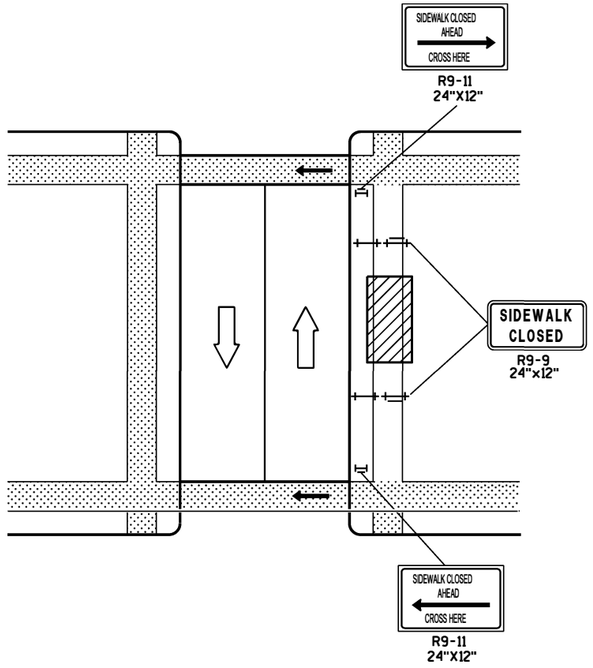


MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

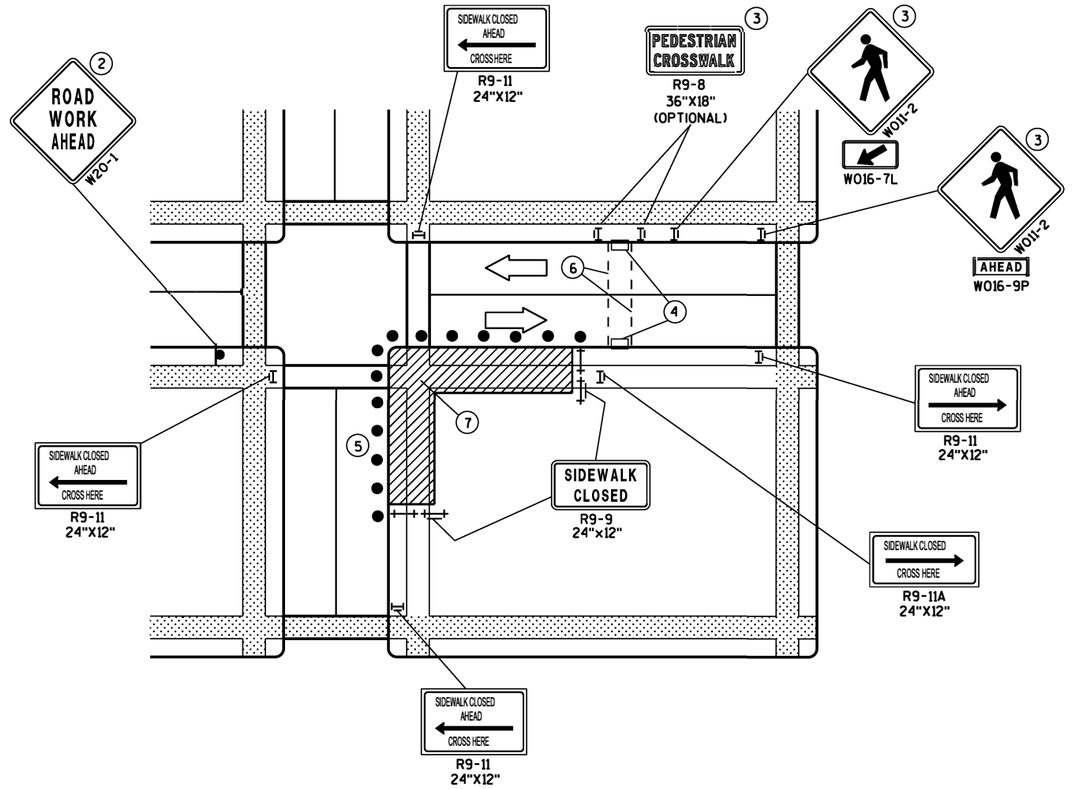
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

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

(1) IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.

(2) "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.

(3) IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.

(4) TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".

(5) DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.

(6) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

(7) LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

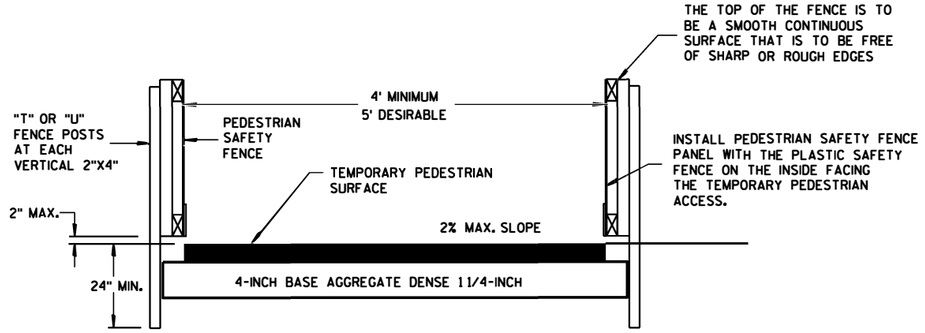
- SIGN ON PERMANENT SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- DIRECTION OF TRAFFIC
- TRAFFIC CONTOL DRUM

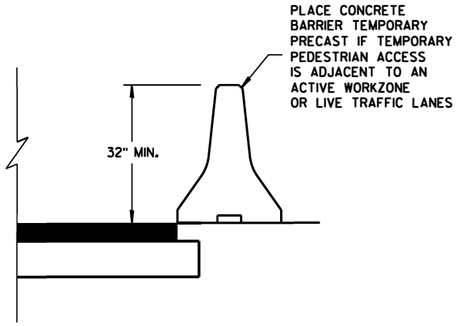
TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 D 30-2a
S.D.D. 15 D 30-2a

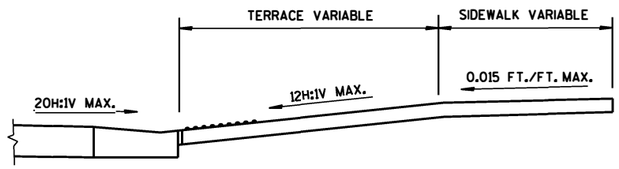




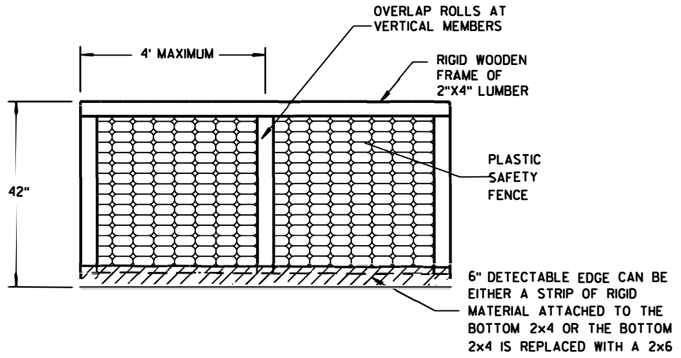
TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

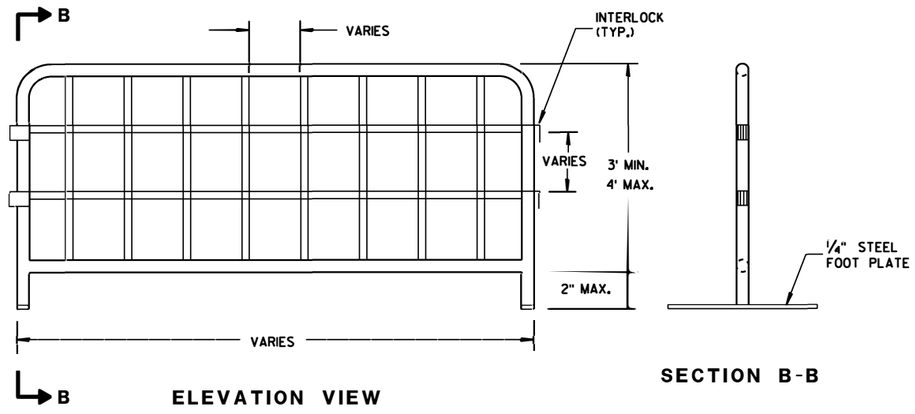
(1) INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



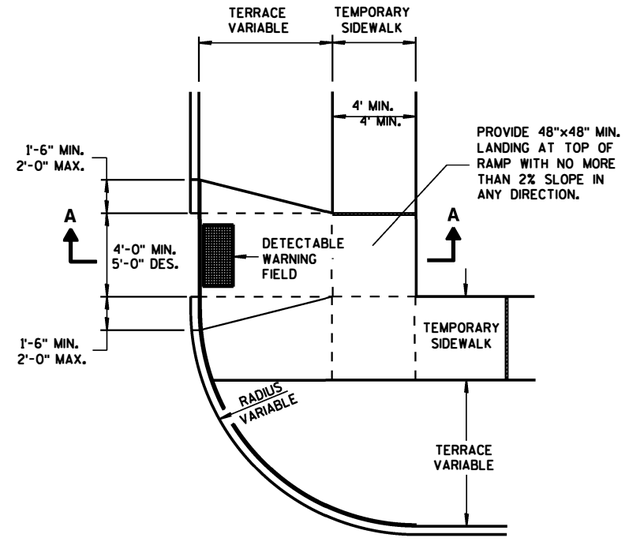
PEDESTRIAN SAFETY FENCE



ELEVATION VIEW

SECTION B-B

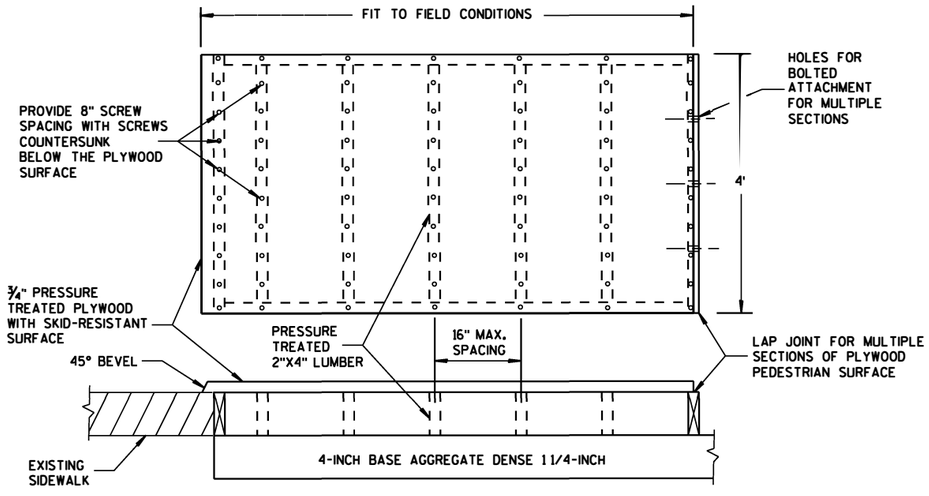
TEMPORARY PEDESTRIAN STEEL BARRICADE (1)



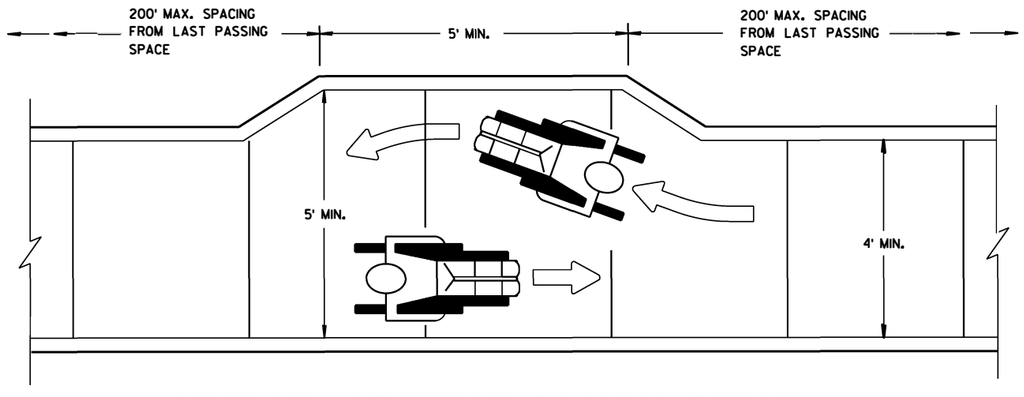
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



NARROW SIDEWALK PASSING DETAIL

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016
DATE
/S/ Peter Amokobe Atepe
STATEWIDE WORK ZON SAFETY ENGIN IC
FHWA

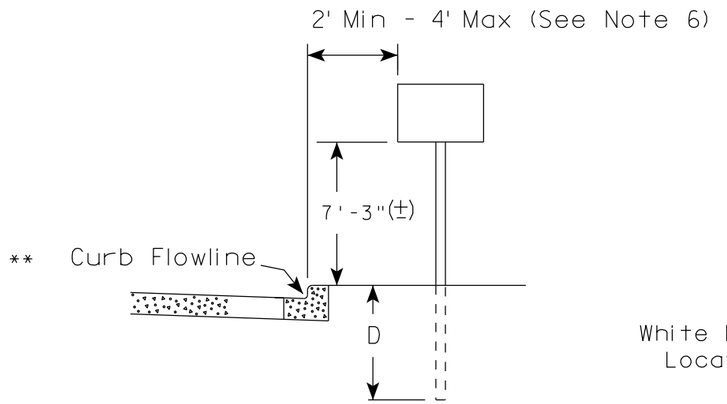
6

S.D.D. 15 D 30-3c

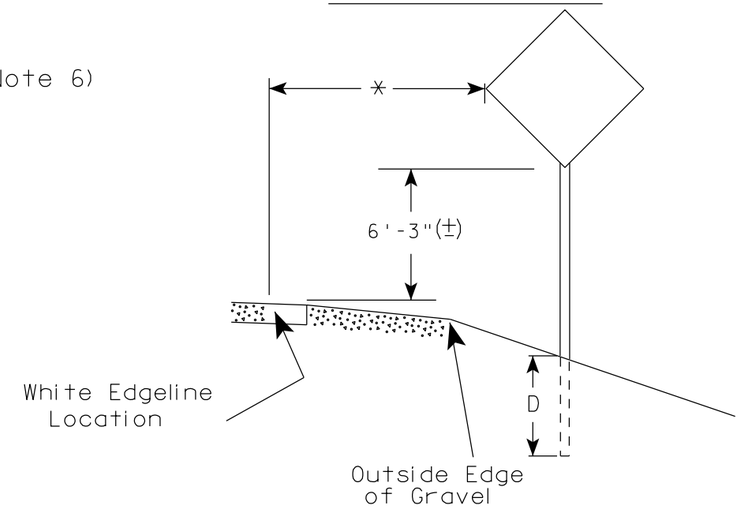
6

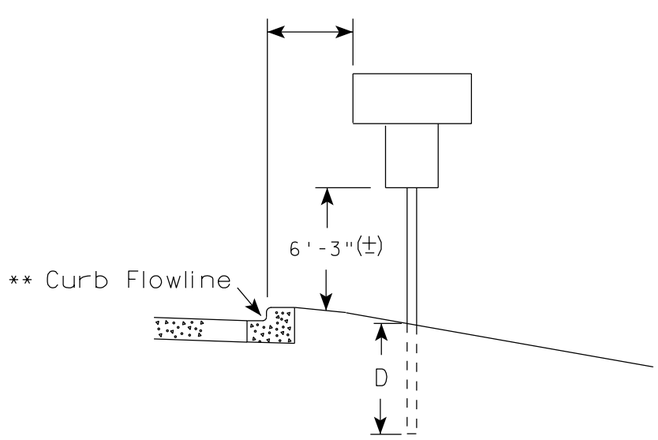
S.D.D. 15 D 30-3c

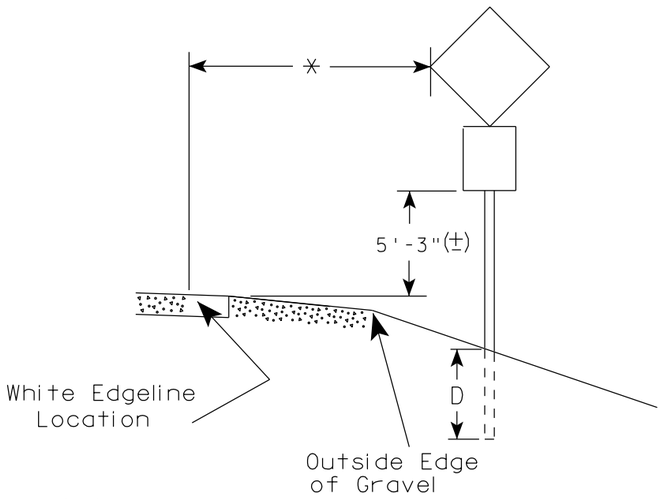
URBAN AREA



RURAL AREA (See Note 2)







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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, 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 (A2-1S) 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 signs shall be mounted at a height of 5'-3" (±) or as directd 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), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

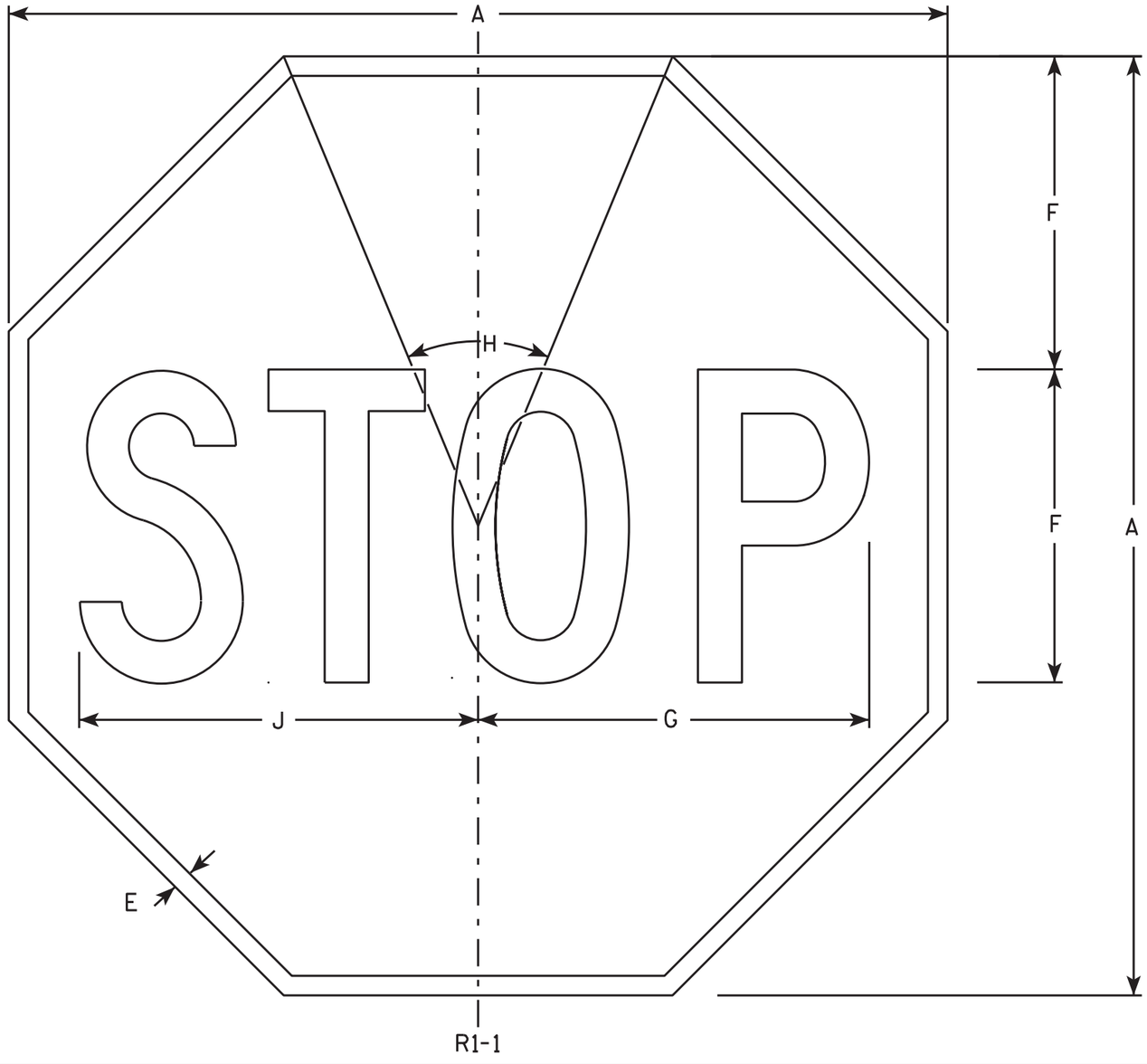
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

PROJECT NO: 7995-02-46	HWY: GRAND AVE	COUNTY: EAU CLAIRE	SIGN PLATES	SHEET NO:	E



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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
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

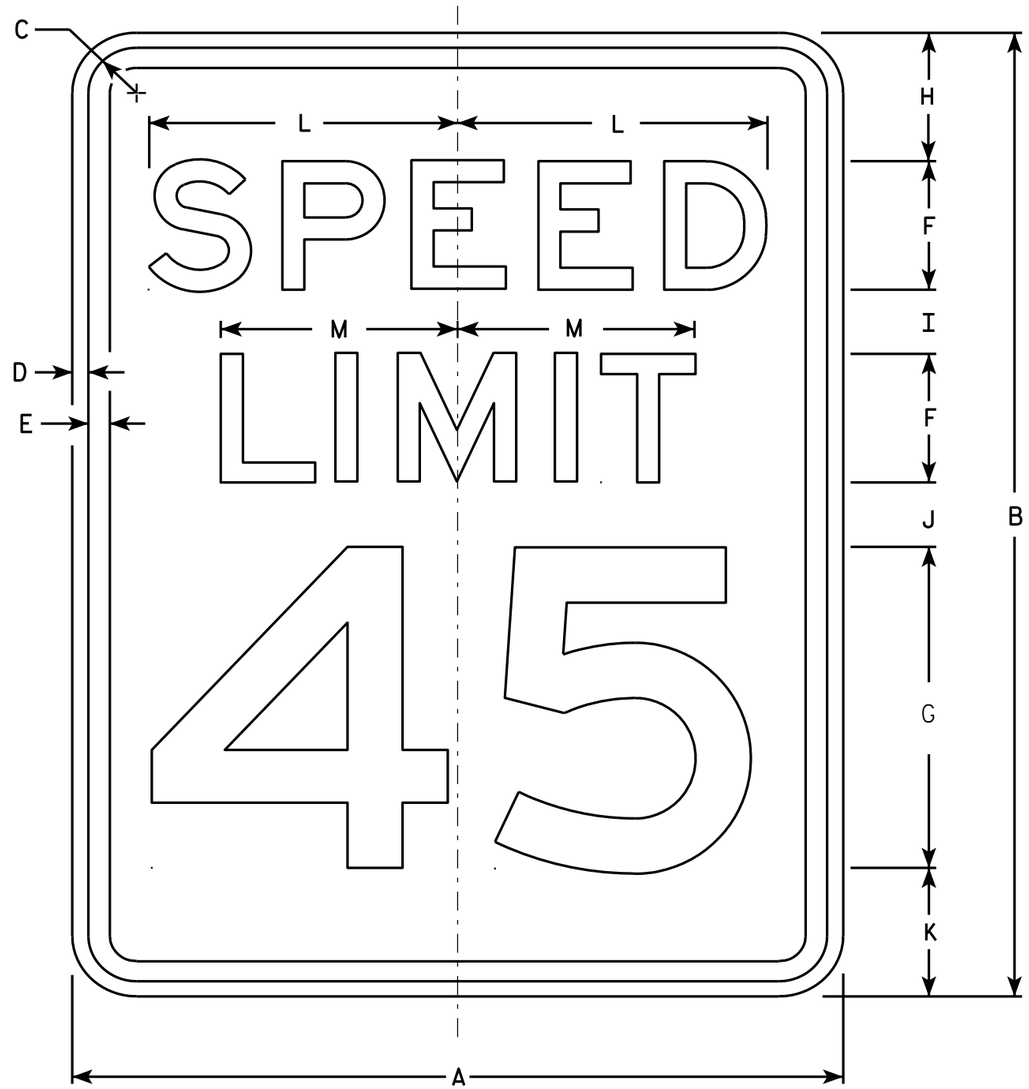
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.12

PROJECT NO: 7995-02-46	HWY: GRAND AVE	COUNTY: EAU CLAIRE	SIGN PLATES	SHEET NO. 67	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

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	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

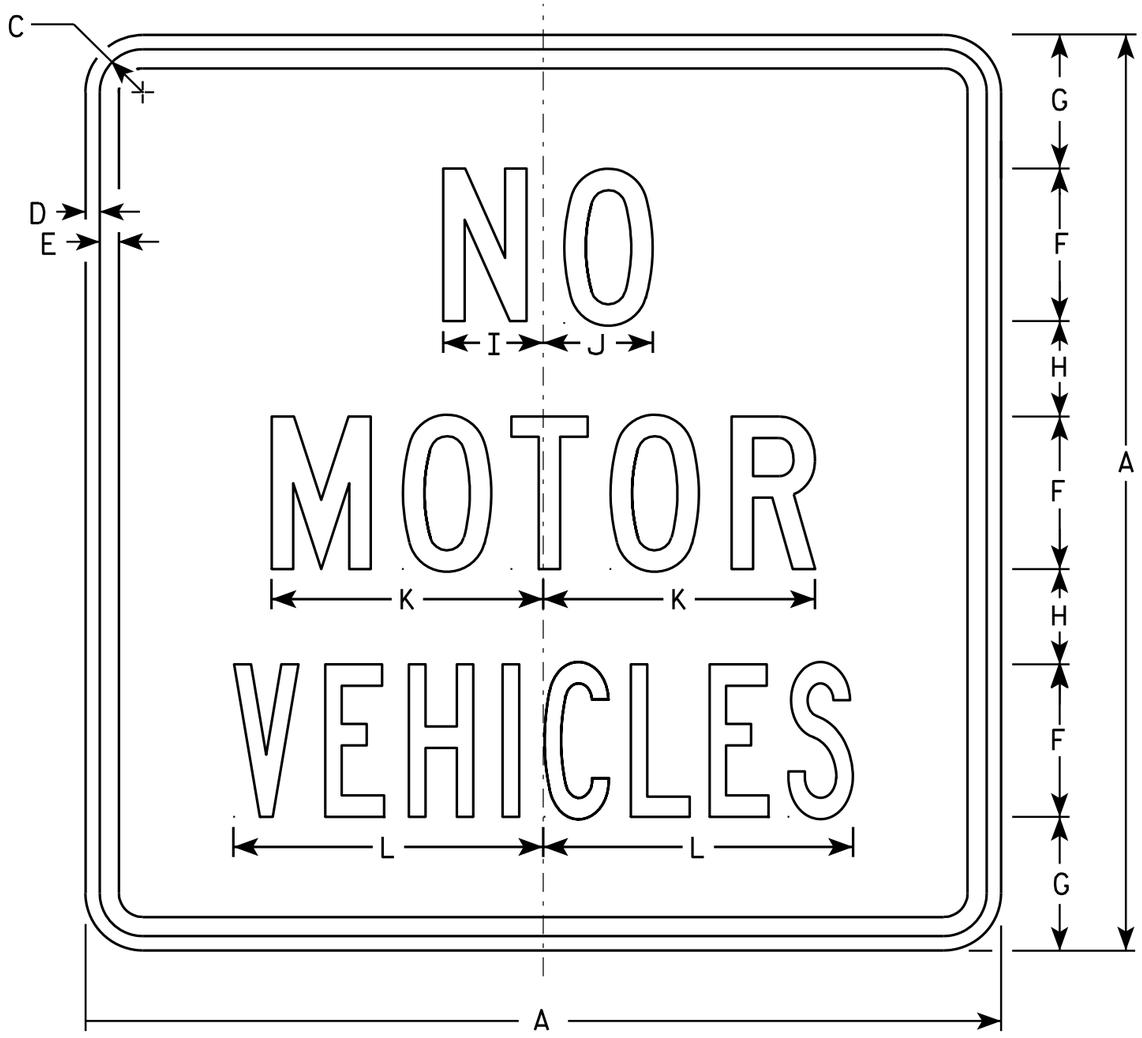
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: 7995-02-46	HWY: GRAND AVE	COUNTY: EAU CLAIRE	SIGN PLATES	SHEET NO: 68	E



R5-3

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - See Note 5.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 & 2 are Series C.
   Line 3 is Series B.

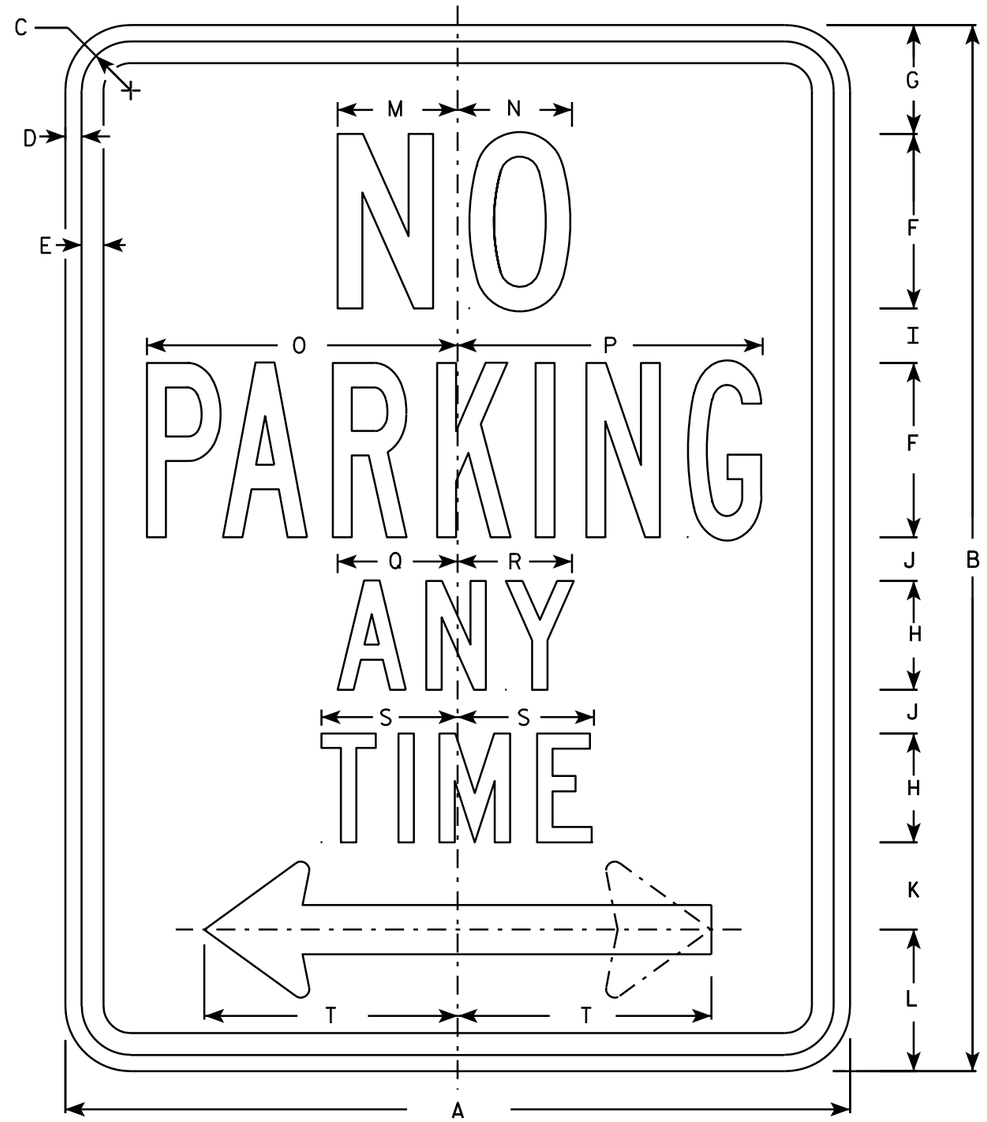
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8															4.0
2M	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8															4.0
3																											
4																											
5																											

STANDARD SIGN
R5-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/29/2011 PLATE NO. R5-3.2

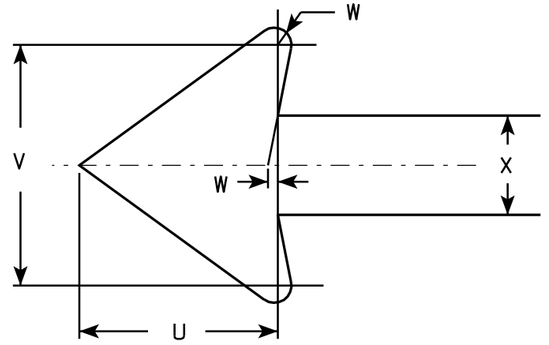
PROJECT NO: 7995-02-46 | HWY: GRAND AVE | COUNTY: EAU CLAIRE | SIGN PLATES | SHEET NO: 69 | E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
   R7-1L (left arrow)
   R7-1R (right arrow)



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	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

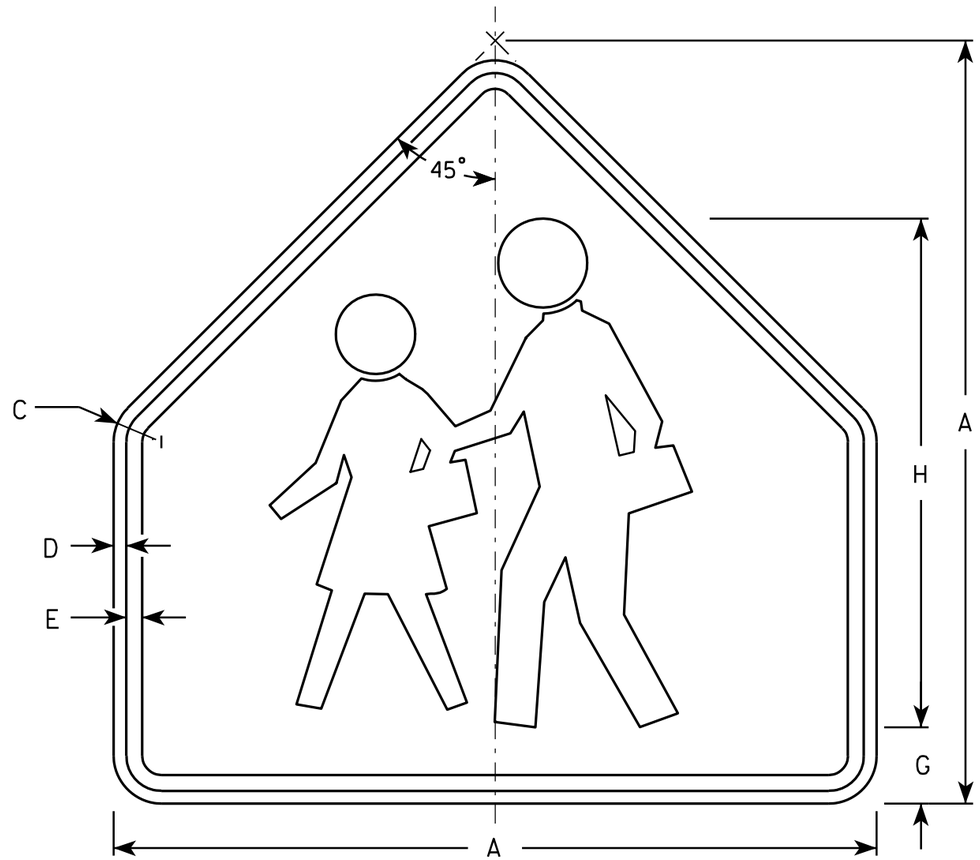
STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO: 7995-02-46	HWY: GRAND AVE	COUNTY: EAU CLAIRE	SIGN PLATES	SHEET NO: 70	E



S1-1

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8		3	20																			4.69
2	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
3	36		1 5/8	5/8	3/4		3 1/2	24																			6.75
4	48		2 1/4	3/4	1		4 3/4	32																			12
5																											

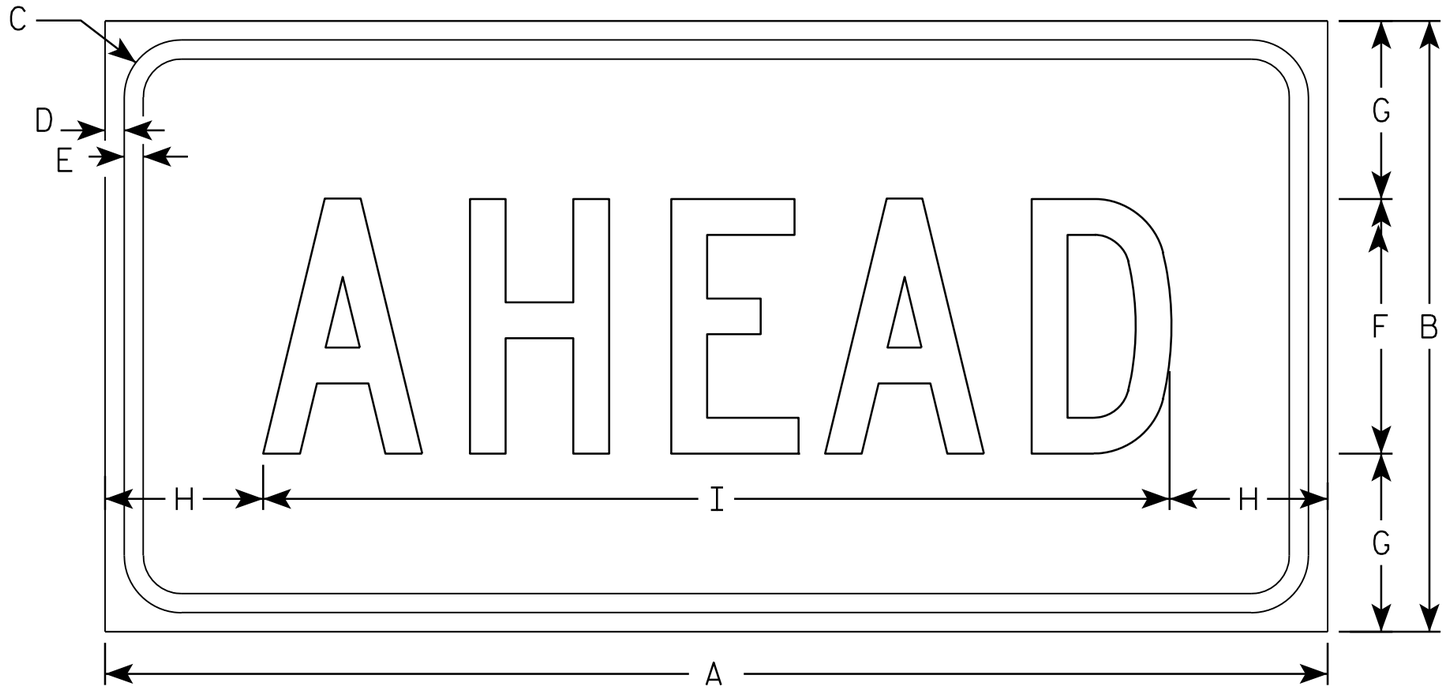
STANDARD SIGN
S1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/30/05 PLATE NO. S1-1.8

PROJECT NO: 7995-02-46	HWY: GRAND AVE	COUNTY: EAU CLAIRE	SIGN PLATES	SHEET NO: 71	E



S16-9P

NOTES

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

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	12	1 1/8	3/8	3/8	5	3 1/2	3 1/8	17 3/4																		2.0
2S	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
2M	30	18	1 1/8	3/8	1/2	7	5 1/2	2 3/4	24 1/2																		3.75
3	30	18	1 1/8	3/8	1/2	7	3 1/2	2 3/4	24 1/2																		3.75
4	48	24	1 3/8	1/2	5/8	10	7	6 1/8	35 3/4																		8.0
5																											

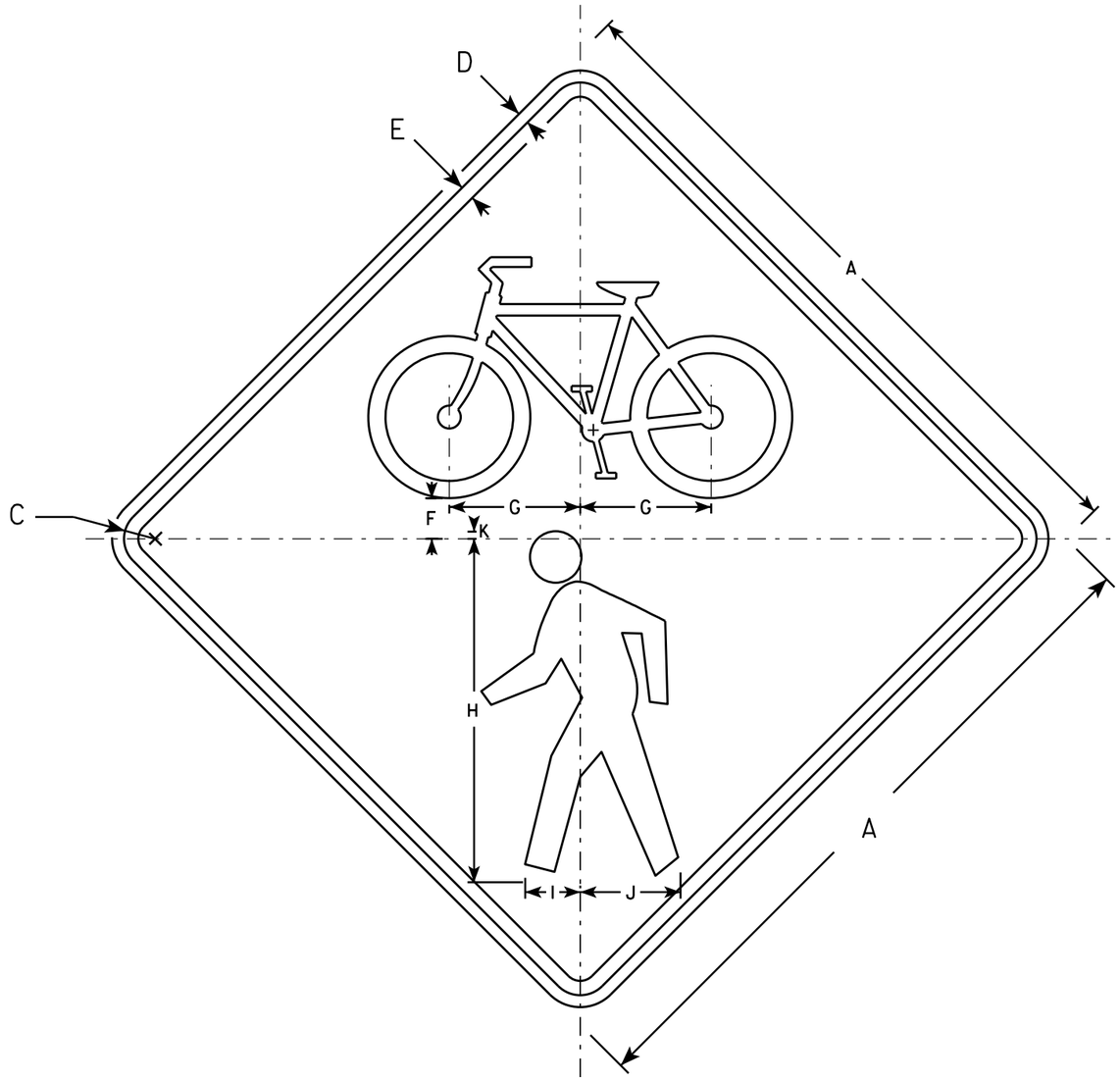
STANDARD SIGN
S16-9P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/22/13 PLATE NO. S16-9P.1

PROJECT NO: 7995-02-46 | HWY: GRAND AVE | COUNTY: EAU CLAIRE | SIGN PLATES | SHEET NO: 72 | E



W11-15

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	1 3/8	4 5/8	12	1 7/8	3 1/2	1/4																4.0
2S	30		1 3/8	1/2	5/8	1 3/4	5 3/4	15	2 3/8	4 3/8	3/8																6.25
2M	36		1 5/8	5/8	3/4	2 1/8	6 7/8	18	2 7/8	5 1/4	3/8																9.0
3	36		1 5/8	5/8	3/4	2 1/8	6 7/8	18	2 7/8	5 1/4	3/8																16.0
4	48		2 1/4	3/4	1	2 7/8	9 1/8	24	3 7/8	7	1/2																16.0
5																											

STANDARD SIGN
W11-15

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

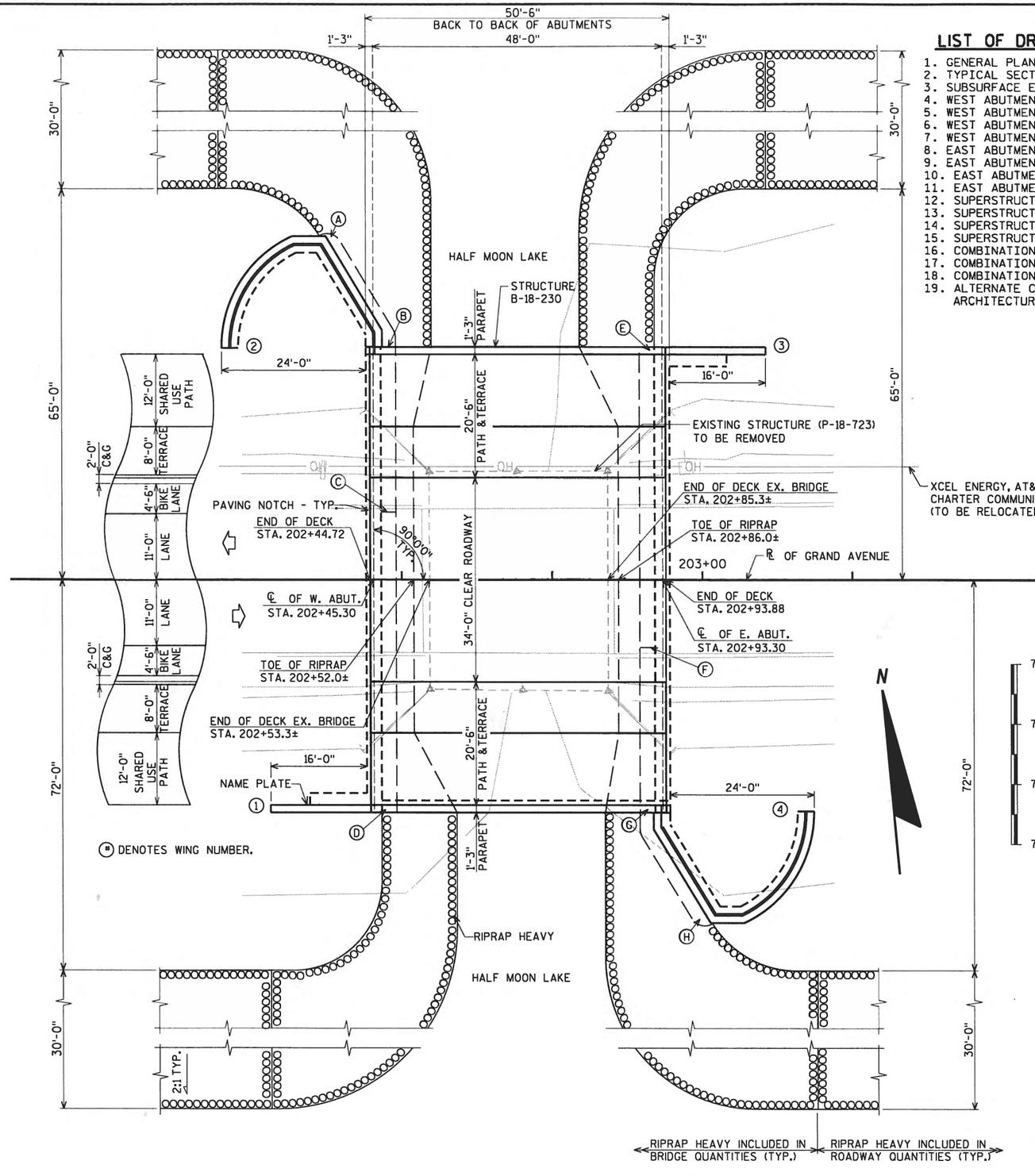
DATE 2/13/14 PLATE NO W11-15.4

PROJECT NO: 7995-02-46 | HWY: GRAND AVE | COUNTY: EAU CLAIRE | SIGN PLATES | SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W1115.DGN PLOT DATE : 13-FEB-2014 10:54 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 7.783368:1.000000
WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER

7995-02-46



Ⓝ DENOTES WING NUMBER.

PLAN

SINGLE SPAN CONCRETE FLAT SLAB BRIDGE

LIST OF DRAWINGS

RIPRAP BERM ELEVATIONS	
POINT	ELEVATION
A	769.34
B	769.34
C	771.79
D	771.79
E	771.85
F	771.85
G	769.40
H	769.40

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.21
OPERATING RATING FACTOR: 1.56
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE ——— f'_c = 4,000 p.s.i.
ALL OTHER ——— f'_c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) ——— f_y = 60,000 p.s.i.

FOUNDATION DATA:

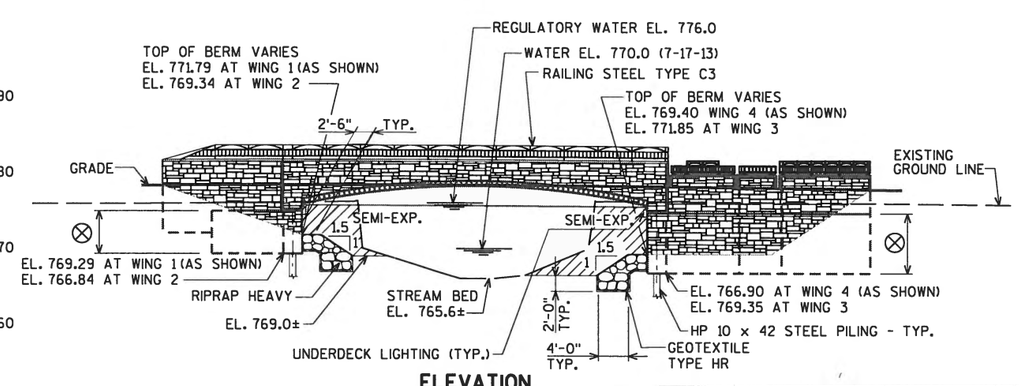
WEST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ǂ PER PILE AS DETERMINEDBY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED LENGTH 20'-0".

EAST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED LENGTH 20'-0".

ǂ THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.D.T. = 1,800 (2017)
A.D.T. = 2,100 (2037)
R.D.S. = 30 M.P.H.



ELEVATION

Ⓧ 5'-0" MINIMUM HEIGHT AT WINGS 1 & 3.
8'-0" MAX. HEIGHT AT WINGS 2 & 4.

COST OF EXCAVATION AND FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-18-230".

WISCONSIN
DANIEL N. SYDOW
E-38363
WI
PROFESSIONAL ENGINEER
10/26/2016

SEE SHEET 2 FOR TYPICAL SECTION AND GENERAL NOTES

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 11/17/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-18-230

GRAND AVENUE OVER HALF MOON LAKE

COUNTY	TOWN/CITY/VILLAGE
EAU CLAIRE	EAU CLAIRE

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
AEB	JWZ	CJM	DNS

GENERAL PLAN

SHEET 74 OF 19

8

8

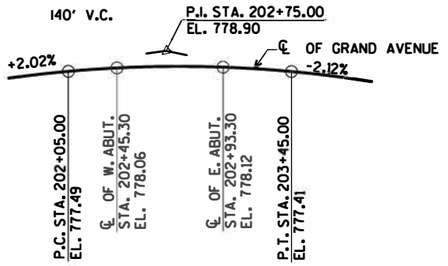
STATE PROJECT NUMBER

7995-02-46

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0500.S	REMOVING OLD STRUCTURE OVER WATERWAY STATION 202+69.30	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-18-230	LS	-----	-----	-----	1
206.5000	COFFERDAM B-18-230	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	450	450	-----	900
405.1000	STAMPING COLORED CONCRETE	CY	-----	-----	20	20
502.0100	CONCRETE MASONRY BRIDGES	CY	110	110	411	631
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	430	430
502.3210	PIGMENTED SURFACE SEALER	SY	21	21	43	85
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	5,360	5,360	-----	10,720
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	6,140	6,140	61,060	73,340
513.7016	RAILING STEEL TYPE C3 B-18-230	LF	63	63	97	223
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	25	25	-----	50
517.1015.S	CONCRETE STAINING MULTI-COLOR B-18-230	SF	980	980	770	2,730
517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-18-230	SF	970	970	650	2,590
550.0500	PILE POINTS	EACH	29	29	-----	58
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	580	580	-----	1,160
606.0300	RIPRAP HEAVY	CY	260	260	-----	520
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	180	180	-----	360
645.0120	GEOTEXTILE TYPE HR	SY	500	500	-----	1,000
652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	3	3	824	830
① 652.0690	CONDUIT SPECIAL 5-INCH	LF	3	3	-----	6
659.0600	UNDERDECK LIGHTING B-18-230	LS	-----	-----	-----	1
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	½" & ¾"
	NAME PLATE					

① RIGID NON-METALLIC SCHEDULE 40



PROFILE GRADE LINE
(GRAND AVENUE)

BENCH MARK:
CP 5363
STA. 201+17.4, 30.7' LT.
EL. 770.22

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

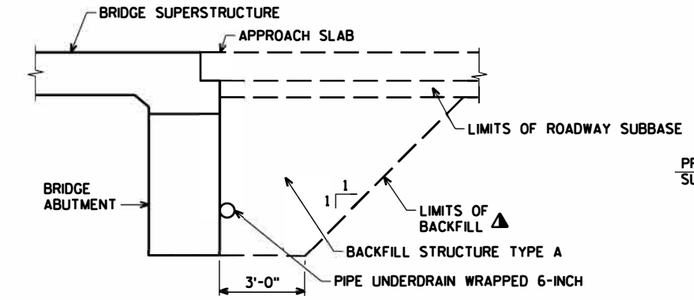
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE UPPER LIMIT FOR "EXCAVATION FOR STRUCTURES BRIDGES B-18-230" SHALL BE THE EXISTING GROUND LINE.

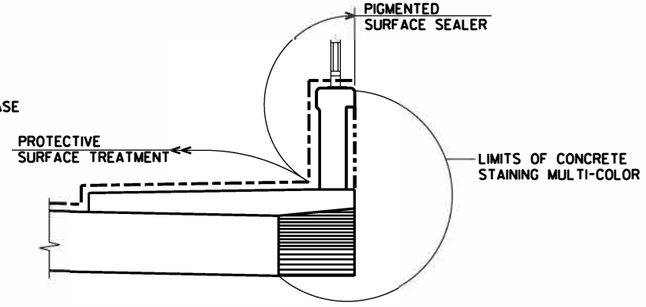
THE EXISTING STRUCTURE, P-18-723, TO BE REMOVED, IS A SINGLE SPAN CONCRETE DECK GIRDER BRIDGE, 29.7 FT. LONG WITH A 24 FT. CLEAR ROADWAY WIDTH AND 5 FT. WIDE RAISED SIDEWALKS.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

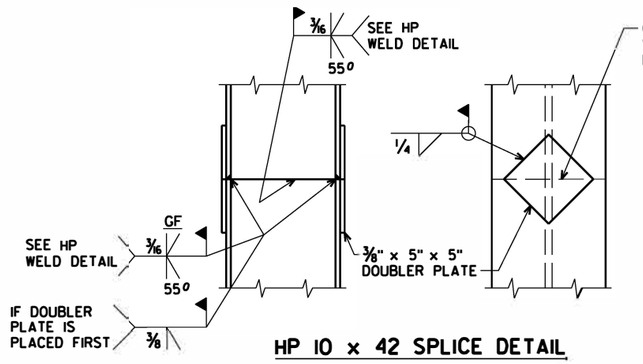
△ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.



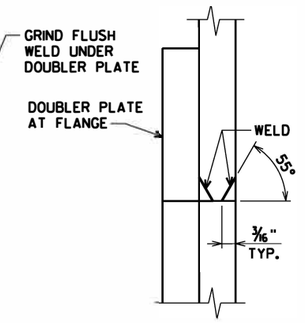
BACKFILL DETAIL



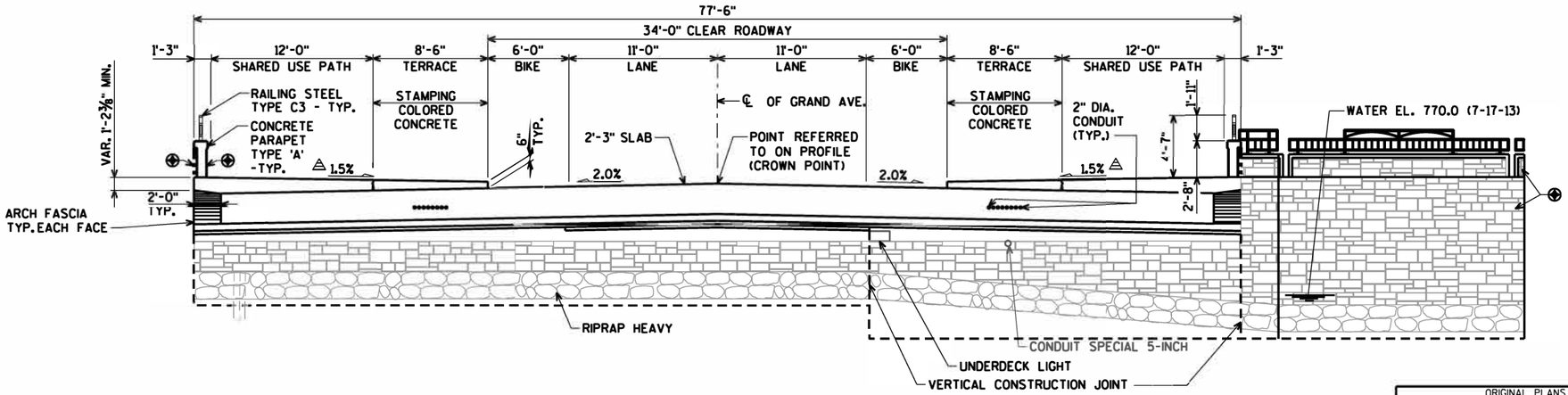
SURFACE TREATMENT DETAIL



HP 10 x 42 SPLICE DETAIL



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR



TYPICAL SECTION THRU BRIDGE
(LOOKING EAST)

⊕ ARCHITECTURAL SURFACE TREATMENT. SEE SHEET 19.

△ ± 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

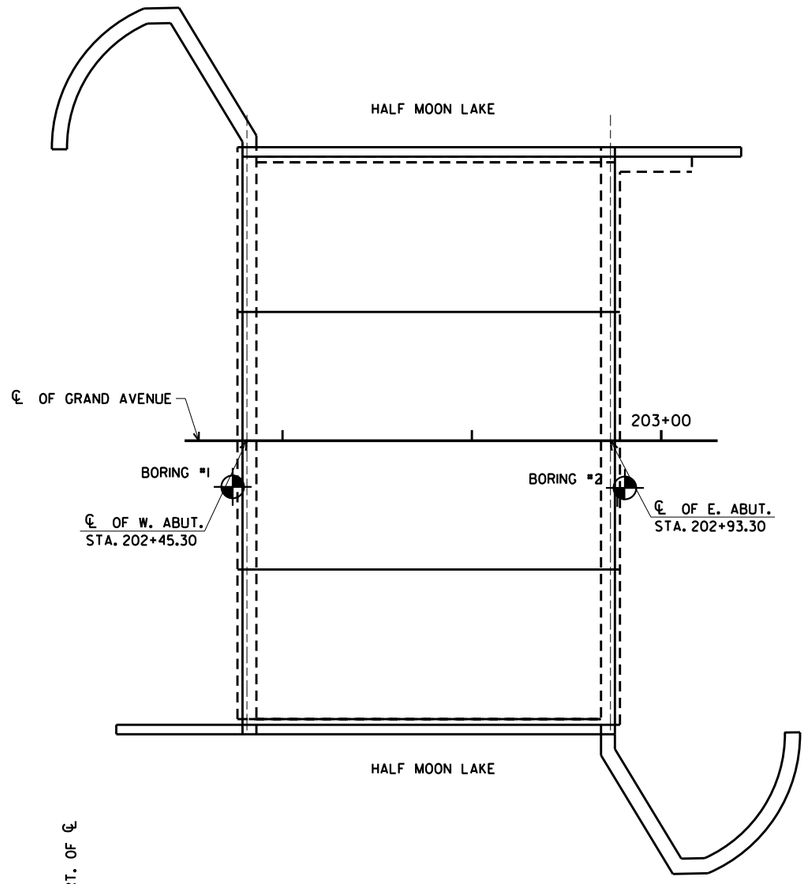
STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

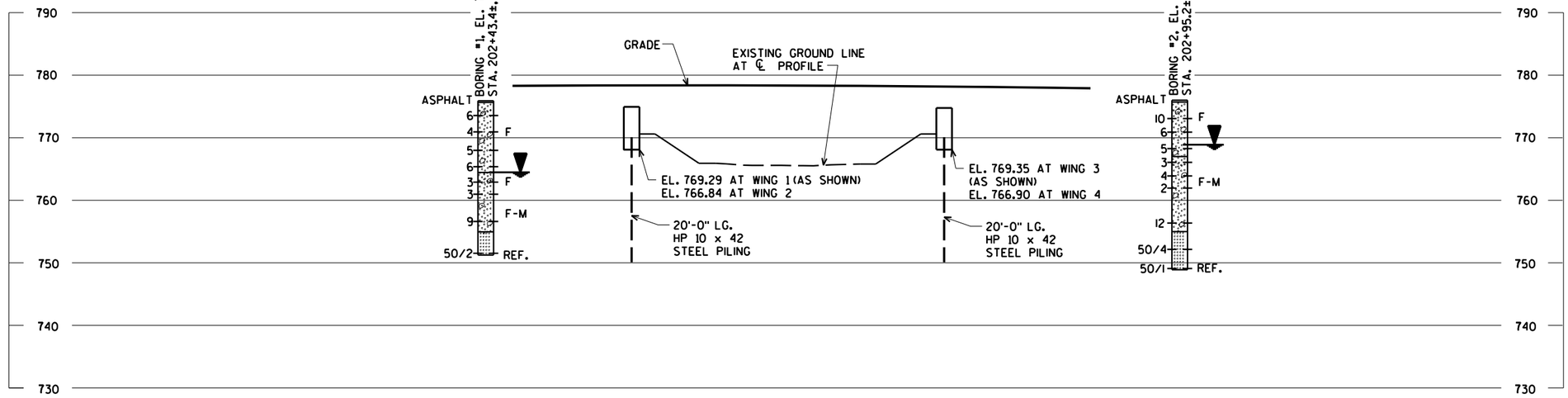
TYPICAL SECTION, QUANTITIES, AND NOTES

SHEET 2 OF 19
75

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



PLAN



N

BORINGS TAKEN BY:
CHOSEN VALLEY TESTING, INC.
LA CROSSE, WI
MARCH 6, 2015

GEOTECHNICAL REPORT BY:
CHOSEN VALLEY TESTING, INC.
LA CROSSE, WI
MAY 28, 2015

STATE PROJECT NUMBER

7995-02-46

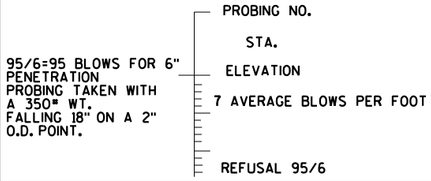
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

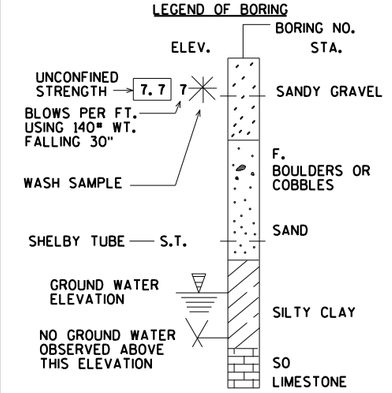
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

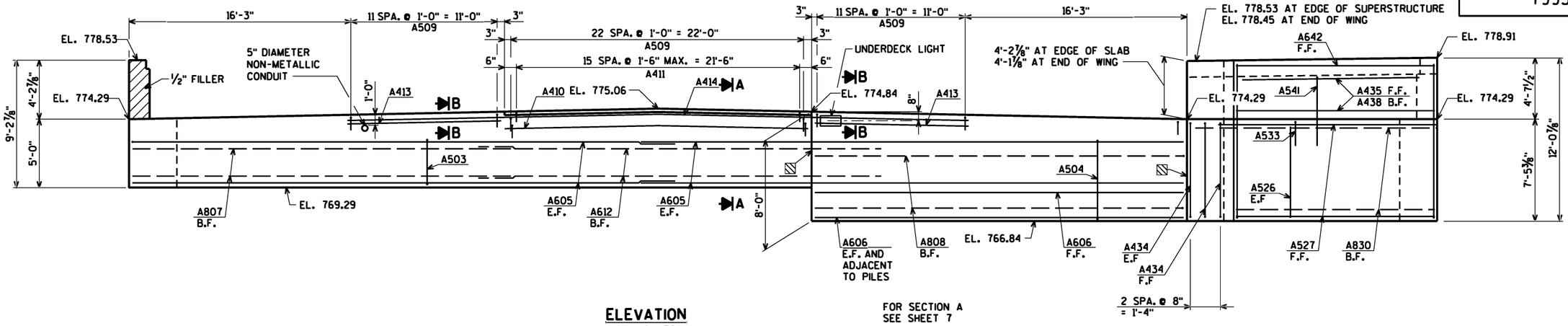
DRAWN BY CJM | PLANS CK'D. DNS

SUBSURFACE EXPLORATION

SHEET 3 OF 19
76

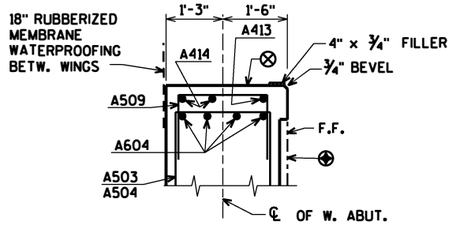
8

8

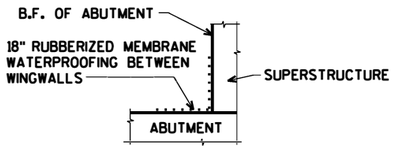


ELEVATION
(LOOKING WEST)

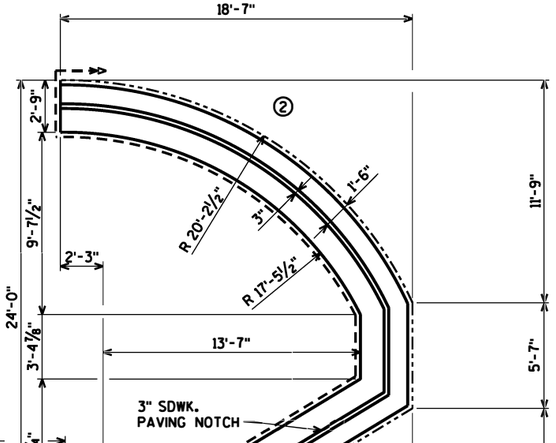
FOR SECTION A SEE SHEET 7

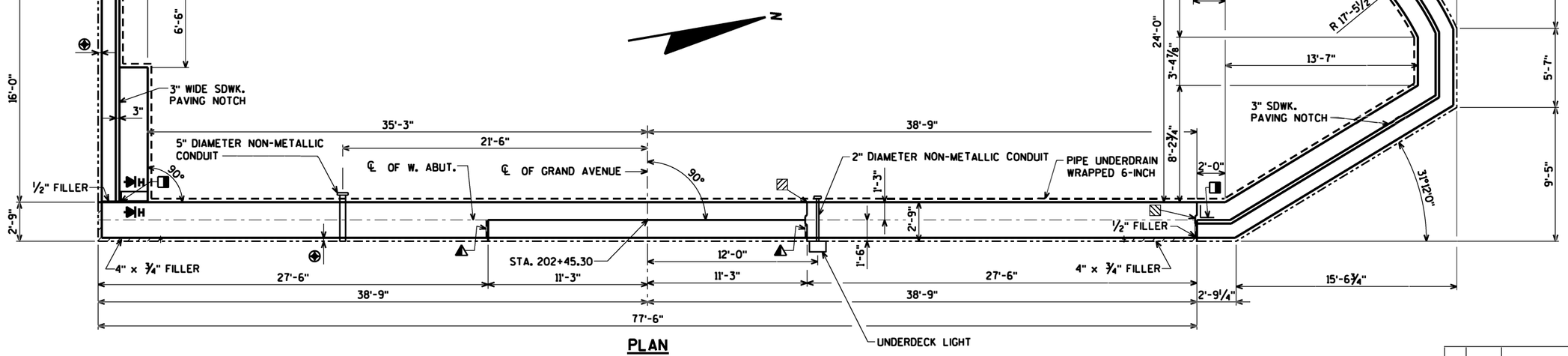


SECTION B



SECTION H





PLAN

⊠ VERT. CONST. JT. - KEYWAY FORMED BY A BEVELED 2" x 8". BEVEL EXPOSED EDGES ¾". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 19. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

▲ ¾" CORK FILLER ON VERTICAL FACE ONLY.

⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING FILLER AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

FOR PILE SPLICE DETAIL SEE SHEET 2.

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

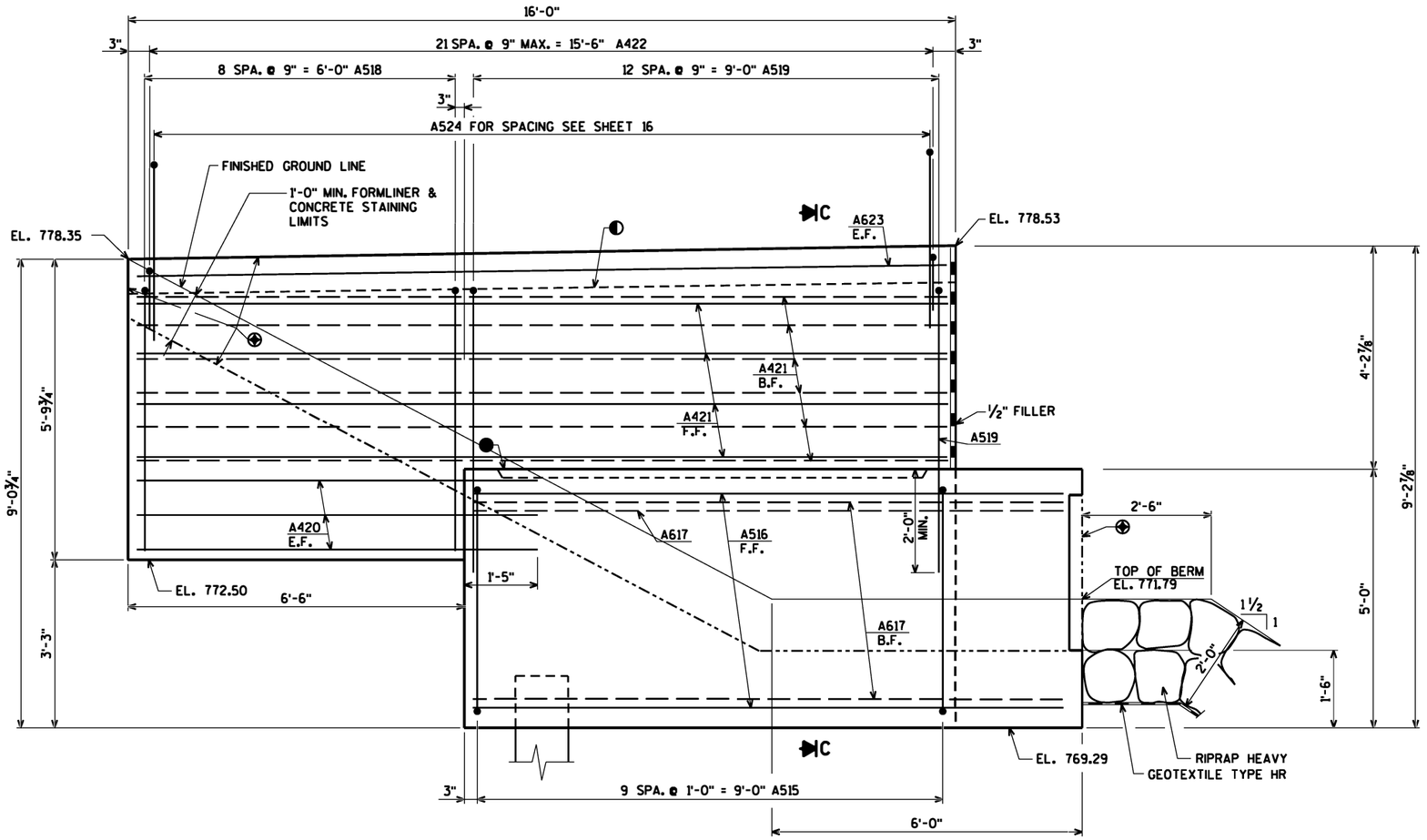
STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

WEST ABUTMENT

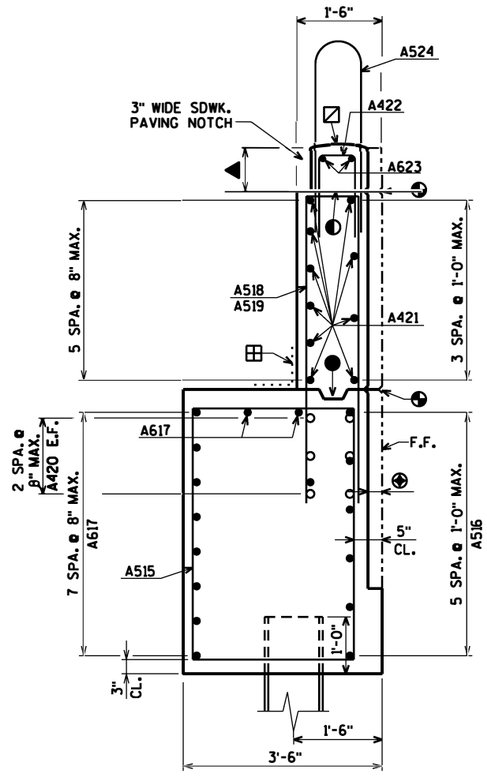
SHEET 4 OF 19
77

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



ELEVATION - WING 1

PARAPET NOT SHOWN.
FOR DETAILS SEE SHEET 16



SECTION C

◀ MATCH SIDEWALK NOTCH DEPTH AT END OF BRIDGE DECK

◐ OPT. CONST. JT. LEAVE ROUGH. IF USED, UTILIZE RUBBERIZED MEMBRANE WATERPROOFING (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES").

☐ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

⊕ LIMITS OF ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

⊕ ¾" "V" GROOVE ON FRONT FACE OF WINGWALL.

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

WEST ABUTMENT WING 1 DETAILS

SHEET 5 OF 19
78

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

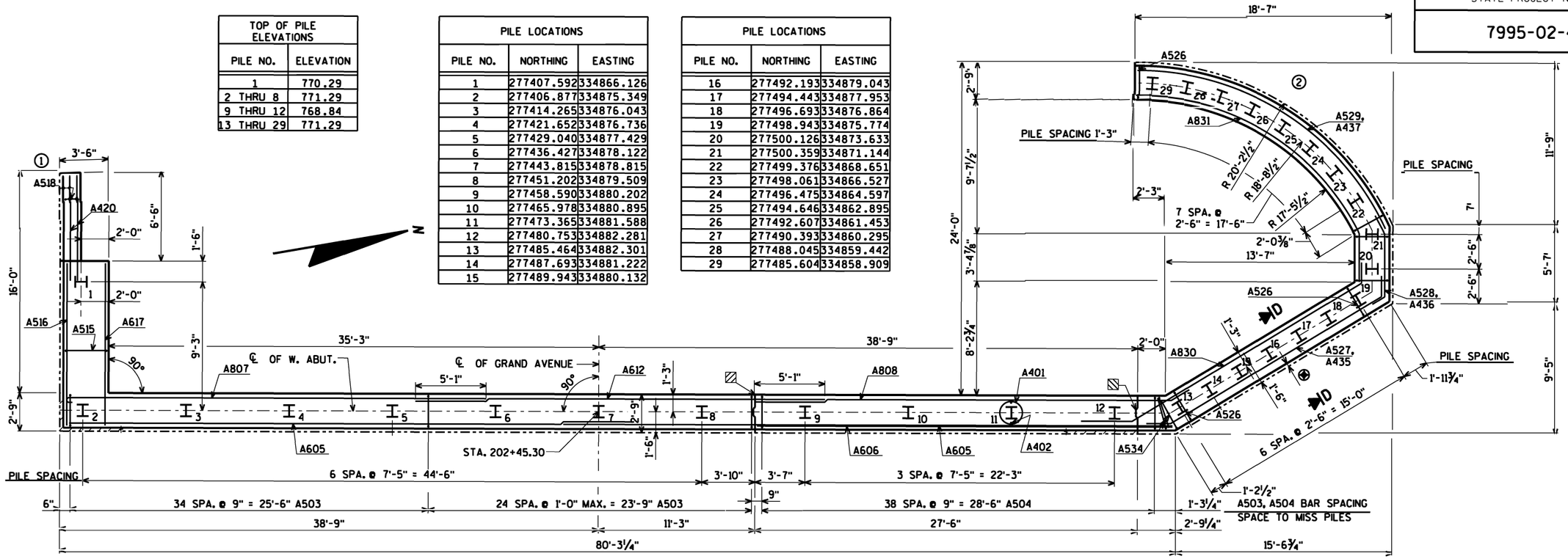
STATE PROJECT NUMBER

7995-02-46

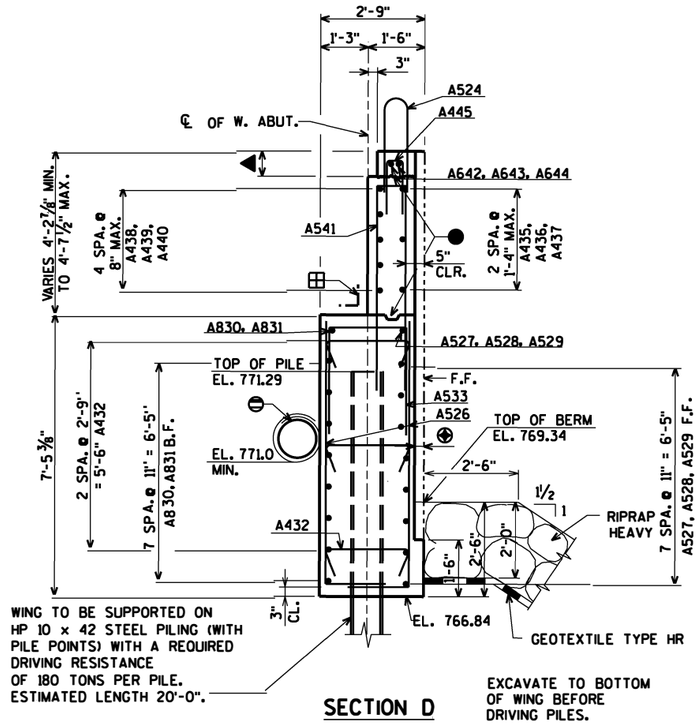
TOP OF PILE ELEVATIONS	
PILE NO.	ELEVATION
1	770.29
2 THRU 8	771.29
9 THRU 12	768.84
13 THRU 29	771.29

PILE LOCATIONS		
PILE NO.	NORTHING	EASTING
1	277407.592	334866.126
2	277406.877	334875.349
3	277414.265	334876.043
4	277421.652	334876.736
5	277429.040	334877.429
6	277436.427	334878.122
7	277443.815	334878.815
8	277451.202	334879.509
9	277458.590	334880.202
10	277465.978	334880.895
11	277473.365	334881.588
12	277480.753	334882.281
13	277485.464	334882.301
14	277487.693	334881.222
15	277489.943	334880.132

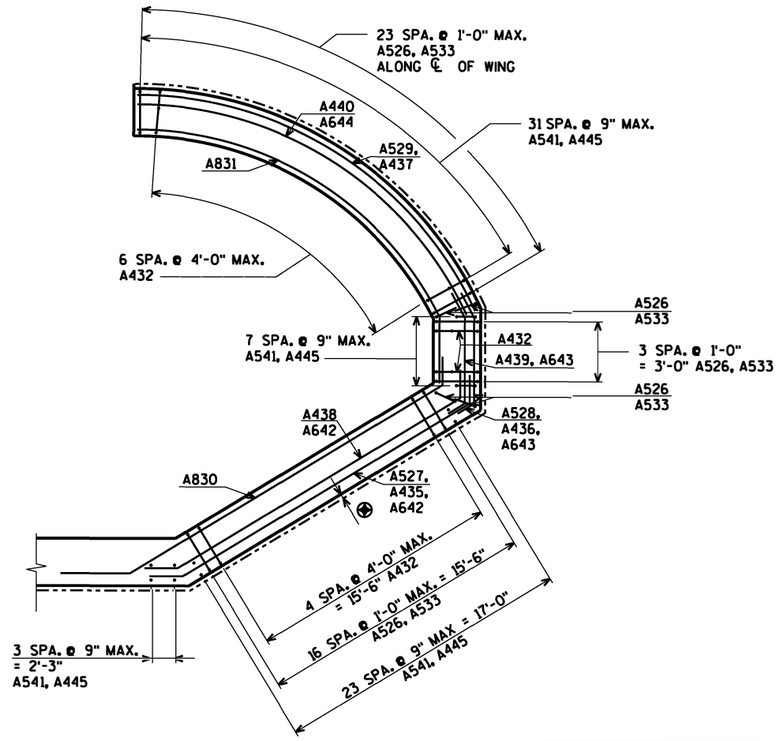
PILE LOCATIONS		
PILE NO.	NORTHING	EASTING
16	277492.193	334879.043
17	277494.443	334877.953
18	277496.693	334876.864
19	277498.943	334875.774
20	277500.126	334873.633
21	277500.359	334871.144
22	277499.376	334868.651
23	277498.061	334866.527
24	277496.475	334864.597
25	277494.646	334862.895
26	277492.607	334861.453
27	277490.393	334860.295
28	277488.045	334859.442
29	277485.604	334858.909



PILE LAYOUT



SECTION D



WING 2 BAR STEEL LAYOUT

- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.
- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".
- MATCH SIDEWALK NOTCH DEPTH AT END OF BRIDGE DECK
- VERT. CONST. JT. - KEYWAY FORMED BY A BEVELED 2" x 8". BEVEL EXPOSED EDGES ¾". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 19. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING
- 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.
- ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

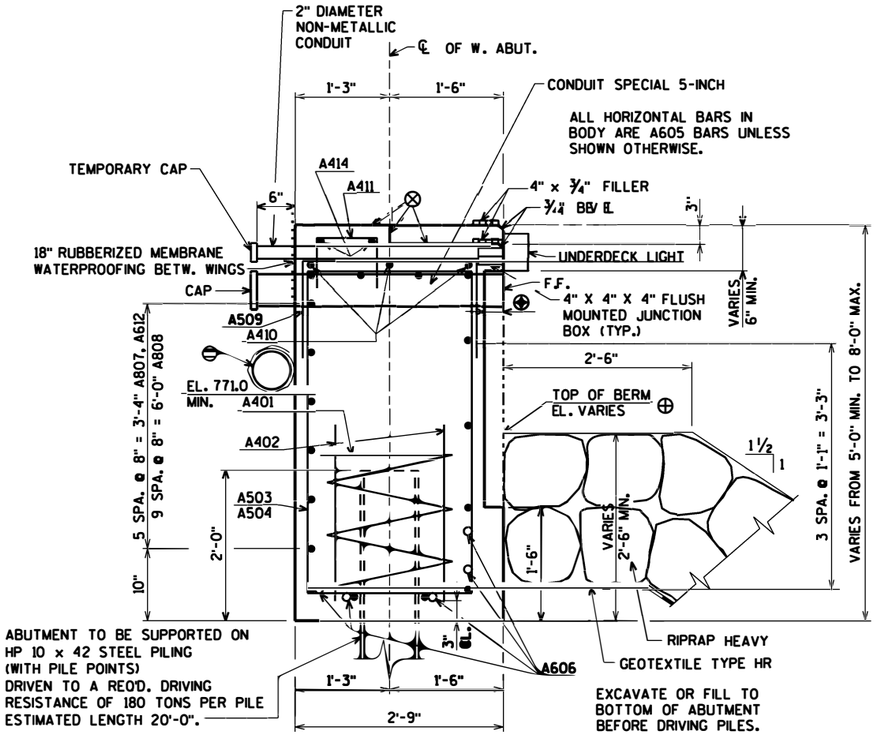
DRAWN BY CJM | PLANS CK'D. DNS

WEST ABUTMENT WING 2 DETAILS

SHEET 6 OF 19

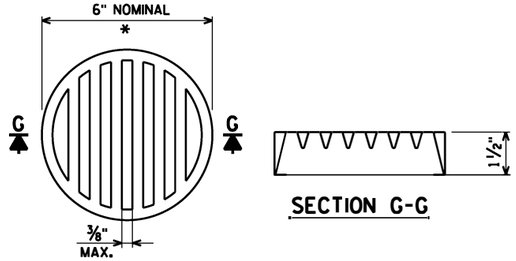
79

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



SECTION A

FOR LOCATION OF SECTION A SEE SHEET 4



SECTION G-G

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL

⊕ SEE SHEET 1 FOR TOP OF RIPRAP ELEVATIONS.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING FILLER AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

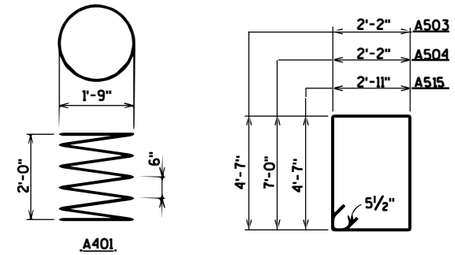
⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

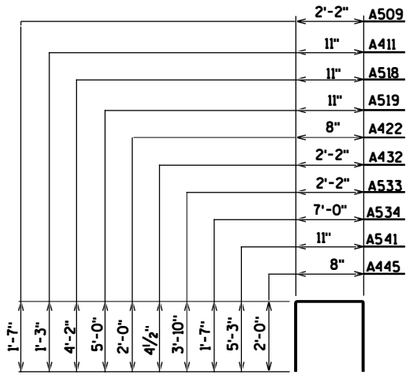
FOR PILE SPLICE DETAIL SEE SHEET 2.

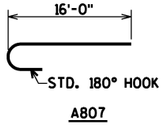
B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

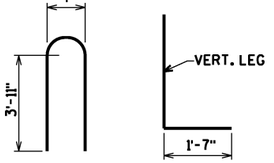




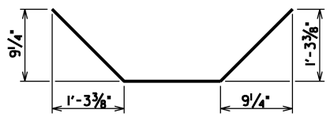


A807

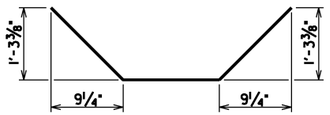
A808



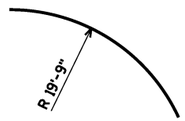
A524 A526



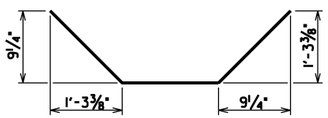
A527



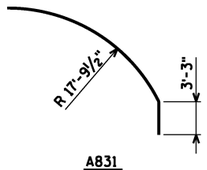
A528, A436, A439, A643



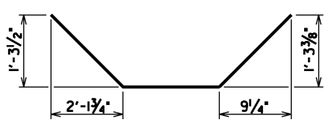
A529, A644



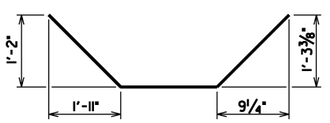
A830



A831



A435



A438, A642

BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	5.360" UNCOATED 6.140" COATED LOCATION
A401		11	28-0	X		BODY @ PILES 2 THRU 12
A402		22	2-3			BODY @ PILES 2 THRU 12
A503		59	14-1	X		BODY VERT.
A504		39	18-11	X		BODY VERT.
A605		22	41-4			BODY HORIZ.
A606		5	29-11			BODY HORIZ.
A807		6	16-11	X		BODY HORIZ. @ WING 1 B.F.
A808		10	30-11	X		BODY HORIZ. @ WING 2 B.F.
A509		47	5-1	X		BODY VERT. TOP
A410		3	22-3			BODY HORIZ. TOP
A411		16	3-3	X		BODY VERT. TOP
A612		6	44-2			BODY HORIZ. BETW. WINGS B.F.
A413		2	11-3			BODY HORIZ. TOP F.F. @ WINGS
A414		2	45-0			BODY HORIZ. TOP
A515	X	10	15-7	X		WING 1 VERT.
A516	X	6	11-5			WING 1 HORIZ. F.F.
A617	X	10	11-5			WING 1 HORIZ.
A518	X	9	9-0	X		WING 1 VERT. TOP
A519	X	13	10-8	X		WING 1 VERT. TOP
A420	X	6	7-9			WING 1 HORIZ. E.F.
A421	X	10	15-7			WING 1 HORIZ. E.F.
A422	X	22	4-6	X		WING 1 VERT.
A623	X	2	15-7			WING 1 HORIZ. E.F.
A524	X	70	8-5	X		PARAPETS VERT.
A425	X	6	15-7			WING 1 PARAPETS HORIZ.
A526	X	94	8-6	X		WING 2 VERT. E.F.
A527	X	9	20-7	X		WING 2 HORIZ. F.F.
A528	X	9	8-0	X		WING 2 HORIZ. F.F.
A529	X	9	22-6	X		WING 2 HORIZ. F.F.
A830	X	9	22-10	X		WING 2 HORIZ. B.F.
A831	X	9	22-8	X		WING 2 HORIZ. B.F.
A432	X	42	2-9	X		WING 2 TIES
A533	X	47	9-7	X		WING 2 VERT. TOP
A534	X	3	9-11	X		WING 2 VERT. E.F.
A435	X	3	21-7	X		WING 2 F.F. HORIZ. TOP
A436	X	3	8-0	X		WING 2 F.F. HORIZ. TOP
* A437	X	3	22-6	X		WING 2 F.F. HORIZ. TOP
A438	X	5	20-9	X		WING 2 B.F. HORIZ. TOP
A439	X	5	7-5	X		WING 2 B.F. HORIZ. TOP
* A440	X	5	22-0	X		WING 2 B.F. HORIZ. TOP
A541	X	68	11-2	X		WING 2 VERT. TOP
A642	X	2	20-9	X		WING 2 E.F. HORIZ. NOTCH
A643	X	2	7-5	X		WING 2 E.F. HORIZ. NOTCH
A644	X	2	22-0	X		WING 2 E.F. HORIZ. NOTCH
A445	X	68	4-6	X		WING 2 VERT. NOTCH
A446	X	6	2-2			WING 2 PARAPET HORIZ.
A447	X	6	15-11			WING 2 PARAPET HORIZ.
A448	X	3	4-6			WING 2 PARAPET HORIZ.
* A449	X	6	21-2	X		WING 2 PARAPET HORIZ.
A450	X	3	4-1			WING 2 PARAPET HORIZ.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

* BEND IN FIELD

STATE PROJECT NUMBER

7995-02-46

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

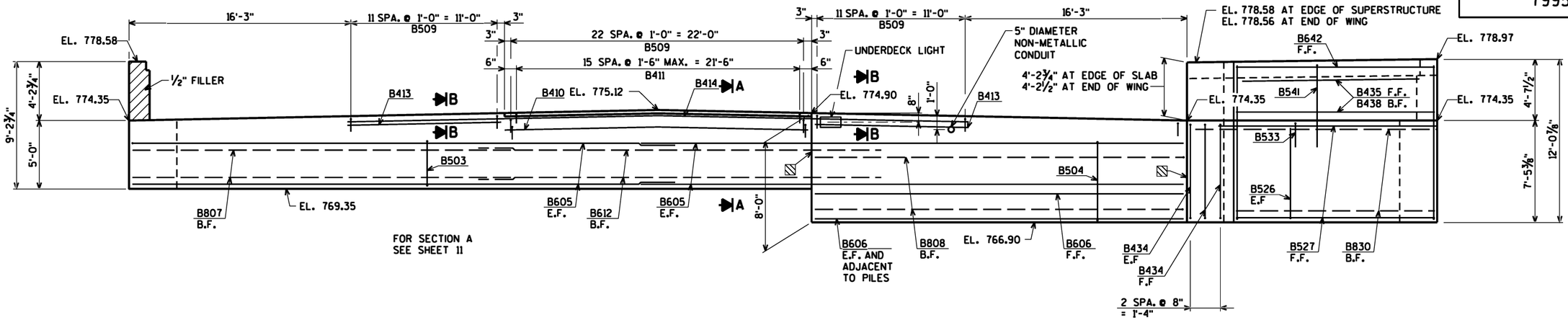
STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

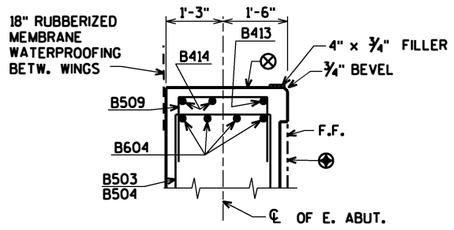
WEST ABUTMENT
BILL OF BARS

SHEET 7 OF 19
80

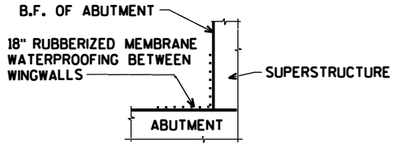
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



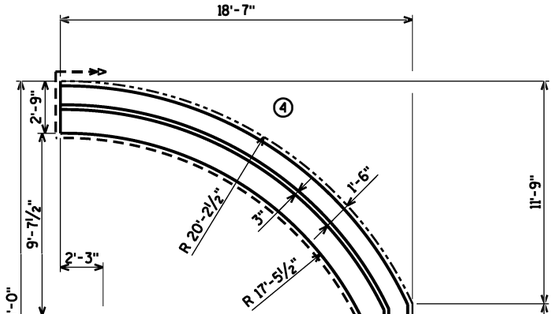
ELEVATION
(LOOKING EAST)

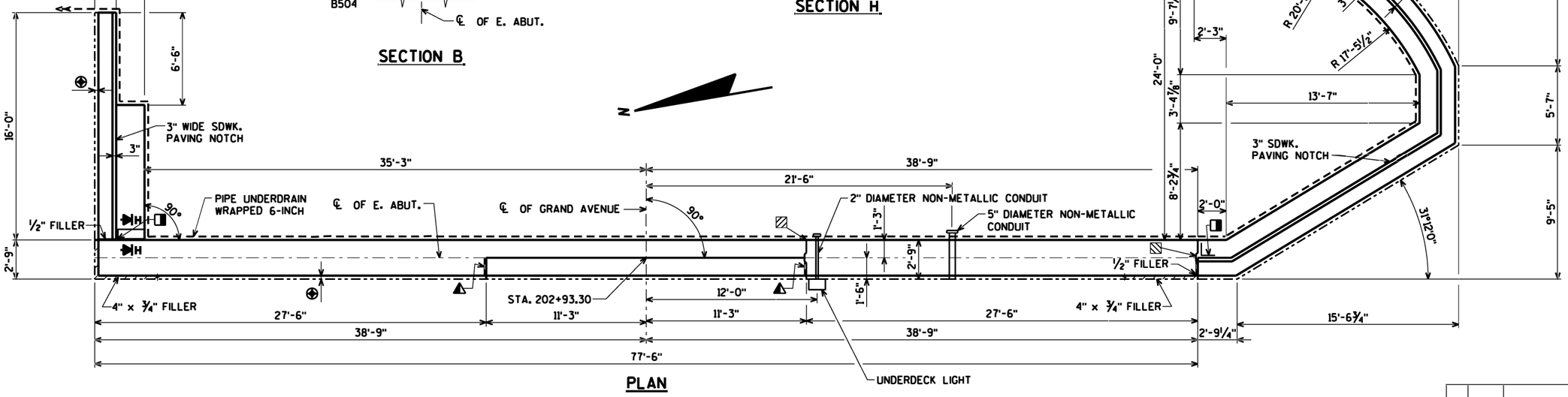


SECTION B



SECTION H





PLAN

⊠ VERT. CONST. JT. - KEYWAY FORMED BY A BEVELED 2" x 8". BEVEL EXPOSED EDGES ¾". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 19. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19.

◨ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

▲ ¾" CORK FILLER ON VERTICAL FACE ONLY.

⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING FILLER AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

FOR PILE SPLICE DETAIL SEE SHEET 2.

NOTE:
SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

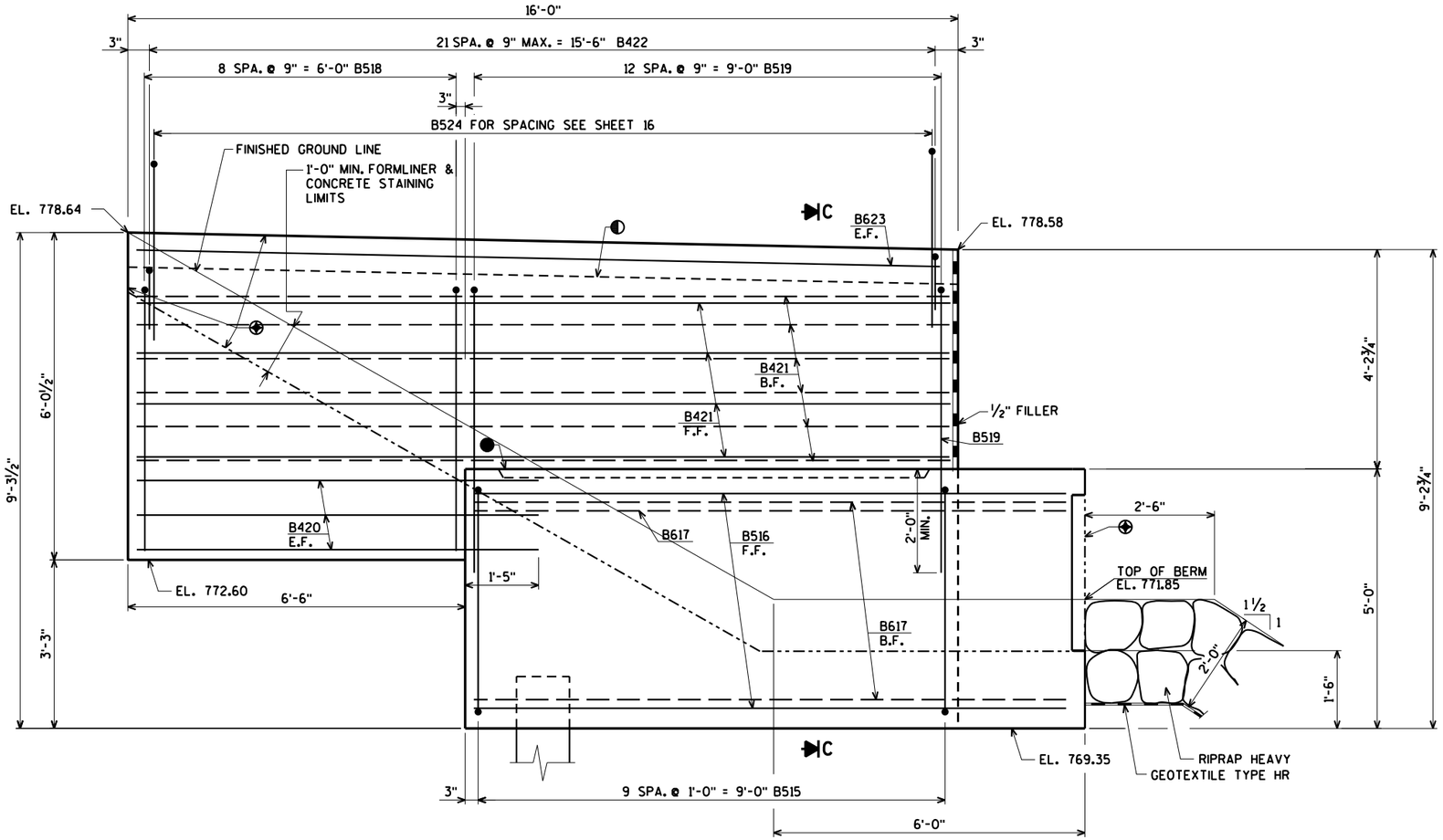
STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

EAST ABUTMENT

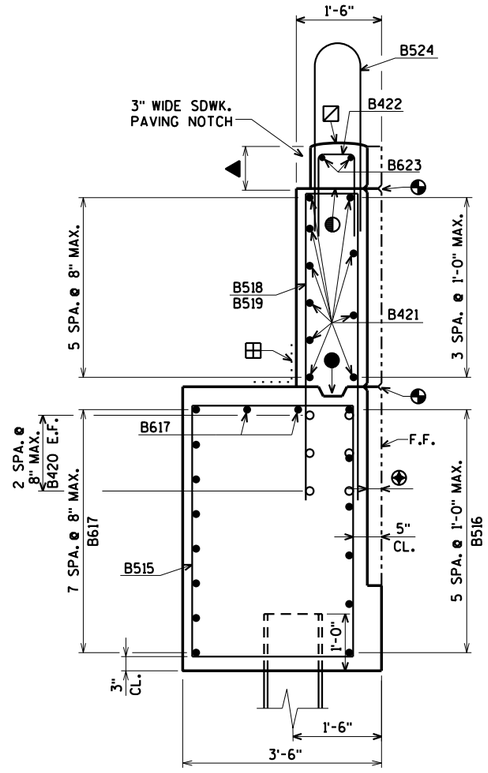
SHEET 8 OF 19
81

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



ELEVATION - WING 3

PARAPET NOT SHOWN.
FOR DETAILS SEE SHEET 16



SECTION C

◀ MATCH SIDEWALK NOTCH DEPTH AT END OF BRIDGE DECK

◐ OPT. CONST. JT. LEAVE ROUGH. IF USED, UTILIZE RUBBERIZED MEMBRANE WATERPROOFING (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES").

☐ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

⊕ LIMITS OF ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

⊕ ¾" "V" GROOVE ON FRONT FACE OF WINGWALL.

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

EAST ABUTMENT WING 3 DETAILS

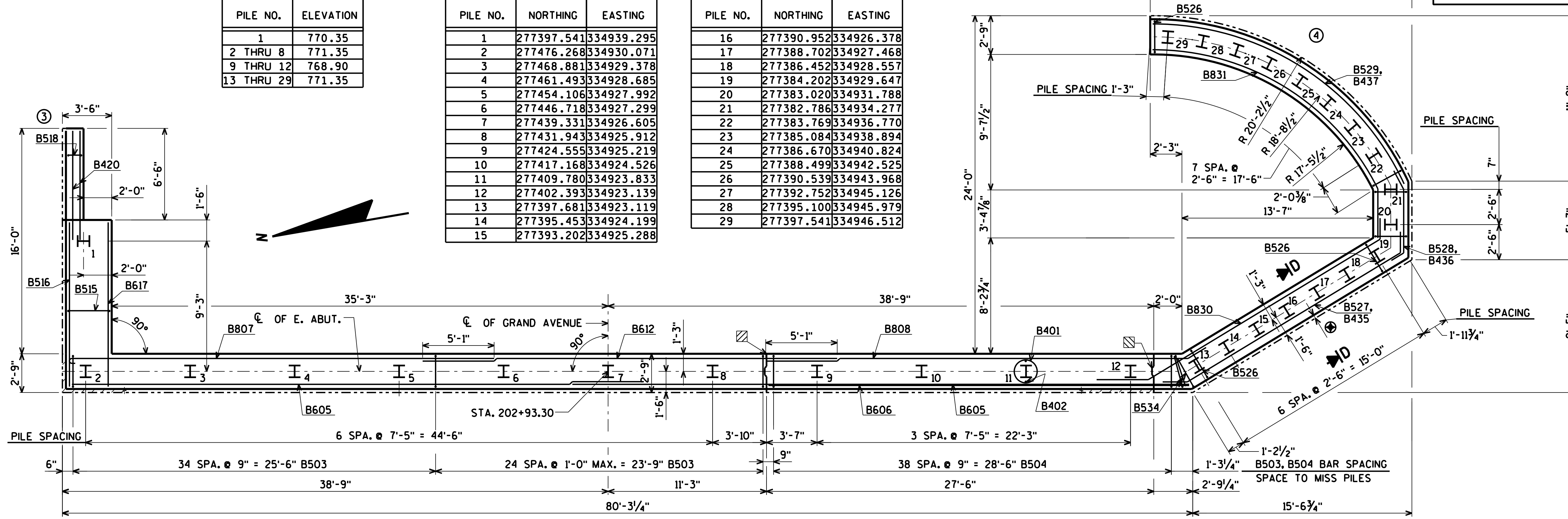
SHEET 9 OF 19
82

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

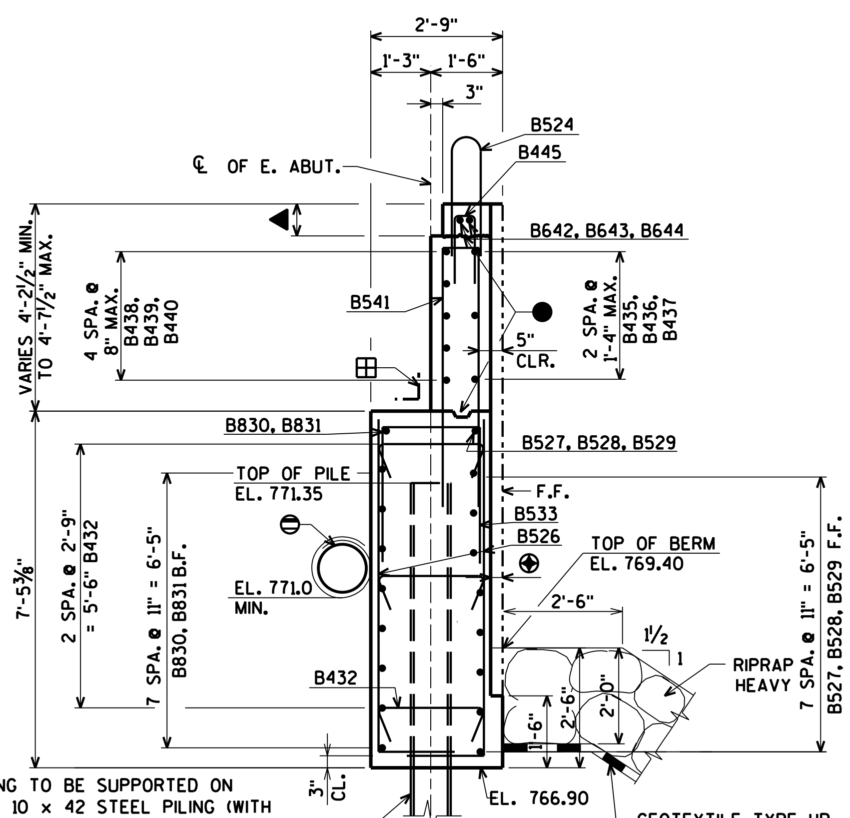
TOP OF PILE ELEVATIONS	
PILE NO.	ELEVATION
1	770.35
2 THRU 8	771.35
9 THRU 12	768.90
13 THRU 29	771.35

PILE LOCATIONS		
PILE NO.	NORTHING	EASTING
1	277397.541	334939.295
2	277476.268	334930.071
3	277468.881	334929.378
4	277461.493	334928.685
5	277454.106	334927.992
6	277446.718	334927.299
7	277439.331	334926.605
8	277431.943	334925.912
9	277424.555	334925.219
10	277417.168	334924.526
11	277409.780	334923.833
12	277402.393	334923.139
13	277397.681	334923.119
14	277395.453	334924.199
15	277393.202	334925.288

PILE LOCATIONS		
PILE NO.	NORTHING	EASTING
16	277390.952	334926.378
17	277388.702	334927.468
18	277386.452	334928.557
19	277384.202	334929.647
20	277383.020	334931.788
21	277382.786	334934.277
22	277383.769	334936.770
23	277385.084	334938.894
24	277386.670	334940.824
25	277388.499	334942.525
26	277390.539	334943.968
27	277392.752	334945.126
28	277395.100	334945.979
29	277397.541	334946.512



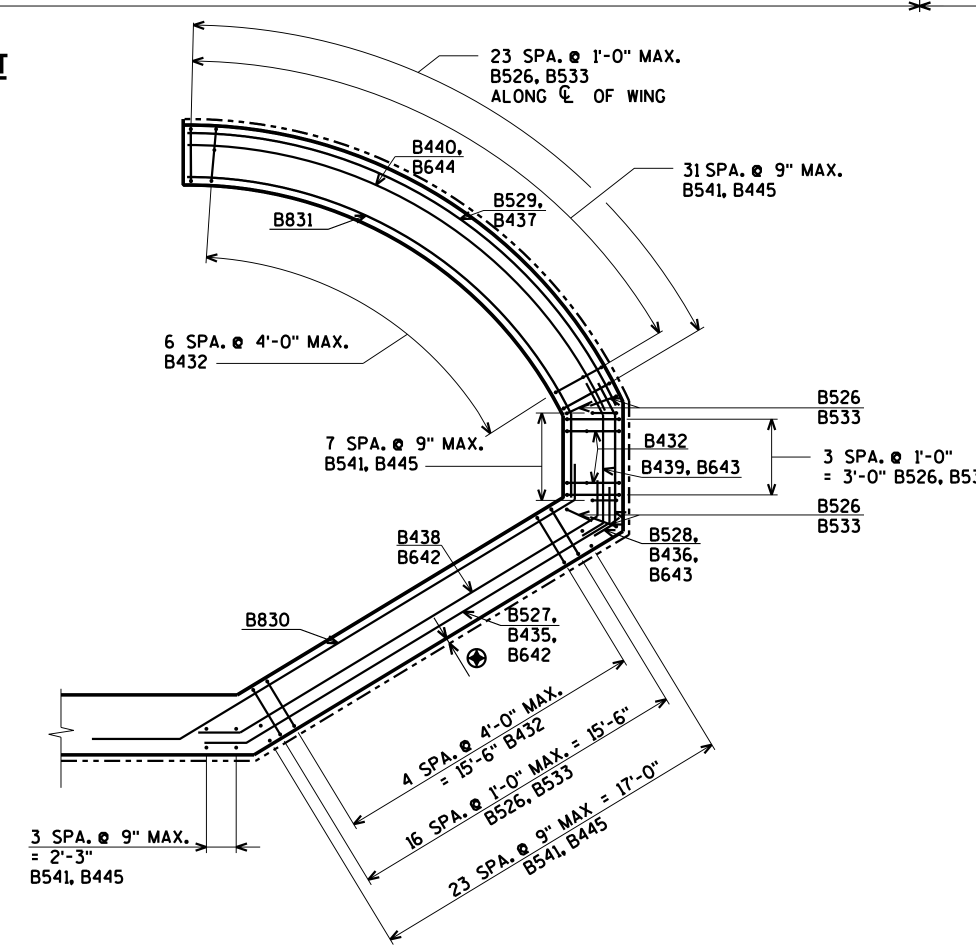
PILE LAYOUT



WING TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE. ESTIMATED LENGTH 20'-0".

SECTION D

EXCAVATE TO BOTTOM OF WING BEFORE DRIVING PILES.



WING 4 BAR STEEL LAYOUT

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6".

◀ MATCH SIDEWALK NOTCH DEPTH AT END OF BRIDGE DECK

▧ VERT. CONST. JT. - KEYWAY FORMED BY A BEVELED 2" x 8". BEVEL EXPOSED EDGES ¾". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 19. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

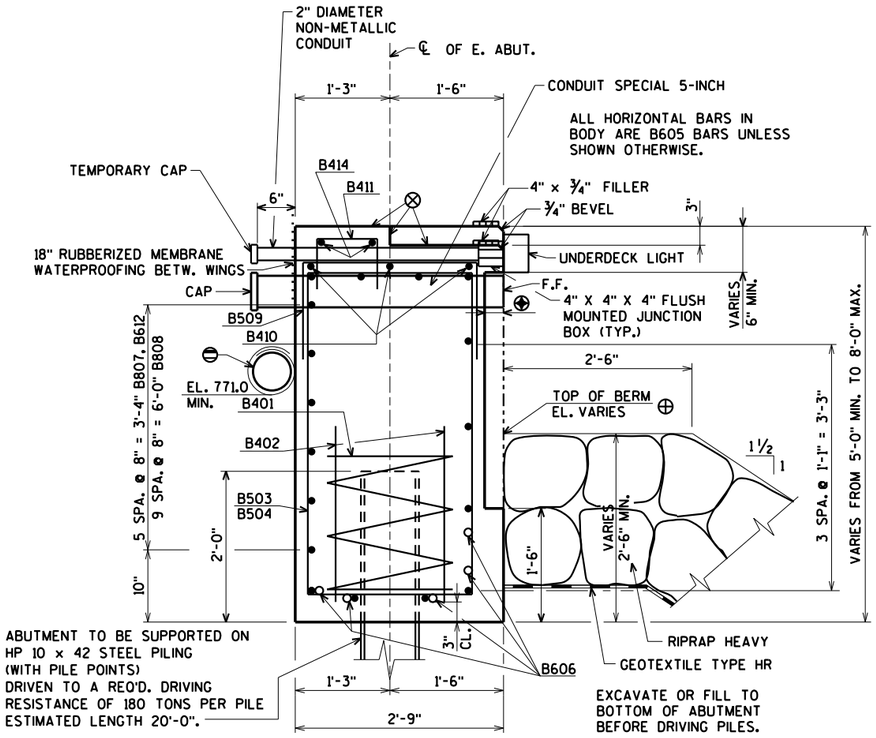
STRUCTURE B-18-230

DRAWN BY CJM PLANS CK'D. DNS

ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com

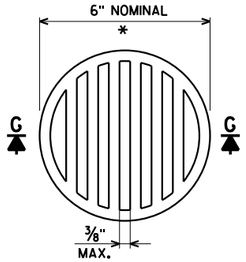
EAST ABUTMENT WING 4 DETAILS

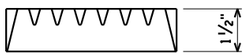
8



SECTION A

FOR LOCATION OF SECTION A SEE SHEET 8





SECTION G-G

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL

⊕ SEE SHEET 1 FOR TOP OF RIPRAP ELEVATIONS.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING FILLER AND SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

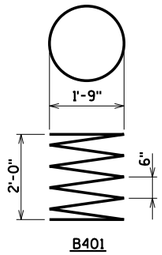
⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

FOR PILE SPLICE DETAIL SEE SHEET 2.

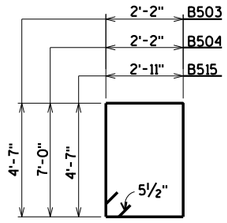
B.F. DENOTES BACK FACE

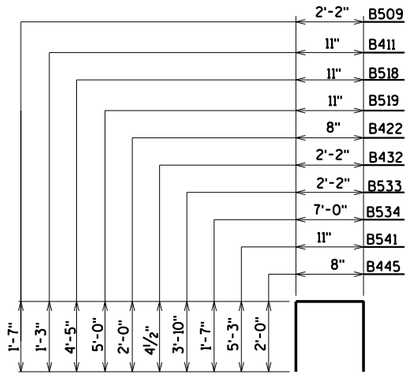
E.F. DENOTES EACH FACE

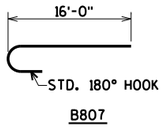
F.F. DENOTES FRONT FACE



B401

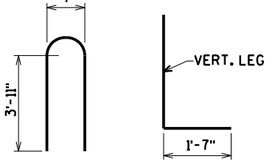




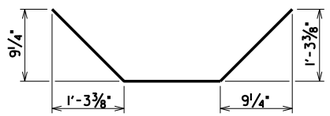


B807

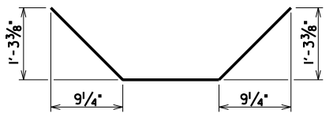
B808



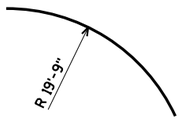
B524 B526



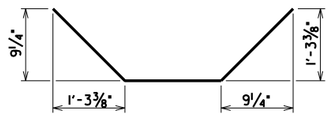
B527



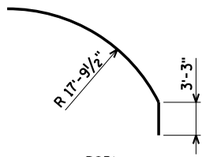
B528, B436, B439, B643



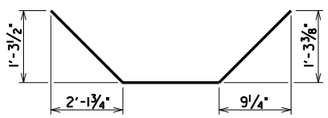
B529, B644



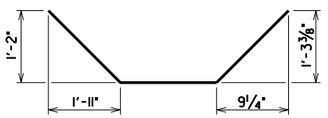
B830



B831



B435



B438, B642

BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	5.360" UNCOATED 6.140" COATED LOCATION
B401		11	28-0	X		BODY @ PILES 2 THRU 12
B402		22	2-3			BODY @ PILES 2 THRU 12
B503		59	14-1	X		BODY VERT.
B504		39	18-11	X		BODY VERT.
B605		22	41-4			BODY HORIZ.
B606		5	29-11			BODY HORIZ.
B807		6	16-11	X		BODY HORIZ. @ WING 3 B.F.
B808		10	30-11	X		BODY HORIZ. @ WING 4 B.F.
B509		47	5-1	X		BODY VERT. TOP
B410		3	22-3			BODY HORIZ. TOP
B411		16	3-3	X		BODY VERT. TOP
B612		6	44-2			BODY HORIZ. BETW. WINGS B.F.
B413		2	11-3			BODY HORIZ. TOP F.F. @ WINGS
B414		2	45-0			BODY HORIZ. TOP
B515	X	10	15-7	X		WING 3 VERT.
B516	X	6	11-5			WING 3 HORIZ. F.F.
B617	X	10	11-5			WING 3 HORIZ.
B518	X	9	9-6	X		WING 3 VERT. TOP
B519	X	13	10-8	X		WING 3 VERT. TOP
B420	X	6	7-9			WING 3 HORIZ. E.F.
B421	X	10	15-7			WING 3 HORIZ. E.F.
B422	X	22	4-6	X		WING 3 VERT.
B623	X	2	15-7			WING 3 HORIZ. E.F.
B524	X	70	8-5	X		PARAPETS VERT.
B425	X	6	15-7			WING 3 PARAPETS HORIZ.
B526	X	94	8-6	X		WING 4 VERT. E.F.
B527	X	9	20-7	X		WING 4 HORIZ. F.F.
B528	X	9	8-0	X		WING 4 HORIZ. F.F.
B529	X	9	22-6	X		WING 4 HORIZ. F.F.
B830	X	9	22-10	X		WING 4 HORIZ. B.F.
B831	X	9	22-8	X		WING 4 HORIZ. B.F.
B432	X	42	2-9	X		WING 4 TIES
B533	X	47	9-7	X		WING 4 VERT. TOP
B534	X	3	9-11	X		WING 4 VERT. E.F.
B435	X	3	21-7	X		WING 4 F.F. HORIZ. TOP
B436	X	3	8-0	X		WING 4 F.F. HORIZ. TOP
* B437	X	3	22-6	X		WING 4 F.F. HORIZ. TOP
B438	X	5	20-9	X		WING 4 B.F. HORIZ. TOP
B439	X	5	7-5	X		WING 4 B.F. HORIZ. TOP
* B440	X	5	22-0	X		WING 4 B.F. HORIZ. TOP
B541	X	68	11-2	X		WING 4 VERT. TOP
B642	X	2	20-9	X		WING 4 E.F. HORIZ. NOTCH
B643	X	2	7-5	X		WING 4 E.F. HORIZ. NOTCH
B644	X	2	22-0	X		WING 4 E.F. HORIZ. NOTCH
B445	X	68	4-6	X		WING 4 VERT. NOTCH
B446	X	6	2-2			WING 4 PARAPET HORIZ.
B447	X	6	15-11			WING 4 PARAPET HORIZ.
B448	X	3	4-6			WING 4 PARAPET HORIZ.
* B449	X	6	21-2	X		WING 4 PARAPET HORIZ.
B450	X	3	4-1			WING 4 PARAPET HORIZ.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

* BEND IN FIELD

STATE PROJECT NUMBER

7995-02-46

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

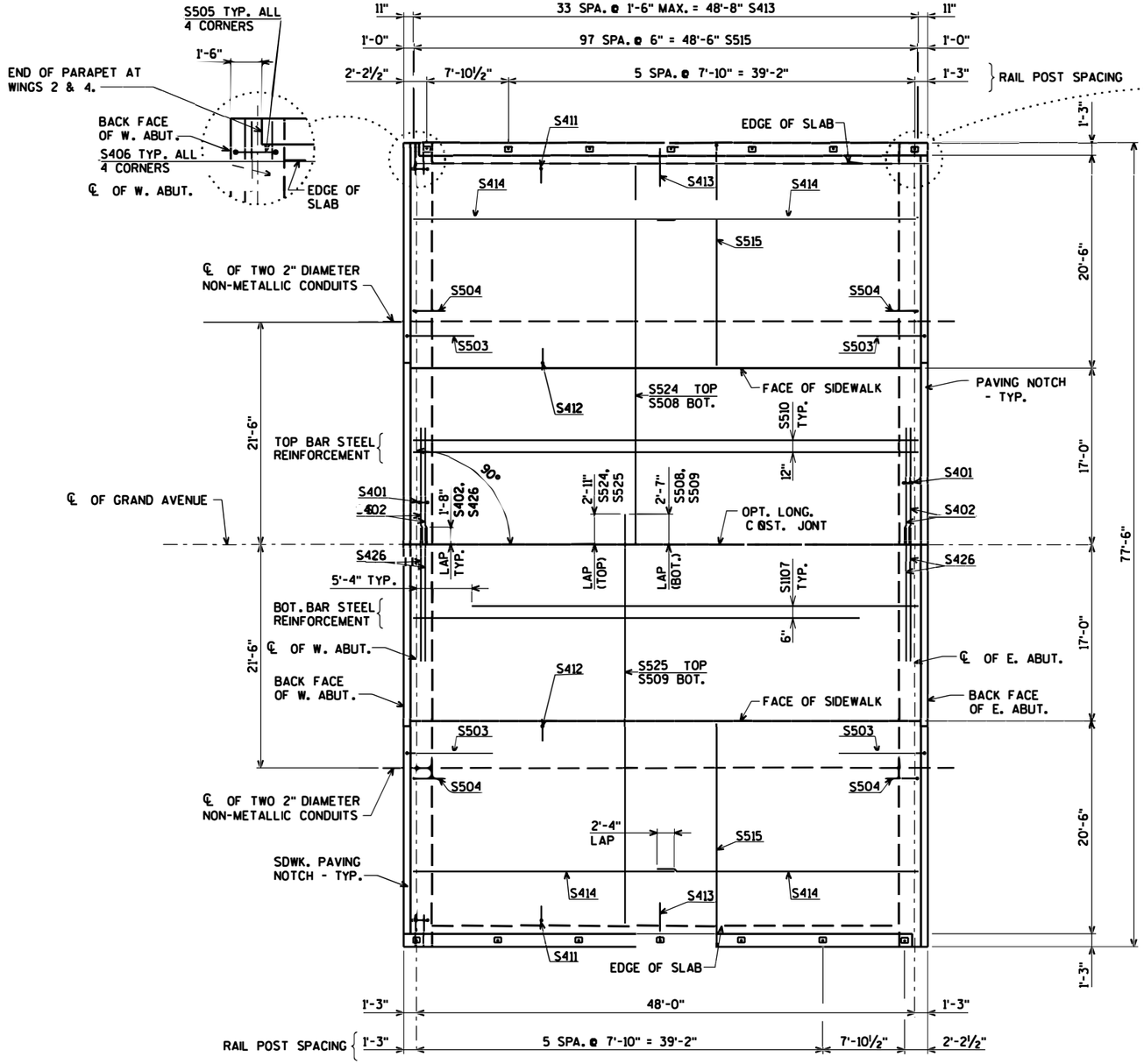
EAST ABUTMENT
BILL OF BARS

SHEET 11 OF 19
84

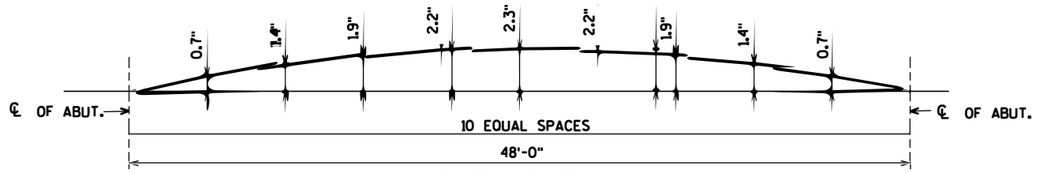
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

STATE PROJECT NUMBER
7995-02-46



PLAN



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE ℄ OF ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB, GUTTER LINES, AND CROWN OR ℄.

BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
S516	4 SERIES OF 7	5'-4" TO 6'-9"
S517	4 SERIES OF 10	3'-9" TO 4'-11

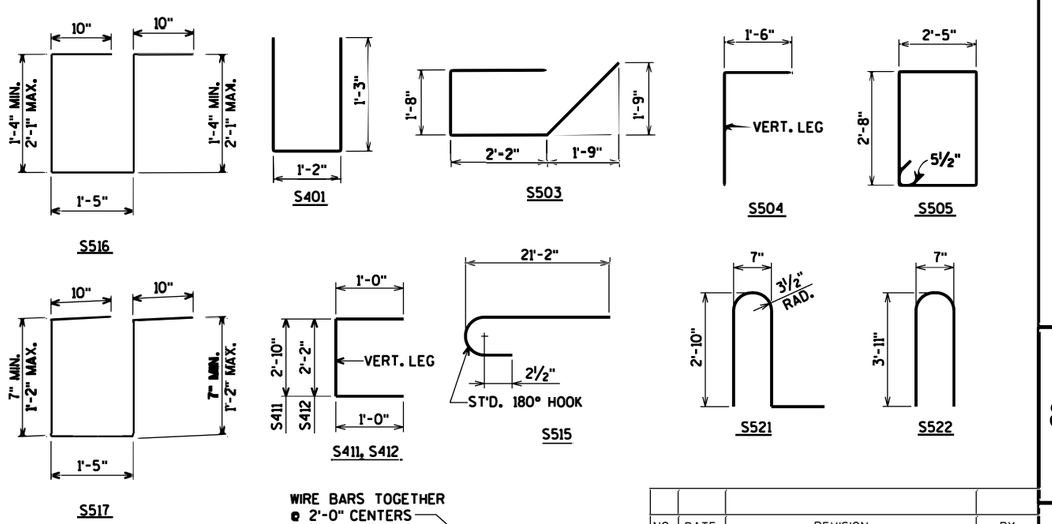
BUNDLE AND TAG EACH SERIES SEPARATELY.

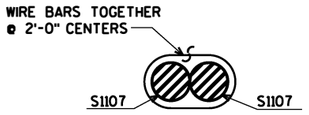
BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	61,060# COATED LOCATION
S401	X	46	3-6	X		SLAB @ ABUT. NOTCH
S402	X	4	10-11			SLAB @ ABUT. NOTCH
S503	X	148	8-3	X		SLAB @ ABUT. @ RDWY
S504	X	148	4-0	X		SLAB @ ABUT. @ RDWY
S505	X	12	10-9	X		SLAB AT ABUT. @ SDWK.
S406	X	24	4-2			SLAB @ ABUT. @ SDWK.
S1107	X	153	43-9		X	SLAB LONG. BOT.
S508	X	70	36-5			SLAB TRANS. BOT.
S509	X	70	39-4			SLAB TRANS. BOT.
S510	X	74	48-10			SLAB LONG. TOP
S411	X	198	4-8	X		SLAB @ SDWK.
S412	X	198	4-0	X		SLAB @ SDWK.
S413	X	68	3-0			SDWK. TRANS. BOT.
S414	X	140	25-7			SDWK. LONG. BOT. & TOP
S515	X	196	21-9	X		SDWK. TRANS. TOP
S516	X	28	6-1	X	⊗	ARCH VERT.
S517	X	40	4-4	X	⊗	ARCH VERT.
S418	X	12	19-0			ARCH HORIZ.
S419	X	8	10-3			ARCH HORIZ.
S520	X	4	20-8			SLAB TRANS. TOP @ END OF DECK
S521	X	98	6-8	X		SDWK. @ PARAPET VERT.
S522	X	2	8-5	X		SDWK. @ PARAPET VERT.
S423	X	24	25-6			SDWK. @ PARAPET HORIZ.
S524	X	51	36-5			SLAB TRANS. TOP
S525	X	51	39-8			SLAB TRANS. TOP
S426	X	4	12-11			SLAB @ ABUT. NOTCH

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.





BUNDLING DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

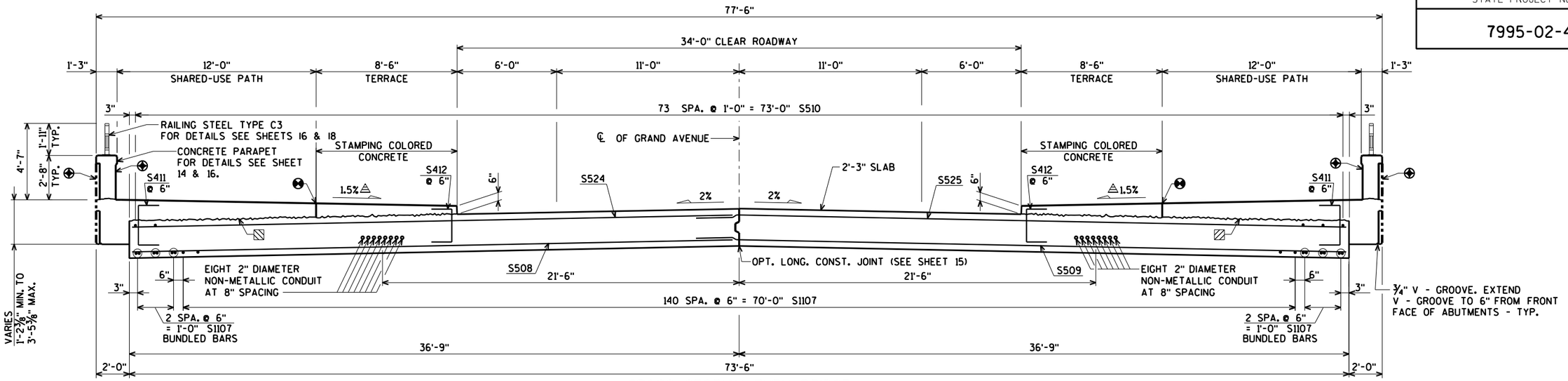
STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

SUPERSTRUCTURE

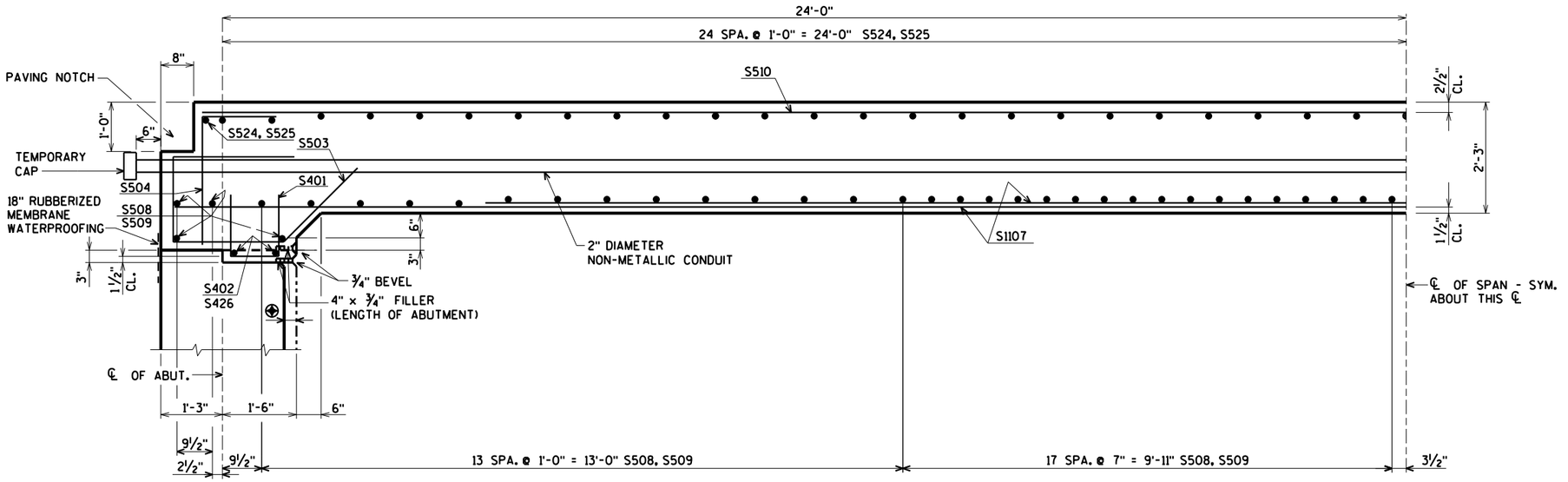
SHEET 12 OF 19
85

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



CROSS SECTION THRU BRIDGE

(LOOKING EAST)



PART LONGITUDINAL SECTION

▨ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE CROSS SLOPE.

△ ± 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

⊗ CONST. JOINT - ROUTE AND SEAL JOINT PER DETAIL ON SHEET 15.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

PARAPETS AND SIDEWALKS SHOWN PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

TOP OF DECK ELEVATIONS

LOCATION	℄ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	℄ OF E. ABUT.
N. EDGE OF SLAB	777.33	777.37	777.39	777.42	777.43	777.44	777.44	777.44	777.43	777.41	777.39
℄ OF STRUCTURE	778.06	778.10	778.13	778.15	778.17	778.18	778.18	778.18	778.16	778.15	778.12
S. EDGE OF SLAB	777.33	777.37	777.39	777.42	777.43	777.44	777.44	777.44	777.43	777.41	777.39

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

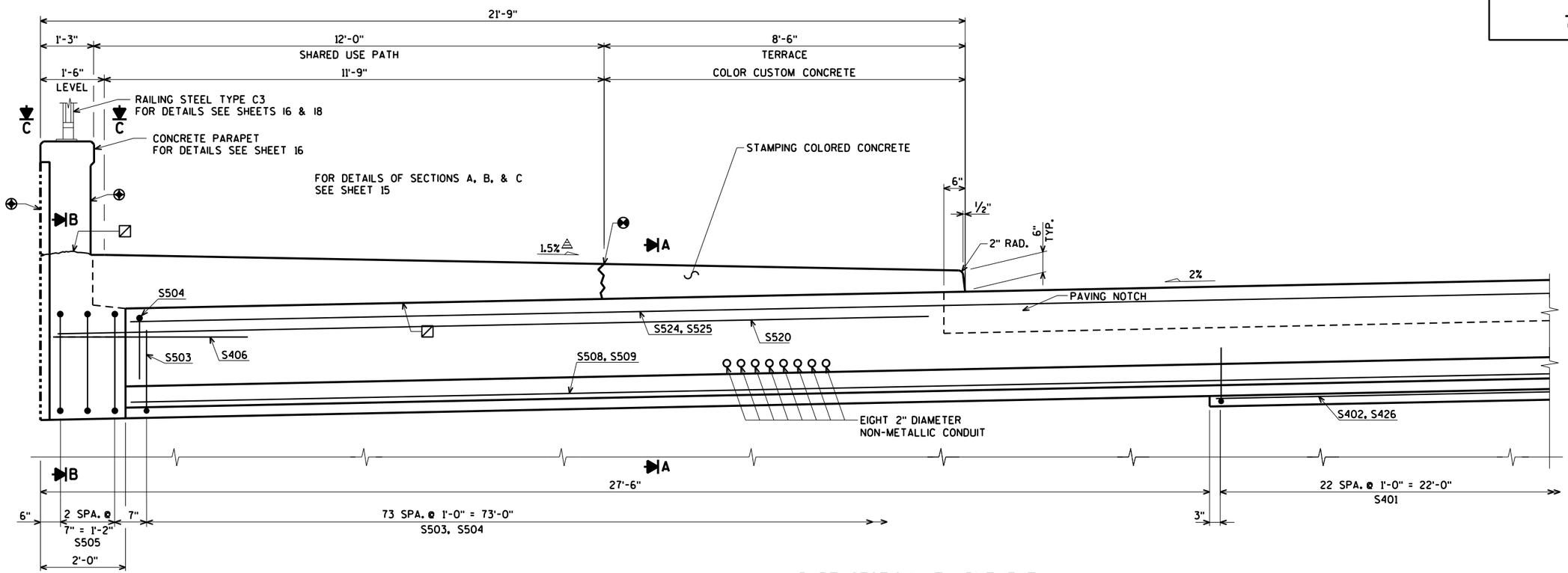
SUPERSTRUCTURE DETAILS

SHEET 13 OF 19
86

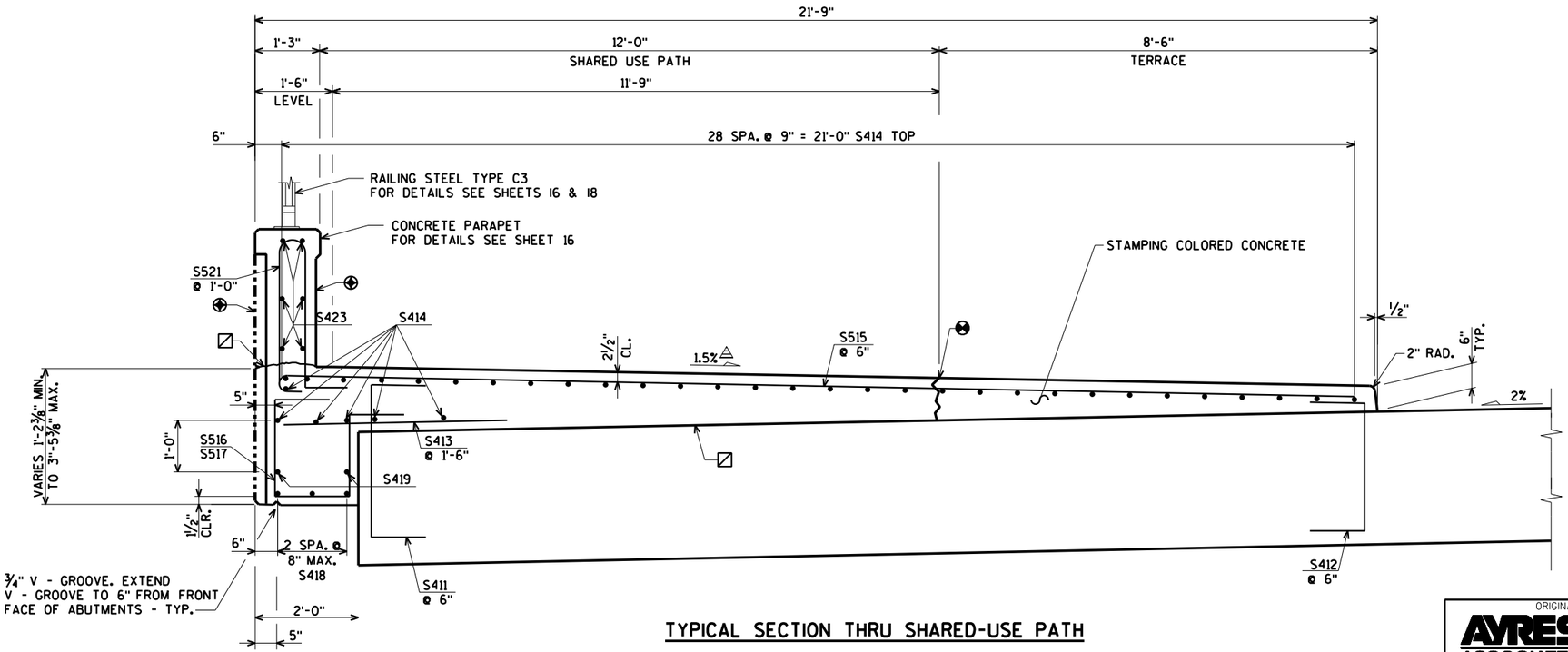
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

7995-02-46



PART SECTION AT ABUTMENT



TYPICAL SECTION THRU SHARED-USE PATH

- CONST. JOINT - ROUTE AND SEAL JOINT PER DETAIL ON SHEET 15.
- ± 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.
- ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

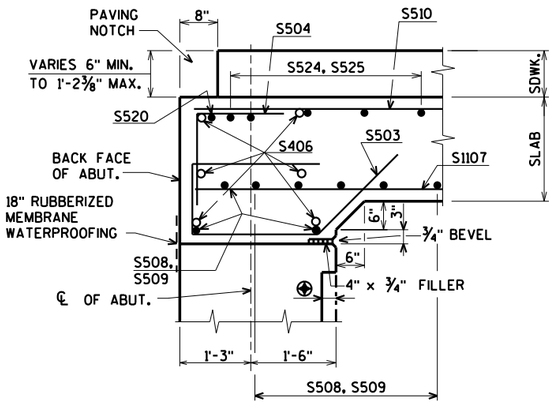
SUPERSTRUCTURE
SHARED USE PATH
DETAILS

SHEET 14 OF 19
87

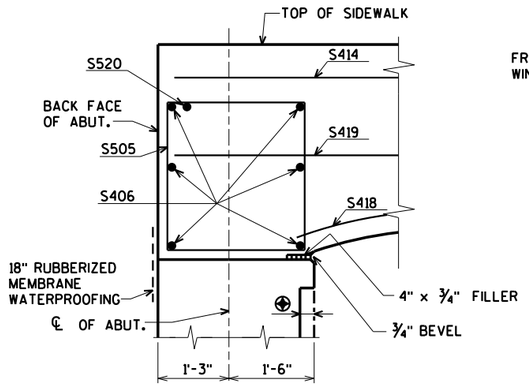
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

8

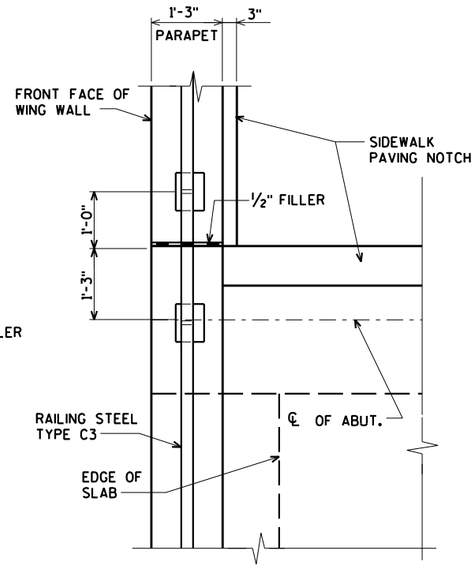


SECTION A

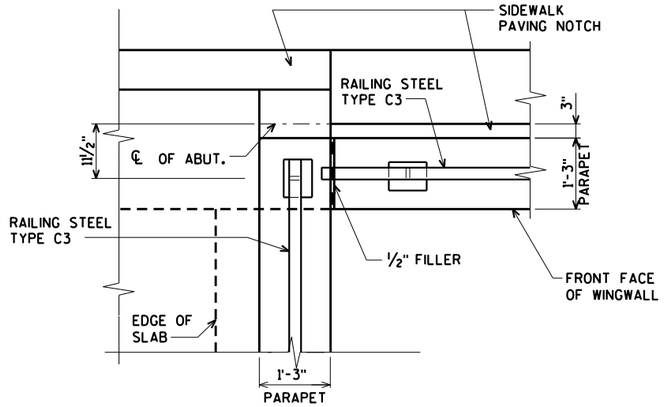


SECTION B

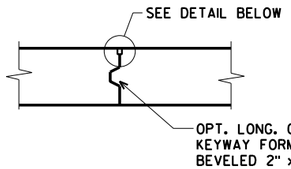
FOR LOCATION OF SECTIONS A, B, & C SEE SHEET 14



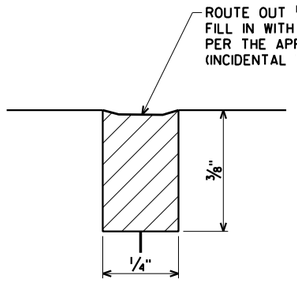
WING 1 AND 3



WING 2 AND 4

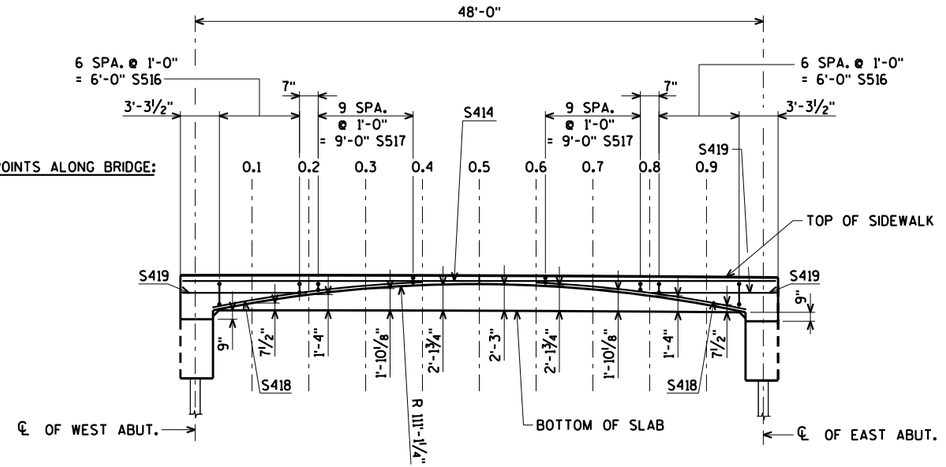


OPTIONAL LONGITUDINAL CONSTRUCTION JOINT



LONGITUDINAL CONSTRUCTION JOINT DETAIL

SECTION C



ARCH FASCIA LAYOUT
TYPICAL EACH FACE OF BRIDGE

NOTE: BOTTOM OF ARCH TO BOTTOM OF SLAB DIMENSION GIVEN.
RADIUS GIVEN IS BOTTOM OF ARCH.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 19

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

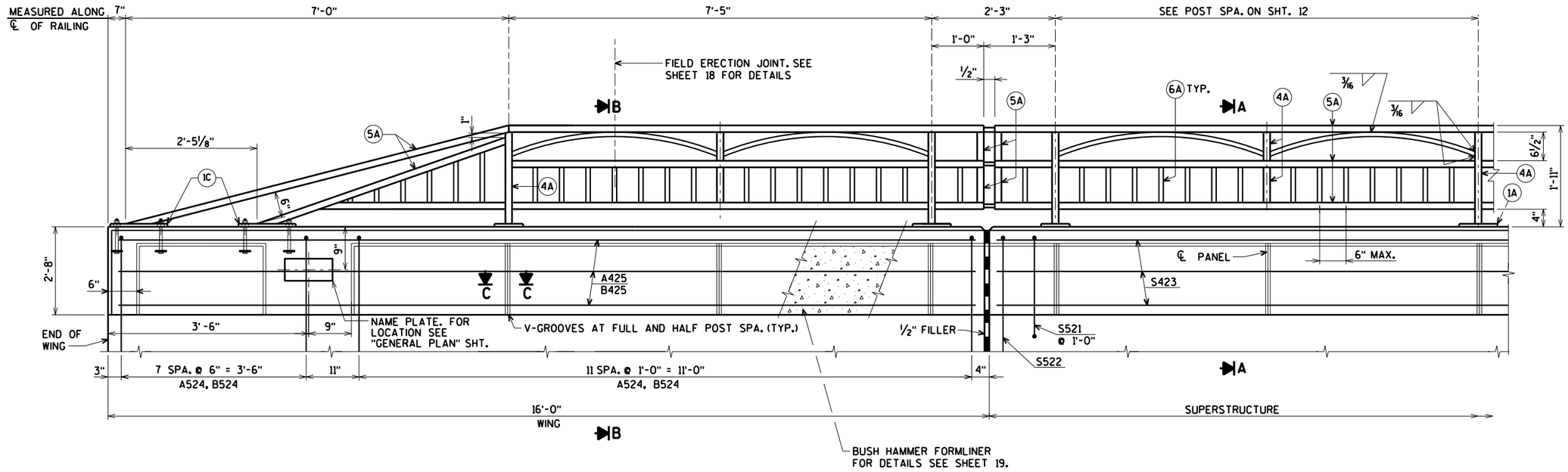
SUPERSTRUCTURE DETAILS

SHEET 15 OF 19
88

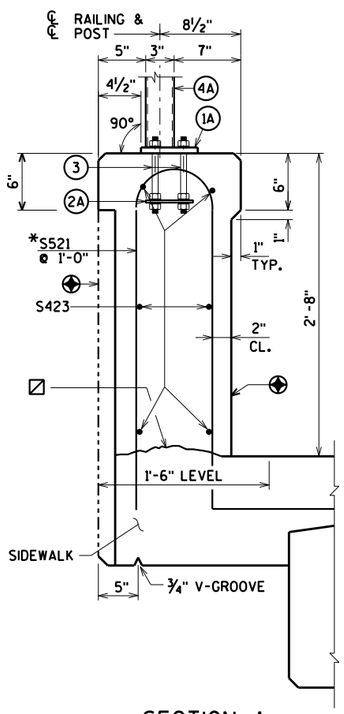
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

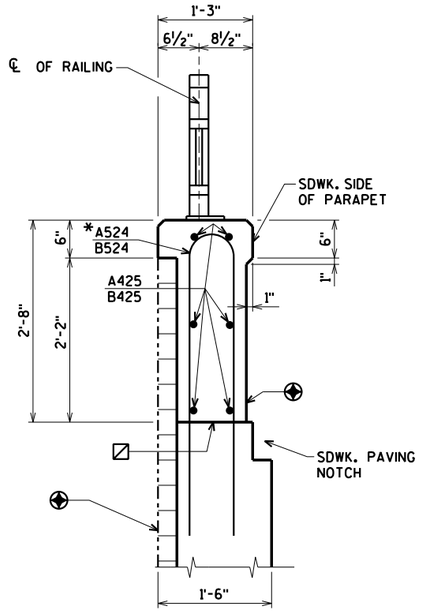
7995-02-46



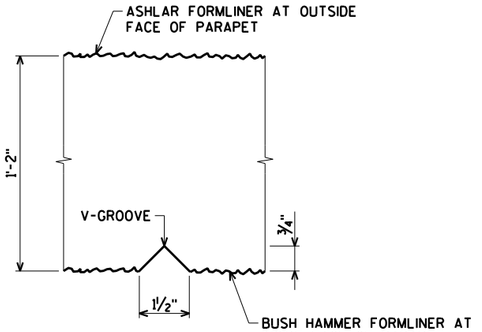
ELEVATION OF RAILING
(INSIDE FACE SHOWN)



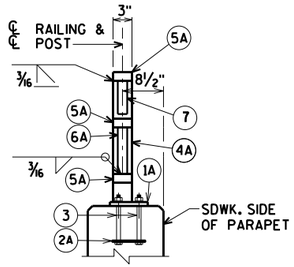
SECTION A



SECTION B



SECTION C



END VIEW

* ADJUST LOCATION OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING.

☒ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

⊕ ARCHITECTURAL SURFACE TREATMENT FOR DETAILS SEE SHEET 19.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

COMBINATION RAIL TYPE "C3" WINGS 1 & 3

SHEET 16 OF 19
89

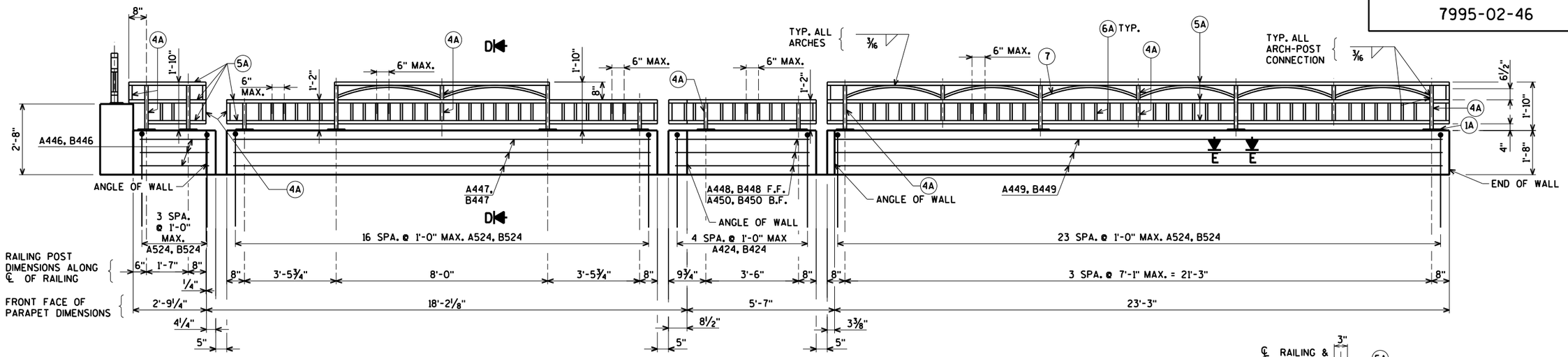
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

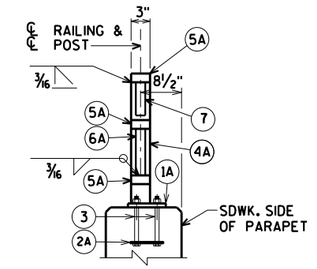
8

STATE PROJECT NUMBER

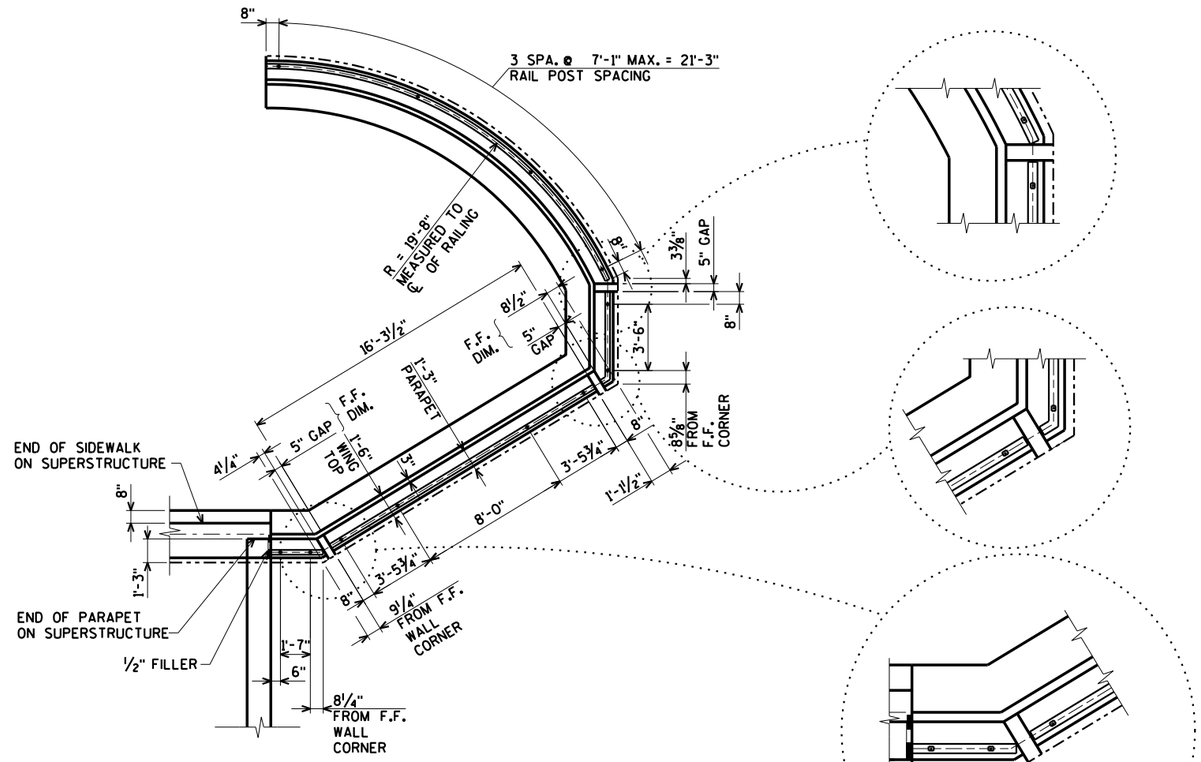
7995-02-46



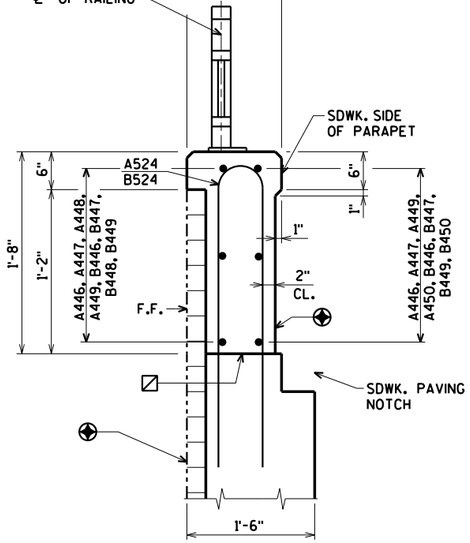
ELEVATION OF RAILING
(OUTSIDE FACE SHOWN)



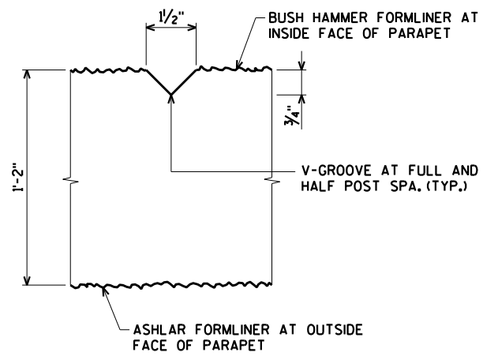
END VIEW



PLAN VIEW OF RAILING LAYOUT
(WING 2 SHOWN, WING 4 SIMILAR)



SECTION D



SECTION E

F.F. DENOTES FRONT FACE

☑ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

⊕ ARCHITECTURAL SURFACE TREATMENT FOR DETAILS SEE SHEET 19.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

COMBINATION RAIL TYPE "C3" WINGS 2 & 4

SHEET 17 OF 19
90

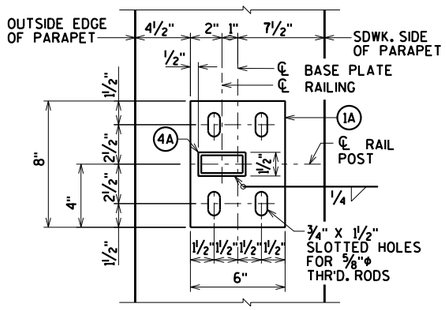
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

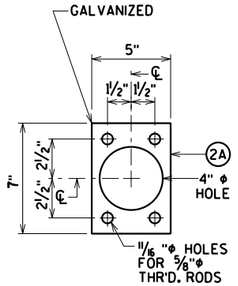
8

STATE PROJECT NUMBER

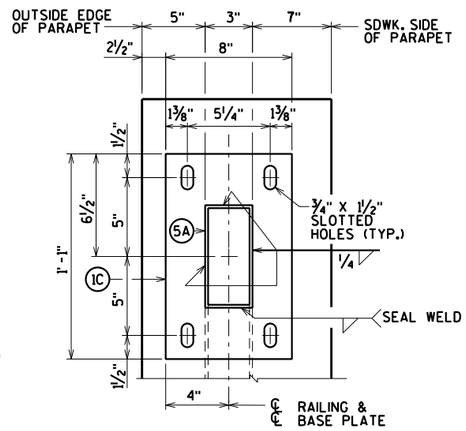
7995-02-46



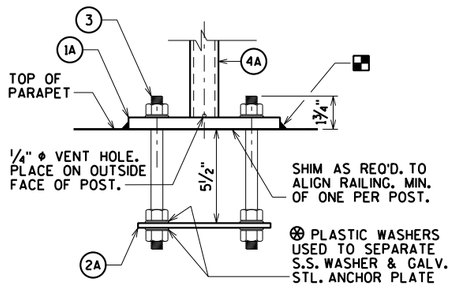
TYPICAL RAIL POST BASE PLATE



ANCHOR PLATE

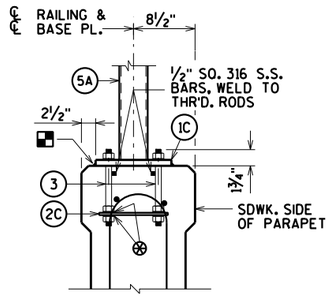


END RAIL BASE PLATE



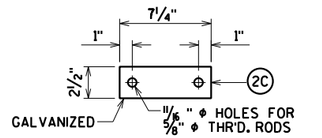
ANCHORAGE FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



ANCHORAGE FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN ADHESIVE ANCHORS ARE USED.



END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16 " φ HOLES FOR THR'D. RODS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16 " φ HOLES FOR THR'D. RODS NO. 3.

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE ANCHORAGE - CONCRETE ADHESIVE ANCHORS, ⅝" φ, EMBED A MIN. OF 7" FOR RAIL POSTS AND 5" FOR END RAILS.)

ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

(6A) BAR 1" X 1" PICKETS. WELD TO NO. 5. (SPACE AT 6" MAX. ℄ TO ℄ SPACING) PLACE VERTICAL.

(7) BAR 1" X 1". BEND TO REQUIRED RADIUS. WELD TO NO. 4 & 5.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.)

RAILING NOTES

BID ITEM SHALL BE "RAILING STEEL TYPE C3 B-18-230", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B (NO. 4, AND NO. 5).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT, AND SHALL BE GALVANIZED.

■ CAULK AROUND PERIMETER OF BASE PLATES, NO. 1, AND FILL BOLT SLOT OPENINGS IN SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

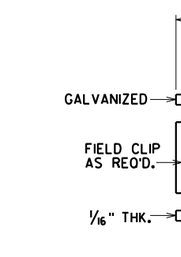
ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

ALL MATERIAL (EXCEPT NO. 3) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, THE STEEL RAILING SHALL BE GIVEN A NO. 6 BLAST CLEANING PER SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE CONTRACT DOCUMENTS. THE RAILING SHALL BE PAINTED FEDERAL COLOR NO. 27038, BLACK.

VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

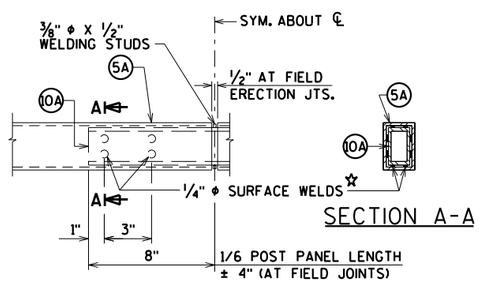


RAIL POST SHIM DETAIL

(2 SETS PER POST)

SHOP RAIL SPLICE DETAIL

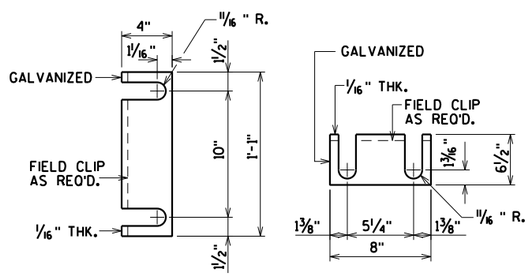
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

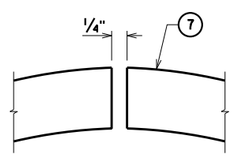
FIELD ERECTION JOINT DETAIL

☆ MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



END RAIL SHIM DETAIL

(2 SETS PER POST)



CURVED MEMBER JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

COMBINATION RAIL TYPE "C3"

SHEET 18 OF 19

91

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

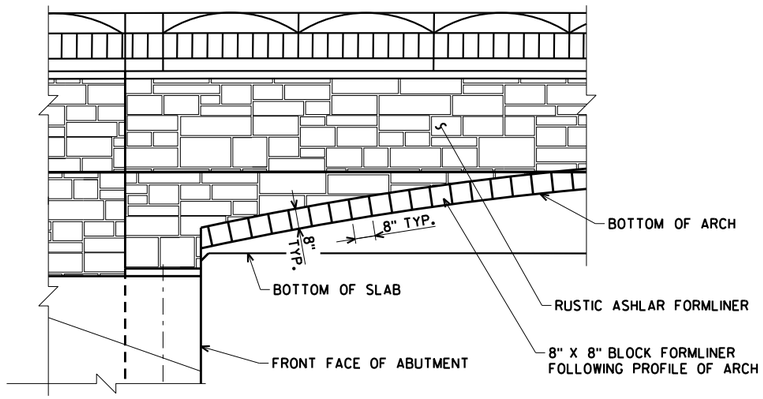
8

9/1/2016

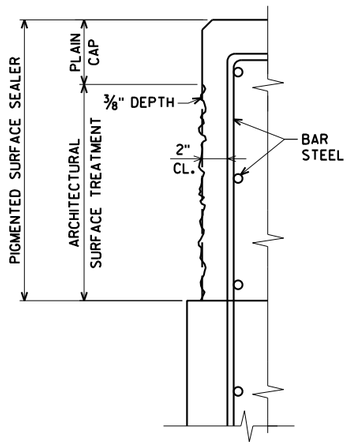
PENTABLE:BReau_shd_util.tbl

STATE PROJECT NUMBER

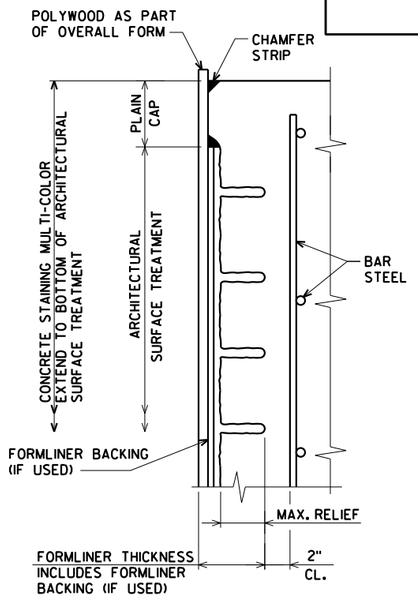
7995-02-46



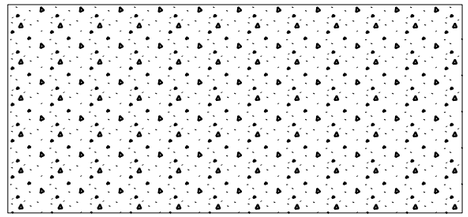
ARCHITECTURAL SURFACE TREATMENT DETAIL



SECTION THRU FORMLINER

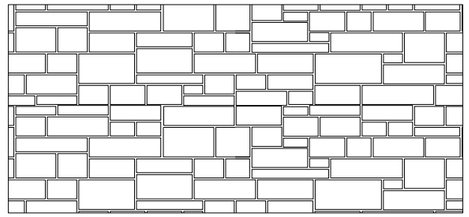


SECTION THRU FORMLINER



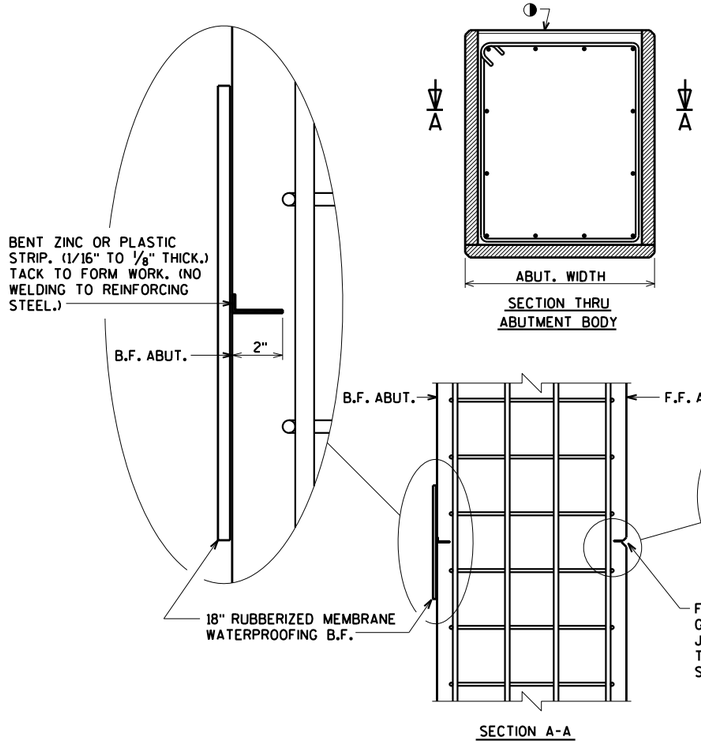
BUSH HAMMER

MAX. RELIEF = 3/8"



GEORGIA ASHLAR

FORMLINER THICKNESS = 2¼"
SIZE = 7" TO 28" WIDE, 3" TO 12" HIGH
MAX. RELIEF = 1⅛"



ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

SAW CUTTING JOINT IS NOT ALLOWED.

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY ½" DEEP.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

STAINING NOTES

"RUSTIC ASHLAR" FORMLINER TO RECIEVE MULTI-COLOR STAIN THAT CLOSELY MATCHES STONE IN CARSON PARK STRUCTURES. STAINING SCHEME TO BE APPROVED BY THE CITY OF EAU CLAIRE PRIOR TO PERFORMING THE WORK.

ABUTMENT NOTES

THE FORMLINER COURSING ON THE WINGS SHALL BE VERTICALLY ALIGNED WITH THE FORMLINER COURSING ON THE FRONT OF THE ABUTMENT.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

FORMLINER COURSING ON ABUTMENTS AND WINGS SHALL BE LEVEL.

WRAP AROUND/MATCH FORMLINER PATTERN AT CORNERS.

PARAPET NOTES

FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-18-230

DRAWN BY CJM | PLANS CK'D. DNS

ALTERNATE CONSTRUCTION JT. & ARCHITECTURAL SURFACE TREATMENT

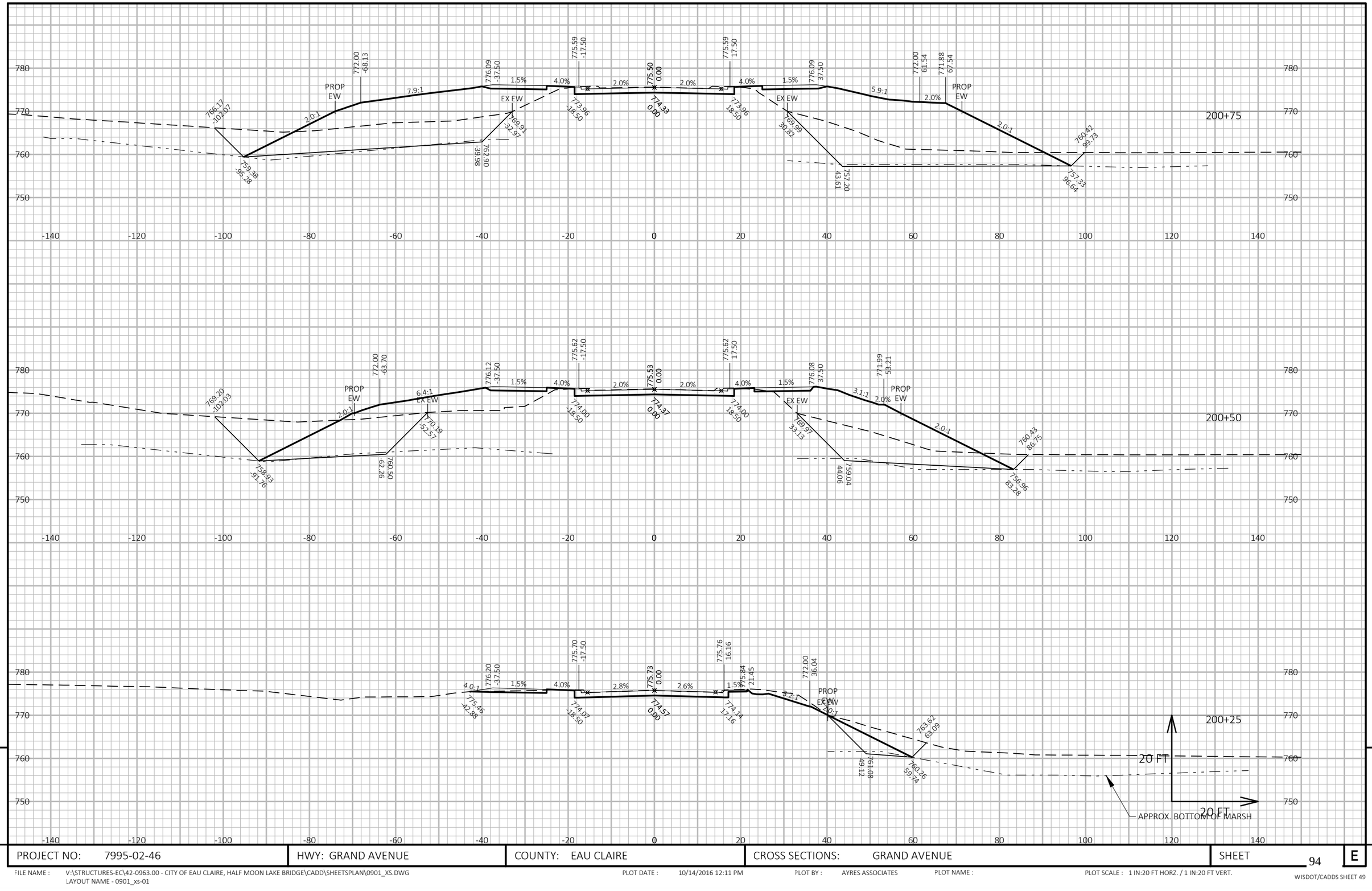
SHEET 19 OF 19

92

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/ Unusable Pavement Material	Fill	Marsh Exc	Incremental Vol (CY) (Unadjusted) Cut	Salvaged/ Unusable Pavement Material	Fill	Marsh Exc	Cumulative Vol (CY) Cut	Expanded Fill	Expanded Marsh Backfill	Mass Ordinate
							Note 1	Note 2	Note 3		1.00 Note 1	1.25	1.00 Note 4	Note 8
200+25	20025.00	0.00	71.02	7.75	0.19	23.06	0	0	0	0	0	0	0	0.00
200+50	20050.00	25.00	50.85	7.75	413.87	533.34	56	7	192	258	56	240	258	-344.93
200+75	20075.00	25.00	51.75	7.75	784.38	583.21	48	7	555	517	104	933	775	-1,308.19
201+00	20100.00	25.00	48.28	7.75	1050.98	410.77	46	7	850	460	150	1,995	1,235	-2,607.29
201+25	20125.00	25.00	39.30	7.75	1078.83	397.35	41	7	986	374	191	3,228	1,609	-4,030.93
201+50	20150.00	25.00	25.83	7.75	1133.93	447.42	30	7	1,024	391	221	4,508	2,000	-5,523.14
201+66.15	20166.15	16.15	15.59	7.75	1182.58	468.21	12	5	693	274	233	5,374	2,274	-6,545.50
201+75	20175.00	8.85	9.89	7.75	1208.13	483.23	4	3	392	156	238	5,864	2,430	-7,127.40
202+00	20200.00	25.00	0.88	7.75	1257.32	498.19	5	7	1,141	454	242	7,291	2,884	-8,828.97
202+25	20225.00	25.00	0.00	7.75	1342.27	511.40	0	7	1,204	467	243	8,795	3,351	-10,620.57
202+40	20240.00	15.00	3.97	7.75	1061.70	475.09	1	4	668	274	244	9,630	3,625	-11,622.90
202+94	20294.00	54.00	2.69	7.75	881.37	465.13	7	16	1,943	940	251	12,059	4,566	-14,624.71
203+00	20300.00	6.00	4.22	7.75	1089.18	495.72	1	2	219	107	251	12,332	4,672	-14,963.41
203+25	20325.00	25.00	0.00	7.75	1406.62	560.71	2	7	1,155	489	253	13,777	5,162	-16,706.40
203+50	20350.00	25.00	1.22	7.75	1328.98	547.83	1	7	1,266	513	254	15,360	5,675	-18,604.04
203+75	20375.00	25.00	3.99	7.75	1351.45	576.21	2	7	1,241	520	256	16,911	6,195	-20,472.21
204+00	20400.00	25.00	7.47	7.75	1324.67	632.19	5	7	1,239	559	262	18,460	6,755	-22,358.43
204+25	20425.00	25.00	16.16	7.75	1171.65	707.33	11	7	1,156	620	273	19,904	7,375	-24,171.39
204+50	20450.00	25.00	20.61	7.75	931.88	781.58	17	7	974	689	290	21,122	8,064	-25,792.44
204+75	20475.00	25.00	23.84	7.75	883.65	746.30	21	7	841	707	310	22,172	8,771	-27,254.11
205+00	20500.00	25.00	34.62	7.75	739.21	666.89	27	7	751	654	337	23,111	9,426	-28,565.92
205+25	20525.00	25.00	46.79	7.75	565.67	669.95	38	7	604	619	375	23,867	10,045	-29,661.89
205+50	20550.00	25.00	56.99	7.75	179.98	454.43	48	7	345	521	423	24,298	10,565	-30,364.85
205+75	20575.00	25.00	62.05	7.75	0.41	-62.05	55	7	84	182	478	24,402	10,747	-30,530.30
206+00	20600.00	25.00	61.68	7.75	0.70	-61.68	57	7	1	-57	535	24,403	10,689	-30,446.47
206+25	20625.00	25.00	68.23	7.75	1.11	-68.23	60	7	1	-60	596	24,404	10,629	-30,358.47
							596	172	19,523	10,629				

1) COMMON EXCAVATION IS THE SUM OF THE CUT EXCAVATION ABOVE THE WATER LINE. ITEM NUMBER 205.0100
2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) AVAILABLE MATERIAL = EXCAVATION COMMON - SALVAGED/UNUSABLE PAVEMENT MATERI
4) BREAKER RUN TONS TO CUBIC YARD FACTOR = 1.8 TONS/CY
5) EXPANDED FILL FACTOR =
6) EXPANDED FILL = (UNEXPANDED FILL - BREAKER RUN (CY) - RIPRAP LIGHT - RIPRAP MEDIUM - RIPRAP HEAVY) * FILL FACTOR
7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE PROJECT. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE PROJECT, MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE PROJECT
8) ASSUMED EXISTING PAVEMENT DEPTH OF 3 INCHES FOR SALVAGED/UNUSABLE PAVEMENT MATERIAL QUANTITY.
EARTHWORK CALCULATED BY TRIANGULAR IRREGULAR NETWORK COMPARISON

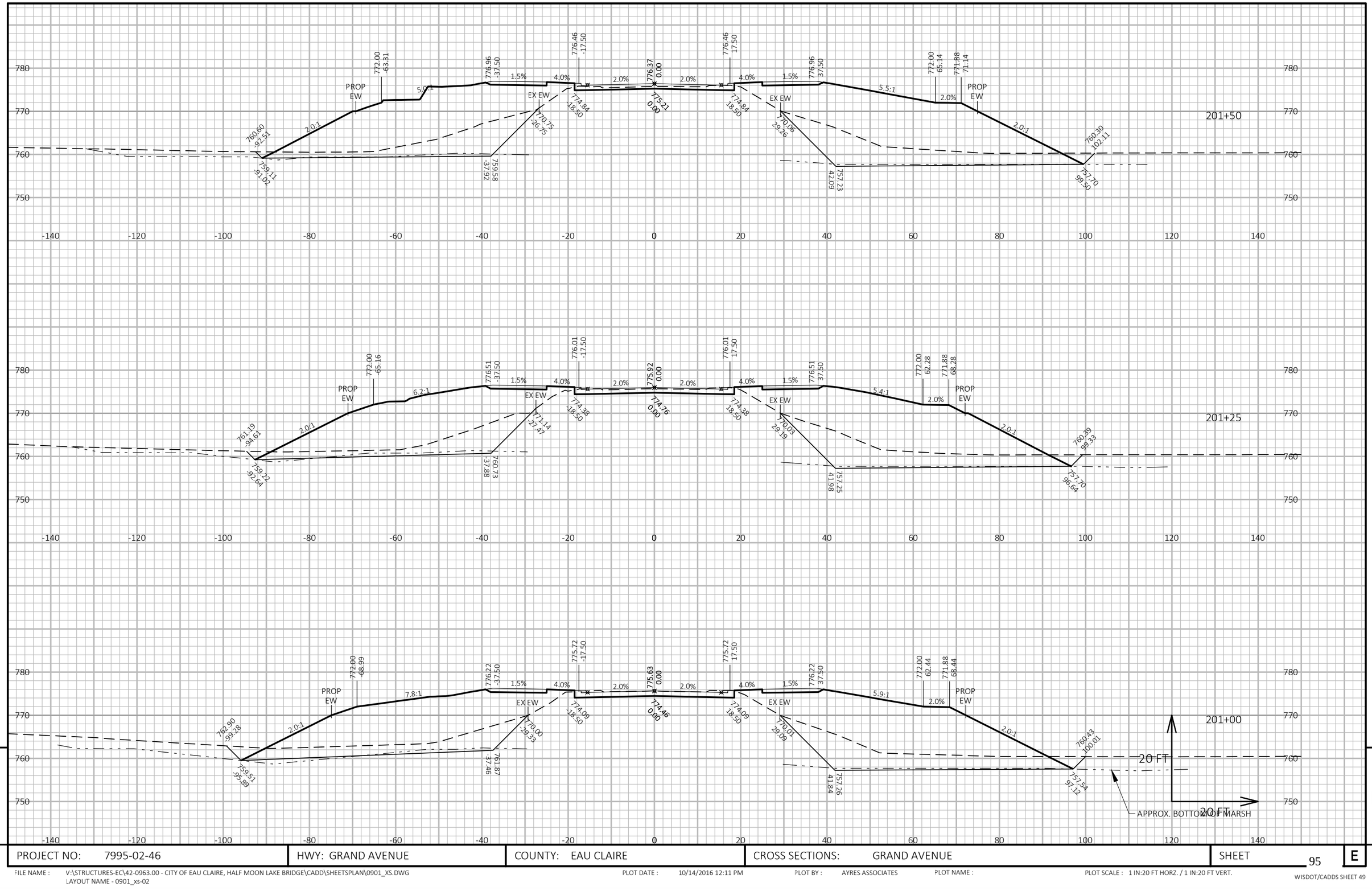


PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 94	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-01

PLOT DATE : 10/14/2016 12:11 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 95	E

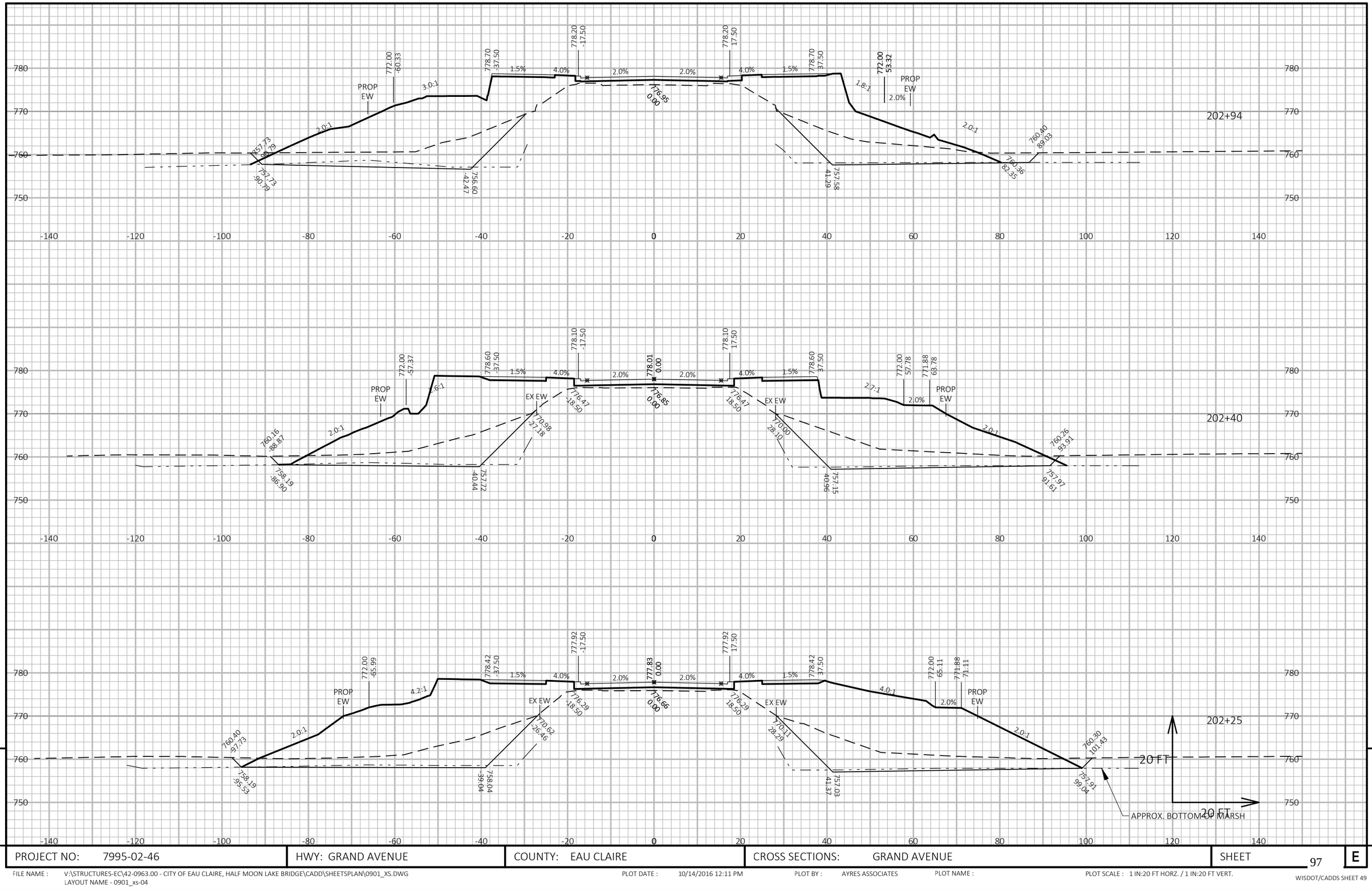
FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-02

PLOT DATE : 10/14/2016 12:11 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

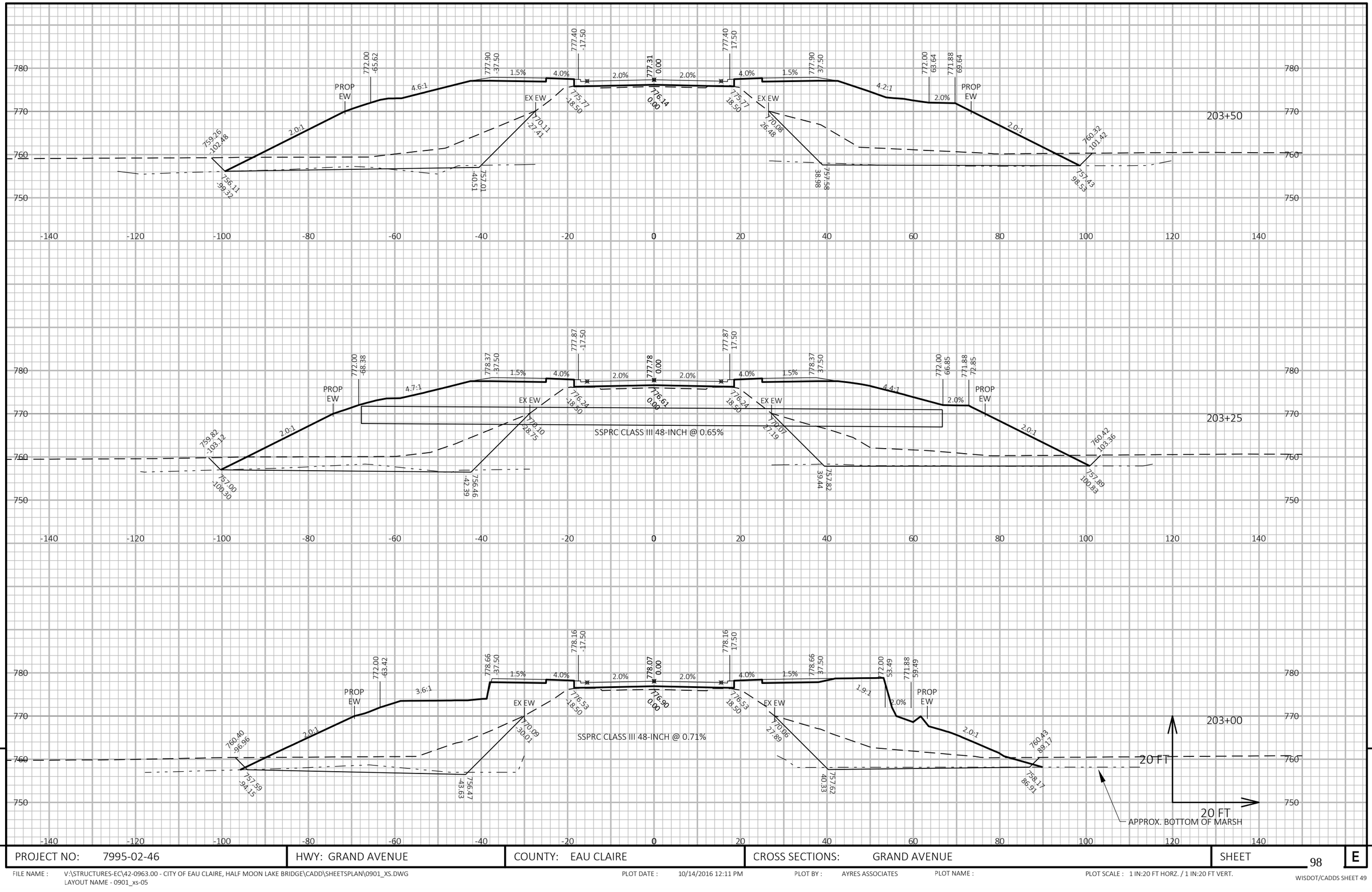
PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 96	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-03
PLOT DATE : 10/14/2016 12:11 PM
PLOT BY : AYRES ASSOCIATES
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 97	E

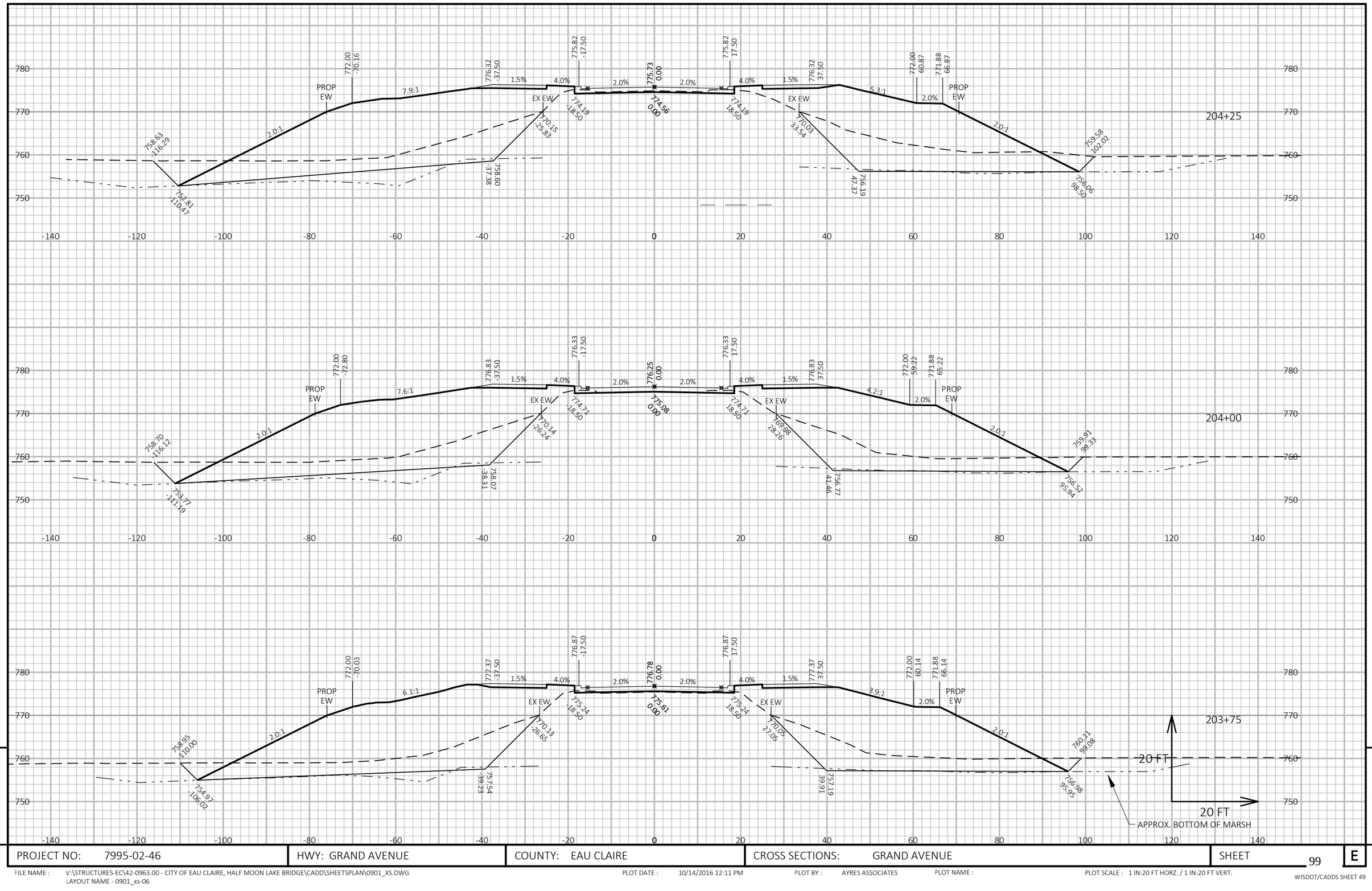
FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-04
PLOT DATE : 10/14/2016 12:11 PM
PLOT BY : AYRES ASSOCIATES
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 98	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-05

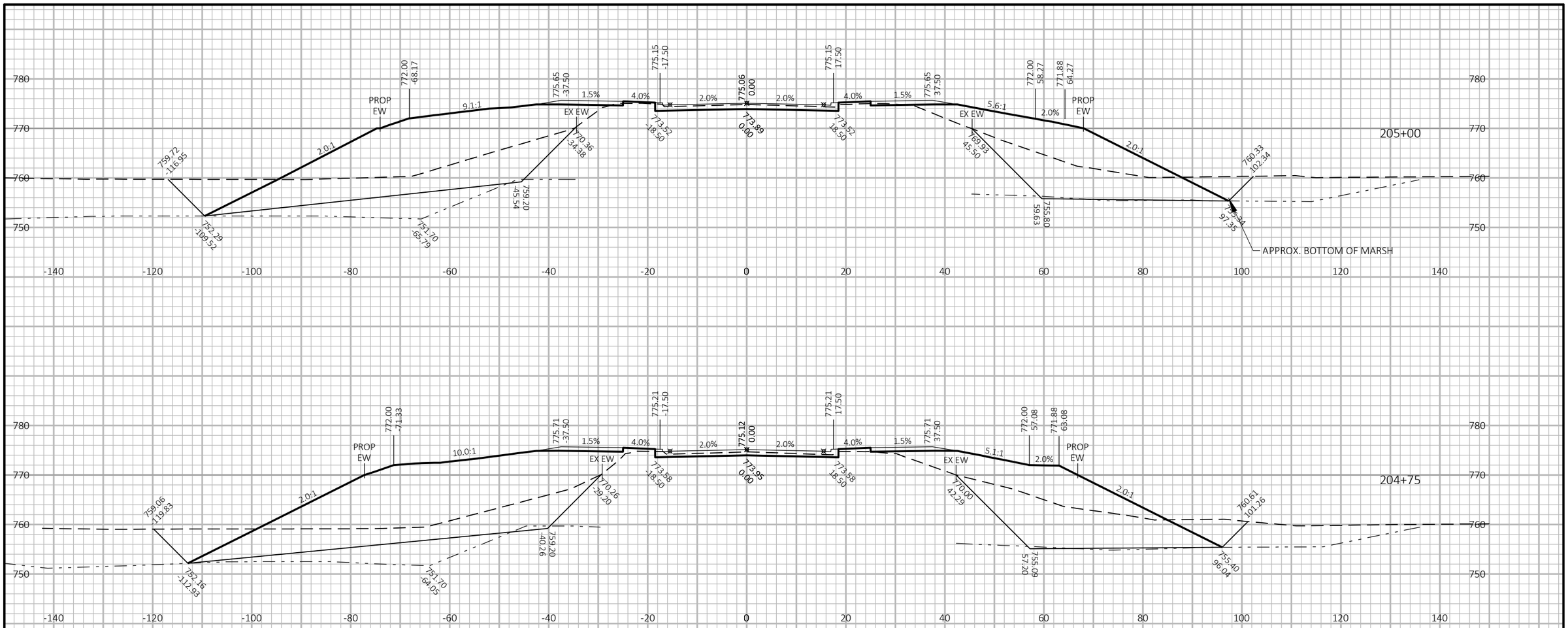
PLOT DATE : 10/14/2016 12:11 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

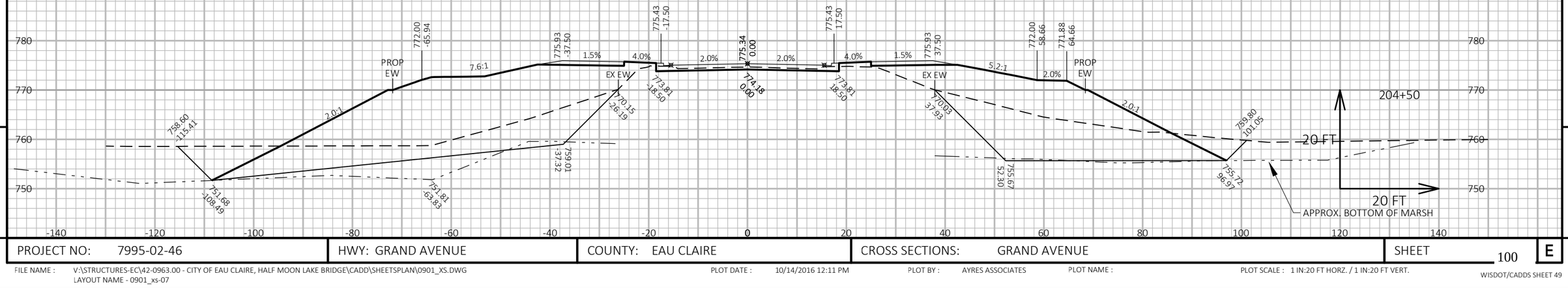


PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 99	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-06

PLOT DATE : 10/14/2016 12:11 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.



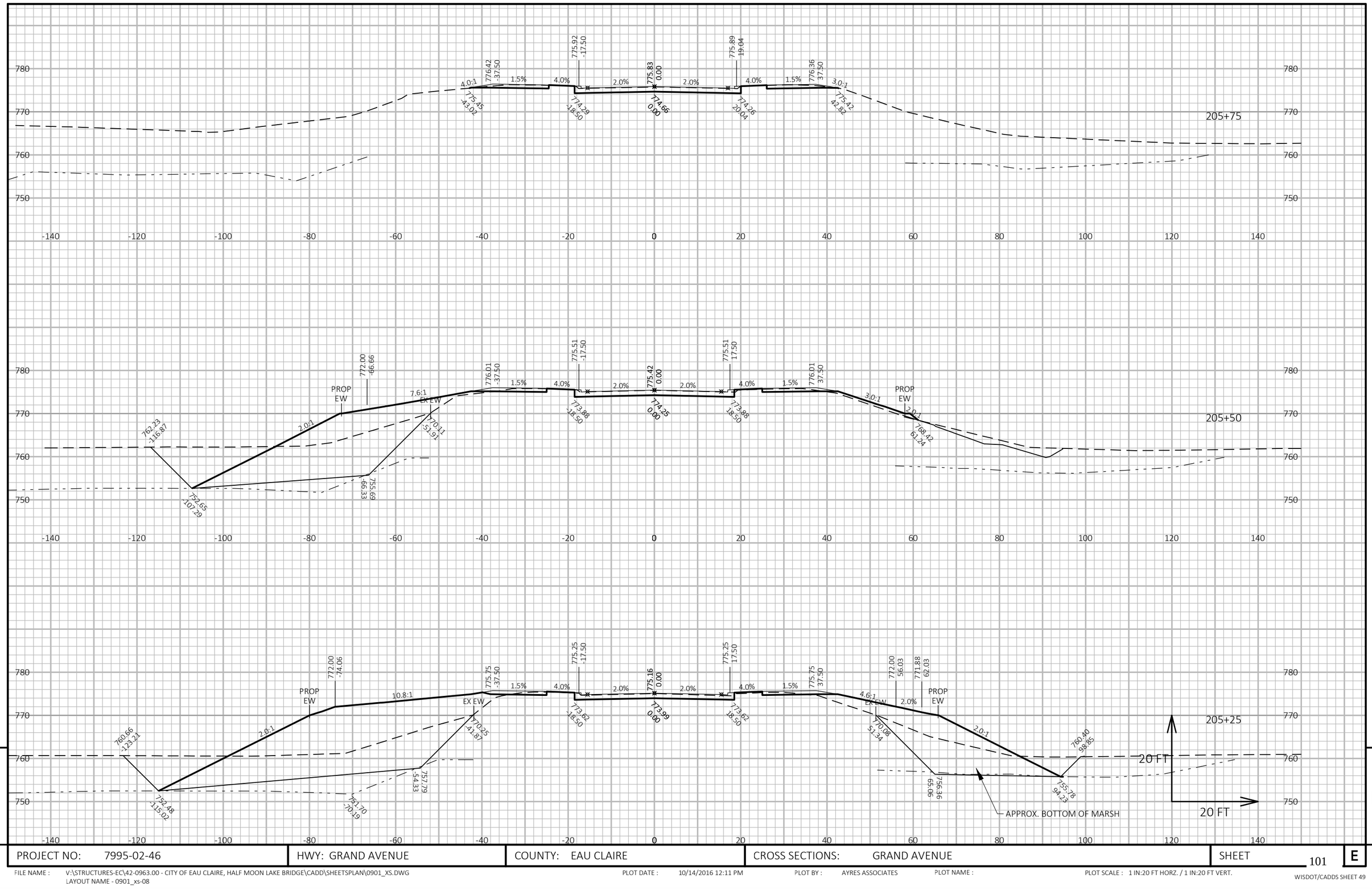


PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 100	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-07

PLOT DATE : 10/14/2016 12:11 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49



PROJECT NO: 7995-02-46	HWY: GRAND AVENUE	COUNTY: EAU CLAIRE	CROSS SECTIONS: GRAND AVENUE	SHEET 101	E

FILE NAME : V:\STRUCTURES-EC\42-0963.00 - CITY OF EAU CLAIRE, HALF MOON LAKE BRIDGE\CADD\SHEETSPLAN\0901_XS.DWG
LAYOUT NAME - 0901_xs-08

PLOT DATE : 10/14/2016 12:11 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov