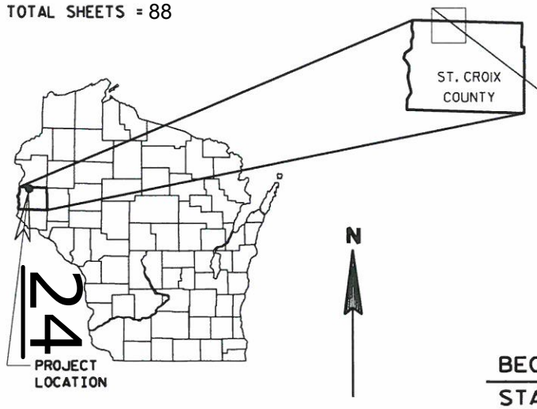
NWL FEB 2014

PROJECT ID: 8866-00-70
WITH: N/A

COUNTY: ST. CROIX

ORDER OF SHEETS

TOTAL SHEETS = 88



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

NORTH COUNTY LINE - STH 65

APPLE RIVER BRIDGE B550268

CTH M

ST. CROIX COUNTY

STATE PROJECT NUMBER
8866-00-70

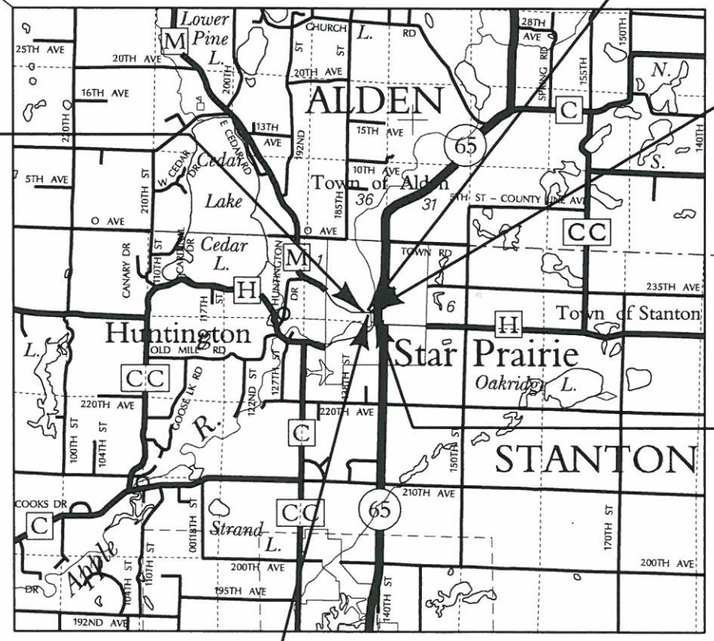
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8866-00-70	WISC 2014056	1

BEGIN PROJECT
STA. 8+97.64
Y = 423216.74
X = 568825.12

T-32-N
T-31-N

END CONSTRUCTION
STA. 20+75
Y = 423291.72
X = 568823.58

STRUCTURE B-55-268



POLK COUNTY
ST. CROIX COUNTY

END PROJECT
STA. 12+00
Y = 423219.88
X = 569127.46

BEGIN CONSTRUCTION
STA. 19+25
Y = 423141.75
X = 568826.56

R-18-W | R-17-W

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.057 MI.

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

DESIGN DESIGNATION

A.D.T.	(2014)	=	2800
A.D.T.	(2034)	=	4000
D.H.V.		=	280
D.		=	60/40
T.		=	7.9%
DESIGN SPEED		=	30 MPH
ESALS		=	N/A

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)
- HIGH VOLTAGE (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

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

ACCEPTED FOR
County of St. Croix
09/11/13 Date
Jim Romsberg County Highway Commissioner

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

WISCONSIN
CHRISTOPHER B. McMAHON
E-29454
EAU CLAIRE WI
PROFESSIONAL ENGINEER

DATE 9/10/13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor AYRES ASSOCIATES INC
Designer AYRES ASSOCIATES INC

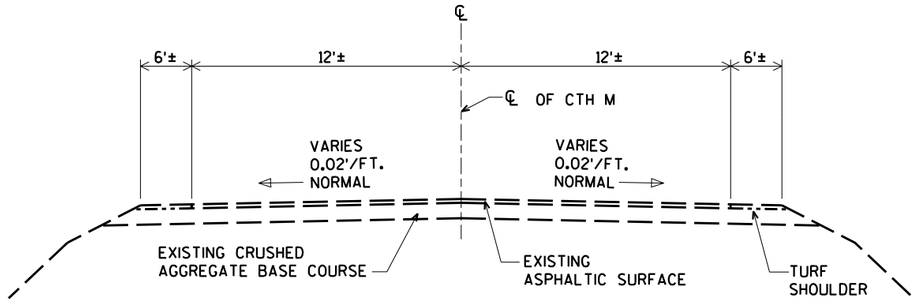
Management Consultant KNIGHT E/A INC.
C.O. Examiner

APPROVED FOR THE DEPARTMENT
DATE: 12/23/13 Ryan B McKane
Management Consultant Signature

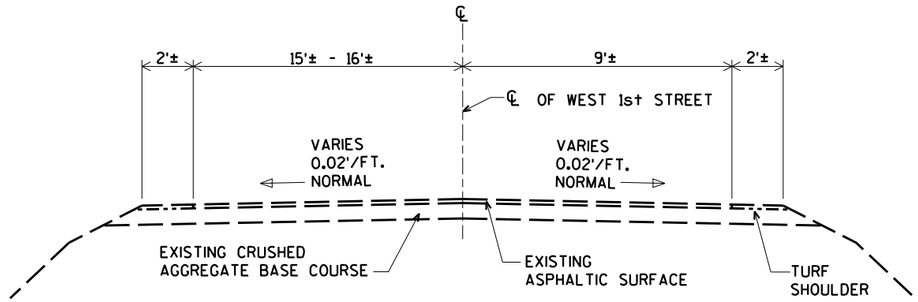
E

u:\42-0848.00 - st. croix co. cth m over apple river\RDWY\420848 ti.dgn PENTABLE:BReau_shd_util.tbl BRIDGE 1:200

WISDOT/CADDS SHEET 10



TYPICAL EXISTING SECTION
(CTH M)



TYPICAL EXISTING SECTION
(WEST 1st STREET)

ABBREVIATIONS

AC	ACRES
CHIS	CHISELED
℄	CENTERLINE
COR	CORNER
CWT	COUNT
CY	CUBIC YARD
EL	ELEVATION
GAL	GALLON
H	HOUSE
IP	IRON PIPE
LB	POUND
LF	LINEAR FEET
LS	LUMP SUM
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
MON	MONUMENT
NORM	NORMAL
OAL	OVERALL LENGTH
PC	POINT OF CURVATURE
PD	PEDESTAL
PI	POINT OF INTERSECTION
PK	PARKER-KALON
PL	PROPERTY LINE
PLE	PERMANENT LIMITED EASEMENT
PP	POWER POLE
PT	POINT OF TANGENCY
R	RADIUS
REQ'D	REQUIRED
RT	RIGHT
R/W	RIGHT-OF-WAY
SF	SQUARE FEET
SHLDR	SHOULDER
STA	STATION
SY	SQUARE YARD
TLE	TEMPORARY LIMITED EASEMENT
VAR	VARIES
WL	WELL

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

NO TREES (AND/OR SHRUBS) ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

EXCAVATION FOR STRUCTURES SHALL INCLUDE FURNISHING, PLACEMENT AND COMPACTION OF ANY FILL MATERIAL REQUIRED TO PROVIDE A SUITABLE FOUNDATION FOR SUBSTRUCTURE UNITS.

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER.

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

ASPHALTIC REMOVAL IS INCLUDED IN THE ITEM EXCAVATION COMMON.

SALVAGE TOPSOIL SHALL BE PLACED ON THE SLOPES, TO THE POINT OF INTERCEPT WITH THE ORIGINAL GROUND SHOWN ON THE CROSS SECTIONS.

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD) 29.

ASPHALT SURFACE SHALL USE ¾" NOMINAL AGGREGATE SIZE.

UTILITIES

WE ENERGIES
104 W. SOUTH STREET
RICE LAKE, WI 54868
ATTN: LEWIS KNAPP
715-234-9605
715-419-2196 (CELL)
lewis.knapp@we-energies.com

NORTHWEST COMMUNICATIONS
116 HARRIMEN AVE. N.
AMERY, WI 54001
ATTN: GREG CARDINAL
715-268-3379
715-554-1620 (CELL)
gregcardinal@amerytel.net

XCEL ENERGY
801 KELLER AVENUE SOUTH
AMERY, WI 54001
ATTN: VICKI BREAULT
715-268-3227
715-268-3710 (CELL)
vicki.m.breault@xcelenergy.com

VILLAGE OF STAR PRAIRIE
207 BRIDGE AVE
P.O. BOX 13
STAR PRAIRIE, WI 54026
ATTN: BRODY LARSON
715-248-7231
715-220-3230 (CELL)
ATTN: GREG GIBSON
715-248-7231
starpv@frontiernet.net

FRONTIER COMMUNICATIONS
154 E. 2nd STREET
NEW RICHMOND, WI 54017
ATTN: TERRY DORR
715-243-7014
715-243-7091(CELL)
terry.dorr@Ftr.com

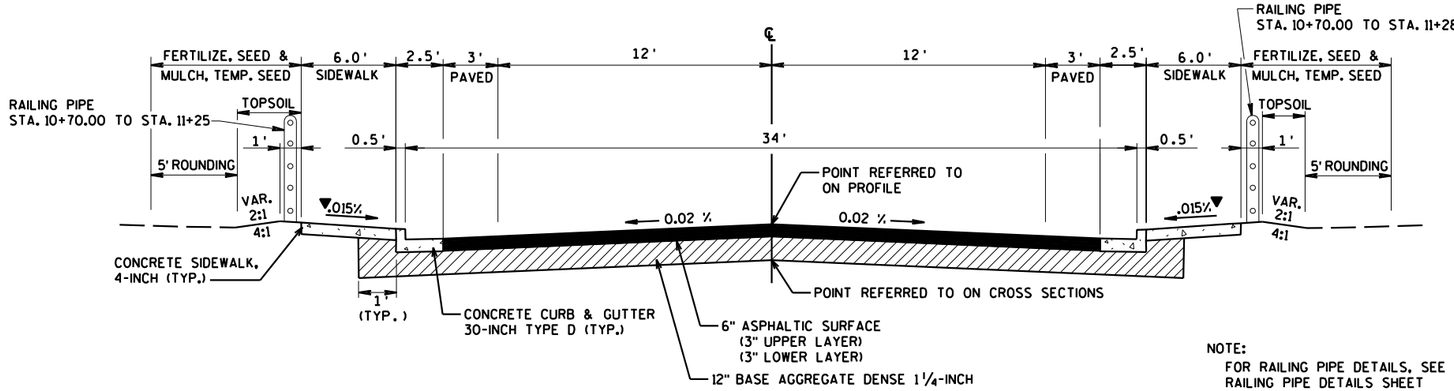
** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

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

DESIGNER
AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: CHRIS McMAHON, PE
715-834-3161
mcmahonc@ayresassociates.com

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:
NICK SCHAFF
1300 WEST CLAIREMONT AVE.
P.O. BOX 4001
EAU CLAIRE, WI 54702-4001
715-839-1609
nicholas.schaff@wisconsin.gov

2

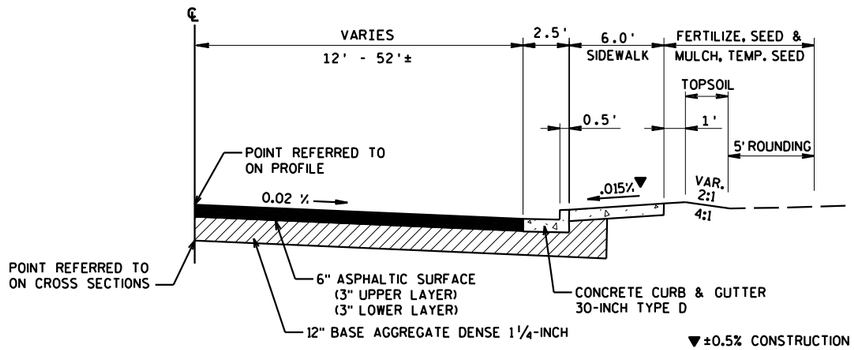


NOTE:
FOR RAILING PIPE DETAILS, SEE
RAILING PIPE DETAILS SHEET

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

FINISHED TYPICAL SECTION

CTH M
(STA. 8+97.64 - STA. 12+00)

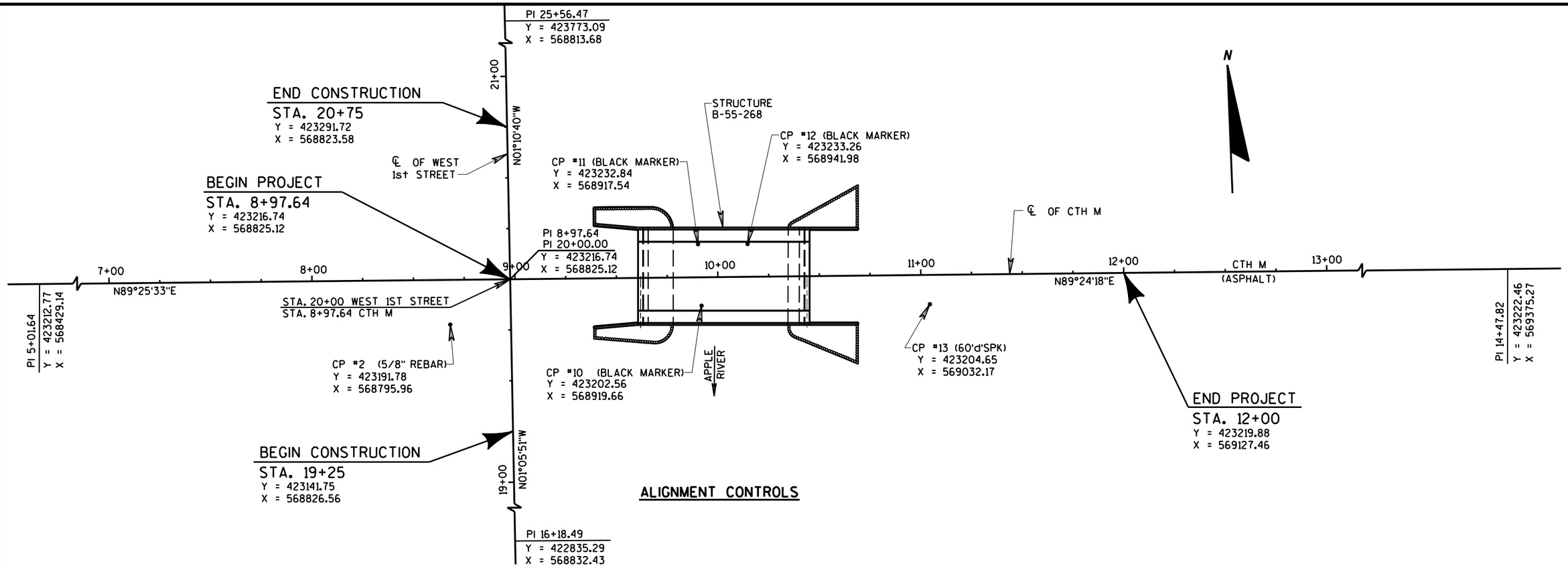


▼±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

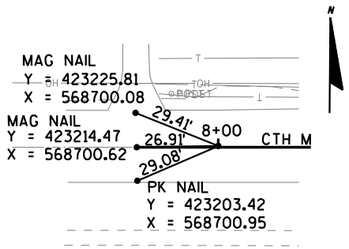
FINISHED TYPICAL SECTION

WEST 1st STREET
(STA. 19+25 - STA. 19+85)
(STA. 20+15 - STA. 20+75)

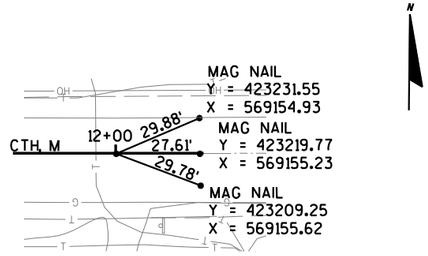
PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	TYPICAL SECTIONS	SHEET 3	E



ALIGNMENT CONTROLS



STA. 8+00.03, 0.52' RT.
(MAG NAIL)
Y = 423215.23
X = 568727.52

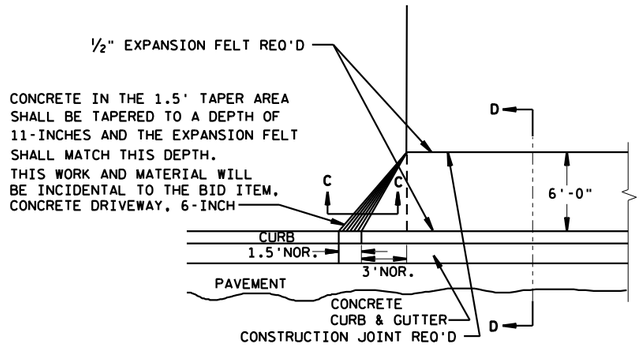


STA. 12+00.15, 0.47' RT.
(MAG NAIL)
Y = 423219.41
X = 569127.62

CONTROL POINT TIES

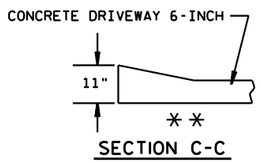
PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	ALIGNMENT CONTROLS & TIES	SHEET 4	E

2

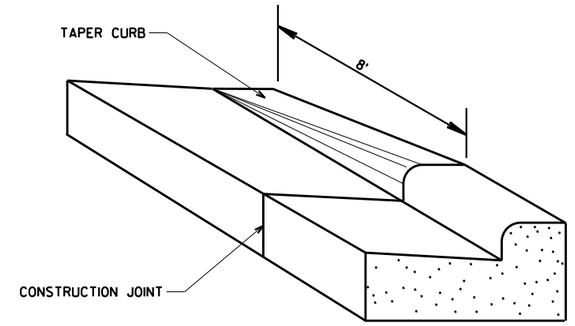


PLAN VIEW

STA. 11+28 TO STA. 11+97, RT.



SECTION C-C

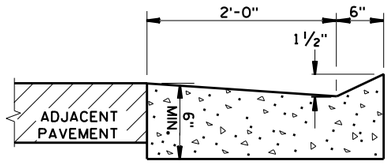


DETAIL OF CURB & GUTTER TERMINAL

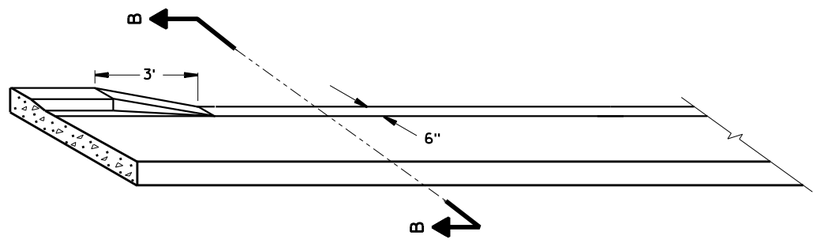
WEST 1st STREET

STA. 19+36.54 - STA. 19+44.54, RT.

STA. 20+54.47 - STA. 20+62.47, RT.



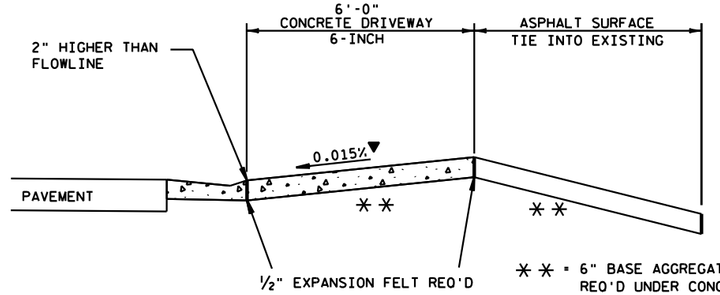
SECTION B-B



CURB OPENING DETAIL

URBAN DRIVEWAY ENTRANCE DETAIL

STA. 11+28 TO STA. 11+97, RT.



SECTION D-D

SECTION THRU ASPHALT DRIVEWAY

STA. 11+28 TO STA. 11+97, RT.

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

CTH M & WEST 1ST STREET INTERSECTION DETAIL
(MODIFIED TYPE D INTERSECTION)

N

END CONSTRUCTION
STA. 20+75
Y = 423291.72
X = 568823.58

BEGIN PROJECT
STA. 8+97.64
Y = 423216.74
X = 568825.12

BEGIN CONSTRUCTION
STA. 19+25
Y = 42314.75
X = 568826.56

℄ OF WEST 1st STREET

CTH M (ASPHALT)

STA. 20+00 WEST 1st ST.
STA. 8+97.64 CTH M
Y = 423216.74
X = 568825.12

STA. 20+54.47

STA. 19+44.54

PI 20+00.00

N01°10'40"W

N01°10'51"W

90°34'57.72"

89°29'51.72"

66'

12'

9'

15'

20'

FRONTIER

EXISTING R/W

SLOPE INTERCEPT

DETECTABLE WARNING FIELD

CURB RAMP TYPE 1-A REQUIRED

STA. 9+49.09, 55' LT
Y = 423272.27
X = 568875.99

40' RAD.

18" ϕ SSPRC CLASS III
L = 16'
1 - ENDWALL REQ'D.

15" ϕ CPCS
L = 12'

18" ϕ SSPRC CLASS III
L = 14'

STA. 9+50.13

STA. 9+49.09

STA. 9+50.13, 55' RT
Y = 423162.28
X = 568878.18

APPLE RIVER

STRUCTURE B-55-268

NORTHWEST COMMUNICATIONS

90° SKEW

10+00

11+00

℄ OF CTH M

EXISTING STRUCTURE B-55-24 TO BE REMOVED

RIPRAP HEAVY

RAILING PIPE

XCEL ENERGY

WE ENERGIES

90'

CAUTION

24"

48"

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	INTERSECTION DETAIL	SCALE, FEET 0 10 20	SHEET 6	E

2

N

EXISTING R/W

EXISTING R/W

END CONSTRUCTION
STA. 20+75

℄ OF WEST 1st STREET

APPLE RIVER

1 W5-52L

2 W5-52L 12" X 36"

3 W5-52R

4 W5-52R 12" X 36"

5 WEIGHT LIMIT 30 TONS R12-1

6 WATCH FOR CHILDREN

EXISTING R/W

STRUCTURE B-55-268

RAILING PIPE

PAVEMENT MARKING CROSSWALK 6-INCH (WHITE)

BEGIN PROJECT
STA. 8+97.64

℄ OF CTH M

9+00

10+00

11+00

12+00

CTH M
(ASPHALT)

20+00

STA. 20+00 WEST 1st STREET
STA. 8+97.64 CTH M

12 SPEED LIMIT 25 R2-1

EXISTING R/W

RAILING PIPE

PAVEMENT MARKING 4-INCH, EPOXY (WHITE EDGELINE)

EXISTING R/W

PAVEMENT MARKING 4-INCH, EPOXY (DBL SOLID YELLOW)

END PROJECT
STA. 12+00

7 R12-1 WEIGHT LIMIT 30 TONS

8 M2-1 JCT 65

9 M4-6 END COUNTY M

10 M1-6

11 M1-5A

BEGIN CONSTRUCTION
STA. 19+25

15 SPEED LIMIT 25 R2-1 24" X 30"

16 W5-52R 12" X 36"

17 W5-52R

18 M2-1 21" X 15" JCT 65 M1-6 24" X 24"

19 M4-6 24" X 12" END COUNTY M M1-5A 24" X 24"

20

21

22 W5-52L

23 W5-52L 12" X 36"

13 STOP R1-1 30" X 30"

14 STOP R1-1

EXISTING R/W

EXISTING R/W

SIGN-REMOVE AND REPLACE

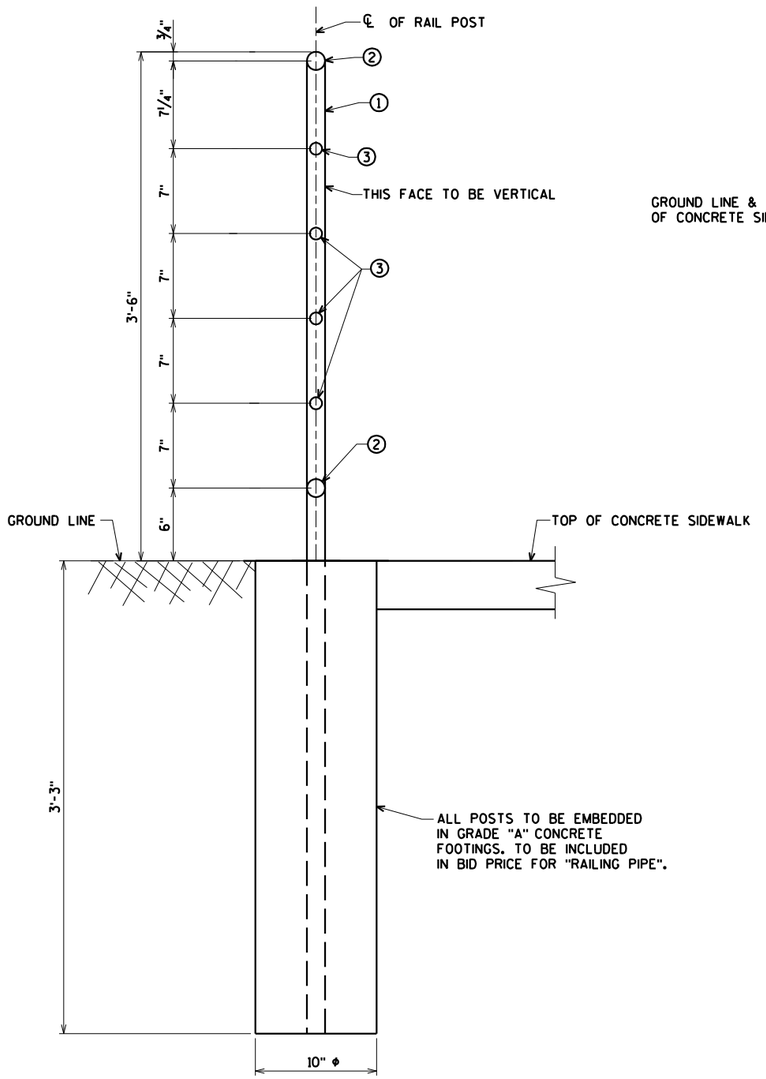
SIGN-REMOVE EXISTING

SIGN-PLACE NEW

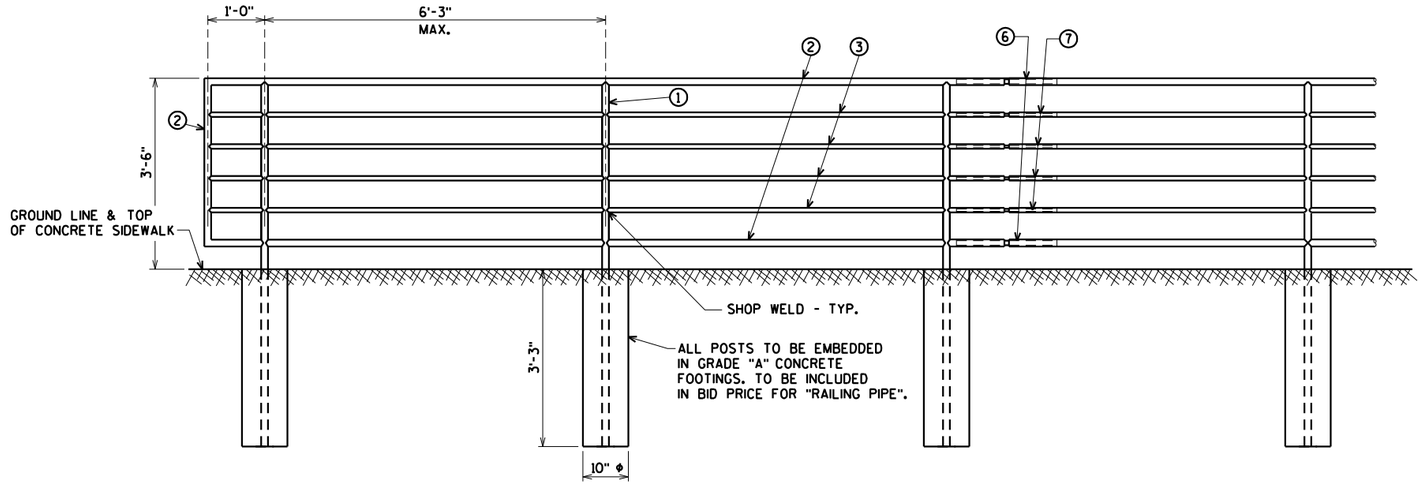
SIGN-MOVE EXISTING

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	SIGNING AND PAVEMENT MARKING PLAN	SCALE, FEET 0 15 30	SHEET 7	E

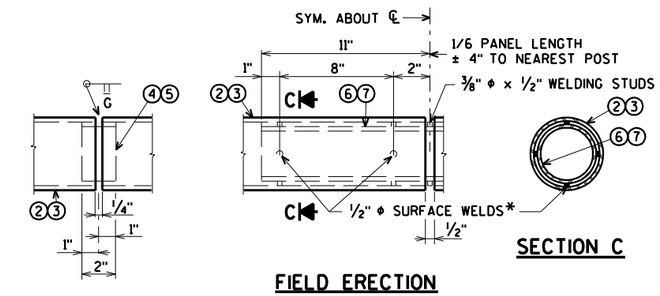
U:\42-0848.00 - St. Croix Co. CTH M over Apple River\RDWY\420848 REMOVAL.dgn PENTABLE:BReou_shd_util.tbl Hoensheidk 1:29.9999



SECTION THRU RAILING



PART ELEVATION OF RAILING



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

FIELD ERECTION JOINT DETAIL

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

SECTION C

GENERAL NOTES

BID ITEM SHALL BE "RAILING PIPE", WHICH INCLUDES ALL ITEMS SHOWN.

STEEL RAILING POSTS AND STEEL TUBING WILL BE PAINTED BROWN (FEDERAL #20059).

ALL MATERIAL SHALL BE PAINTED WITH A THREE-COAT ZINC RICH EPOXY SYSTEM. PRIOR TO PAINTING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 11 NEAR WHITE BLAST CLEANING BY SSPC SPECIFICATIONS.

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

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

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

LEGEND

(1) 1 1/2" ϕ STEEL PIPE FOR POST. CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. PLACE POSTS VERTICAL.

(2) 1 1/2" ϕ STEEL PIPE FOR TOP & BOT. RAIL. WELD TO NO. 1.

(3) 1" ϕ STEEL PIPE FOR INTERMEDIATE RAILS. WELD TO NO. 1.

(4) 1" ϕ PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 1 9/16".

(5) 1/2" ϕ ROD SLEEVE FOR NO. 3. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 15/16".

(6) 1" ϕ PIPE SLEEVE x 1'-10" LONG FOR NO. 2. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE 3/8" ϕ x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

(7) 1/2" ϕ ROD SLEEVE x 1'-10" LONG FOR NO. 3. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" ϕ x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	RAILING PIPE DETAILS	SHEET 8	E

REMOVE INLET
STA. 9+25, 30' LT
4'X4'X3.46' DEEP

REMOVE SSPCS 15" L=40'
STA. 9+25 TO STA. 9+65, 30' LT.

N

END CONSTRUCTION
STA. 20+75
(SAWCUT REQUIRED)
Y = 423291.72
X = 568823.58

66'

FRONTIER

FRONTIER

STA. 20+00 WEST 1st STREET
STA. 8+97.64 CTH M

APPLE RIVER

NORTHWEST COMMUNICATIONS

SLOPE INTERCEPT

MANHOLE 1

BM #1

STRUCTURE B-55-268

FRONTIER

SLOPE INTERCEPTS

90'

℄ OF CTH M

66'

BM #2

CP #11

CP #12

RAILING PIPE

EXISTING R/W

66'

8+00

9+00

10+00

11+00

12+00

CTH M
(ASPHALT)

INLET 1

PI 20+00.00

XCEL ENERGY

RETAINING WALL

PI 8+97.64

EXISTING R/W

CP #2

CP #13

WE ENERGIES

BEGIN PROJECT
STA. 8+97.64
(SAWCUT REQUIRED)
Y = 423216.74
X = 568825.12

BEGIN CONSTRUCTION
STA. 19+25
(SAWCUT REQUIRED)
Y = 423141.75
X = 5688256.56

CP #10

WE ENERGIES
SLOPE INTERCEPT

℄ OF WEST 1st STREET

EXISTING STRUCTURE (B-55-24) TO BE REMOVED

RAILING PIPE

LIFT STATION CONTROLS

END PROJECT
STA. 12+00
(SAWCUT REQUIRED)
Y = 426219.88
X = 569127.46

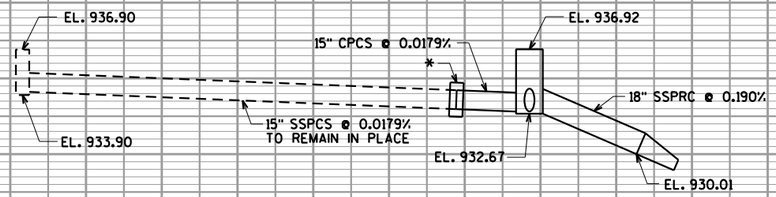
FRONTIER

EXISTING INLET, 2.5x2.5-FT.
INV. OUT: 934.11
RIM: 936.90
SUMP: 933.9
TO REMAIN IN PLACE

MANHOLE 1, 4-FT. DIAMETER
MANHOLE COVER TYPE L
INV. IN: 932.81
INV. OUT: 932.67
RIM: 936.92
SUMP: 932.67

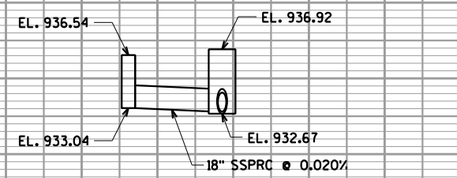
INLET 1, 2x3-FT.
INLET COVER TYPE H-S
INV. OUT: 933.04
RIM: 936.54
SUMP: 933.04

MANHOLE 1, 4-FT. DIAMETER
MANHOLE COVER TYPE L
INV. IN: 932.82
INV. OUT: 932.67
RIM: 936.92
SUMP: 932.67



STA. 8+60.38, 19.16' LT.
CTH M

STA. 9+35.25, 31.71' LT.
CTH M



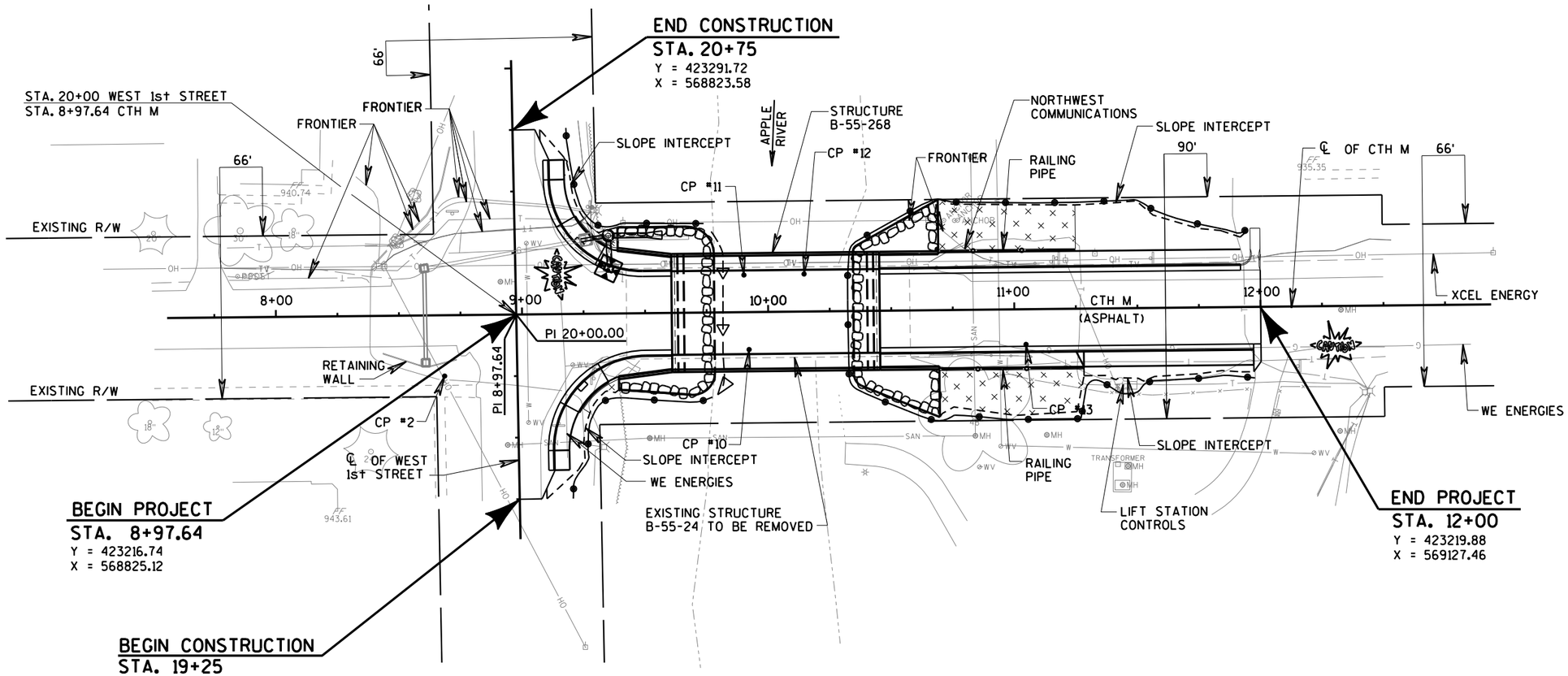
STA. 9+35.35, 18.5' LT.
CTH M

STA. 9+35.25, 31.71' LT.
CTH M

940
930
920
910

* USE CONCRETE COLLAR TO CONNECT TO EXISTING SSPCS

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	STORM SEWER	SCALE, FEET 0 25 50	SHEET 9	E



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

HIGH WATER $_2$ EL. 918.8

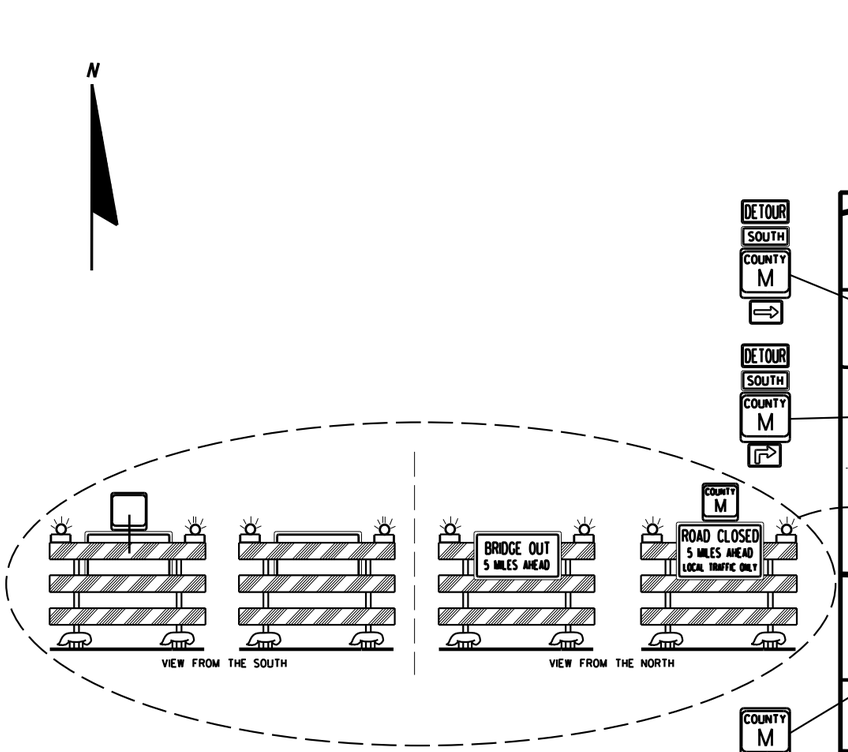
LEGEND

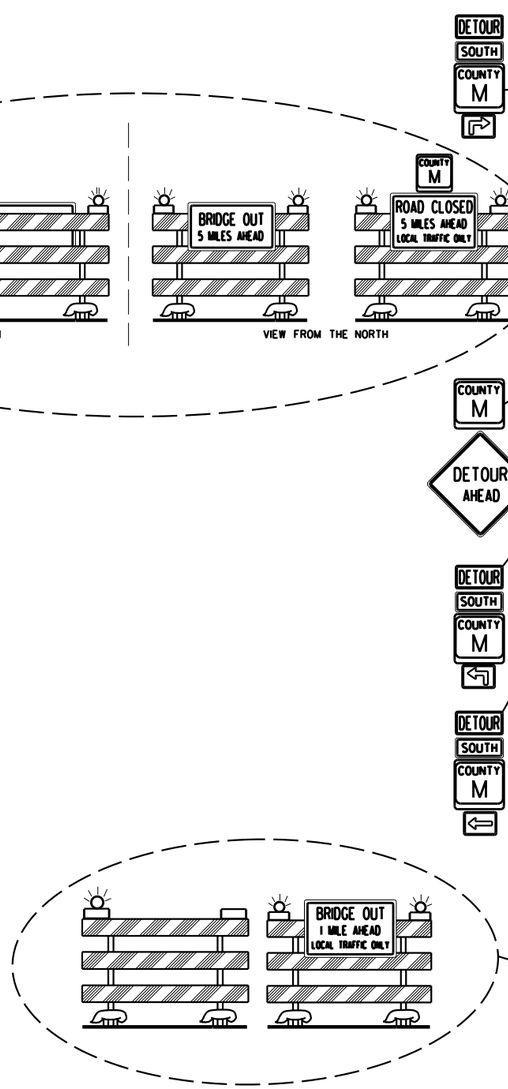
- EROSION MAT CLASS II TYPE B
- TEMPORARY DITCH CHECKS (UNDISTRIBUTED)
- SILT FENCE
- RIPRAP HEAVY
- TURBIDITY BARRIER
- INLET PROTECTION TYPE C

TOTAL PROJECT AREA = 0.68 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.45 ACRES

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	EROSION CONTROL	SCALE, FEET 0 25 50	SHEET 10	E

2





GENERAL NOTES

1. DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON CONTRACTORS METHODS OR SEQUENCE OF OPERATION.
2. ALL SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. SIGN FACE LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS. UNLESS OTHERWISE PROVIDED IN THE PLAN
4. ROAD MACHINERY, TRUCK ENTRANCE, FLAGMAN AHEAD, ETC., SIGNS SHALL BE USED AS NEEDED AND SHALL BE REMOVED OR COVERED AT NIGHT, WEEKENDS OR WHEN THE ACTIVITY OR CONDITION DOES NOT EXIST. NO FLASHER SHALL BE USED WITH A COVERED SIGN.
5. ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.
6. EXISTING TRAFFIC SIGNS MAY REQUIRE RELOCATION DURING STAGES OF CONSTRUCTION AND SHALL BE LOCATED AS REQUIRED BY THE ENGINEER IN THE FIELD.
7. "WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

LEGEND

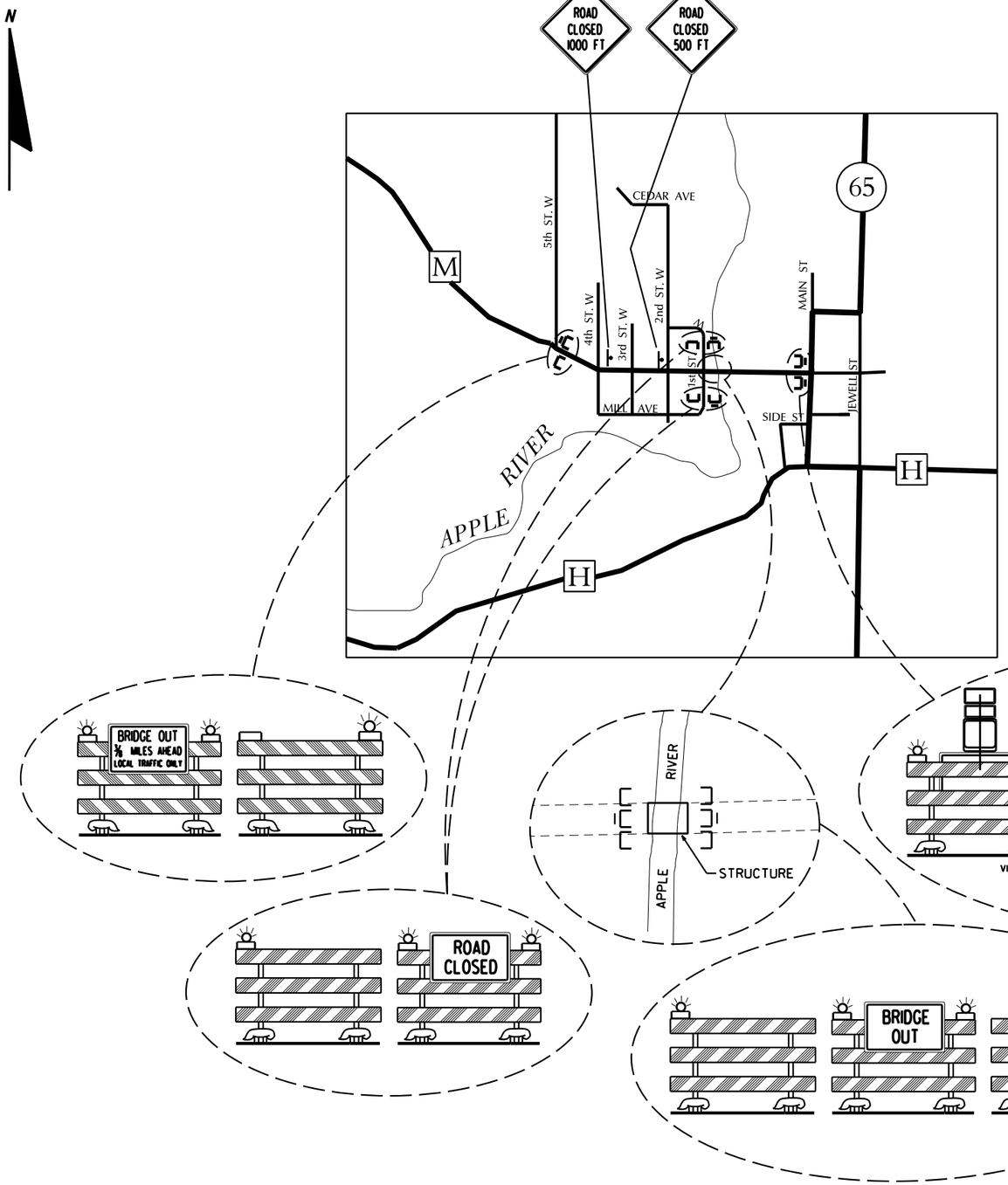
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE WITH TWO (2) TYPE "A" FLASHING LIGHTS

SIGN SIZES

M1-5a	= 24" x 24"
M2-1	= 21" x 15"
M3-1	= 24" x 12"
M3-2	= 24" x 12"
M3-3	= 24" x 12"
M3-4	= 24" x 12"
M4-8	= 24" x 18"
M4-8a	= 24" x 18"
M4-9	= 30" x 24"
M05-1 R	= 21" x 21"
M05-1 L	= 21" x 21"
M06-1	= 21" x 21"
M4-6	= 24" x 12"
R1-1	= 36" x 36"
R11-2B	= 48" x 30"
R11-3	= 60" x 30"
R11-3B	= 60" x 30"
R11-3C	= 60" x 24"
W1-6	= 48" x 24"
W01-1 R	= 36" x 36"
W013-1	= 18" x 18"

W1-6
M4-8
M3-1, 2, 3, 4
M1-5a
M05-1 R, 1 L, M06-1
M4-6
R11-3
R11-3B
R11-3C
W20-2

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	DETOUR LAYOUT	SHEET 11	E



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M4-9	= 30" x 24"
M05-1 R	= 21" x 21"
M05-1 L	= 21" x 21"
M06-1	= 21" x 21"
M4-6	= 24" x 12"
R1-1	= 36" x 36"
R11-2	= 48" x 30"
R11-2B	= 48" x 30"
R11-3B	= 60" x 30"
R11-4	= 60" x 30"
W1-6	= 48" x 24"
WO1-1 R	= 36" x 36"
WO13-1	= 18" x 18"

GENERAL NOTES

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LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE WITH TWO (2) TYPE "A" FLASHING LIGHTS WITH SIGN
- TYPE III BARRICADE WITH ONE (1) TYPE "A" FLASHING LIGHT

W1-6

ROAD CLOSED — R11-2

BRIDGE OUT — R11-2B

ROAD CLOSED TO THRU TRAFFIC — R11-4

BRIDGE OUT I MILE AHEAD LOCAL TRAFFIC ONLY — R11-3B

ROAD CLOSED 500 FT — W20-3

DETOUR NORTH COUNTY M — M4-8, M3-1, 2, 3, 4, M1-5a

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	TRAFFIC CONTROL LAYOUT	SHEET 12	E

DATE 03DEC13 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	8866-00-70 QUANTITY
0010	201.0105	CLEARING	STA	3.000	3.000
0020	201.0205	GRUBBING	STA	3.000	3.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 10+00	LS	1.000	1.000
0040	204.0165	REMOVING GUARDRAIL	LF	120.000	120.000
0050	204.0220	REMOVING INLETS	EACH	1.000	1.000
0060	204.0245	REMOVING STORM SEWER (SIZE) 01. 15-INCH	LF	40.000	40.000
0070	205.0100	EXCAVATION COMMON **P**	CY	493.000	493.000
0080	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-55-268	LS	1.000	1.000
0090	208.0100	BORROW	CY	50.000	50.000
0100	210.0100	BACKFILL STRUCTURE	CY	615.000	615.000
0110	213.0100	FINISHING ROADWAY (PROJECT) 01. 8866-00-70	EACH	1.000	1.000
0120	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	1.000	1.000
0130	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	810.000	810.000
0140	416.0160	CONCRETE DRIVEWAY 6-INCH	SY	50.000	50.000
0150	455.0605	TACK COAT	GAL	26.000	26.000
0160	465.0105	ASPHALTIC SURFACE	TON	345.000	345.000
0170	465.0315	ASPHALTIC FLUMES	SY	9.000	9.000
0180	502.0100	CONCRETE MASONRY BRIDGES	CY	340.000	340.000
0190	502.3200	PROTECTIVE SURFACE TREATMENT	SY	490.000	490.000
0200	503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	415.000	415.000
0210	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	6,660.000	6,660.000
0220	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	37,030.000	37,030.000
0230	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	10.000	10.000
0240	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-55-268	EACH	8.000	8.000
0250	513.2000	RAILING PIPE (STRUCTURE) 01. NEAR B-55-268	LS	1.000	1.000
0260	513.4052	RAILING TUBULAR TYPE F-4 MODIFIED (STRUCTURE) 01. B-55-268	LS	1.000	1.000
0270	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	31.000	31.000
0280	520.8000	CONCRETE COLLARS FOR PIPE	EACH	1.000	1.000
0290	521.0115	CULVERT PIPE CORRUGATED STEEL 15-INCH	LF	12.000	12.000
0300	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	1.000	1.000
0310	550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	360.000	360.000
0320	550.0500	PILE POINTS	EACH	36.000	36.000
0330	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	1,260.000	1,260.000
0340	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	463.000	463.000
0350	601.0600	CONCRETE CURB PEDESTRIAN	LF	36.000	36.000
0360	602.0405	CONCRETE SIDEWALK 4-INCH	SF	2,260.000	2,260.000
0370	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	16.000	16.000
0380	606.0300	RIPRAP HEAVY	CY	230.000	230.000
0390	608.0318	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH	LF	30.000	30.000
0400	611.0545	MANHOLE COVERS TYPE L	EACH	1.000	1.000
0410	611.0639	INLET COVERS TYPE H-S	EACH	1.000	1.000
0420	611.2004	MANHOLES 4-FT DIAMETER	EACH	1.000	1.000
0430	611.3230	INLETS 2X3-FT	EACH	1.000	1.000
0440	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	300.000	300.000
0450	619.1000	MOBILIZATION	EACH	1.000	1.000

3

DATE 03DEC13 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	8866-00-70 QUANTITY
0460	625.0500	SALVAGED TOPSOIL	SY	525.000	525.000
0470	627.0200	MULCHING	SY	495.000	495.000
0480	628.1504	SILT FENCE	LF	750.000	750.000
0490	628.1520	SILT FENCE MAINTENANCE	LF	2,250.000	2,250.000
0500	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	5.000	5.000
0510	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0520	628.2023	EROSION MAT CLASS II TYPE B	SY	320.000	320.000
0530	628.6005	TURBIDITY BARRIERS	SY	65.000	65.000
0540	628.7015	INLET PROTECTION TYPE C	EACH	1.000	1.000
0550	628.7504	TEMPORARY DITCH CHECKS	LF	50.000	50.000
0560	629.0210	FERTILIZER TYPE B	CWT	0.500	0.500
0570	630.0120	SEEDING MIXTURE NO. 20	LB	25.000	25.000
0580	630.0200	SEEDING TEMPORARY	LB	25.000	25.000
0590	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	7.000	7.000
0600	637.2210	SIGNS TYPE II REFLECTIVE H	SF	22.380	22.380
0610	637.2230	SIGNS TYPE II REFLECTIVE F	SF	12.000	12.000
0620	638.2102	MOVING SIGNS TYPE II	EACH	1.000	1.000
0630	638.2602	REMOVING SIGNS TYPE II	EACH	12.000	12.000
0640	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0650	643.0100	TRAFFIC CONTROL (PROJECT) 01. 8866-00-70	EACH	1.000	1.000
0660	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,368.000	1,368.000
0670	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,128.000	2,128.000
0680	643.0900	TRAFFIC CONTROL SIGNS	DAY	836.000	836.000
0690	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 8866-00-70	EACH	1.000	1.000
0700	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	6,612.000	6,612.000
0710	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	420.000	420.000
0720	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,105.000	1,105.000
0730	647.0766	PAVEMENT MARKING CROSSWALK EPOXY 6-INCH	LF	122.000	122.000
0740	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	3.000	3.000
0750	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	423.000	423.000
0760	650.5000	CONSTRUCTION STAKING BASE	LF	423.000	423.000
0770	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	463.000	463.000
0780	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-55-268	LS	1.000	1.000
0790	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 8866-00-70	LS	1.000	1.000
0800	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	361.000	361.000
0810	690.0150	SAWING ASPHALT	LF	206.000	206.000
0820	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	2,040.000	2,040.000
0830	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR	HRS	1,200.000	1,200.000
0840	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	300.000	300.000
0850	SPV.0165	SPECIAL 01. ANTI-GRAFFITI SHEILD	SF	1,510.000	1,510.000

3

CLEARING AND GRUBBING (CATEGORY 0010)

STATION TO STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
Sta. 9+00 to Sta. 12+00	CTH M	3	3

204.0165 REMOVING GUARDRAIL (CATEGORY 0010)

STATION TO STATION	LOCATION	LF
Sta. 9+22 to Sta. 9+34	CTH M, LT	15
Sta. 9+23 to Sta. 9+33	CTH M, RT	15
Sta. 10+65 to Sta. 11+12	CTH M, LT	48
Sta. 10+65 to Sta. 11+07	CTH M, RT	42
TOTAL		120

204.0220 REMOVING INLETS (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 9+25	CTH M, 30' LT	1

204.0245 REMOVING STORM SEWER 01. 15-INCH (CATEGORY 0010)

STATION TO STATION	LOCATION	LF
Sta. 9+25 to Sta. 9+65	CTH M, 30' LT	40

EARTHWORK SUMMARY (CATEGORY 0010)

DIVISION	STATION TO STATION	LOCATION	**P** 205.0100 EXCAVATION COMMON CUT (2) CY	EBS (3) CY	SALVAGED/ UNUSEABLE PAVEMENT MATERIAL (4) CY	AVAILABLE MATERIAL (5) CY	UNEXPANDED FILL CY	EXPANDED FILL (7) CY	MASS ORDINATE ±(8) CY	WASTE CY	208.0100 BORROW CY	COMMENTS:
1	Sta. 8+97.64 to Sta. 9+60.75	CTH M	118	0	0	118	40	52	66	66	0	
	Sta. 10+45.25 to Sta. 12+00	CTH M	270	0	0	270	246	320	-50	0	50	
	SUBTOTAL		388	0	0	388	286	372	16	66	50	
2	Sta. 19+25 to Sta. 19+85	WEST 1ST ST.	56	0	0	56	4	5	51	51	0	
	Sta. 20+15 to Sta. 20+75	WEST 1ST ST.	49	0	0	49	2	3	46	46	0	
	SUBTOTAL		105	0	0	105	6	8	97	97	0	
	GRANDTOTAL		493	0	0	493	292	380		163	50	

TOTAL EXCAVATION COMMON **493** **TOTAL BORROW** **50**

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
2) SALVAGED/UNUSEABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) EBS EXCAVATION TO BE BACKFILLED WITH BORROW MATERIAL.
4) SALVAGED/UNUSEABLE PAVEMENT MATERIAL
5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSEABLE PAVEMENT MATERIAL
6) EXCAVATION MARSH - TO BE BACKFILLED WITH BORROW. ITEM NUMBER 205.0400
7) EXPANDED FILL FACTOR = 1.30
EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
8) THE MASS ORDINATE ± QTY CALCULATED FOR THE DIVISION.
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

3

213.0100 FINISHING ROADWAY (CATEGORY 0010)

LOCATION	EACH
PROJECT 8866-00-70	1

BASE AGGREGATE DENSE (CATEGORY 0010)

STATION TO STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
Sta. 8+97.64 to Sta. 9+60.75	CTH M	---	150
Sta. 10+45.25 to Sta 12+00	CTH M	---	460
Sta. 19+25 to Sta. 19+85	WEST 1ST ST.	---	100
Sta. 20+15 to Sta. 20+75	WEST 1ST ST.	---	100
Sta. 19+25 to Sta. 19+29.20	WEST 1ST ST.	0.5	---
Sta. 20+70.45 to Sta. 20+75	WEST 1ST ST.	0.5	---
TOTALS		1	810

416.0160 CONCRETE DRIVEWAY 6-INCH (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 11+25 to Sta. 11+97	CTH M, RT	50
TOTAL		50

455.0605 TACK COAT (CATEGORY 0010)

STATION TO STATION	LOCATION	GAL
Sta. 8+97.64 to Sta. 9+60.75	CTH M	6
Sta. 10+45.25 to Sta. 12+00	CTH M	14
Sta. 19+25 to Sta. 19+85	WEST 1ST ST.	3
Sta. 20+15 to Sta. 20+75	WEST 1ST ST.	3
TOTAL		26

465.0105 ASPHALTIC SURFACE (CATEGORY 0010)

STATION TO STATION	LOCATION	TON
Sta. 8+97.64 to Sta. 9+60.75	CTH M	75
Sta. 10+45.25 to Sta. 12+00	CTH M	190
Sta. 19+25 to Sta. 19+85	WEST 1ST ST.	40
Sta. 20+15 to Sta. 20+75	WEST 1ST ST.	40
TOTAL		345

465.0315 ASPHALTIC FLUMES (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 11+98	CTH M, LT	9

513.2000 RAILING PIPE (NEAR B-55-268) (CATEGORY 0010)

STATION TO STATION	LOCATION	LF	LS
Sta. 10+70 TO Sta. 11+25	CTH M, LT	55	---
Sta. 10+70 to Sta. 11+28	CTH M, RT	58	---
TOTALS		113	1

520.8000 CONCRETE COLLARS FOR PIPE (CATEGORY 0010)

STATION	LOCATION	PIPE SIZE AND TYPE	EACH
Sta. 9+24.14	CTH M, 29.85' LF	15-INCH, CPCS	1

521.0115 CULVERT PIPE CORRUGATED STEEL 15-INCH (CATEGORY 0010)

STATION TO STATION	LOCATION	THICKNESS (INCHES)	LF
Sta. 9+24.14 to Sta. 9+35.25	CTH M, 29.85'/31.71' LT	0.064	12

522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 9+51.01	CTH M, 31.71' LT	1

601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D (CATEGORY 0010)

STATION TO STATION	LOCATION	LF
Sta. 9+49.09 to Sta. 9+60.75	CTH M, LT	12
Sta. 9+50.13 to Sta. 9+60.75	CTH M, RT	11
Sta. 10+45.25 to Sta. 11+92	CTH M, LT	147
Sta. 10+45.25 to Sta. 11+97	CTH M, RT	152
Sta. 19+36.54 to Sta. 19+85	WEST 1ST ST., RT	71
Sta. 20+15 to Sta. 20+62.47	WEST 1ST ST., RT	70
TOTAL		463

601.0600 CONCRETE CURB PEDESTRIAN (CATEGORY 0010)

STATION TO STATION	LOCATION	LF
Sta. 9+21.63 to Sta. 9+33.90	CTH M, LT	18
Sta. 9+22.53 to Sta. 9+34.69	CTH M, RT	18
TOTAL		36

602.0405 CONCRETE SIDEWALK 4-INCH (CATEGORY 0010)

STATION TO STATION	LOCATION	SF
Sta. 9+49.09 to Sta. 9+60.75	CTH M, LT	75
Sta. 9+50.13 to Sta. 9+60.75	CTH M, RT	70
Sta. 10+45.25 to Sta. 11+92	CTH M, LT	870
Sta. 10+45.25 to Sta. 11+28	CTH M, RT	475
Sta. 19+36.54 to Sta. 19+85	WEST 1ST ST., RT	385
Sta. 20+15 to Sta. 20+62.47	WEST 1ST ST., RT	385
TOTAL		2,260

602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW (CATEGORY 0010)

STATION TO STATION	LOCATION	SF
Sta. 9+21.31 to Sta. 9+24.15	CTH M, LT	8
Sta. 9+22.12 to Sta. 9+24.94	CTH M, RT	8
TOTAL		16

608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH (CATEGORY 0010)

STATION TO STATION	LOCATION	DESCRIPTION	LF
Sta. 9+35.35 to Sta. 9+35.25	CTH M, 18.5'/31.71' LT	Inlet 1 to Manhole 1	14
Sta. 9+35.25 to Sta. 9+51.01	CTH M, 31.71' LT	Manhole 1 to Discharge	16
TOTAL			30

611.0545 MANHOLE COVERS TYPE L (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 9+35.25	CTH M, 31.71' LT (Manhole 1)	1

611.0639 INLET COVERS TYPE H-S (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 9+35.35	CTH M, 18.5' LT (Inlet 1)	1

611.2004 MANHOLE 4-FT DIAMETER (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 9+35.25	CTH M, 31.71' LT (Manhole 1)	1

611.3230 INLETS 2x3-FT (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 9+35.35	CTH M, 18.5' LT (Inlet 1)	1

619.1000 MOBILIZATION

LOCATION	EACH
PROJECT 8866-00-70 (CATEGORY 0010)	0.2
PROJECT 8866-00-70 (CATEGORY 0020)	0.8
TOTAL	1

SALVAGED TOPSOIL, MULCHING, FERTILIZER, SEED & TEMPORARY SEED (CATEGORY 0010)

STATION TO STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING NO. 20 LB	630.0200 SEEDING TEMPORARY LB
Sta. 8+97.60 to Sta. 12+00	CTH M	480	325	0.4	16	16
Sta. 19+25 to Sta. 20+75	WEST 1ST ST.	45	70	0.0	2	2
Undistributed		---	100	0.1	7	7
TOTALS		525	495	0.5	25	25

SILT FENCE & SILT FENCE MAINTENANCE (CATEGORY 0010)

STATION TO STATION	LOCATION	628.1504 LF	628.1520 MAINTENANCE LF
Sta. 9+19 to Sta. 9+78	CTH M, LT	95	285
Sta. 9+20 to Sta. 9+77	CTH M, RT	90	270
Sta. 10+32 to Sta. 11+95	CTH M, LT	200	600
Sta. 10+32 to Sta. 11+97	CTH M, RT	215	645
Undistributed		150	450
TOTALS		750	2,250

MOBILIZATIONS EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

LOCATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 8866-00-70	5	2

628.2023 EROSION MAT CLASS II TYPE B (CATEGORY 0010)

STATION TO STATION	LOCATION	SY
Sta. 9+24 to Sta. 9+39	CTH M, LT	6
Sta. 9+24 to Sta. 9+39	CTH M, RT	6
Sta. 10+69.25 to Sta. 11+25	CTH M, LT	123
Sta. 10+69.25 to Sta. 11+28	CTH M, RT	120
Undistributed		65
TOTAL		320

3

628.6005 TURBIDITY BARRIER (CATEGORY 0010)

LOCATION	SY
West Abutment	50
Undistributed	15
TOTALS	65

628.7015 INLET PROTECTION TYPE C (CATEGORY 0010)

STATION TO STATION	LOCATION	EACH
Sta. 9+35.35	CTH M, 18.5' LT (Inlet 1)	1

628.7504 TEMPORARY DITCH CHECKS (CATEGORY 0010)

LOCATION	LF
UNDISTRIBUTED	50

634.0612 WOOD POSTS 4X6 INCH X 12 FT (CATEGORY 0010)

STATION	LOCATION	EACH
Sta. 9+34	CTH M, RT (M1-5A, M1-6, M2-1, M4-6)	1
Sta. 9+34	CTH M, RT (R2-1)	1
Sta. 9+37	CTH M, LT (W5-52L)	1
Sta. 9+37	CTH M, RT (W5-52R)	1
Sta. 10+72	CTH M, LT (W5-52R)	1
Sta. 10+72	CTH M, RT (W5-52L)	1
Sta. 19+47	WEST 1ST ST., RT (R1-1)	1
TOTAL		7

637.2210 SIGNS TYPE II REFLECTIVE H (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	SF
Sta. 9+34	CTH M, RT	M1-5A (COUNTY M)	4
Sta. 9+34	CTH M, RT	M1-6 (STH 65)	4
Sta. 9+34	CTH M, RT	M2-1 (JCT)	2.2
Sta. 9+34	CTH M, RT	M4-6 (END)	2
Sta. 9+34	CTH M, RT	R2-1 (SPEED LIMIT 25 MPH)	5
Sta. 19+47	WEST 1ST ST., RT	R1-1 (STOP)	5.18
TOTAL			22.38

637.2230 SIGNS TYPE II REFLECTIVE F (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	SF
Sta. 9+37	CTH M, LT	W5-52L (OBJECT MARKER)	3
Sta. 9+37	CTH M, RT	W5-52R (OBJECT MARKER)	3
Sta. 10+72	CTH M, LT	W5-52R (OBJECT MARKER)	3
Sta. 10+72	CTH M, RT	W5-52L (OBJECT MARKER)	3
TOTAL			12

638.2102 MOVING SIGNS TYPE II (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	EACH
Sta. 11+53	CTH M, LT	WATCH FOR CHILDREN	1

638.2602 REMOVING SIGNS TYPE II (CATEGORY 0010)

STATION	LOCATION	DESCRIPTION	EACH
Sta. 9+28	CTH M, RT	R12-1 (WEIGHT LIMIT 30 TONS)	1
Sta. 9+29	CTH M, RT	M2-1 (JCT)	1
Sta. 9+30	CTH M, RT	M1-6 (STH 65)	1
Sta. 9+31	CTH M, RT	M1-5A (CTH M)	1
Sta. 9+32	CTH M, RT	M4-6 (END)	1
Sta. 9+32	CTH M, RT	R2-1 (SPEED LIMIT 25 MPH)	1
Sta. 9+33	CTH M, LT	W5-52L (OBJECT MARKER)	1
Sta. 9+35	CTH M, RT	W5-52R (OBJECT MARKER)	1
Sta. 10+67	CTH M, LT	W5-52R (OBJECT MARKER)	1
Sta. 10+67	CTH M, RT	W5-52L (OBJECT MARKER)	1
Sta. 11+32	CTH M, LT	R12-1 (WEIGHT LIMIT 30 TONS)	1
Sta. 19+55	WEST 1ST ST., RT	R1-1 (STOP)	1
TOTAL			12

642.5001 FIELD OFFICE TYPE B (CATEGORY 0010)

LOCATION	EACH
PROJECT 8866-00-70	1

643.0100 TRAFFIC CONTROL (CATEGORY 0010)

LOCATION	EACH
PROJECT 8866-00-70	1

TRAFFIC CONTROL BARRICADES, LIGHTS, AND SIGNS (CATEGORY 0010)

	643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS	
LOCATION	EACH	DAYS	EACH	DAYS	EACH	DAYS
PROJECT 8866-00-70	18	76	28	76	11	76
TOTAL		1,368		2,128		836

643.2000 TRAFFIC CONTROL DETOUR (CATEGORY 0010)

LOCATION	EACH
PROJECT 8866-00-70	1

643.3000 TRAFFIC CONTROL DETOUR SIGNS (CATEGORY 0010)

LOCATION	EACH	DAYS
PROJECT 8866-00-70	87	76
TOTAL		6,612

646.0106 PAVEMENT MARKING EPOXY 4-INCH (CATEGORY 0010)

STATION	DESCRIPTION	LF
Sta. 8+97.64 to Sta. 12+00	Double Solid Yellow	605
Sta. 9+50 to Sta. 12+00	Left Edgeline White	250
Sta. 9+50 to Sta. 12+00	Right Edgeline White	250
TOTAL		1,105

647.0766 PAVEMENT MARKING CROSSWALK EPOXY 6-INCH (CATEGORY 0010)

STATION	DESCRIPTION	LF
Sta. 9+23	White	81
Sta. 9+29	White	41
TOTAL		122

690.0150 SAWING ASPHALT (CATEGORY 0010)

STATION	LOCATION	LF
Sta. 8+97.64	CTH M	150
Sta. 12+00	CTH M	38
Sta. 19+25	WEST 1ST ST.	9
Sta. 20+75	WEST 1ST ST.	9
TOTAL		206

CONSTRUCTION STAKING

CATEGORY	LOCATION	650.4000 STORM SEWER EACH	650.4500 SUBGRADE LF	650.5000 BASE LF	650.5500 CURB & GUTTER LF	650.6500 STRUCTURE LAYOUT LS	650.9910 SUPPLEMENTARY CONTROL LS	650.9920 SLOPE STAKES LF
0010	CTH M	3	303	303	322	---	1	261
0010	WEST 1ST ST.	---	120	120	141	---	---	100
0020	B-55-268	---	---	---	---	1	---	---
TOTALS		3	423	423	463	1	1	361

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	9+43	BLACK MARKER & PAINT MARK, NW CORNER OF BRIDGE, 18' LT	937.20
2	12+95	60'D' SPK IN S. FACE OF PP, 20' LT	934.94

N

ORIGIN OF LEVELS
ST. CROIX COUNTY PROVIDED CP
CP #2 (5/8" REBAR)
EL. 939.38
NGVD 29

END CONSTRUCTION
STA. 20+75
(SAWCUT REQUIRED)
Y = 423291.72
X = 568823.58

STA. 20+00 WEST 1st STREET
STA. 8+97.64 CTH M

VILLAGE OF STAR PRAIRIE

APPLE RIVER

NORTHWEST COMMUNICATIONS

GARY W. PETERSON
CONSTRUCT ASPHALT FLUME
STA. 11+98 LT.

FRONTIER

SLOPE INTERCEPT

BM #1

STRUCTURE B-55-268

SLOPE INTERCEPTS

90'

℄ OF CTH M

66'

EXISTING R/W

CP #11

CP #12

RAILING PIPE

BM #2

8+00

9+00

10+00

11+00

12+00

CTH M
(ASPHALT)

PI 20+00.00

PI 8+97.64

XCEL ENERGY

RETAINING WALL

CP #2

CP #13

WE ENERGIES

NOTES:

FOR ALIGNMENT CONTROLS AND TIES, SEE ALIGNMENT CONTROLS & TIES SHEET.

FOR STORM SEWER ITEMS AND DETAILS, SEE STORM SEWER SHEET.

BEGIN PROJECT
STA. 8+97.64
(SAWCUT REQUIRED)
Y = 423216.74
X = 568825.12

BEGIN CONSTRUCTION
STA. 19+25
(SAWCUT REQUIRED)
Y = 423141.75
X = 5688256.56

CP #10

WE ENERGIES
SLOPE INTERCEPT

℄ OF WEST 1st STREET

EXISTING STRUCTURE (B-55-24) TO BE REMOVED

RIVER ISLAND PARK
VILLAGE OF STAR PRAIRIE

RAILING PIPE

CONSTRUCT DRIVEWAY
STA. 11+46.71 RT.

LIFT STATION CONTROLS

END PROJECT
STA. 12+00
(SAWCUT REQUIRED)
Y = 426219.88
X = 569127.46

FRONTIER

NET LENGTH OF CENTERLINE STA. 8+97.64 TO 12+00 = 302.36 LIN. FT.

EARTHWORK SUMMARY
STA. 8+97.64 TO STA. 9+60.75
EXC. COMMON 118 C.Y.
FILL 40 C.Y.
SHR. = 30%
WASTE 66 C.Y.

EARTHWORK SUMMARY
STA. 10+45.25 TO STA. 12+00
EXC. COMMON 270 C.Y.
FILL 246 C.Y.
SHR. = 30%
BORROW 50 C.Y.

200.00' VC
K = 637.69

PC STA 9+50.00
PC EL 936.75

HIGH WATER$_{100}$ EL. 921.8

WATER EL. 917.5
(3-12-12)

FINISHED ℄ PROFILE

-1.16%

-0.85%

EXISTING ℄ PROFILE

PI STA 8+97.64
PI EL 937.36

PI STA 10+50.00
PI EL 935.59

PT STA 11+50.00
PT EL 934.74

PI STA 12+00.00
PI EL 934.32

STREAM BED
EL. 914.2

REMOVING OLD STRUCTURE OVER WATERWAY
WITH MINIMAL DEBRIS STATION 10+00, STRUCTURE B-55-24
THREE-SPAN HAUNCED SLAB BRIDGE
26.0' CLEAR RDWY. x 117.0' O.A.L.
0° SKEW

STA. 10+03
STRUCTURE B-55-268 REQ'D.
SINGLE SPAN PRESTRESSED CONCRETE GIRDER BRIDGE
34'-0" CLEAR ROADWAY x 84'-6" O.A.L. WITH 6' RAISED SIDEWALKS
0° SKEW

940 930 920 910

939.29 938.54 938.25 MATCH 937.95 937.95 937.36 937.33 929.44 936.75 914.70 936.19 929.34 935.67 934.94 935.19 934.63 934.74 934.32 MATCH 934.04

7+50 8+00 8+50 9+00 9+50 10+00 10+50 11+00 11+50 12+00 12+50

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	PLAN AND PROFILE - CTH M	SCALE, FEET 0 25 50	SHEET 20	E

U:\42-0848.00 - St. Croix Co. CTH M over Apple River\RDWY\420848 pp ML.dgn 12/2/2013 $PLOT NA PENTABLE:BReau_shd_util.tbl Hoensheidk 1:50

WISDOT/CADDS SHEET 40

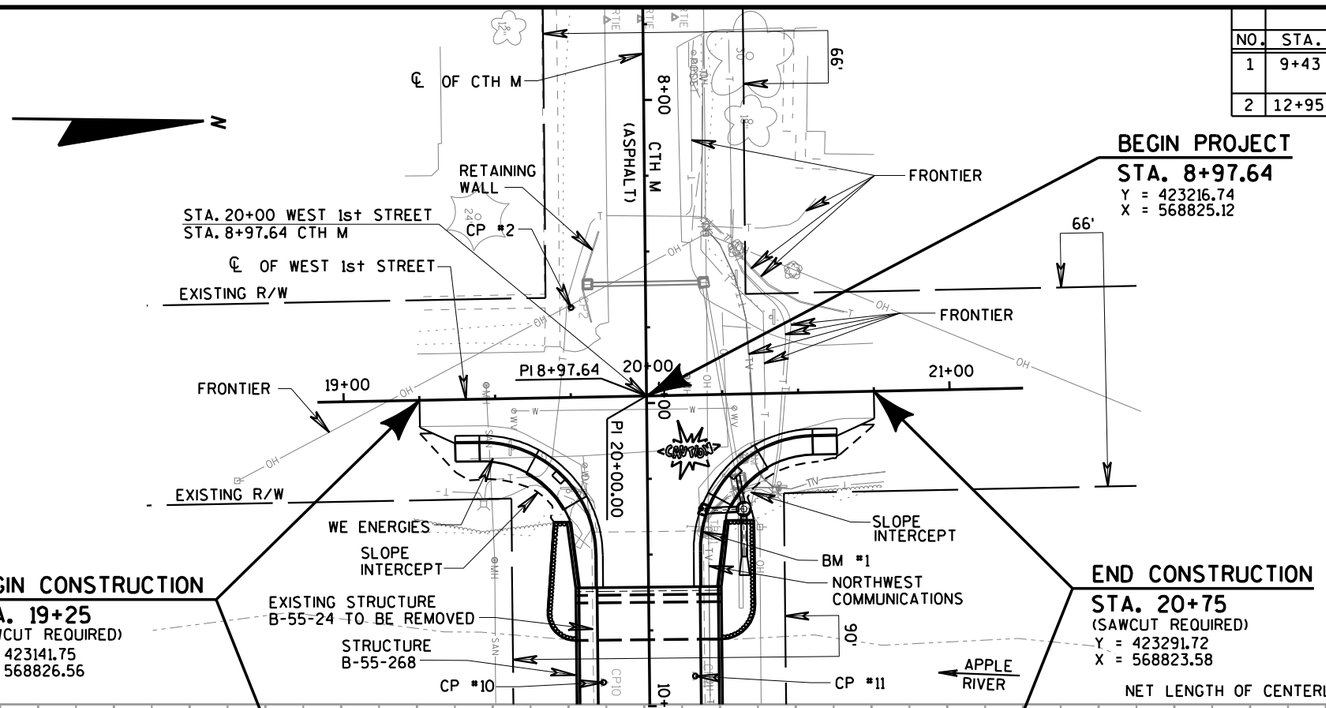
NOTES:
FOR ALIGNMENT CONTROLS AND TIES,
SEE ALIGNMENT CONTROLS & TIES SHEET.

FOR STORM SEWER ITEMS AND DETAILS,
SEE STORM SEWER SHEET.

ORIGIN OF LEVELS

ST. CROIX COUNTY PROVIDED CP
CP #2 (5/8" REBAR)
EL. 939.38
NGVD 29

		BENCH MARKS	
NO.	STA.	DESCRIPTION	ELEV.
1	9+43	BLACK MARKER & PAINT MARK, NW CORNER OF BRIDGE, 18' LT	937.20
2	12+95	60'D' SPK IN S. FACE OF PP, 20' LT	934.94



NET LENGTH OF CENTERLINE STA. 19+25.00 TO 20+75.00 = 150 LIN. FT.

EARTHWORK SUMMARY

STA. 19+25 TO STA. 19+85	
EXC. COMMON	56 C.Y.
FILL	4 C.Y.
SHR. = 30%	
WASTE	51 C.Y.

EARTHWORK SUMMARY

STA. 20+15 TO STA. 20+75	
EXC. COMMON	49 C.Y.
FILL	2 C.Y.
SHR. = 30%	
WASTE	46 C.Y.

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	PLAN AND PROFILE - WEST 1st STREET	SCALE, FEET 0 25 50	SHEET	E

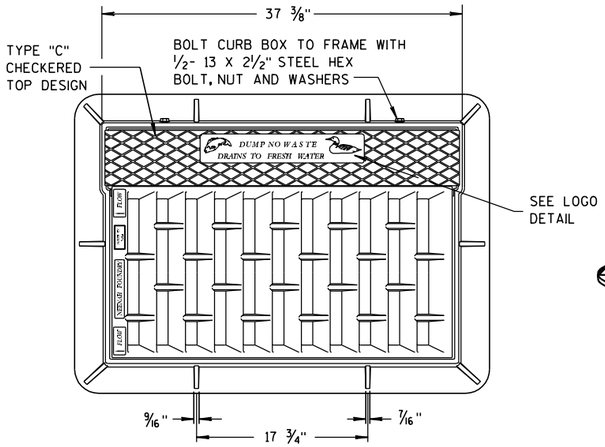
U:\42-0848.00 - St. Croix Co. CTH M over Apple River\RDWY\420848 pp SR.dgn 10/25/2013 $PLOT NA PENTABLE:BReau_shd_util.tbl BRIDGE 1:50

WISDOT/CADDS SHEET 40

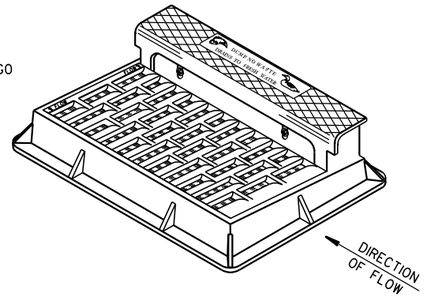
Standard Detail Drawing List

08A05-18A	INLET COVERS TYPE A, H, A-S, & H-S
08A05-18D	INLET COVER, TYPE BW, Z 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
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
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
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
12A03-10	NAME PLATE (STRUCTURES)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)

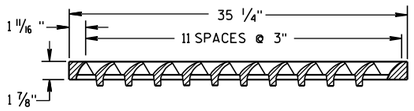
6

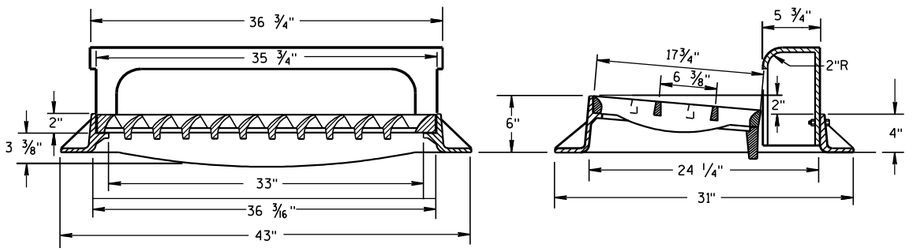


NOTE:
GRATE IS REVERSIBLE.



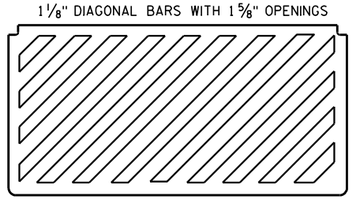
NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"





TYPE "H"

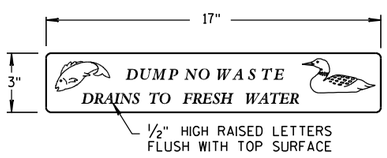
(APPROXIMATE WEIGHT 441 LBS.)
FRAME..... 181 LBS.
GRATE..... 146 LBS.
CURB BOX..... 114 LBS.



SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")
(APPROXIMATE WEIGHT 159 LBS.)
GRATE..... 159 LBS.

(NOTED AS TYPE H-S ON DRAINAGE TABLE)



LOGO DETAIL

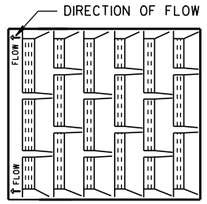
GENERAL NOTES

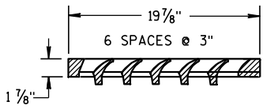
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

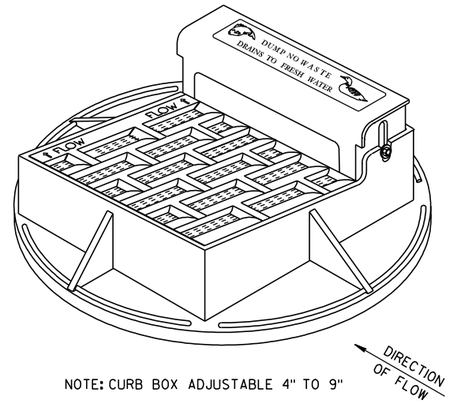
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

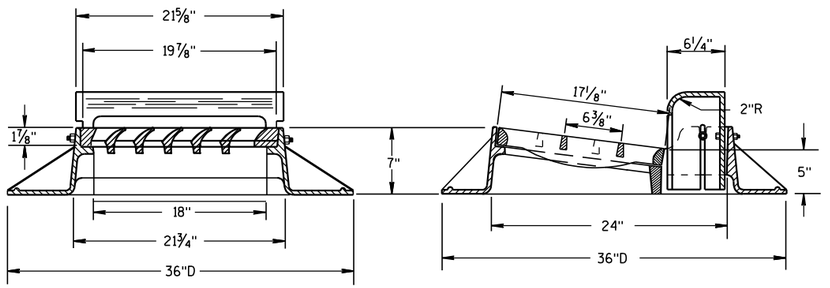
THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





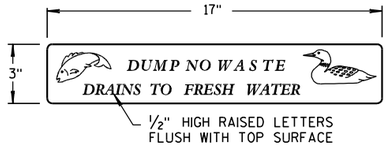


NOTE: CURB BOX ADJUSTABLE 4" TO 9"



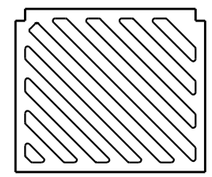
TYPE "A"

(APPROXIMATE WEIGHT 340 LBS.)
FRAME..... 185 LBS.
GRATE..... 71 LBS.
CURB BOX..... 84 LBS.



LOGO DETAIL

NOTE:
GRATE IS REVERSIBLE.



SPECIAL GRATE FOR TYPE "A" COVER

(MEASURES 19 3/4" X 17" X 1 7/8"
GRATE..... 84 LBS.

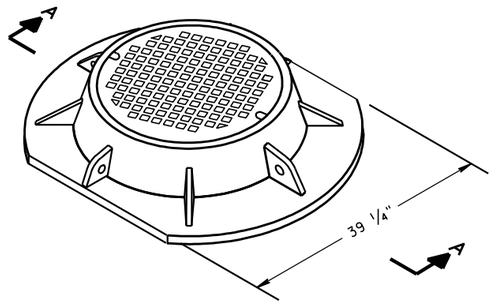
(NOTED AS TYPE A-S ON DRAINAGE TABLE)

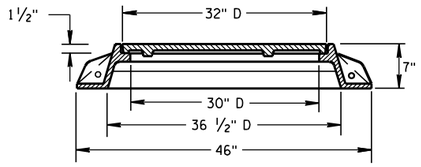
INLET COVERS
TYPE A, H, A-S, & H-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. [illegible] ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 8 A 5-18a



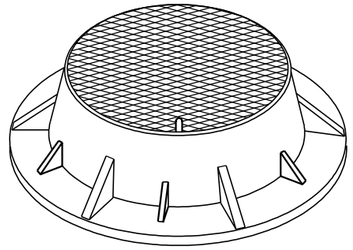


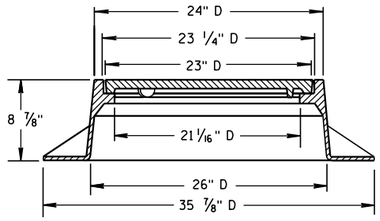
SECTION A-A

TYPE "K"

(APPROXIMATE WEIGHT 439 LBS.)

FRAME.....216 LBS.
LID.....223 LBS.

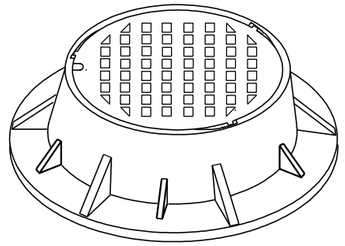


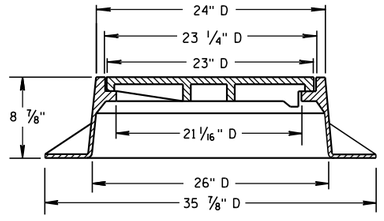


TYPE "J"

(APPROXIMATE WEIGHT 267 LBS.)

FRAME.....152 LBS.
LID.....115 LBS.





TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID

(APPROXIMATE WEIGHT 267 LBS.)

FRAME.....158 LBS.
LID.....109 LBS.

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

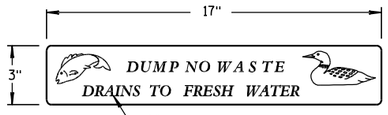
GENERAL NOTES

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.

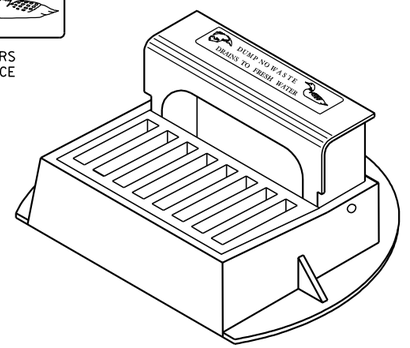
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

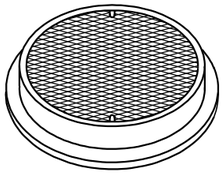
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

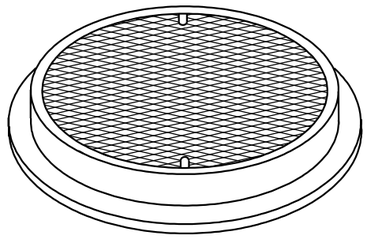
THE ACTUAL WEIGHT OF COVERS MAY VARY WITH 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

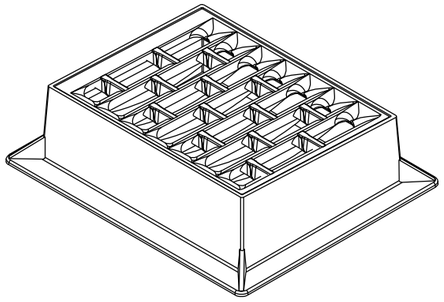


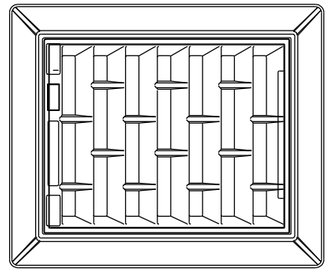
LOGO DETAIL

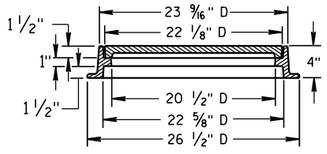








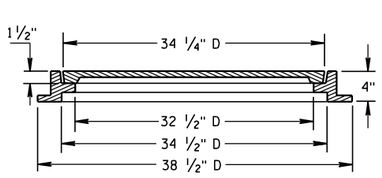




TYPE "L"

(APPROXIMATE WEIGHT 158 LBS.)

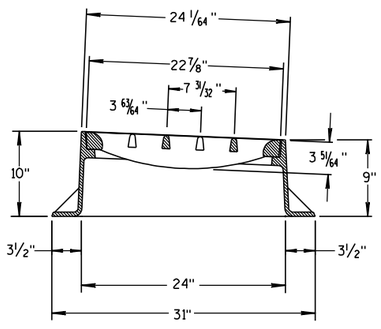
FRAME.....81 LBS.
LID.....77 LBS.

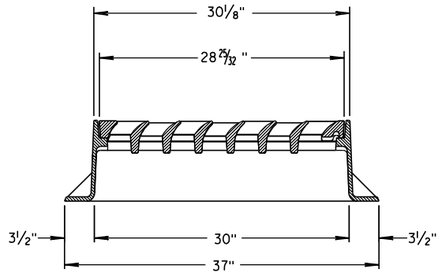


TYPE "M"

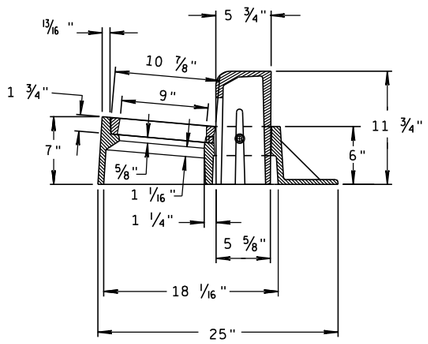
(APPROXIMATE WEIGHT 377 LBS.)

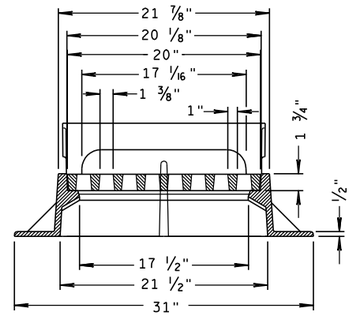
FRAME..... 125 LBS.
LID..... 252 LBS.





INLET COVER TYPE "BW"





INLET COVER TYPE "Z"

(APPROXIMATE WEIGHT 344 LBS.)

FRAME.....206 LBS.
GRATE..... 46 LBS.
CURB BOX..... 92 LBS.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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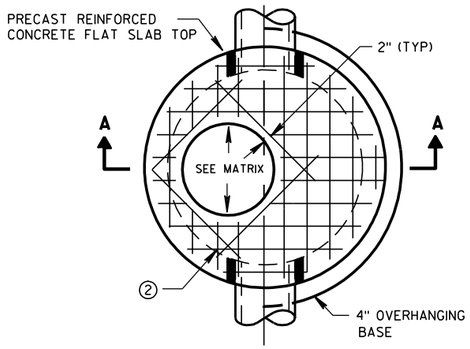
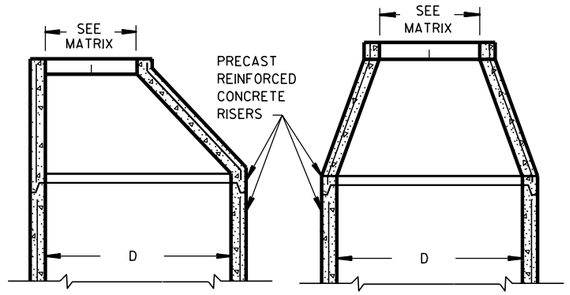
S.D.D. 8 A 5-18d

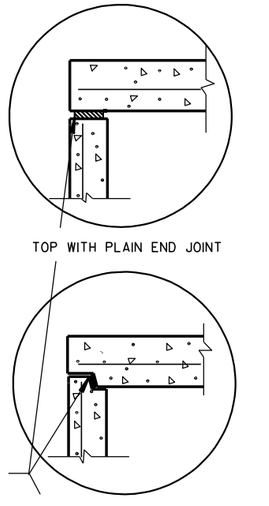


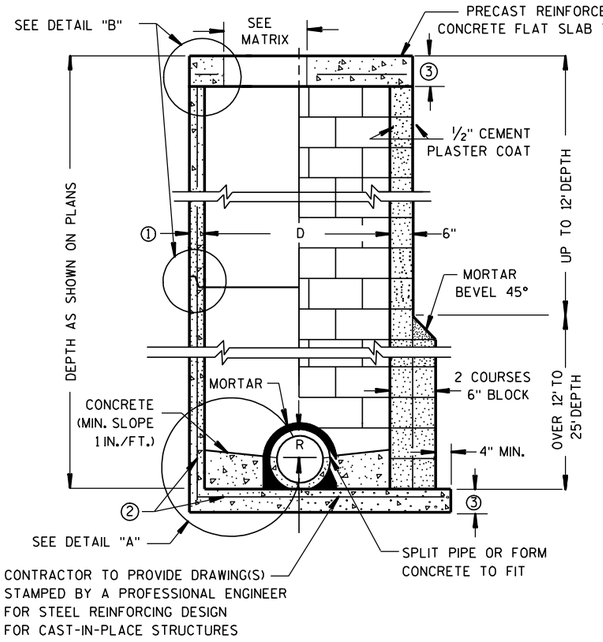
PLAN VIEW CIRCULAR OPENING



OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

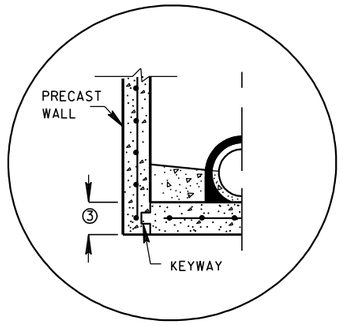
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



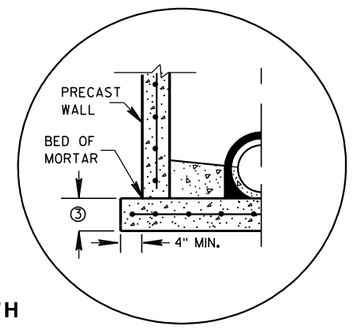


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

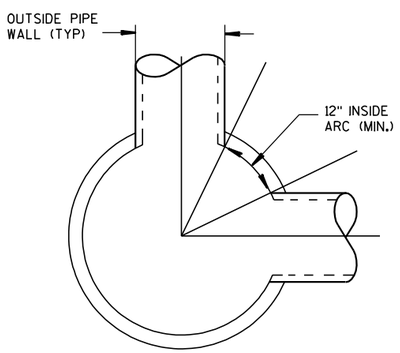


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

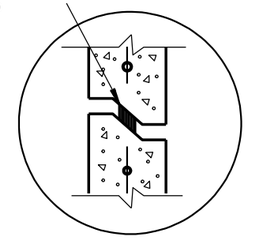


SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



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 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 SEPERATE 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
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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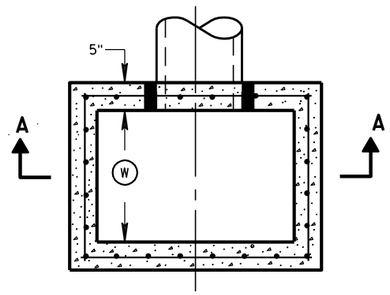
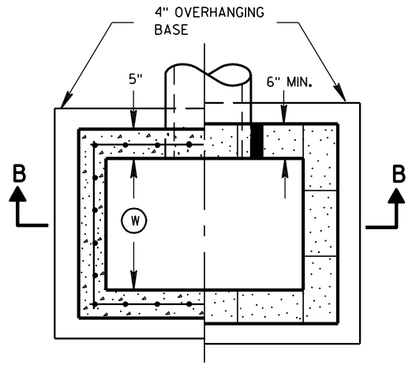
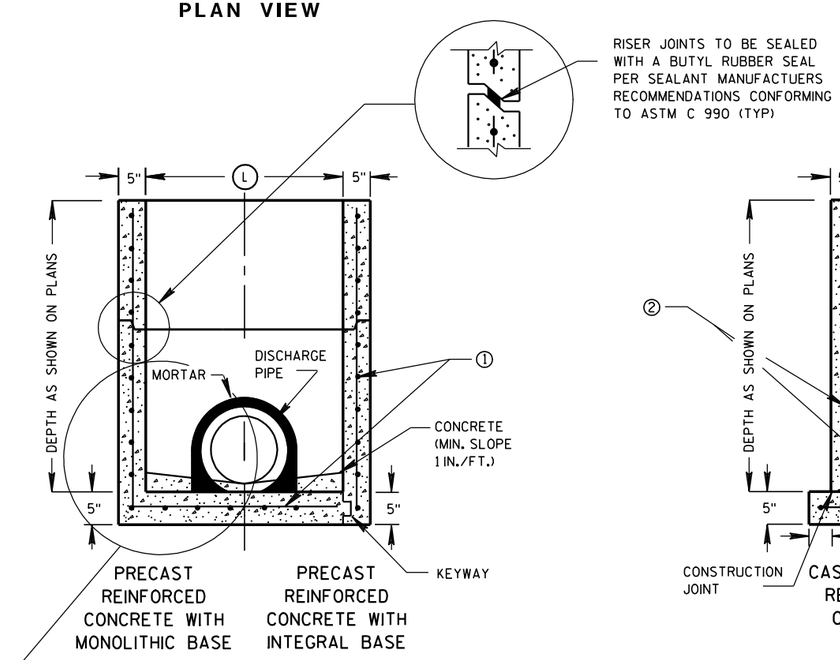


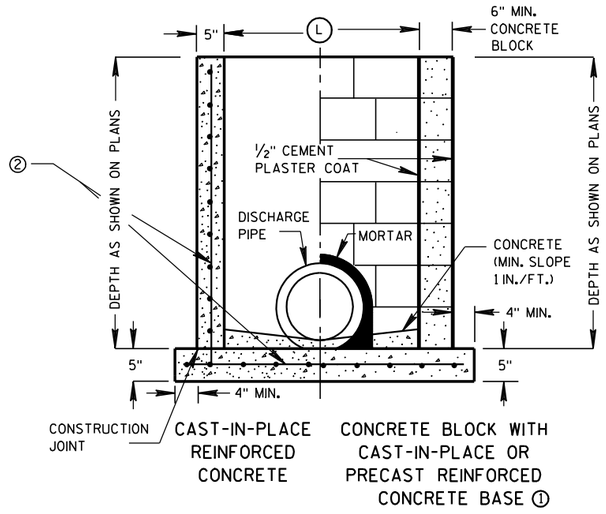
PLAN VIEW



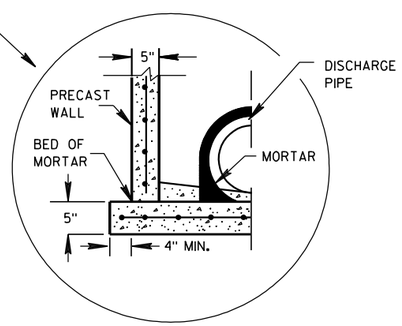
PLAN VIEW



SECTION A-A



SECTION B-B



SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

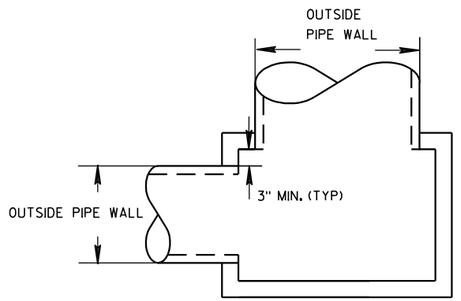
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



DETAIL "A"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS D ENGINEER
FHWA

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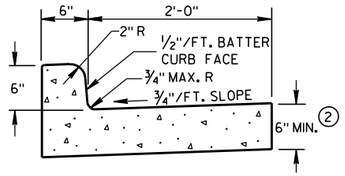
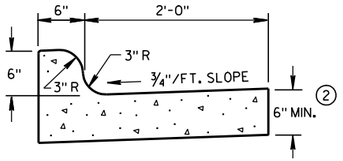
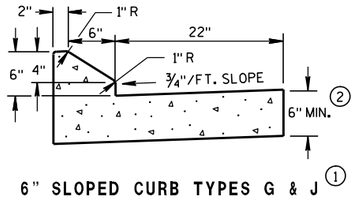
S.D.D. 8 C 7-1



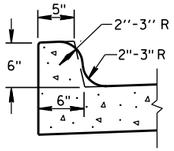
TYPES A & D (1)



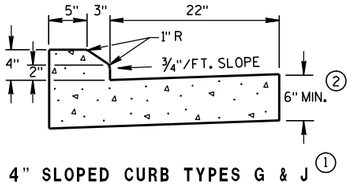
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

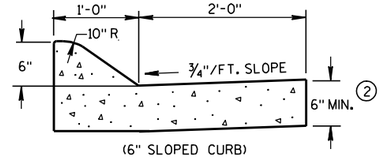


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

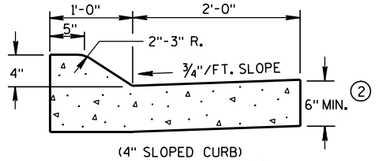


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

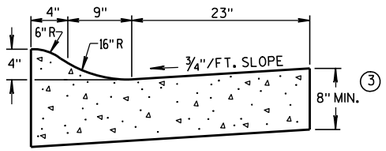


(6" SLOPED CURB)



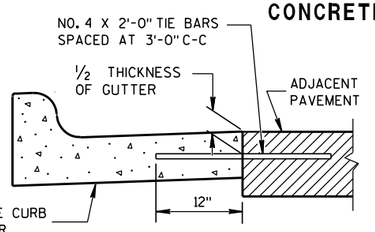
(4" SLOPED CURB)

TYPES A & D (1)

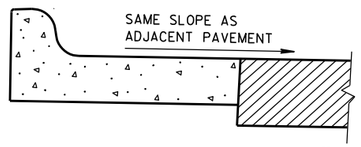


4" SLOPED CURB TYPES R & T (1) (4)

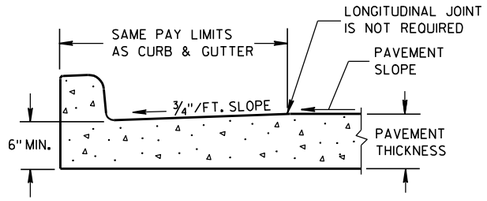
CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION (1)



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



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

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.

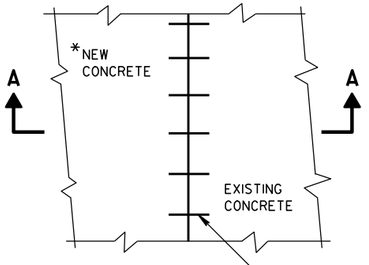
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(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.

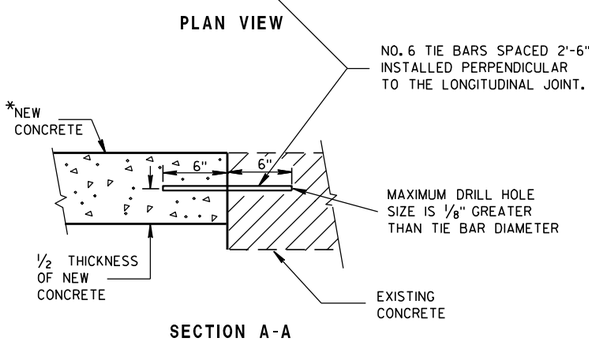
(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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



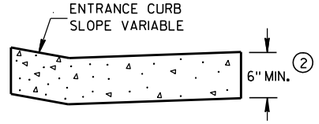
PLAN VIEW

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

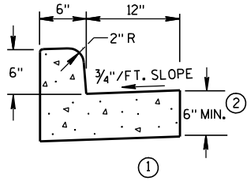


SECTION A-A

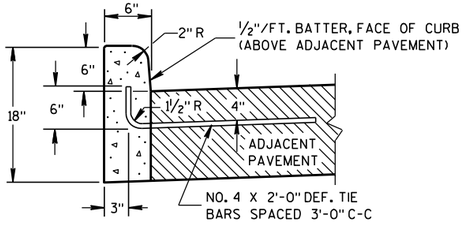
TIE BARS DRILLED INTO EXISTING PAVEMENT



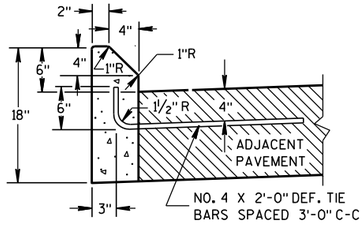
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



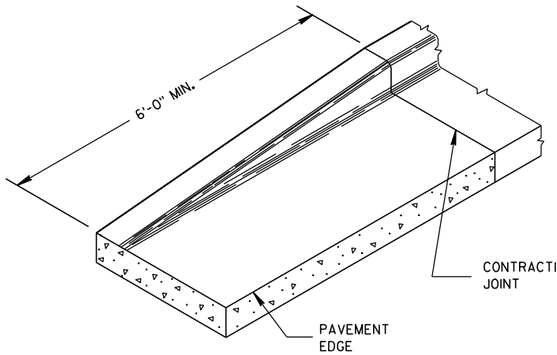
(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES A & D



(1)
TYPES G & J



END SECTION CURB & GUTTER

CONCRETE CURB

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

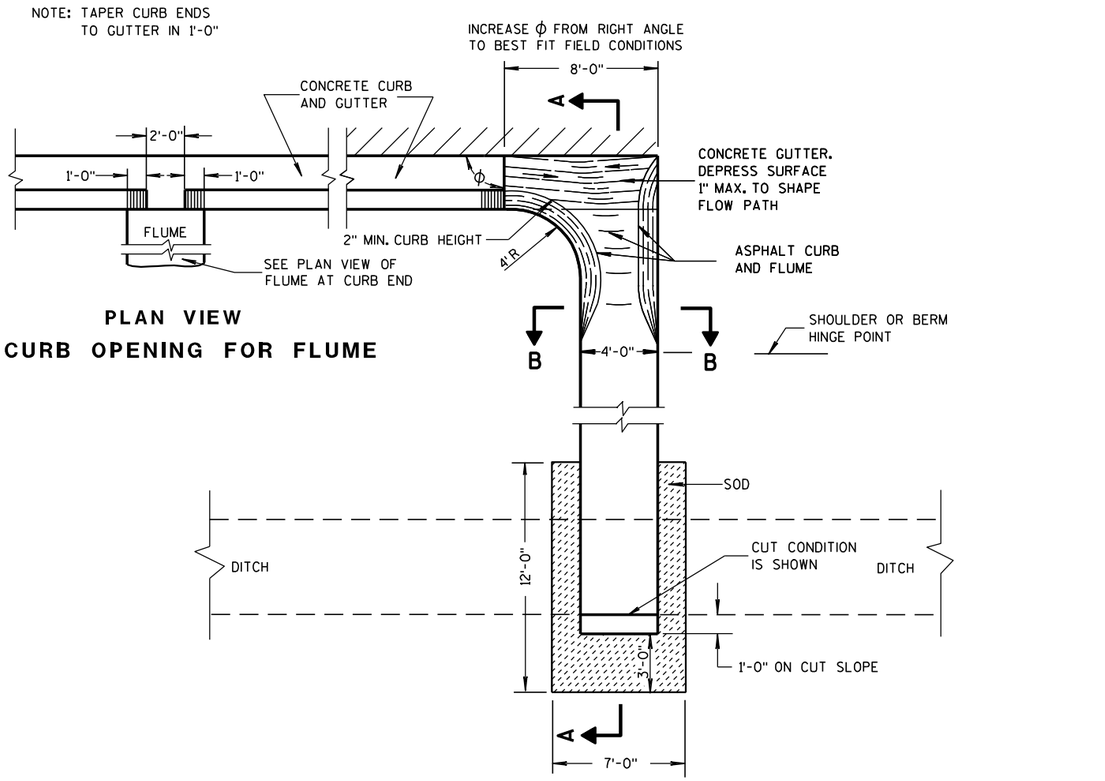
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

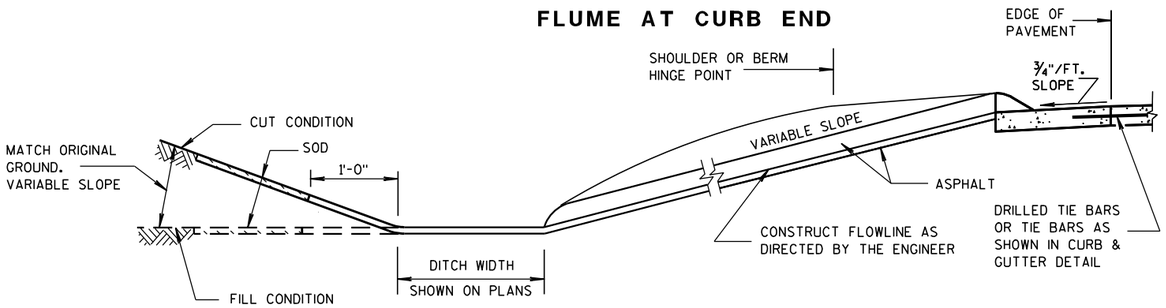
S.D.D. 8 D 1-17

ASPHALTIC FLUME

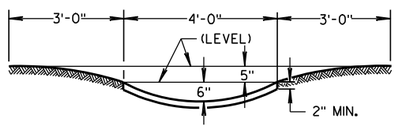


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

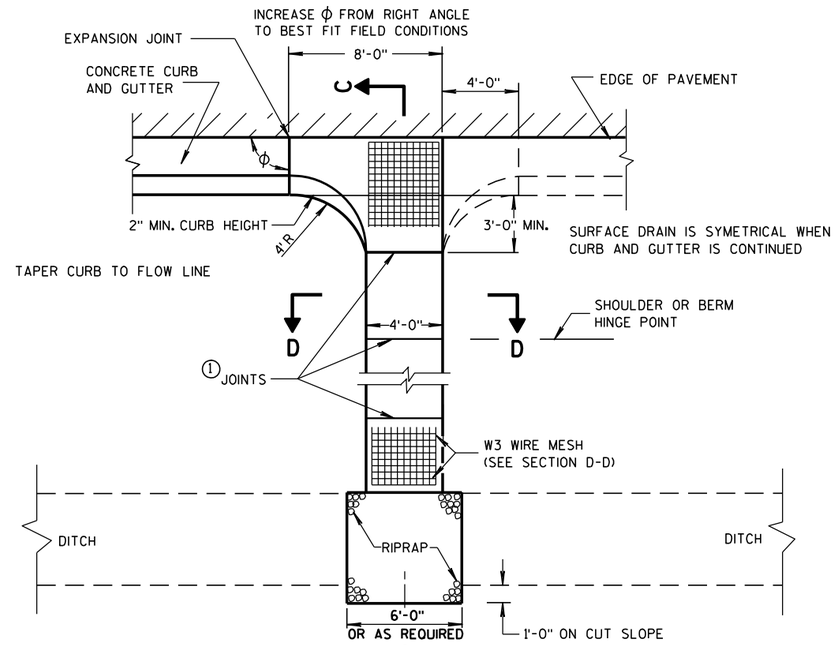
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

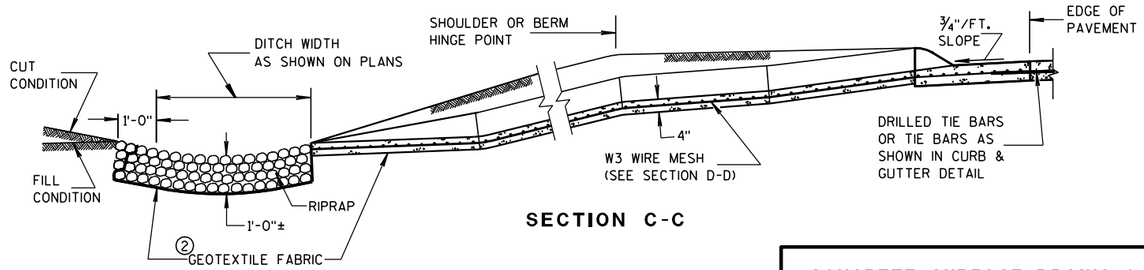
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

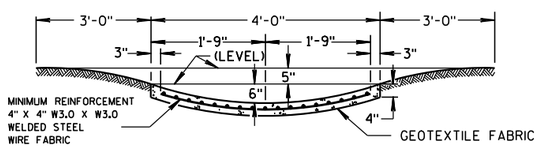
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

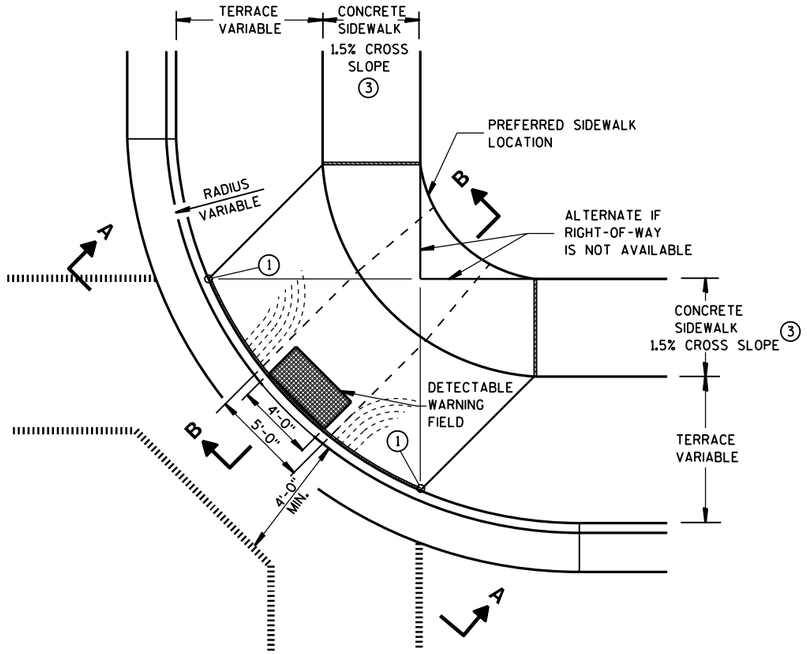
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
28
MENT
FHWA

6

S.D.D. 8 D 4-5

6

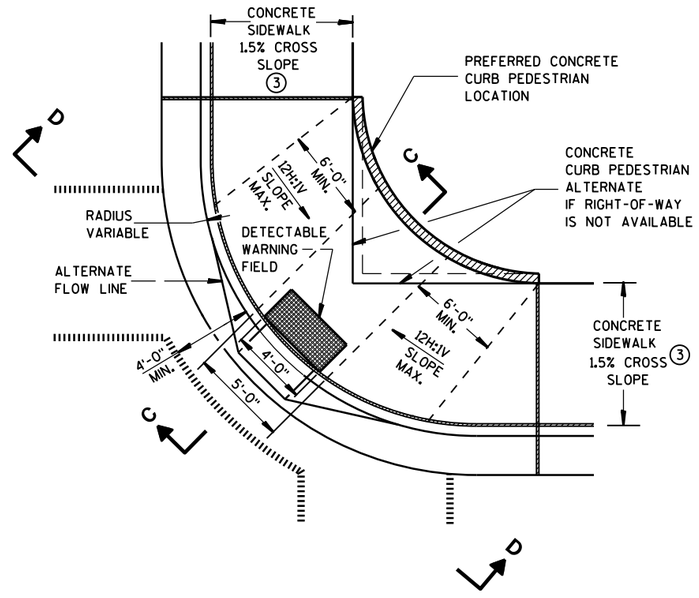
S.D.D. 8 D 4-5



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.

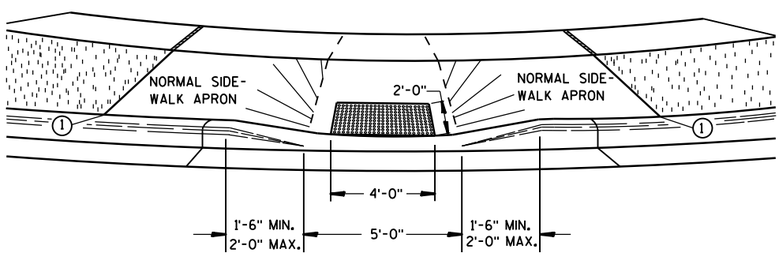
① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.

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.

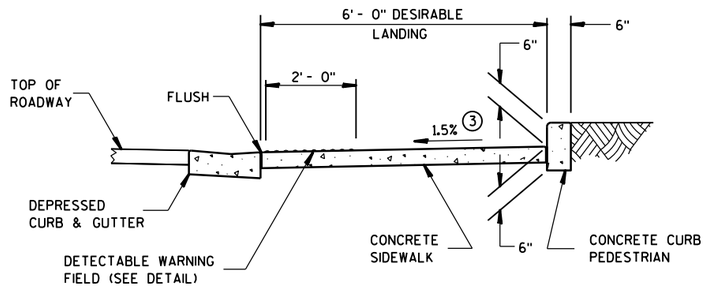
③ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

LEGEND

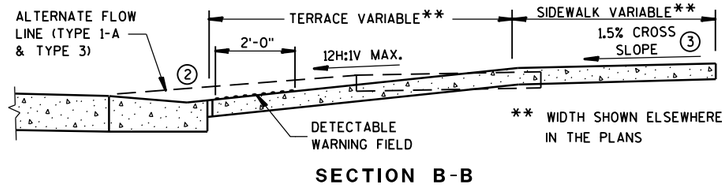
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



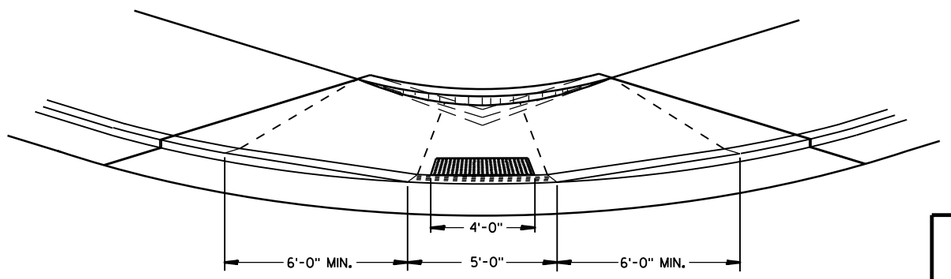
VIEW A-A



SECTION C-C



SECTION B-B



VIEW D-D

CURB RAMPS TYPES 1 AND 1-A

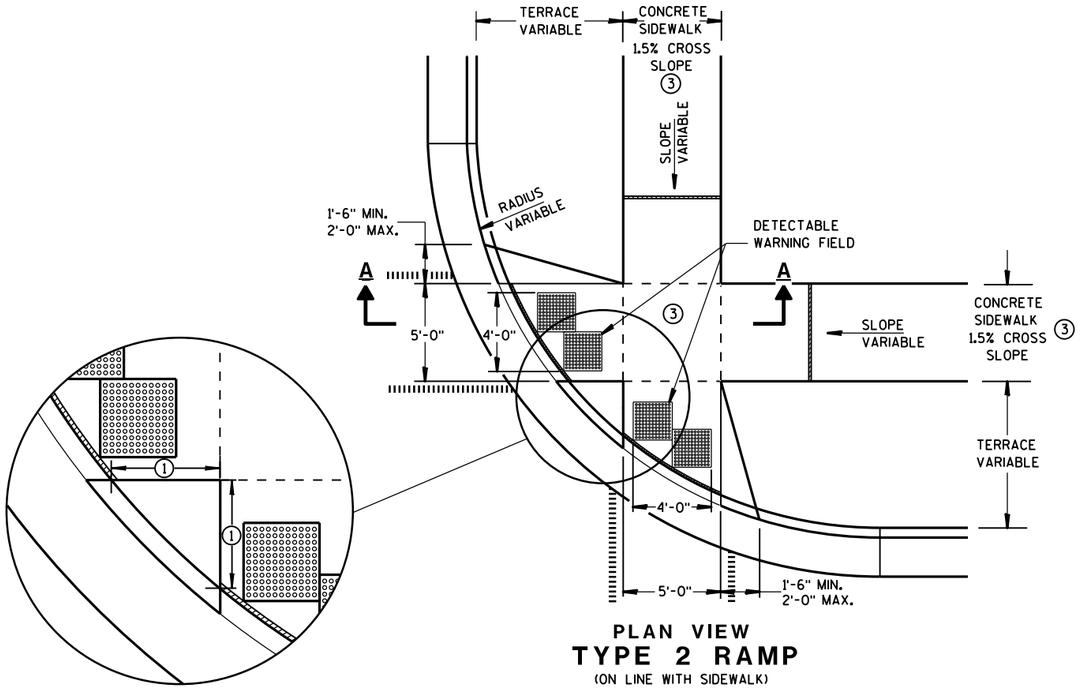
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

6

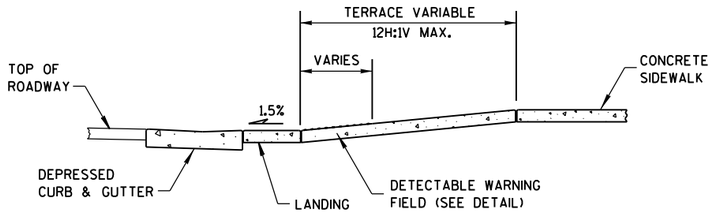
S.D.D. 8 D 5-15a



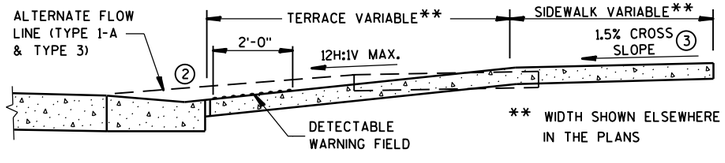
PLAN VIEW

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.

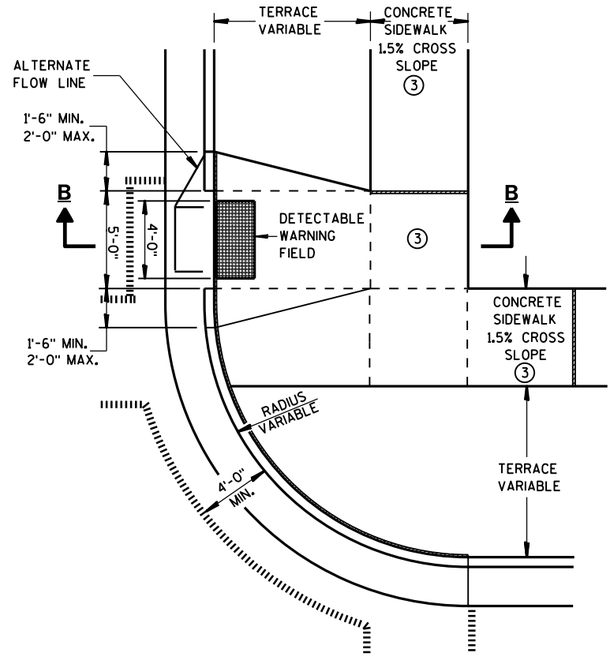
① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.

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

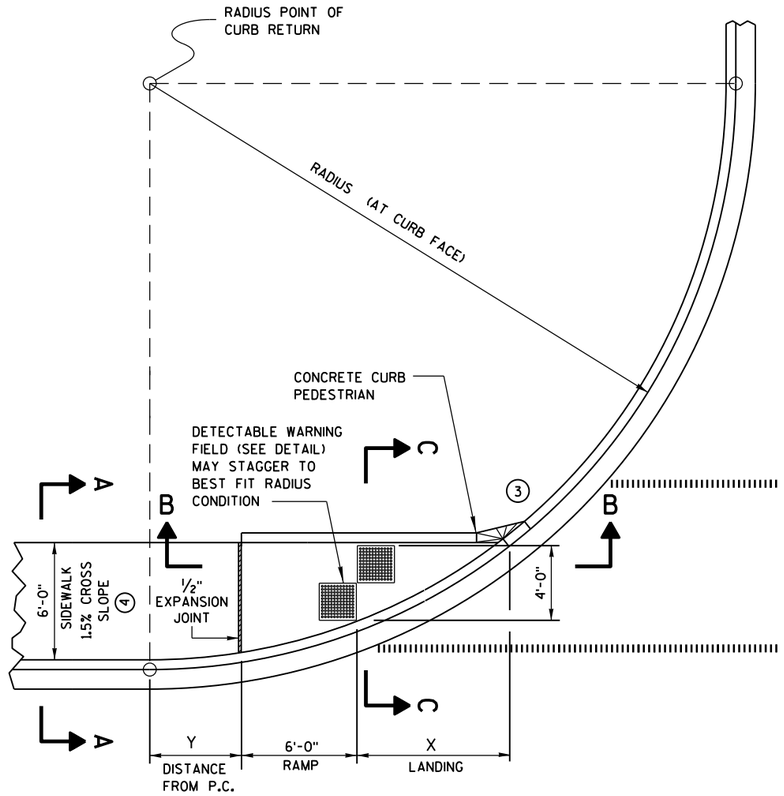
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

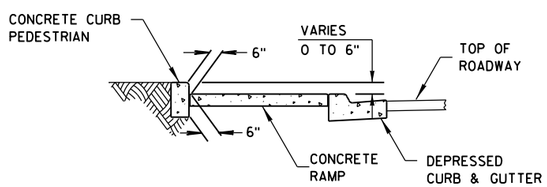
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

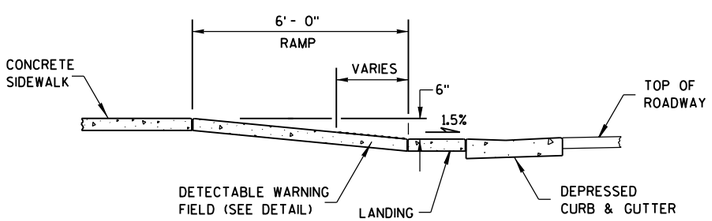
S.D.D. 8 D 5-15b



CURB RAMP TYPE 4A
PLAN VIEW



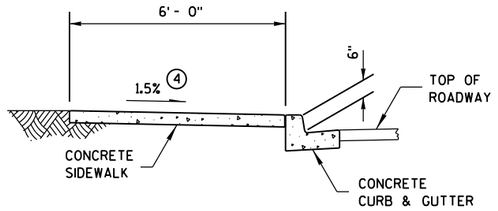
SECTION C-C FOR TYPE 4A



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

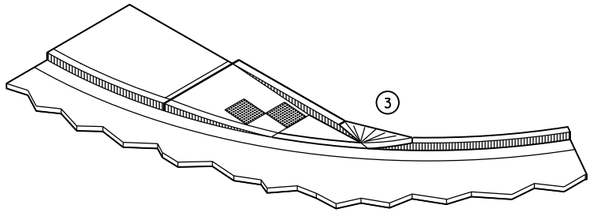
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

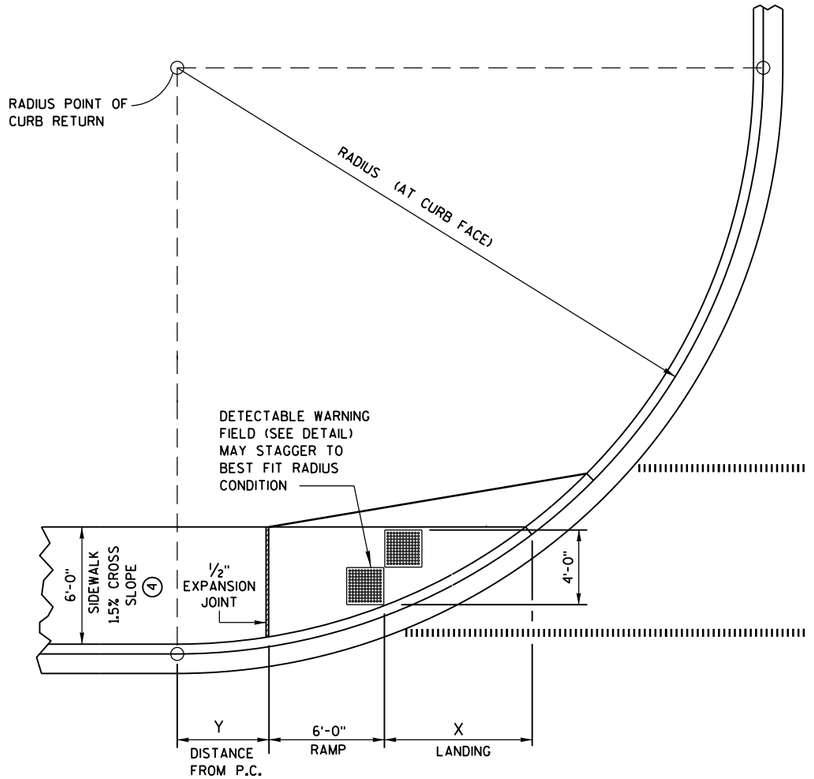
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

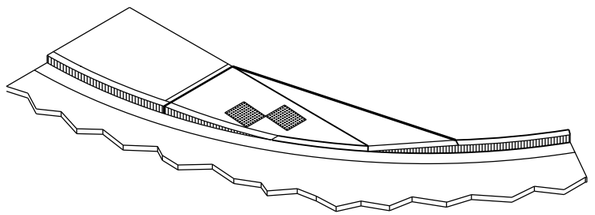
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

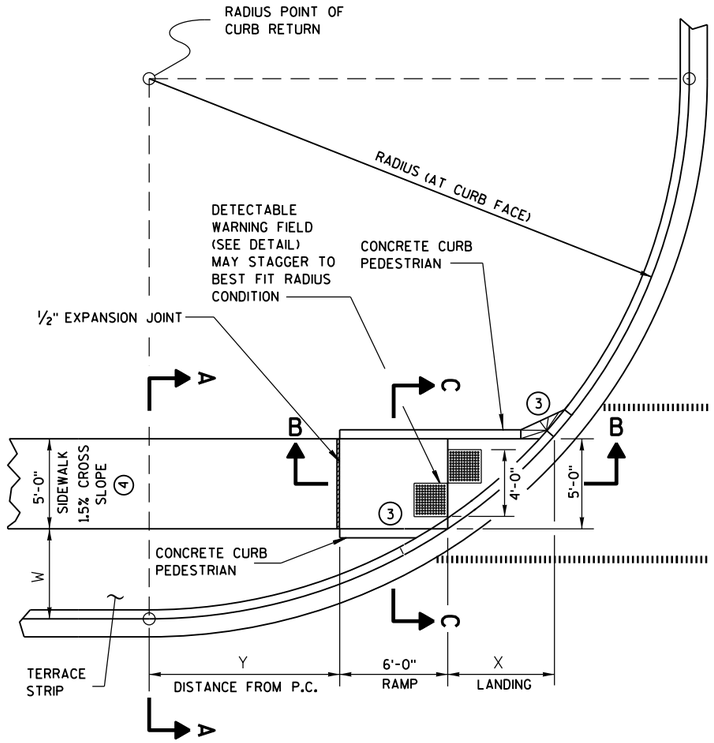
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 4A AND 4A1

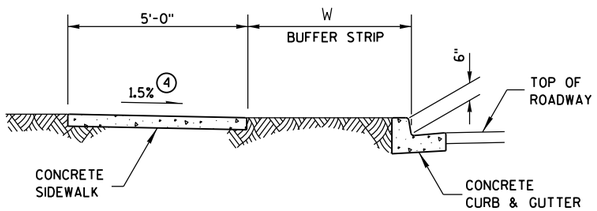
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

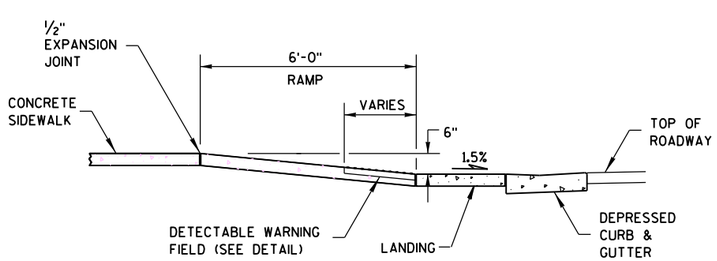
S.D.D. 8 D 5-15c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



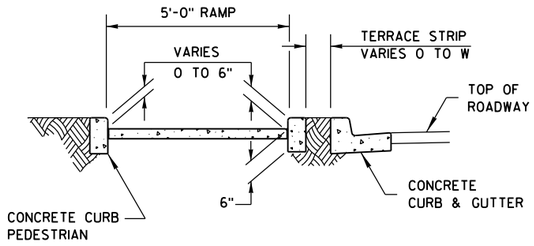
SECTION B-B FOR TYPE 4B

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



SECTION C-C FOR TYPE 4B

GENERAL NOTES

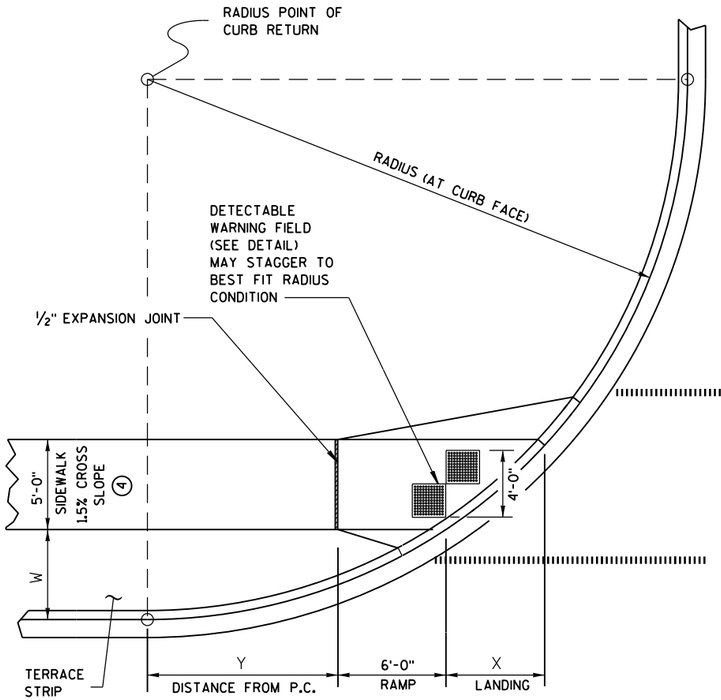
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

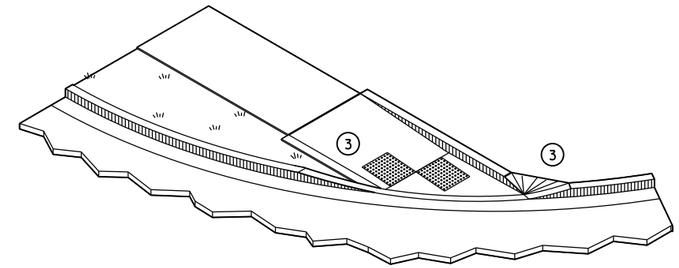
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

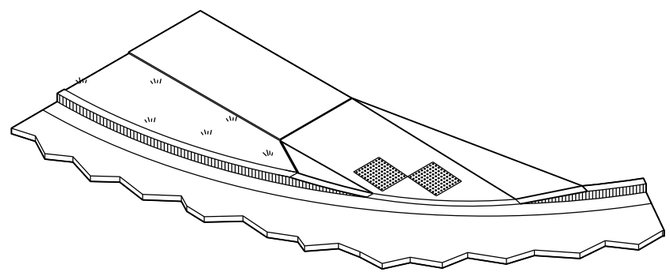
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



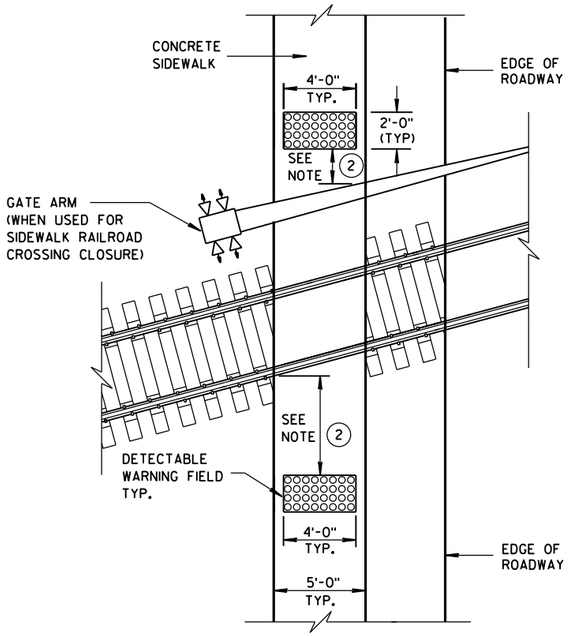
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS
TYPE 4B AND 4B1

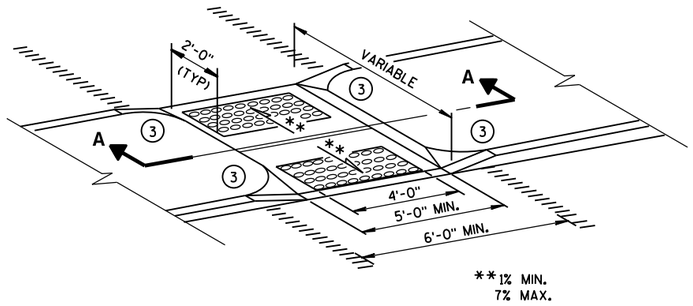
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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%.

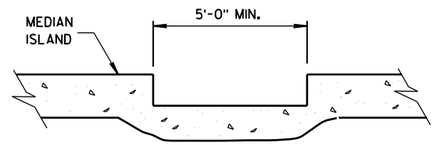
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

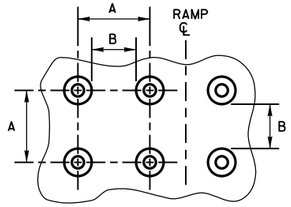
(2) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET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



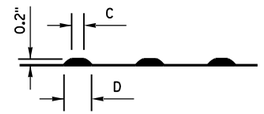
SECTION A-A



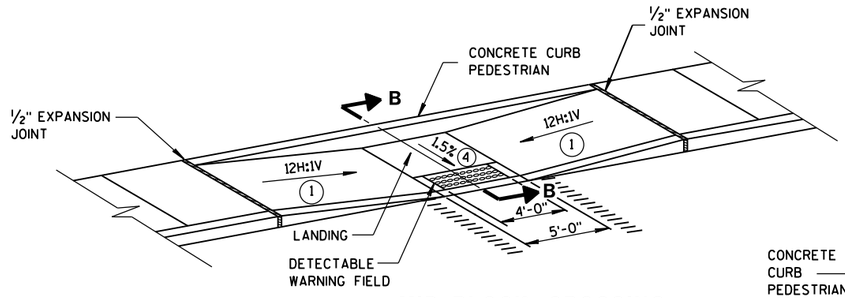
PLAN VIEW

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

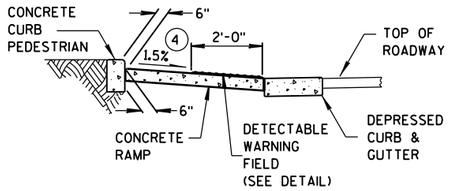
* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



ELEVATION VIEW

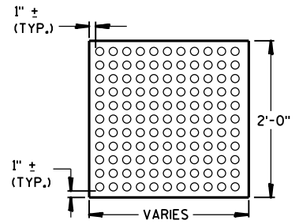


MID-BLOCK CROSSING
TYPE 7A



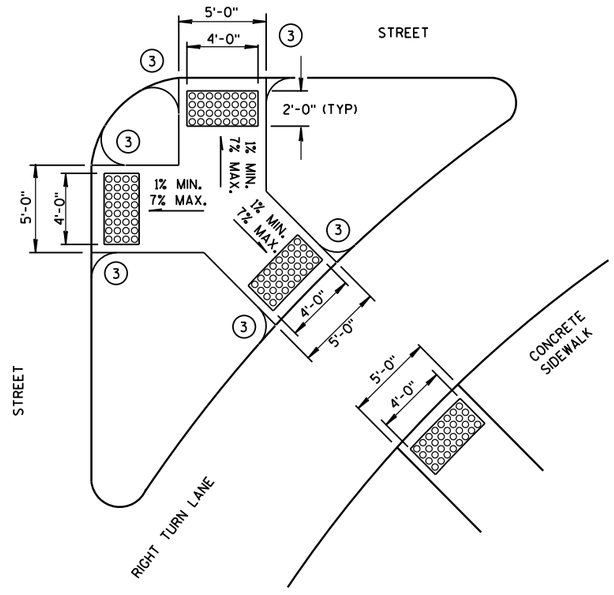
SECTION B-B

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

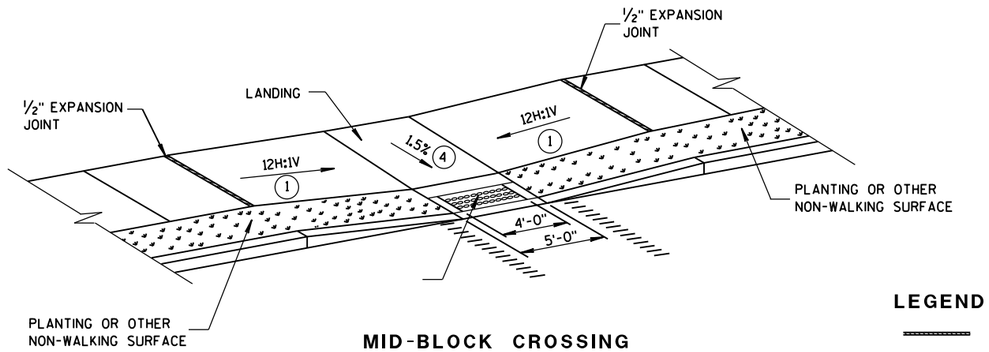


PLAN VIEW

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)

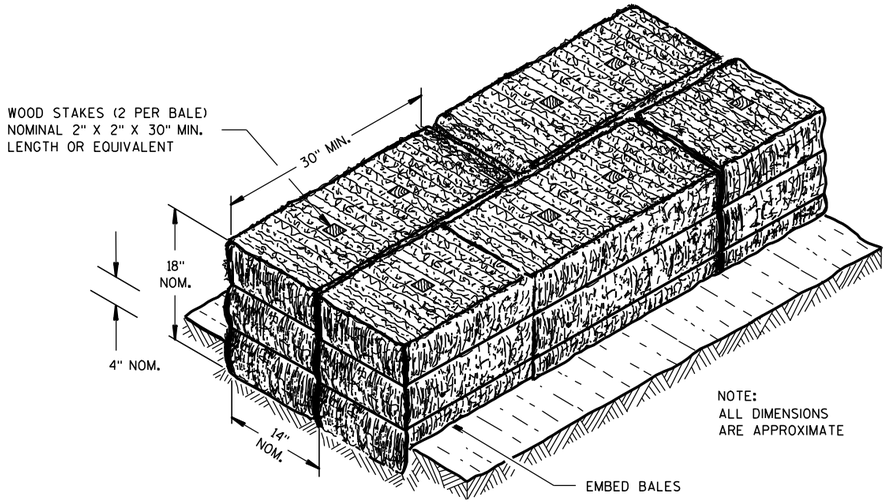
CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

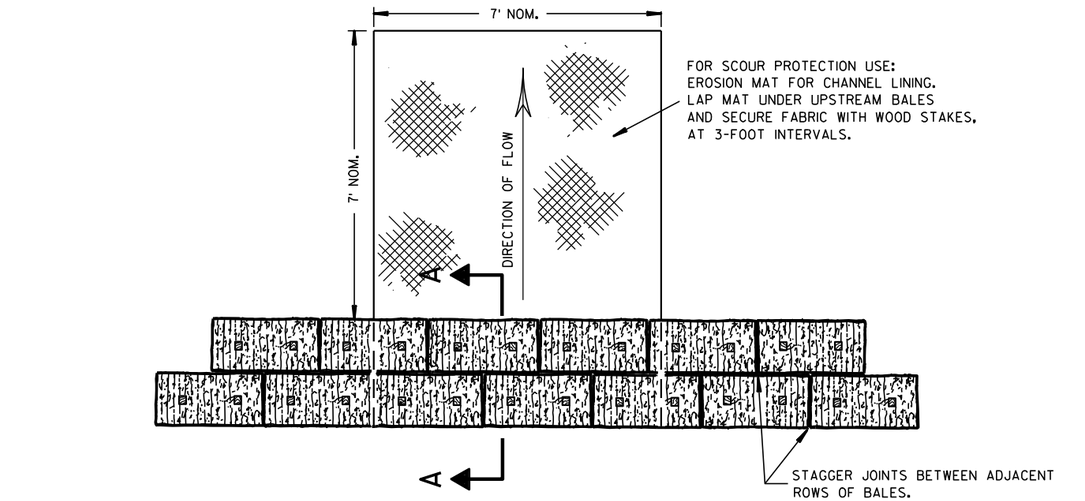
APPROVED
2-6-2013 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

6

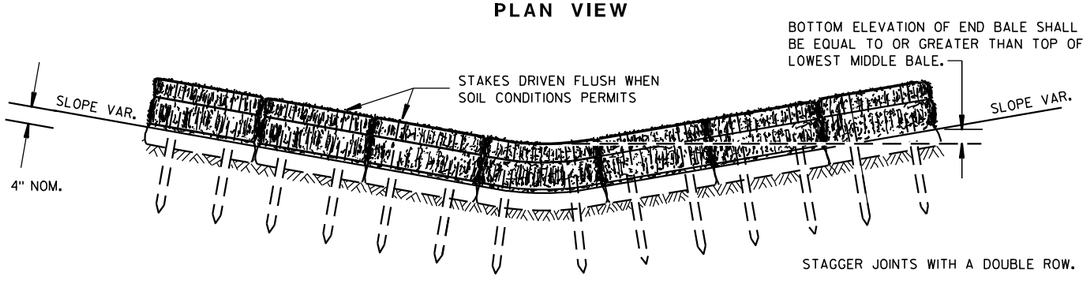
S.D.D. 8 D 5-15e



SECTION A-A



PLAN VIEW



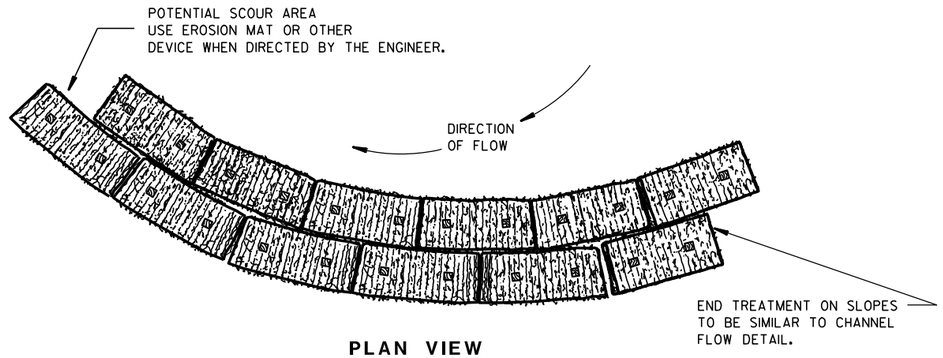
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

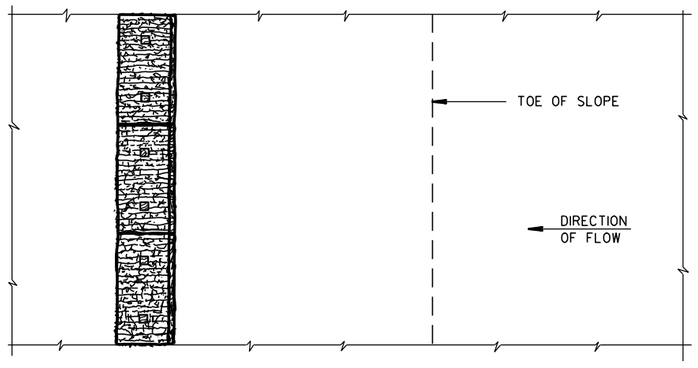
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

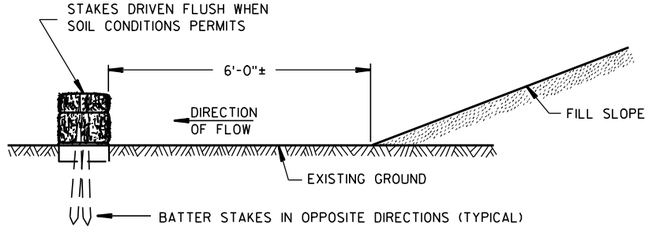


PLAN VIEW

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

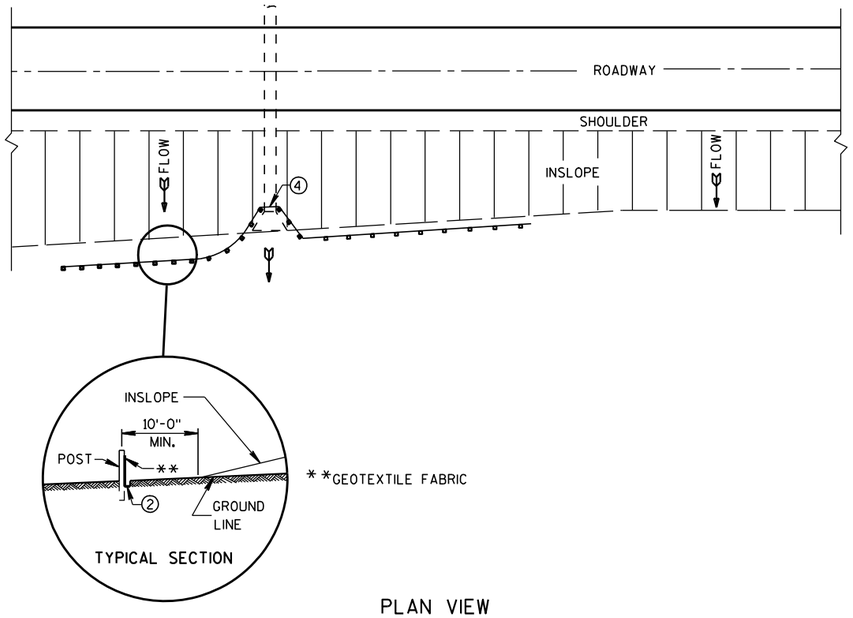
FHWA

6

S.D.D. 8 E 8-3

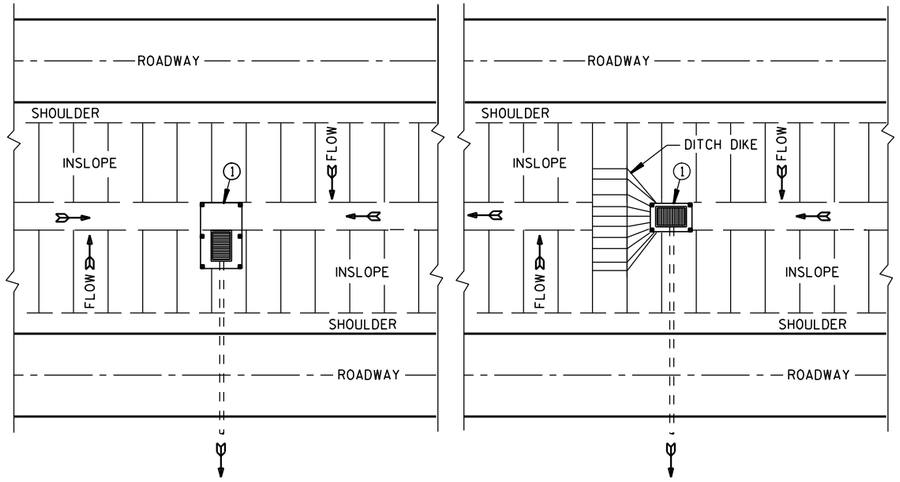
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

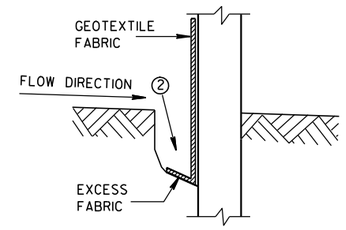
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

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.

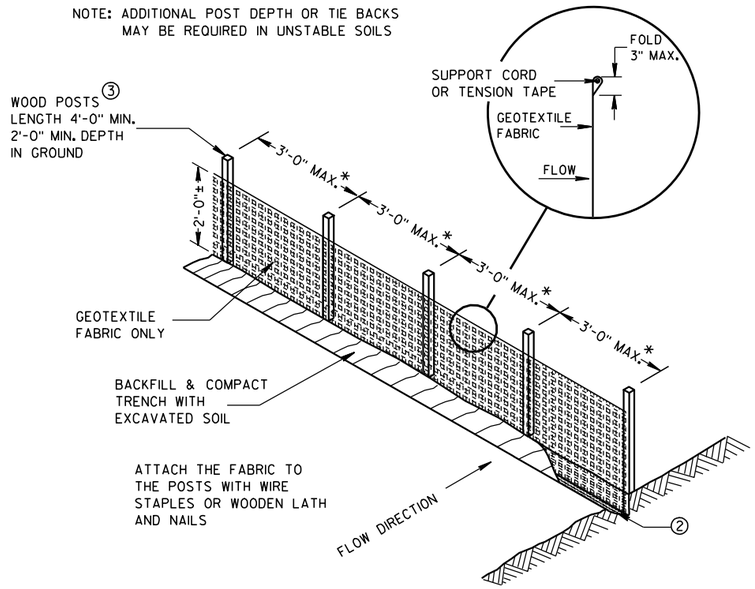
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

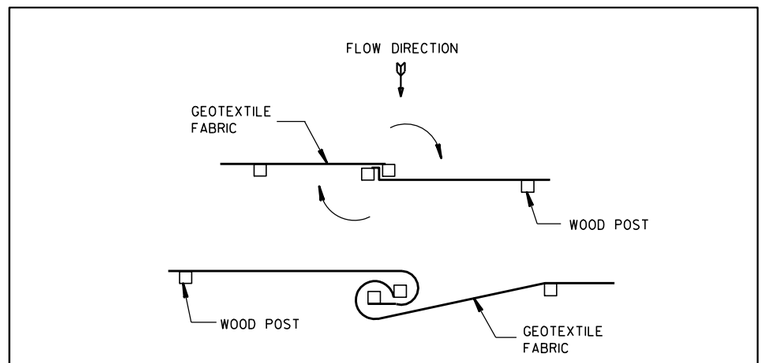
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



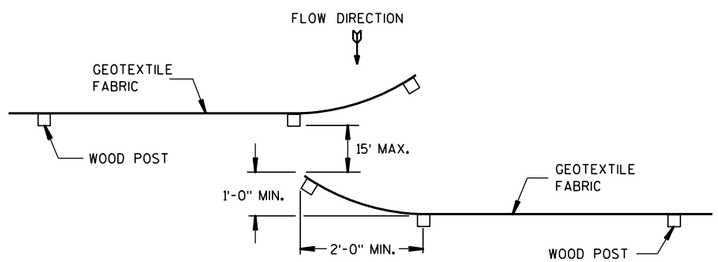
TRENCH DETAIL



SILT FENCE

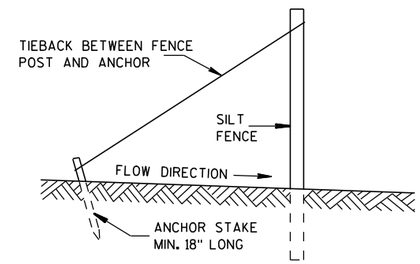


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

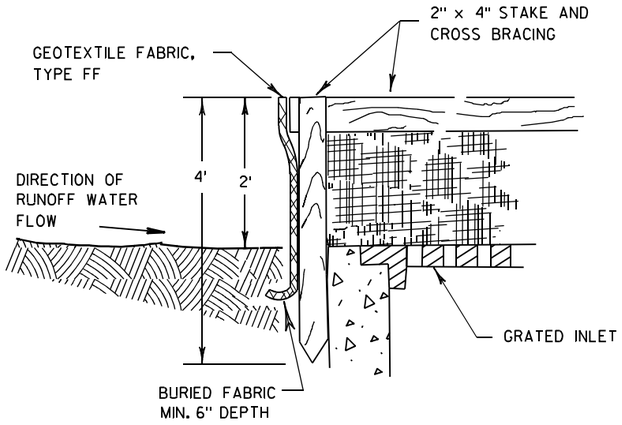
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

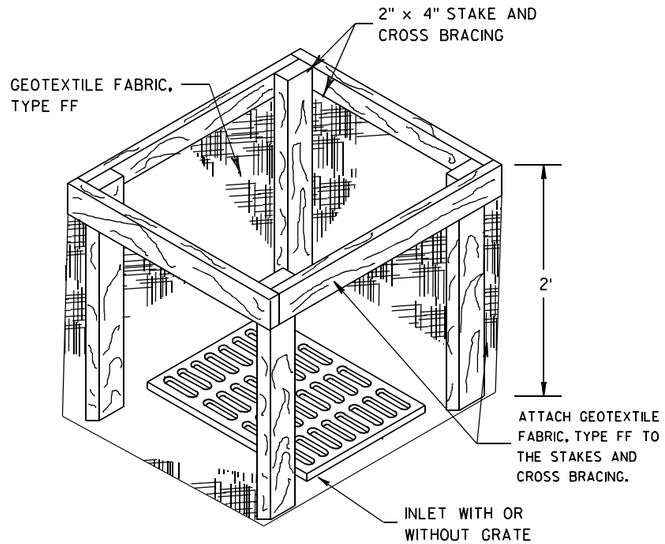
6

S.D.D. 8 E 9-6

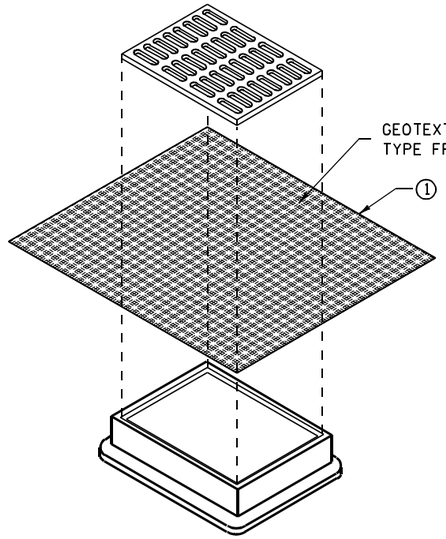
6

S.D.D. 8 E 9-6



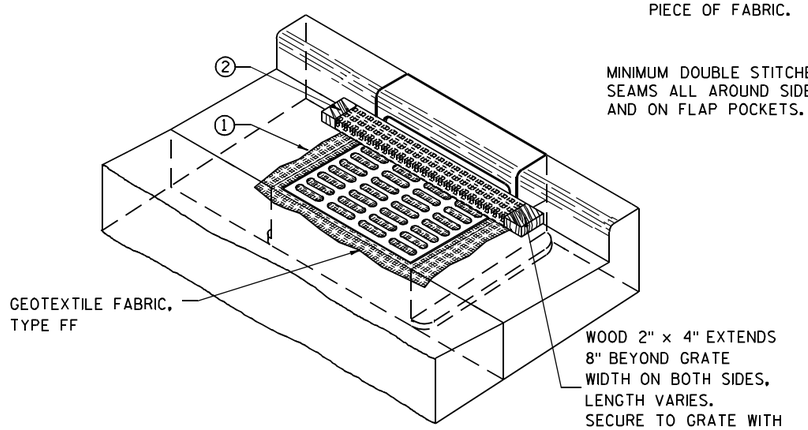


INLET PROTECTION, TYPE A

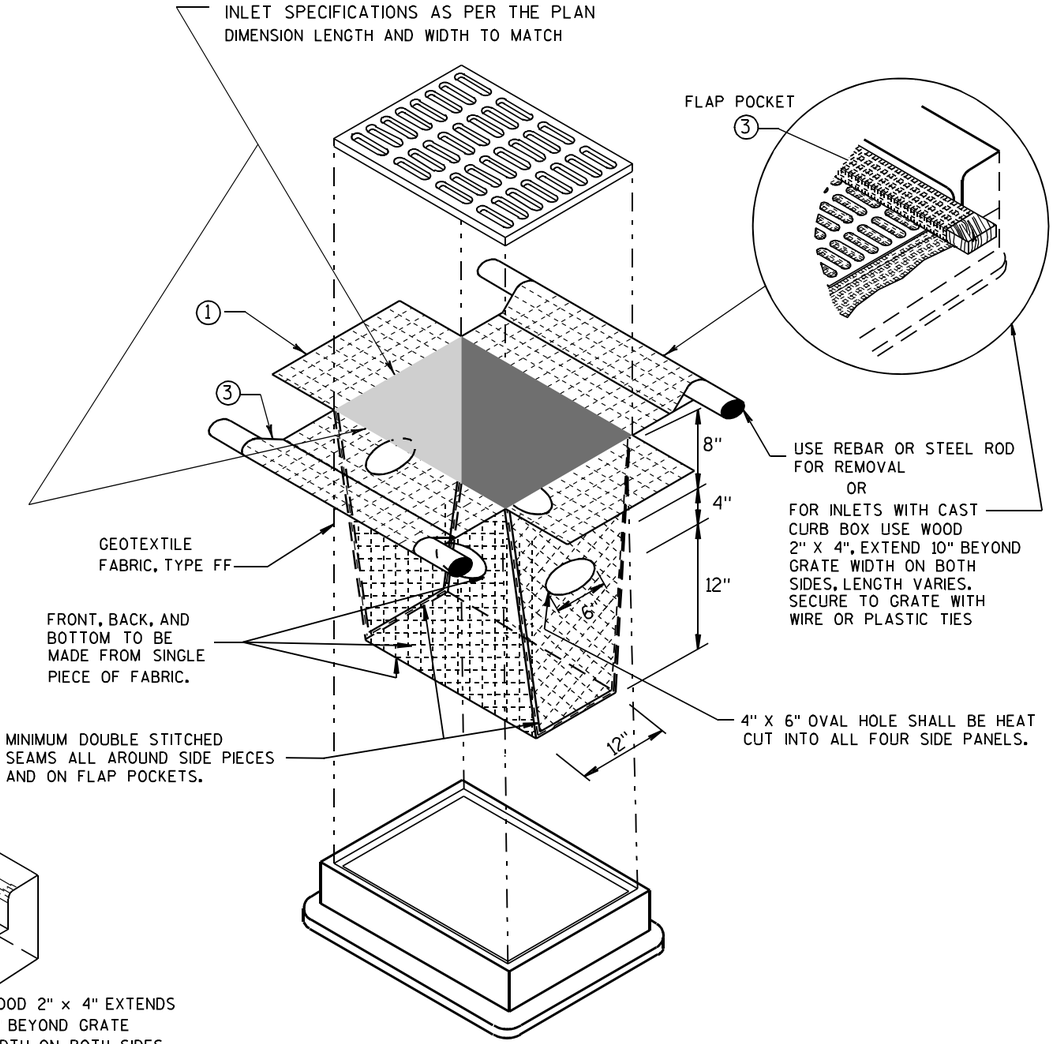


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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

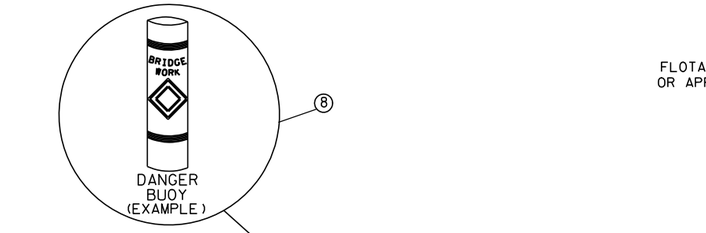
APPROVED

10/16/02
DATE

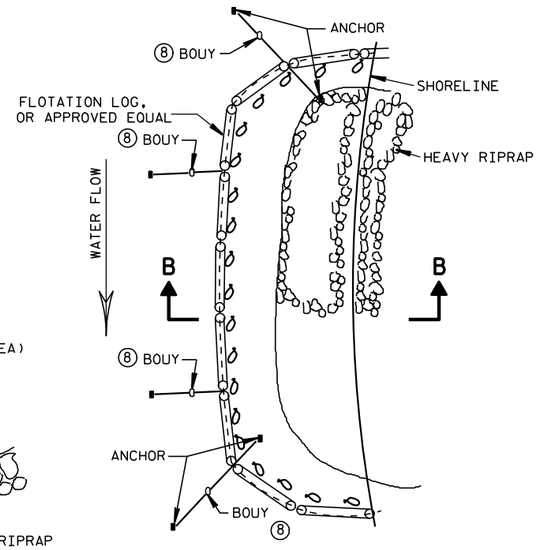
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

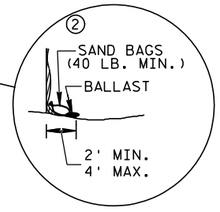
FHWA

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

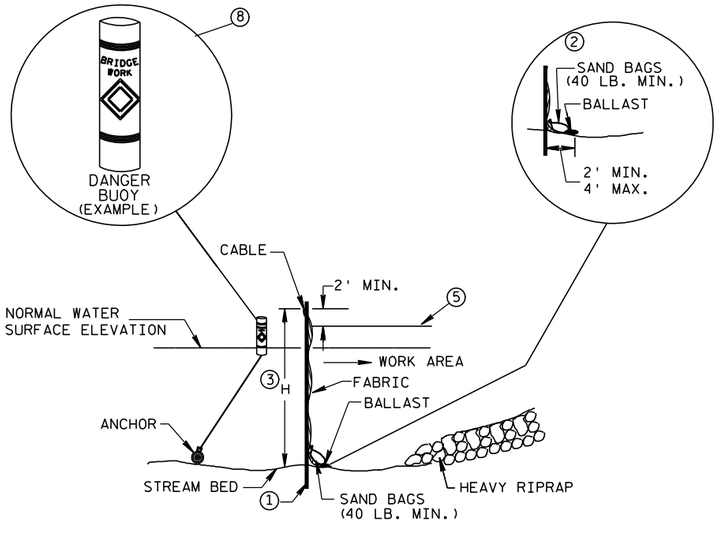


SECTION B-B

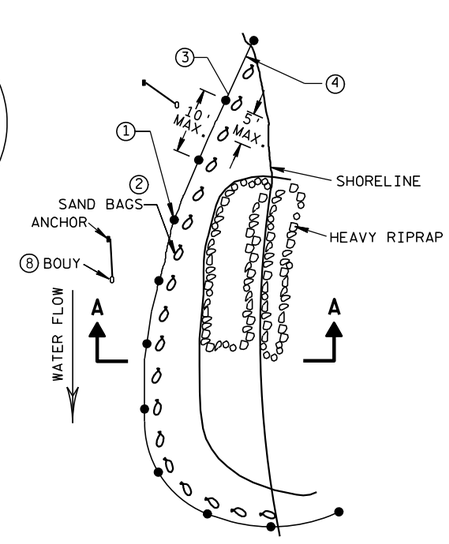




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

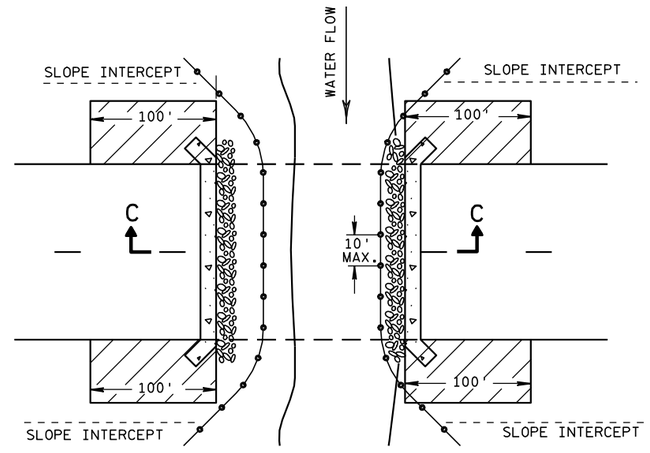
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

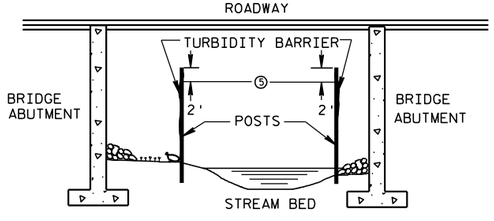
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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6

S.D.D. 8 E 11-2

METAL APRON ENDWALLS

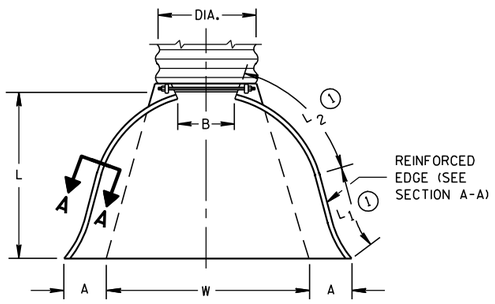
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

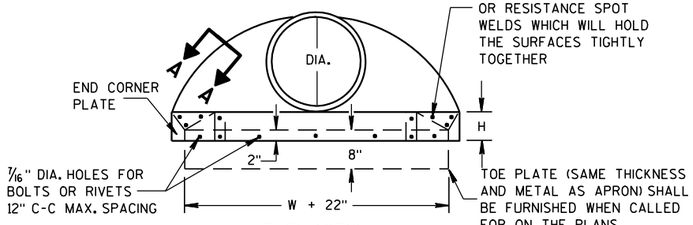
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
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

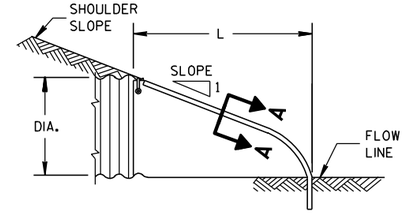
* MINIMUM
** MAXIMUM



PLAN VIEW

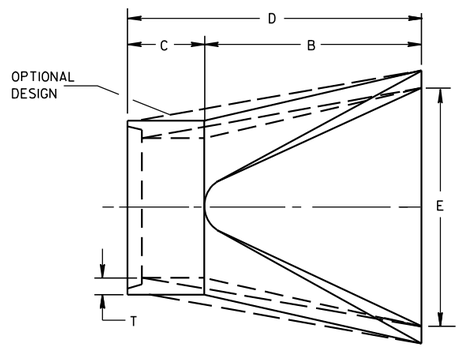


END VIEW

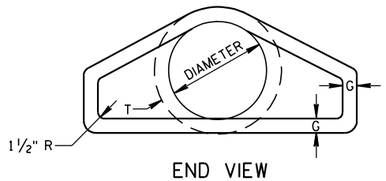


SIDE ELEVATION

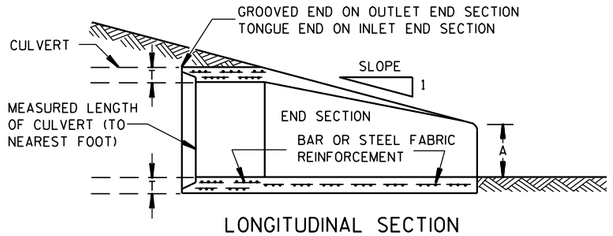
METAL ENDWALLS



PLAN

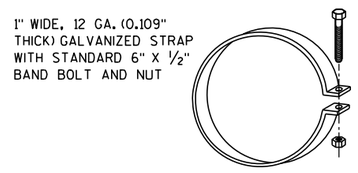


END VIEW



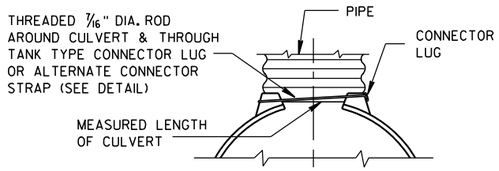
LONGITUDINAL SECTION

CONCRETE ENDWALLS

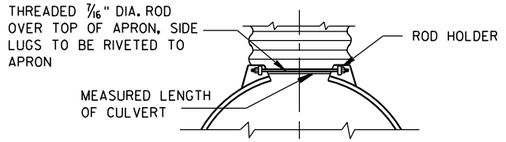


ALTERNATE FOR TYPE 1 CONNECTION

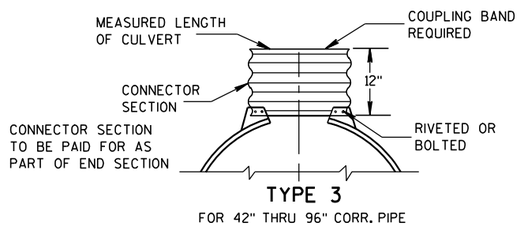
END SECTION CONNECTOR STRAP



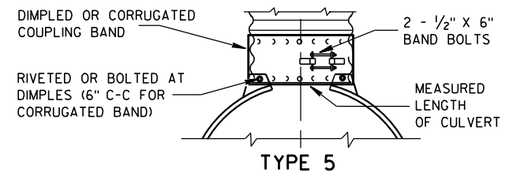
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

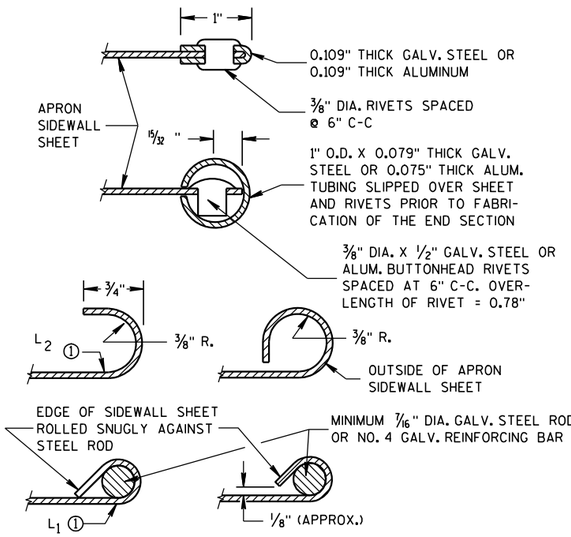
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

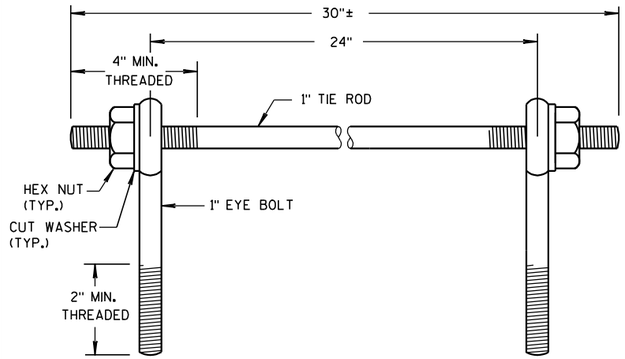
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

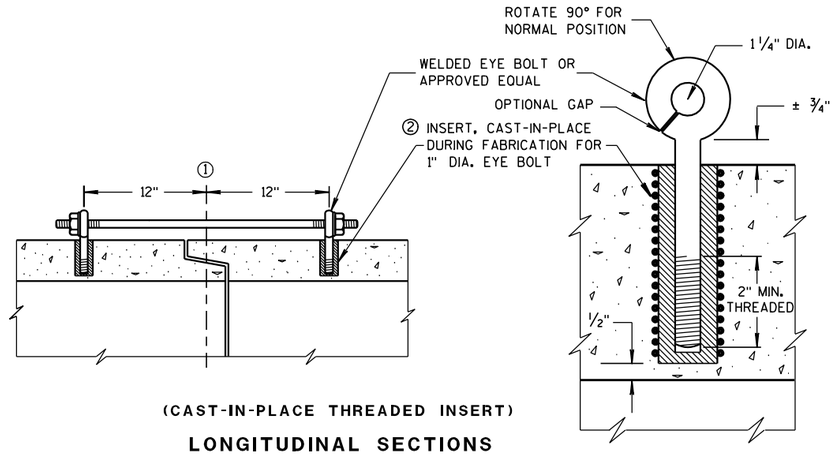
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



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.

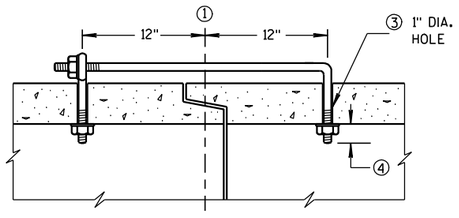
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

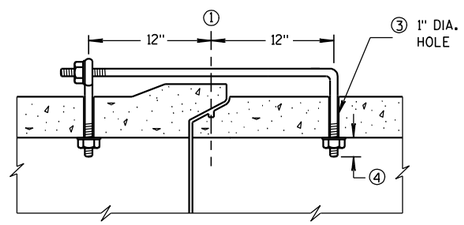
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

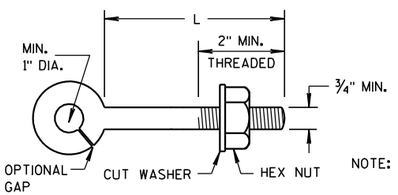


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

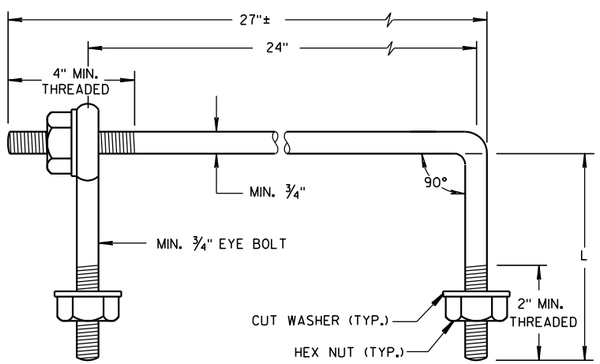
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

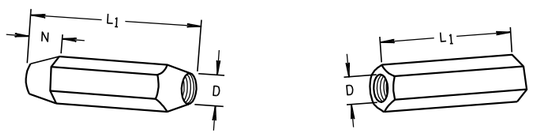
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

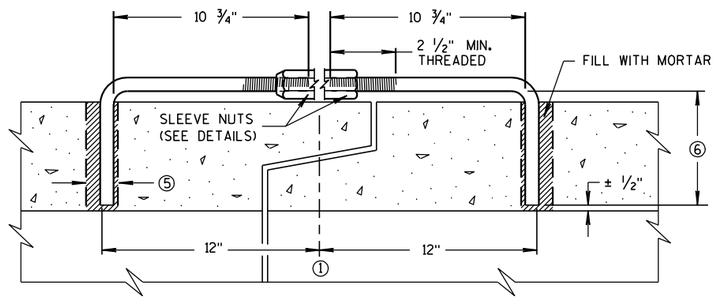
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

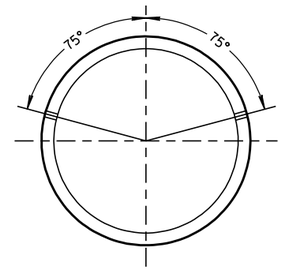
SLEEVE NUTS



LONGITUDINAL SECTION

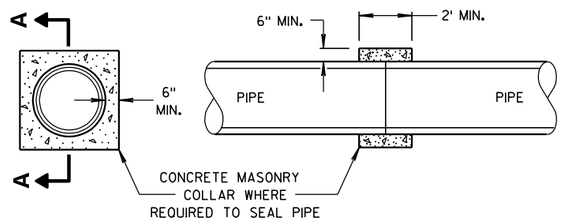
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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
39
FHWA

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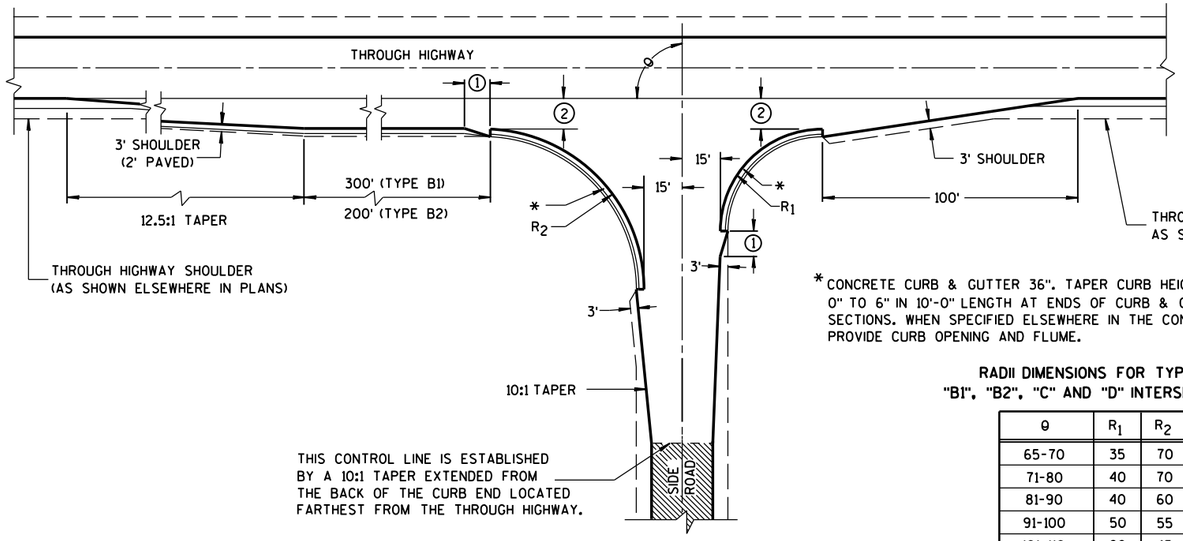
S.D.D. 8 F 4-7

6

S.D.D. 8 F 4-7

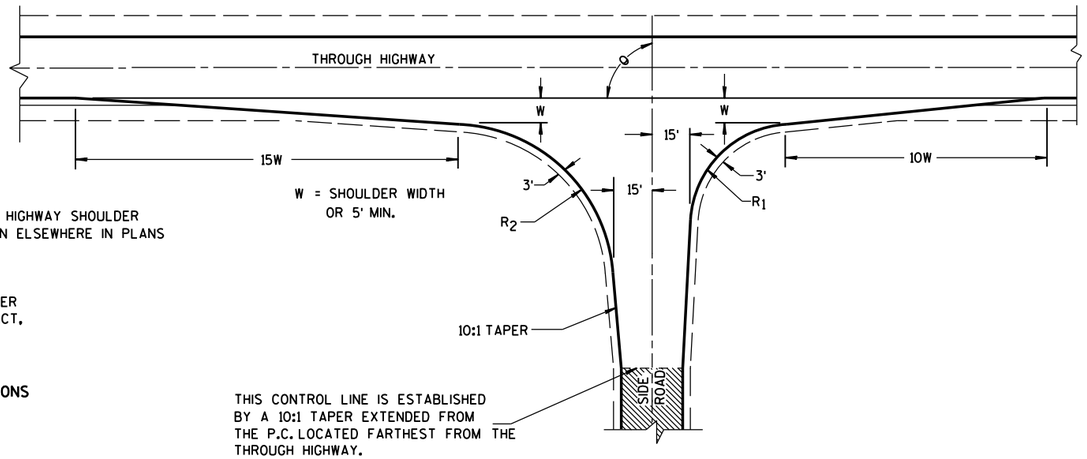


TYPE "B1" AND "B2"

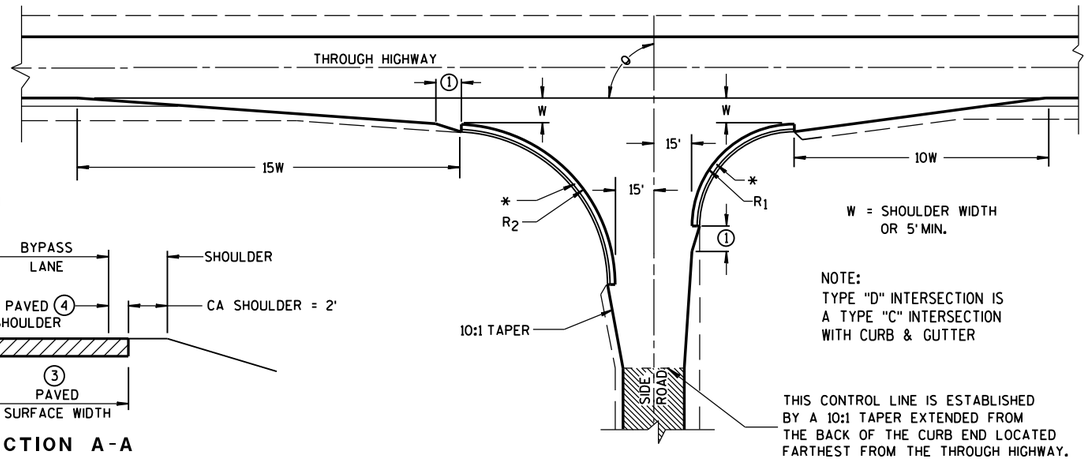
*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



TYPE "C"



TYPE "D"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

(1) 10-FT TYPICAL.

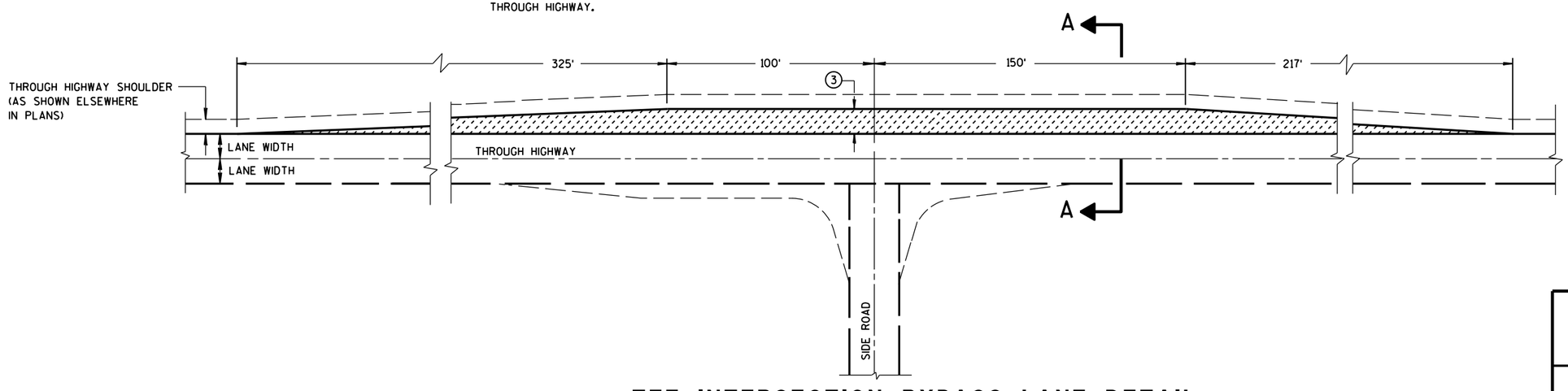
(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.

SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)

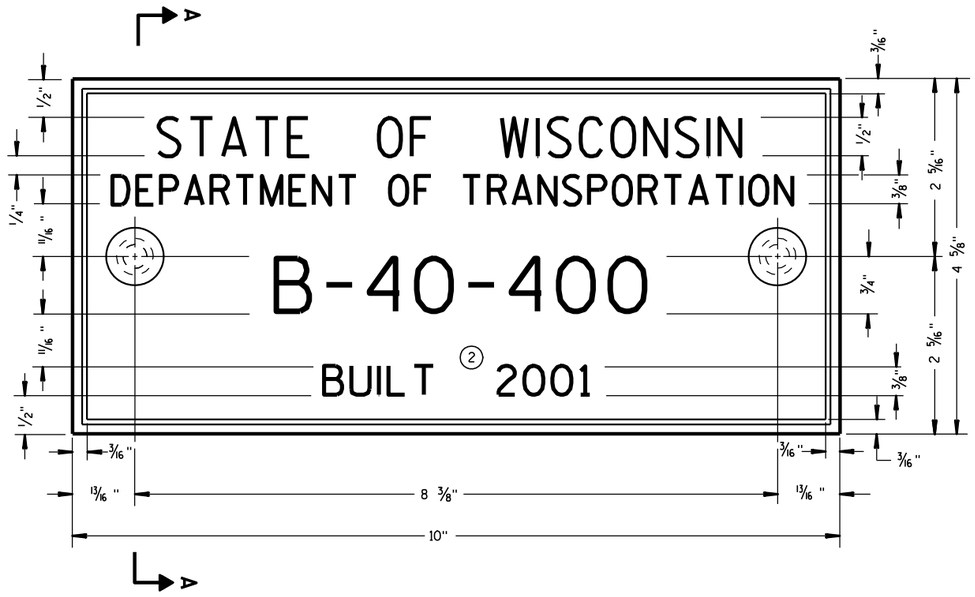


TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 9 A 1-13a



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)

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

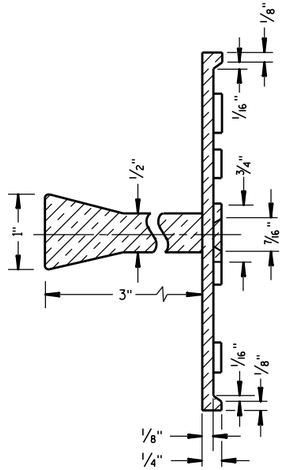
GENERAL NOTES

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

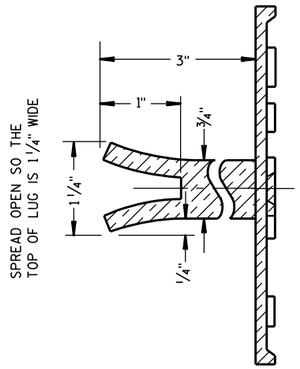
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

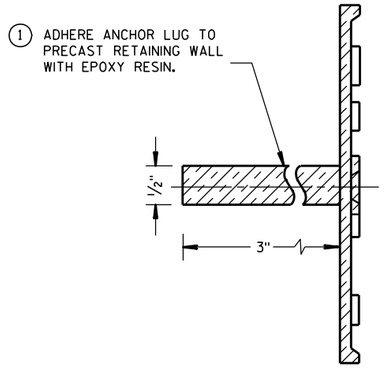
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

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S.D.D. 12 A 3-10

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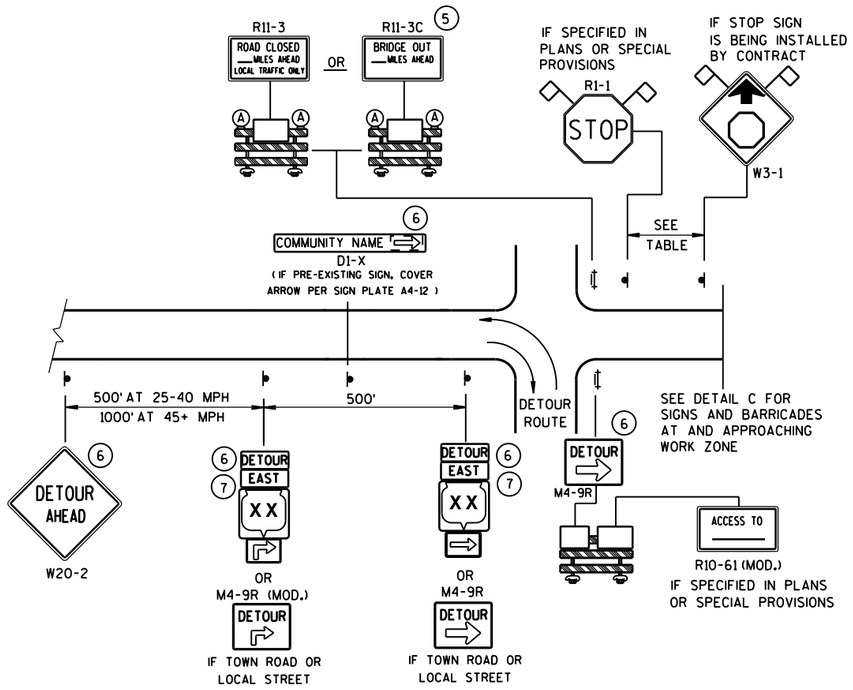
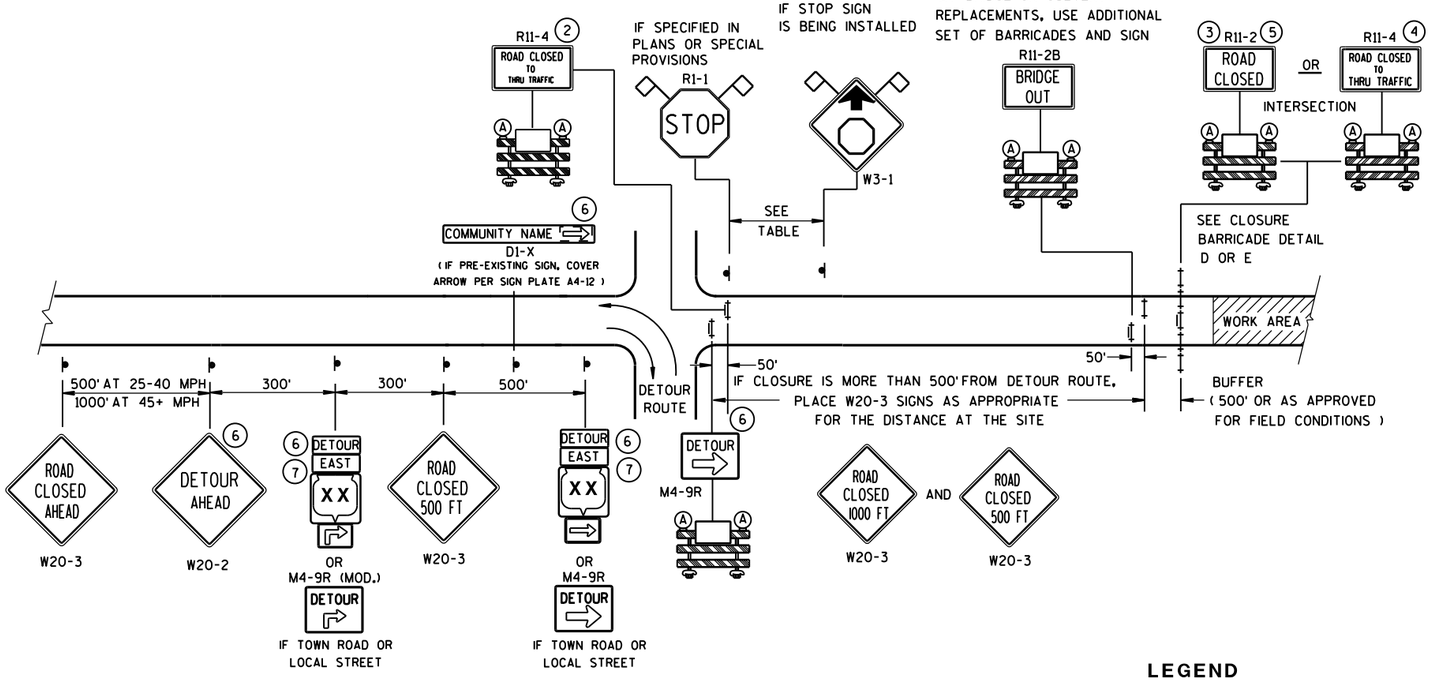
S.D.D. 12 A 3-10



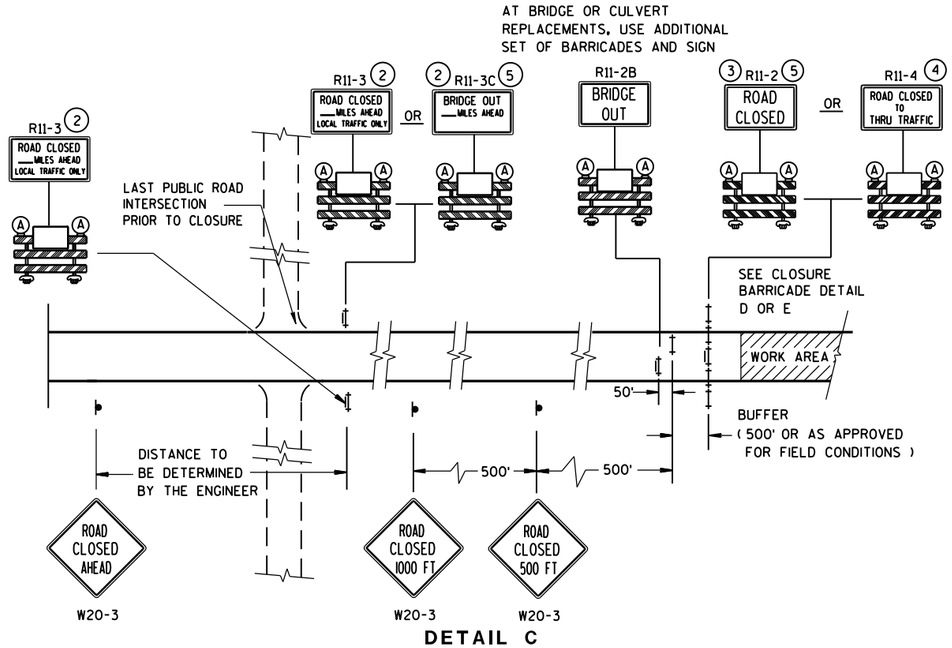
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

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

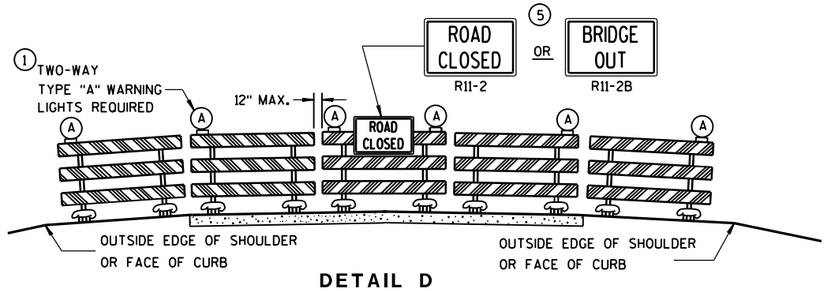
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

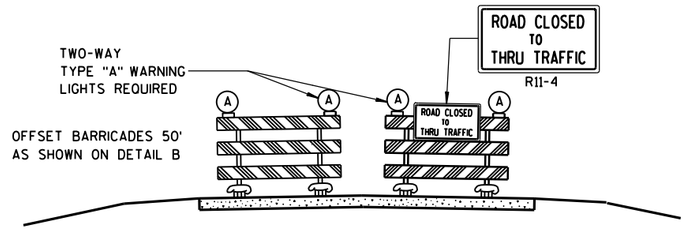
S.D.D. 15 C 2-5a



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
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.

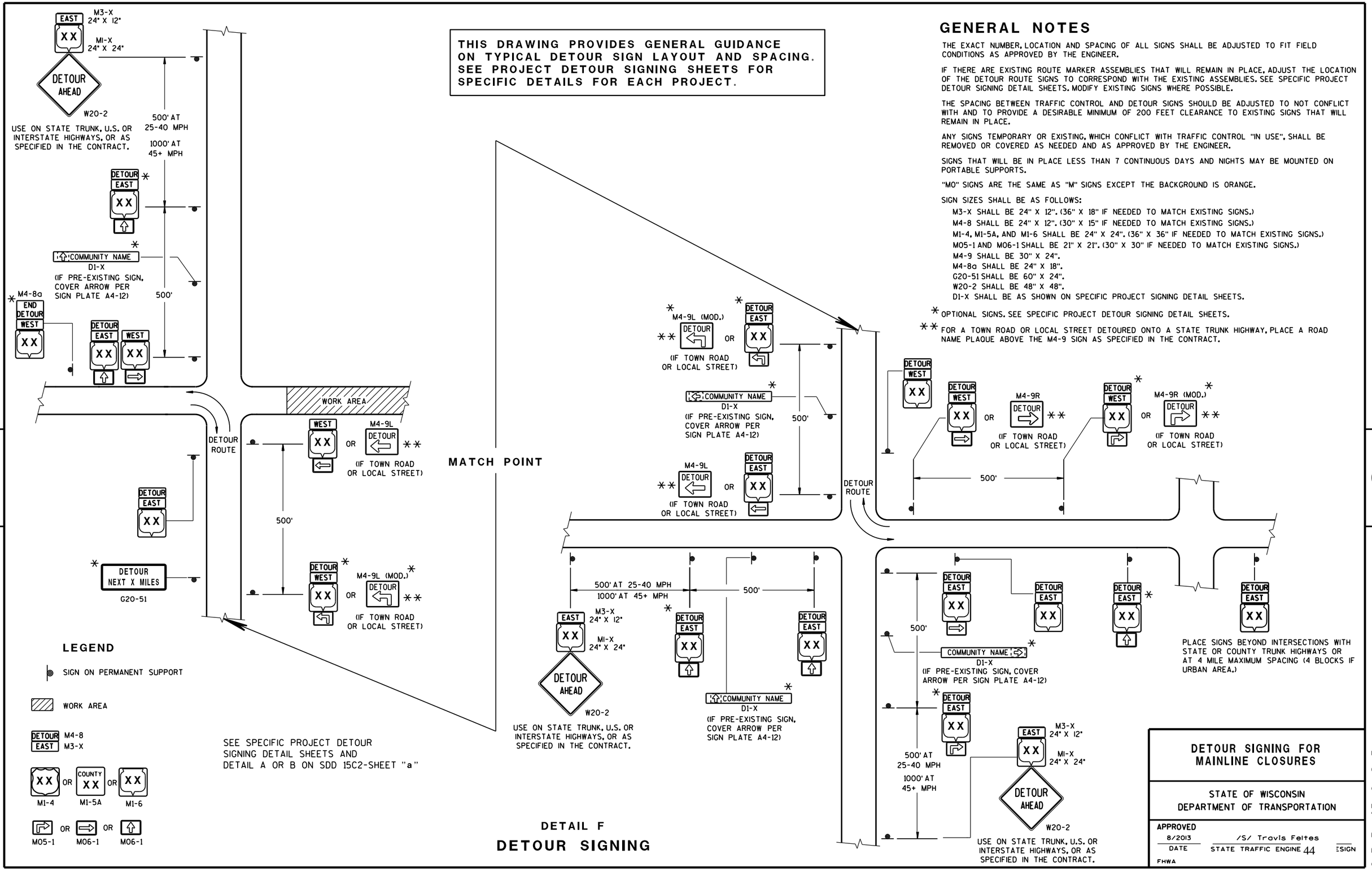
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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



DETAIL F

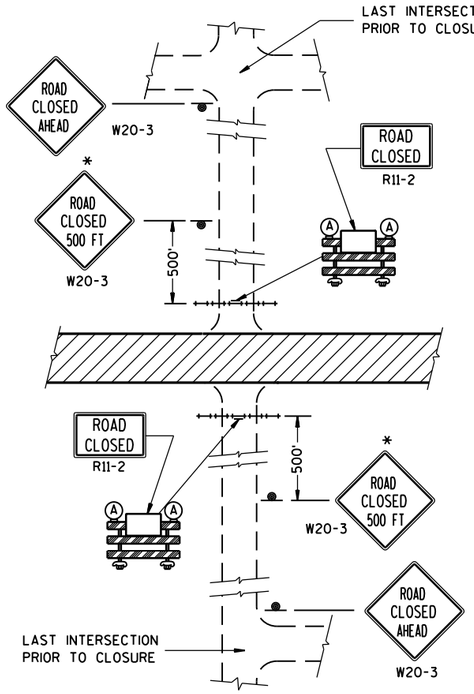
DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

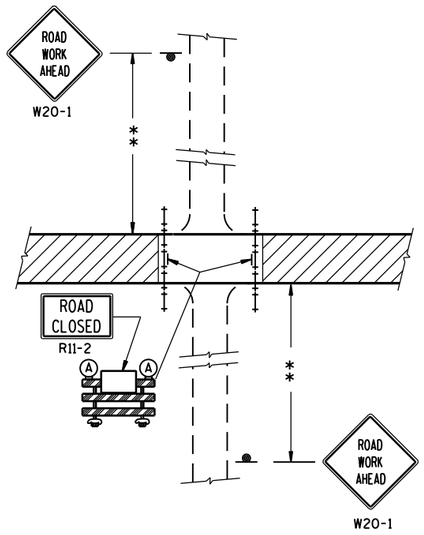
APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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



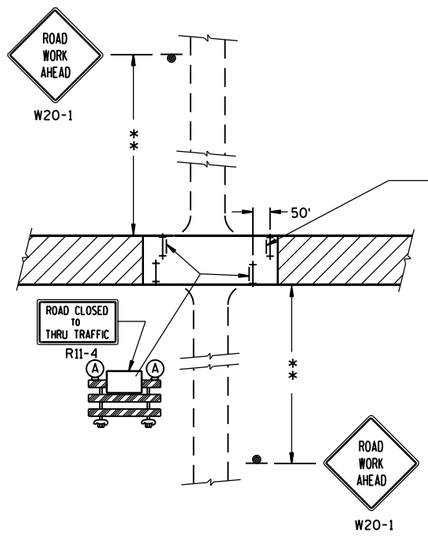
DETAIL 1

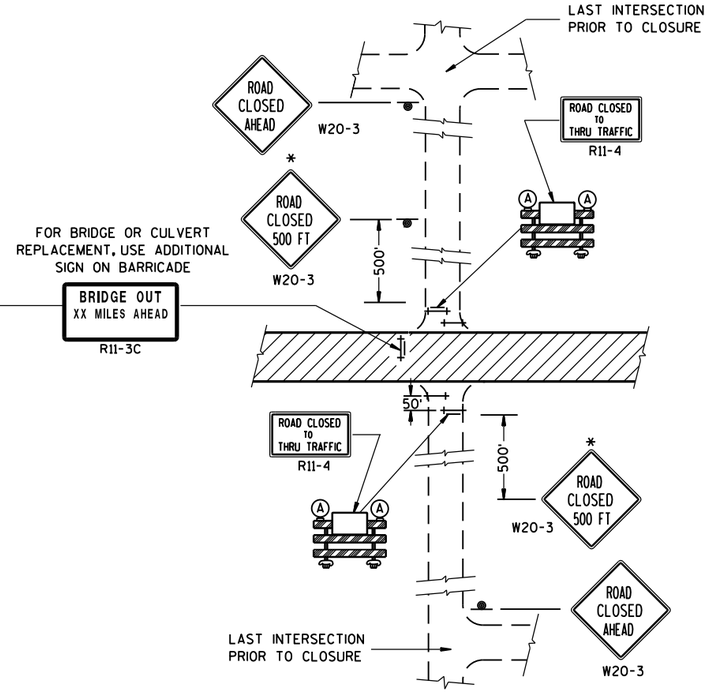
(NO ACCESS TO PROJECT)



DETAIL 2

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





DETAIL 3

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

DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

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

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

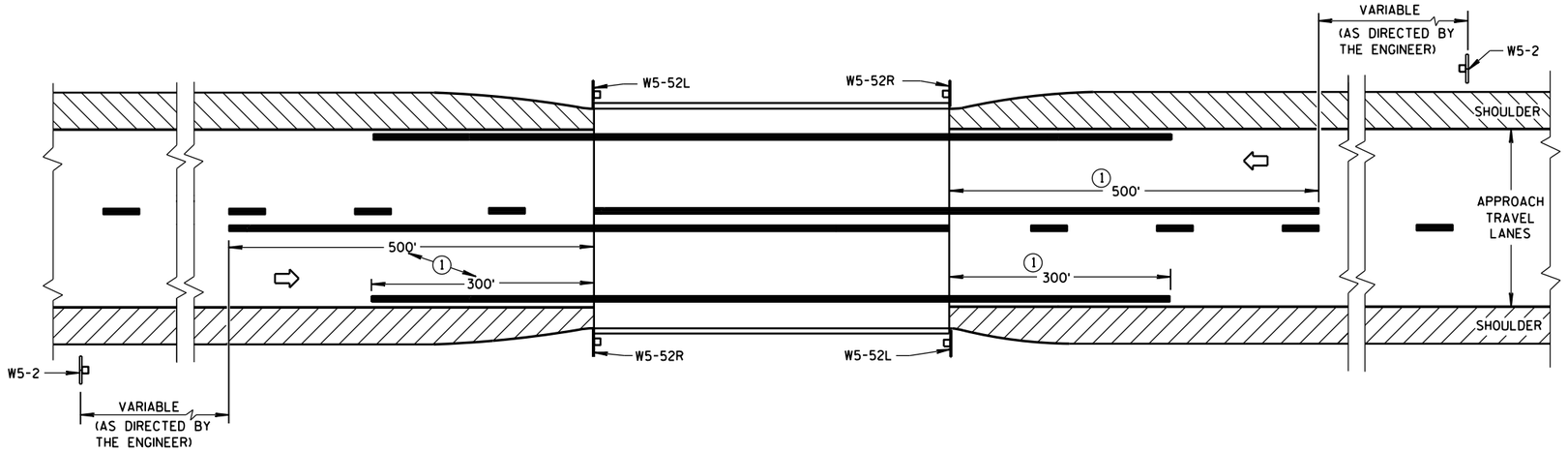
BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

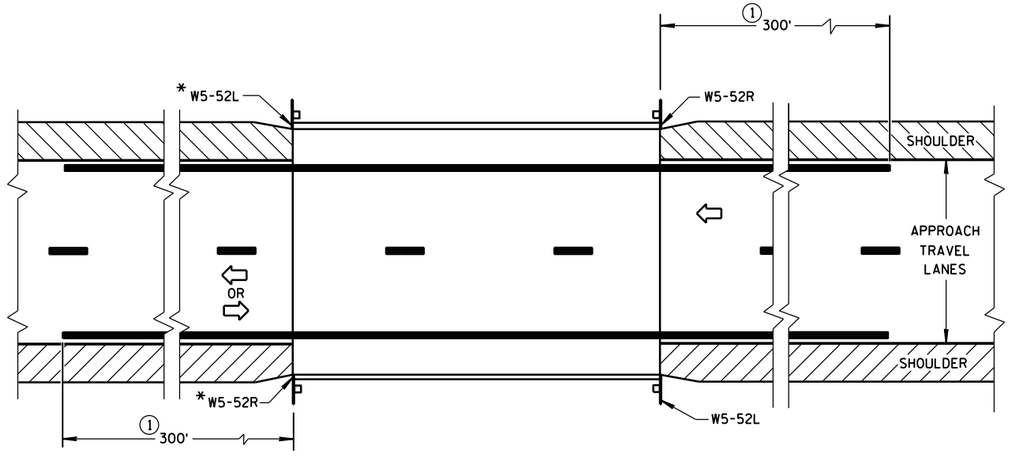
S.D.D. 15 C 3-2



SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET

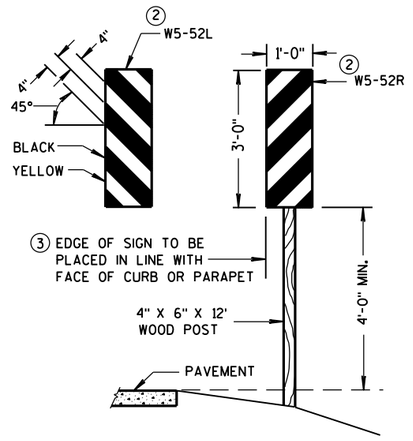


*OMIT ON ONE-WAY TRAVELLED WAYS

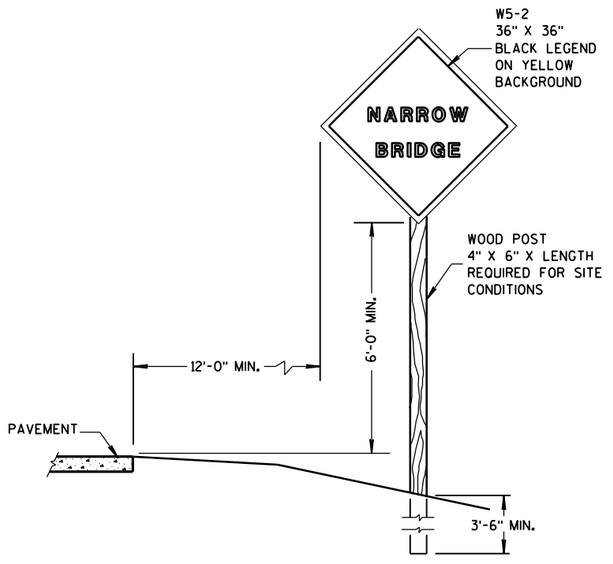
SITUATION 2

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

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.

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

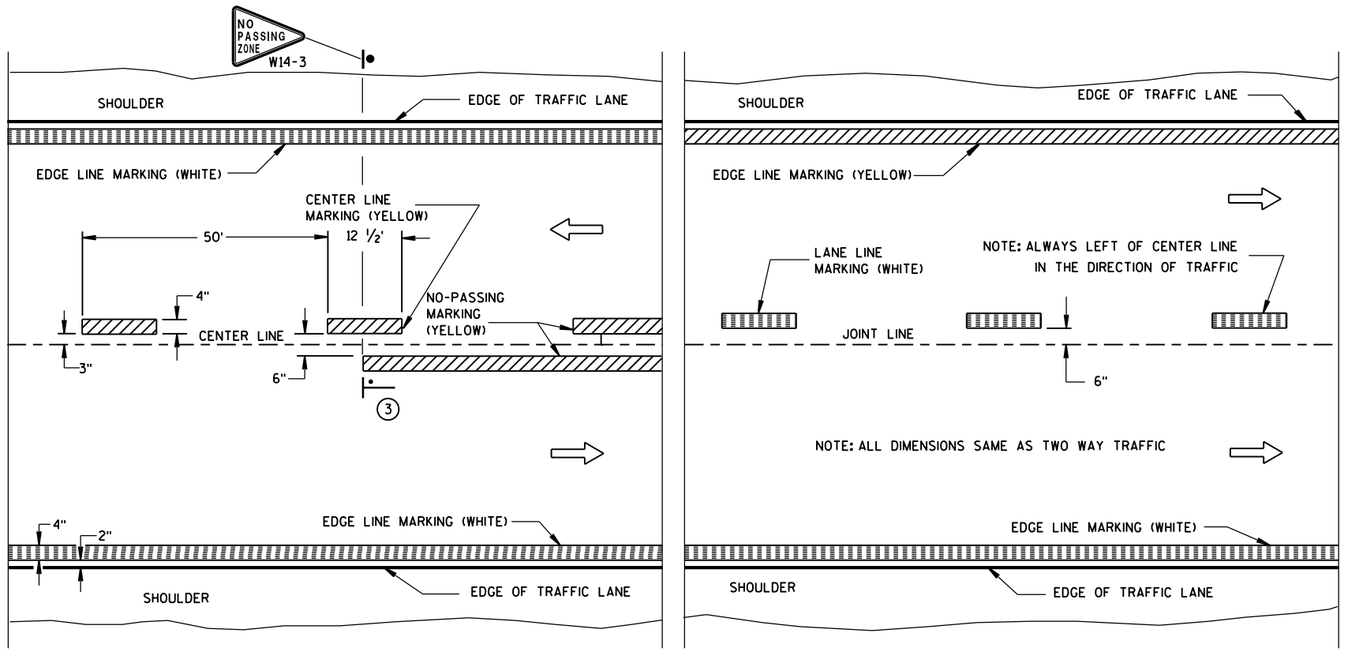
3/4/2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC ENGINEER

FHWA

6

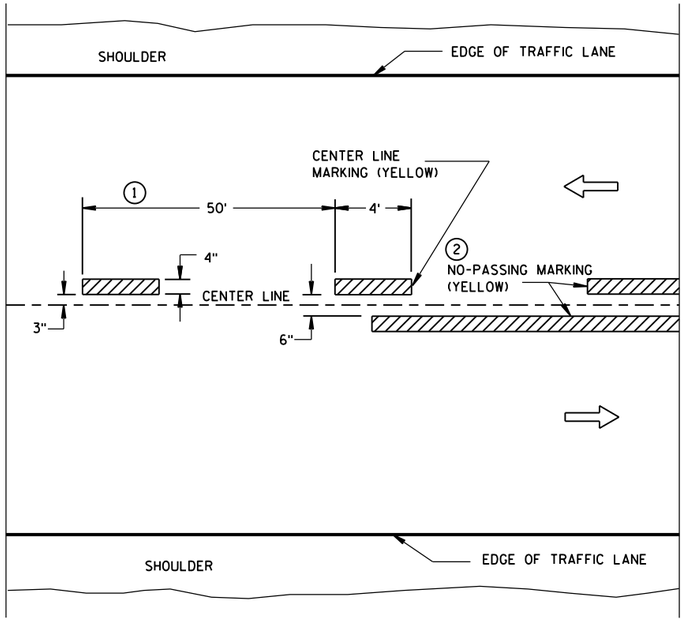
S.D.D. 15 C 6-6



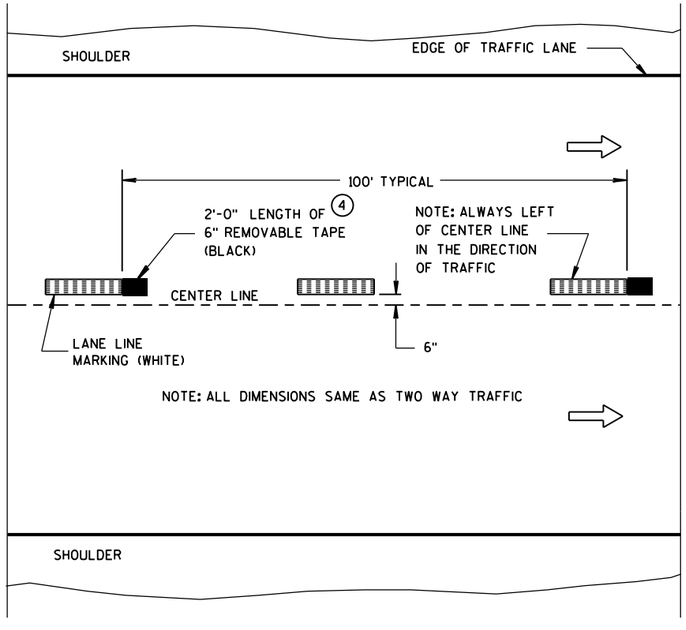
TWO WAY TRAFFIC

ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

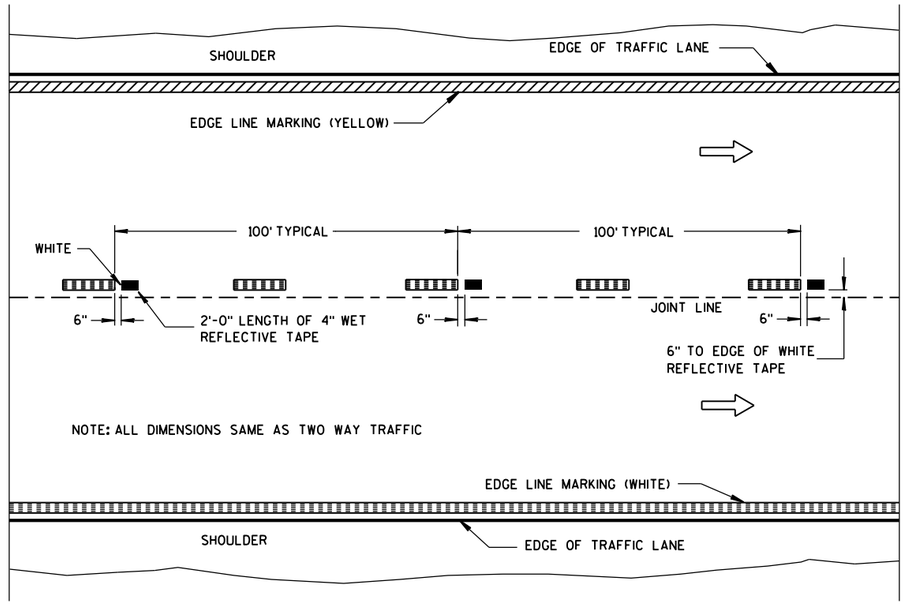
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E

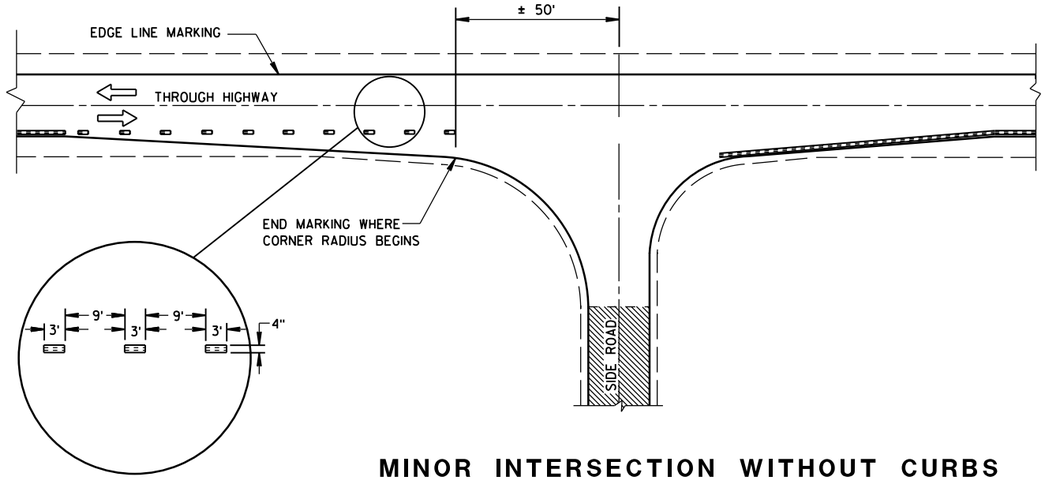
FHWA

6

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

6

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



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.

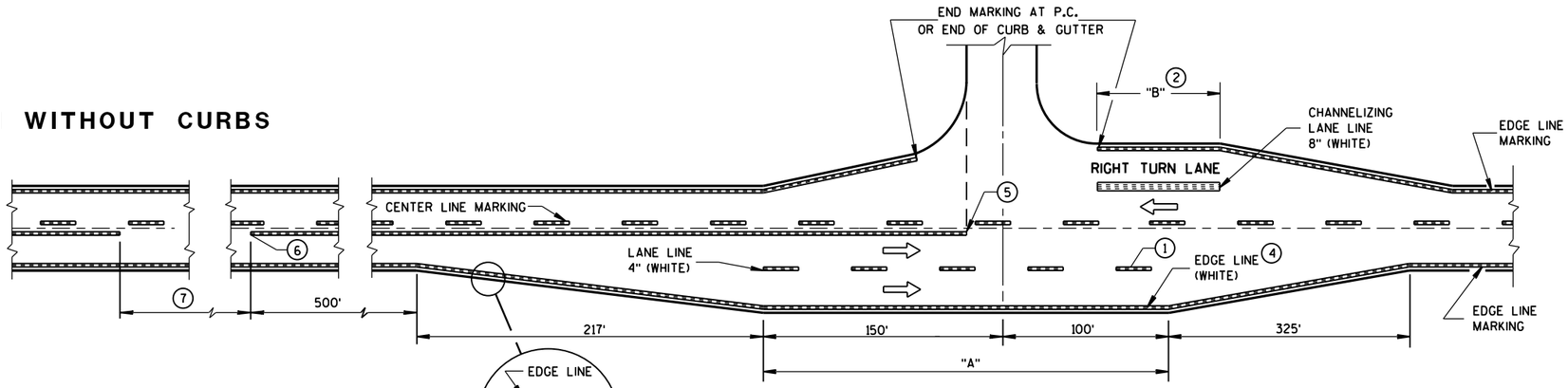
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

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

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

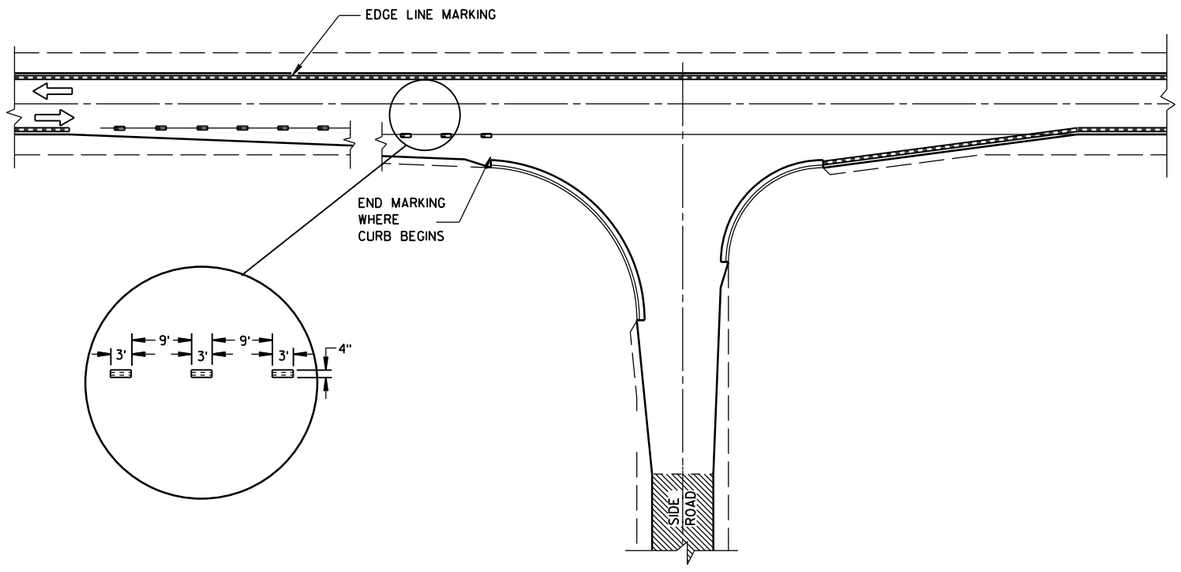
(7)

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



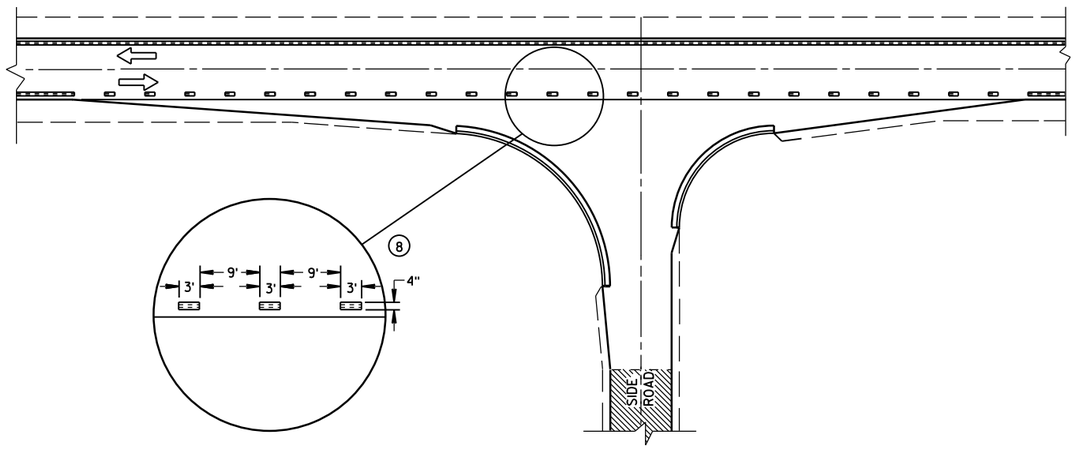
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

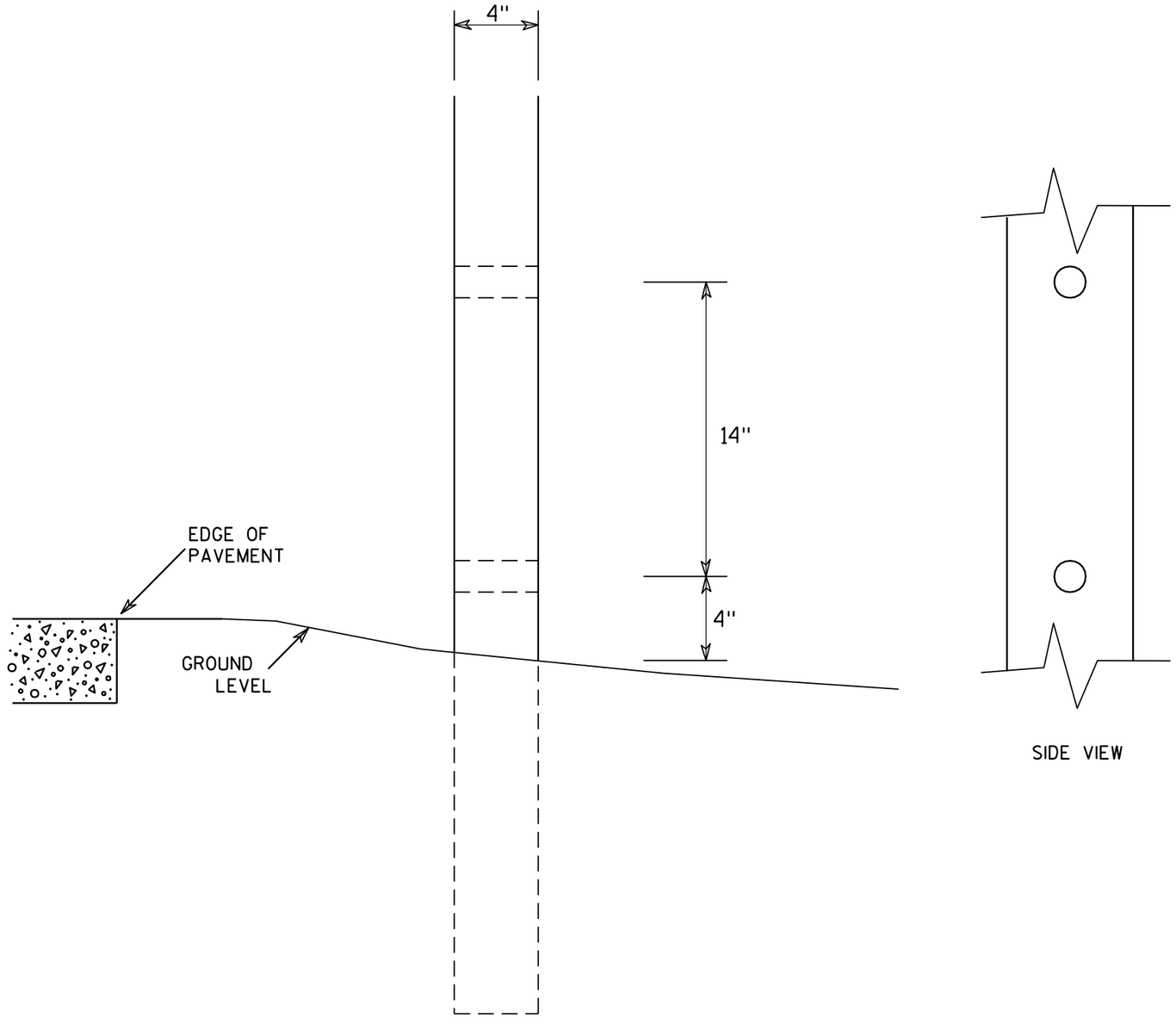
(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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



SIDE VIEW

GENERAL NOTES

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

7

7

4 X 6 WOOD POST MODIFICATIONS

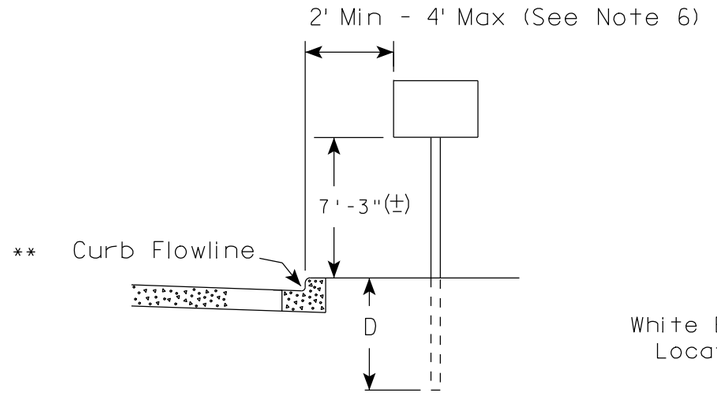
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

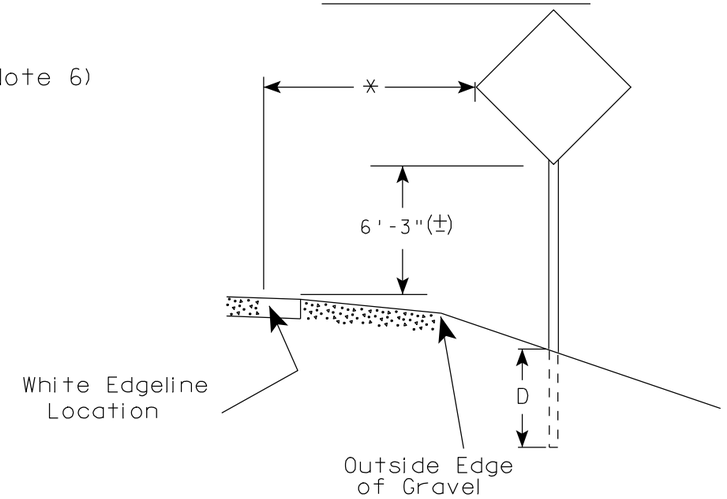
DATE 3/27/97 PLATE NO. A4-11.2

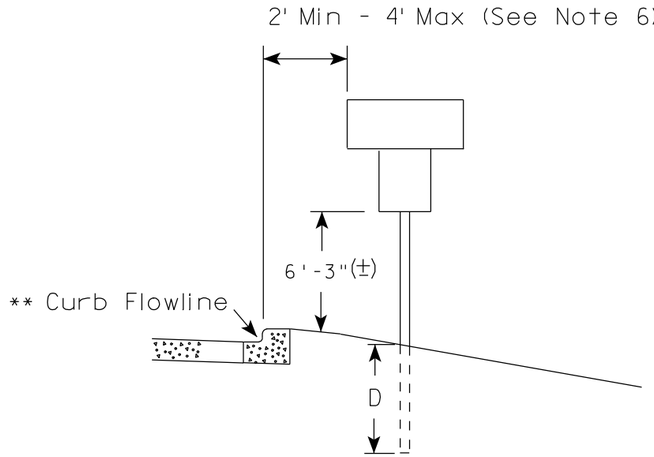
PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX		SHEET NO: 49	E

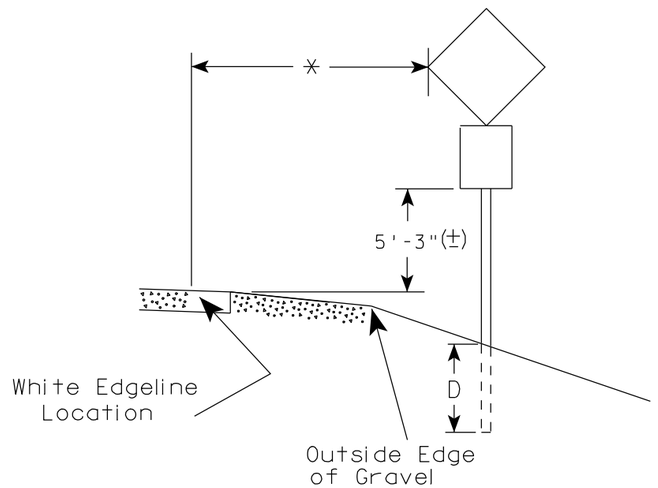
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

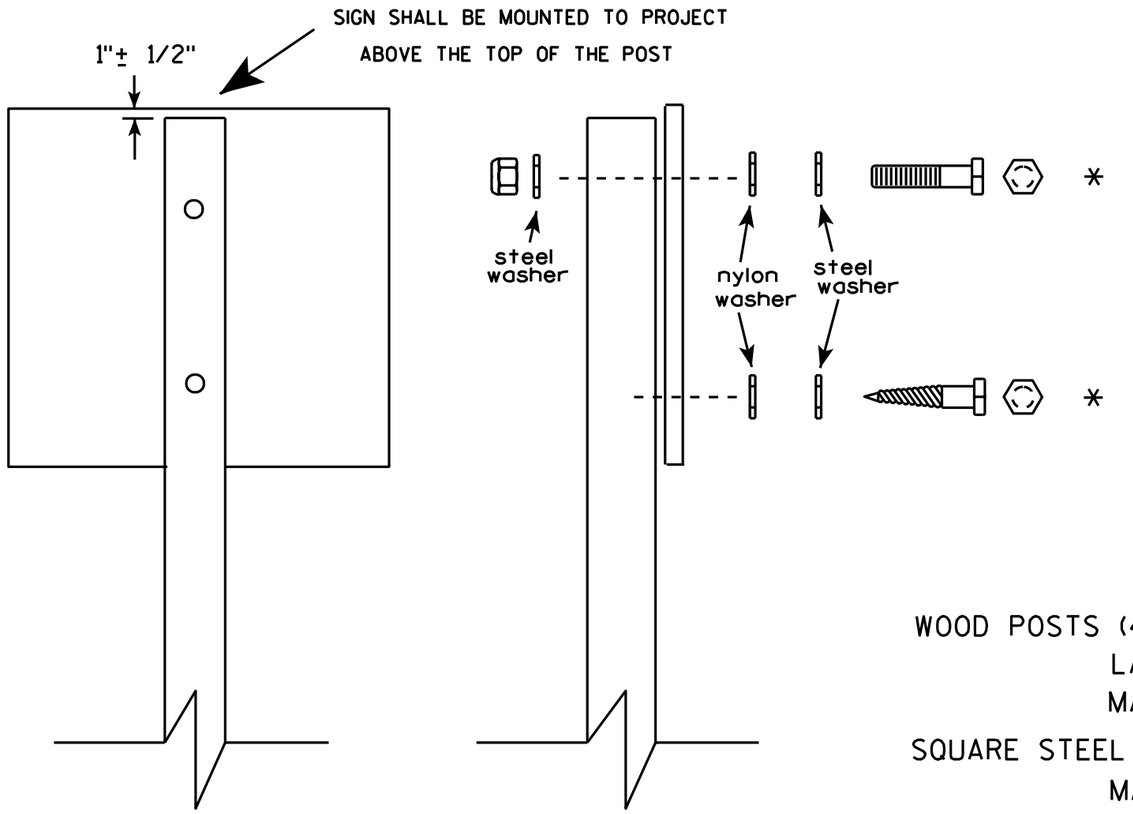
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/24/2013 PLATE NO. A4-3.17

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX		SHEET NO: 50	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")

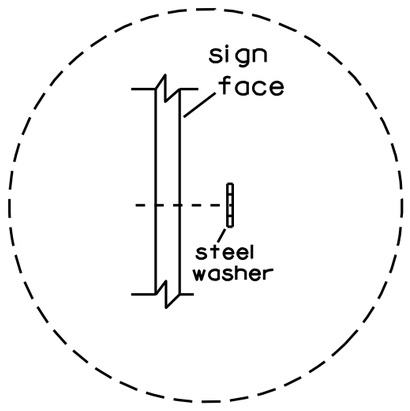
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts

RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



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

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

ATTACHMENT OF SIGNS TO POSTS

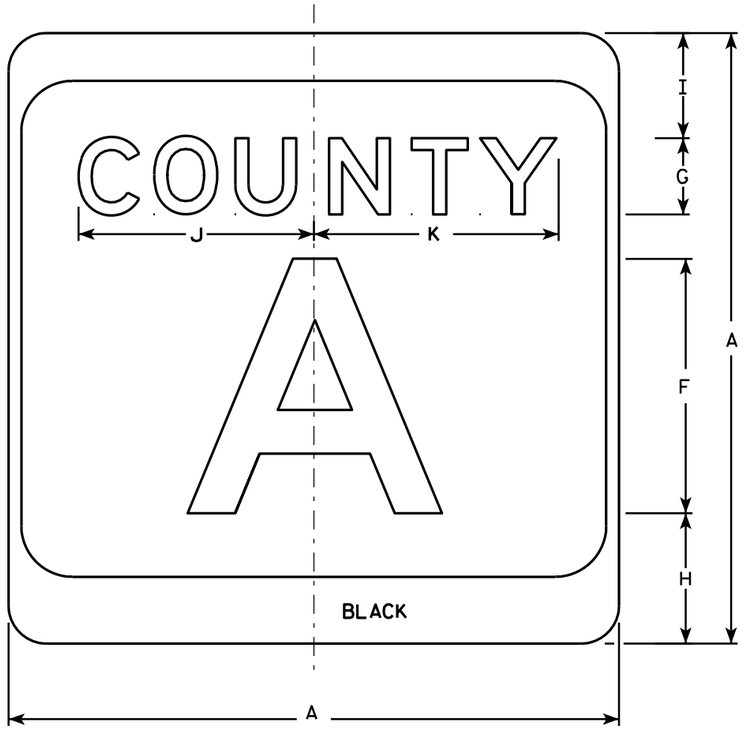
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

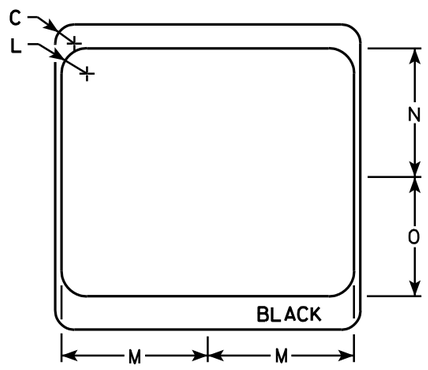
DATE 3/23/10 PLATE NO. A4-8.7

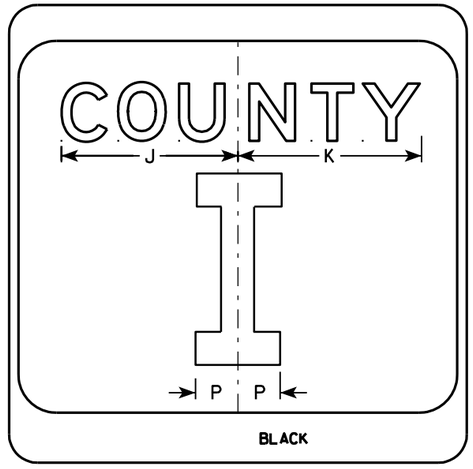
7

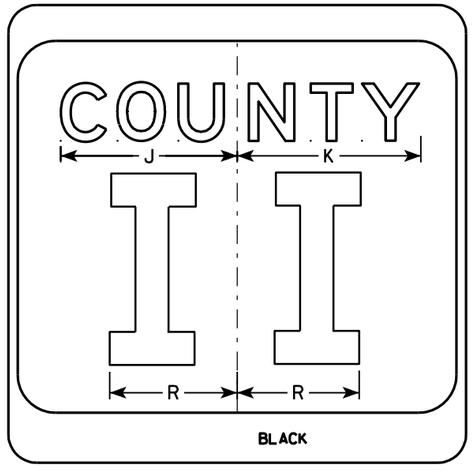
7



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

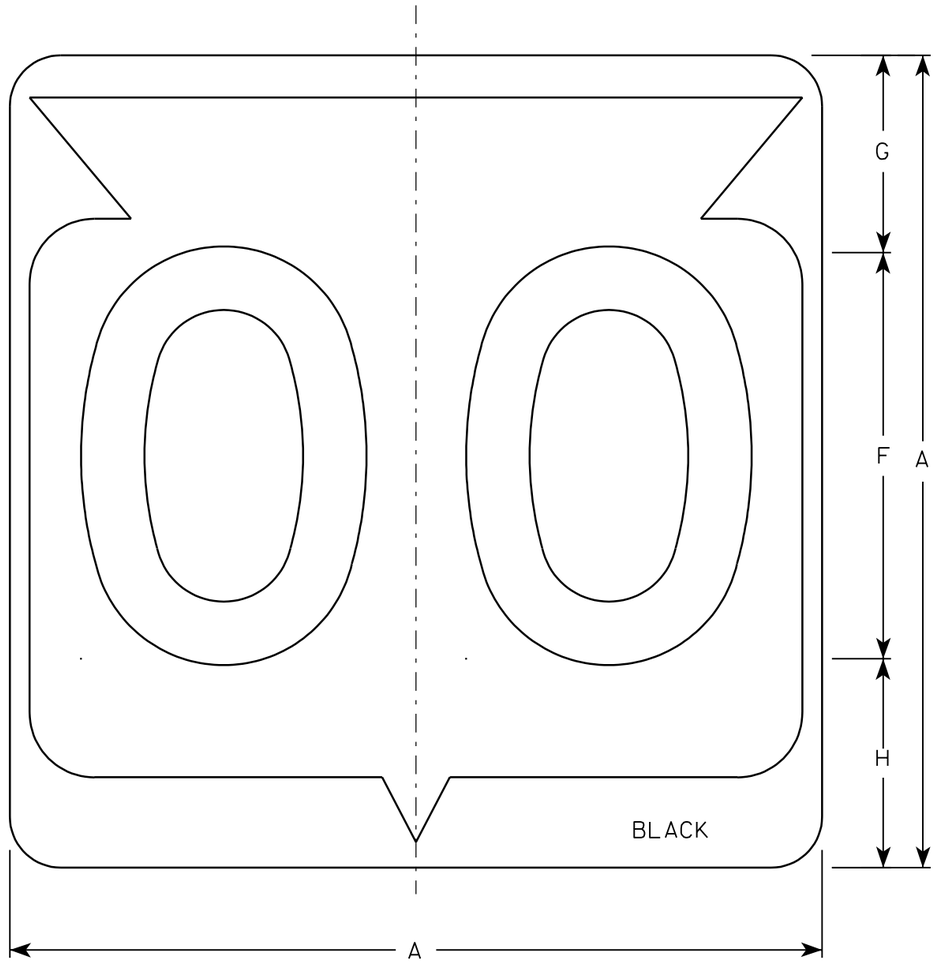
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

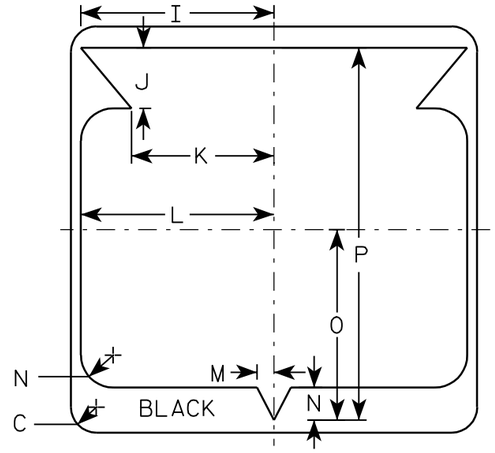
PROJECT NO: 8866-00-70 | HWY: CTH M | COUNTY: ST. CROIX | SHEET NO: 52 | E



M1-6

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

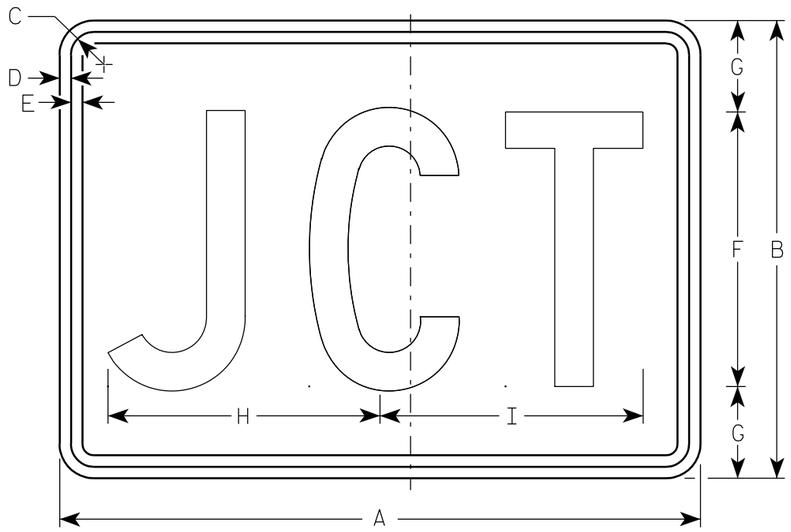
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

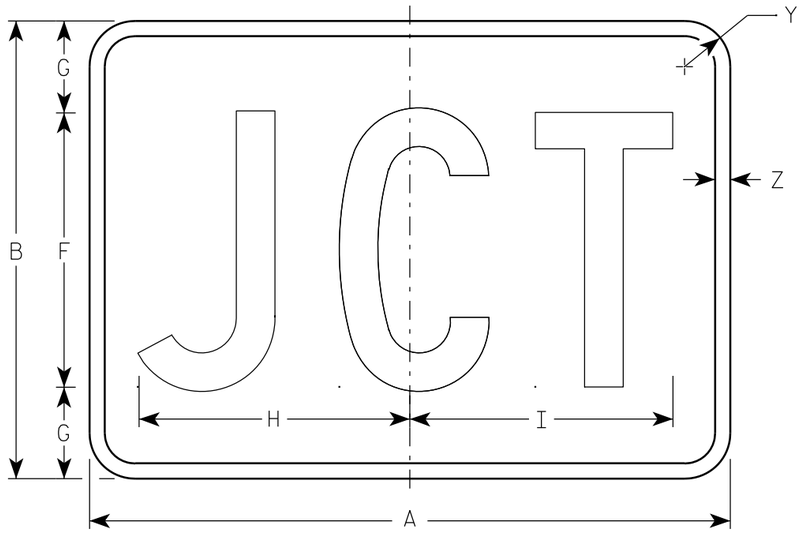
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	SHEET NO: 53	E



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB2-1 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG2-1 Background - Green
   Message - White - Type H Reflective
   MK2-1 Background - Green
   Message - White - Type H Reflective
   MM2-1 Background - White - Type H Reflective
   Message - Green
   MN2-1 Background - Brown
   Message - White - Type H Reflective
   MR2-1 Background - Brown
   Message - Yellow - Type H Reflective

Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40	0.20

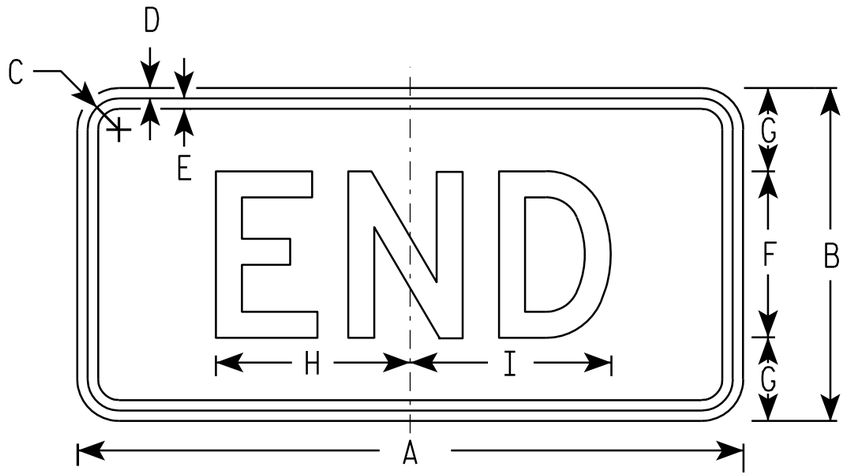
STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

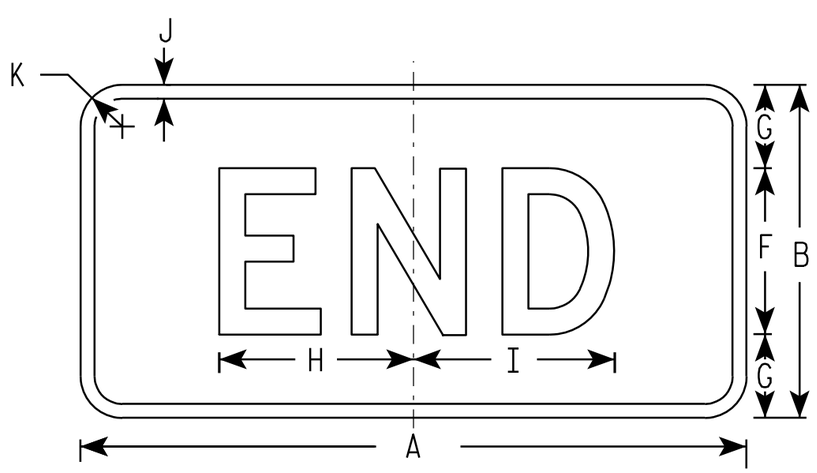
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M2-1.10

PROJECT NO: 8866-00-70 | HWY: CTH M | COUNTY: ST. CROIX | SHEET NO: 54 | E



M4-6
MK4-6
MM4-6
MR4-6



MB4-6
MG4-6
MN4-6

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-6 Background - White - Type H Reflective (Detour or temporary Signs - Reflective)
   Message - Black

   MB4-6 Background - Blue
   Message - White - Type H Reflective (Detour or temporary Signs - Reflective)

   MG4-6 Background - Green
   Message - White - Type H Reflective

   MK4-6 Background - Green
   Message - White - Type H Reflective

   MM4-6 Background - White - Type H Reflective
   Message - Green

   MN4-6 Background - Brown
   Message - White - Type H Reflective

   MR4-6 Background - Brown
   Message - Yellow - Type H Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	7	7 1/4	1/2	1 1/2																2.00
3	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
4	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
5	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5

STANDARD SIGN
M4-6

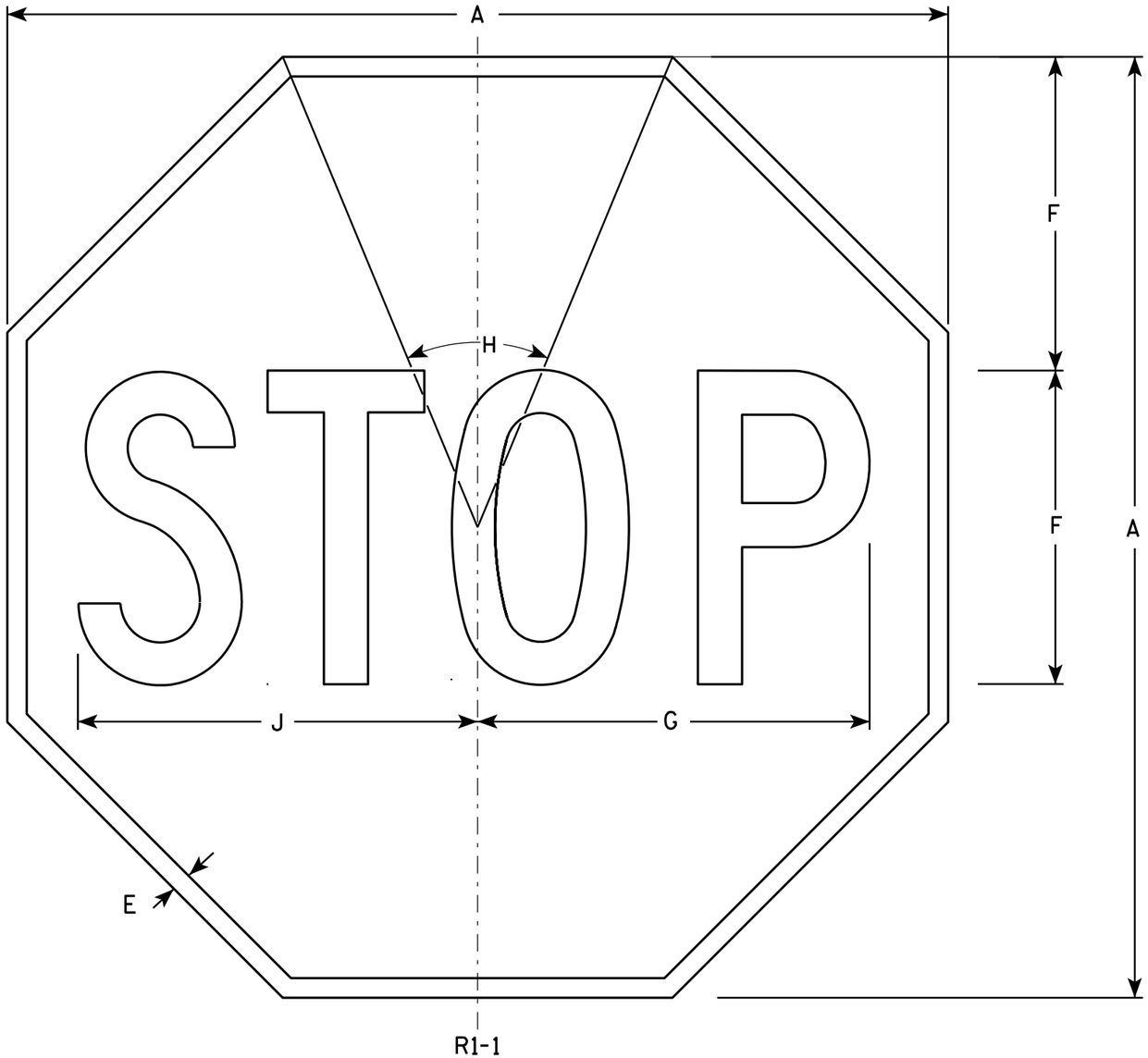
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-6.7

PROJECT NO: 8866-00-70 | HWY: CTH M | COUNTY: ST. CROIX | SHEET NO: 55 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M46.DGN PLOT DATE : 10-NOV-2010 12:57 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 5.462457:1.000000
WISDOT/CADDS SHEET 42



NOTES

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

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

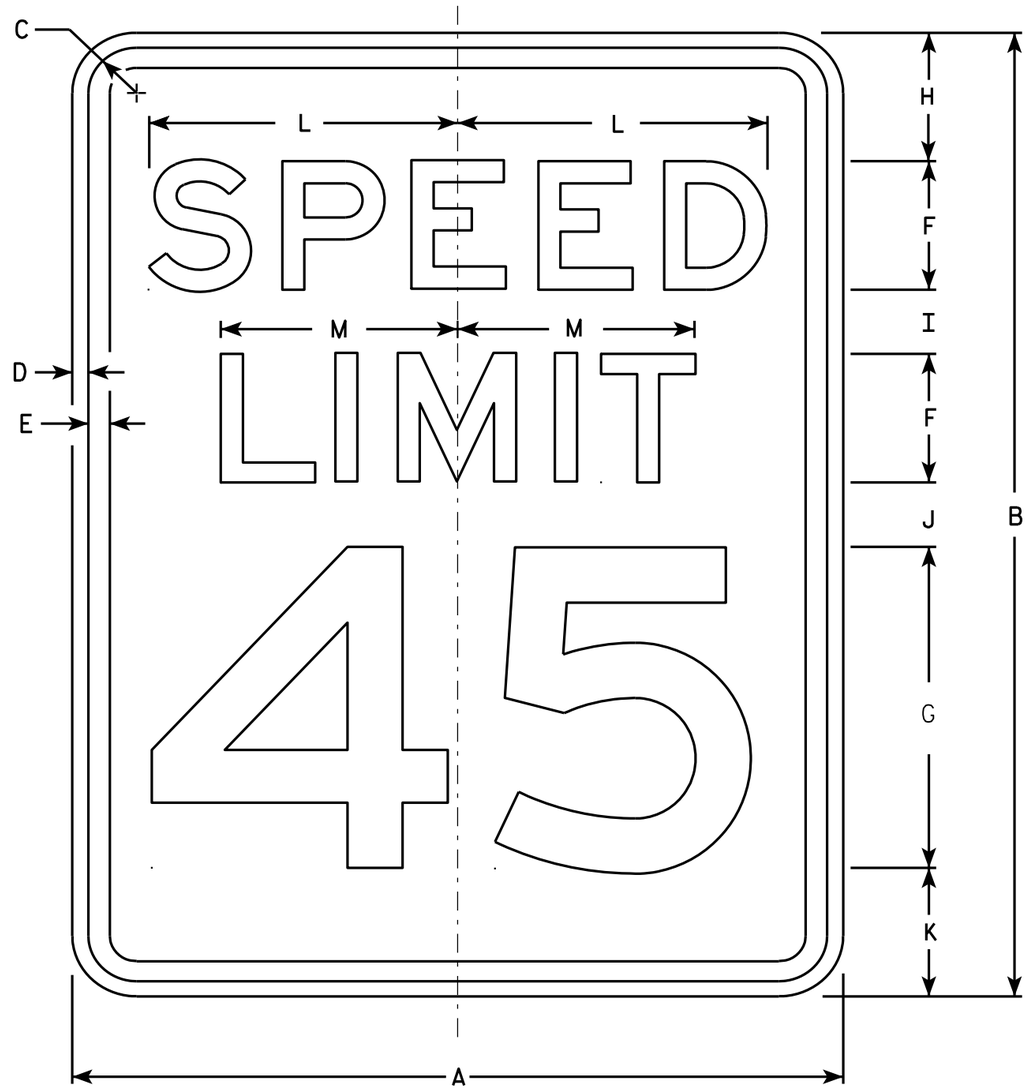
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX		SHEET NO: 56	E



R2-1

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

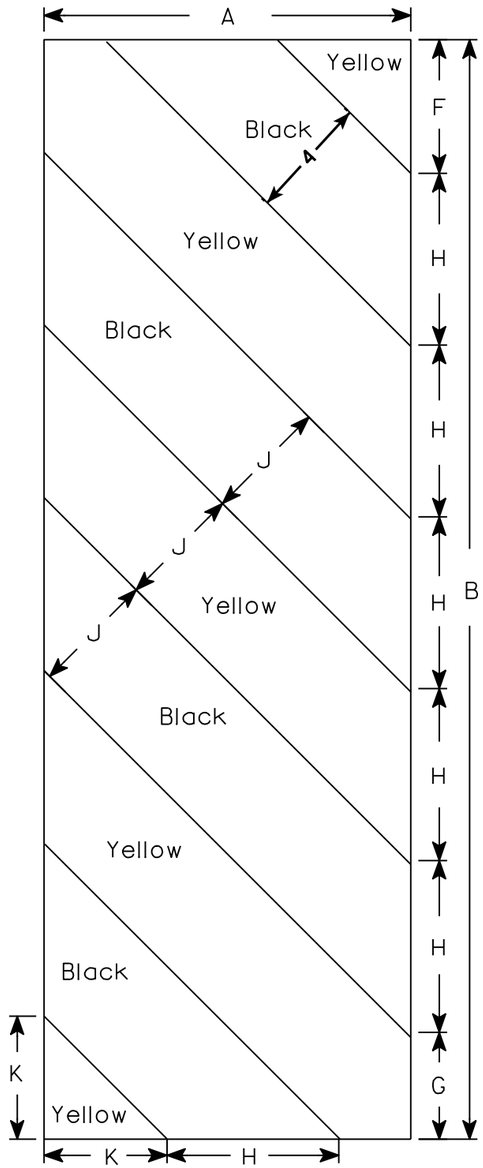
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

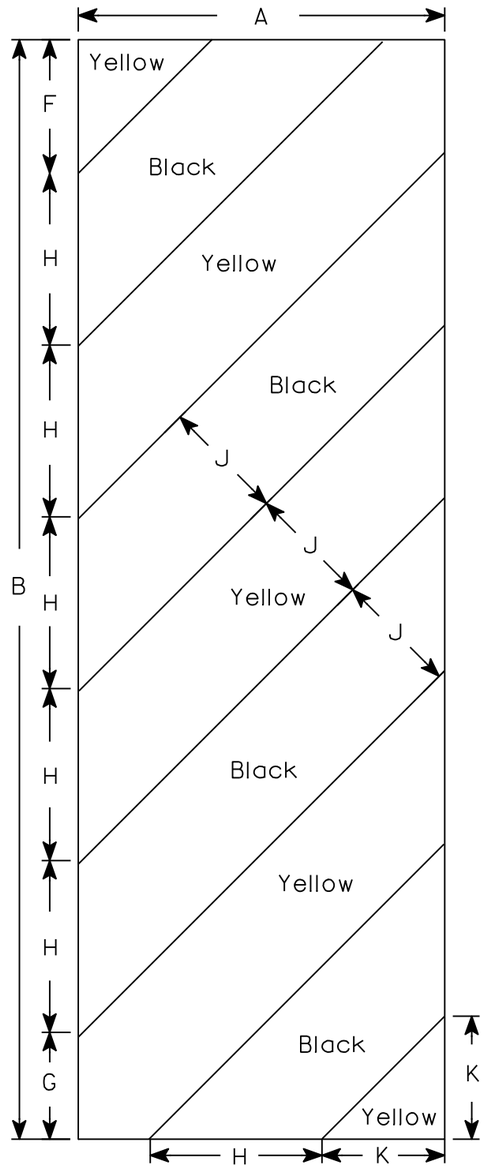
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: 8866-00-70 | HWY: CTH M | COUNTY: ST. CROIX | SHEET NO: 57 | E



W5-52L



W5-52R

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: 8866-00-70 | HWY: CTH M | COUNTY: ST. CROIX | SHEET NO: 58 | E

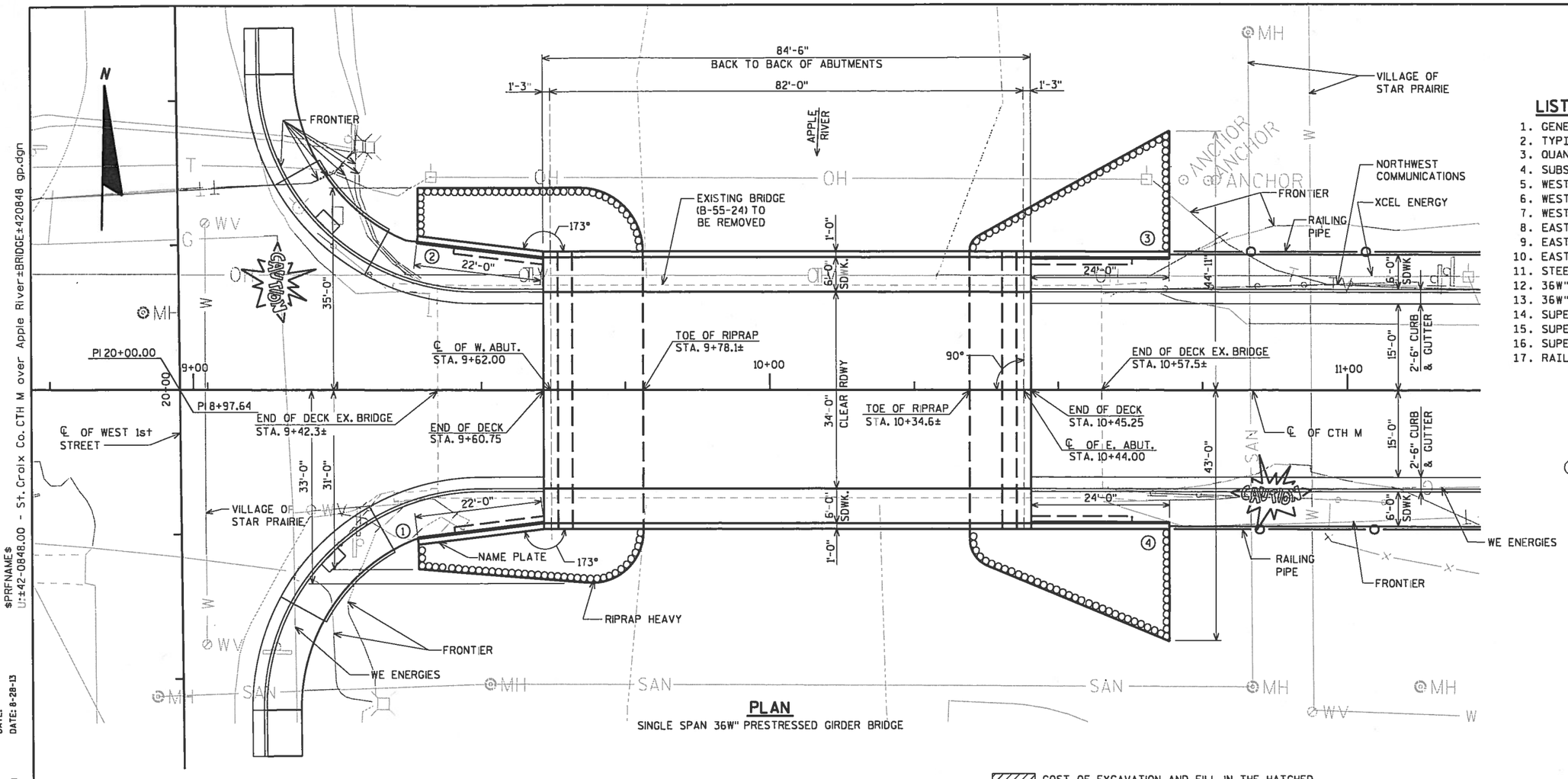
STATE PROJECT NUMBER

8866-00-70

LIST OF DRAWINGS

1. GENERAL PLAN
2. TYPICAL SECTION AND NOTES
3. QUANTITIES AND DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT WING DETAILS
7. WEST ABUTMENT PILE LAYOUT & BILL OF BARS
8. EAST ABUTMENT
9. EAST ABUTMENT WING DETAILS
10. EAST ABUTMENT PILE LAYOUT & BILL OF BARS
11. STEEL INTER. DIAPHRAGM DETAILS
12. 36W" PRESTRESSED GIRDER DETAILS
13. 36W" PRESTRESSED GIRDER DETAILS
14. SUPERSTRUCTURE
15. SUPERSTRUCTURE PLAN
16. SUPERSTRUCTURE DETAILS
17. RAILING TUBULAR TYPE F-4 MOD.

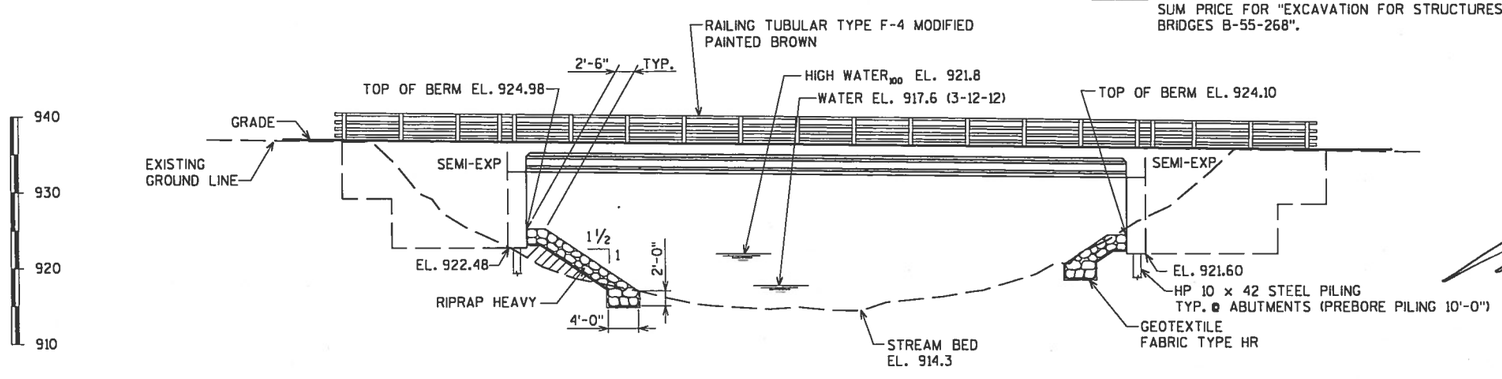
○ DENOTES WING NUMBER.



PLAN

SINGLE SPAN 36W" PRESTRESSED GIRDER BRIDGE

COST OF EXCAVATION AND FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-55-268".



ELEVATION

FOR TYPICAL SECTION, PROFILE GRADE LINE, & DESIGN DATA SEE SHEET 2

WISCONSIN
CHRISTOPHER B. McMAHON
E-29454
EAU CLAIRE
WI
PROFESSIONAL ENGINEER
10/29/13

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

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

NO.	DATE	REVISION	BY

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher KAR 12/02/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-55-268

CTH M OVER APPLE RIVER

COUNTY: ST. CROIX
~~TOWN/CITY~~/VILLAGE: STAR PRAIRIE

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JCK	AEB	KAZ/CLS	CBM

GENERAL PLAN

SHEET 1 OF 17

59

8

8

$PRFNAME$
U:\42-0848.00 - St. Croix Co. CTH M over Apple River\BRIDGE\420848 gp.dgn

DATE: 8-28-13
DATE:
DATE: 8-28-13
CHECKED BY: KLW
BACK CHECKED BY:
CORRECTED BY: CJM

10/29/2013
PENTABLE:BReau_shd_util.tbl
I.D.
DATE:

STATE PROJECT NUMBER

8866-00-70

DESIGN DATA

LIVE LOAD:

DESIGN RATING: HL-93
INVENTORY RATING FACTOR: 1.09
OPERATING RATING FACTOR: 1.70
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

ULTIMATE DESIGN STRESSES:

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

36W" PRESTRESSED GIRDER
CONCRETE MASONRY f'_c = 8,000 p.s.i.
STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF = 270,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FLOOD
DRAINAGE AREA = 459 sq. mi.
WATERWAY AREA = 295 sq. ft.
V = 8.0 f.p.s.
Q_{100} = 2,360 c.f.s.
HIGH $WATER_{100}$ EL. 921.8
HIGH $WATER_{2}$ EL. 918.8
RDWY. OVERFLOW = N/A
SCOUR CRITICAL CODE = 8

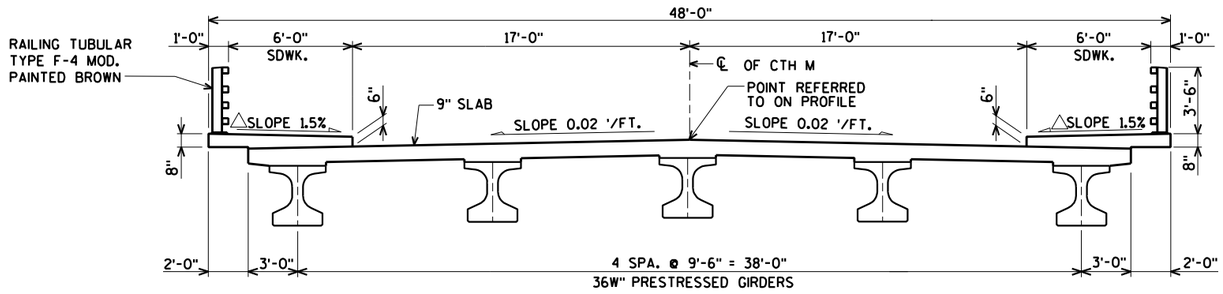
FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 100 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 35'-0" AT BOTH ABUTMENTS. PREBORE PILING 10'-0"

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

TRAFFIC DATA:

A.D.T. = 2,800 (2014)
A.D.T. = 4,000 (2034)
R.D.S. = 30 M.P.H.



CROSS SECTION THRU ROADWAY

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

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED TO THE TOP OF DECK, TOP OF SIDEWALK, FACE OF CURB, AND AS SHOWN IN DETAIL ON SHEET 3.

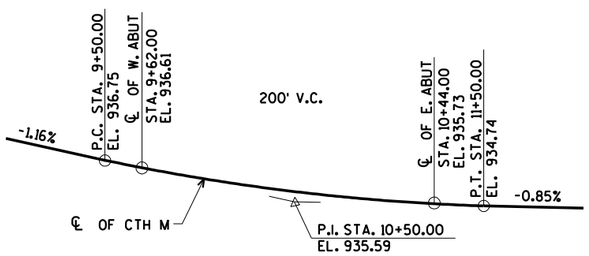
ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, B-55-24, TO BE REMOVED, IS A THREE-SPAN HAUNCHED SLAB BRIDGE, 117.0 FT. LONG WITH A 26.0 FT. CLEAR ROADWAY WIDTH.

AT BACKFACE OF ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

STEEL RAILING POSTS AND STEEL TUBING WILL BE PAINTED BROWN (FEDERAL #20059).



PROFILE GRADE LINE
(CTH M)

BENCHMARK:
BLACK MARKER & PAINT MARK
NW CORNER OF BRIDGE
STA. 9+45, 19' LT.
EL. 937.20

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY KAZ/CLS | PLANS CK'D. KLW

TYPICAL SECTION AND NOTES

SHEET 2 OF 17
60

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

8

8

$PRFNAME$
U:\42-0848.00 - St. Croix Co. CTH M over Apple River\BRIDGE\420848 gp.dgn

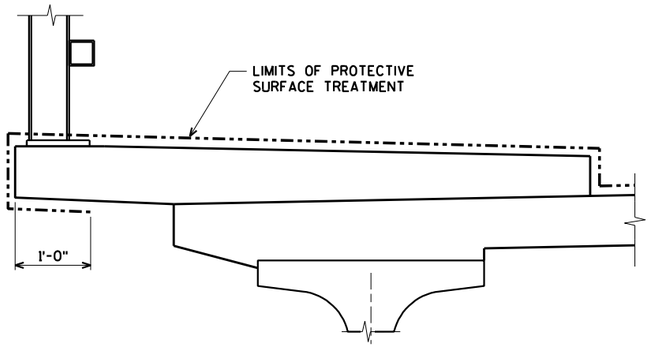
8/30/2013

PENTABLE:BReau_shd_util.tbl

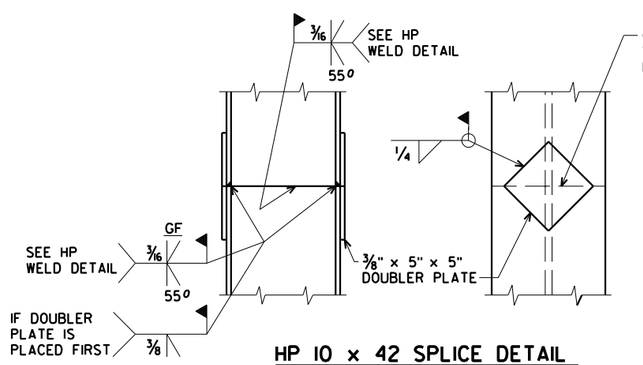
TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-55-268	LS	-----	-----	-----	1
210.0100	BACKFILL STRUCTURE	CY	315	300	-----	615
502.0100	CONCRETE MASONRY BRIDGES	CY	82	86	172	340
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	490	490
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-----	-----	415	415
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	3,330	3,330	-----	6,660
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	4,330	4,780	27,920	37,030
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	-----	-----	10	10
506.4000	STEEL DIAPHRAGMS B-55-268	EACH	-----	-----	8	8
513.4052 ●	RAILING TUBULAR TYPE F-4 MODIFIED B-55-268	LS	-----	-----	-----	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	15	16	-----	31
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	180	180	-----	360
550.0500	PILE POINTS	EACH	18	18	-----	36
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	630	630	-----	1,260
606.0300	RIPRAP HEAVY	CY	125	105	-----	230
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	150	150	-----	300
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	225	195	-----	420
SPV.0165	ANTI-GRAFFITI SHEILD	SF	715	745	50	1,510
	NON-BID ITEMS					
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"

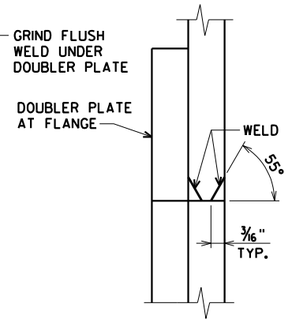
● RAILING TUBULAR TYPE F-4 MODIFIED WILL BE PAINTED BROWN (FEDERAL #20059).



PROTECTIVE SURFACE TREATMENT DETAIL



HP 10 x 42 SPLICE DETAIL



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

QUANTITIES AND DETAILS

SHEET 3 OF 17
61

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

$PRFNAME$
U:\42-0848.00 - St. Croix Co. CTH M over Apple River\BRIDGE\420848 SL.dgn

STATE PROJECT NUMBER

8866-00-70

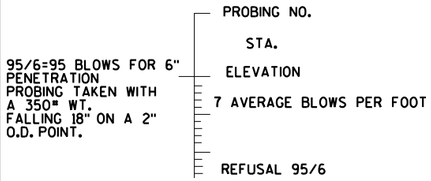
ABBREVIATIONS

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

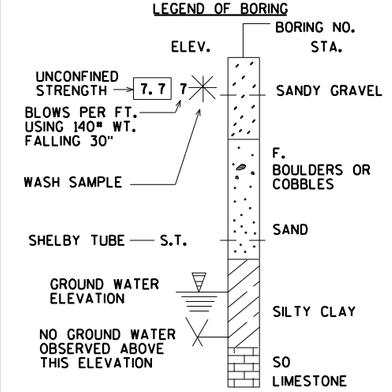
MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING



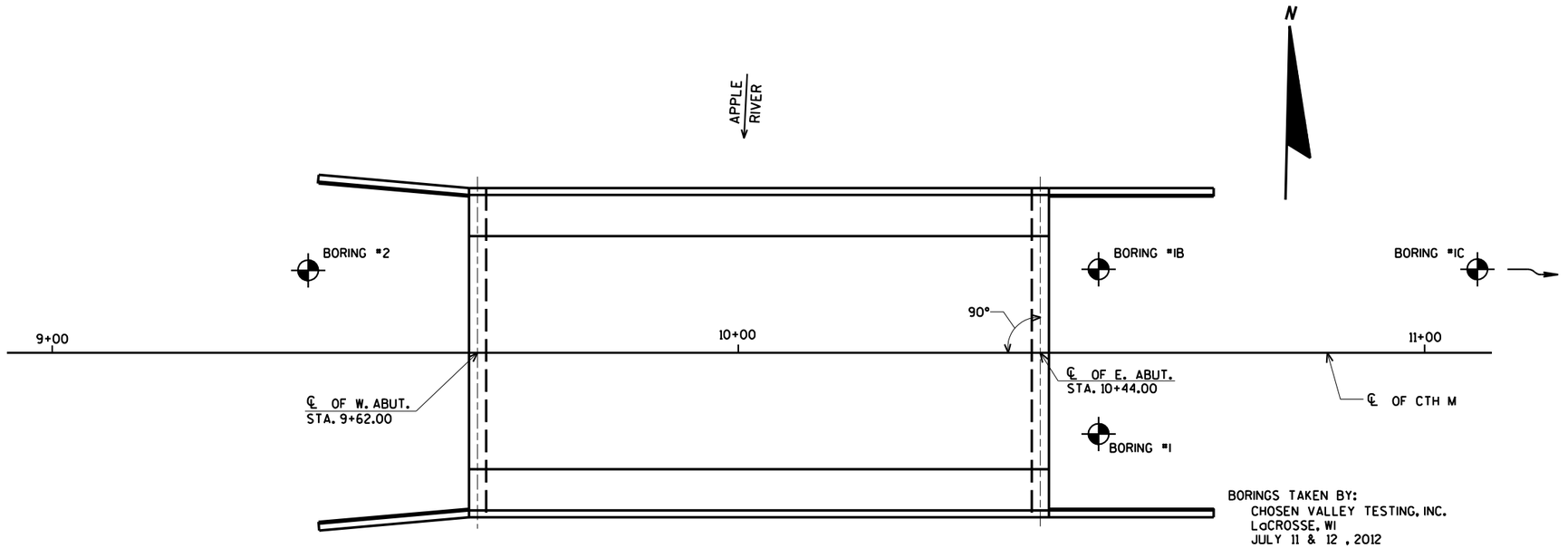
LEGEND OF BORING

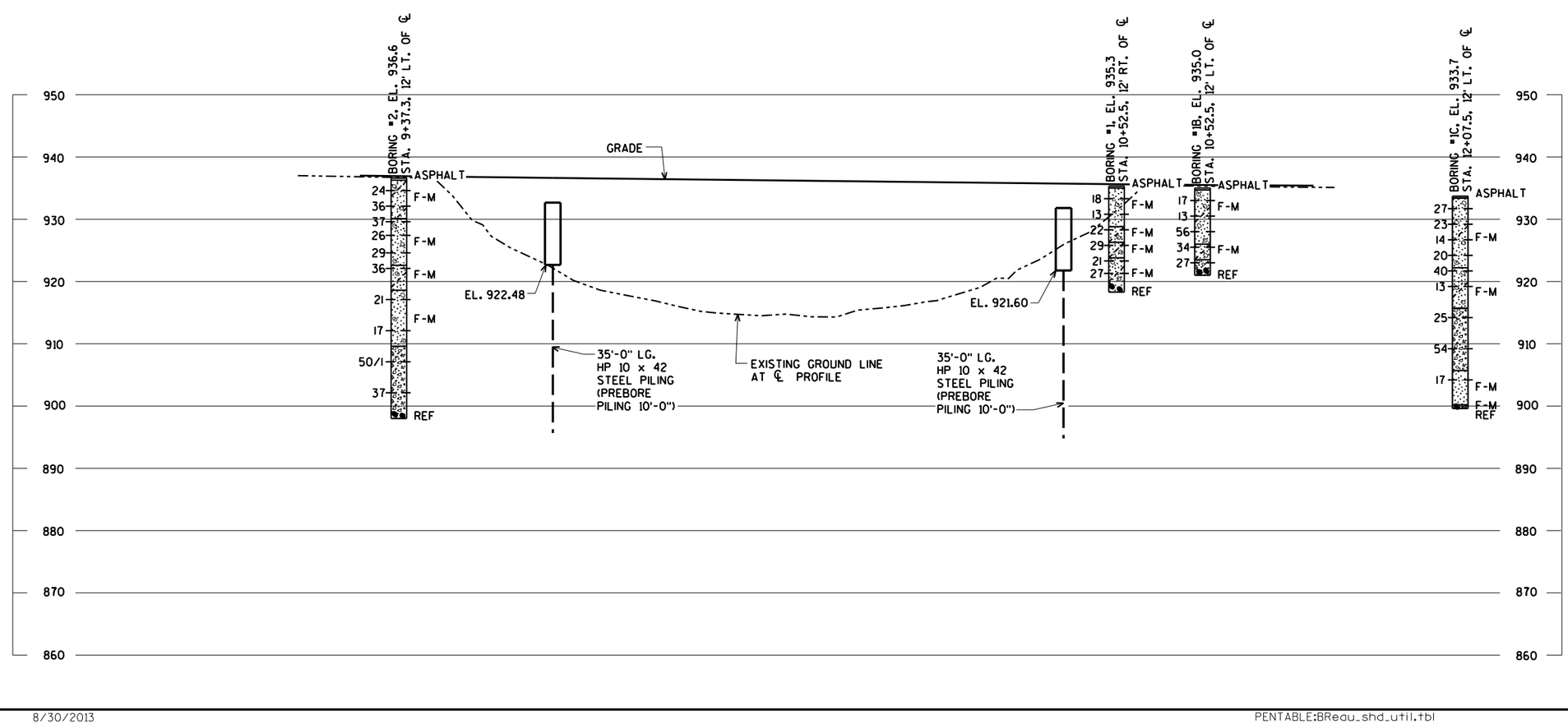


UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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





NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY KAZ | PLANS CK'D. KLW

SUBSURFACE EXPLORATION

SHEET 4 OF 17
62

8

8

8/30/2013

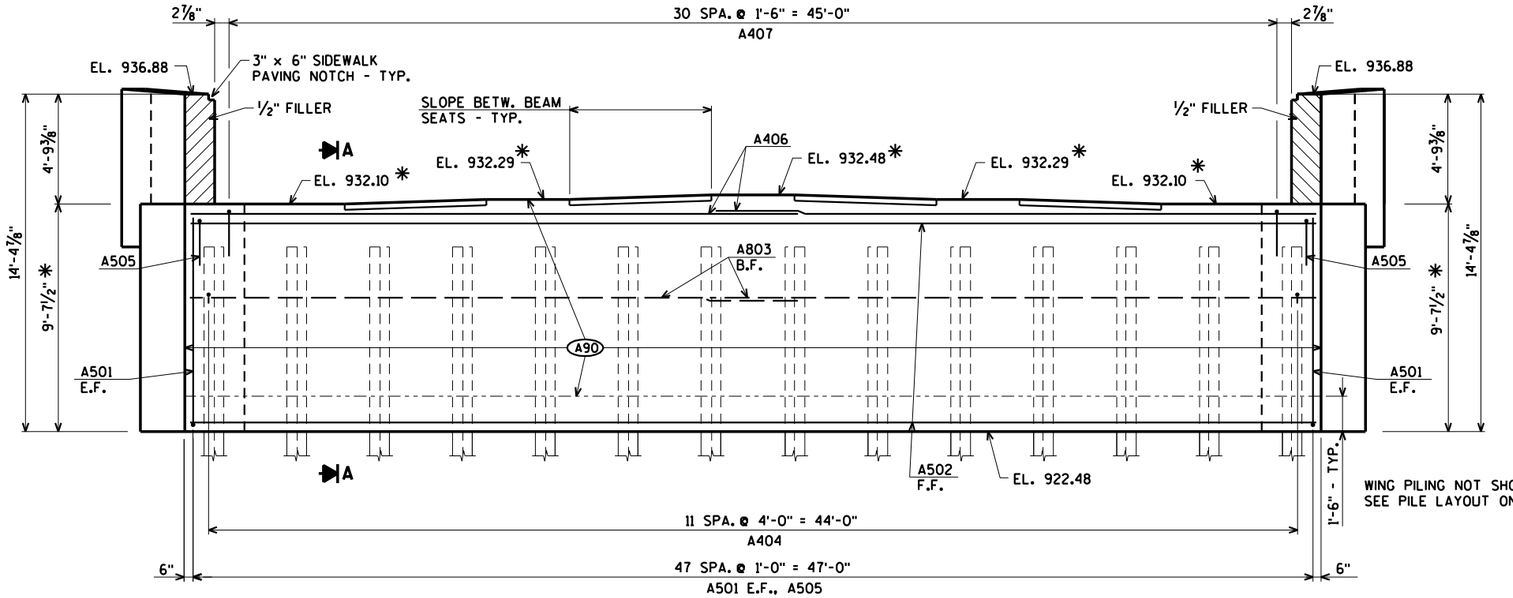
PENTABLE:BReau_shd_util.tbl

STATE PROJECT NUMBER

8866-00-70

* ELEVATIONS AND DIMENSIONS TAKEN AT ℄ OF ABUT.

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

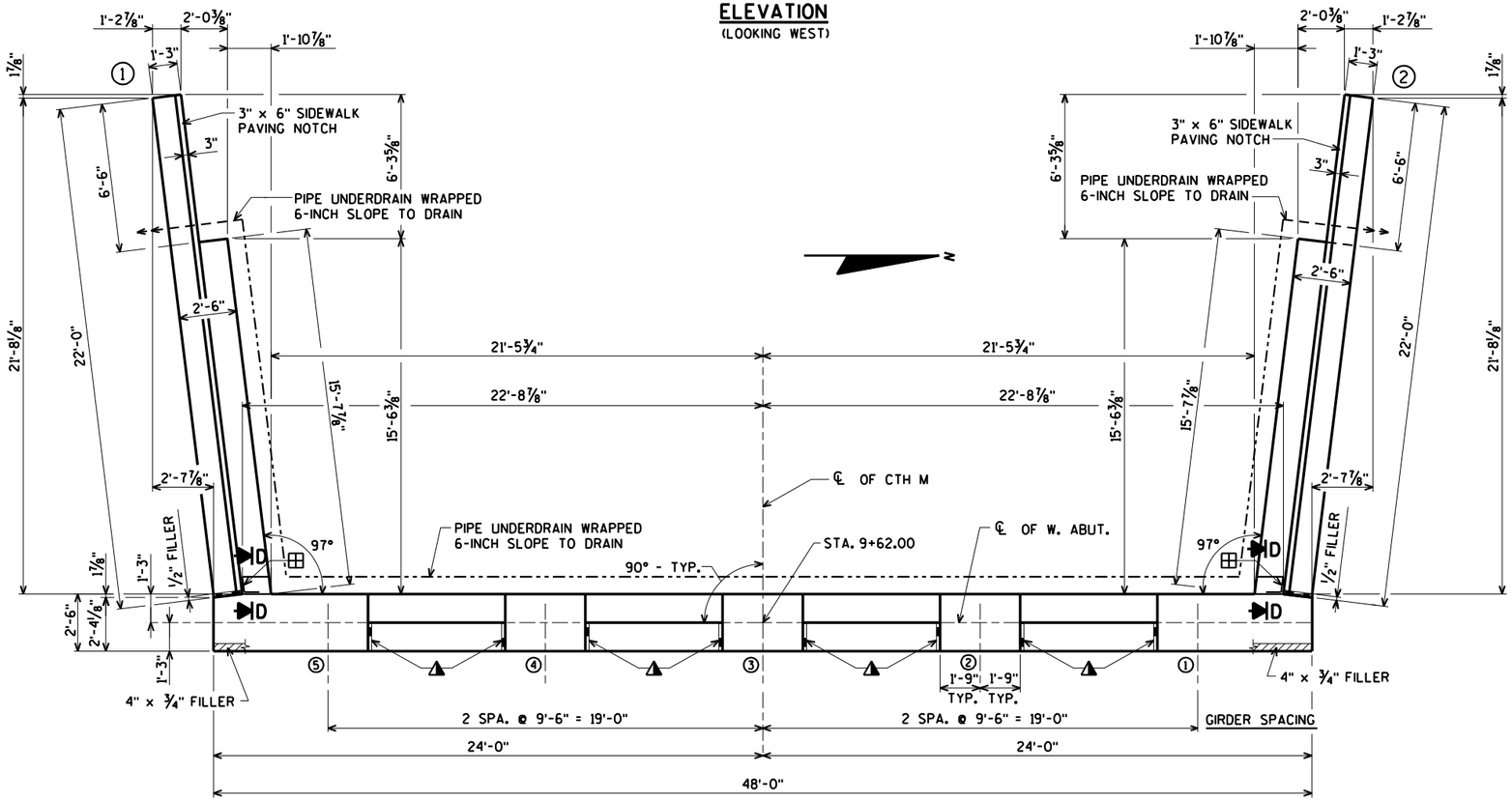


ELEVATION
(LOOKING WEST)

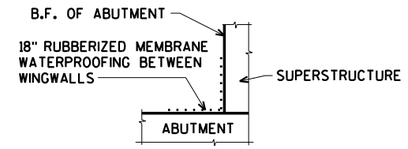
A90 LIMITS OF ANTI-GRAFFITI SHIELD

NOTE: FOR SECTION "A", SEE SHEET 7

WING PILING NOT SHOWN IN ELEVATION VIEW. SEE PILE LAYOUT ON SHEET 7



PLAN



SECTION D

▲ ¾" CORK FILLER ON VERTICAL FACE ONLY.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENT.

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

WORK THIS SHEET WITH SHEETS 6 & 7

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

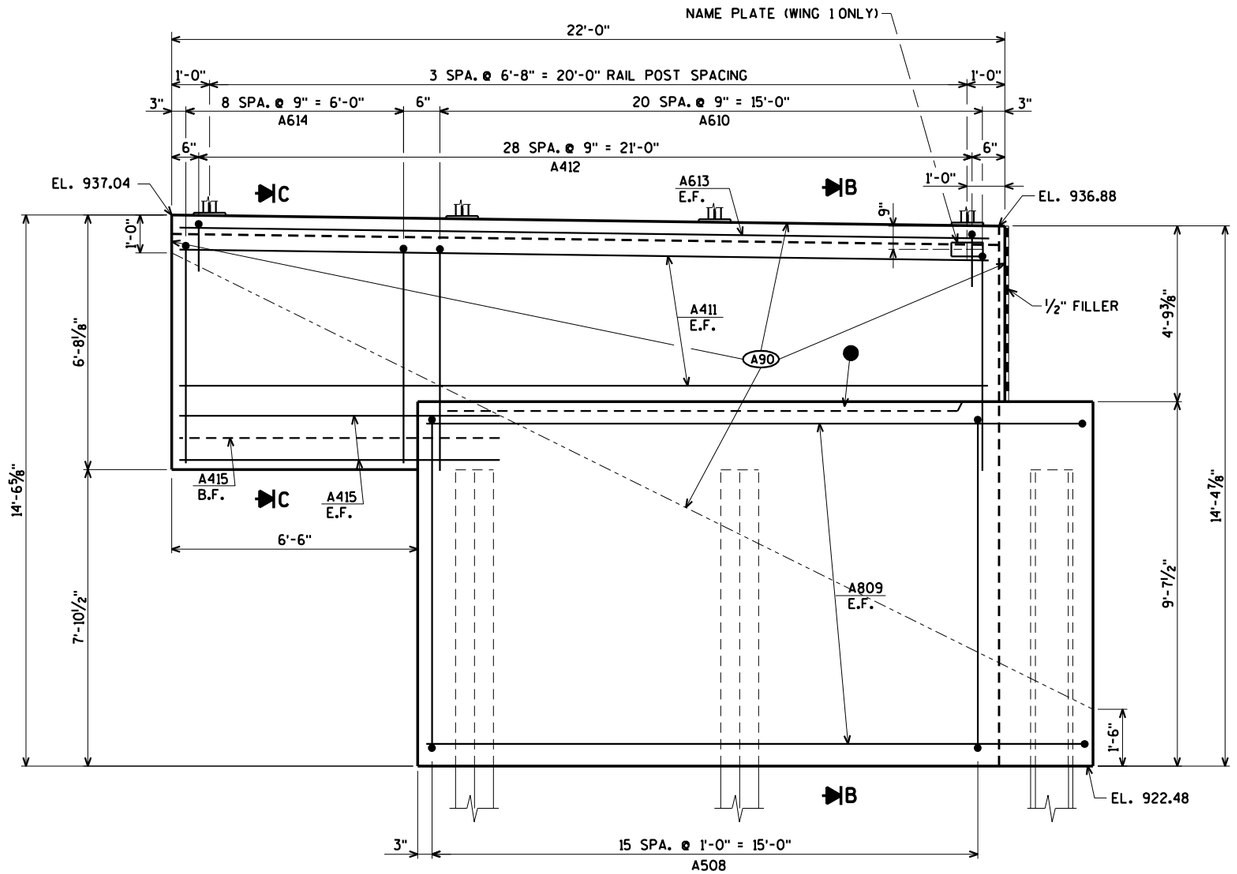
STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

WEST ABUTMENT

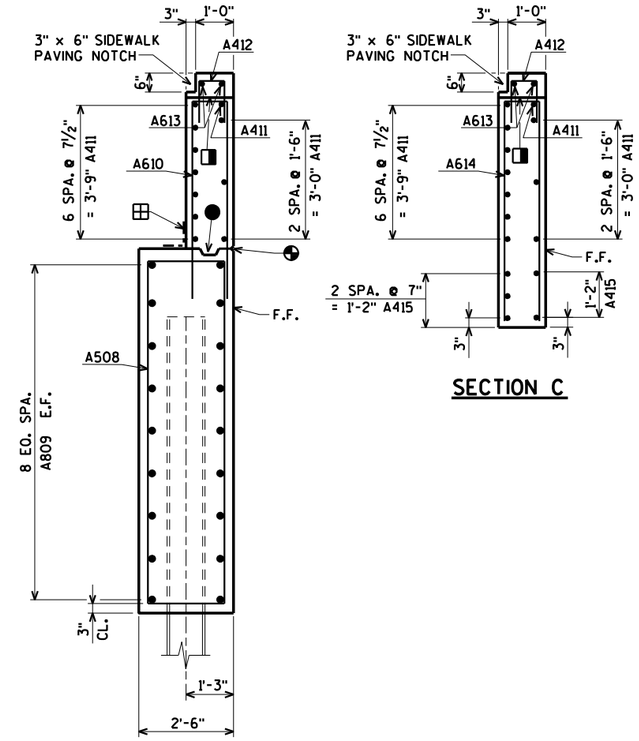
SHEET 5 OF 17
63

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



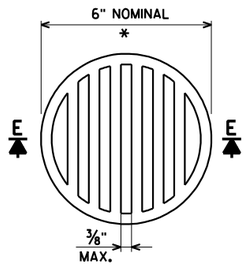
ELEVATION - WING 1

(WING 2 SIMILAR)



SECTION B

SECTION C



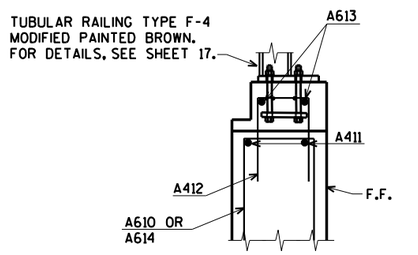
SECTION E-E

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

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

THE RODENT SHIELD SHALL BE 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 SHEET METAL SCREWS.

RODENT SHIELD DETAIL



TOP OF WING DETAIL

TYPE "F-4 MODIFIED" RAILING
WITH 3" X 6" DEEP SIDEWALK NOTCH

(A90) LIMITS OF ANTI-GRAFFITI SHIELD

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

3/4" 'V' GROOVE ON F.F. OF WINGWALL.

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

18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENT.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

WORK THIS SHEET WITH SHEETS 5 & 7

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

WEST ABUTMENT WING DETAILS

SHEET 6 OF 17
64

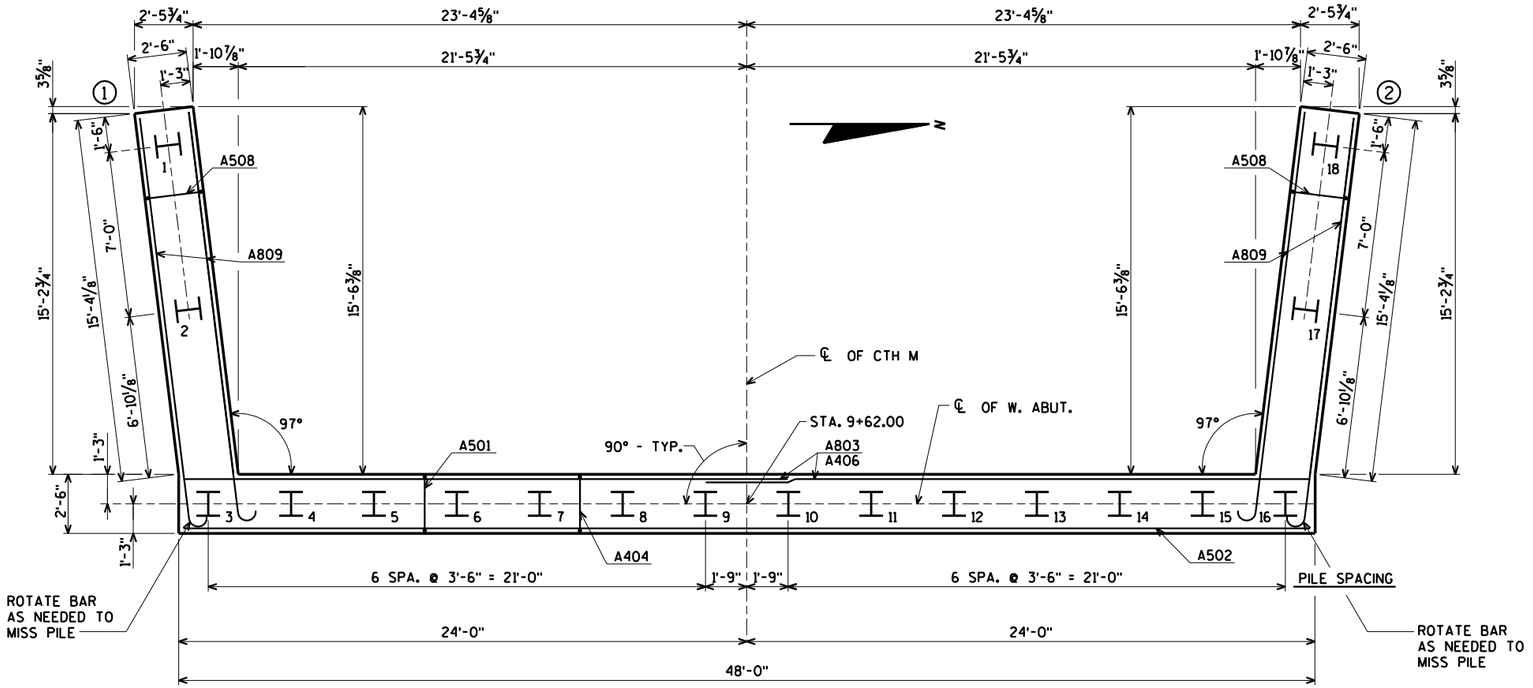
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

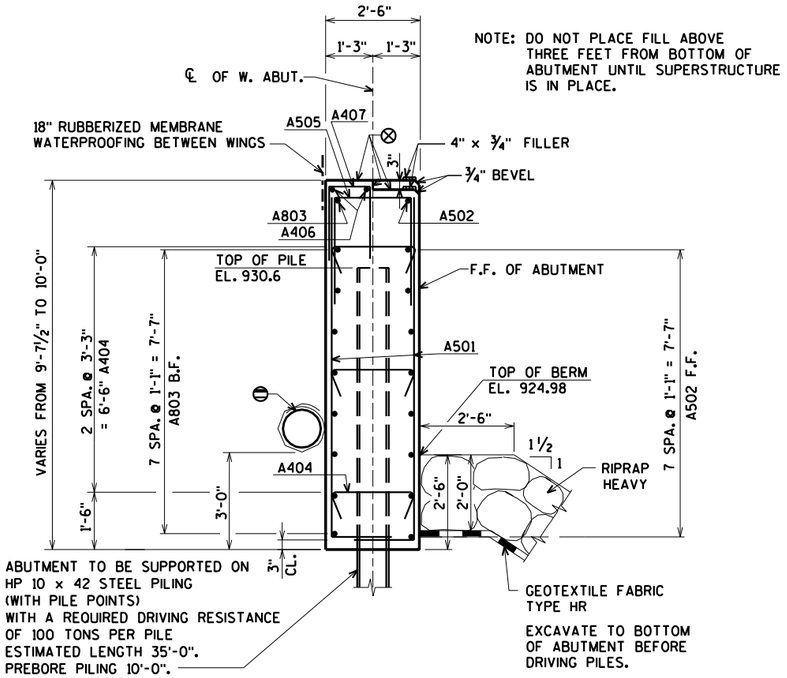
8866-00-70

BILL OF BARS

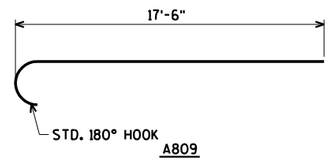
BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	4,330# COATED 3,330# UNCOATED LOCATION
A501		96	10-4	X		BODY VERT. E.F.
A502		9	47-8			BODY HORIZ. F.F.
A803		18	26-5			BODY HORIZ. B.F.
A404		36	2-11	X		BODY TIES
A505		48	6-11	X		BODY VERT. TOP
A406		4	24-10			BODY HORIZ.
A407		31	4-5	X		BODY VERT.
A508	X	32	22-11	X		WING VERT. E.F.
A809	X	36	18-5	X		WING HORIZ. E.F.
A610	X	42	13-1	X		WING VERT.
A411	X	22	21-7			WING HORIZ. E.F.
A412	X	58	3-10	X		WING VERT.
A613	X	4	21-8			WING HORIZ. TOP
A614	X	18	12-1	X		WING VERT.
A415	X	10	7-9			WING VERT. E.F.

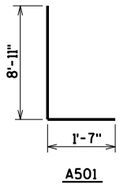


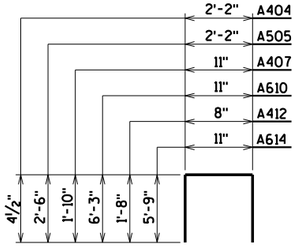
PILE LAYOUT

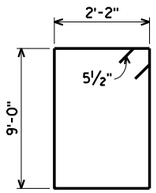


SECTION A









⊖ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SDD REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE. SEE DETAIL ON SHEET 5.

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

FOR SPLICE DETAIL SEE SHEET 3.

NOTE: FOR LOCATION OF SECTION "A" SEE SHEET 5.

F.F. DENOTES FRONT FACE.
B.F. DENOTES BACK FACE.
E.F. DENOTES EACH FACE.
WORK THIS SHEET WITH SHEETS 5 & 6

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

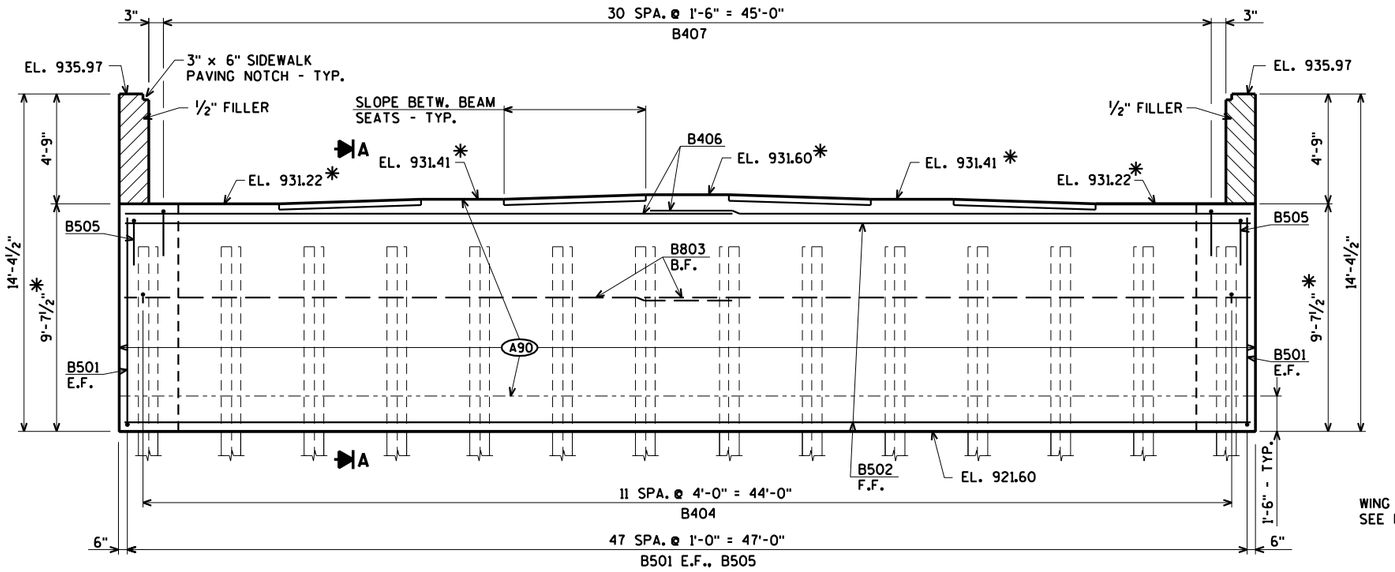
WEST ABUTMENT PILE LAYOUT & BILL OF BARS

SHEET 7 OF 17
65

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

* ELEVATIONS AND DIMENSIONS TAKEN AT ℄ OF ABUT.

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

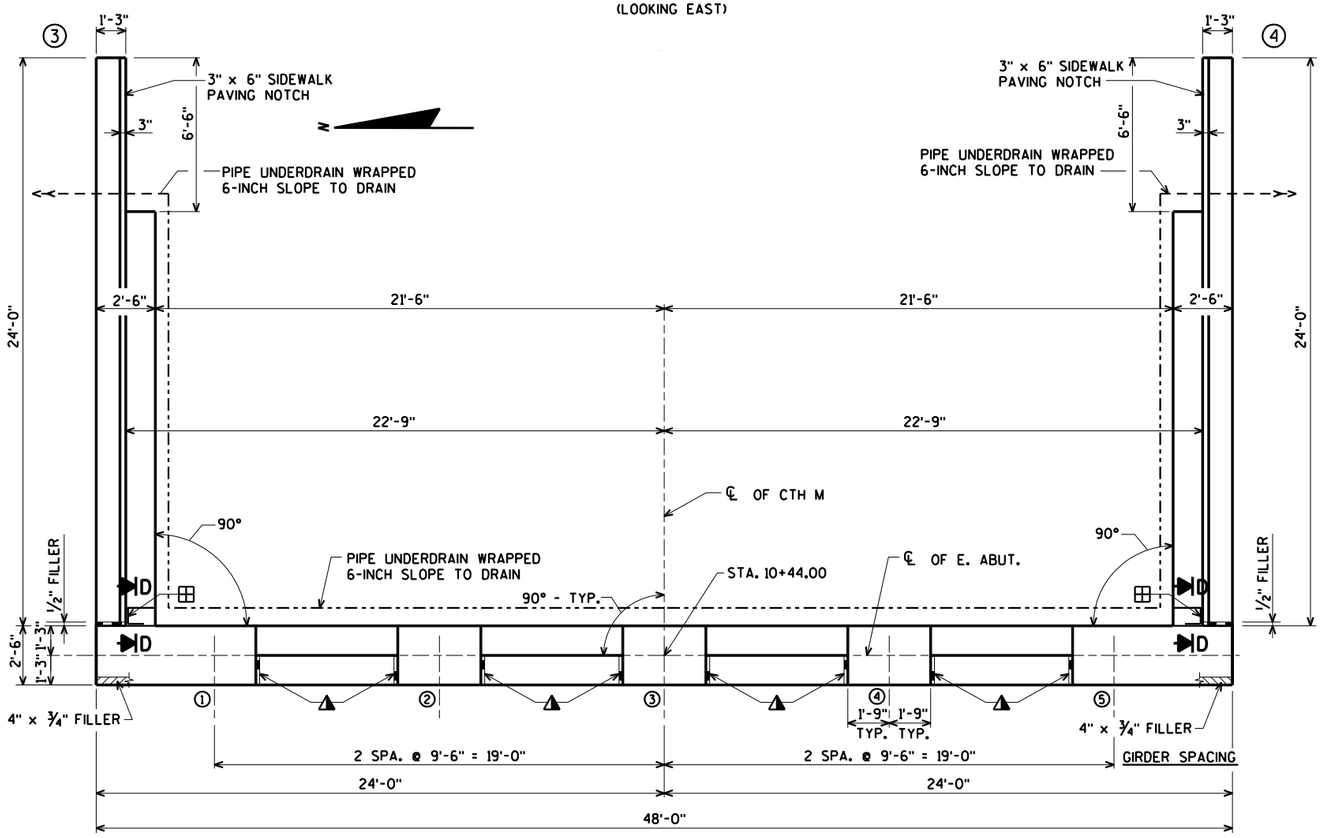


ELEVATION
(LOOKING EAST)

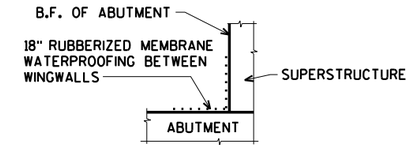
A90 LIMITS OF ANTI-GRAFFITI SHIELD

NOTE: FOR SECTION "A" SEE SHEET 10.

WING PILING NOT SHOWN IN ELEVATION VIEW. SEE PILE LAYOUT ON SHEET 10



PLAN



SECTION D

▲ ¾" CORK FILLER ON VERTICAL FACE ONLY.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE OF ABUTMENT.

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

WORK THIS SHEET WITH SHEETS 9 & 10

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

EAST ABUTMENT

SHEET 8 OF 17
66

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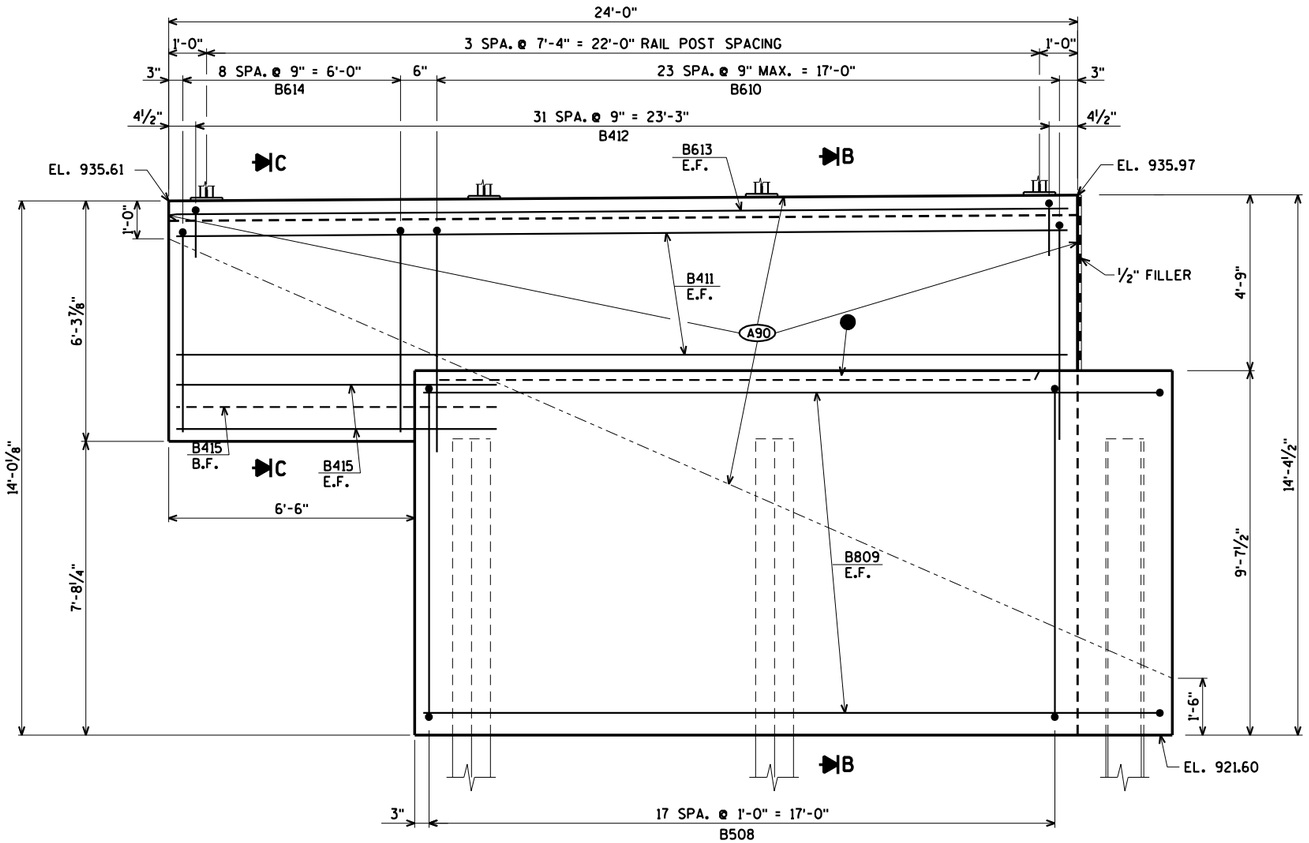
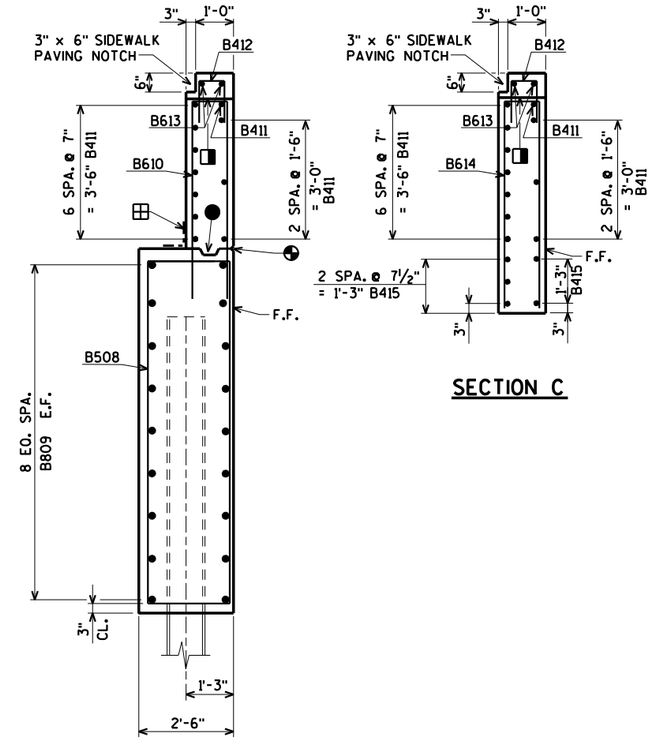
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

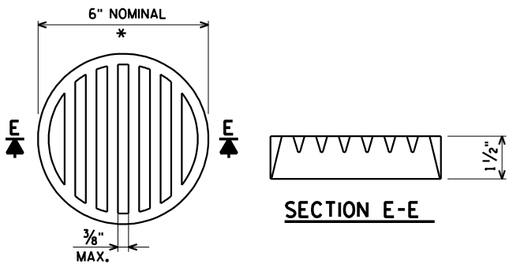


ELEVATION - WING 3
(WING 4 SIMILAR)



SECTION C

SECTION B



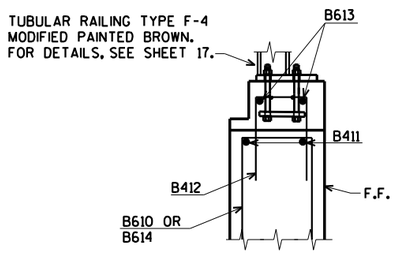
SECTION E-E

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

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

THE RODENT SHIELD SHALL BE 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 SHEET METAL SCREWS.

RODENT SHIELD DETAIL



TOP OF WING DETAIL
TYPE "F-4 MODIFIED" RAILING
WITH 3" X 6" DEEP SIDEWALK NOTCH

(A90) LIMITS OF ANTI-GRAFFITI SHIELD

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

¾" 'V' GROOVE ON F.F. OF WINGWALL.

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

18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENT.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

WORK THIS SHEET WITH SHEETS 8 & 10

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

EAST ABUTMENT WING DETAILS

SHEET 9 OF 17
67

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
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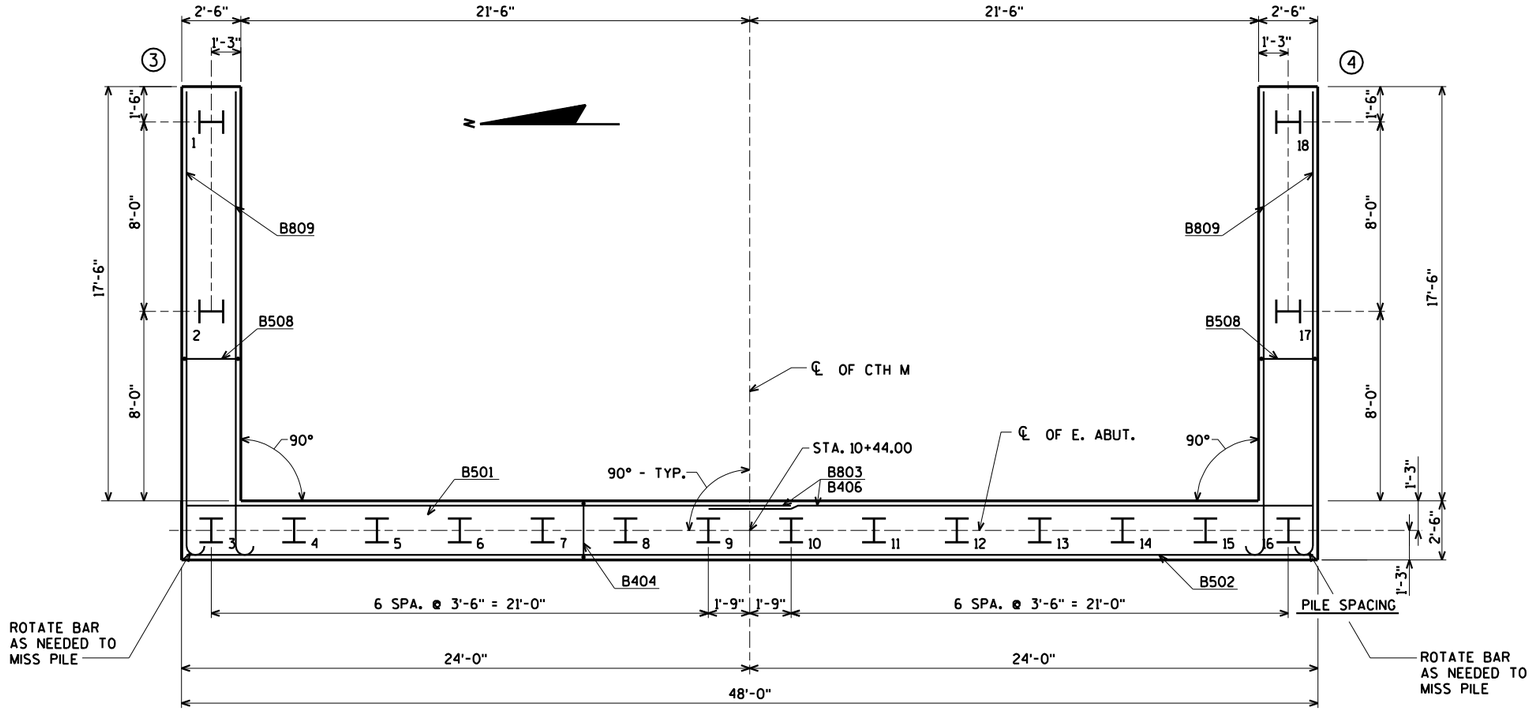
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

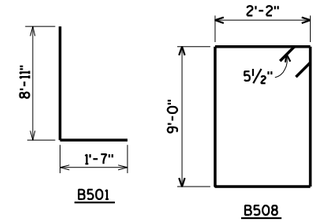
8866-00-70

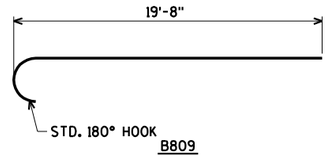


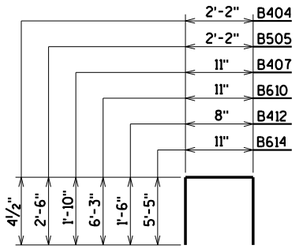
PILE LAYOUT

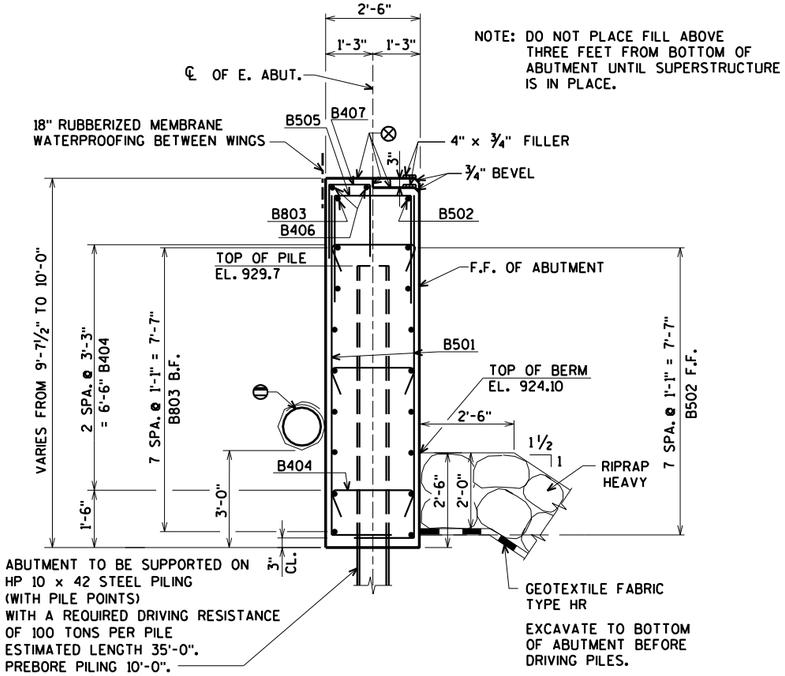
BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	4,780# COATED 3,330# UNCOATED LOCATION
B501		96	10-4	X		BODY VERT. E.F.
B502		9	47-8			BODY HORIZ. F.F.
B803		18	26-5			BODY HORIZ. B.F.
B404		36	2-11	X		BODY TIES
B505		48	6-11	X		BODY VERT. TOP
B406		4	24-10			BODY HORIZ.
B407		31	4-5	X		BODY VERT.
B508	X	36	22-11	X		WING VERT. E.F.
B809	X	36	20-7			WING HORIZ. E.F.
B610	X	48	13-1	X		WING VERT.
B411	X	22	23-7			WING HORIZ. E.F.
B412	X	64	3-6	X		WING VERT.
B613	X	4	23-7			WING HORIZ. TOP
B614	X	18	11-5	X		WING VERT.
B415	X	10	7-9			WING VERT. E.F.









SECTION A

⊖ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SDD REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE. SEE DETAIL ON SHEET 9.

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

NOTE: FOR LOCATION OF SECTION "A" SEE SHEET 8.

F.F. DENOTES FRONT FACE.
B.F. DENOTES BACK FACE.
E.F. DENOTES EACH FACE.
WORK THIS SHEET WITH SHEETS 8 & 9

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

EAST ABUTMENT BILL OF BARS

SHEET 10 OF 17
68

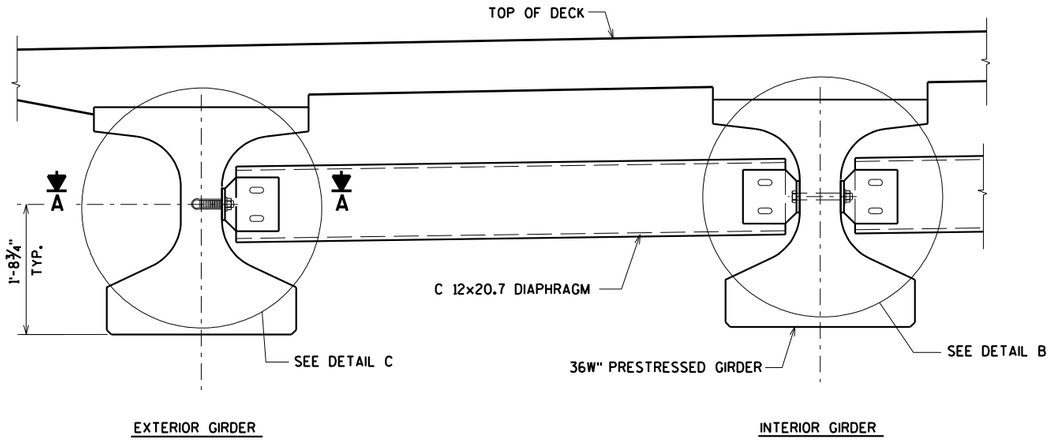
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

8

STATE PROJECT NUMBER

8866-00-70



PART TRANSVERSE SECTION AT DIAPHRAGM

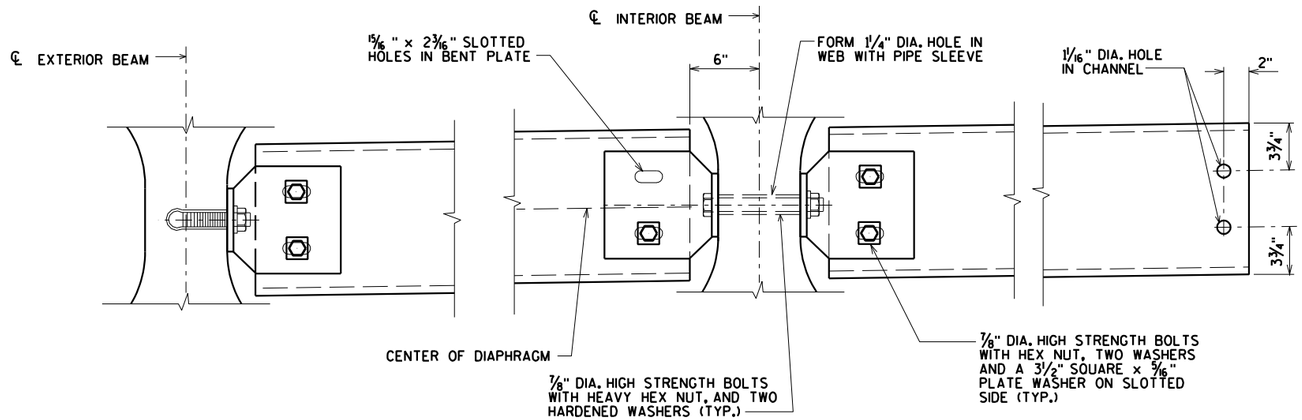
NOTES

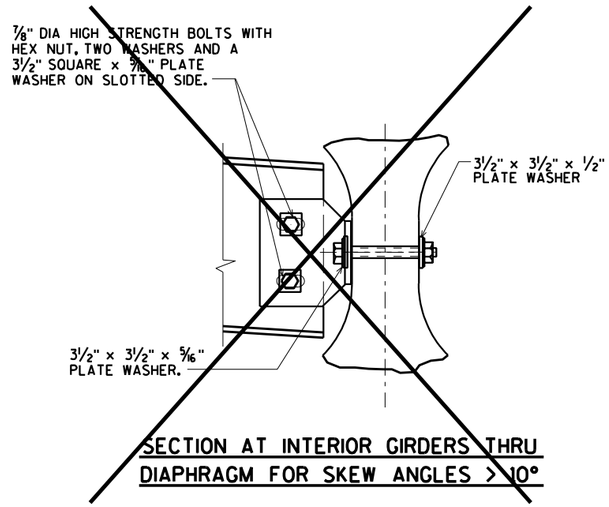
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGM B-55-268", EACH.

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.

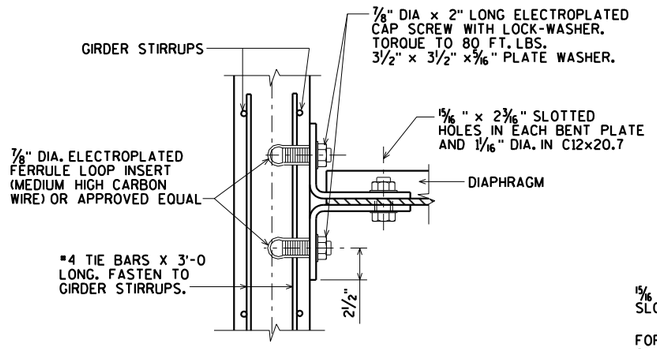
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY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





SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°

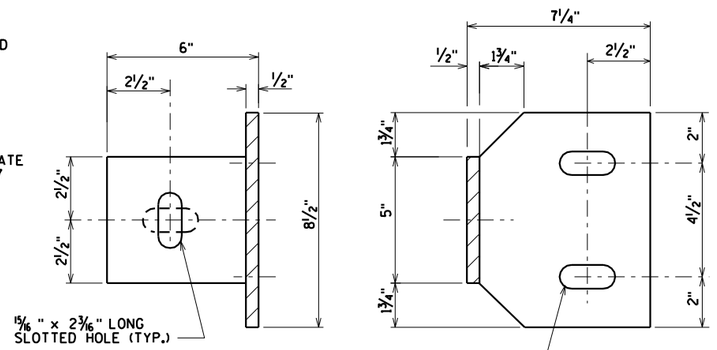
DETAIL C



SECTION A-A

(FOR EXTERIOR ATTACHMENT)

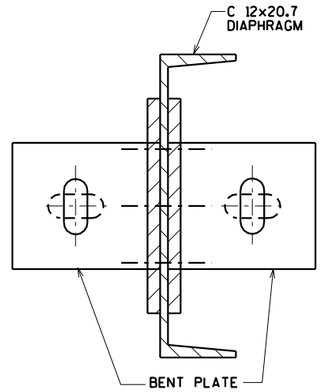
DETAIL B



FOR EACH PAIR OF ANGLES ON A GIVEN BEAM FACE, ONE SLOTTED HOLE TO BE VERTICAL AND ONE TO BE HORIZONTAL.

BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY KAZ | PLANS CK'D. KLW

STEEL INTER. DIAPHRAGM DETAILS

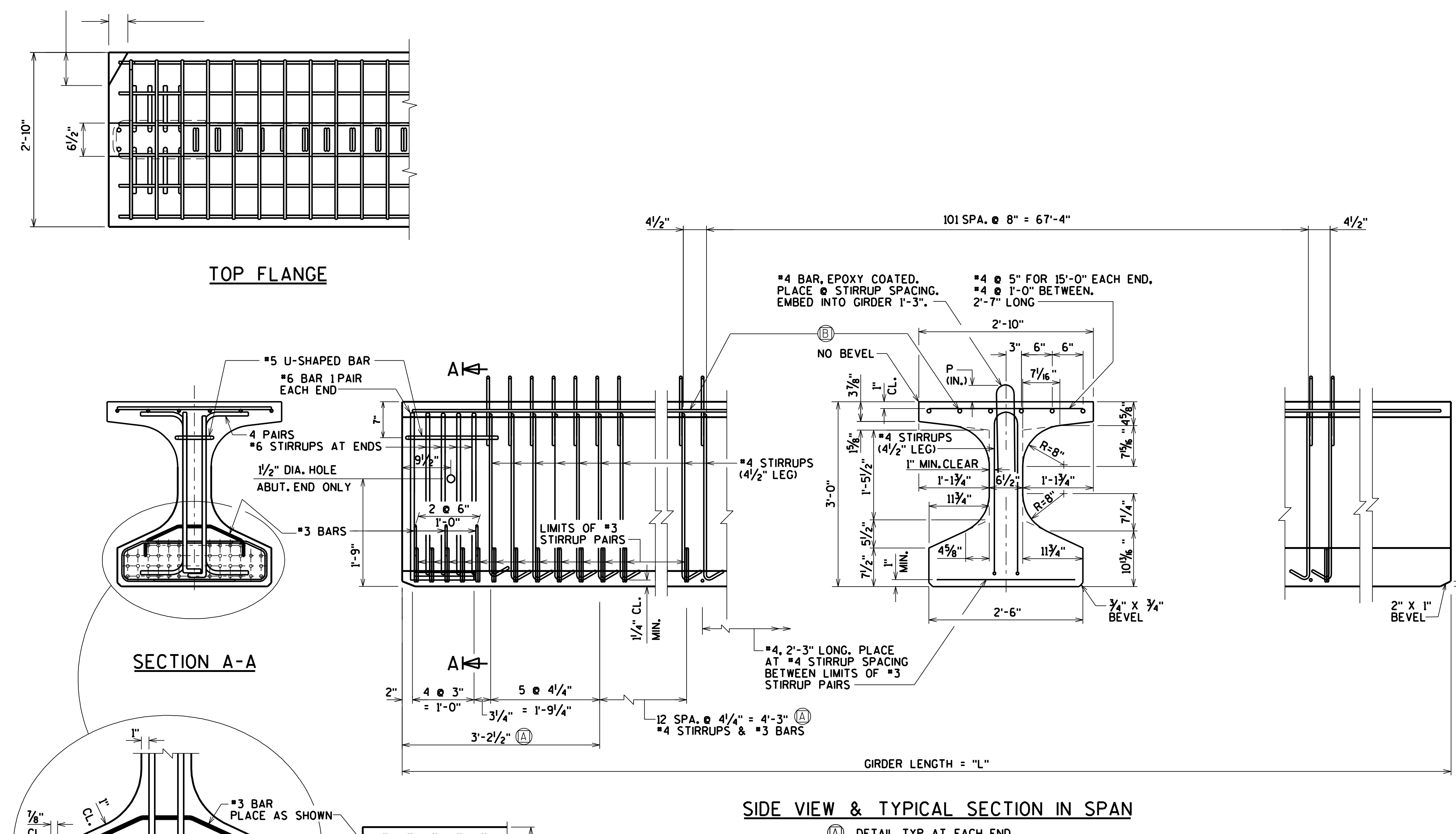
SHEET 11 OF 17

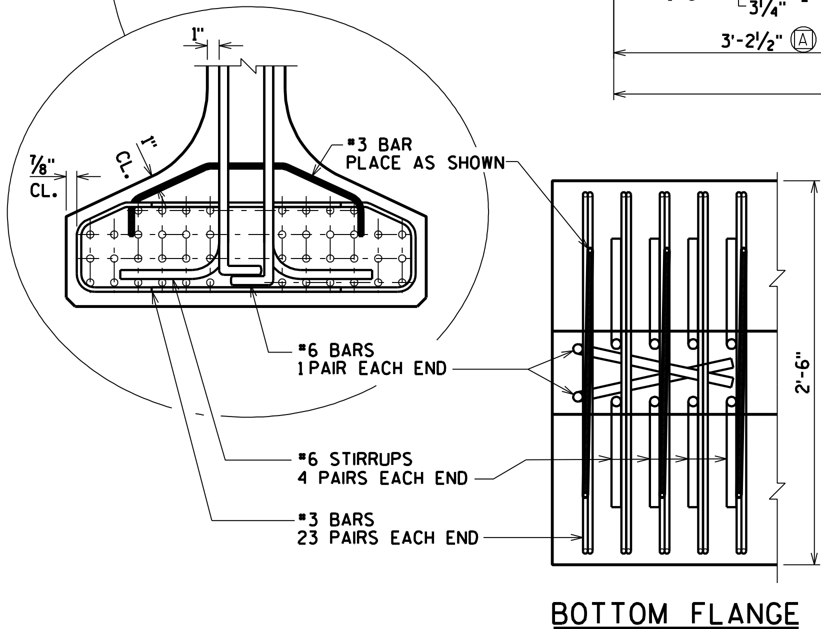
69

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

8

8





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.

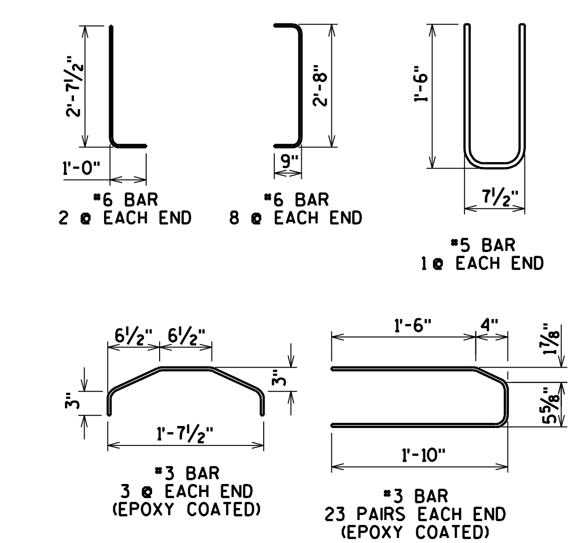
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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.



* 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" 1ST 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	ALL	83'-0"	0.6	1.2	1.6	1.9	2.0	1.9	1.6	1.2	0.6	8,000	8"	7"	8"	0.6	32	6,400	31	11.5	14.5	5		

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

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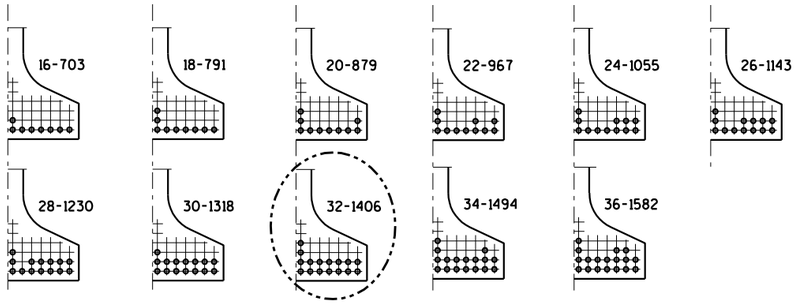
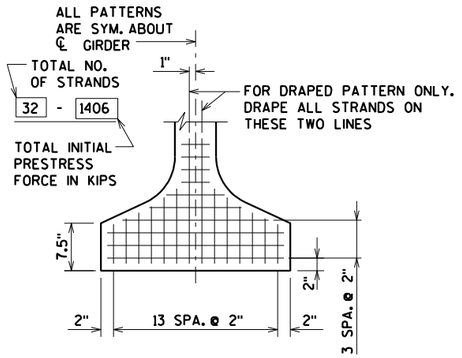
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

36W" PRESTRESSED GIRDER DETAILS

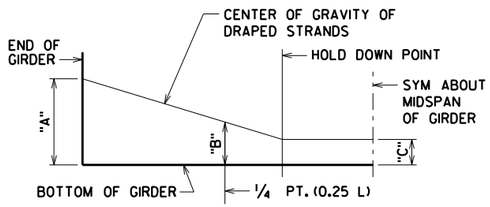


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"ϕ STRANDS



TYP. STRAND PATTERN

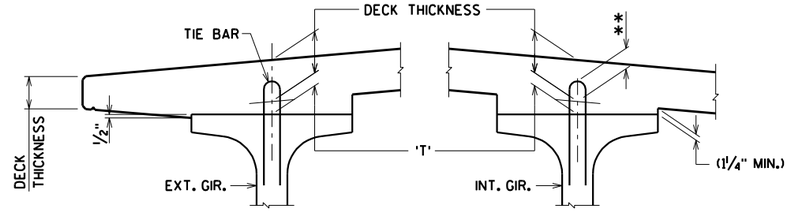


DRAPED STRAND PROFILE

*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	4.0

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'. USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DECK HAUNCH DETAIL

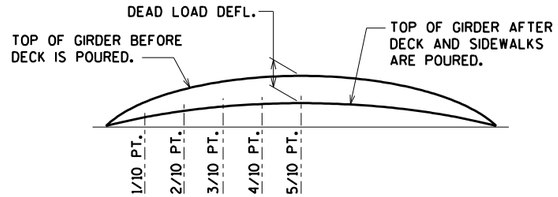
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** 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 3⅛" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

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36W" PRESTRESSED GIRDER DETAILS

SHEET 13 OF 17
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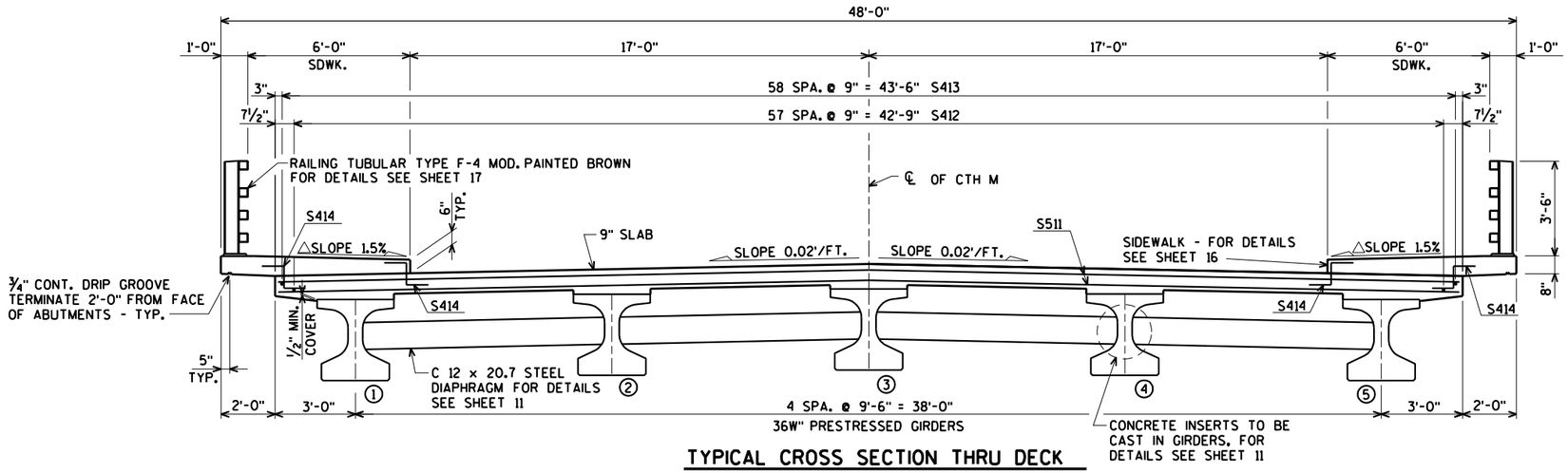


TYPICAL CROSS SECTION THRU DECK

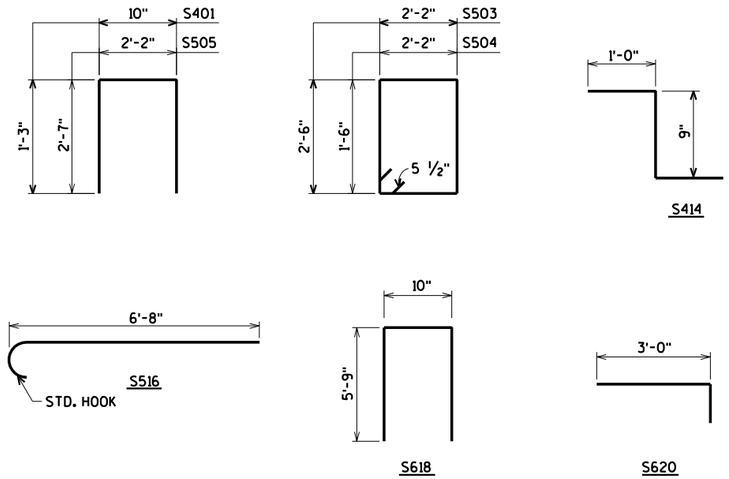
(LOOKING EAST)

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

BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	27,920" COATED LOCATION
S401	X	56	3-2	X		DIAPH. @ ABUT. VERT. @ NOTCH
S402	X	16	5-8			DIAPH. @ ABUT. HORIZ. @ NOTCH
S503	X	92	9-11	X		DIAPH. @ ABUT. VERT.
S504	X	20	7-10	X		DIAPH. @ ABUT. VERT. @ GIRDERS
S505	X	92	7-1	X		DIAPH. @ ABUT. VERT.
S606	X	10	47-8			DIAPH. @ ABUT. HORIZ.
S607	X	4	3-5			DIAPH. @ ABUT. HORIZ. EXT. GIRDERS
S608	X	48	5-6			DIAPH. @ ABUT. HORIZ. BETW. GIRDERS
S609	X	8	4-4			DIAPH. @ ABUT. HORIZ. EXT. GIRDERS
S510	X	20	6-0			DIAPH. @ ABUT. HORIZ. THRU GIRDER
S511	X	253	43-8			SLAB TRANS. TOP & BOT.
S412	X	174	29-2			SLAB LONG. BOT.
S413	X	177	29-8			SLAB LONG. TOP
S414	X	676	2-7	X		SLAB @ SDWK.
S415	X	114	3-0			SDWK. TRANS. BOT.
S516	X	338	7-3	X		SDWK. TRANS. TOP
S417	X	78	29-8			SDWK. LONG. TOP & BOT.
S618	X	24	12-0	X		SLAB @ RAIL POSTS
S619	X	40	4-0			SLAB @ INT. RAIL POSTS
S620	X	8	4-0	X		SLAB @ END RAIL POSTS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

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SUPERSTRUCTURE

SHEET 14 OF 17
72

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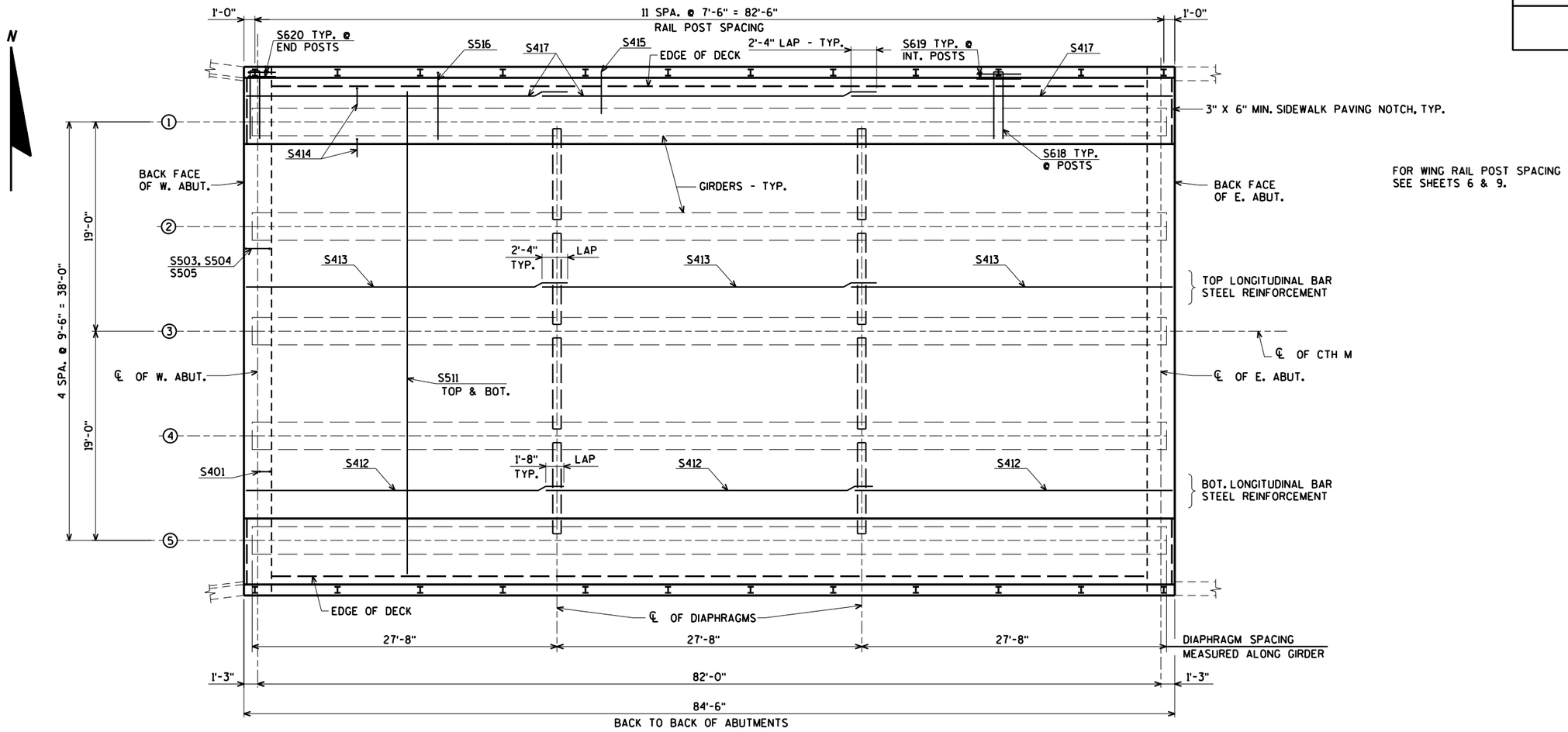
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE PROJECT NUMBER

8866-00-70

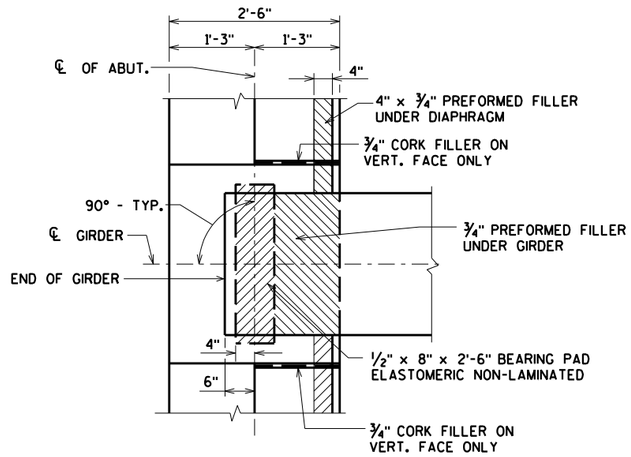


PLAN

TOP OF DECK ELEVATIONS

	℄ OF W. ABUT.	0.1 PT	0.2 PT	0.3 PT	0.4 PT	0.5 PT	0.6 PT	0.7 PT	0.8 PT	0.9 PT	℄ OF E. ABUT.
N. SLAB EDGE	936.17	936.08	935.99	935.90	935.81	935.72	935.63	935.54	935.46	935.37	935.29
GIRDER 1	936.23	936.14	936.05	935.96	935.87	935.78	935.69	935.60	935.52	935.43	935.35
GIRDER 2	936.42	936.33	936.24	936.15	936.06	935.97	935.88	935.79	935.71	935.62	935.54
GIRDER 3	936.61	936.52	936.43	936.34	936.25	936.16	936.07	935.98	935.90	935.81	935.73
GIRDER 4	936.42	936.33	936.24	936.15	936.06	935.97	935.88	935.79	935.71	935.62	935.54
GIRDER 5	936.23	936.14	936.05	935.96	935.87	935.78	935.69	935.60	935.52	935.43	935.35
S. SLAB EDGE	936.17	936.08	935.99	935.90	935.81	935.72	935.63	935.54	935.46	935.37	935.29

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



BEARING PAD DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

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SUPERSTRUCTURE PLAN

SHEET 15 OF 17
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ORIGINAL PLANS PREPARED BY
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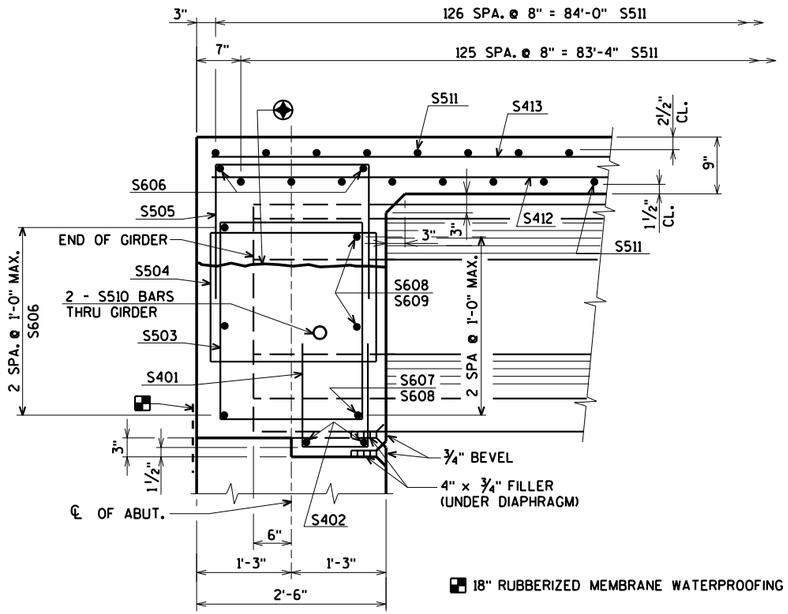
$PRFNAME$
U:\42-0848.00 - St. Croix Co. CTH M over Apple River\BRIDGE\420848 sup.dgn

8/30/2013

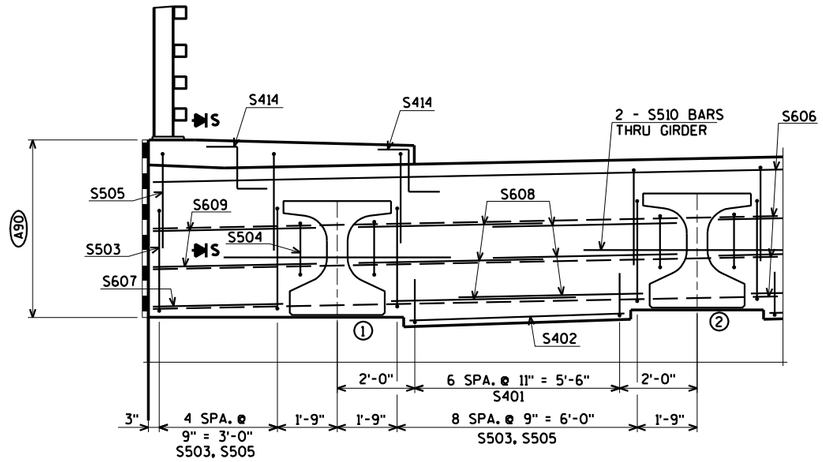
PENTABLE:BReau_shd_util.tbl



■ 18" RUBBERIZED MEMBRANE WATERPROOFING

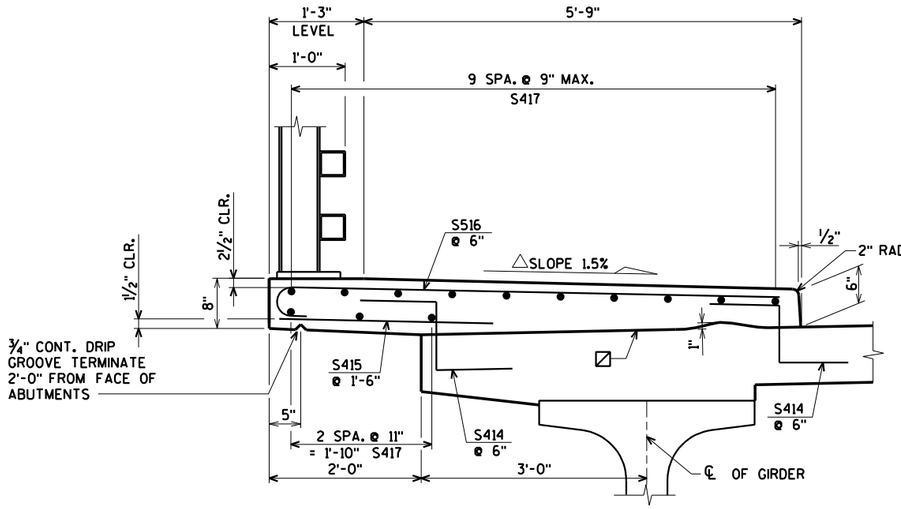
◈ OPTIONAL CONSTRUCTION JOINT 1'-2" BELOW TOP OF GIRDER. IF USED, DECK POUR MUST BE WITHIN 2 WEEKS FROM THE TIME OF THE DIAPHRAGM POUR.

PART LONGITUDINAL SECTION



PART SECTION AT ABUTMENT
(LOOKING EAST)

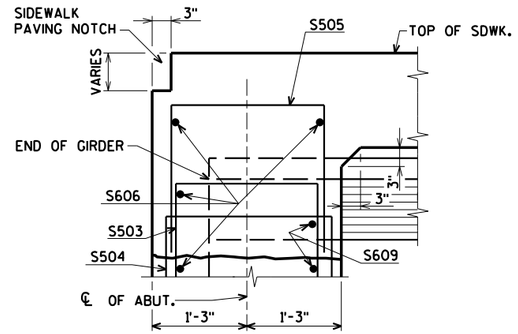
(A90) ANTI-GRAFFITI SHIELD TO BE APPLIED TO THE ENDS OF THE ABUTMENT DIAPHRAGMS.



SECTION THRU SIDEWALK

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

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



SECTION S

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-55-268

DRAWN BY CLS | PLANS CK'D. KLW

SUPERSTRUCTURE DETAILS

SHEET 16 OF 17
74

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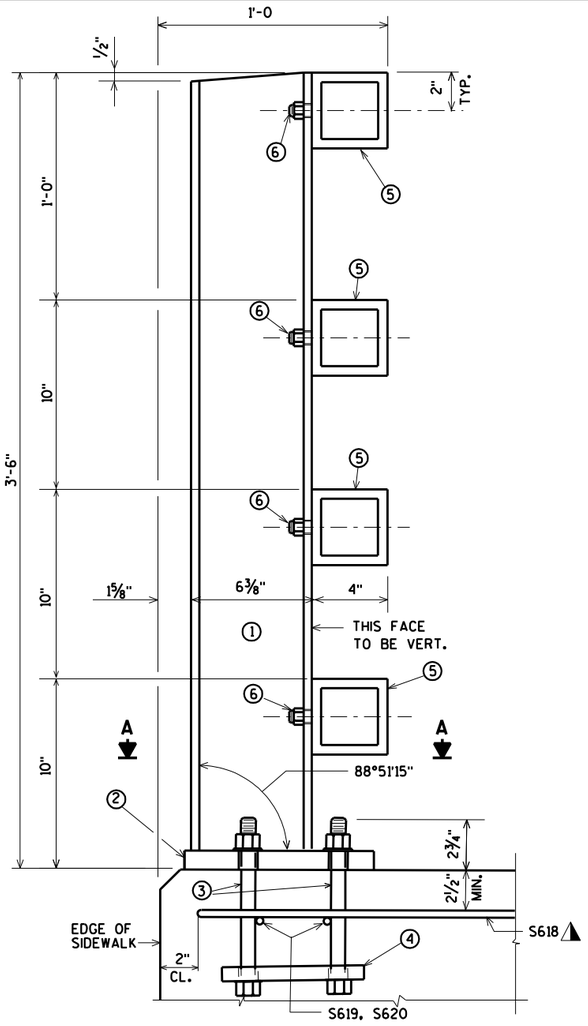
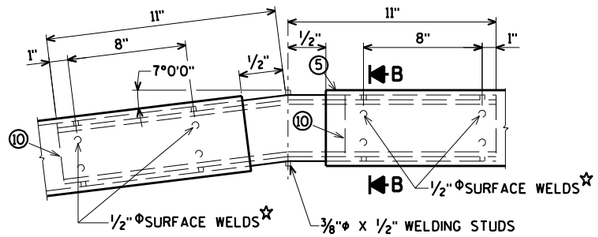
STATE PROJECT NUMBER
8866-00-70



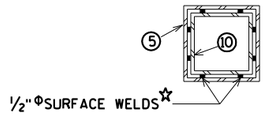
SECTION THRU RAILING ON SIDEWALK



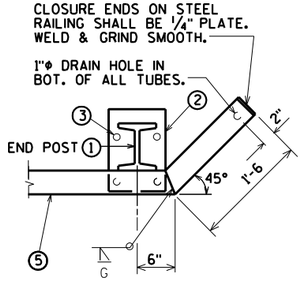
FIELD ERECTION JOINT DETAIL

AT WEST ABUTMENT
WING 1 SHOWN, WING 2 SIMILAR

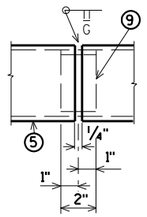
☆MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



SECTION B

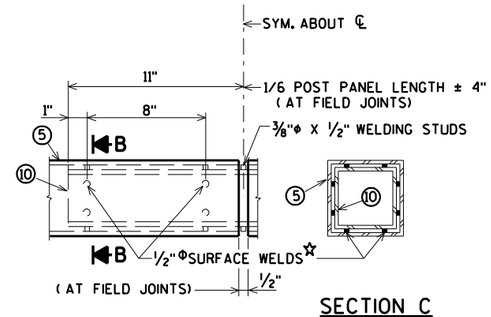


DETAIL FOR END POSTS



SHOP RAIL SPLICE DETAIL

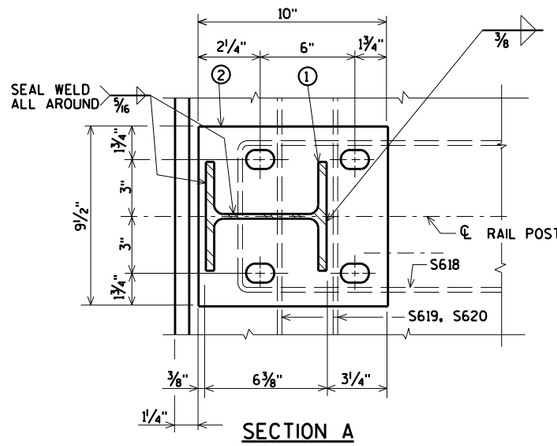
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



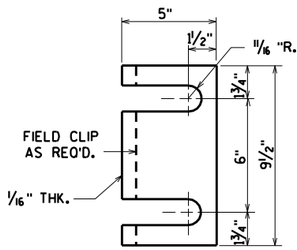
SECTION C

FIELD ERECTION JOINT DETAIL

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

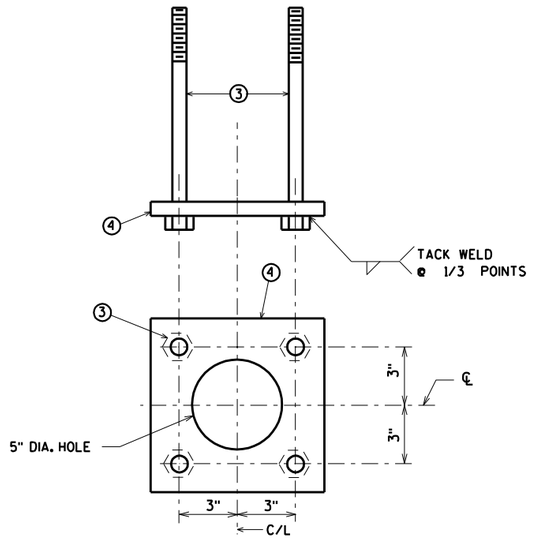


SECTION A



POST SHIM DETAIL

4 PER POST



ANCHORAGE DETAIL

LEGEND

① W6X25 WITH 1¼" DIA. HOLES ON EACH SIDE OF POST FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF SIDEWALK. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

② PLATE 1" X 9½" X 10", WITH 1⅛" X 1½" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.

③ A325 - ⅞" DIA. HEX BOLTS (GALVANIZED) WITH A325 NUT & WASHER. 14" LONG AT END POSTS. USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING.

④ ¼" X 8" X 8" FLAT BAR, WITH ⅝" DIA. HOLES FOR ANCHOR BOLTS NO.3.

⑤ TS 4 X 4 X 0.25 STRUCTURAL TUBING, CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. ATTACH TO NO. 1 WITH TWO NO. 6 STUDS.

⑥ ⅝" DIA. X 1½" LONG (REQUIRED AT EACH RAIL TO POST LOCATION.) SHOP WELDED STUDS WITH HEX NUT AND 2" WASHERS.

⑨ SQUARE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 $^{13}/_{32}$ ".

⑩ TS 3 X 3 X 0.25 X 2-0"' & 1'-10" LONG. PROVIDE ½" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 5. PROVIDE ⅜" DIA. X ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING TUBULAR TYPE F-4 MODIFIED B-55-268", WHICH INCLUDESALL ITEMS SHOWN.

STEEL RAILING POSTS AND STEEL TUBING WILL BE PAINTED BROWN (FEDERAL #20059).

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

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

ALL MATERIAL, EXCEPT ANCHORAGE DETAIL NO. 3 & 4 SHALL BE PAINTED WITH A THREE-COAT ZINC RICH EPOXY SYSTEM. PRIOR TO PAINTING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 11 NEAR WHITE BLAST CLEATING BY SSPC SPECIFICATIONS.

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

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

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

PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

FOR SECTION AT TOP OF WING SEE SHEETS 6 & 9.

⚠ TIE TO TOP MAT OF STEEL.

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STRUCTURE B-55-268

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TUBULAR RAILING TYPE F-4 MOD.

SHEET 17 OF 17
75

ORIGINAL PLANS PREPARED BY
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Eau Claire, WI 54701
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EARTHWORK SUMMARY (CATEGORY 0010)

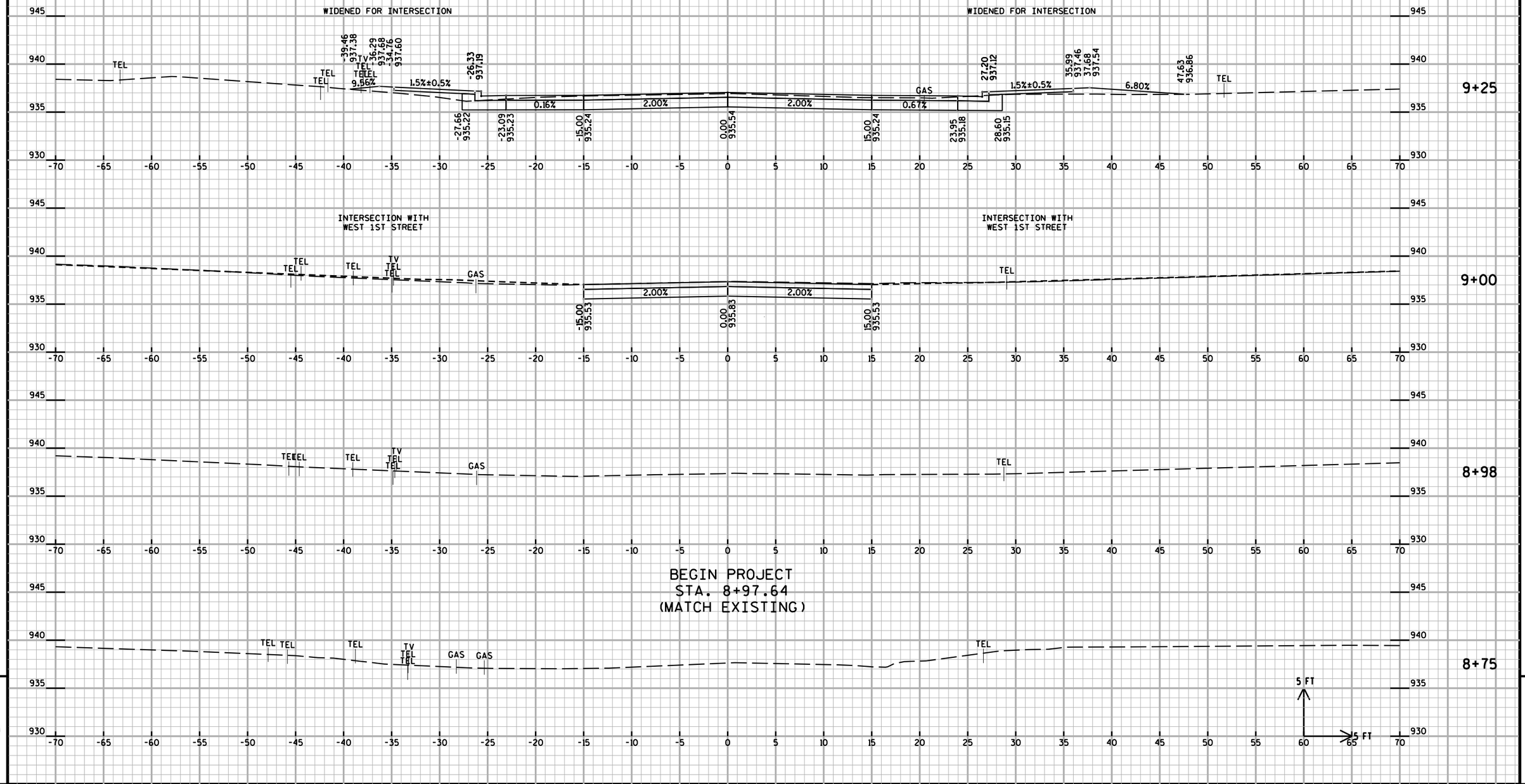
		AREA			INCREMENTAL VOLUME			CUMULATIVE VOLUME		
DIVISION	STATION	CUT SF	SALVAGED/ UNUSEABLE PAVEMENT MATERIAL SF	FILL SF	CUT (1) CY	SALVAGED/ UNUSEABLE PAVEMENT MATERIAL (2) CY	FILL (3) CY	CUT (1) 1.00 CY	EXPANDED FILL (4) 1.30 CY	MASS ORDINATE ±(5) CY
1	8+97.64	45	0	0						
CTH M	9+00	46	0	0	4	0	0	4	0	4
	9+25	75	0	11	56	0	5	60	7	54
	9+38.88	59	0	38	34	0	13	94	23	71
	9+60.75	0	0	16	24	0	22	118	52	66
	STRUCTURE (B-55-268)									
	10+45.25	0	0	16	22	0	52	22	68	-46
	10+69.25	49	0	101	10	0	19	32	92	-60
	10+75	46	0	78	42	0	68	74	181	-107
	11+00	43	0	69	41	0	55	115	252	-137
	11+25	45	0	50	5	0	5	120	259	-139
	11+28	48	0	36	24	0	16	144	280	-136
	11+41	50	0	31	11	0	7	155	289	-134
	11+47	50	0	28	6	0	3	161	293	-132
	11+50	50	0	26	4	0	2	165	295	-130
	11+52	52	0	23	46	0	14	211	313	-102
	11+75	56	0	10	59	0	5	270	320	-50
	12+00	72	0	0						
SUBTOTALS					388	0	255			
2	19+25	17	0	0						
W. 1st Street	19+50	23	0	1	18	0	2	18	3	15
	19+75	41	0	0	30	0	2	48	5	43
	19+85	4	0	0	8	0	0	56	5	51
	Intersection with CTH M									
	20+15	4	0	0	6	0	0	62	5	57
	20+25	31	0	0	25	0	1	87	7	81
	20+50	23	0	1	18	0	1	105	8	97
	20+75	17	0	0						
SUBTOTALS					105	0	6			
TOTALS					493	0	261			

205.0100 EXCAVATION COMMON = SAY 493 **208.0100 BORROW = SAY 50**

NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSEABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
5) THE MASS ORDINATE ± QTY CALCULATED FOR THE DIVISION.

PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STA. 8+75 TO 9+25

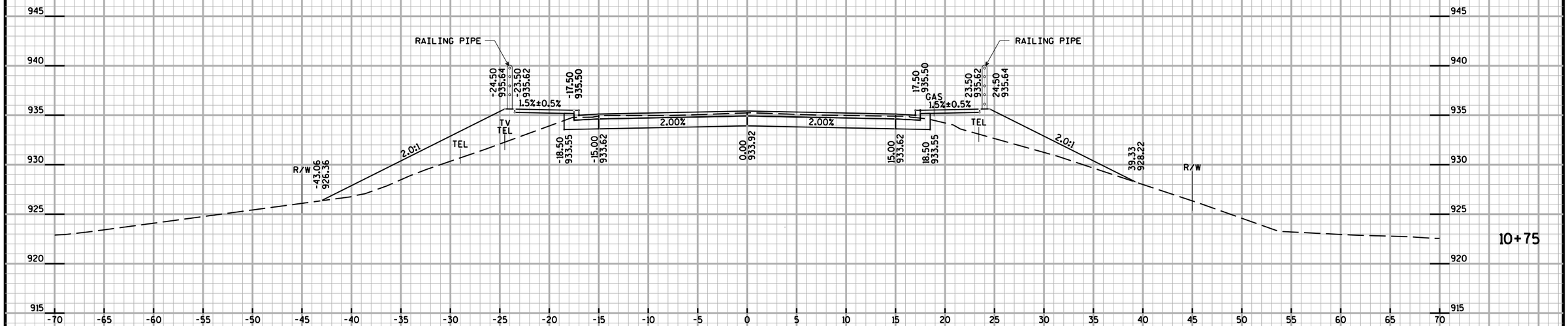


PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS	SHEET 77	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 10+50 TO 10+75



10+75

STRUCTURE B-55-268

5 FT
5 FT

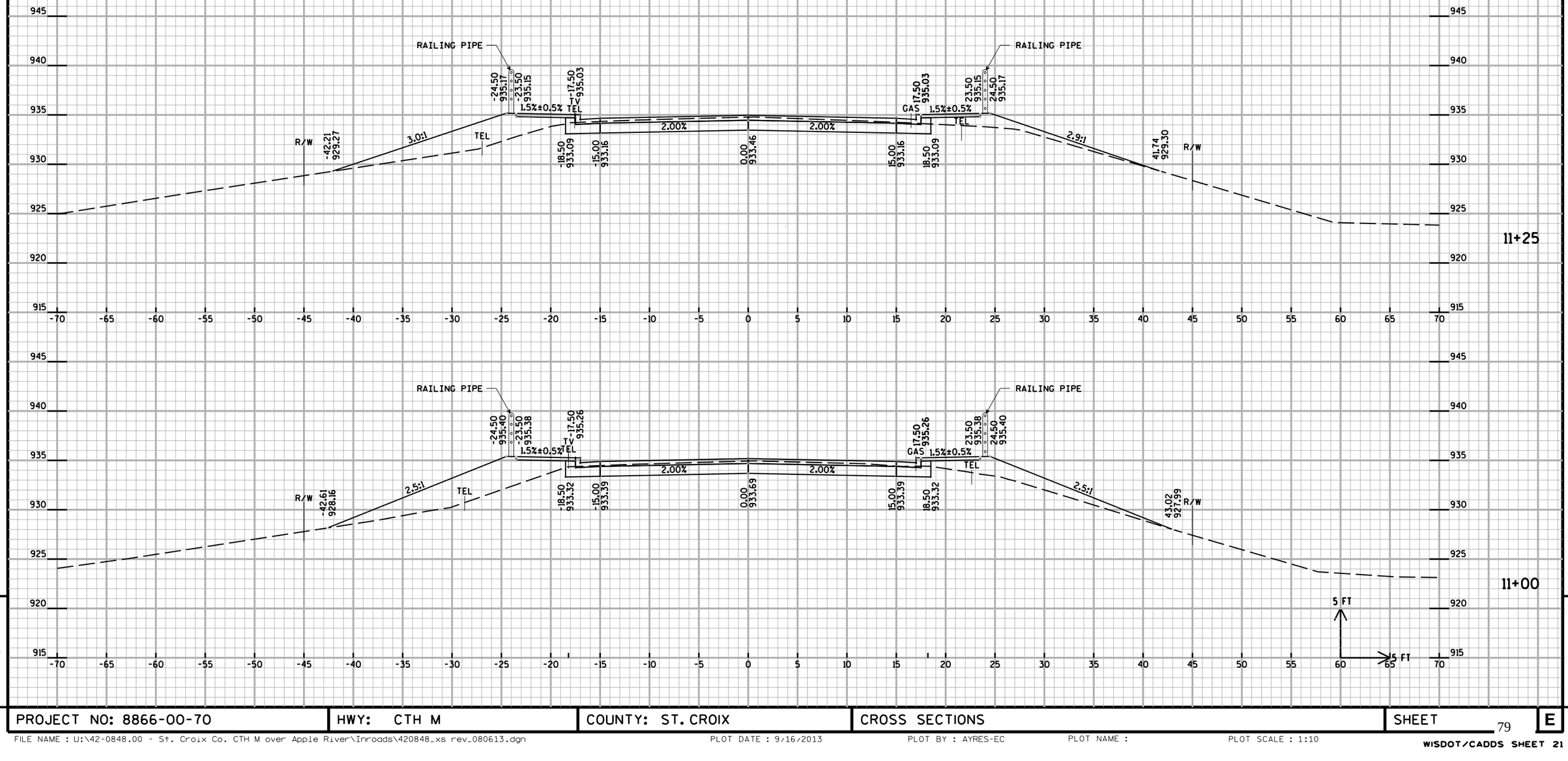
9 9

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+00 TO 11+25



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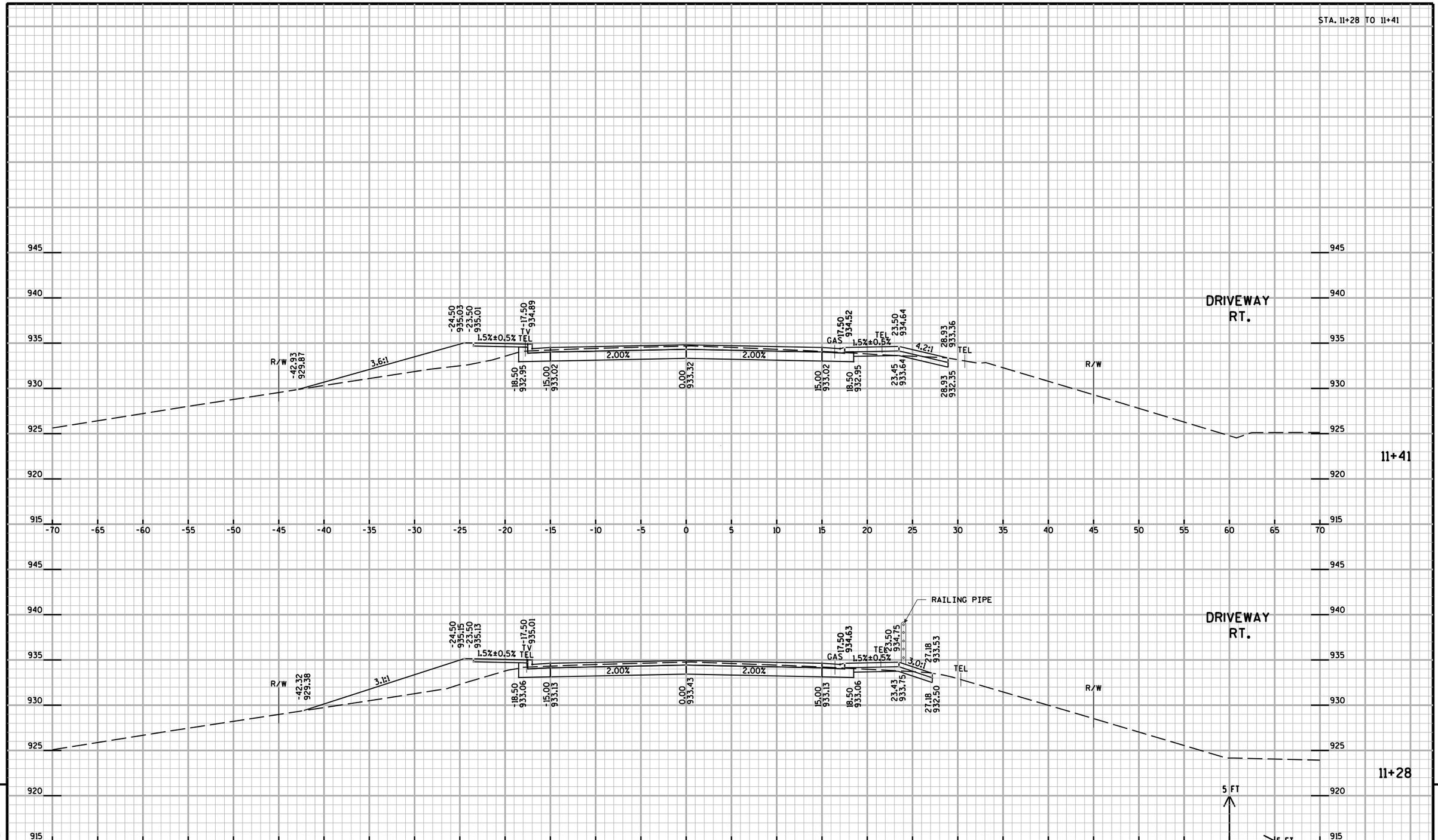
9

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+28 TO 11+41



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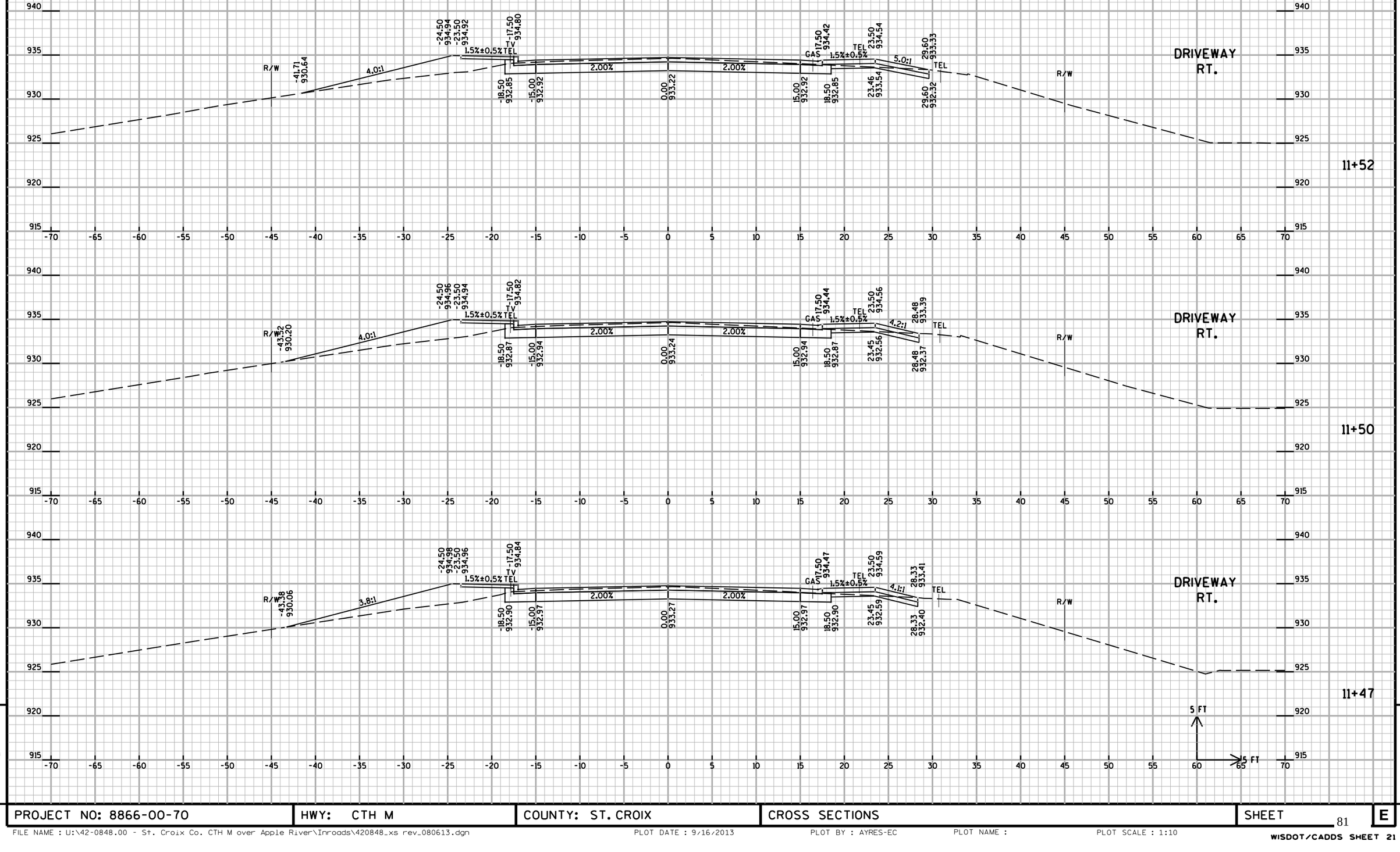
PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+47 TO 11+52



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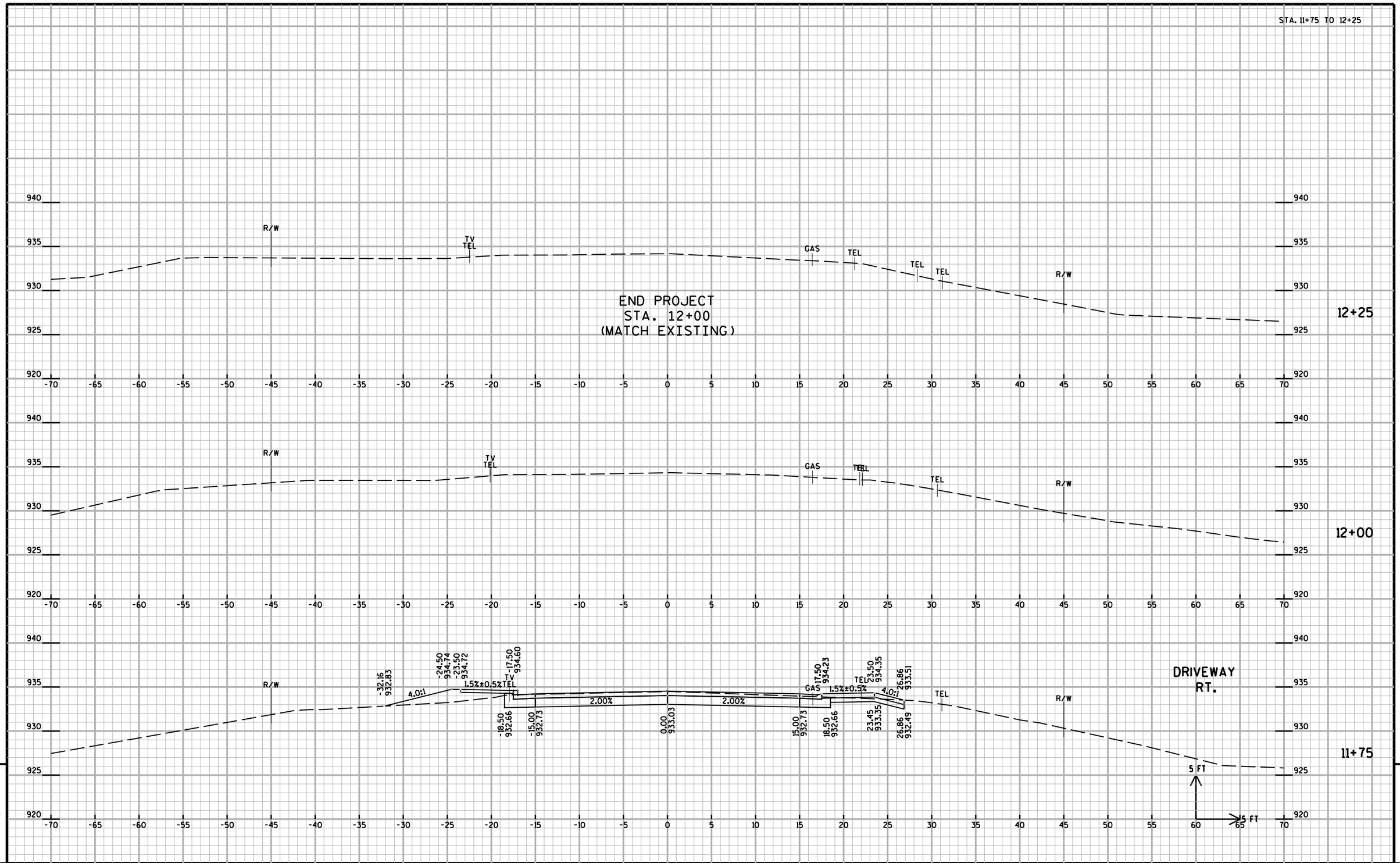
PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS	SHEET	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 11+75 TO 12+25



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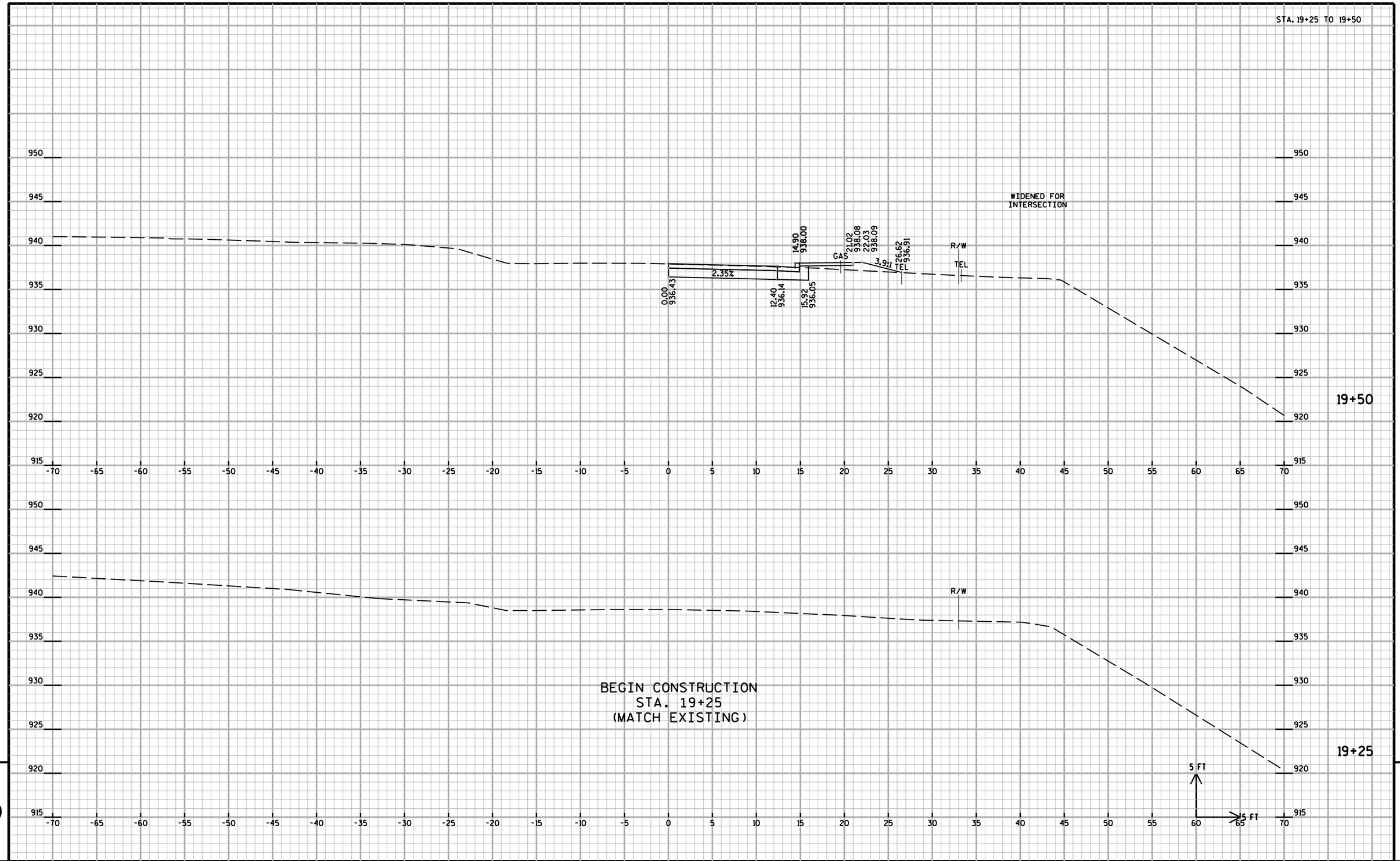
9

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS	SHEET 82	E

STA. 19+25 TO 19+50



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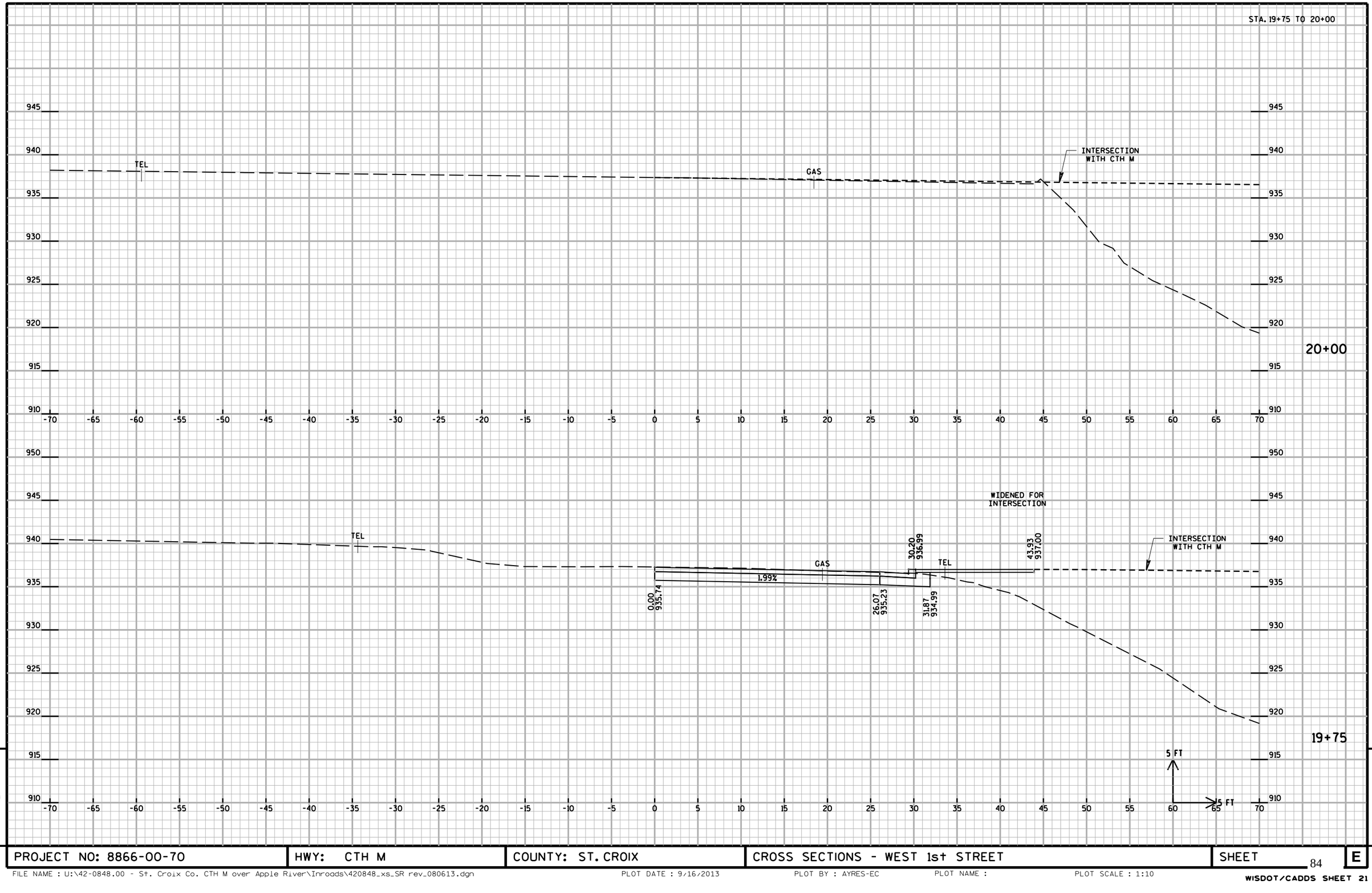
PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS - WEST 1st STREET	SHEET	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs_SR rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 19+75 TO 20+00

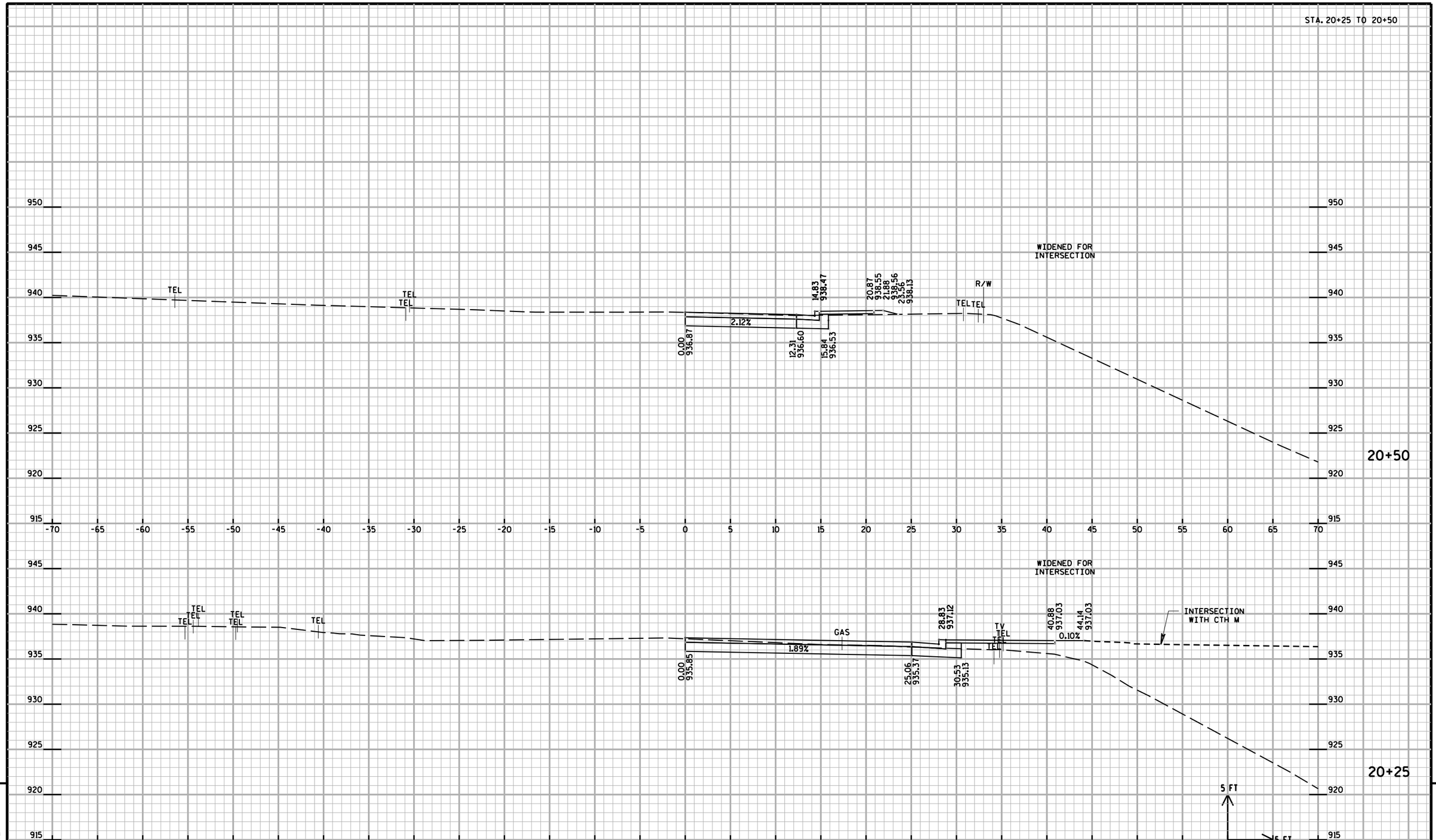


PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS - WEST 1st STREET	SHEET	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs_SR rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 20+25 TO 20+50



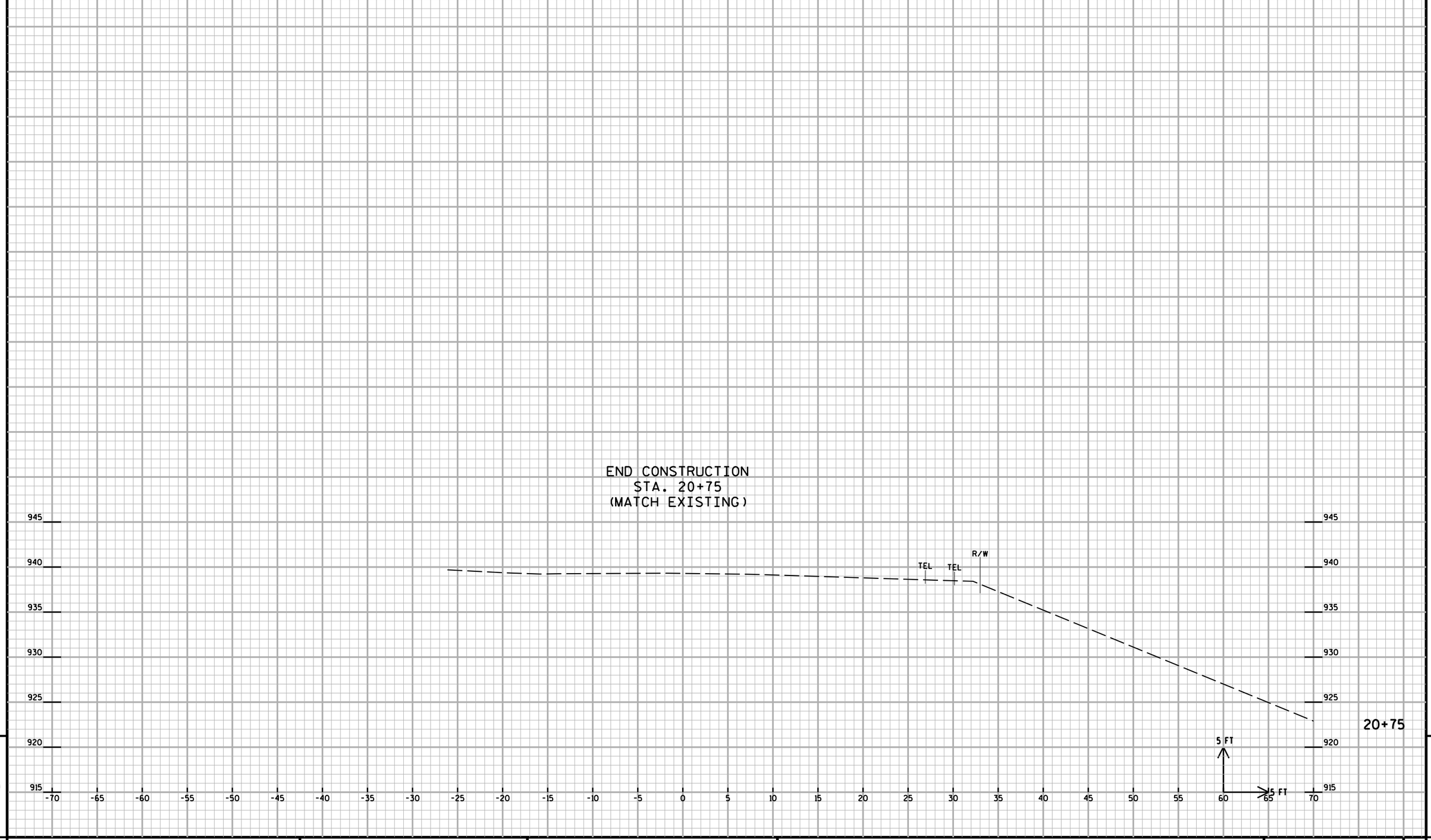
PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS - WEST 1st STREET	SHEET	E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs_SR rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

STA. 20+75 TO 20+75

END CONSTRUCTION
STA. 20+75
(MATCH EXISTING)



9

9

PROJECT NO: 8866-00-70	HWY: CTH M	COUNTY: ST. CROIX	CROSS SECTIONS - WEST 1st STREET	SHEET E

FILE NAME : U:\42-0848.00 - St. Croix Co. CTH M over Apple River\Inroads\420848_xs_SR rev_080613.dgn PLOT DATE : 9/16/2013 PLOT BY : AYRES-EC PLOT NAME : PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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