SEL

NOV 2015

PROJECT ID: 3755-00-71

WITH:

COUNTY: RACINE

ORDER OF SHEETS

TOTAL SHEETS = -114

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

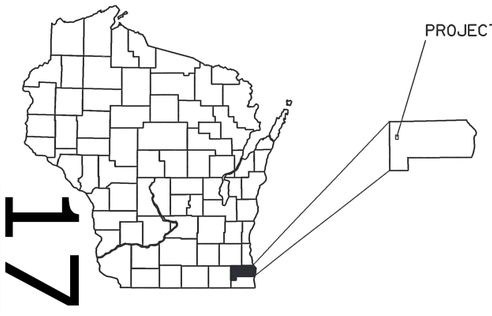
PLAN OF PROPOSED IMPROVEMENT

CTH D (WASHINGTON AVENUE)

BRIDGE OVER FOX RIVER (B-51-0149)

CTH D
RACINE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3755-00-71	WISC 2015577	1

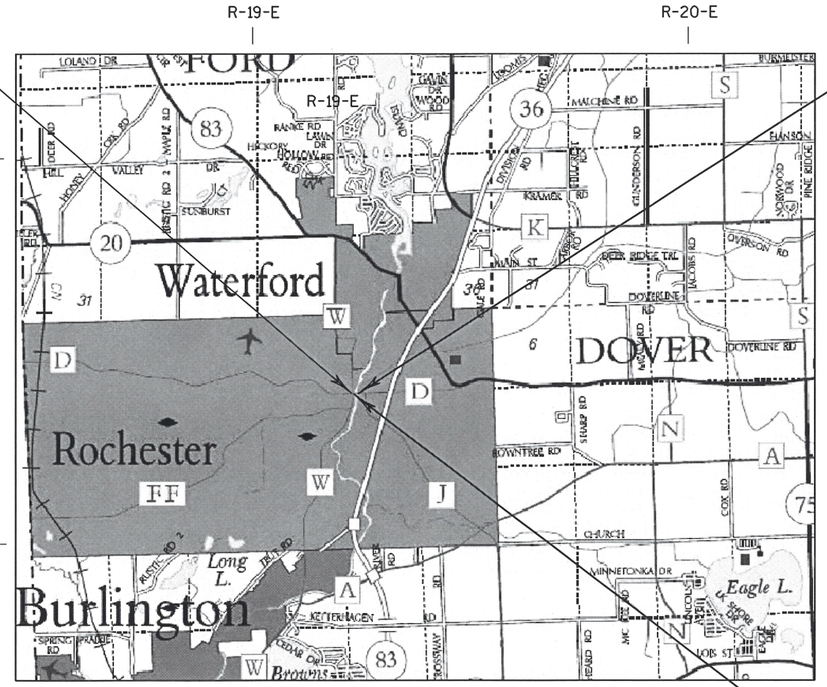


STATE PROJECT NUMBER
3755-00-71

N

BEGIN PROJECT
STA 200+36.49
Y = 191360.33
X = 521136.32

END PROJECT
STA 204+45.00



DESIGN DESIGNATION

A.A.D.T. 2015	=	5200
A.A.D.T. 2035	=	5700
D.H.V.	=	7.2
D.D.	=	59/41
T.	=	8.4%
DESIGN SPEED	=	30 MPH
ESALS	=	2,007,500

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 1.0 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.077 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), 'RACINE' COUNTY." NAD83 (CORS 96)

"ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NAVD (1929)

ACCEPTED FOR RACINE COUNTY

4/2/2015 (Date) Nathan Mundsett (Signature)

County Engineer (Title of Official)

ORIGINAL PLANS PREPARED BY

KSA K. SINGH & ASSOCIATES, INC.
Engineers, Scientists and Environmental Consultants

WISCONSIN MUNZER K. HAIDAR 27021-006 WAUKESHA, WI PROFESSIONAL ENGINEER

03/30/2015 (Date) Munzer Haidar (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	KSA
Designer	KSA
Management Consultant	DAAR
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 4/29/15 (Management Consultant Signature)

E

FILE NAME : P:\8427 CTH D BRIDGE REPLACEMENT RACINE COUNTY\TRANSPORTATION\CAD\SHEETSET\010101_TI.DWG PLOT DATE : 3/26/2015 6:12 PM PLOT BY : CLIFTON JANSSEN PLOT NAME : ----------

2

ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
CB	CATCH BASIN
C&G	CURB AND GUTTER
C-C	CENTER TO CENTER
CONC	CONCRETE
CSD	CONCRETE SURFACE DRAIN
CTR	CENTER
CWT	HUNDREDWEIGHT
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DD	DIRECTIONAL DISTRIBUTION
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
E	EAST
EB	EASTBOUND
EL OR ELEV	ELEVATION
EXIST	EXISTING
FS	FULL SUPERELEVATION
FT	FOOT
HE	HIGHWAY EASEMENT
HMA	HOT MIX ASPHALT
INCID	INCIDENTAL
INL	INLET
L	LENGTH OF CURVE
LF	LINEAR FOOT
LONG	LONGITUDINAL
LT	LEFT
MH	MANHOLE
MIN	MINIMUM
ML OR M/L	MATCH LINE
N	NORTH
NB	NORTHBOUND
NC	NORMAL CROWN
NTS	NOT TO SCALE
PAVT	PAVEMENT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
REQD	REQUIRED
R/L	REFERENCE LINE
RO	RUN OFF LENGTH
RT	RIGHT
RW OR R/W	RIGHT-OF-WAY
S	SOUTH
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWINGS
SHT	SHEET
SI	SLOPE INTERCEPT
SS	STORM SEWER
STA	STATION
SY	SQUARE YARD
SYM	SYMMETRICAL
T	TANGENT LENGTH
TEMP	TEMPORARY
TYP	TYPICAL
V	VELOCITY OR DESIGN SPEED
VAR	VARIABLE OR VARIES
W	WEST
WB	WESTBOUND
YD	YARD

UTILITY CONTACTS

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

FAX-A-LOCATE 1-800-338-3860

WISCONSIN STATUTE 182.0175 (1974)
REQUIRES MINIMUM OF 3 WORKING DAYS
NOTICE BEFORE YOU EXCAVATE
IN WISCONSIN

WE ENERGIES (GAS & ELECTRIC)

BRUMFIELD, LATROY
333 W. EVERETT STREET
MILWAUKEE, WI 53203
(414) 221-5617
latroy.brumfield@we-energies.com

TIME WARNER CABLE

CRAMER, STEVE
1320 N. MARTIN LUTHER KING DRIVE
MILWAUKEE, WI 53212
(414) 227-4045
steve.cramer@twcable.com

US GEOLOGICAL SURVEY

WASCHBUSCH, ROB
8505 RESEARCH WAY
MIDDLETON, WI 53562
(608) 821-3868
rjwaschb@usgs.gov

TDS TELECOM

JOHNSON, MICHAEL
20875 CROSSROADS CIRCLE
SUITE 800
WAUKESHA, WI 53186
(262) 754-3052
michael.johnson@tdstelecom.com

OTHER AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

WEBSTER, CRAIG
141 BARSTOW ROOM 180
WAUKESHA, WI 53188
(262) 574-2141
Craig.Webster@wisconsin.gov

RACINE COUNTY DPW

PLUNKETT, NATE
14200 WASHINGTON AVENUE
STURTEVANT, WI 53177
(262) 886-8440
Nathan.Plunkett@goracine.org

CONSULTANT CONTACT

K. SINGH & ASSOCIATES, INC.
HAIDAR, MUNZER
3636 NORTH 124TH STREET
WAUWATOSA, WI 53222
(262) 821-1171 EXT. 107
MHAIDAR@KSACONSULTANTS.COM

WISCONSIN DEPARTMENT OF TRANSPORTATION

KRAMER, KATHY
141 NORTHWEST BARSTOW STREET
WAUKESHA, WI 53188
(262) 548-8772
kathleen1.kramer@dot.wi.gov

VILLAGE OF ROCHESTER

BIRKETT, CHRISTOPHER
203 WEST MAIN STREET
P.O. BOX 65
ROCHESTER, WI 53167
(262) 332-1017
cbirkett@rochesterwi.us

GENERAL NOTES

THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GRO UND STRUCTURES AND FACILITIES.

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

INLET PROTECTION IS REQUIRED AT ALL INLETS AS PER DETAIL OR AS DIRECTED BY THE ENGINEER.

THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR MORE THAN 30 DAYS SHALL BE SEEDED WITH TEMPORARY SEED WITHOUT MULCH OR FERTILIZER. TEMPORARY SEED MAY BE USED ON AREAS THAT DO NOT HAVE TOPSOIL PLACED. TEMPORARY SEED SHALL BE DISKED OR TILLED PRIOR TO PERMANENT SEEING; UNLESS TEMPORARY SEED WAS USED WITH PERMANENT SEED DURING LATE SEEDING OPERATIONS. TEMPORARY SEED SHALL BE PLACED AT HALF THE NORMAL RATE ON ALL PERMANENT SLOPES.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SEEDED. INSTALL EROSION CONTROL MAT AS DIRECTED BY THE ENGINEER.

SEED AND INSTALL EROSION MAT FOR ALL SALVAGED TOPSOILED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.

STATIONING, DISTANCES AND OFFSETS FOR SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND THE FINAL LOCATION OF THE SIGNS ARE TO BE DETERMINED BY THE ENGINEER.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

CONCRETE JOINTS SHALL MATCH ABUTTING PAVEMENT AND CURB AND GUTTER JOINTS UNLESS OTHERWISE DESIGNATED BY THE ENGINEER.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT PRIOR APPROVAL OF THE ENGINEER.

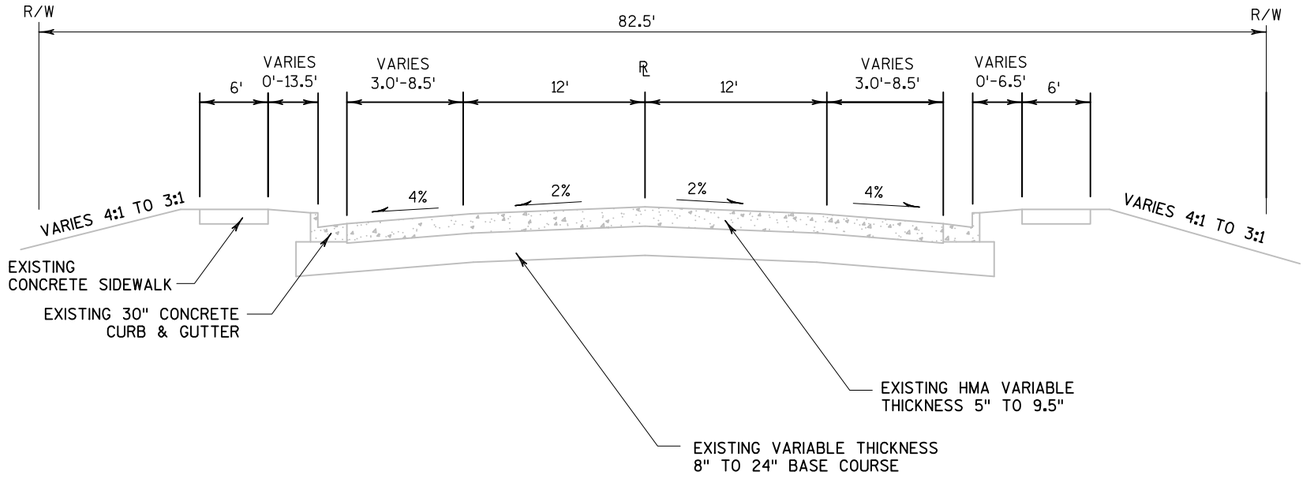
SMOOTH AND EVEN JOINTS SHALL BE PROVIDED WHERE MATCHING EXISTING SAWCUTTING.

RADII, ELEVATIONS, AND DIMENSIONS ARE GIVEN AT THE PAVEMENT EDGES, UNLESS OTHERWISE NOTED IN THE PLANS.

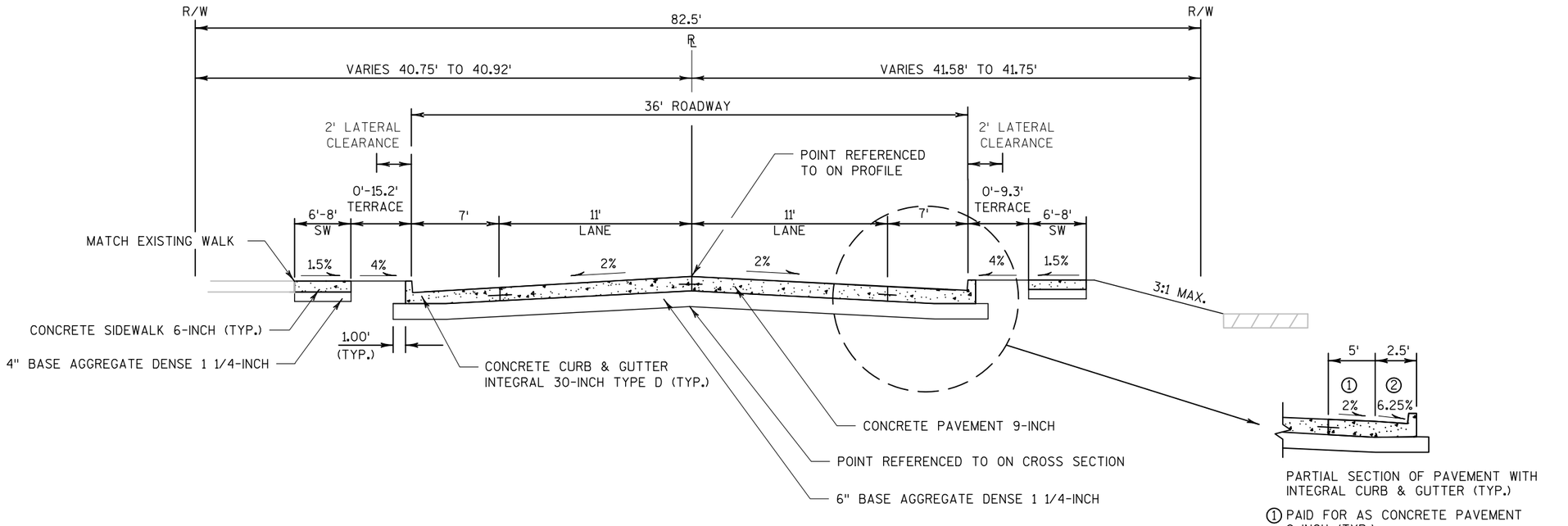
WETLAND, WATERWAYS, AND OTHER ENVIRONMENTALLY SENSITIVE AREAS SHALL BE PROTECTED AT ALL TIMES. DO NOT STORE EQUIPMENT OR MATERIAL NEAR THESE SITES UNLESS APPROVED BY THE ENGINEER.

SAW CUTS IN EXISTING PAVEMENT AND SIDEWALKS SHALL BE TO NEAT STRAIGHT LINES. EDGES OF SAW CUT EDGES DAMAGED DURING CONSTRUCTION SHALL BE RECUT PRIOR TO ACCEPTANCE FOR PAVING.

ORDER OF SHEETS SECTION 2



EXISTING TYPICAL SECTION
STA. 200+36.49 TO 201+36.86
STA. 203+39.36 TO 204+45.00



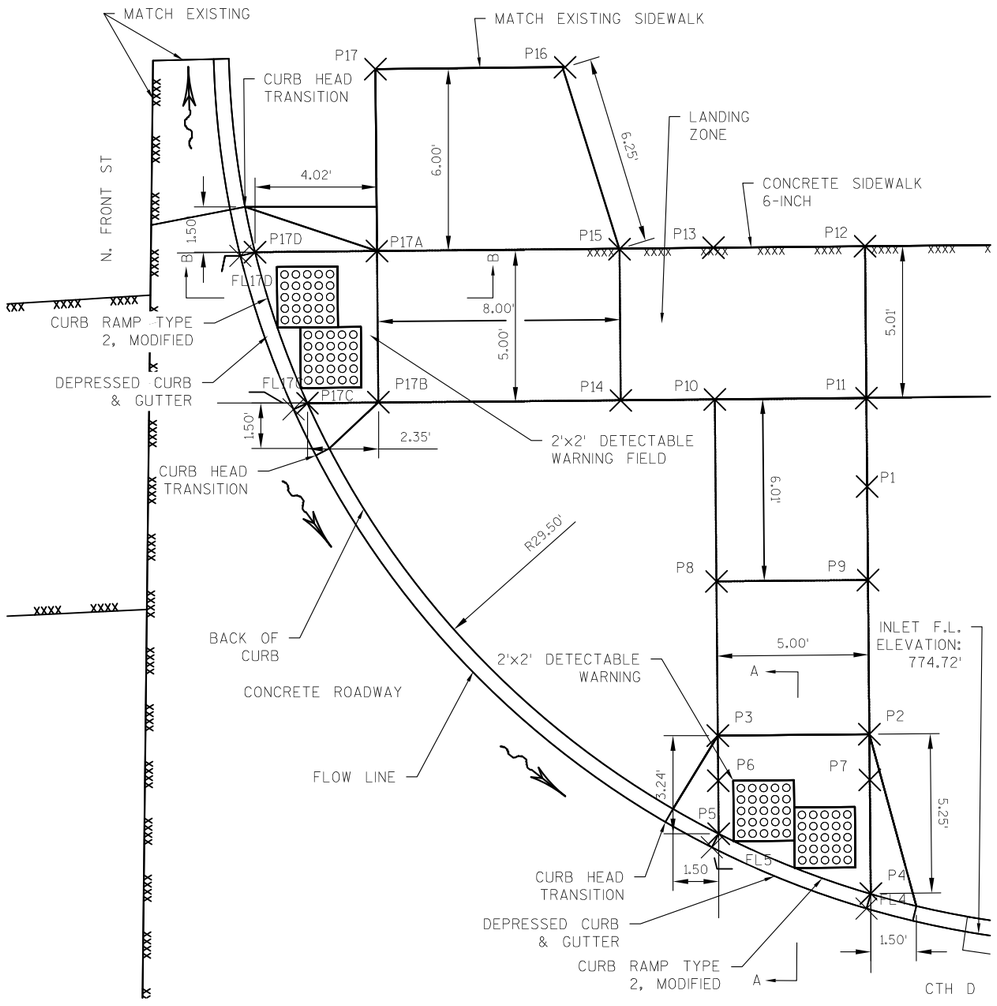
FINISHED TYPICAL SECTION
STA. 200+36.49 TO 201+36.86
STA. 203+39.36 TO 204+45.00

PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER (TYP.)

① PAID FOR AS CONCRETE PAVEMENT 9-INCH (TYP.)

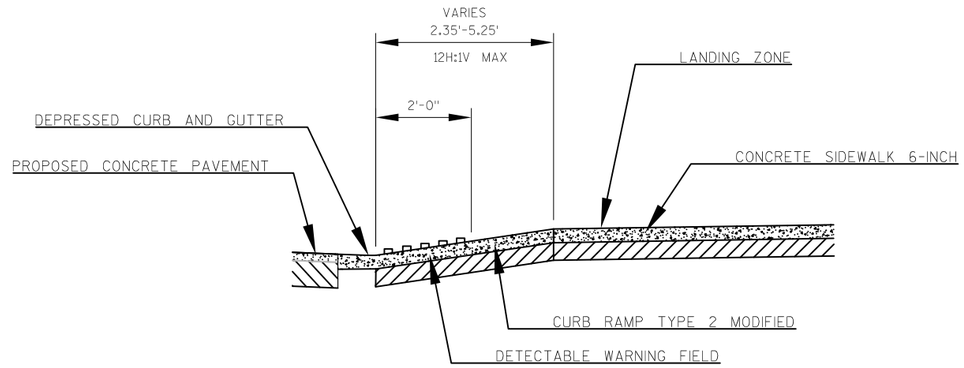
② PAID FOR AS CONCRETE CURB & GUTTER INTEGRAL 30-INCH TYPE D (TYP.)

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	TYPICAL SECTIONS -CTH D	SHEET 3	E



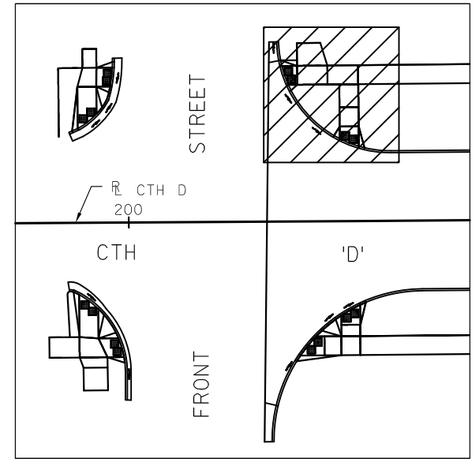
PLAN VIEW

CTH D & N. FRONT ST INTERSECTION, NE QUADRANT
CURB RAMP DETAIL



SECTION A-A & B-B
CURB RAMP TYPE 2 MODIFIED

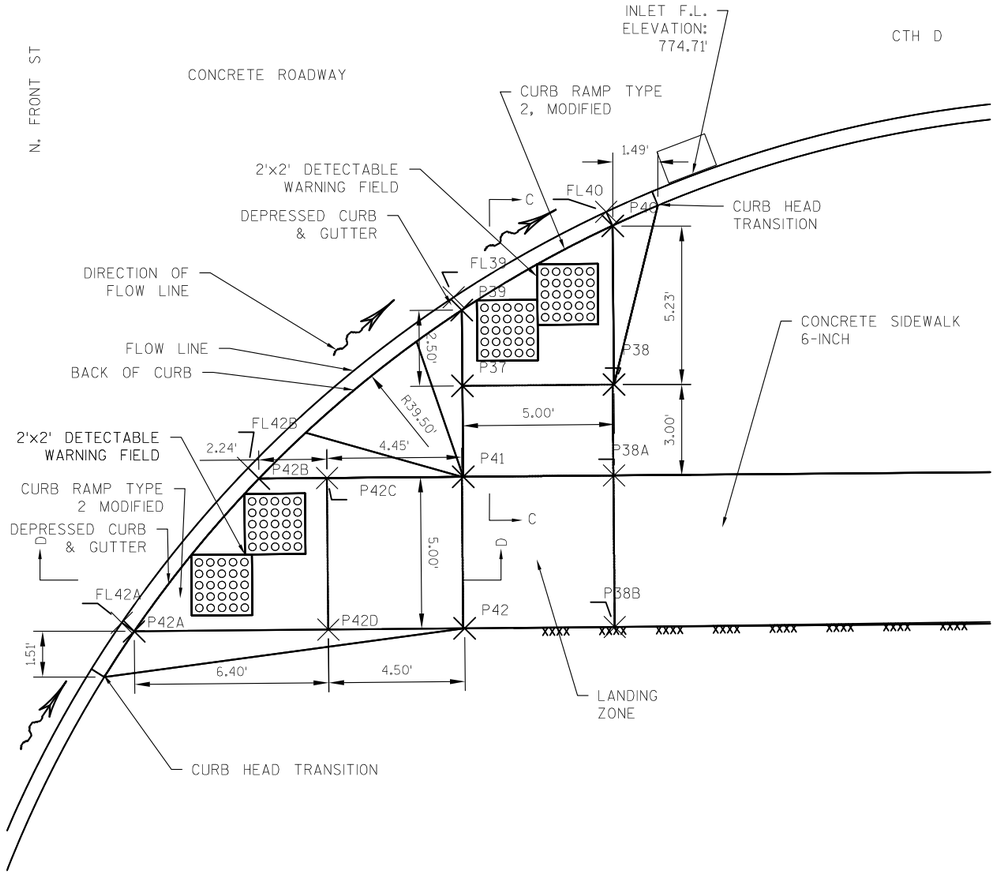
NOTES:
1. SEE STANDARD DETAIL DRAWING "CURB RAMPS TYPE 2 AND TYPE 3", FOR ALL OTHER PERTINENT INFORMATION.
2. REFER TO POINT COORDINATES AND GRADES.
3. REMOVE AND REPLACE 6-FEET OF EXISTING CURB & GUTTER WITH 30-INCH CURB & GUTTER.



KEY PLAN

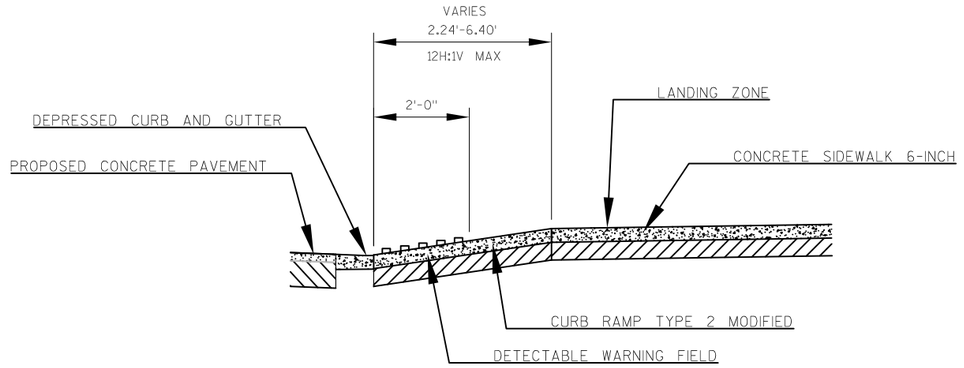
LEGEND
DIRECTION OF FLOW

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CONSTRUCTION DETAILS: CURB RAMPS	SHEET 4	E



PLAN VIEW

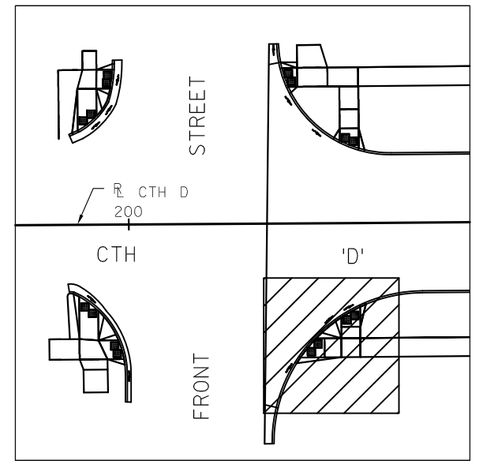
CTH D & N. FRONT ST INTERSECTION,
SE QUADRANT CURB RAMP DETAIL



SECTION C-C & D-D
CURB RAMP TYPE 2 MODIFIED

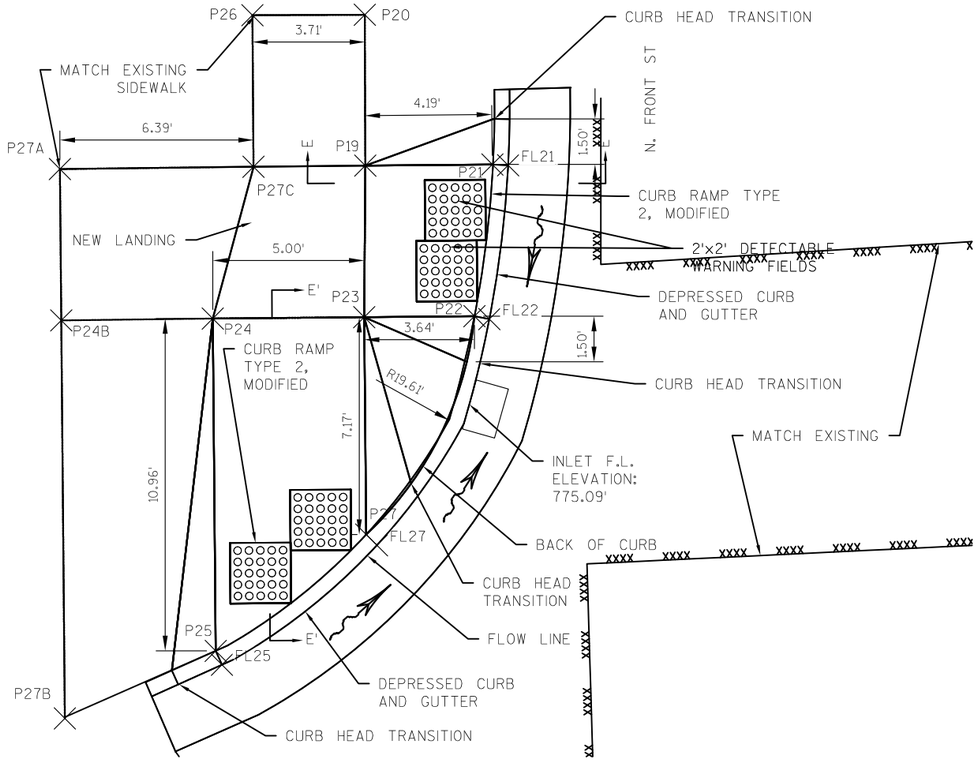
NOTES:
1. SEE STANDARD DETAIL DRAWING "CURB RAMPS TYPE 2 AND TYPE 3", FOR ALL OTHER PERTINENT INFORMATION.
2. REFER TO POINT COORDINATES AND GRADES.
3. REMOVE AND REPLACE 6-FEET OF EXISTING CURB & GUTTER WITH 30-INCH CURB & GUTTER.

LEGEND
DIRECTION OF FLOW

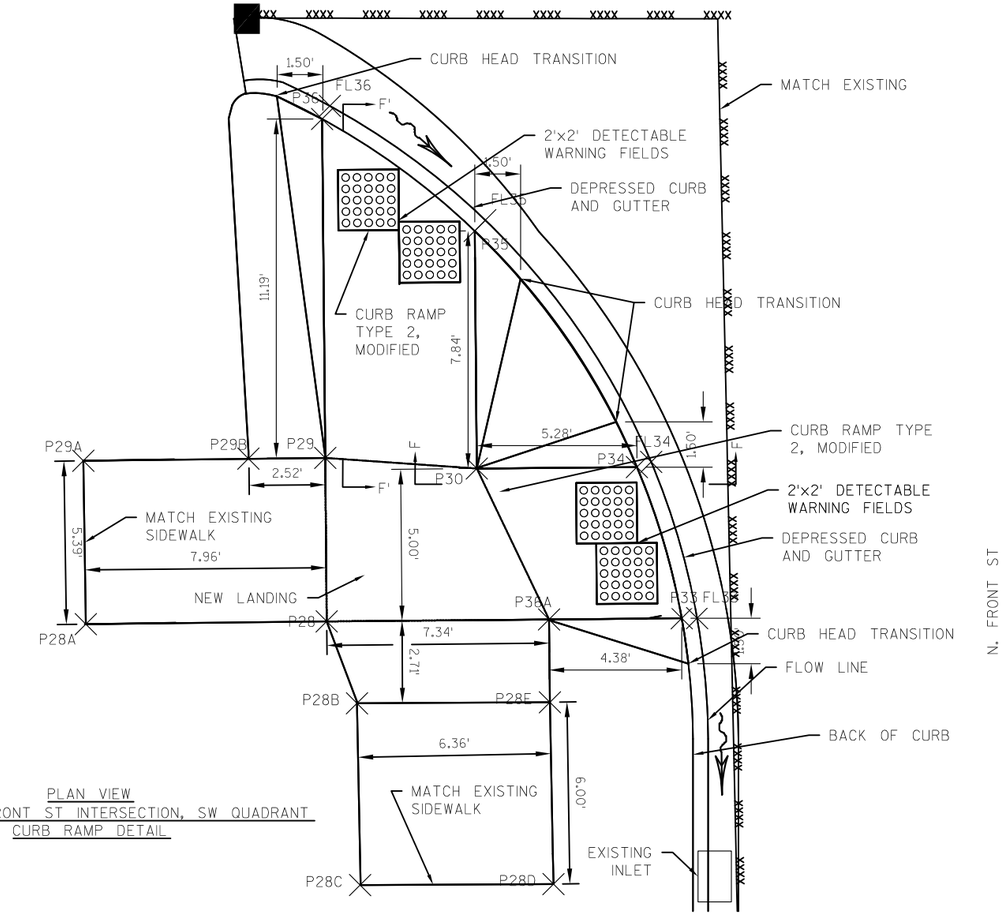


KEY PLAN

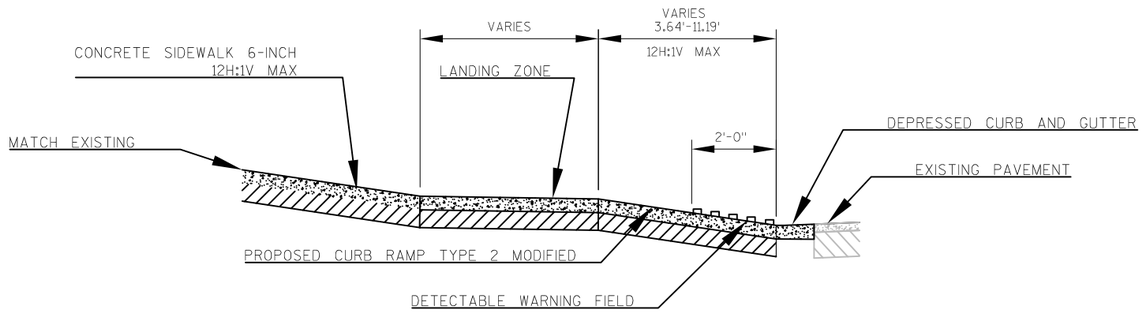
PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CONSTRUCTION DETAILS: CURB RAMPS	SHEET 5	E



PLAN VIEW
CTH D & N. FRONT ST INTERSECTION, NW QUADRANT
CURB RAMP DETAIL



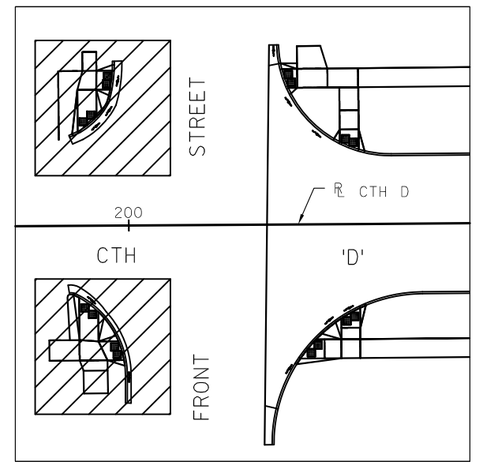
PLAN VIEW
CTH D & N. FRONT ST INTERSECTION, SW QUADRANT
CURB RAMP DETAIL



SECTION E-E & E'-E'
SECTION F-F & F'-F'
CURB RAMP TYPE 2 MODIFIED

NOTES:
1. SEE STANDARD DETAIL DRAWING "CURB RAMPS TYPE 2 AND TYPE 3", FOR ALL OTHER PERTINENT INFORMATION.
2. REFER TO POINT COORDINATES AND GRADES.
3. REMOVE AND REPLACE 6-FEET OF EXISTING CURB & GUTTER WITH 30-INCH CURB & GUTTER.

LEGEND
DIRECTION OF FLOW



KEY PLAN

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CONSTRUCTION DETAILS: CURB RAMPS	SHEET 6	E

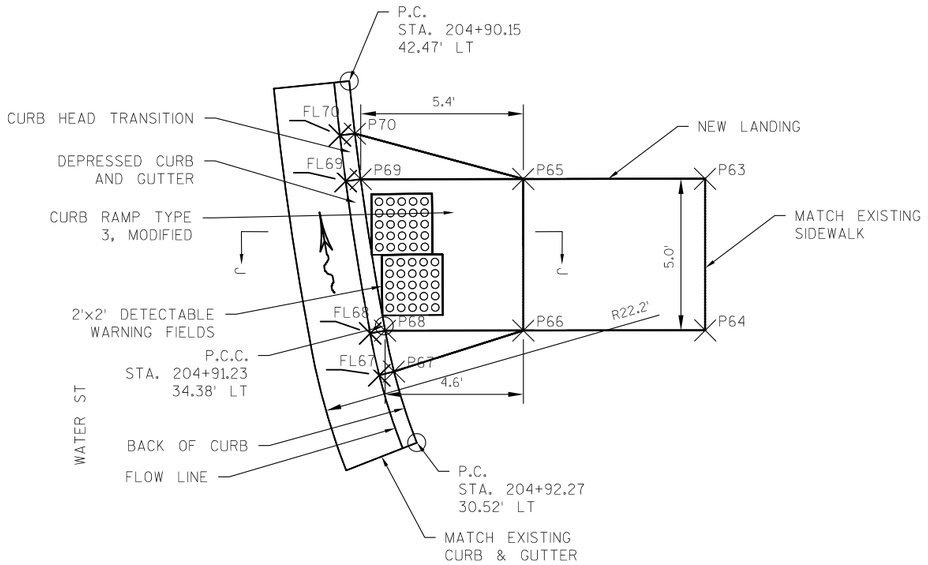
CURB RAMP POINTS LAYOUT TABLE

CTH D & FRONT ST INTERSECTION, NE QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (LT)		
P1	200+60.78	33.21	775.28	EDGE OF CONCRETE SIDEWALK
P2	200+59.91	25.05	775.16	BEGIN CURB RAMP
P3	200+54.91	25.04	775.17	BEGIN CURB RAMP
P4	200+59.92	20.05	774.86	END CURB RAMP
P5	200+54.92	22.26	774.96	END CURB RAMP
P6	200+55.81	23.53	775.04	BEGIN CURB RAMP
P7	200+60.81	23.53	775.04	BEGIN CURB RAMP
P8	200+55.79	30.11	775.25	END CURB RAMP
P9	200+60.79	30.13	775.24	END CURB RAMP
P10	200+55.77	36.11	775.31	EDGE OF CONCRETE SIDEWALK
P11	200+60.77	36.12	775.33	EDGE OF CONCRETE SIDEWALK
P12	200+60.75	41.14	775.42	EDGE OF CONCRETE SIDEWALK
P13	200+55.75	41.12	775.37	EDGE OF CONCRETE SIDEWALK
P14	200+52.67	36.10	775.26	BEGIN CURB RAMP
P15	200+52.65	41.11	775.34	BEGIN CURB RAMP
P16	200+50.89	47.10	775.47	EDGE OF CONCRETE SIDEWALK
P17	200+44.63	47.08	775.29	EDGE OF CONCRETE SIDEWALK
P17A	200+45.91	41.08	775.22	BEGIN CURB RAMP
P17B	200+45.92	36.08	775.14	BEGIN CURB RAMP
P17C	200+42.32	36.07	775.03	END CURB RAMP
P17D	200+40.63	41.06	775.16	END CURB RAMP
FL17D	200+40.07	40.92	775.13	FLOW LINE ELEVATION
FL17C	200+41.87	35.87	775.01	FLOW LINE ELEVATION
FL5	200+55.58	21.34	774.94	FLOW LINE ELEVATION
FL4	200+60.67	19.29	774.84	FLOW LINE ELEVATION

CTH D & FRONT ST INTERSECTION, NW QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (LT)		
P19	199+91.68	40.87	775.37	BEGIN CURB RAMP
P20	199+91.69	45.84	775.72	TOP OF WALK
P21	199+95.87	40.88	775.23	END CURB RAMP
P22	199+95.25	35.88	775.20	END CURB RAMP
P23	199+91.62	35.87	775.33	BEGIN CURB RAMP
P24	199+86.62	35.85	775.43	BEGIN CURB RAMP
P24B	199+81.62	35.82	775.82	TOP OF WALK
P25	199+86.65	24.89	775.25	END CURB RAMP
P26	199+87.98	45.85	775.78	TOP OF WALK
P27	199+91.64	28.70	775.19	END CURB RAMP
P27A	199+81.60	40.83	775.84	TOP OF WALK
P27B	199+81.66	22.69	775.79	END CURB RAMP
P27C	199+87.99	40.85	775.43	TOP OF WALK
FL21	199+96.39	40.85	775.22	FLOW LINE ELEVATION
FL22	199+95.74	35.78	775.18	FLOW LINE ELEVATION
FL25	199+86.86	24.43	775.23	FLOW LINE ELEVATION
FL27	199+91.99	28.34	775.18	FLOW LINE ELEVATION

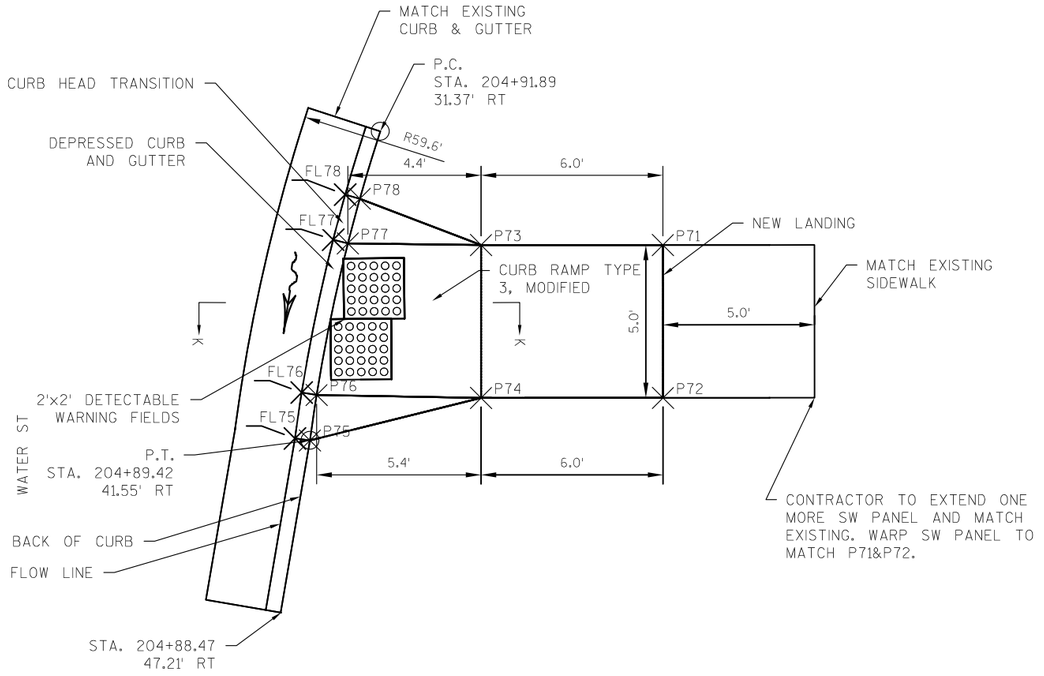
CTH D & FRONT ST INTERSECTION, SE QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (RT)		
P37	200+55.96	27.35	775.16	BEGIN CURB RAMP
P38	200+60.96	27.33	775.06	BEGIN CURB RAMP
P38A	200+60.94	30.33	775.31	TOP OF WALK
P38B	200+60.94	35.33	775.41	TOP OF WALK
P39	200+55.95	24.84	774.98	END CURB RAMP
P40	200+60.94	22.09	774.82	END CURB RAMP
P41	200+55.97	30.35	775.41	BEGIN CURB RAMP
P42	200+55.94	35.35	775.44	BEGIN CURB RAMP
P42A	200+45.08	35.38	775.39	END CURB RAMP
P42B	200+49.23	30.37	775.30	END CURB RAMP
P42C	200+51.48	30.36	775.32	TOP OF WALK
P42D	200+51.49	35.36	775.42	TOP OF WALK
FL39	200+55.69	24.42	774.96	FLOW LINE ELEVATION
FL40	200+60.73	21.63	774.79	FLOW LINE ELEVATION
FL42A	200+44.67	35.09	775.36	FLOW LINE ELEVATION
FL42B	200+48.87	30.01	775.29	FLOW LINE ELEVATION

CTH D & FRONT ST INTERSECTION, SW QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (RT)		
P28	199+86.84	35.56	775.65	TOP OF SIDEWALK
P28A	199+78.89	35.60	776.22	TOP OF SIDEWALK
P28B	199+87.82	38.26	775.83	TOP OF SIDEWALK
P28C	199+87.89	44.26	776.30	TOP OF SIDEWALK
P28D	199+94.27	44.27	776.23	TOP OF SIDEWALK
P28E	199+94.19	38.27	775.75	TOP OF SIDEWALK
P29	199+86.82	30.16	775.71	BEGIN CURB RAMP
P29A	199+78.84	30.21	776.35	TOP OF SIDEWALK
P29B	199+84.29	30.18	775.94	TOP OF SIDEWALK
P30	199+91.82	30.54	775.63	BEGIN CURB RAMP
P33	199+98.55	35.52	775.33	END CURB RAMP
P34	199+97.10	30.52	775.55	END CURB RAMP
P35	199+92.15	23.35	775.65	END CURB RAMP
P36	199+86.79	18.98	775.66	END CURB RAMP
P36A	199+94.18	35.53	775.54	BEGIN CURB RAMP
FL33	199+99.07	35.52	775.31	FLOW LINE ELEVATION
FL34	199+97.58	30.36	775.53	FLOW LINE ELEVATION
FL35	199+92.15	22.35	775.58	FLOW LINE ELEVATION
FL36	199+87.04	18.55	775.63	FLOW LINE ELEVATION



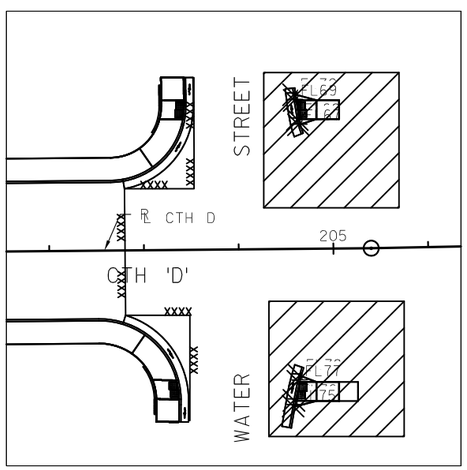
PLAN VIEW

CTH D & WATER ST INTERSECTION
NE QUADRANT CURB RAMP DETAIL

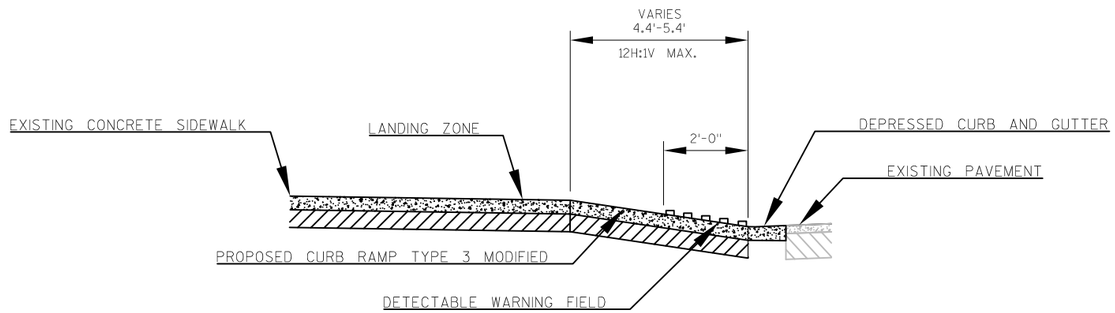


PLAN VIEW

CTH D & WATER ST INTERSECTION
SE QUADRANT CURB RAMP DETAIL



KEY PLAN

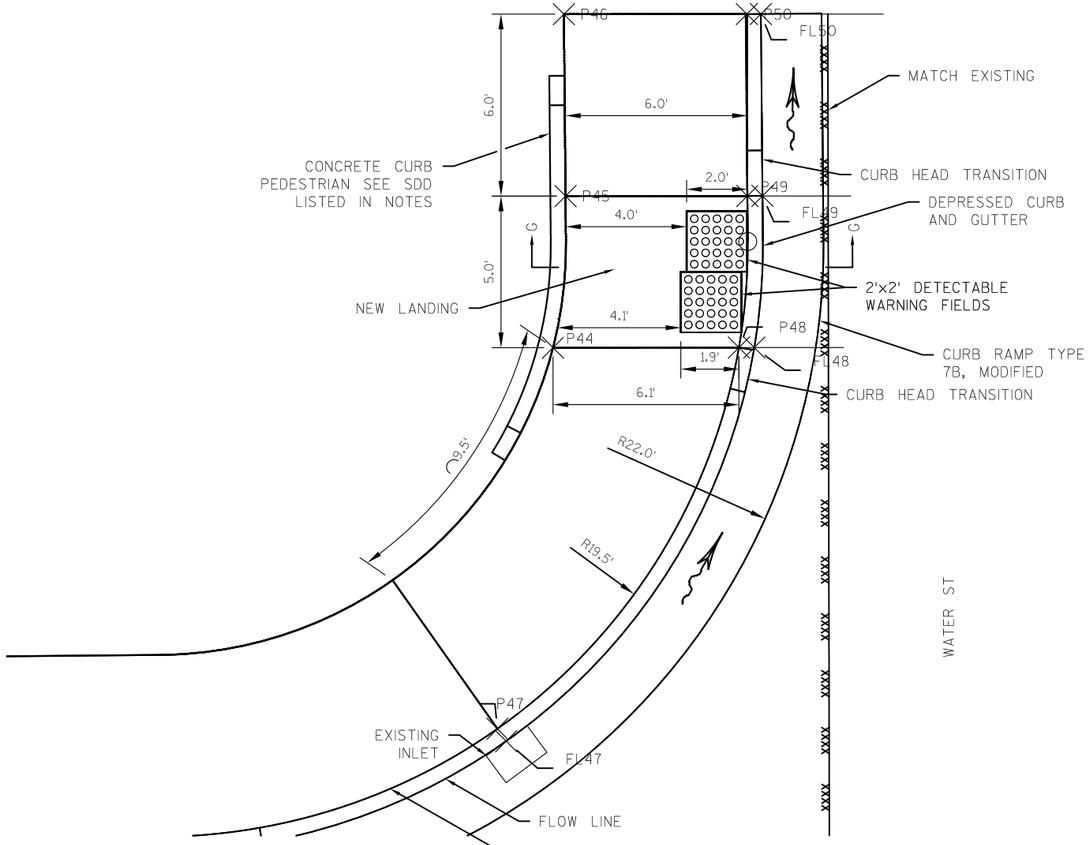


SECTION J-J & K-K

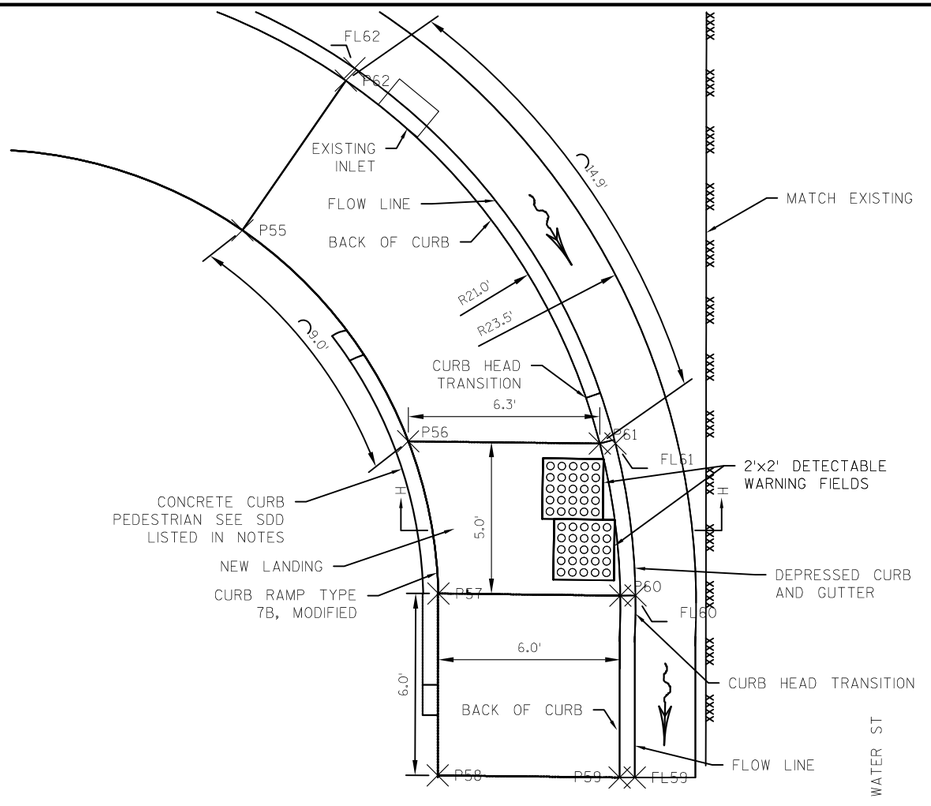
NOTES:
1. SEE STANDARD DETAIL DRAWING "CURB RAMPS TYPE 2 AND 3", FOR ALL OTHER PERTINENT INFORMATION.
2. REFER TO POINT COORDINATES AND GRADES.
3. REMOVE AND REPLACE 6-FEET OF EXISTING CURB & GUTTER WITH 30-INCH CURB & GUTTER.

LEGEND
DIRECTION OF FLOW

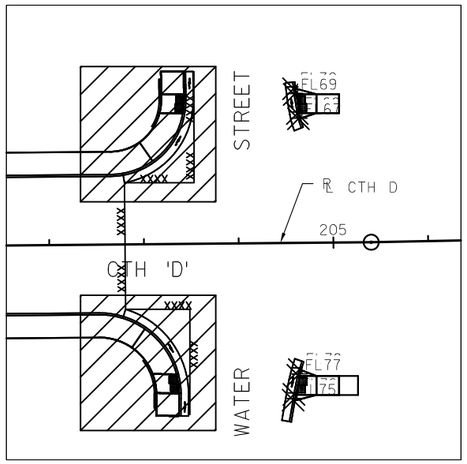
PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CONSTRUCTION DETAILS: CURB RAMPS	SHEET 8	E



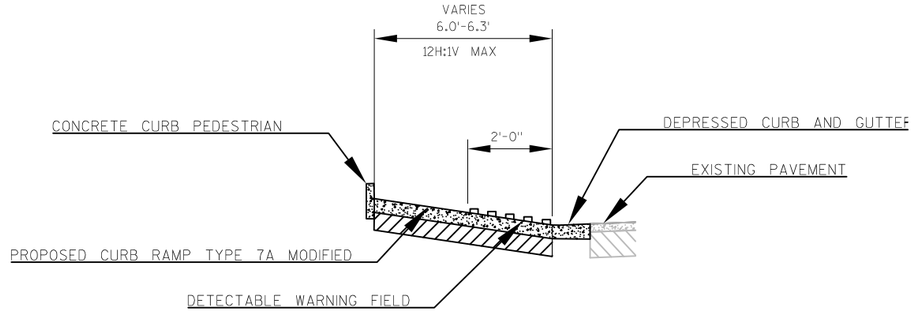
PLAN VIEW
CTH D & WATER ST INTERSECTION
NW QUADRANT CURB RAMP DETAIL



PLAN VIEW
CTH D & WATER ST INTERSECTION
SW QUADRANT CURB RAMP DETAIL



KEY PLAN



SECTION G-G & H-H

NOTES:
1. SEE STANDARD DETAIL DRAWING "CURB RAMPS TYPE 5, 6, 7A, 7B & 8", FOR ALL OTHER PERTINENT INFORMATION.
2. REFER TO POINT COORDINATES AND GRADES.
3. REMOVE AND REPLACE 6-FEET OF EXISTING CURB & GUTTER WITH 30-INCH CURB & GUTTER.

LEGEND
DIRECTION OF FLOW

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CONSTRUCTION DETAILS: CURB RAMPS	SHEET 9	E

CURB RAMP POINTS LAYOUT TABLE

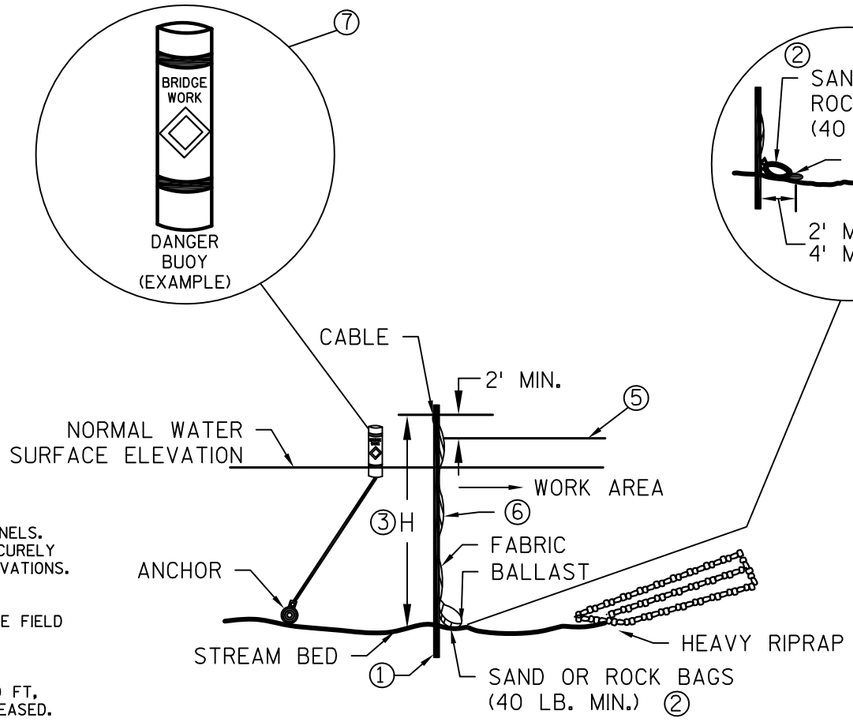
CTH D & WATER ST INTERSECTION, NE QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (LT)		
P63	205+01.86	39.14	775.03	TOP OF WALK
P64	205+01.82	34.15	775.11	TOP OF WALK
P65	204+95.86	39.19	775.13	BEGIN CURB RAMP
P66	204+95.82	34.19	775.07	BEGIN CURB RAMP
P67	204+91.54	32.89	775.26	END CURB RAMP
P68	204+91.26	34.23	774.70	END CURB RAMP
P69	204+90.50	39.23	774.67	END CURB RAMP
P70	204+90.32	40.73	775.13	END CURB RAMP
FL67	204+91.05	32.76	774.76	FLOW LINE ELEVATION
FL68	204+90.77	34.14	774.69	FLOW LINE ELEVATION
FL69	204+90.00	39.17	774.66	FLOW LINE ELEVATION
FL70	204+89.82	40.68	774.63	FLOW LINE ELEVATION

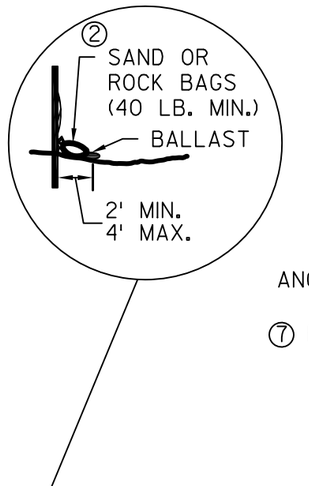
CTH D & WATER ST INTERSECTION, NW QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (LT)		
P44	204+54.41	34.52	775.03	BEGIN CURB RAMP
P45	204+54.87	39.52	774.96	BEGIN CURB RAMP
P46	204+54.87	45.52	775.00	TOP OF SIDEWALK
P47	204+52.46	21.97	775.32	END CURB RAMP
P48	204+60.54	34.47	774.94	END CURB RAMP
P49	204+60.87	39.47	774.81	END CURB RAMP
P50	204+60.90	45.47	774.91	END CURB RAMP
FL47	204+52.75	21.55	775.08	FLOW LINE ELEVATION
FL48	204+61.05	34.47	774.93	FLOW LINE ELEVATION
FL49	204+61.37	39.47	774.80	FLOW LINE ELEVATION
FL50	204+61.37	45.46	774.41	FLOW LINE ELEVATION

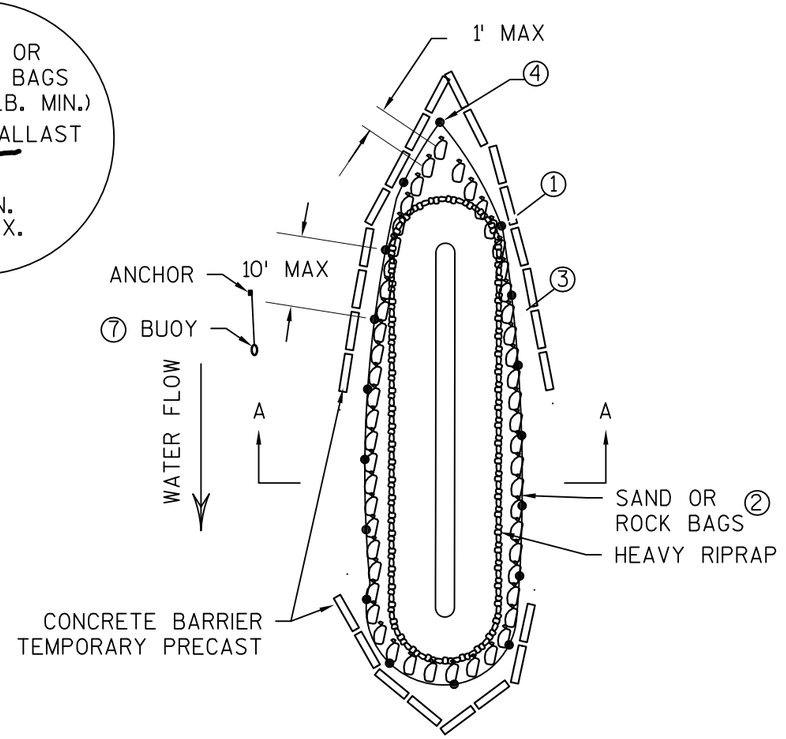
CTH D & WATER ST INTERSECTION, SE QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (RT)		
P71	205+01.18	35.20	775.00	TOP OF WALK
P72	205+01.14	40.25	775.10	TOP OF WALK
P73	204+95.18	35.15	775.10	BEGIN CURB RAMP
P74	204+95.14	40.19	775.02	BEGIN CURB RAMP
P75	204+89.48	41.55	775.44	END CURB RAMP
P76	204+89.72	40.05	774.98	END CURB RAMP
P77	204+90.79	35.06	775.02	END CURB RAMP
P78	204+91.20	33.59	775.51	END CURB RAMP
FL75	204+88.99	41.47	774.94	FLOW LINE ELEVATION
FL76	204+89.22	39.96	774.97	FLOW LINE ELEVATION
FL77	204+90.31	34.93	775.00	FLOW LINE ELEVATION
FL78	204+90.72	33.45	775.01	FLOW LINE ELEVATION

CTH D & WATER ST INTERSECTION, SW QUADRANT CURB RAMP				
POINT NO.	CTH D		ELEVATION	REMARKS
	STATION	OFFSET (RT)		
P55	204+46.57	27.24	775.72	TOP OF WALK
P56	204+51.99	34.25	775.01	BEGIN CURB RAMP
P57	204+52.93	39.28	774.96	BEGIN CURB RAMP
P58	204+52.86	45.28	775.22	TOP OF WALK
P59	204+58.86	45.40	775.19	END CURB RAMP
P60	204+58.93	39.40	774.87	END CURB RAMP
P61	204+58.30	34.38	774.97	END CURB RAMP
P62	204+50.03	22.33	775.63	END CURB RAMP
FL59	204+59.36	45.41	774.68	FLOW LINE ELEVATION
FL60	204+59.43	39.4	774.88	FLOW LINE ELEVATION
FL61	204+58.82	34.38	774.97	FLOW LINE ELEVATION
FL62	204+50.32	21.92	775.13	FLOW LINE ELEVATION

2







NOTES:

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

② SAND OR ROCK BAGS TO BE USED AS ADDITIONAL BALLAST TO MEET ADVERSE FIELD CONDITIONS. BAGS WILL BE PLACED CONTINUOUSLY ALONG THE BARRIER.

③ WHEN BARRIER HEIGHT, H. EXCEEDS 8.0 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.

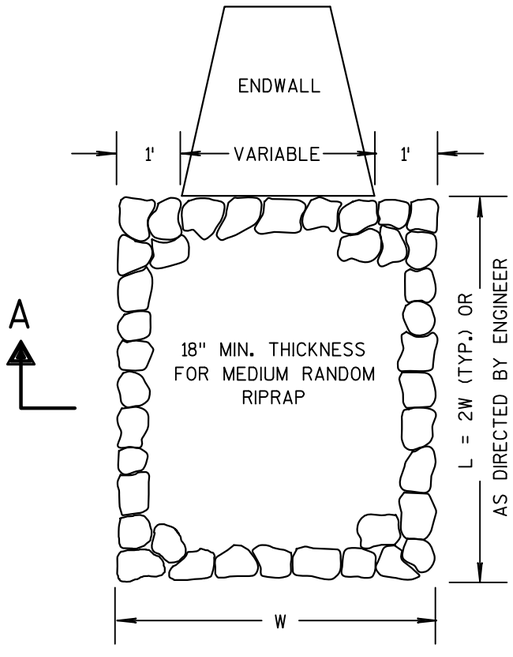
⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.

⑥ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

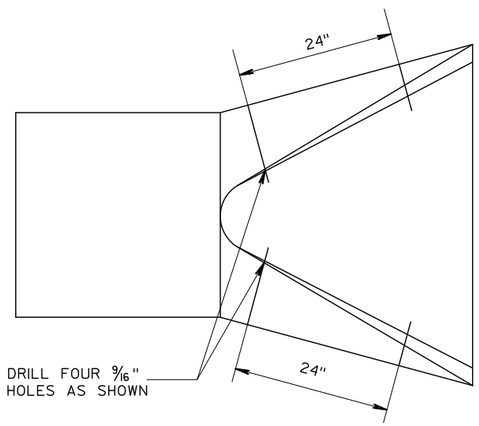
⑦ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.

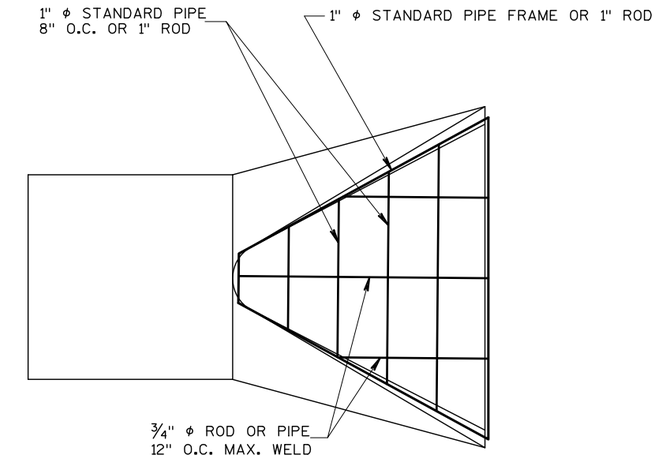
SEE STANDARD DETAIL O8E11-2 FOR ABUTMENT TURBIDITY BARRIER. SEE EROSION CONTROL FOR PLACEMENT OF TEMPORARY CONCRETE BARRIER.

SPECIAL TURBIDITY BARRIER AT PIERS

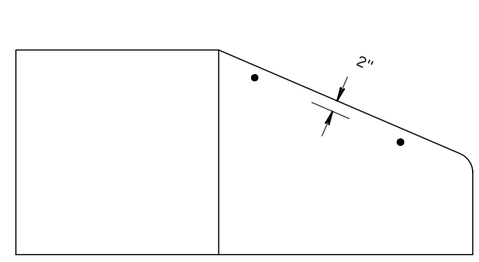


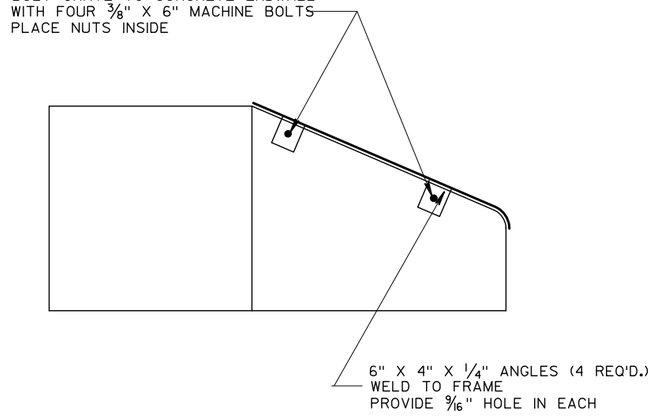
MEDIUM RIPRAP TREATMENT AT EXISTING CULVERT END

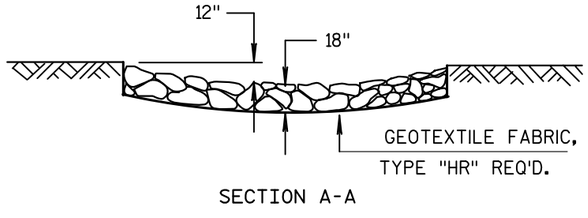




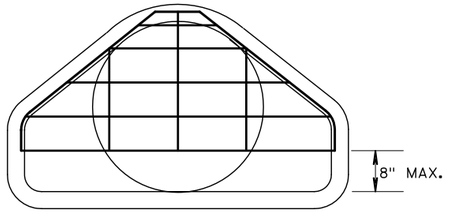
AT EACH PIPE



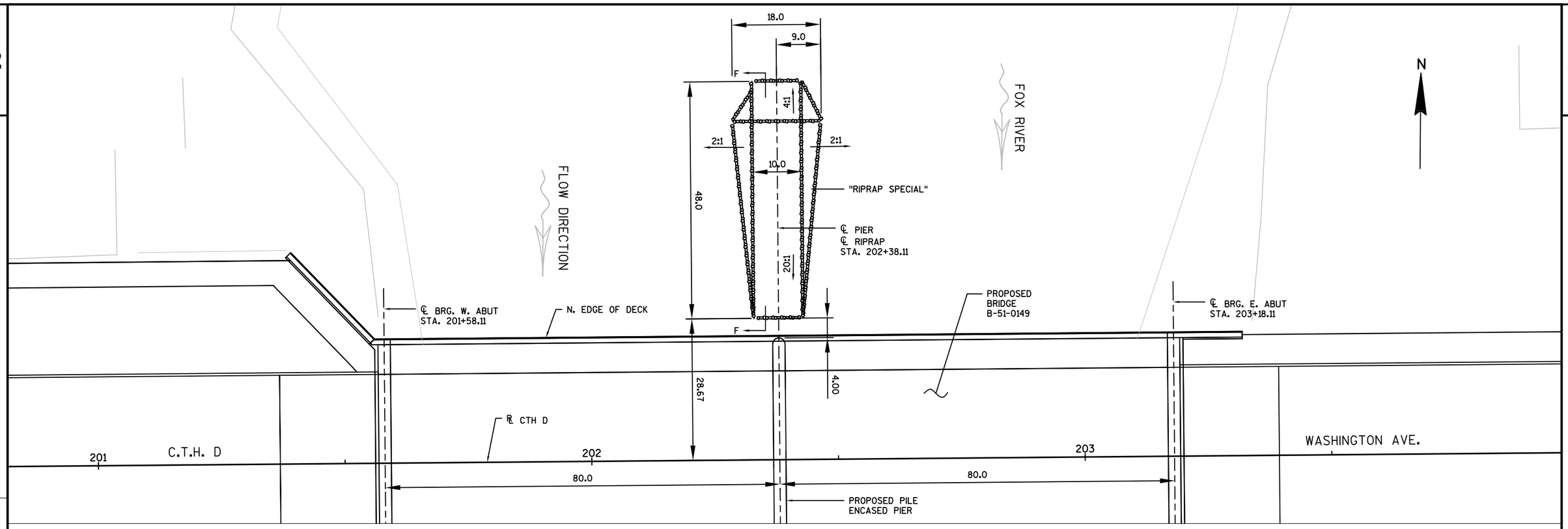


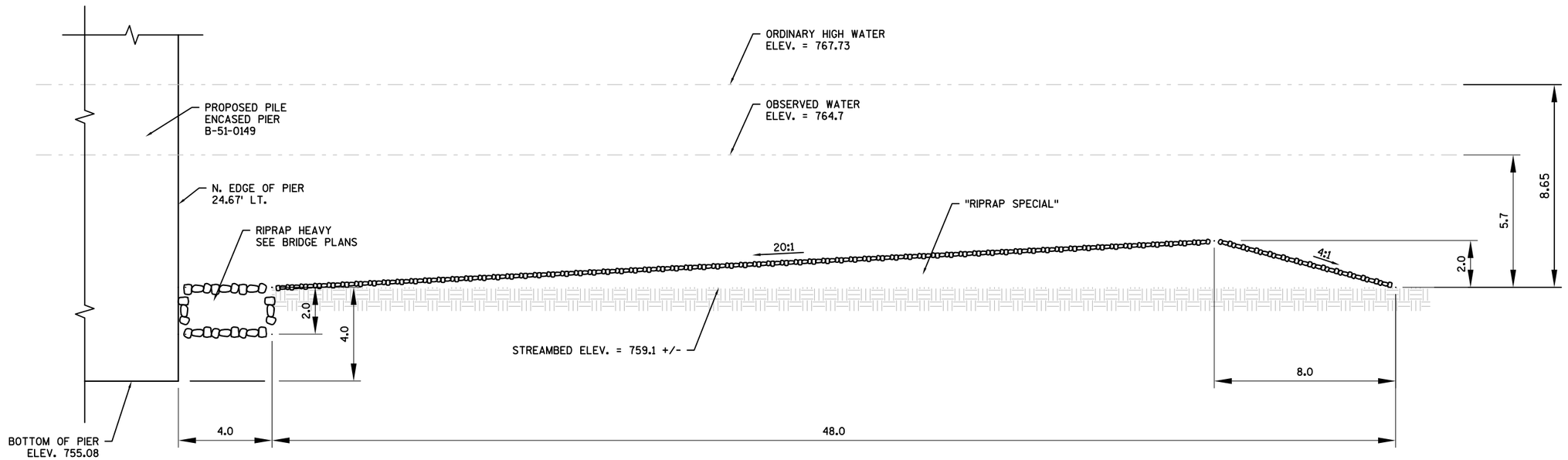


SECTION A-A



36" PIPE GRATE DETAIL

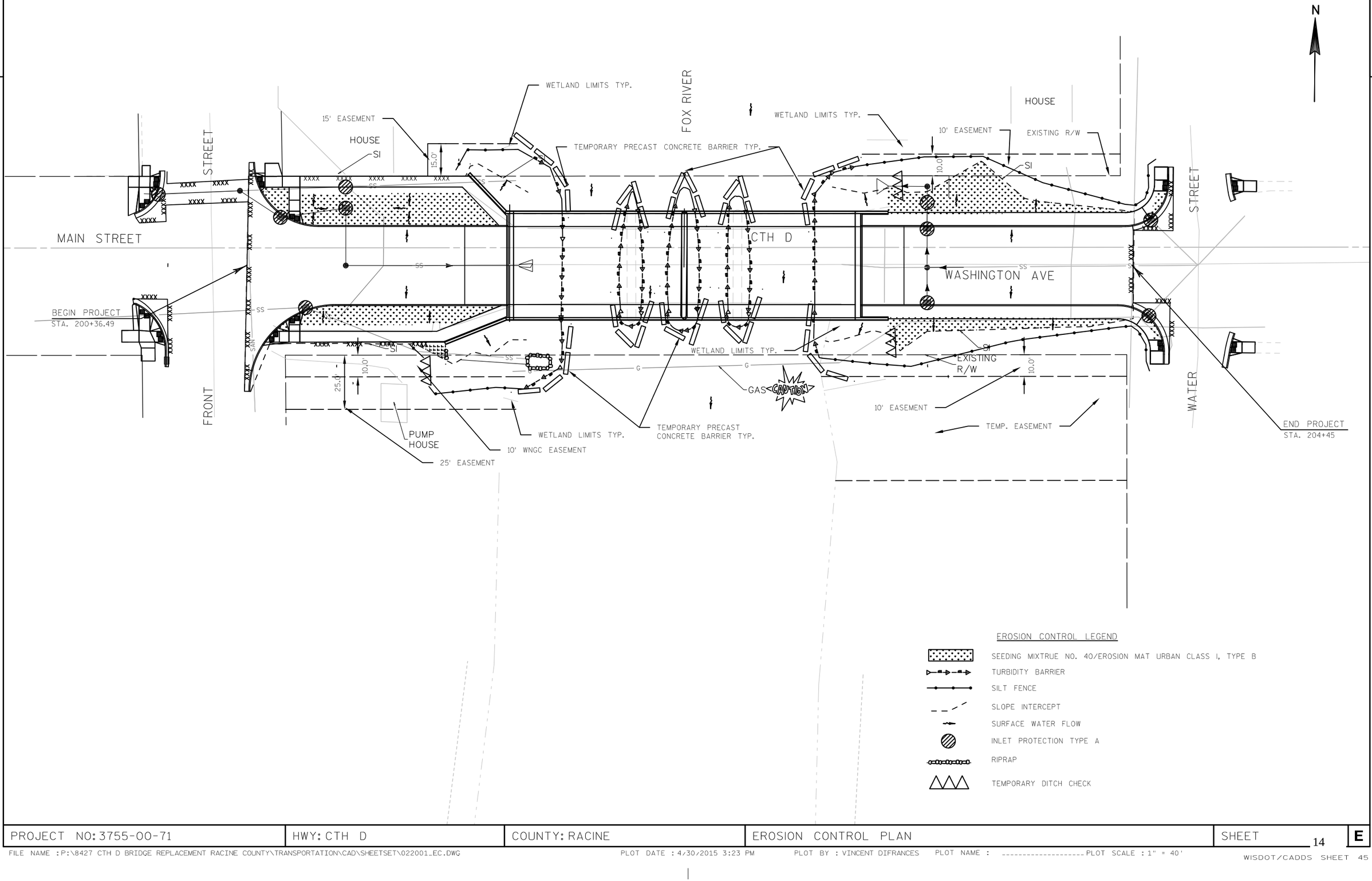




SECTION F-F

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	RIPRAP SPECIAL - FISH SPAWNING HABITAT	SHEET	E

2



EROSION CONTROL LEGEND

- SEEDING MIXTRUE NO. 40/EROSION MAT URBAN CLASS I, TYPE B
- TURBIDITY BARRIER
- SILT FENCE
- SLOPE INTERCEPT
- SURFACE WATER FLOW
- INLET PROTECTION TYPE A
- RIPRAP
- TEMPORARY DITCH CHECK

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	EROSION CONTROL PLAN	SHEET 14	E

FILE NAME : P:\8427 CTH D BRIDGE REPLACEMENT RACINE COUNTY\TRANSPORTATION\CAD\SHEETSET\022001_EC.DWG PLOT DATE : 4/30/2015 3:23 PM PLOT BY : VINCENT DIFRANCES PLOT NAME : ---------- PLOT SCALE : 1" = 40'
WISDOT/CADDS SHEET 45

CONTRACTOR SHALL VERIFY EXISTING PIPE INVERTS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE DISCUSSED WITH ENGINEER.

STREET

HOUSE

REMOVE 8' OF 12" RCPSS. INSTALL 8' OF 12" RCPSS WITH CONCRETE COLLAR.

PRESERVE/PROTECT EXISTING CHAIN LINK FENCE

15' EASEMENT

MATCH EXISTING WALL

WETLAND LIMITS TYP.

FOX RIVER

MH - 6 FT. DIA. TYPE J
STA. 203+50, 36.51' LT

WETLAND LIMITS TYP.

10' EASEMENT

EXISTING R/W

HOUSE

OVERHEAD

N

STREET

GUY POLE

STA. 199+95, 32.54' LT
INLET 2X2.5; INLET COVER 'BW'

1.0

2.0 MH - 4 FT. DIA TYPE J
STA. 200+33.12, 34.35' LT

15.0'

SI

AEW - CCRP 36 IN.
STA. 203+26.10, 36.54' LT

11.0

9.0 MH - 6 FT. DIA. TYPE H
STA. 203+50, 17.50' LT

10.0'

INLETS - 4 FT. DIA TYPE HS
STA. 200+64.73, 17.9' LT

3.0

ABANDON RCPSS

REMOVE INLET AND PIPE

MAIN STREET

MANHOLE - 5 FT. DIA. TYPE C
STA. 200+82.0, 26.5' LT

4.0

REMOVE MANHOLE AND PIPE

CTH D

REMOVE INLET AND PIPE

8.0 MH - 6 FT. DIA. TYPE J
STA. 203+50, 0.87' RT

13.0 STA. 204+53, 20.9' LT
CB ADJUSTING REQ'D

200 201 202 203 204 205

OVERHEAD

BEGIN PROJECT
STA. 200+36.49

MH - 4 FT. DIA. TYPE J
STA. 200+82.0, 0.0' LT

5.0

REMOVE 12" RCP

5.1 AEW - CCRP 18 IN.
STA. 201+67.93', 0.0' LT
UNDER PROPOSED ABUTMENT

REMOVE MANHOLE AND PIPE

WASHINGTON AVE

7.0 INLETS - 2X3 FT. TYPE H
STA. 203+50, 17.49' RT

12.0 STA. 204+52, 23.2' RT
CB ADJUSTING REQ'D

INLETS 4-FT DIAMETER WITH COVER TYPE H
STA. 200+63.48, 19.9' RT

6.0

REMOVE INLET AND PIPE

WETLAND LIMITS TYP.

SI

GUY POLE

6.1

GV

RECONSTRUCTING INLET
STA. 200+00.0, 44.0' RT

REMOVE 8' OF 18" RCPSS. INSTALL 8' OF 18" RCPSS WITH CONCRETE COLLAR.

FRONT

ELECTRIC

25.0'

10.0'

PLACE RIPRAP MEDIUM AT END OF EXISTING OUTFLOW PIPE

GAS

CAUTION

EXISTING R/W

10' EASEMENT

WATER

REMOVE 8' OF 24" RCPSS. INSTALL 8' OF 24" RCPSS WITH CONCRETE COLLAR.

PRESERVE/PROTECT EXISTING CHAIN LINK FENCE

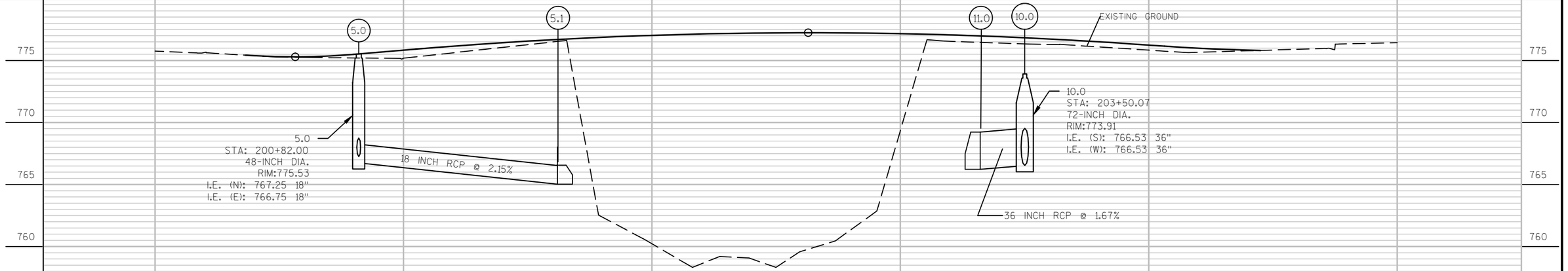
PUMP HOUSE

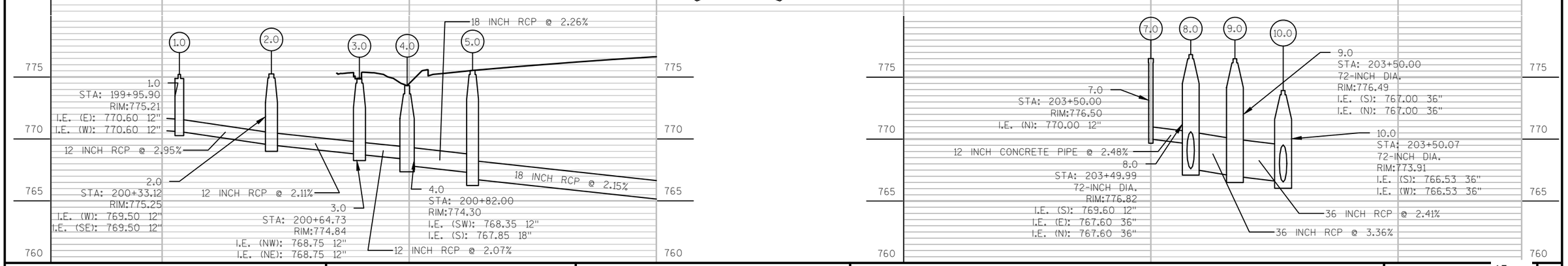
10' WNGC EASEMENT

WETLAND LIMITS TYP.
25' EASEMENT

CONTRACTOR SHALL VERIFY EXISTING PIPE INVERTS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE DISCUSSED WITH ENGINEER.

END PROJECT
STA. 204+45.00





PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	STORM SEWER PLAN & PROFILE	SHEET 15 E

2

N

BEGIN PROJECT
STA. 200+36.49

1 — COUNTY W — M1-5A 24"X24"
M6-4 21"X21"

2 — STOP — R1-1 30"X30"

3 — COUNTY D
MOVING SIGN & MOVING SIGN SUPPORT

4 — STOP
MOVING SIGN & MOVING SIGN SUPPORT

5 — COUNTY D — M1-5A 24"X24"
SPEED LIMIT 25 — R2-1 24"X30"

6 — BIKE ROUTE — D11-1 24"X18"
END — M4-6 24"X12"

7 — BIKE ROUTE — D11-1 24"X18"

8 — NO PARKING HERE TO CORNER
MOVING SIGN & MOVING SIGN SUPPORT

9 — JCT — M2-1 21"X15"
COUNTY W — M1-5A 24"X24"

10 — E MAIN ST / N WATER ST
MOVE & REUSE

11 — E MAIN ST / N WATER ST
MOVING SIGN & MOVING SIGN SUPPORT

12 — STOP
MOVING SIGN & MOVING SIGN SUPPORT

13 — STOP
MOVING SIGN & MOVING SIGN SUPPORT

END PROJECT
STA. 204+45.00

REMOVE: COUNTY W; BIKE ROUTE / END; STOP; COUNTY D / SPEED LIMIT 25; BIKE ROUTE

REMAIN: JCT / COUNTY W; NO PARKING ANY TIME; WATERFORD INDUSTRIAL PARK

WETLAND LIMITS TYP.

10' EASEMENT

EXISTING R/W

10.0'

GAS CAUTION

GUY POLE

200 201 202 203 204 205

SIGNING LEGEND

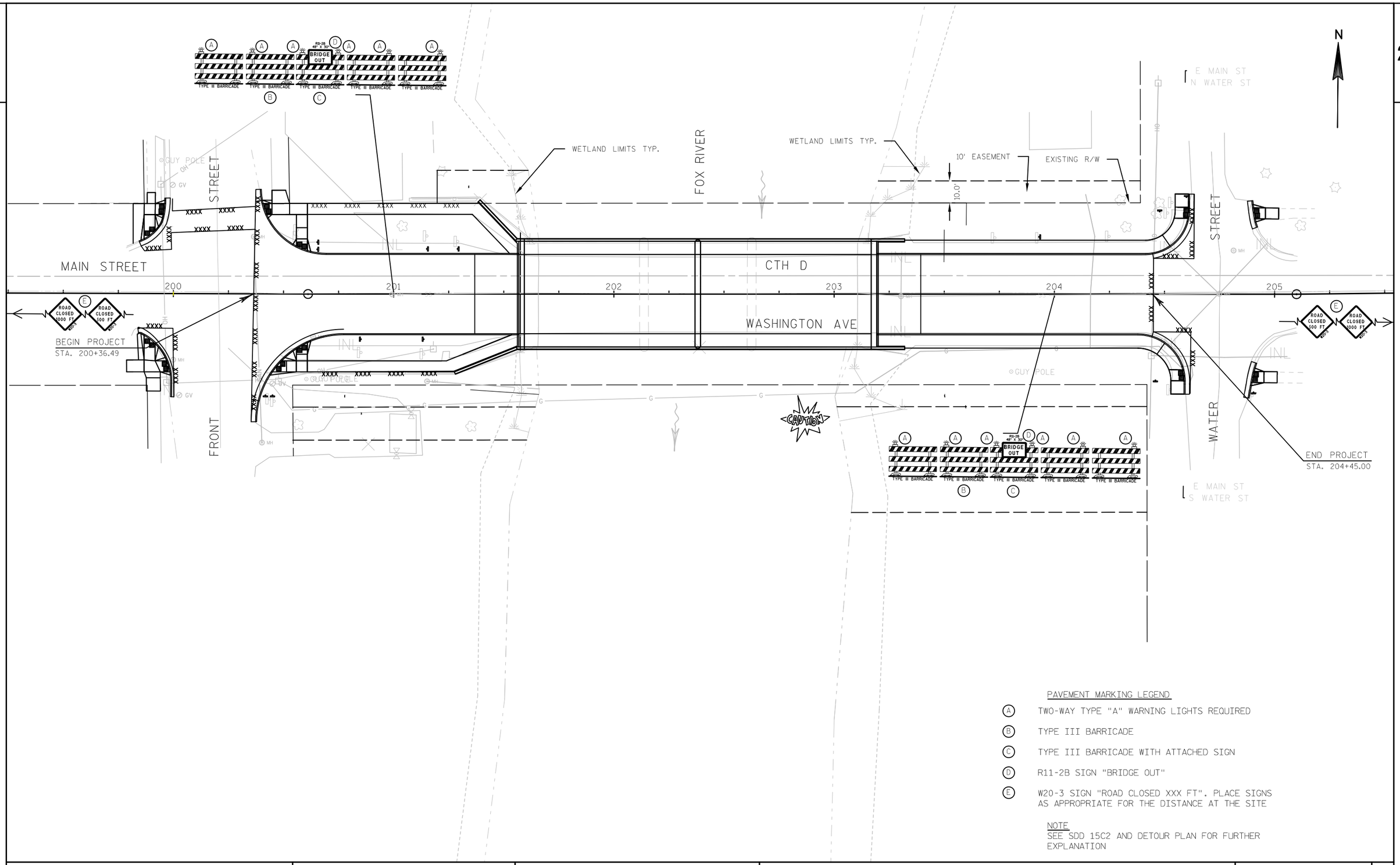
- (X) DENOTES SIGN NUMBER
- PROPOSED OR MOVED SIGN MOUNTED ON POST
- EXISTING SIGN MOUNTED ON POST

PAVEMENT MARKING LEGEND

- (A) PAVEMENT MARKING EPOXY 4-INCH, WHITE
- (B) PAVEMENT MARKING EPOXY 4-INCH, DOUBLE YELLOW
- (C) PAVEMENT MARKING CROSSWALK EPOXY 6-INCH
- (D) PAVEMENT MARKING STOP LINE EPOXY 12-INCH

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	PAVEMENT MARKING AND SIGNING	SHEET 16	E

FILE NAME : P:\8427 CTH D BRIDGE REPLACEMENT RACINE COUNTY\TRANSPORTATION\CAD\SHEETSET\024501_PM.DWG PLOT DATE : 4/30/2015 8:19 AM PLOT BY : VINCENT DIFRANCES PLOT NAME : ---------- PLOT SCALE : 1" = 40'



PAVEMENT MARKING LEGEND

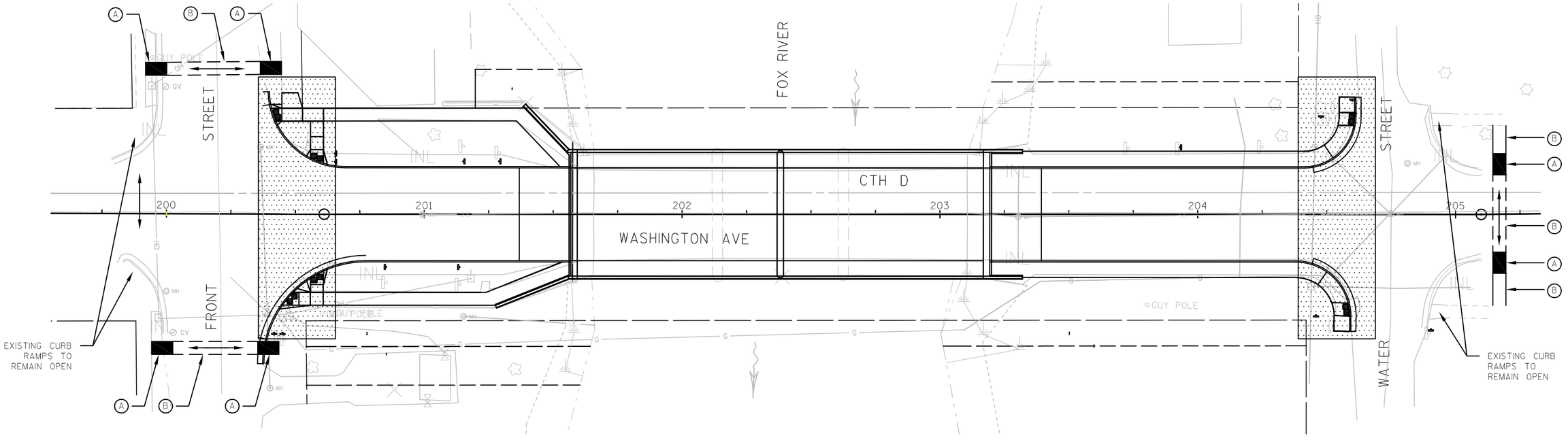
- (A) TWO-WAY TYPE "A" WARNING LIGHTS REQUIRED
- (B) TYPE III BARRICADE
- (C) TYPE III BARRICADE WITH ATTACHED SIGN
- (D) R11-2B SIGN "BRIDGE OUT"
- (E) W20-3 SIGN "ROAD CLOSED XXX FT". PLACE SIGNS AS APPROPRIATE FOR THE DISTANCE AT THE SITE

NOTE
SEE SDD 15C2 AND DETOUR PLAN FOR FURTHER EXPLANATION

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	TRAFFIC CONTROL	SHEET 17	E

FILE NAME : P:\8427 CTH D BRIDGE REPLACEMENT RACINE COUNTY\TRANSPORTATION\CAD\SHEETSET\025001_TC.DWG PLOT DATE : 4/30/2015 8:20 AM PLOT BY : VINCENT DIFRANCES PLOT NAME : ---------- PLOT SCALE : 1" = 40'
WISDOT/CADDS SHEET 45

2



PEDESTRIAN ACCOMODATION LEGEND

- PEDESTRIAN MOVEMENT
- (A) TEMPORARY CURB RAMP
- (B) TEMPORARY CROSSWALK/SIDEWALK
- CURB RAMP CONSTRUCTION AREA (THIS STAGE)

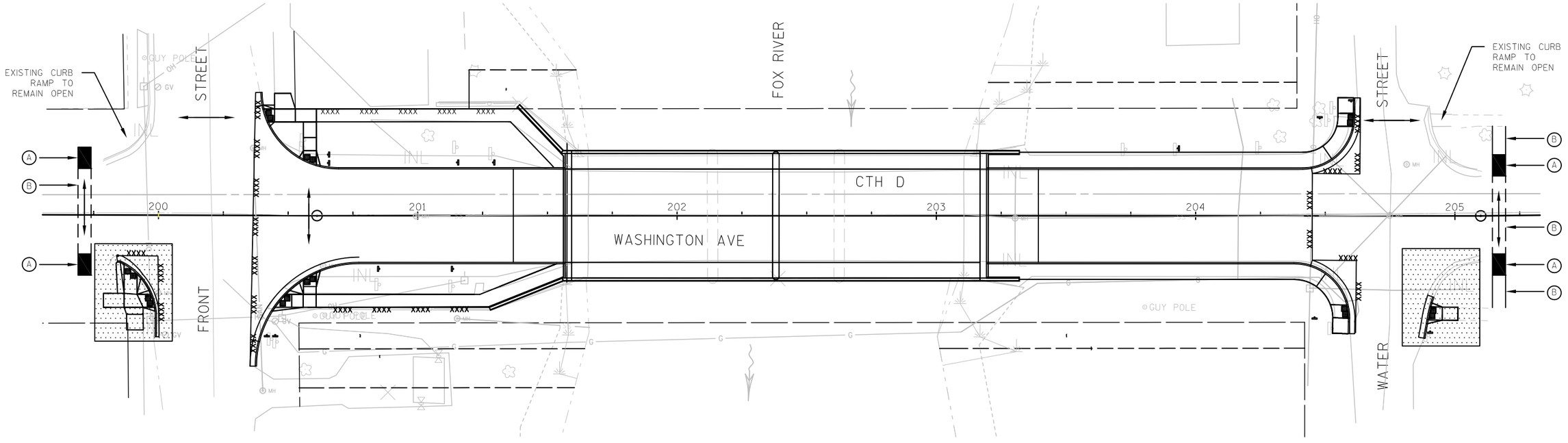
GENERAL NOTES

REFER TO STANDARD DETAIL DRAWING "TRAFFIC CONTROL, PEDESTRIAN ACCOMODATION" FOR SIDEWALK CLOSURE DETAILS.

IMPLEMENT FLAGGING OPERATIONS WHERE CONCRETE PLACEMENT AND STORM SEWER WORK ENCROACHES INTO ROADWAY SHOULDER.

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	PEDESTRIAN ACCOMODATION - STAGE 1	SHEET 18	E

2



PEDESTRIAN ACCOMODATION LEGEND

- PEDESTRIAN MOVEMENT
- (A) TEMPORARY CURB RAMP
- (B) TEMPORARY CROSSWALK/SIDEWALK
- CURB RAMP CONSTRUCTION AREA (THIS STAGE)

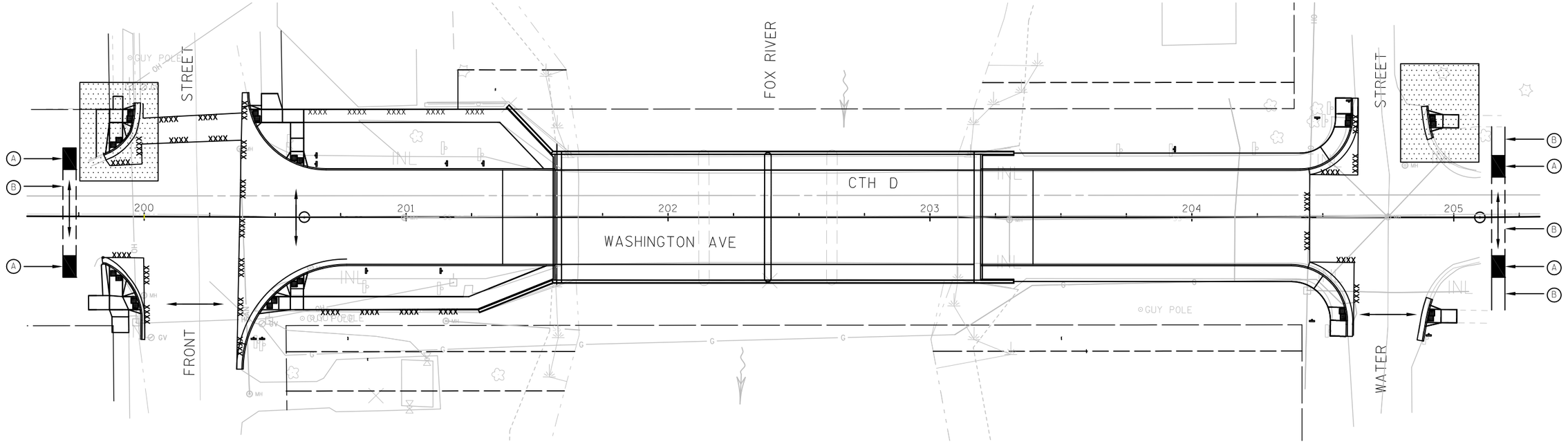
GENERAL NOTES

REFER TO STANDARD DETAIL DRAWING "TRAFFIC CONTROL, PEDESTRIAN ACCOMODATION" FOR SIDEWALK CLOSURE SIGNING AND DETAILS.

IMPLEMENT FLAGGING OPERATIONS WHERE CONCRETE PLACEMENT AND STORM SEWER WORK ENCROACHES INTO ROADWAY SHOULDER.

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	PEDESTRIAN ACCOMODATION - STAGE 2	SHEET 19	E

2



PEDESTRIAN ACCOMODATION LEGEND

- PEDESTRIAN MOVEMENT
- (A) TEMPORARY CURB RAMP
- (B) TEMPORARY CROSSWALK/SIDEWALK
- CURB RAMP CONSTRUCTION AREA (THIS STAGE)

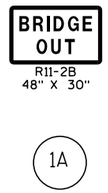
GENERAL NOTES

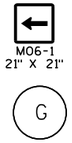
REFER TO STANDARD DETAIL DRAWING "TRAFFIC CONTROL, PEDESTRIAN ACCOMODATION" FOR SIDEWALK CLOSURE SIGNING AND DETAILS.

IMPLEMENT FLAGGING OPERATIONS WHERE CONCRETE PLACEMENT AND STORM SEWER WORK ENCROACHES INTO ROADWAY SHOULDER.

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	PEDESTRIAN ACCOMODATION - STAGE 3	SHEET 20	E

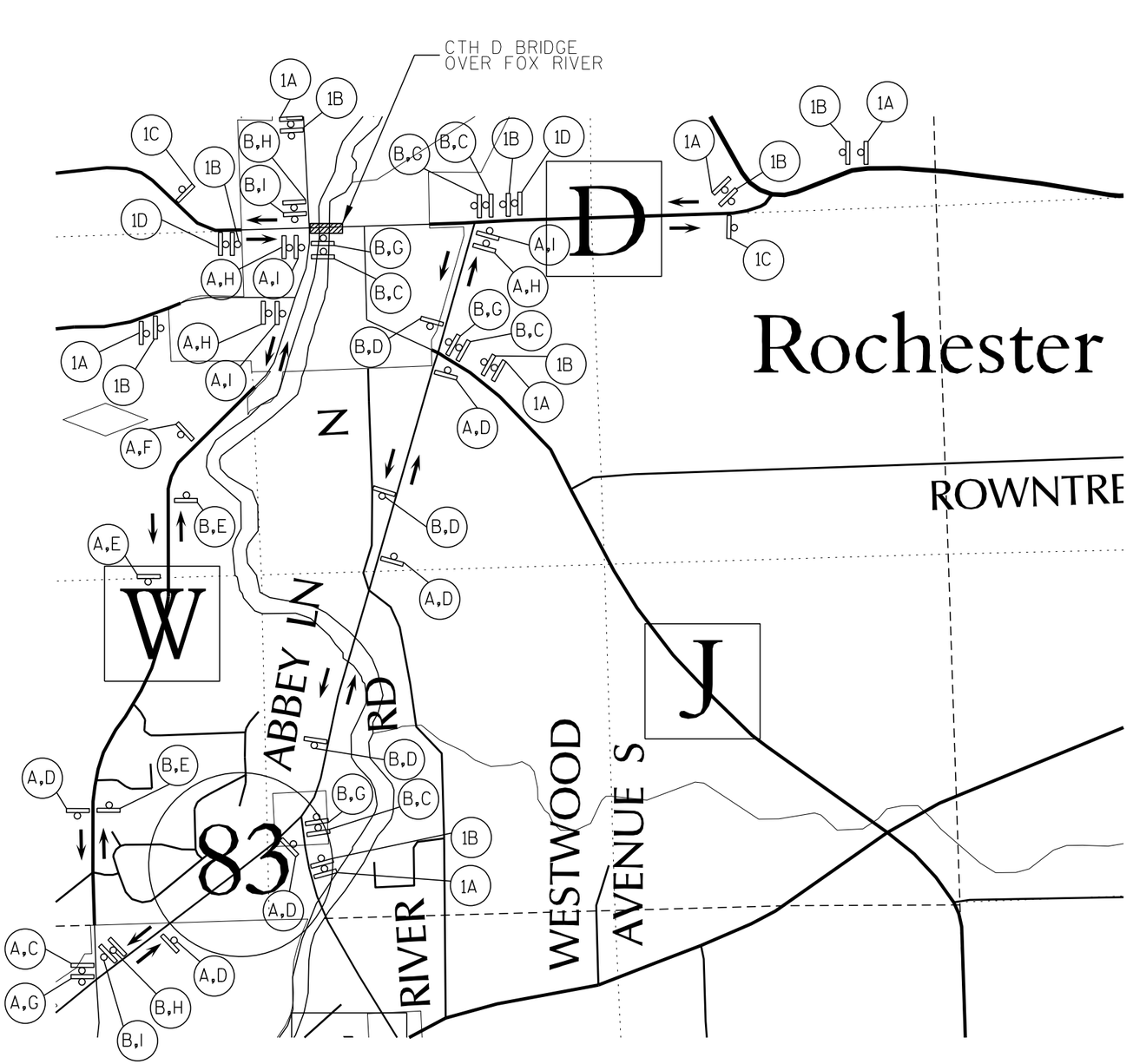
2





NOTES

1. CONTRACTOR SHALL PROVIDE ACCESS WITHIN WORK AREA TO LOCAL TRAFFIC AND EMERGENCY VEHICLES AT ALL TIMES.
2. THE ERECTION AND PLACEMENT OF SIGNS SHALL BE IN ACCORDANCE WITH SDD AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
3. REMOVE OR COVER EXISTING SIGNS THAT CONFLICT WITH DETOUR ROUTE.
4. SEE STANDARD DETAIL DRAWINGS FOR LOCAL ROAD AND ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.



PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	DETOUR PLAN: CTH D BRIDGE OVER FOX RIVER	SHEET 21	E

DATE 25AUG15 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	3755-00-71 QUANTITY
0010	201.0105	Clearing	STA	4.000	4.000
0020	201.0205	Grubbing	STA	4.000	4.000
0030	203.0210.S	Abatement of Asbestos Containing Material (structure) 01. B-51-0149	LS	1.000	1.000
0040	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 202+38.11	LS	1.000	1.000
0050	204.0100	Removing Pavement	SY	45.000	45.000
0060	204.0150	Removing Curb & Gutter	LF	681.000	681.000
0070	204.0155	Removing Concrete Sidewalk	SY	444.000	444.000
0080	204.0210	Removing Manholes	EACH	2.000	2.000
0090	204.0215	Removing Catch Basins	EACH	6.000	6.000
0100	204.0245	Removing Storm Sewer (size) 01. 12-INCH	LF	161.000	161.000
0110	204.0245	Removing Storm Sewer (size) 02. 18-INCH	LF	85.000	85.000
0120	204.0245	Removing Storm Sewer (size) 03. 24-INCH	LF	20.000	20.000
0130	204.0245	Removing Storm Sewer (size) 04. 36-INCH	LF	48.000	48.000
0140	204.0291.S	Abandoning Sewer	CY	4.000	4.000
0150	205.0100	Excavation Common	CY	700.000	700.000
0160	206.1000	Excavation for Structures Bridges (structure) 01. B-51-0149	LS	1.000	1.000
0170	210.0100	Backfill Structure	CY	655.000	655.000
0180	213.0100	Finishing Roadway (project) 01. 3755-00-71	EACH	1.000	1.000
0190	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	675.000	675.000
0200	415.0090	Concrete Pavement 9-Inch	SY	870.000	870.000
0210	415.0410	Concrete Pavement Approach Slab	SY	144.000	144.000
0220	416.0610	Drilled Tie Bars	EACH	158.000	158.000
0230	416.0620	Drilled Dowel Bars	EACH	139.000	139.000
0240	440.4410.S	Incentive IRI Ride	DOL	824.000	824.000
0250	455.0605	Tack Coat	GAL	7.000	7.000
0260	465.0105	Asphaltic Surface	TON	27.000	27.000
0270	502.0100	Concrete Masonry Bridges	CY	492.000	492.000
0280	502.3200	Protective Surface Treatment	SY	895.000	895.000
0290	503.0137	Prestressed Girder Type I 36W-Inch	LF	965.000	965.000
0300	504.0500	Concrete Masonry Retaining Walls	CY	69.000	69.000
0310	505.0405	Bar Steel Reinforcement HS Bridges	LB	5,950.000	5,950.000
0320	505.0415	Bar Steel Reinforcement HS Retaining Walls	LB	2,450.000	2,450.000
0330	505.0605	Bar Steel Reinforcement HS Coated Bridges	LB	82,310.000	82,310.000
0340	505.0615	Bar Steel Reinforcement HS Coated Retaining Walls	LB	5,100.000	5,100.000
0350	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	24.000	24.000
0360	506.4000	Steel Diaphragms (structure) 01. B-51-0149	EACH	10.000	10.000
0370	516.0500	Rubberized Membrane Waterproofing	SY	43.000	43.000
0380	517.1010.S	Concrete Staining (structure) 01. B-51-0149	SF	8,610.000	8,610.000
0390	520.8000	Concrete Collars for Pipe	EACH	4.000	4.000
0400	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	1.000	1.000
0410	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	1.000	1.000
0420	550.0020	Pre-Boring Rock or Consolidated Materials	LF	144.000	144.000
0430	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	1,195.000	1,195.000

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DATE 25AUG15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	3755-00-71 QUANTITY
0440	601.0407	Concrete Curb & Gutter 18-Inch Type D	LF	36.000	36.000
0450	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	154.000	154.000
0460	601.0452	Concrete Curb & Gutter Integral 30-Inch Type D	LF	529.000	529.000
0470	601.0600	Concrete Curb Pedestrian	LF	26.000	26.000
0480	602.0415	Concrete Sidewalk 6-Inch	SF	3,809.000	3,809.000
0490	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	96.000	96.000
0500	603.8000	Concrete Barrier Temporary Precast Delivered	LF	663.000	663.000
0510	603.8125	Concrete Barrier Temporary Precast Installed	LF	663.000	663.000
0520	606.0200	Riprap Medium	CY	1.000	1.000
0530	606.0300	Riprap Heavy	CY	309.000	309.000
0540	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	116.000	116.000
0550	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	117.000	117.000
0560	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	10.000	10.000
0570	608.0336	Storm Sewer Pipe Reinforced Concrete Class III 36-Inch	LF	84.000	84.000
0580	611.0430	Reconstructing Inlets	EACH	1.000	1.000
0590	611.0530	Manhole Covers Type J	EACH	4.000	4.000
0600	611.0610	Inlet Covers Type BW	EACH	1.000	1.000
0610	611.0612	Inlet Covers Type C	EACH	1.000	1.000
0620	611.0624	Inlet Covers Type H	EACH	3.000	3.000
0630	611.0639	Inlet Covers Type H-S	EACH	1.000	1.000
0640	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000
0650	611.2005	Manholes 5-FT Diameter	EACH	1.000	1.000
0660	611.2006	Manholes 6-FT Diameter	EACH	3.000	3.000
0670	611.3004	Inlets 4-FT Diameter	EACH	2.000	2.000
0680	611.3225	Inlets 2x2.5-FT	EACH	1.000	1.000
0690	611.3230	Inlets 2x3-FT	EACH	2.000	2.000
0700	611.8115	Adjusting Inlet Covers	EACH	2.000	2.000
0710	611.8120.S	Cover Plates Temporary	EACH	2.000	2.000
0720	611.9800.S	Pipe Grates	EACH	1.000	1.000
0730	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	265.000	265.000
0740	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0750	619.1000	Mobilization	EACH	1.000	1.000
0760	628.1504	Silt Fence	LF	420.000	420.000
0770	628.1520	Silt Fence Maintenance	LF	420.000	420.000
0780	628.1905	Mobilizations Erosion Control	EACH	12.000	12.000
0790	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0800	628.2008	Erosion Mat Urban Class I Type B	SY	429.000	429.000
0810	628.6005	Turbidity Barriers	SY	850.000	850.000
0820	628.7005	Inlet Protection Type A	EACH	8.000	8.000
0830	628.7504	Temporary Ditch Checks	LF	80.000	80.000
0840	628.7560	Tracking Pads	EACH	1.000	1.000
0850	628.7570	Rock Bags	EACH	410.000	410.000
0860	629.0210	Fertilizer Type B	CWT	0.270	0.270
0870	630.0140	Seeding Mixture No. 40	LB	12.000	12.000
0880	630.0200	Seeding Temporary	LB	6.000	6.000
0890	633.5200	Markers Culvert End	EACH	2.000	2.000

3

DATE 25AUG15 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	3755-00-71 QUANTITY
0900	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	6.000	6.000
0910	637.2210	Signs Type II Reflective H	SF	35.430	35.430
0920	638.2102	Moving Signs Type II	EACH	10.000	10.000
0930	638.2602	Removing Signs Type II	EACH	10.000	10.000
0940	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0950	638.4000	Moving Small Sign Supports	EACH	4.000	4.000
0960	642.5201	Field Office Type C	EACH	1.000	1.000
0970	643.0100	Traffic Control (project) 01. 3755-00-71	EACH	1.000	1.000
0980	643.0300	Traffic Control Drums	DAY	2,000.000	2,000.000
0990	643.0410	Traffic Control Barricades Type II	DAY	1,199.000	1,199.000
1000	643.0420	Traffic Control Barricades Type III	DAY	1,090.000	1,090.000
1010	643.0705	Traffic Control Warning Lights Type A	DAY	2,398.000	2,398.000
1020	643.0900	Traffic Control Signs	DAY	3,706.000	3,706.000
1030	643.2000	Traffic Control Detour (project) 01. 3755-00-71	EACH	1.000	1.000
1040	643.3000	Traffic Control Detour Signs	DAY	14,606.000	14,606.000
1050	644.1410.S	Temporary Pedestrian Surface Asphalt	SF	1,000.000	1,000.000
1060	644.1601.S	Temporary Curb Ramp	EACH	8.000	8.000
1070	645.0120	Geotextile Fabric Type HR	SY	516.000	516.000
1080	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,500.000	1,500.000
1090	646.0600	Removing Pavement Markings	LF	298.000	298.000
1100	647.0556	Pavement Marking Stop Line Epoxy 12-Inch	LF	102.000	102.000
1110	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	573.000	573.000
1120	650.4000	Construction Staking Storm Sewer	EACH	15.000	15.000
1130	650.5000	Construction Staking Base	LF	247.000	247.000
1140	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	719.000	719.000
1150	650.6500	Construction Staking Structure Layout (structure) 01. B-51-0149	LS	1.000	1.000
1160	650.7000	Construction Staking Concrete Pavement	LF	247.000	247.000
1170	650.9910	Construction Staking Supplemental Control (project) 01. 3755-00-71	LS	1.000	1.000
1180	650.9920	Construction Staking Slope Stakes	LF	247.000	247.000
1190	690.0150	Sawing Asphalt	LF	444.000	444.000
1200	690.0250	Sawing Concrete	LF	248.000	248.000
1210	715.0415	Incentive Strength Concrete Pavement	DOL	976.000	976.000
1220	715.0502	Incentive Strength Concrete Structures	DOL	5,610.000	5,610.000
1230	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	600.000	600.000
1240	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	650.000	650.000
1250	SPV.0035	Special 01. Riprap Special	CY	29.000	29.000
1260	SPV.0060	Special 01. Construction Staking Curb Ramp	EACH	8.000	8.000
1270	SPV.0090	Special 01. Parpet Concrete Type 'TX'	LF	408.000	408.000
1280	SPV.0090	Special 02. Construction Staking Sidewalk	LF	510.000	510.000

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CLEARING AND GRUBBING ITEMS

CATEGORY	CTH D STA	CTH D STA	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
0010	200+00	202+00	LT & RT	2	2
	203+00	205+00	LT & RT	2	2
			TOTALS	4	4

REMOVING PAVEMENT

CATEGORY	STATION	LOCATION	204.0100 REMOVING PAVEMENT SY
0010	200+75 LT		45
TOTAL			45

REMOVING CURB & GUTTER

CATEGORY	STATION	LOCATION	204.0150 REMOVING CURB & GUTTER LF
0010	199+85 - 199+98	LT	28
	199+84 - 200+00	RT	33
	200+39 - 201+66	LT	137
	200+42 - 201+66	RT	130
	203+11 - 204+59	LT	160
	203-11 - 204+59	RT	163
	204+90 - 204+92	LT	13
	204+87 - 204+90	RT	17
	TOTAL		681

REMOVING CONCRETE SIDEWALK

CATEGORY	STATION	LOCATION	204.0155 REMOVING CONCRETE SIDEWALK SY
0010	199+85 - 199+98	LT	25
	199+84 - 200+00	RT	23
	200+39 - 201+56	LT	108
	200+42 - 201+56	RT	90
	203+19 - 204+61	LT	103
	203-19 - 204+61	RT	95
	TOTAL		444

REMOVING MANHOLES

CATEGORY	STATION/OFFSET	204.0210 REMOVING MANHOLES EACH
0010	200+99, 0.0'	1
	200+80, 22.8' RT	1
	TOTAL	2

REMOVING CATCH BASINS

CATEGORY	STATION/OFFSET	204.0215 REMOVING CATCH BASINS EACH
0010	199+66, 32.6' LT	1
	200+64, 19.9' RT	1
	200+80, 22.8' RT	1
	200+90, 22.7' LT	1
	203+30, 16.4' LT	1
	203+30, 17.4' RT	1
	TOTAL	6

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FILE NAME : P:\8427 CTH D Bridge Replacement Racine County\Transportation\CAD\Sheetset/030201_mq.ppt PLOT DATE : 8/20/2015 3:55:07 PM PLOT BY : NICK DECENT PLOT NAME : 030201_mq PLOT SCALE : 1:1

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REMOVING STORM SEWER

CATEGORY	STATION/OFFSET	204.0245.01 12-INCH LF	204.0245.02 18-INCH LF	204.0245.03 24-INCH LF	204.0245.04 36-INCH LF
0010	199+85 - 200+82	50	-	20	-
	200+82 - 201+49	53	85	-	-
	201+50 LT	24	-	-	-
	203+10 - 203+58	34	-	-	48
	TOTAL	161	85	20	48

ABANDONING SEWER

CATEGORY	STATION/OFFSET	204.0291.S ABANDONING SEWER CY
0010	200+35 - 201+55 LT, 12-INCH	4
	TOTAL	4

FINISHING ROADWAY

CATEGORY	STATION	LOCATION	213.0100 FINISHING ROADWAY (3755-00-71) EACH
0010	200+36 - 204+45	CTH D	1
	TOTAL		1

3

EARTHWORK SUMMARY

From/To Station	Location	Common Excavation (1) Item # 205.0100 Cut (2)	Common Excavation (1) Item # 205.0100 Undistributed EBS Excavation (3)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Reduced EBS in Fill Factor 0.80	Expanded EBS Backfill Factor 1.30	Unexpanded Fill (6)	Expanded Fill (7) Factor 1.20	Mass Ordinate +/- (8)	Waste (9) & (10)	Borrow	Comment:
200+38 - 204+44	CTH D	590	30	244	346	24	39	60	72	274	518	0	
B-51-0149		74	6	0	74	5	8	0	0	74	74	0	
Subtotal Common Excavation		700											
		664	36	244	346	29	47	60	72	348	592	0	
Total Common		700											

1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unusable Pavement Material is included in Cut unless existing pavement is below subgrade. (Existing Pavement EBS)
3) EBS Excavation to be backfilled with Base Aggregated Dense 1-1/4 Inch
4) Existing pavement volume (CY), not available for fill
5) Available Material = Cut - Salvaged/Unusable Pavement Material (0 if negative)
6) Unexpanded Fill = Fill from Endarea Earthwork Volumes + Existing Pavement EBS
7) Fill Factor = 1.20, Expanded Fill = Unexpanded Fill x 1.20
8) Mass Ordinate = (Available Material) - (Expanded Fill). Plus quantity indicates an excess of material within the Division. Minus quantity indicates a shortage of material within the Division.
9) Waste = EBS + Salvaged/Unusable Pavement Material + (Mass Ordinate if positive within Division)
10) Material Excavated from structures is considered waste, but can be incorporated into project if material is acceptable and required as directed by Engineer.

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BASE AGGREGATE ITEMS

CATEGORY	STATION	LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4 INCH TON
0010	199+87 - 200+36	LT & RT	73
	200+36 - 201+56		190
	200+41 - 201+56	LT	25
	200+45 - 201+56	RT	21
	203+19 - 204+45		172
	203+19 - 204+61	LT	40
	203+19 - 204+60	RT	41
	204+90 - 205+02	LT	6
	204+89 - 205+02	RT	6
	EBS (IF REQUIRED)		101
		TOTAL	675

ASPHALTIC SURFACE

CATEGORY	STATION	465.0105 ASPHALTIC SURFACE TON	455.0605 TACK COAT GAL	REMARKS
0010	199+75 - 200+36.5	20	5	STORM / CURB AND GUTTER PATCHING
	200+45 - 205+00	7	2	CURB AND GUTTER PATCHING
	TOTAL	27	7	

3

PAVEMENT ITEMS

CATEGORY	STATION	LOCATION	415.0090 CONCRETE PAVEMENT 9-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLABS SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	440.4410.S INCENTIVE IRI RIDE DOL	715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT DOL
0010	199+84 - 199+97	LT	-	-	10	-	-	-
	199+84 - 200+00	RT	-	-	12	-	-	-
	200+36 - 201+37		425	-	-	-	212	416
	200+36		-	-	-	105	-	-
	201+37 - 201+57		-	72	-	-	36	63
	201+57 - 203+19		-	-	-	-	328	-
	203+19 - 203+39		-	72	-	-	36	63
	203+39 - 204+45		445	-	-	-	212	436
	204+45		-	-	-	34	-	-
	204+45 - 204+64	LT	-	-	12	-	-	-
	204+45 - 204+62	RT	-	-	11	-	-	-
	204+86 - 204+90	RT	-	-	6	-	-	-
	204+88 - 204+90	LT	-	-	5	-	-	-
	200+52 - 201+40	RT	-	-	57	-	-	-
	200+58 - 201+28	RT	-	-	45	-	-	-
	TOTAL		870	144	158	139	824	976

CONCRETE COLLAR FOR PIPE

CATEGORY	STATION	LOCATION	520.8000 EACH	REMARKS
0010	199+89	33' LT	1	12-INCH
	200+74	23' RT	1	18-INCH
	200+54	20' RT	1	24-INCH
	203+61	1' RT	1	36-INCH
		TOTAL	4	--

FILE NAME : P:\8427 CTH D Bridge Replacement Racine County\Transportation\CAD\Sheetset/030201_mq.ppt PLOT DATE : 8/20/2015 3:55:07 PM PLOT BY : NICK DECENT PLOT NAME : 030201_mq PLOT SCALE : 1:1

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CONCRETE ITEMS

CATEGORY	STATION	LOCATION	601.0407 CONCRETE CURB & GUTTER 18-INCH TYPE D LF	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF	601.0452 CONCRETE CURB & GUTTER INTEGRAL 30-INCH TYPE D LF	601.0600 CONCRETE CURB PEDESTRIAN LF	602.0415 CONCRETE SIDEWALK 6-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	644.1410.S TEMPORARY PEDESTRIAN SURFACE ASPHALT SF	644.1601.S TEMPORARY CURB RAMP EACH
0010	199+84 - 199+97	LT	-	28	-	-	221	16	500	4
	199+84 - 200+00	RT	36	28	-	-	195	16	-	2
	200+37 - 201+57	RT	-	-	135	-	650	16	-	-
	200+40 - 201+57	LT	-	-	142	-	760	16	-	-
	203+19 - 204+45	LT	-	-	126	-	741	-	-	-
	203+19 -204+45	RT	-	-	126	-	765	-	-	-
	204+45 - 204+64	LT	-	36	-	-	190	8	-	-
	204+45 - 204+62	RT	-	32	-	-	165	8	-	-
	204+50 - 204+55	RT&LT	-	-	-	26	-	-	-	-
	204+86 - 205+01	RT	-	17	-	-	62	8	-	-
	204+88 - 205+02	LT	-	13	-	-	60	8	500	2
	TOTAL		36	154	529	26	3,809	96	1,000	8

3

RECONSTRUCTING INLETS AND ADJUSTING INLET COVERS ITEMS

CATEGORY	STATION	LOCATION	OFFSET	611.0430 RECONSTRUCTING INLETS EACH	611.8115 ADJUSTING INLET COVERS EACH
0010	200+00	RT	44.0'	1	-
	204+52	RT	23.2'	-	1
	204+53	LT	20.9'	-	1
	TOTAL			1	2

PIPE GRATES AND MARKS CULVERT END

CATEGORY	STATION	LOCATION	OFFSET	611.9800.S PIPE GRATES EACH	633.5200 MARKERS CULVERT END EACH
0010	203+32	LT	36.6'	1	1
	201+65	LT	0.0'	-	1
	TOTAL			1	2

STORM SEWER STRUCTURE ITEMS

CATEGORY	STRUCTURE NUMBER	STATION	OFFSET FT		RIM/ FLANGE ELEV	OUTLET INVERT ELEV	DEPTH FT	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH EACH	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	611.0530 MANHOLE COVERS TYPE J EACH	611.0612 INLET COVERS TYPE C EACH	611.0624 INLET COVERS TYPE H EACH	611.0390 INLET COVERS TYPE H-S EACH	611.0610 INLET COVERS TYPE BW EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.2005 MANHOLES 5-FT DIAMETER EACH	611.2006 MANHOLES 6-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3225 INLETS 2X2.5-FT EACH	611.3230 INLETS 2X3-FT EACH
	1.0	199+95.90	32.64	LT	775.21	770.60	3.44	-	-	-	-	-	-	1	-	-	-	-	1	1
0010	2.0	200+33.12	34.35	LT	775.25	769.50	4.83	-	-	1	-	-	-	-	1	-	-	-	-	-
	3.0	200+64.73	17.9'	LT	774.84	768.75	4.92	-	-	-	-	-	1	-	-	-	-	1	-	-
	4.0	200+82	26.50	LT	774.30	767.85	5.53	-	-	-	1	-	-	-	-	1	-	-	-	-
	5.0	200+82	0.00	LT	775.53	766.75	7.86	-	-	1	-	-	-	-	1	-	-	-	-	-
	5.1	201+67.93	0.00	LT	-	765.03	-	1	-	-	-	-	-		-	-	-	-	-	-
	6.0	200+63.48	19.90	RT	774.83	766.92	6.99	-	-	-	-	1	-	-	-	-	-	1	-	-
	7.0	203+50	17.49	RT	776.50	770.00	5.58	-	-	-	-	1	-	-	-	-	-	-	-	1
	8.0	203+50	0.87	RT	776.81	767.60	8.29	-	-	1	-	-	-	-	-	-	1	-	-	-
	9.0	203+50	17.50	LT	776.49	767.00	8.57	-	-	-	-	1	-	-	-	-	1	-	-	-
	10.0	203+50	36.51	LT	773.91	766.53	6.46	-	-	1	-	-	-	-	-	-	1	-	-	-
	11.0	203+26.10	36.54	LT	-	766.23	-	-	1	-	-	-	-	-	-	-	-	-	-	-
TOTAL								1	1	4	1	3	1	1	2	1	3	2	1	2

NOTES

1) JOINT TIES FOR CONCRETE PIPE SHALL BE PROVIDED AT ALL CONCRETE APRON ENDWALLS. APRON ENDWALLS SHALL BE TIED FOR THE LAST THREE JOINTS AT PIPE ENDS. THE COST OF THESE TIES SHALL BE INCIDENTAL TO THE COST OF THE PIPE.
2) STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURES OR TO THE APRON END OF ENDWALLS.
3) PIPE LENGTHS ARE MEASURED TO THE CENTER OF STRUCTURES AND THE END OF PIPE UPSTREAM FROM APRON ENDWALLS (LENGTH DOES NOT INCLUDE APRON ENDWALL).
4) RIM ELEVATIONS ARE GIVEN AT THE FLANGE LINE FOR INLET GRATES OR THE CENTER OF THE MANHOLE COVER FOR MANHOLES
5) STRUCTURE DEPTH = RIM ELEVATION - INVERT - CASTING HEIGHT - ADJUSTMENT
   CASTING HEIGHT = 0.75 FT FOR J COVERS; 0.5 FT FOR HM, H, H-S AND S COVERS; 0.83 FT FOR TYPE V AND BW; 0.67 FT FOR TYPE B; 0 FT FOR TYPE MS COVERS
   ADJUSTMENT (RINGS) = 0.42 FT FOR B, V, J, HM, H, HS AND S COVERS; 0 FT FOR TYPE MS COVERS
6) FLAT TOP SLAB WITH CENTERED 21" X 24" RECTANGULAR OPENING REQUIRED ON ALL MANHOLES WITH TYPE V INLET COVERS
7) FLAT TOP SLAB WITH CENTERED 21" X 24" RECTANGULAR OPENING REQUIRED ON TYPE 3 INLETS WITH TYPE V INLET COVERS
8) FLAT TOP SLAB WITH CENTERED 24" X 36" RECTANGULAR OPENING REQUIRED ON MANHOLES WITH TYPE HM, H-S, AND H INLET COVERS
9) FLAT TOP SLAB WITH CENTERED 26" X 26" RECTANGULAR OPENING REQUIRED ON MANHOLES WITH TYPE S INLET COVERS

STORM SEWER PIPE REINFORCED CONCRETE CLASS III

CATEGORY	PIPE NUMBER	FROM STR	TO STR	INLET ELEV	DISCH ELEV	SLOPE %	608.0312 12-INCH LF	608.0318 18-INCH LF	608.0324 24-INCH LF	608.0336 36-INCH LF
0010	P1.1	Exist	1.0	-	770.70	-	7	-	-	-
	P1	1.0	2.0	770.60	769.50	2.97%	37	-	-	-
	P2	2.0	3.0	769.50	768.75	2.11%	36	-	-	-
	P3	3.0	4.0	768.75	768.35	2.07%	19	-	-	-
	P4	4.0	5.0	767.85	767.25	2.22%	-	27	-	-
	P5	5.0	5.1	766.75	765.03	2.15%	-	80	-	-
	P6	7.0	8.0	770.00	769.60	2.35%	17	-	-	-
	P6.1	Exist	8.0	-	767.60	-	-	-	-	11
	P7	8.0	9.0	767.60	767.00	3.33%	-	-	-	18
	P8	9.0	10.0	767.00	766.53	2.47%	-	-	-	19
	P9	10.0	11.0	766.53	766.23	1.67%	-	-	-	18
	P10	Exist	6.0	-	767.62		-	10	-	
	P11	6.0	Exist	766.92	-	-	-	-	10	18
TOTAL							116	117	10	84

MOBILIZATIONS

CATEGORY	LOCATION	619.1000 MOBILIZATION EACH	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	CTH D	1	12	6
	TOTAL	1	12	6

3

TURBIDITY BARRIER, CONCRETE BARRIER TEMPORARY PRECAST, ROCK BAGS

CATEGORY	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	628.6005 TURBIDITY BARRIER SY	628.7570 ROCK BAGS EACH	REMARKS
0010	201+50 - 202+00	102	102	144	-	STANDARD TURBIDITY BARRIER
	202+00 - 202+25	153	153	188	130	REMOVAL OF EXISTING PIER; SPECIAL TURBIDITY BARRIER
	202+50 - 202+75	153	153	188	130	REMOVAL OF EXISTING PIER; SPECIAL TURBIDITY BARRIER
	202+38	153	153	217	150	NEW PIER; SPECIAL TURBIDITY BARRIER
	202+75 - 203+20	102	102	113	-	STANDARD TURBIDITY BARRIER
	TOTAL	663	663	850	410	

EROSION MATERIALS

CATEGORY	STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	611.8120S COVER PLATES TEMPORARY EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7005 INLET PROTECTION TYPE A EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7560 TRACKING PAD EACH	629.0210 FERTILIZER TYPE B CWT	630.0200 SEEDING** TEMPORARY LB	630.0410 SEEDING MIXTURE NO. 40 LB	645.0120 GEOTEXTILE FABRIC TYPE HR SY	SPV.0035.01 RIPRAP SPECIAL CY
0010	200+43 - 201+66	LT	-	-	35	35	151	-	20	-	0.10	2	4	-	-
	200+49 - 201+66	RT	-	-	57	57	80	-	20	-	0.05	1	2	-	-
	201+67	44' RT	1	-	-	-	-	-	-	-	-		-	2	-
	200+52	LT	-	-	-	-	-	1	-	-	-	-	-	-	-
	200+63	RT	-	-	-	-	-	1	-	-	-	-	-	-	-
	200+82	LT	-	-	-	-	-	2	-	-	-	-	-	-	-
	200+82	MED.	-	1	-	-	-	-	-	-	-	-	-	-	-
	202+38.11	LT.	-	-	-	-	-	-	-	-	-	-	-	-	29
	203+11 - 204+44	LT	-	-	160	160	120	-	20	-	0.08	2	3	-	-
	203+05 - 204+42	RT	-	-	168	168	78	-	20	-	0.05	1	2	-	-
	203+50	MED.	-	1	-	-	-	-	-	-	-	-	-	-	-
	203+50	LT	-	-	-	-	-	2	-	-	-	-	-	-	-
	203+50	RT	-	-	-	-	-	1	-	-	-	-	-	-	-
	203+95 - 204+45	-	-	-	-	-	-	1	-	1	-	-	-	-	-
	TOTAL		1	2	420	420	429	8	80	1	0.27	6	12	2	29

**Temporary seeding not intended to used with final permanent seed. Temporary seed may be used with permanent seed if late seeding occurs.

PERMANENT SIGNING

CATEGORY	SIGN NUMBER	STATION	SIGN CODE	SIGN SIZE INCH	634.0614 POSTS WOOD 4x6-INCH x 14-FT EACH	637.2210 SIGNS REFLECTIVE TYPE II SF	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH	SIGN MESSAGE
0010	1	200+65 LT	M1-5A	24 " X 24 "	1	4.00	-	1	1	-	COUNTY W
			M6-4	21 " X 21 "	-	3.06	-	1	-	-	-
	2	200+65 LT	R1-1	30 " X 30 "	1	5.18	-	1	1	-	STOP
	3	200+42 RT	-	-	-	-	2	-		1	COUNTY D
	4	200+45 RT	-	-	-	-	1	-		1	STOP
	5	200+85 RT	M1-5A	24 " X 24 "	1	4.00	-	1	1	-	COUNTY D
			R2-1	24 " X 30 "	-	5.00	-	1	-	-	SPEED LIMIT 25
	6	201+15 LT	D11-1	24 " X 18 "	1	3.00	-	1	1	-	BIKE ROUTE
			M4-6	24 " X 12 "	-	2.00	-	1	-	-	END
	7	201+15 RT	D11-1	24 " X 18 "	1	3.00	-	1	1		BIKE ROUTE
	8	201+30 LT	-	-	-	-	1	-	-	-	NO PARKING HERE TO CORNER
	9	203+93 LT	M2-1	21 " X 15 "	1	2.19	-	1	1	-	JCT
			M1-5A	24 " X 24 "	-	4.00	-	1	-	-	COUNTY W
	10	204+46 RT	-	-	-	-	2	-	-	1	E. MAIN ST. / S. WATER ST.
	11	204+48 LT	-	-	-	-	2	-	-	1	E. MAIN ST. / N. WATER ST.
	12	204+60 LT	-	-	-	-	1	-	-	-	STOP
	13	204+90 RT	-	-	-	-	1	-	-	-	STOP
		TOTAL			6	35.43	10	10	6	4	

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	DURATION DAYS	643.0300 TRAFFIC CONTROL DRUMS EACH	643.0300 DAYS	643.0410 TRAFFIC CONTROL BARRICADES TYPE II EACH	643.0410 DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH	643.0420 DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH	643.0705 DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH	643.0900 DAYS
	191+15	20	50	1000								
0010	191+15	109	-	-	-	-	-	-	-	-	2	218
	196+15	109	-	-	-	-	-	-	-	-	1	109
	199+75 - 200+40	109	-		7	763	5	545	12	1,308	14	1526
	204+40 - 205+25	109	-		4	436	5	545	10	1,090	14	1526
	208+60	109	-	-	-	-	-	-	-	-	1	109
	213+60	109	-	-	-	-	-	-	-	-	2	218
	213+60	20	50	1,000	-	-	-	-	-	-	-	-
	TOTAL			2,000		1,199		1,090		2,398		3,706

FIELD OFFICE TYPE C

CATEGORY	LOCATION	642.5201 FIELD OFFICE TYPE C EACH
0010	CTH D	1

TRAFFIC CONTROL

CATEGORY	LOCATION	643.0100 TRAFFIC CONTROL EACH	643.2000 TRAFFIC CONTROL DETOUR EACH
0010	CTH D	1	1
	TOTAL	1	1

TRAFFIC DETOUR ITEMS

CATEGORY	SIGN CODE	DURATION DAYS	643.3000 TRAFFIC CONTROL DETOUR SIGNS EACH	643.3000 DAYS
0010	R11-2B	109	3	327
	W20-2	109	3	327
	M4-8A	109	2	218
	R11-3B	109	2	218
	M4-8	109	31	3379
	M03-2	109	16	1744
	M1-5A	109	31	3379
	M03-4	109	15	1635
	M05-1L	109	5	545
	M06-1	109	9	981
	M05-2R	109	3	327
	M05-2L	109	1	109
	M06-1	109	5	545
	M05-1R	109	4	436
	M06-1	109	4	436
	TOTAL			14,606

3

PAVEMENT MARKING

CATEGORY	STATION		WHITE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH	YELLOW LF	646.0600 REMOVING PAVEMENT MARKINGS LF	647.0556 PAVEMENT MARKING STOP LINE EPOXY 12-INCH LF	647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH LF
0010	199+82 - 199+92		-		-	102	18	84
	199+98 - 200+42	LT	-		-	101	21	86
	199+98 - 200+49	RT	-		-	95	21	95
	200+55 -200+65		-		-	-	18	87
	200+66 - 204+41	LT	375		375	-	-	-
	200+66 - 204+41	RT	375		375	-	-	-
	204+41 -204+47		-		-	-	-	67
	204+47 - 204+63	RT	-		-	-	-	25
	204+47 - 204+65	LT	-		-	-	-	28
	204+63 - 204+88	RT	-		-	-	12	52
	204+63 - 204+89	LT	-		-	-	12	49
	SUBTOTAL		750		750	298	102	573
	TOTAL			1500		298	102	573

SAWING ITEMS

CATEGORY	STATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
0010	199+86 - 200+37	207	54
	200+37	106	-
	200+40 - 201+40	-	194
	204+45 - 204+75	131	-
	TOTAL	444	248

3

CONSTRUCTION STAKING

CATEGORY	LOCATION	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.6500 CONSTRUCTION STAKING STRUCTURE LAYOUT B-51-149 LS	650.7000 CONSTRUCTION STAKING CONCRETE PAVEMENT LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (I.D. 3755-00-01) LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	SPV.0060.01 CONSTRUCTION STAKING CURB RAMP EACH	SPV.0090.02 CONSTRUCTION STAKING SIDEWALK LF
0010	199+84 - 200+00	2	-	92	-	-	-	-	2	-
	200+36 - 201+63	6	121	277	-	121	1	121	2	238
	201+56 - 203-19	-	-	-	1	-	-	-	-	-
	203+19 - 204+45	5	126	252	-	126	-	126	2	272
	204+45 - 204+90	2	-	98	-	-	-	-	2	-
	TOTAL	15	247	719	1	247	1	247	8	510

BENCH MARKS			
NO.	STATION/OFFSET	DESCRIPTION	ELEV.
704	201+65.72 24.23 RT.	CHIS. BOX ON BRIDGE WALL	779.10

HOUSE
15' PLE
VOL. 353, PG. 141
TITLE# 372584
DOC. #438203
PRESERVE/PROTECT EXISTING CHAIN LINK FENCE
DRILL IN NO. 6 TIE BAR, 18" C-C ALONG SAWCUT LINE
MATCH EXISTING WALL
NW WETLAND LIMITS 0.002 ACRE IMPACT
FULL DEPTH SAWCUT SIDEWALK ALONG R/W
FOX RIVER
NE WETLAND LIMITS 0.001 ACRE IMPACT
10' PLE
VOL. 353, PG. 146
TITLE#372585
DOC.#438205
HOUSE
EXISTING R/W
OVERHEAD
GUY POLE
FRONT STREET
MAIN STREET
FULL DEPTH SAWCUT
PI: 200+11.15
15.0'
SI
80'
80'
INL
WATER STREET
PI: 205+09.97
N89° 39' 48"E
200
201
CTH D
202
N89° 29' 24"E
203
WASHINGTON AVE
204
205
N88° 50' 20"E
238.85
448.83
385.76
36'
10.0'
OVERHEAD.
CONCRETE APPROACH SLAB
B.M. 704
SE WETLAND LIMITS 0.001 ACRE IMPACT
GUY POLE
EXISTING R/W
FULL DEPTH SAWCUT
FULL DEPTH SAWCUT SIDEWALK
6-INCHES N. OF FENCE
10' WNGC EASEMENT
GAS
CAUTION
PUMP HOUSE
25' PLE
VOL. 353, PG. 136
TITLE # 372586
DOC. #438201
SW WETLAND LIMITS 0.002 ACRE IMPACT
10' PLE
VOL. 1006, PG. 261
TITLE#372587
DOC. #848647
NOTE: SEE SDD 8D5, SHEET B "CURB RAMPS TYPE 2, TYPE 3, AND TYPE 7" FOR ALL OTHER PERTINENT INFORMATION
ELECTRIC
PRESERVE/PROTECT EXISTING CHAIN LINK FENCE
DRILL IN NO. 6 TIE BAR, 18" C-C ALONG SAWCUT LINE

BEGIN PROJECT
STA. 200+36.49
Y: 191360.33
X: 521136.32

END PROJECT
STA. 204+45.00
Y: 191363.856
X: 521544.826

LEGEND
1. CONCRETE CURB RAMP TYPE 2 MODIFIED
2. CONCRETE CURB RAMP TYPE 3 MODIFIED
3. CONCRETE CURB RAMP TYPE 7 MODIFIED
A. 5" ASPHALTIC SURFACE 12" BASE AGGREGATE DENSE 1¼-INCH
C. CONCRETE PAVEMENT (SEE TYPICAL SECTION)

VCL = 36.00
K = 14.01
-0.88%
1.68%
VPC STA 200+43.72
VPC EL 775.35
VPI STA 200+61.73
VPI EL 775.19
VPT STA 200+79.73
VPT EL 775.49
VPC STA 201+05.00
VPC EL 775.91
VPI STA 202+50.00
VPI EL 778.34
HP STA=202+62.88
EL=777.24
VPT STA 203+95.00
VPT EL 776.31
VCL = 31.00
K = 32.55
-1.40%
-0.53%
VPC STA 204+06.32
VPC EL 776.15
VPI STA 204+21.82
VPI EL 775.93
VPT STA 204+37.32
VPT EL 775.86
PROPOSED
EXISTING
MATCH EXISTING
MATCH EXISTING
STRUCTURE B-51-149
VCL = 290.00
K = 94.24
EXISTING GRADE
PROPOSED GRADE

790 785 780 775 770 765 760 755

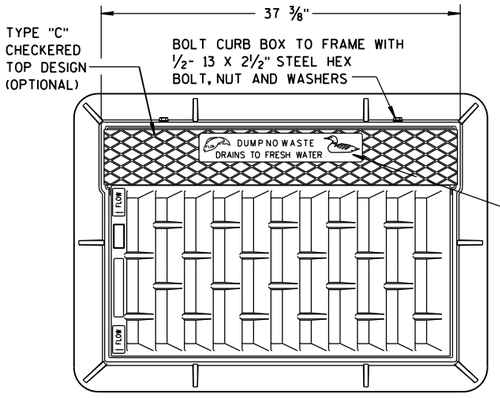
775.28 775.31 | 775.19 775.83 | 776.28 776.56 | 760.23 777.03 | 768.34 777.23 | 769.35 777.16 | 776.33 776.83 | 775.84 776.24 | 775.85 | 776.44

199+55 200+00 200+50 201+00 201+50 202+00 202+50 203+00 203+50 204+00 204+50 205+00 205+50

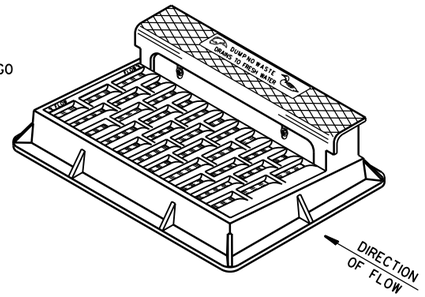
PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	PLAN & PROFILE: CTH D	SHEET 33	E

Standard Detail Drawing List

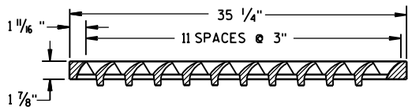
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
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
12A03-10	NAME PLATE (STRUCTURES)
13B02-07A	CONCRETE BRIDGE APPROACH
13B02-07B	STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D28-02	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE
15D30-02A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-02B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION

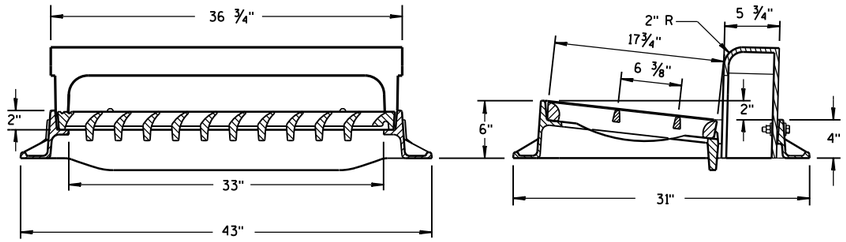


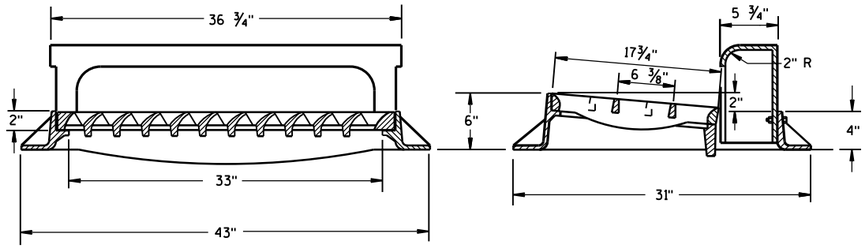
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

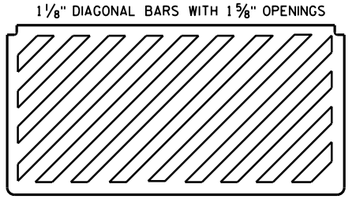






TYPE "H"

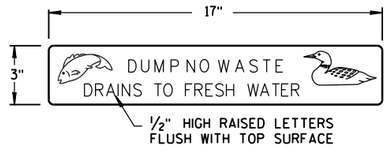
NOTE: EITHER CASTING IS ACCEPTABLE



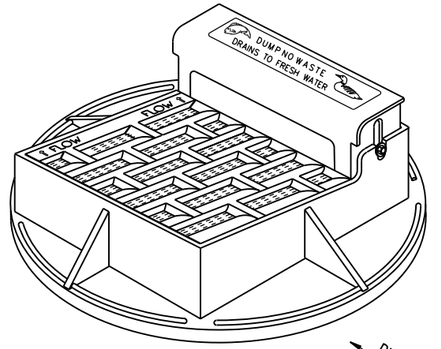
SPECIAL GRATE FOR TYPE "H" COVER

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

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

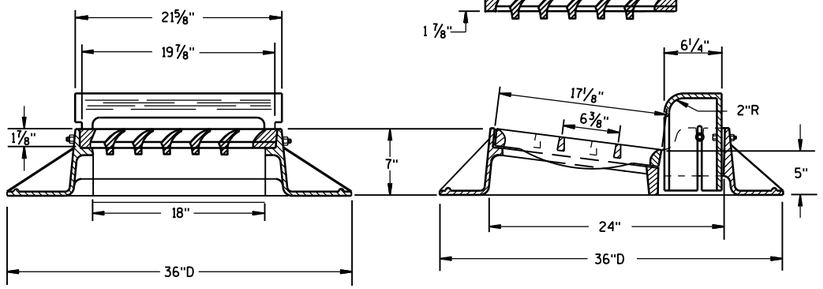


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



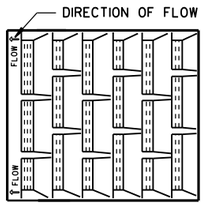
TYPE "A"

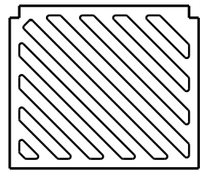
GENERAL NOTES

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.

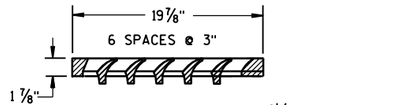


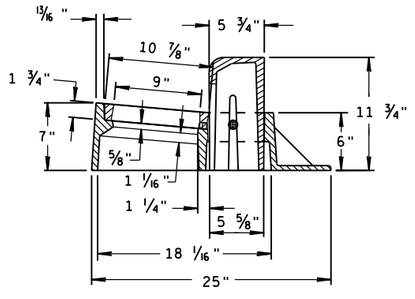


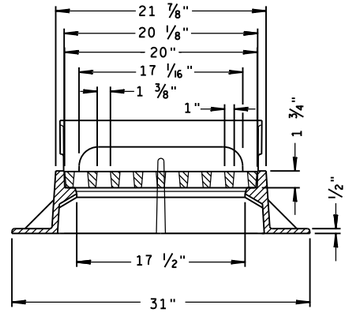
SPECIAL GRATE FOR TYPE "A" COVER

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

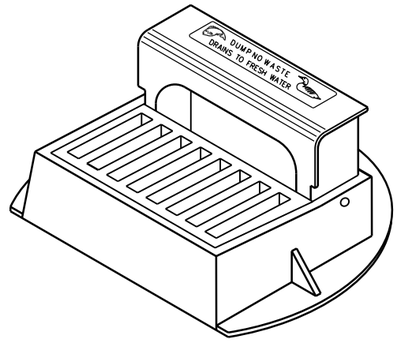
(NOTED AS TYPE A-S ON DRAINAGE TABLE)







TYPE "Z"



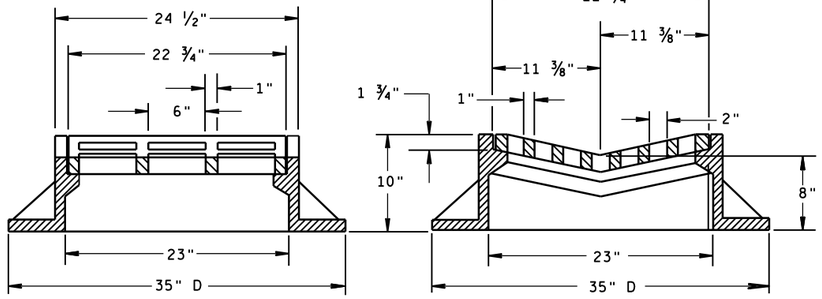
INLET COVERS
TYPE A, H, A-S, H-S & Z

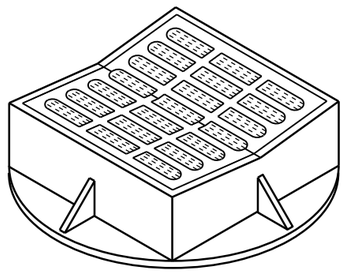
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

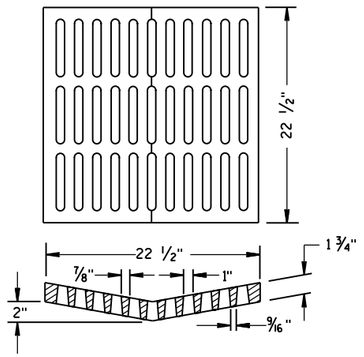
6

S.D.D. 8 A 5-19a



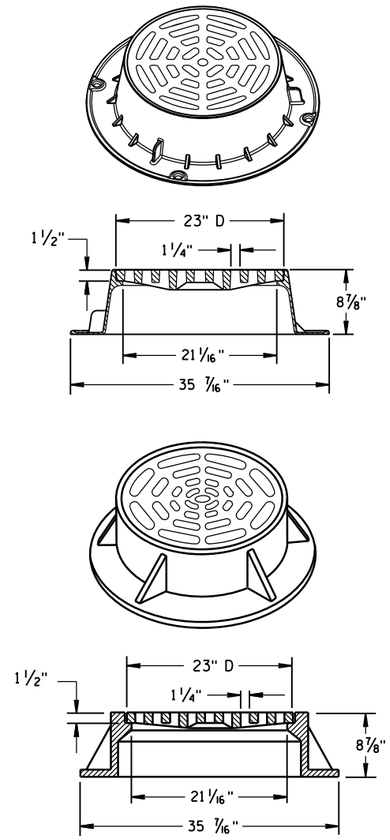


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

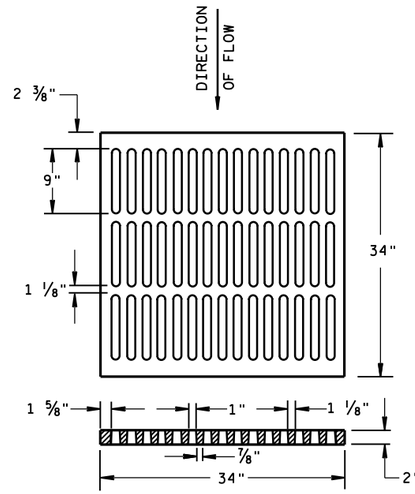
NOTE: EITHER CASTING IS ACCEPTABLE

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.

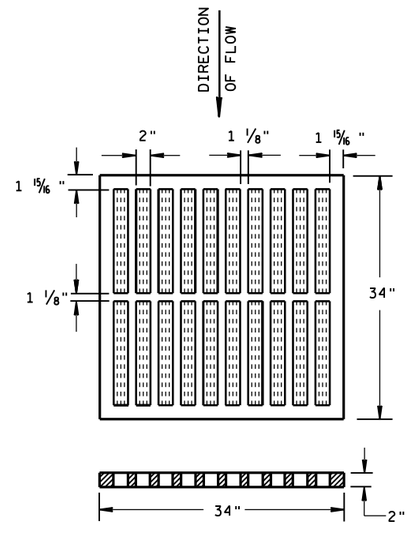
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



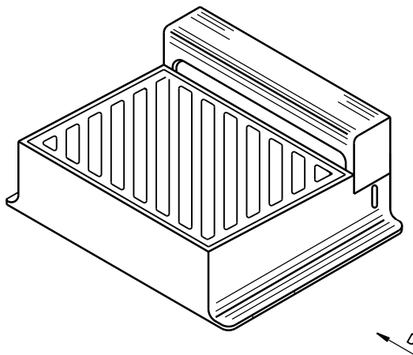
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE

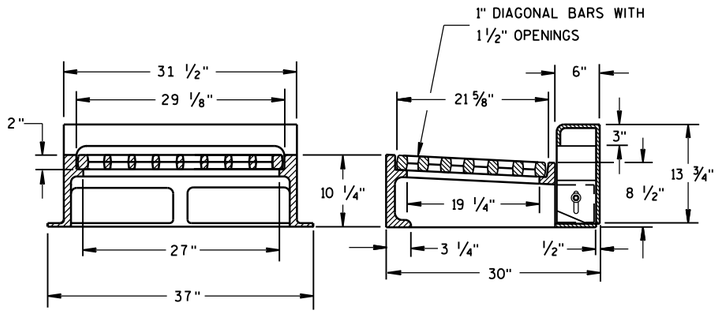


TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON DRAINAGE TABLE



DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

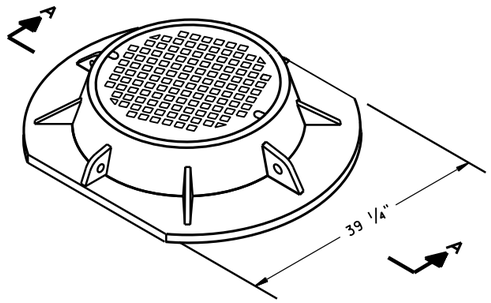
INLET COVERS
TYPE B, B-A, C, MS, MS-A, & WM

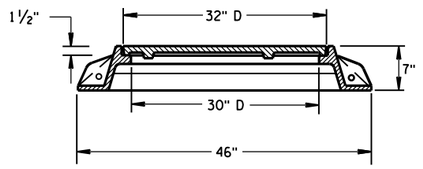
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

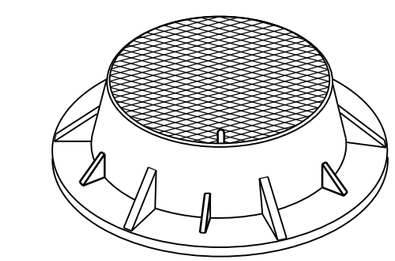
6

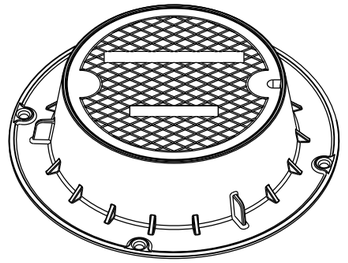
S.D.D. 8 A 5-19b

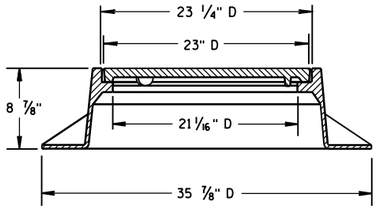


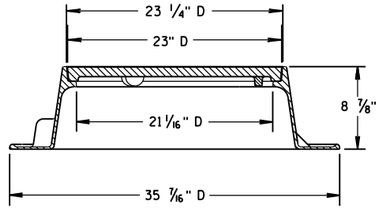


SECTION A-A
TYPE "K"









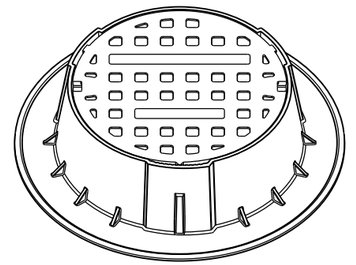
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

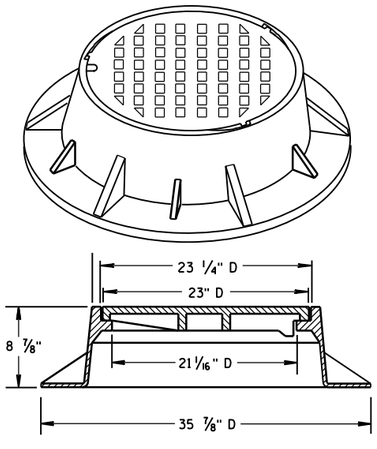
GENERAL NOTES

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.

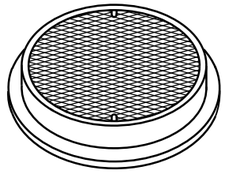
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

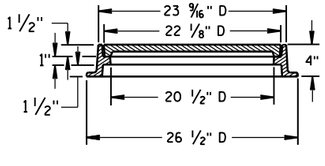
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



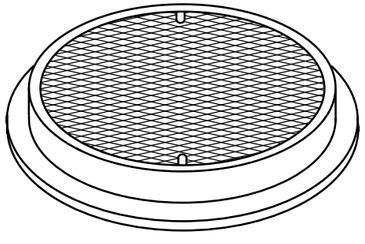


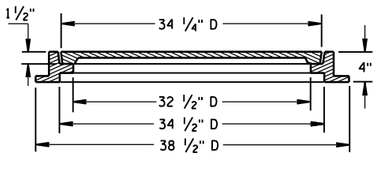
TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE



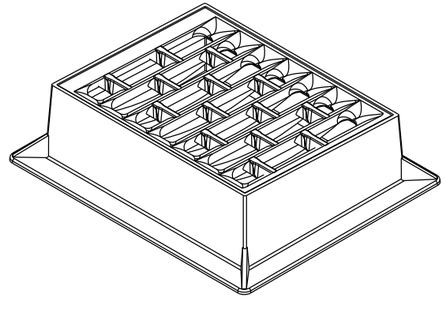


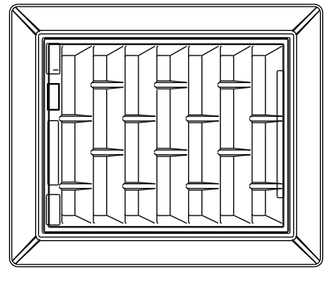
TYPE "L"

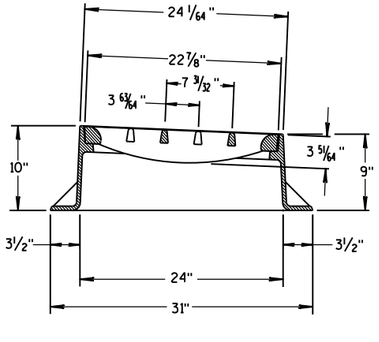


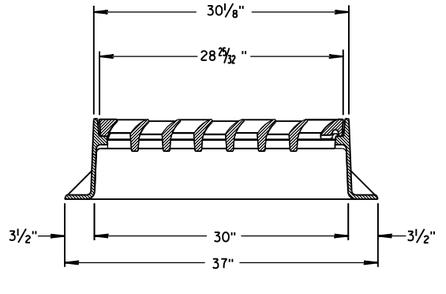


TYPE "M"









INLET COVER TYPE "BW"

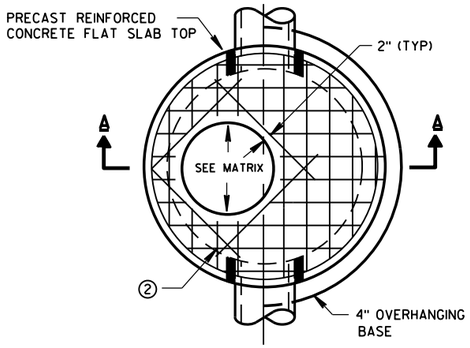
INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

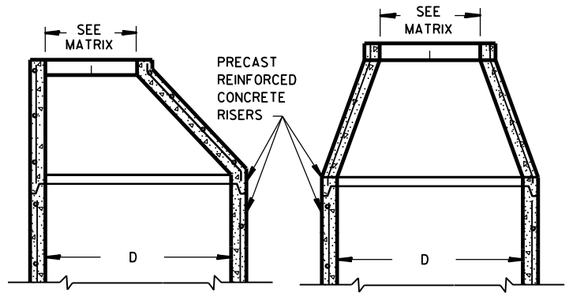
APPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 A 5-19d

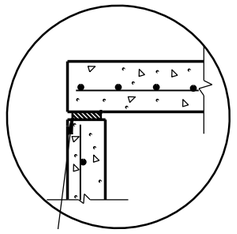


PLAN VIEW CIRCULAR OPENING

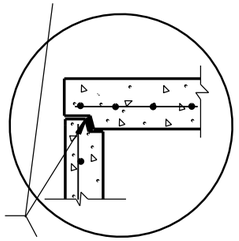


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

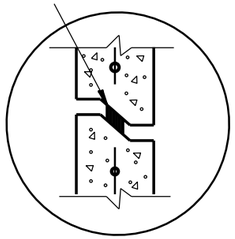


TOP WITH PLAIN END JOINT



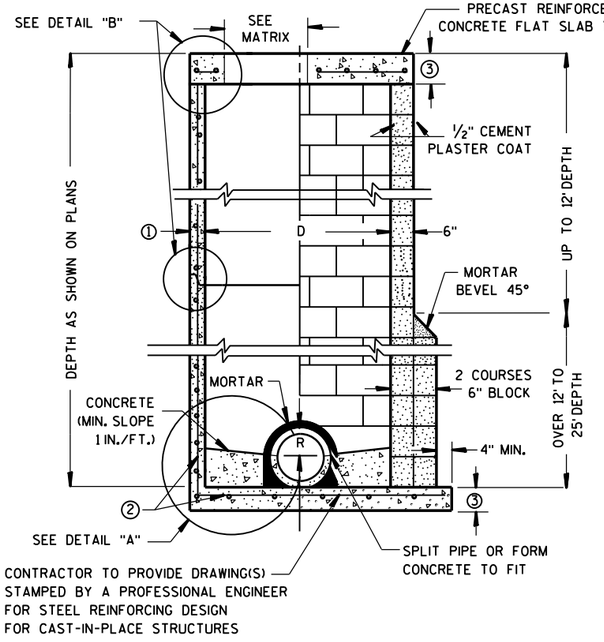
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



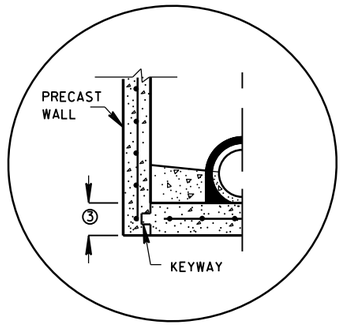
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

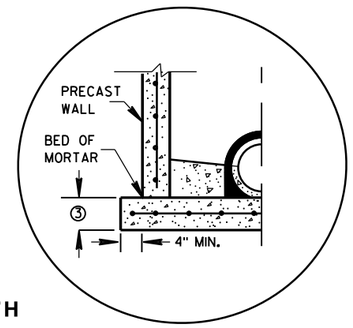


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

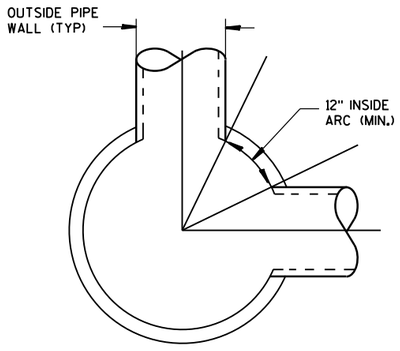


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

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 MANHOLE 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 DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE 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.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL 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.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
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6/5/2012 — DATE
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FHWA

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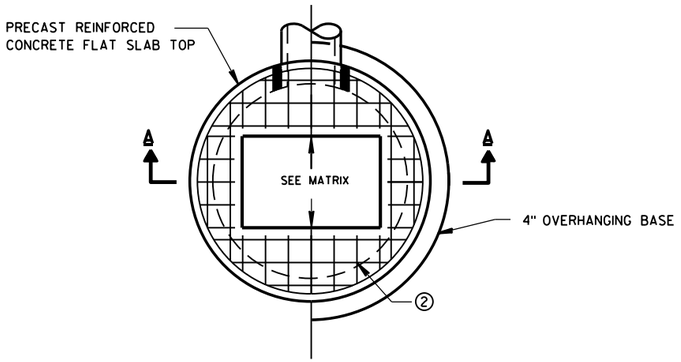
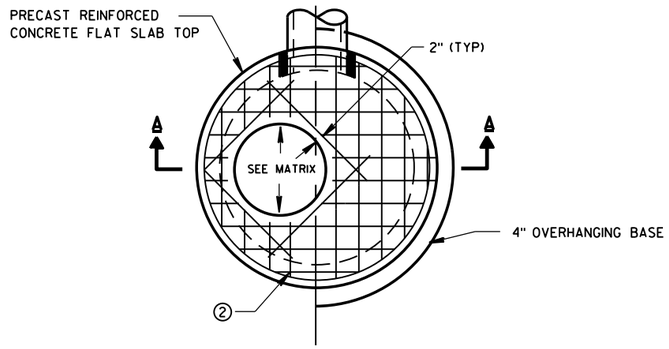
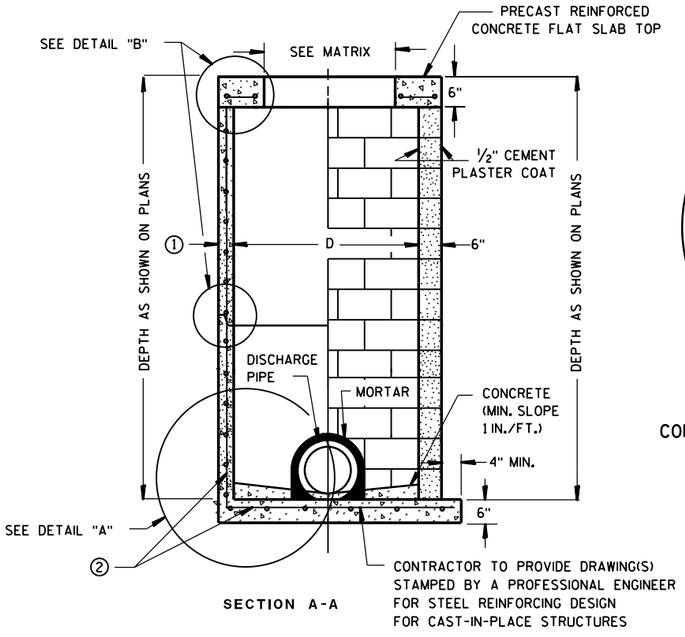


PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

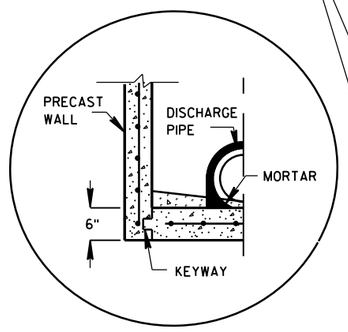


SECTION A-A

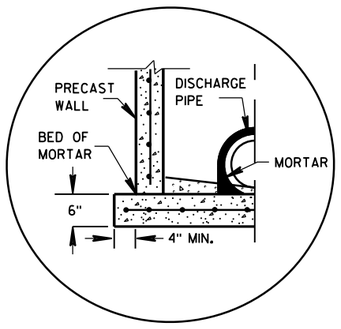
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

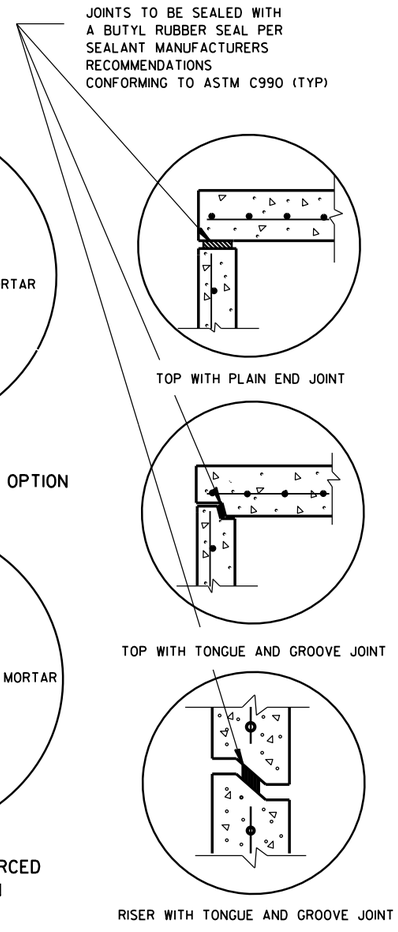


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "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.

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 DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE 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.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

4" OVERHANGING BASES ARE REQUIRED FOR ALL 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.

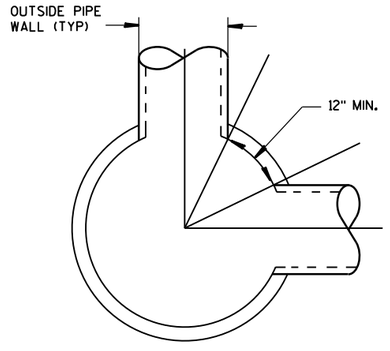
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012
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FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

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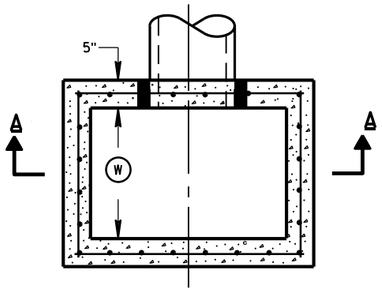
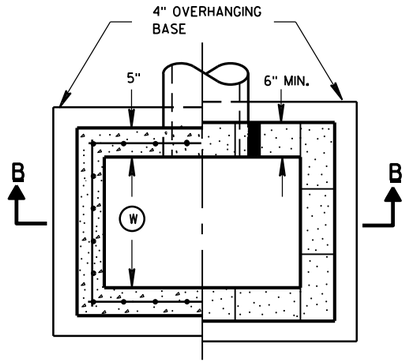
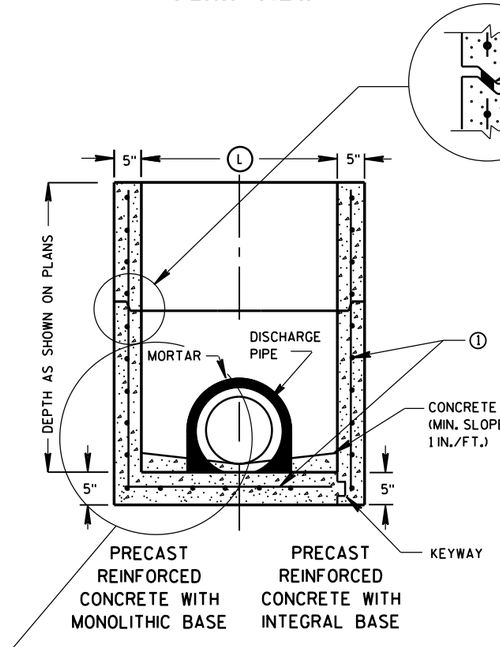
INLETS 3-FT AND 4-FT DIAMETER



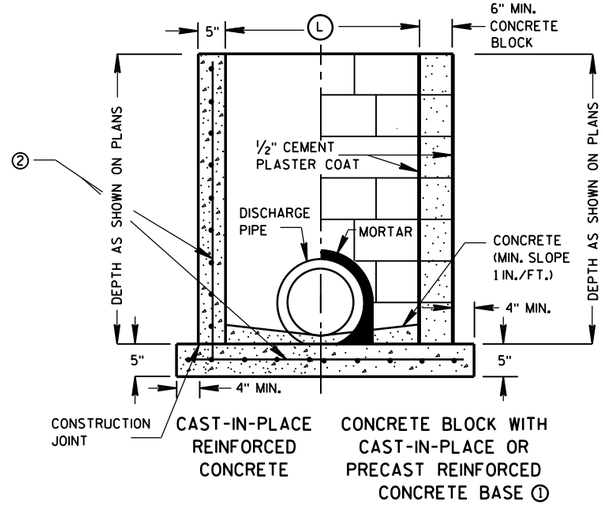
PLAN VIEW



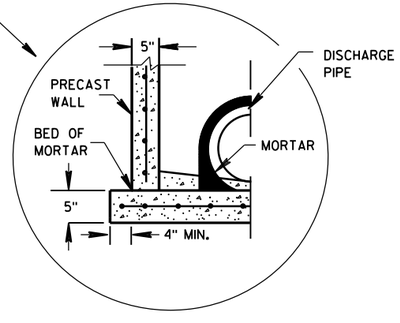
PLAN VIEW



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.

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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.

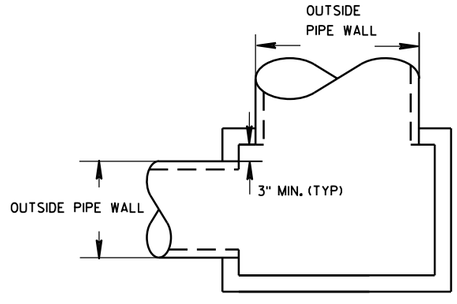
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

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

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ROADWAY STANDARDS DE
ENGINEER

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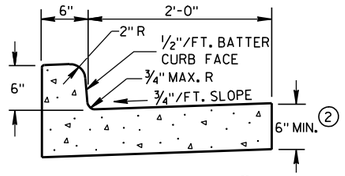
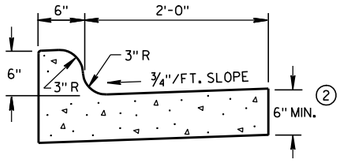
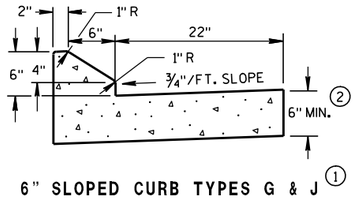
S.D.D. 8 C 7-1



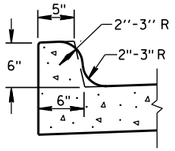
TYPES A & D (1)



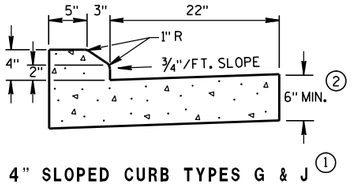
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

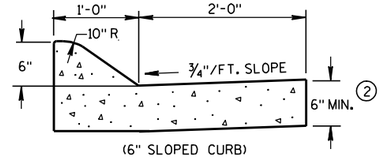


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

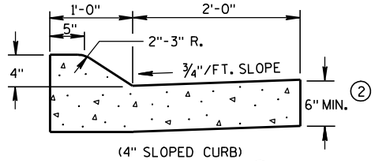


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

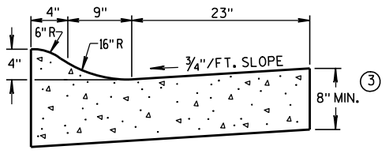


(6" SLOPED CURB)



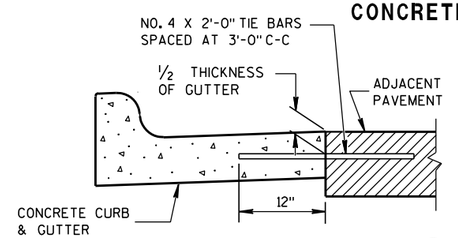
(4" SLOPED CURB)

TYPES A & D (1)

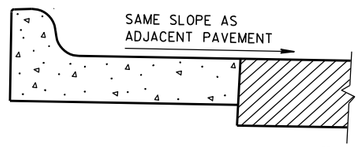


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION (1)



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

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.

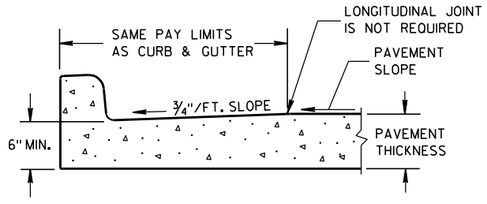
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(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.

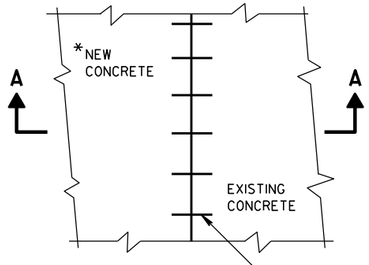
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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

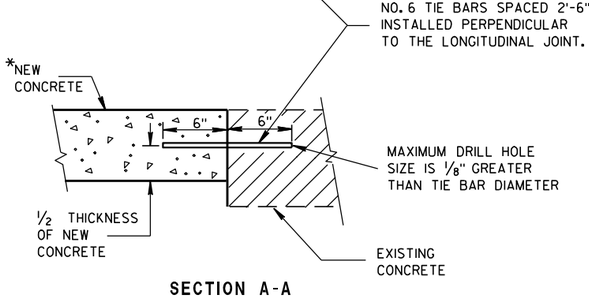


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



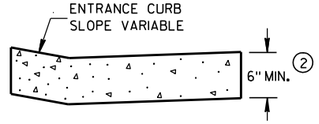
PLAN VIEW

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

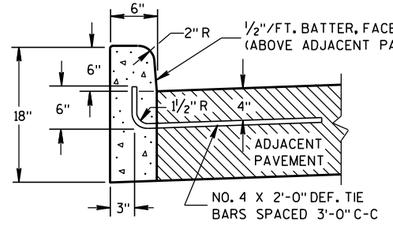


SECTION A-A

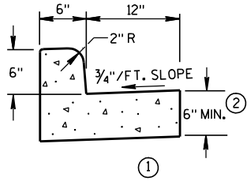
TIE BARS DRILLED INTO EXISTING PAVEMENT



DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

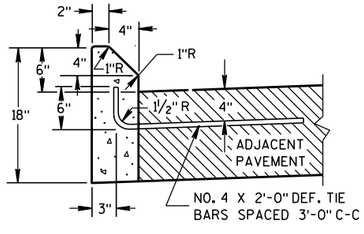


(1) TYPES A & D

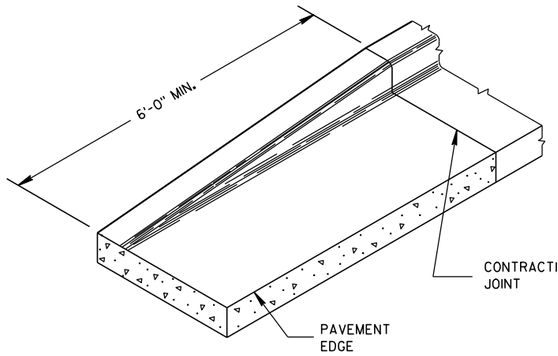


(1) TYPES A & D

CONCRETE CURB & GUTTER 18"



(1) TYPES G & J



END SECTION CURB & GUTTER

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

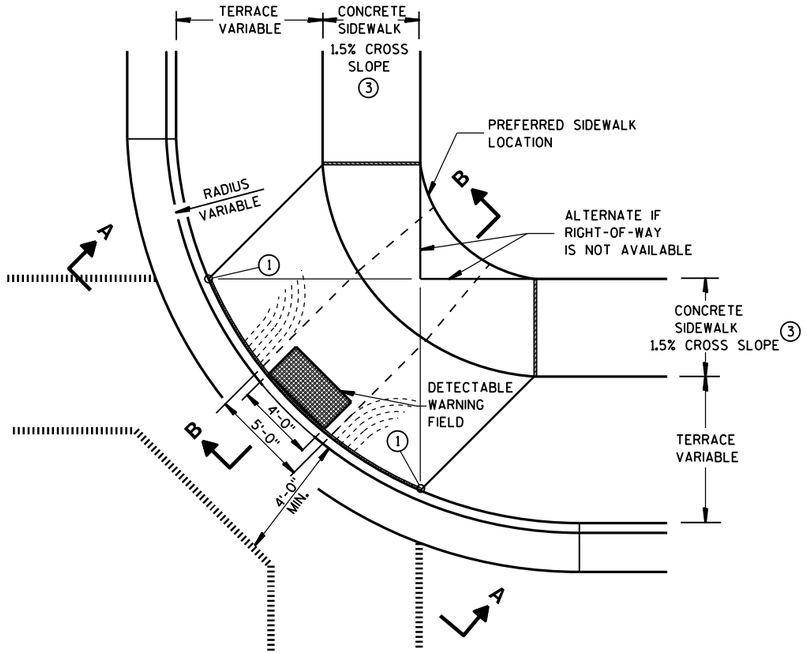
APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 8 D 1-17

6

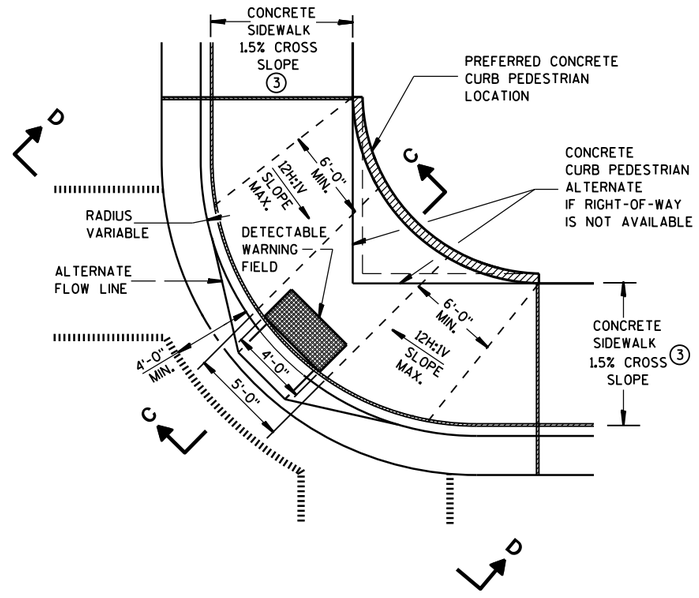
S.D.D. 8 D 1-17



PLAN VIEW

TYPE 1 RAMP

(CENTER OF CORNER RADIUS)



PLAN VIEW

TYPE 1-A RAMP

(NO TERRACE)

GENERAL NOTES

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

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

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

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

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

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.

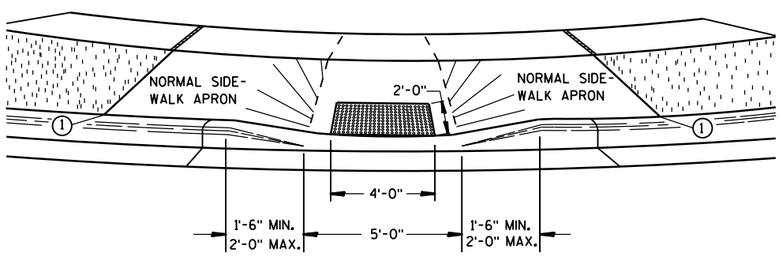
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

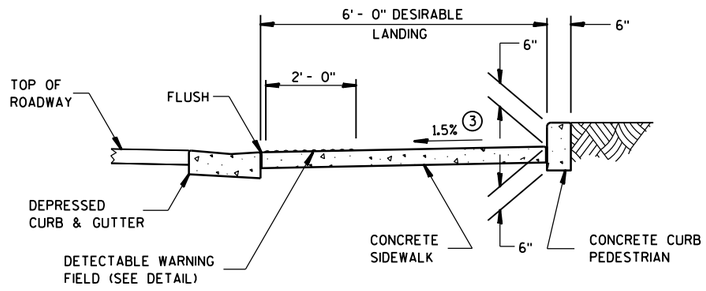
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

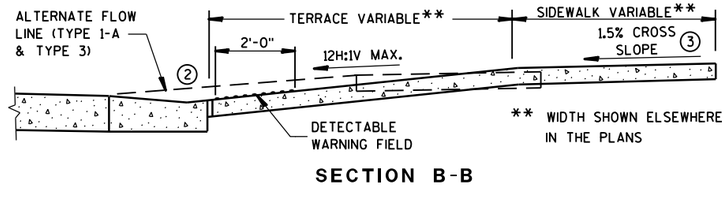
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



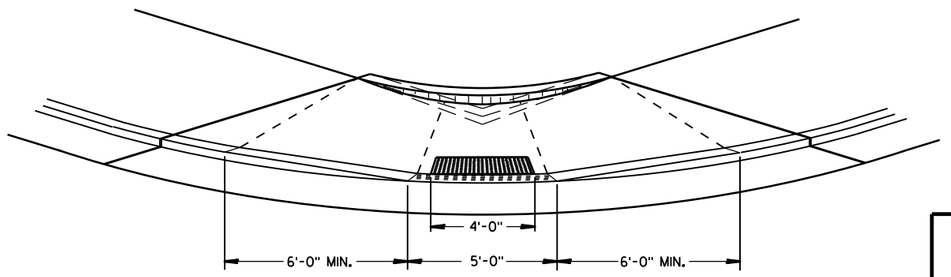
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

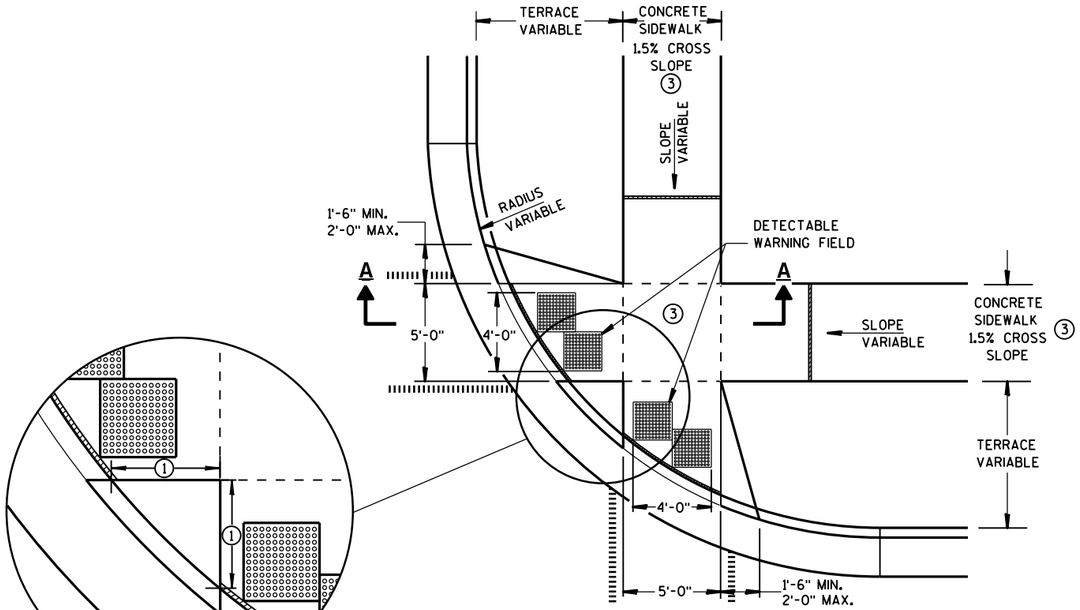
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15a

6

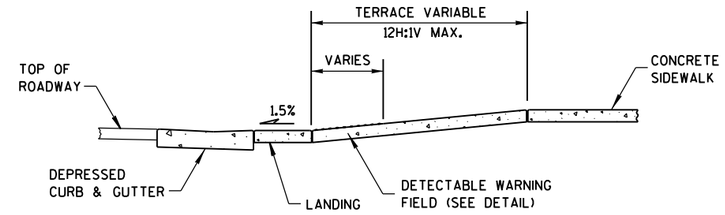
S.D.D. 8 D 5-15a



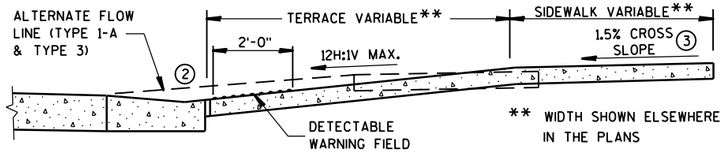
PLAN VIEW

TYPE 2 RAMP

(ON LINE WITH SIDEWALK)



SECTION A-A



SECTION B-B

GENERAL NOTES

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

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

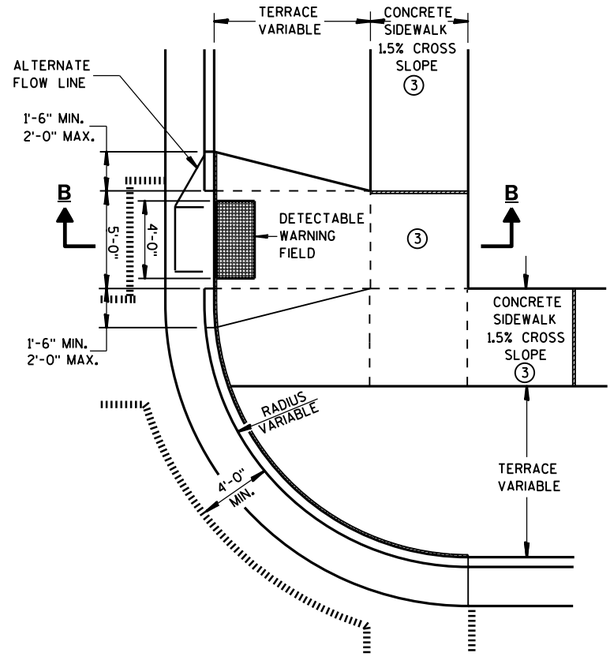
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.

③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

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



PLAN VIEW

TYPE 3 RAMP

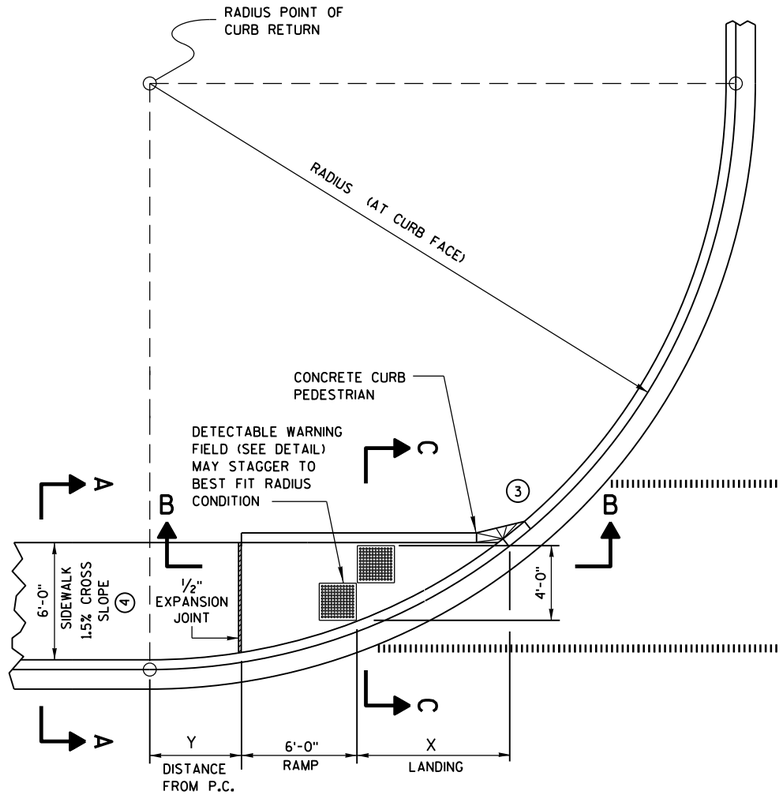
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS
TYPES 2 AND 3

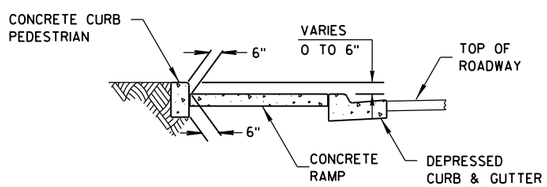
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

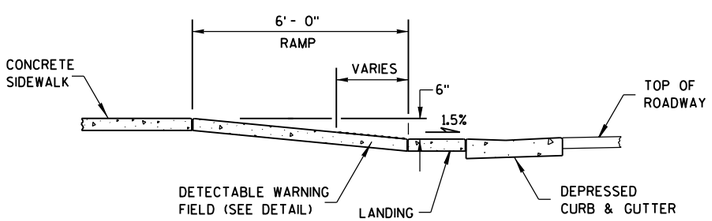
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



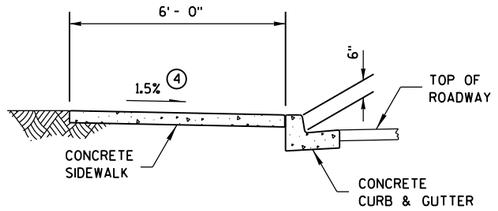
SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1¾"	2'-7¼"
30 FEET	7'-11¾"	4'-8¼"
40 FEET	9'-5¼"	6'-5"
50 FEET	10'-8¾"	7'-11¼"
60 FEET	11'-10¼"	9'-3½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

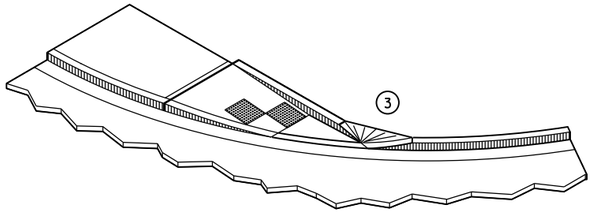
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

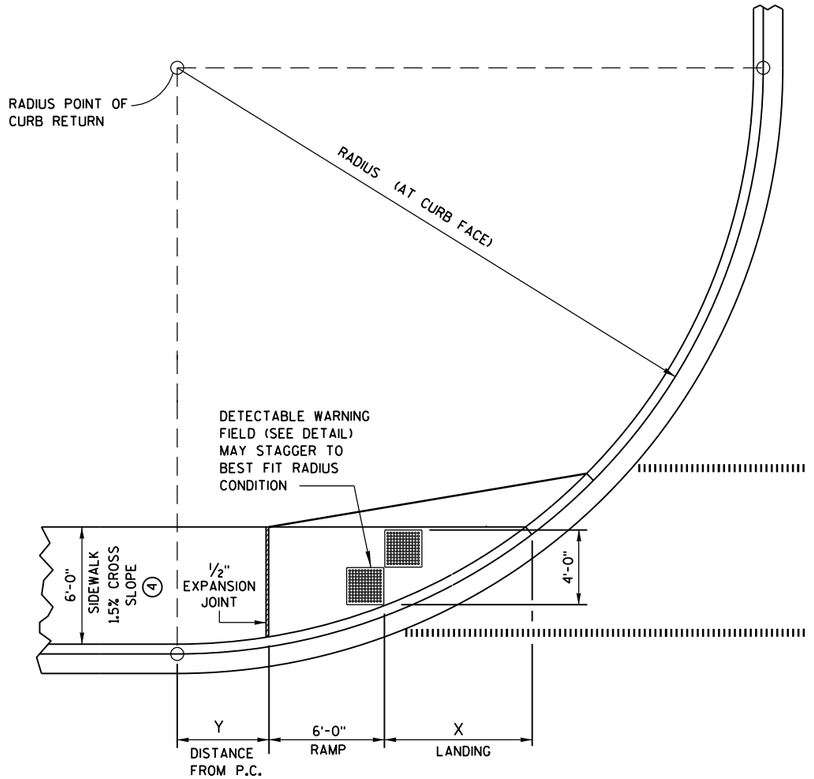
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

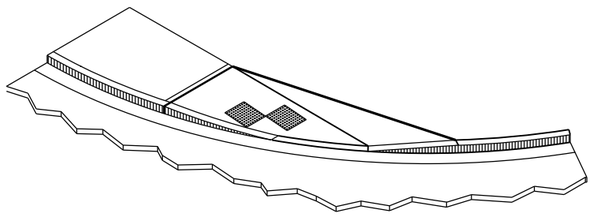
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

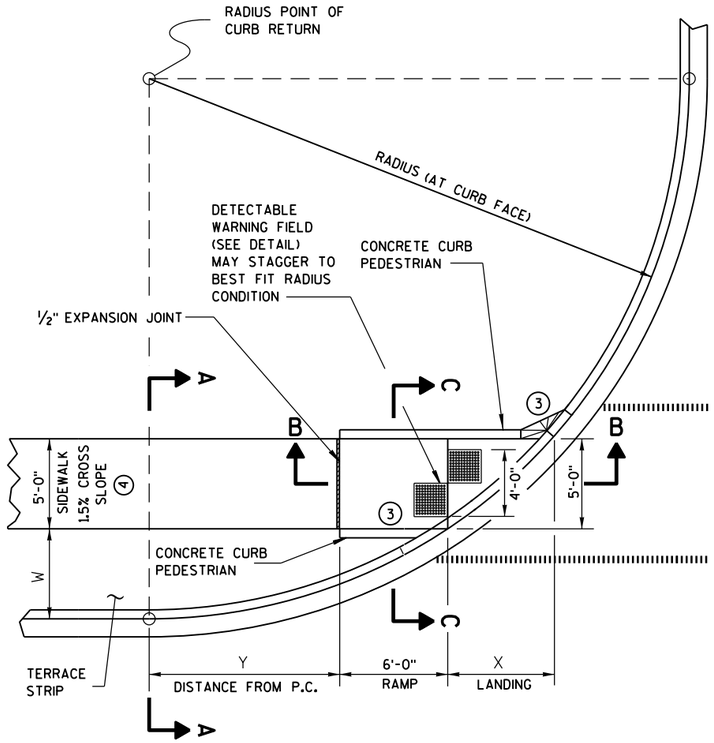
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

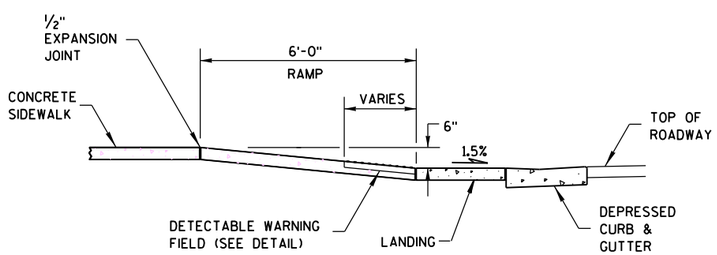
6

S.D.D. 8 D 5-15c

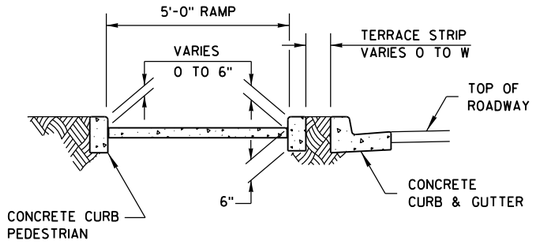


CURB RAMP TYPE 4B
PLAN VIEW

SECTION A-A FOR TYPE 4B



SECTION B-B FOR TYPE 4B



SECTION C-C FOR TYPE 4B

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)

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'-5½"	4'-6½"	4'-8½"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-3½"	3'-1½"	9'-2½"
30 FEET	7'-3¾"	7'-1"	6'-5½"	8'-11½"	5'-9¼"	10'-7"	5'-2½"	12'-0"	4'-8¾"	13'-3¼"
40 FEET	8'-9½"	9'-2½"	7'-10"	11'-5¼"	7'-1"	13'-4½"	6'-5¾"	15'-¾"	5'-11½"	16'-7¼"
50 FEET	10'-¾"	11'-¾"	9'-¼"	13'-7¼"	8'-2½"	15'-9½"	7'-6½"	17'-9"	6'-11¾"	19'-6¼"
60 FEET	11'-2½"	12'-8¾"	10'-¾"	15'-6½"	9'-2¼"	17'-11¾"	8'-5¾"	20'-1¾"	7'-10½"	22'-1½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

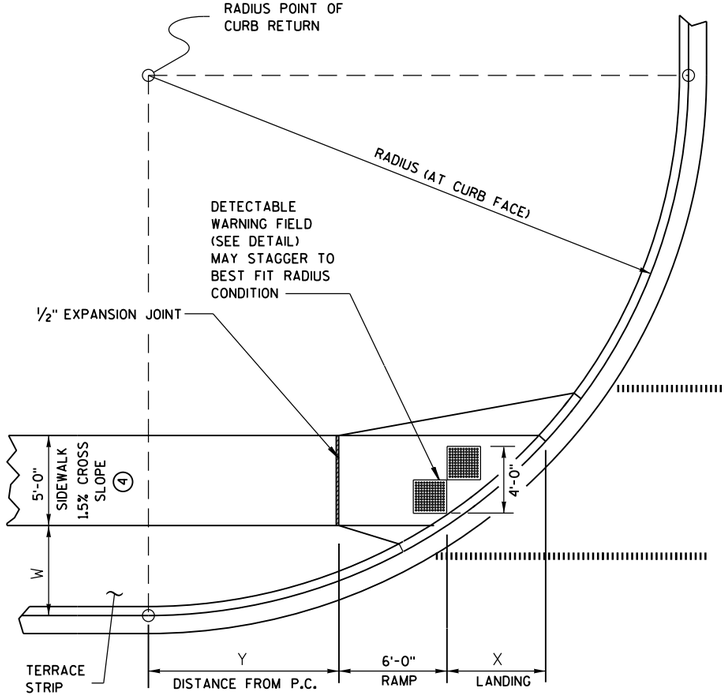
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

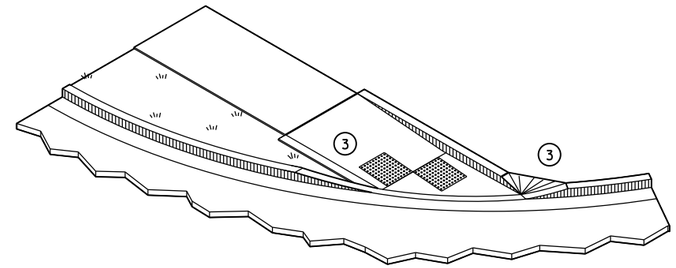
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

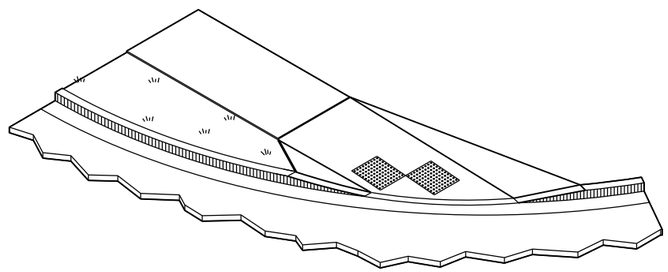
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



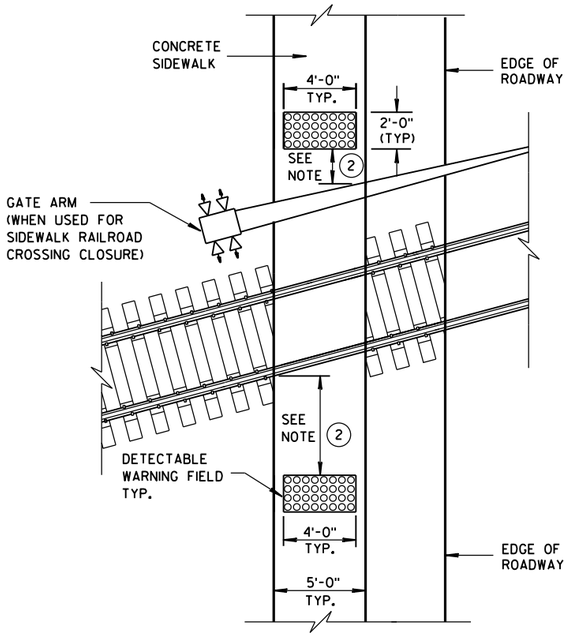
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS TYPE 4B AND 4B1

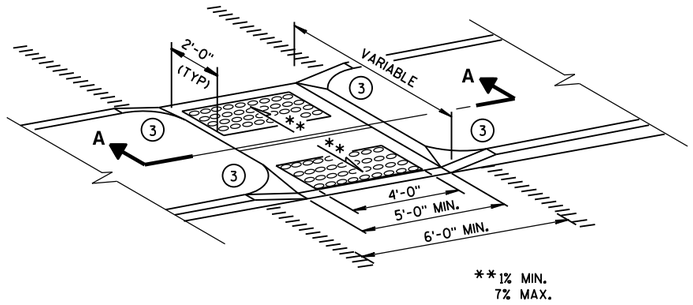
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 8 D 5-15d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

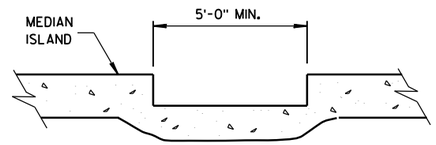
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

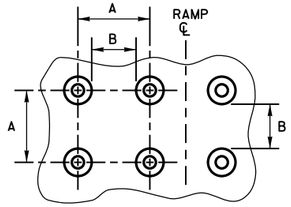
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

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

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



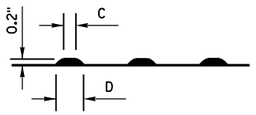
SECTION A-A



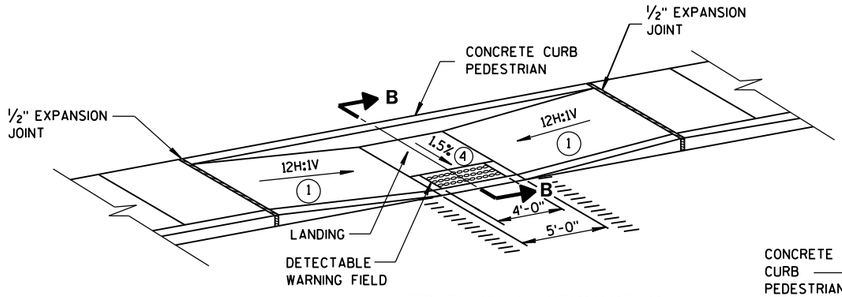
PLAN VIEW

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

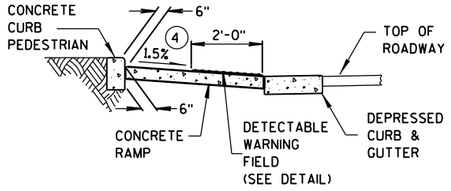
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

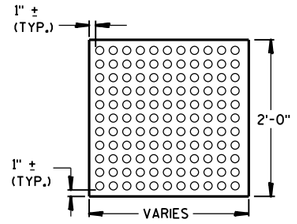


MID-BLOCK CROSSING
TYPE 7A



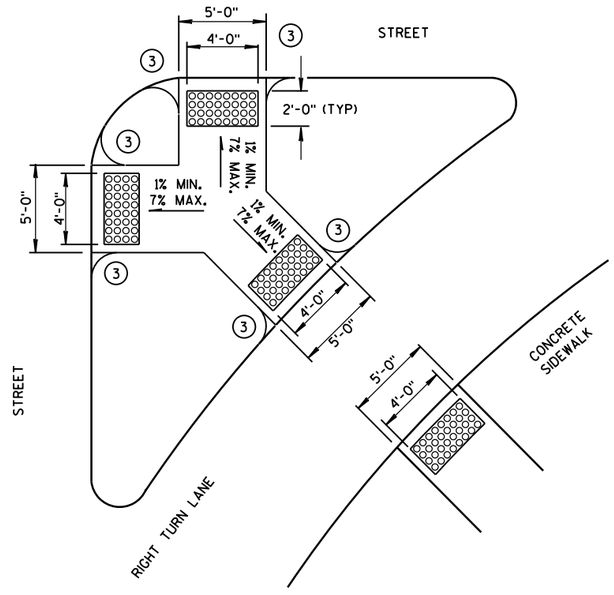
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

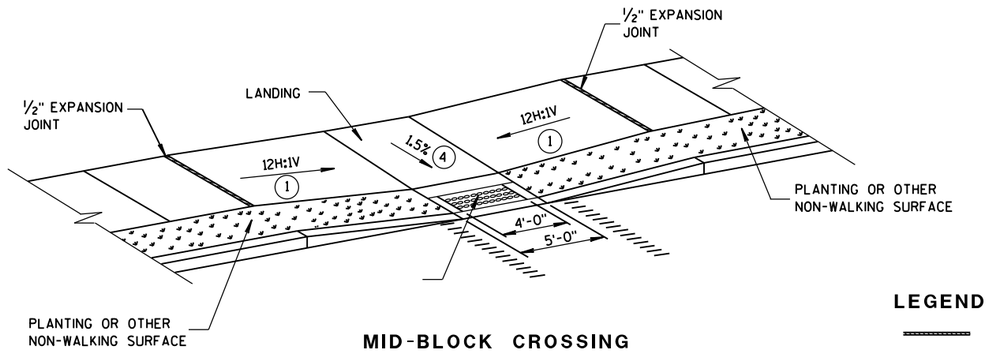


PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)



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

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

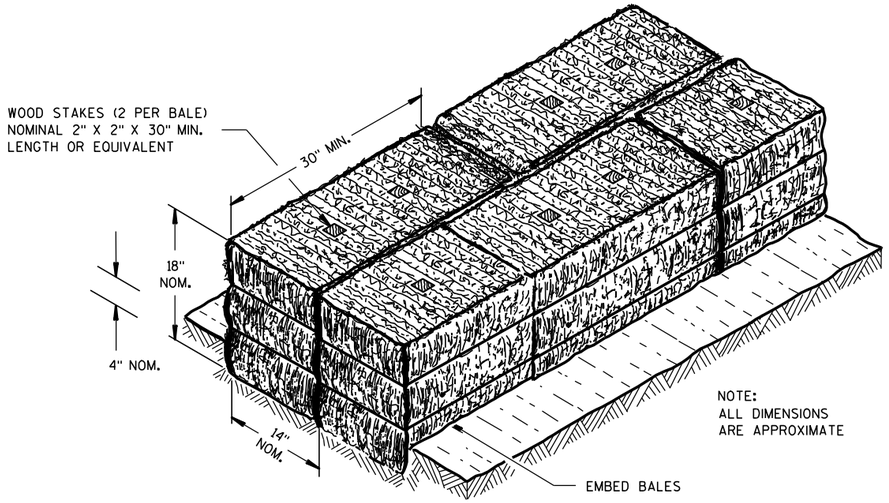
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

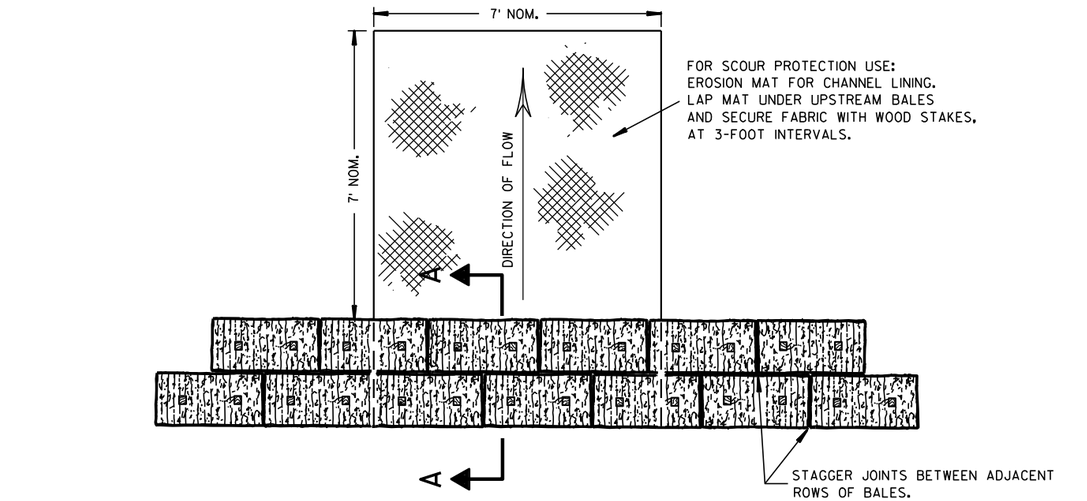
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

6

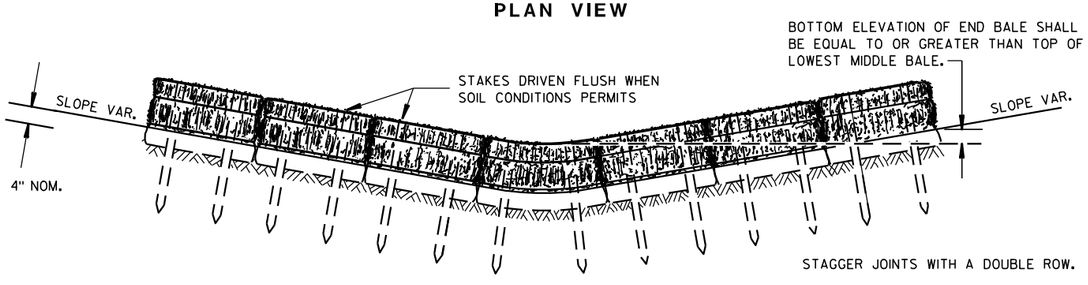
S.D.D. 8 D 5-15e



SECTION A-A



PLAN VIEW



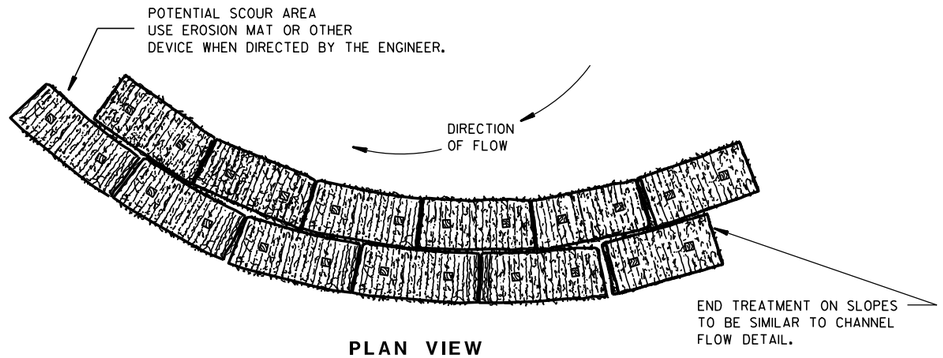
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

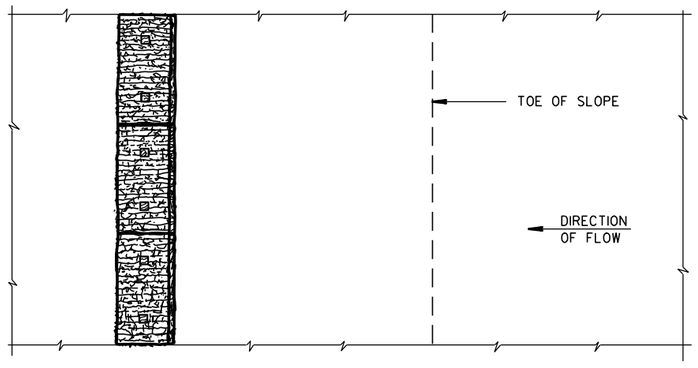
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(1) TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

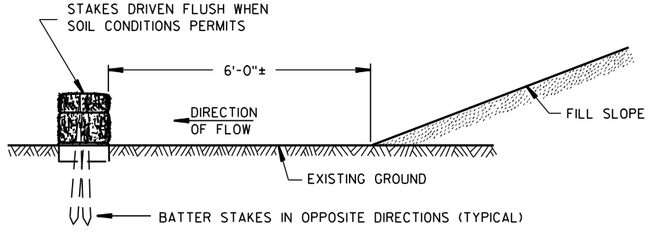


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

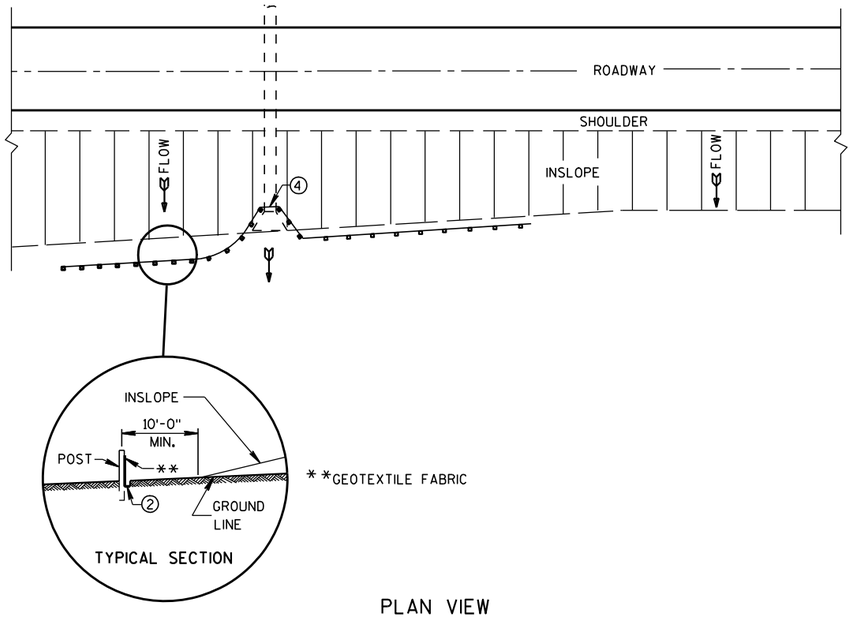
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

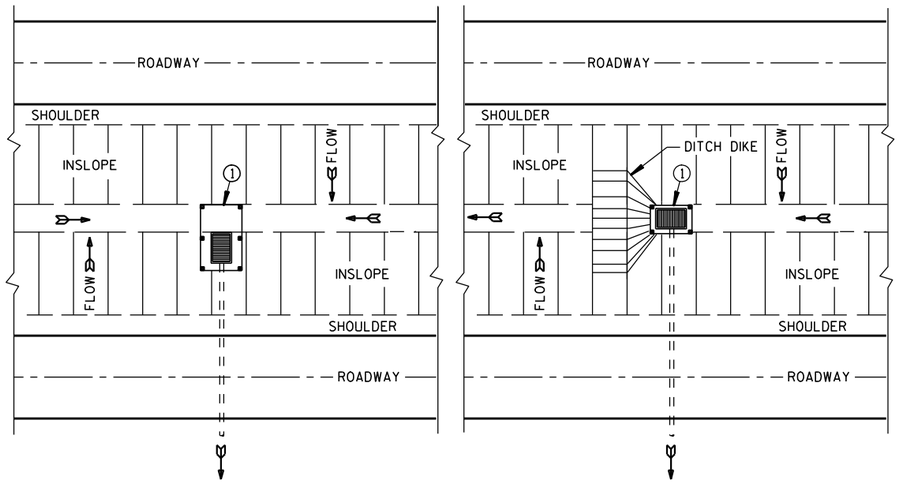
6

S.D.D. 8 E 8-3



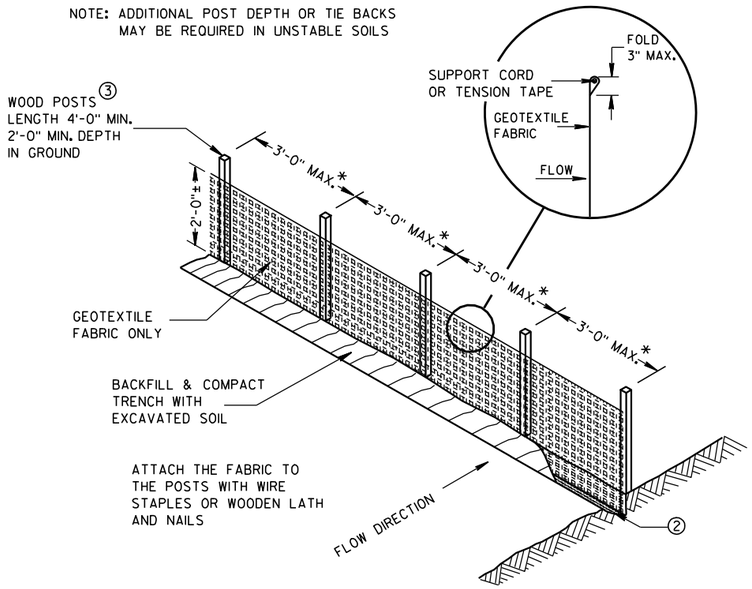
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



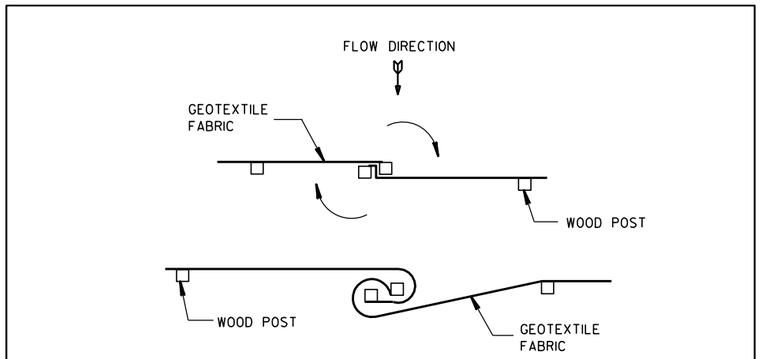
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



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

SILT FENCE

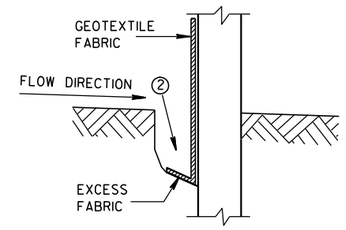


JOINING TWO LENGTHS OF SILT FENCE 5

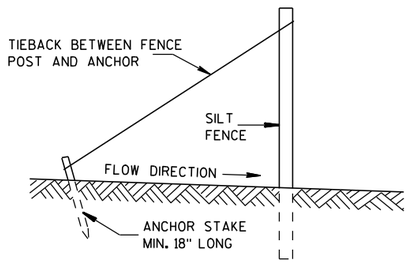
GENERAL NOTES

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 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 9-6

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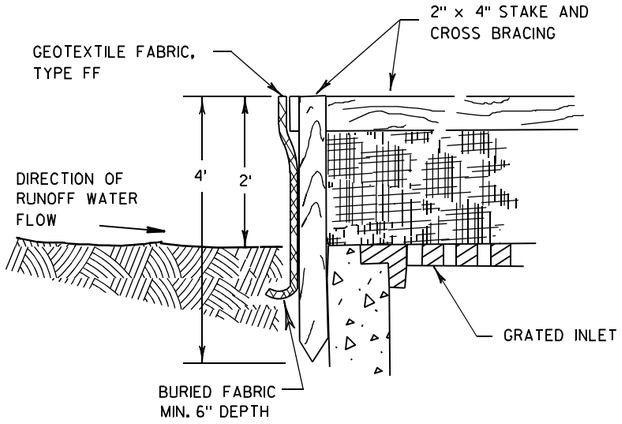
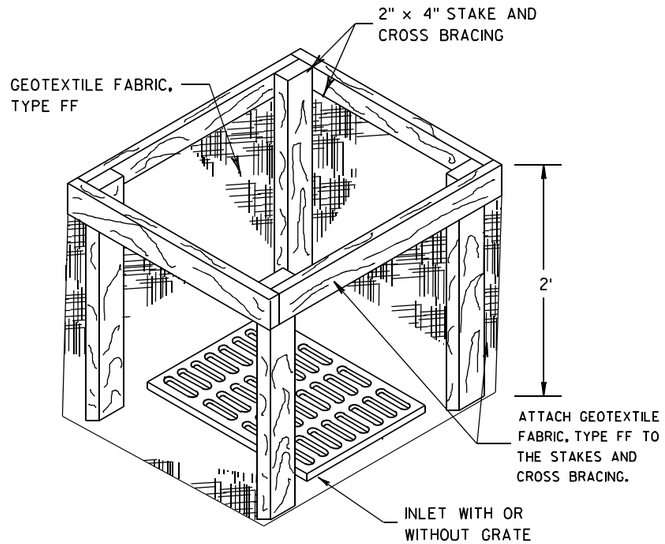
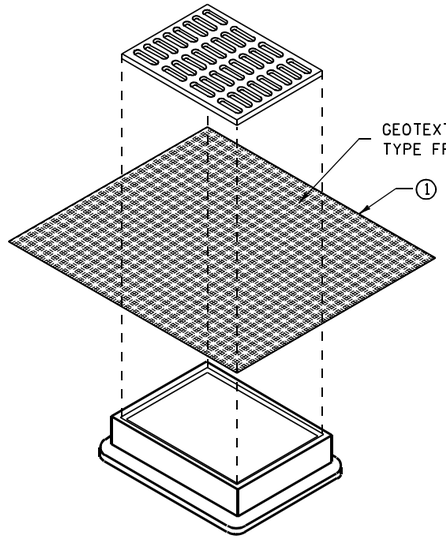
S.D.D. 8 E 9-6



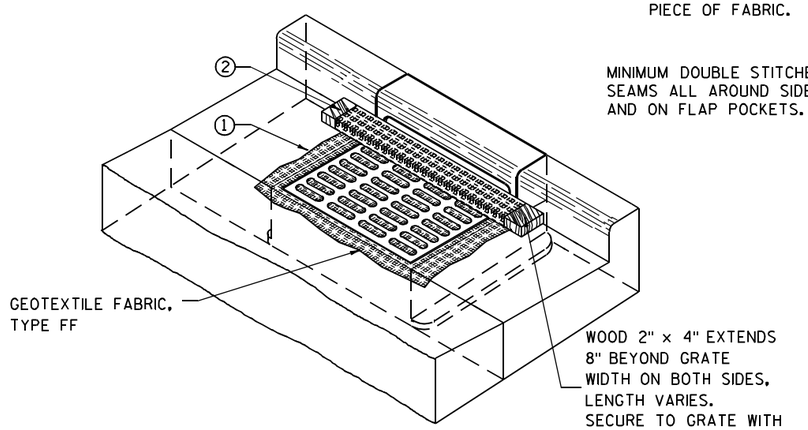


INLET PROTECTION, TYPE A

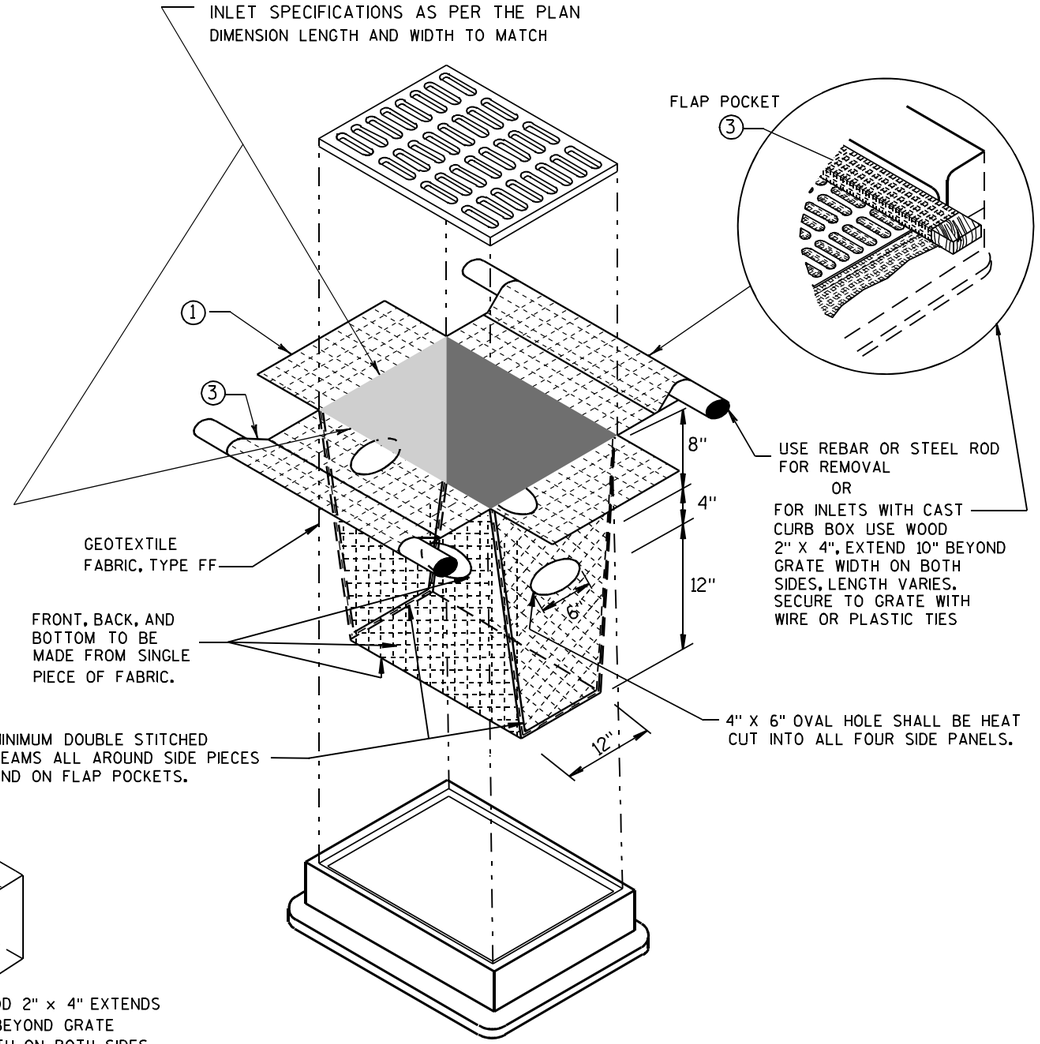


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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

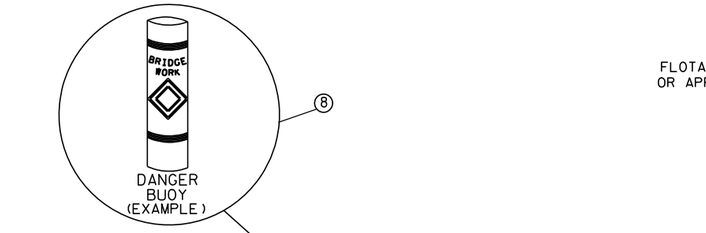
APPROVED

10/16/02
DATE

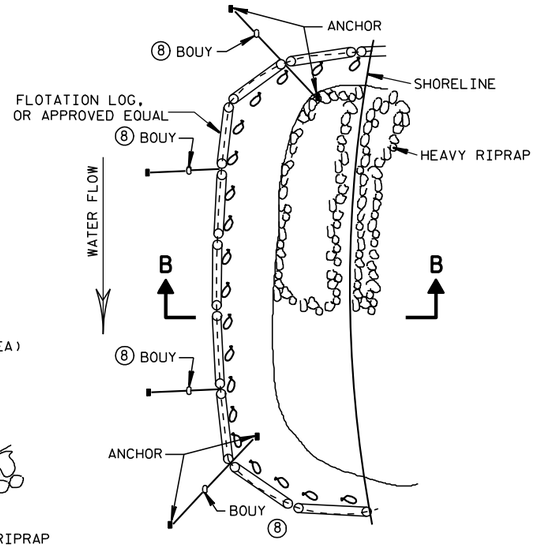
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

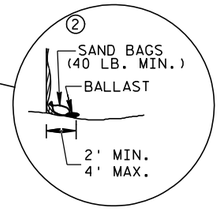
FHWA

6
S.D.D. 8 E 10-2

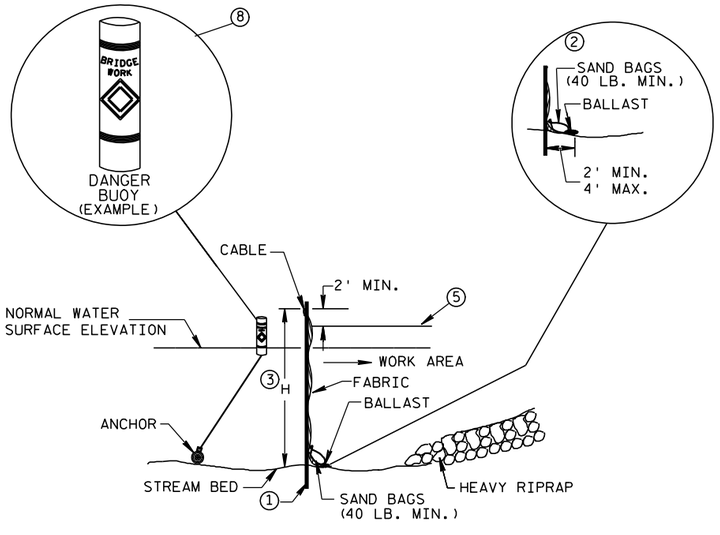


SECTION B-B

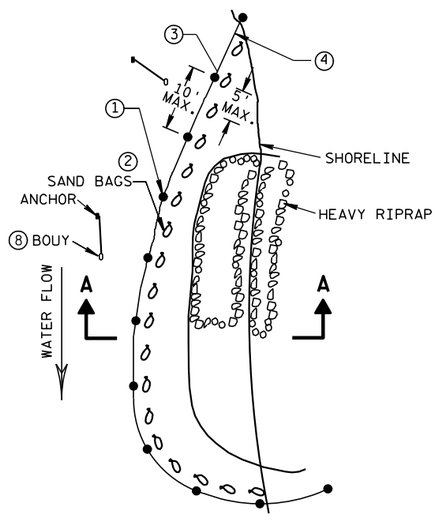




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

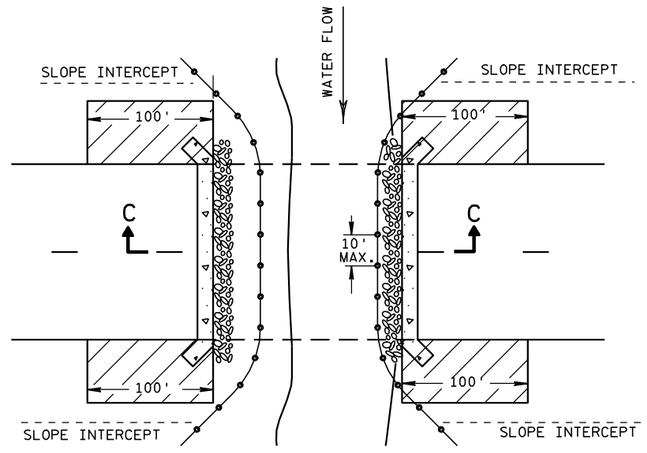
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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.

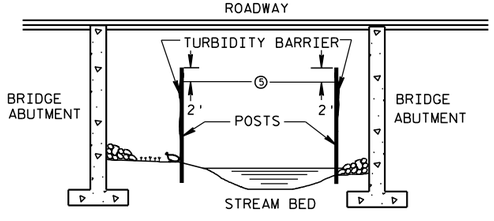
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

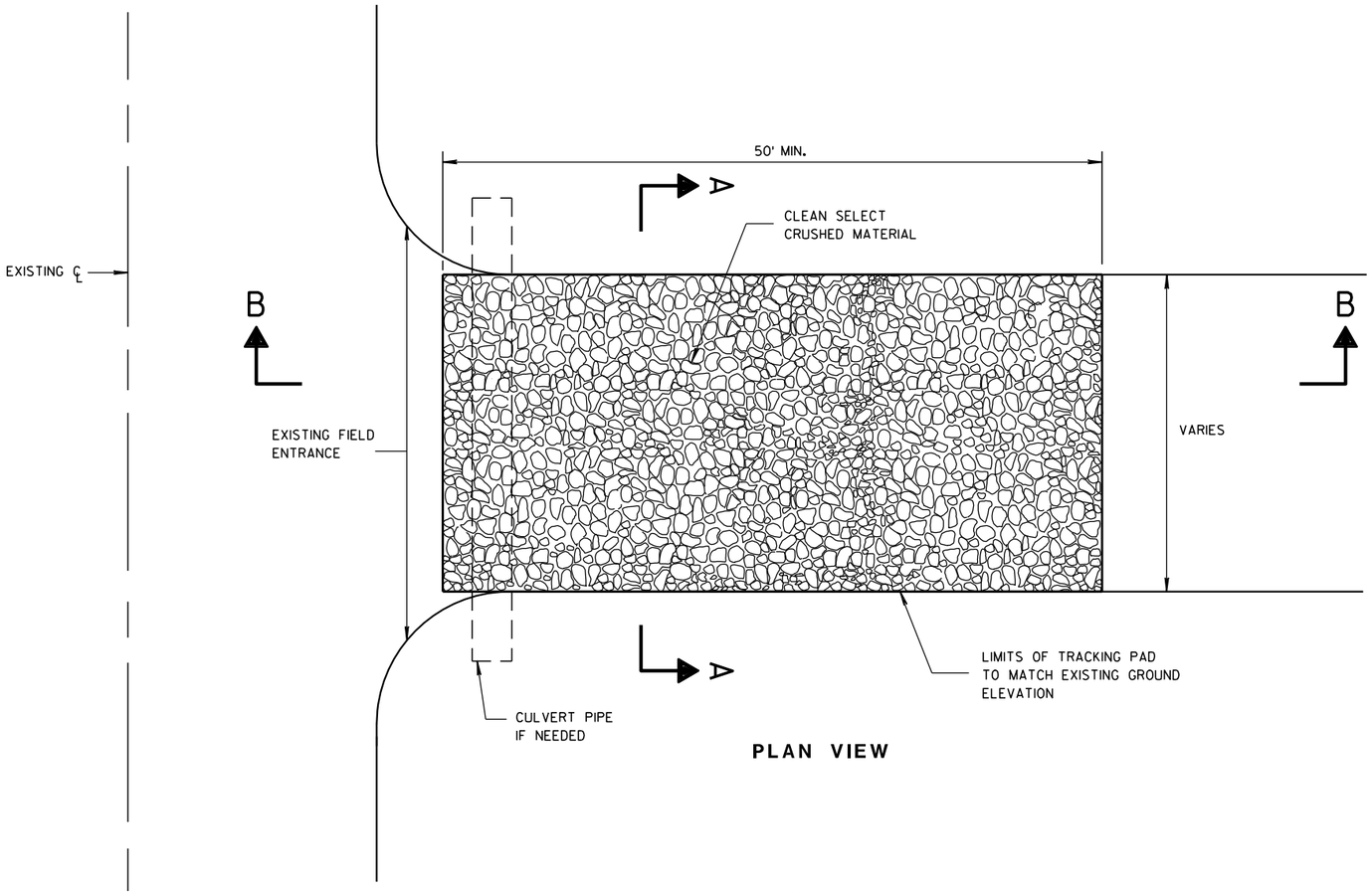
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

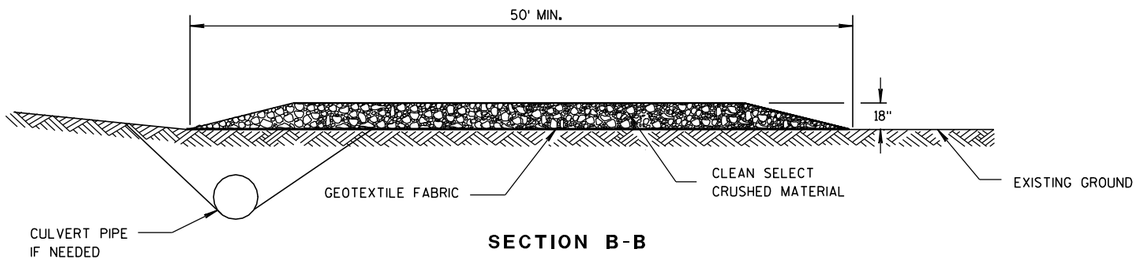
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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.

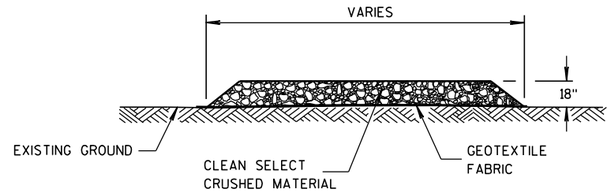
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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
/S/ Jerry H. Zoda — ROADWAY STANDARDS ENGINEER
ENT
FHWA

6

S.D.D. 8 E 14-1

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

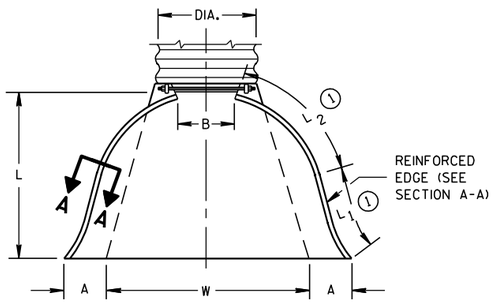
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 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	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

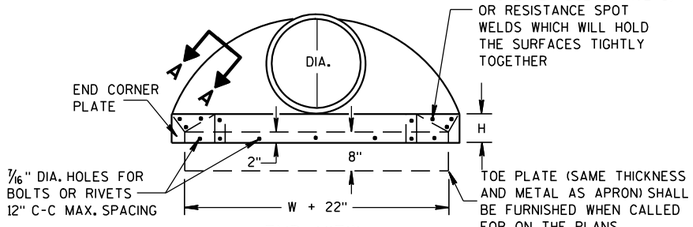
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24-30 **	* 72-78 **	* 21-27 **	99	102	5 1/2	2 to 1
72	7	* 24-36 **	78	21	99	108	6	2 to 1
78	7 1/2	* 24-36 **	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

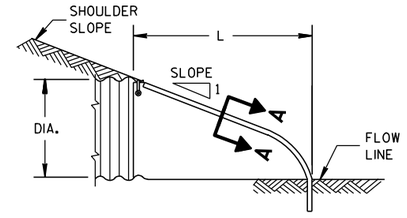
*MINIMUM
**MAXIMUM



PLAN VIEW

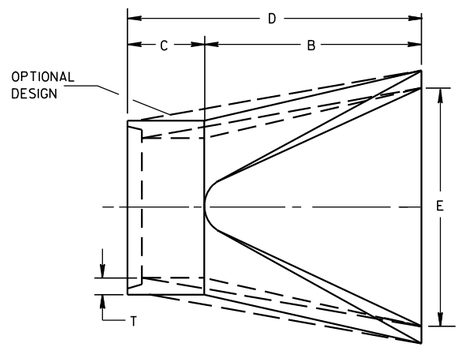


END VIEW

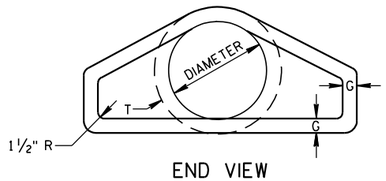


SIDE ELEVATION

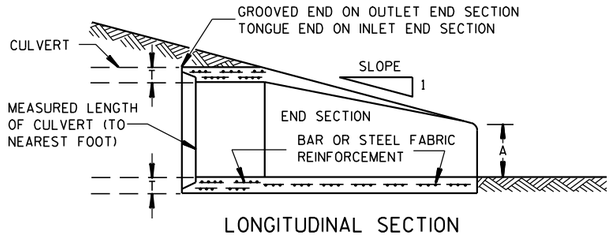
METAL ENDWALLS



PLAN

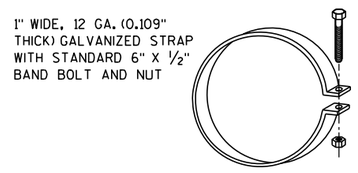


END VIEW



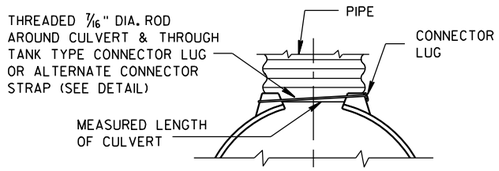
LONGITUDINAL SECTION

CONCRETE ENDWALLS

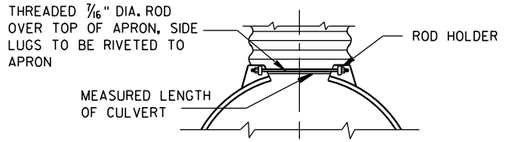


ALTERNATE FOR TYPE 1 CONNECTION

END SECTION CONNECTOR STRAP

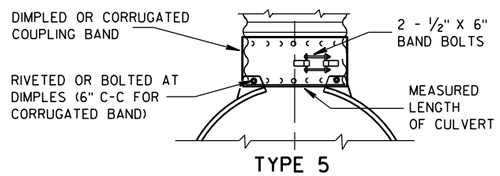


TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

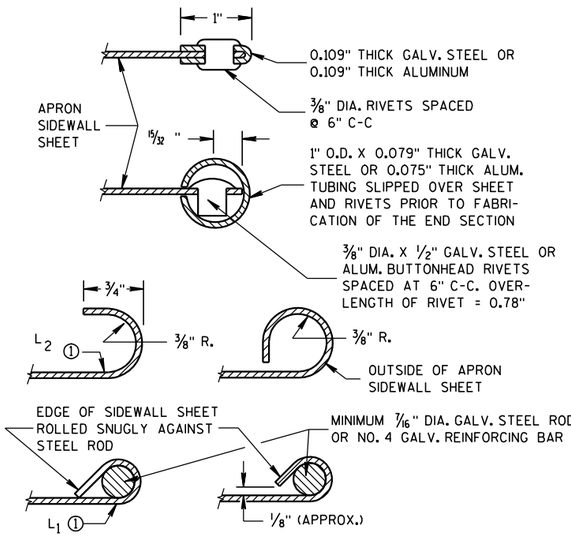
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

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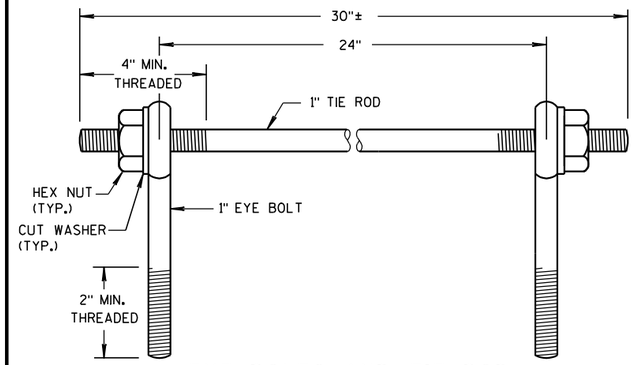
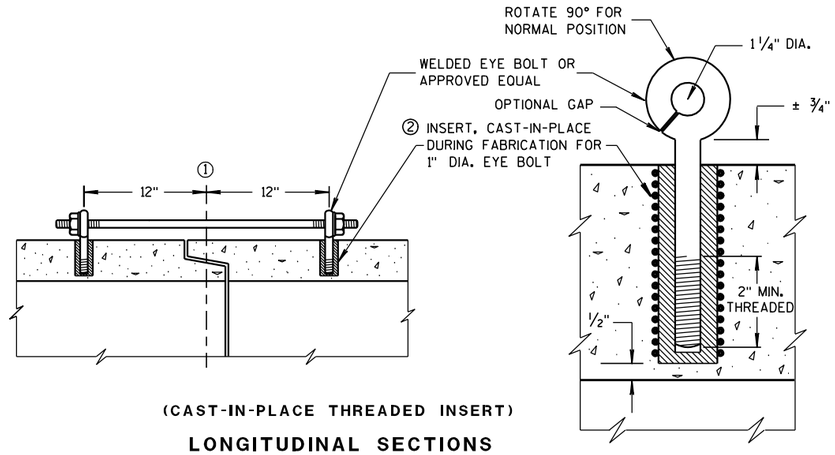


EYE BOLTS AND TIE ROD



(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.

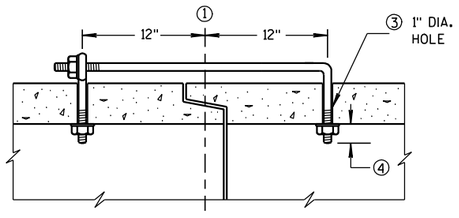
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

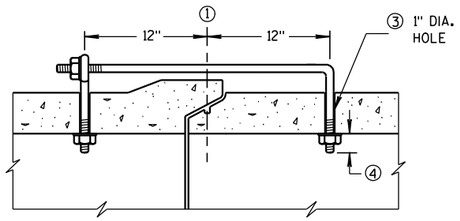
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

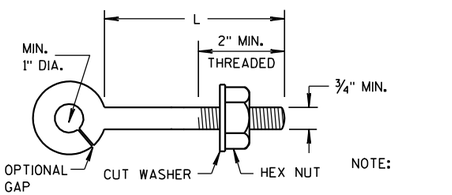


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

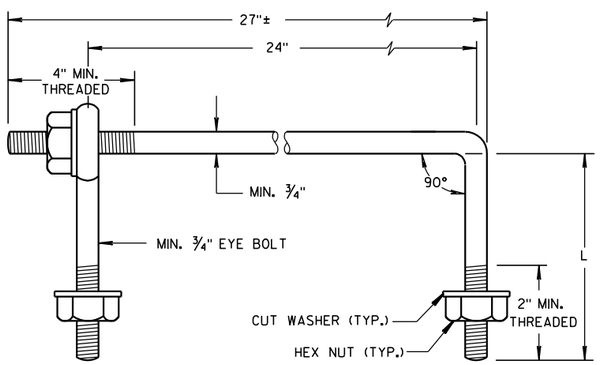
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

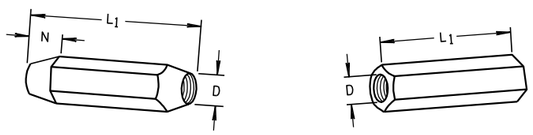
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

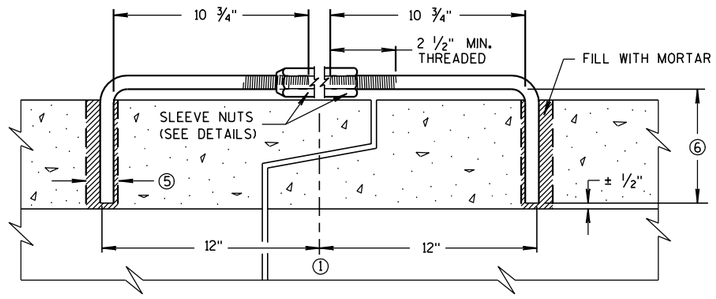
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

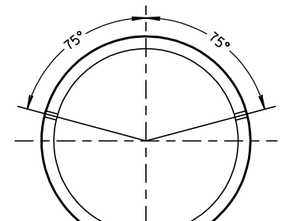
SLEEVE NUTS



LONGITUDINAL SECTION

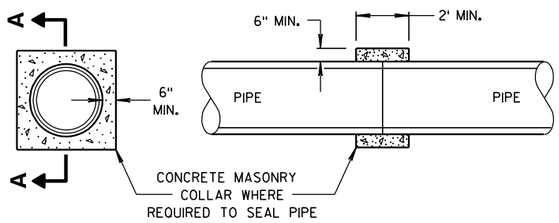
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

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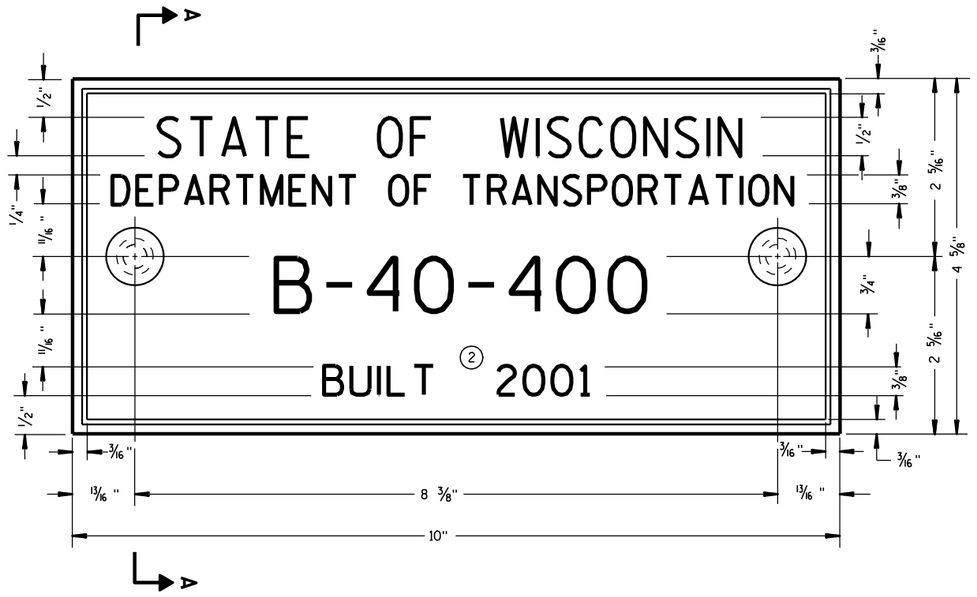


TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

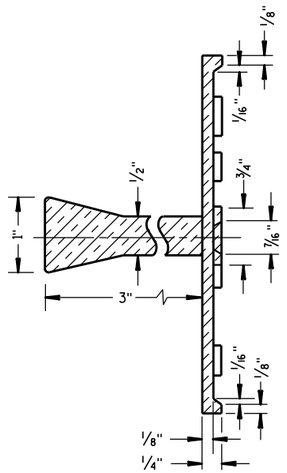
GENERAL NOTES

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.

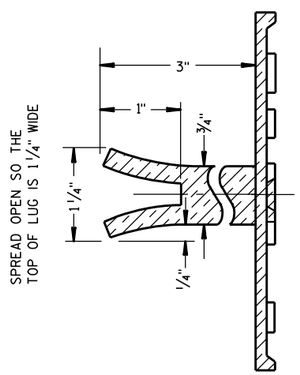
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

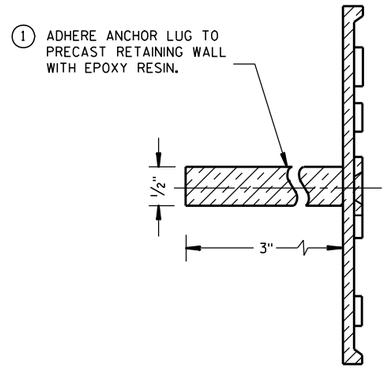
COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

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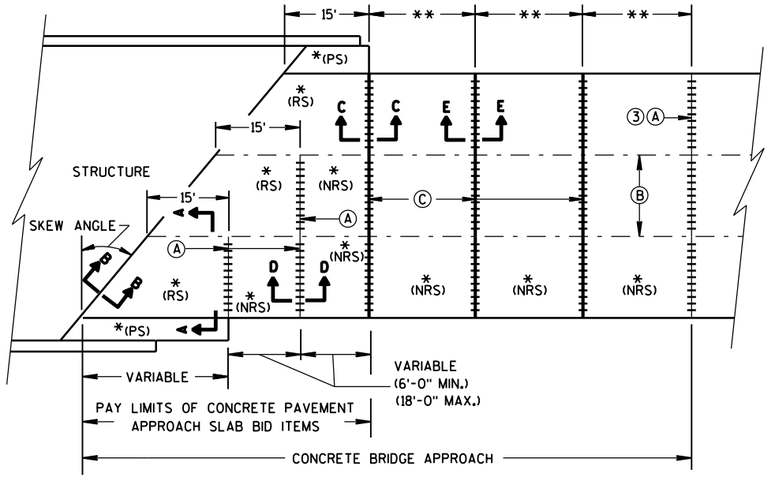
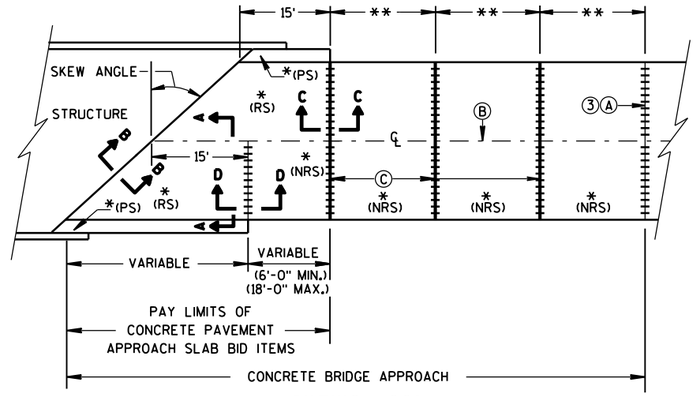
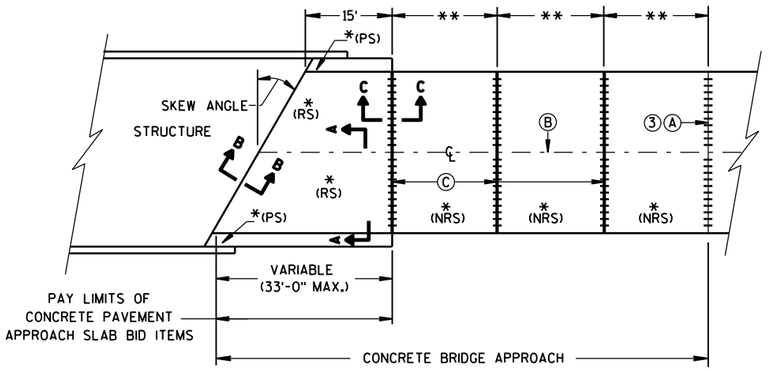


SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



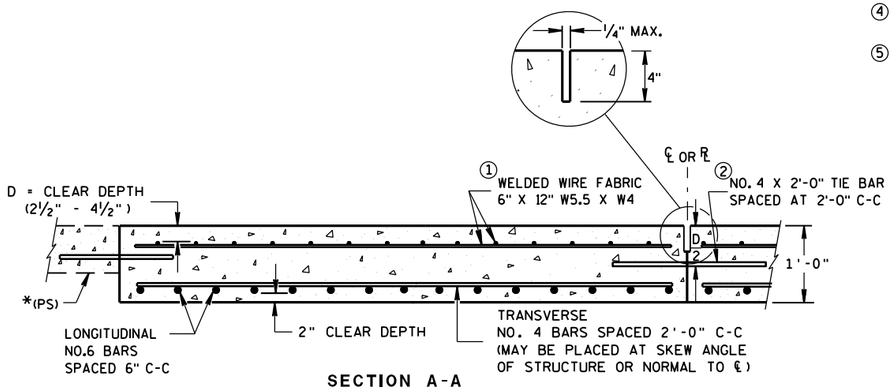
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

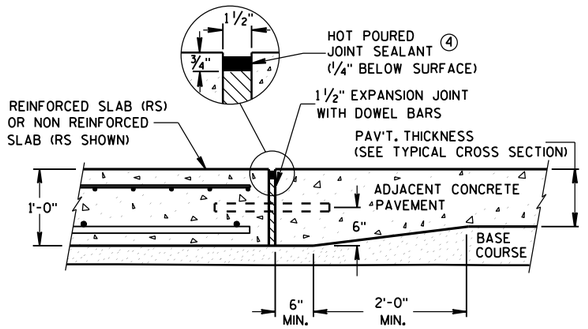
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN (SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
***STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11, & SDD 13C13)

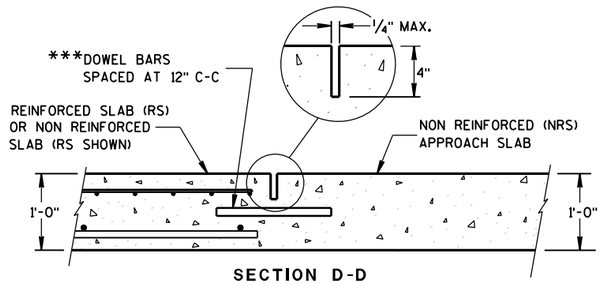
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) STANDARD LONGITUDINAL JOINT AND TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



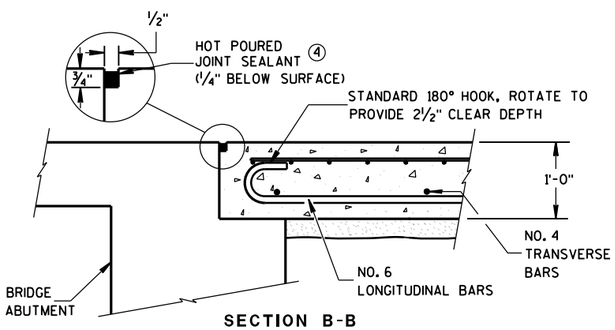
SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

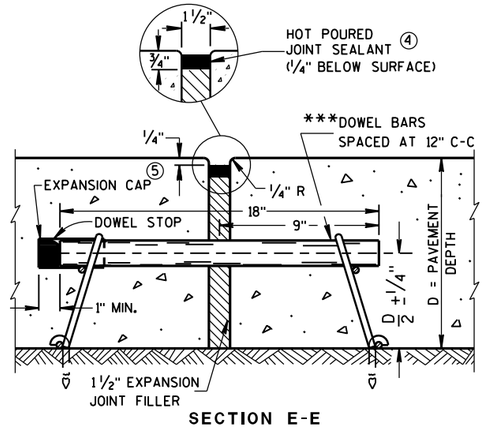
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

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 DOWEL A CONTRACTION JOINT THAT ABUTS 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



SECTION E-E
EXPANSION JOINT

CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
EER
FHWA

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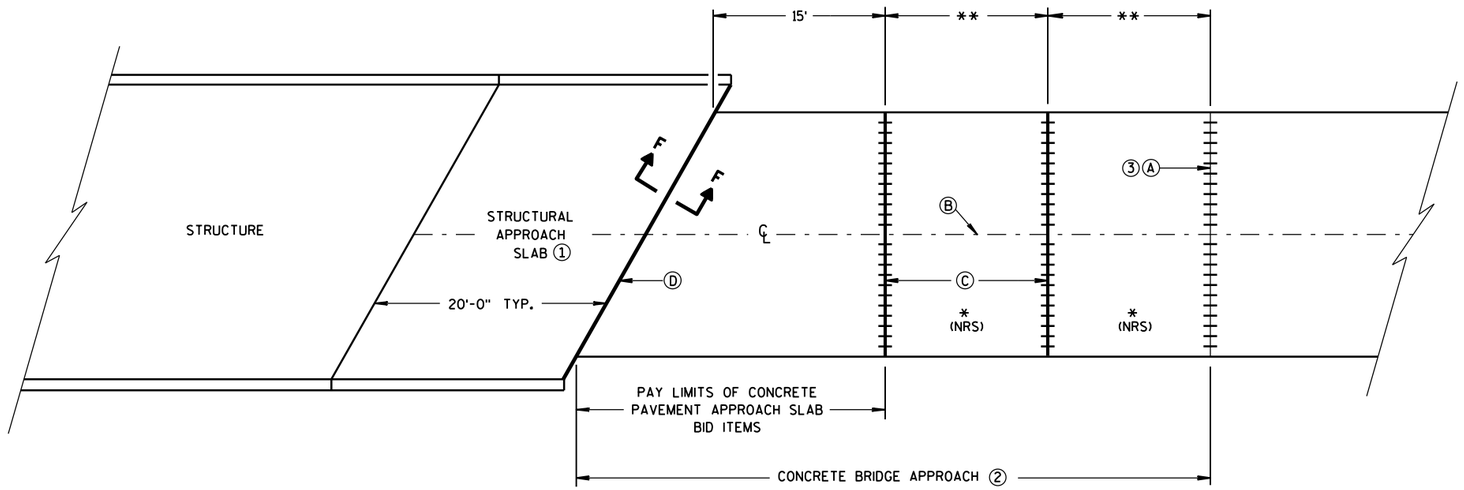
S.D.D. 13 B 2-7a



BRIDGE APPROACHES

GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE BRIDGE APPROACH.

① CONFORM TO APPLICABLE BRIDGE MANUAL STANDARD DRAWINGS FOR *STRUCTURAL APPROACH SLABS* (SEE CHAPTER 12 - ABUTMENTS).

② CONFORM TO SHEET (a) OF THIS SET FOR *CONCRETE BRIDGE APPROACH* DETAILS, WITH ONE EXCEPTION — WHEN CONSTRUCTING A *CONCRETE BRIDGE APPROACH* NEXT TO A *STRUCTURAL APPROACH SLAB*, AS SHOWN IN THE DETAIL DRAWING, THE *CONCRETE BRIDGE APPROACH* WILL ONLY HAVE TWO EXPANSION JOINTS; THE THIRD EXPANSION JOINT IS AT THE END OF THE *STRUCTURAL APPROACH SLAB*.

③ DO NOT DOWEL A CONTRACTION JOINT THAT ABUTS AN HMA PAVEMENT.

*(NRS) = NON-REINFORCED CONCRETE SLAB

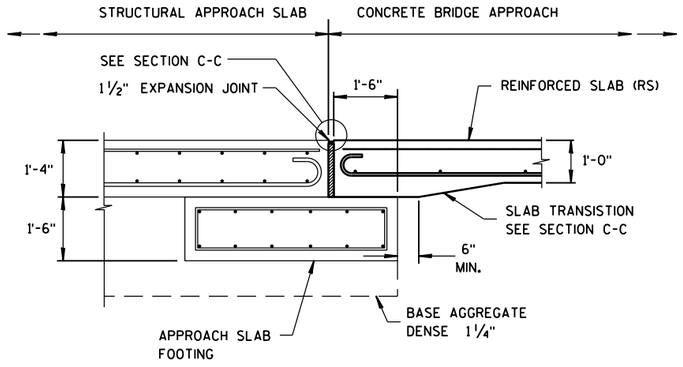
**STANDARD TRANSVERSE JOINT SPACING (SEE SDD 13C4, SDD 13C11, & SDD 13C13)

Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT AND TIE BARS.

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

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION F-F

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE BRIDGE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2014 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE
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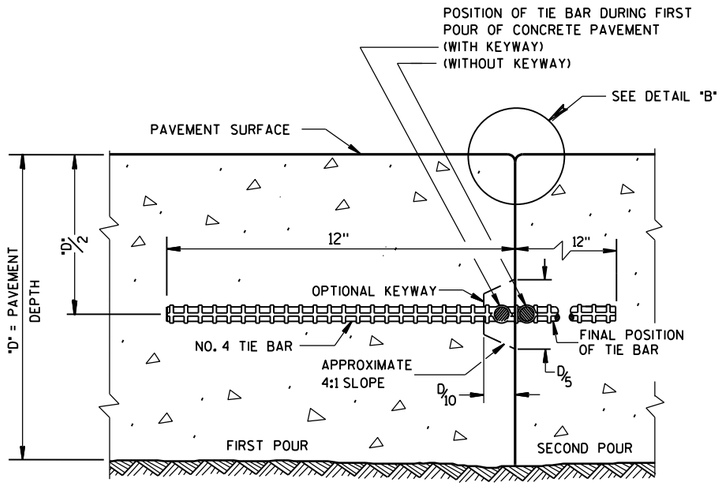
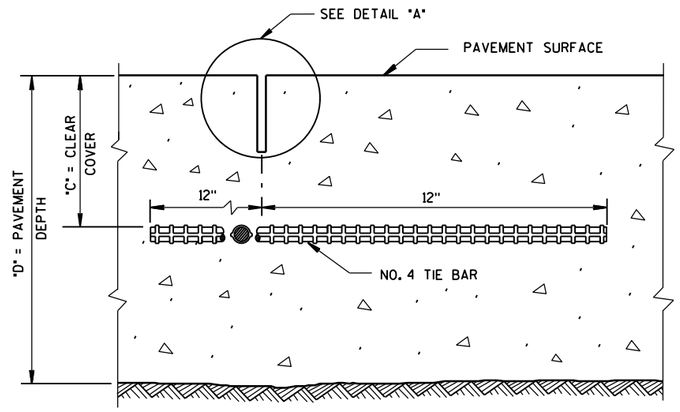
S.D.D. 13 B 2-7b



CONSTRUCTION JOINT



SAWED JOINT

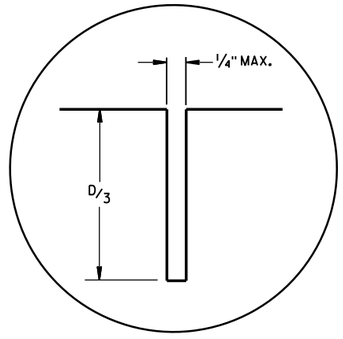
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

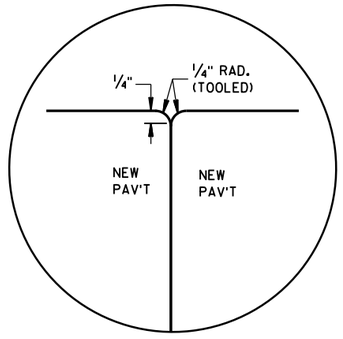
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



DETAIL "A"



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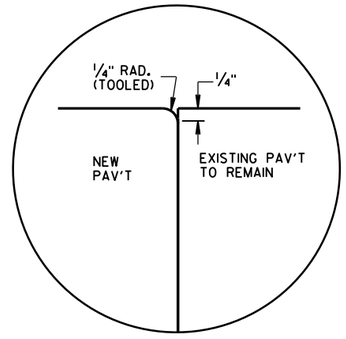
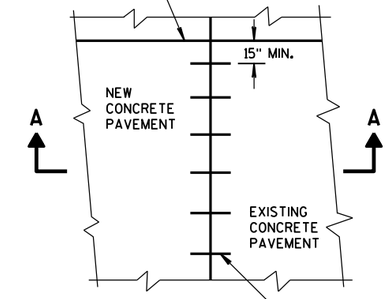
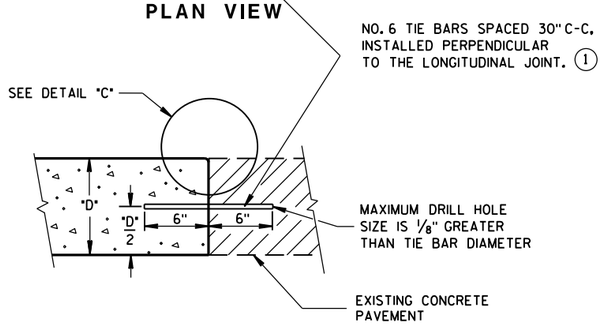


DETAIL "C"



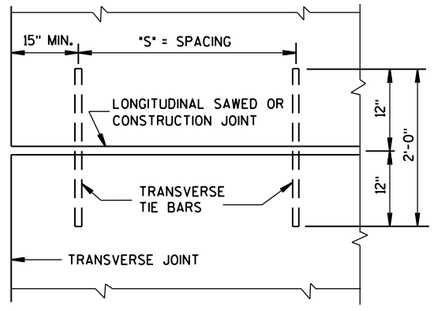
PLAN VIEW



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

TIE BAR TABLE

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



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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9/2014 — DATE

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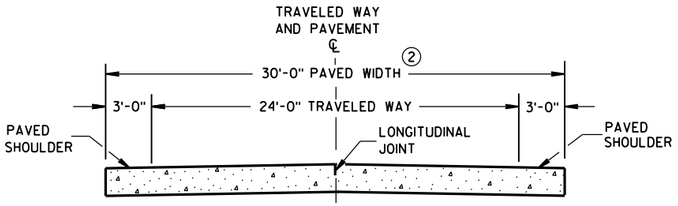
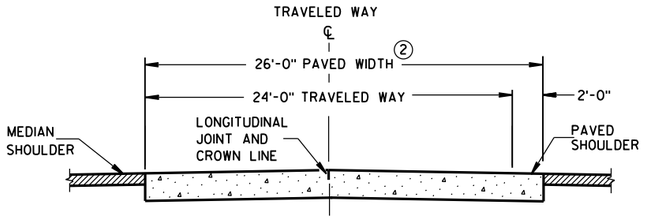
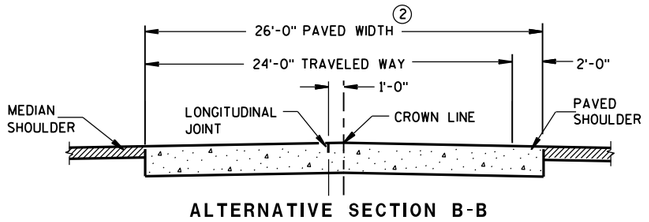


SECTION A-A ①

TWO-LANE TWO-WAY HIGHWAY



SECTION B-B



ALTERNATIVE SECTION B-B ①

DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

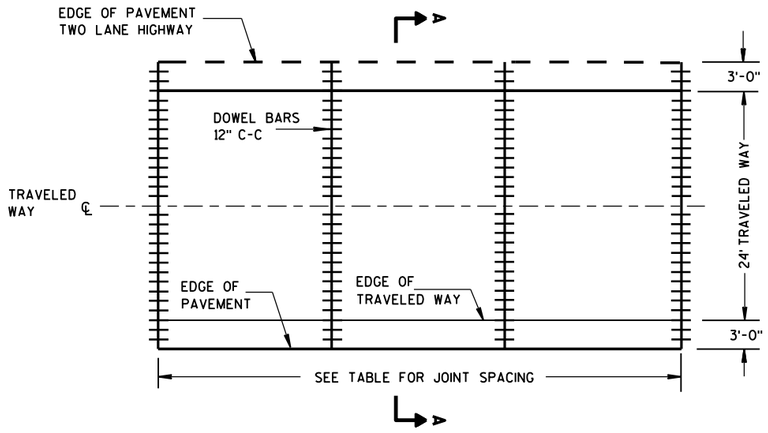
LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

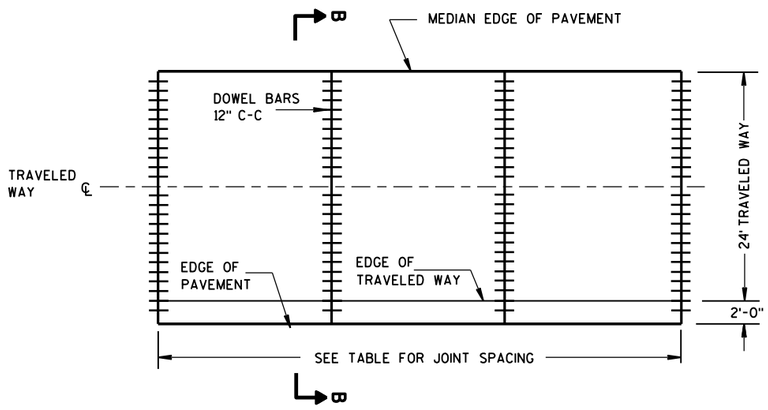
② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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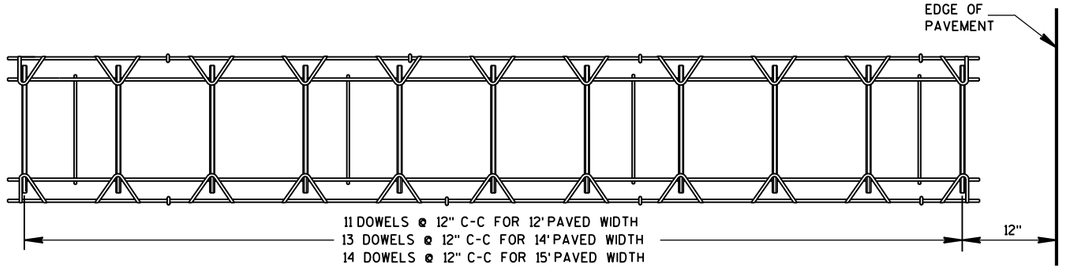
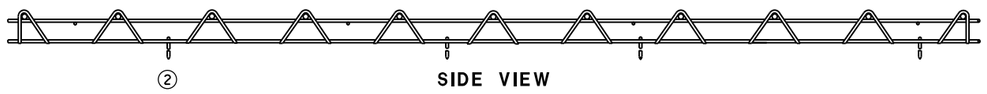


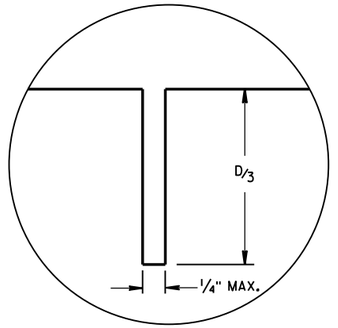
PLAN VIEW



SIDE VIEW

(NORMAL TO CENTERLINE)

CONTRACTION JOINT DOWEL ASSEMBLY ①



JOINT DETAIL

GENERAL NOTES

① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

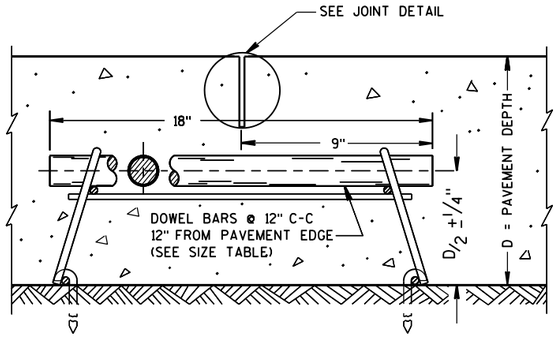
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A 1/4-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

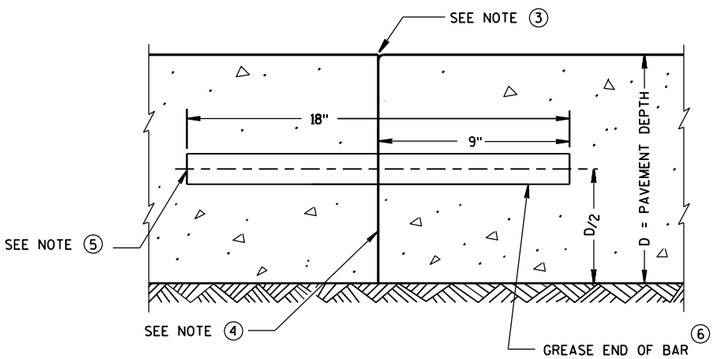
⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

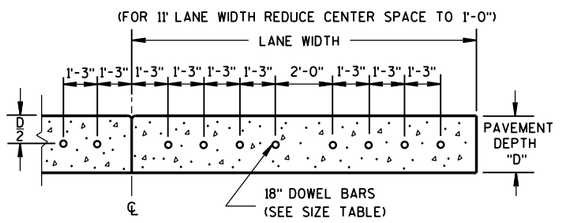
⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS 1/8-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

RURAL DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/3/2013 — DATE

/S/ Deb Bischoff — PAVEMENT POLICY & DE ENGINEER

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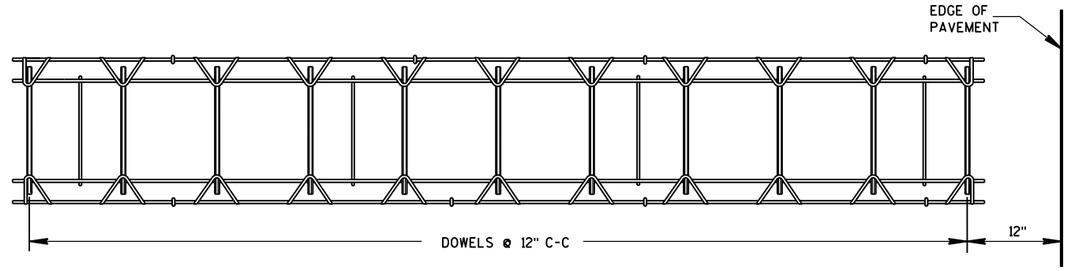
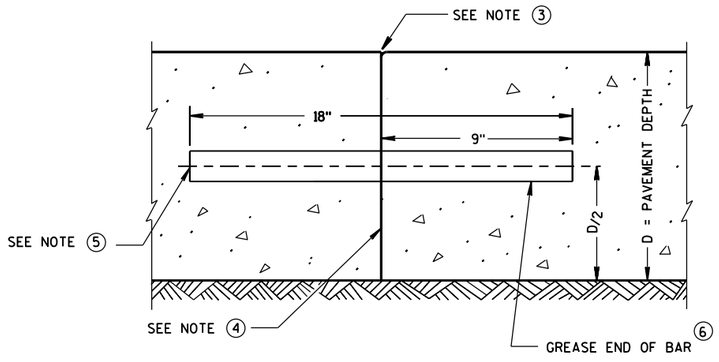


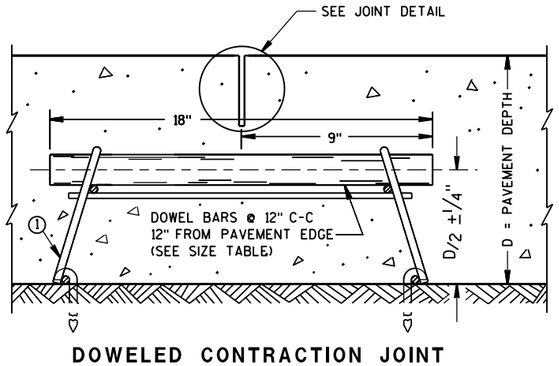
PLAN VIEW

SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



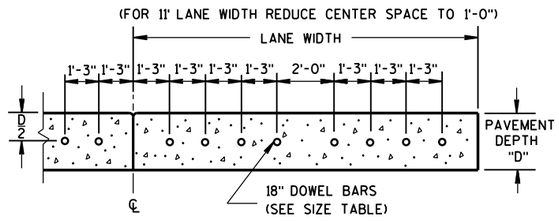
TRANSVERSE CONSTRUCTION JOINT



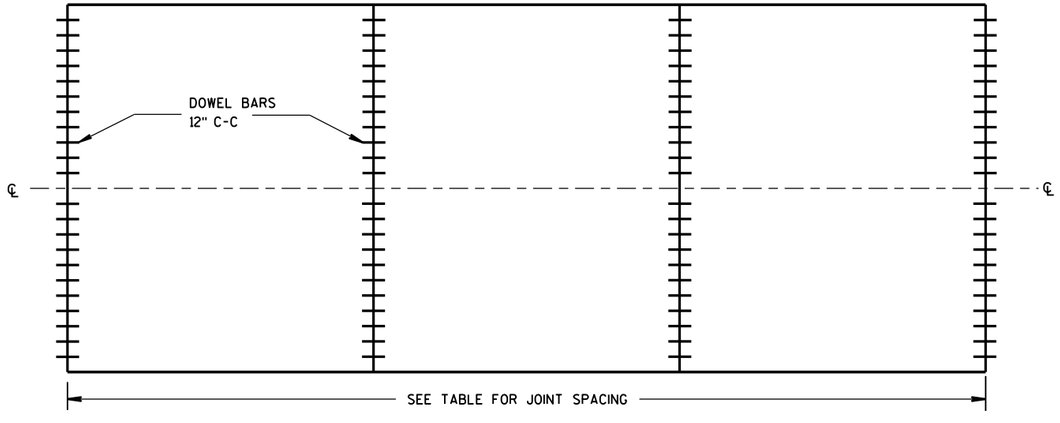
DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE LONGITUDINAL JOINT AND THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① **OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.**

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

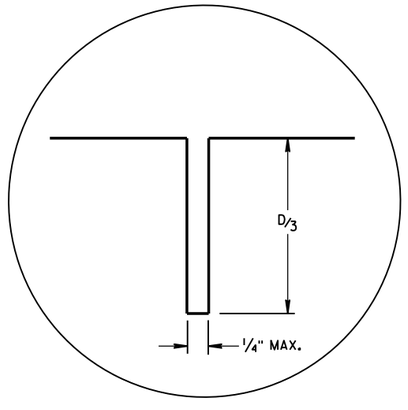
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE ENGINEER
FHWA

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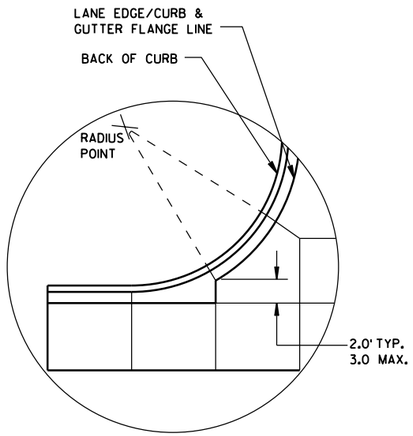
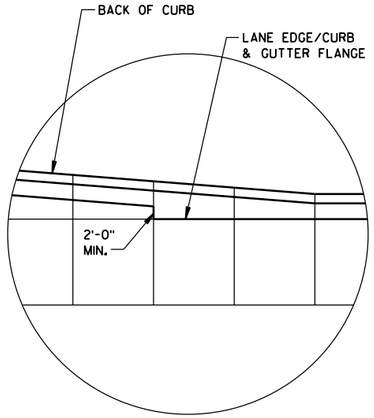


DETAIL "A"



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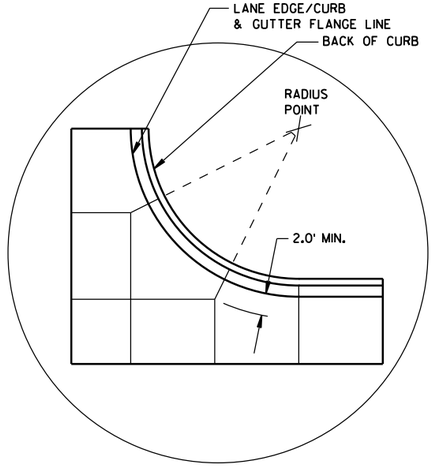
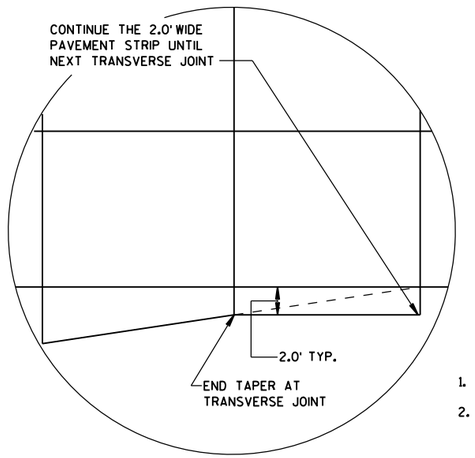


DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

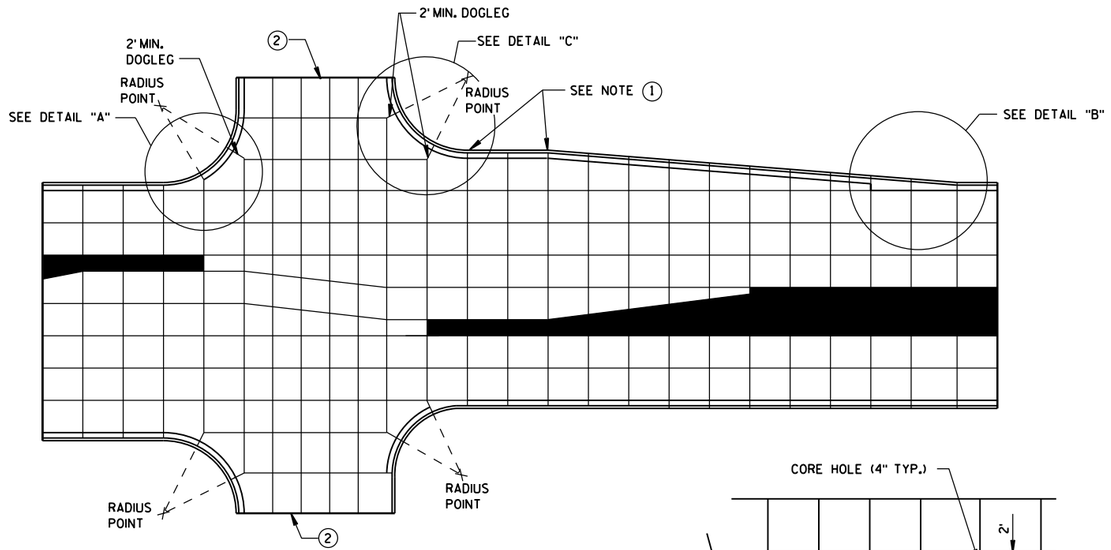
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.

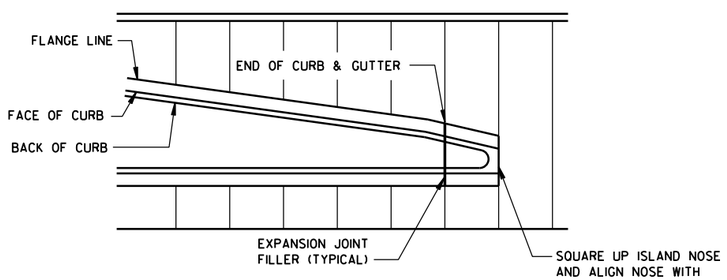


STANDARD INTERSECTION

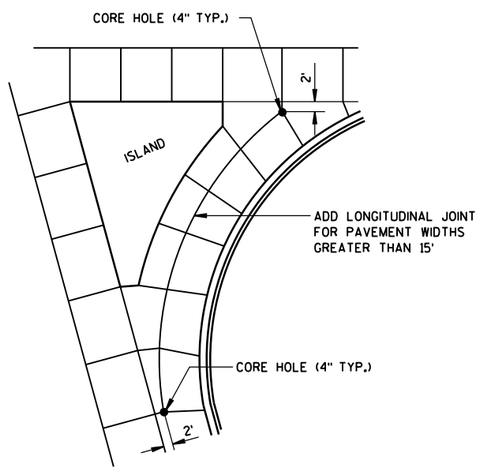
PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'

SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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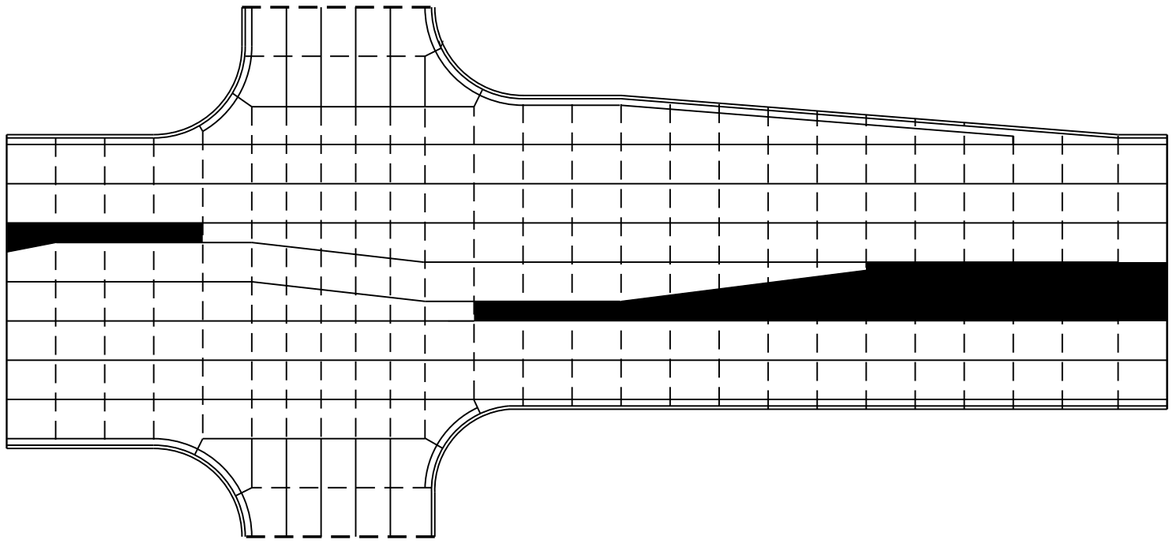
S.D.D. 13 C 18-2a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

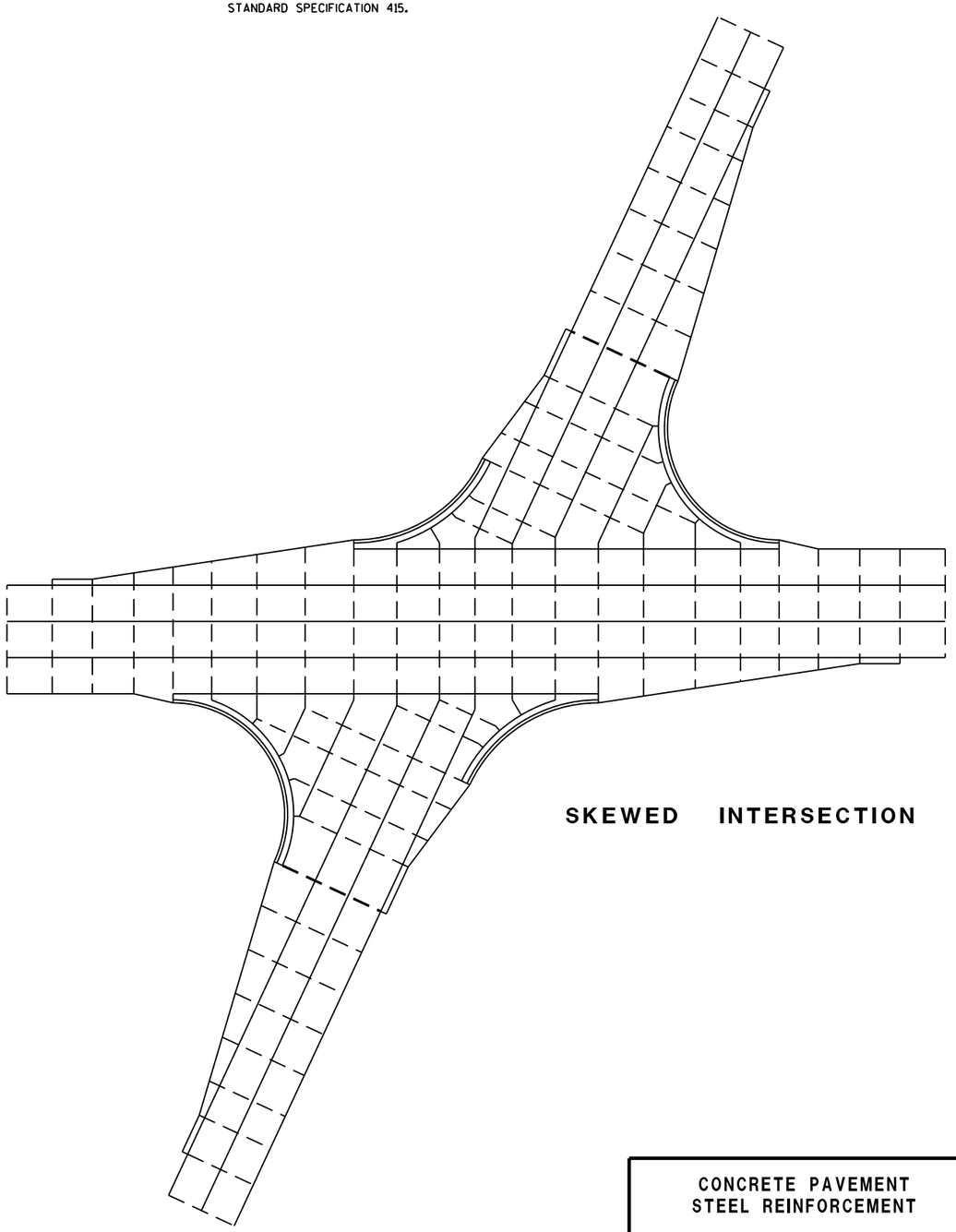
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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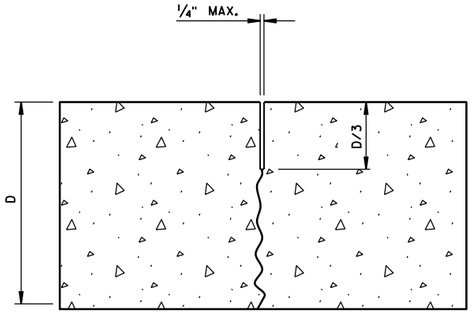
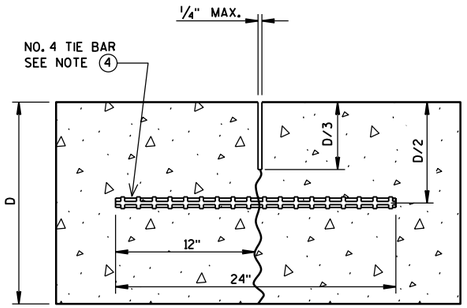
6

S.D.D. 13 C 18-2b



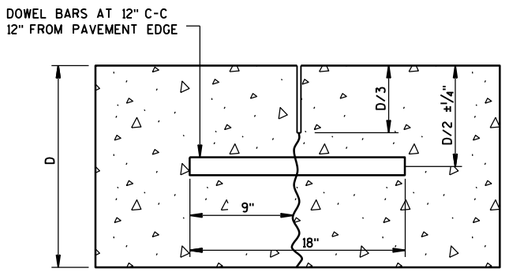
UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

GENERAL NOTES

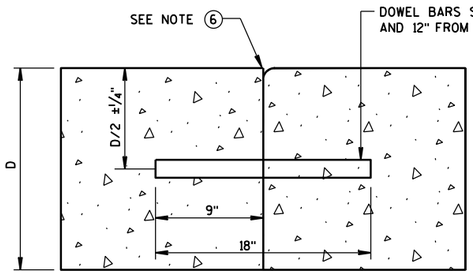
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.



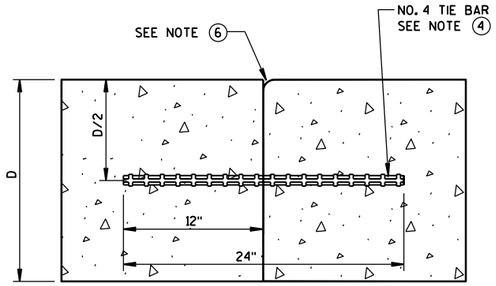
DOWELED-TRANSVERSE

CONTRACTION JOINTS

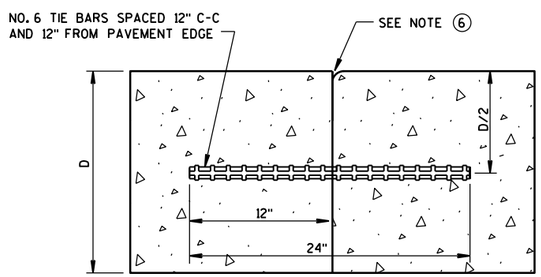
SEE NOTE (2)



DOWELED TRANSVERSE

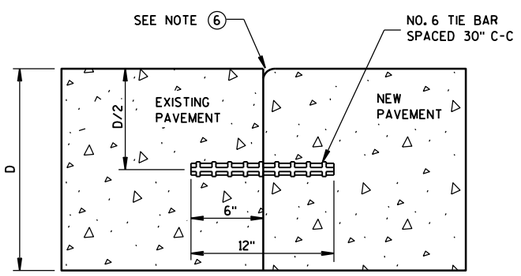


TIED LONGITUDINAL



TIED TRANSVERSE

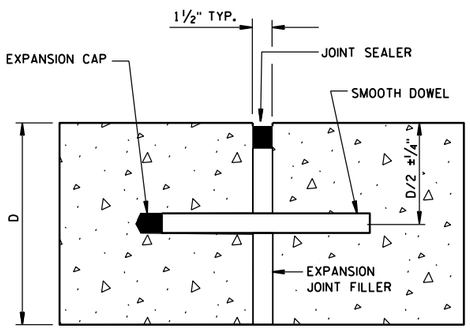
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

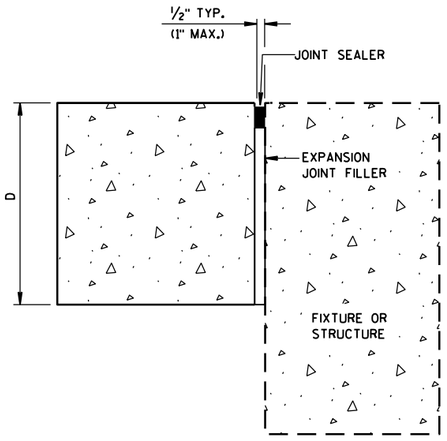
CONSTRUCTION JOINTS

SEE NOTE (5)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

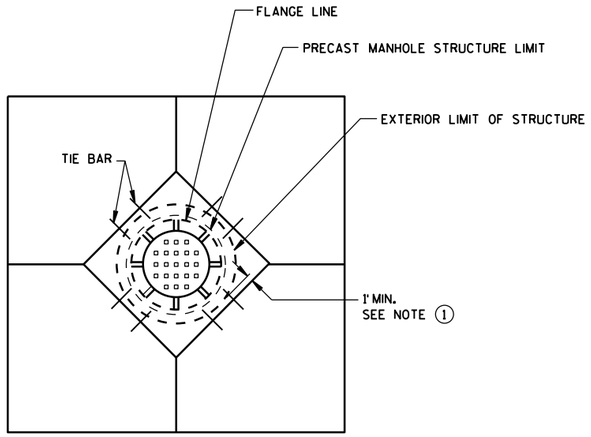
EXPANSION JOINTS

CONCRETE PAVEMENT
JOINT TYPES

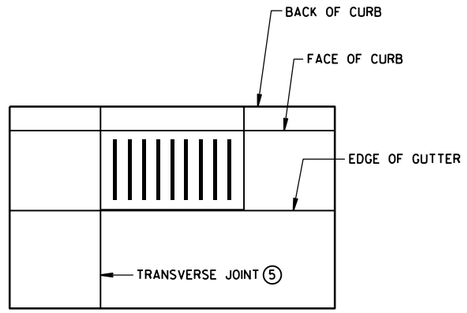
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

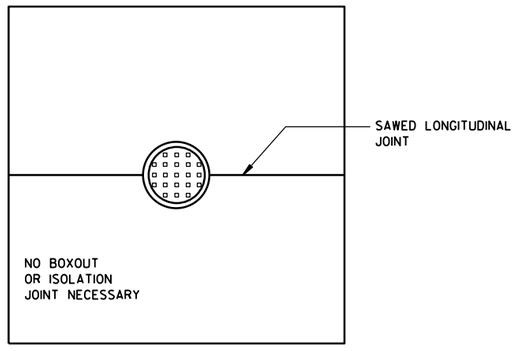
S.D.D. 13 C 18-2c



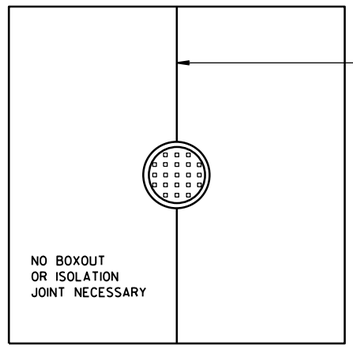
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



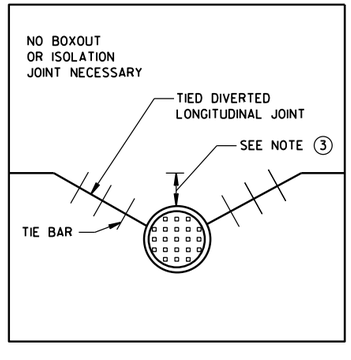
INLET WITH TRANSVERSE JOINT



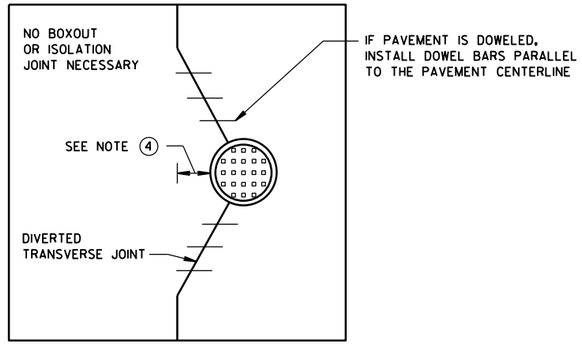
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-3-2013 — DATE

/S/ Deb Bischoff — PAVEMENT POLICY & DE

NEER

FHWA

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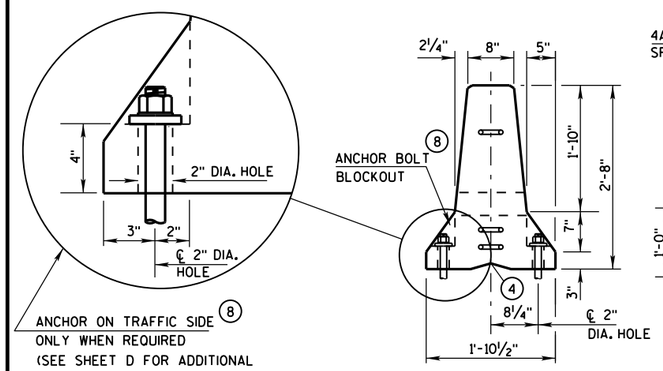
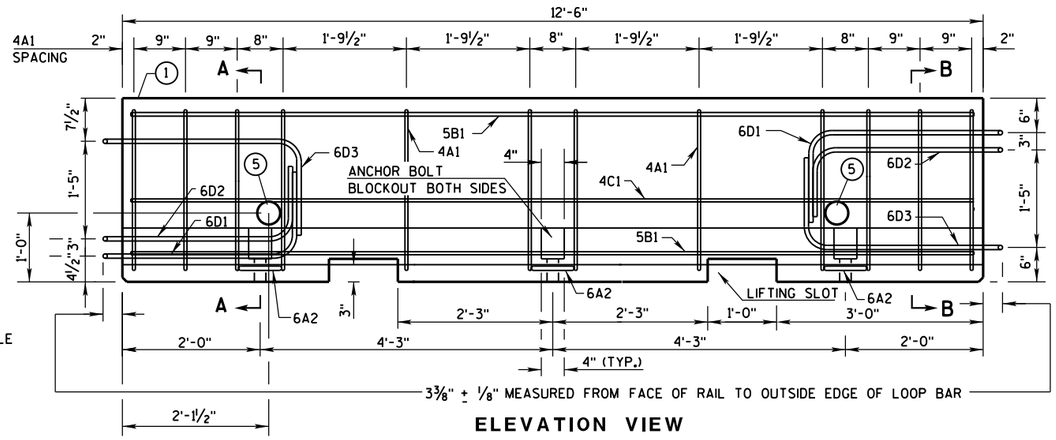
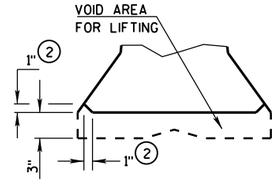
S.D.D. 13 C 18-2d



END VIEW



ELEVATION VIEW



DETAIL "B"
LIFTING SLOT DETAIL

GENERAL NOTES

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

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

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

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

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

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

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

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WI CBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

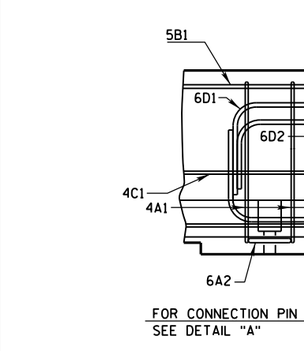
(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

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

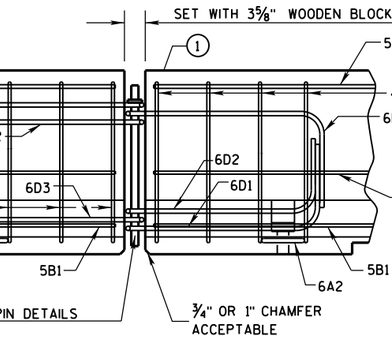
(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

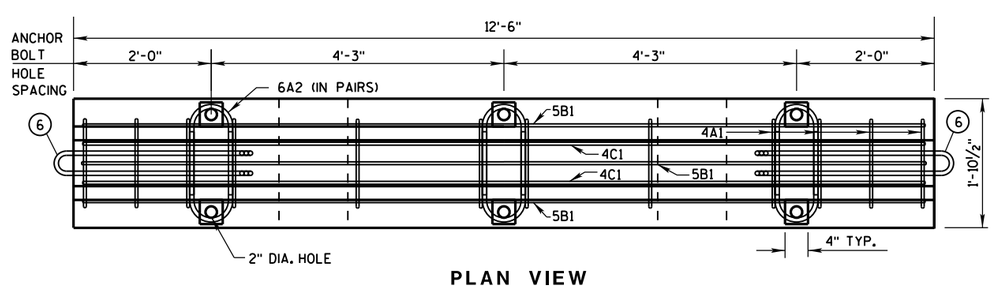
(9) 1" CHAMFER OPTIONAL.



SECTION A-A
(STIRRUP PLACEMENT)



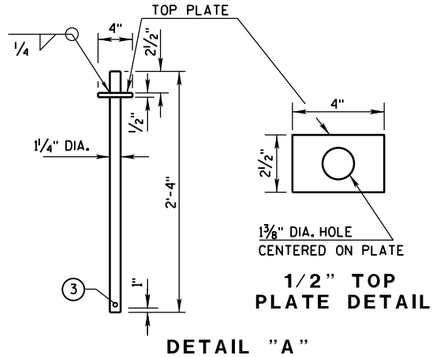
SECTION B-B
(STIRRUP PLACEMENT)



PLAN VIEW

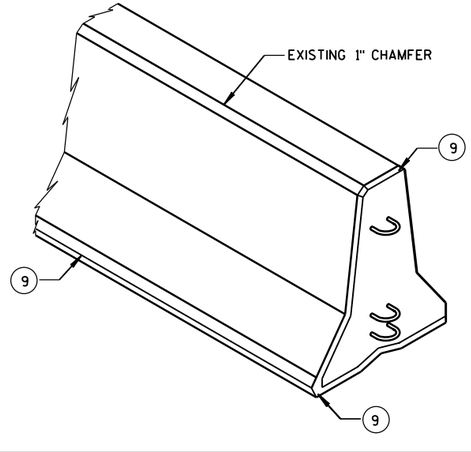
DETAILS OF BARRIER SECTION

DETAILS OF BARRIER CONNECTION



1/2" TOP
PLATE DETAIL

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



CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

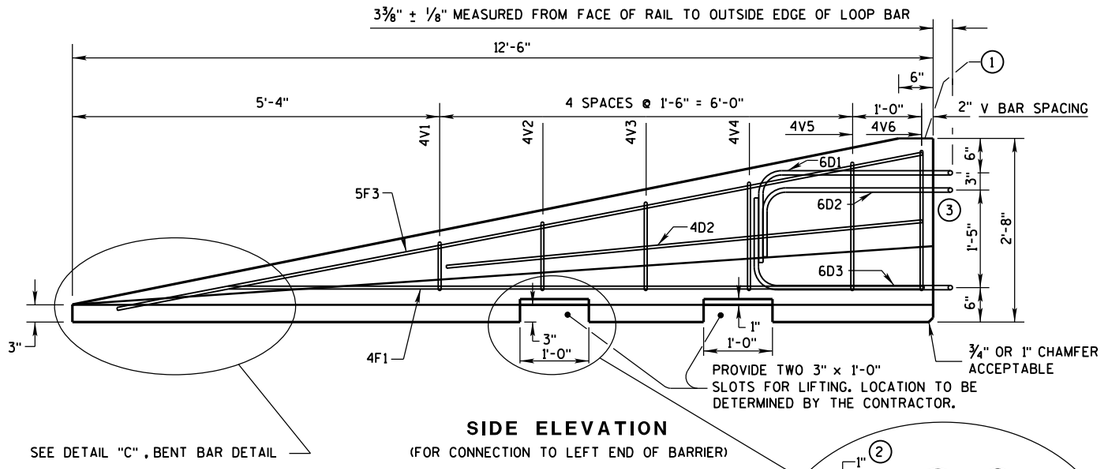
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 65

6

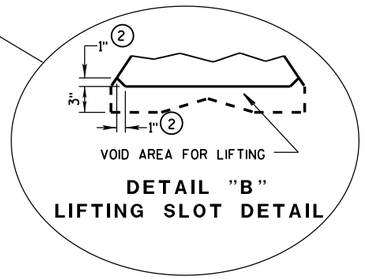
S.D.D. 14 B 7-14a

6

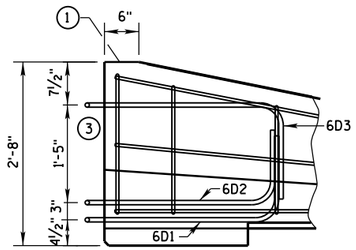
S.D.D. 14 B 7-14a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



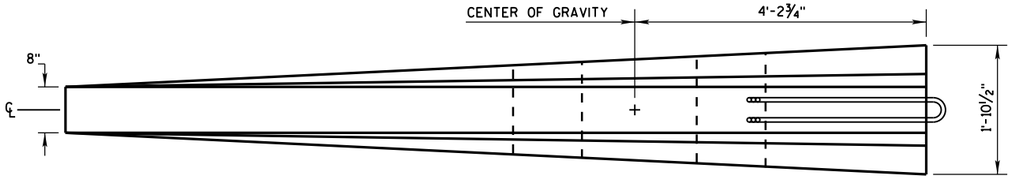
DETAIL "B"
LIFTING SLOT DETAIL



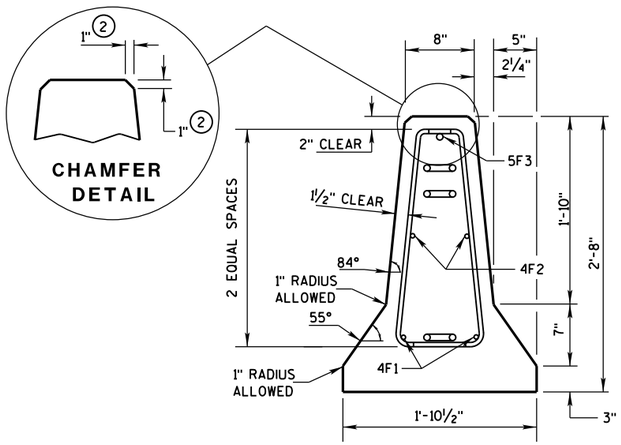
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

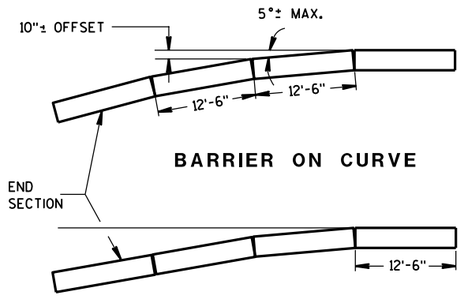
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



PLAN VIEW



END SECTION **FRONT ELEVATION**



BARRIER ON CURVE

FLARE AT BARRIER END

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

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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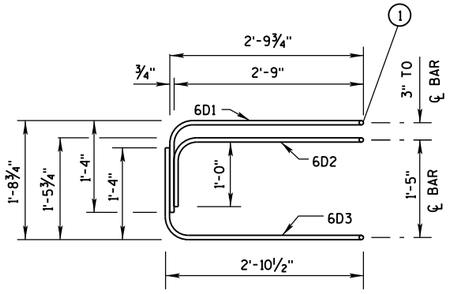
S.D.D. 14 B 7-14b

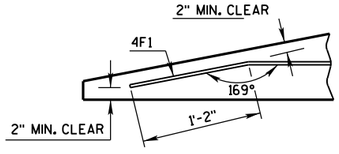
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

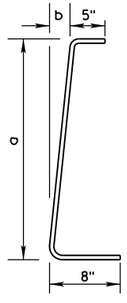
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

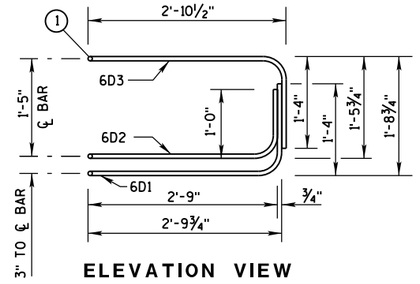
GENERAL NOTES

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

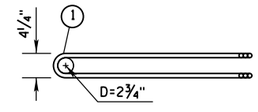
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

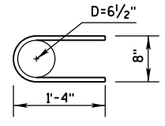
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



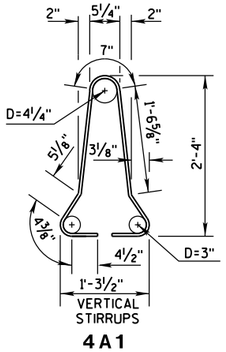
ELEVATION VIEW



PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



4A1

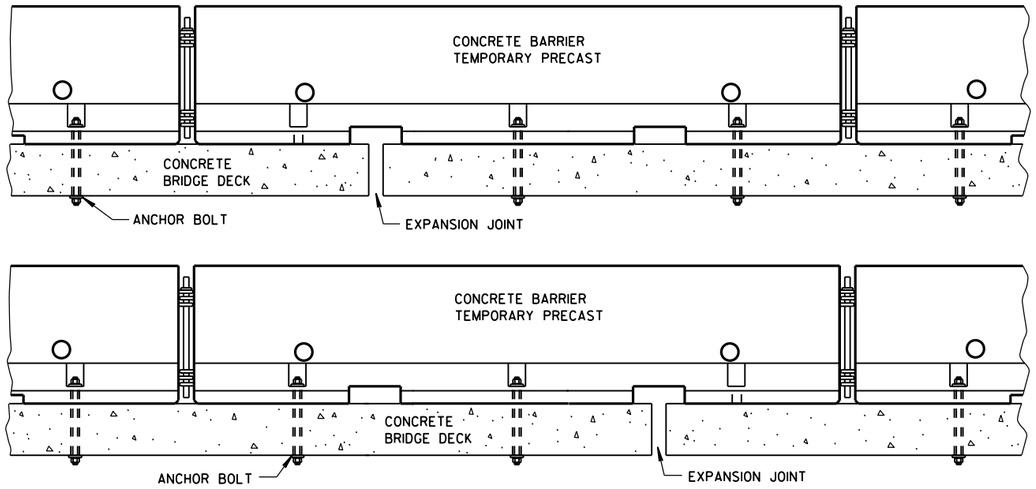
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

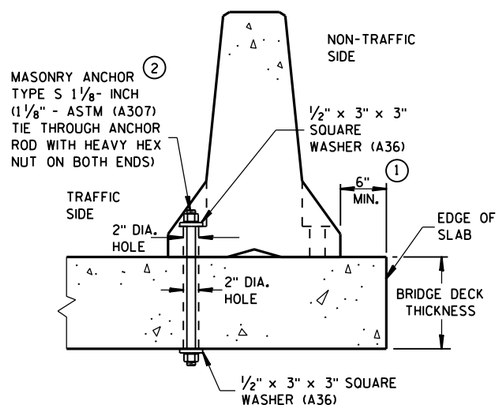
6

S.D.D. 14 B 7-14c



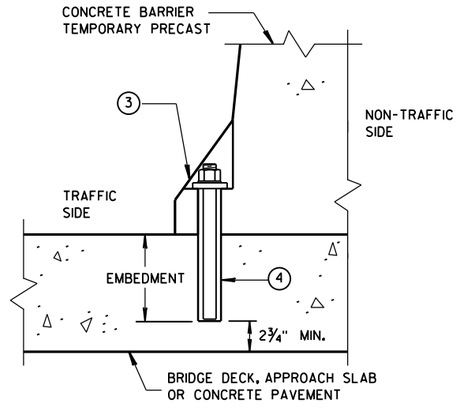
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

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



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR ② INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

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

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

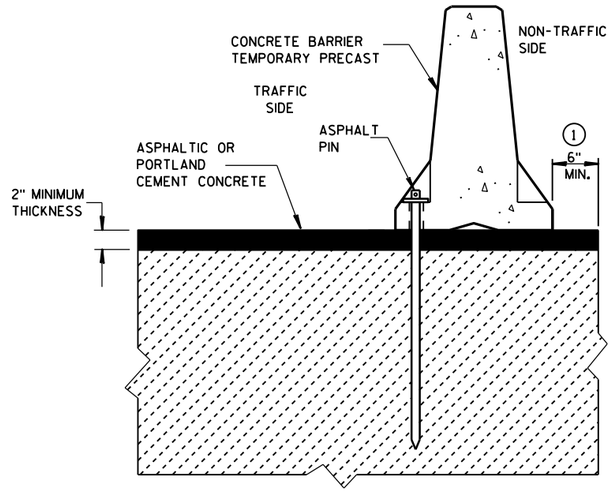
② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

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

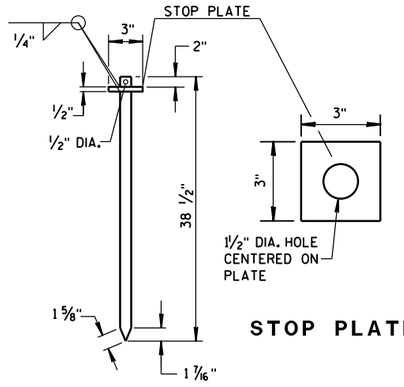
③ 1⅛" DIAMENTER A307 THREADED ROD, ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.

④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.



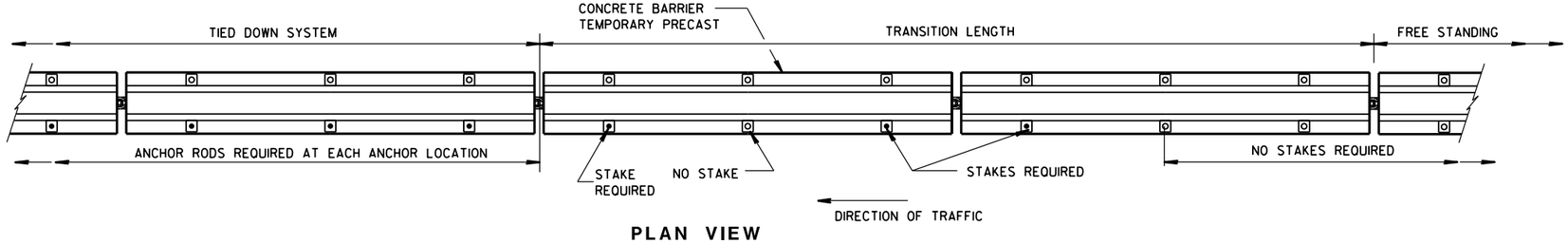
STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN
(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

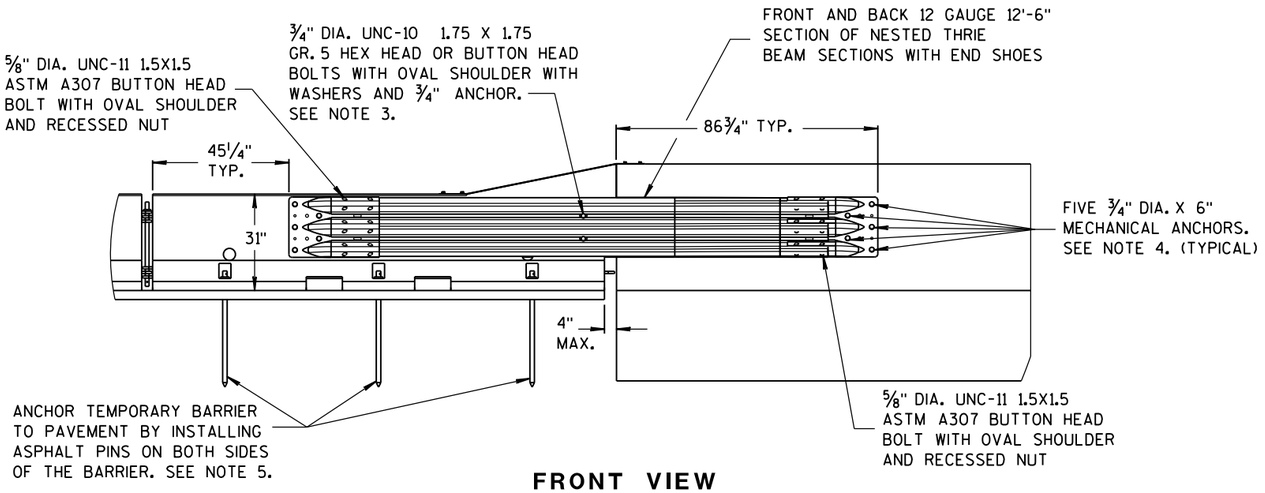
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

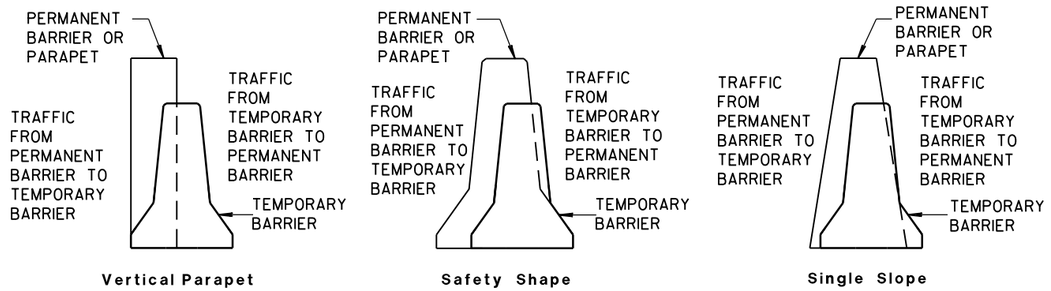
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-14d



FRONT VIEW

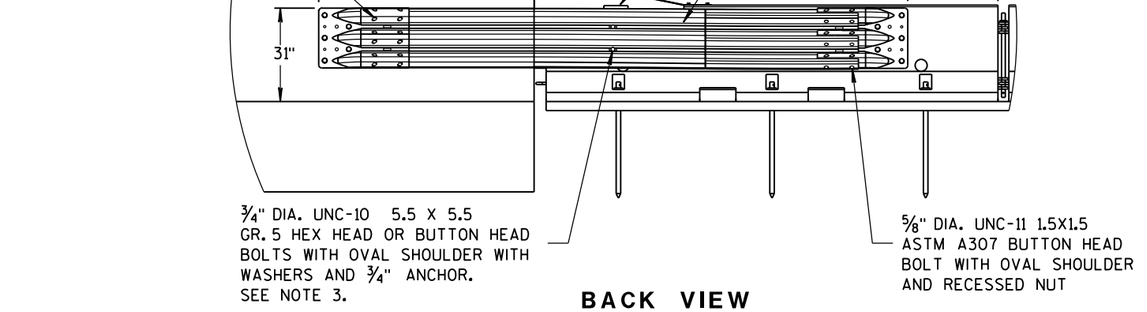


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

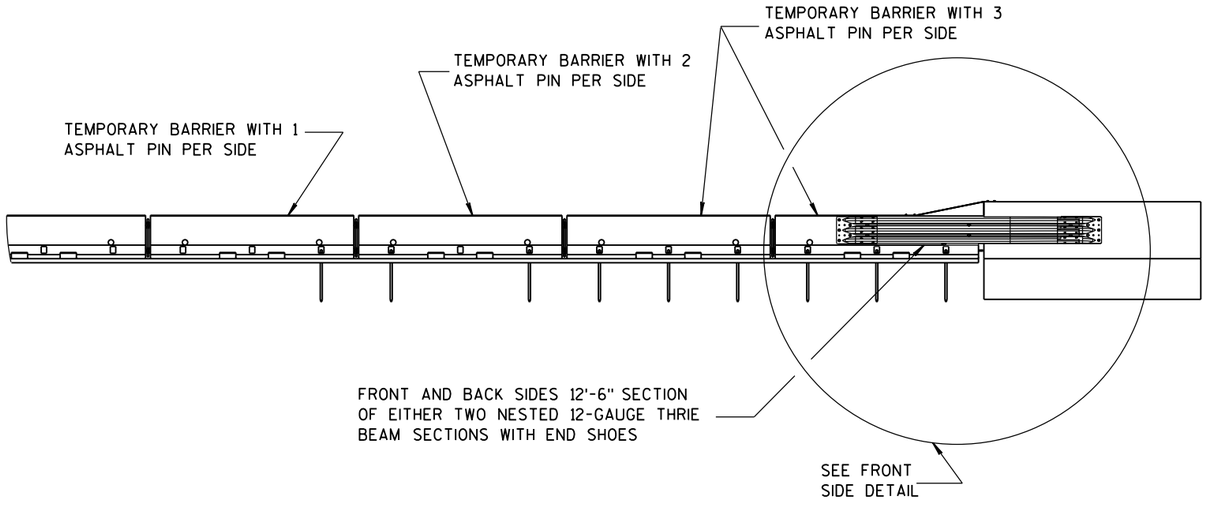
NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS.

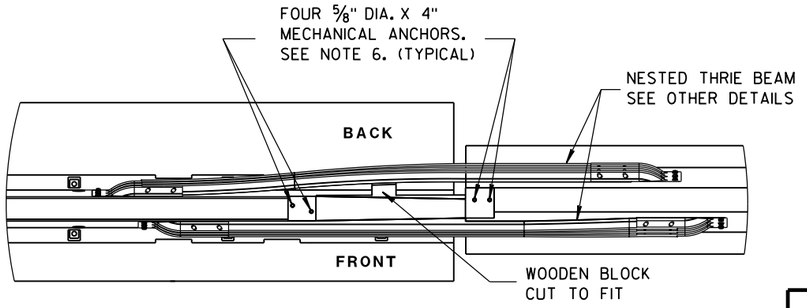
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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



BACK VIEW



FRONT VIEW



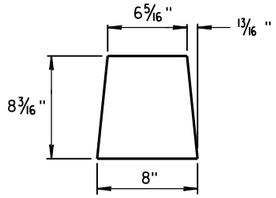
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

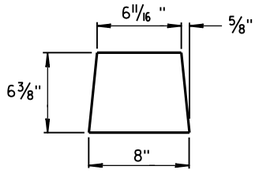
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

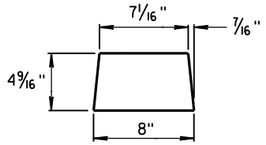
6
S.D.D. 14 B 7-14e



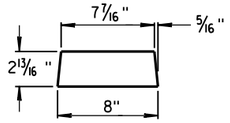
GUSSET 1



GUSSET 2

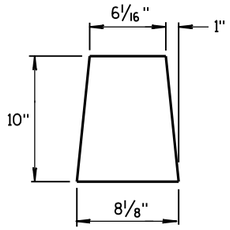


GUSSET 3

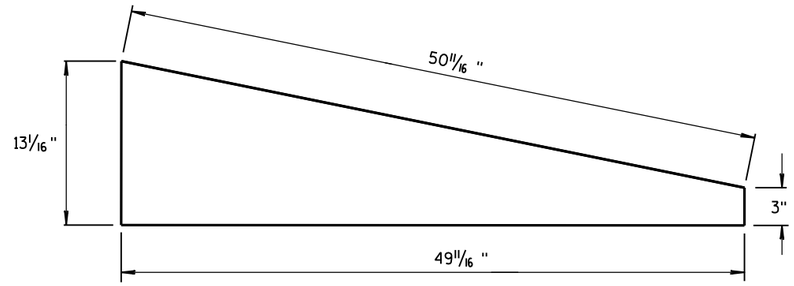


GUSSET 4

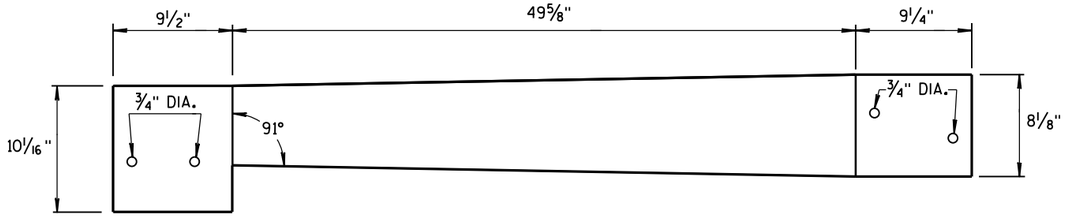
GUSSETS

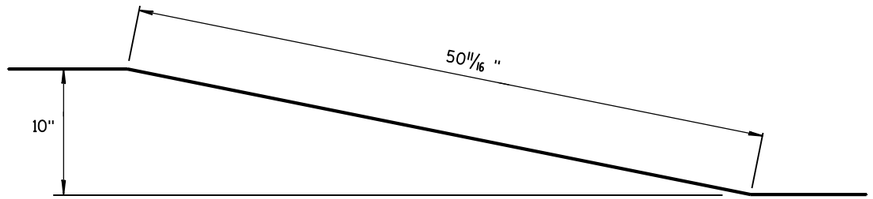


END PLATE



SIDE PLATE

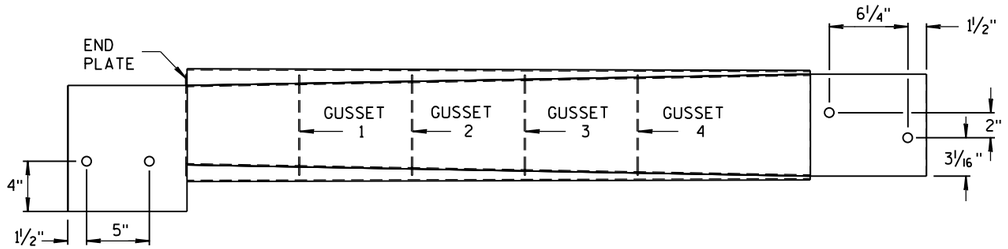


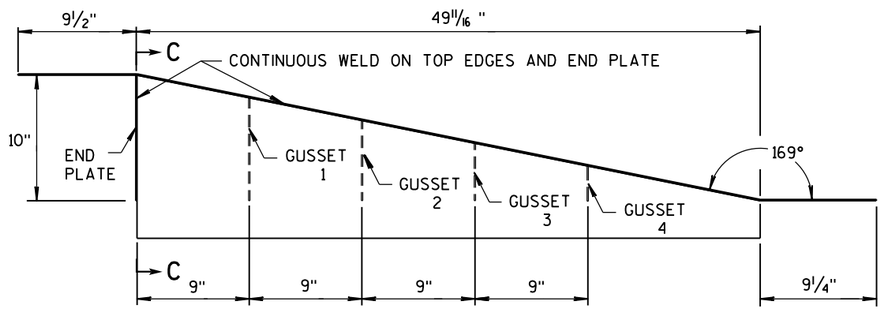


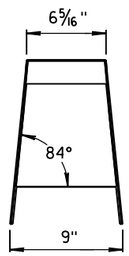
TOP PLATE

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

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







SECTION C-C

NOTES

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

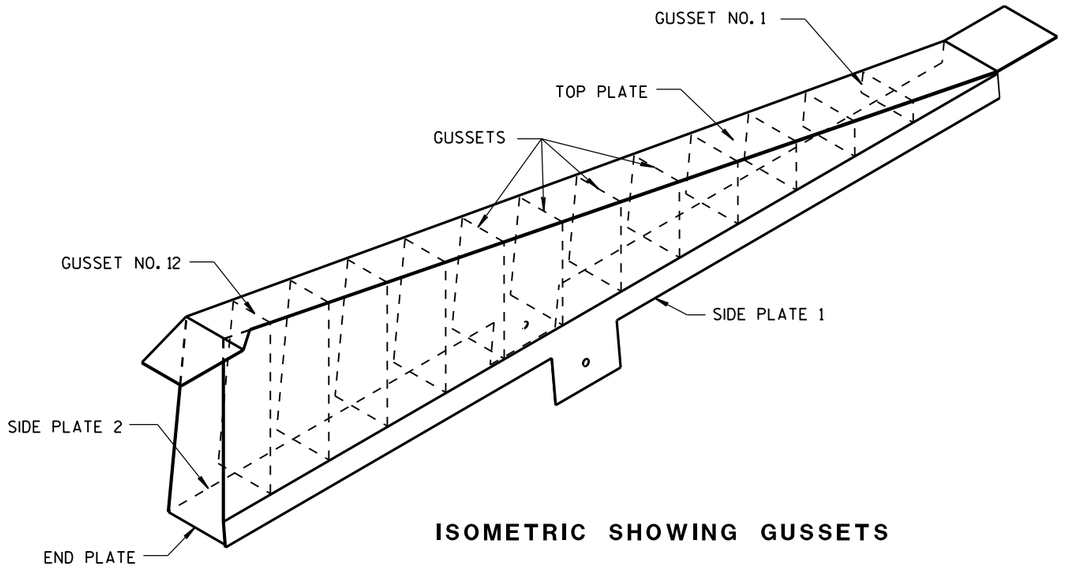
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

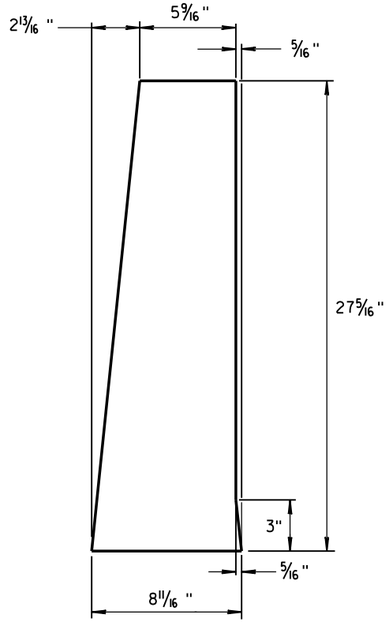
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 7-14f

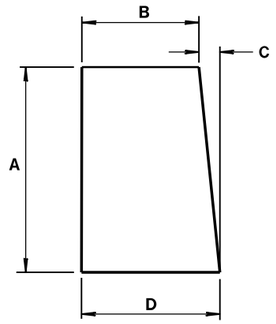


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



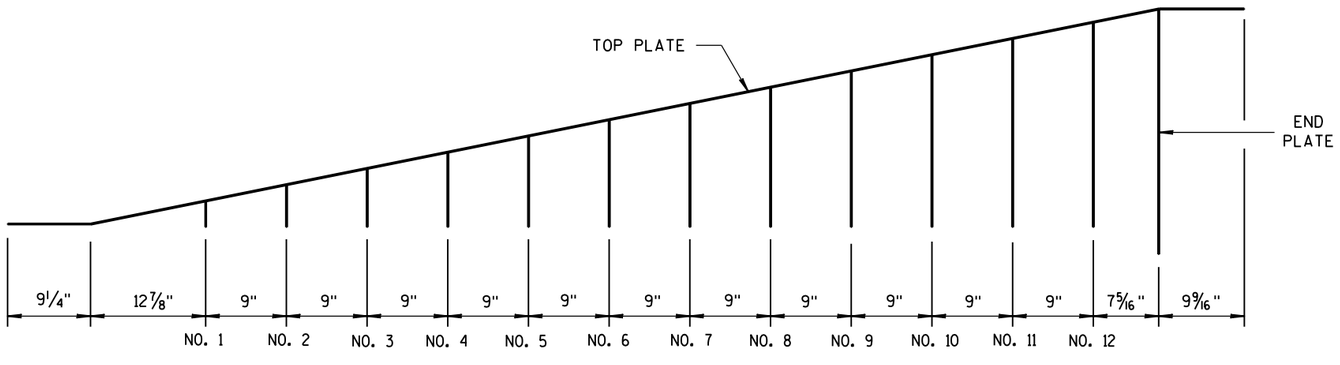
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

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

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

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



GUSSET LOCATION

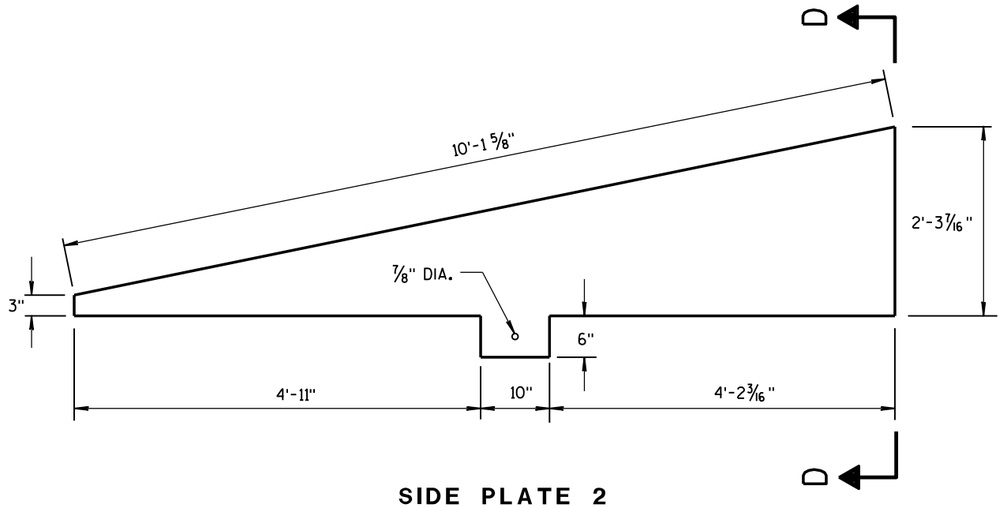
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

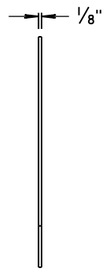
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

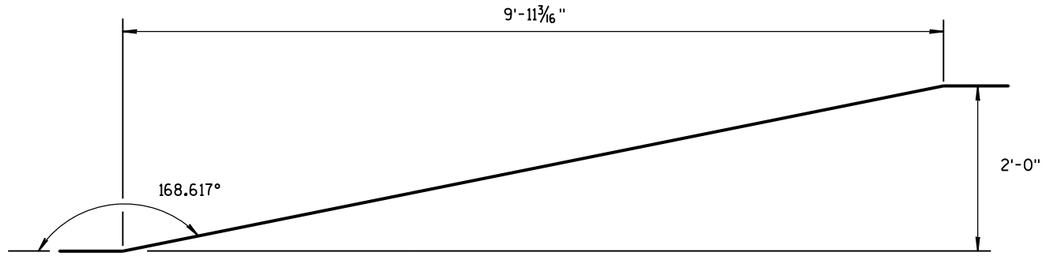
S.D.D. 14 B 7-14g



SIDE PLATE 2

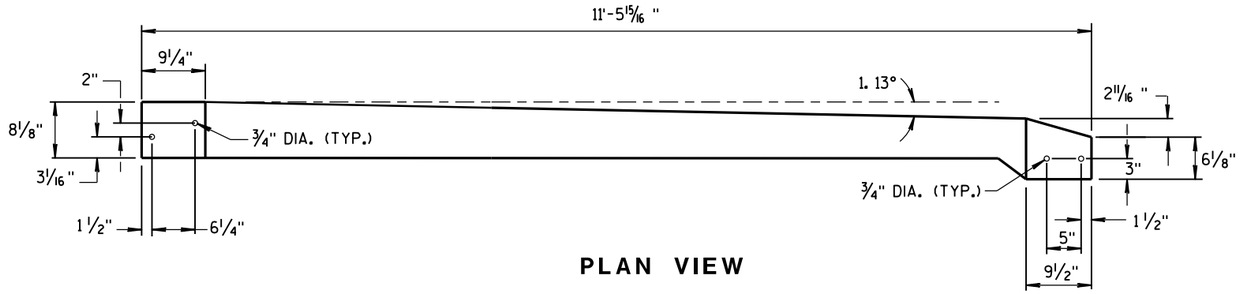


END VIEW



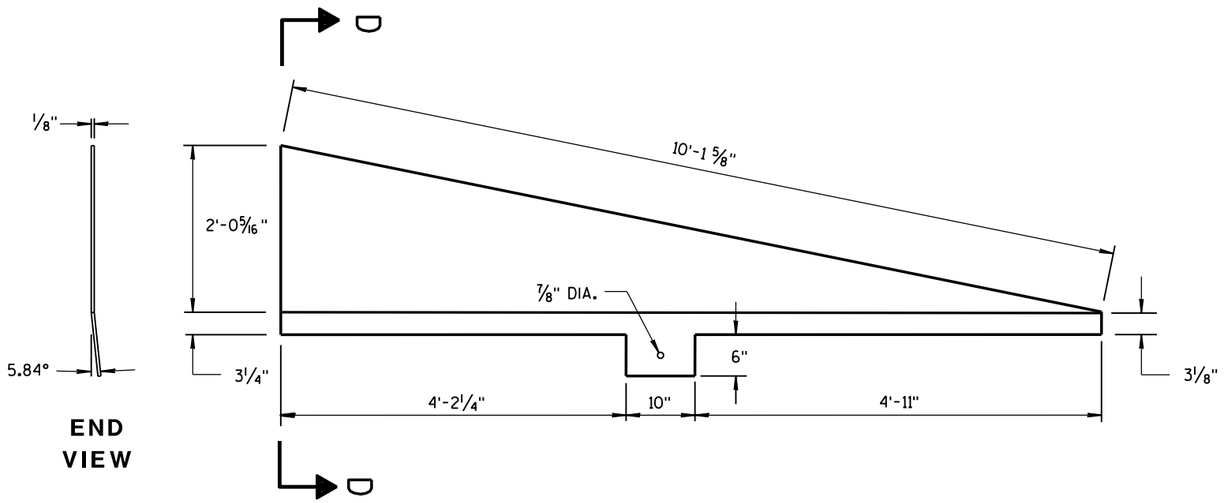
SIDE VIEW

TOP PLATE



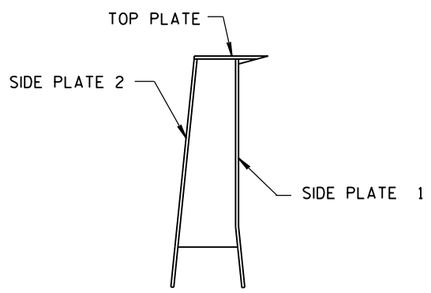
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

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

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

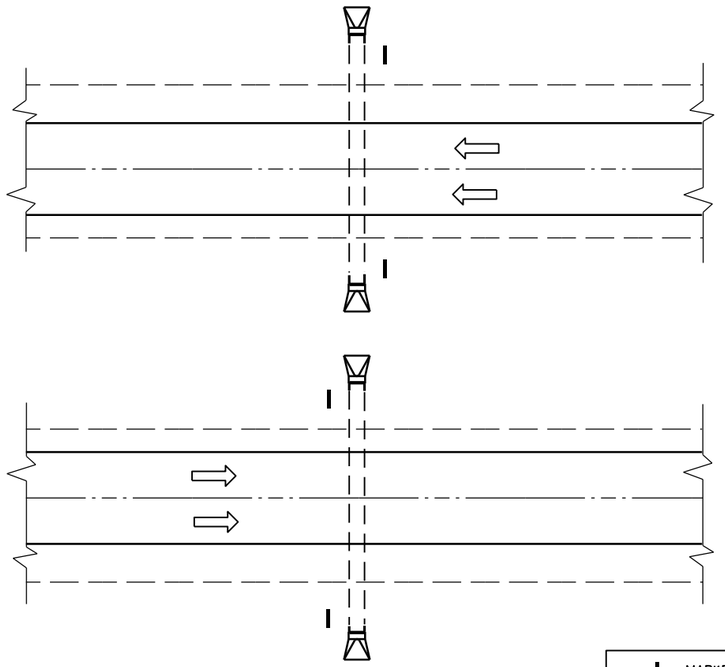
APPROVED
June 2014 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARD DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 7-14h

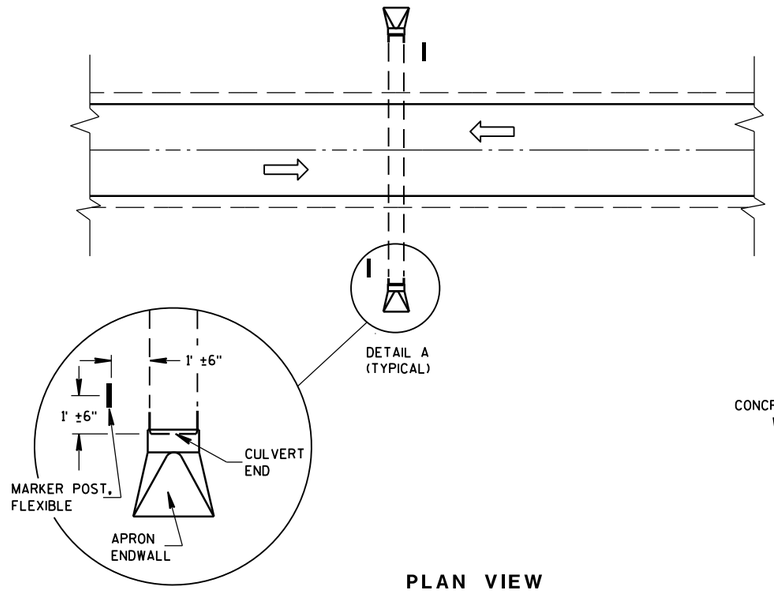
6

S.D.D. 14 B 7-14h



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

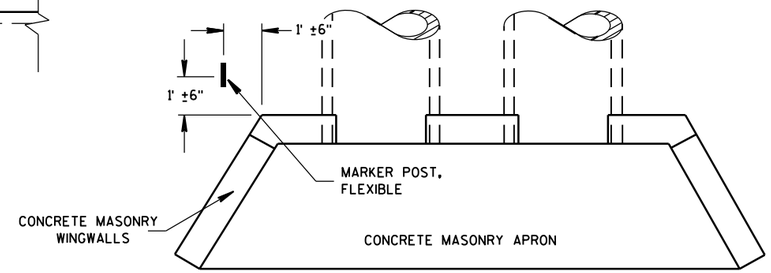
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

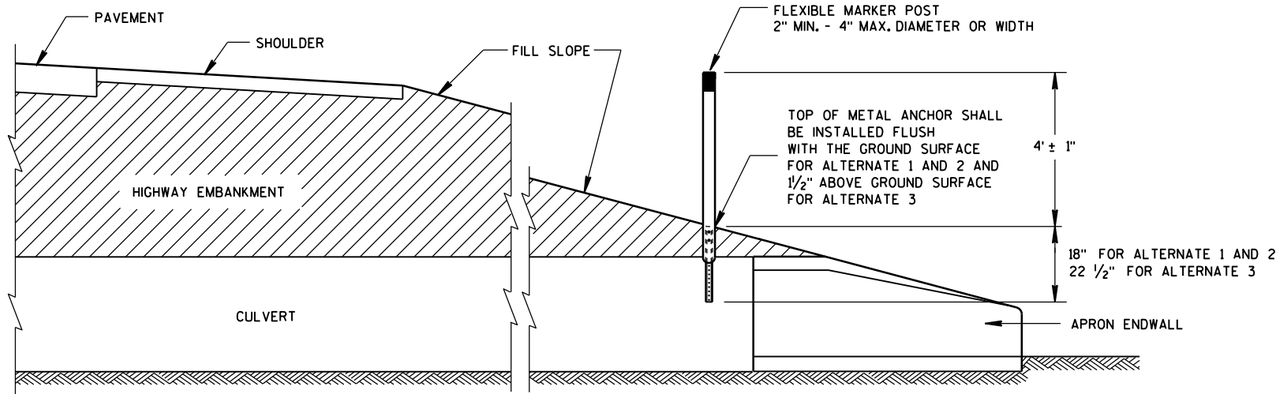
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



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

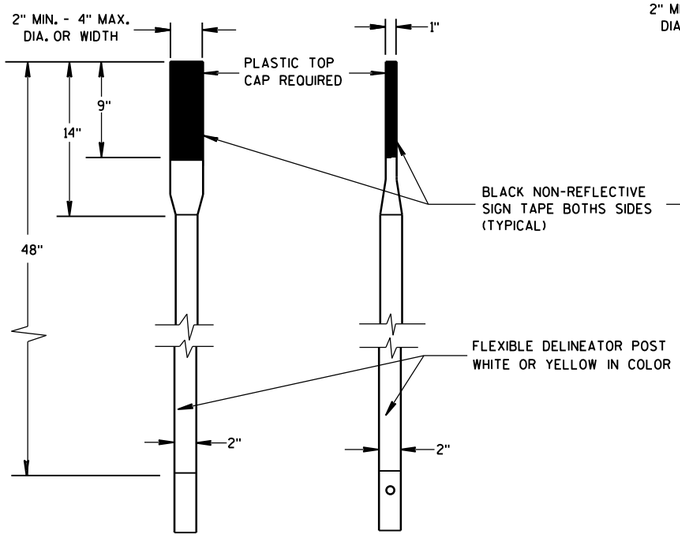
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

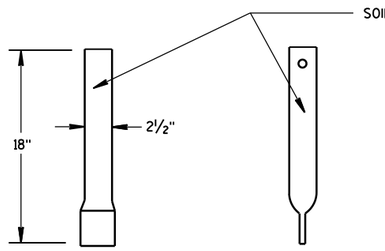
6

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

6

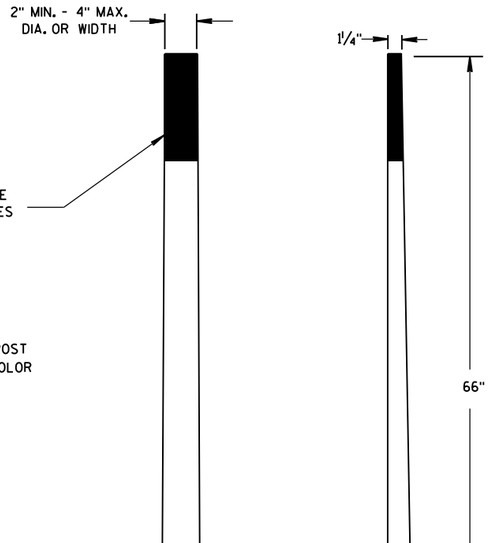
S.D.D. 15 A 3-2a





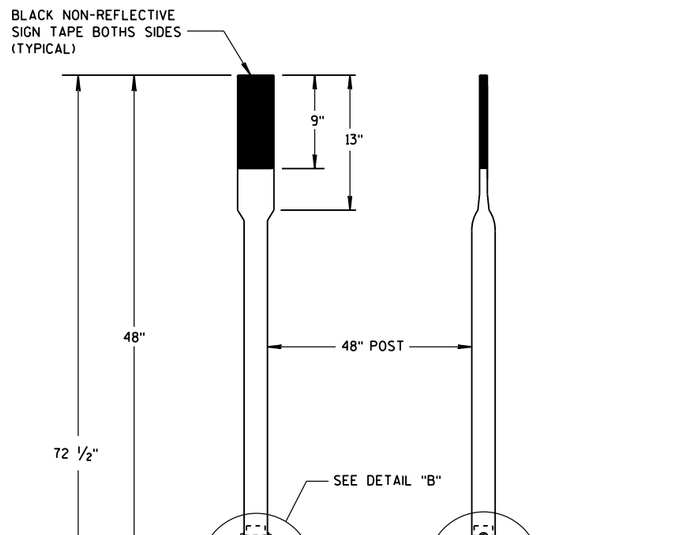
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

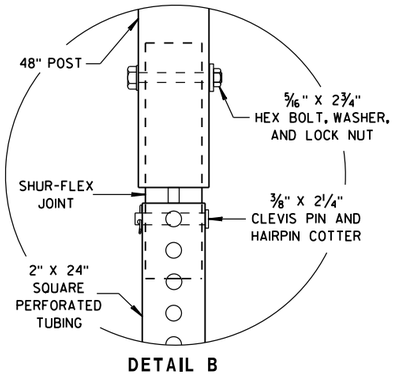
ALTERNATE 2



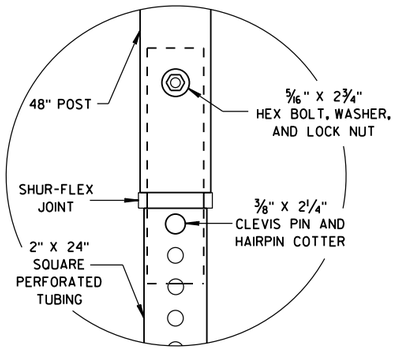
FRONT VIEW SIDE VIEW

ALTERNATE 3

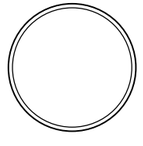
FLEXIBLE MARKER POSTS



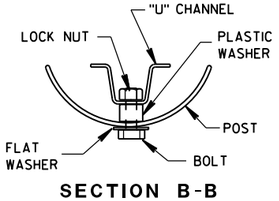
DETAIL B



DETAIL C



SECTION A-A



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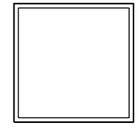
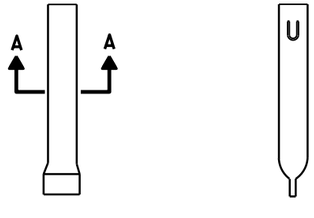
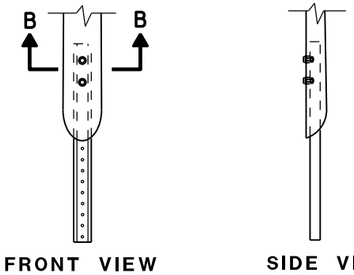


SECTION C-C



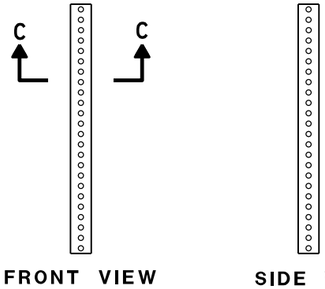
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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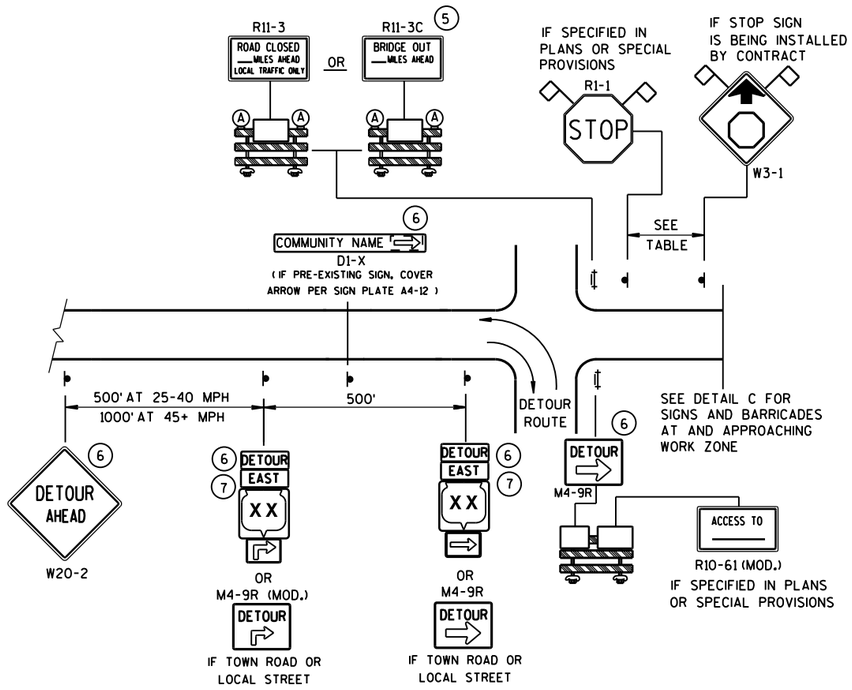
S.D.D. 15 A 3-2b

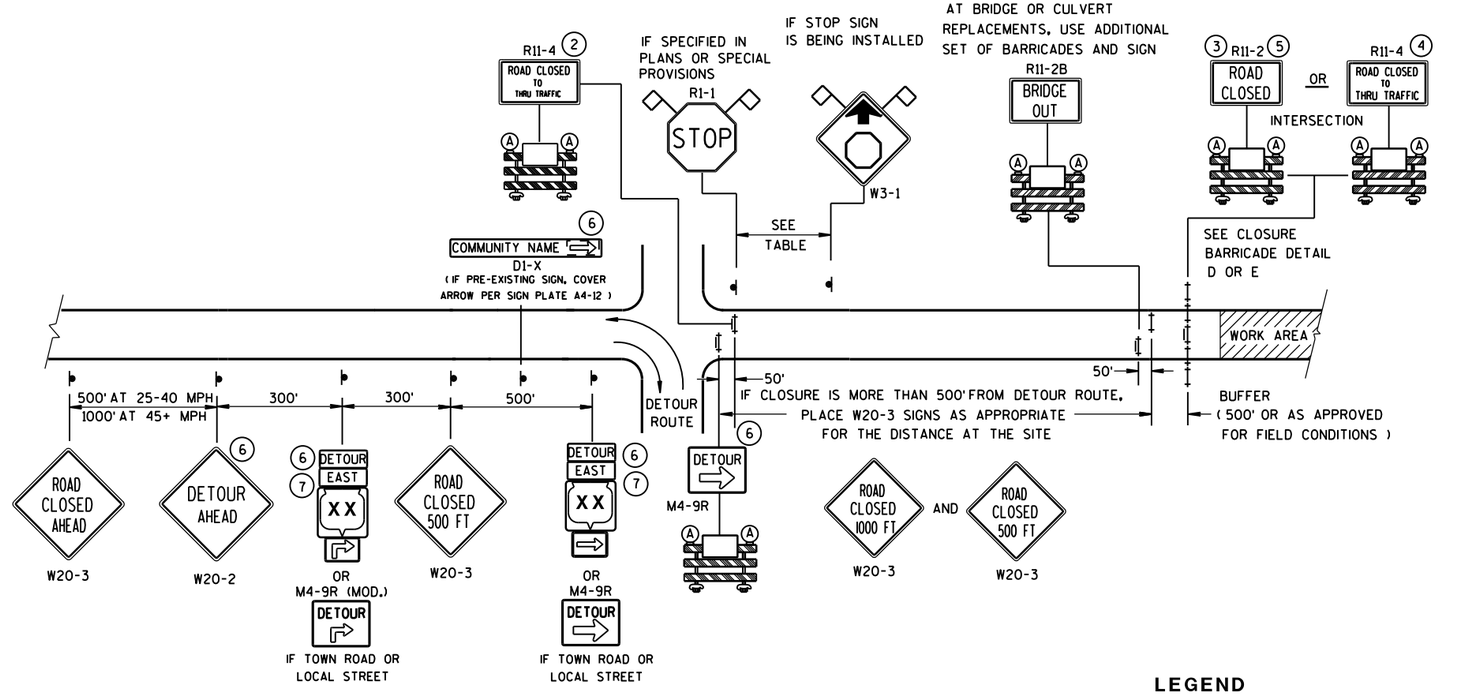
6

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



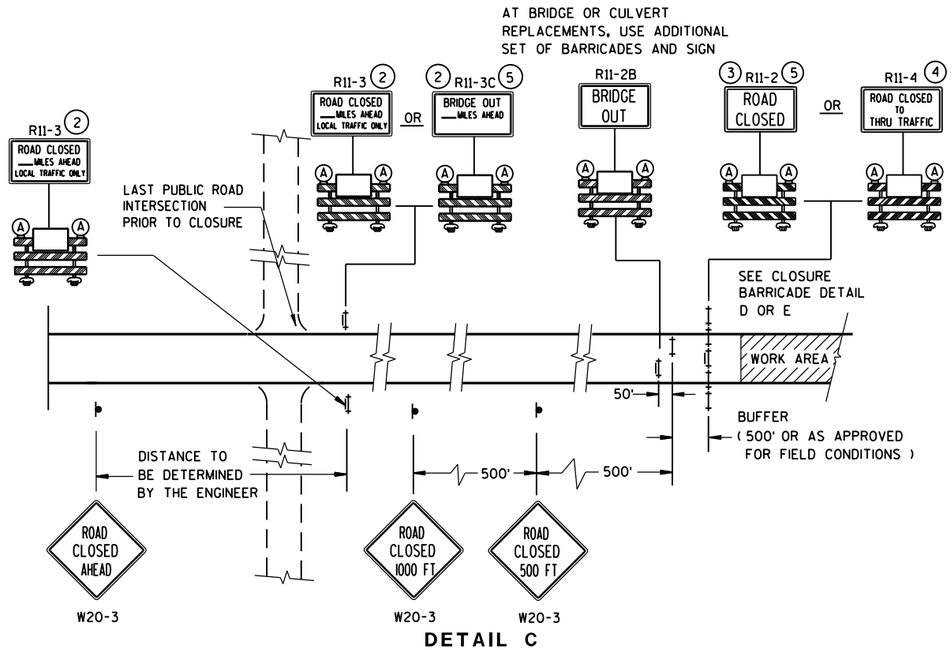
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

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

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)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

8/2013 DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

FHWA

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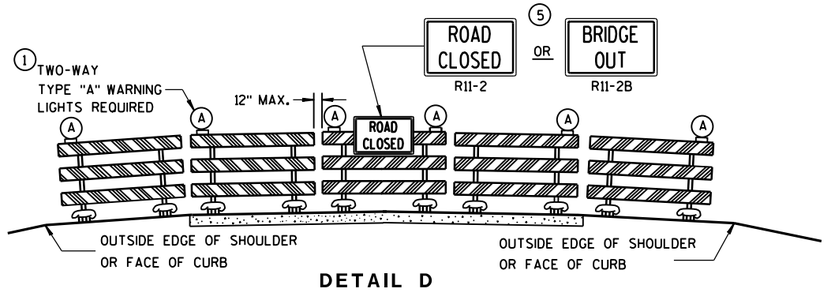
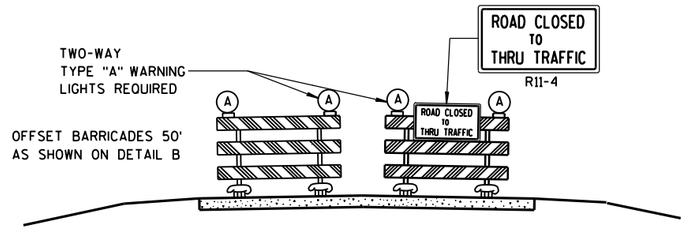
S.D.D. 15 C 2-5a



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

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

6

S.D.D. 15 C 2-5b

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

GENERAL NOTES

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

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

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

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

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

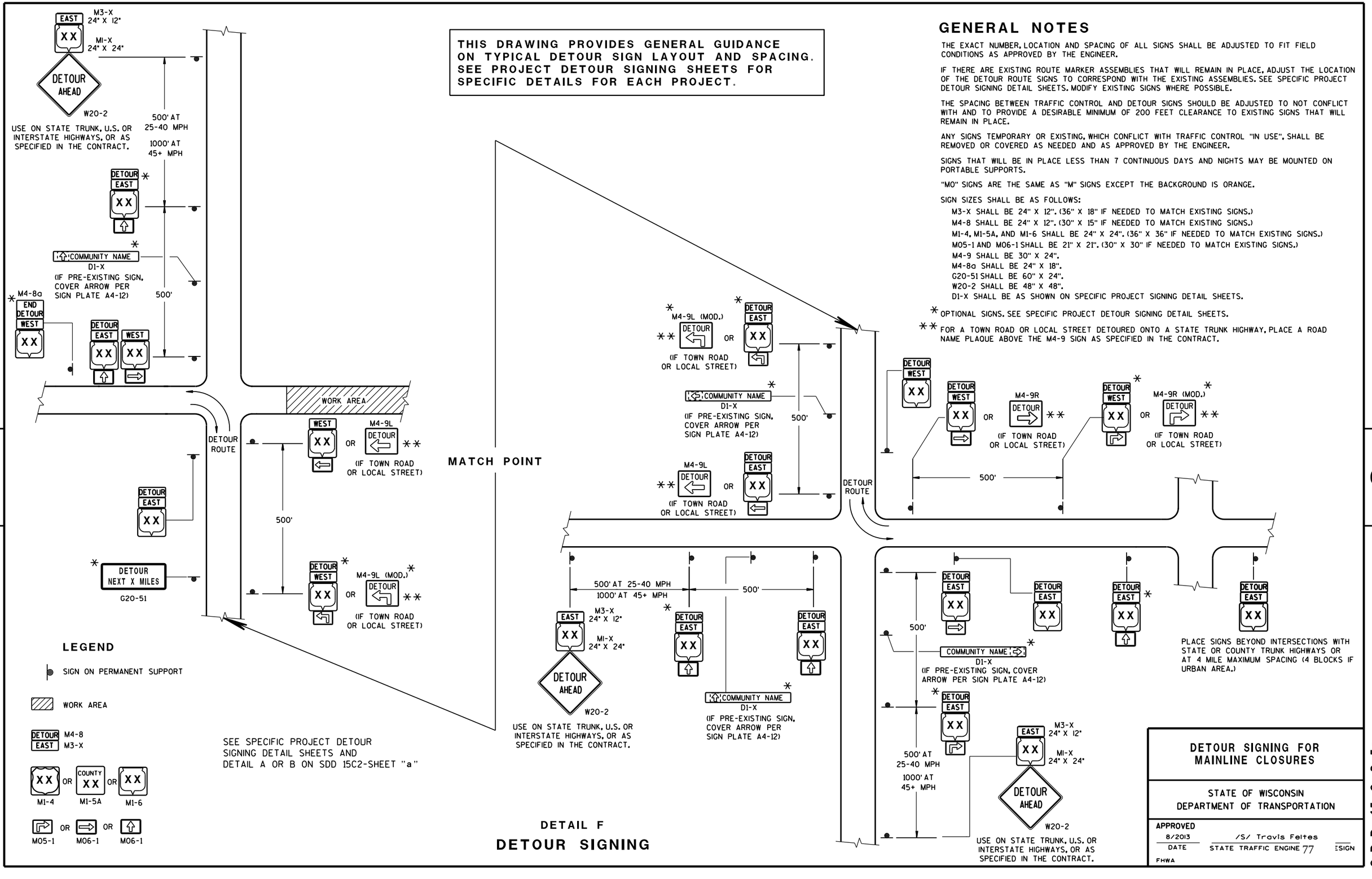
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (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.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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



LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST — M4-8, M3-X
- XX OR COUNTY XX OR XX — M1-4, M1-5A, M1-6
- MO5-1 OR MO6-1 OR MO6-1

SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

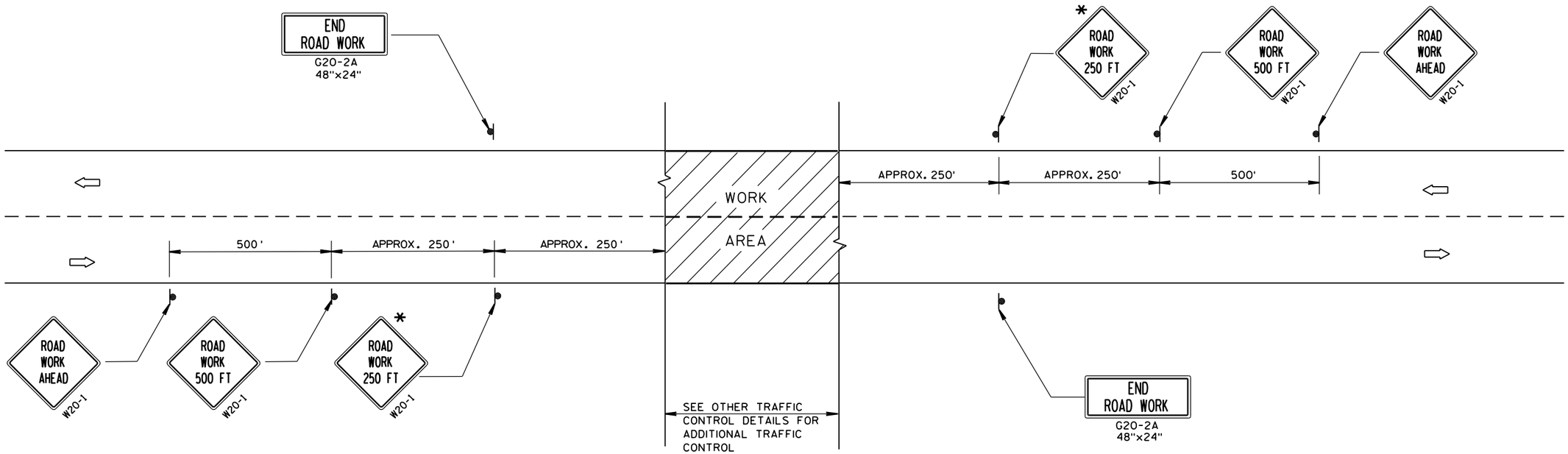
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

S.D.D. 15 C 2-5c

6

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

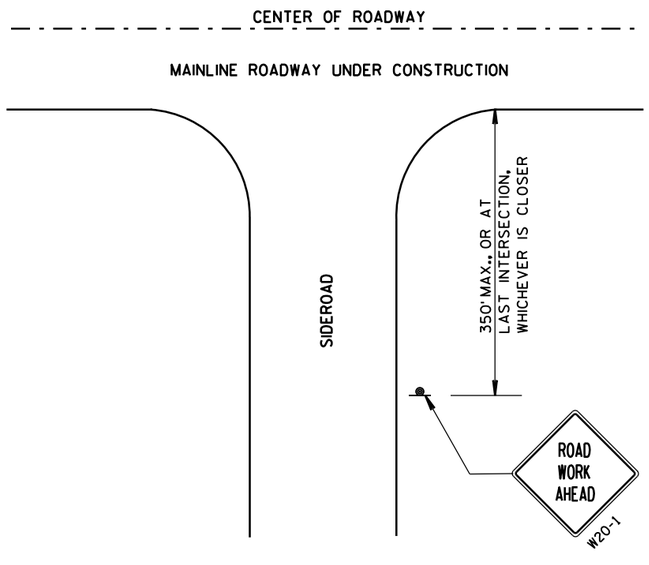
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013	/S/ Travis Feltes	
DATE	STATE TRAFFIC ENGINEER	SIGN

FHWA

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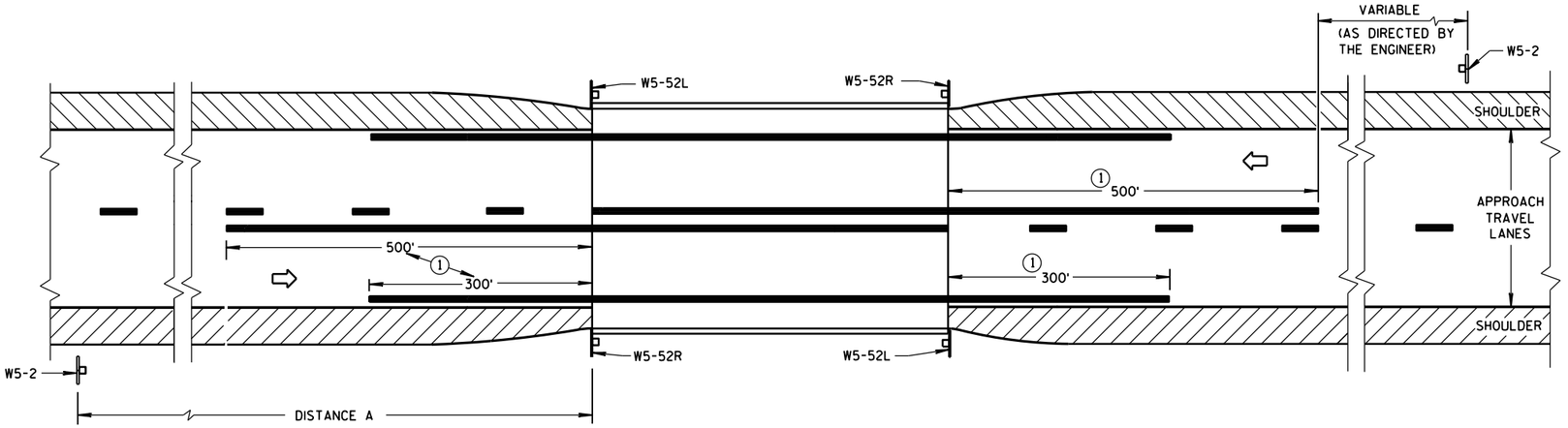
S.D.D. 15 C 5-2



GENERAL NOTES

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

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

(1) MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.

(2) FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.

(3) LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.

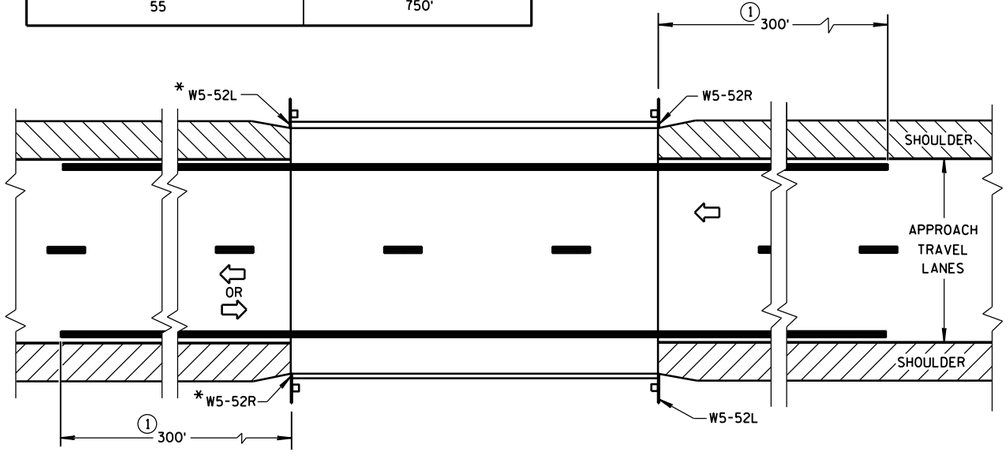
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET

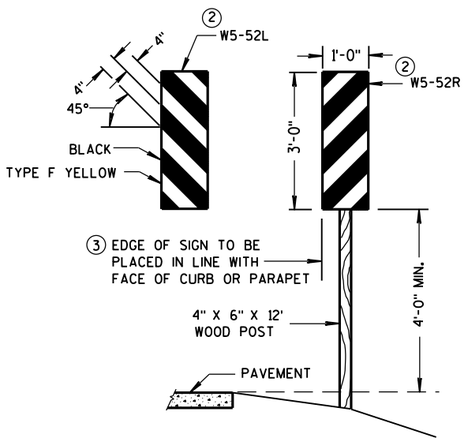


*OMIT ON ONE-WAY TRAVELLED WAYS

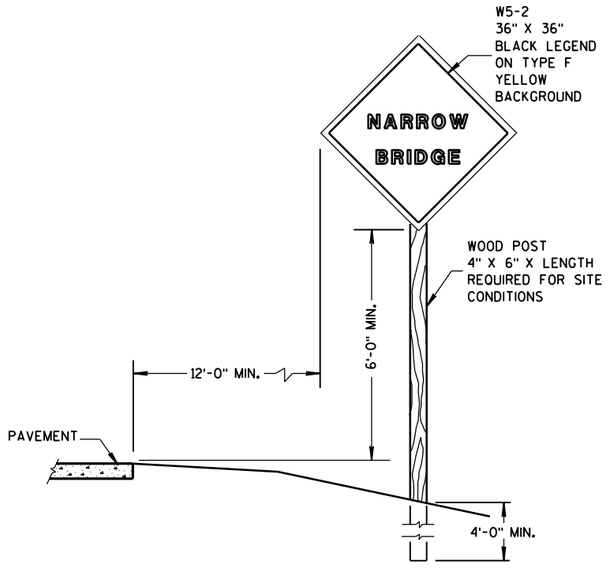
SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



OBJECT MARKER PLACEMENT



SIGN PLACEMENT

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-2014 DATE

/S/ Travis Feltes STATE TRAFFIC ENGINEER

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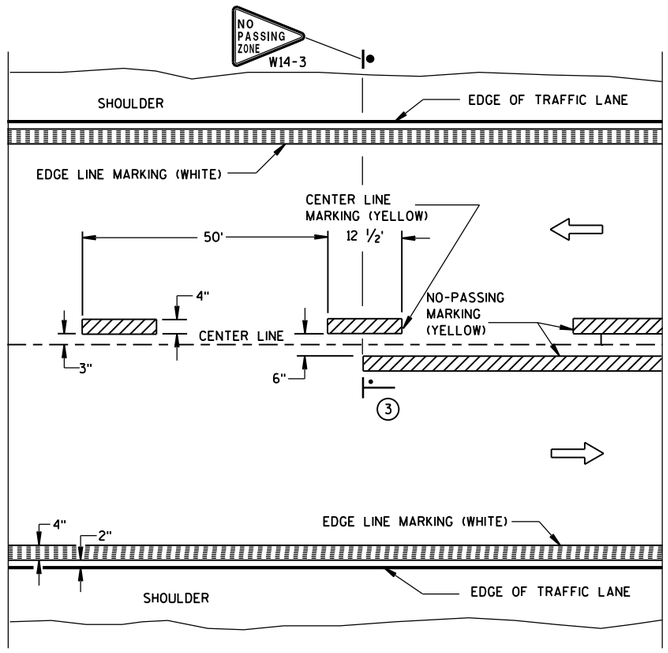
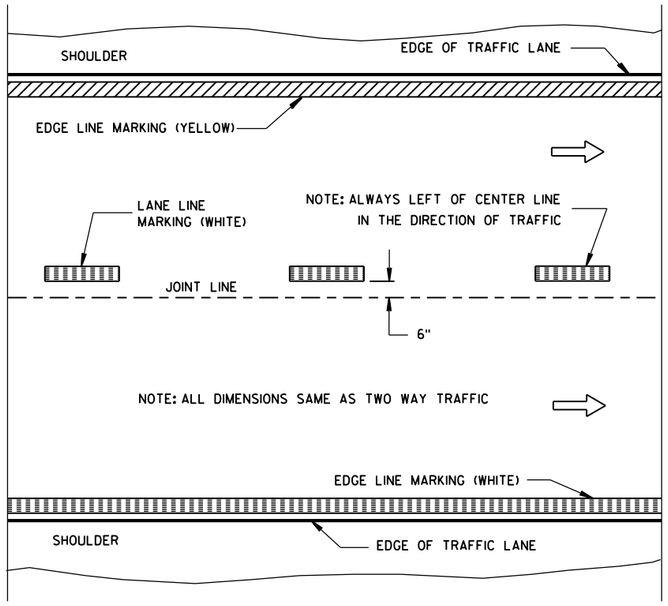
S.D.D. 15 C 6-7

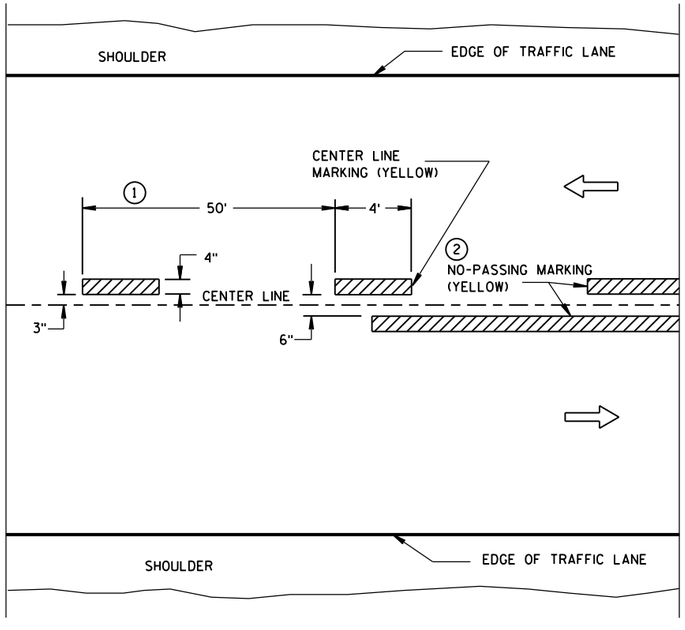


TWO WAY TRAFFIC

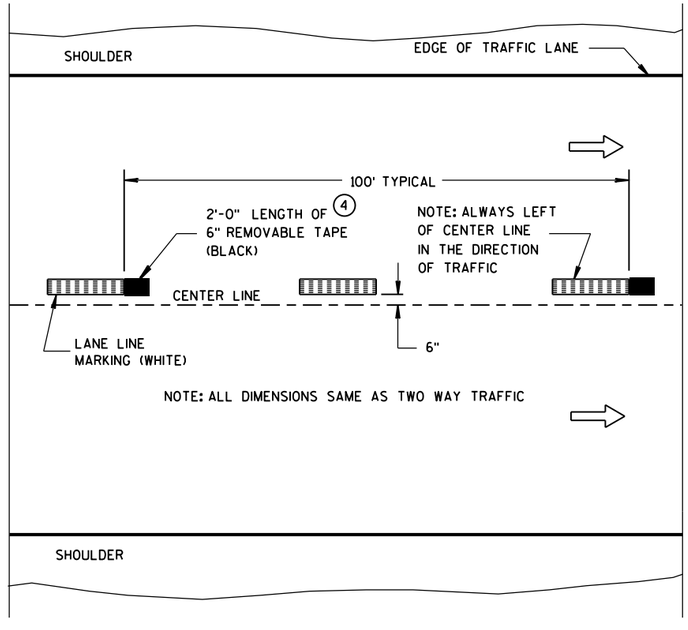


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

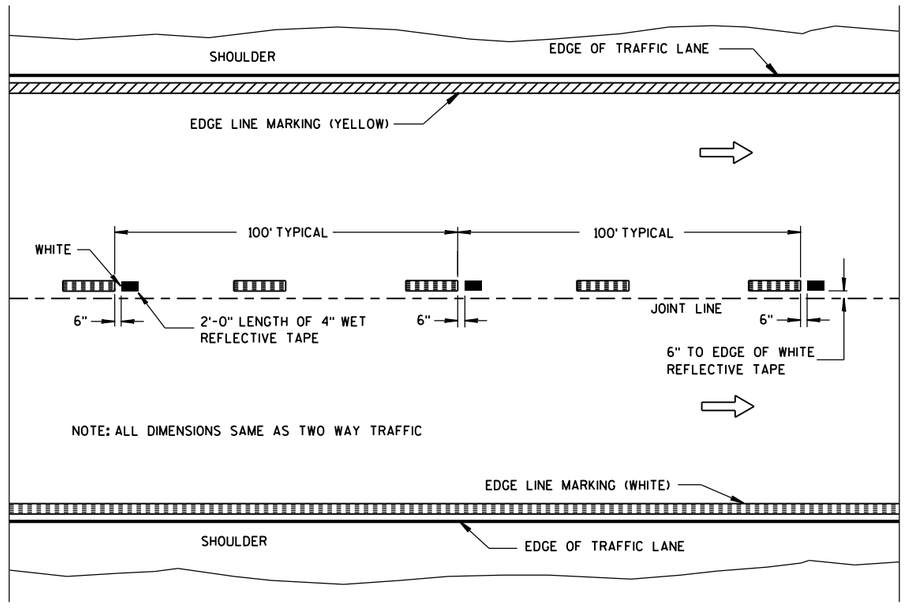
GENERAL NOTES

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

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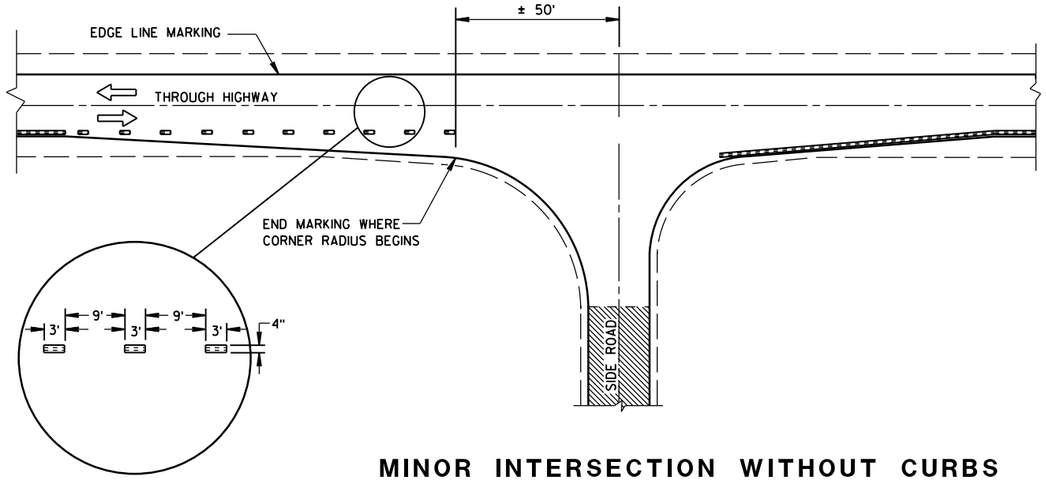
S.D.D. 15 C 8-16a

6

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



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

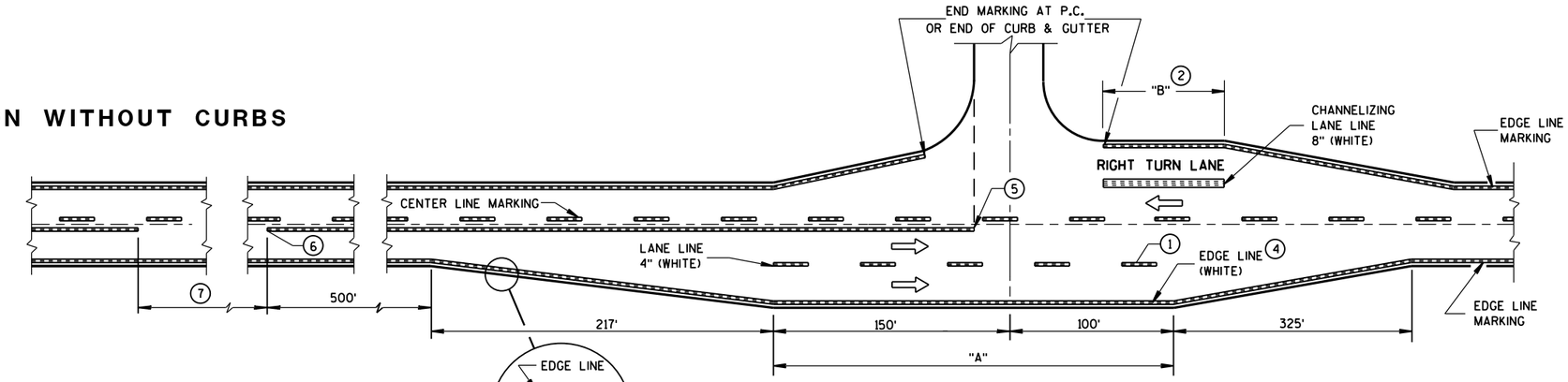
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

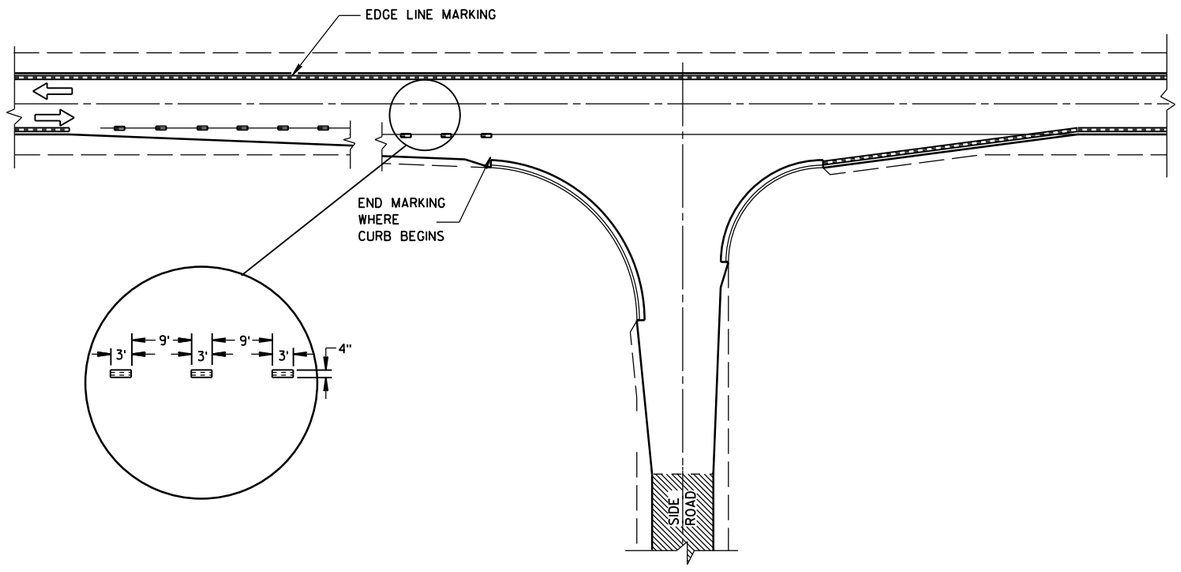
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



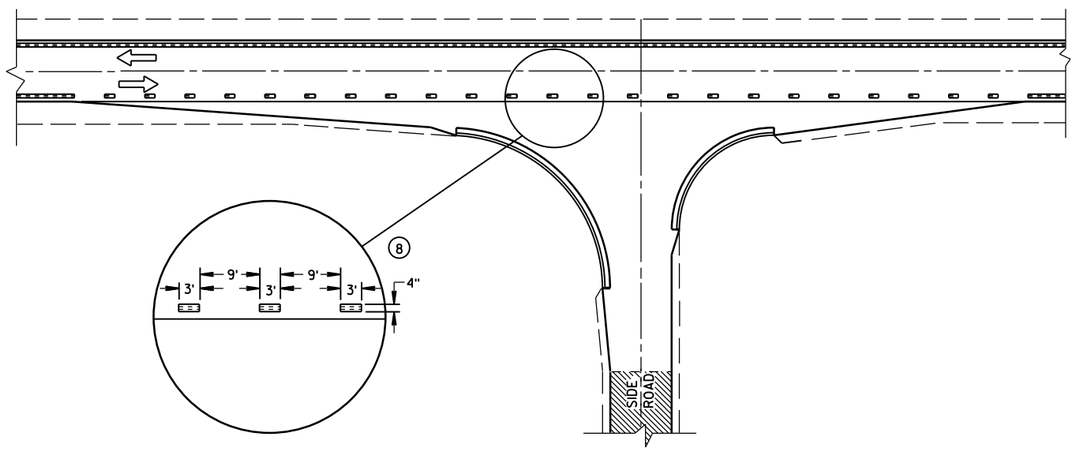
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

6

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

LEGEND

SIGN ON PORTABLE OR PERMANENT SUPPORT

DIRECTION OF TRAFFIC

WORK AREA

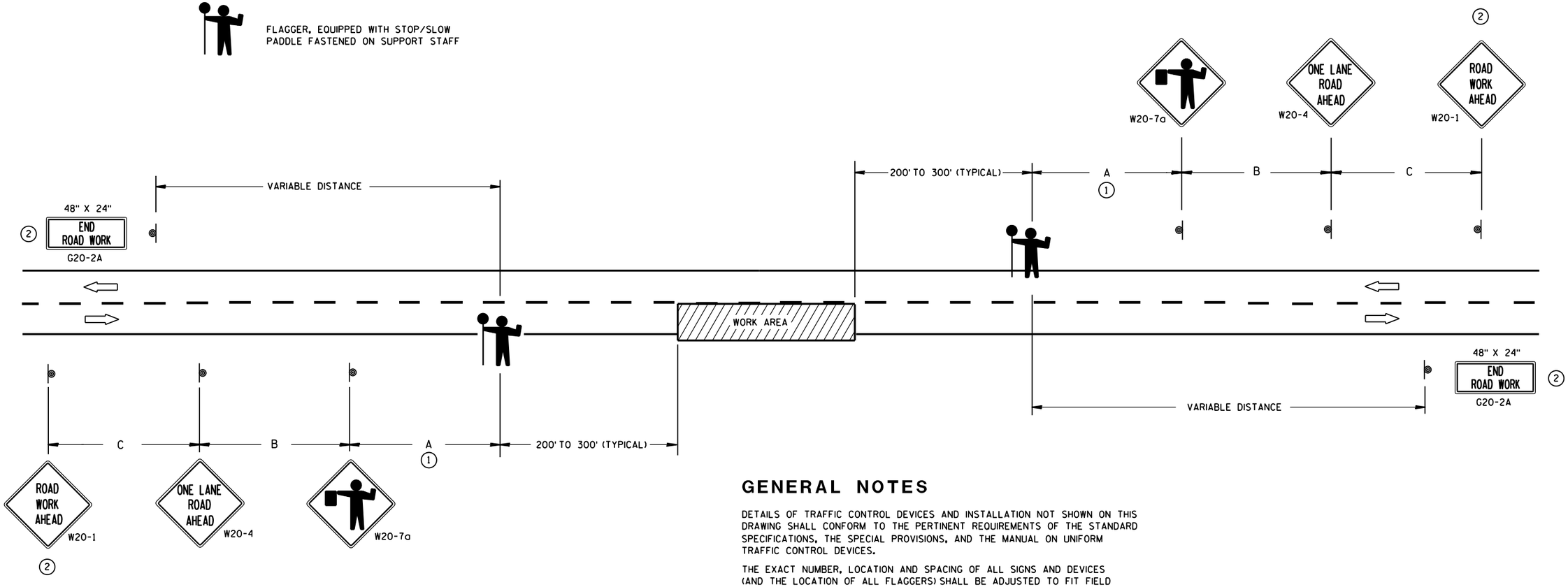
FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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

W3-4

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



(1) FOR A MOVING WORK OPERATION,
SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

(2) SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

GENERAL NOTES

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

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

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

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 15 C 12-4

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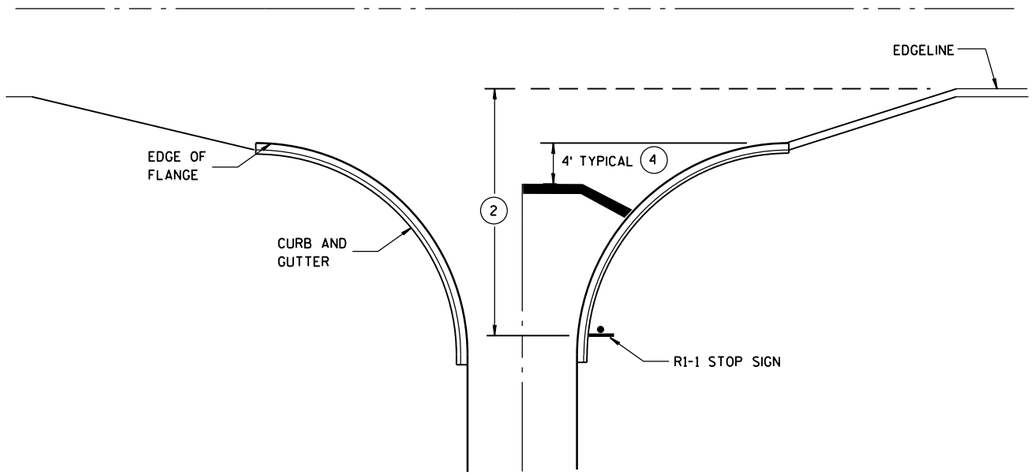
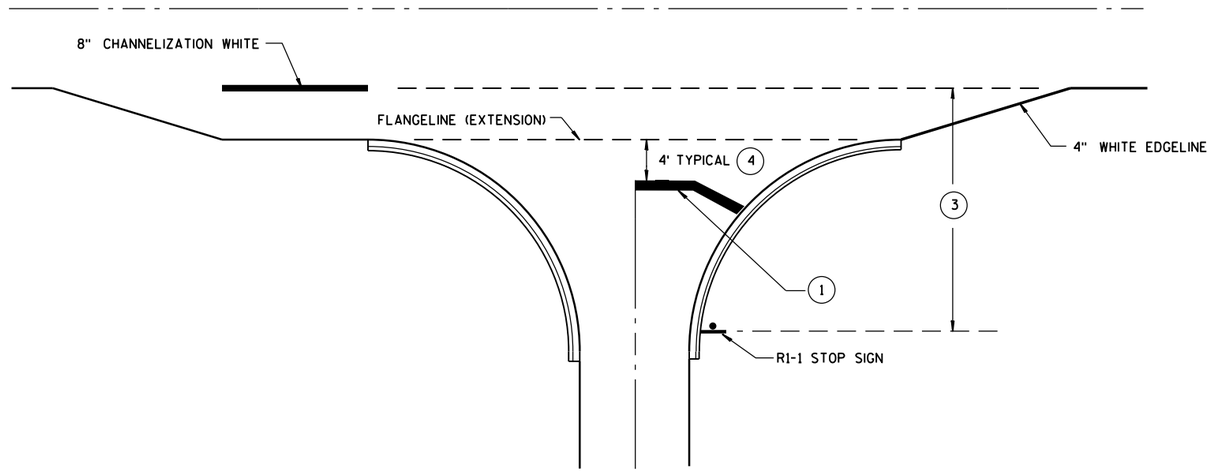
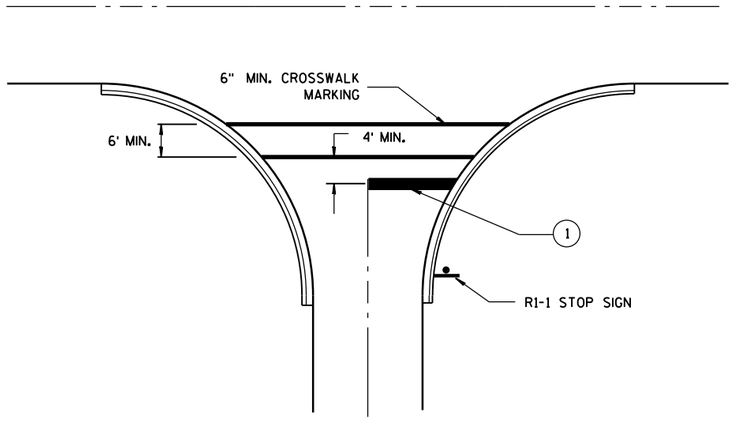
S.D.D. 15 C 12-4



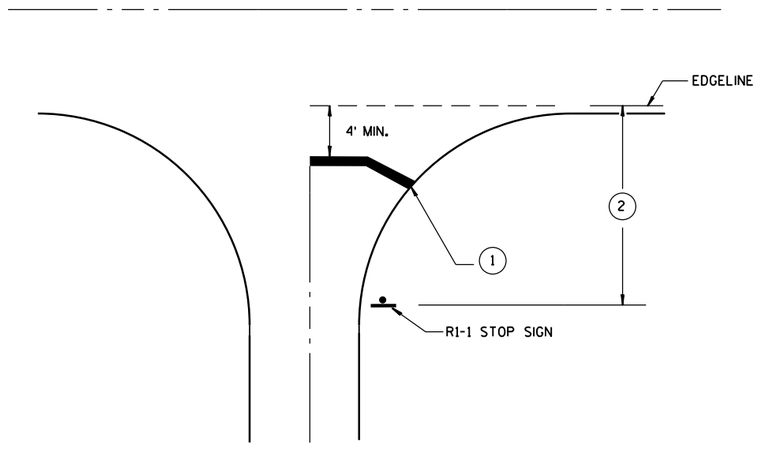
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/30/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

FHWA

6

S.D.D. 15 C 33-1

S.D.D. 15 C 33-1

GENERAL NOTES

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

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

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

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

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

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

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

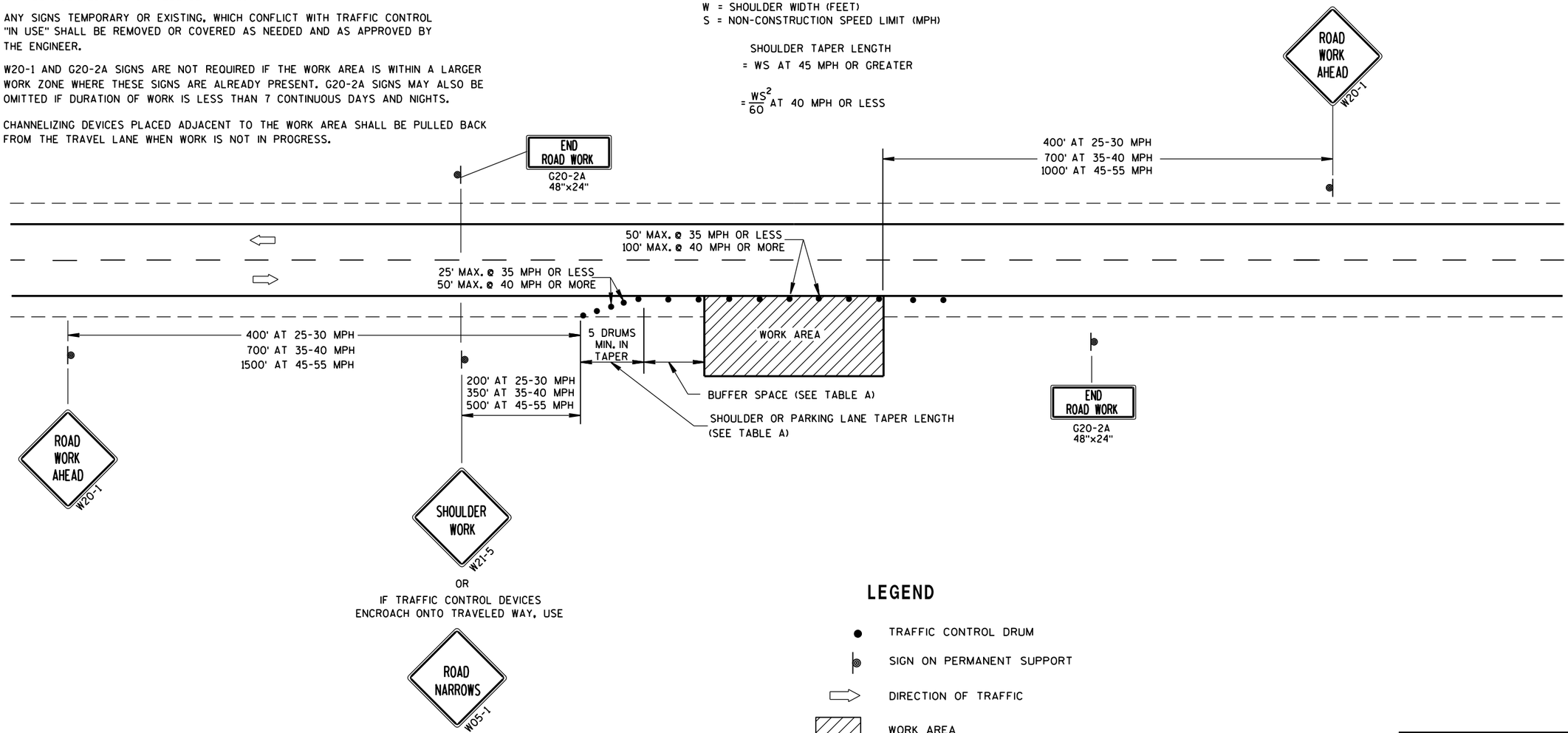
TABLE A

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

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

SHOULDER TAPER LENGTH
= WS AT 45 MPH OR GREATER

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



LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 DATE

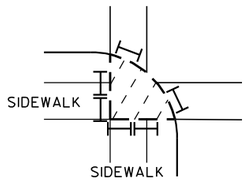
/S/ Travis Feltes
STATE TRAFFIC ENGINEER

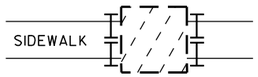
FHWA

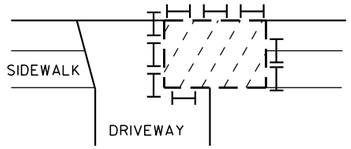
6

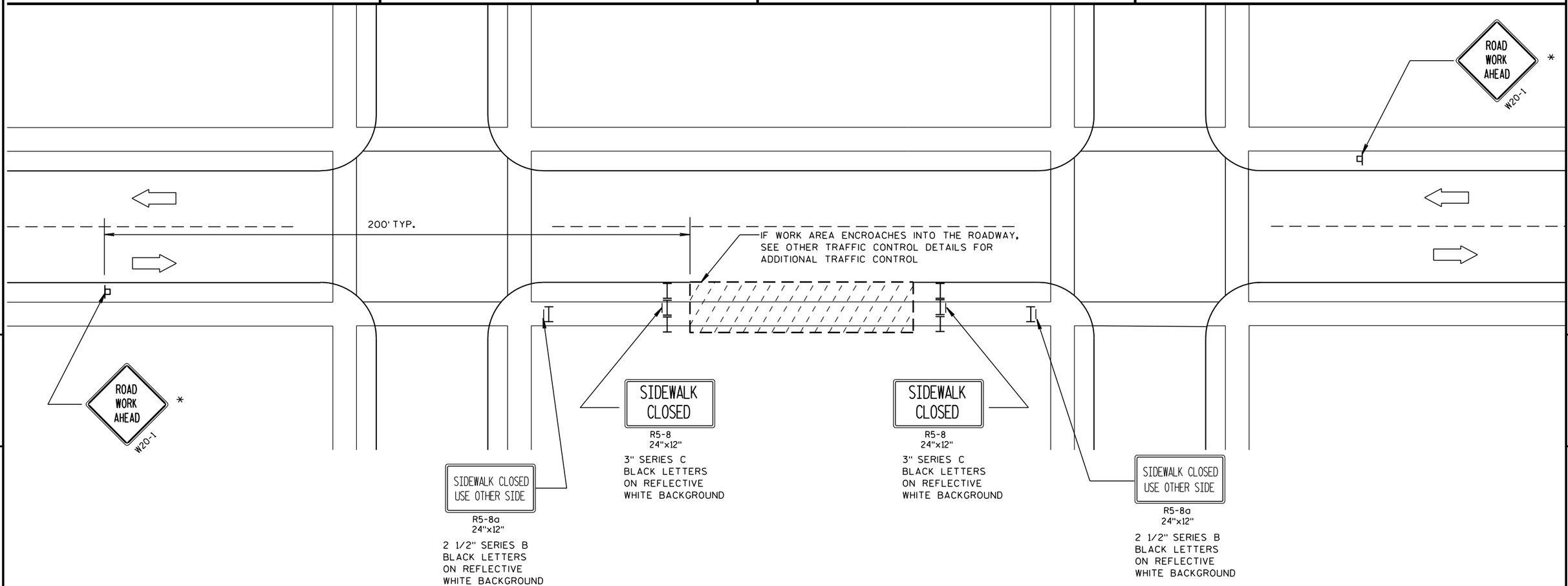
S.D.D. 15 D 28-2

WARNING OF LOCALIZED SIDEWALK WORK AREAS









LEGEND

- POST MOUNTED SIGN
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES :

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

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

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

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

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

TRAFFIC CONTROL, SIDEWALK CLOSURE

TRAFFIC CONTROL, SIDEWALK CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/2000 DATE

/S/ Chester J. [illegible]
CHIEF SIGNS AND MARK 85 [illegible]NEER

FHWA

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S.D.D. 15 D 30-1

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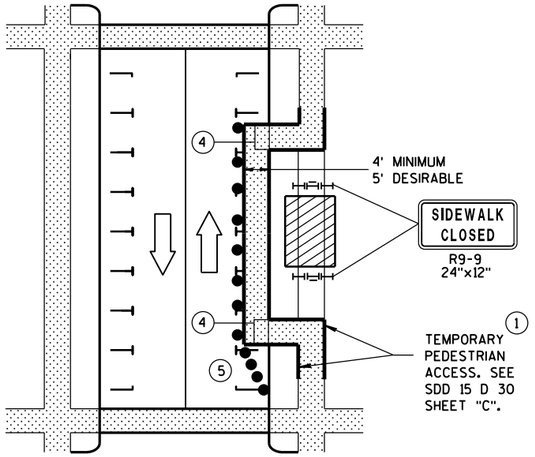
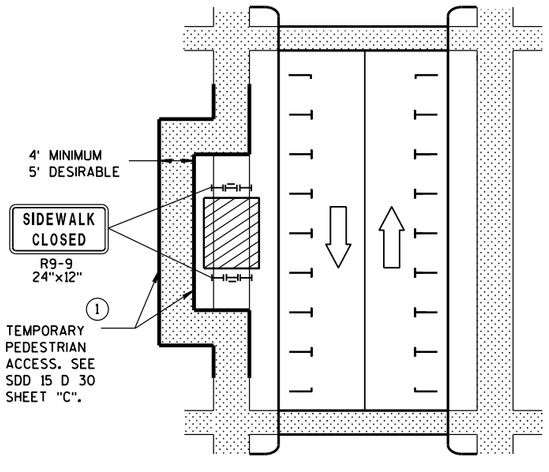
S.D.D. 15 D 30-1

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

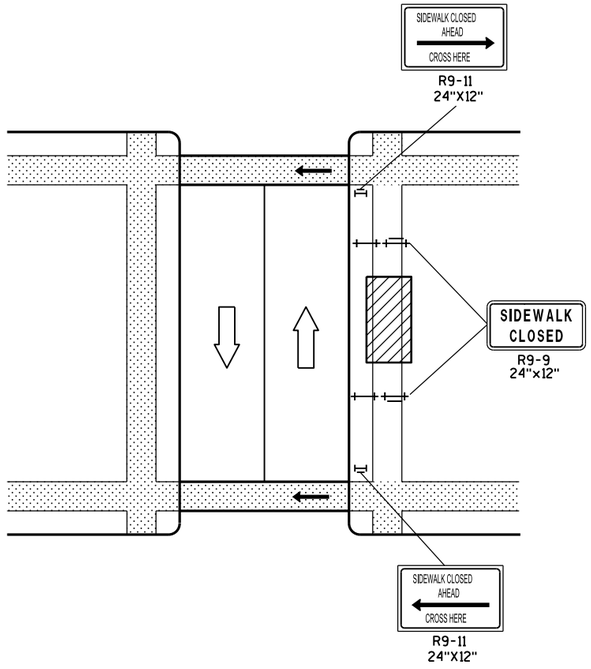


MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

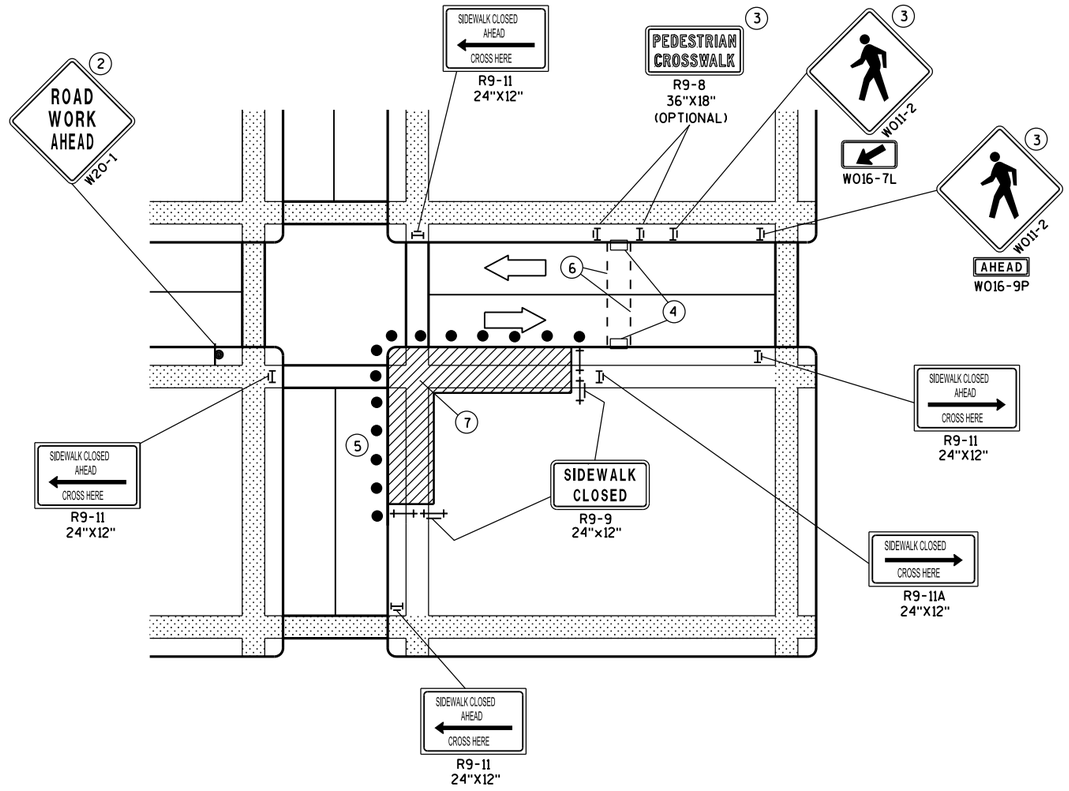
NOTE: LAYOUT SAME AS ABOVE.



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

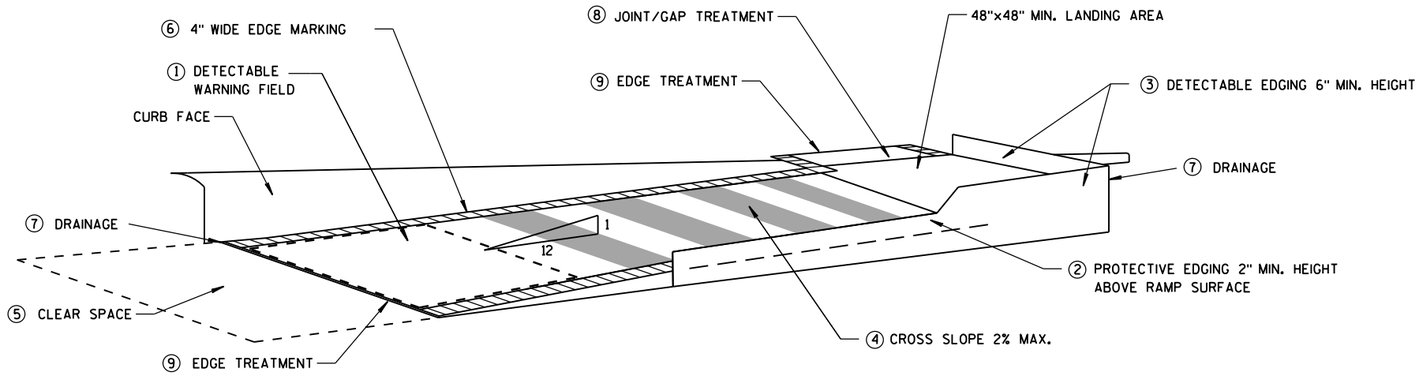
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

6

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



TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.

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

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".

② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

④ CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

⑤ CLEAR SPACE OF 48"X48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

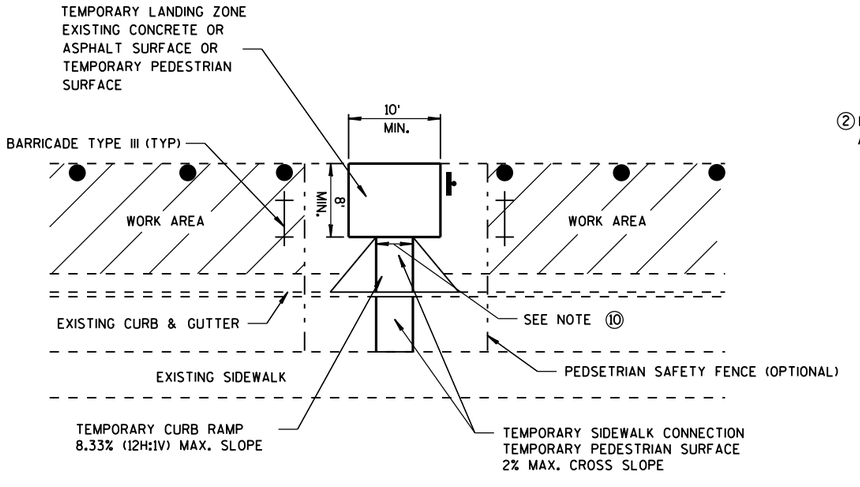
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.

⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

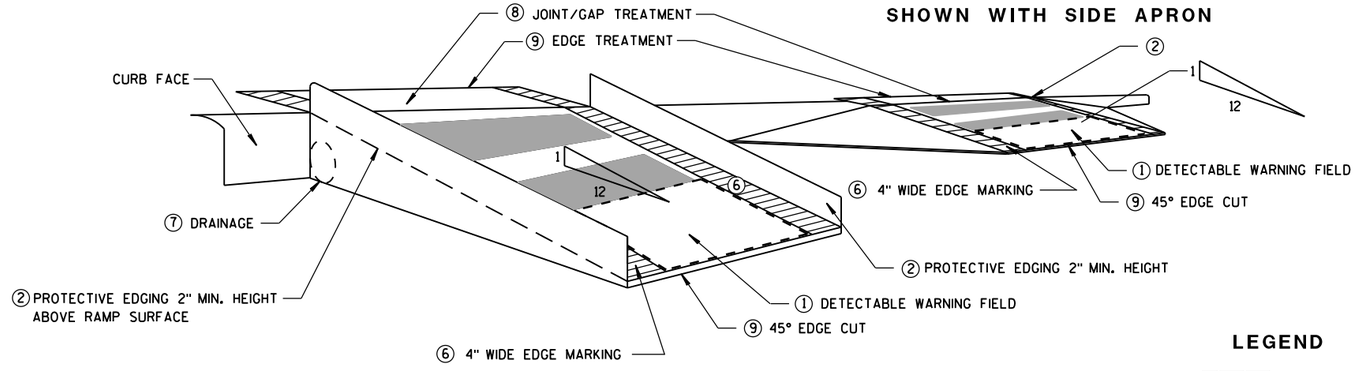
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

⑩ 5' WIDE MIN. WITH PEDSETRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD



SHOWN WITH SIDE APRON

SHOWN WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

LEGEND

WORK AREA

TYPE III BARRICADE

TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

March 2015 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER — SIGN

FHWA

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S.D.D. 15 D 30-2b

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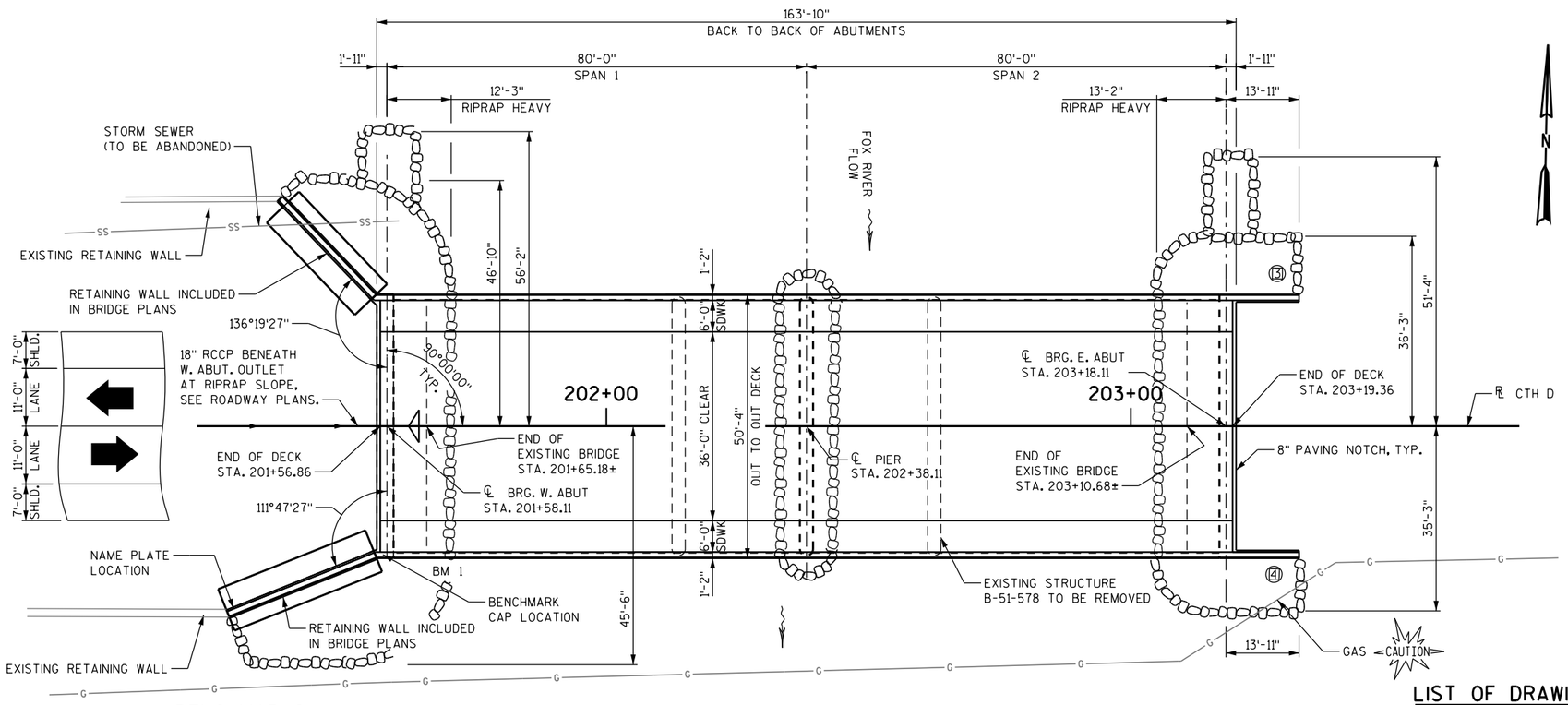
S.D.D. 15 D 30-2b



BENCHMARKS

NO.	STA/OFFSET	DESCRIPTION	ELEV.
BM 1	201+66.01, 24'-2" RT	CHISELED "□" ON BRIDGE WALL	779.01

HORIZONTAL DATUM AND ADJUSTMENT: NAD 83 (CORS 96)
VERTICAL DATUM AND ADJUSTMENT: NAVD (1929)
COORDINATE REFERENCE SYSTEM: WCCS RACINE CO.

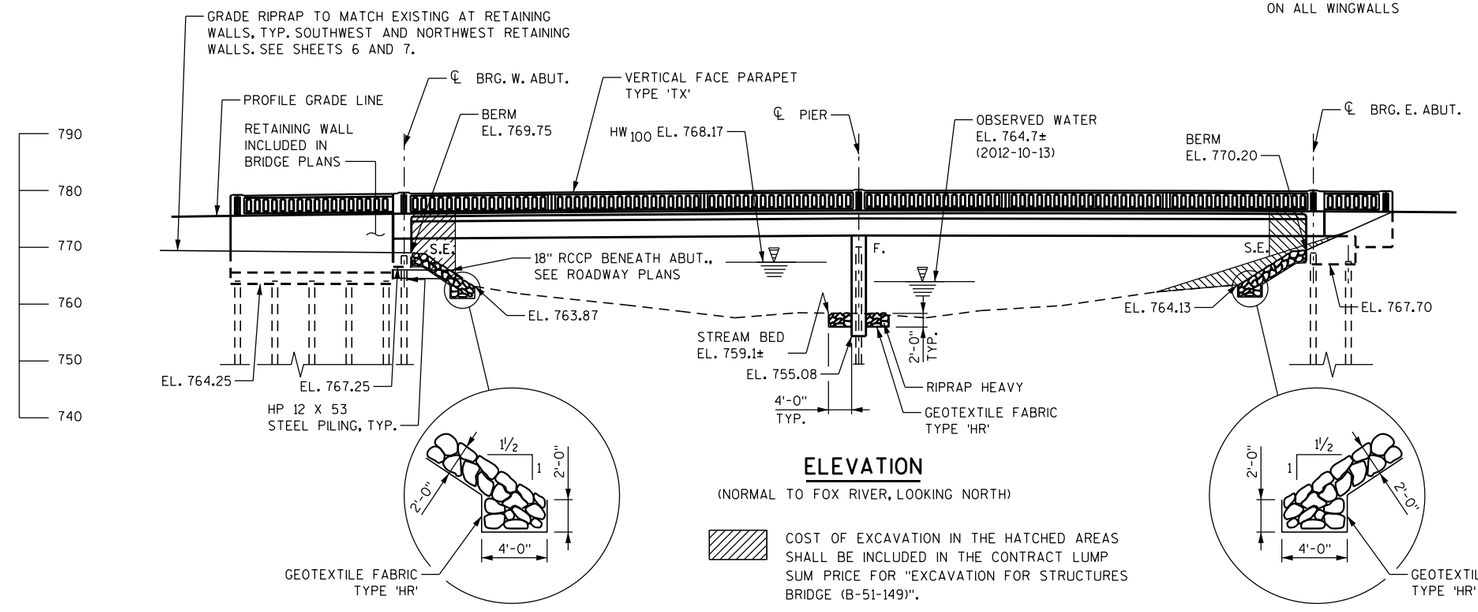
PLAN

TWO SPAN 36W" CONTINUOUS PRESTRESSED CONCRETE GIRDER BRIDGE

LEGEND

- ⊗ INDICATES WING WALL NUMBER
- F. FIXED BEARING
- S.E. SEMI-EXPANSION BEARING

NOTE: SURFACE DRAINS REQUIRED ON ALL WINGWALLS



ELEVATION

(NORMAL TO FOX RIVER, LOOKING NORTH)

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGE (B-51-149)".

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. SOUTHWEST RETAINING WALL
7. NORTHWEST RETAINING WALL
8. RETAINING WALL DETAILS
9. EAST ABUTMENT
10. EAST ABUTMENT DETAILS
11. PIER
12. 36W" PRESTRESSED GIRDER DETAILS 1
13. 36W" PRESTRESSED GIRDER DETAILS 2
14. STEEL DIAPHRAGM
15. SUPERSTRUCTURE CROSS SECTION
16. SUPERSTRUCTURE PLAN
17. SUPERSTRUCTURE DETAILS 1
18. SUPERSTRUCTURE DETAILS 2
19. VERTICAL FACE PARAPET 'TX'
20. AESTHETIC DETAILS

STATE PROJECT NUMBER

3755-00-71

DESIGN DATA

LIVE LOAD:
DESIGN LOADING = HL-93
INVENTORY RATING FACTOR = 1.28
OPERATING RATING FACTOR = 1.67
WIS. STD. PERMIT VEHICLE (WIS-SPV) = 250 KIPS

DESIGNED FOR A 20 PSF FUTURE WEARING SURFACE

MATERIAL PROPERTIES:
CONCRETE MASONRY, DECK.....f'c = 4,000 psi
CONCRETE MASONRY, ALL OTHER.....f'c = 3,500 psi
HIGH STRENGTH BAR STEEL
REINFORCEMENT GRADE 60.....fy = 60,000 psi
36W-INCH PRESTRESSED GIRDERS,
CONCRETE MASONRY.....f'c = 8,000 psi
STRANDS- 0.6" DIA. WITH
ULT. TENSILE STRENGTH OF.....270,000 psi

TRAFFIC DATA CTH D

A.D.T. = 5,200 (2015)
= 5,700 (2035)

R.D.S. = 30 MPH

FOUNDATION DATA

ABUTMENTS AND PIER TO BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 22'-0" LONG AT WEST ABUTMENT, 23'-0" LONG AT EAST ABUTMENT, AND 28'-0" LONG AT PIER. PRE-BORE PILES FOR PIER 5'-0" MINIMUM INTO BEDROCK.

RETAINING WALLS TO BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS* PER PILE AS DETERMINED BY THE MODIFIED GATES FORUMULA. ESTIMATED 22'-0" LONG AT NORTHWEST AND SOUTHWEST RETAINING WALLS.

*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.

HYDRAULIC DATA

Q_{100} = 4,130 C.F.S.
VEL. = 4.20 F.P.S.
HW_{100} EL. = 768.17
WATERWAY AREA = 984 SQ. FT.
DRAINAGE AREA = 443 SQ. MI.
ROAD OVERTOPPING = N/A
SCOUR CRITICAL CODE = 5
Q_2 = 2,670 C.F.S.
HW_2 EL. = 767.73

WISCONSIN
SURENDRA K. GUPTA
E-41327
AMES, IA
PROFESSIONAL ENGINEER
5-1-2015

STRUCTURES DESIGN CONTACTS

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

CONSULTANT CONTACT:
SUREN GUPTA (262) 821-1171

NO.	DATE	REVISION	BY

KSA K. Singh & Associates, Inc.
Engineers, Scientists and Environmental Consultants

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED William C. Dreher NK 07/09/15
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-51-149

CTH D (WASHINGTON AVE.) OVER FOX RIVER

COUNTY	VILLAGE
RACINE	ROCHESTER

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
NLD	SG	VJD	SG

GENERAL PLAN & ELEVATION

SHEET 1 OF 20
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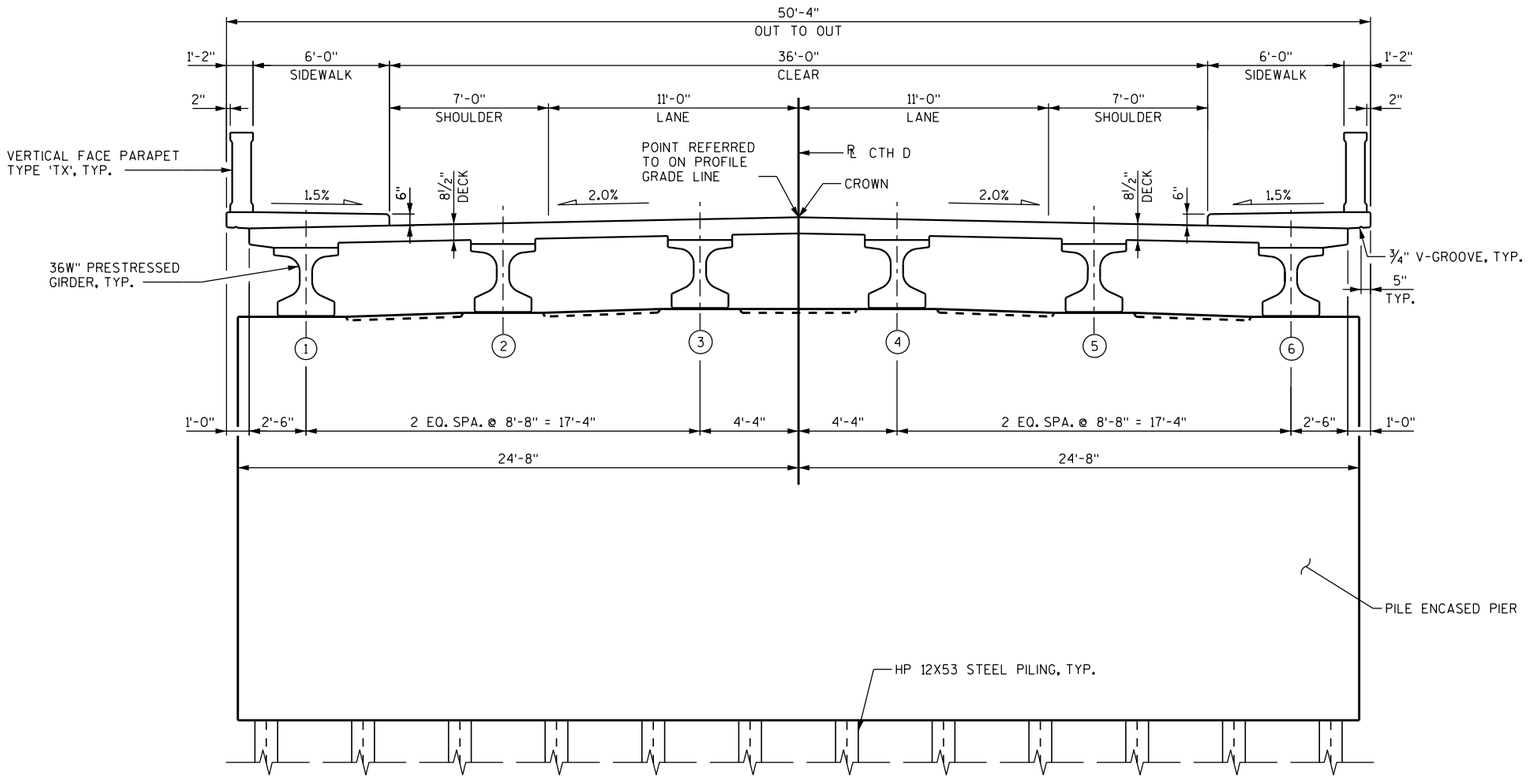
STATE PROJECT NUMBER
3755-00-71



CROSS SECTION THRU BRIDGE

(LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

THE FIRST DIGIT OF A THREE DIGIT AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

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

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH THE BENCHMARK CAPS TO BE INSTALLED AS SHOWN ON THE PLANS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH VALUE SHOWN ON THE PRESTRESSED GIRDER DETAIL SHEET.

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

THE FINISHED GRADED SECTION SHALL BE THE UPPER LIMIT OF EXCAVATION FOR THE STRUCTURES.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENTS SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

THE EXISTING STREAMBED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 210 OF THE STANDARD SPECIFICATIONS.

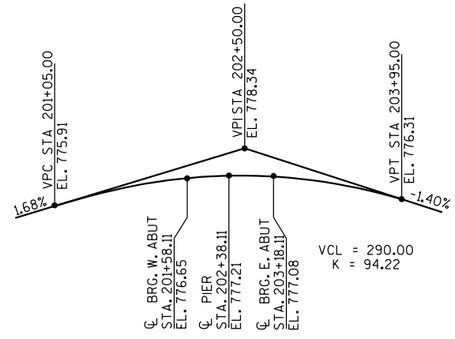
THE EXISTING STRUCTURE, B-51-578, IS A 3 SPAN REINFORCED CONCRETE T-BEAM WITH AN OVERALL WIDTH OF 48'-2" AND AN OVERALL LENGTH OF 145'-6" TO BE REMOVED.

VARIATIONS TO THE NEW GRADE LINE OVER ¼" MUST BE SUBMITTED BY THE FIELD ENGINEER TO THE BUREAU OF STRUCTURES SECTION FOR REVIEW.

CONCRETE STAINING TO BE PLACED ON ALL VERTICAL AND HORIZONTAL FACES OF CONCRETE PARAPETS. WORK TO BE PAID FOR UNDER BID ITEM "CONCRETE STAINING B-51-149".

TOTAL ESTIMATED QUANTITIES

BID ITEM NO.	BID ITEM	UNIT	SW WALL	NW WALL	WEST ABUT.	EAST ABUT.	PIER	SUPER	Total
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 202+38.11	LS	-	-	-	-	-	-	1
203.0210.S	ABATEMENT ASBESTOS MATERIAL B-51-149	LS	-	-	-	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-51-149	LS	-	-	-	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	111	106	219	219	-	-	655
502.0100	CONCRETE MASONRY BRIDGES	CY	-	-	31	53	81	327	492
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-	-	-	-	-	895	895
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-	-	-	-	-	965	965
504.0500	CONCRETE MASONRY RETAINING WALLS	CY	38	31	-	-	-	-	69
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	-	-	3,110	2,840	-	-	5,950
505.0415	BAR STEEL REINFORCEMENT HS RETAINING WALLS	LB	1,360	1,090	-	-	-	-	2,450
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	-	-	-	1,880	3,890	76,540	82,310
505.0615	BAR STEEL REINFORCEMENT HS COATED RETAINING WALLS	LB	2,790	2,310	-	-	-	-	5,100
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-	-	6	6	12	-	24
506.4000	STEEL DIAPHRAGMS B-51-149	EACH	-	-	-	-	-	10	10
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	10	8	13	-	-	43
517.1010.S	CONCRETE STAINING B-51-149	SF	550	440	290	570	830	5,930	8,610
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	-	-	-	-	144	-	144
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	189	189	176	230	412	-	1,195
606.0300	RIPRAP HEAVY	CY	46	45	69	115	34	-	309
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	45	40	85	95	-	-	265
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	1	1	-	2	-	-	4
645.0120	GEOTEXTILE FABRIC TYPE 'HR'	SY	69	66	116	184	79	-	514
SPV.0090.01	PARAPET CONCRETE TYPE 'TX'	LF	31	25	-	24	-	328	408
	NON-BID ITEMS								
	FILLER	SIZE	-	-	-	-	-	-	3/4", 1/2"



PROFILE GRADE LINE CTH D

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

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CROSS SECTION AND QUANTITIES

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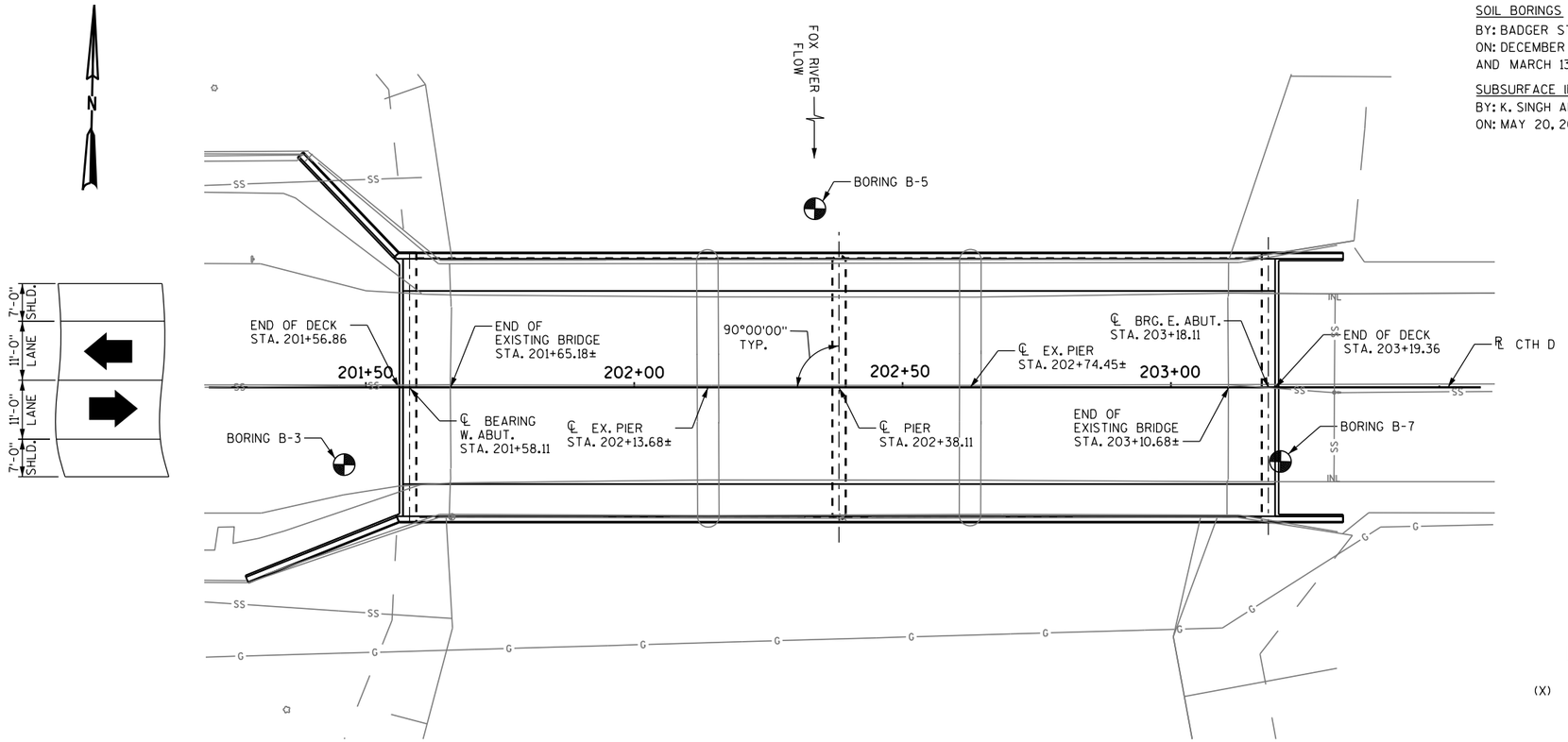


SOIL BORINGS
BY: BADGER STATE DRILLING CO., INC.
ON: DECEMBER 11, 2012 - DECEMBER 14, 2012
AND MARCH 13, 2013 - MARCH 14, 2013

SUBSURFACE INVESTIGATION REPORT
BY: K. SINGH AND ASSOCIATES
ON: MAY 20, 2013

LEGEND

(X) ADJUSTED BLOWS PER FOOT

STATE PROJECT NUMBER

3755-00-71

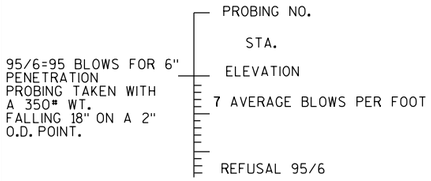
ABBREVIATIONS

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

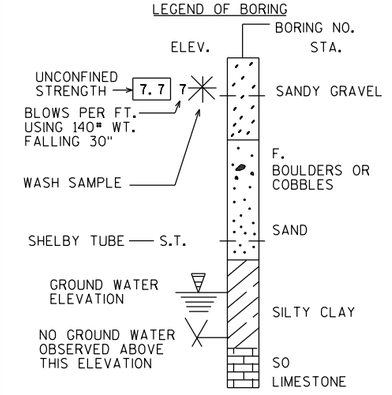
MATERIAL SYMBOLS

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.

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SUBSURFACE EXPLORATION

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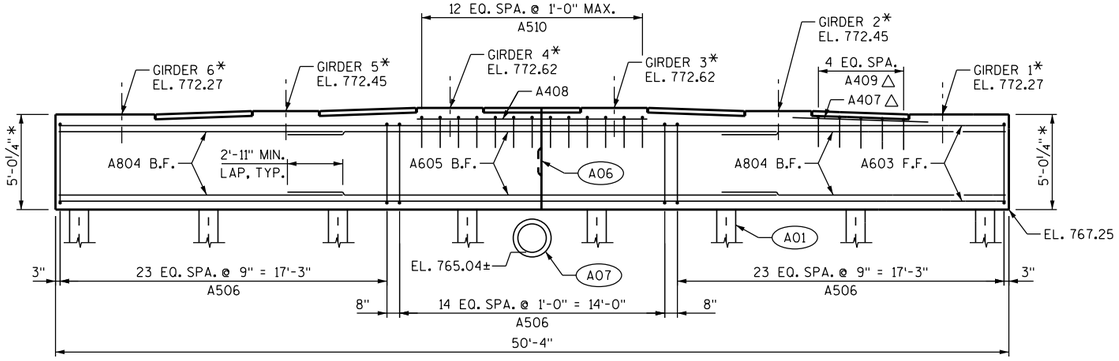
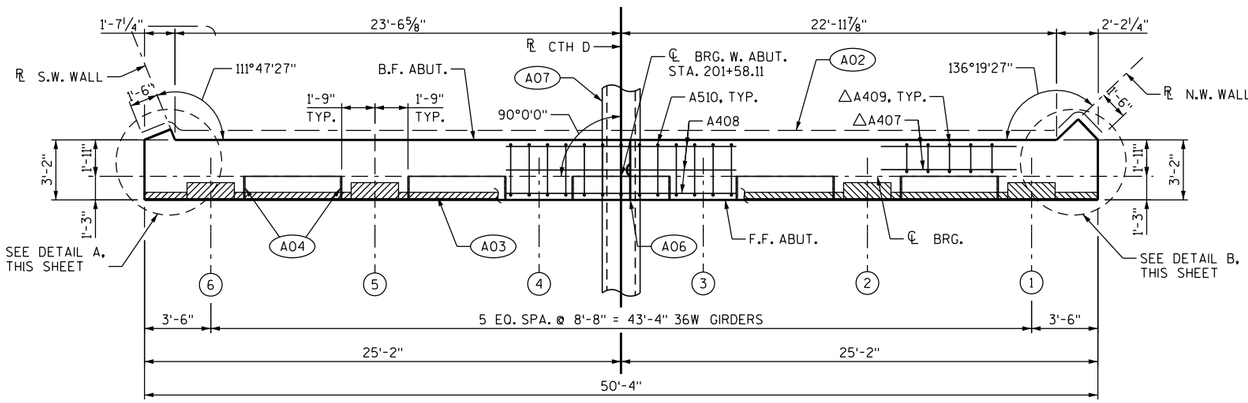
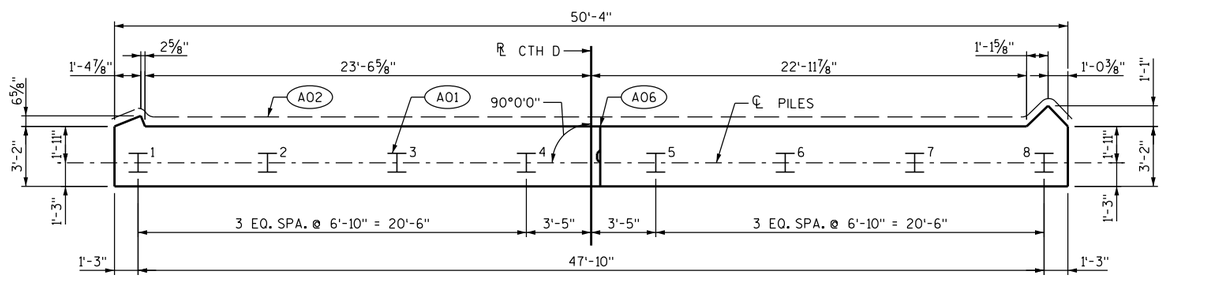


ELEVATION

LOOKING WEST AT FRONT FACE

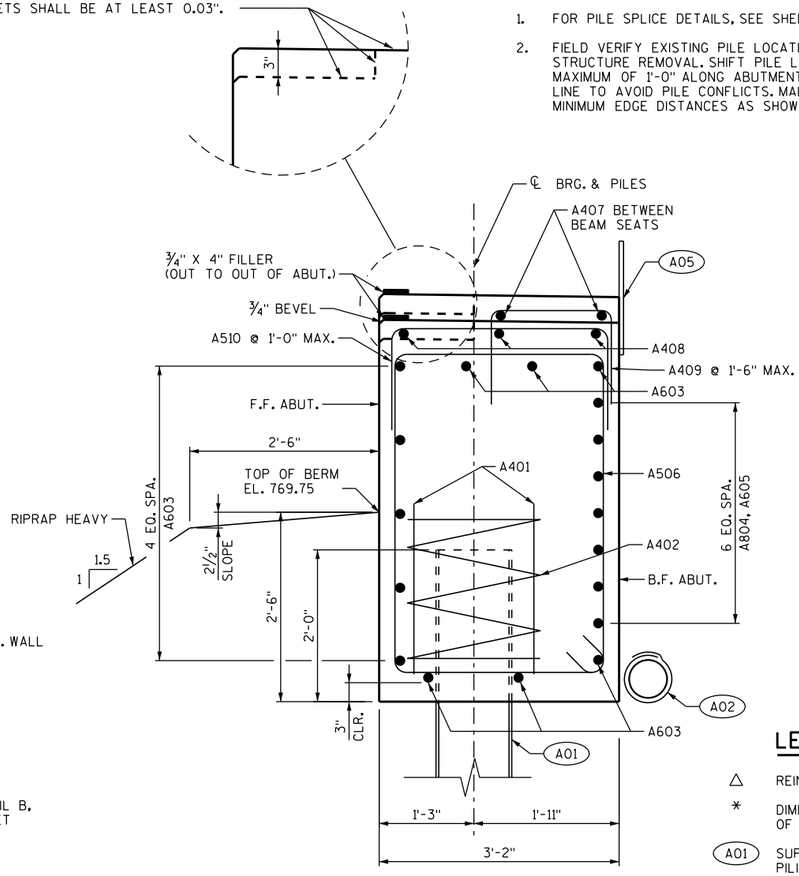


PLAN

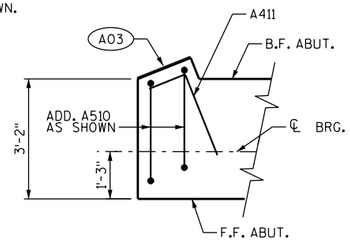


PILE PLAN

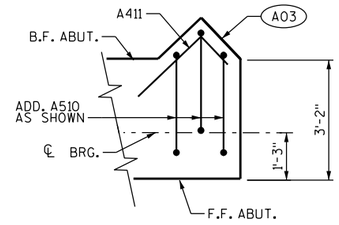
STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



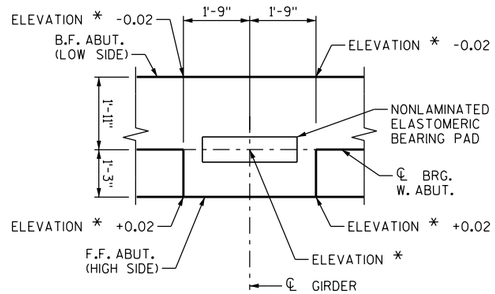
SECTION THRU ABUTMENT BODY



DETAIL A



DETAIL B



SLOPED BEAM SEAT DETAIL - WEST ABUTMENT

NOTES

1. FOR PILE SPLICE DETAILS, SEE SHEET 5.
2. FIELD VERIFY EXISTING PILE LOCATIONS AFTER STRUCTURE REMOVAL. SHIFT PILE LOCATIONS A MAXIMUM OF 1'-0" ALONG ABUTMENT CENTER LINE TO AVOID PILE CONFLICTS. MAINTAIN MINIMUM EDGE DISTANCES AS SHOWN.

LEGEND

△	REINFORCEMENT TYPICAL BETWEEN ALL BEAM SEATS.
*	DIMENSIONS AND ELEVATIONS AT CENTERLINE OF BEARING.
A01	SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 22'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.
A02	PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED. SEE SHEET 5 FOR DETAILS.
A03	¾" X 4" PREFORMED FILLER, OUT TO OUT OF ABUTMENT.
A04	¾" CORK FILLER UP VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
A05	18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
A06	VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THRU JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.
A07	REINFORCED CONCRETE STORM SEWER PIPE, 18-INCH CLASS 3. SEE ROADWAY PLANS FOR DETAILS.

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STRUCTURE B-51-149

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WEST ABUTMENT

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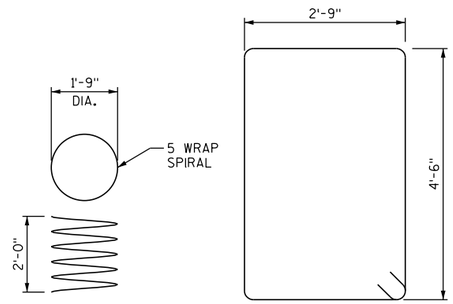
BILL OF BARS - WEST ABUTMENT

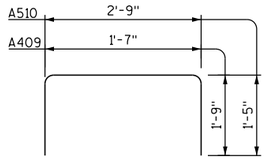
COATED: 0 LBS
UNCOATED: 3,110 LBS

MARK	COATED	NO REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
A401		16	2'-3"			PILES - 2 PER BODY PILE
A402		8	28'-0"		X	PILES - 1 PER BODY PILE
A603		11	49'-11"			BODY-HORIZ. -F.F.
A804		14	15'-0"			BODY-HORIZ.-B.F.
A605		7	25'-11"			BODY-HORIZ.-B.F.
A506		63	15'-2"		X	BODY STIRRUPS
A407		10	7'-2"			BODY-HORIZ.-BTWN. BEAM SEATS
A408		4	12'-2"			BODY-HORIZ.-UNDER GIR. 3 & 4
A409		25	4'-11"		X	BODY-VERT.-BTWN. BEAM SEATS
A510		18	5'-4"		X	BODY-VERT.-UNDER GIR. 3 & 4
A412		4	3'-4"		X	BODY - HORIZ. - ENDS

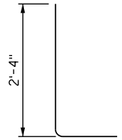


A402

A506



A409, A510



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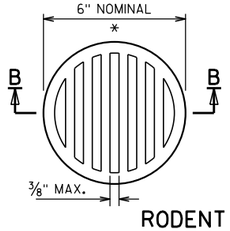
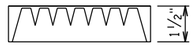




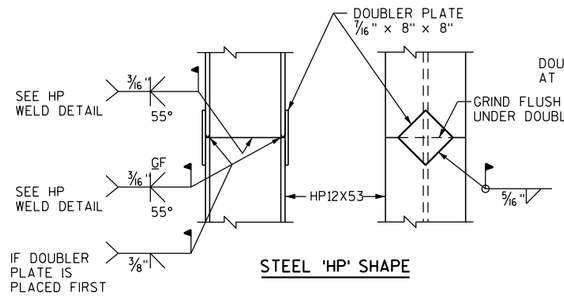
SECTION B-B

RODENT SHIELD DETAIL

* 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 WITH 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.



STEEL 'HP' SHAPE

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAIL

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STRUCTURE B-51-149

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WEST ABUTMENT DETAILS

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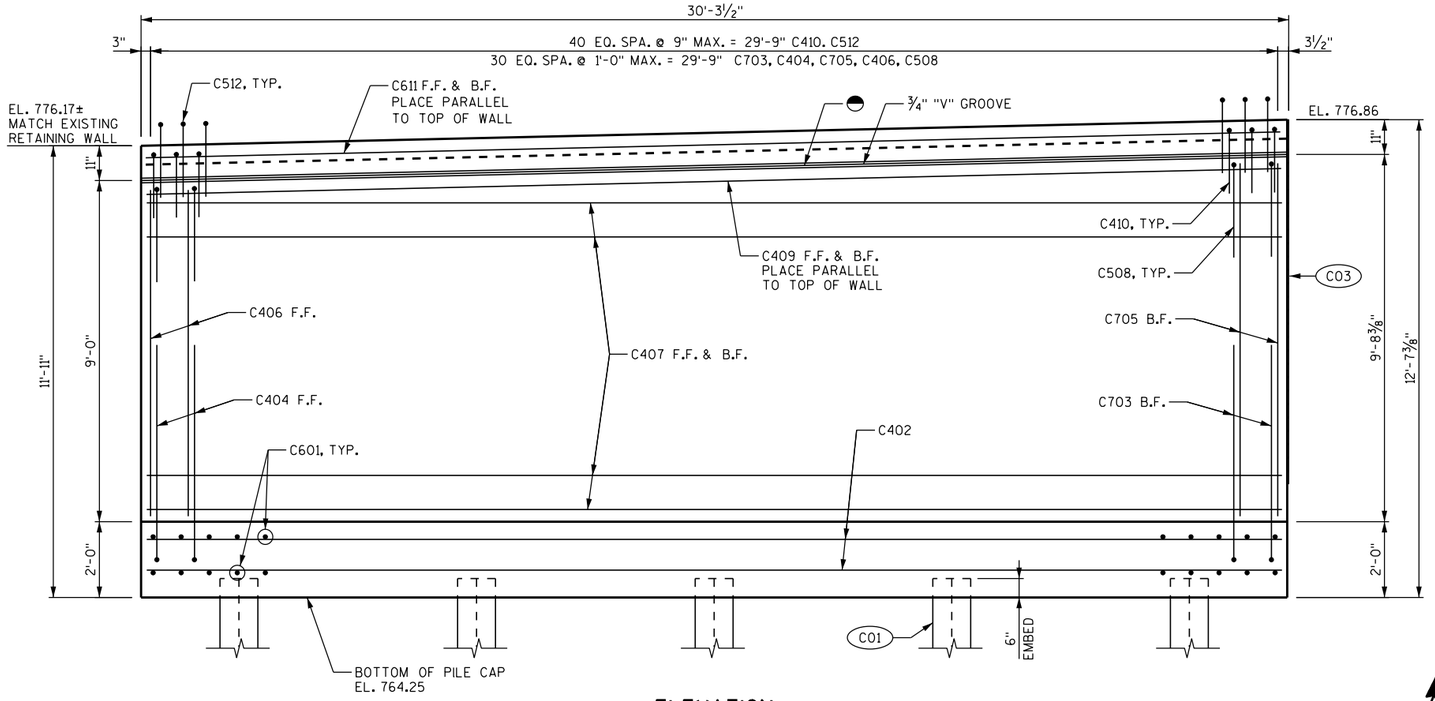
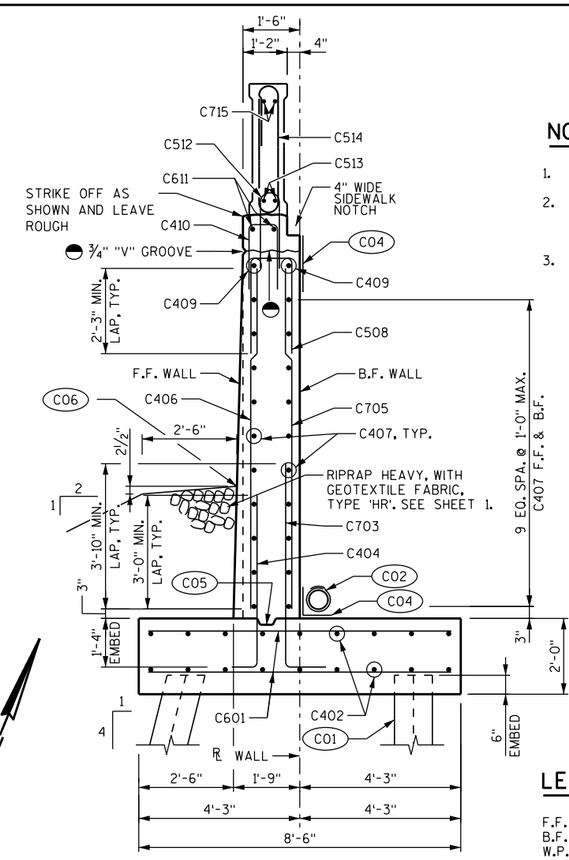


ELEVATION

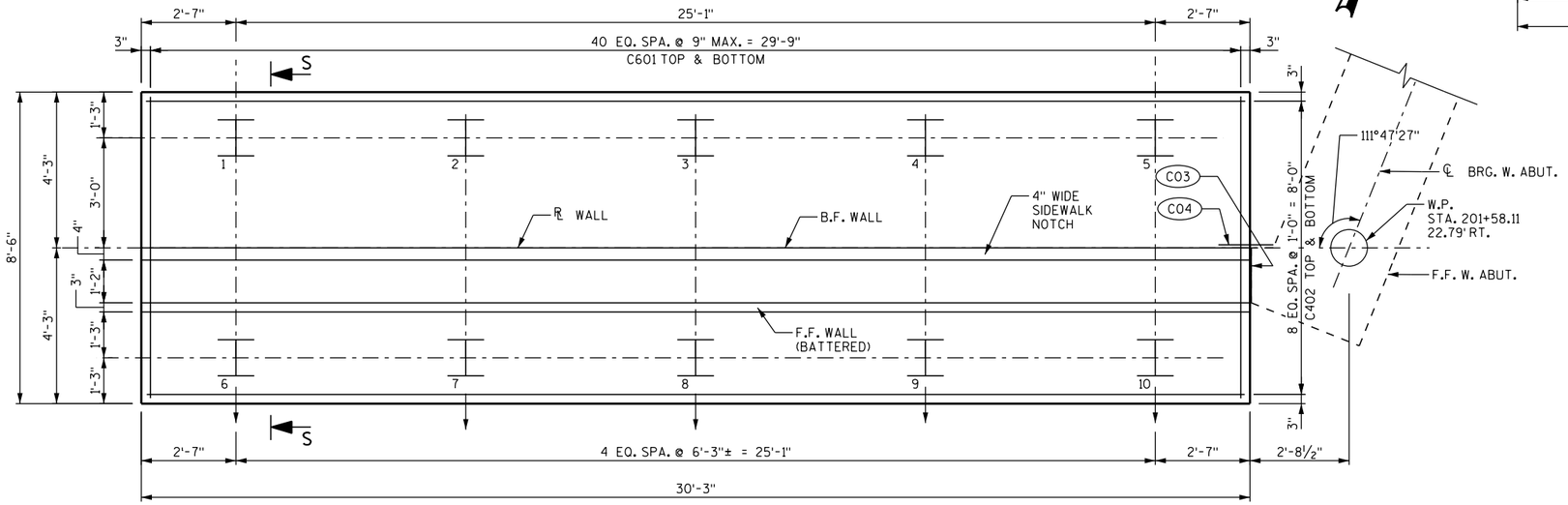
LOOKING NORTH AT F.F. OF WALL
(PARAPET NOT SHOWN FOR CLARITY)



SECTION S-S

NOTES

1. FOR PILE SPLICE DETAILS, SEE SHEET 5.
2. FIELD VERIFY EXISTING WALL ELEVATIONS. ADJUST TO MATCH AS DIRECTED BY THE FIELD ENGINEER.
3. FIELD VERIFY EXISTING PILE LOCATIONS AFTER STRUCTURE REMOVAL. SHIFT PILE LOCATIONS A MAXIMUM OF 1'-0" ALONG THE WALL LENGTH TO AVOID PILE CONFLICTS. MAINTAIN MINIMUM EDGE DISTANCES AS SHOWN.



PLAN

SHOWING PILE LAYOUT AND
FOOTING REINFORCEMENT

LEGEND

F.F. - FRONT FACE
B.F. - BACK FACE
W.P. - WORKING POINT

→ INDICATES PILE BATTER DIRECTION.

CONSTRUCTION JOINT. LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE.

(C01) SUPPORT RETAINING WALL ON HP 12 X 53 STEEL PILING. ESTIMATED 22'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.

(C02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. SEE SHEET 5 FOR DETAILS.

(C03) ½" FILLER (INCLUDED IN WALL LENGTH): SEAL INTERFACE BETWEEN ABUTMENT DIAPHRAGM, ABUTMENT BODY, AND STEM OF RETAINING WALL. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

(C04) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.

(C05) OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY. EXTEND REINFORCEMENT THROUGH JOINT.

(C06) MATCH RIPRAP GRADE FROM EXISTING EL. AT EXISTING RETAINING WALL TO ABUT. BERM EL., PER SHEET 1.

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SOUTHWEST RETAINING WALL

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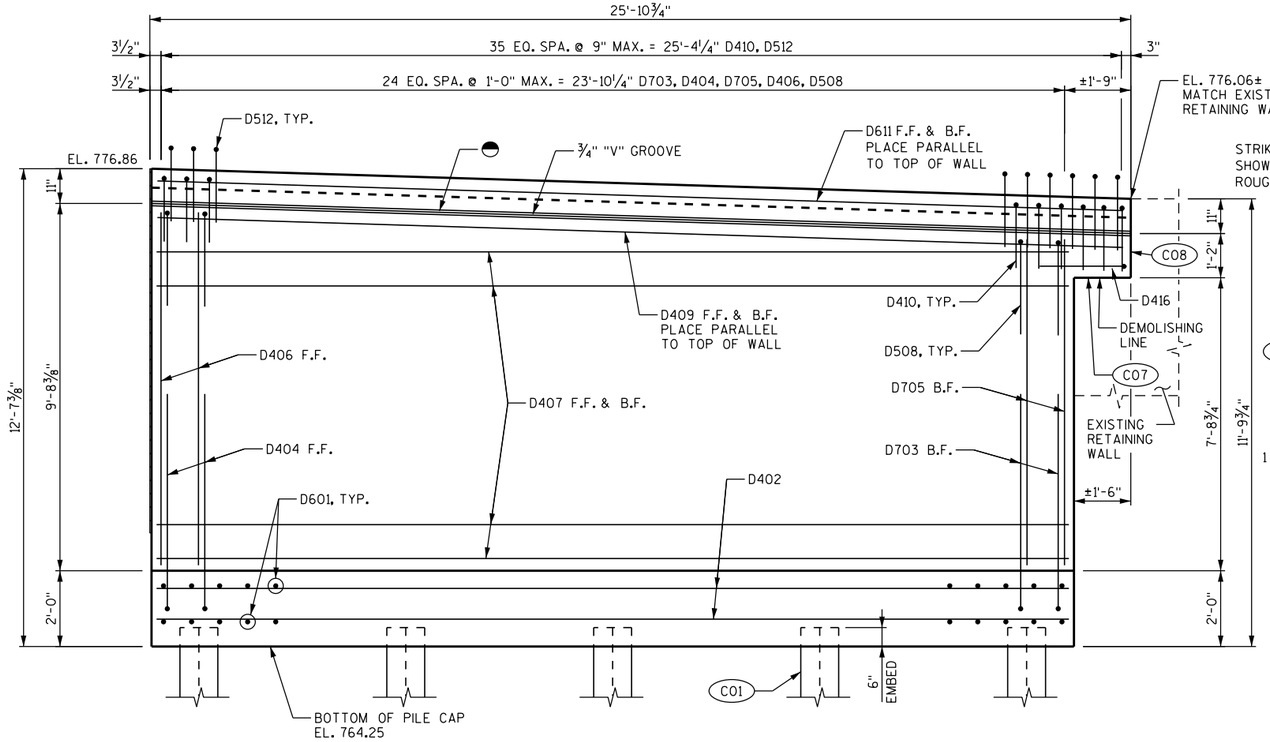
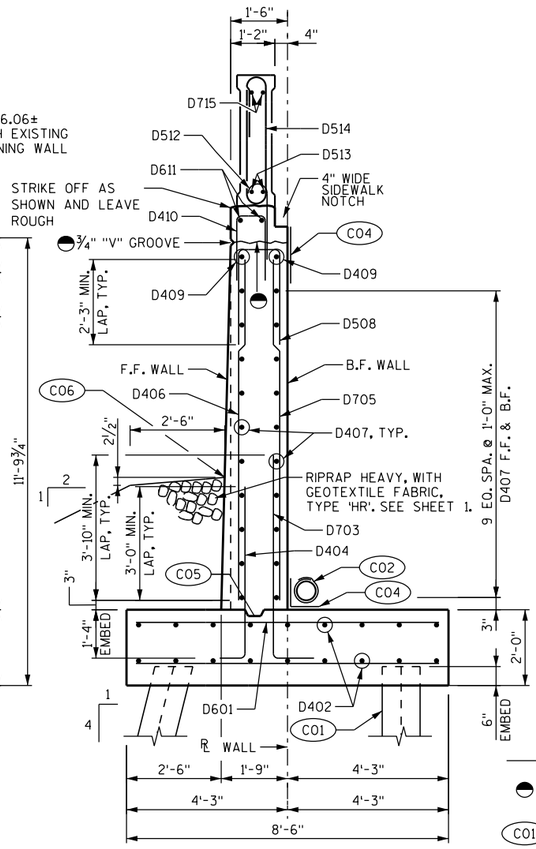
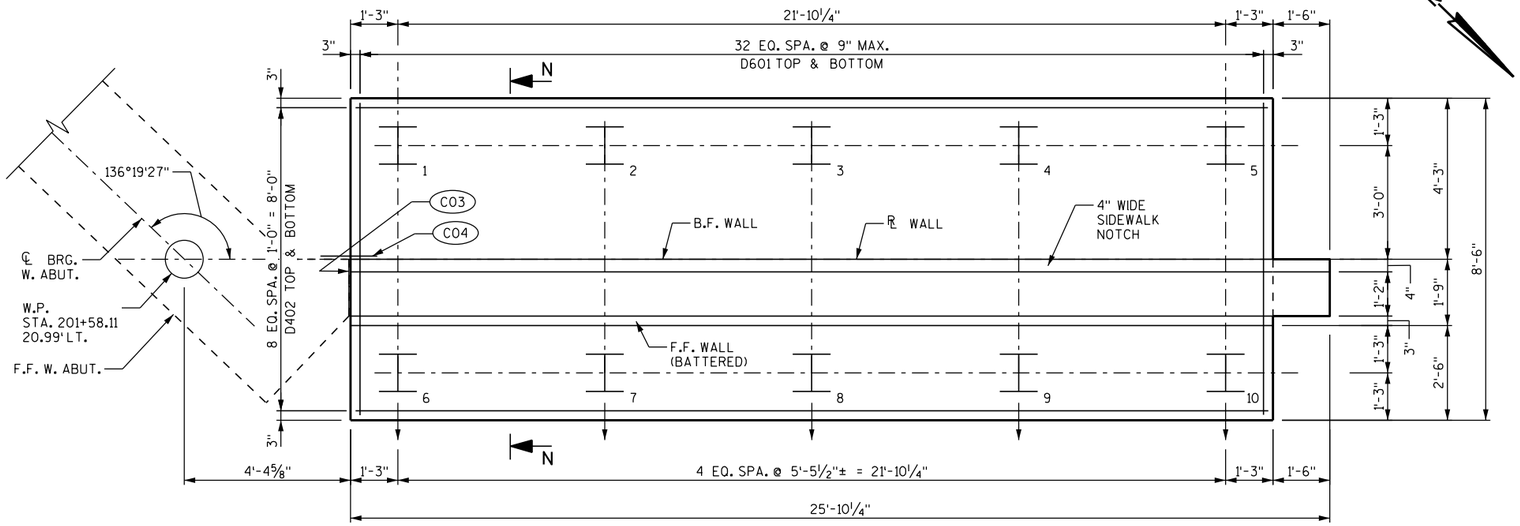


ELEVATION

LOOKING SOUTH AT F.F. OF WALL
(PARAPET NOT SHOWN FOR CLARITY)



SECTION N-N



PLAN

SHOWING PILE LAYOUT AND
FOOTING REINFORCEMENT

NOTES

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LEGEND

F.F. - FRONT FACE
B.F. - BACK FACE
W.P. - WORKING POINT

→ INDICATES PILE BATTER DIRECTION.

◓ CONSTRUCTION JOINT. LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE.

(C01) SUPPORT RETAINING WALL ON HP 12 X 53 STEEL PILING. ESTIMATED 22'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.

(C02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. SEE SHEET 5 FOR DETAILS.

(C03) ½" FILLER (INCLUDED IN WALL LENGTH): SEAL INTERFACE BETWEEN ABUTMENT DIAPHRAGM, ABUTMENT BODY, AND STEM OF RETAINING WALL. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

(C04) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.

(C05) OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY. EXTEND REINFORCEMENT THROUGH JOINT.

(C06) MATCH RIPRAP GRADE FROM EXISTING EL. AT EXISTING RETAINING WALL TO ABUT. BERM EL., PER SHEET 1.

(C07) CONSTRUCTION JOINT, LEAVE ROUGH. SALVAGE AND CLEAN EXISTING VERTICAL REINFORCEMENT AND INCORPORATE INTO NEW WORK.

(C08) SAWCUT VERTICAL CONSTRUCTION JOINT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

NORTHWEST RETAINING WALL

SHEET 7 OF 20
94

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STATE PROJECT NUMBER
3755-00-71

BILL OF BARS - S.W. Wall — COATED: 2,790 LBS; UNCOATED: 1,360 LBS

	MARK	COATED	NO REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
	C601		82	8'-1"			PILE CAP - TRANS. - TOP & BOTTOM
	C402		18	29'-9"			PILE CAP - LONGIT. - TOP & BOTTOM
	C703	X	31	6'-5"		X	STEM - VERTICAL - B.F.
	C404	X	31	3'-10"		X	STEM - VERTICAL - F.F.
△	C705	X	31	8'-11"	X		STEM - VERTICAL - B.F.
△	C406	X	31	8'-11"	X		STEM - VERTICAL - F.F.
	C407	X	20	29'-9"			STEM - HORIZ. - F.F. & B.F.
	C508	X	31	5'-6"		X	STEM - VERTICAL - BENT
	C409	X	2	29'-9"			STEM - HORIZ. - F.F. & B.F.
	C410	X	41	4'-1"		X	STEM - VERTICAL - BENT
	C611	X	2	29'-9"			STEM - HORIZ. - F.F. & B.F.
	C512	X	41	4'-4"		X	PARAPET - VERTICAL - DOWELS
	C513	X	2	29'-9"			PARAPET - HORIZ.
	C514	X	41	8'-6"		X	PARAPET - VERTICAL
	C715	X	2	29'-9"			PARAPET - HORIZ.

BILL OF BARS - N.W. Wall — COATED: 2,310 LBS; UNCOATED: 1,090 LBS

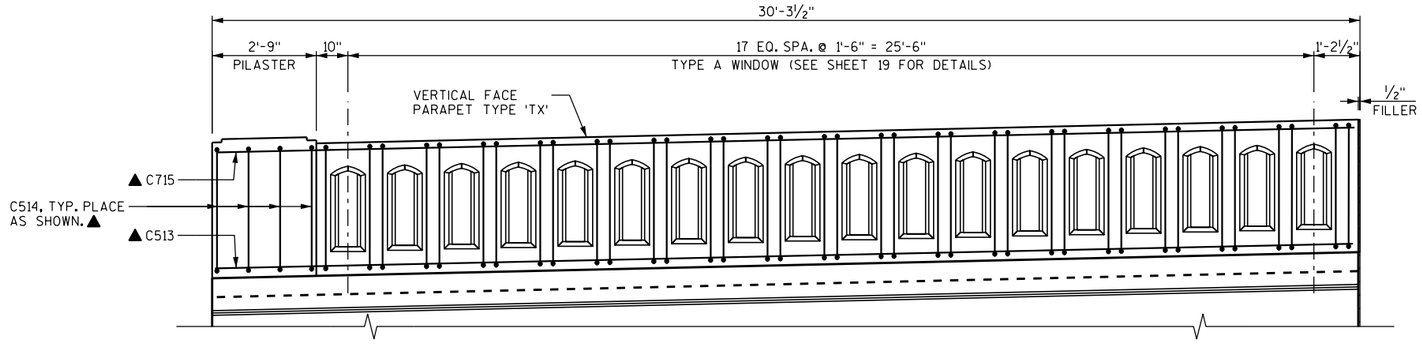
	MARK	COATED	NO REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
	D601		66	8'-1"			PILE CAP - TRANS. - TOP & BOTTOM
	D402		18	23'-10"			PILE CAP - LONGIT. - TOP & BOTTOM
	D703	X	25	6'-5"		X	STEM - VERTICAL - B.F.
	D404	X	25	3'-10"		X	STEM - VERTICAL - F.F.
△	D705	X	25	8'-10"	X		STEM - VERTICAL - B.F.
△	D406	X	25	8'-10"	X		STEM - VERTICAL - F.F.
	D407	X	20	23'-10"			STEM - HORIZ. - F.F. & B.F.
	D508	X	25	5'-6"		X	STEM - VERTICAL - BENT
	D409	X	2	25'-5"			STEM - HORIZ. - F.F. & B.F.
	D410	X	36	4'-1"		X	STEM - VERTICAL - BENT
	D611	X	2	25'-5"			STEM - HORIZ. - F.F. & B.F.
	D512	X	36	4'-4"		X	PARAPET - VERTICAL - DOWELS
	D513	X	2	25'-5"			PARAPET - HORIZ.
	D514	X	35	8'-6"		X	PARAPET - VERTICAL
	D715	X	2	25'-5"			PARAPET - HORIZ.
	D416	X	1	5'-6"		X	STEM -HORIZONTAL -END

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

BAR SERIES TABLE

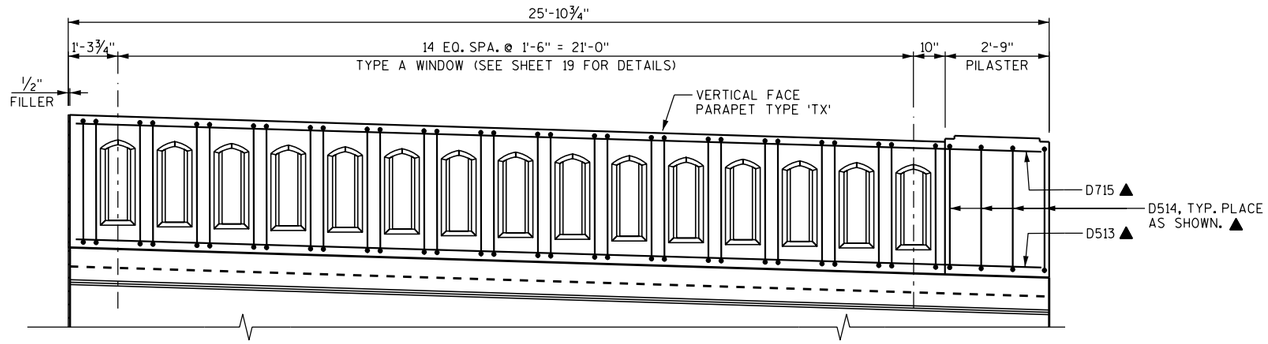
MARK	NO. REQ'D	LENGTHS
C705	1 SERIES OF 31	8'-7" TO 9'-3"
C406	1 SERIES OF 31	8'-7" TO 9'-3"
D705	1 SERIES OF 25	8'-5" TO 9'-3"
D406	1 SERIES OF 25	8'-5" TO 9'-3"

BUNDLE AND TAG EACH SERIES SEPARATELY



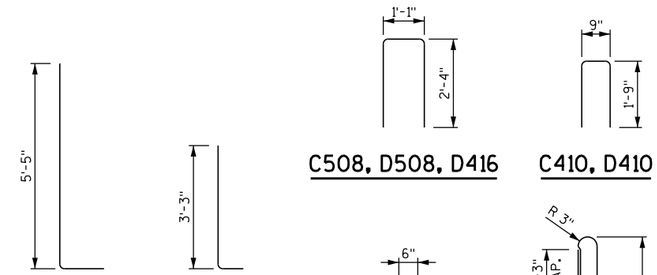
S.W. WALL PARAPET ELEVATION

LOOKING NORTH AT F.F. WALL



N.W. WALL PARAPET ELEVATION

LOOKING SOUTH AT F.F. WALL



C703, D703 — C404, D404 — C508, D508, D416 — C410, D410 — C512, D512 — C514, D514

LEGEND

▲ REFER TO SHEET 19 FOR ADDITIONAL PARAPET REINFORCING DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

RETAINING WALL DETAILS

SHEET 8 OF 20
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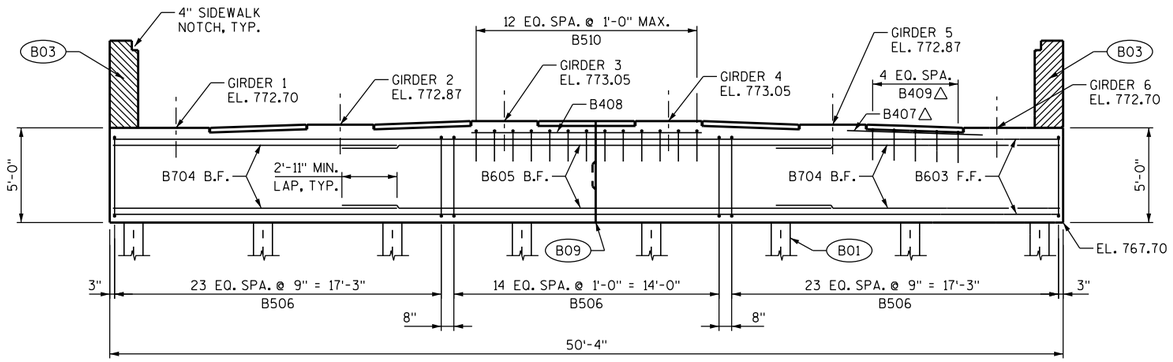
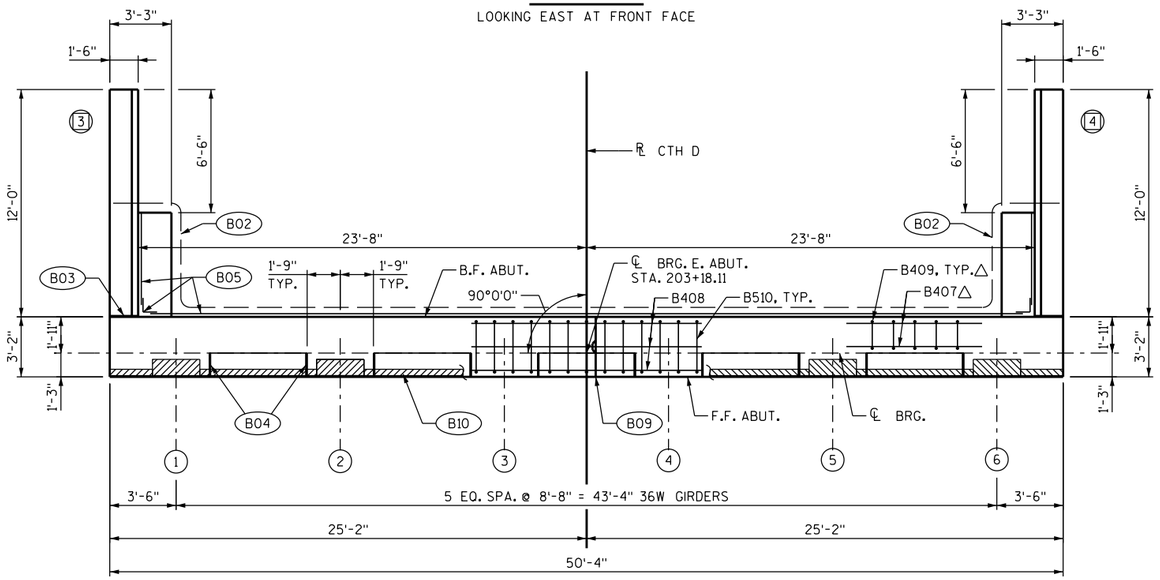


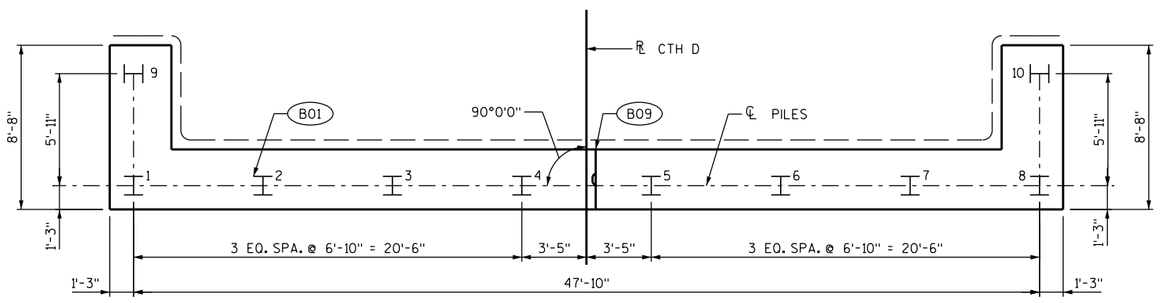
ELEVATION

LOOKING EAST AT FRONT FACE



PLAN

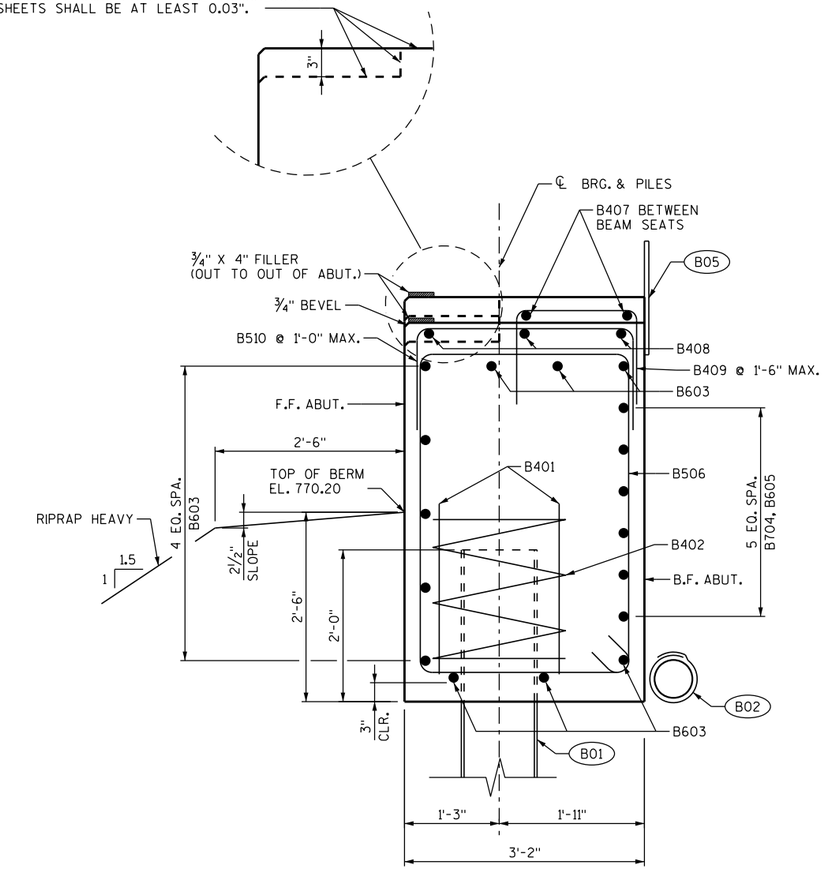
(X) INDICATES WING NUMBER



PILE PLAN

(X) INDICATES WING NUMBER

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



SECTION THRU ABUTMENT BODY

LEGEND

△ REINFORCEMENT TYPICAL BETWEEN ALL BEAM SEATS.

(B01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 23'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.

(B02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. SEE SHEET 5 FOR DETAILS.

(B03) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

(B04) ¾" CORK FILLER UP VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(B05) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.

(B09) VERT. CONST. JOINT KEYWAY FORMED BY BEVELED 2" X 8" X 1'-6". CLEAR BRG. SEAT BY 3" MIN. CLEAR PILES BY 9" MIN. RUN BAR STEEL THRU JOINT AND SEAL WITH 18" RUBBERIZED MEMBRANE WATERPROOFING.

(B10) ¾" X 4" PREFORMED FILLER, OUT TO TOU OF ABUTMENT.

NOTES

1. FOR PILE SPLICE DETAILS, SEE SHEET 5.
2. FIELD VERIFY EXISTING PILE LOCATIONS AFTER STRUCTURE REMOVAL. SHIFT PILE LOCATIONS A MAXIMUM OF 1'-0" ALONG ABUTMENT CENTER LINE TO AVOID PILE CONFLICTS. MAINTAIN MINIMUM EDGE DISTANCES AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

EAST ABUTMENT

SHEET 9 OF 20
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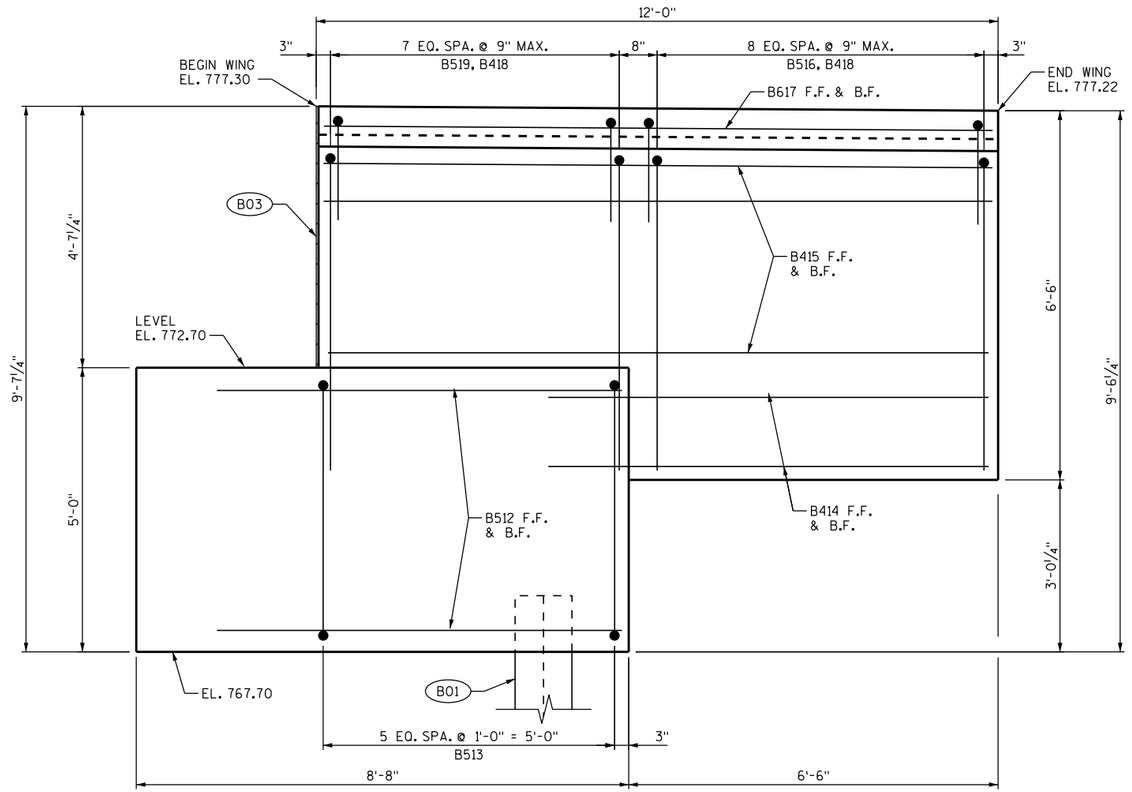
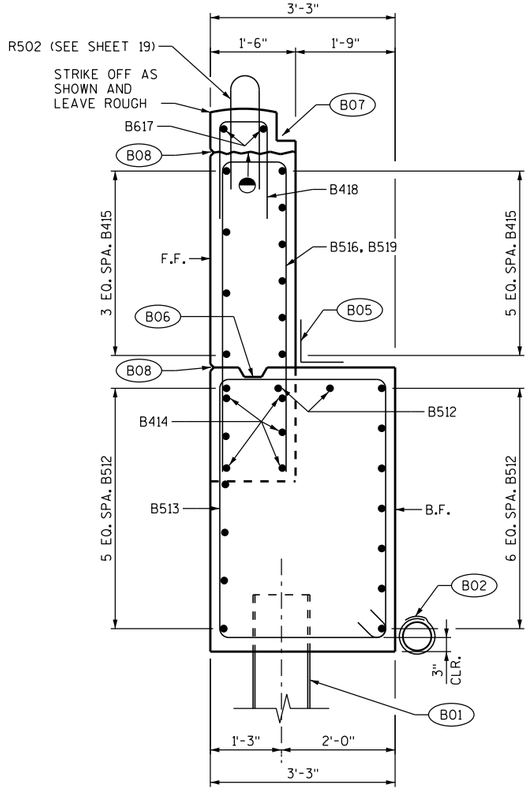


WING ELEVATION

WING 3 SHOWN, WING 4 SIMILAR



SECTION THRU WING

(PARAPET NOT SHOWN FOR CLARITY)

NOTES

1. FOR PILE SPLICE DETAILS, SEE SHEET 5.

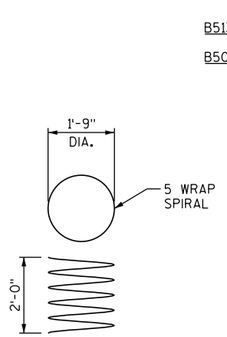
LEGEND

- (B01) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING. ESTIMATED 23'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE.
- (B02) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MINIMUM TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED. SEE SHEET 5 FOR DETAILS.
- (B03) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- (B05) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACK FACE.
- (B06) OPTIONAL CONSTRUCTION JOINTS FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- (B07) 4" WIDE SIDEWALK NOTCH.
- (B08) ¾" "V" GROOVE.
- CONSTRUCTION JOINT, LEAVE ROUGH. POUR CONCRETE ABOVE THIS JOINT AFTER DECK IS IN PLACE. IF JOINT IS USED, UTILIZE RUBBERIZED MEMBRANE WATERPROOFING.

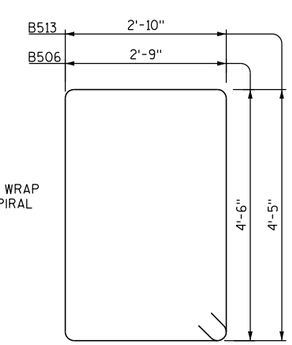
BILL OF BARS - EAST ABUTMENT

COATED: 1,880 LBS
UNCOATED: 2,840 LBS

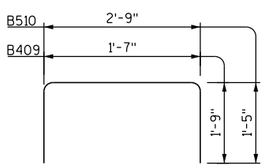
MARK	COATED	NO REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
B401		16	2'-3"			PILES - 2 PER BODY PILE
B402		8	28'-0"		X	PILES - 1 PER BODY PILE
B603		11	49'-11"			BODY-HORIZ. -F.F.
B704		12	15'-0"			BODY-HORIZ.-B.F.
B605		6	25'-11"			BODY-HORIZ.-B.F.
B506		63	15'-2"		X	BODY STIRRUPS
B407		10	7'-2"			BODY-HORIZ.-BTWN. BEAM SEATS
B408		4	12'-2"			BODY-HORIZ.-UNDER GIR. 3 & 4
B409		25	4'-11"		X	BODY-VERT.-BTWN. BEAM SEATS
B510		13	5'-4"		X	BODY-VERT.-UNDER GIR. 3 & 4
B512	X	30	7'-4"			WINGS 3 & 4- BODY - HORIZ.-F.F.-B.F.
B513	X	12	15'-1"		X	WINGS 3 & 4 - BODY - STIRRUPS
B414	X	10	7'-11"			WINGS 3 & 4- STEM - HORIZ.-F.F.-B.F.
B415	X	20	11'-7"			WINGS 3 & 4- STEM - HORIZ.-F.F.-B.F.
B516	X	18	11'-11"		X	WINGS 3 & 4- STEM - VERT.
B617	X	4	11'-7"			WINGS 3 & 4- STEM - HORIZ.
B418	X	34	4'-0"		X	WINGS 3 & 4- STEM - VERT.
B519	X	16	15'-7"		X	WINGS 3 & 4 - STEM - VERT



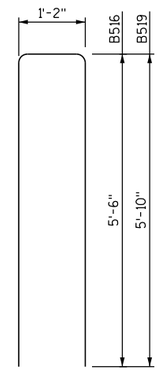
B402



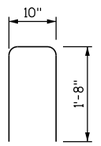
B506, B513



B409, B510



B516, B519



B418

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

EAST ABUTMENT DETAILS

SHEET 10 OF 20
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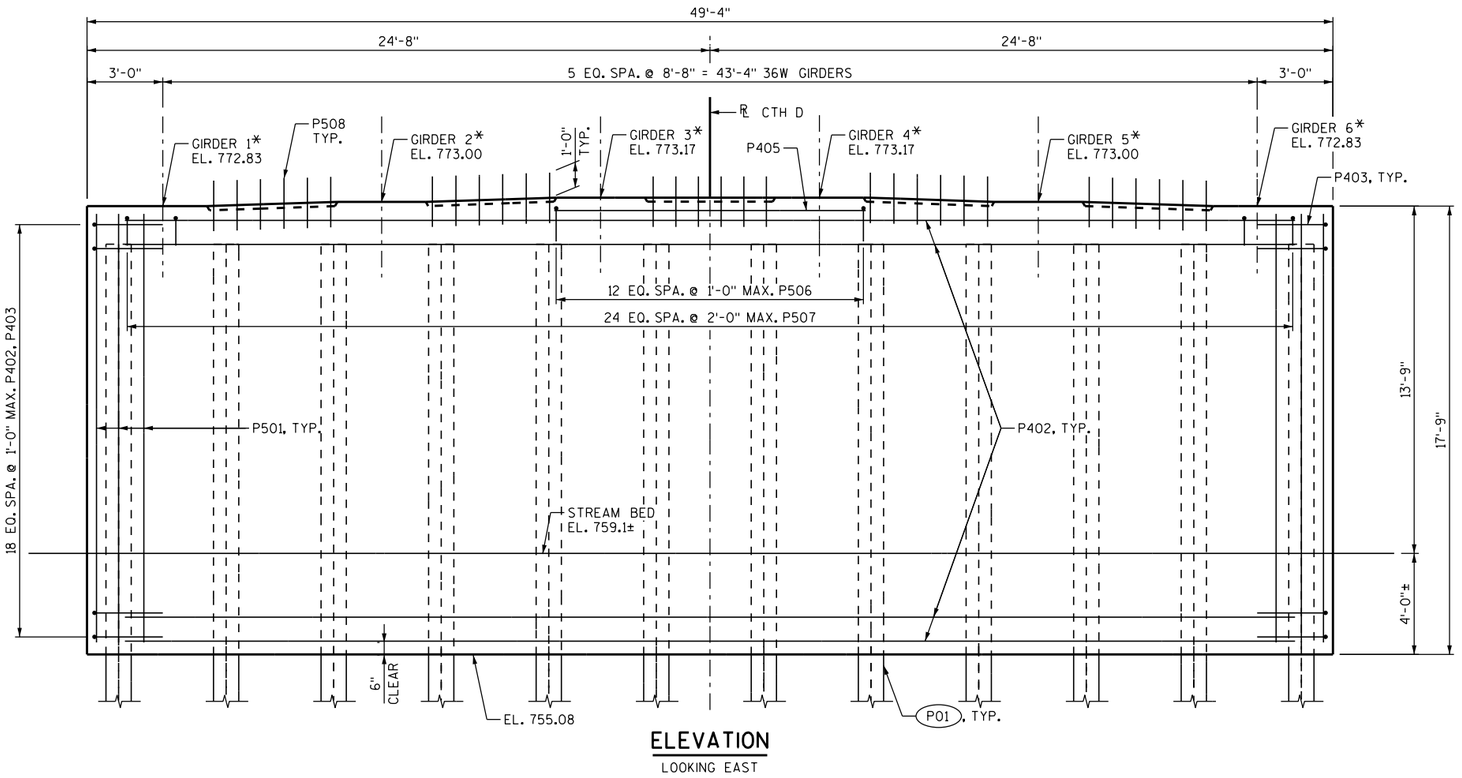
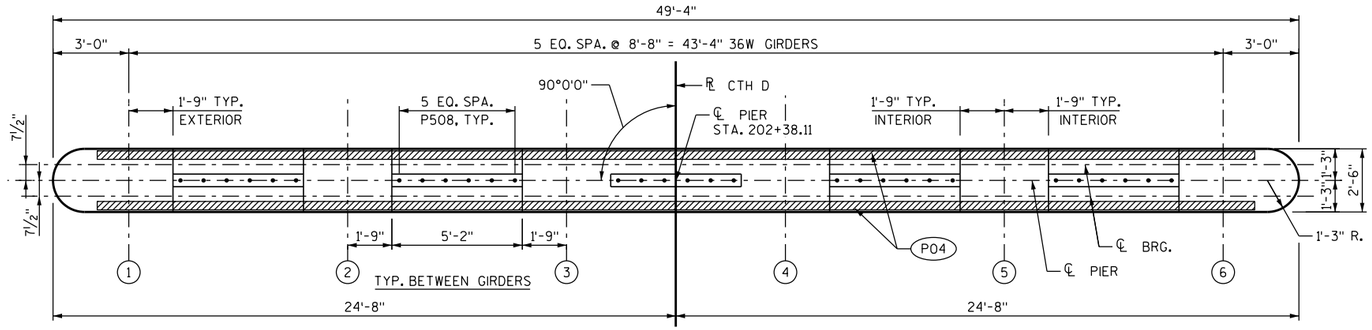
3755-00-71

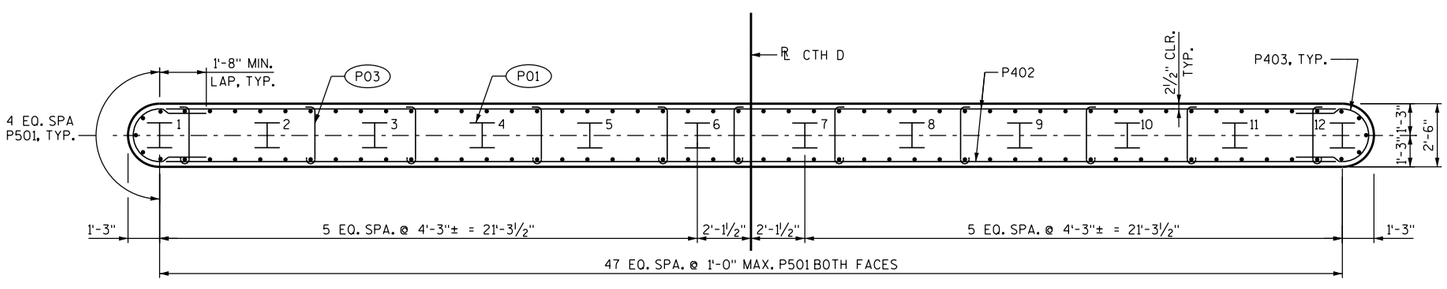


ELEVATION

LOOKING EAST

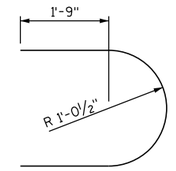


PLAN

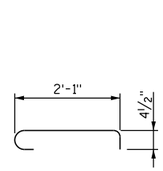


PILE PLAN

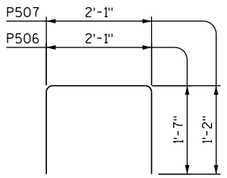
BILL OF BARS - PIER						COATED: 3,890 LBS UNCOATED: 0 LBS
MARK	COATED	NO REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
P501	X	102	17'-0"			PIER - VERTICAL
P402	X	38	46'-10"			PIER - HORIZONTAL
P403	X	38	7'-0"		X	PIER - HORIZONTAL
P404	X	216	3'-1"		X	PIER - HORIZONTAL - TIES
P405	X	3	12'-2"			PIER - HORIZ. - AT BEAM SEAT 3 & 4
P506	X	13	5'-0"		X	PIER - VERT. - AT BEAM SEAT 3 & 4
P507	X	25	4'-2"		X	PIER - VERT. - TOP
P508	X	30	2'-0"			PIER - VERT. - DOWELS



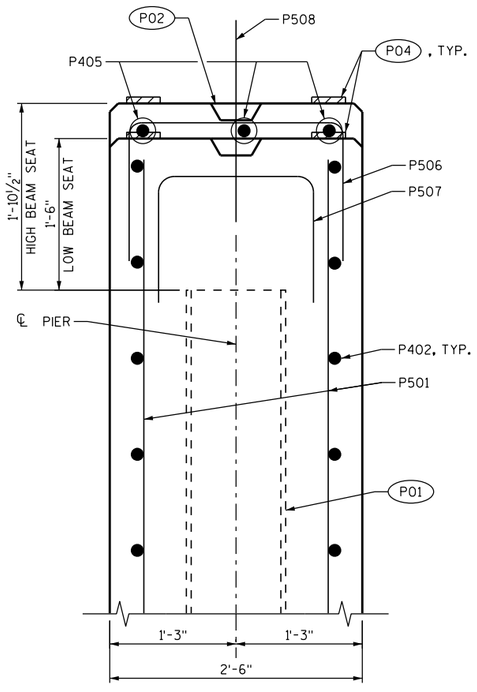
P403



P404



P506/P507



SECTION THRU PIER

SHOWING CAP REINFORCEMENT

NOTES

1. FOR PILE SPLICE DETAIL, SEE SHEET 5.

LEGEND

* ELEVATION AT CENTERLINE OF PIER.

(P01) PIERS TO BE SUPPORTED ON HP12 X 53 DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 28'-0" LONG. PRE-BORE PILES 5'-0" MINIMUM INTO BEDROCK.

(P02) KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" BETWEEN GIRDERS.

(P03) P404. PLACE BARS ADJACENT TO EACH PILE ON ONE SIDE ONLY. ALTERNATE ENDS AT EACH LEVEL. VERTICAL SPACING = 1'-0" MAX.

(P04) ¾" X 4" PREFORMED FILLER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

PIER

SHEET 11 OF 20
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STATE PROJECT NUMBER

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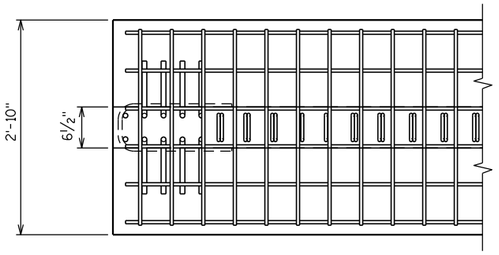
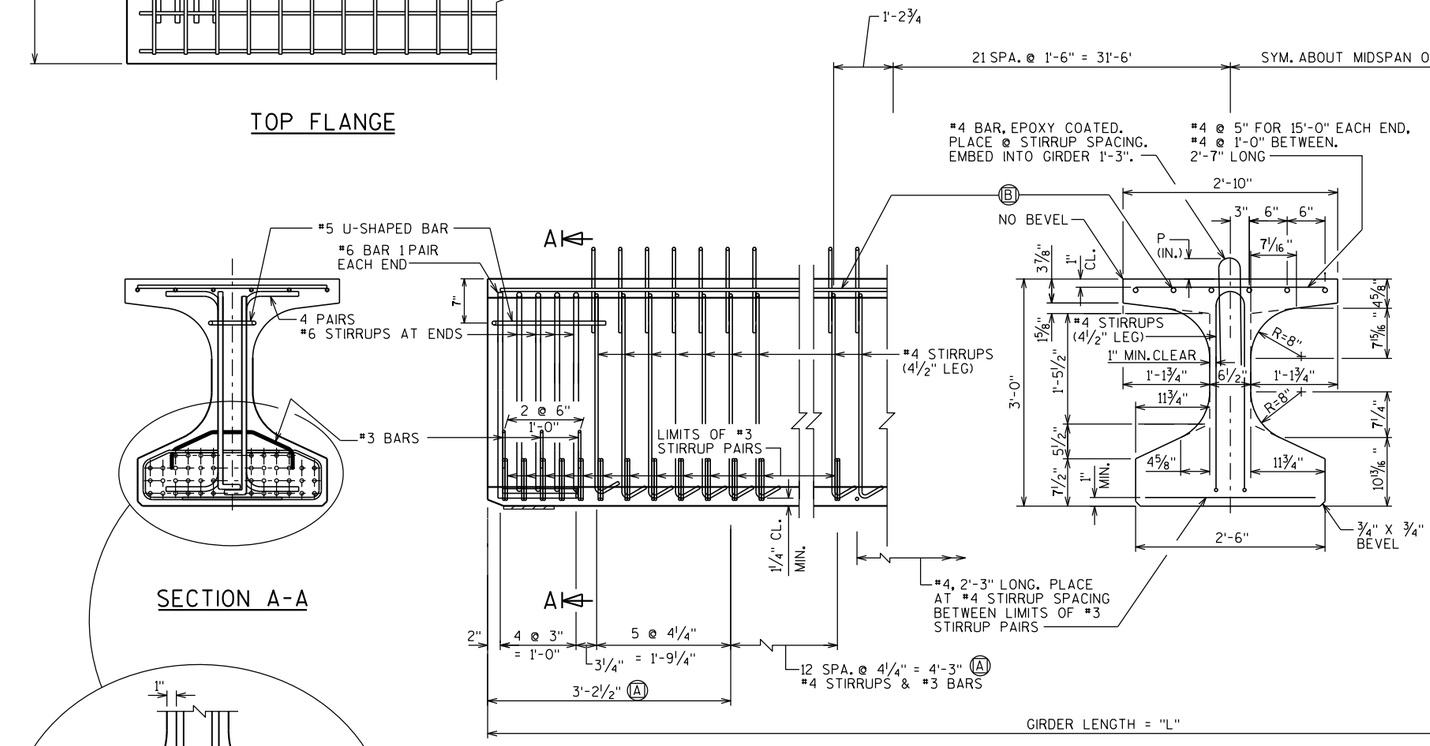
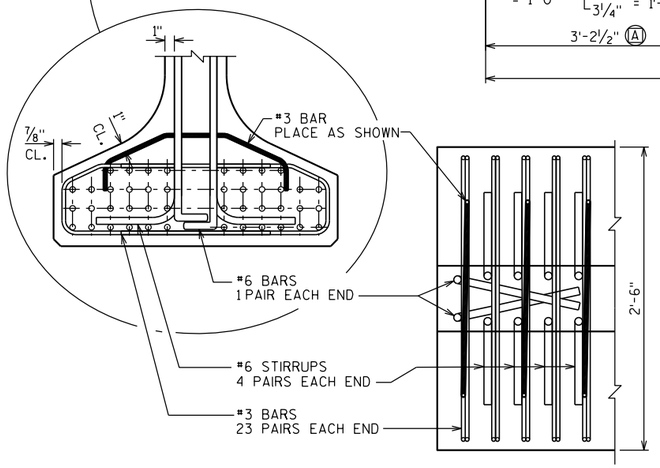


TOP FLANGE



SECTION A-A



BOTTOM FLANGE

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

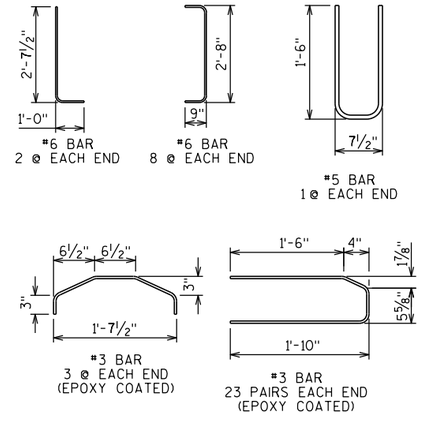
PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 # 4 BARS, FULL LENGTH, MIN. LAP = 1'-11"



✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" IST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳
1	1-6	80'-4½"	0.5	1.0	1.4	1.6	1.7	1.6	1.4	1.0	0.5	8,000	6.0"	6.0"	6.0"	0.6	28	6,800	32	11	14	4		
2	1-6	80'-4½"	0.5	1.0	1.4	1.6	1.7	1.6	1.4	1.0	0.5	8,000	6.0"	6.0"	6.0"	0.6	28	6,800	32	11	14	4		

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STATE OF WISCONSIN
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STRUCTURE B-51-149

DRAWN BY NLD | PLANS CK'D. SG

36W" PRESTRESSED GIRDER DETAILS 1

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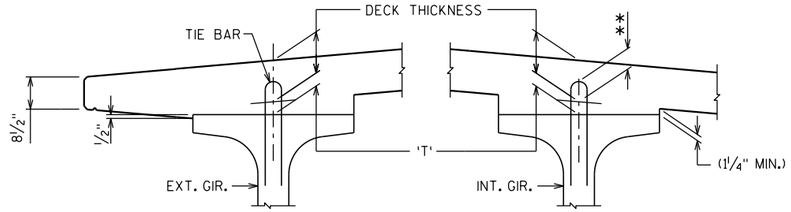


DECK HAUNCH DETAIL

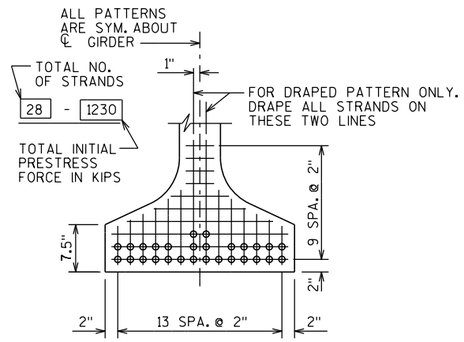
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

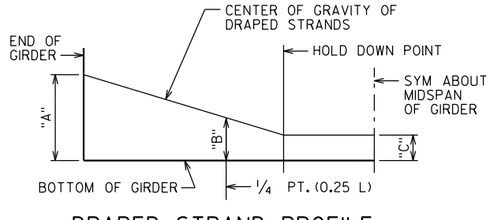
TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2.5" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



TYP. STRAND PATTERN

DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	2.93
2	2.93

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

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36W" PRESTRESSED GIRDER DETAILS 2

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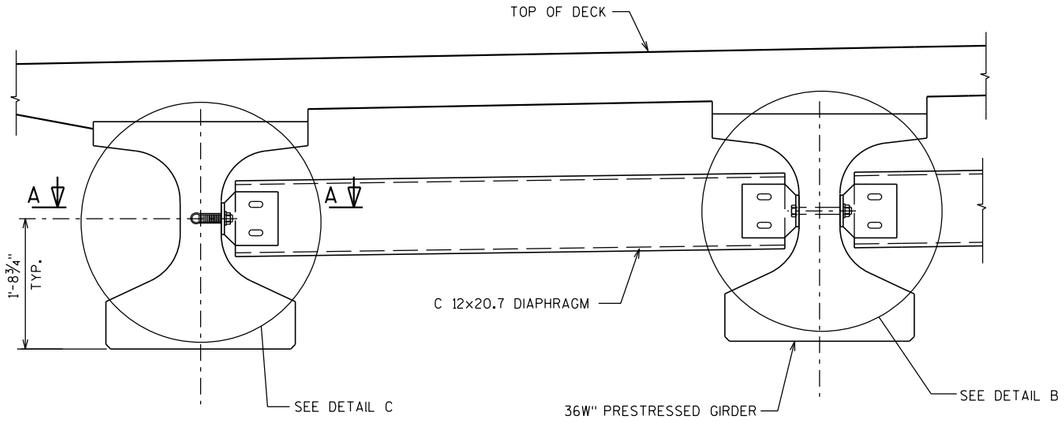
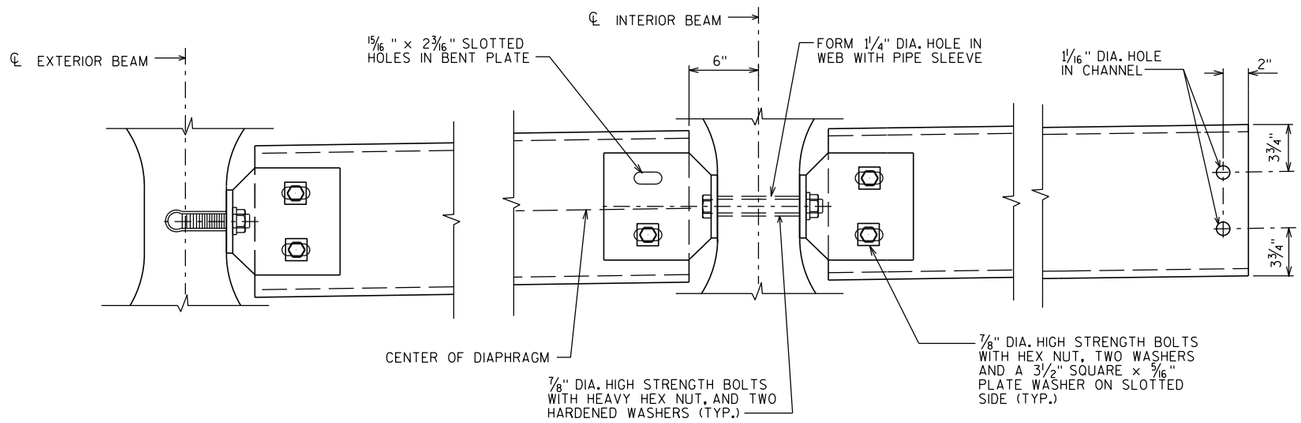


EXTERIOR GIRDER

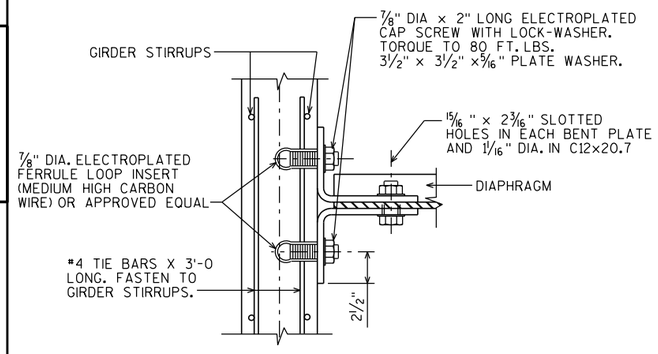
INTERIOR GIRDER

PART TRANSVERSE SECTION AT DIAPHRAGM



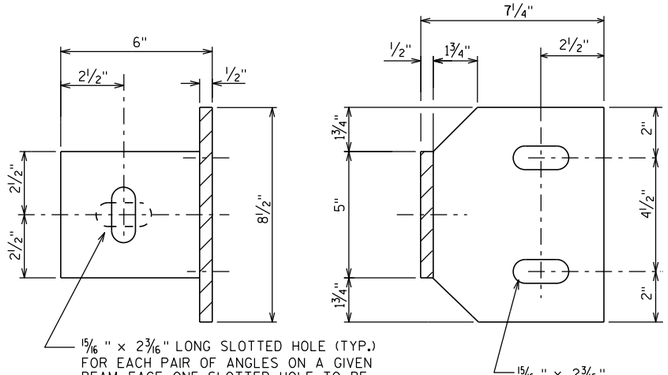
DETAIL C

DETAIL B



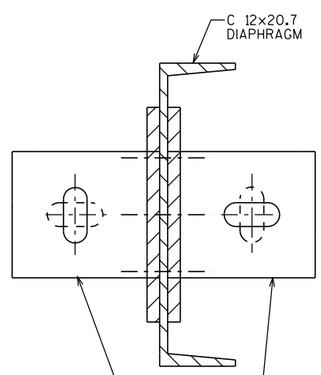
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-51-149 ". EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

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

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STEEL DIAPHRAGM

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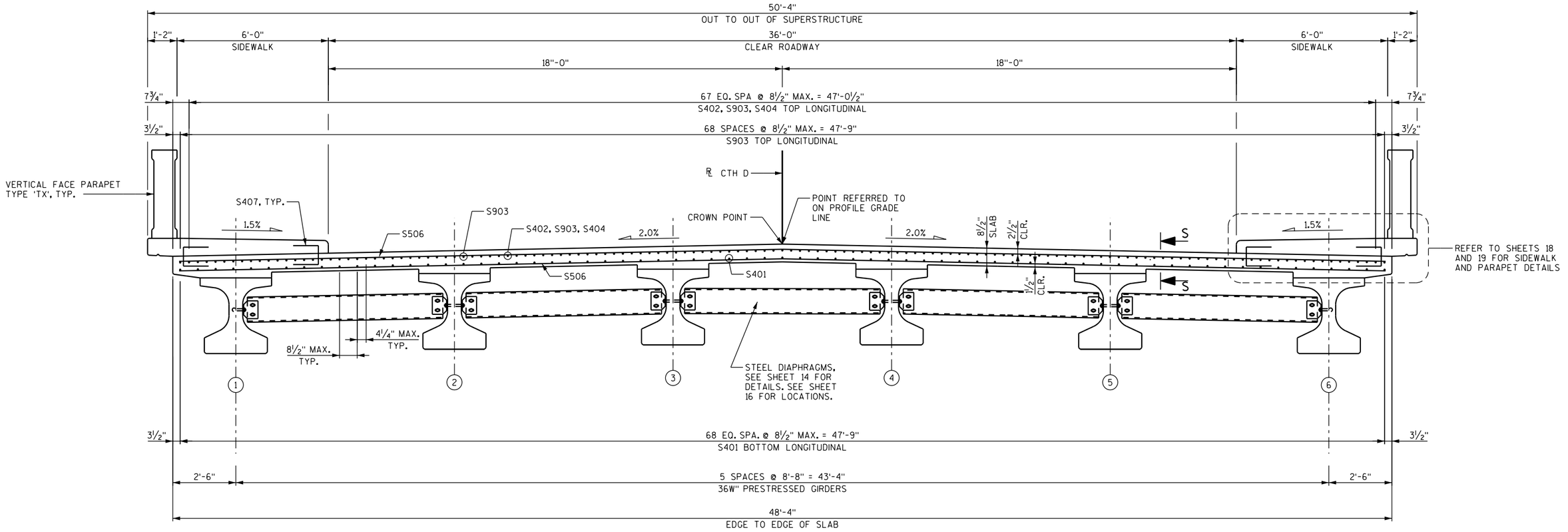
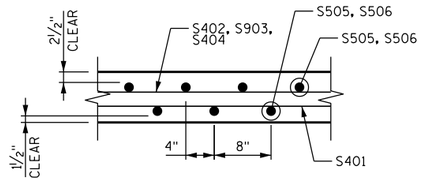


CROSS SECTION THRU ROADWAY

IN SPAN, LOOKING EAST
(SIDEWALK REINFORCEMENT NOT SHOWN FOR CLARITY)



SECTION S-S

TOP OF DECK ELEVATIONS

LOCATION	C/L W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	C/L PIER	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	C/L E. ABUT.
NORTH EDGE OF DECK*	776.17	776.26	776.33	776.41	776.47	776.53	776.58	776.63	776.67	776.70	776.72	776.74	776.75	776.76	776.75	776.74	776.73	776.70	776.67	776.64	776.60
GIRDER 1*	776.22	776.31	776.38	776.46	776.52	776.58	776.63	776.68	776.72	776.75	776.77	776.79	776.80	776.81	776.80	776.79	776.78	776.75	776.72	776.69	776.65
GIRDER 2	776.39	776.48	776.56	776.63	776.70	776.75	776.81	776.85	776.89	776.92	776.95	776.96	776.97	776.98	776.98	776.97	776.95	776.93	776.90	776.86	776.82
GIRDER 3	776.57	776.65	776.73	776.80	776.87	776.93	776.98	777.02	777.06	777.09	777.12	777.14	777.15	777.15	777.15	777.14	777.12	777.10	777.07	777.04	776.99
CROWN (RL CTH D)	776.65	776.74	776.82	776.89	776.96	777.01	777.07	777.11	777.15	777.18	777.21	777.22	777.23	777.24	777.24	777.23	777.21	777.19	777.16	777.12	777.08
GIRDER 4	776.57	776.65	776.73	776.80	776.87	776.93	776.98	777.02	777.06	777.09	777.12	777.14	777.15	777.15	777.15	777.14	777.12	777.10	777.07	777.04	776.99
GIRDER 5	776.39	776.48	776.56	776.63	776.70	776.75	776.81	776.85	776.89	776.92	776.95	776.96	776.97	776.98	776.98	776.97	776.95	776.93	776.90	776.86	776.82
GIRDER 6*	776.22	776.31	776.38	776.46	776.52	776.58	776.63	776.68	776.72	776.75	776.77	776.79	776.80	776.81	776.80	776.79	776.78	776.75	776.72	776.69	776.65
SOUTH EDGE OF DECK*	776.17	776.26	776.33	776.41	776.47	776.53	776.58	776.63	776.67	776.70	776.72	776.74	776.75	776.76	776.75	776.74	776.73	776.70	776.67	776.64	776.60

* DECK ELEVATIONS TAKEN PRIOR TO SIDEWALK CONSTRUCTION ASSUMING A 2% CROSS SLOPE FROM SIDEWALK CURB FACE.

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STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

SUPERSTRUCTURE CROSS SECTION

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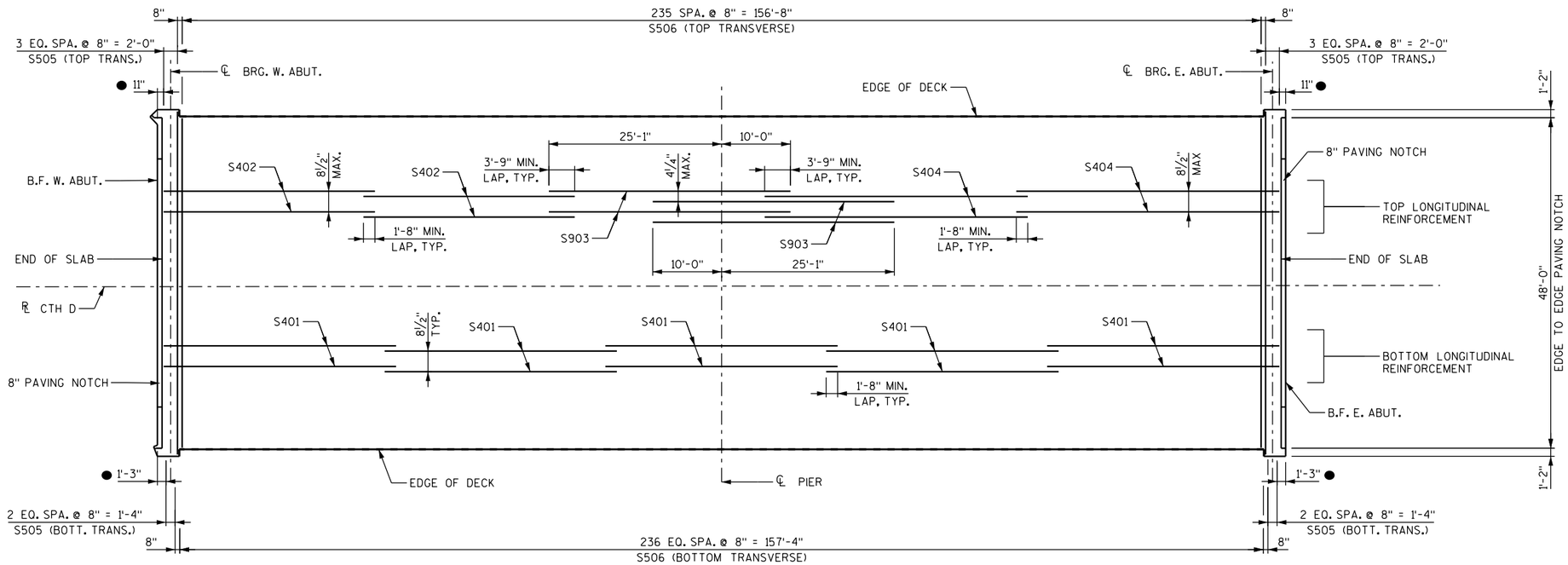
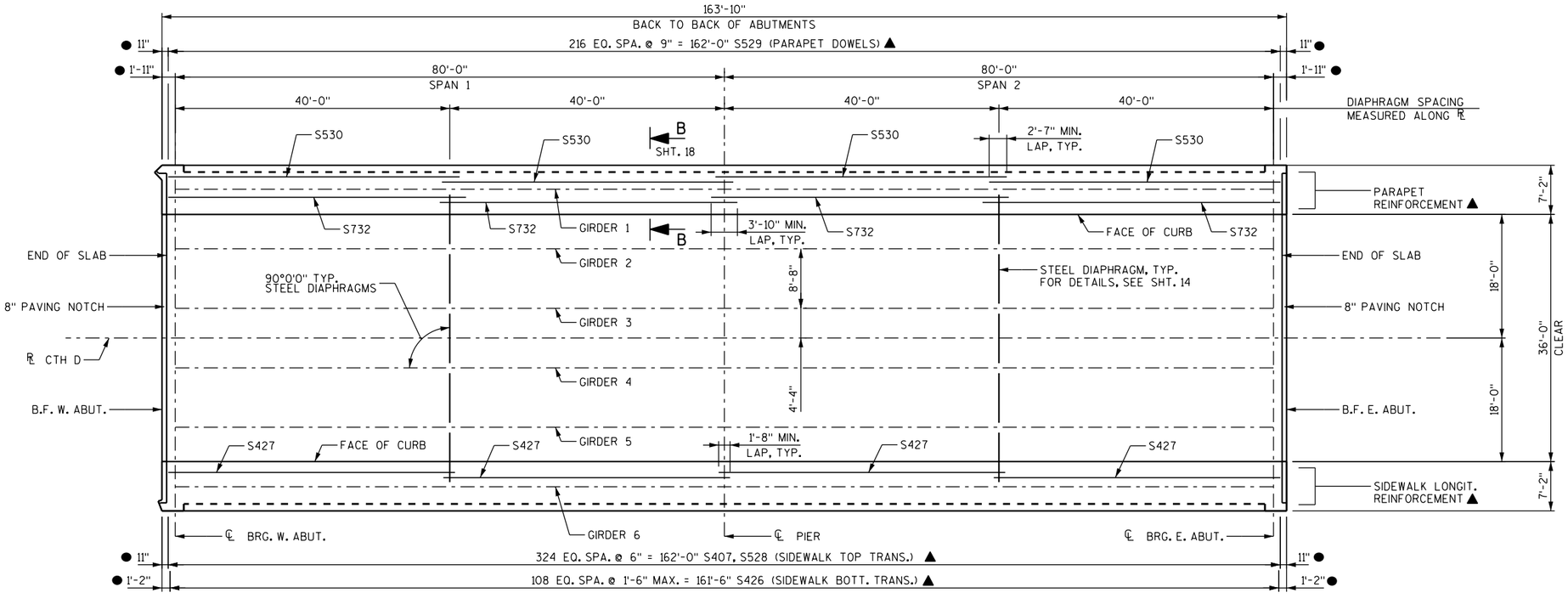


PLAN

SHOWING SLAB REINFORCEMENT
(SIDEWALKS NOT SHOWN FOR CLARITY)



PLAN

SHOWING SIDEWALK REINFORCEMENT
AND DIAPHRAGM SPACING

NOTES

REFER TO SHEET 18 FOR SECTION B-B.

LEGEND

● DIMENSION TAKEN OFF BACK FACE OF ABUTMENT.

▲ PLACE REINFORCING BARS IN EACH SIDEWALK.

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DRAWN BY VJD | PLANS CK'D. SG

SUPERSTRUCTURE PLAN

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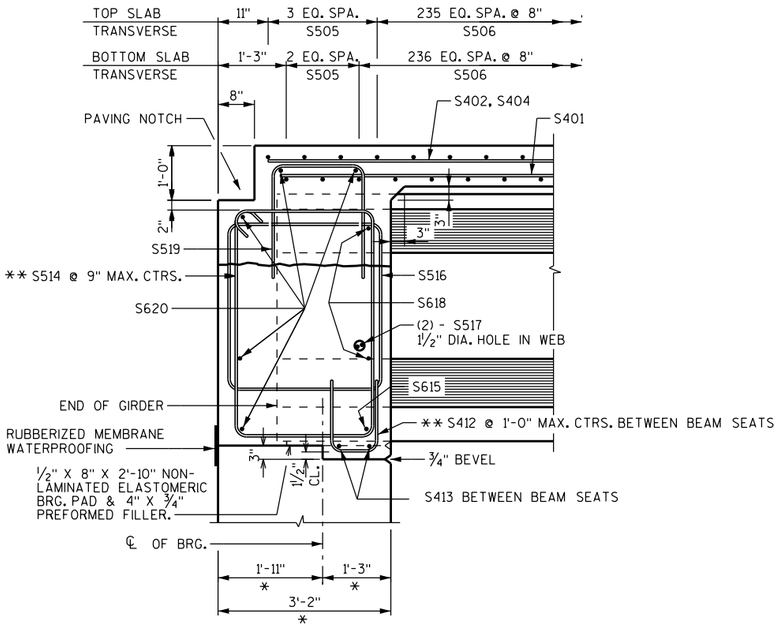
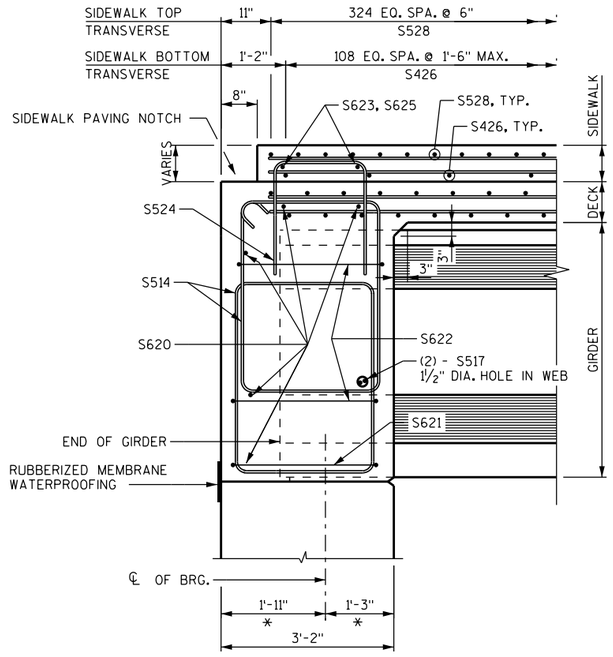


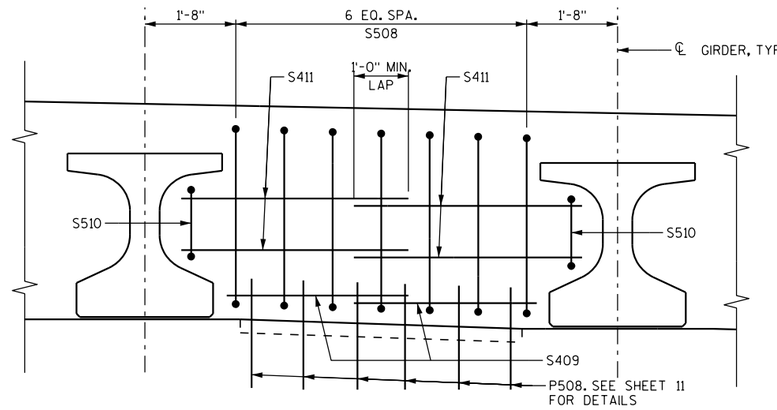
SECTION C-C

PART LONGITUDINAL SECTION AT ABUTMENT
SHOWING REINFORCEMENT



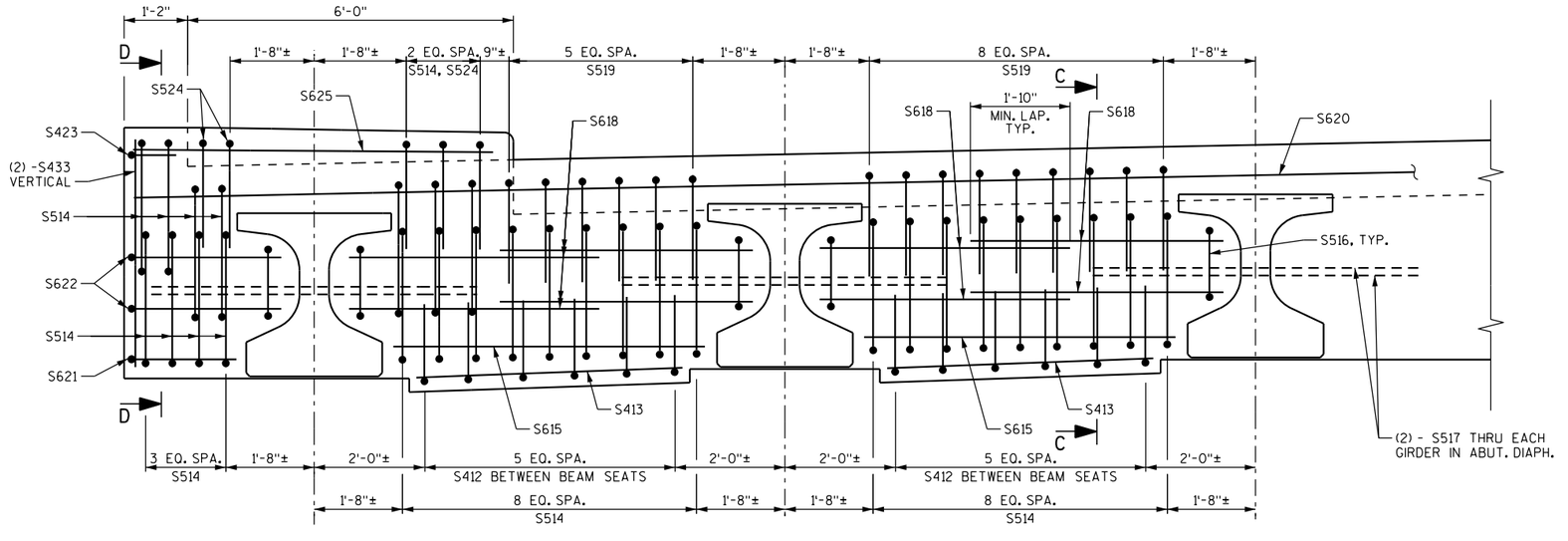
SECTION D-D

PART LONGITUDINAL SECTION AT ABUTMENT
SHOWING REINFORCEMENT



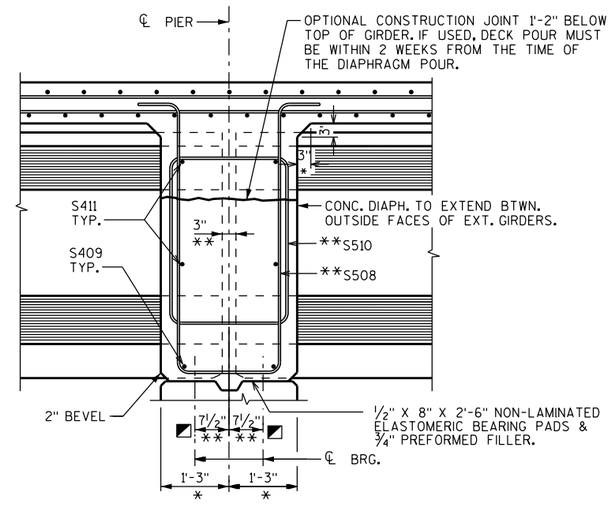
DIAPHRAGM REINFORCEMENT OVER PIER

CONC. DIAPH. TO EXTEND BETWEEN OUTSIDE FACES OF EXTERIOR GIRDERS
(DECK STEEL AND PARAPETS NOT SHOWN FOR CLARITY)



DIAPHRAGM REINFORCEMENT AT EAST ABUTMENT

LOOKING EAST, WEST ABUTMENT SIMILAR
(DECK STEEL AND PARAPETS NOT SHOWN FOR CLARITY)



PART LONGITUDINAL SECTION

AT PIER, SHOWING REINFORCEMENT

LEGEND

- ◩ DIMENSION IS TAKEN PARALLEL TO GIRDER
- * DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.
- ** BARS PLACED PARALLEL TO GIRDERS, SPACING PERPENDICULAR TO ℄ GIRDERS

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STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

SUPERSTRUCTURE DETAILS 1

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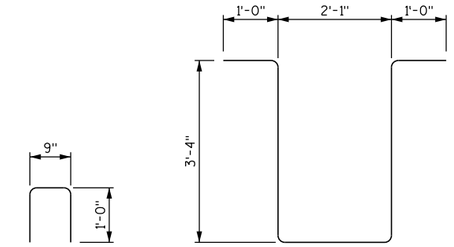
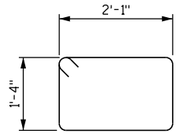
BILL OF BARS - SUPERSTRUCTURE — COATED: 76,540 LBS; UNCOATED: 0 LBS

MARK	COATED	NO REQ'D	LENGTH	BAR SERIES	BENT	LOCATION
S401	X	345	33'-10"			SLAB - LONGIT. - BOTTOM
S402	X	136	30'-9"			SLAB - LONGIT. - TOP - SPAN 1
S903	X	137	35'-1"			SLAB - LONGIT. - OVER PIER
S404	X	136	38'-3"			SLAB - LONGIT. - TOP - SPAN 2
S505	X	14	49'-10"			SLAB - TRANS. - TOP & BOTT. - AT ABUTMENTS
S506	X	473	47'-10"			SLAB - TRANS. - TOP & BOTTOM
S407	X	650	2'-7"		X	SLAB - TRANS. - SIDEWALK DOWEL
S508	X	35	10'-3"		X	DIAPH. - PIER - VERT.
S409	X	20	3'-5"			DIAPH - PIER - HORIZ.
S510	X	10	7'-6"		X	DIAPH. - PIER. - VERT.
S411	X	40	4'-1"			DIAPH. - PIER. - HORIZ.
S412	X	60	3'-4"		X	DIAPH. - ABUT. - VERT. - BTWN BEAM SEATS
S413	X	20	4'-9"			DIAPH. - ABUT. HORIZ. - BTWN BEAM SEATS
S514	X	134	11'-2"		X	DIAPH. - ABUT. - VERT.
S615	X	10	5'-9"			DIAPH. - ABUT. - HORIZ.
S516	X	24	8'-10"		X	DIAPH. - ABUT. - VERT.
S517	X	24	6'-0"			DIAPH. - ABUT. - HORIZ. - THRU GIRDERS
S618	X	40	4'-6"			DIAPH. - ABUT. - HORIZ
S519	X	78	5'-6"		X	DIAPH. - ABUT. - VERT.
S620	X	10	49'-10"			DIAPH. - ABUT. - HORIZ.
S621	X	4	6'-1"		X	DIAPH. - ABUT. - HORIZ. - ENDS
S622	X	8	7'-12"		X	DIAPH. - ABUT. - HORIZ. - ENDS
S423	X	4	4'-1"		X	DIAPH. - ABUT. - HORIZ. - ENDS
S524	X	20	5'-10"		X	DIAPH. - ABUT. - VERT. - SIDEWALK
S625	X	8	6'-8"			DIAPH. - ABUT. - HORIZ. - SIDEWALK
S426	X	218	1'-11"			SIDEWALK - TRANS. - BOTTOM
S427	X	104	41'-9"			SIDEWALK - LONGIT.- TOP & BOTTOM
S528	X	650	7'-4"		X	SIDEWALK - TRANS. - TOP
S529	X	434	3'-4"		X	PARAPET - VERT. - DOWELS
S530	X	16	42'-5"			PARAPET - HORIZ.
S531	X	476	8'-6"		X	PARAPET - VERT.
S732	X	16	43'-5"			PARAPET - HORIZ.
S433	X	8	4'-2"			DIAPH. - ABUT. - VERT. ENDS.



S508

S407



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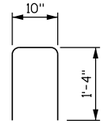

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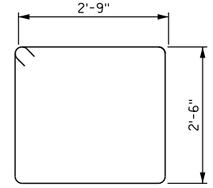

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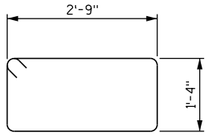

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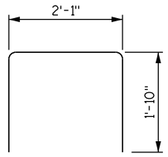
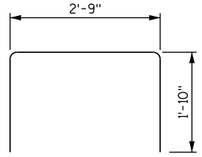
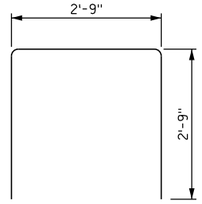


S519



S621



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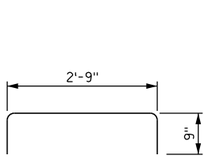

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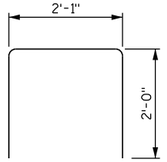

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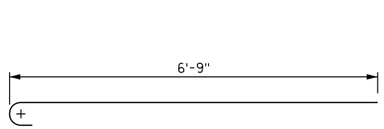
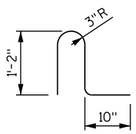


S528



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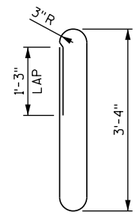
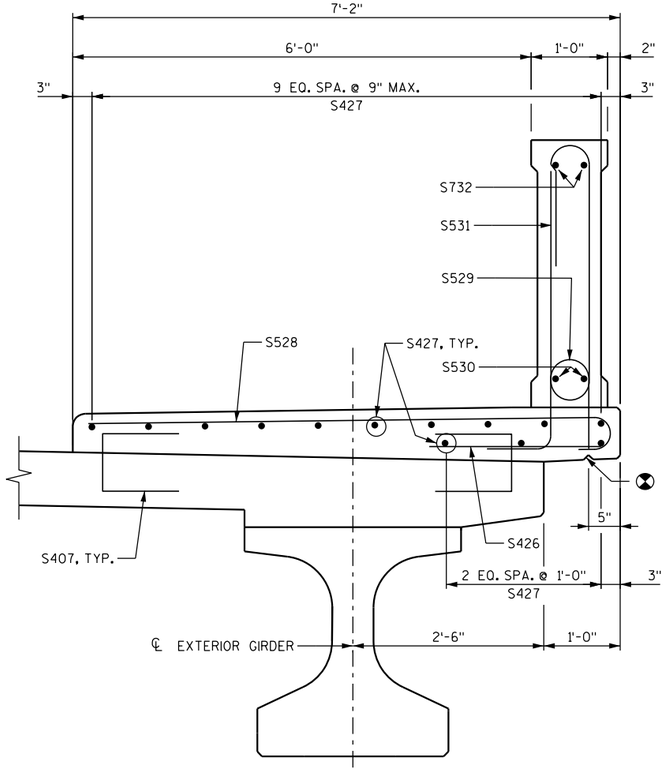
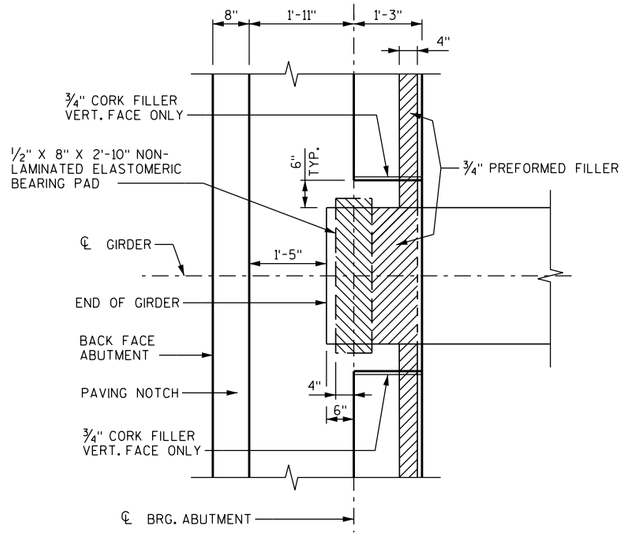


S531



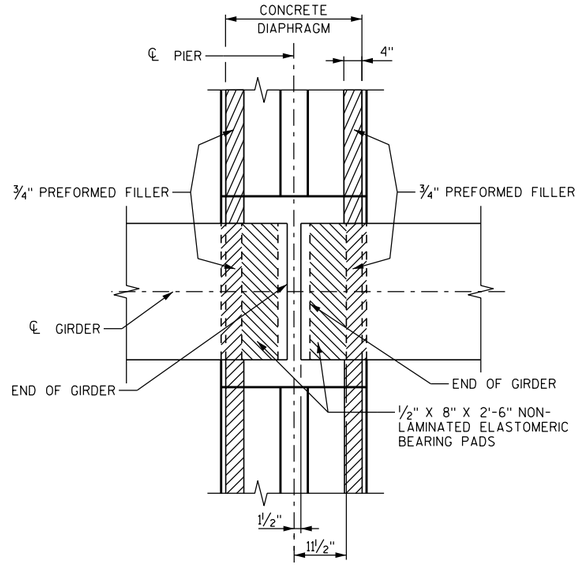
SECTION B-B

REFER TO SHEET 16 FOR ADDITIONAL DETAILS
(DECK REINFORCEMENT NOT SHOWN FOR CLARITY)



BEARING PAD DETAILS

AT ABUTMENT



BEARING PAD DETAILS

AT PIER

LEGEND

V-GROOVE. ¾" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGM. V-GROOVES ARE REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

SUPERSTRUCTURE DETAILS 2

SHEET 18 OF 20
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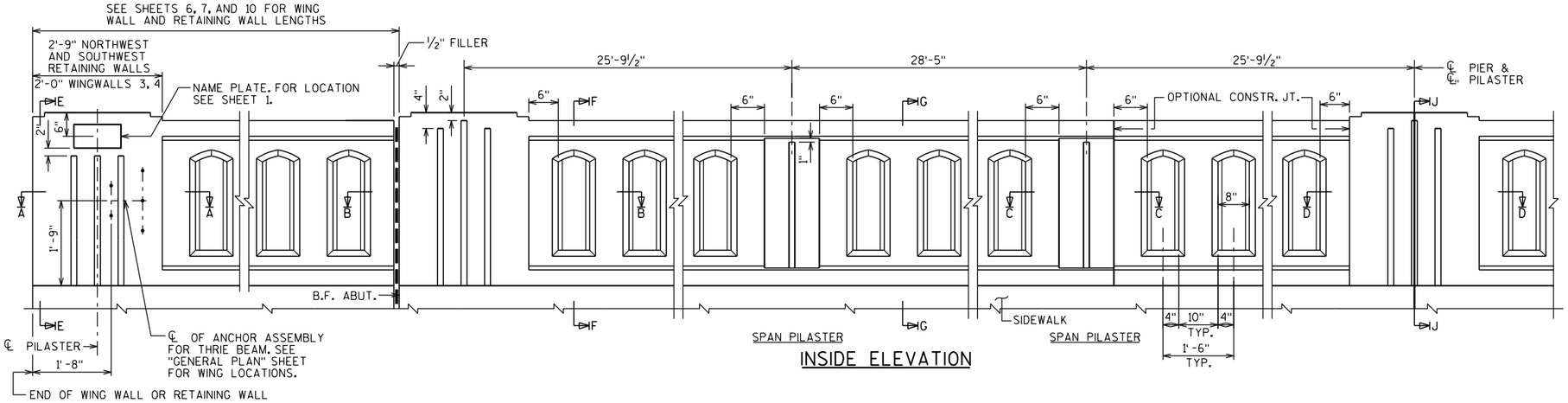
STATE PROJECT NUMBER
3755-00-71



INSIDE ELEVATION

NOTES

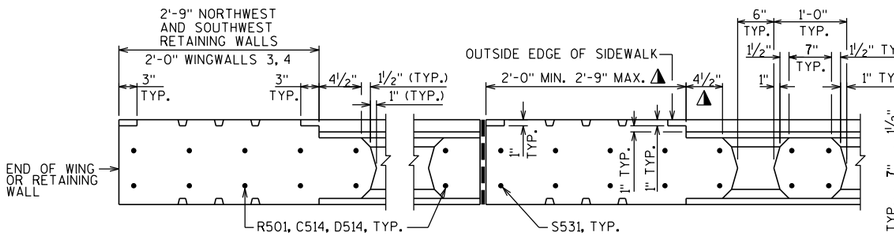
BID ITEM SHALL BE "PARAPET CONCRETE TYPE 'TX'", WHICH SHALL INCLUDE ALL ITEMS SHOWN.

LEGEND

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

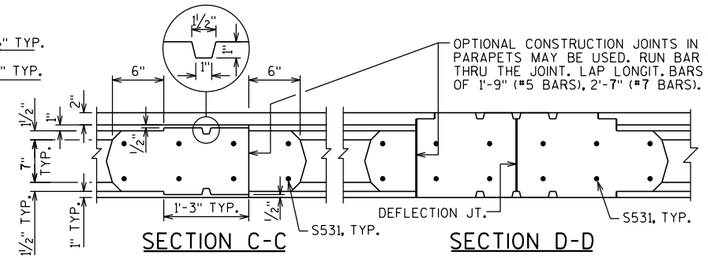
✳ FOR PARAPET REINFORCEMENT ON THE SUPERSTRUCTURE, SEE SHEETS 16 AND 18.

◭ VALUE APPLIES TO PIER PILASTER ALSO



SECTION A-A

SECTION B-B

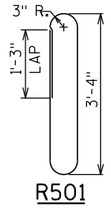


SECTION C-C

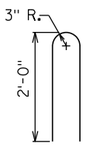
SECTION D-D

(SEE SECTION J-J)

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9" (#5 BARS), 2'-7" (#7 BARS).



R501

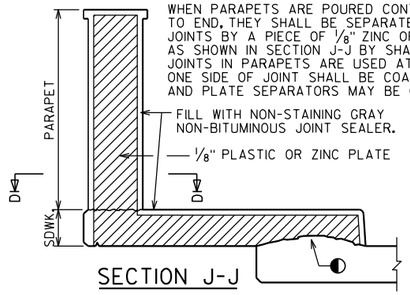


R502

BILL OF BARS

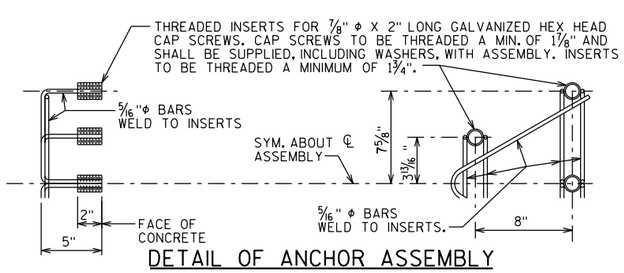
COATED = 600 LB

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
R501	X	34	8'-6"	X	PARAPET VERT. AT WINGWALLS
R502	X	34	4'-4"	X	PARAPET VERT. DOWEL AT WINGWALLS
R503	X	4	11'-7"		PARAPET HORIZ. TOP WING WALLS 3, 4
R704	X	4	11'-7"		PARAPET HORIZ. BOTTOM WING WALLS 3, 4



SECTION J-J

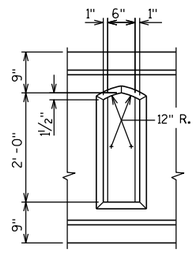
(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)



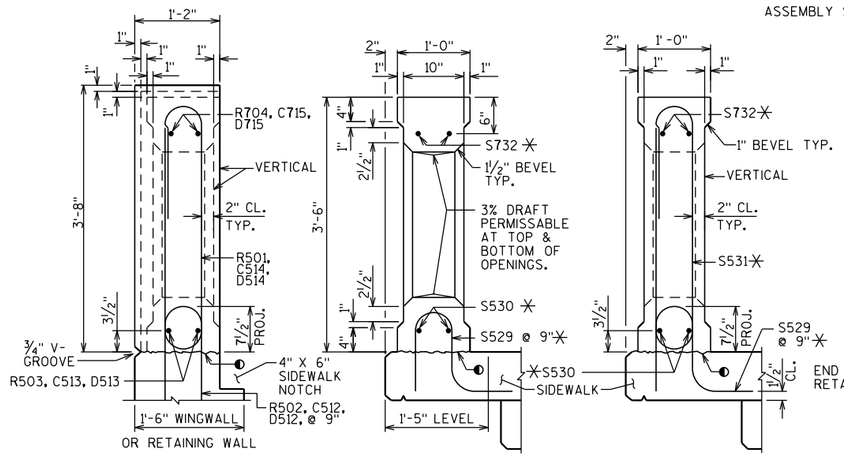
DETAIL OF ANCHOR ASSEMBLY

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

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLY FOR BEAM GUARD", EACH.



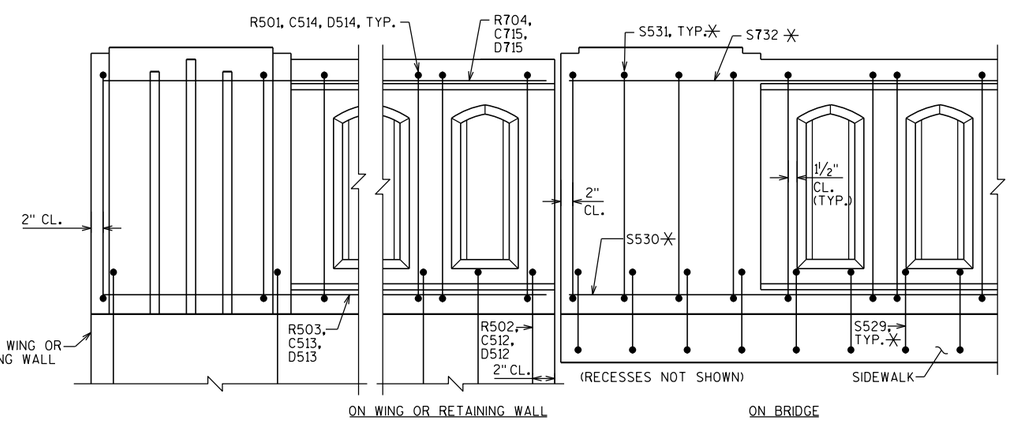
WINDOW DETAILS



SECTION E-E

SECTION F-F

SECTION G-G



OUTSIDE ELEVATION SHOWING TYPICAL REINFORCEMENT PLACEMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

DRAWN BY NLD | PLANS CK'D. SG

VERTICAL FACE PARAPET 'TX'

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STATE PROJECT NUMBER
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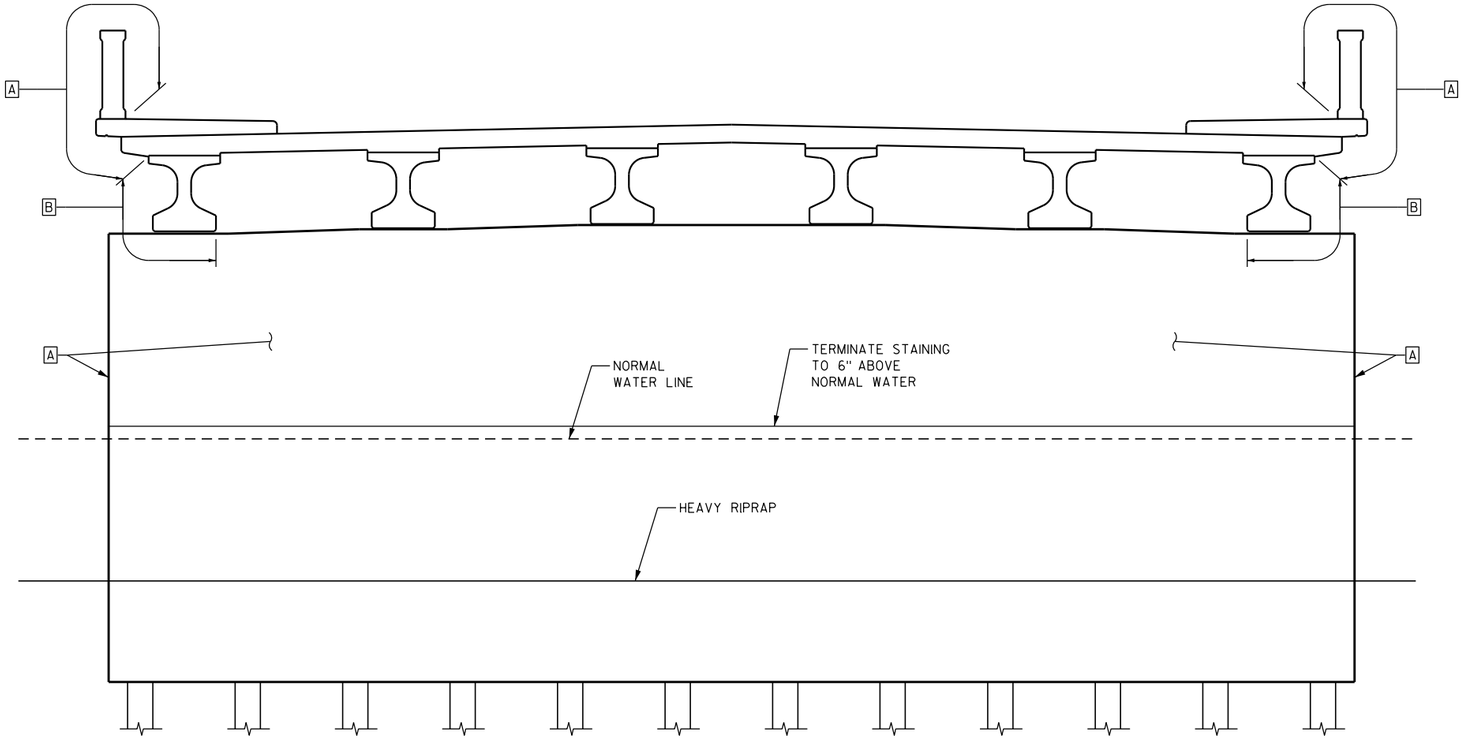


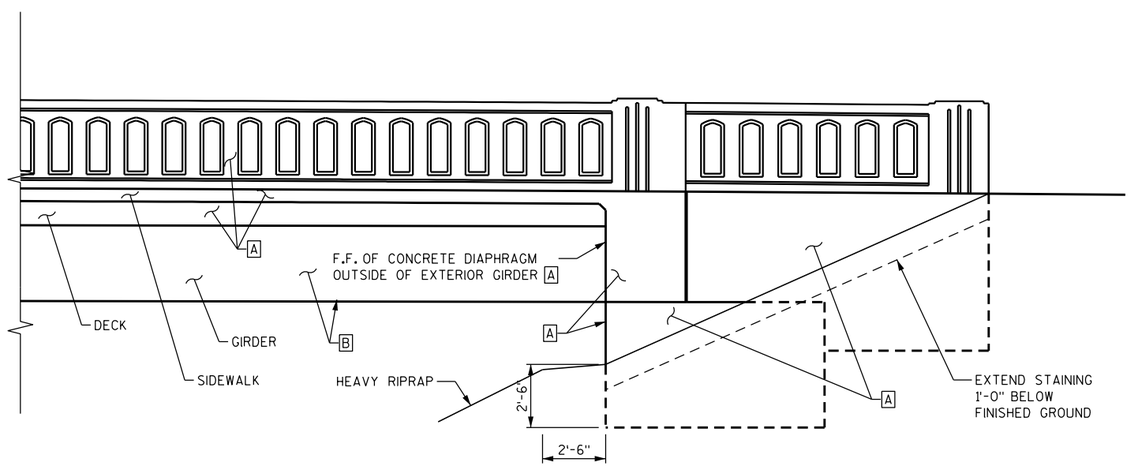
PIER ELEVATION

NOTE

1. DO NOT APPLY STAIN TO AREAS RECEIVING PROTECTIVE SURFACE TREATMENT.

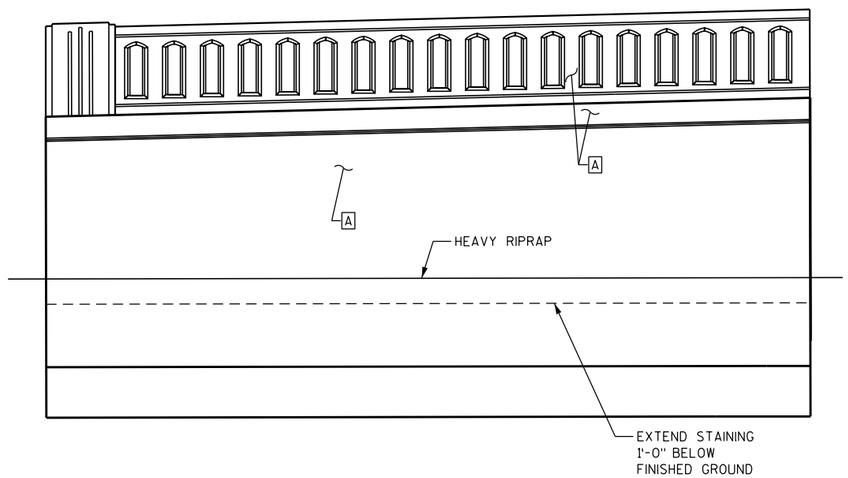
CONCRETE STAINING SCHEDULE

MARK	FEDERAL COLOR NUMBER	LOCATION
A	33564	PARAPET, EDGE OF DECK, EDGE OF SIDEWALK, OVERHANG, ABUTMENTS, WINGWALLS, RETAINING WALLS, DIAPHRAGMS
B	33448	EXTERIOR GIRDERS



OUTSIDE ELEVATION

AT EAST ABUTMENT
(WEST ABUTMENT SIMILAR)



S.W. RETAINING WALL ELEVATION

(N.W. RETAINING WALL SIMILAR)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-51-149

DRAWN BY VJD | PLANS CK'D. SG

AESTHETIC DETAILS

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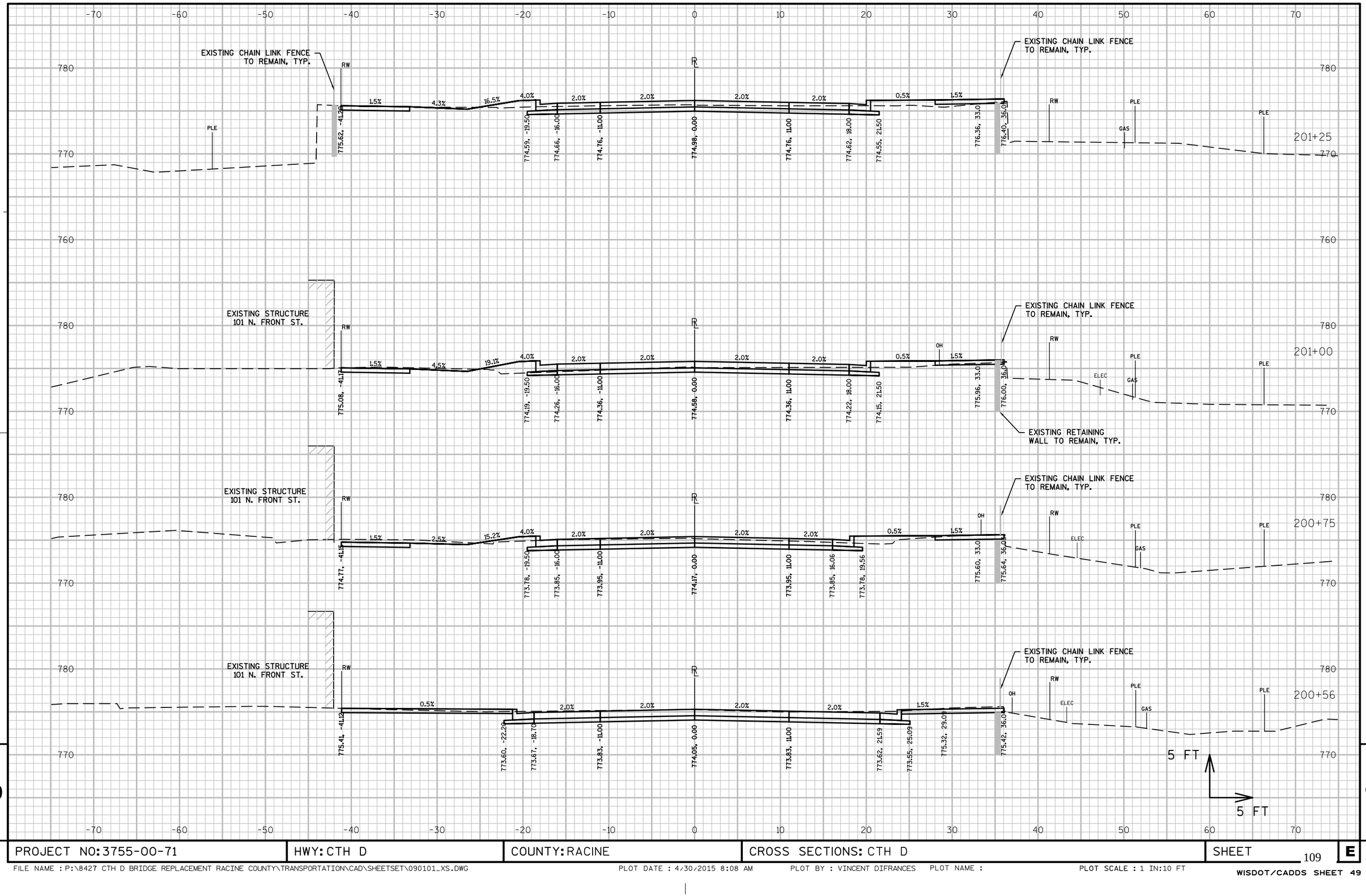
STATION	Real Station	Distance	AREA (SF) Cut	AREA (SF) Fill	Incremental Vol (CY) (Unadjusted) Cut Note 1	Incremental Vol (CY) (Unadjusted) Fill Note 3	Cumulative Vol (CY) Cut 1.00 Note 1	Cumulative Vol (CY) Expanded Fill 1.2	Mass Ordinate Note 8
200+38	20038	0	70	0	48	0	48	0	0
200+56	20056	18	82	0	32	0	80	0	51
200+75	20075	19	59	7	48	2	128	3	97
201+00	20100	25	39	9	45	7	173	12	133
201+25	20125	25	45	8	39	8	212	21	163
201+50	20150	25	72	1	54	4	266	26	212
201+57	20157	7	68	0	19	0	286	27	230
203+17	20317	160	46	45	0	0	286	27	567
203+25	20325	8	40	24	12	10	298	38	568
203+50	20350	25	43	2	39	12	337	53	592
203+75	20375	25	49	5	43	3	379	57	631
204+00	20400	25	51	3	46	4	425	62	672
204+25	20425	25	55	2	49	2	474	65	718
204+44	20444	19	70	0	48	0	522	65	762
					522	54			

Notes:		
1 - Cut	Cut includes Salvaged/Unusable Pavement material	
2 - Salvaged/Unusable Pavement Materia	This does not show up in cross sections	
3 - Fill	Does not include Unusable Pavement Exc volume	
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]	Note 8 - Select one based on mass haul input dialog selection. EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut + EBS + Marsh Exc) - ((Fill - (Reduced Marsh in Fill) - (Reduced EBS in Fill) - (Expanded Rock)) * Fill Factor))]	EBS and Marsh Exc used outside 1:1 in fill slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Granular: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes
8 - Mass Ordinate	If Marsh and EBS to be backfilled with Cut or Borrow: [(Cut) - ((Fill - Expanded Rock) * Fill Factor))]	Marsh and EBS are not usable outside the 1:1 slopes

9

9

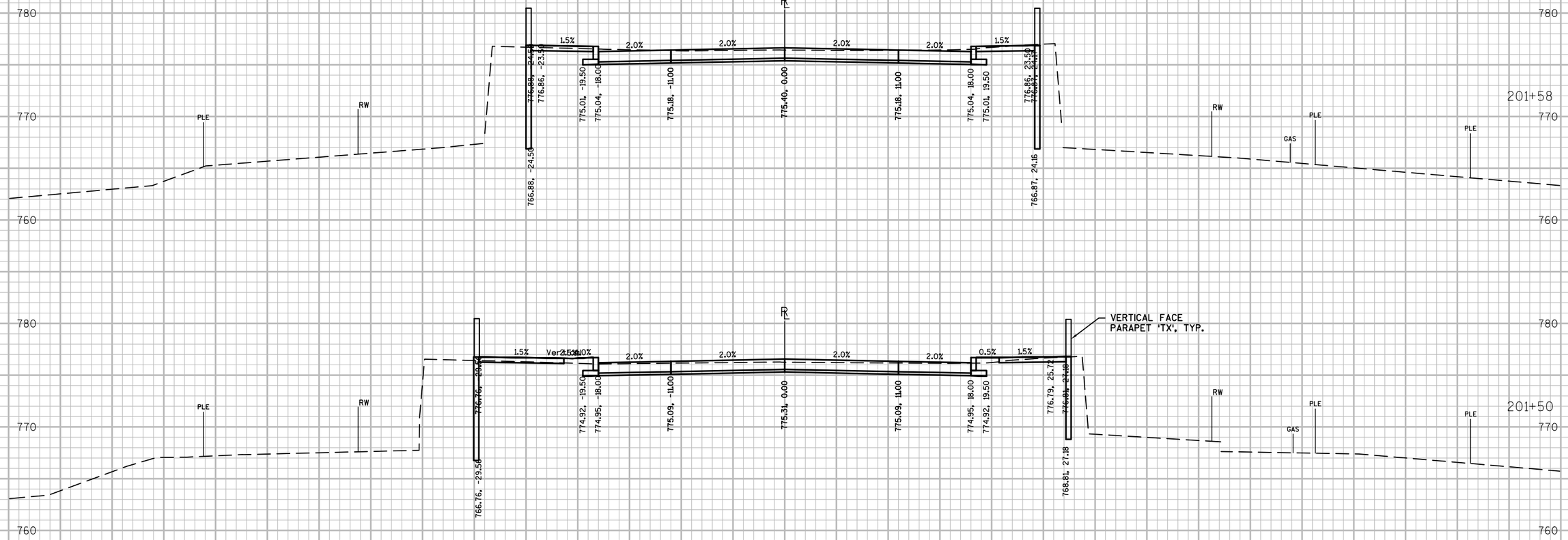


PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CROSS SECTIONS: CTH D	SHEET 109	E

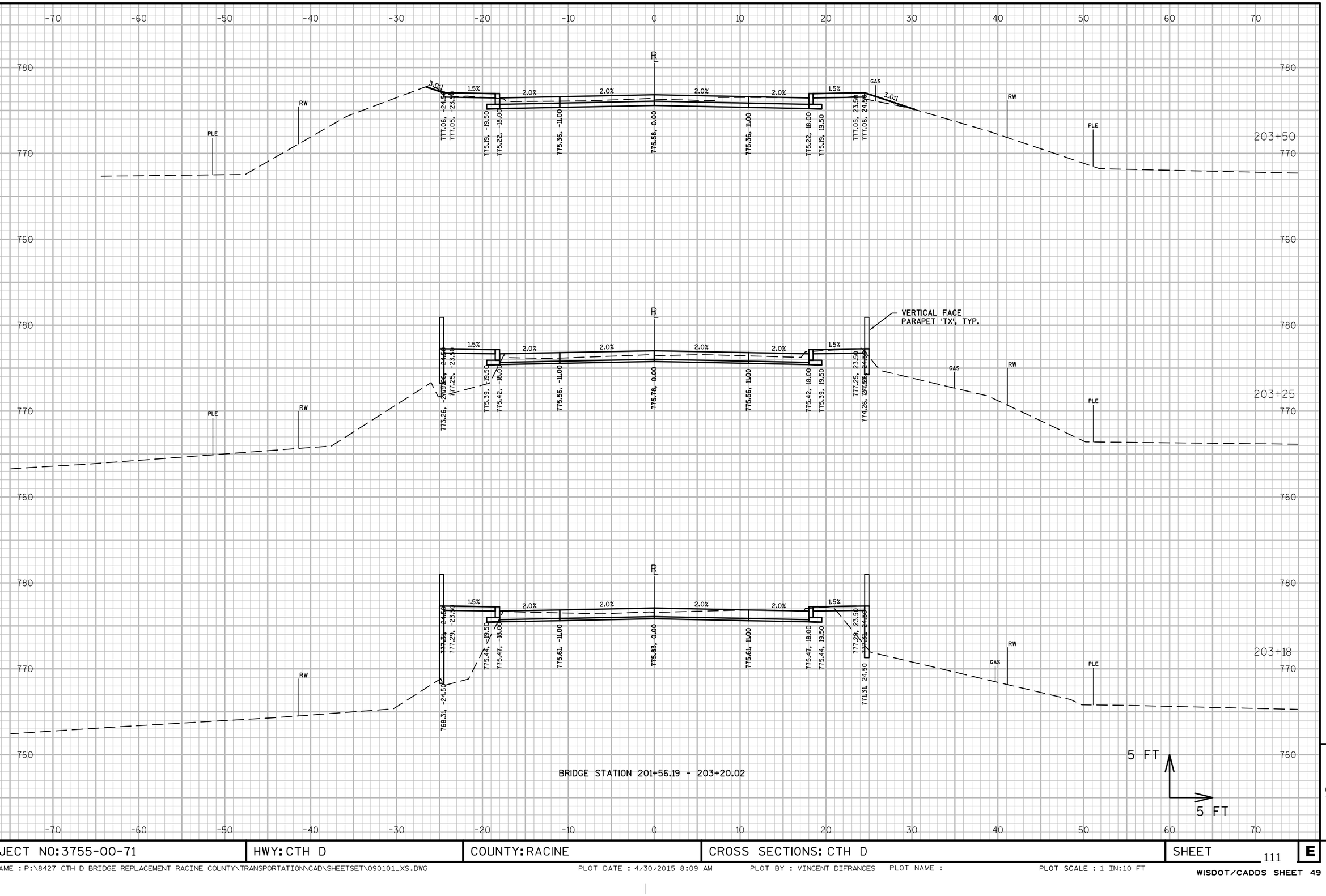
FILE NAME : P:\8427 CTH D BRIDGE REPLACEMENT RACINE COUNTY\TRANSPORTATION\CAD\SHEETSET\090101_XS.DWG PLOT DATE : 4/30/2015 8:08 AM PLOT BY : VINCENT DIFRANCES PLOT NAME : PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

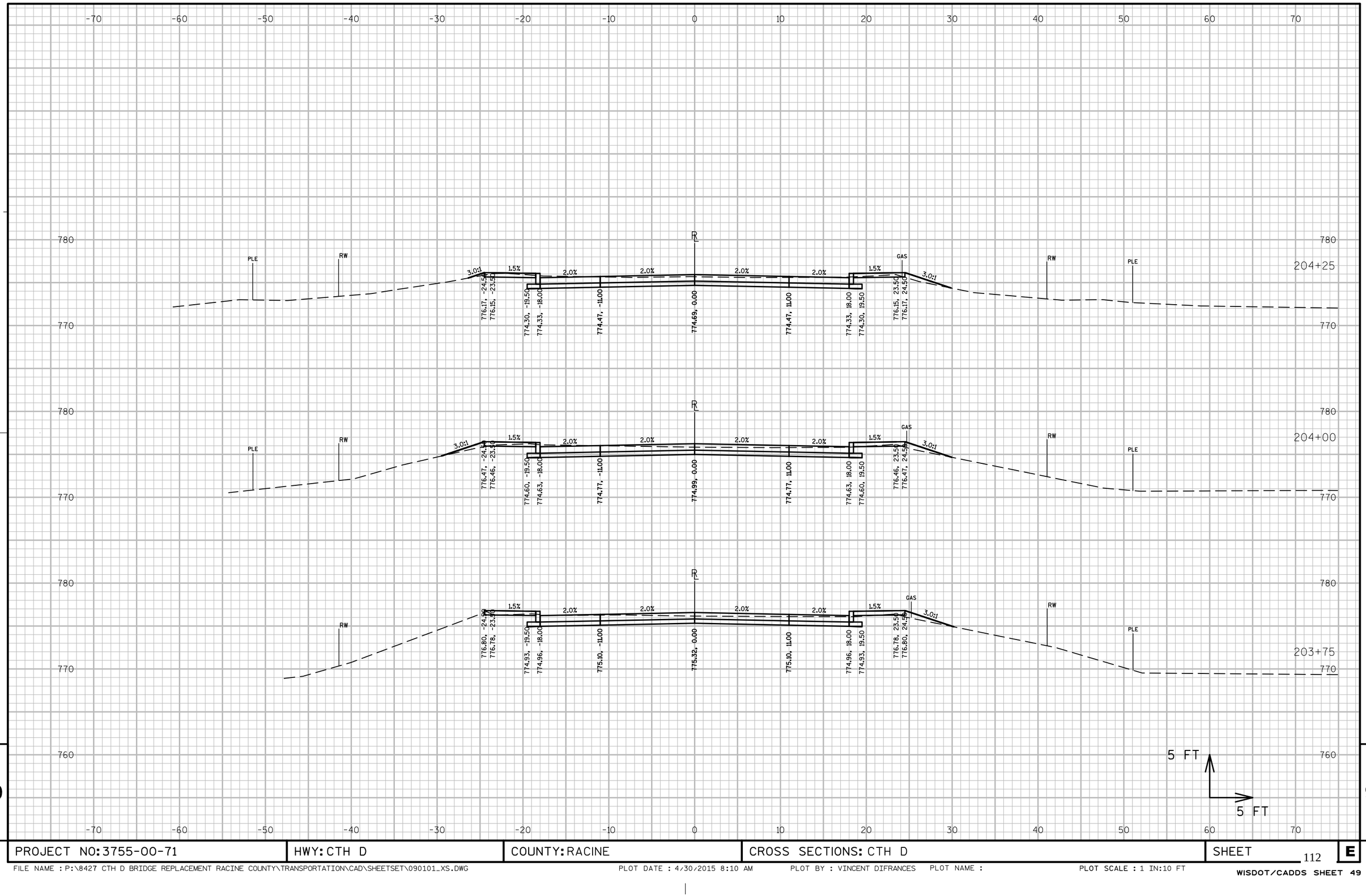
BRIDGE STATION 201+56.19 - 203+20.02



PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CROSS SECTIONS: CTH D	SHEET 110	E



PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CROSS SECTIONS: CTH D	SHEET 111	E



9

9

PROJECT NO: 3755-00-71	HWY: CTH D	COUNTY: RACINE	CROSS SECTIONS: CTH D	SHEET 112	E

FILE NAME : P:\8427 CTH D BRIDGE REPLACEMENT RACINE COUNTY\TRANSPORTATION\CAD\SHEETSET\090101_XS.DWG PLOT DATE : 4/30/2015 8:10 AM PLOT BY : VINCENT DIFRANCES PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 49

Notes

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