SUP FEBRUARY 2019

PROJECT ID: 8890-00-70
WITH: N/A

COUNTY: TAYLOR

28

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8890-00-70	WISC 2019135	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

C MEDFORD, STATE STREET

BLACK RIVER BRIDGE B600134

LOC STR

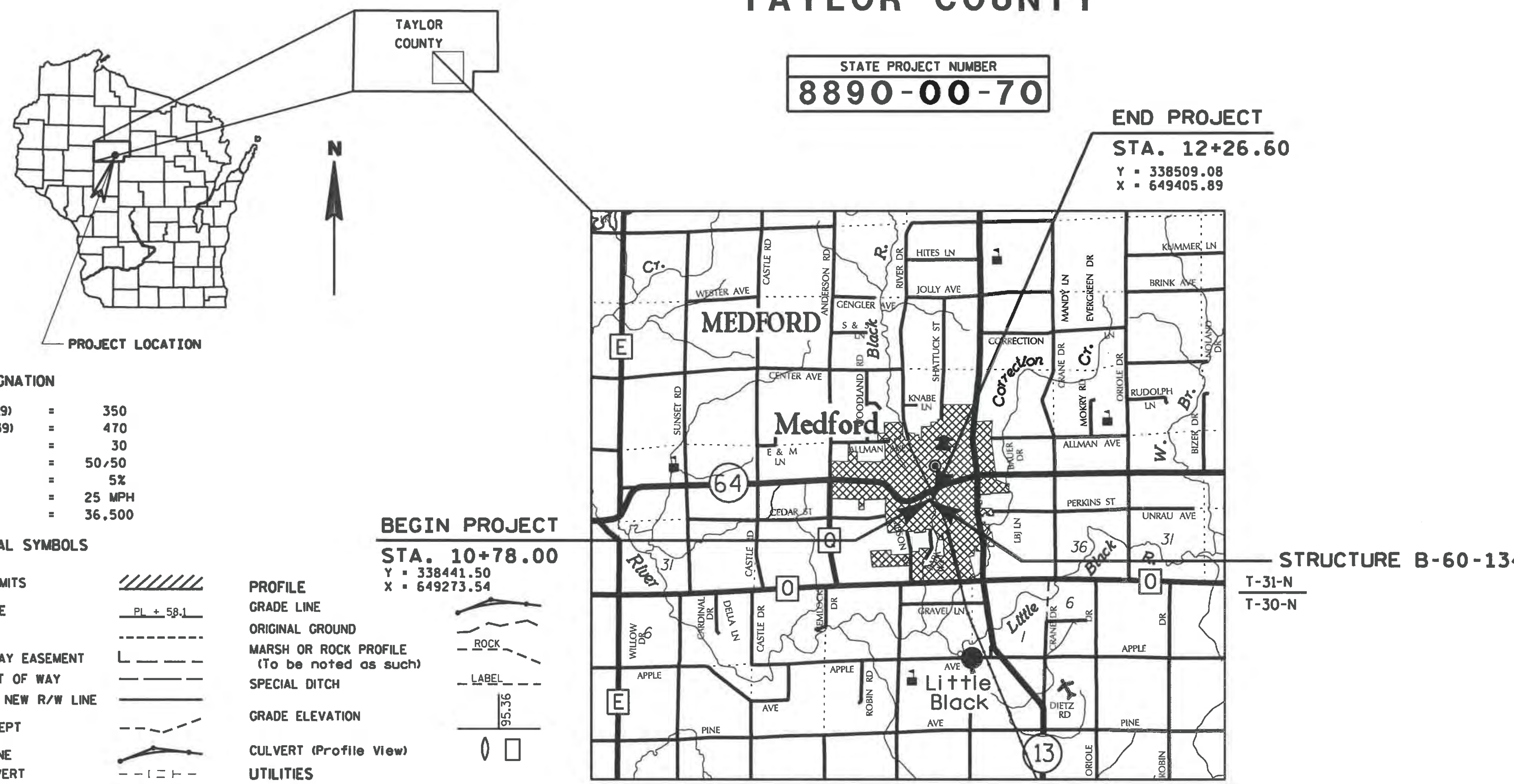
TAYLOR COUNTY

STATE PROJECT NUMBER
8890-00-70

ORDER OF SHEETS

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

TOTAL SHEETS = 78



LAYOUT
SCALE 0 1 MI.

DESIGN DESIGNATION

A.A.D.T. (2019)	=	350
A.A.D.T. (2039)	=	470
D.H.V.	=	30
D.	=	50/50
T.	=	5%
DESIGN SPEED	=	25 MPH
ESALS	=	36,500

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- 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 ELECTRIC — OH —
- ELECTRIC — E —
- FIBER OPTIC — FO —
- GAS — G —
- SANITARY SEWER — SAN —
- STORM SEWER — SS —
- TELEPHONE — T —
- WATER — W —
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

TOTAL NET LENGTH OF CENTERLINE = 0.028 MI.

SURVEY PERFORMED IN 2016.
COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, (WCCS) TAYLOR COUNTY, NAD 83

ACCEPTED FOR
City of Medford
7-19-18 Date
[signature] DPW

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

WISCONSIN MICHAEL C. STOFFEL E-31143 BLOOMER, WI PROFESSIONAL ENGINEER
[signature]
DATE 7/19/18

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor AYRES ASSOCIATES INC
Designer AYRES ASSOCIATES INC
Management Consultant KNIGHT E/A INC.

APPROVED FOR THE DEPARTMENT
DATE 7/26/18 [signature]
Management Consultant Signature

E

GENERAL NOTES

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

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

SHRINKAGE OF EARTHWORK IS VARIABLE. AN AVERAGE FACTOR FOR EXCAVATION COMMON IS 30%.

FILL, AS SHOWN ON THE PLAN SHEETS, PERTAINS TO EMBANKMENT CONSTRUCTED FROM EXCAVATION COMMON. THE FACTOR USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 1.5.

EXCAVATION BELOW SUBGRADE (EBS) WILL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION FOR EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION.

WHEN THE QUANTITY OF BASE AGGREGATE DENSE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD THE DEPTH OF THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE EXACT LOCATION AND WIDTH OF DRIVEWAY ENTRANCES WILL BE DETERMINED IN THE FIELD BY THE ENGINEER. ALL DRIVEWAYS ARE TO BE REPLACED IN KIND UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR AS SHOWN ON THE PLANS.

SAWCUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAWCUTS WILL BE NEATLY DELINEATED THROUGH THE ASPHALT AND/OR CONCRETE STREETS, DRIVEWAYS AND/OR PARKING LOTS AT THE MATCH LINE AS SHOWN ON THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN AND PROVIDE DOCUMENTATION TO THE ENGINEER.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS, FLOODWAY OR FLOODPLAIN OF ANY WETLANDS.

SEED AND FERTILIZE ALL SALVAGED TOPSOILED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.

DO NOT APPLY FERTILIZER WITHIN 20 FEET OF A WATER BODY OR WETLAND.

SEED MIXTURE NO.40 SHALL BE USED THROUGHOUT THE PROJECT.

EROSION CONTROL MEASURES WILL BE PLACED AS SHOWN ON THE EROSION CONTROL PLAN. THE EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER. ANY REMOVAL OF ITEMS ARE INCIDENTAL TO THE RESPECTIVE EROSION CONTROL BID ITEM COSTS.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SALVAGED TOPSOIL, FERTILIZED, SEEDED, TEMPORARY SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER.

RESHAPE AND SEEDING OF ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS OUTSIDE OF THE ENGINEER DETERMINED CONSTRUCTION LIMITS ARE INCIDENTAL TO THE CONTRACT.

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL BY THE ENGINEER. FINAL LIMITS OF FENCE REMOVAL TO BE DETERMINED BY THE ENGINEER.

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

STATIONING FOR SIGNS SHOWN IN THE PLANS ARE APPROXIMATE AND THE FINAL LOCATION OF SIGNS ARE TO BE DETERMINED BY THE ENGINEER.

CURB AND GUTTER ELEVATIONS ARE ALONG THE FLANGE LINE UNLESS OTHERWISE NOTED.

RADIUS POINTS, UNLESS OTHERWISE NOTED, ARE TO FLAG OF CURB.

EXISTING ELEVATIONS SHALL BE VERIFIED IN THE FIELD.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD83(2011)).

UTILITY CONTACTS

MEDFORD STREET AND WATER
639 SOUTH 2ND STREET
PO BOX 360
MEDFORD, WI 54451
ATTN: JOE HARRIS, SUPERINTENDENT
715-748-1187

MEDFORD ELECTRIC UTILITY
639 SOUTH 2ND STREET
PO BOX 360
MEDFORD, WI 54451
ATTN: SPENCER TITERA
715-748-1521

CHARTER COMMUNICATIONS
503 EAST IVES STREET, *316
MARSHFIELD, WI 54449
ATTN: JESSE GRUNY
715-898-1616
MOBILE 715-651-5605

CENTURYLINK
20 SOUTH WILSON AVENUE
RICE LAKE, WI 54868
ATTN: Monty Parker
715.234.5528
monty.parker@centurylink.com

WE ENERGIES GAS
1921 8TH STREET
WISCONSIN RAPIDS, WI 54494
ATTN: RYAN MENTKE
715-421-7249
MOBILE 715-421-9293

CITY OF MEDFORD

MEDFORD PUBLIC WORKS
639 SOUTH 2ND STREET
PO BOX 360
MEDFORD, WI 54451
ATTN: JOHN FALES, DIRECTOR
715-748-4321

DESIGN CONTACT

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: MIKE STOFFEL, PE
715-834-3161
stoffelm@ayresassociates.com

STRUCTURAL DESIGN
ATTN: CHRIS MCMAHON, PE
mcmahonc@AyresAssociates.com

DNR CONTACT

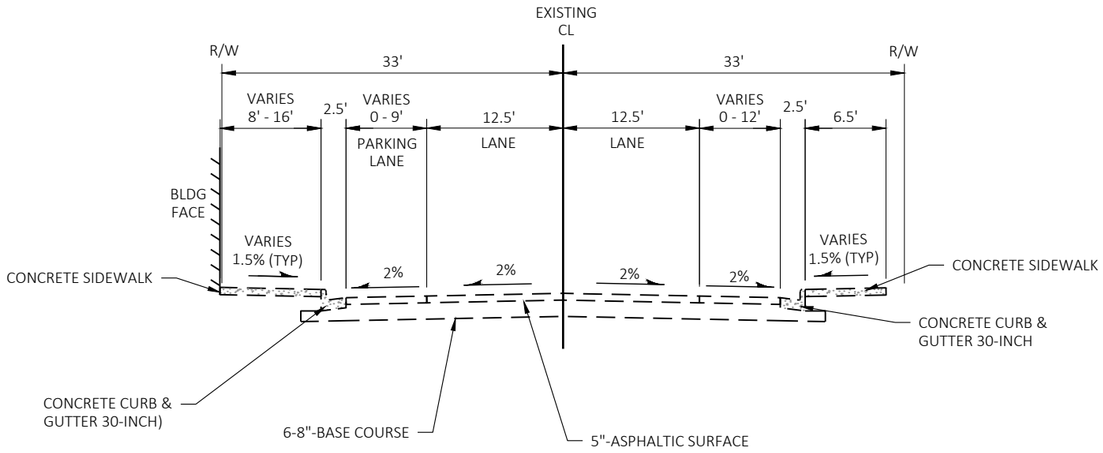
WENDY HENNIGES
107 SUTLIFF AVENUE
RHINELANDER, WI 54501
715-365-8916
wendy.henniges@wisconsin.gov

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

RUNOFF COEFFICIENT TABLE

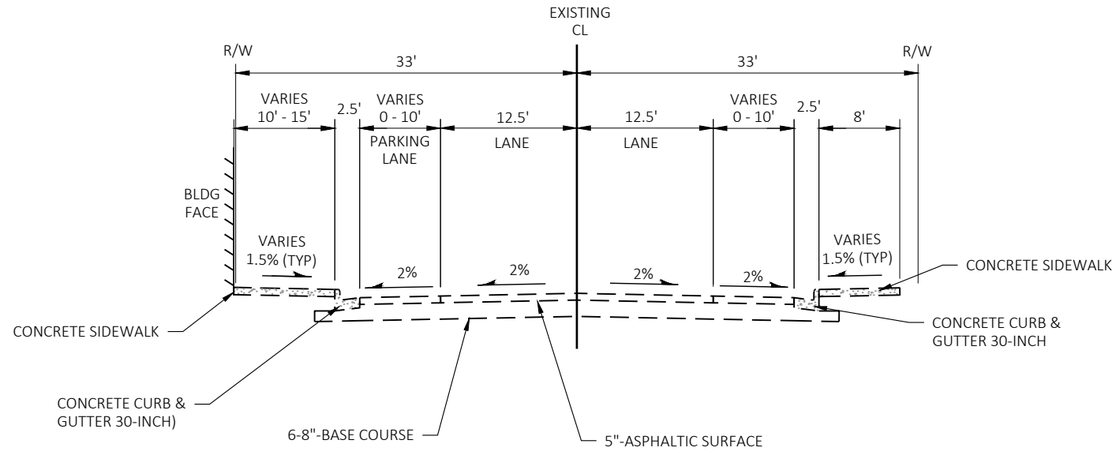
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = 4.45 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.62 ACRES



TYPICAL EXISTING SECTION - STATE STREET (WEST OF BRIDGE)

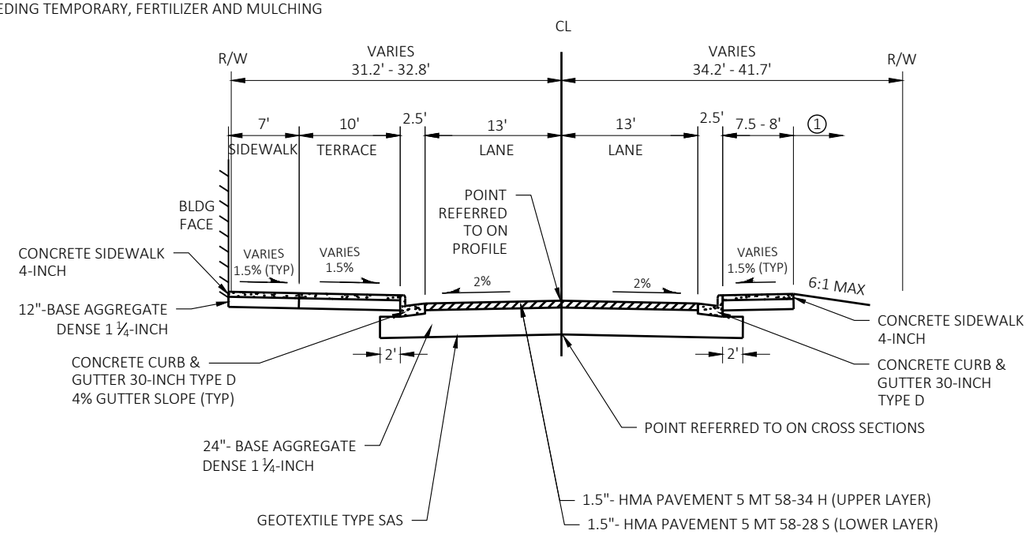
STA. 10+51.63 TO STA. 11+29.28



TYPICAL EXISTING SECTION - STATE STREET (EAST OF BRIDGE)

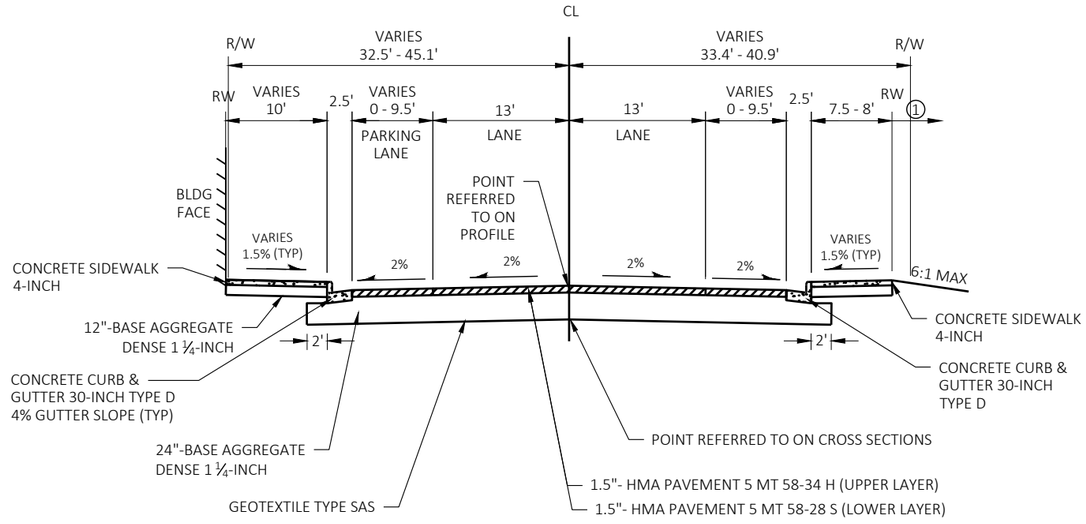
STA. 11+70.43 TO STA. 12+26.60

① SALVAGED TOPSOIL, SEEDING MIXTURE #40,
SEEDING TEMPORARY, FERTILIZER AND MULCHING



TYPICAL FINISHED SECTION - STATE STREET (WEST OF BRIDGE)

STA. 10+51.63 TO STA. 11+28.42
APPROACH SLAB STA. 11+12.75 TO STA. 11+28.42

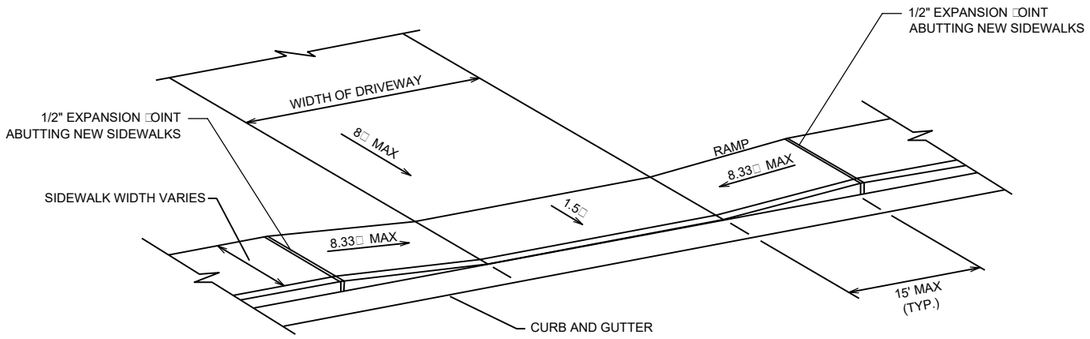


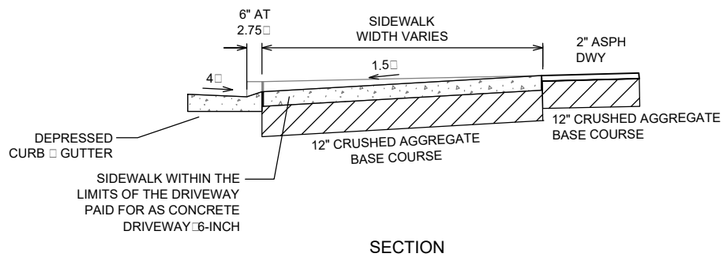
TYPICAL FINISHED SECTION - STATE STREET (EAST OF BRIDGE)

STA. 11+73.58 TO STA. 12+26.60
APPROACH SLAB STA. 11+73.58 TO STA. 11+89.25

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	TYPICAL SECTIONS	SHEET 3	E

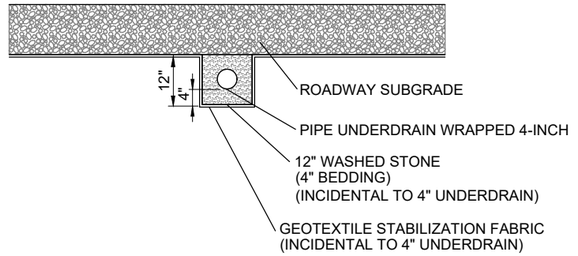
FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\020301_TS.DWG
LAYOUT NAME - TYPICAL SECTIONS
PLOT DATE : 7/19/2018 11:53 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:15 FT
WISDOT/CADDS SHEET 42



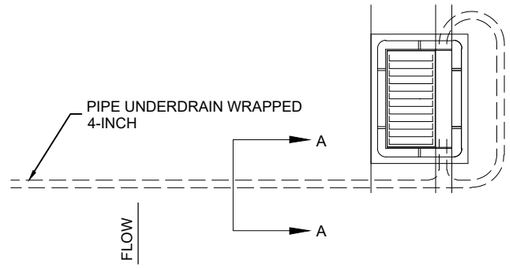


SECTION

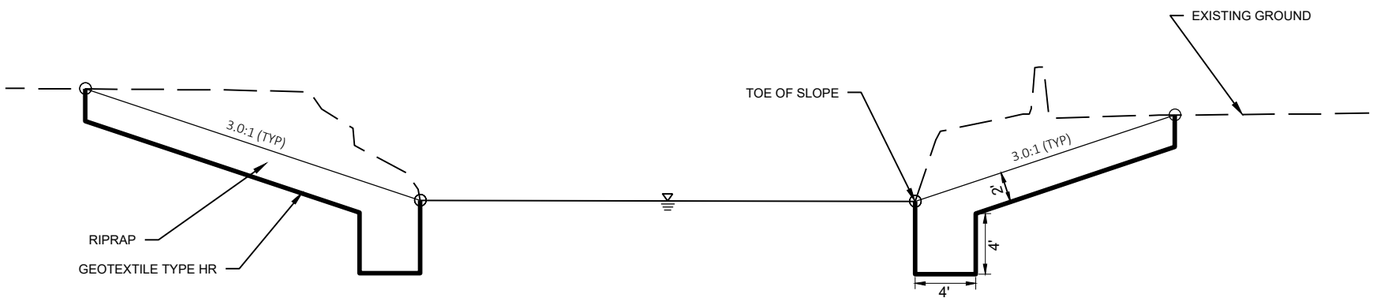
CONCRETE DRIVEWAY AND SIDEWALK RAMP TYPE X DETAIL



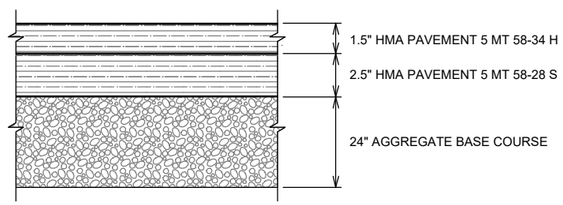
SECTION A-A



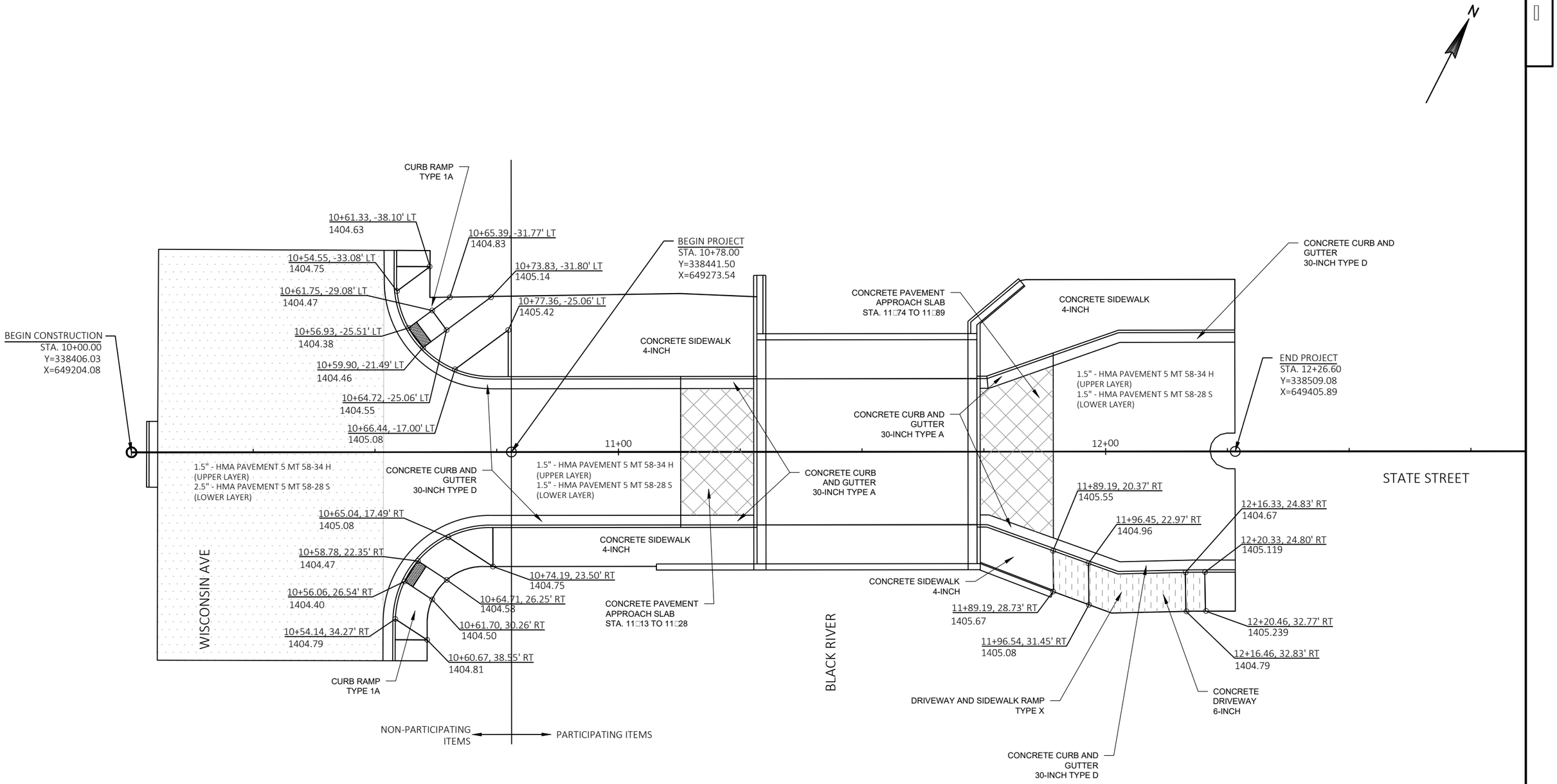
ROADWAY UNDERDRAIN



RIPRAP TYPICAL SECTION



WISCONSIN AVE PAVEMENT STRUCTURE



PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	PAVING DETAILS	SHEET 5	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\021201_PD.DWG
LAYOUT NAME - 021201_pd
PLOT DATE : 7/19/2018 11:53 AM
PLOT BY : AYRES ASSOCIATES
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

BM 1083

CP 1

BEGIN CONSTRUCTION
STA. 10+00.00
Y=338406.03
X=649204.08

BEGIN PROJECT
STA. 10+78.00
Y=338441.50
X=649273.54

CP 5

BM 1123

END PROJECT
STA. 12+26.60
Y=338509.08
X=649405.89

11+00

12+00

BRIDGE
B-60-134

STATE STREET

WISCONSIN AVE

R/W

TLE

PLE

PARTICIPATING ITEMS

NON-PARTICIPATING ITEMS

SLOPE INTERCEPT

BLACK RIVER

CP 3

PNT BRICK PAVERS

PNT DESC BRICK PAVERS

PNT DESC SUSPENDED WALKWAY

GRASS PLAZA

PARKING LOT

BLDG

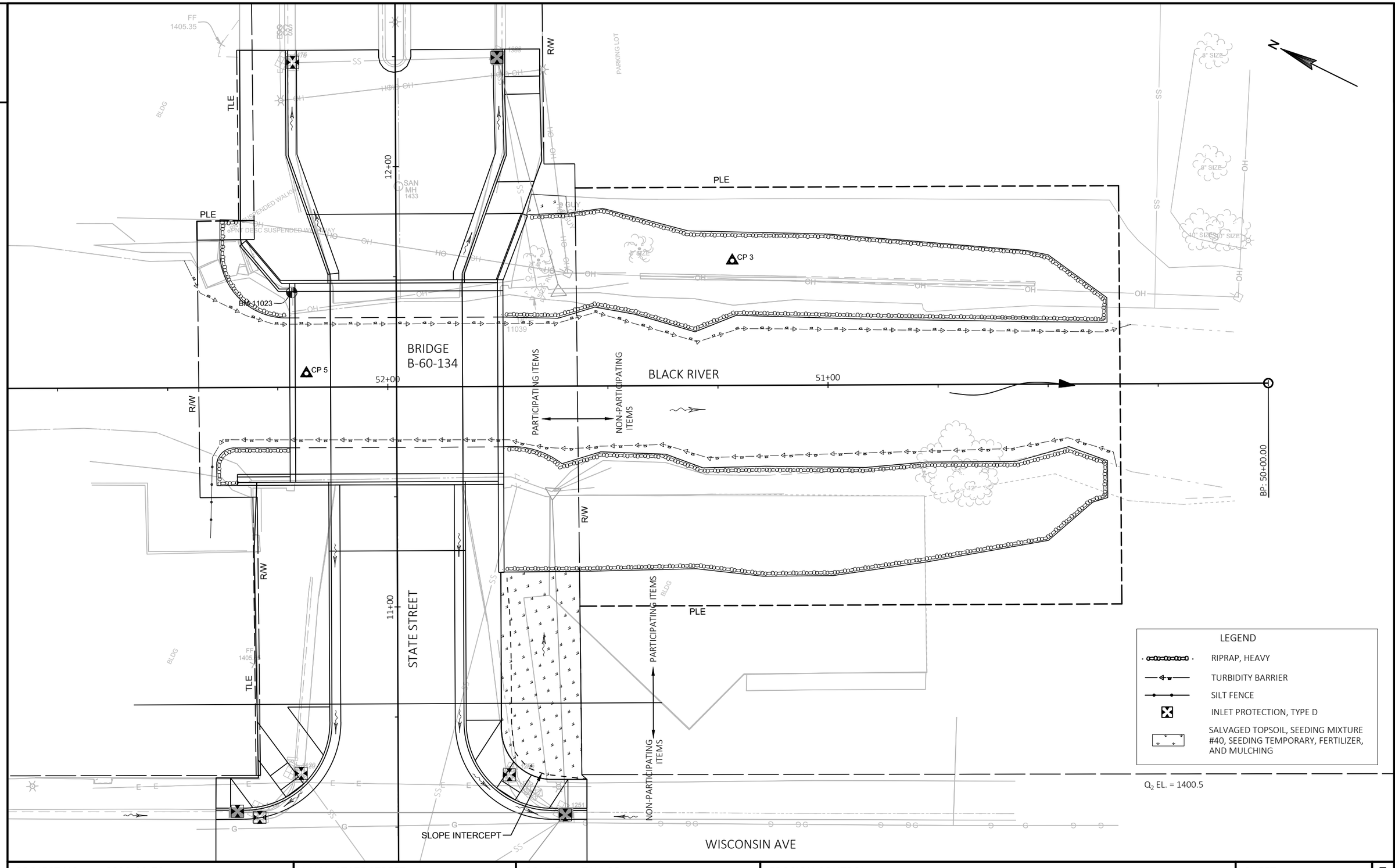
LEGEND

- RIPRAP, HEAVY
- TURBIDITY BARRIER
- SILT FENCE
- INLET PROTECTION, TYPE D
- SALVAGED TOPSOIL, SEEDING MIXTURE #40, SEEDING TEMPORARY, FERTILIZER, AND MULCHING

Q_2 EL. = 1400.5

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	EROSION CONTROL	SHEET 6	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022001_ec
PLOT DATE : 7/19/2018 12:27 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 42

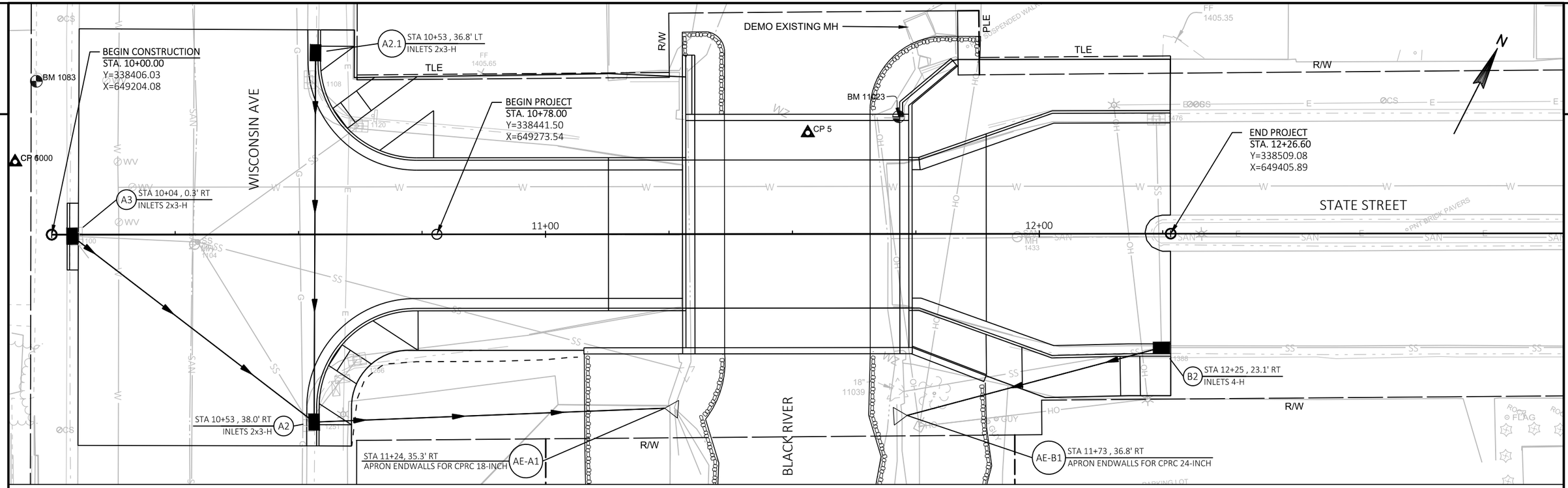


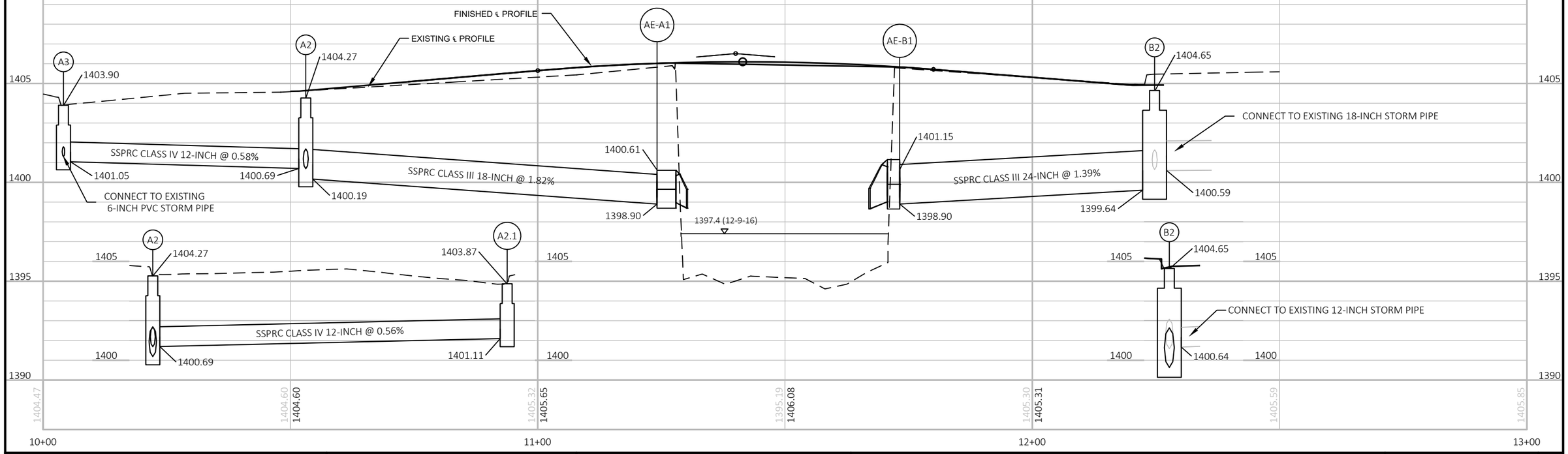
PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	EROSION CONTROL	SHEET 7	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\022001_EC.DWG
LAYOUT NAME - 022002_ec

PLOT DATE : 7/19/2018 11:53 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:20 FT

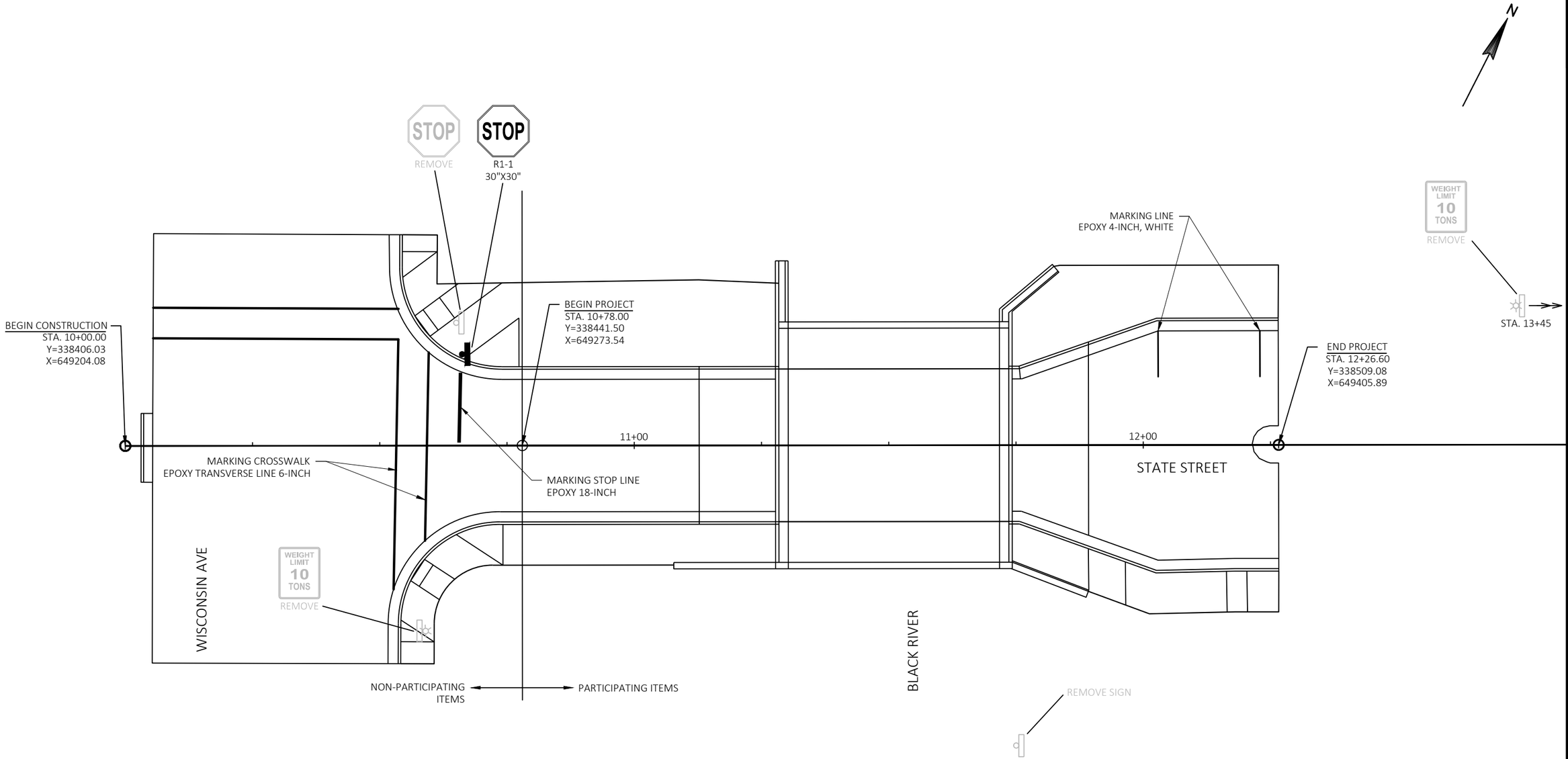
WISDOT/CADDS SHEET 42



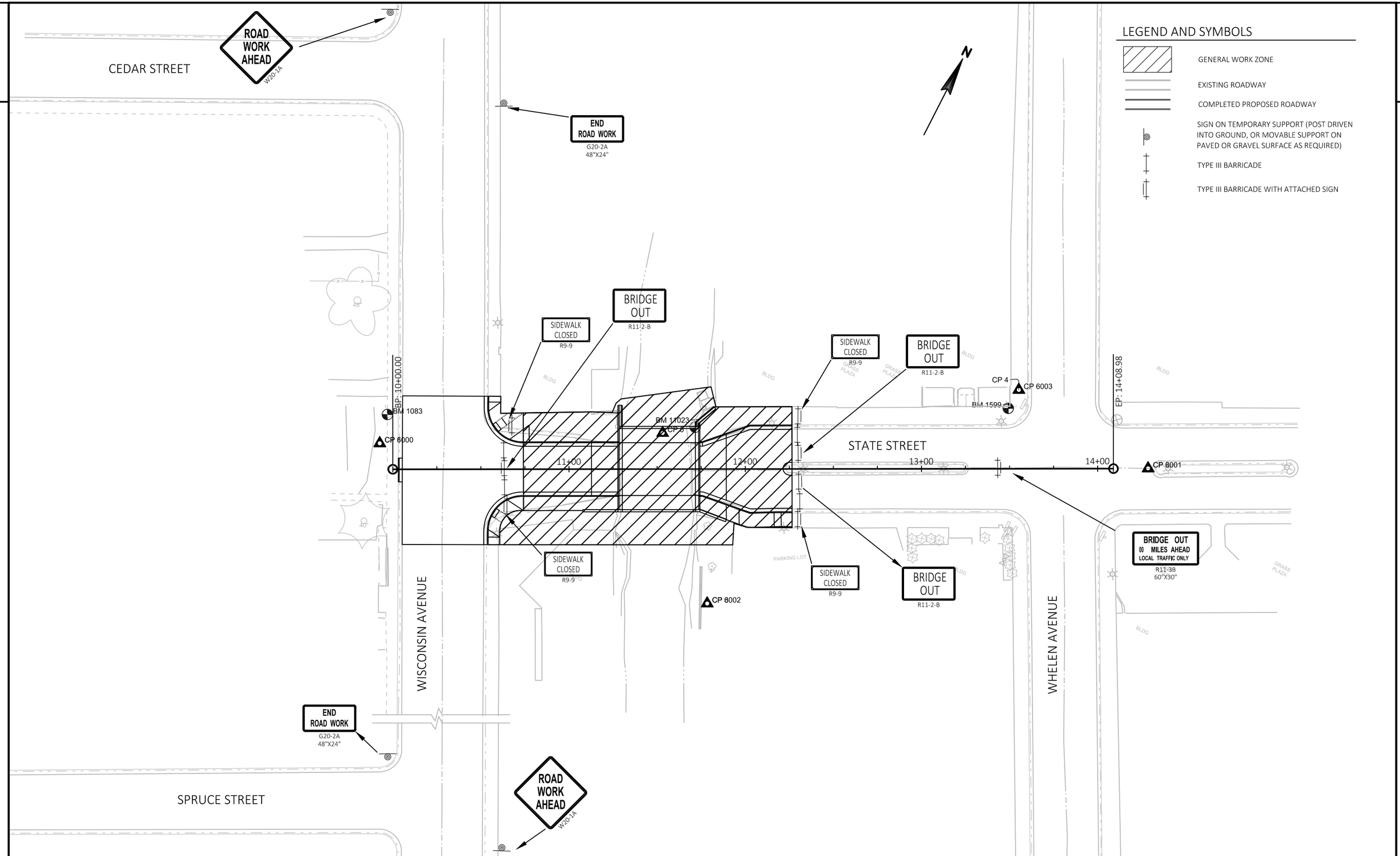


PROJECT NO: 8890-000-70	HWY: STATE STREET	COUNTY: TAYLOR	STORM SEWER	SHEET 8	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\022501_SS.DWG
LAYOUT NAME - 022501_ss
PLOT DATE : 7/19/2018 11:53 AM
PLOT BY : AYRES ASSOCIATES
PLOT NAME :
PLOT SCALE : 1 IN:20 FT
WISDOT/CADDS SHEET 41



PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	PERMANENT SIGNING	SHEET 9	E

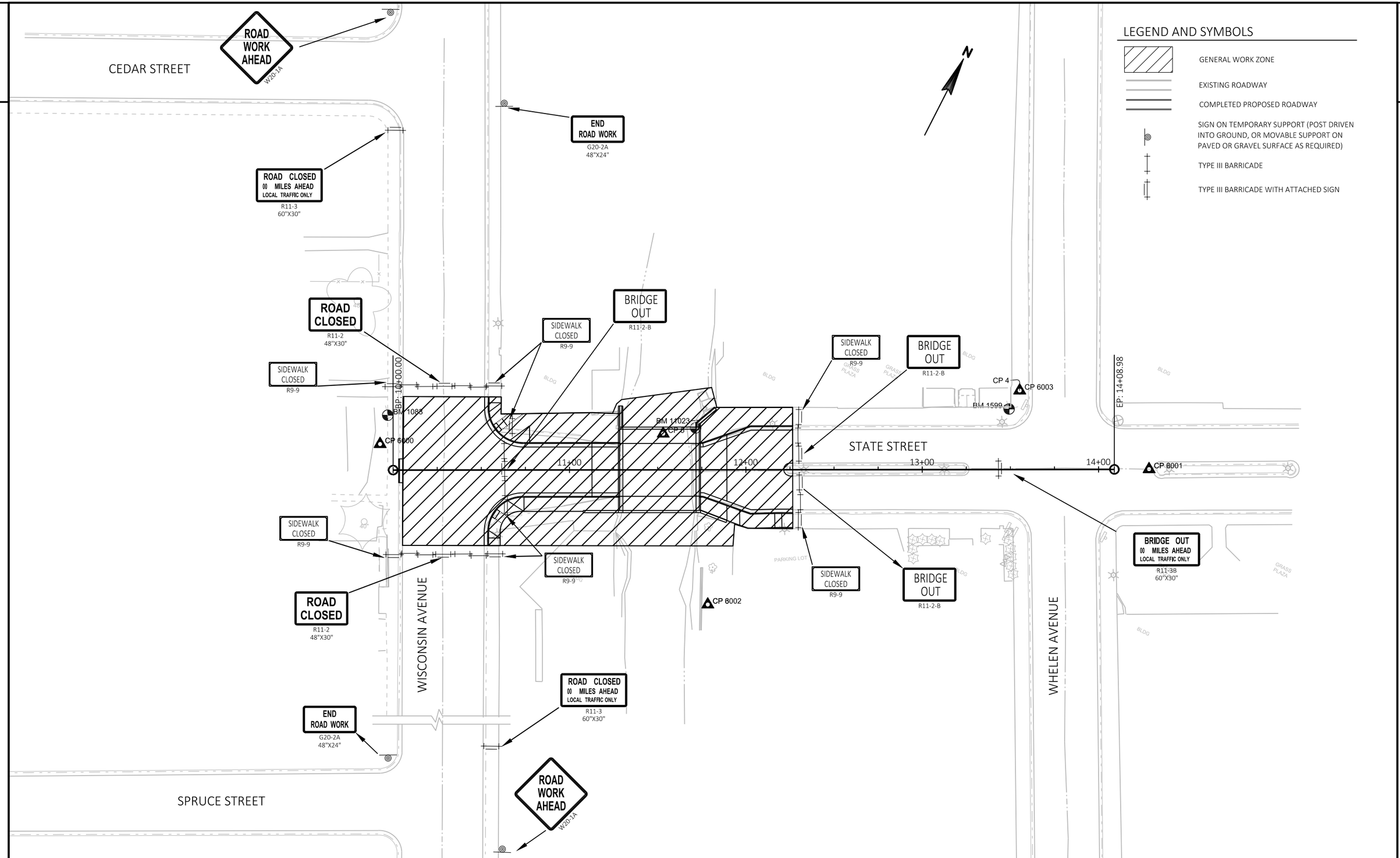


PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	TRAFFIC CONTROL - STAGE 1 (BRIDGE WORK)	SHEET 10	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\025001_TC.DWG
LAYOUT NAME - STAGE 1

PLOT DATE : 7/19/2018 11:53 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42

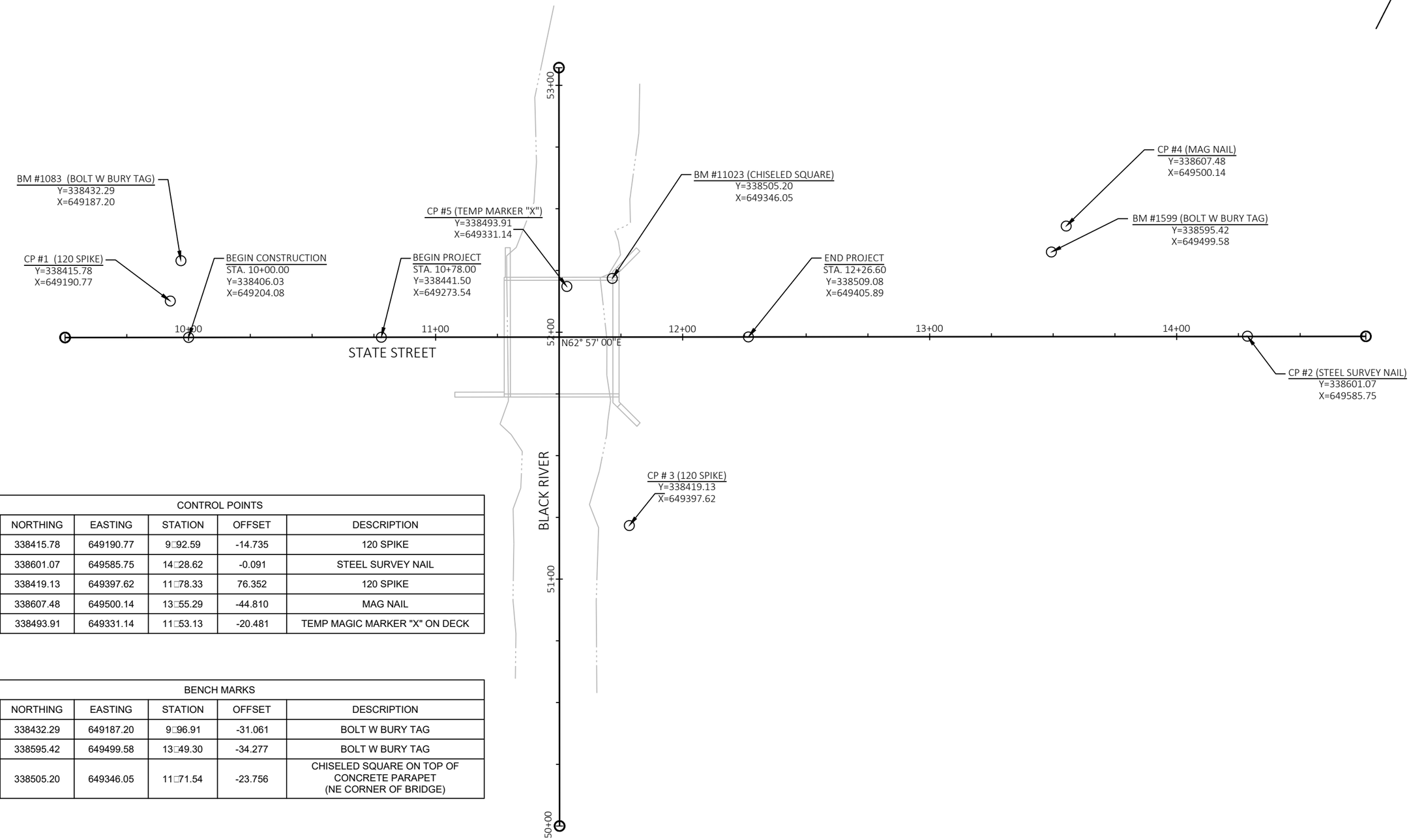


PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	TRAFFIC CONTROL - STAGE 2 (WISCONSIN AVENUE ROAD WORK)	SHEET 11	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\025001_TC.DWG
LAYOUT NAME - STAGE 2

PLOT DATE : 7/19/2018 11:53 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:50 FT

WISDOT/CADDS SHEET 42



CONTROL POINTS					
NO.	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
1	338415.78	649190.77	9□92.59	-14.735	120 SPIKE
2	338601.07	649585.75	14□28.62	-0.091	STEEL SURVEY NAIL
3	338419.13	649397.62	11□78.33	76.352	120 SPIKE
4	338607.48	649500.14	13□55.29	-44.810	MAG NAIL
5	338493.91	649331.14	11□53.13	-20.481	TEMP MAGIC MARKER "X" ON DECK

BENCH MARKS					
NO.	NORTHING	EASTING	STATION	OFFSET	DESCRIPTION
1083	338432.29	649187.20	9□96.91	-31.061	BOLT W BURY TAG
1599	338595.42	649499.58	13□49.30	-34.277	BOLT W BURY TAG
11023	338505.20	649346.05	11□71.54	-23.756	CHISELED SQUARE ON TOP OF CONCRETE PARAPET (NE CORNER OF BRIDGE)

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	ALIGNMENT PLAN	SHEET 12	E

8890-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	3.000	3.000
0004	201.0205	Grubbing	STA	3.000	3.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 11+49	LS	1.000	1.000
0008	204.0110	Removing Asphaltic Surface	SY	1,025.000	1,025.000
0010	204.0150	Removing Curb & Gutter	LF	301.000	301.000
0012	204.0155	Removing Concrete Sidewalk	SY	303.000	303.000
0014	204.0210	Removing Manholes	EACH	1.000	1.000
0016	204.0220	Removing Inlets	EACH	6.000	6.000
0018	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	156.000	156.000
0020	204.0245	Removing Storm Sewer (size) 02. 15-Inch	LF	83.000	83.000
0022	204.0245	Removing Storm Sewer (size) 03. 18-Inch	LF	53.000	53.000
0024	204.9090.S	Removing (item description) 01. Retaining Wall	LF	176.000	176.000
0026	205.0100	Excavation Common	CY	1,969.000	1,969.000
0028	206.1000	Excavation for Structures Bridges (structure) 01. B-60-134	LS	1.000	1.000
0030	210.1500	Backfill Structure Type A	TON	1,050.000	1,050.000
0032	213.0100	Finishing Roadway (project) 01. 8890-00-70	EACH	1.000	1.000
0034	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,577.000	1,577.000
0036	415.0410	Concrete Pavement Approach Slab	SY	97.000	97.000
0038	416.0160	Concrete Driveway 6-Inch	SY	28.000	28.000
0040	455.0605	Tack Coat	GAL	56.000	56.000
0042	460.2000	Incentive Density HMA Pavement	DOL	110.000	110.000
0044	460.6225	HMA Pavement 5 MT 58-28 S	TON	92.000	92.000
0046	460.6445	HMA Pavement 5 MT 58-34 H	TON	68.000	68.000
0048	502.0100	Concrete Masonry Bridges	CY	352.000	352.000
0050	502.3200	Protective Surface Treatment	SY	240.000	240.000
0052	505.0400	Bar Steel Reinforcement HS Structures	LB	10,360.000	10,360.000
0054	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	35,260.000	35,260.000
0056	513.7016	Railing Steel Type C3 01. B-60-134	LF	155.000	155.000
0058	516.0500	Rubberized Membrane Waterproofing	SY	22.000	22.000
0060	517.1015.S	Concrete Staining Multi-Color (structure) 01. B-60-134	SF	1,100.000	1,100.000
0062	517.1050.S	Architectural Surface Treatment (structure) 01. B-60-134	SF	680.000	680.000
0064	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	1.000	1.000
0066	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	1.000	1.000
0068	550.0010	Pre-Boring Unconsolidated Materials	LF	540.000	540.000
0070	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	795.000	795.000
0072	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	62.000	62.000

8890-00-70

Line	Item	Item Description	Unit	Total	Qty
0074	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	232.000	232.000
0076	602.0405	Concrete Sidewalk 4-Inch	SF	2,693.000	2,693.000
0078	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	20.000	20.000
0080	606.0300	Riprap Heavy	CY	635.000	635.000
0082	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	71.000	71.000
0084	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	49.000	49.000
0086	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	137.000	137.000
0088	611.0624	Inlet Covers Type H	EACH	4.000	4.000
0090	611.3004	Inlets 4-FT Diameter	EACH	1.000	1.000
0092	611.3230	Inlets 2x3-FT	EACH	3.000	3.000
0094	612.0404	Pipe Underdrain Wrapped 4-Inch	LF	133.000	133.000
0096	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0098	618.0100	Maintenance And Repair of Haul Roads (project) 01. 8890-00-70	EACH	1.000	1.000
0100	619.1000	Mobilization	EACH	1.000	1.000
0102	624.0100	Water	MGAL	25.000	25.000
0104	625.0500	Salvaged Topsoil	SY	96.000	96.000
0106	627.0200	Mulching	SY	120.000	120.000
0108	628.1504	Silt Fence	LF	25.000	25.000
0110	628.1520	Silt Fence Maintenance	LF	50.000	50.000
0112	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0114	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0116	628.6005	Turbidity Barriers	SY	363.000	363.000
0118	628.7020	Inlet Protection Type D	EACH	8.000	8.000
0120	629.0205	Fertilizer Type A	CWT	0.080	0.080
0122	630.0140	Seeding Mixture No. 40	LB	2.200	2.200
0124	630.0200	Seeding Temporary	LB	3.000	3.000
0126	634.0811	Posts Tubular Steel 2x2-Inch X 11-FT	EACH	1.000	1.000
0128	637.2210	Signs Type II Reflective H	SF	5.180	5.180
0130	638.2602	Removing Signs Type II	EACH	4.000	4.000
0132	638.3000	Removing Small Sign Supports	EACH	3.000	3.000
0134	642.5001	Field Office Type B	EACH	1.000	1.000
0136	643.0420	Traffic Control Barricades Type III	DAY	1,100.000	1,100.000
0138	643.0705	Traffic Control Warning Lights Type A	DAY	1,460.000	1,460.000
0140	643.0900	Traffic Control Signs	DAY	1,060.000	1,060.000
0142	643.5000	Traffic Control	EACH	1.000	1.000
0144	645.0111	Geotextile Type DF Schedule A	SY	130.000	130.000
0146	645.0120	Geotextile Type HR	SY	1,130.000	1,130.000

8890-00-70

Line	Item	Item Description	Unit	Total	Qty
0148	645.0140	Geotextile Type SAS	SY	1,054.000	1,054.000
0150	646.1020	Marking Line Epoxy 4-Inch	LF	18.000	18.000
0152	646.6120	Marking Stop Line Epoxy 18-Inch	LF	14.000	14.000
0154	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	182.000	182.000
0156	650.4000	Construction Staking Storm Sewer	EACH	6.000	6.000
0158	650.4500	Construction Staking Subgrade	LF	224.000	224.000
0160	650.5000	Construction Staking Base	LF	224.000	224.000
0162	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	294.000	294.000
0164	650.6500	Construction Staking Structure Layout (structure) 01. B-60-134	LS	1.000	1.000
0166	650.9000	Construction Staking Curb Ramps	EACH	2.000	2.000
0168	650.9910	Construction Staking Supplemental Control (project) 01. 8890-00-70	LS	1.000	1.000
0170	650.9920	Construction Staking Slope Stakes	LF	224.000	224.000
0172	690.0150	Sawing Asphalt	LF	130.000	130.000
0174	715.0502	Incentive Strength Concrete Structures	DOL	2,112.000	2,112.000
0176	999.1000.S	Seismograph	LS	1.000	1.000
0178	999.1500.S	Crack and Damage Survey	LS	1.000	1.000
0180	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	1,200.000	1,200.000
0182	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	300.000	300.000

CLEARING AND GRUBBING

CATEGORY	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
0010	STATE STREET	1	1
CATEGORY 0010 SUBTOTAL		**1**	**1**
0030	BLACK RIVER	2	2
CATEGORY 0030 SUBTOTAL		**2**	**2**
PROJECT TOTAL		**3**	**3**

REMOVING ASPHALTIC SURFACE

CATEGORY	LOCATION	204.0110 (SY)
0010	WEST OF BRIDGE	203
	EAST OF BRIDGE	251
CATEGORY 0010 SUBTOTAL		**454**
0030	WEST OF BRIDGE	571
CATEGORY 0030 SUBTOTAL		**571**
PROJECT TOTAL		**1025**

REMOVING CURB & GUTTER

CATEGORY	STATION	TO	STATION	OFFSET	204.0150 (LF)
0010	10+78	-	11+28	LT	50
	10+78	-	11+28	RT	50
	11+72	-	12+27	LT	55
	11+72	-	12+27	RT	56
CATEGORY 0010 SUBTOTAL					**211**
0030	10+03	-	---	---	14
	10+53	-	10+78	LT	39
	10+53	-	10+78	RT	36
CATEGORY 0030 SUBTOTAL					**90**
PROJECT TOTAL					**301**

REMOVING CONCRETE SIDEWALK

CATEGORY	STATION	TO	STATION	OFFSET	204.0155 (SY)
0010	10+78	-	11+28	LT	69
	10+78	-	11+28	RT	61
	11+72	-	12+27	LT	71
	11+72	-	12+27	RT	51
CATEGORY 0010 SUBTOTAL					**252**
0030	10+53	-	10+78	LT	29
	10+53	-	10+78	RT	22
CATEGORY 0030 SUBTOTAL					**51**
PROJECT TOTAL					**303**

REMOVING STORM SEWER

FROM		TO	204.0245.01 12-INCH (LF)	204.0245.02 15-INCH (LF)	204.0245.03 18-INCH (LF)
1100	-	1104	25	---	---
1108	-	1120	14	---	---
1266	-	1251	16	---	---
1251	-	1104	---	43	---
1120	-	1104	---	40	---
1104	-	20	101	---	---
1388	-	11039	---	---	53
PROJECT TOTAL			**156**	**83**	**53**

STORM SEWER STRUCTURES REMOVAL

STRUCTURE	STATION	OFFSET	204.0210 REMOVING MANHOLES (EACH)	204.0220 REMOVING INLETS (EACH)
1100	10+04	0' RT	---	1
1104	10+32	1' RT	1	---
1108	10+52	31' LT	---	1
1251	10+52	38' RT	---	1
1120	10+62	22' LT	---	1
1266	10+62	25' RT	---	1
1388	12+25	23' RT	---	1
PROECT TOTAL			**1**	**6**

REMOVING RETAINING WALL

CATEGORY	STATION	TO	STATION	OFFSET	204.9090.S (LF)
0030	50+52		51+43	RT	91
	50+78		51+63	LT	85
CATEGORY 0030 SUBTOTAL					**176**
PROJECT TOTAL					**176**

BASE AGGREGATE

CATEGORY	STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)	624.0100 WATER (MGAL)
0010	10+78.00 - 11+27.85	260	4
	11+69.62 - 12+26.57	375	6
	SIDEWALK	140	2
CATEGORY 0010 SUBTOTAL		**775**	**12**
0030	10+00.00 - 10+78.00	767	12
	SIDEWALK	35	1
CATEGORY 0030 SUBTOTAL		**802**	**13**
PROJECT TOTAL		**1577**	**25**

FINISHING ROADWAY

LOCATION	213.0100 (Project) (EACH)
PROJECT	1
PROJECT TOTAL	1

ALL BID ITEMS ARE CATEGORY 0010 UNLESS NOTED.

EARTHWORK SUMMARY

CATEGORY	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)	UNEXPANDED FILL	EXPANDED FILL (2)	MASS ORDINATE +/- (3)	WASTE
			CUT		FACTOR 1.30		
0010	10+78.00 - 12+26.60	STATE STREET	414	1	1	813	813
	51+50 - 51+75	BLACK RIVER	227	0	0	227	227
CATEGORY 0010 SUBTOTAL			641				
0030	10+00 - 10+78	STATE STREET	474	0	0	0	0
	50+35 - 51+50	BLACK RIVER	854	0	0	854	854
CATEGORY 0030 SUBTOTAL			1,328				
PROJECT TOTAL			1,969				

1) COMMON EXCAVATION IS THE CUT. ITEM NUMBER 205.0100.

2) EXPANADED FILL. FACTOR = 1.30; EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR

3) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL ON THE PROJECT.

4) ALL QUANTITIES SHOWN IN CY

ASPHALT PAVING

CATEGORY	LOCATION	460.6445 HMA PAVEMENT 5 MT 58-34 H (TON)	460.6225 HMA PAVEMENT 5 MT 58-28 S (TON)	455.0605 TACK COAT (GAL)	460.2000 INCENTIVE DENSITY HMA PAVEMENT (DOL)
0010	PROJECT	23	23	19	30
CATEGORY 0010 SUBTOTAL		**23**	**23**	**19**	**30**
0030	WEST OF BRIDGE	45	69	37	80
CATEFORY 0030 SUBTOTAL		**45**	**69**	**37**	**80**
PROJECT TOTAL		**68**	**92**	**56**	**110**

CONCRETE PAVEMENT

STATION	TO	STATION	415.0410 APPROACH SLAB (SY)	416.0160 CONCRETE DRIVEWAY 6-INCH (SY)
11+13	-	11+28	45	---
11+74	-	11+89	52	---
11+88	-	12+20	---	28
PROJECT TOTAL			**97**	**28**

CONCRETE SIDEWALK 4-INCH

CATEGORY	STATION	TO	STATION	OFFSET	602.0405 (SF)
0010	10+78		11+28	LT	842
	10+78		11+28	RT	393
	11+72		12+27	LT	647
	11+72		12+27	RT	177
CATEGORY 0010 SUBTOTAL					**2059**
0030	10+53		10+78	LT	370
	10+53		10+78	RT	264
CATEGORY 0030 SUBTOTAL					**634**
PROJECT TOTAL					**2693**

CURB RAMP

CATEGORY	STATION	TO	STATION	OFFSET	650.9000 CONSTRUCTION STAKING CURB RAMP (EACH)	602.0505 DETECTABLE WARNING FIELD YELLOW (SF)
0030	10+55	-	10+66	LT	1	10
	10+54	-	10+65	RT	1	10
CATEGORY 0030 SUBTOTAL					**2**	**20**
PROJECT TOTAL					**2**	**20**

ALL BID ITEMS ARE CATEGORY 0010 UNLESS NOTED.

STORM SEWER STRUCTURES

STRUCTURE	STATION	OFFSET*	LOCATION	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH (EACH)	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH (EACH)	611.0624 INLET COVERS TYPE H (EACH)	611.3004 INLETS 4-FT DIAMETER (EACH)	611.3230 INLETS 2X3-FT (EACH)	650.4000 CONSTRUCTION STAKING STORM SEWER (EACH)	612.0404 PIPE UNDERDRAIN WRAPPED 4-INCH (LF)	RIM ELEVATION	INVERT ELEVATION**	DEPTH*** (FT)
AE-A1	11+24	35.3' RT	STATE ST	1	---	---	---	---	1	---	---	1398.90	---
A2	10+53	38.0' RT	STATE ST	---	---	1	---	1	1	33	1404.27	1400.19	3.29
A3	10+04	0.3' RT	STATE ST	---	---	1	---	1	1	33	1403.90	1401.05	2.02
AE-B1	11+73	36.8' RT	STATE ST	---	1	---	---	---	1	---	---	1398.90	---
B2	12+25	23.1' RT	STATE ST	---	---	1	1	---	1	33	1404.65	1399.64	4.05
A2.1	10+53	36.8' RT	STATE ST	---	---	1	---	1	1	33	1403.87	1401.11	1.93
PROJECT TOTAL				**1**	**1**	**4**	**1**	**3**	**6**	**132**			

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

STORM SEWER PIPES

FROM		TO	608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-IN (LF)	608.0324 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-IN (LF)	608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-IN (LF)	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	# JOINT TIES REQUIRED* EACH
B2	-	AE-B1	---	49	---	1399.64	1398.90	0.015	3
A2.1	-	A2	---	---	75	1401.11	1400.69	0.006	---
A3	-	A2	---	---	62	1401.05	1400.69	0.006	---
A2	-	AE-A1	71	---	---	1400.19	1398.90	0.018	---
PROJECT TOTAL			**71**	**49**	**137**				

* NON-BID ITEM: FOR INFORMATION ONLY

INLET PROTECTION TYPE D

STATION	OFFSET	628.7020 (EACH)
10+04	RT/LT	1
10+52	LT	1
10+52	RT	1
10+53	LT	1
10+62	LT	1
10+62	RT	1
12+24	LT	1
12+24	RT	1
PROJECT TOTAL		**8**

ALL BID ITEMS ARE CATEGORY 0010 UNLESS NOTED.

CURB & GUTTER

CATEGORY	STATION	TO	STATION	OFFSET	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D (LF)	601.0409 CONCRETE CURB & GUTTER 30-INCH TYPE A (LF)
0010	10+53	-	11+13	LT	35	---
	10+53	-	11+13	RT	35	---
	11+13	-	11+28	LT	---	15
	11+13	-	11+28	RT	---	15
	11+74	-	11+89	LT	---	16
	11+74	-	11+89	RT	---	16
	11+89	-	12+27	LT	38	---
	11+89	-	12+27	RT	38	---
CATEGORY 0010 SUBTOTAL					**146**	**62**
0030	10+78	-	11+13	LT	42	---
	10+78	-	11+13	RT	44	---
CATEGORY 0030 SUBTOTAL					**86**	**---**
PROJECT TOTAL					**232**	**62**

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	LOCATION	618.0100 (EACH)
0030	PROJECT	1
CATEGORY 0030 SUBTOTAL		**1**
PROJECT TOTAL		**1**

MOBILIZATION

CATEGORY	LOCATION	619.1000 (Project) (EACH)
0010	PROJECT	0.3
CATEGORY 0010 SUBTOTAL		**0.3**
0020	PROJECT	0.7
CATEGORY 0020 SUBTOTAL		**0.7**
PROJECT TOTAL		**1**

FINISHING ITEMS

CATEGORY	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	627.0200 MULCHING (SY)	629.0205 FERTILIZER TYPE A (CWT)	630.0140 SEEDING MIXTURE NO. 40 (LB)	630.0200 TEMPORARY SEEDING (LB)
0010	PROJECT	64	64	0.04	1.2	2
	UNDISTRIBUTED	---	16	0.01	0.3	0
CATEGORY 0010 SUBTOTAL		**64**	**80**	**0.05**	**1.5**	**2**
0030	PROJECT	32	32	0.02	0.6	1
	UNDISTRIBUTED	---	8	0.01	0.1	0
CATEGORY 0030 SUBTOTAL		**32**	**40**	**0.03**	**0.7**	**1**
PROJECT TOTAL		**96**	**120**	**0.08**	**2.2**	**3**

EROSION CONTROL

CATEGORY	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)	628.6005 TURBIDITY BARRIERS (SY)
0010	WEST OF BRIDGE	20	40	59
	EAST OF BRIDGE	---	---	67
	UNDISTRIBUTED	5	10	32
CATEGORY 0010 SUBTOTAL		**25**	**50**	**158**
0030	WEST OF BRIDGE	---	---	82
	EAST OF BRIDGE	---	---	82
	UNDISTRIBUTED	---	---	41
CATEGORY 0030 SUBTOTAL		**---**	**---**	**205**
PROJECT TOTAL		**25**	**50**	**363**

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905 (EACH)	628.1910 EMERGENCY (EACH)
PROJECT	4	4
PROJECT TOTAL	**4**	**4**

ALL BID ITEMS ARE CATEGORY 0010 UNLESS NOTED.

PERMANENT SIGNING

CATEGORY	APPROXIMATE STATION	APPROXIMATE OFFSET	SIGN CODE	SIGN SIZE	634.0811 POSTS TUBULAR STEEL 2X2 11-FT (EACH)	637.2210 SIGNS TYPE II REFLECTIVE H (SF)
0030	10+66	18' LT	R1-1	30" X 30"	1	5.18
CATEGORY 0030 SUBTOTAL					**1**	**5.18**
PROJECT TOTAL					**1**	**5.18**

REMOVING SIGNING

CATEGORY	APPROXIMATE STATION	APPROXIMATE OFFSET	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)	DESCRIPTION
0010	10+58	36' RT	1	---	WEIGHT LIMIT 10 TON SIGN
	11+75	59' RT	1	1	SIGN AT RETAINING WALL
	INTERSECTION WHELEN & STATE	LT	1	1	WEIGHT LIMIT 10 TON SIGN
CATEGORY 0010 SUBTOTAL			**3**	**2**	
0030	10+65	24' LT	1	1	STOP SIGN
CATEGORY 0030 SUBTOTAL			**1**	**1**	
PROJECT TOTAL			**4**	**3**	

TRAFFIC CONTROL

STAGE	SERVICE PERIOD (DAYS)	643.0705 WARNING LIGHTS TYPE A NO. IN SERVICE (EACH)	643.0705 WARNING LIGHTS TYPE A PAY QUANTITY (DAY)	643.0420 BARRICADES TYPE III NO. IN SERVICE (EACH)	643.0420 BARRICADES TYPE III PAY QUANTITY (DAY)	643.0900 SIGNS NO. IN SERVICE (EACH)	643.0900 SIGNS PAY QUANTITY (DAY)
1	80	16	1280	12	960	12	960
2	5	36	180	28	140	20	100
PROJECT TOTAL			**1460**		**1100**		**1060**

MARKING

CATEGORY	LOCATION	646.1020 LINE EPOXY 4-INCH WHITE (LF)	646.6120 STOP LINE EPOXY 18-INCH (LF)	646.7420 CROSSWALK EPOXY TRANSVERSE LINE 6-INCH (LF)
0010	EAST OF BRIDGE	18	---	---
CATEGORY 0010 SUBTOTAL		**18**	**---**	**---**
0030	WEST OF BRIDGE	---	14	182
CATEGORY 0030 SUBTOTAL		**---**	**14**	**182**
PROJECT TOTAL		**18**	**14**	**182**

FIELD OFFICE TYPE B

LOCATION	642.5001 (EACH)
PROJECT	1
PROJECT TOTAL	**1**

TRAFFIC CONTROL

LOCATION	643.5000 (EACH)
PROJECT	1
PROJECT TOTAL	**1**

GEOTEXTILE

CATEGORY	LOCATION	645.0140 GEOTEXTILE TYPE SAS (SY)
0010	WEST OF BRIDGE	193
	EAST OF BRIDGE	286
CATEGORY 0010 SUBTOTAL		**479**
0030	WEST OF BRIDGE	575
CATEGORY 0030 SUBTOTAL		**575**
PROJECT TOTAL		**1054**

ALL BID ITEMS ARE CATEGORY 0010 UNLESS NOTED.

CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	650.4500 SUBGRADE (LF)	650.5000 BASE (LF)	650.9920 SLOPE STAKES (LF)	650.5500 CURB & GUTTER (LF)
0010	10+78	-	12+27	149	149	149	208
CATEGORY 0010 SUBTOTAL				**149**	**149**	**149**	**208**
0030	10+03	-	10+78	75	75	75	86
CATEGORY 0030 SUBTOTAL				**75**	**75**	**75**	**86**
PROJECT TOTAL				**224**	**224**	**224**	**294**

SEISMOGRAPH

LOCATION	999.1000.S (LS)
PROJECT	1
PROJECT TOTAL	**1**

CRACK AND DAMAGE SURVEY

LOCATION	999.1500.S (LS)
PROJECT	1
PROJECT TOTAL	**1**

CONSTRUCTION STAKING STRUCTURE LAYOUT

CATEGORY		650.6500 (LS)
0020	PROJECT	1
CATEGORY 0020 SUBTOTAL		**1**
PROJECT TOTAL		**1**

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL

	650.9910 (LS)
PROJECT	1
PROJECT TOTAL	**1**

SAWING PAVEMENTS

CATEGORY	STATION	OFFSET	690.0150 SAWING ASPHALT (LF)
0010	12+27	LT/RT	38
CATEGORY 0010 SUBTOTAL			**38**
0030	10+06 - 10+52	LT	46
	10+06 - 10+52	RT	46
CATEGORY 0030 SUBTOTAL			**92**
PROJECT TOTAL			**130**

ALL BID ITEMS ARE CATEGORY 0010 UNLESS NOTED.

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W OR HE LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
SLOPE INTERCEPT
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC) (TYPE)
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING — TO BE REMOVED
BRIDGE

SECTION CORNER SYMBOL
SECTION CORNER MONUMENT
GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT
SIGN
OFF-PREMISE SIGN

R/W MONUMENT (TO BE SET)
NON-MONUMENTED R/W POINT
FOUND IRON PIN (1-INCH UNLESS NOTED)

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE	■	□
TELEPHONE POLE	●	⌀
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)	▣	▫

ACCESS RESTRICTED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)
NO ACCESS (NEW HIGHWAY)

PARCEL NUMBER (25) — UTILITY NUMBER (40)
TLE POINT NUMBER 25
PARALLEL OFFSETS

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF INTERSECTION	PI
ACRES	AC	PROPERTY LINE	PL
AHEAD	AH	RECORDED AS	(100')
ALUMINUM	ALUM	REEL / IMAGE	R/I
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RESTICTIVE DEVELOPMENT EASEMENT	RDE
CENTERLINE	C/L	RIGHT	RT
CERTIFIED SURVEY MAP	CSM	RIGHT OF WAY	R/W
CONCRETE	CONC	SECTION	SEC
COUNTY	CO	SEPTIC VENT	SEPV
COUNTY TRUNK HIGHWAY	CTH	SQUARE FEET	SF
DISTANCE	DIST	STATE TRUNK HIGHWAY	STH
CORNER	COR	STATION	STA
DOCUMENT NUMBER	DOC	TELEPHONE PEDESTAL	TP
EASEMENT	EASE	TEMPORARY LIMITED EASEMENT	TLE
EXISTING	EX	TRANSPORTATION PROJECT PLAT	TPP
GAS VALVE	GV	UNITED STATES HIGHWAY	USH
GRID NORTH	GN	VOLUME	V
HIGHWAY EASEMENT	HE		
IDENTIFICATION	ID		
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY NUMBER	NGS NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		
POINT OF COMPOUND CURVE	PCC		

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER	—W—	SANITARY SEWER	—SAN—
GAS	—G—	STORM SEWER	—SS—
TELEPHONE	—T—	CABLE TELEVISION	—TV—
OVERHEAD TRANSMISSION LINES	—OH—	FIBER OPTIC	—FO—
ELECTRIC	—E—		

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), TAYLOR COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES. GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" CAPPED IRON BARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS OF PUBLIC RECORD."

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINT OF REFERENCE:

EXISTING HIGHWAY RIGHT-OF-WAY FOR W. STATE STREET AND S. WISCONSIN AVENUE SHOWN HEREIN IS BASED ON MCCARTNEY AND WHELEN'S ADDITION TO THE CITY OF MEDFORD.

RW COURSE TABLE		
COURSE	BEARING	DISTANCE
108-100	S62°31'30"W	138.83'
100-101	N26°53'32"W	73.00'
101-102	N62°31'30"E	63.24'
102-103	N27°28'30"W	13.00'
103-104	N62°31'30"E	58.50'
104-105	S27°28'30"E	13.00'
105-106	N62°31'30"E	16.85'
106-107	S27°03'00"E	66.00'
107-108	S27°20'01"E	7.00'

PLE COURSE TABLE		
COURSE	BEARING	DISTANCE
105-104	N27°28'30"W	13.00'
104-113	N62°31'30"E	4.30'
113-114	S27°28'30"E	13.00'
114-105	S62°31'30"W	4.30'

SCHEDULE OF LANDS AND INTERESTS REQUIRED

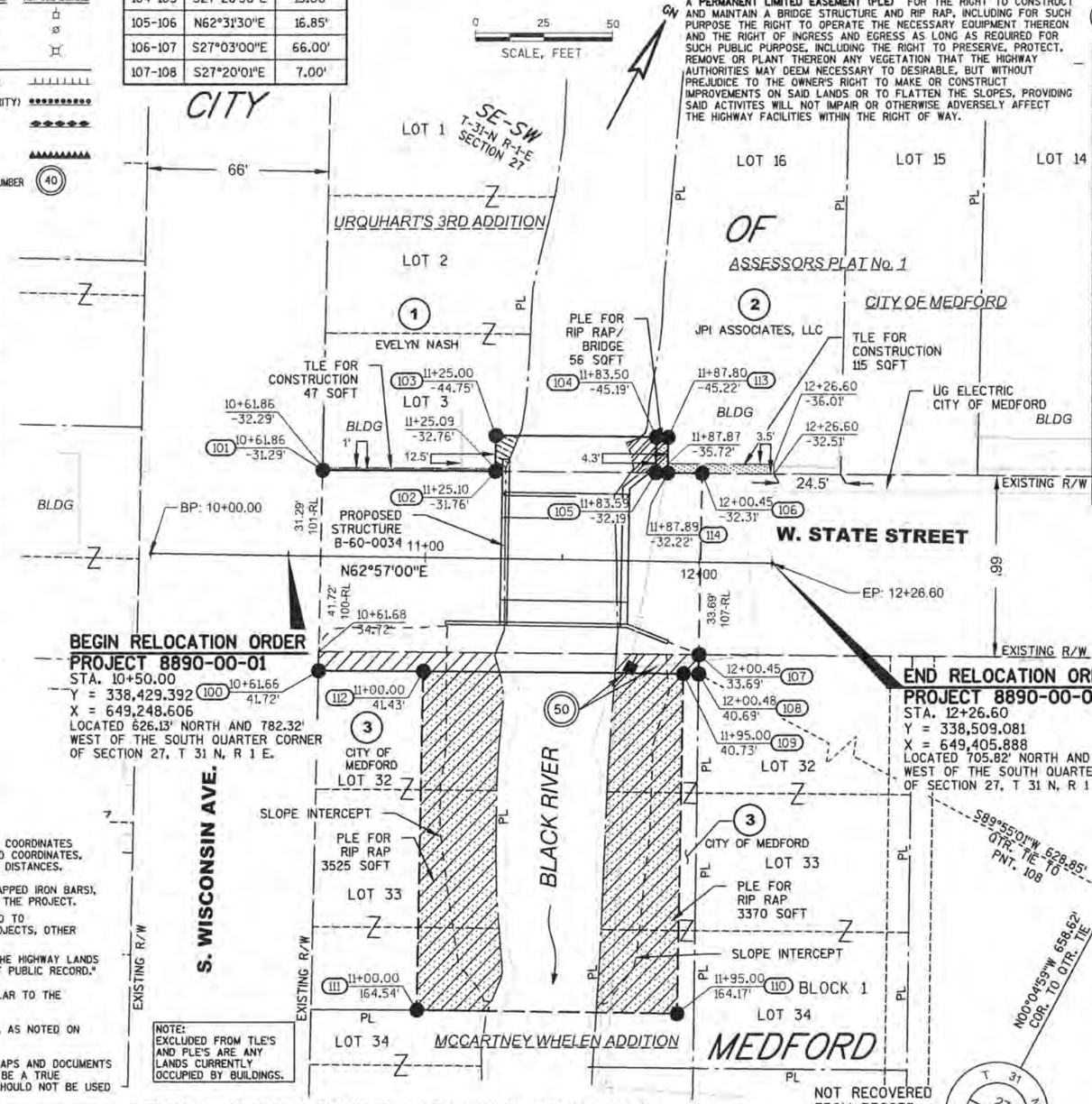
PARCEL NO.	OWNERSHIP	INTEREST REQUIRED	R/W SQFT EXISTING	NEW	TOTAL	PLE	TLE
1	EVELYN NASH	FEE/TLE	---	77	77	---	47
2	JPI ASSOCIATES, LLC	FEE/PLE/TLE	---	115	115	56	115
3	CITY OF MEDFORD	FEE/PLE	---	667	667	6,895	---
50	MEDFORD ELECTRIC UTILITY	RELEASE OF RIGHTS					

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE CITY

A PERMANENT LIMITED EASEMENT (PLE) FOR THE RIGHT TO CONSTRUCT AND MAINTAIN A BRIDGE STRUCTURE AND RIP RAP, INCLUDING FOR SUCH PURPOSE THE RIGHT TO OPERATE THE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY TO DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHT TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES WITHIN THE RIGHT OF WAY.

(50) MEDFORD ELECTRIC UTILITY NO RECORD EASEMENT

R/W POINT STATION		
POINT	Y	X
100	338,396.918	649,277.963
101	338,462.027	649,244.942
102	338,491.202	649,301.047
103	338,502.736	649,295.049
104	338,529.726	649,346.951
105	338,518.192	649,352.949
106	338,525.967	649,367.901
107	338,467.185	649,397.916
108	338,460.967	649,401.130
109	338,458.438	649,396.267
110	338,348.496	649,452.406
111	338,304.971	649,367.962
112	338,414.607	649,311.979
113	338,531.710	649,350.766
114	338,520.176	649,356.764



NOTE: EXCLUDED FROM TLE'S AND PLE'S ARE ANY LANDS CURRENTLY OCCUPIED BY BUILDINGS.

A TEMPORARY LIMITED EASEMENT (TLE) FOR THE RIGHT TO CONSTRUCT A DRIVEWAY AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLES EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

PLE COURSE TABLE		
COURSE	BEARING	DISTANCE
108-109	S62°31'30"W	5.48'
109-110	S27°03'00"E	123.45'
110-111	S62°43'55"W	95.00'
111-112	N27°03'00"W	123.10'
112-110	N62°31'30"E	95.00'

REVISION DATE

R/W PROJECT NUMBER 8890-00-01		SHEET NUMBER	TOTAL SHEETS
FEDERAL PROJECT NUMBER ---		4.01	1

PLAT OF RIGHT-OF-WAY REQUIRED FOR

CITY OF MEDFORD, STATE STREET
(BLACK RIVER BRIDGE B600134)

LOCAL STREET — TAYLOR COUNTY

CONSTRUCTION PROJECT NUMBER 8890-00-71

LAYOUT
0 — 500FT
SCALE

NET CENTERLINE LENGTH 0.033 MI

APPROVED FOR CITY OF MEDFORD

7-19-18 DATE — DIRECTOR OF PUBLIC WORKS

PLAT PREPARED BY
AYRES ASSOCIATES

THE SURVEY IS PREPARED AT THE REQUEST OF THE CITY OF MEDFORD. THE TOPOGRAPHY AND UTILITY SURVEY WAS PERFORMED IN JANUARY 2017. THIS THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN
James R. Cappeart
S-3044
Green Bay
Wis.
LAND SURVEYOR

JAMES CAPPEART — 7/13/2018 DATE
REGISTRATION NUMBER S-3044

MATCH EXISTING SAWCUT REQ'D

BEGIN CONSTRUCTION
STA. 10+00.00
Y=338406.03
X=649204.08

BM 1083

CR 6000

CURB RAMP TYPE 1A

TLE

R/W

R20

MEDFORD UTILITIES

EX R/W

WISCONSIN AVE

WE ENERGIES

BEGIN PROJECT
STA. 10+78.00
Y=338441.50
X=649273.54

CURB RAMP TYPE 1A

R20

SLOPE INTERCEPT

MATCH EXISTING SAWCUT REQ'D

NON-PARTICIPATING ITEMS

PARTICIPATING ITEMS

R/W

BLACK RIVER

PLE

SUSPENDED WALKWAY

CHARTER

TLE

R/W

BM 11023

CP 5

STRUCTURE B-60-134

30'

30'

49'

11+00

12+00

13+00

MEDFORD UTILITIES AND CHARTER

EXISTING STRUCTURE (P-60-704) TO BE REMOVED

MEDFORD UTILITIES

MEDFORD UTILITIES

STATE STREET

MATCH EXISTING SAWCUT REQ'D

END PROJECT
STA. 12+26.60
Y=338509.08
X=649405.89

DRIVEWAY AND SIDEWALK RAMP TYPE X

BENCH MARKS			
NO.	NORTHING	EASTING	DESCRIPTION
1083	338432.29	649187.20	BOLT W BURY TAG
1599	338595.42	649499.58	BOLT W BURY TAG
11023	338505.20	649346.05	CHISELED SQUARE ON TOP OF CONCRETE PARAPET (NE CORNER OF BRIDGE)

STA 10+50.00 EL 1404.60

STA 10+51.79 EL 1404.61

VPC STA 11+00.00 VPC EL 1405.65

VPI STA 11+40.00 VPI EL 1406.51

VPT STA 11+80.00 VPT EL 1405.71

STA 12+20.00 EL 1404.91

STA 12+26.60 EL 1404.92

1410

1405

1400

1395

EXISTING ℄ PROFILE

FINISHED ℄ PROFILE

0.55%

2.15%

-2.00%

0.15%

HIGH WATER$_{100}$ EL. 1406.7

VCL = 80.00

K = 19.28

WATER EL. 1397.4 (12-9-16)

STREAM BED EL. 1394.5

1404.47

1404.60 1404.60

1405.32 1405.65

1395.19 1406.08

1405.30 1405.31

1405.59

1405.85

10+00

11+00

12+00

13+00

REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS
STATION 11+49, STRUCTURE P-60-704
SINGLE SPAN CONCRETE DECK GIRDER BRIDGE ON VERTICAL CONCRETE ABUTMENTS
45.9' O.A.L X 29' CLEAR RDWY WIDTH WITH 9.25' SIDEWALKS, 0" SKEW

STRUCTURE B-60-134 REQ'D
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE ON VERTICAL PILE-ENCASED ABUTMENTS
46.5' O.A.L. X 30' CLEAR RDWY WIDTH WITH 8' WIDE SIDEWALKS

EARTHWORK SUMMARY

CATEGORY 0010
STATE STREET STA. 10+78.00 TO 12+26.60
BLACK RIVER STA. 51+50.00 TO 51+75.00
EXC. COMMON 641 CY
FILL 1 CY
SHR. = 30%
BORROW 0 CY

CATEGORY 0030
STATE STREET STA. 10+00.00 TO 10+78.00
BLACK RIVER STA. 50+35.00 TO 51+50.00
EXC. COMMON 1328 CY
FILL 0 CY
SHR. = 30%
BORROW 0 CY

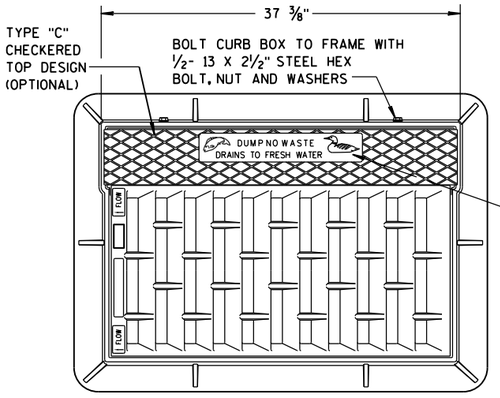
PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	PLAN AND PROFILE: STATE STREET	SHEET 23	E

Standard Detail Drawing List

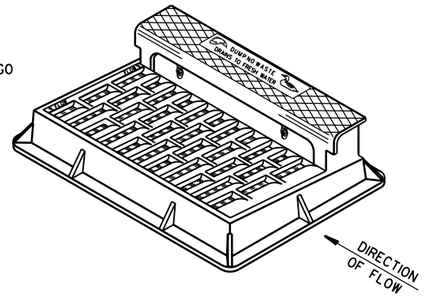
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
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
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

6

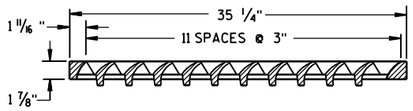
6

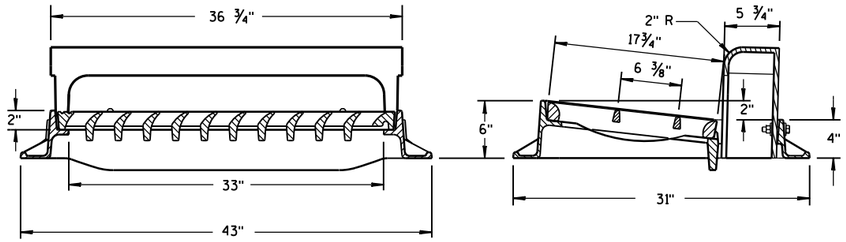


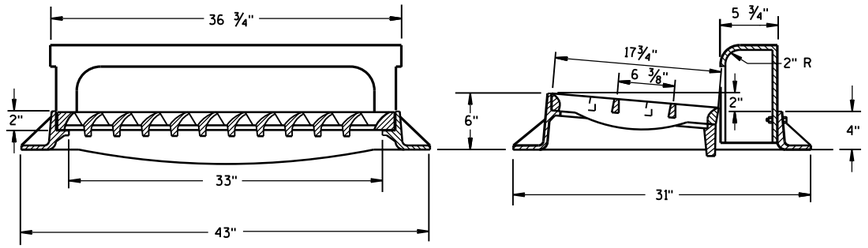
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

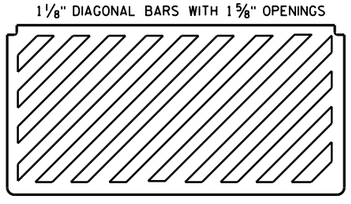






TYPE "H"

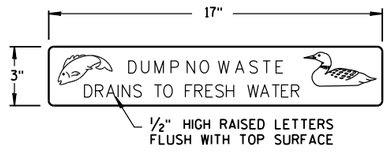
NOTE: EITHER CASTING IS ACCEPTABLE



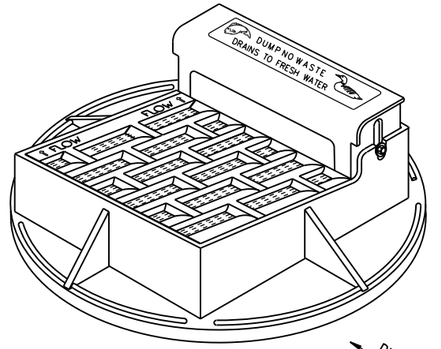
SPECIAL GRATE FOR TYPE "H" COVER

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

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

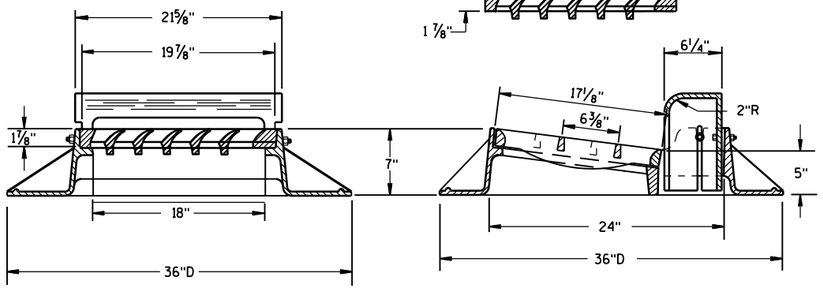


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



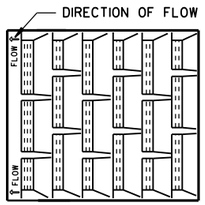
TYPE "A"

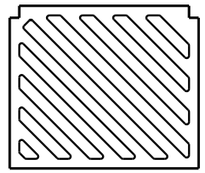
GENERAL NOTES

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

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

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

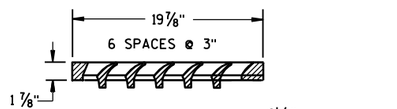


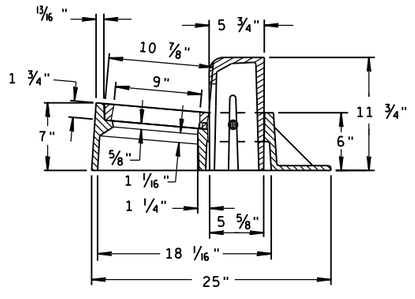


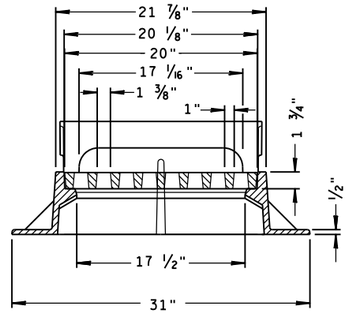
SPECIAL GRATE FOR TYPE "A" COVER

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

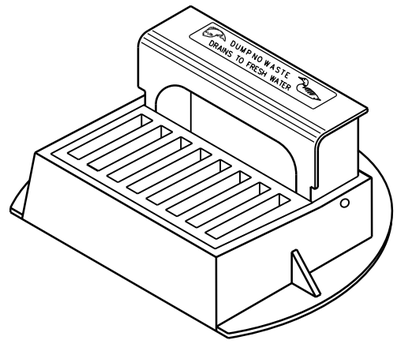
(NOTED AS TYPE A-S ON DRAINAGE TABLE)







TYPE "Z"



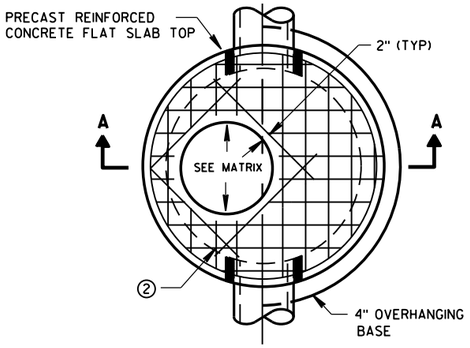
INLET COVERS
TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

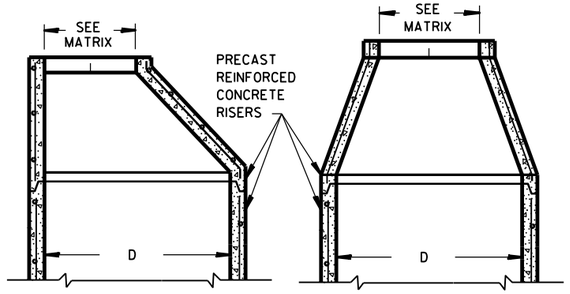
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

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

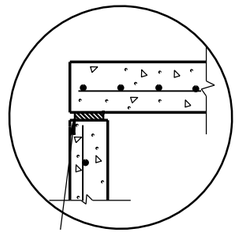


PLAN VIEW CIRCULAR OPENING

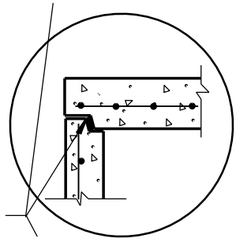


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

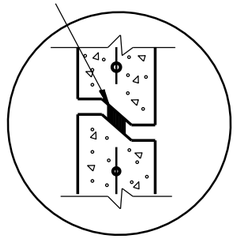


TOP WITH PLAIN END JOINT



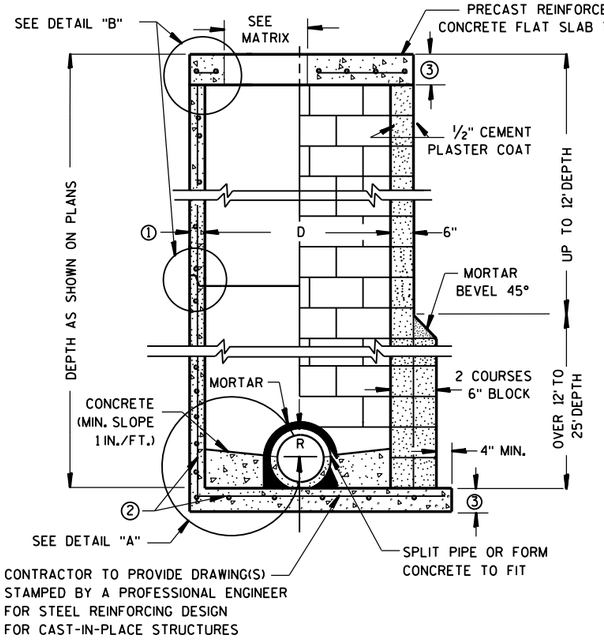
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



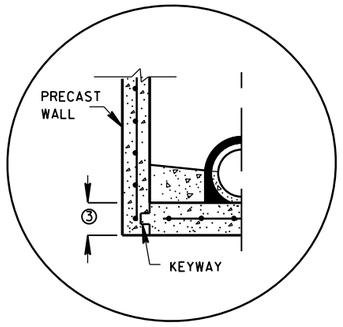
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

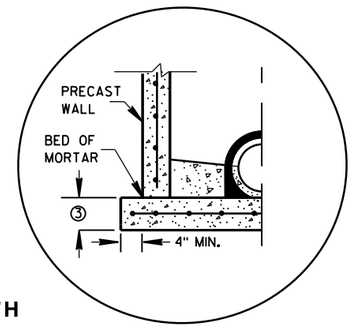


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

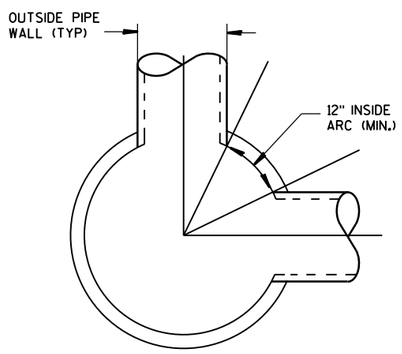


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

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

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

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

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

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION 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.

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

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

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

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

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

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

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

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

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

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

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

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

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

MANHOLE COVER OPENING MATRIX

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

PIPE MATRIX

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

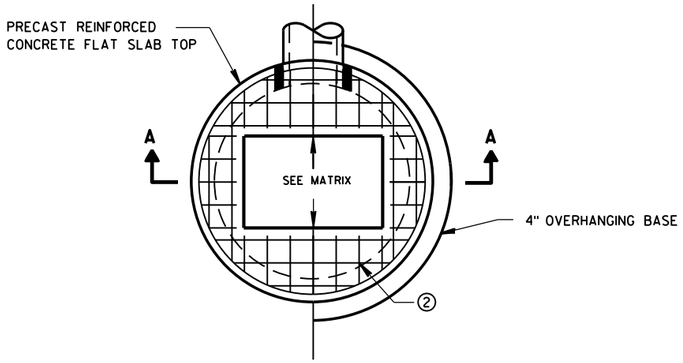
APPROVED

Sept., 2016
DATE

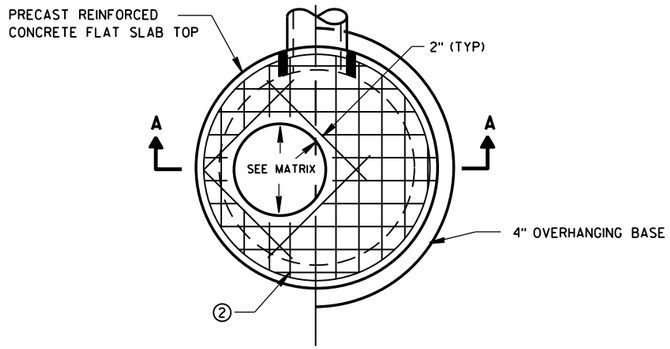
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERV

FHWA

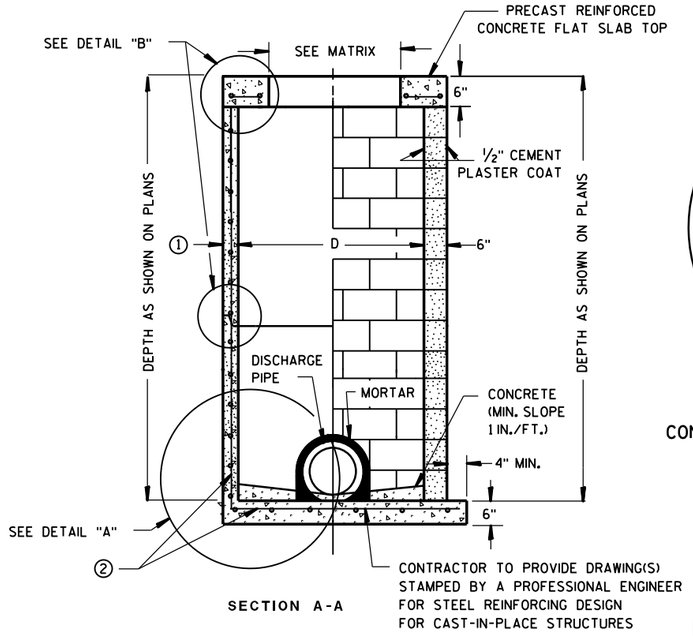
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

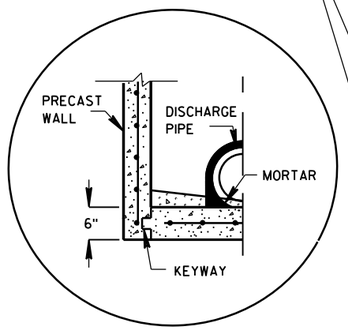


SECTION A-A

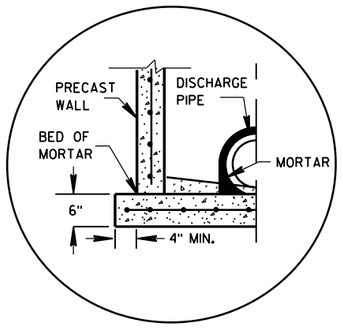
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

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

CIRCULAR INLETS W/ FLAT TOP

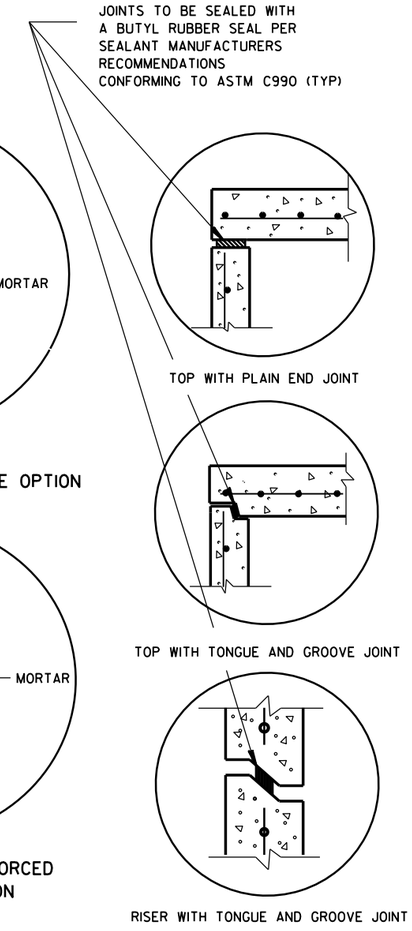


PRECAST REINFORCED
CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

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

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

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

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

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

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

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

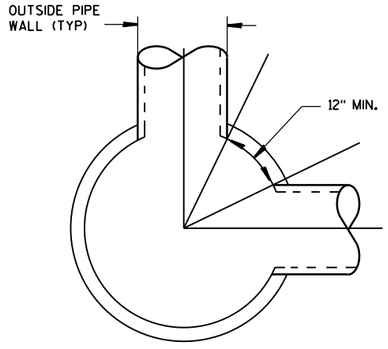
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

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

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

INLET COVER OPENING MATRIX

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



DETAIL "C"

PIPE MATRIX

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

INLETS 3-FT AND 4-FT DIAMETER

INLETS 3-FT
AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

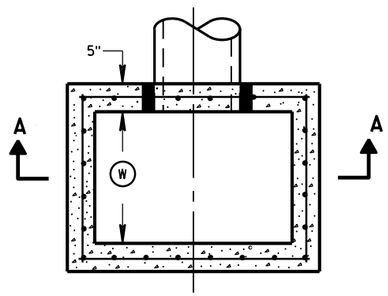
APPROVED
Sept.. 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS | UNIT SUPERVI ENT
FHWA

6

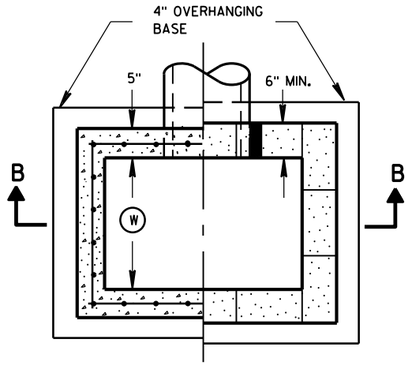
S.D.D. 8 C 6-2

6

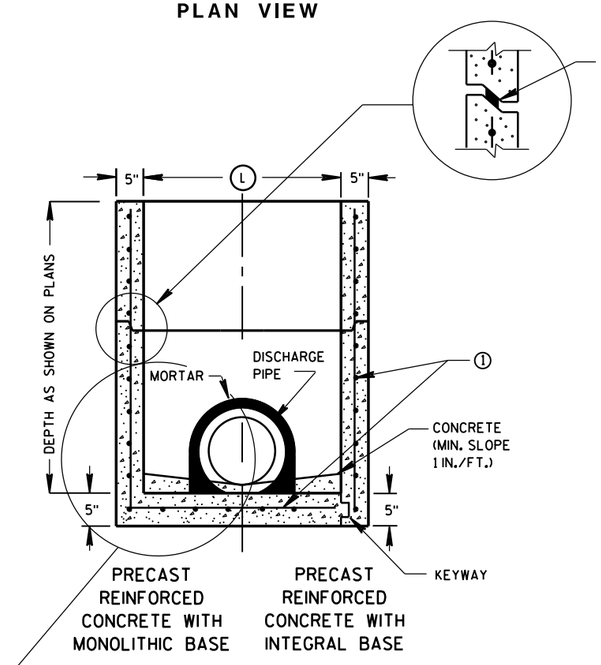
S.D.D. 8 C 6-2



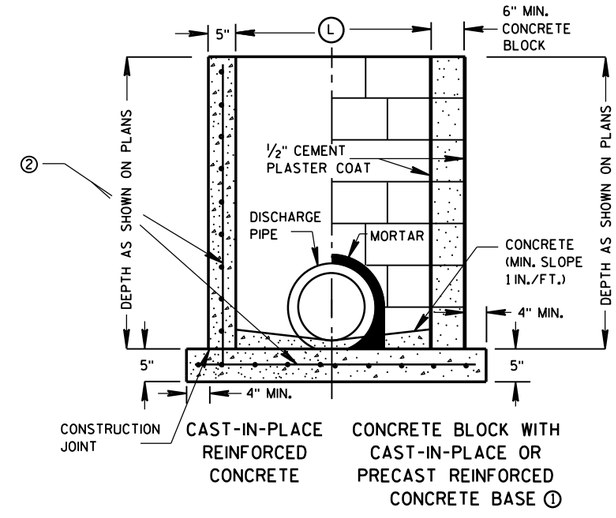
PLAN VIEW



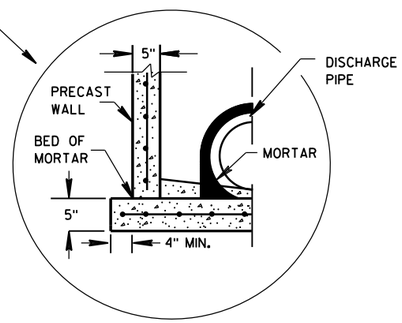
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

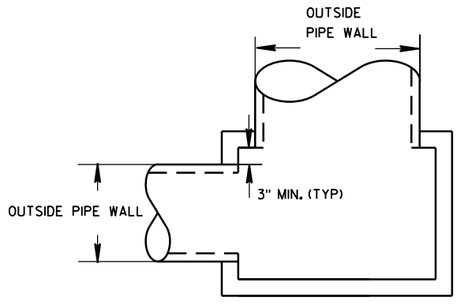
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

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

PIPE MATRIX

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



DETAIL "A"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

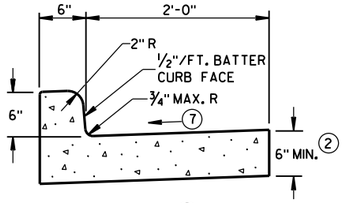
APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT UNIT SUPERVIS
FHWA

6

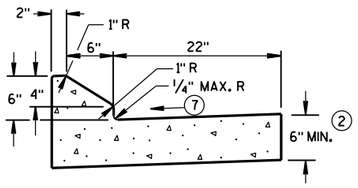
S.D.D. 8 C 7-2

6

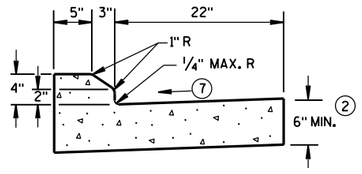
S.D.D. 8 C 7-2



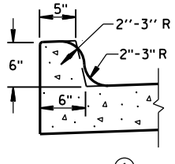
TYPES A (1) & D



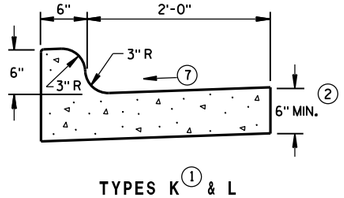
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

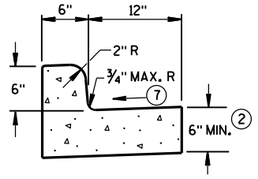


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



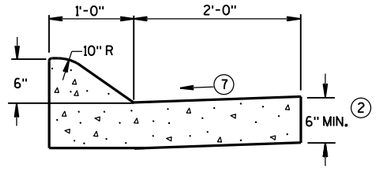
TYPES K (1) & L

CONCRETE CURB & GUTTER 30"

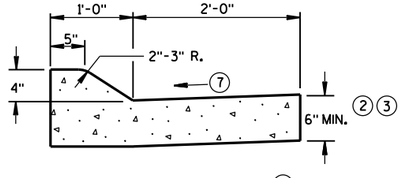


TYPES A (1) & D

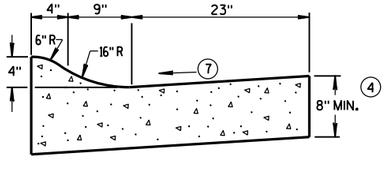
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

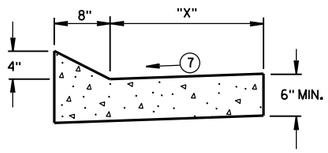


4" SLOPED CURB TYPES A (1) & D



4" SLOPED CURB TYPES R (1) & T (5)

CONCRETE CURB & GUTTER 36"



TYPES TBT & TBTT (1)

CONCRETE CURB & GUTTER

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

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.

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

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

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

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

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

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

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

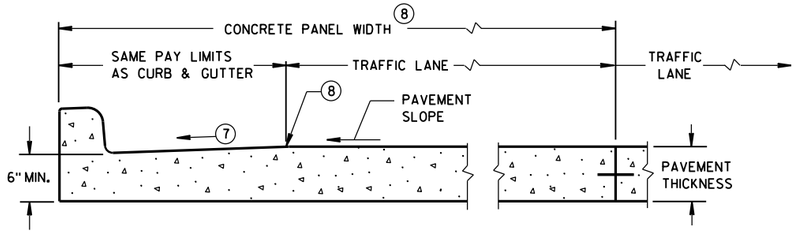
(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

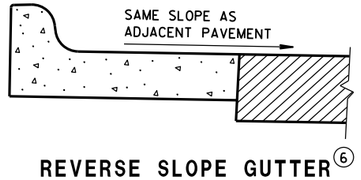
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB & GUTTER

* BIKE LANE IS NOT SHOWN.



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

CONCRETE CURB & GUTTER

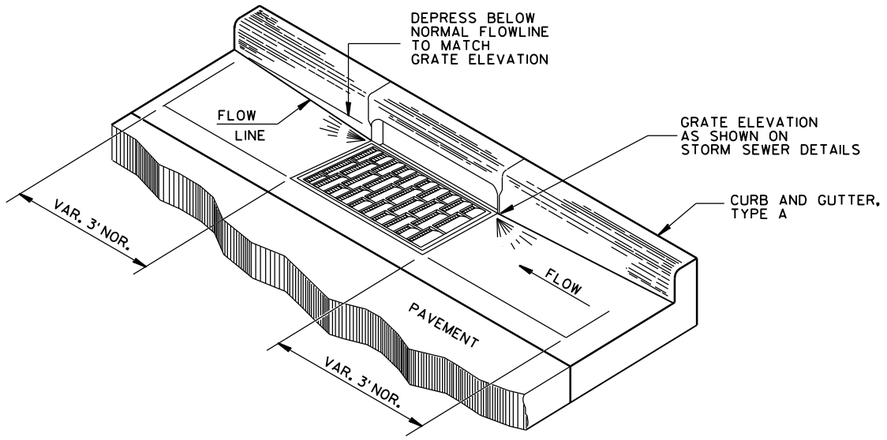
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 8 D 1-20a

6

S.D.D. 8 D 1-20a



DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

GENERAL NOTES

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

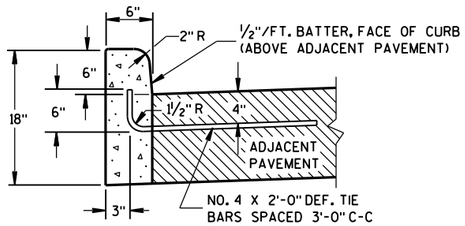
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

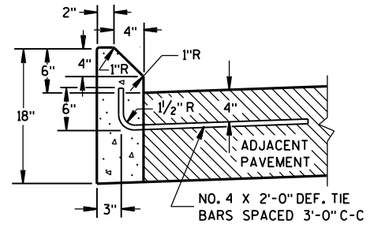
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

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

(9) REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

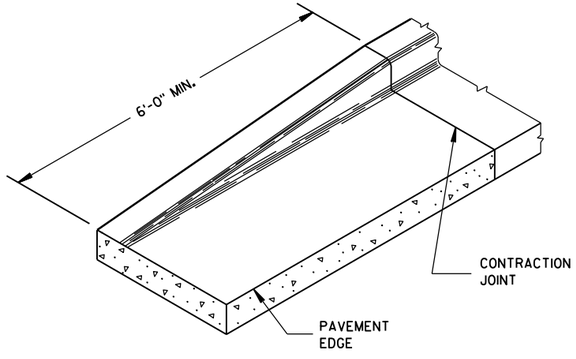


TYPES A(1) & D

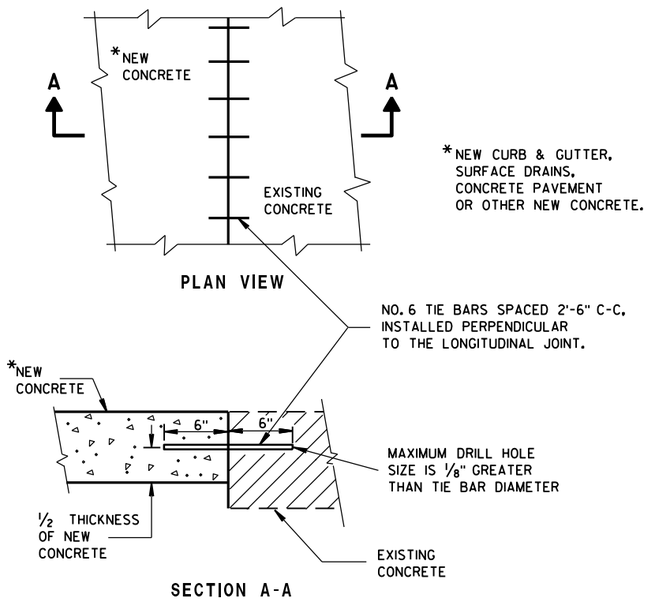


TYPES G(1) & J

CONCRETE CURB



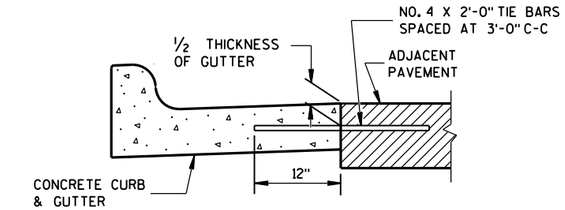
END SECTION CURB & GUTTER



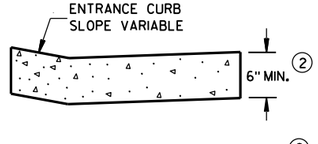
PLAN VIEW

SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

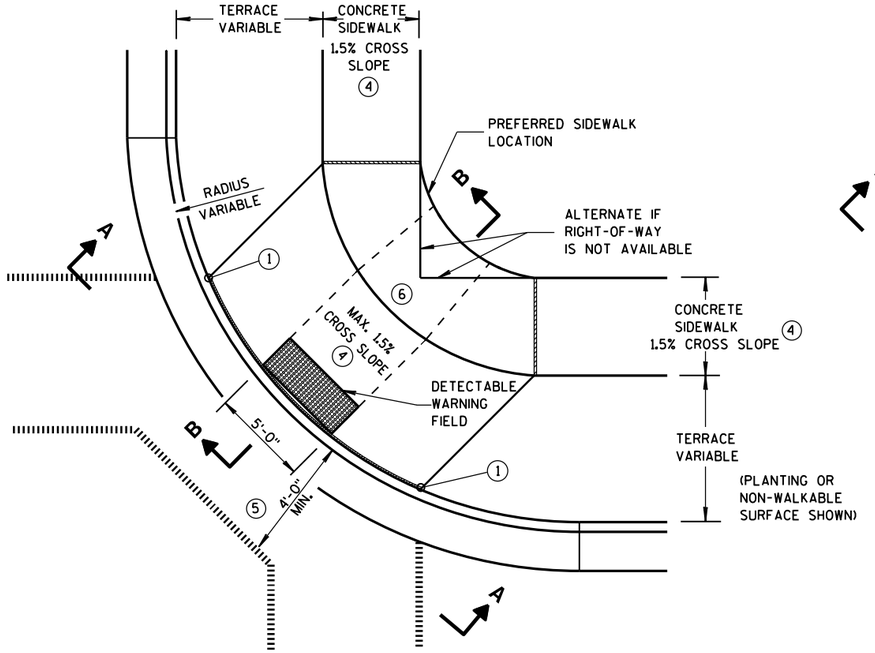
APPROVED
June, 2017 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS 30 UNIT SUPERVISOR — ENT
FHWA

6

S.D.D. 8 D 1-20b

6

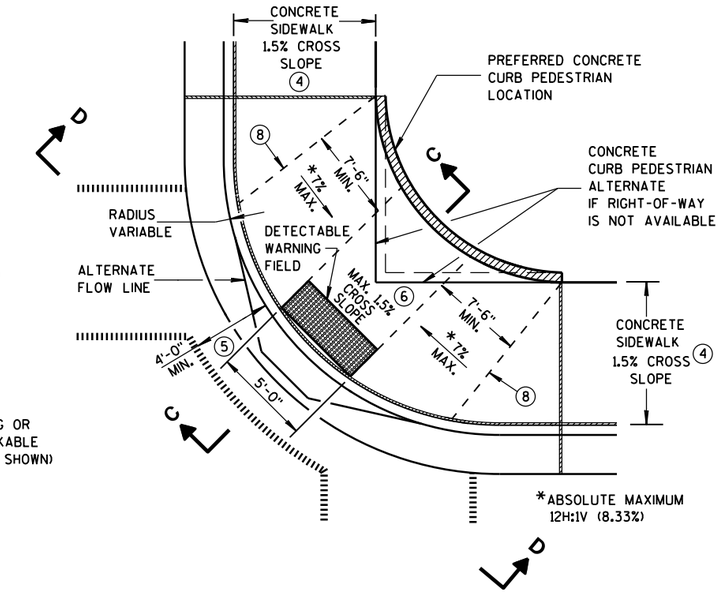
S.D.D. 8 D 1-20b



PLAN VIEW

TYPE 1 RAMP

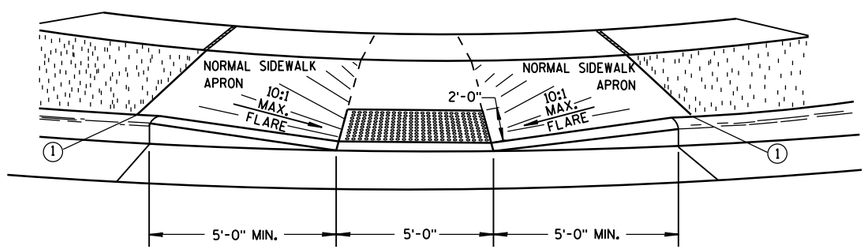
(CENTER OF CORNER RADIUS)



PLAN VIEW

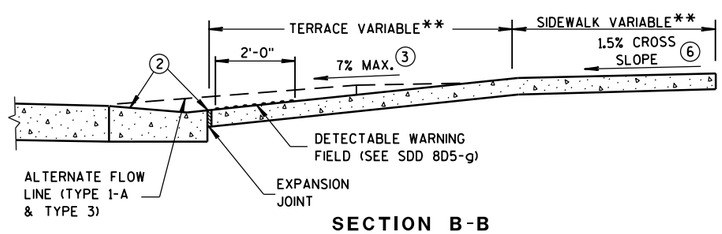
TYPE 1-A RAMP

(NO TERRACE)

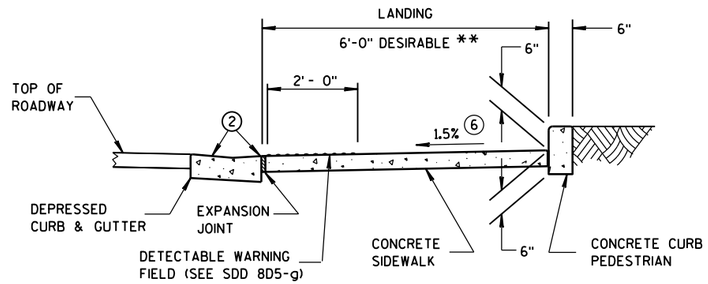


VIEW A-A

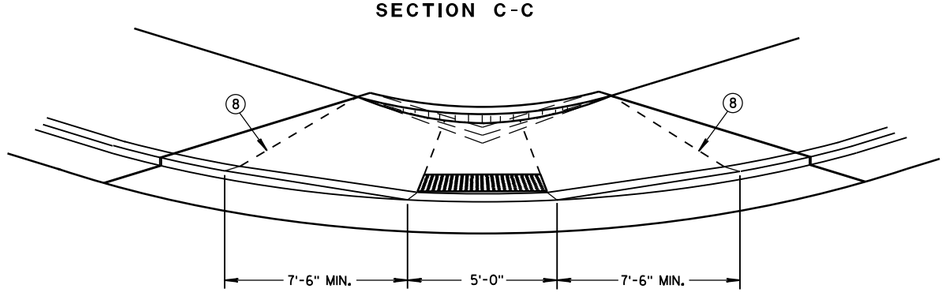
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

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

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

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

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

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

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

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

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

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

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

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

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

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

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

LEGEND

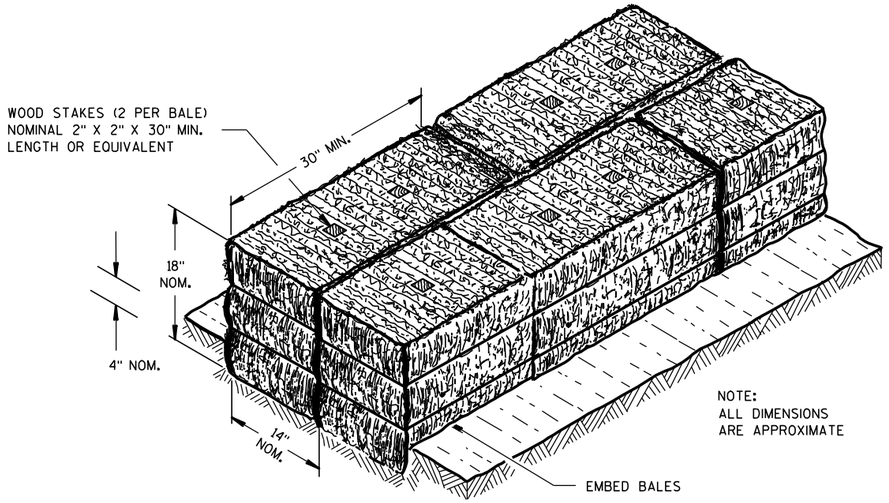
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

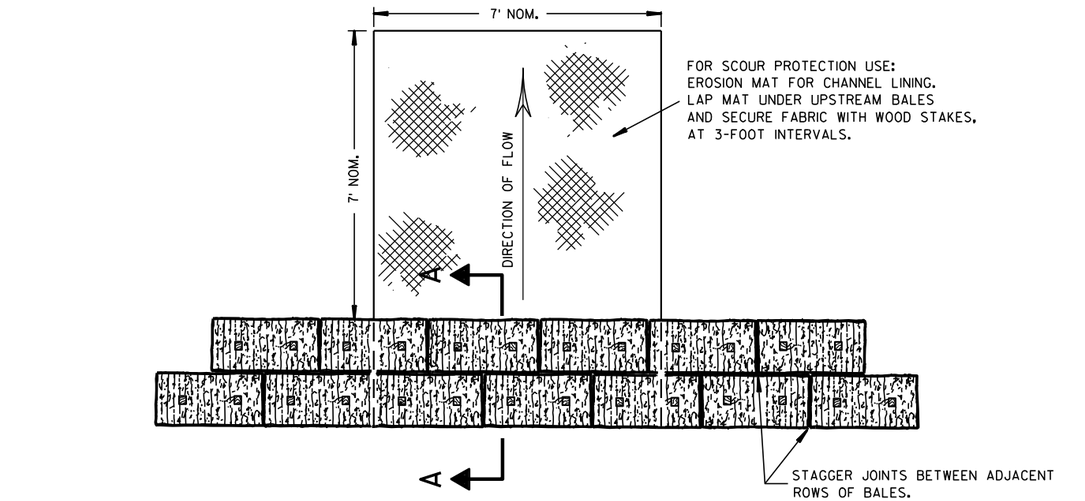
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

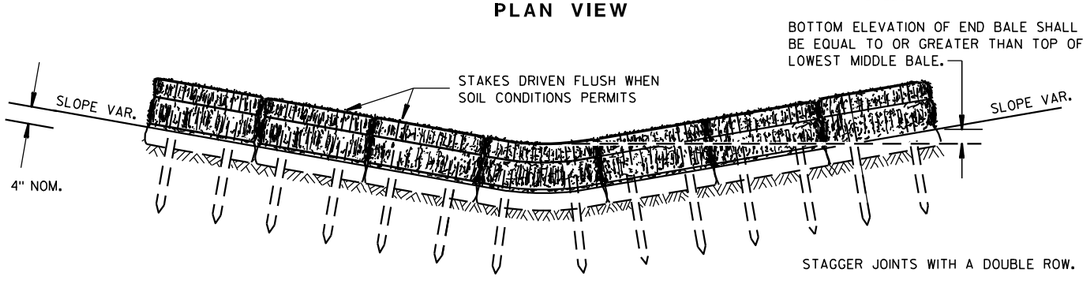
S.D.D. 8 D 5-19a



SECTION A-A



PLAN VIEW



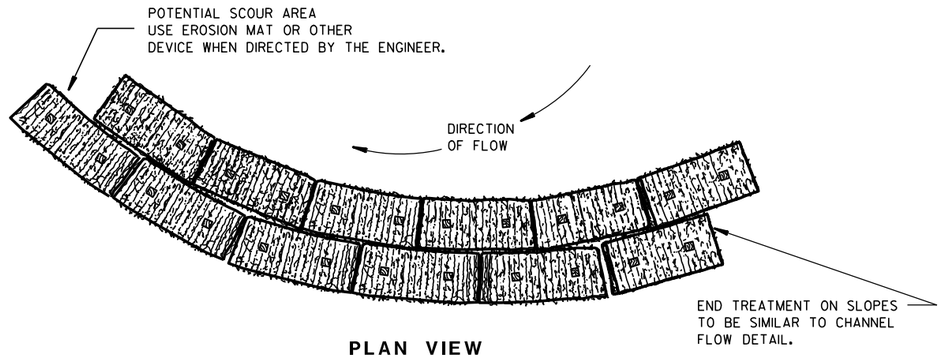
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

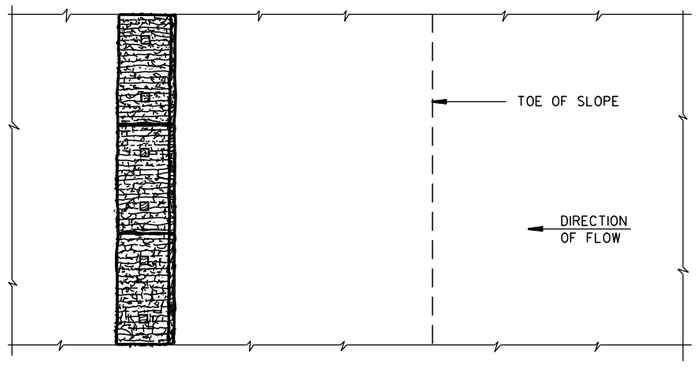
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

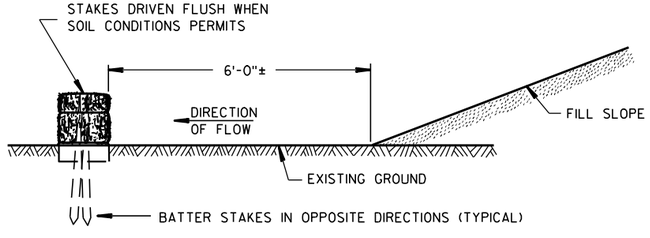


PLAN VIEW

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

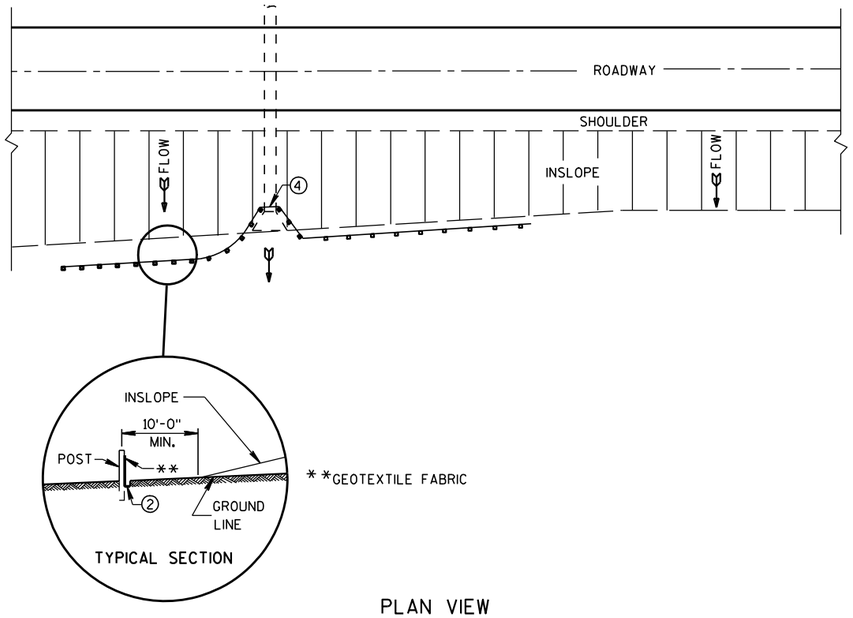
APPROVED
6/04/02 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 8-3

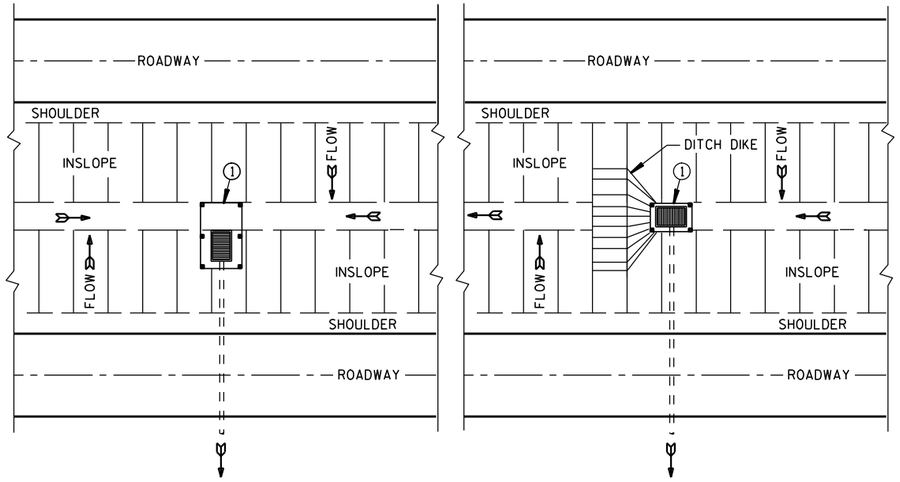
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



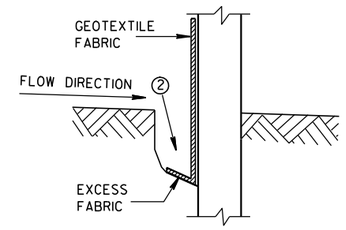
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

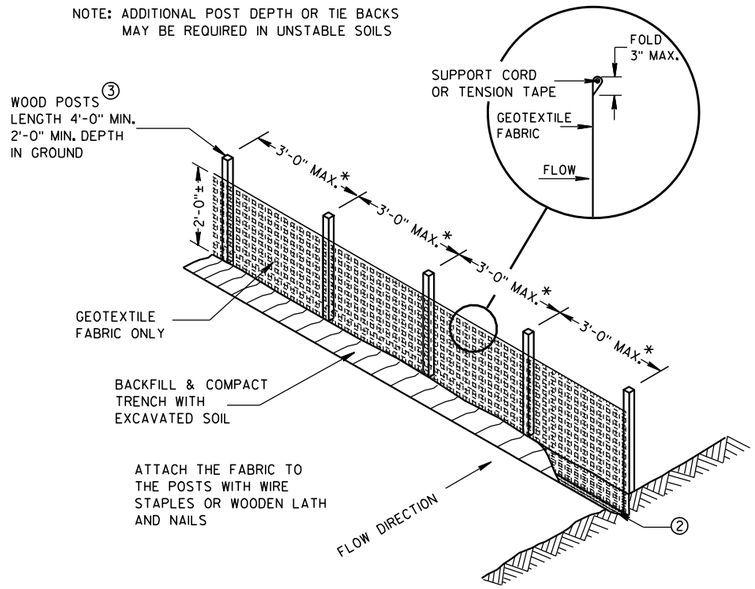
GENERAL NOTES

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.

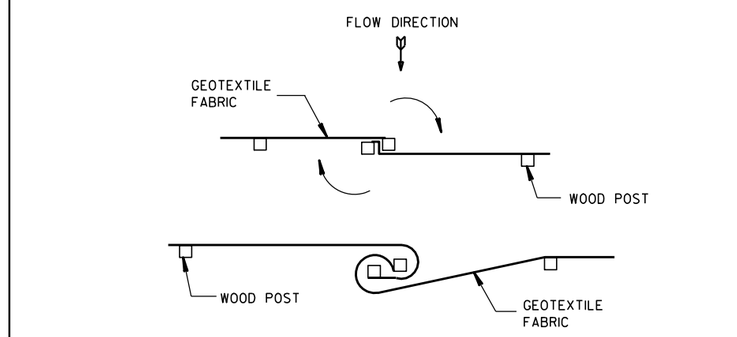


TRENCH DETAIL

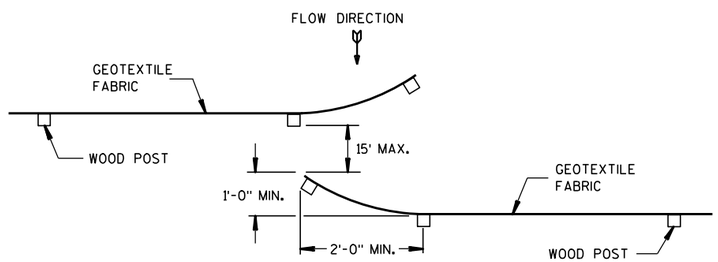


*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

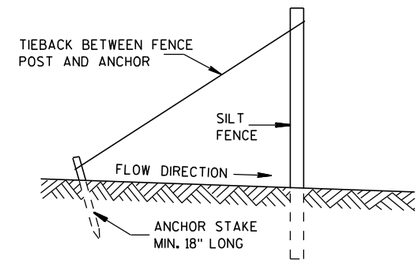


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

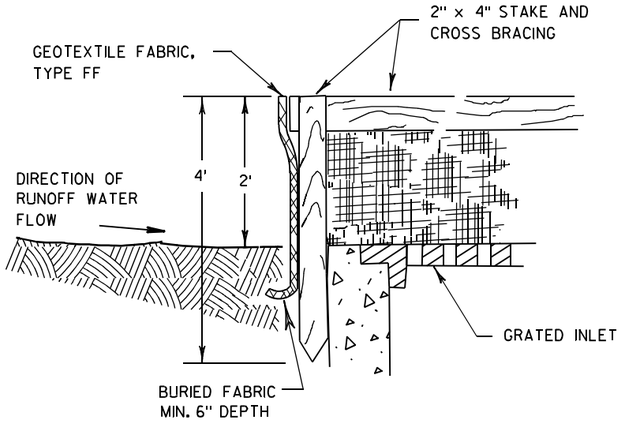
SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4-29-05 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

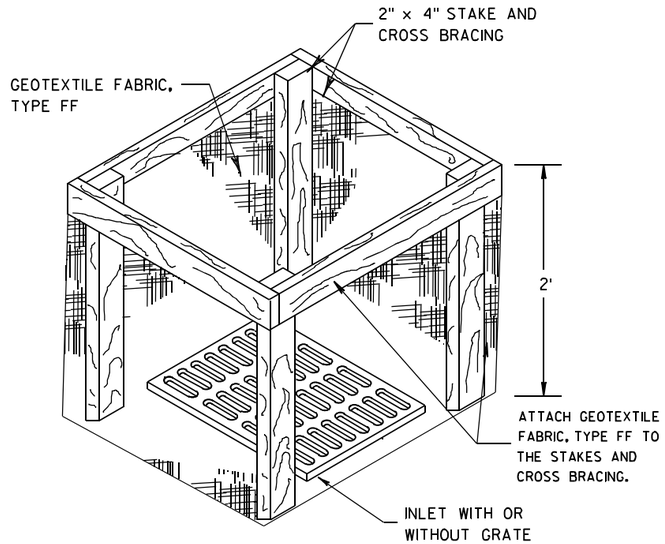
6

S.D.D. 8 E 9-6

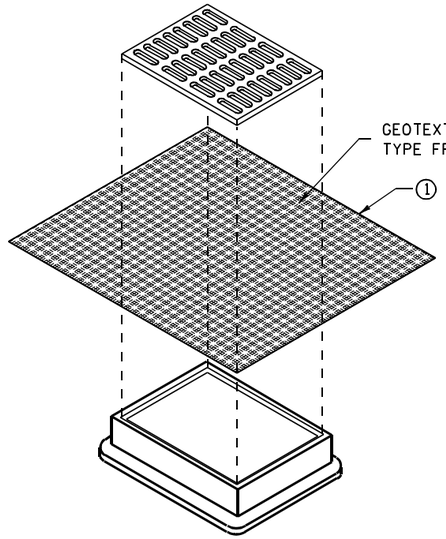
6

S.D.D. 8 E 9-6



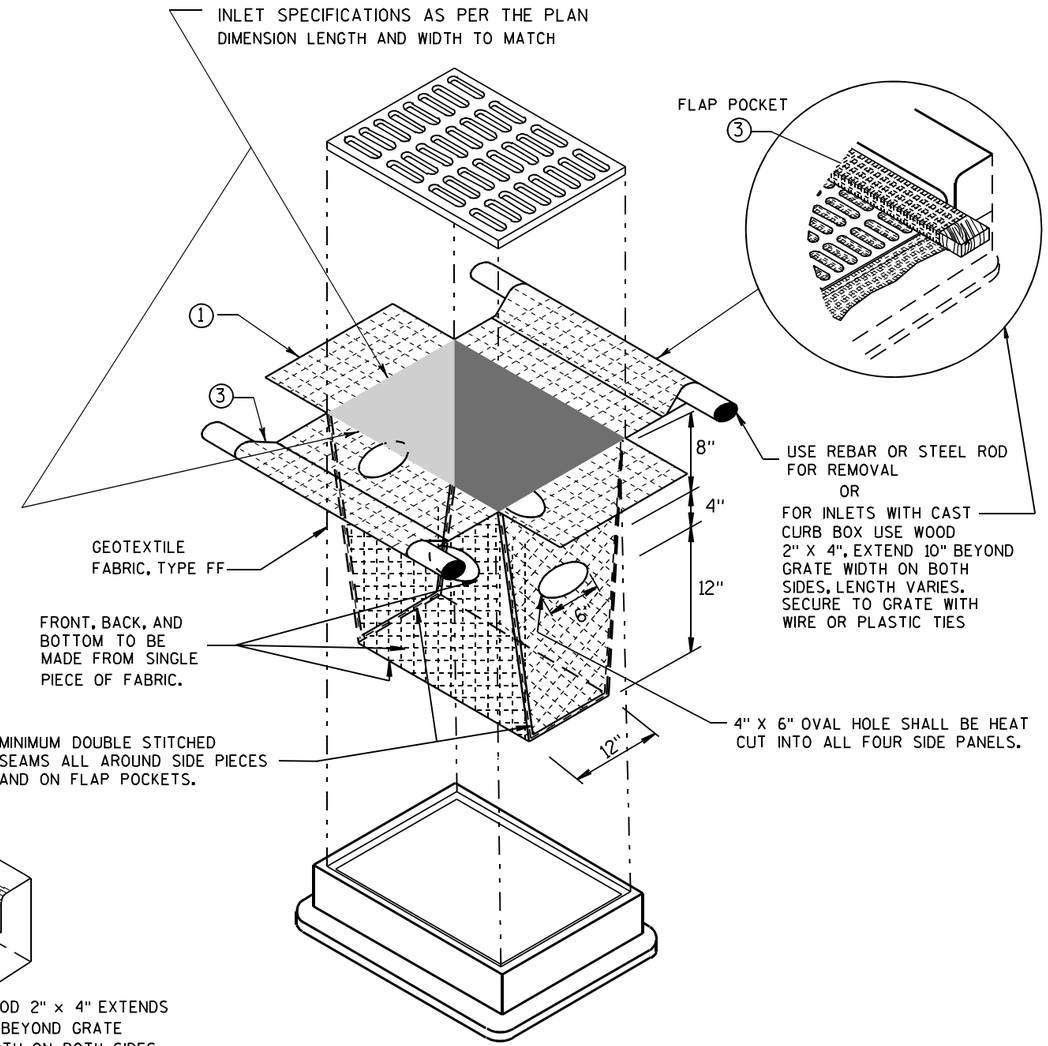


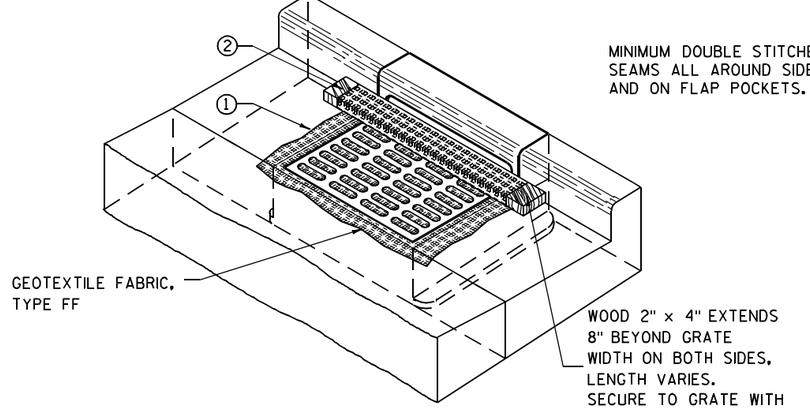
INLET PROTECTION, TYPE A



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

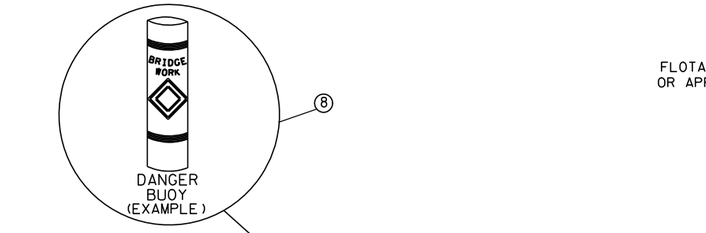
APPROVED

10/16/02
DATE

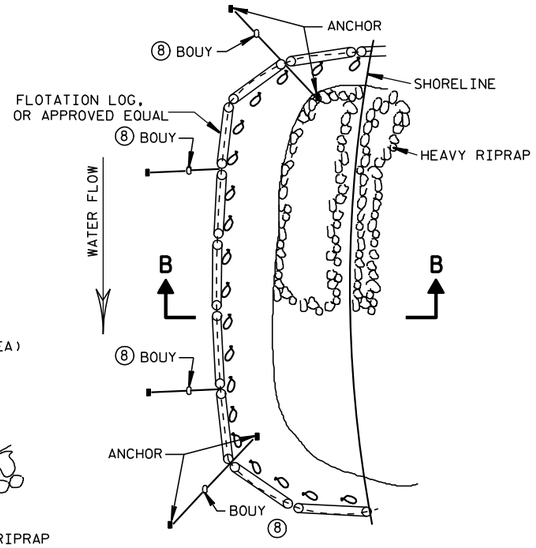
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

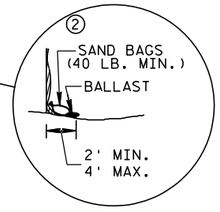
FHWA

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

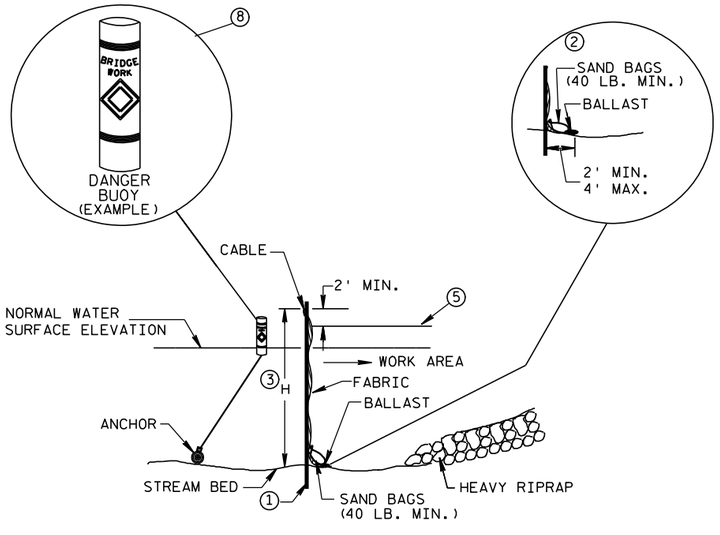


SECTION B-B

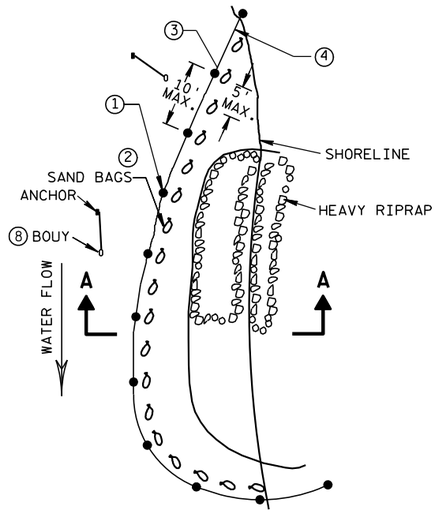




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



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.

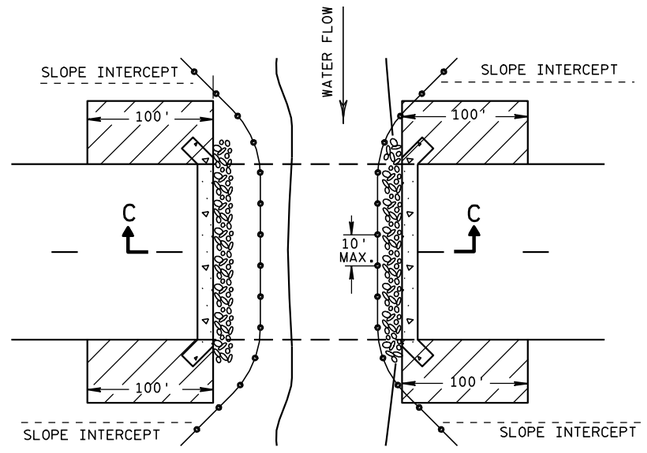
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

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

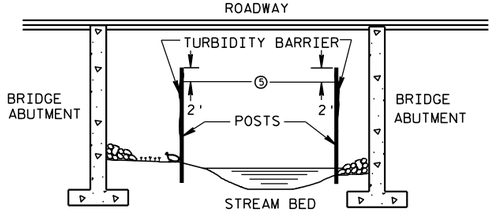
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

METAL APRON ENDWALLS

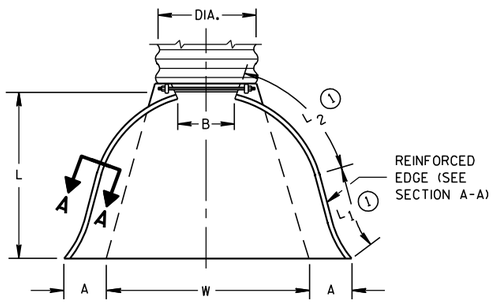
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

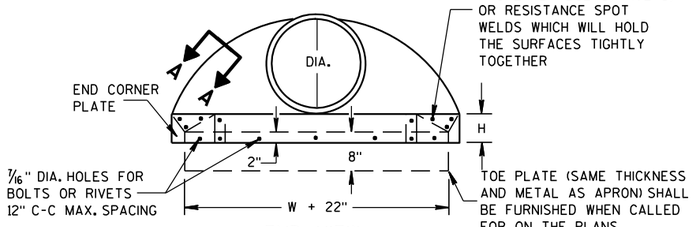
REINFORCED CONCRETE APRON ENDWALLS

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

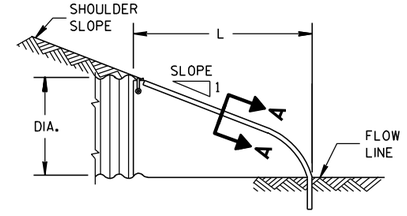
*MINIMUM
**MAXIMUM



PLAN VIEW

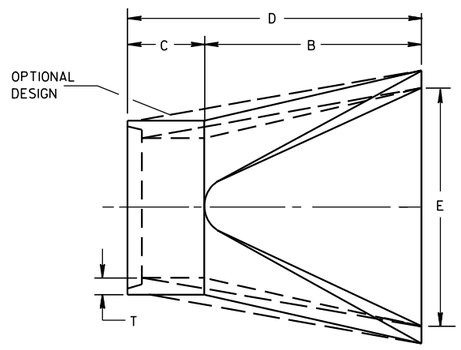


END VIEW

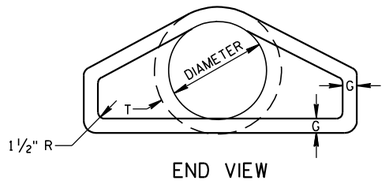


SIDE ELEVATION

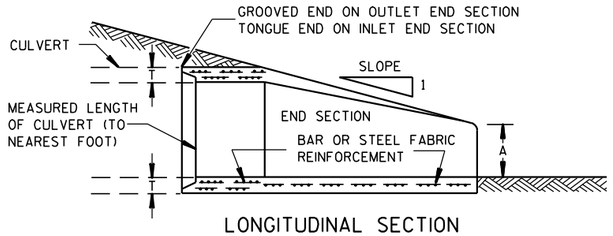
METAL ENDWALLS



PLAN

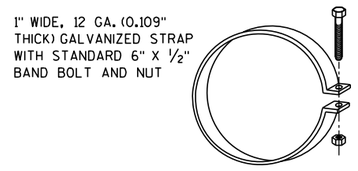


END VIEW



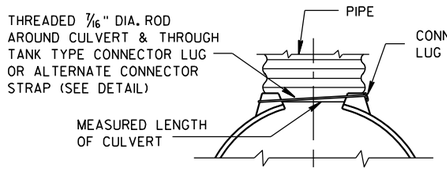
LONGITUDINAL SECTION

CONCRETE ENDWALLS

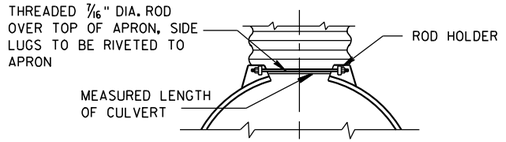


ALTERNATE FOR TYPE 1 CONNECTION

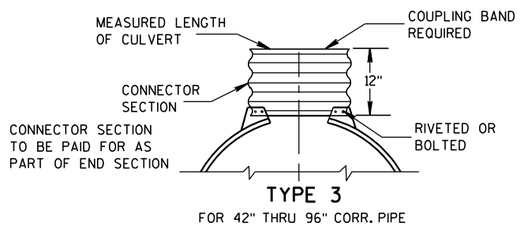
END SECTION CONNECTOR STRAP



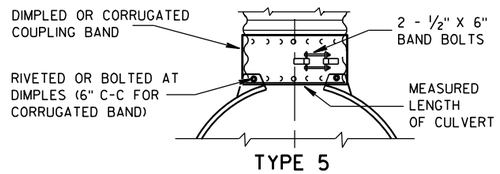
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

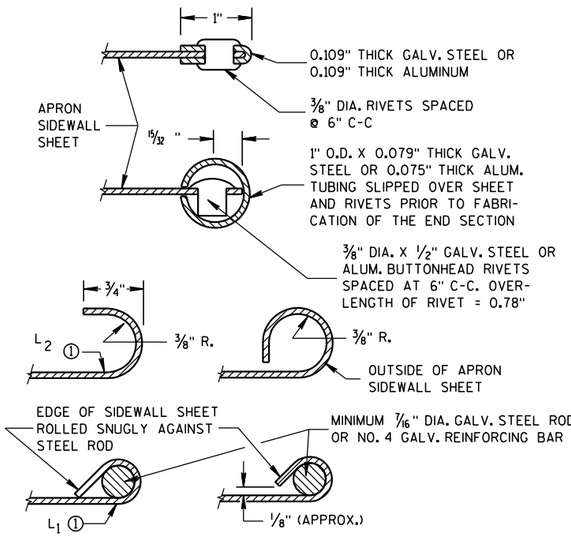
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

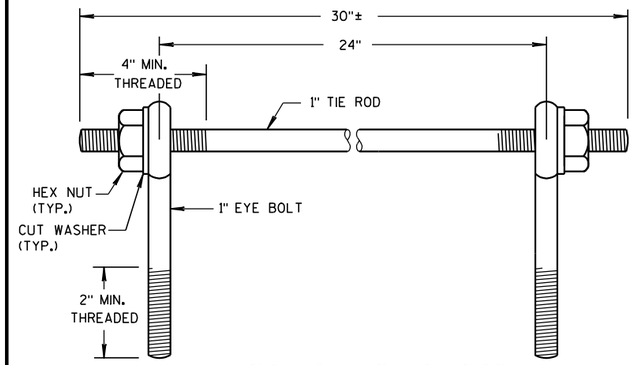
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

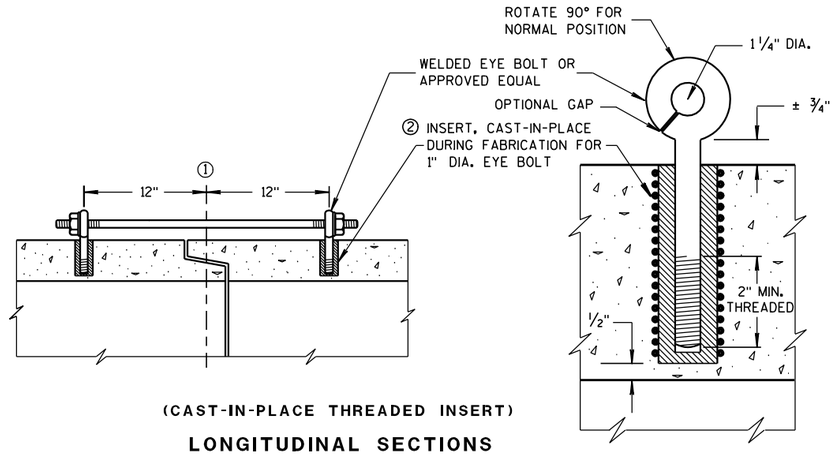
APPROVED
11/30/94 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

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

GENERAL NOTES

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

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

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

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

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

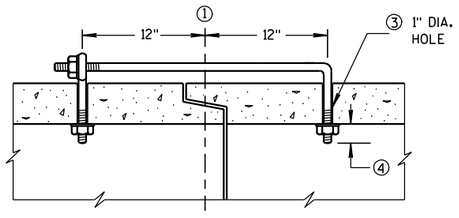
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

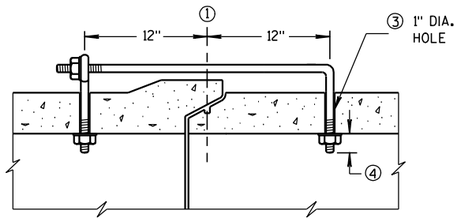
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

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



(TONGUE & GROOVE PIPE)

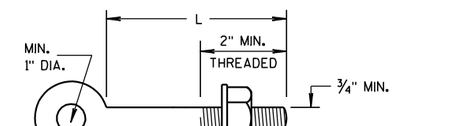


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

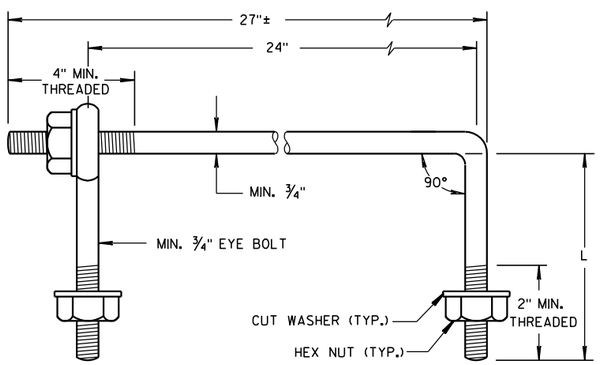
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

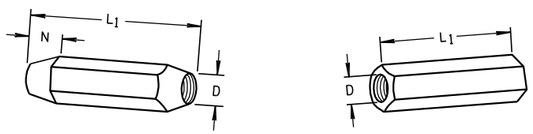
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

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

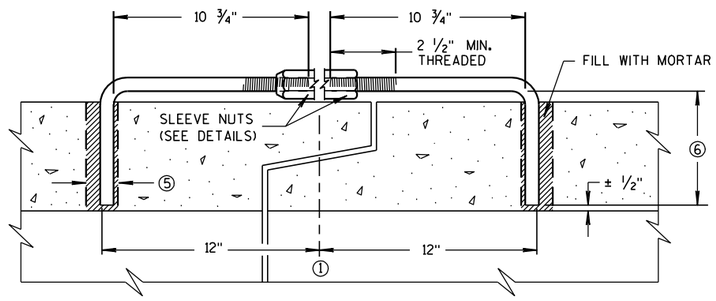
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

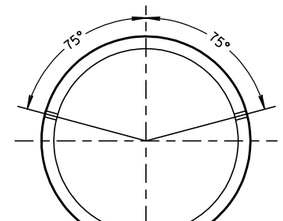
SLEEVE NUTS



LONGITUDINAL SECTION

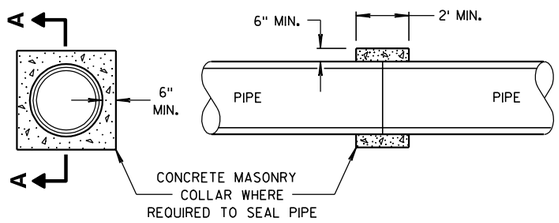
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

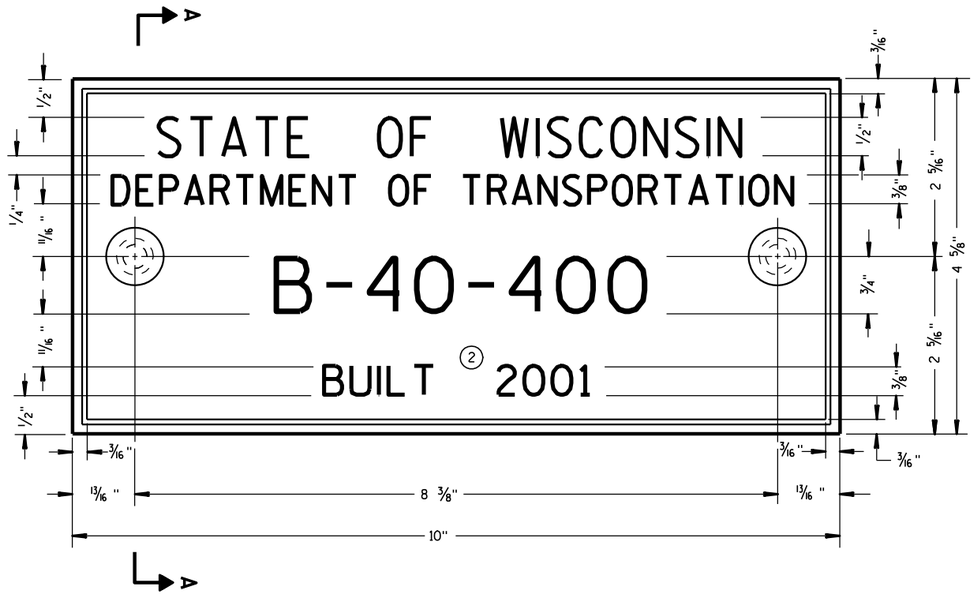
APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
37
FHWA

6

S.D.D. 8 F 4-7

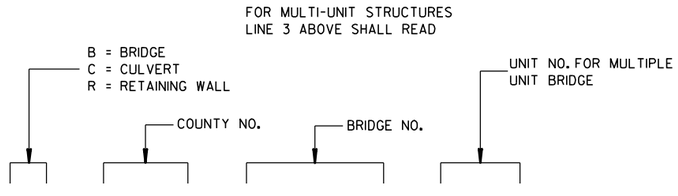
6

S.D.D. 8 F 4-7



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

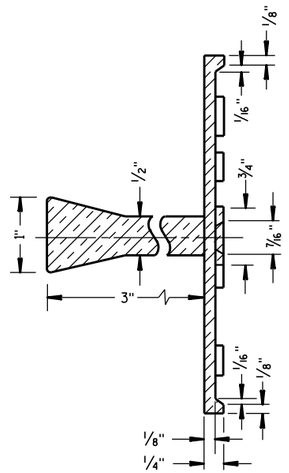
GENERAL NOTES

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

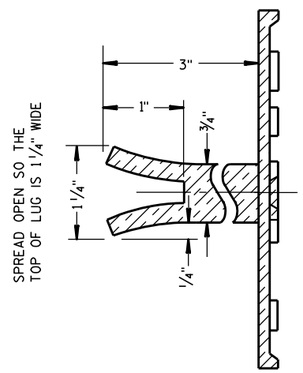
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

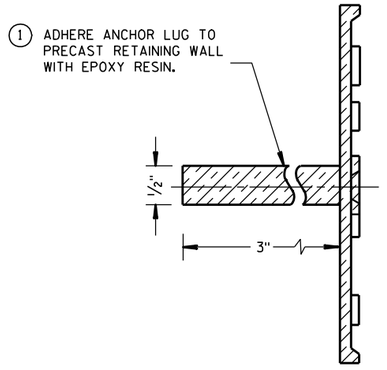
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

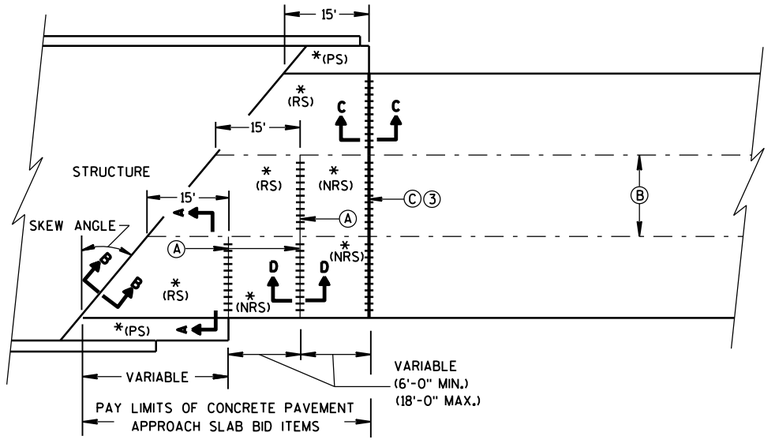
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
3/26/10 DATE	/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER
FHWA	

6

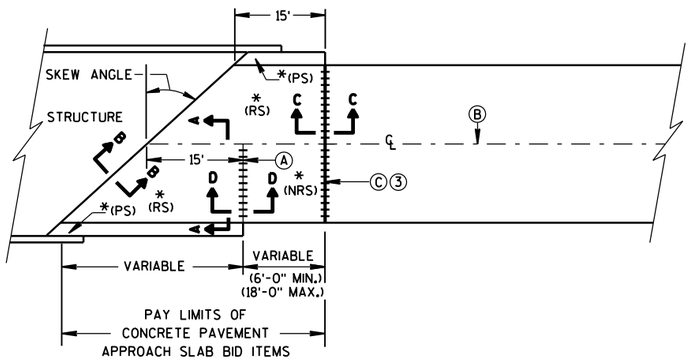
S.D.D. 12 A 3-10

6

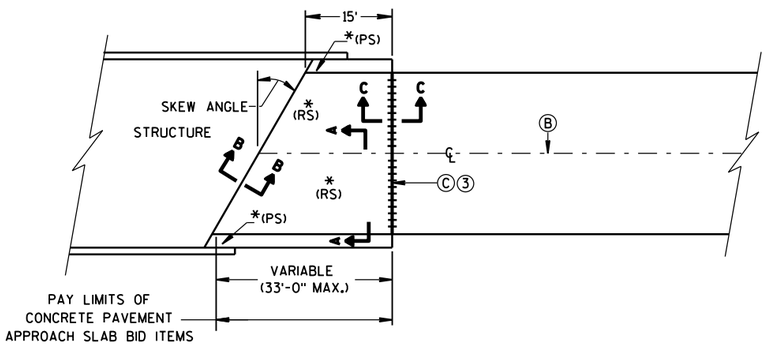
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

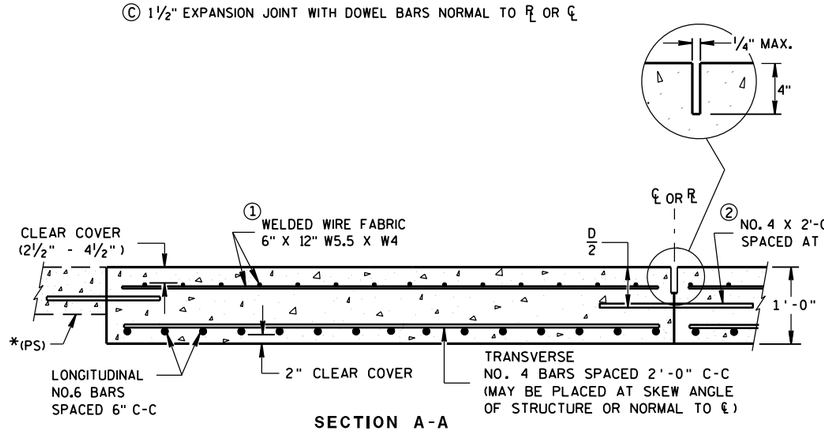
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

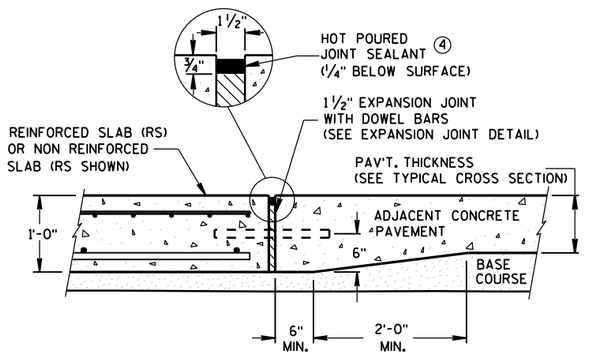
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

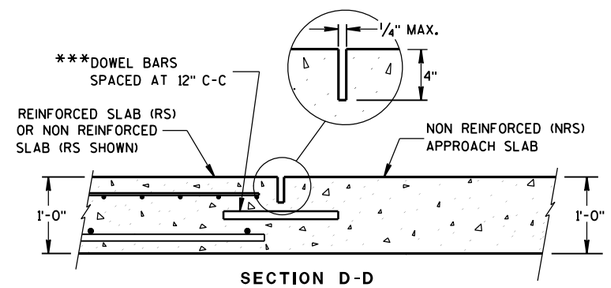
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

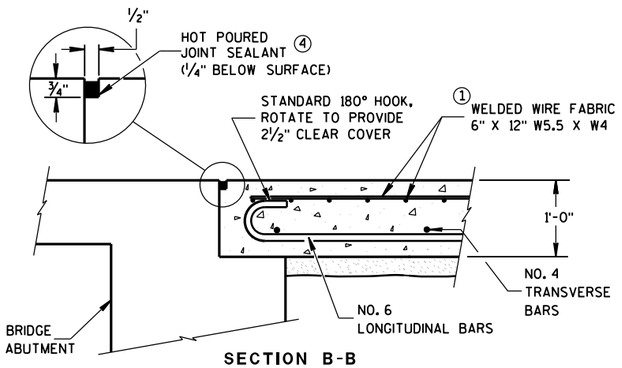
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

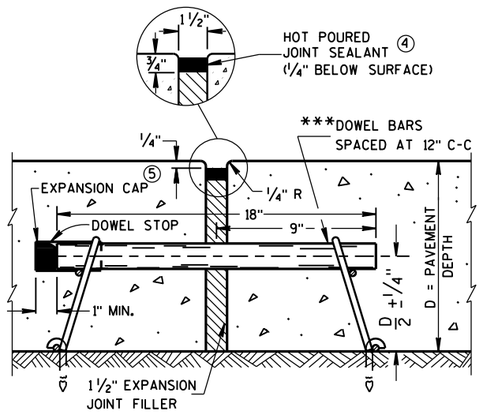
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

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

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

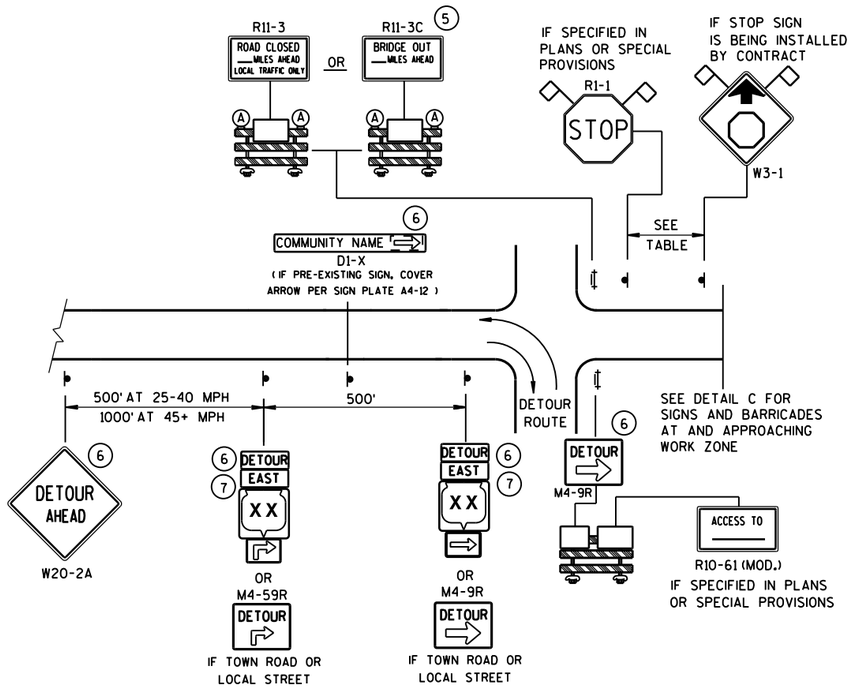
APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

6

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

6

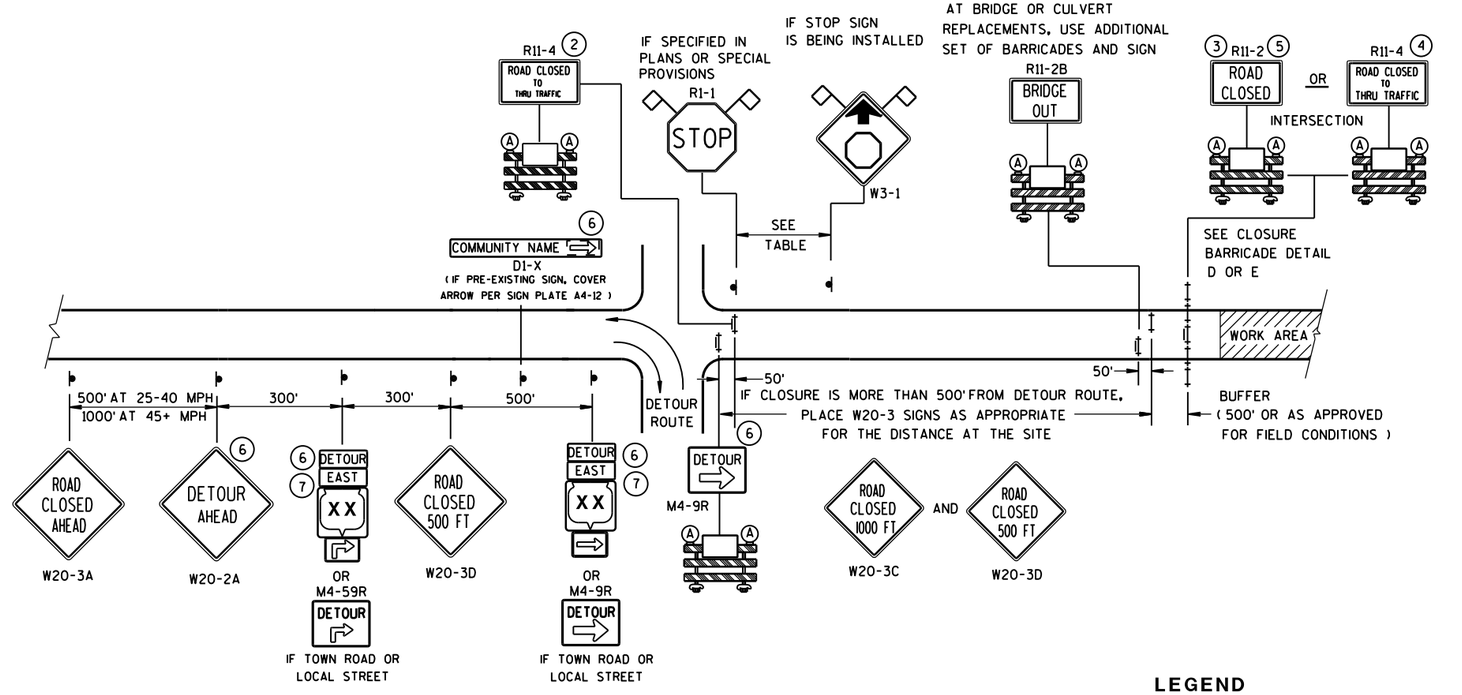
S.D.D. 13 B 2-8a



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

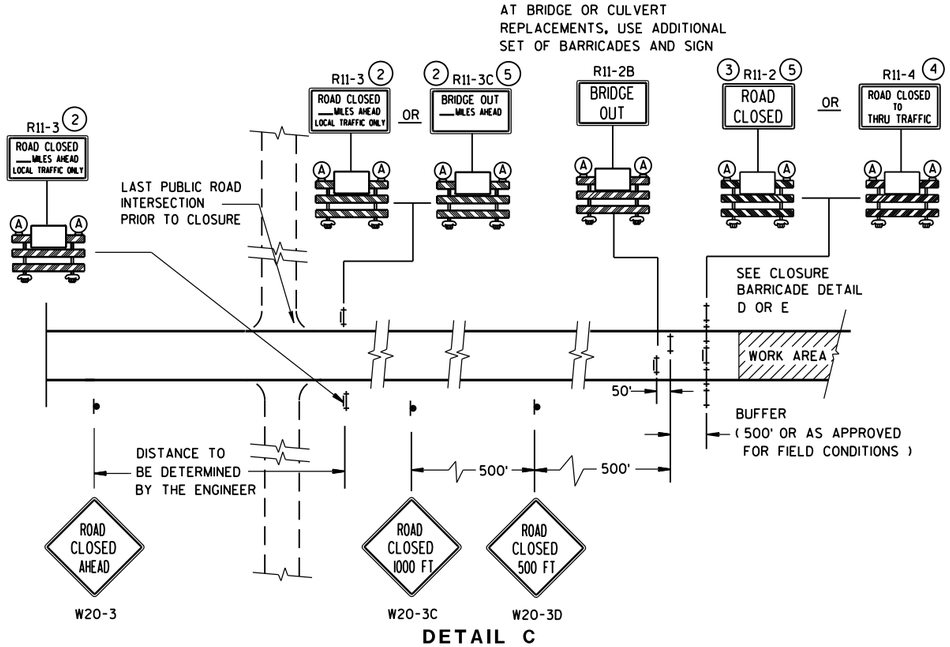
WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



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)

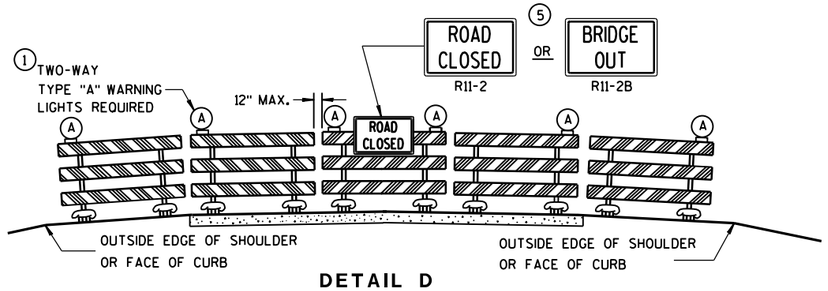
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

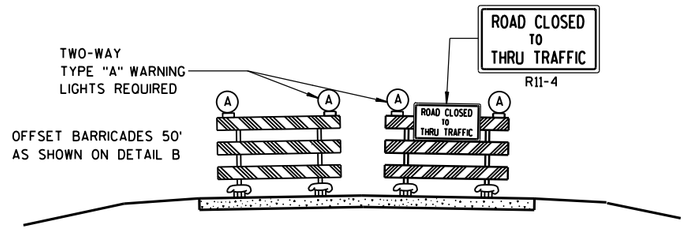
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

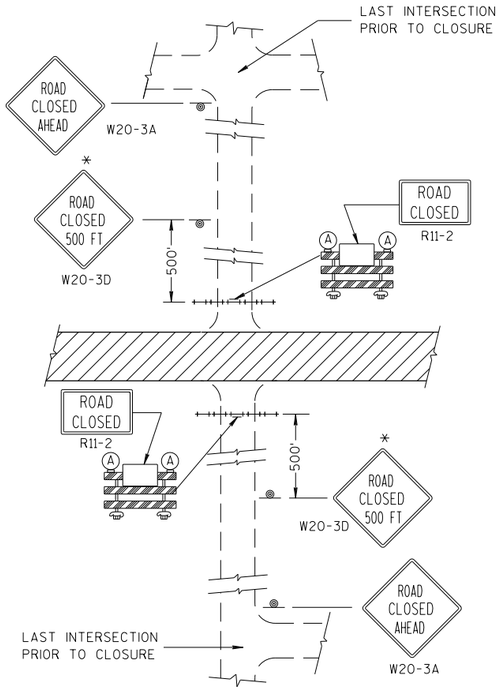
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA — FIC

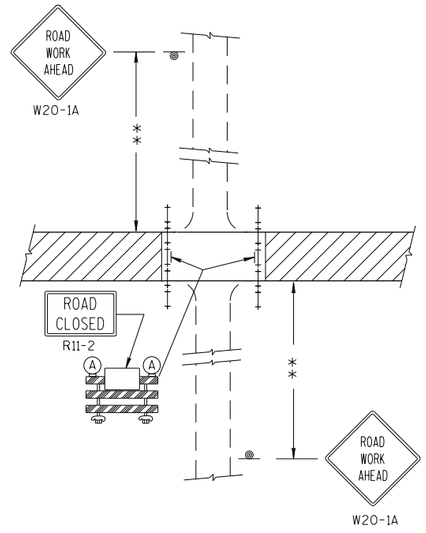
6

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



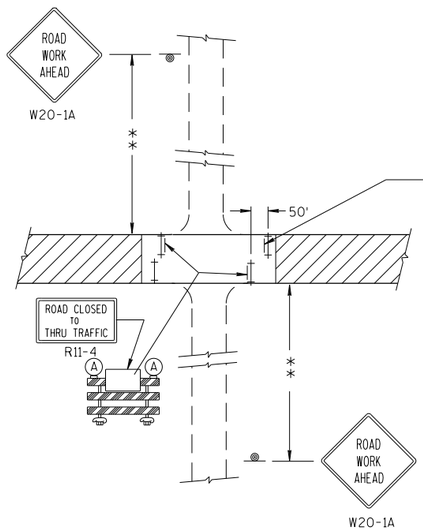
DETAIL 1

(NO ACCESS TO PROJECT)



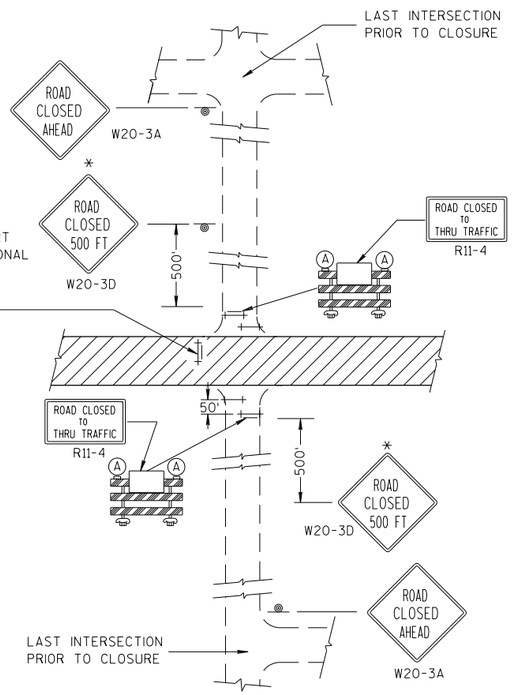
DETAIL 2

(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

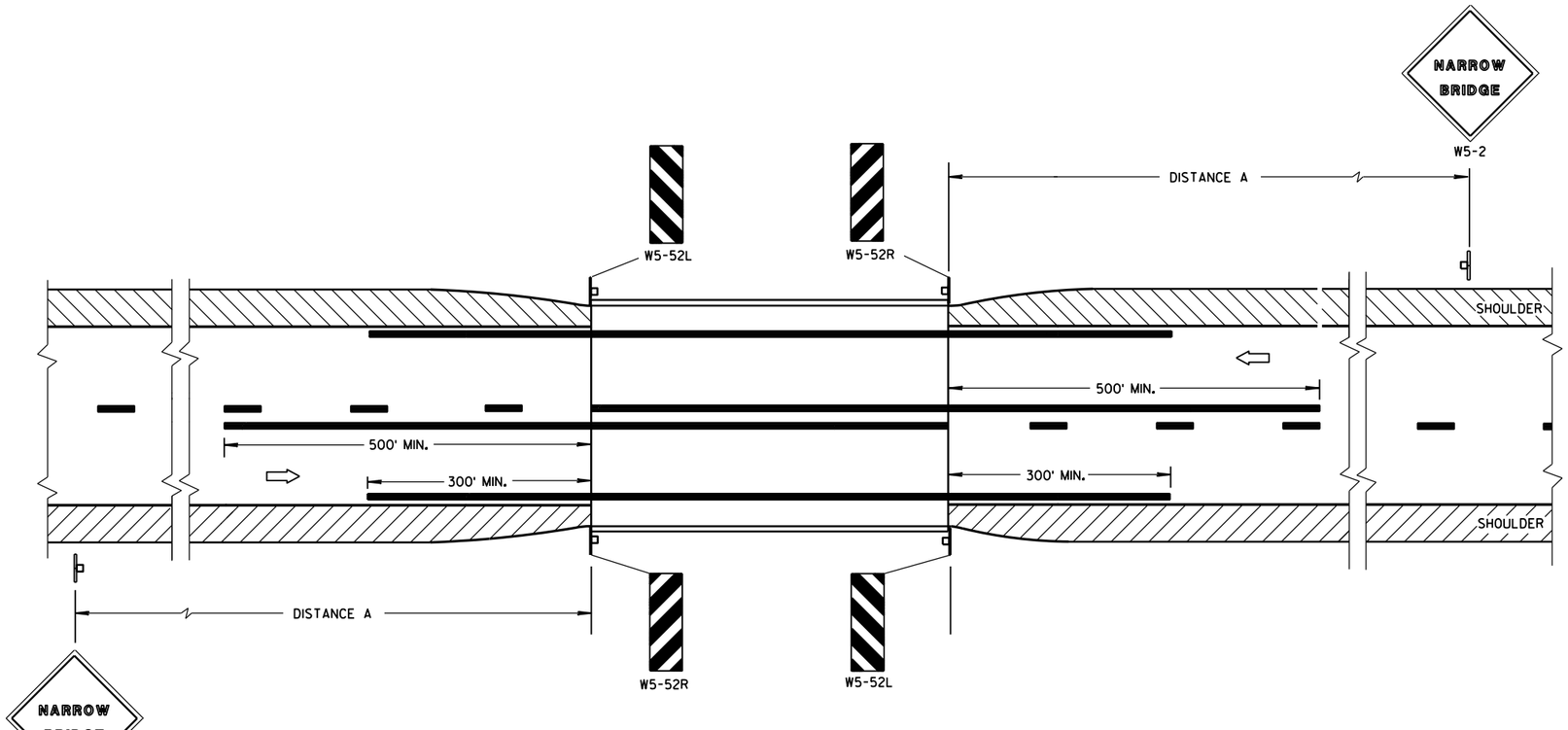
7/2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENGI

FHWA

6

S.D.D. 15 C 3-5



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

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

GENERAL NOTES

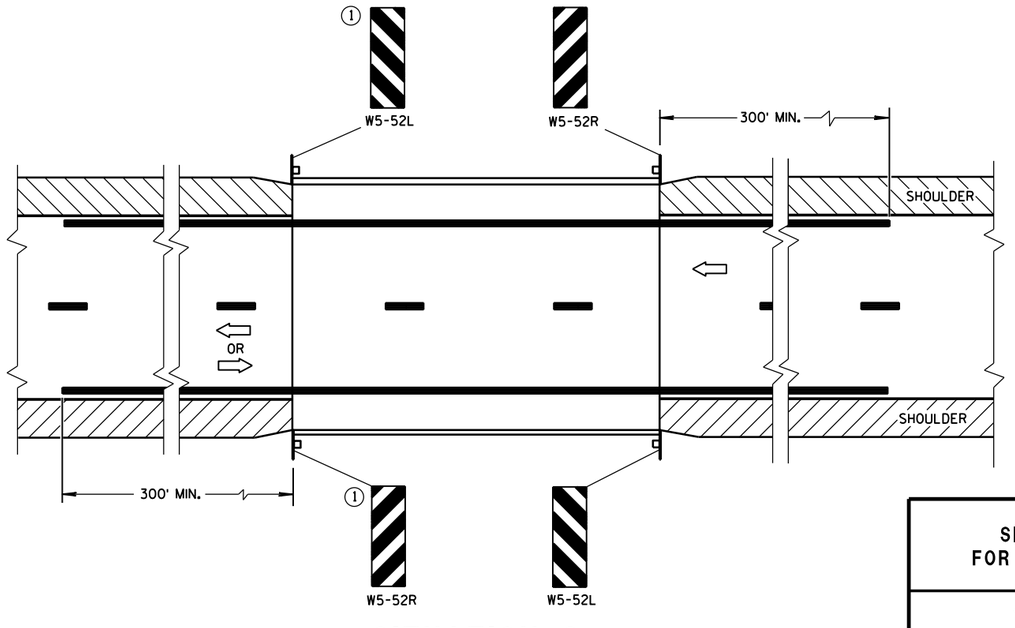
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

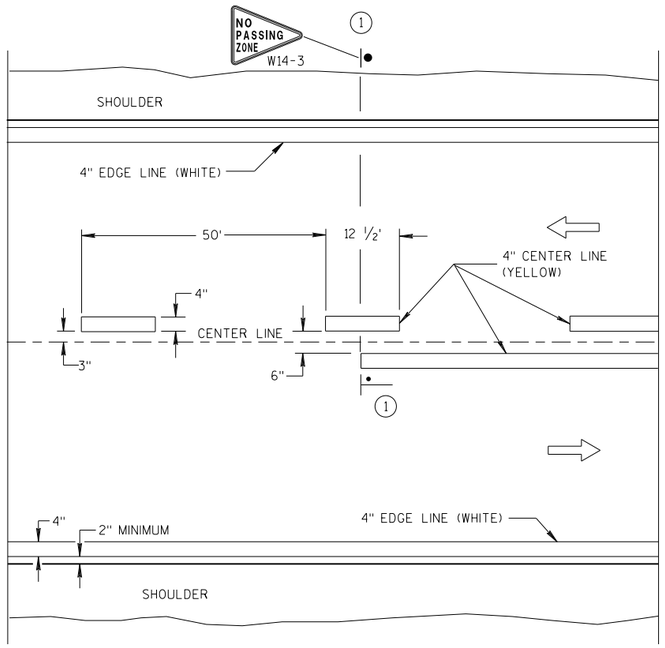
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]EER
FHWA

6

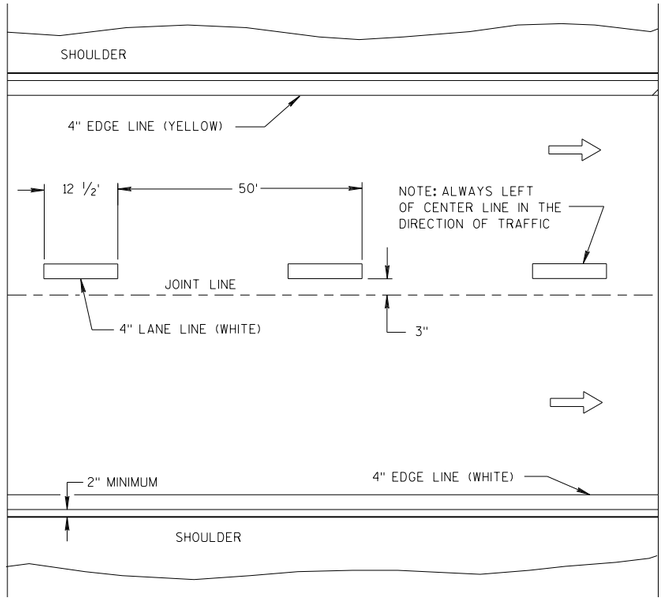
S.D.D. 15 C 6-9

6

S.D.D. 15 C 6-9



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

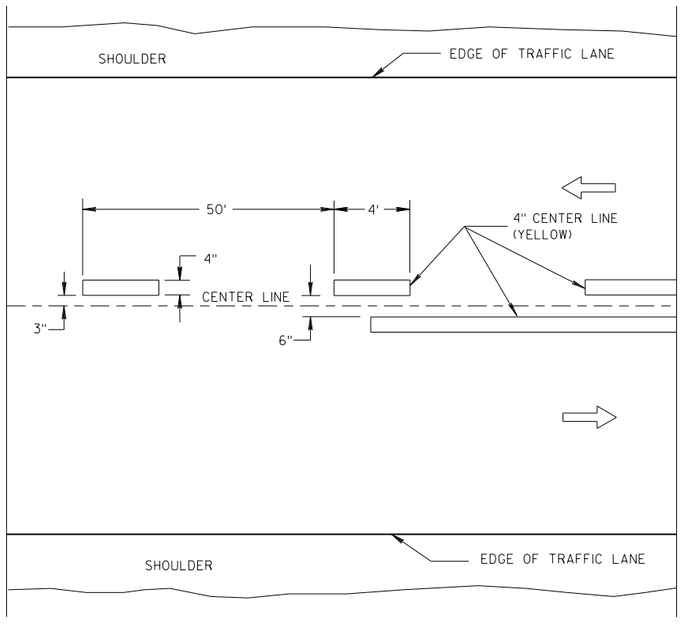
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

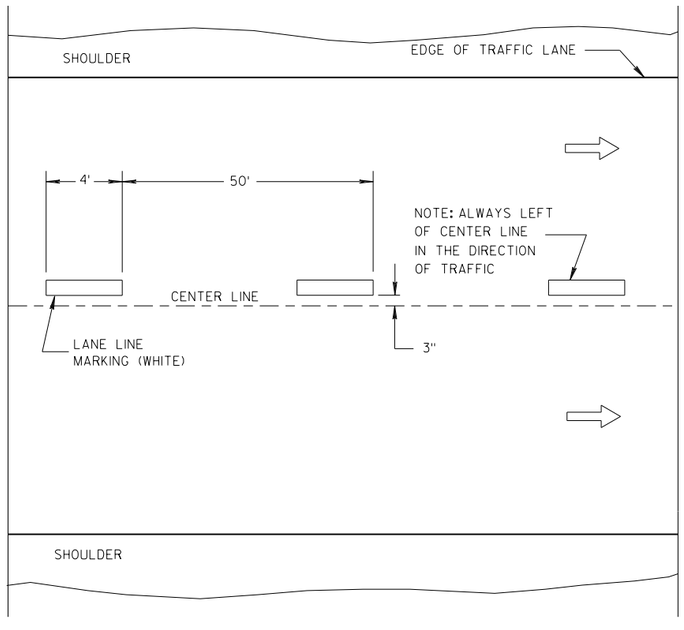
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018 — DATE

/S/ Matthew R. Rauch — STATE SIGNING AND MARKING ENGINEER

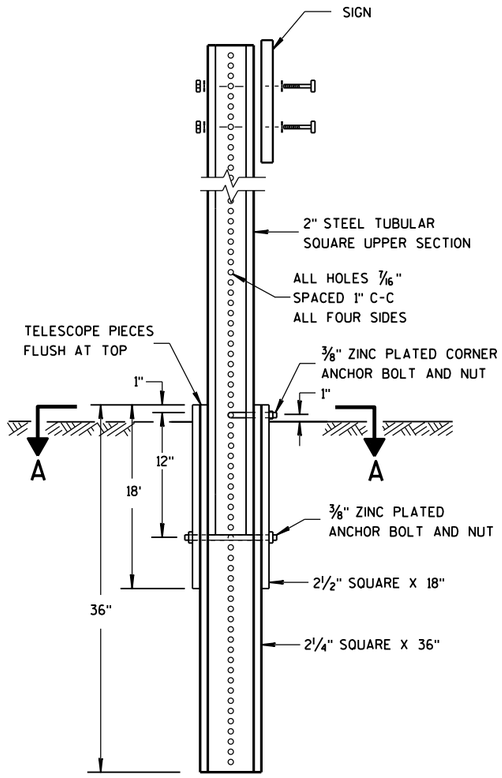
FHWA

6

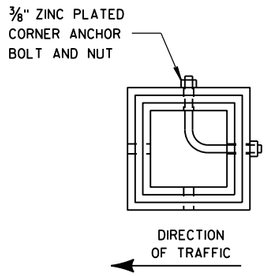
S.D.D. 15 C 8-19a

6

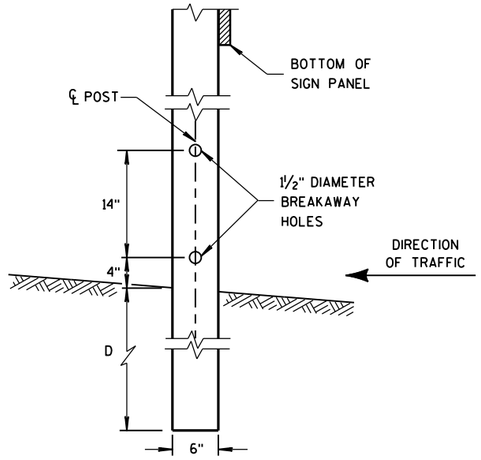
S.D.D. 15 C 8-19a



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



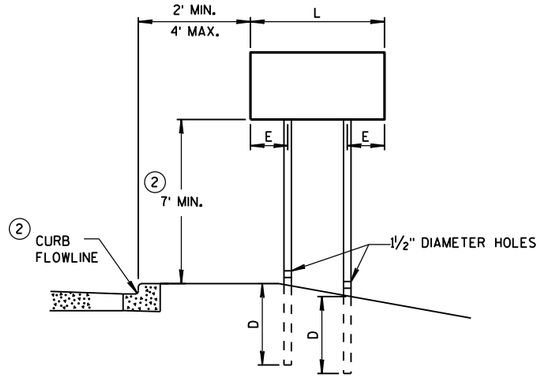
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

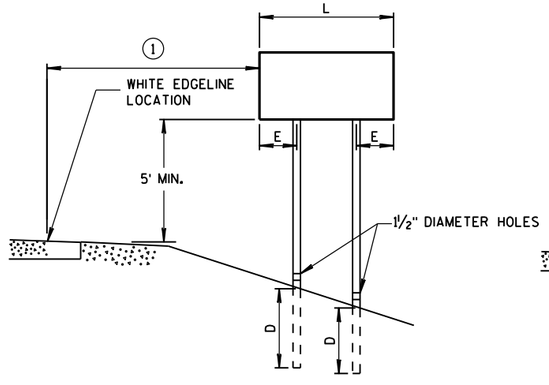
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

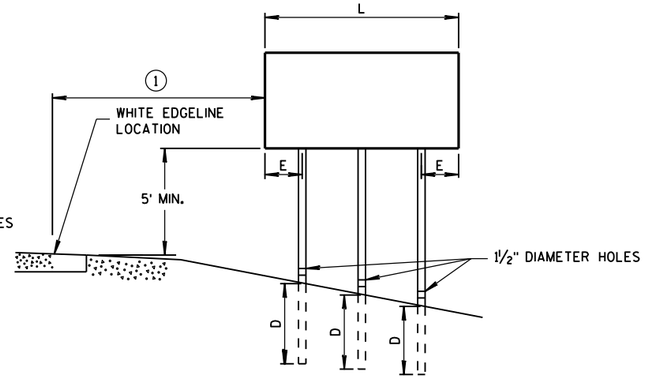
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

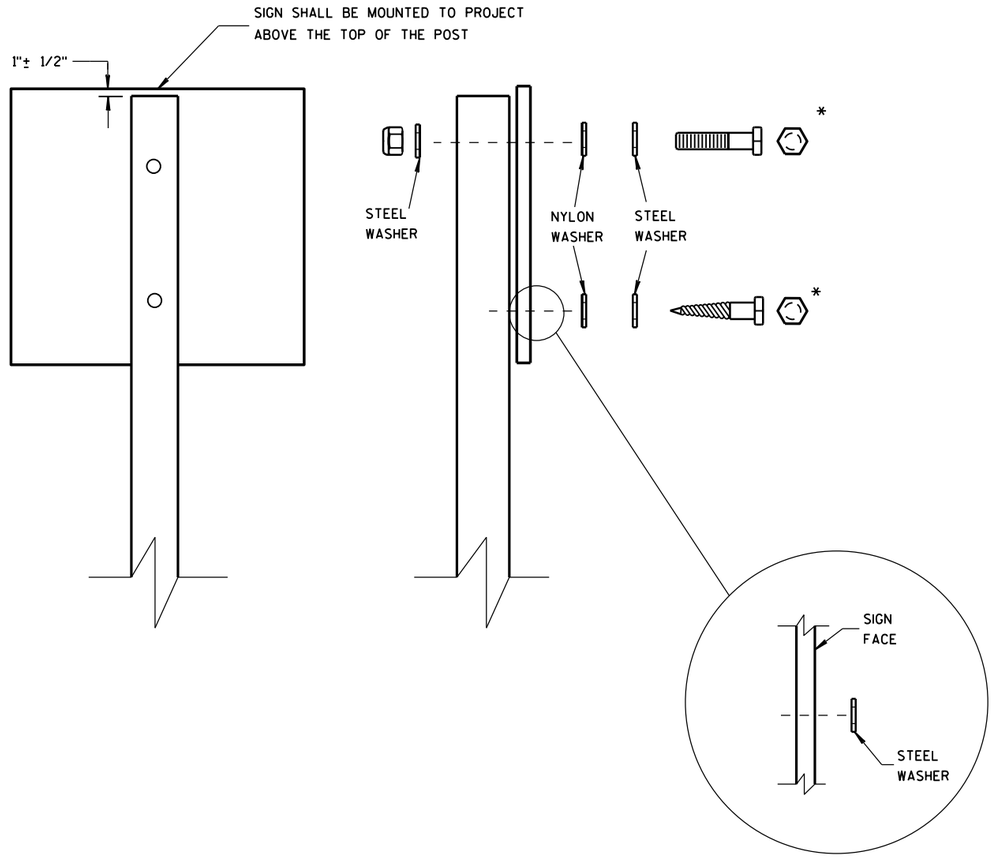
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 D 38-2a
S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

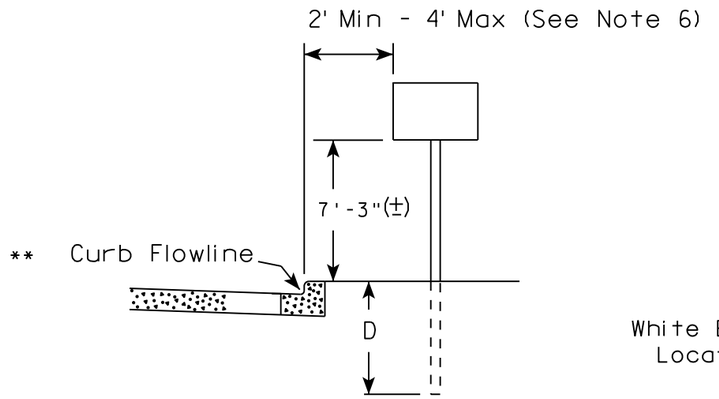
APPROVED

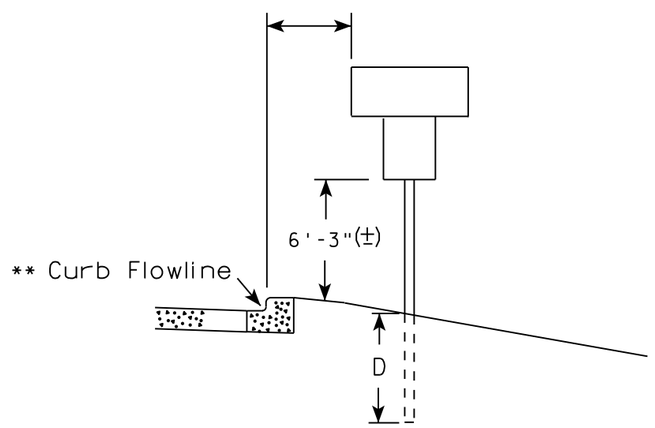
June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

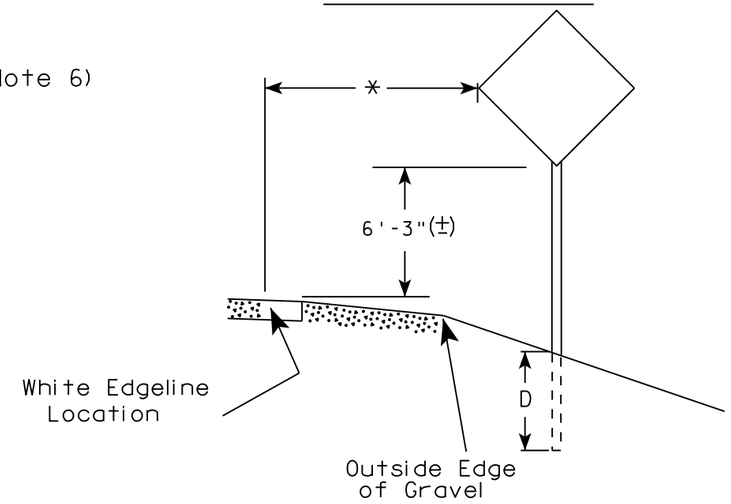
FHWA

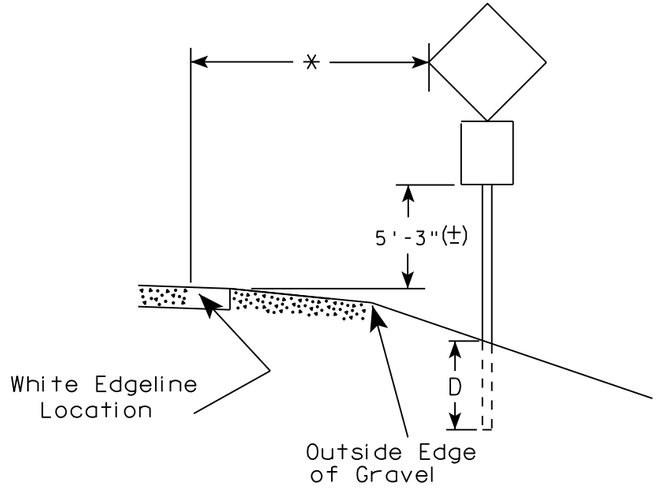
URBAN AREA





RURAL AREA (See Note 2)





GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

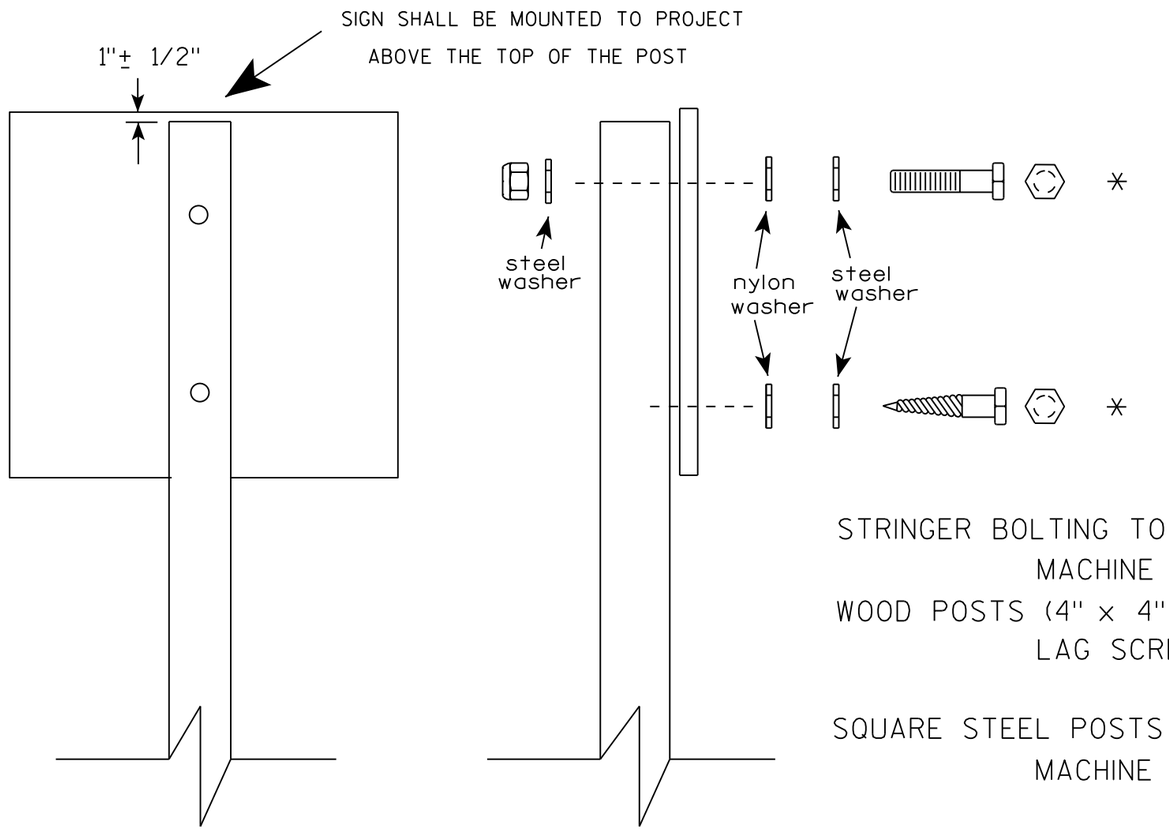
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

7

7

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR		SHEET NO: 47	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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

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

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)

3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)

3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

* 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

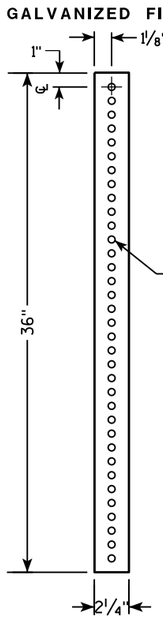
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR		SHEET NO:	E

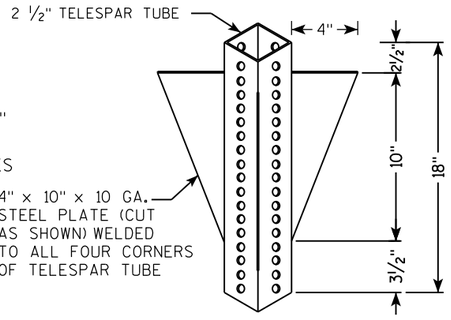
FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

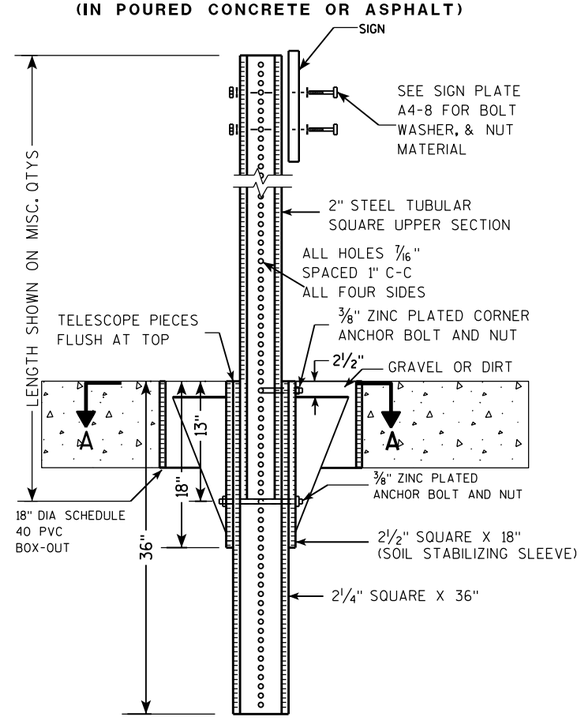
2 ¼ " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



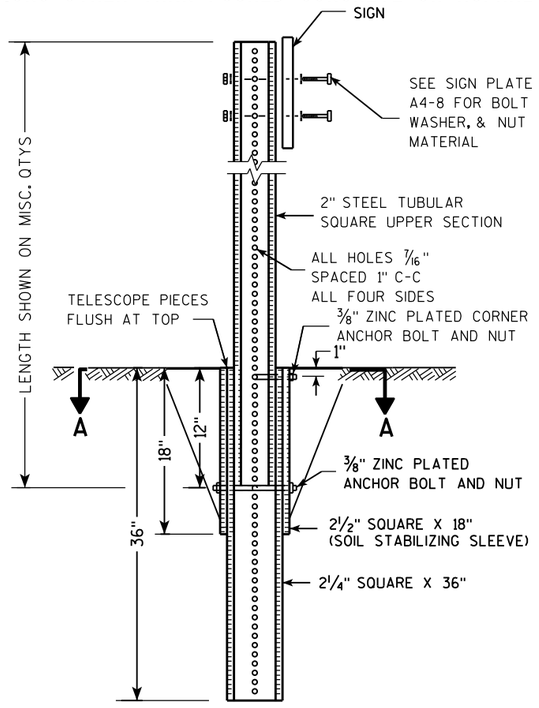
2 ½ " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

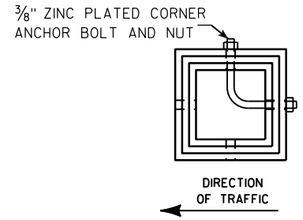


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

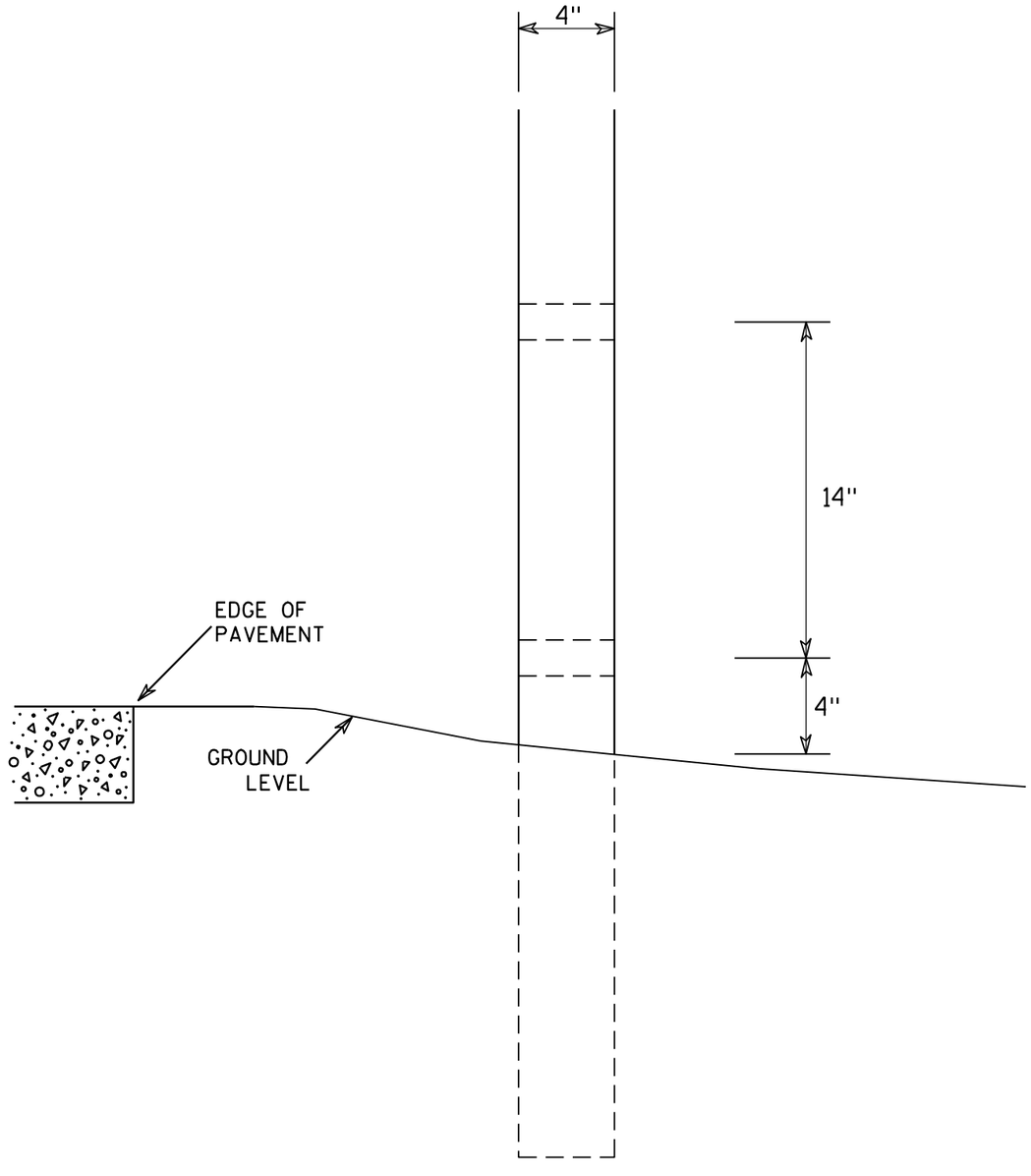
TUBULAR STEEL
SIGN POST
A4-9

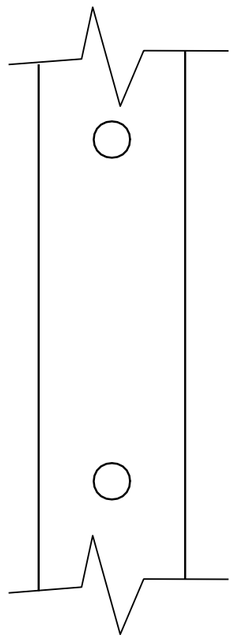
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 49 A4-9.9

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR		SHEET NO:	E





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.

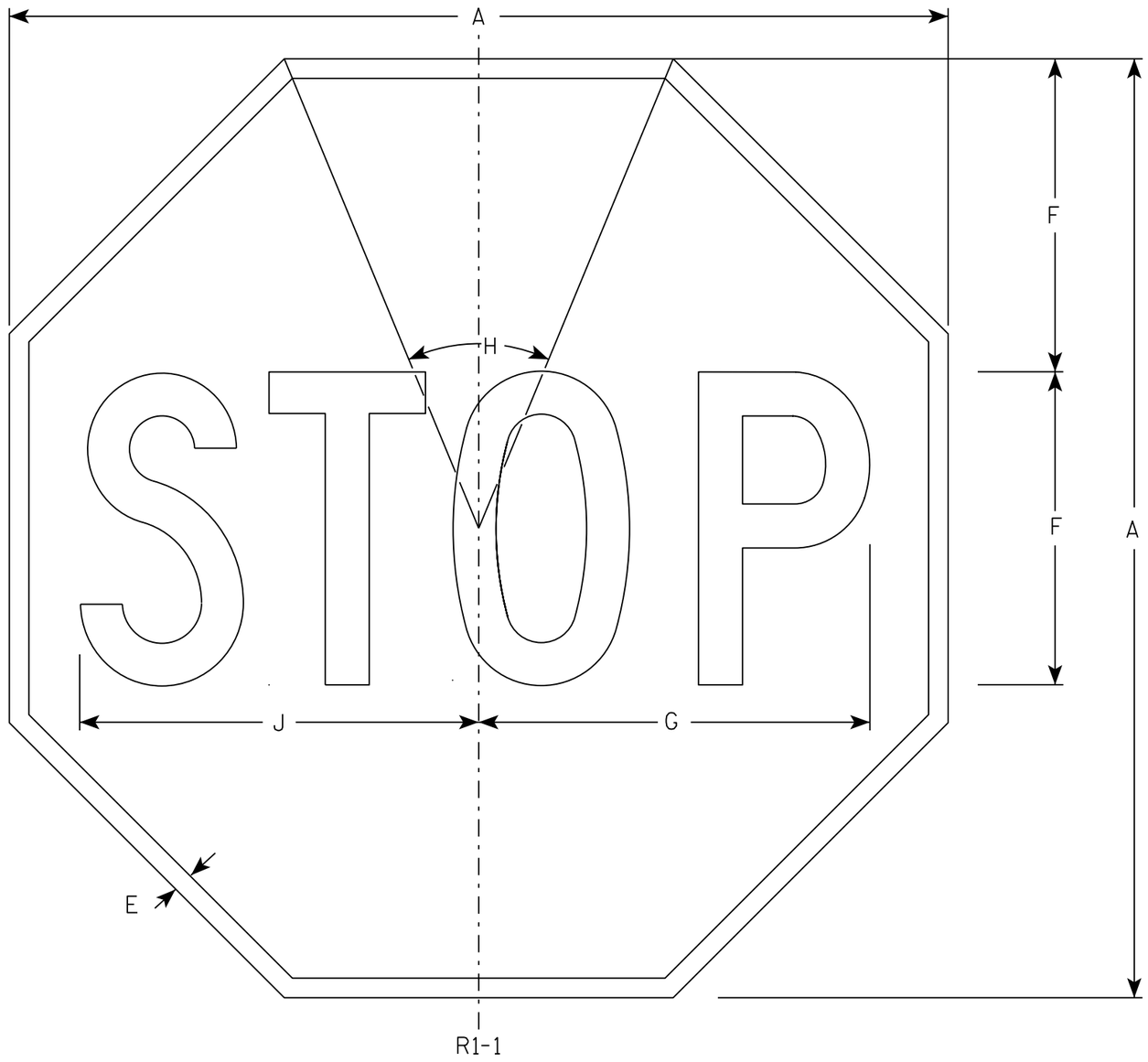
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR		SHEET NO: 50	E



NOTES

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

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

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

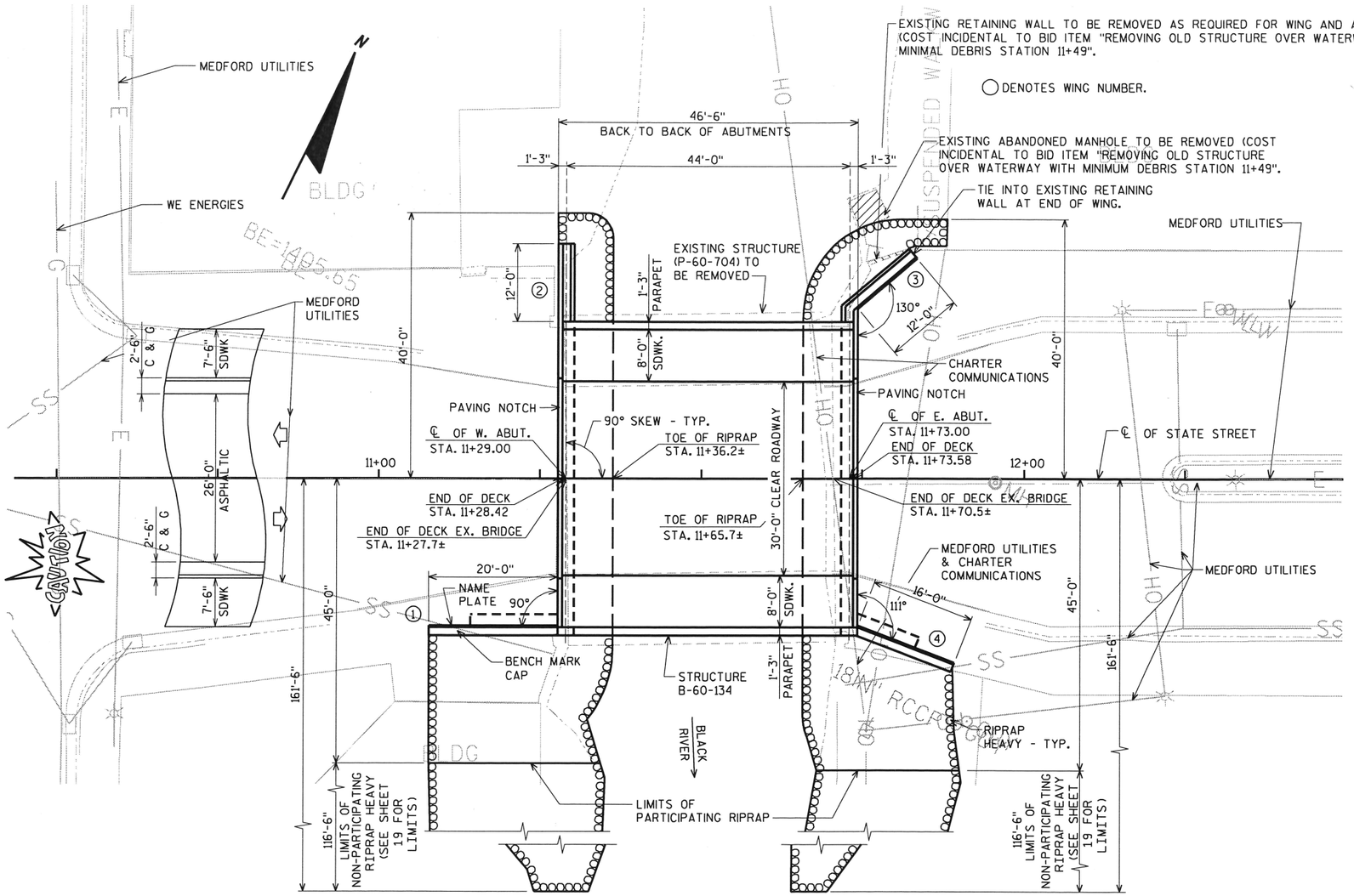
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

PROJECT NO: 8890-00-70 | HWY: STATE STREET | COUNTY: TAYLOR | SHEET NO: 51 | E

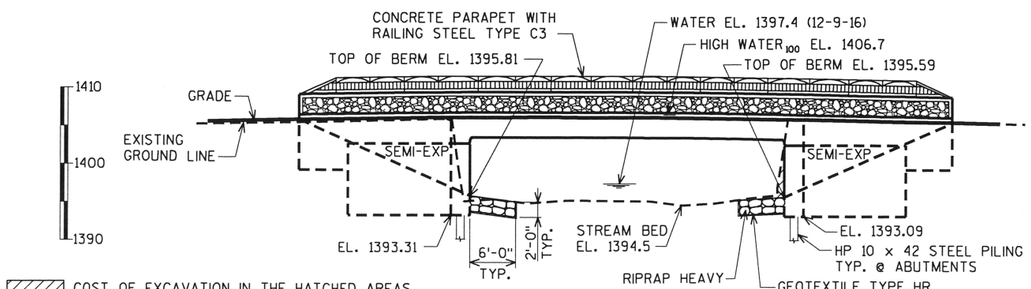
STATE PROJECT NUMBER

8890-00-70



PLAN

SINGLE SPAN CONCRETE FLAT SLAB



ELEVATION

COST OF EXCAVATION IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-60-134".

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.11
OPERATING RATING FACTOR: 1.44
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

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

HYDRAULIC DATA:

100 YEAR FREQUENCY

Q_{100} = 3,200 c.f.s. { BRIDGE = 3,188 c.f.s. / OVERFLOW = 12 c.f.s.
VEL.= 9.4 f.p.s.
HW_{100} = EL. 1406.7
WATERWAY AREA = 340 sq. ft.
DRAINAGE AREA = 47.2 sq. mi.
SCOUR CRITICAL CODE = 8
DATUM = NAVD 88 (2012)

2 YEAR FREQUENCY

Q_2 = 900 c.f.s.
VEL.= 4.2 f.p.s.
HW_2 = EL. 1400.5

FREQUENCY OF OVERTOPPING

FREQUENCY = 55 YEARS
Q_{55} = 2,660 c.f.s.
HW_{55} = EL. 1406.0

FOUNDATION DATA:

WEST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 45'-0". PRE-BORE PILING 30'-0".

EAST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ǂ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 45'-0". PRE-BORE PILING 30'-0".

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

TRAFFIC DATA:

A.A.D.T. = 350 (2019)
A.A.D.T. = 470 (2039)
R.D.S. = 25 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. STRUCTURE DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT WING 1 DETAILS
7. WEST ABUTMENT WING 2 DETAILS
8. WEST ABUTMENT PILE LAYOUT & BILL OF BARS
9. EAST ABUTMENT
10. EAST ABUTMENT WING 3 DETAILS
11. EAST ABUTMENT WING 4 DETAILS
12. EAST ABUTMENT PILE LAYOUT & BILL OF BARS
13. ALTERNATE CONSTRUCTION JOINT
14. SUPERSTRUCTURE
15. SUPERSTRUCTURE DETAILS
16. SUPERSTRUCTURE PLAN AND BILL OF BARS
17. RAILING STEEL TYPE C3 AND PARAPET DETAILS
18. RAILING STEEL TYPE 'C3' DETAILS
19. RIPRAP HEAVY LAYOUT

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

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

WISCONSIN
CHRISTOPHER B. McMAHON
E-29454
EAU CLAIRE
WI
PROFESSIONAL ENGINEER
7/31/18

NO.	DATE	REVISION	BY

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 08/02/18
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-60-134

STATE STREET OVER THE BLACK RIVER

COUNTY: TAYLOR — ~~TOWN~~/CITY/~~VILLAGE~~: MEDFORD

DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

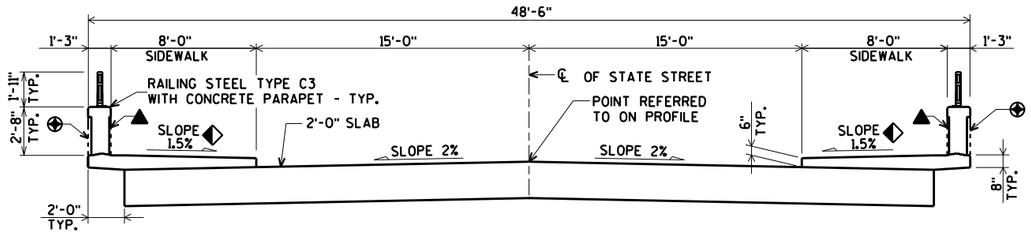
DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ZSS	CJM	CJM/CLS	CBM

GENERAL PLAN

SHEET 1 OF 19
52

DATE: DATE: DATE:
CHECKED BY: BACK CHECKED BY: CORRECTED BY:

8



CROSS SECTION THRU ROADWAY

⊕ ARCHITECTURAL SURFACE TREATMENT - TYP.

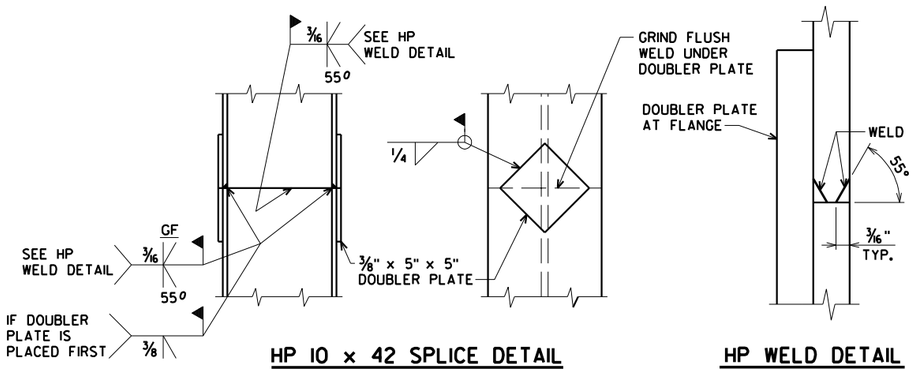
◆ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

▲ ARCHITECTURAL SURFACE TREATMENT WITH ½" MAXIMUM RELIEF - TYP.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	E. ABUT.	SUPER.	TOTAL	CATEGORY 0020	CATEGORY 0030
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 11+49	LS	-----	-----	-----	1	1	-----
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-60-134	LS	-----	-----	-----	1	1	-----
210.1500	BACKFILL STRUCTURE TYPE A	TON	540	510	-----	1,050	1,050	-----
502.0100	CONCRETE MASONRY BRIDGES	CY	82	77	193	352	352	-----
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	240	240	240	-----
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	5,400	4,960	-----	10,360	10,360	-----
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,670	1,760	31,830	35,260	35,260	-----
513.7016	RAILING STEEL TYPE C3	LF	32	30	93	155	155	-----
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	11	-----	22	22	-----
517.1015.S	CONCRETE STAINING MULTI-COLOR B-60-134	SF	215	205	680	1,100	1,100	-----
⊗ 517.1050.S	ARCHITECTURAL SURFACE TREATMENT B-60-134	SF	140	135	405	680	680	-----
550.0010	PRE-BORING UNCONSOLIDATED MATERIALS	LF	270	270	-----	540	540	-----
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	400	395	-----	795	795	-----
606.0300	RIPRAP HEAVY	CY	335	300	-----	635	155	480
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	100	-----	200	200	-----
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	70	60	-----	130	130	-----
645.0120	GEOTEXTILE TYPE HR	SY	590	540	-----	1,130	290	840
	NON-BID ITEMS							
	FILLER	SIZE	-----	-----	-----	½" & ¾"	-----	-----

⊗ INCLUDES BOTH FACES OF PARAPETS



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

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

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

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, P-60-704, TO BE REMOVED, IS A SINGLE SPAN CONCRETE DECK GIRDER BRIDGE, 45.9 FT. LONG WITH A 29 FT. CLEAR ROADWAY WIDTH WITH 9.25 FT. SIDEWALKS ON EACH SIDE ON VERTICAL CONCRETE ABUTMENTS.

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

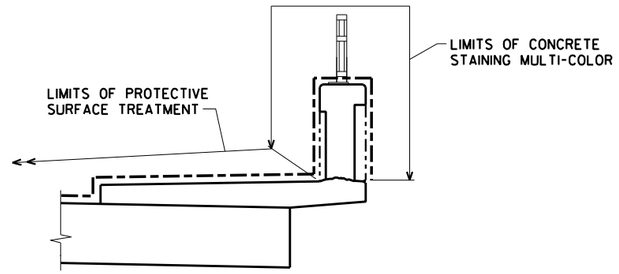
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

ADDITIONAL RIPRAP HEAVY AND GEOTEXTILE TYPE HR DOWNSTREAM OF PARTICIPATING LIMITS TO BE 100% FUNDED BY THE CITY. THE QUANTITIES FOR THE ADDITIONAL RIPRAP HEAVY AND GEOTEXTILE TYPE HR ARE INCLUDED IN CATEGORY 0030.

RAILING WILL BE PAINTED BLACK (FEDERAL COLOR NO. 27038).



PROTECTIVE SURFACE TREATMENT AND CONCRETE STAINING MULTI-COLOR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

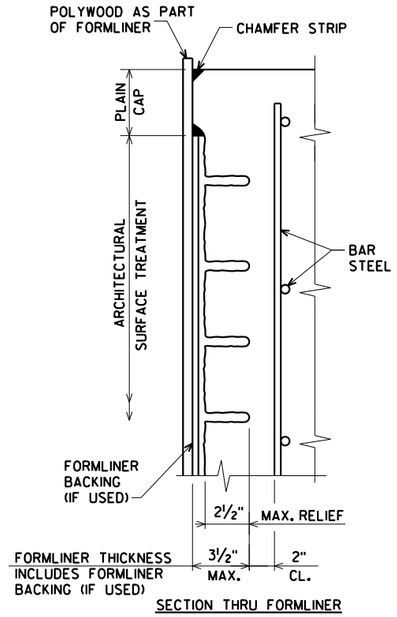
STRUCTURE B-60-134

DRAWN BY CJM/CLS | PLANS CK'D. CBM

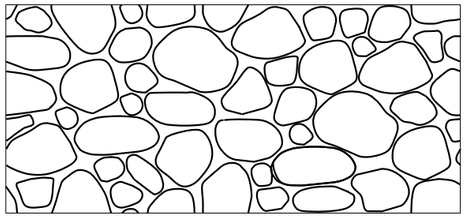
QUANTITIES AND NOTES

SHEET 2 OF 19
53

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



SECTION THRU FORMLINER



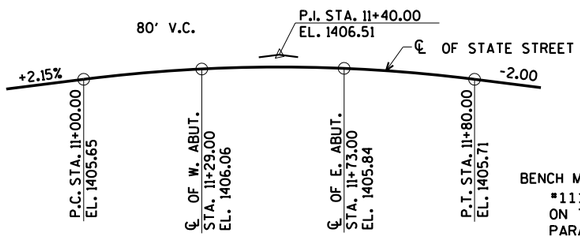
FIELD STONE - RANDOM

FORMLINER THICKNESS = 3½" MAX.
SIZES BETWEEN 6" x 24"
RELIEF = 2½" MAX.

PARAPET NOTES

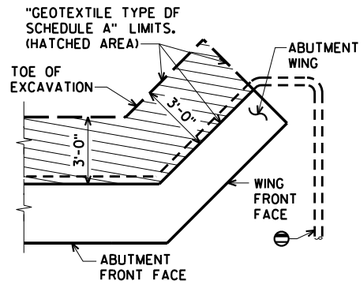
FORMLINER COURSING ON PARAPETS SHALL BE PARALLEL TO TOP OF PARAPET.

FORMLINER ON INSIDE FACES OF PARAPET SHALL HAVE THE "FIELD STONE-RANDOM" PATTERN, BUT ONLY HAVE A ½" MAXIMUM RELIEF.

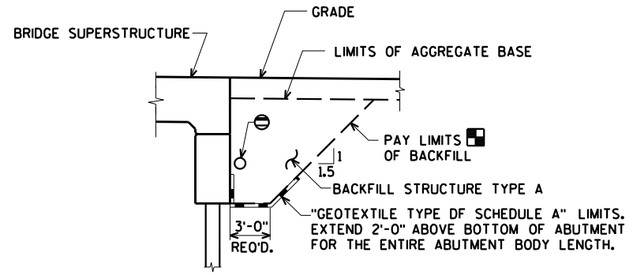


PROFILE GRADE LINE
(STATE STREET)

BENCH MARK:
*111023 CHISLED SQUARE ON TOP OF CONCRETE PARAPET AT NE CORNER OF BRIDGE
STA. 11+72, 24' LT.
EL. 1409.37



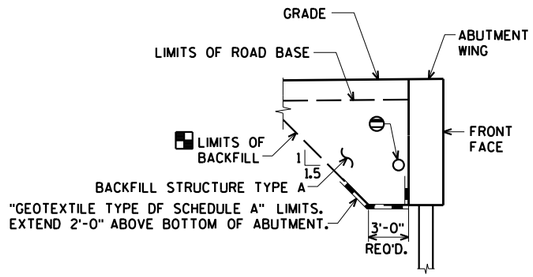
BACKFILL STRUCTURE LIMITS ABUTMENT PLAN WITH WING



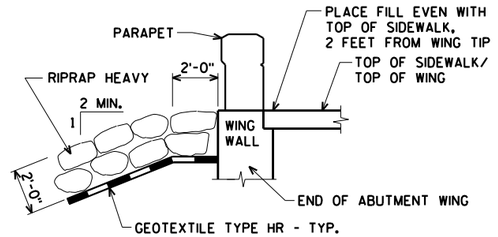
BACKFILL STRUCTURE LIMITS THRU ABUTMENT

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

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



BACKFILL STRUCTURE LIMITS THRU WING



TYPICAL FILL SECTION AT WING TIPS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

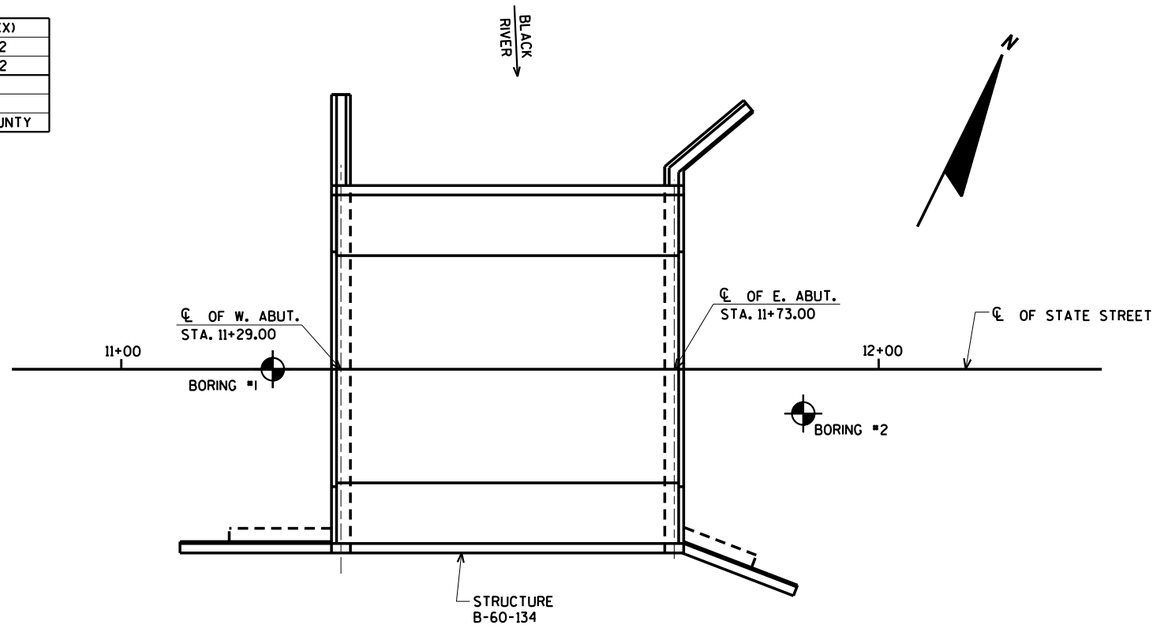
DRAWN BY CJM/CLS | PLANS CK'D. CBM

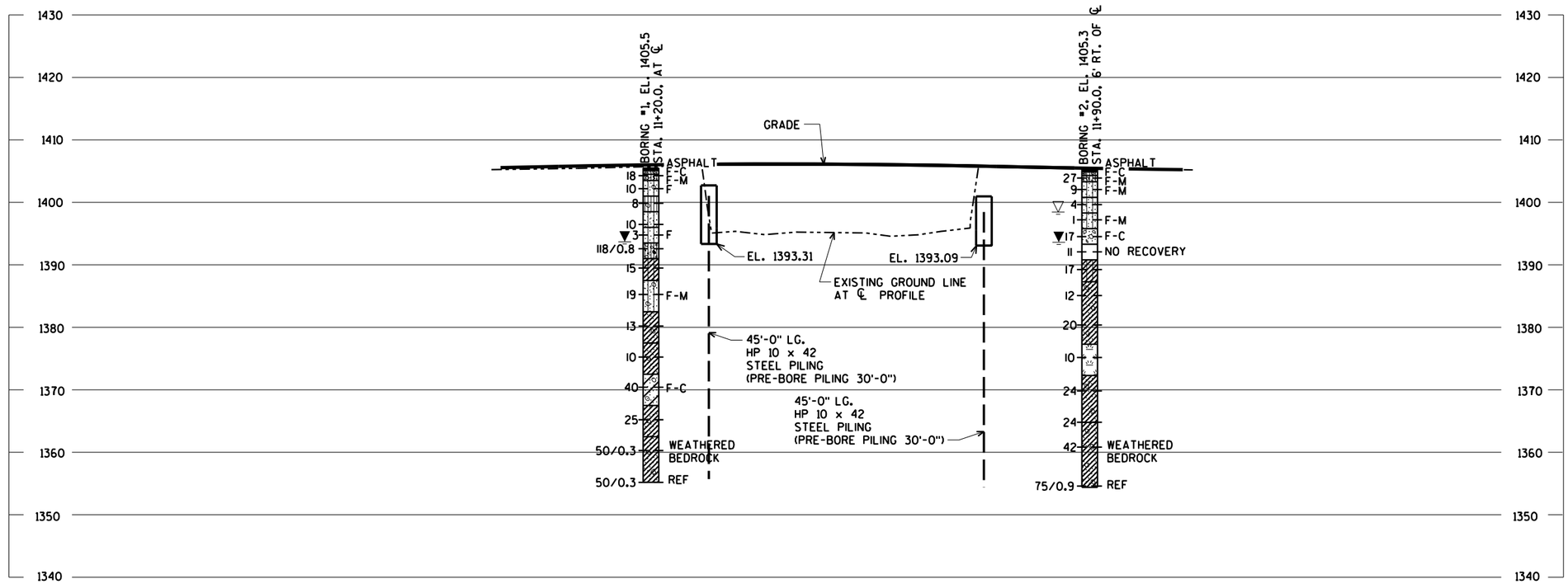
STRUCTURE DETAILS

SHEET 3 OF 19
54

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

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	JULY 18, 2017	338460.58	649310.92
2	JULY 18, 2017	338481.08	649376.02
BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC			
REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) TAYLOR COUNTY			





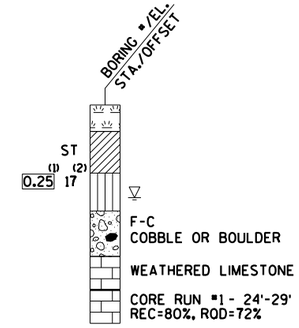
STATE PROJECT NUMBER

8890-00-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

DRAWN BY CLS | PLANS CK'D. CBM

SUBSURFACE EXPLORATION

SHEET 4 OF 19
55

8

8

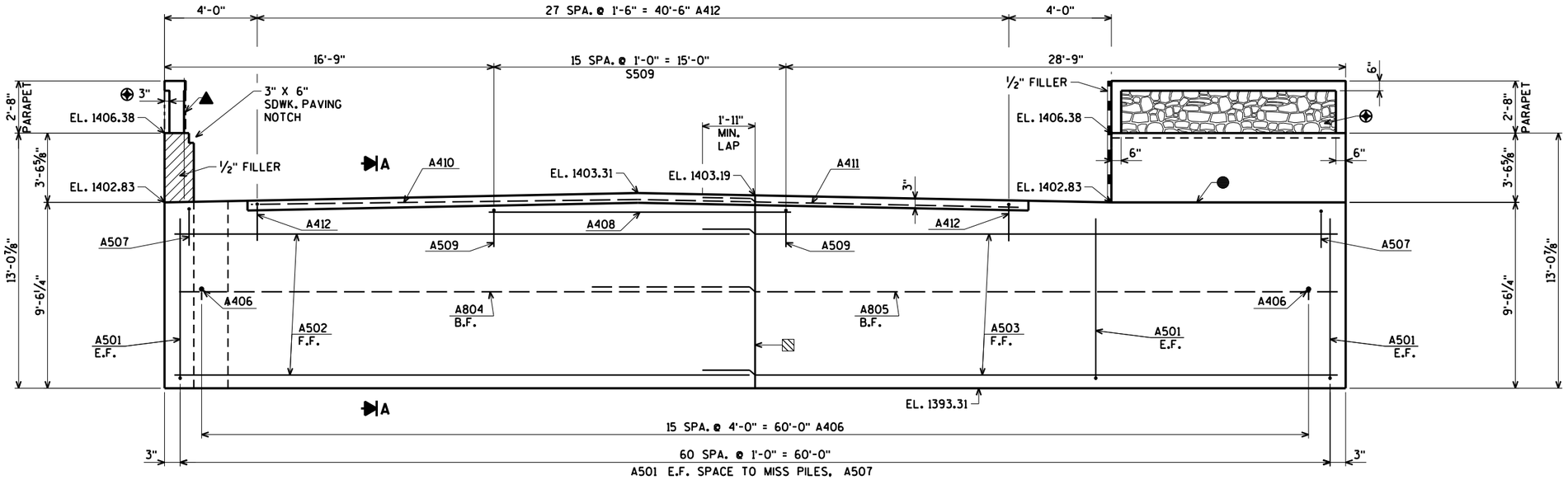
$PRFNAME$
U:\42-107\00 - City Medford - State St over Black River, Taylor County\Structures\Final\421071 soil final.dgn

5/24/2018

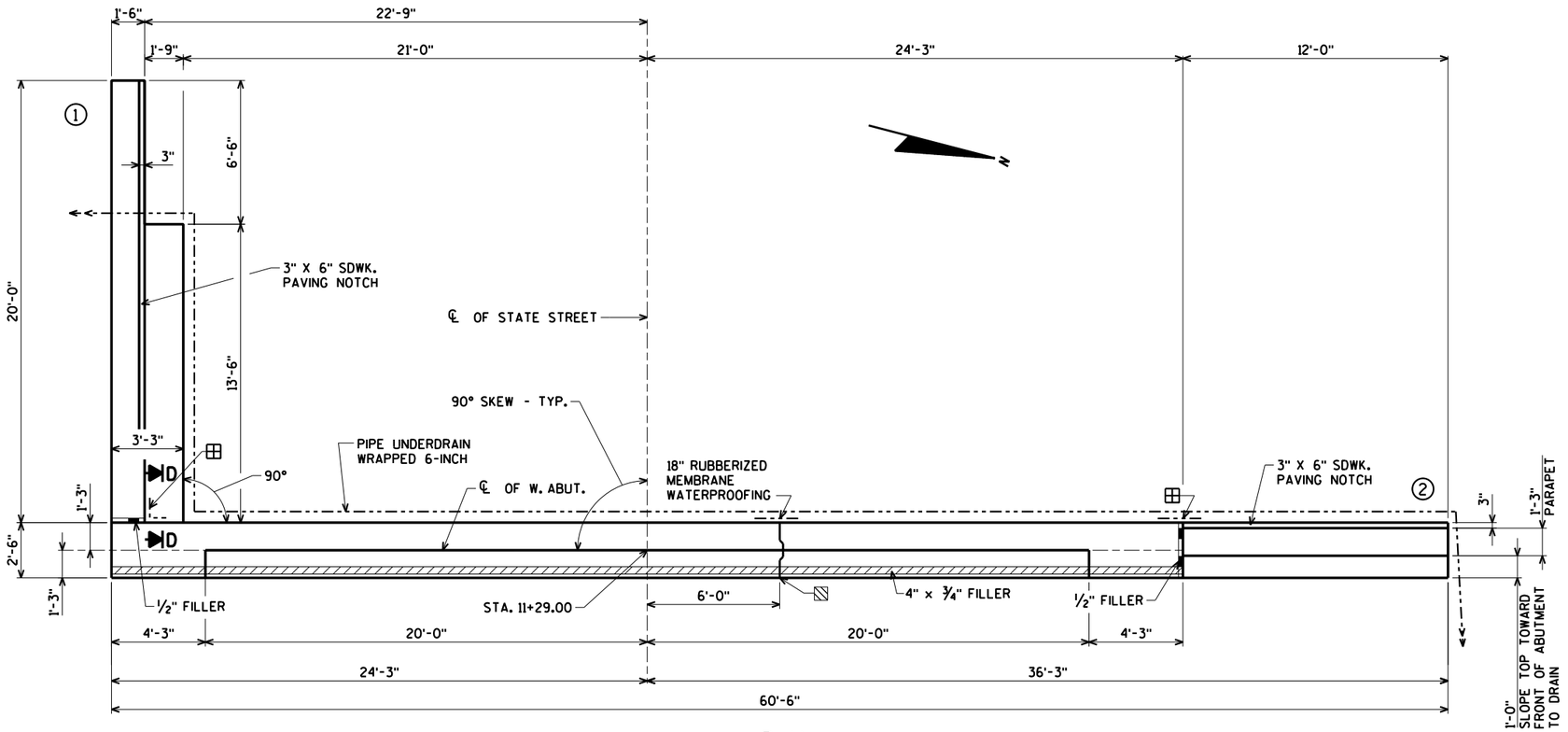
PENTABLE:BReau_shd_util.tbl

STATE PROJECT NUMBER

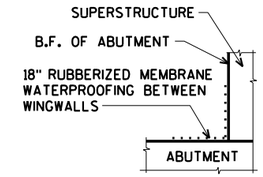
8890-00-70



ELEVATION
(LOOKING WEST)



PLAN



SECTION D

▲ ARCHITECTURAL SURFACE TREATMENT WITH 1/2" MAXIMUM RELIEF.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 3

FOR SECTION "A" SEE SHEET 8

PILING NOT SHOWN IN ELEVATION VIEW. SEE PILE LAYOUT ON SHEET 8

● OPT. KEYED CONST. JOINT - FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING FROM BRIDGE SEAT TO TOP OF WING.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

▨ VERT. CONST. JT. - KEYWAY FORMED BY A SURFACED BEVELED 2" x 8". BEVEL EXPOSED EDGES ¾". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 13. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

WEST ABUTMENT

SHEET 5 OF 19
56

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

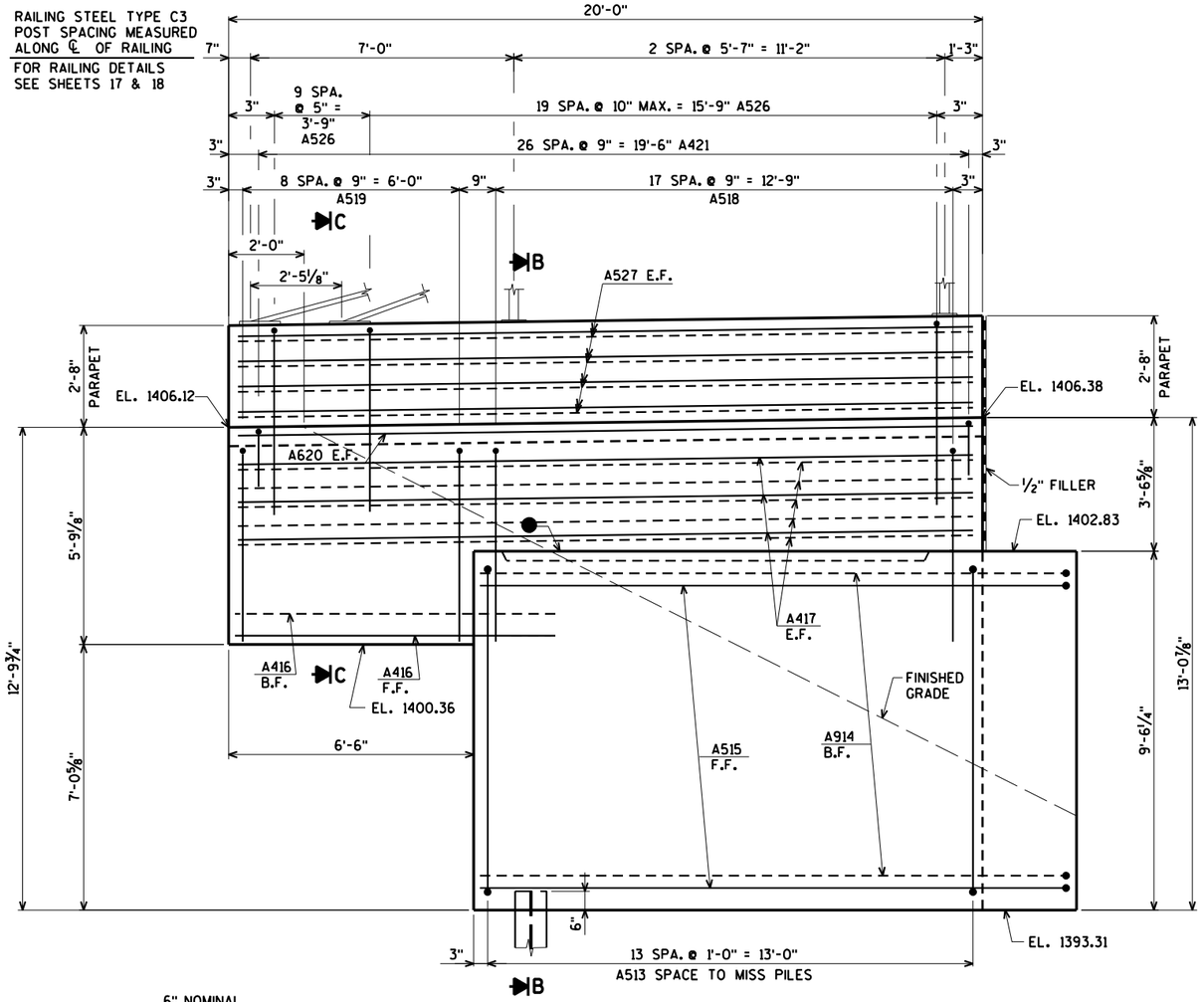
8

8

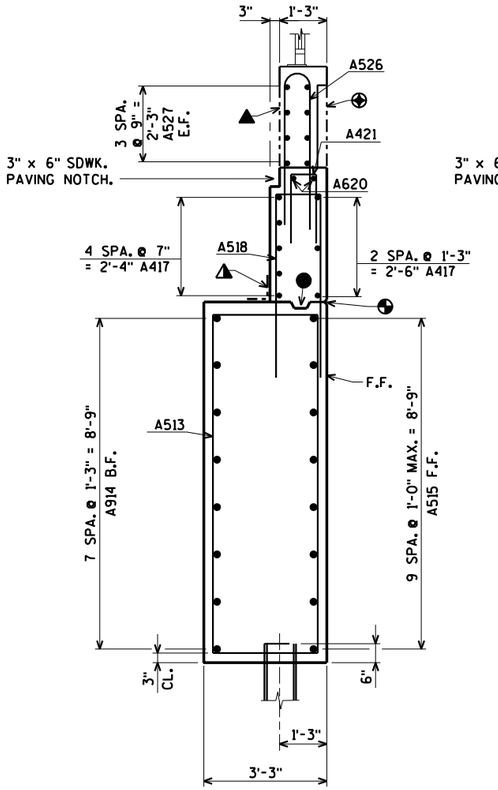
STATE PROJECT NUMBER

8890-00-70

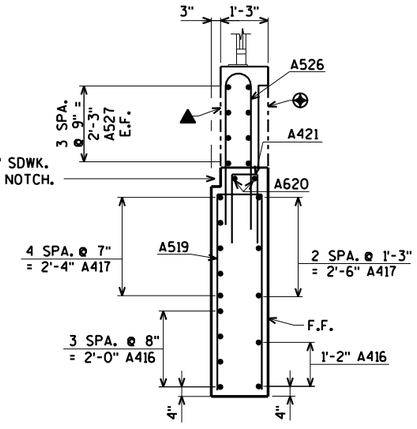
RAILING STEEL TYPE C3
POST SPACING MEASURED ALONG ℄ OF RAILING
FOR RAILING DETAILS SEE SHEETS 17 & 18



ELEVATION - WING 1



SECTION B



SECTION C

▲ ARCHITECTURAL SURFACE TREATMENT WITH ½" MAXIMUM RELIEF.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 3

◔ ¾" 'V' GROOVE ON F.F. OF WINGWALL.

● OPT. KEYED CONST. JOINT - FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

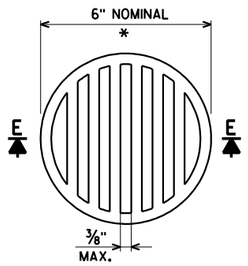
△ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONSTRUCTION JOINT IS USED (COST INCIDENTAL TO "CONCRETE MASONRY BRIDGES").

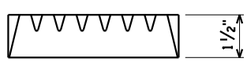
FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE





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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

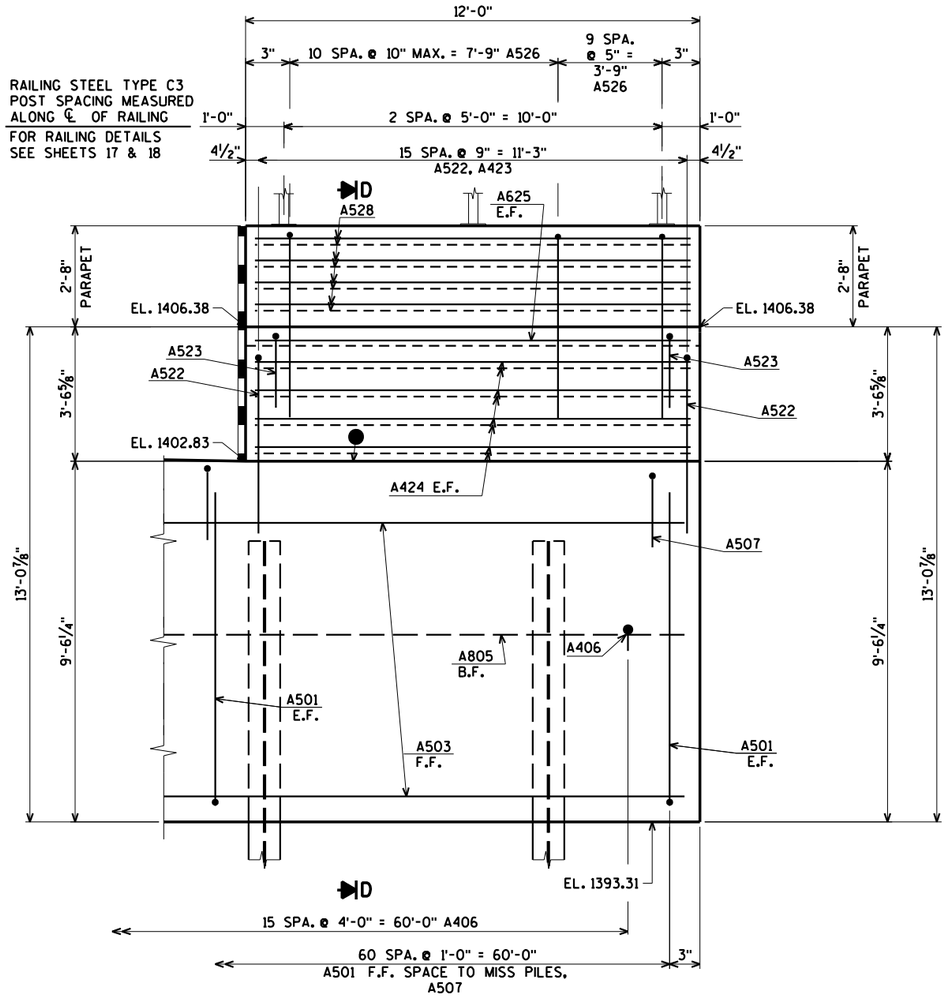
STRUCTURE B-60-134

DRAWN BY	CJM	PLANS CK'D.	CBM

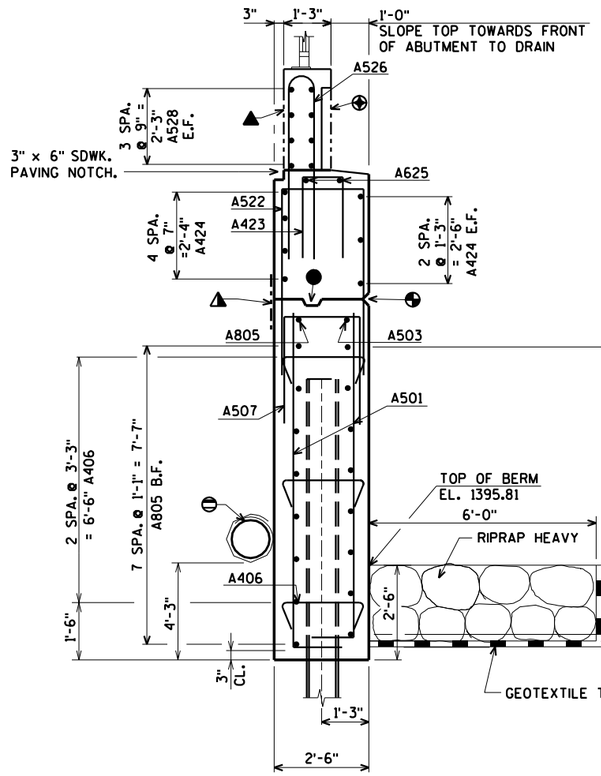
WEST ABUTMENT WING 1 DETAILS

SHEET 6 OF 19
57

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



ELEVATION - WING 2



SECTION D

- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD DETAIL SEE SHEET 6.
- 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONSTRUCTION JOINT IS USED (COST INCIDENTAL TO "CONCRETE MASONRY BRIDGES").
- ¾" 'V' GROOVE ON F.F. OF WINGWALL.
- ARCHITECTURAL SURFACE TREATMENT WITH ½" MAXIMUM RELIEF.
- ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 3
- OPT. KEYED CONST. JOINT - FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

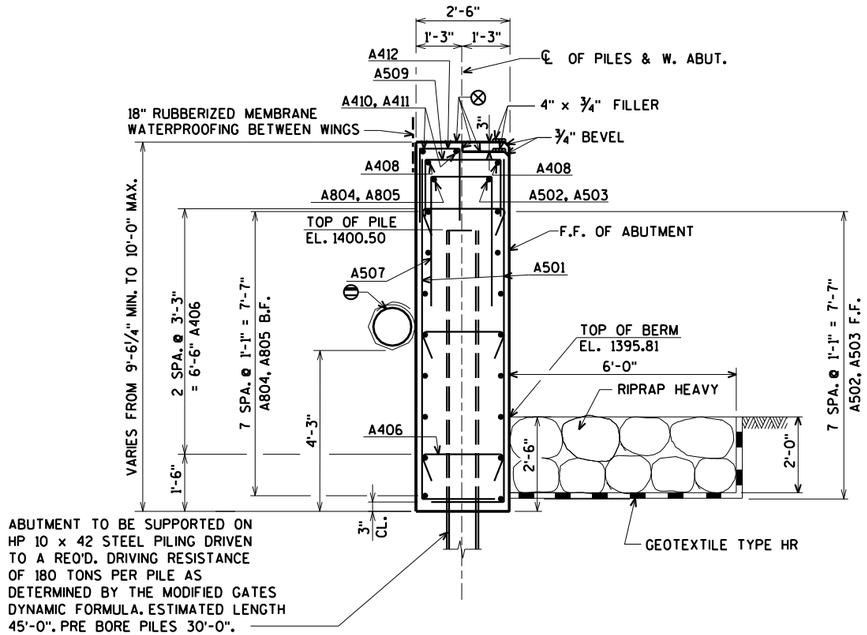
STRUCTURE B-60-134

DRAWN BY	CJM	PLANS CK'D.	CBM

WEST ABUTMENT WING 2 DETAILS

SHEET 7 OF 19
58

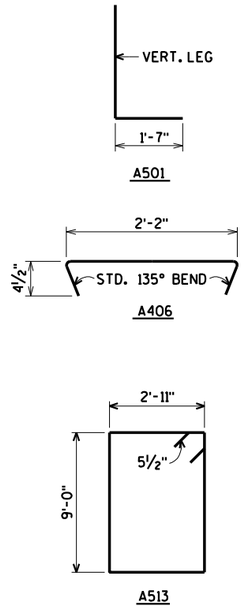
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

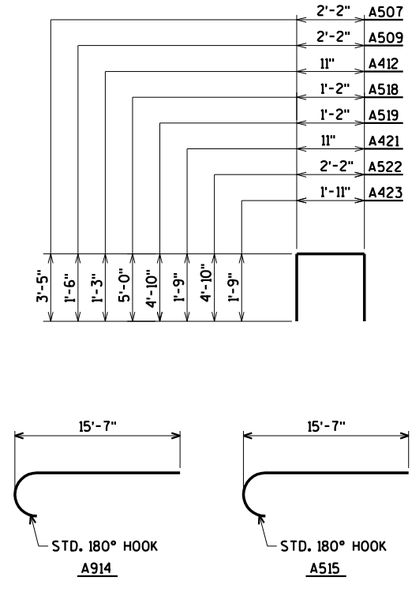


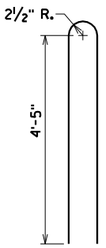
SECTION A

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.



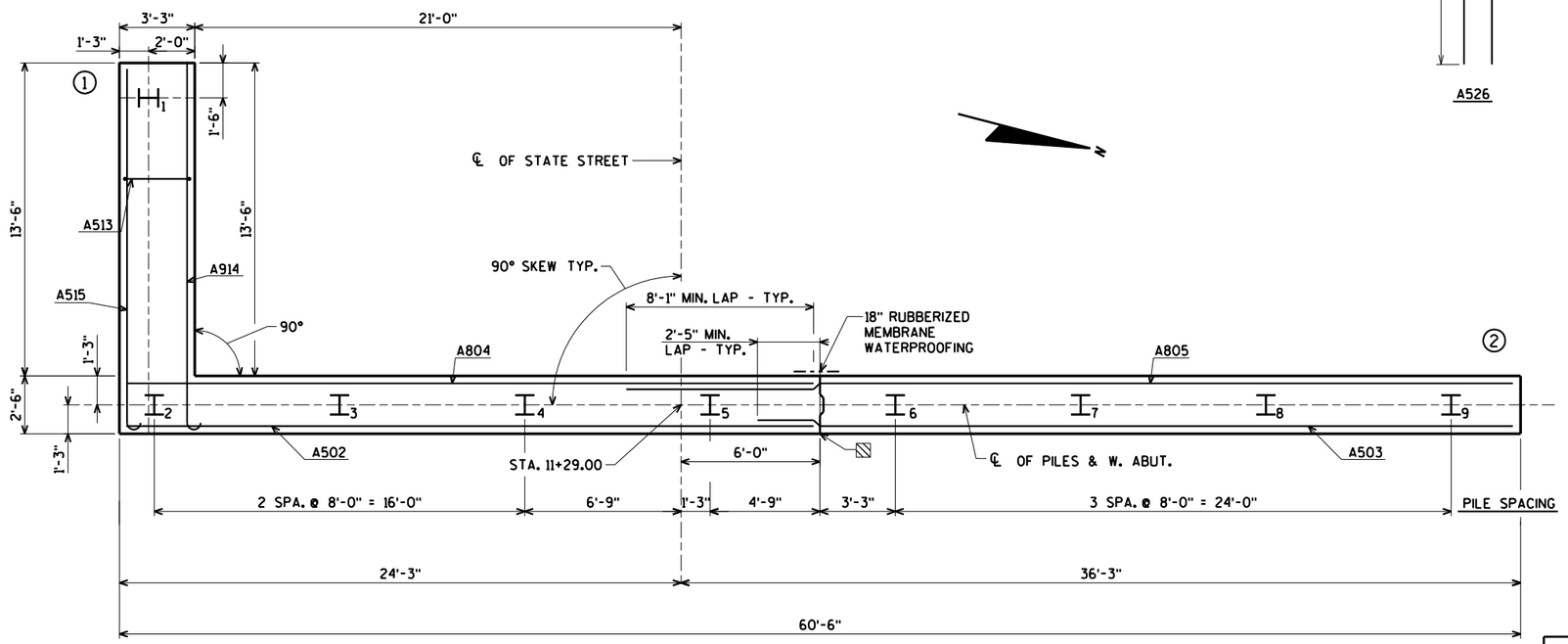




BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1,670# COATED 5,400# UNCOATED LOCATION
A501		122	10-4	X		BODY VERT. E.F.
A502		9	30-1			BODY HORIZ. F.F.
A503		9	32-6			BODY HORIZ. F.F.
A804		9	30-1			BODY HORIZ. B.F.
A805		9	38-2			BODY HORIZ. B.F.
A406		48	2-9	X		BODY TIES
A507		61	8-10	X		BODY VERT. TOP
A408		2	15-6			BODY HORIZ. TOP
A509		16	5-0	X		BODY VERT. TOP
A410		2	26-6			BODY HORIZ. NOTCH
A411		2	16-5			BODY HORIZ. NOTCH
A412		28	3-3	X		BODY VERT. NOTCH
A513		14	24-5	X		WING 1 VERT.
A914		8	16-10	X		WING 1 HORIZ. B.F.
A515		10	16-2	X		WING 1 HORIZ. F.F.
A416	X	6	7-9			WING 1 HORIZ. E.F.
A417	X	8	19-8			WING 1 HORIZ. E.F.
A518	X	18	11-0	X		WING 1 VERT.
A519	X	9	10-8	X		WING 1 VERT.
A620	X	2	19-8			WING 1 SDWK. NOTCH HORIZ.
A421	X	27	4-3	X		WING 1 SDWK. NOTCH VERT.
A522	X	16	11-8	X		WING 2 VERT.
A423	X	16	5-3	X		WING 2 SDWK. NOTCH VERT.
A424	X	8	11-8			WING 2 HORIZ. E.F.
A625	X	2	11-8			WING 2 SIDEWALK NOTCH HORIZ.
A526	X	49	9-6	X		WING 1 & 2 PARAPET VERT.
A527	X	8	19-8			WING 1 PARAPET HORIZ. E.F.
A528	X	8	11-8			WING 2 PARAPET HORIZ. E.F.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



PILE LAYOUT

▨ VERT. CONST. JT. - KEYWAY FORMED BY A SURFACED BEVELED 2" x 8". BEVEL EXPOSED EDGES ¾". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 13. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING

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

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION "A" SEE SHEET 5.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

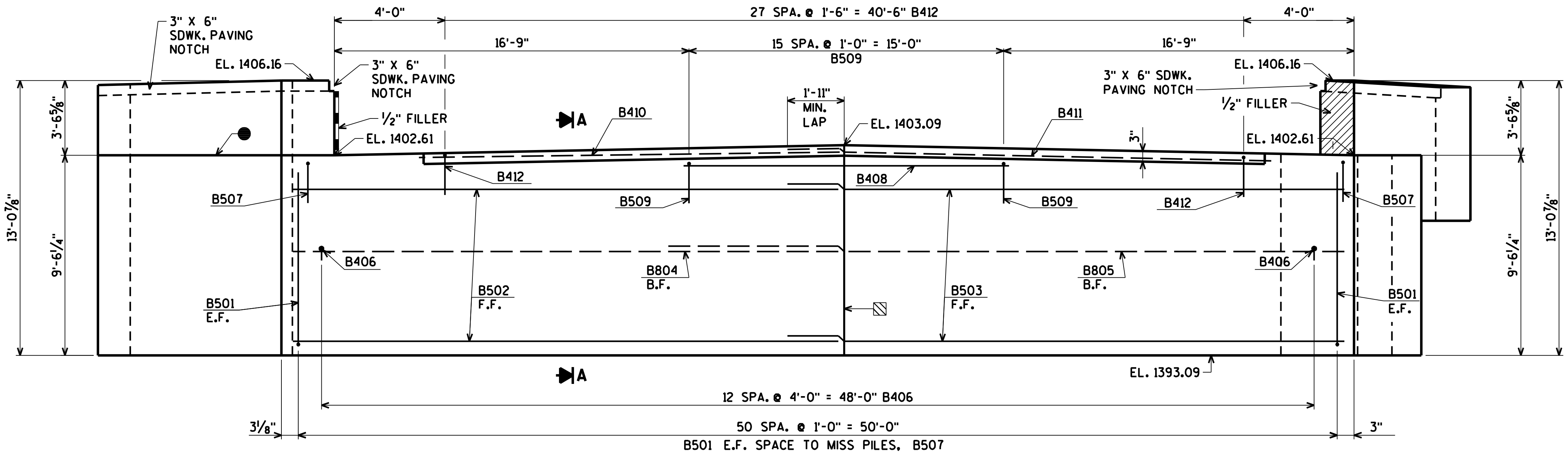
WEST ABUTMENT PILE LAYOUT & BILL OF BARS

SHEET 8 OF 19
59

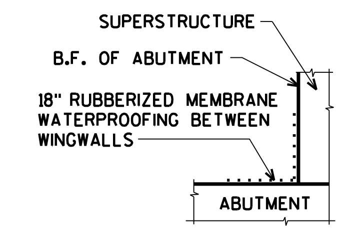
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

PARAPETS NOT SHOWN ON WINGWALLS FOR CLARITY.

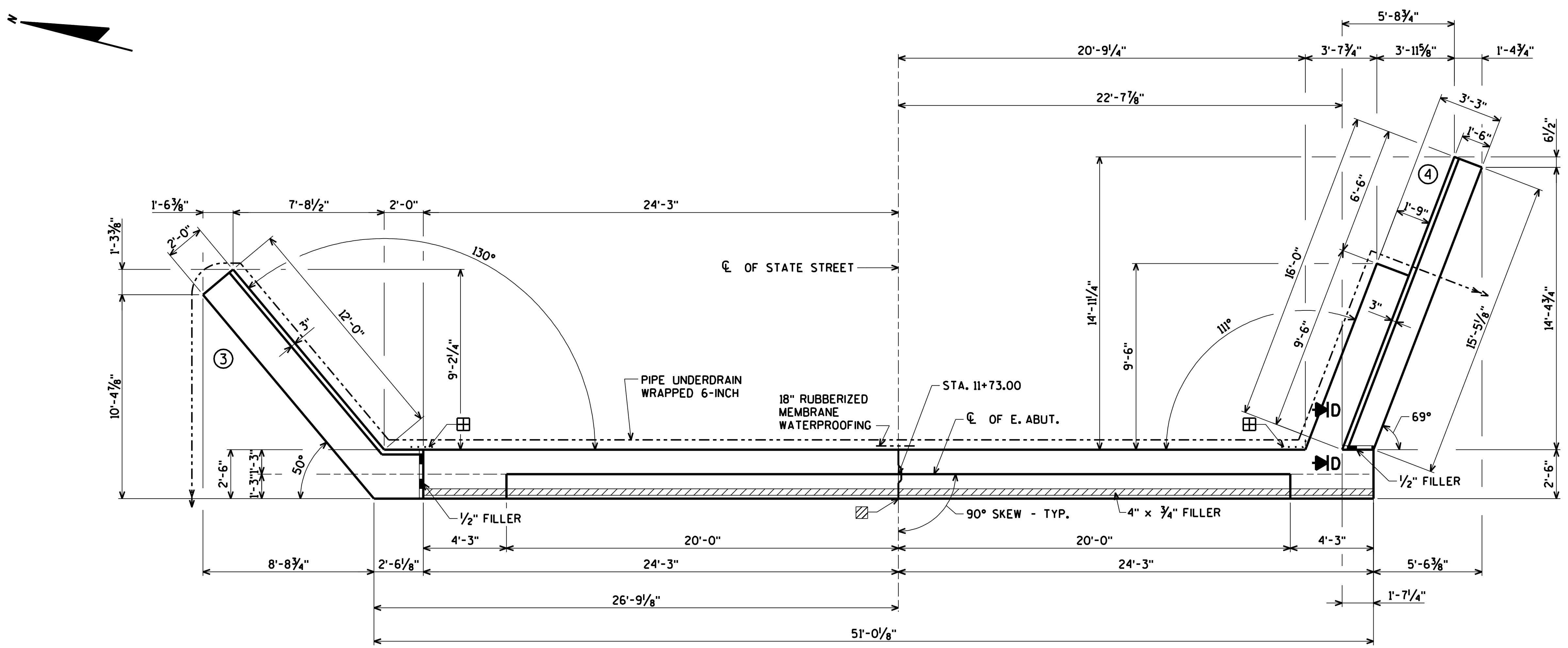
STATE PROJECT NUMBER 8890-00-70



ELEVATION
(LOOKING EAST)



SECTION D



PLAN

FOR SECTION "A" SEE SHEET 12

PILING NOT SHOWN IN ELEVATION VIEW. SEE PILE LAYOUT ON SHEET 12

● OPT. KEYED CONST. JOINT - FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING FROM BRIDGE SEAT TO TOP OF WING.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

▧ VERT. CONST. JT. - KEYWAY FORMED BY A SURFACED BEVELED 2" x 8". BEVEL EXPOSED EDGES 3/4". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 13. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING

NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

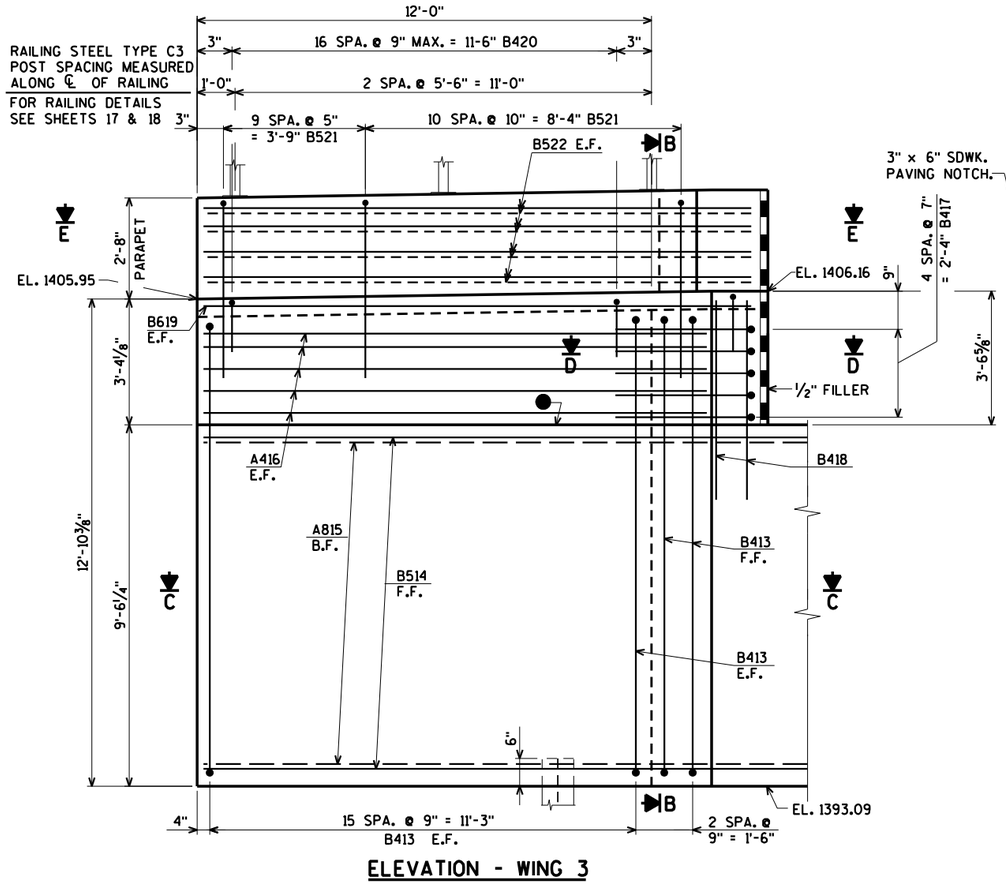
STRUCTURE B-60-134

DRAWN BY CJM PLANS CK'D. CBM

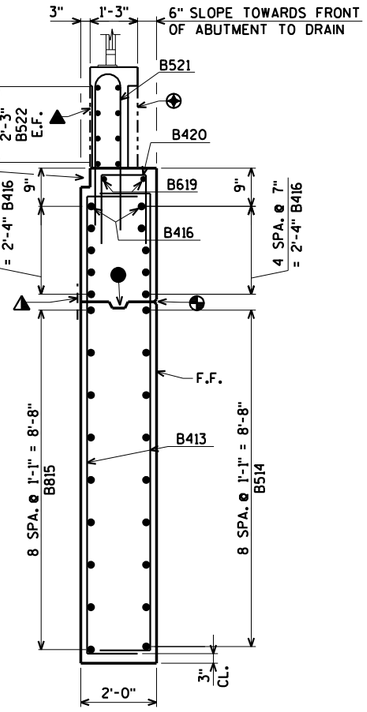
EAST ABUTMENT

SHEET 9 OF 19

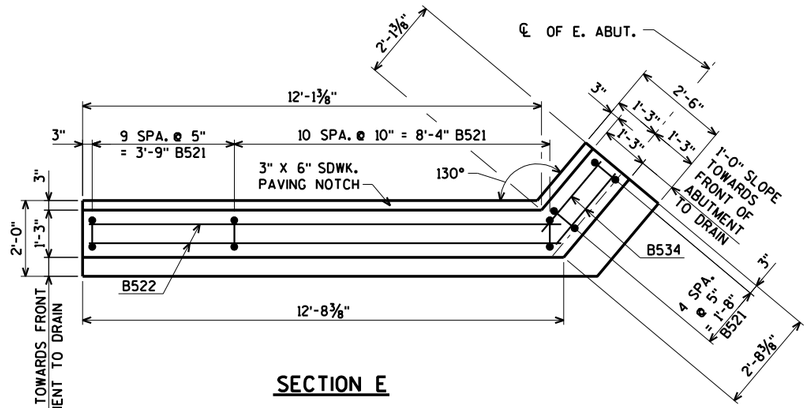
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com



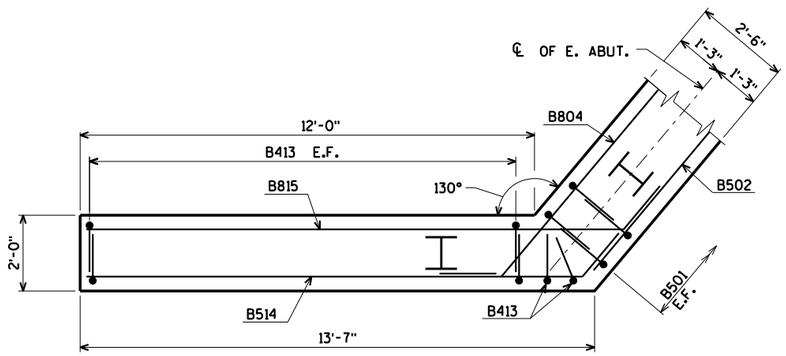
ELEVATION - WING 3



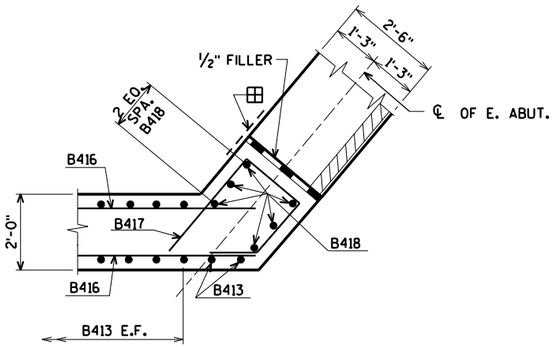
SECTION B



SECTION E



SECTION C



SECTION D

⊞ 18" RUBBERIZED MEMBRANE WATERPROOFING FROM BRIDGE SEAT TO TOP OF WING.

▲ ARCHITECTURAL SURFACE TREATMENT WITH ½" MAXIMUM RELIEF.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 3

⊕ ¾" 'V' GROOVE ON F.F. OF WINGWALL.

● OPT. KEYED CONST. JOINT - FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

⚠ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONSTRUCTION JOINT IS USED (COST INCIDENTAL TO "CONCRETE MASONRY BRIDGES").

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

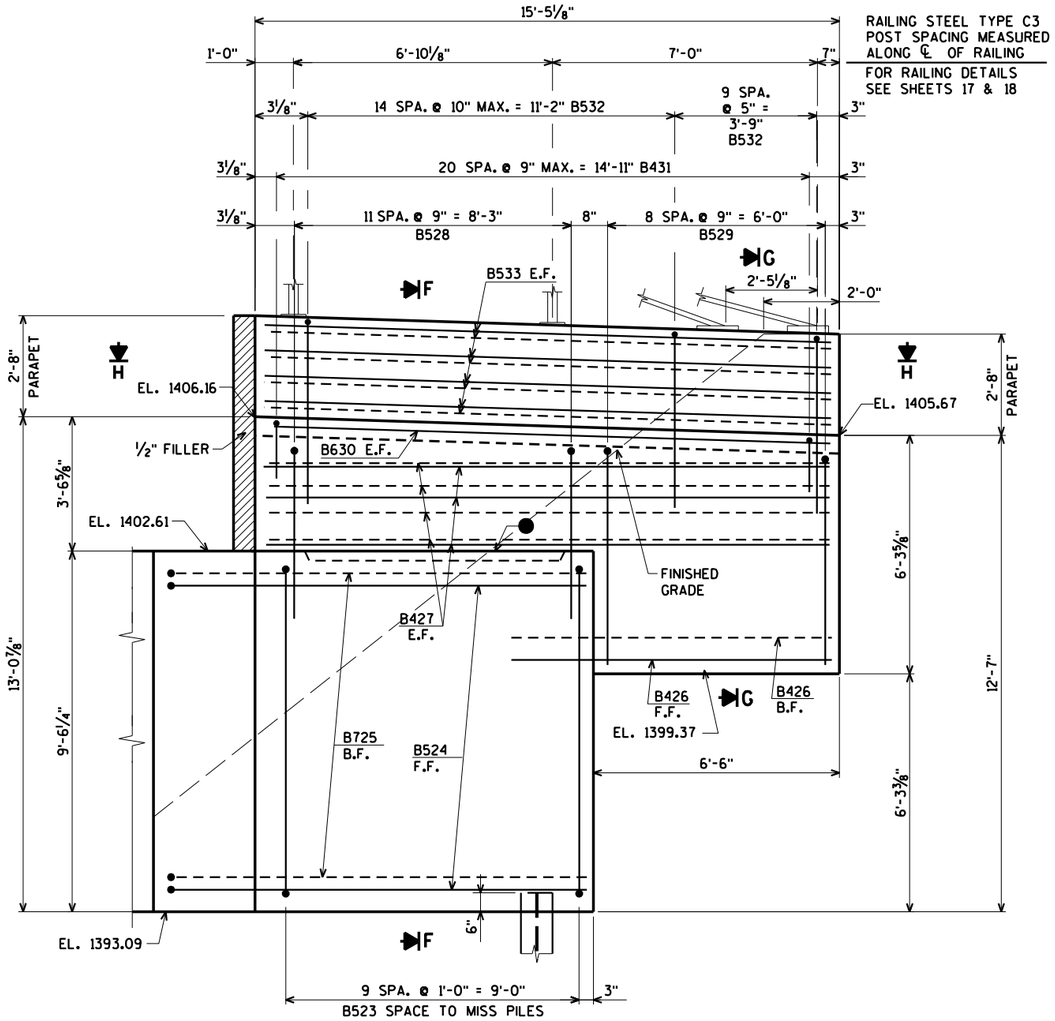
STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

EAST ABUTMENT WING 3 DETAILS

SHEET 10 OF 19
61

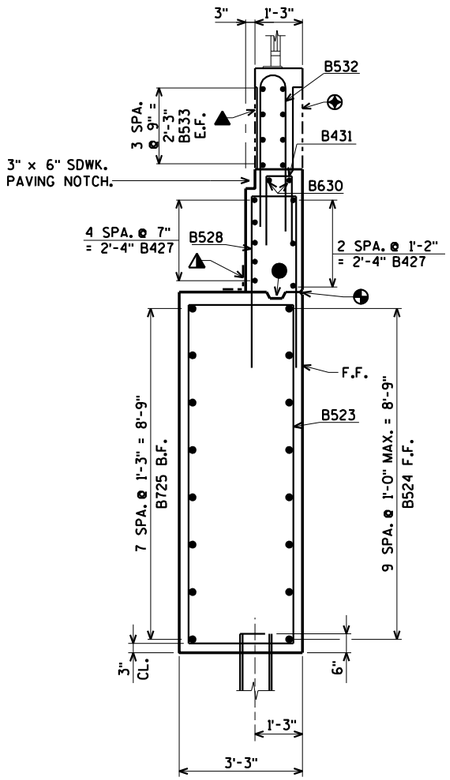
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



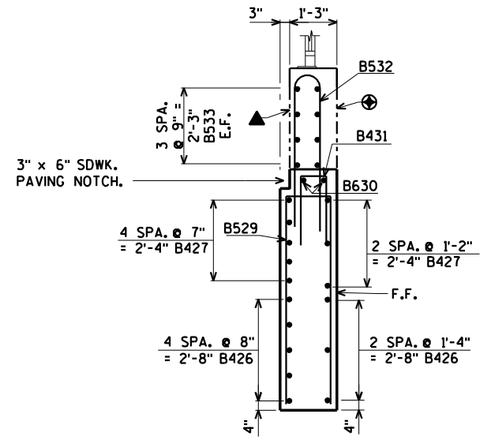
ELEVATION - WING 4

RAILING STEEL TYPE C3
POST SPACING MEASURED ALONG ℄ OF RAILING

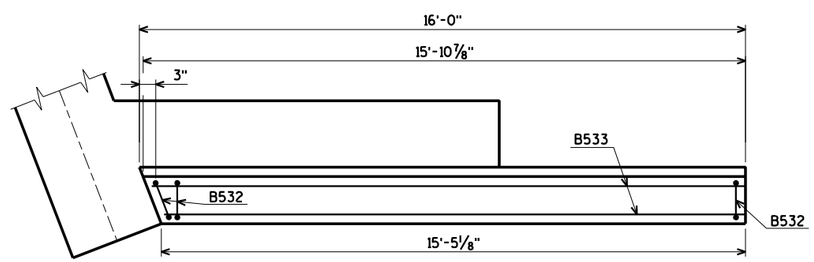
FOR RAILING DETAILS SEE SHEETS 17 & 18



SECTION F



SECTION G



SECTION H

▲ ARCHITECTURAL SURFACE TREATMENT WITH ½" MAXIMUM RELIEF.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 3

◔ ¾" 'V' GROOVE ON F.F. OF WINGWALL.

● OPT. KEYED CONST. JOINT - FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE.

◭ 18" RUBBERIZED MEMBRANE WATERPROOFING IF CONSTRUCTION JOINT IS USED (COST INCIDENTAL TO "CONCRETE MASONRY BRIDGES").

FOR PILE SPLICE DETAIL SEE SHEET 2.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

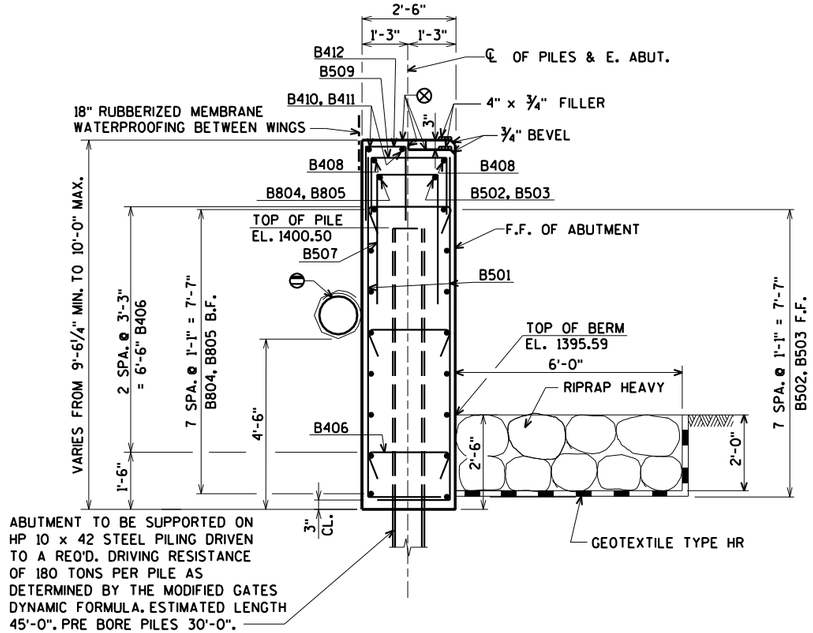
DRAWN BY CJM | PLANS CK'D. CBM

EAST ABUTMENT WING 4 DETAILS

SHEET 11 OF 19
62

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

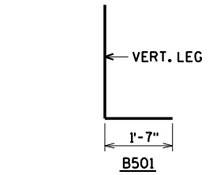
8



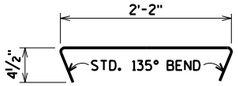
SECTION A

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

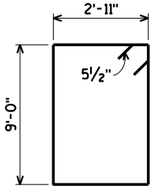
EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.



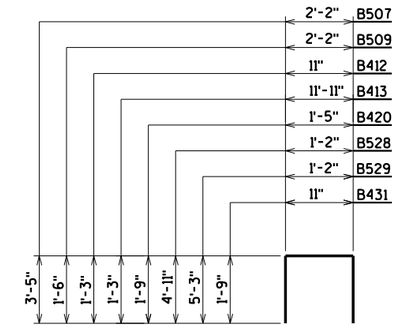
B501

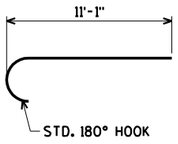


B406

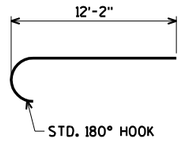


B523

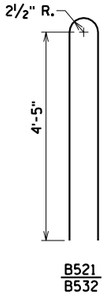




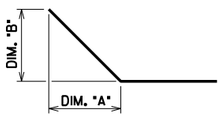
B524



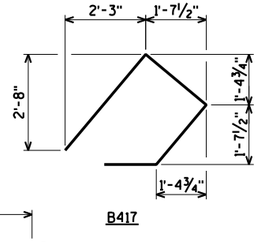
B725



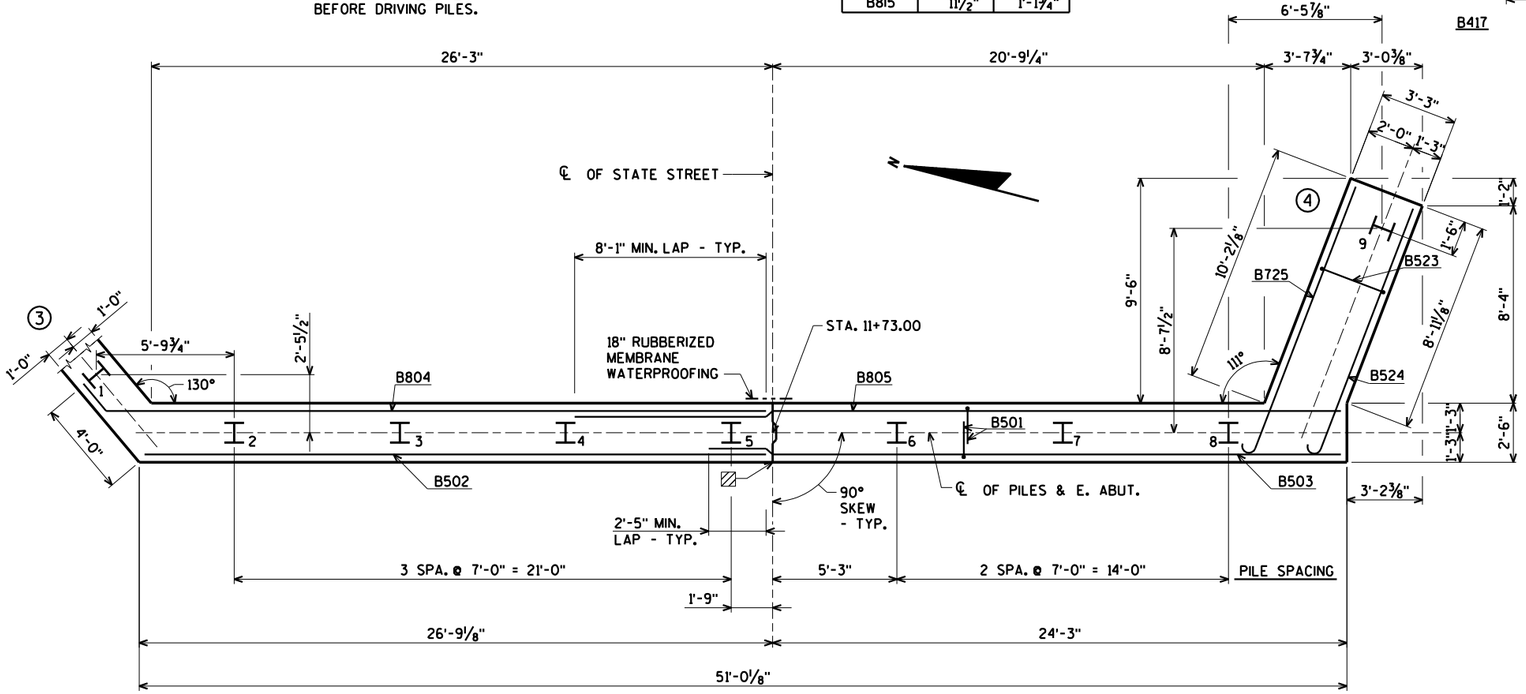
B521
B532



BAR NO.	DIM. "A"	DIM. "B"
B804	11½"	1'-1¾"
B514	11½"	1'-1¾"
B815	11½"	1'-1¾"



B417



PILE LAYOUT

BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	1,760# COATED 4,960# UNCOATED LOCATION
B501		102	10-4	X		BODY VERT. E.F.
B502		9	26-7			BODY HORIZ. F.F.
B503		9	26-6			BODY HORIZ. F.F.
B804		9	29-9	X		BODY HORIZ. B.F.
B805		9	32-2			BODY HORIZ. B.F.
B406		39	2-9	X		BODY TIES
B507		51	8-10	X		BODY VERT. TOP
B408		2	15-6			BODY HORIZ. TOP
B509		16	5-0	X		BODY VERT. TOP
B410		2	20-6			BODY HORIZ. NOTCH
B411		2	22-6			BODY HORIZ. NOTCH
B412		28	3-3	X		BODY VERT. NOTCH
B413	X	34	14-3	X		WING 3 VERT. E.F.
B514		9	14-7	X		WING 3 HORIZ. F.F.
B815		9	15-10	X		WING 3 HORIZ. B.F.
B416	X	10	13-4			WING 3 HORIZ. E.F.
B417	X	5	9-0	X		WING 3 HORIZ. AT CORNER
B418	X	6	5-4			WING 3 VERT. AT CORNER
B619	X	2	13-4			WING 3 SDWK. NOTCH HORIZ.
B420	X	17	4-9	X		WING 3 SDWK. NOTCH VERT.
B521	X	25	9-6	X		WING 3 PARAPET VERT.
B522	X	8	12-6			WING 3 PARAPET HORIZ.
B523		10	24-5	X		WING 4 VERT.
B524		10	11-6	X		WING 4 HORIZ. F.F.
B725		8	13-3	X		WING 4 HORIZ. B.F.
B426	X	8	7-9			WING 4 HORIZ. E.F.
B427	X	8	15-1			WING 4 HORIZ. E.F.
B528	X	12	10-10	X		WING 4 VERT.
B529	X	9	11-5	X		WING 4 VERT.
B630	X	2	15-1			WING 4 SDWK. NOTCH HORIZ.
B431	X	21	4-3	X		WING 4 SDWK. NOTCH VERT.
B532	X	24	9-6	X		WING 3 PARAPET VERT.
B533	X	8	15-2			WING 3 PARAPET HORIZ.
B534	X	8	1-11			WING 3 PARAPET HORIZ. @ CORNER

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

▨ VERT. CONST. JT. - KEYWAY FORMED BY A SURFACED BEVELED 2" x 8". BEVEL EXPOSED EDGES ¾". FOR ALTERNATE CONST. JT. DETAILS SEE SHEET 13. SEAL JOINT AT BACK FACE WITH 18" RUBBERIZED MEMBRANE WATERPROOFING

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

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

FOR PILE SPLICE DETAIL SEE SHEET 2.

FOR LOCATION OF SECTION "A" SEE SHEET 9.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

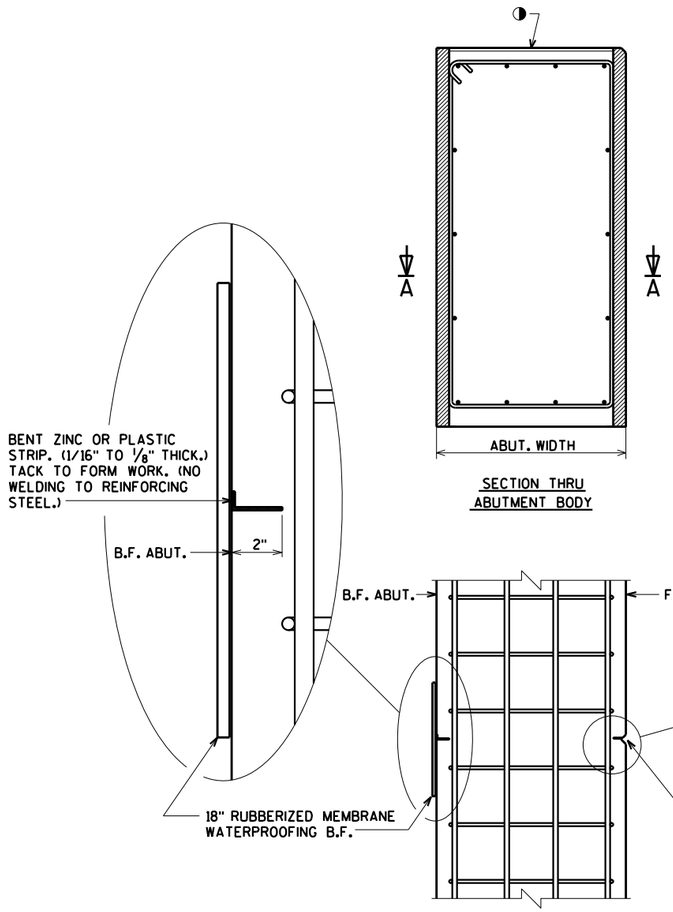
STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

EAST ABUTMENT PILE LAYOUT & BILL OF BARS

SHEET 12 OF 19
63

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



ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

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

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

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

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

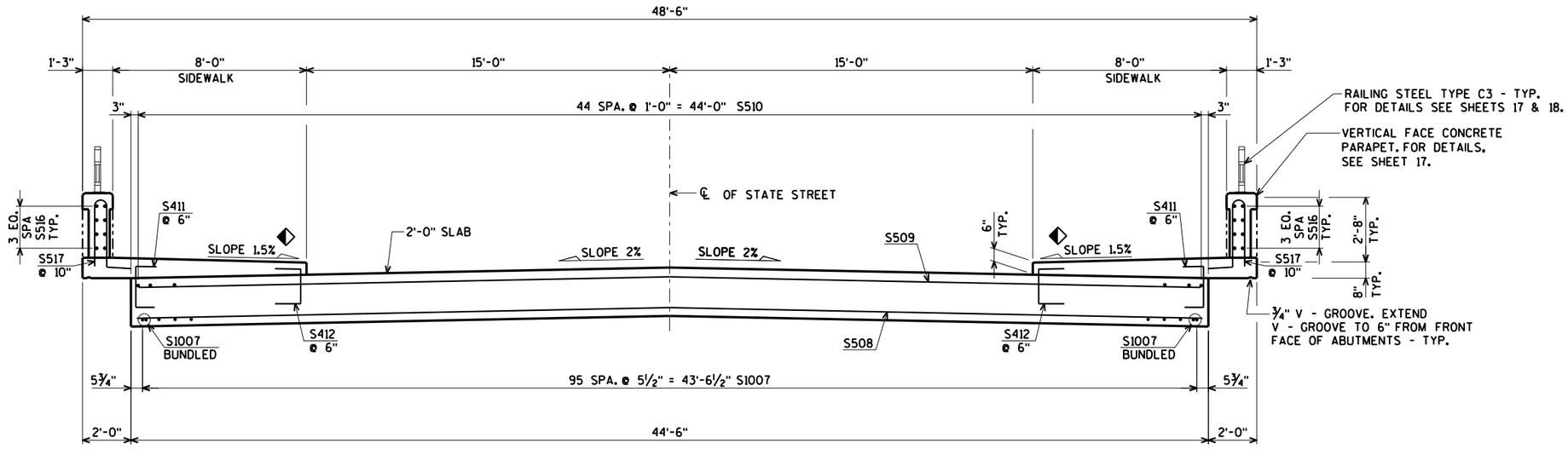
STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

ALTERNATE CONSTRUCTION JOINT

SHEET 13 OF 19
64

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



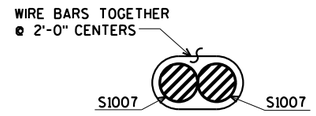
CROSS SECTION THRU ROADWAY

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

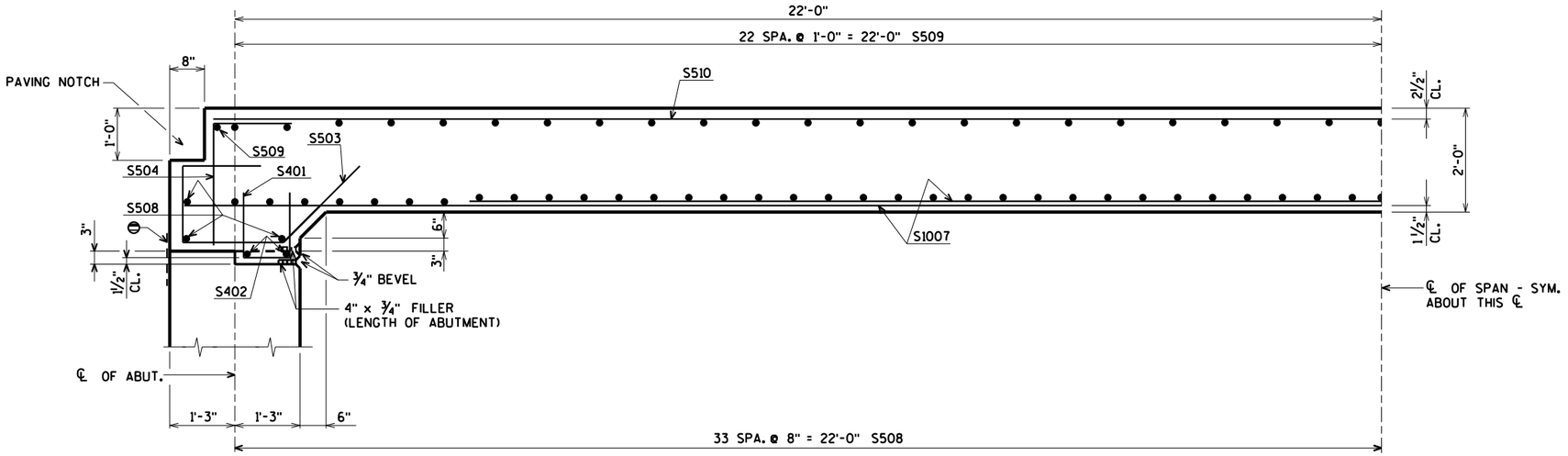
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

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

⊖ 18" RUBBERIZED MEMBRANE WATERPROOFING BETWEEN WINGS.



BUNDLING DETAIL



PART LONGITUDINAL SECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

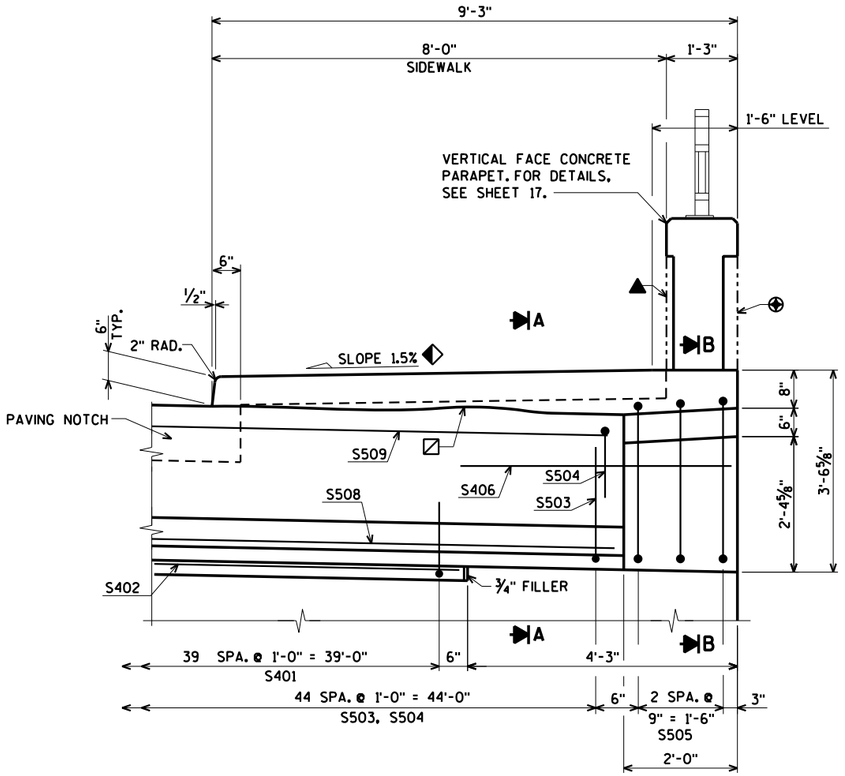
STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

SUPERSTRUCTURE

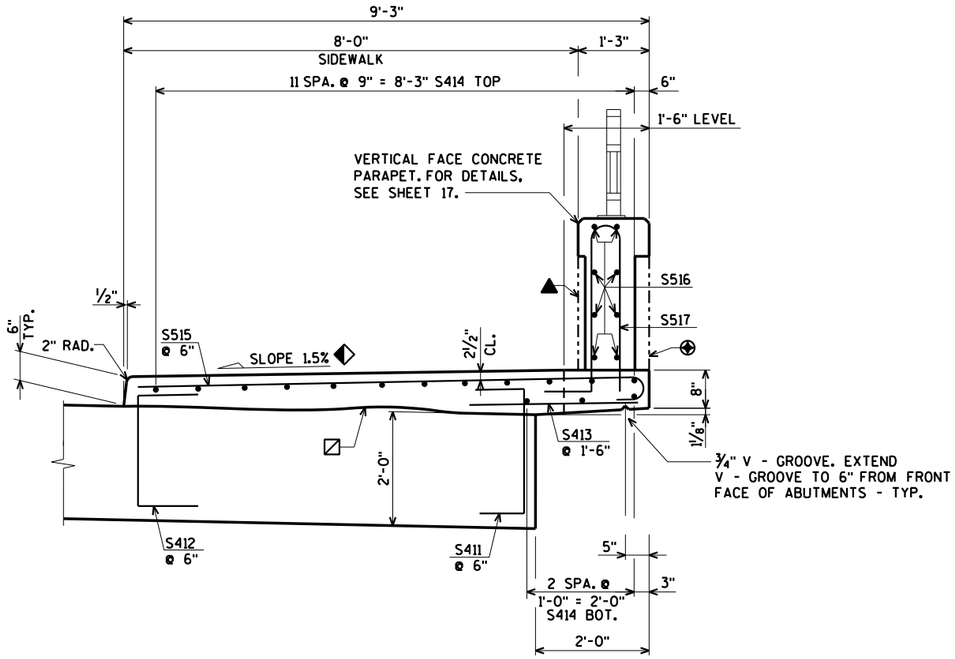
SHEET 14 OF 19
65

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

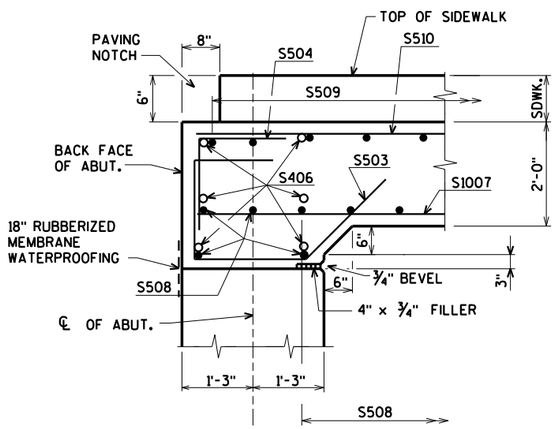


PART SECTION AT ABUTMENT

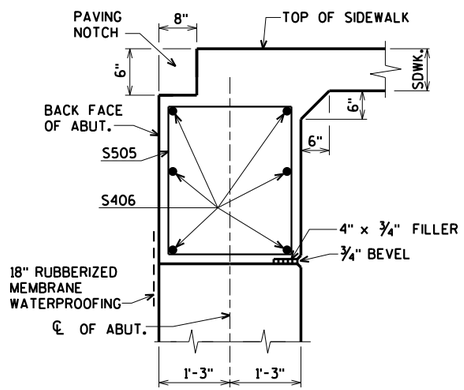
(WING 4 SHOWN, OTHER WINGS SIMILAR)



TYPICAL SECTION THRU SIDEWALK



SECTION A



SECTION B

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

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

▲ ARCHITECTURAL SURFACE TREATMENT WITH 1/2" MAXIMUM RELIEF.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 3

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

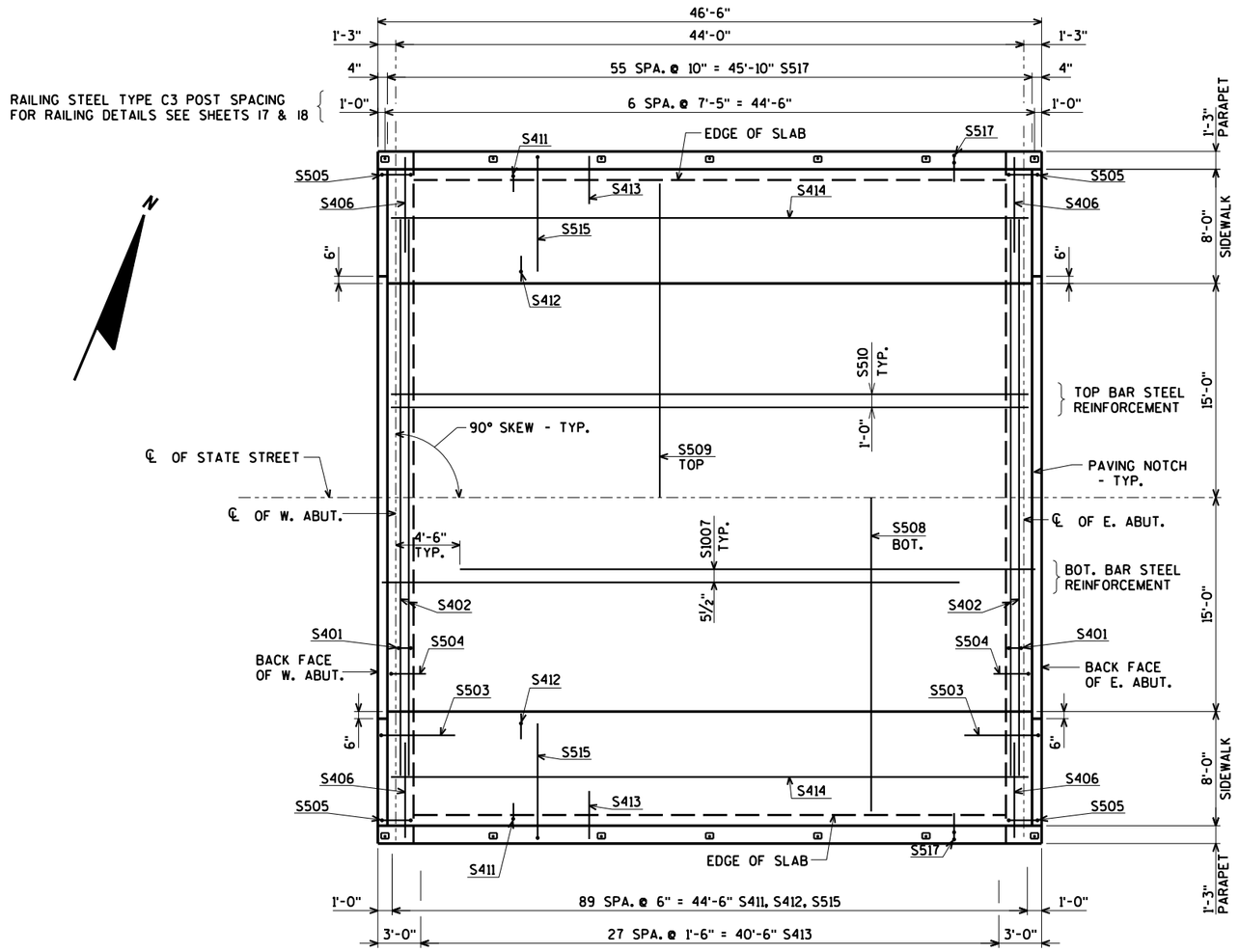
DRAWN BY CJM | PLANS CK'D. CBM

SUPERSTRUCTURE DETAILS

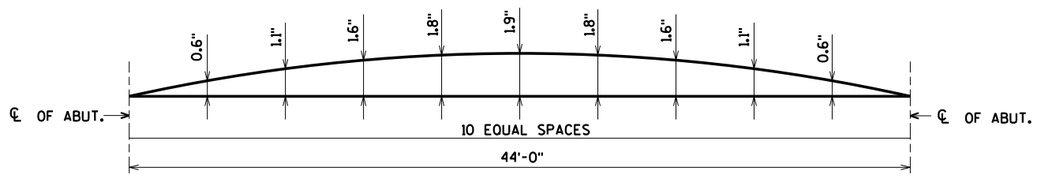
SHEET 15 OF 19
66

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

8
8



PLAN



CAMBER DIAGRAM

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

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

TOP OF DECK ELEVATIONS

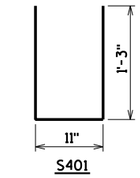
LOCATION	℄ OF W. ABUT.	0.1 PT	0.2 PT	0.3 PT	0.4 PT	0.5 PT	0.6 PT	0.7 PT	0.8 PT	0.9 PT	℄ OF E. ABUT.
N. EDGE OF SLAB	1405.61	1405.63	1405.65	1405.65	1405.64	1405.63	1405.60	1405.56	1405.52	1405.46	1405.39
N. EDGE OF SIDEWALK	1405.76	1405.78	1405.79	1405.80	1405.79	1405.77	1405.75	1405.71	1405.66	1405.60	1405.54
℄ OF STRUCTURE	1406.06	1406.08	1406.09	1406.10	1406.09	1406.07	1406.05	1406.01	1405.96	1405.90	1405.84
S. EDGE OF SIDEWALK	1405.76	1405.78	1405.79	1405.80	1405.79	1405.77	1405.75	1405.71	1405.66	1405.60	1405.54
S. EDGE OF SLAB	1405.61	1405.63	1405.65	1405.65	1405.64	1405.63	1405.60	1405.56	1405.52	1405.46	1405.39

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

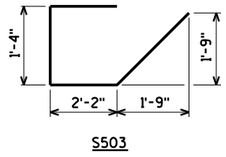
BILL OF BARS

BAR. NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	31,830# COATED LOCATION
S401	X	80	3-3	X		SLAB @ ABUT. NOTCH
S402	X	4	39-8			SLAB @ ABUT. NOTCH
S503	X	90	7-0	X		SLAB @ ABUT.
S504	X	90	3-9	X		SLAB @ ABUT.
S505	X	12	9-11	X		SLAB @ ABUT. @ SDWK.
S406	X	24	3-10			SLAB @ ABUT. @ SDWK.
S1007	X	100	40-7			SLAB LONG. BOT.
S508	X	73	44-2			SLAB TRANS. BOT.
S509	X	47	44-2			SLAB TRANS. TOP
S510	X	45	44-10			SLAB LONG. TOP
S411	X	180	4-0	X		SLAB @ SDWK.
S412	X	180	3-9	X		SLAB @ SDWK.
S413	X	56	2-10			SDWK. TRANS. BOT.
S414	X	30	44-10			SDWK. LONG. BOT. & TOP
S515	X	180	9-5	X		SDWK. TRANS. TOP
S516	X	16	46-2			PARAPET HORIZ.
S517	X	112	6-9	X		PARAPET VERT.

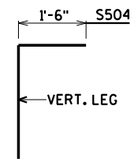
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

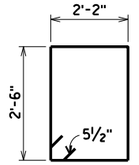


S401

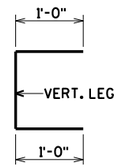


S503

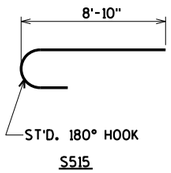




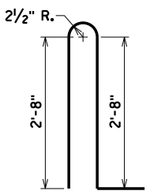
S505



S411, S412



S515



S517

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

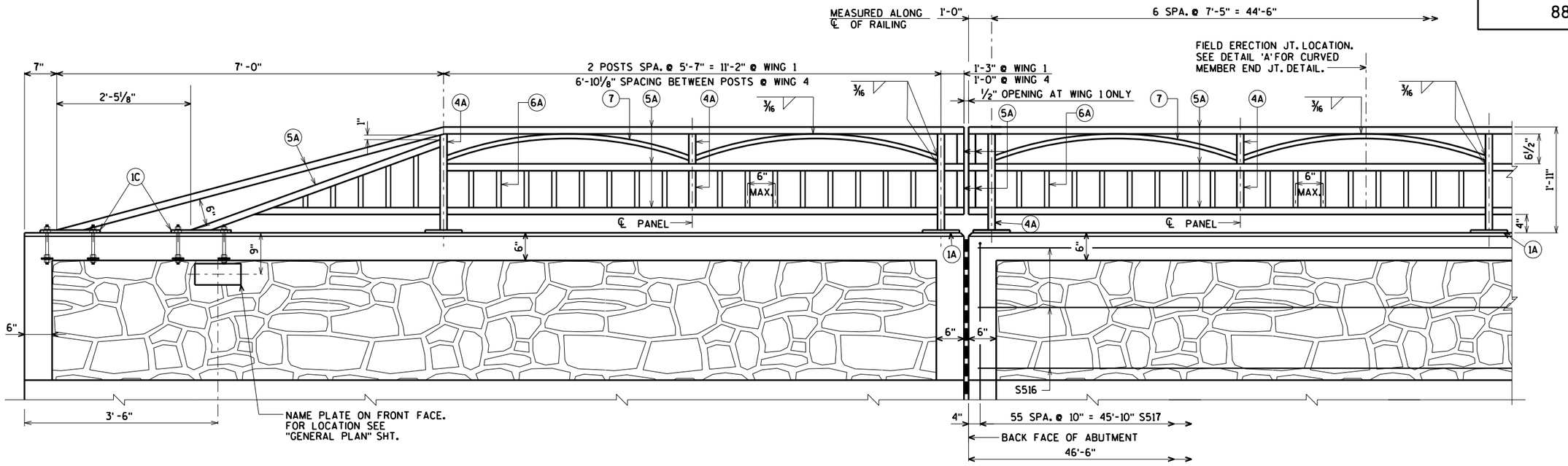
STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

SUPERSTRUCTURE PLAN AND BILL OF BARS

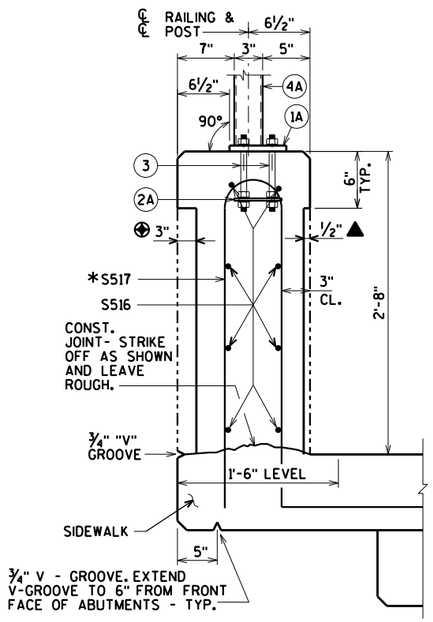
SHEET 16 OF 19
67

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



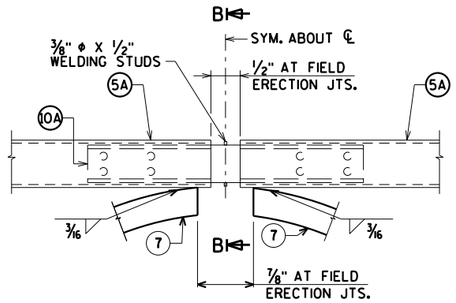
ELEVATION OF PARAPET AT SUPERSTRUCTURE AND WINGS 1 & 4

(SEE SHEETS 6 AND 11 FOR WING DETAILS)

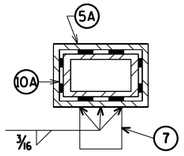


SECTION THRU PARAPET ON BRIDGE

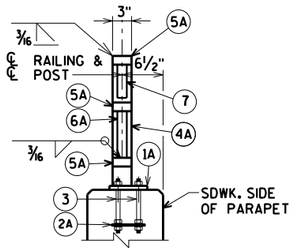
*ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING.



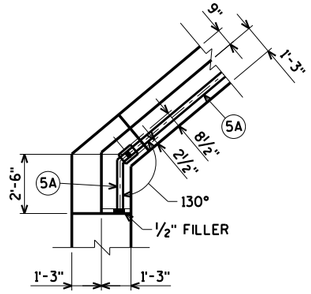
DETAIL A



SECTION B-B

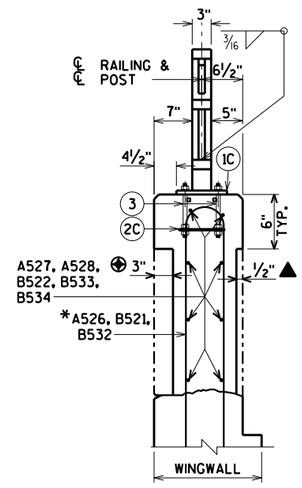


END VIEW

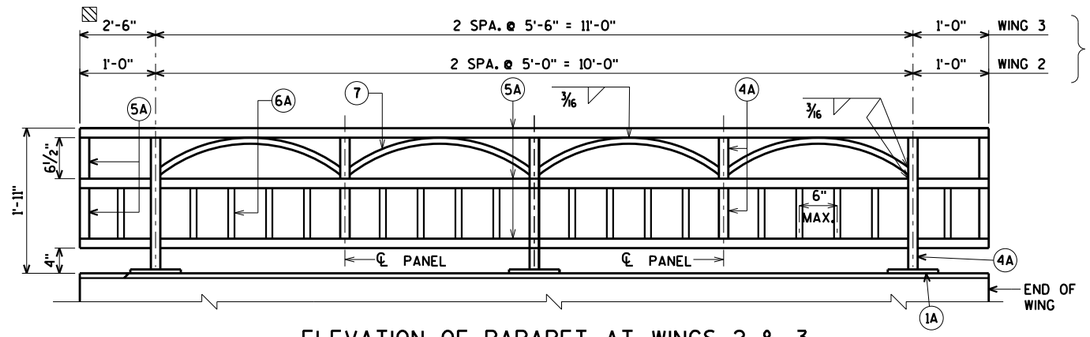


DETAIL B

PLAN VIEW OF RAIL OVERHANG AT WING 3.



END VIEW



ELEVATION OF PARAPET AT WINGS 2 & 3

(SEE SHEETS 7 AND 10 FOR WING DETAILS)

▨ OVERHANG IS BENT AT WING 3. SEE DETAIL B.

▲ ARCHITECTURAL SURFACE TREATMENT WITH ½" MAXIMUM RELIEF.

⊕ ARCHITECTURAL SURFACE TREATMENT. FOR DETAILS SEE SHEET 3

WORK THIS SHEET WITH SHEET 18

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

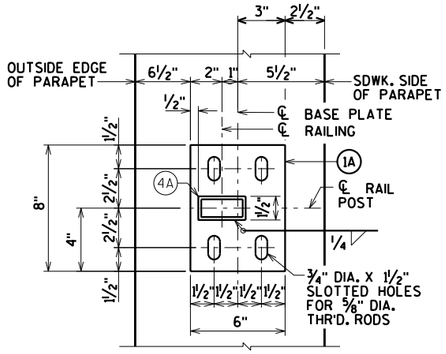
RAILING STEEL TYPE "C3" AND PARAPET DETAILS

SHEET 17 OF 19
68

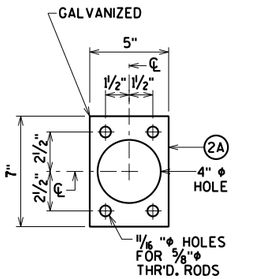
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

8

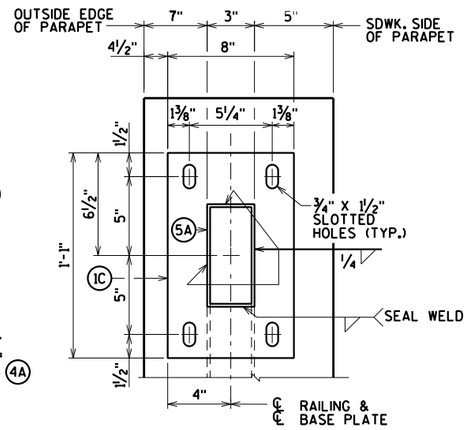
8



TYPICAL RAIL POST BASE PLATE
FOR 3"x1½"x3⁄16" POSTS (4A)



ANCHOR PLATE
FOR 3"x1½"x3⁄16" POSTS (4A)



END RAIL BASE PLATE

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

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

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

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

(3) ⅝" DIA. X 9" LONG, TYPE 316 STAINLESS STEEL THREADED RODS (MIN. TENSILE STRENGTH = 70 KSI) WITH NUT AND WASHERS OF SAME ALLOY GROUP. ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS ⅝-INCH, EMBED 7" IN CONCRETE FOR RAIL POSTS, EMBED 5" IN CONCRETE FOR END RAILS. ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.

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

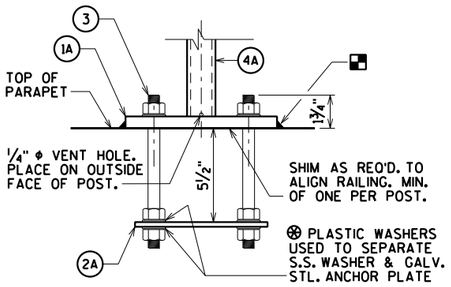
(5A) STRUCTURAL TUBING 3" X 1½" X 3⁄16" RAILS. WELD TO NO. 1 & NO. 4. INSIDE OF TUBE TO BE PAINTED AT ALL FIELD ERECTION & EXPANSION JOINTS.

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

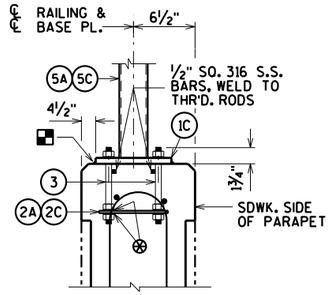
(7) BAR 1" X 1". BEND TO REQUIRED RADIUS. WELD TO NO. 4 & 5.

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

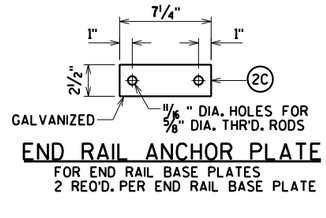
(10A) RECTANGULAR SLEEVE FABRICATED FROM 3⁄16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ WING 1 JT.)



ANCHORAGE FOR RAIL POSTS
NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.



ANCHORAGE FOR END RAIL
NOTE: ANCHOR PLATES NOT REQ'D. WHEN ADHESIVE ANCHORS ARE USED.



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

NOTES
BID ITEM SHALL BE "RAILING STEEL TYPE C3 B-60-134", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN.

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

ALL PLATES, BARS, AND RECTANGULAR SLEEVES SHALL CONFORM TO ASTM A709 GRADE 36. ALL STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B.

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

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

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

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

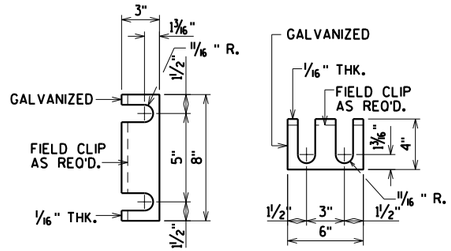
ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

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

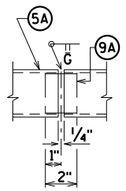
VENT HOLES SHALL BE DRILLED IN POST AND RAIL MEMBERS AS REQUIRED TO FACILITATE GALVANIZING AND DRAINAGE.

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

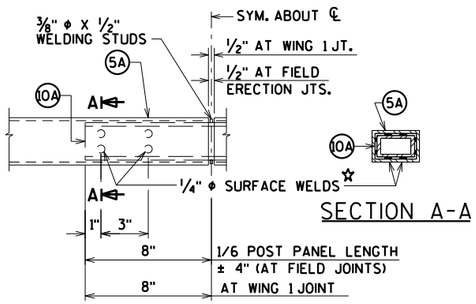
TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.



RAIL POST SHIM DETAIL
(2 SETS PER POST)

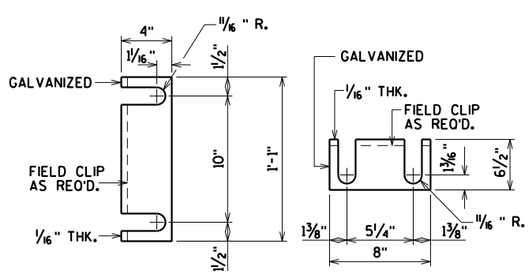


SHOP RAIL SPLICE DETAIL
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION A-A

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



END RAIL SHIM DETAIL
(2 SETS PER POST)

WORK THIS SHEET WITH SHEET 17

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

RAILING STEEL TYPE "C3" DETAILS

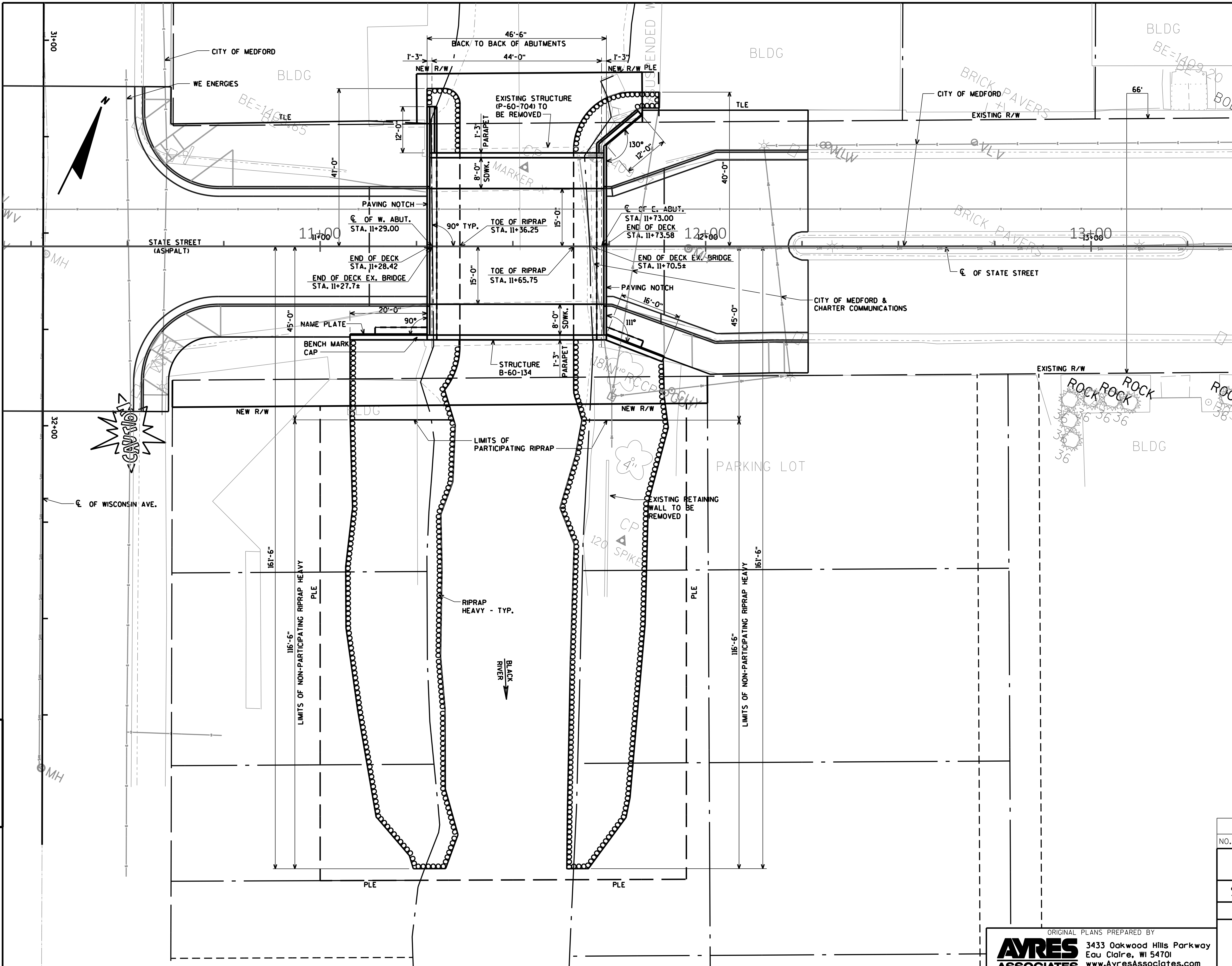
SHEET 18 OF 19
69

7/31/2018

PENTABLE:BReau_shd_util.tbl

STATE PROJECT NUMBER

8890-00-70


CITY OF MEDFORD
WE ENERGIES
BLDG
46'-6"
BACK TO BACK OF ABUTMENTS
44'-0"
1'-3"
NEW R/W
NEW R/W PLE
EXISTING STRUCTURE (P-60-704) TO BE REMOVED
TLE
12'-0"
1'-3" PARAPET
41'-0"
8'-0" SDWK.
130°
12'-0"
40'-0"
PAVING NOTCH
℄ OF W. ABUT. STA. 11+29.00
90° TYP.
TOE OF RIPRAP STA. 11+36.25
15'-0"
℄ OF E. ABUT. STA. 11+73.00
END OF DECK STA. 11+73.58
STATE STREET (ASHPALT)
11+00
12+00
13+00
END OF DECK STA. 11+28.42
END OF DECK EX. BRIDGE STA. 11+27.7±
TOE OF RIPRAP STA. 11+65.75
END OF DECK EX. BRIDGE STA. 11+70.5±
CITY OF MEDFORD & CHARTER COMMUNICATIONS
℄ OF STATE STREET
EXISTING R/W
66'
20'-0"
90°
NAME PLATE
BENCH MARK CAP
16'-0"
111°
45'-0"
STRUCTURE B-60-134
NEW R/W
LIMITS OF PARTICIPATING RIPRAP
PARKING LOT
EXISTING RETAINING WALL TO BE REMOVED
℄ OF WISCONSIN AVE.
31+00
32+00
161'-6"
116'-6"
LIMITS OF NON-PARTICIPATING RIPRAP HEAVY
PLE
RIPRAP HEAVY - TYP.
BLACK RIVER
ROCK

ORIGINAL PLANS PREPARED BY

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-60-134

DRAWN BY CJM | PLANS CK'D. CBM

RIPRAP HEAVY LAYOUT

SHEET 19 OF 19

8

$PRFNAME$
U:±42-1071.00 - City Medford - State St over Black River, Taylor County±Structures±Final±421071_riprap.DGN

5/24/2018

PENTABLE:BReau_shd_util.tbl

STATE STREET

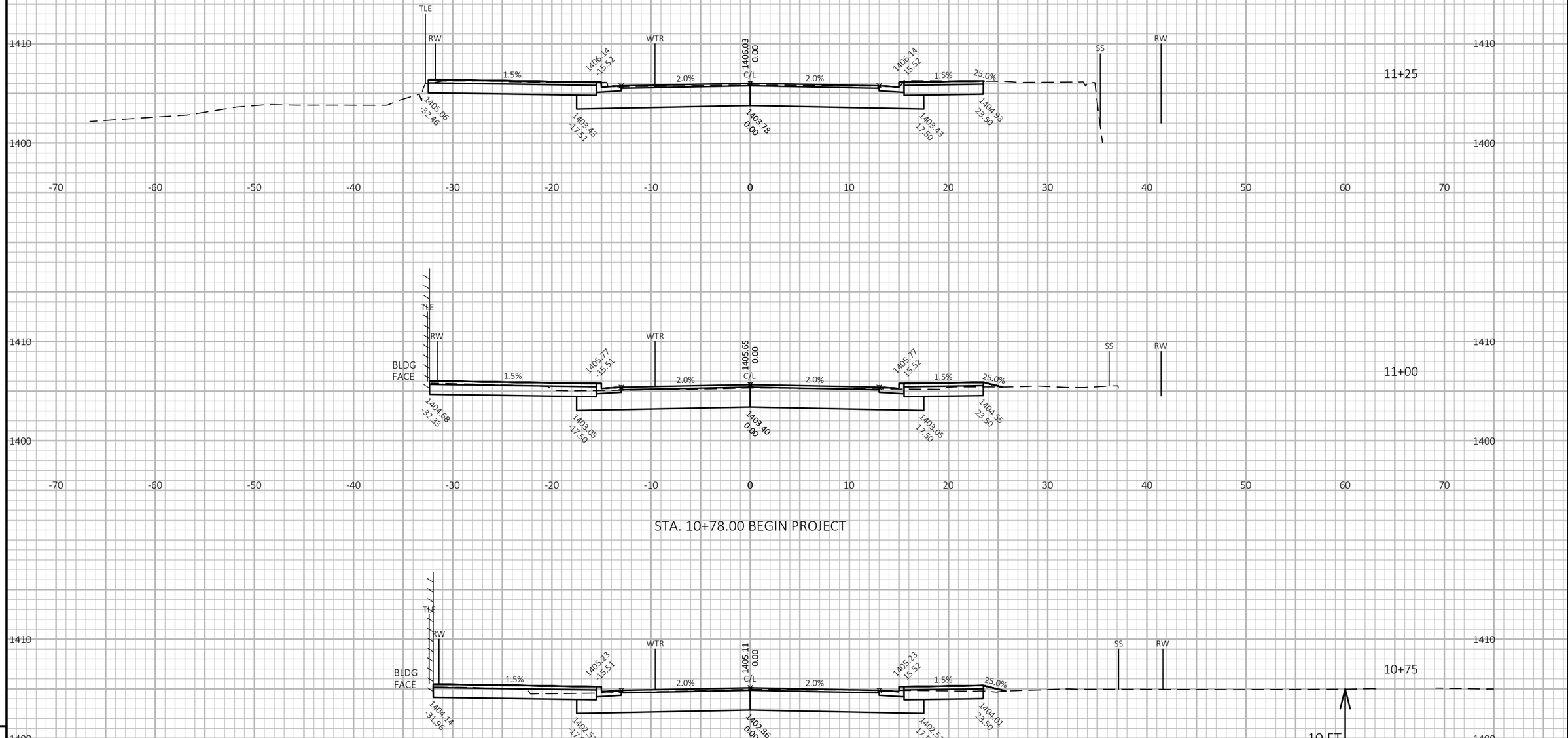
STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.30	MASS ORDINATE NOTE 3
10+03	0.00	196.00	0.00	0	0	0	0	0
10+25	22.00	196.00	0.00	160	0	160	0	160
10+50	25.00	196.00	0.00	181	0	341	0	341
10+75	25.00	91.93	0.74	133	0	474	0	474
11+00	25.00	88.81	0.43	84	1	558	1	557
11+25	25.00	104.86	0.00	90	0	648	1	646
11+75	0.00	101.19	0.00	0	0	648	1	646
12+00	25.00	136.39	0.00	110	0	758	1	756
12+25	25.00	146.07	0.00	131	0	889	1	887
				889	1			

BLACK RIVER

STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.30	MASS ORDINATE NOTE 3
50+25	0.00	0.00	0.00	0	0	0	0	0
50+40	15.00	82.90	0.00	23	0	23	0	23
50+50	10.00	174.45	0.00	48	0	71	0	71
50+75	25.00	203.10	0.00	175	0	245	0	245
51+00	25.00	215.50	0.00	194	0	439	0	439
51+25	25.00	221.16	0.00	202	0	641	0	641
51+50	25.00	237.30	0.00	212	0	854	0	854
51+68	18.00	271.90	0.00	170	0	1,023	0	1,023
51+75	7.00	173.90	0.00	58	0	1,081	0	1,081
				1,081	0			

NOTE 1- CUT	CUT INCLUDES EXISTING ASPHALT PAVEMENT. ASSUMED TO BE REUSED AS FILL OUTSIDE THE 1:1 ROAD CORE.
NOTE 2- FILL	VOLUME NEEDED TO BE FILLED.
NOTE 3- MASS ORDINATE	(CUT)-(FILL*1.30)

STRUCTURE B-60-134



STA. 10+78.00 BEGIN PROJECT

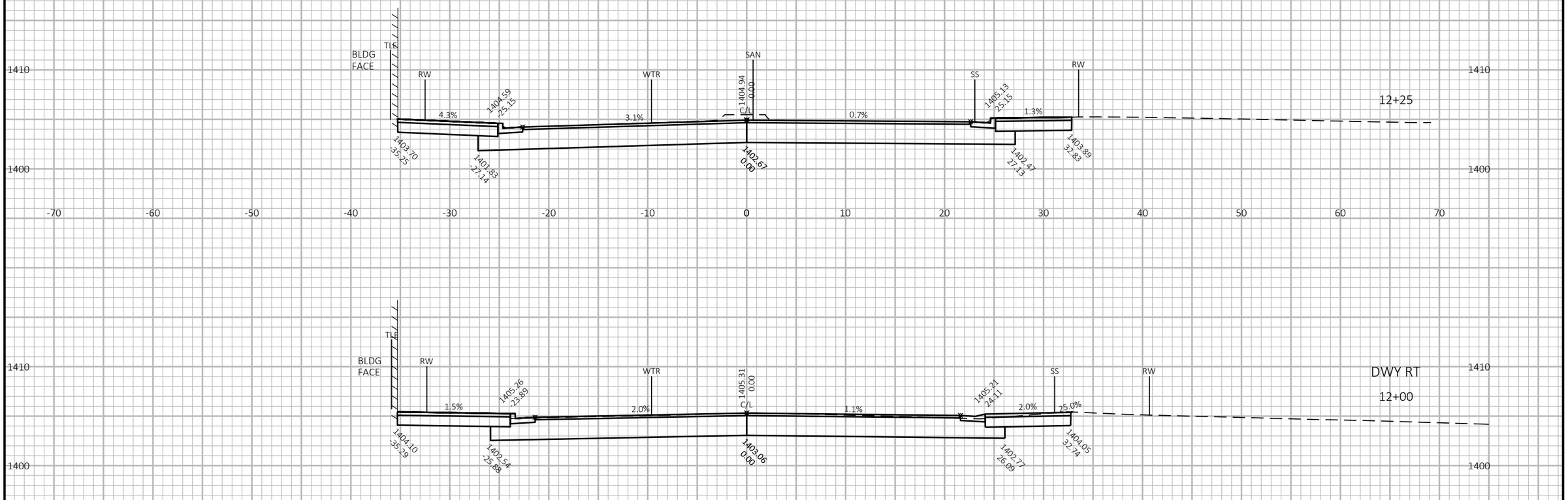
STA. 10+00.00 BEGIN CONSTRUCTION

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	CROSS SECTIONS	SHEET 72	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 1 CROSS SECTIONS

PLOT DATE : 7/19/2018 11:54 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

STA. 12+26.60 END PROJECT

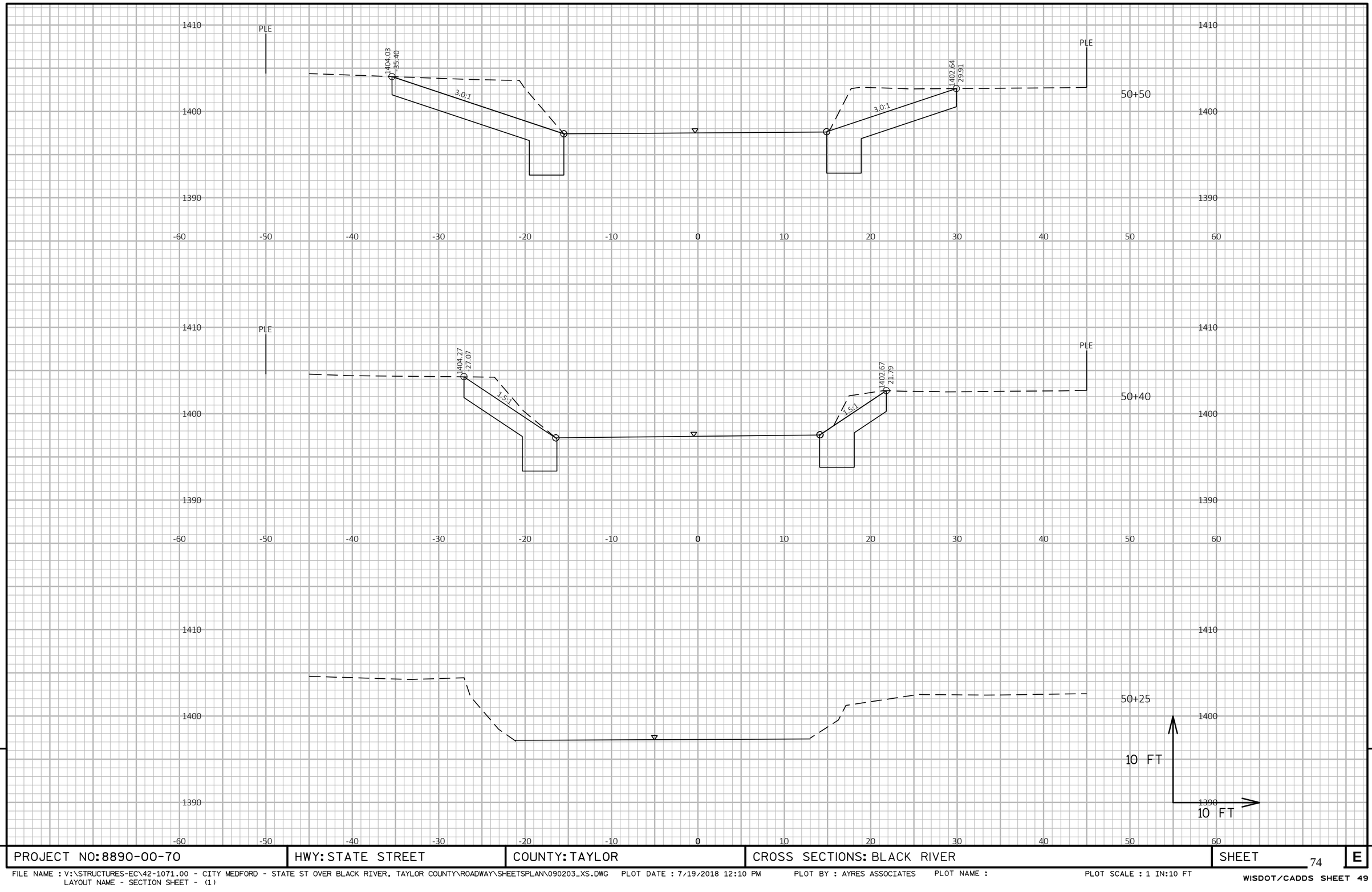


PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	CROSS SECTIONS	SHEET 73	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\090201_XS.DWG
LAYOUT NAME - 2 CROSS SECTIONS

PLOT DATE : 7/19/2018 11:54 AM PLOT BY : AYRES ASSOCIATES PLOT NAME : **PLOT SCALE :** 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

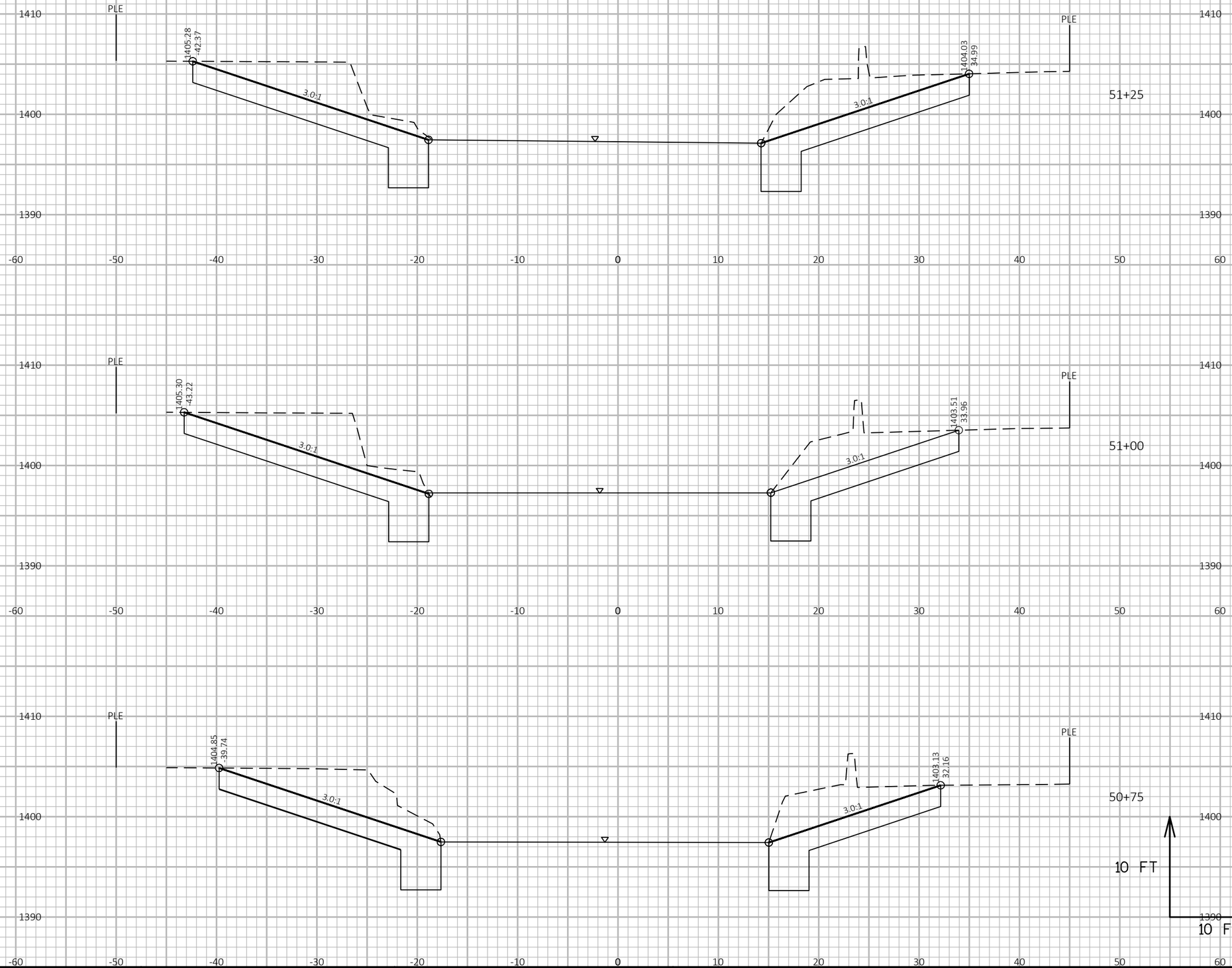
WISDOT/CADDS SHEET 49



PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	CROSS SECTIONS: BLACK RIVER	SHEET 74	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\090203_XS.DWG PLOT DATE : 7/19/2018 12:10 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:10 FT
LAYOUT NAME - SECTION SHEET - (1)

WISDOT/CADDS SHEET 49



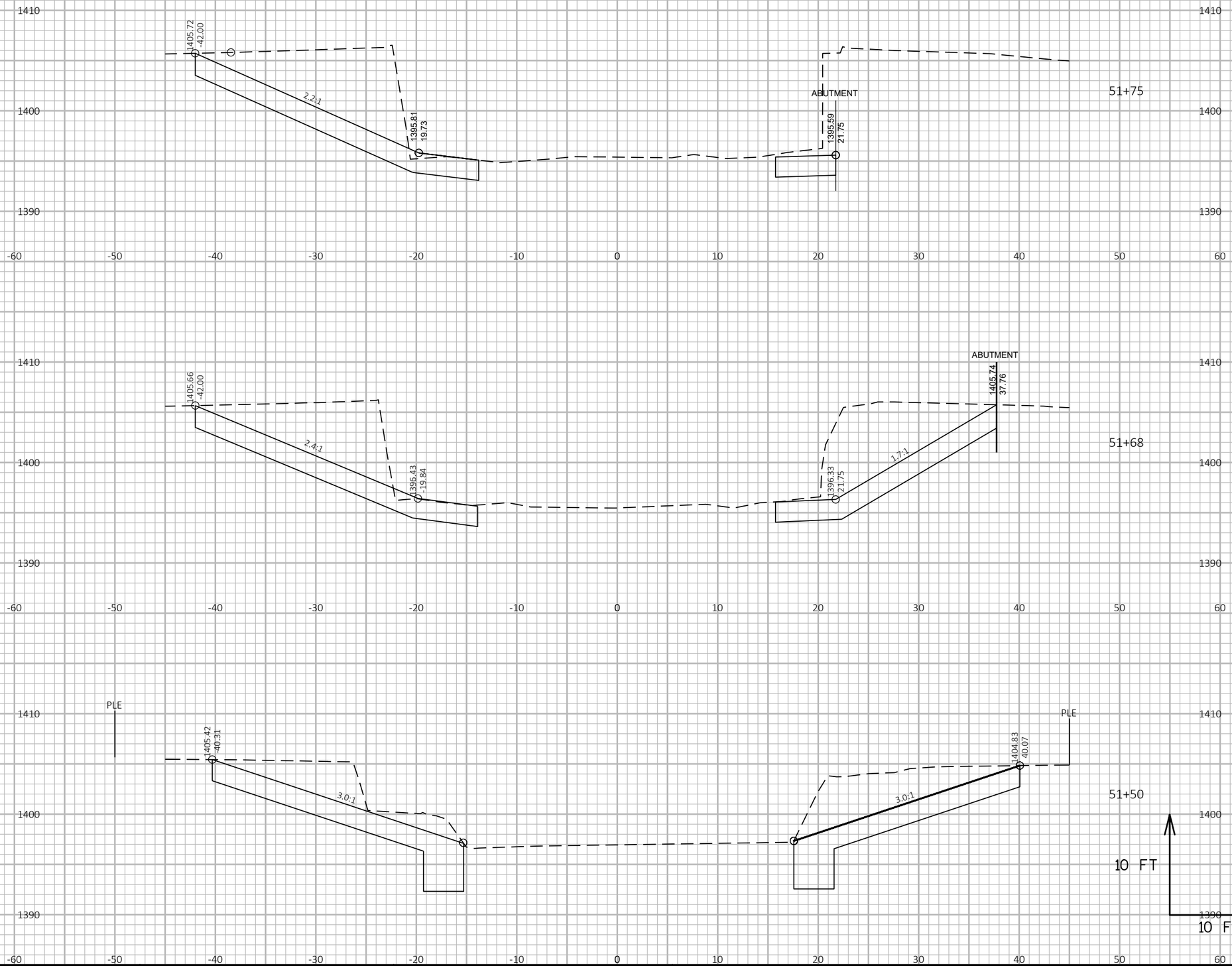
9

9

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	CROSS SECTIONS: BLACK RIVER	SHEET 75	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\090203_XS.DWG PLOT DATE : 7/19/2018 12:10 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:10 FT
LAYOUT NAME - SECTION SHEET - (2)

WISDOT/CADDS SHEET 49



9

9

PROJECT NO: 8890-00-70	HWY: STATE STREET	COUNTY: TAYLOR	CROSS SECTIONS: BLACK RIVER	SHEET	E

FILE NAME : V:\STRUCTURES-EC\42-1071.00 - CITY MEDFORD - STATE ST OVER BLACK RIVER, TAYLOR COUNTY\ROADWAY\SHEETSPLAN\090203_XS.DWG PLOT DATE : 7/19/2018 12:10 PM PLOT BY : AYRES ASSOCIATES PLOT NAME : PLOT SCALE : 1 IN:10 FT
LAYOUT NAME - SECTION SHEET - (3)

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov