

BRIDGE REPLACEMENT - PPCB
LETTING DATE

BRM-5657(614)- -8N-33 AUGUST 19, 2025

SECTION 404 PERMIT AND CONDITIONS

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NO. 14, USACE PROJECT NO. MVR-2024-742. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT WEBSITE (<http://www.envpermits.iowadot.gov/>). THE U.S. ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

IOWA DNR FLOODPLAIN CONSTRUCTION PERMIT

THIS PROJECT IS COVERED BY THE IOWA DEPARTMENT OF NATURAL RESOURCES FLOODPLAIN CONSTRUCTION PERMIT NO. FP-2024-1096

281-1
09-28-22



Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE
URBAN ROAD SYSTEM

CITY OF OELWEIN

BRM-5657(614)- -8N-33

BRIDGE REPLACEMENT - PPCB

IN THE CITY OF OELWEIN ON 10th ST SW

OVER OTTER CREEK, S28 T91 R09

SCALES: As Noted

REFER TO THE PROPOSAL FORM FOR LIST OF APPLICABLE SPECIFICATIONS.

SEE SHEET C.4 FOR STANDARD ROAD PLAN TABULATION

R-9W



SECTION 28

B.O.P. STATION 8+25
E.O.P. STATION 12+00
FHWA STRUCTURE NO. 8920

DESIGN SPEED: 40 MPH

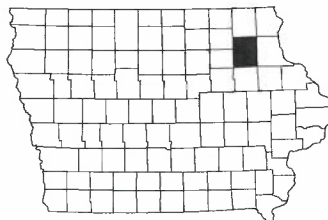
TRAFFIC CONTROL PLAN

THIS ROAD SHALL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION. ALL TRAFFIC CONTROL DEVICES, PROCEDURES, AND LAYOUTS WITHIN THE LIMITS OF THIS PROJECT SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, (MUTCD) AS ADOPTED BY THE DEPARTMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC), CHAPTER 130." THE CONTRACTOR SHALL FURNISH TRAFFIC CONTROL INCLUDING BARRICADES AND SIGNS IN ACCORDANCE WITH TC-252 AND THE MUTCD. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DETOUR SIGNING. CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL DEVICES ON A 24 HOUR PER DAY, 7 DAYS A WEEK BASIS DURING THE CONSTRUCTION PERIOD. CONTRACTOR TO PROVIDE 24 HOUR CALL NUMBER FOR REPAIR OF DEFICIENCIES.

APPROX. SCALE:

0 1/4 1/2
SCALE IN MILES

LOCATION MAP



WORKING DRAWINGS WILL BE CHECKED BY ORIGIN DESIGN
137 MAIN STREET, DUBUQUE, IA 52001
563-556-2464 (PHONE); 563-556-7811 (FAX)
COURTNEY WAND
COURTNEY.WAND@ORIGINDSIGN.COM

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CITY OF OELWEIN

PROJECT NUMBER BRM-5657(614)- -8N-33

COVER SHEET

SHEET: A.1

REV: .

TOTAL SHEETS
40

PROJECT NUMBER
BRM-5657(614)- -8N-33

INDEX OF SHEETS

105-3
10-18-05

NO.	DESCRIPTION
A.1 - A.2	TITLE SHEET, LEGENDS AND ABBREVIATIONS
B.1	TYPICAL SECTIONS
C.1 - C.4	ESTIMATE OF QUANTITIES, STANDARD ROAD PLANS, & GENERAL INFORMATION
* D.1	PLAN & PROFILES (MAINLINE)
* H.1	EASEMENT PLAN
J.1	DETOUR PLAN
L.1	PAVING PLANS
* SPS.1-SPS.2	SOIL BORINGS
U.1 - U.6	APPROACH DETAILS, BRIDGE RAILING DETAILS, MISC DETAILS
* V.1	SITUATION PLAN
V.2	BERM GRADING PLAN
V.3 - V.12	BRIDGE DETAILS
* V.13 - V.15	BRIDGE DETAILS
V.16 - V.21	BRIDGE DETAILS
* COLOR PLAN SHEETS	

MILEAGE SUMMARY

105-1
09-27-94

DIV.	LOCATION	LIN. FT.	MILES
1	10TH STREET SW STA 08+25 TO 12+00	375	0.07
TOTAL		375	0.07



UTILITY CONTACTS:

ALLIANT ENERGY (GAS & ELECTRIC)
COMPANY NAME: ALLIANT ENERGY
DESIGN CONTACT: CRISTEN GALLUP
PHONE: 319 283 9023
EMAIL: CRISTENGALLUP@ALLIANTENERGY.COM

CENTURYLINK/LUMEN
COMPANY NAME : CENTURYLINK/LUMEN
DESIGN CONTACT: KRYSTAL HUNTER
PHONE: 319 540 1889
EMAIL: KRYSTAL.HUNTER@LUMEN.COM

ALLIANT ENERGY (FIBER)
COMPANY NAME: ALLIANT ENERGY
DESIGN CONTACT: LAURA SEALS
PHONE: 319 786 4198
EMAIL: LAURASEALS@ALLIANTENERGY.COM

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	NOAH HOFRICHTER	CIVIL
U.1	COURTNEY WAND	STRUCTURAL
SPS.1	MATT REISDORFER	GEOTECHNICAL



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA

FOR ORIGIN DESIGN CO.
Noah Hofrichter 5/13/2025
NOAH HOFRICHTER DATE
PE 24665 12/31/2025
LICENSE # RENEWAL DATE

PAGES OR SHEETS COVERED BY THIS CERTIFICATION:
INDEX THIS SHEET EXCEPT FOR SPS, U, & V SHEETS

P:\23\036\DRAWINGS\CIVIL\23036 ZZ A SHEETS.DWG 12/12/2024 3:57:26 PM JOE RETTENBERGER

ABBREVIATIONS

Δ	CENTRAL ANGLE	FD	FLOOR DRAIN	R	RADIUS
A/C	AIR CONDITIONING(ER)	FDN	FOUNDATION	R&R	REMOVE & REPLACE
AC	ACRES	F.E.	FIELD ENTRANCE	R&S	REMOVE & SALVAGE
A.F.F.	ABOVE FINISHED FLOOR	FES	FLARED END SECTION	RCB	REINFORCED CONCRETE BOX
AGG	AGGREGATE	F-F	FACE TO FACE	RCAP	REINFORCED CONCRETE ARCH PIPE
AOH	ARROW ON HYDRANT	FFE	FINISH FLOOR ELEVATION	RCP	REINFORCED CONCRETE PIPE
ARCH	ARCHITECTURAL	FG	FORM GRADE	RD	ROAD
ASPH	ASPHALT	FIN GR	FINISHED GRADE	REBAR	REINFORCING BAR
AVG	AVERAGE	FL	FLOWLINE	REF	REFERENCE
		FLG	FLANGE	REINF	REINFORCING/REINFORCED
		FLR	FLOOR	REV	REVISION
B-B	B/C - B/C	FM	FORCE MAIN	RIM	RIM ELEVATION
B/C, BOC	BACK OF CURB	FND	FOUND	ROW	RIGHT OF WAY
B/DITCH	BOTTOM OF DITCH	FT	FOOT/FEET	RP	RADIUS POINT
BFP	BACKFLOW PREVENTOR	FTG	FOOTING	RS	RESILIENT SEAT
B/L	BASE LINE	FUT	FUTURE	RT	RIGHT
B/S	BOTTOM OF SLOPE	FV	FIELD VERIFY		
BLDG	BUILDING			S	SOUTH
B.M.	BENCH MARK	G	GUTTER	S=	SUPERELEVATION
BOP	BEGINNING OF PROJECT	GC	GENERAL CONTRACTOR	SAN	SANITARY
BOT	BOTTOM	GALV	GALVANIZED	SANS	SANITARY SEWER
BSMT	BASEMENT	GND	GROUND	SB	SOIL BORING
BV	BUTTERFLY VALVE	GRAN	GRANULAR	SCH	SCHEDULE
		GRD	GRADE	SD	SUB DRAIN
		GV	GATE VALVE	SEC	SECTION
				SE'LY	SOUTHEASTERLY
C&G	CURB AND GUTTER			SF	SQUARE FOOT
CATV	CABLE TELEVISION	HMA	HOT MIX ASPHALT	S.F.D.	STEP FOOTING DOWN
CB	CATCH BASIN	HORIZ	HORIZONTAL	SHT	SHEET
C-C	CENTER TO CENTER	HPT	HIGH POINT	SIG.	SIGNAL
CF	CUBIC FEET	HSD	HEADLIGHT STOPPING DISTANCE	SIM.	SIMILAR
CH	CHORD	HYD	HYDRANT	S'LY	SOUTHERLY
CH BRG	CHORD BEARING			SOG	SLAB ON GRADE
CIP	CAST IRON PIPE	ID	INSIDE DIA/INSIDE DIM	SPEC	SPECIFICATION
C-I-P	CAST-IN-PLACE	IE	INVERT ELEVATION	SS	STAINLESS STEEL
CISP	CAST IRON SOIL PIPE	IMP	IMPROVEMENTS	SSD	STOPPING SIGHT DISTANCE
CJ	CONTROL JOINT	IN	INCHES	ST	STREET
☉ OR CL	CENTERLINE	INV	INVERT	STA	STATION
CLR	CLEAR	IP	IRON PIPE	STD	STANDARD
CMP	CORRUGATED METAL PIPE			STL	STEEL
CMU	CONCRETE MASONRY UNIT	JB	JUNCTION BOX	STM	STORM
CO	CLEAN OUT	JT	JOINT/JOINT LENGTH	STMS	STORM SEWER
COL	COLUMN	K	RATE OF VERT CURVATURE	SW'LY	SOUTHWESTERLY
COMP	COMPACTED			SY	SQUARE YARD
CONC	CONCRETE	L	LENGTH OF CURVE	T	TANGENT LENGTH
CONN	CONNECTION	LAT	LATERAL	T/B	TOP OF BANK
CONST	CONSTRUCTION	LF	LINEAL FOOT	T/DITCH	TOP OF DITCH
CONT	CONTINUOUS	LONG	LONGITUDINAL	T/C, TC	TOP OF CURB
COR	CORNER	LP	LIGHT POLE	T/GRAV	TOP OF GRAVEL
CP	CONTROL POINT	LPT	LOW POINT	T/WALL	TOP OF WALL
CPE	CORRUGATED POLYETHYLENE PIPE	LT	LEFT	T/P, TP	TOP OF PAVEMENT
CRST	CRUSHED STONE			T/S	TOP OF SLOPE
CSP	CORRUGATED STEEL PIPE	MAX	MAXIMUM	T/SUB	TOP OF SUBGRADE
CTRD	CENTERED	ME	MATCH EXISTING	T/W, TW	TOP OF WALK
CTR	CENTER	MH	MANHOLE	T/WM	TOP OF WATER MAIN
CULT	CULTIVATED	MIN	MINIMUM	T & B	TOP AND BOTTOM
CV	CHECK VALVE	MISC	MISCELLANEOUS	T.O.B.	TOP OF BEAM
CY	CUBIC YARD	MON	MONUMENT	T.O.B.L.	TOP OF BRICK LEDGE
		MP	MILE POST	T.O.C.	TOP OF CONCRETE
				T.O.E.F.	TOP OF EXISTING FOOTING
D	DEGREE OF CURVE	N	NORTH	T.O.F.	TOP OF FOOTING
DIA (ø)	DIAMETER	N/A	NOT APPLICABLE	T.O.M.	TOP OF MASONRY
DIP	DUCTILE IRON PIPE	N'E'LY	NORTHEASTERLY	T.O.P.	TOP OF PIER
DN	DOWN	N'LY	NORTHERLY	T.O.S.	TOP OF STEEL
DRWY	DRIVEWAY	NO/#	NUMBER	TCE	TEMP CONSTRUCTION EASEMENT
DS	DOWNSPOUT	NIC	NOT IN CONTRACT	TEL	TELEPHONE
DWG(S)	DRAWING(S)	NTS	NOT TO SCALE	TEMP	TEMPORARY
DWL(S)	DOWEL(S)	NW'LY	NORTHWESTERLY	THK	THICK / THICKNESS
				TWP	TOWNSHIP
				TYP	TYPICAL
				U	UTILITY
E	EAST	OC	ON CENTER	UAC	USE AS CONSTRUCTED
E'LY	EASTERLY	OD	OUTSIDE DIAMETER	UE	UTILITY EASEMENT
EA	EACH			UL	UNDERWRITERS LABORATORIES, INC.
EJ	EXPANSION JOINT	PC	POINT OF CURVE	ULFM	UNDERWRITERS LABORATORIES FACTORY MUTUAL
EL	ELEVATION	PERF	PERFORATED	UNO	UNLESS NOTED OTHERWISE
ELEC	ELECTRICAL	PI	POINT OF INTERSECTION		
ELEV	ELEVATOR	P/L	PROPERTY LINE	VAR	VARIES
EMBED	EMBEDMENT	PM	PRINCIPAL MERIDIAN	VC	VERTICAL CURVE
ENGR	ENGINEER	POB	POINT OF BEGINNING	VCP	VITRIFIED CLAY PIPE
ENTR	ENTRANCE	POC	POINT OF CURVE	VER	VERIFY
EOP	END OF PROJECT	POT	POINT OF TANGENT	VERT	VERTICAL
EOR	END OF RADIUS	PRC	POINT OF REVERSE CURVE	VOL	VOLUME
E/P	EDGE OF PAVEMENT	PROP	PROPOSED	VPC	VERT POINT OF CURVE
EQ	EQUAL	PRV	PRESSURE REDUCING VALVE	VPI	VERT POINT OF INTERSECTION
E/S	EDGE OF SHOULDER	PT	POINT OF TANGENCY	VPT	VERT POINT OF TANGENCY
ESMT	EASEMENT	PVC	POLYVINYL CHLORIDE		
EST	ESTIMATE	PVMT	PAVEMENT	W	WEST
EX	EXISTING	QTY	QUANTITY	W/	WITH
EXC	EXCAVATE/EXCAVATION			W'LY	WESTERLY
EXP	EXPANSION			WM	WATER MAIN
EXT	EXTERIOR			W/O	WITHOUT
EXTD	EXTEND			W.P.	WORKING POINT
EW	EACH WAY			WD	WOOD
				WSO	WATER SHUT OFF
				WV	WATER VALVE
				WWF	WELDED WIRE FABRIC
				YD	YARD

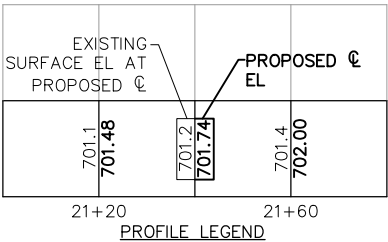
LEGEND

EXISTING		PROPOSED		EXISTING		PROPOSED	
---	PROPERTY/ROW LINE	---			CATCH BASIN		
---	EASEMENT	---			AREA INTAKE		
---	SECTION LINE	---			STORM MANHOLE		
---	QUARTER SECTION LINE	---			SANITARY MANHOLE		
---	QUARTER QUARTER SECTION LINE	---			UTILITY MANHOLE		
---	CENTERLINE	---			WATER VALVE MANHOLE		
---	STORM SEWER	---	D		FIRE HYDRANT		
---	SUB DRAIN	---	SD		WATER SHUT OFF		
---	SANITARY SEWER	---	S		WATER VALVE		
---	FORCE MAIN	---	FM		YARD HYDRANT		
---	WATER LINE	---			GAS VALVE		
---	GAS LINE	---	G		SIGN		
---	OVERHEAD ELECTRIC	---	OHE		UTILITY POLE		
---	UNDERGROUND ELECTRIC	---	E		UTILITY POLE WITH LIGHT		
---	OVERHEAD TELEPHONE	---	OHT		TRAFFIC SIGNAL POLE		
---	UNDERGROUND TELEPHONE	---	T		GUY ANCHOR		
---	OVERHEAD TELEVISION	---	OHTV		LIGHT POLE		
---	UNDERGROUND TELEVISION	---	TV		UTILITY PEDESTAL		
---	FIBER OPTIC	---	FIB		WELL		
---	WIRE FENCE	---	X		MAILBOX		
---	CHAINLINK FENCE	---	O		WATER LEVEL		
---	WOOD FENCE	---	□		BOLLARD		
---	SILT FENCE	---	SF		SOIL BORING		
---	PERIMETER CONTROL	---	PC		POST INDICATOR VALVE		
---	CONTOUR LINE	---	000		DECIDUOUS TREE W/ TRUNK DIA.		
---	RAILROAD TRACKS	---			CONIFEROUS TREE W/ TRUNK DIA.		
---	GUARD RAIL	---			SHRUB OR BUSH		
---	SPOT ELEVATION	---	+ 0.00				
---	DIRECTION OF FLOW	---					
---	TREE LINE	---					
---	REVTMENT EXTENTS	---					
---	EROSION STONE	---					

UTILITY LINES WITH DESIGNATORS WRAPPED IN PARENTHESIS SUCH AS (W) or (G) ARE LOCATED BASED ON MAP OR GIS DATA

SURVEY

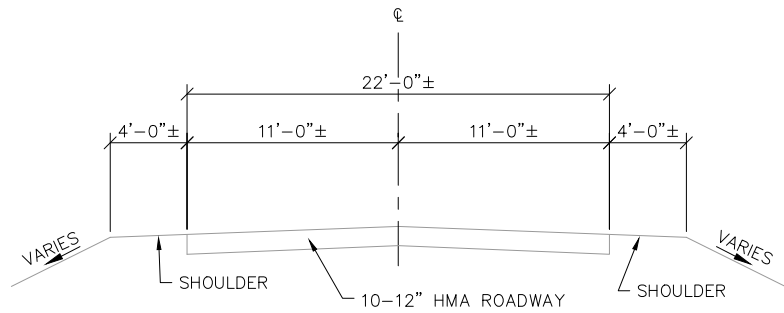
■	FOUND REBAR
●	FOUND IRON PIPE
○	SET REBAR



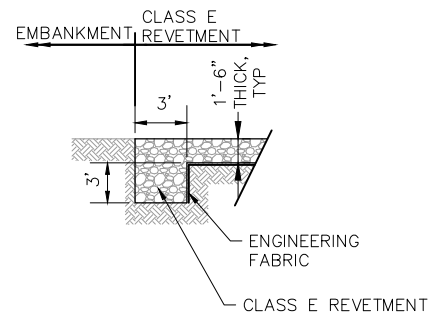
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

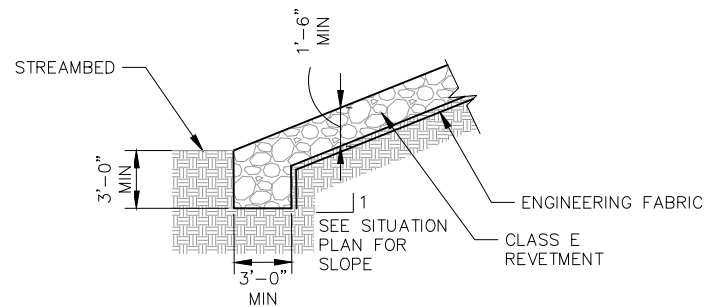
71'-0" END SPANS 97'-0" CENTER SPAN



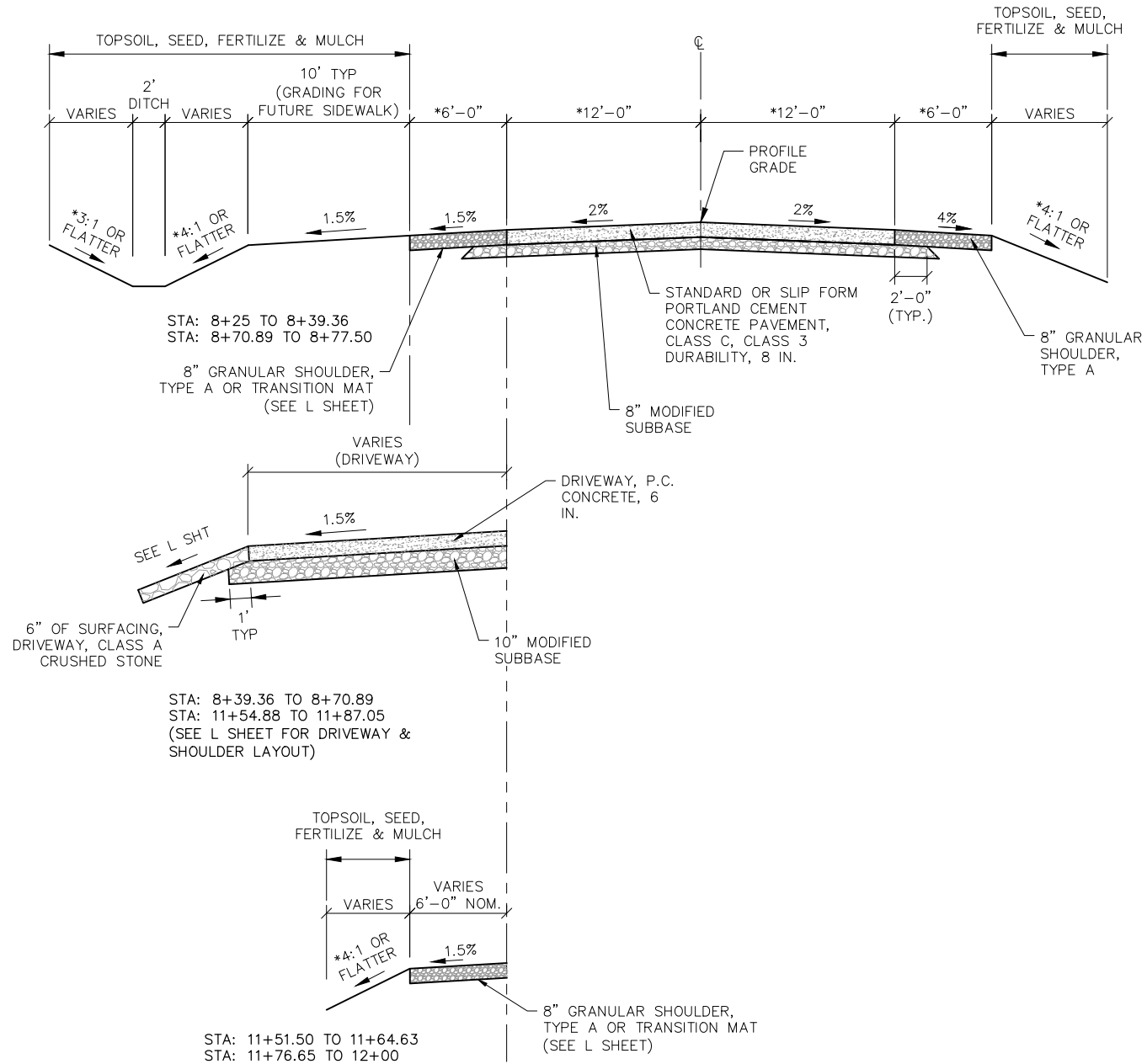
1
B.1 EXISTING SECTION
NOT TO SCALE



3
B.1 TRENCH END ANCHOR DETAIL
NOT TO SCALE



4
B.1 REVETMENT TOE-IN SECTION
NOT TO SCALE



* FROM STATION 8+25 TO 8+39.36, STATION 11+51.50 L TO 12+00 L, & 11+75 R TO 12+00 R, TAPER BACK TO EX GRADES AND PAVING WIDTHS

2
B.1 TYPICAL SECTION
NOT TO SCALE

STA: 8+25 TO 8+77.50
STA: 11+51.50 TO 12+00

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

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10th STREET IN OELWEIN BRIDGE REPLACEMENT - BRM-5657(614)- -8N-33							
REF. NO.	ITEM CODE	BID ITEM DESCRIPTION	UNITS	ROADWAY QUANTITIES	BRIDGE QUANTITIES		TOTAL
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.72			0.72
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY & BORROW	CY	295			295
3	2104-2713020	EXCAVATION, CLASS 13, CHANNEL	CY		4107		4107
4	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	241			241
5	2115-0100000	MODIFIED SUBBASE	CY	85			85
6	2121-7425010	GRANULAR SHOULDERS, TYPE A	TON	55			55
7	2301-0685550	BRIDGE APPROACH PAVEMENT, AS PER PLAN	SY	154.2			154.2
8	2301-1033080	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	SY	268			268
9	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	42			42
10	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS		1		1
11	2402-2720000	EXCAVATION, CLASS 20	CY		104		104
12	2402-2721000	EXCAVATION, CLASS 21	CY		106		106
13	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY		495.0		495
14	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB		128331		128331
15	2407-0562870	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB70	EACH		10		10
16	2407-0562895	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB95	EACH		5		5
17	2408-7800000	STRUCTURAL STEEL	LB		5787.2		5787.2
18	2414-6424110	CONCRETE BARRIER RAILING	LF		476		476
19	2414-6460000	ORNAMENTAL METAL RAILING	LF		261.6		261.6
20	2417-0225024	APRONS, METAL, 24 IN. DIA.	EACH	1			1
21	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.	LF	28			28
22	2501-0201057	PILES, STEEL, HP 10 X 57	LF		1100		1100
23	2501-6335010	PREBORED HOLES	LF		183.2		183.2
24	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF		106		106
25	2507-3250005	ENGINEERING FABRIC	SY		1310		1310
26	2507-6800061	REVTMENT, CLASS E	TON		1250		1250
27	2510-6745850	REMOVAL OF PAVEMENT	SY	529			529
28	2515-2475006	DRIVEWAY, P.C. CONCRETE, 6 IN.	SY	56			56
29	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	1			1
30	2528-2518000	SAFETY CLOSURE	EACH	4			4
31	2528-8445110	TRAFFIC CONTROL	LS	1			1
32	2533-4980005	MOBILIZATION	LS	1			1
33	2599-9999005	34" TO 38" CONCRETE BARRIER TRANSITION SECTION, MODIFIED	EACH		4		4
34	2599-9999005	REMOVE AND REINSTALL EXISTING FLAP GATE, 24"	EACH	1			1
35	2599-9999005	CONCRETE BARRIER, APPROACH, MODIFIED, 16 FT	EACH	4			4
36	2599-9999009	CORING ROCK SOCKET	LF		24		24
37	2601-2634100	MULCHING	ACRE	1			1
38	2601-2636043	SEEDING AND FERTILIZING (RURAL)	AC	0.5			0.5
39	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	AC	0.5			0.5
40	2601-2700020	TRANSITION MAT	SF	240			240
41	2602-0000020	SILT FENCE	LF	450			450
42	2602-000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	450			450
43	2602-000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	225			225
44	2602-0000309	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA.	LF	575			575
45	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	575			575



800 556-4491

CITY OF OELWEIN

PROJECT NUMBER BRM-5657(614)- -8N-33

QUANTITIES

SHEET: C.1

REV: .

P:\23\036\DRAWINGS\CIVIL\23036.ZZ C SHEETS.DWG 12/12/2024 3:57:32 PM JOE RETTENBERGER

ESTIMATE REFERENCE INFORMATION		
DATA BELOW IS FOR INFORMATION ONLY AND DOES NOT CONSTITUTE A BASIS FOR EXTRA WORK ORDER REQUESTS		
REF. NO.	DESCRIPTION	BID ITEM DESCRIPTION
1	QUANTITY IN THE PLANS IS BASED ON THE AREAS SHOWN BETWEEN THE EXISTING EDGE OF GRANULAR SHOULDER AND SLOPE LIMITS FROM APPROXIMATELY STA 8+25 TO STA 12+00 BOTH SIDES. DO NOT DISTURB WETLAND AREA NOTED ON SHEET D.1 WITHOUT PRIOR APPROVAL OF THE ENGINEER. CITY WILL FELL ANY POTENTIAL BAT HABITAT TREES PRIOR TO MARCH 31, 2025. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL AND GRUBBING ASSOCIATED WITH ANY REMAINING MATERIALS, AND ALL EFFORTS NEEDED FOR ANY OTHER TREES OR BRUSH WITHIN THE GRADING LIMITS. PRIOR TO BIDDING, CONTRACTOR SHALL REVIEW EXISTING SITE CONDITIONS AND TO IDENTIFY TREES THAT NEED TO BE CLEARED AND GRUBBED TO CONFIRM THE EXTENT OF EFFORT REMAINING. INCLUDES REMOVAL OF ANY FENCE POSTS OR OTHER MISCELLANEOUS LANDSCAPING POSTS ENCOUNTERED WITHIN THE CONSTRUCTION LIMITS.	CLEARING AND GRUBBING
2	SEE SUMMARY TABLE ON C SHEETS FOR A BREAKDOWN OF VOLUMES ON EACH SIDE OF THE CREEK. CLASS 10 EXCAVATION INCLUDES EARTHWORK FOR ROADWAY EMBANKMENT, DITCHES, AND REVETMENT PLACEMENT OTHER THAN BETWEEN THE FACE OF THE PROPOSED BRIDGE ABUTMENTS. QUANTITY INDICATED IN THE PLANS REPRESENTS TOTAL CUT QUANTITY WITHIN THE LIMITS OF CLASS 10. QUANTITIES ARE ADJUSTED FOR PAVEMENT REMOVAL BUT ARE NOT ADJUSTED FOR TOPSOIL. SUFFICIENT CUT MATERIAL WILL BE AVAILABLE FROM THE CLASS 10 AND THE CLASS 13, CHANNEL BID ITEM SUCH THAT NO BORROW IS EXPECTED TO BE REQUIRED. CUT VOLUME ALSO INCLUDES EXCAVATION FOR EMBEDMENT OF REVETMENT, CLASS E AND REVETMENT TOE DETAIL THAT IS WITHIN THE LIMITS OF CLASS 10 EXCAVATION. MATERIAL DETERMINED TO BE SUITABLE BY THE ENGINEER MAY BE USED FOR EMBANKMENT CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR WASTING ANY UNSUITABLE OR EXCESS MATERIAL. MATERIAL MAY NOT BE WASTED ON WETLANDS OR WITHIN THE FLOODPLAIN. PAYMENT QUANTITY WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS.	EXCAVATION, CLASS 10, ROADWAY & BORROW
3	SEE SUMMARY TABLE ON C SHEETS FOR A BREAKDOWN OF VOLUMES ON EACH SIDE OF THE CREEK. CLASS 13 CHANNEL EXCAVATION INCLUDES THE AREA BETWEEN THE FACE OF PROPOSED BRIDGE ABUTMENTS. QUANTITY INDICATED IN THE PLANS REPRESENTS TOTAL CUT QUANTITY WITHIN THE LIMITS OF CLASS 13, CHANNEL. QUANTITIES ARE ADJUSTED FOR PAVEMENT REMOVAL BUT ARE NOT ADJUSTED FOR TOPSOIL. CUT VOLUME ALSO INCLUDES EXCAVATION FOR EMBEDMENT OF REVETMENT, CLASS E AND REVETMENT TOE DETAIL THAT IS WITHIN THE LIMITS OF CLASS 13, CHANNEL EXCAVATION. MATERIAL DETERMINED TO BE SUITABLE BY THE ENGINEER MAY BE USED FOR EMBANKMENT CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR WASTING ANY UNSUITABLE OR EXCESS MATERIAL. MATERIAL MAY NOT BE WASTED ON WETLANDS OR WITHIN THE FLOODPLAIN. QUANTITY MEASURED FOR PAYMENT WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS.	EXCAVATION, CLASS 13, CHANNEL
4	REPLACE TO A MINIMUM OF 4 INCHES. QUANTITY CALCULATED IS BASED ON AREA WHERE TOPSOIL IS TO BE PLACED WITHIN FINISHED CONSTRUCTION LIMITS. CONSTRUCTION LIMITS FOR THIS PURPOSE ARE THE SLOPE LIMITS SHOWN IN GRADING AREAS.	TOPSOIL, STRIP, SALVAGE AND SPREAD
5	FOR USE UNDER PCC PAVEMENT (ROADWAY AND DRIVEWAY) AS SHOWN ON SHEET B.1. PLAN QUANTITY ASSUMES THAT THERE IS A 2' EXTENSION OF THE SUBBASE ON ROADWAY PAVEMENT. MODIFIED SUBBASE UNDER APPROACH PAVEMENT IS INCLUDED IN BRIDGE APPROACH PAVEMENT ITEM AS NOTED ON U SHEETS AND IS NOT PAID SEPERATELY.	MODIFIED SUBBASE
6	FOR ROADWAY SHOULDER MATERIAL AS SHOWN ON THE B.1 TYPICAL SECTION SHEET.	GRANULAR SHOULDERS, TYPE A
7	SEE DETAILS INCLUDING METHOD OF MEASUREMENT AND BASIS OF PAYMENT ON SHEETS U.1 AND U.2. INCLUDES PAVING UNDER A PORTION OF CONCRETE, BARRIER, APPROACH MODIFIED. CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. EVALUATION REQUIREMENTS FOR SMOOTHNESS OF SECTION 2428 OF THE STANDARD SPECIFICATIONS SHALL APPLY FOR THIS PROJECT. EVALUATION REQUIREMENTS FOR THICKNESS OF SECTION 2301 OF THE STANDARD SPECIFICATIONS DO NOT APPLY FOR THIS PROJECT AND NO INCENTIVE FOR THICKNESS WILL BE PAID.	BRIDGE APPROACH PAVEMENT, AS PER PLAN
8	SEE TYPICAL SECTIONS ON SHEET B.1 AND JOINTING AND LAYOUT INFORMATION ON SHEET L.1. CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION. EVALUATION REQUIREMENTS FOR SMOOTHNESS OF SECTIONS 2316 AND 2317 OF THE STANDARD SPECIFICATIONS DO NOT APPLY FOR THIS PROJECT AND NO INCENTIVE FOR SMOOTHNESS WILL BE PAID. EVALUATION REQUIREMENTS FOR THICKNESS OF SECTION 2301 OF THE STANDARD SPECIFICATIONS DO NOT APPLY FOR THIS PROJECT AND NO INCENTIVE FOR THICKNESS WILL BE PAID.	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.
9	FOR USE AS GRANULAR SURFACING ON ENTRANCES AS SHOWN ON SHEET B.1 AND SHEET L.1 CONTRACTOR TO FURNISH AND SPREAD THE MATERIAL AT A TYPICAL 6 INCH THICKNESS.	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE
10	EXISTING BRIDGE ON STATION 10+00 IS A 150'X 24' STEEL BEAM BRIDGE WITH CONCRETE DECK AND ABUTMENTS. CONTRACTOR TO REMOVE ALL SUBSTRUCTURE TO 3 FEET MINIMUM BELOW FINISHED GRADE OR AS NEEDED TO AVOID CONFLICTS WITH PROPOSED STRUCTURE. STRUCTURE BECOMES THE PROPERTY OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF THE STRUCTURE OFFSITE. SEE C.4 FOR ASBESTOS AND LEAD AND CHROMIUM TESTING NOTES.	REMOVAL OF EXISTING BRIDGE
11	AT BRIDGE ABUTMENTS	EXCAVATION, CLASS 20
12	AT BRIDGE PIERS	EXCAVATION, CLASS 21
13	CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION. EVALUATION REQUIREMENTS FOR SMOOTHNESS OF SECTION 2428 OF THE STANDARD SPECIFICATIONS SHALL APPLY FOR THIS PROJECT.	STRUCTURAL CONCRETE (BRIDGE)
14	-	REINFORCING STEEL, EPOXY COATED
15	INCLUDES THE COST OF PROVIDING BEAM VENTS PER V. 16 AND PROVIDING BEAM BEARING MATERIALS.	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB70
16	INCLUDES THE COST OF PROVIDING BEAM VENTS PER V. 16 AND PROVIDING BEAM BEARING MATERIALS.	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, BTB95
17	FOR BRIDGE BEAM DIAPHRAGMS AND DECK DRAINS PER V SHEETS.	STRUCTURAL STEEL
18	CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION.	CONCRETE BARRIER RAILING
19	ON NORTH DECK EDGE PER U SHEETS. SHOP DRAWING SUBMITTAL REQUIRED. CONTRACTOR SHALL PROVIDE ONE RAILING PANEL AND POST AS A MOCK UP PRIOR TO FABRICATION OF THE ENTIRE SECTION. IF ACCEPTABLE, THE PANEL AND POST MAY BE INCORPORATED INTO THE PROJECT. NO FIELD PAINTING ALLOWED EXCEPT FOR REPAIR OR TOUCH UP PER NOTES IN PLAN SET. FIELD WELDING OR CUTTING IS NOT ALLOWED. METHOD OF MEASUREMENT SHALL BE BY THE LINEAR FEET SHOWN IN THE CONTRACT DOCUMENTS, FROM END OF RAILING TO END OF RAILING. BASIS OF PAYMENT IS FULL COMPENSATION FOR FURNINSHING ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO CONSTRUCT THE RAIL AS SHOWN IN THE CONTRACT DOCUMEENTS.	ORNAMENTAL METAL RAILING
20	FOR INLET END OF DRIVEWAY CULVERT AT STA 8+83.93 LT.	APRONS, METAL, 24 IN. DIA.
21	FOR DRIVEWAY AT STA 8+54.89 LT.	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.
22	CAST IN-ONE-PIECE STEEL PILE POINTS ARE REQUIRED FOR ALL THE STEEL H-PILES EXCEPT FOR PIER PILES THAT ARE IN ROCK CORES. PILE POINTS SHALL BE CONSIDERED INCIDENTAL TO THIS BID ITEM. SEE V SHEETS FOR PILE DRIVING NOTES.	PILES, STEEL, HP 10 X 57
23	AT BRIDGE ABUTMENTS PER V.1 AND AT PIER PILES THAT REQUIRE ROCK CORING PER DETAILS ON V.3. SEE NOTES ON V.3 FOR WHEN PIER PILE PREBORED HOLES SHOULD BE FILLED WITH SATURATED SAND INSTEAD OF BENTONITE. SATURATED SAND IS CONSIDERED INCIDENTAL TO THIS ITEM.	PREBORED HOLES
24	FOR REMOVAL OF STEEL BEAM GUARDRAIL ADJACENT TO EXISTING BRIDGE ENDS. REMOVAL OF ALL OBJECT MARKERS/HAZARD SIGNS ASSOCIATED WITH THE GUARDRAIL AND BRIDGE ENDS ARE INCIDENTAL TO THIS ITEM.	REMOVAL OF STEEL BEAM GUARDRAIL
25	PLACED UNDER THE REVETMENT AS SHOWN ON SHEET D.1, V.1 AND V.2. NOTE ANCHORAGE OF THE ENGINEERING FABRIC AS PER THE DETAILS ON B.1. FABRIC UNDER REVETMENT SHALL BE INSTALLED AS SOON AS BERM GRADING IS COMPLETE AS EROSION CONTROL MEASURE. IF ENGINEERING FABRIC IS NOT IMMEDIATELY INSTALLED, PERIMETER AND SLOPE CONTROL DEVICE SHALL BE INSTALLED TO PREVENT EROSION INTO THE STREAM.	ENGINEERING FABRIC
26	PLACED AROUND ABUTMENTS AND PIERS AS SHOWN ON SHEET D.1, V.1 AND V.2 INCLUDING AS PER TOE-IN DETAILS ON SHEET B.1.	REVETMENT, CLASS E
27	FOR REMOVAL OF EXISTING HMA PAVEMENT. METHOD OF MEASUREMENT FOR REMOVAL OF PAVEMENT WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS. CONFIRM EXTENTS OF PAVEMENT REMOVAL WITH THE ENGINEER PRIOR OT REMOVAL.	REMOVAL OF PAVEMENT
28	CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. SEE SHEET D.1 AND SHEET L.1 FOR LAYOUT INFORMATION.	DRIVEWAY, P.C. CONCRETE, 6 IN.
29	FOR EXISTING SPEED LIMIT SIGN AS SHOWN ON SHEET D.1. FIELD VERIFY LOCATION. REINSTALL PER SI-101 TYPE 1 INSTALLATION WITH AN "X" DISTANCE FROM THE EDGE OF PAVEMENT TO EDGE OF SIGN OF A MINIMUM OF 12 FEET. METHOD OF MEASUREMENT IS BY EACH SIGN AND POST INSTALLATION REMOVED AND REINSTALLED AS SHOWN IN THE CONTRACT DOCUMENTS. BASIS OF PAYMENT IS FULL COMPENSATION FOR FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR REMOVAL AND RE-INSTALLATION OF THE EXISTING SIGN AND POST AS SHOWN IN THE CONTRACT DOCUMENTS.	REMOVE AND REINSTALL SIGN AS PER PLAN
30	SEE TABULATION ON C SHEETS.	SAFETY CLOSURE



800 556-4491

CITY OF OELWEIN

PROJECT NUMBER BRM-5657(614)- -8N-33

REFERENCE NOTES

SHEET: C.2

REV: .

REFERENCE NOTES CONTINUED:

ESTIMATE REFERENCE INFORMATION		
DATA BELOW IS FOR INFORMATION ONLY AND DOES NOT CONSTITUTE A BASIS FOR EXTRA WORK ORDER REQUESTS		
REF. NO.	DESCRIPTION	BID ITEM DESCRIPTION
31	SEE NOTES ON SHEET A.1 AND SHEET J.1. INCLUDES ALL ITEMS ASSOCIATED WITH PROVIDING A SIGNED DETOUR.	TRAFFIC CONTROL
32	CONTRACTOR SHALL SUBMIT AN UPDATED PROJECT SCHEDULE TO THE CITY MONTHLY THAT INDICATES WHEN THE ROAD WILL BE OPEN TO TRAFFIC.	MOBILIZATION
33	SEE V SHEETS FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION. INCLUDES ALL CONCRETE AND REINFORCING STEEL. METHOD OF CONSTRUCTION SHALL BE AS PER SECTION 2513 OF THE STANDARD SPECIFICATIONS. METHOD OF MEASUREMENT SHALL BE BY COUNT FOR THE BARRIER TRANSITION SECTION. BASIS OF PAYMENT WILL BE THE CONTRACT UNIT PRICE EACH FOR THE TYPE OF END SECTION. REINFORCEMENT IN CONCRETE BARRIER TRANSITION SECTIONS THAT IS NOT PART OF THE BRIDGE STRUCTURE IS NOT PAID FOR SEPARATELY. PAYMENT IS CONSIDERED FULL COMPENSATION FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO CONSTRUCT THE COMPLETE TAPERED END SECTION IN CONFORMANCE WITH THE PLAN DETAILS.	34" TO 38" CONCRETE BARRIER TRANSITION SECTION, MODIFIED
34	THIS ITEM COVERS ALL EFFORTS NEEDED TO REMOVE THE EXISTING FLAP GATE FROM THE EXISTING 24-INCH CMP DRIVEWAY PIPE NEAR STA 8+70 LT AND REINSTALL ON THE END OF THE NEW 24" CMP DRIVEWAY PIPE OUTLET AT APPROXIMATE STA. 8+70, 62.68' LT. SEE D.1 FOR LOCATION. METHOD OF MEASUREMENT IS BY EACH RUBBER FLASH GATE INSTALLED. BASIS OF PAYMENT SHALL BE FULL COMPENSATION FOR MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR REMOVAL AND RE-INSTALLATION OF THE EXISTING FLAP GATE.	REMOVE AND REINSTALL EXISTING FLAP GATE, 24"
35	SEE SHEET V.19 FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION. INCLUDES ALL CONCRETE AND REINFORCING STEEL OR DOWELS. METHOD OF CONSTRUCTION SHALL BE AS PER SECTION 2513 OF THE STANDARD SPECIFICATIONS. METHOD OF MEASUREMENT SHALL BE BY COUNT FOR THE BARRIER END SECTION. BASIS OF PAYMENT WILL BE THE CONTRACT UNIT PRICE EACH FOR THE TYPE OF END SECTION. REINFORCEMENT IN CONCRETE BARRIER END SECTIONS THAT IS NOT PART OF THE BRIDGE STRUCTURE IS NOT PAID FOR SEPARATELY. PAYMENT IS CONSIDERED FULL COMPENSATION FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO CONSTRUCT THE COMPLETE TAPERED END SECTION IN CONFORMANCE WITH THE PLAN DETAILS.	CONCRETE BARRIER, APPROACH, MODIFIED, 16 FT
36	THE QUANTITY OF "CORING ROCK SOCKET" AT THE PIERS IS BASED ON THE ANTICIPATED TOP OF BEDROCK ELEVATIONS AND CORING 3 FEET INTO THE ROCK FOR (4) PILES IN EACH PIER AS NOTED ON V.6. THE NUMBER OF LINEAL FEET OF ROCK CORING WILL BE MEASURED IN THE FIELD AND PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAL FOOT. THE PRICE BID INCLUDES THE COST OF PREDRILLING 16 INCH DIAMETER ROCK SOCKETS A MINIMUM 3 FEET INTO BEDROCK. THIS ITEM INCLUDES THE COST OF DISPOSAL OF EXCAVATED MATERIAL AND FURNISHING AND PLACING CLASS "C" STRUCTURAL CONCRETE TO BACKFILL THE SOCKET TO THE REQUIRED ELEVATION. IF PIER PILES CAN BE DRIVEN TO ELEVATION 972 (10 FEET BELOW THE SCOUR ELEVATION), THEN NO MEASUREMENT OR PAYMENT WILL BE MADE FOR "CORING ROCK SOCKET". SEE DETAILS ON V.3	CORING ROCK SOCKET
37	MULCH ALL DISTURBED AREAS OUTSIDE THE STREAMBED WITHOUT REVETMENT, HARD SURFACING, OR GRANULAR MATERIAL. HYDROMULCHING IS ALLOWABLE. QUANTITY ASSUMES BOTH TEMPORARY AND PERMANENT SEEDING AND WILL BE ADJUSTED IF THE STABILIZING CROP IS NOT NEEDED.	MULCHING
38	ALL DISTURBED AREAS OUTSIDE THE STREAMBED WITHOUT REVETMENT, HARD SURFACING, OR GRANULAR MATERIAL. HYDROSEEDING IS ALLOWABLE.	SEEDING AND FERTILIZING (RURAL)
39	SEED WITH STABILIZING CROP ALL DISTURBED AREAS WITHIN CONSTRUCTION LIMITS WHICH ARE NOT ABLE TO BE SEEDED WITH PERMANENT SEEDING DUE TO CONSTRUCTION OPERATIONS, STAGING, OR IF THE SEEDING SEASON REQUIREMENTS OF STANDARD SPECIFICATIONS DELAYS PLACEMENT OF PERMANENT SEEDING. QUANTITY ESTIMATED IN THE PLANS IS THE SAME AS THE AREA OF THE PERMANENT SEEDING.	STABILIZING CROP - SEEDING AND FERTILIZING
40	FOR USE AT END OF BARRIER RAILS AS SHOWN ON SHEET D.1.	TRANSITION MAT
41	PLACED AT THE TOE OF FILL SLOPE IN AREAS WITHOUT A DITCH, AS SHOWN ON SHEET D.1. BID ITEM INCLUDES 25% ADDITIONAL QUANTITY FOR FIELD ADJUSTMENTS AND REPLACEMENTS.	SILT FENCE
42	REMOVE DEVICES ONLY AS DIRECTED BY THE ENGINEER. THE CITY OF OELWEIN MAY ELECT TO REMOVE SOME OF THE DEVICES STILL IN PLACE AT THE END OF THE PROJECT.	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS
43	THIS ITEM IS INCLUDED FOR CLEANOUT AND REPAIR OF THE SILT FENCE DURING THE PROJECT. THE BID QUANTITY IS ESTIMATED TO BE 50% OF THE BID QUANTITY FOR SILT FENCE.	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK
44	FOR USE ON OVERBANKS IN AND ADJACENT TO BRIDGE OPENING, AS SHOWN ON SHEET D.1 BID ITEM INCLUDES 25% ADDITIONAL QUANTITY FOR FIELD ADJUSTMENTS AND REPLACEMENTS.	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 9 IN. DIA.
45	REMOVE DEVICES ONLY AS DIRECTED BY THE ENGINEER. THE CITY OF OELWEIN MAY ELECT TO REMOVE SOME OF THE DEVICES STILL IN PLACE AT THE END OF THE PROJECT.	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE

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GENERAL NOTES:

ALL UNSALVAGEABLE MATERIAL AND RUBBLE GENERATED DURING THIS PROJECT SHALL BE DISPOSED OF OFF THE HIGHWAY RIGHT-OF-WAY IN A WASTE AREA PROVIDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE WASTED MATERIAL MUST NOT CREATE AN UNSIGHTLY CONDITION WHEN VIEWED FROM PUBLIC HIGHWAYS. REMOVALS AND DISPOSALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ALSO, ALL EXCESSIVE EXCAVATED MATERIAL AND UNSUITABLE MATERIAL FOR BACKFILL WILL BECOME THE PROPERTY OF THE CONTRACTOR AND WILL BE DISPOSED OF OFF SITE. ALL BORROW MATERIAL SHALL BE SUPPLIED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

NO EXTRA PAYMENT IS ALLOWED FOR COLD WEATHER PROTECTION DURING CONSTRUCTION.

THE OWNER WILL PROVIDE FOR FOUR TRIPS FOR STAKING, ONE OF THESE TRIPS INCLUDES COLLECTING THE IN-PLACE BEAM ELEVATIONS FOR HAUNCH ADJUSTMENTS AFTER THE BEAMS ARE PLACED. SUBGRADE STAKES WILL NOT BE PROVIDED, ONLY THE FINAL PAVEMENT GRADE STAKES. THE SURVEYOR REQUIRES A MINIMUM OF 48 HOURS NOTICE FOR THE SCHEDULING OF STAKING. RE-STAKING WILL BE AN EXTRA SERVICE CHARGED TO THE CONTRACTOR AS A TIME AND MATERIAL FEE AND CHANGE ORDERED INTO THE PROJECT AS A CONTRACTOR EXPENSE.

AN ASBESTOS INSPECTION WAS PERFORMED, AND NO ASBESTOS WAS DETECTED IN THE TESTED MATERIAL.

SCRAPE SAMPLES OF THIS BRIDGE WERE TAKEN TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. THE ANALYSIS OF THE TOTAL CHROMIUM FOUND WAS <220 PART PER MILLION (PPM) ON THE BRIDGE RAILINGS AND <130 PPM ON THE BRIDGE BEAMS. THE ANALYSIS OF THE TOTAL LEAD FOUND WAS 510 PPM ON THE BRIDGE RAILINGS AND <80 PPM ON THE BRIDGE BEAMS. THE ANALYSIS SHOWS THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. NO OTHER SUBSTANCES WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE LPA'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO CONSTITUENTS. IF HAZARDOUS MATERIALS ARE DISCOVERED DURING CONSTRUCTION, CEASE WORK AND NOTIFY THE ENGINEER.

ROAD CONTRACTOR IS TO USE DUE CAUTION IN WORKING OVER AND AROUND ALL TILE LINES. BREAKS IN THE TILE LINE DUE TO THE CONTRACTOR'S CARELESSNESS ARE TO BE REPLACED AT THE CONTRACTOR'S EXPENSE WITHOUT COST TO OWNER. ANY TILE LINES BROKEN OR DISTURBED BY DESIGNATED CUT LINES WILL BE REPLACED AS DIRECTED BY THE ENGINEER AND AT THE OWNER'S EXPENSE.

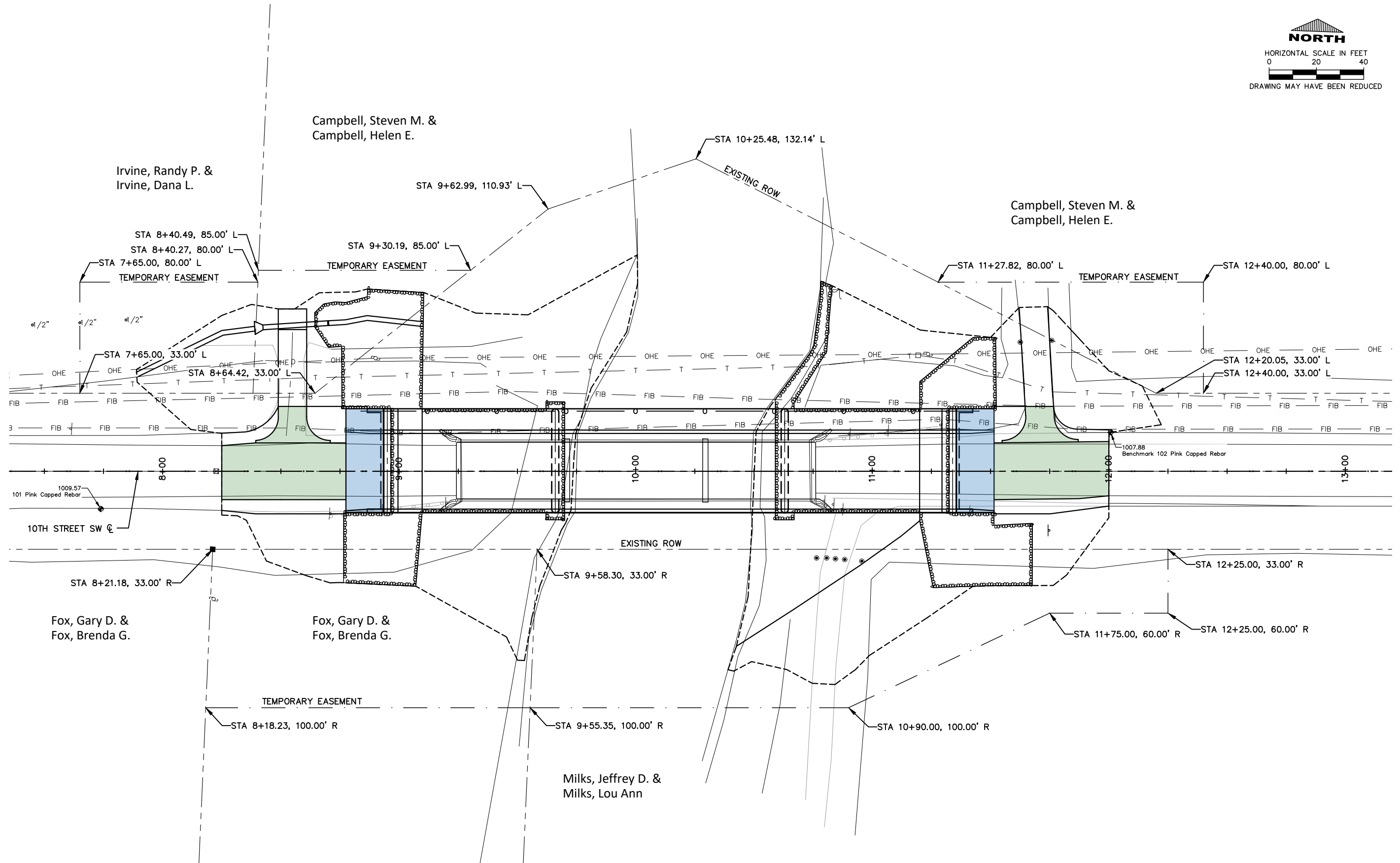
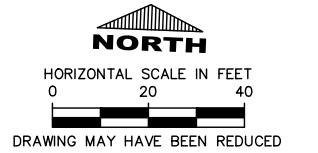
STANDARD ROAD PLAN EW-401 IS LISTED IN TABULATION 105-4; HOWEVER, IT IS INCLUDED FOR INFORMATION PURPOSES ONLY SINCE IT IS AN OPTION. NO QUANTITIES ASSOCIATED WITH CONSTRUCTING EW-401 ARE INCLUDED IN ANY BID ITEMS. ANY STREAM CROSSING USED SHALL COMPLY WITH PERMIT REQUIREMENTS OF THE USACE NATIONWIDE PERMIT AND IOWA DNR FLOODPLAIN PERMIT REQUIREMENTS OF IOWA ADMINISTRATIVE CODE SECTION 567 IAC 72.1(6).

108-13A 10/4/2023			
SAFETY CLOSURES			
Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
7+25	1		BEGINNING OF PROJECT
8+80		1	WEST ABUTMENT
11+50		1	EAST ABUTMENT
13+00	1		END OF PROJECT

105-4 10-18-11		
STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
DR-203	04-21-20	Metal Pipe Aprons and Beveled Ends
EC-105	04-17-18	Transition Mat (TM)
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Deck Sediment Control Devices
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad
PV-101	04-15-25	Joints
SI-101	04-19-16	Locations - Type "A" Signs
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-252	04-21-20	Routes Closed to Traffic


10th Street Bridge Oelwein							
EARTHWORK SUMMARY							
LOCATION	A	B	C	D	E	F	G
	TOTAL ROADWAY CUT UNADJUSTED	UNUSABLE EXISTING PAVEMENT VOLUME	TOTAL ROADWAY CUT, ADJUSTED (EXCAVATION, CLASS 10, ROADWAY & BORROW)	TOTAL ROADWAY FILL, ADJUSTED (1.3 SHRINK FACTOR)	CHANNEL AREA CUT, UNADJUSTED (EXCAVATION, CLASS 13, CHANNEL)	CHANNEL AREA FILL, ADJUSTED (1.3 SHRINK FACTOR)	CLASS 20 EXCAVATION
WEST OF BRIDGE	280	80	201	206	-	-	-
WEST BRIDGE BERM	-	-	-	-	1640	2	-
EAST OF BRIDGE	191	96	94	154	-	-	-
EAST BRIDGE BERM	-	-	-	-	2467	12	-
BRIDGE (WEST ABUTMENT)	-	-	-	-	-	-	52
BRIDGE (EAST ABUTMENT)	-	-	-	-	-	-	52
TOTALS:	471 CY	176 CY	295 CY	360 CY	4107 CY	14 CY	104 CY
NOTES: - ALL VALUES IN CUBIC YARDS - BOLD TITLES/VALUES INDICATE PAY ITEMS AND QUANTITIES - ALL QUANTITIES INCLUDE EXCAVATION FOR EMBEDMENT OF CLASS E REVETMENT AS APPROPRIATE - QUANTITIES NOT ADJUSTED FOR TOPSOIL							


112-06 2/22/2024												
BRIDGE APPROACH SECTION												
* Not a Bid Item												
Line No.	Bridge Station	End	Skew Ahead Left (Degrees)	Skew Ahead Right (Degrees)	(T) Thickness (IN)	Pay Length	Double-Reinf. Area (SY)	Perforated * 4" Subdrain (LF)	Subdrain * Outlet (STA)	Subdrain * Outlet Side	Modified * Subbase (TON)	Remarks
1	8+77.50	W	0	0	10	15.83	77.1				75.1	SEE U SHEETS FOR DETAILS
2	11+51.50	E	0	0	10	15.83	77.1				75.1	SEE U SHEETS FOR DETAILS





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SIGN LEGEND


- (A)  R11-2, 48"x30"
(TO BE PLACED IN ROAD)
SAFETY CLOSURE


(B)  R11-4, 60"x30"
(TO BE PLACED
STAGGERED IN
ROAD)


(C)  M1-94H, 12"x24"
BLACK ON ORANGE


(D)  M4-9R, 30"x24"
BLACK ON ORANGE


(E)  M4-9R, 30"x24"
BLACK ON ORANGE


(F)  R11-4, 60"x30"


(G)  D3-1, BLACK ON ORANGE
6" UPPERCASE
4.5" LOWERCASE

(H)  M1-94H, 12"x24"
BLACK ON ORANGE

(I)  M4-9L, 30"x24"
BLACK ON ORANGE

(J)  M4-9L, 30"x24"
BLACK ON ORANGE





(K)  W20-3, 48"x48"
BLACK ON ORANGE

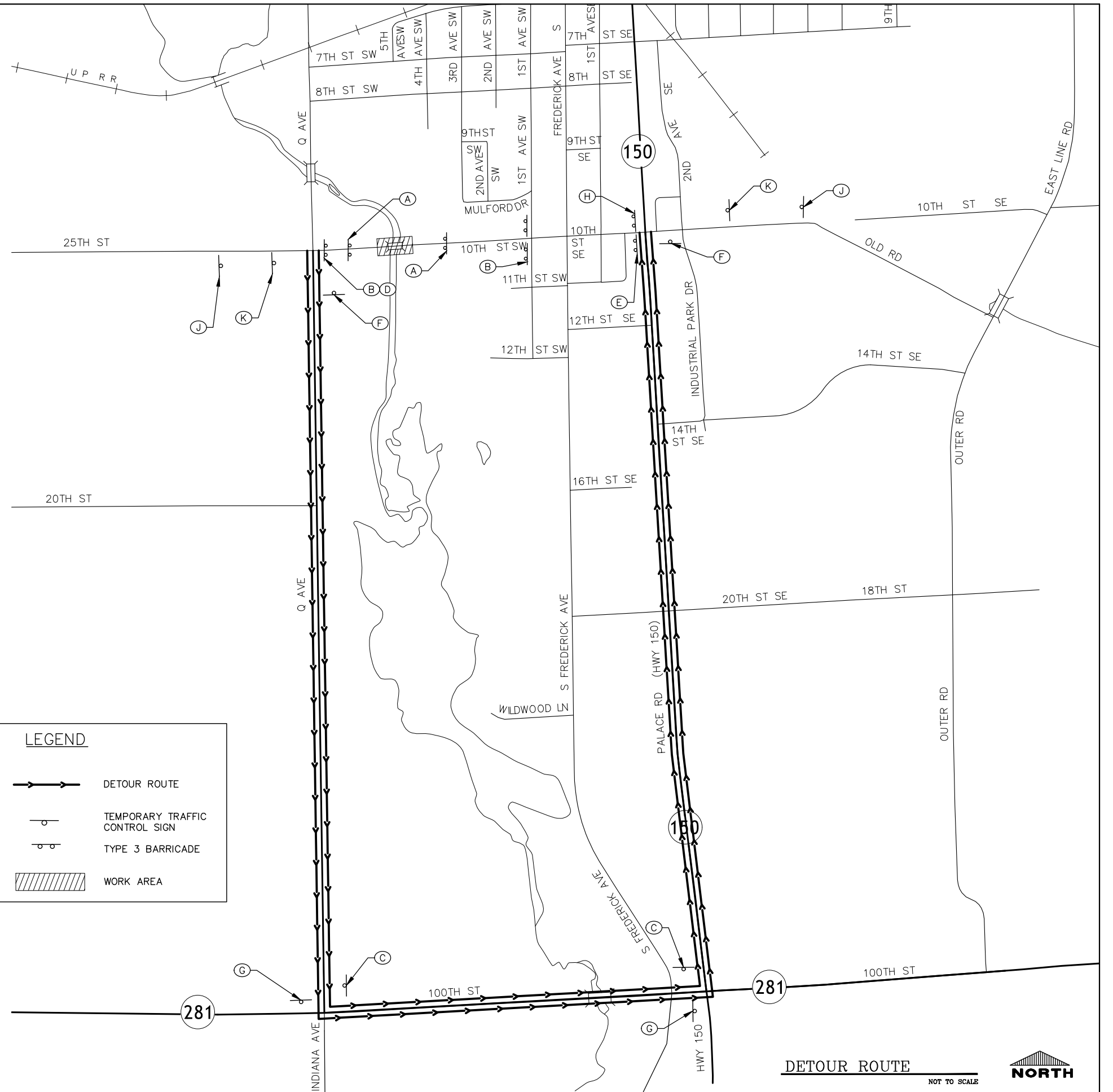
(L)  W20-2, 48"x48"
BLACK ON ORANGE

TRAFFIC CONTROL NOTES

1. 10th STREET BETWEEN Q AVENUE AND 1ST AVENUE SW WILL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION. PROPERTY ACCESS WILL BE MAINTAINED AT ALL TIMES.
2. THE LOCATION FOR STORAGE OF EQUIPMENT AND WORKERS VEHICLES DURING WORKING AND NON-WORKING HOURS SHALL BE AS APPROVED BY THE ENGINEER.
3. WORK SHALL NOT BEGIN WITHOUT ADEQUATE TRAFFIC CONTROL IN PLACE.
4. PROPOSED SIGN SPACING MAY BE MODIFIED IF APPROVED BY THE ENGINEER TO MEET EXISTING FIELD CONDITIONS OR TO PREVENT OBSTRUCTION OF THE MOTORIST'S VIEW OF PERMANENT SIGNING.
5. ALL WORK WITHIN HIGHWAY 150 AND HIGHWAY 281 RIGHT OF WAY SHALL BE PERFORMED BY THE CONTRACTOR BETWEEN THE HOURS OF 30 MINUTES AFTER SUNRISE TO 30 MINUTES BEFORE SUNSET. DETOUR SIGNING MAY BE PLACED WITH IOWA DOT SIGNS IF THE SPACING IS ACCEPTABLE. THE EXISTING SIGNS MUST BE ABLE TO HANDLE THE ADDITIONAL WEIGHT AND TEMPORARY SIGNS MUST BE PLACED OUTSIDE OF THE EXISTING SIGNS, FARTHEST FROM THE ROAD.
6. PERMANENT SIGNING THAT CONVEYS A MESSAGE IN CONFLICT WITH THE MESSAGE OF THE TEMPORARY SIGNING AND NOT APPLICABLE TO THE WORKING CONDITIONS SHALL BE COVERED BY THE CONTRACTOR WHEN DIRECTED BY THE ENGINEER.
7. THE CONTRACTOR SHALL PROVIDE A MINIMUM 2 WEEK NOTICE PRIOR TO INSTALLING THE PROPOSED DETOUR TO ALLOW NOTIFICATION OF AREA RESIDENTS AND BUSINESSES. THE CONTRACTOR SHALL PROVIDE NOTICE TO THE IOWA DOT MAINTENANCE SUPERVISOR:
GABRIEL ZITTERGRUEN
EMAIL: GABRIEL.ZITTERGRUEN@OWADOT.US
PHONE: 563-880-4519,
PRIOR TO INSTALLING DETOUR SIGNS ON
HIGHWAY 150 AND HIGHWAY 281 SO HE IS
AWARE OF WORK ALONG THE HIGHWAY RIGHT OF
WAY.
8. BARRICADES AND SAFETY CLOSURES SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD ROAD PLAN TC252

LEGEND

- | | |
|---|--------------------------------|
|  | DETOUR ROUTE |
|  | TEMPORARY TRAFFIC CONTROL SIGN |
|  | TYPE 3 BARRICADE |
|  | WORK AREA |

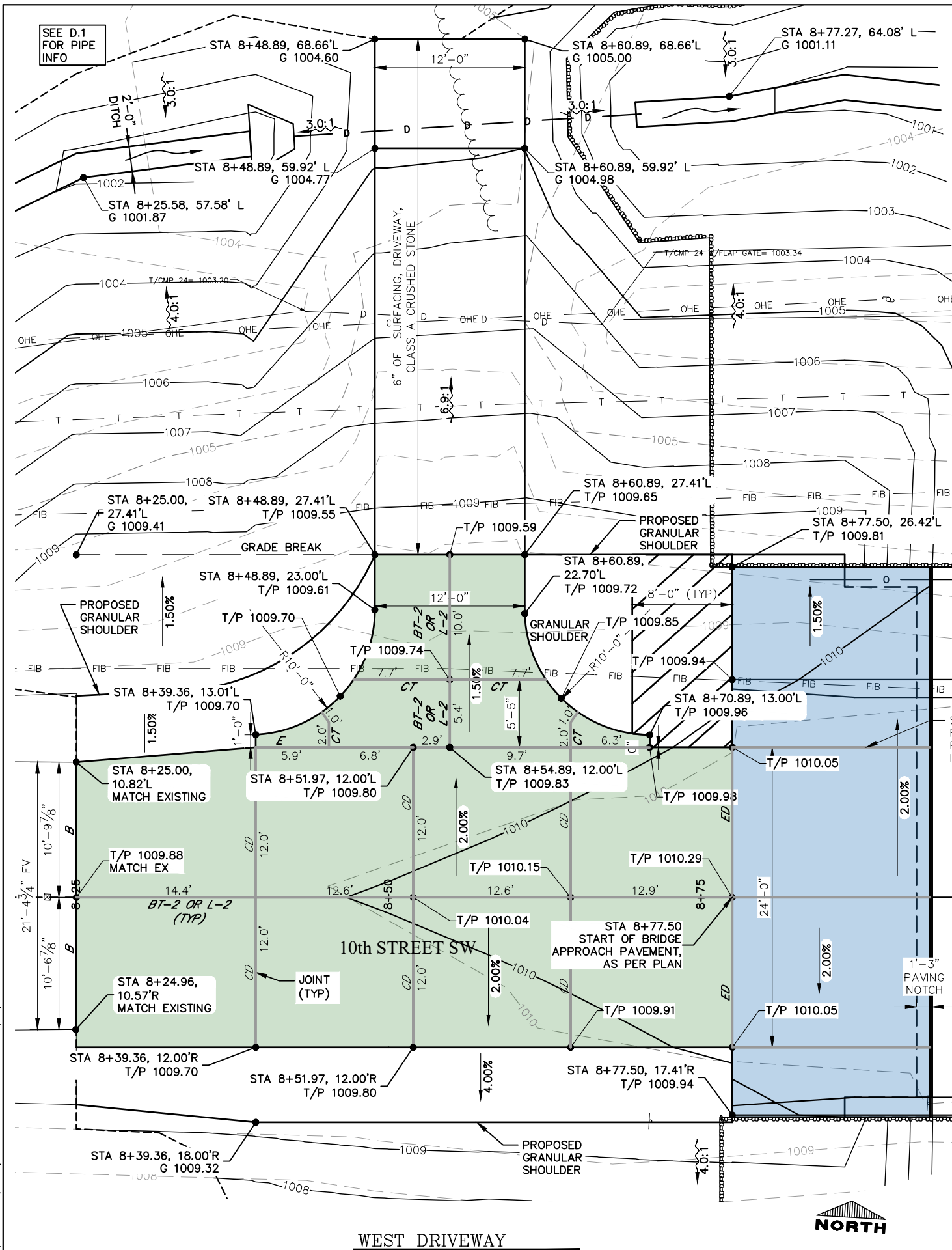


DETOUR ROUTE

NOT TO SCALE



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LOG OF BORING

CHOSEN VALLEY TESTING



PROJECT: 23253.24.IAW Design Phase Geotechnical Evaluation Proposed 10th St. SW Bridge Replacement 10th St. SW Oelwein, Iowa				BORING: B-01		
				LOCATION: See attached sketch		
				DATE: 5/28/2024	SCALE: 1" = 4'	
Elev. 1010.2	Depth 0.0	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
1009.2	1.0		12" ASPHALT			Elevations provided by Origin Design.
1008.2	2.0	SP	POORLY-GRADED SAND mostly medium grained, black, wet.			
		SP	(Fill)	21		
		SC	(IADOT: Coarse Sand)			
1006.2	4.0	SC	POORLY-GRADED SAND to CLAYEY SAND mostly medium grained, trace of gravel, brown, moist, medium dense.			
			(Fill)	26		
			(IADOT: Coarse Sand)			
			CLAYEY SAND mostly medium grained, trace of gravel, brown to dark brown to dark grey to black, moist, medium dense.	28		
			(Alluvium)			
			(IADOT: Clayey Sand)	10		
998.7	11.5	SP	POORLY-GRADED SAND mostly medium grained, trace of gravel, brown to dark brown to dark grey, waterbearing, loose.	5	▽	Water encountered at about 13 feet during drilling.
			(Alluvium)	6		
			(IADOT: Silty Sand)			
992.2	18.0	SM	SILTY SAND with GRAVEL mostly fine grained, brown, moist, dense to very dense.			
			(Weathered Dolomite)	35		
			(IADOT: Granular Material)			
986.2	24.0			*		* 50 = 1"
			Auger refusal at about 24 feet during drilling, presumably on bedrock. Boring sealed upon completion.			

23253.24.IAW

B-01 page 1 of 1

LOG OF BORING

CHOSEN VALLEY TESTING



PROJECT: 23253.24.IAW Design Phase Geotechnical Evaluation Proposed 10th St. SW Bridge Replacement 10th St. SW Oelwein, Iowa				BORING: B-02		
				LOCATION: See attached sketch		
				DATE: 5/28/2024	SCALE: 1" = 4'	
Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
1011.5	0.0					
1011.0	0.5		5" ASPHALT			Elevations provided by Origin Design.
1010.3	1.2		8" CONCRETE			
			AIR VOID SPACE			
1000.0	11.5					
		SP	POORLY-GRADED SAND to CLAYEY SAND			
		SC	mostly medium grained, trace of gravel, trace of wood, dark grey, waterbearing, loose.	5	▽	Water encountered at about 12.5 feet during drilling.
			(Alluvium)			
			(IADOT: Silty Sand)			
997.5	14.0	SC	CLAYEY SAND with GRAVEL mostly medium grained, trace of wood, black, waterbearing, medium dense.	16		
995.5	16.0					
		SP	(Alluvium)			
			(IADOT: Clayey Sand)	8		
			POORLY-GRADED SAND mostly medium grained, trace of gravel, grey, waterbearing, loose.			
			(Alluvium)			
			(IADOT: Fine Sand)			
991.5	20.0					
		SP	POORLY-GRADED SAND with GRAVEL	26		
990.5	21.0					
990.0	21.5	GM	mostly medium grained, grey, moist, medium dense.			
			(Alluvium)			
			(IADOT: Gravely Sand)			
			SILTY GRAVEL mostly fine grained, light brown, moist, medium dense.			
			(Weathered Dolomite)			
			(IADOT: Granular Material)			
			Auger refusal at about 21.5 feet during drilling, presumably on bedrock. Boring sealed upon completion.			

23253.24.IAW

B-02 page 1 of 1

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

June 10, 2024

(signature) (date)

Printed or typed name: Matthew J. Reisdorfer, PE.
License number: 22234
My license renewal date is December 31, 2025
Pages or sheets covered by this seal: SPS.1, SPS.2

LOG OF BORING

CHOSEN VALLEY TESTING



PROJECT: 23253.24.IAW Design Phase Geotechnical Evaluation Proposed 10th St. SW Bridge Replacement 10th St. SW Oelwein, Iowa				BORING: B-03		
				LOCATION: See attached sketch		
				DATE: 5/28/2024	SCALE: 1" = 4'	
Elev. 1010.5	Depth 0.0	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
1010.0	0.5		5" ASPHALT			Elevations provided by Origin Design.
1009.3	1.2		7.5" CONCRETE			
			AIR VOID SPACE			
1003.0	7.5					
		SP	POORLY-GRADED SAND with GRAVEL mostly fine grained, light grey, moist, medium dense. (Alluvium) (IADOT: Gravely Sand)	16		Water encountered at about 13 feet during drilling. PP = 1.5 tsf
999.0	11.5	SP	POORLY-GRADED SAND mostly medium grained, trace of gravel, dark grey, waterbearing, loose. (Alluvium) (IADOT: Fine Sand)	8	▽	
996.5	14.0	CL	LEAN CLAY with SAND trace of gravel, black, wet, rather soft. (Alluvium) (IADOT: Soft Silty Clay)	4		
994.5	16.0	SC CL	CLAYEY SAND to SANDY LEAN CLAY mostly medium grained, trace of gravel, black, moist, loose to medium dense. (Alluvium) (IADOT: Clayey Sand)	6		
				14		
989.5	21.0					
		GC GM	CLAYEY GRAVEL to SILTY GRAVEL mostly fine grained, light brown, moist, medium dense. (Weathered Dolomite) (IADOT: Granular Material)	13		
984.0	26.5					
			Auger refusal at about 26.5 feet during drilling, presumably on bedrock. Boring sealed upon completion.			

23253.24.IAW

B-03 page 1 of 1

23253.24.IAW

B-03 page 1 of 1

LOG OF BORING

CHOSEN VALLEY TESTING



PROJECT: 23253.24.IAW Design Phase Geotechnical Evaluation Proposed 10th St. SW Bridge Replacement 10th St. SW Oelwein, Iowa				BORING: B-04		
				LOCATION: See attached sketch		
				DATE: 5/28/2024	SCALE: 1" = 4'	
Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
1009.8	0.0					
1008.9	0.9		10" ASPHALT			Elevations provided by Origin Design.
		SP	POORLY-GRADED SAND mostly medium grained, black, moist.			
1007.8	2.0	SC	(Fill) (IADOT: Fine Sand)	21		
1005.8	4.0		CLAYEY SAND mostly medium grained, trace of gravel, dark brown to dark grey, moist, medium dense.			
		CL	(Alluvium) (IADOT: Clayey Sand)	16		
1003.3	6.5	SC	SANDY LEAN CLAY trace of gravel, dark brown to dark grey, wet, stiff.			
			(Alluvium) (IADOT: Firm-Very Firm Glacial Clay)	4		
			CLAYEY SAND mostly medium grained, trace of gravel, black, moist, loose.			
998.3	11.5		(Alluvium) (IADOT: Silty Sand)	9		
		SP SC	POORLY-GRADED SAND to CLAYEY SAND mostly medium grained, trace of gravel, black, moist, loose.			
995.8	14.0		(Alluvium) (IADOT: Silty Sand)	5		
		SP	POORLY-GRADED SAND mostly medium grained, trace of gravel, dark grey, moist to waterbearing, loose to medium dense.			
			(Alluvium) (IADOT: Silty Sand)	11		
						Water encountered at about 20 feet during drilling.
987.8	22.0	SP	POORLY-GRADED SAND with GRAVEL mostly medium grained, grey, waterbearing, loose.			
			(Alluvium) (IADOT: Fine Sand)			
982.8	27.0		SILTY SAND with GRAVEL mostly fine grained, trace of clay, light brown, moist, medium dense.			
		SM	(Weathered Dolomite) (IADOT: Granular Material)			
979.3	30.5					
			Auger refusal at about 30.5 feet during drilling, presumably on bedrock. Boring sealed upon completion.			

23253.24.IAW

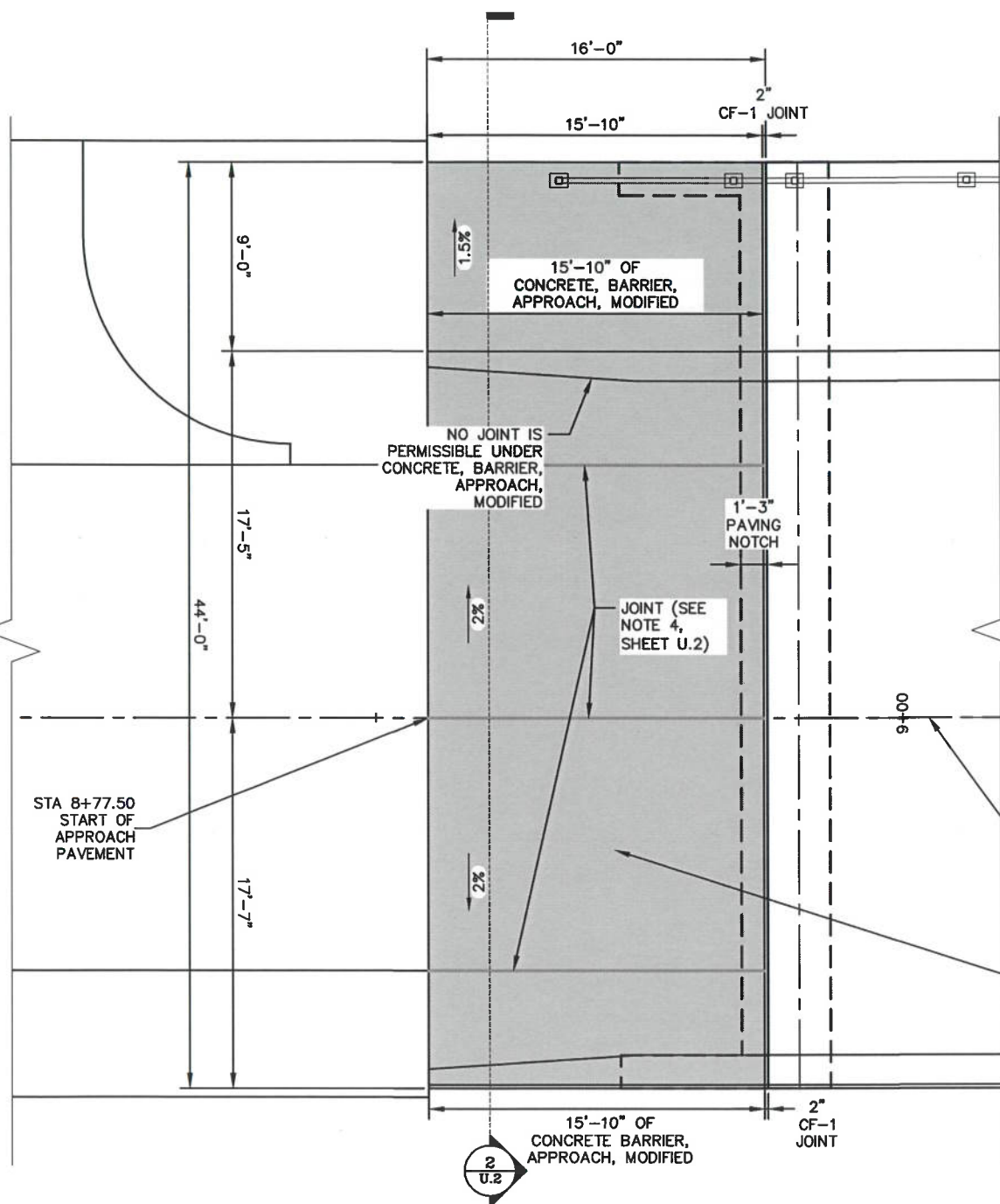
B-04 page 1 of 1

23253.24.IAW

B-04 page 1 of 1

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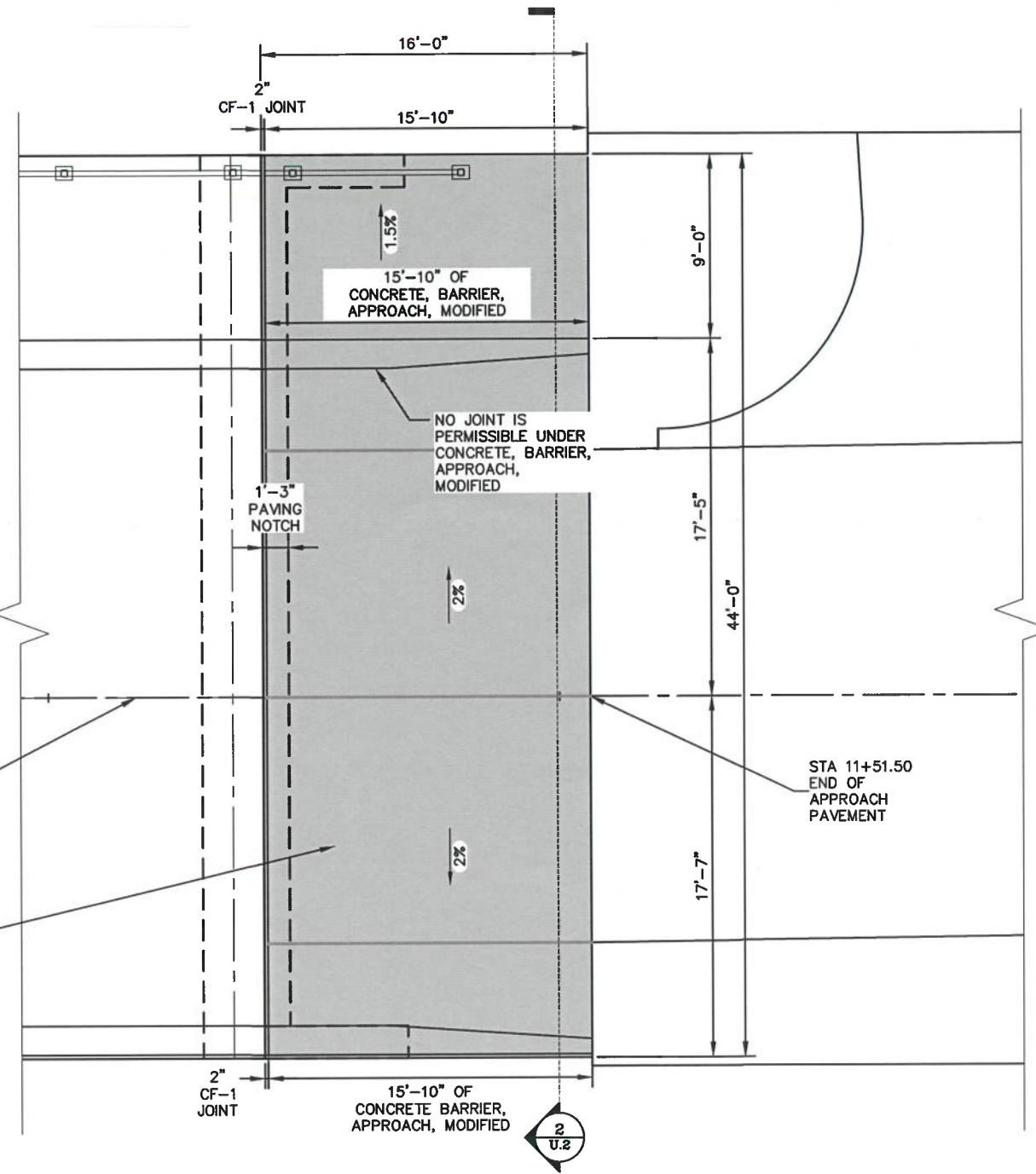
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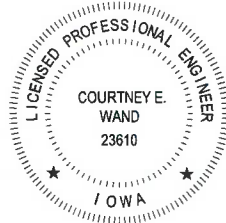
WEST APPROACH

PROPOSED BRIDGE
AND ROADWAY C

BRIDGE APPROACH
PAVEMENT, AS PER
PLAN



EAST APPROACH



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED
BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND
THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE
LAWS OF THE STATE OF IOWA

FOR ORIGIN DESIGN CO.

Courtney Wand 12-12-24

COURTNEY E. WAND DATE

PE 23610 12/31/2025

LICENSE # RENEWAL DATE

PAGES OR SHEETS COVERED BY THIS CERTIFICATION:

U & V SHEETS



HORIZONTAL SCALE IN FEET
0 4 8
DRAWING MAY HAVE BEEN REDUCED

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

origin 800 556-4491

CITY OF OELWEIN

PROJECT NUMBER BRM-5657(614)- -8N-33

APPROACH DETAILS

SHEET: U.1

REV: .

CONCRETE USED FOR THE BRIDGE APPROACH PAVEMENT SECTION SHALL BE CLASS C, CLASS 3I DURABILITY UNLESS OTHERWISE APPROVED BY ENGINEER.

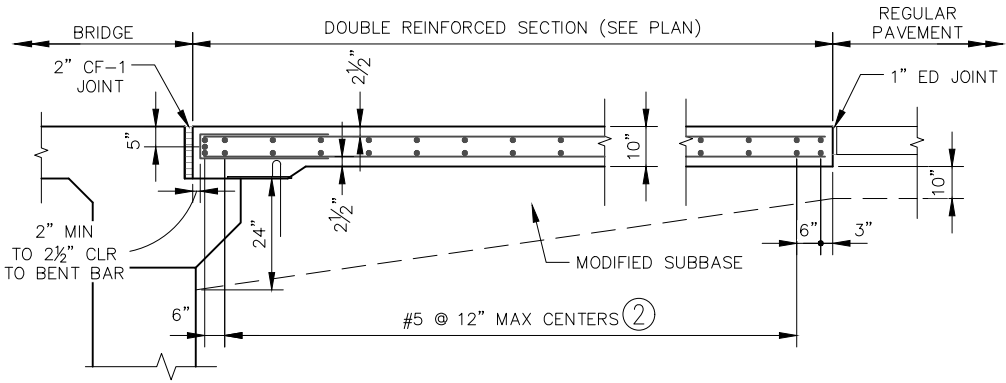
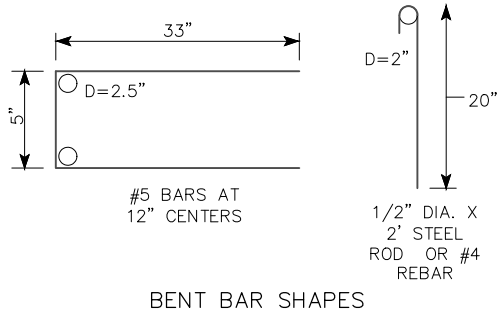
CONTRACT ITEM:

BRIDGE APPROACH, PAVEMENT, AS PER PLAN

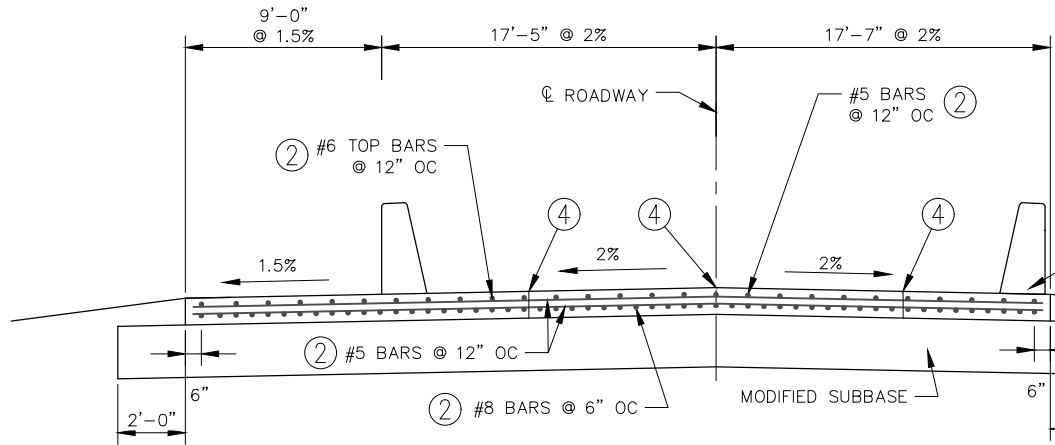
- METHOD OF MEASUREMENT FOR BRIDGE APPROACH, AS PER PLAN SHALL BE THE SQUARE YARDS SHOWN IN THE CONTRACT DOCUMENTS.
- BASIS OF PAYMENT FOR BRIDGE APPROACH PAVEMENT, AS PER PLAN IS FULL COMPENSATION FOR:
 - EXCAVATION FOR SPECIFIED STONE MATERIAL
 - SAW CUTTING
 - FURNISHING AND INSTALLING REINFORCED STEEL, TIE BARS, AND DOWEL ASSEMBLIES
 - PLACING, FINISHING, TEXTURING, GROOVING, AND CURING
 - ALL JOINT CONSTRUCTION
 - MODIFIED SUBBASE
 - ALL OTHER MATERIALS AND LABOR TO CONSTRUCT THE APPROACH PAVEMENT SECTION AS SHOWN IN THE CONTRACT DOCUMENTS.

FOR JOINT DETAILS, SEE STANDARD ROAD PLANS PV-101. FOR PROJECT SPECIFIC JOINTING OUTSIDE OF APPROACH PAVEMENT, SEE L SHEETS

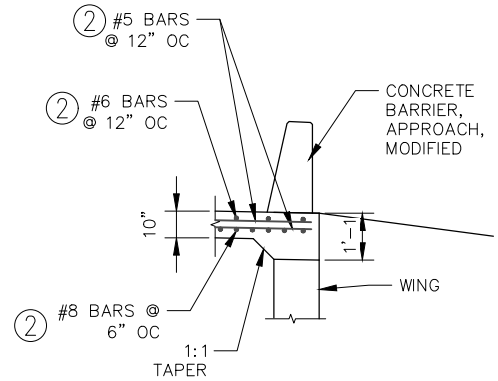
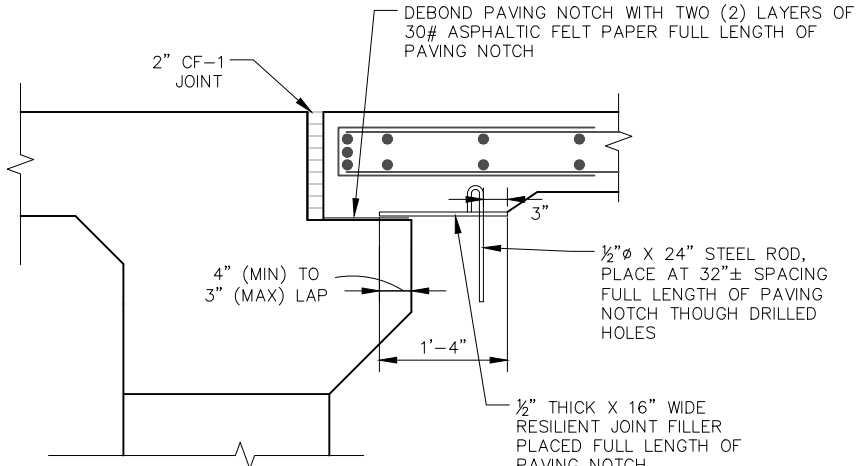
- 2" MIN. TO 2 1/2" MAX. CLEAR TO BENT BAR.
- MINIMUM LAP LENGTH: #5 Bars - 18"
#6 Bars - 27"
#8 Bars - 48"
- PLACE ADDITIONAL #5 BAR PARALLEL TO SKEWED FACE.
- LONGITUDINAL JOINT: (PV-101, IDOT STANDARD ROAD PLANS)
SINGLE POUR - SAW CUT JOINT PER PV-101 DETAIL B.
TWO POURS - USE BT-4 JOINT.



1 SECTION
U.2 NOT TO SCALE



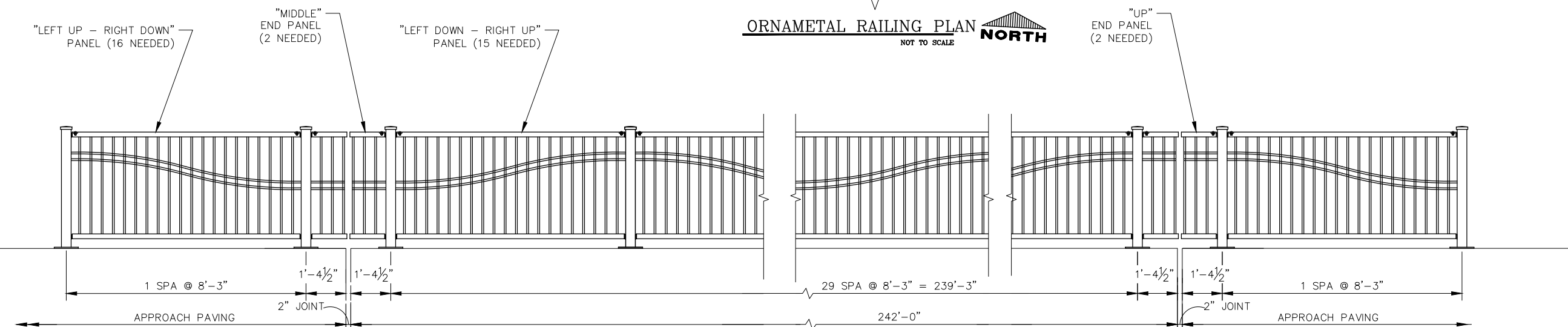
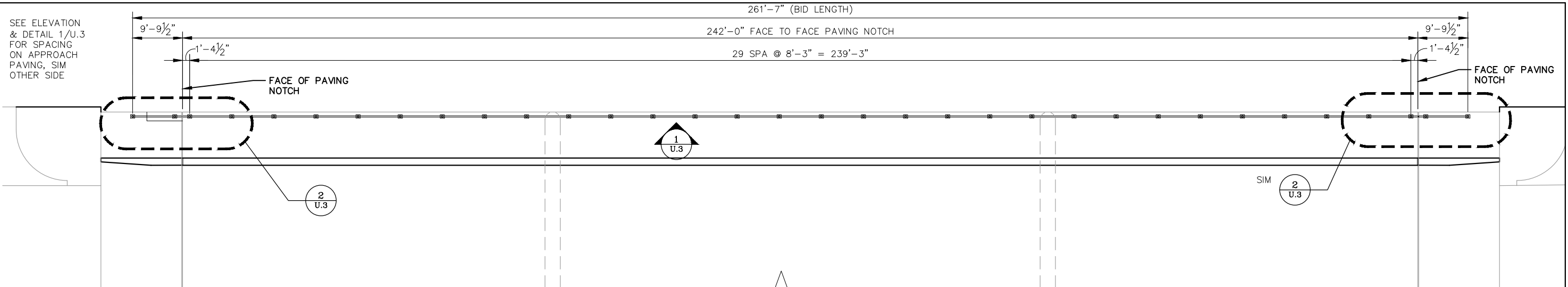
2 TYPICAL SECTION - BOTH
U.2 NOT TO SCALE



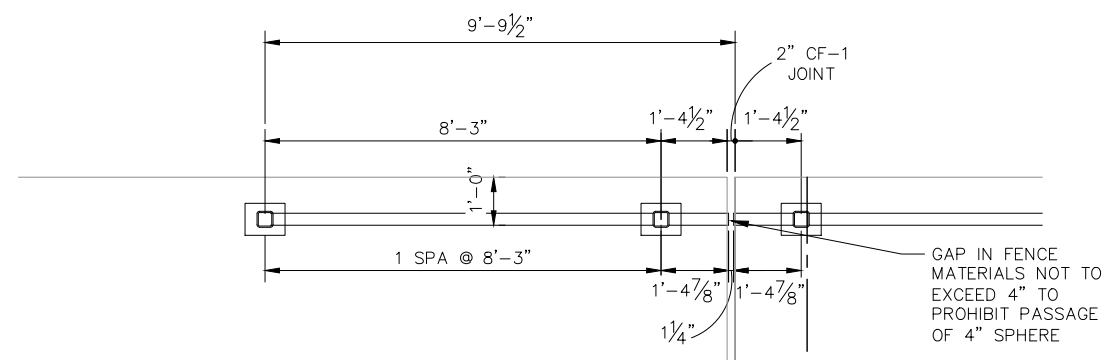
4 SECTION AT SOUTH WINGS
U.2 NOT TO SCALE

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50
71'-0" END SPANS 97'-0" CENTER SPAN
SHEET: U.2 REV: .

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1 U.3 ORNAMETAL METAL RAILING ELEVATION
LOOKING NORTH FROM SIDEWALK SIDE
NOT TO SCALE



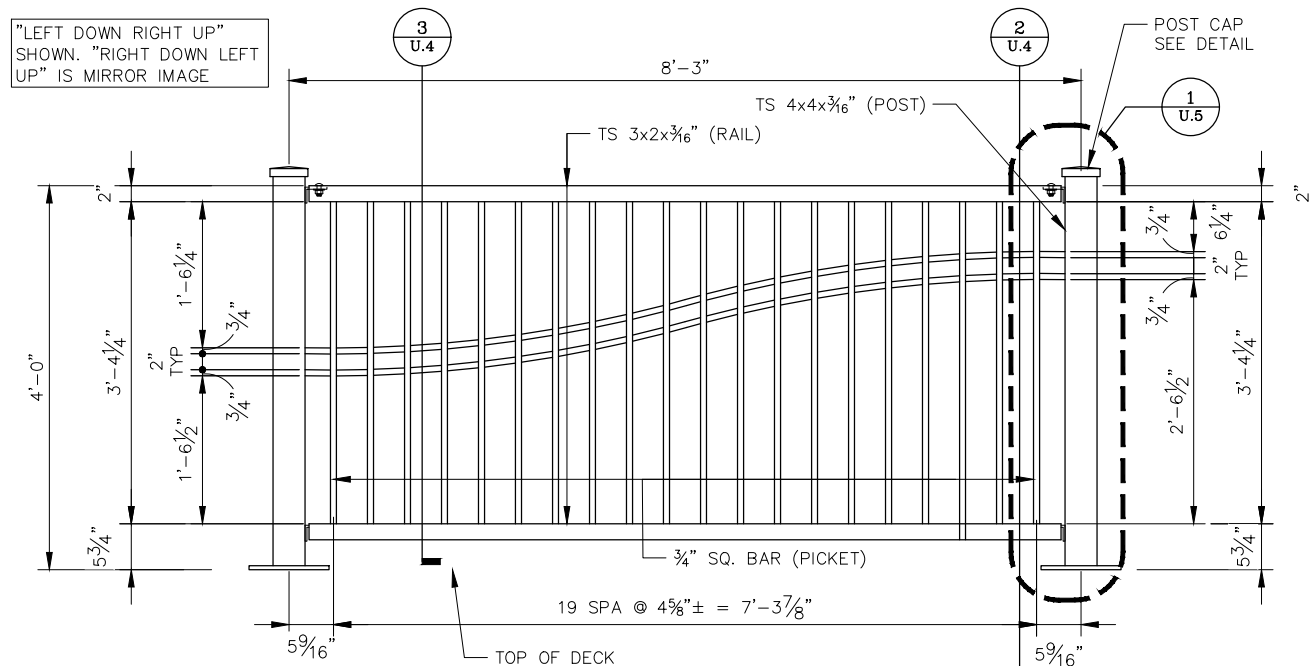
1 U.3 PLAN BLOWUP
AT APPROACH PAVING
NOT TO SCALE

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

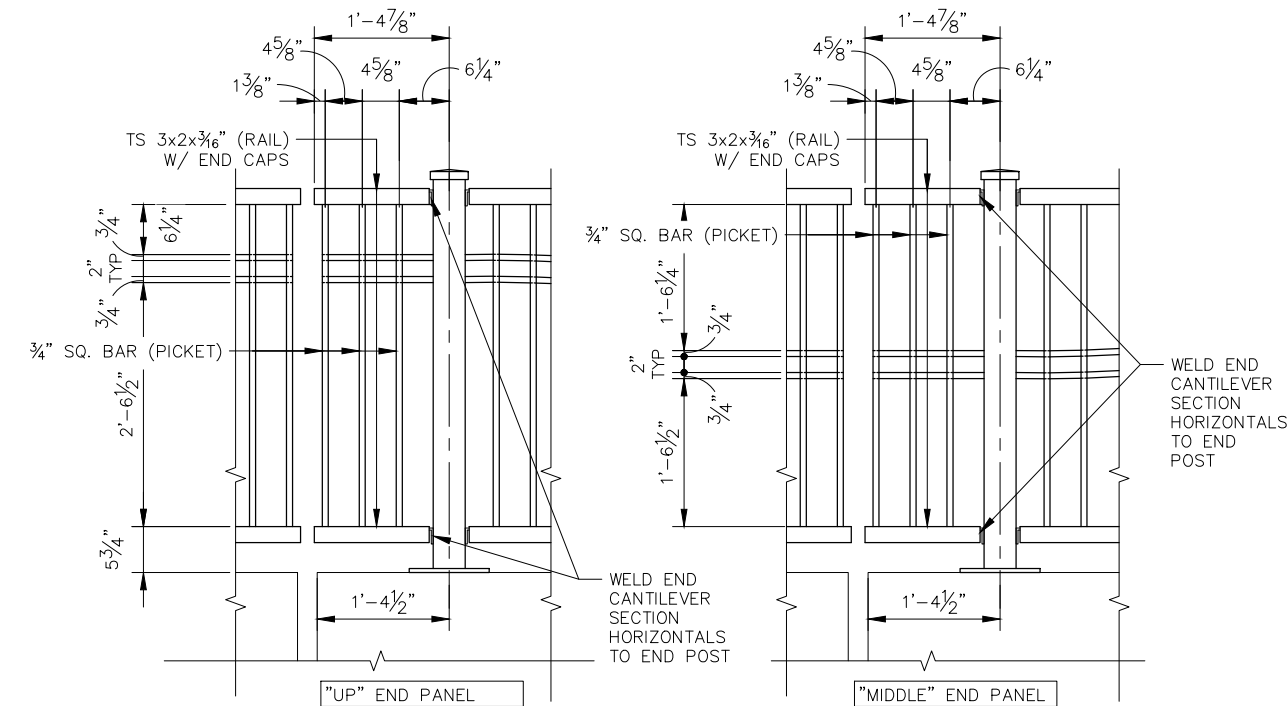
Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

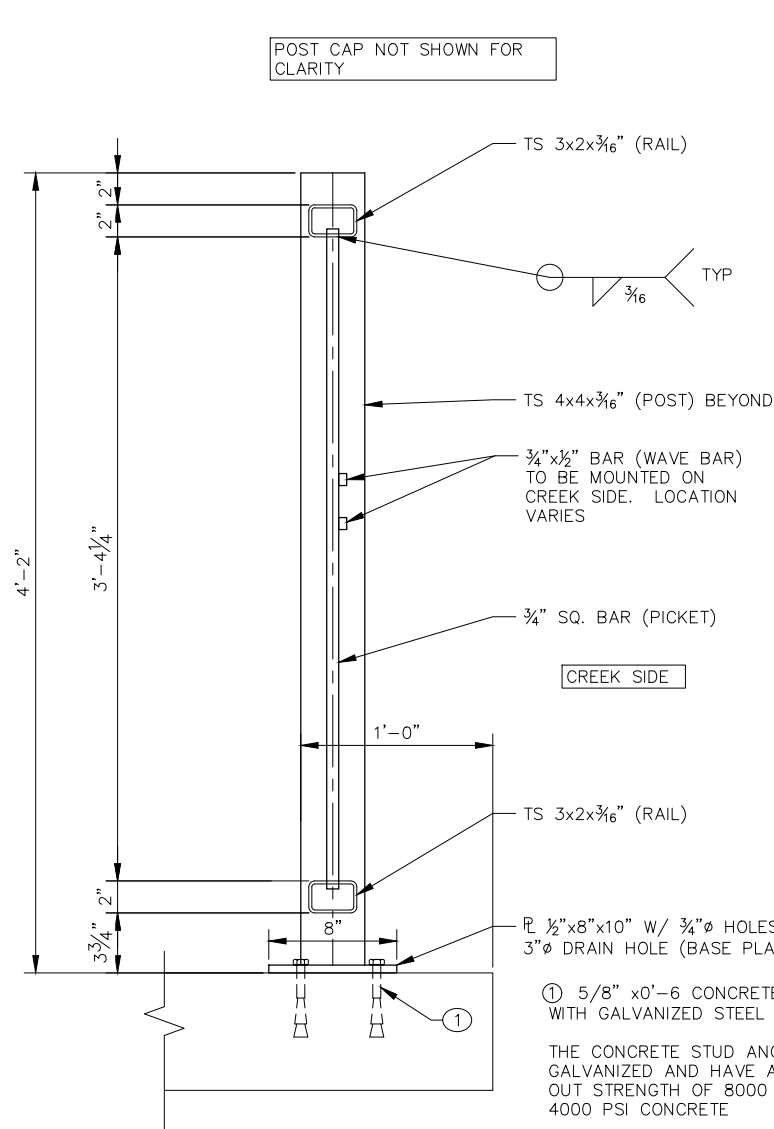
"LEFT DOWN RIGHT UP"
SHOWN. "RIGHT DOWN LEFT
UP" IS MIRROR IMAGE



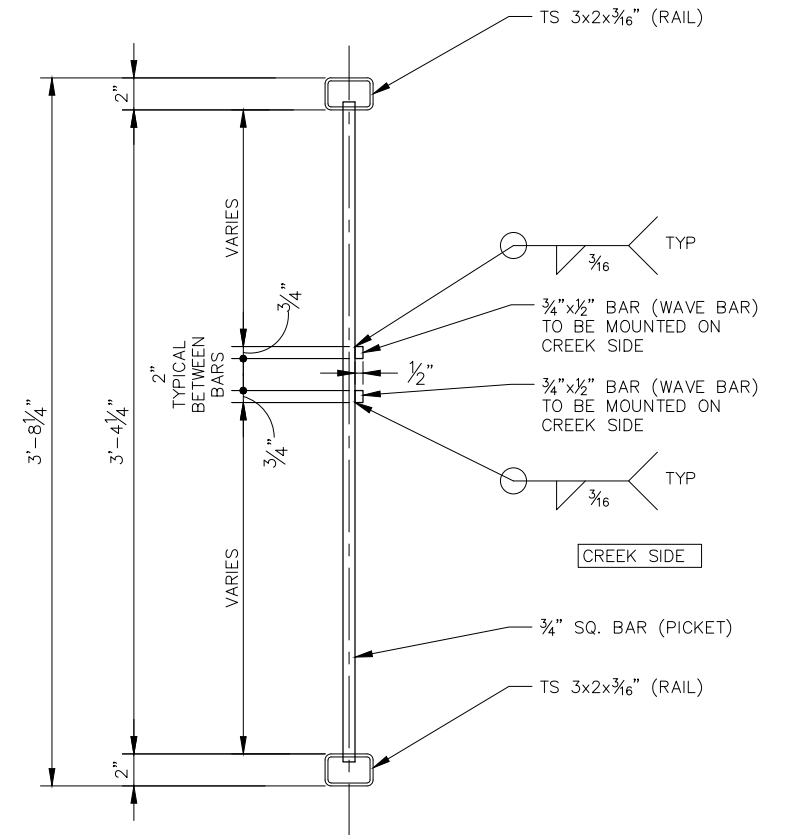
1 U.4 TYPICAL ORNAMENTAL METAL RAILING SPAN
LOOKING FROM SIDEWALK SIDE NOT TO SCALE



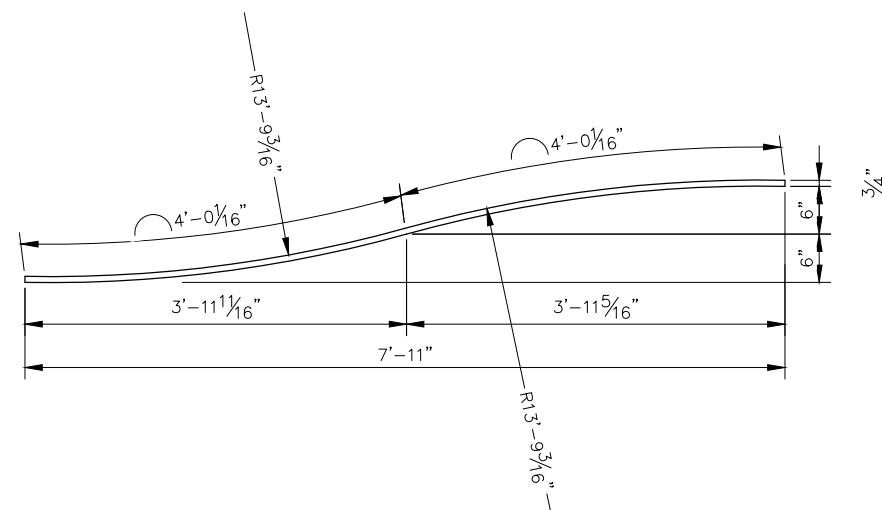
4 U.4 TYP ORNAMENTAL METAL RAILING END
NOT TO SCALE



2 U.4 ORNAMENTAL METAL RAILING SECTION
NOT TO SCALE



3 U.4 ORNAMENTAL METAL RAILING SECTION
NOT TO SCALE



5 U.4 WAVE BAR DETAIL
NOT TO SCALE

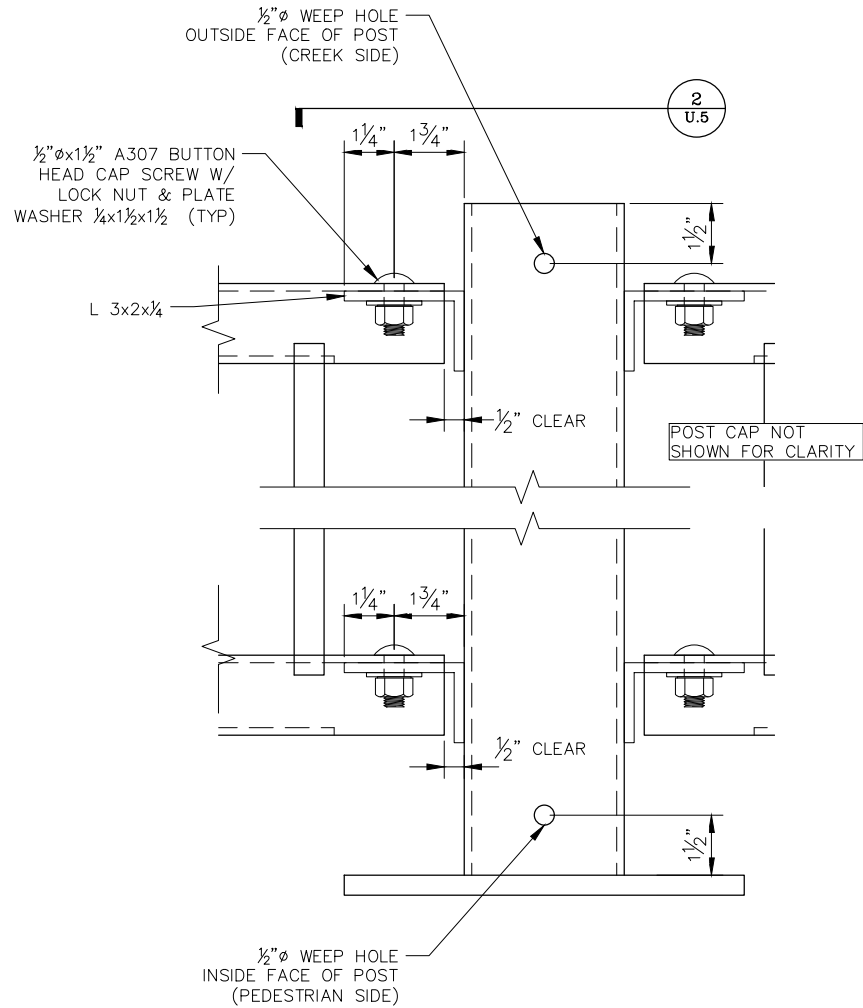
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

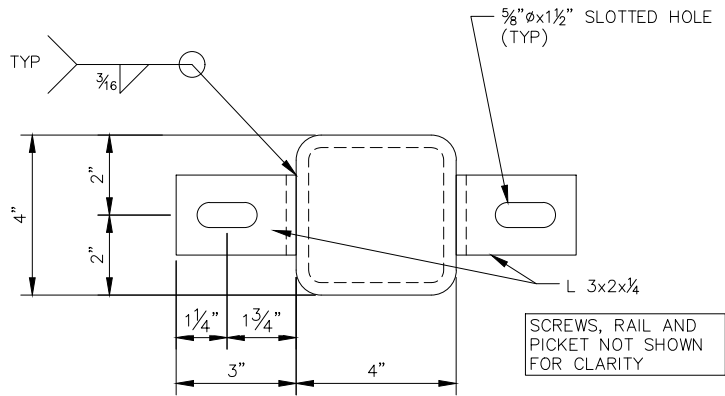
71'-0" END SPANS

97'-0" CENTER SPAN

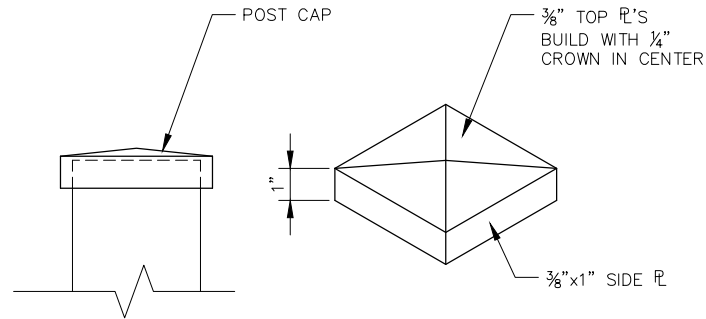
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1
U.5
ANGLE ATTACHMENT DETAIL
TYP BOTH RAILINGS NOT TO SCALE



2
U.5
SECTION
TYP BOTH RAILINGS NOT TO SCALE



3
U.5
POST CAP
TYP BOTH RAILINGS NOT TO SCALE

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RAILING GALVANIZE AND PAINTING SPECIFICATIONS

STEEL RAILING COMPONENTS SHALL BE ABRASIVE BLAST CLEANED TO A MINIMUM OF SSPC–SP6 “COMMERCIAL BLAST CLEANING” PRIOR TO HOT–DIP GALVANIZING. GALVANIZE COMPONENTS IN ACCORDANCE WITH ASTM A 123. DO NOT QUENCH OR APPLY CHROMATE CONVERSION COATINGS TO ANY GALVANIZED COMPONENTS THAT WILL RECEIVE PAINTING. FOLLOWING GALVANIZING, PAINT COMPONENTS IN ACCORDANCE WITH MATERIALS I.M. 568.

PREPARATION OF GALVANIZED SURFACES FOR PAINT SHALL BE IN ACCORDANCE WITH MATERIALS I.M. 568, APPENDIX F. COMPLETE “PAINT OVER GALVANIZED SURFACE TRAVEL LOG” IN APPENDIX E.

ALL COATING SHALL BE PERFORMED IN AN APPROVED SHOP IN ACCORDANCE WITH MATERIALS I.M. 568.

PAINT SYSTEM SHALL USE A THREE COAT FLUOROPOLYMER PAINT SYSTEM. APPROVED FLUOROPOLYMER PAINT SYSTEMS FOR THIS PROJECT ARE LISTED IN MATERIALS I.M. 482.09. STANDARD SPECIFICATION 2408.02.Q SHALL APPLY EXCEPT AS MODIFIED HEREIN.

THE PAINT SYSTEM SHALL CONSIST OF THE FOLLOWING:

PRIME COAT:

- a. APPLY A COAT OF THE ORGANIC ZINC RICH PAINT FROM THE APPROVED FLUOROPOLYMER PAINT SYSTEM TO ALL SURFACES AS SOON AS POSSIBLE AFTER SURFACE PREPARATION OF GALVANIZED SURFACE.
- b. APPLY THE PRIMER AS RECOMMENDED BY THE MANUFACTURER IN A SINGLE APPLICATION TO OBTAIN A DRY FILM THICKNESS (DFT) AS LISTED IN THE MANUFACTURER’S PRODUCT DATA SHEET FOR THE PRIMER MATERIAL. APPLY THE PRIMER ABOVE THE BLAST PROFILE, SO THAT A UNIFORM APPEARANCE IS OBTAINED AFTER THE COATING IS CURED.
- c. APPLY A STRIPE COAT BY BRUSH TO EDGES, WELDS, CREVICES, BOLT HEADS, AND OTHER SURFACE IRREGULARITIES WHEN APPLYING THE PRIMER COAT. THE STRIPE COAT MAY BE APPLIED TO THE SURFACE BY SPRAY AS LONG AS IT IS IMMEDIATELY AND THOROUGHLY WORKED INTO THESE AREAS BY BRUSH.
- d. ALLOW THE PRIME COAT TO CURE ACCORDING TO THE COATING MANUFACTURER’S RECOMMENDATIONS BEFORE THE INTERMEDIATE COAT IS APPLIED.
- e. PERFORM REPAIRS OR BUILD–UP OF THE PAINT FILM AS SOON AS POSSIBLE, AND NO LATER THAN 24 HOURS FROM THE INITIAL APPLICATION.
- f. COMPLETELY REBLAST AND REPAINT STEEL MEMBERS WITH COATING AREAS MEASURING LESS THAN THE MANUFACTURER’S MINIMUM RECOMMENDED DRY FILM THICKNESS THAT HAVE NOT BEEN CORRECTED WITHIN 24 HOURS.
- g. CORRECT, TO THE ENGINEER’S SATISFACTION, ALL DEFECTS IN APPLICATION SUCH AS RUNS, SAGS, MUD CRACKING, OVER–SPRAY, AND DRY SPRAY.
- h. EXCESSIVE COATING THICKNESS IS AS EQUALLY UNDESIRABLE AS UNACCEPTABLY THIN COATING THICKNESS, AND BOTH WILL BE SUFFICIENT CAUSE FOR REJECTION. EXCESSIVE THICKNESS WILL BE EVALUATED ON A CASE–BY–CASE BASIS IN CONSULTATION WITH THE COATING MANUFACTURER.

INTERMEDIATE COAT:

- a. SHOP APPLY THE INTERMEDIATE COAT OF THE APPROVED FLUOROPOLYMER PAINT SYSTEM TO ALL PRIMED SURFACES.

- b. APPLY THE INTERMEDIATE COAT AS RECOMMENDED BY THE MANUFACTURER IN A SINGLE APPLICATION TO OBTAIN A DRY FILM THICKNESS AS LISTED IN THE MANUFACTURER’S PRODUCT DATA SHEET FOR THE MATERIAL. APPLY THE INTERMEDIATE COAT OVER THE PRIMER, SO THAT A UNIFORM APPEARANCE IS OBTAINED AFTER THE COATING IS CURED. USE A COLOR THAT CONTRASTS WITH THE PRIMER AND TOP COAT.
- c. APPLY A STRIPE COAT BY BRUSH TO EDGES, WELDS, CREVICES, BOLT HEADS, AND OTHER SURFACE IRREGULARITIES WHEN APPLYING THE PRIMER COAT AND INTERMEDIATE SECOND COAT. THE STRIPE COAT MAY BE APPLIED TO THE SURFACE BY SPRAY AS LONG AS IT IS IMMEDIATELY AND THOROUGHLY WORKED INTO THESE AREAS BY BRUSH.
- d. ALLOW THE INTERMEDIATE COAT TO CURE ACCORDING TO THE COATING MANUFACTURER’S RECOMMENDATIONS BEFORE THE FINISH COAT IS APPLIED.

TOP COAT

- a. SHOP APPLY THE FLUOROPOLYMER TOP COAT OF THE APPROVED FLUOROPOLYMER PAINT SYSTEM TO ALL PAINTED SURFACES.
- b. APPLY THE TOP COAT AS RECOMMENDED BY THE MANUFACTURER IN A SINGLE APPLICATION TO OBTAIN A DRY FILM THICKNESS AS LISTED IN THE MANUFACTURER’S PRODUCT DATA SHEET FOR THE MATERIAL. APPLY THE TOP COAT OVER THE INTERMEDIATE COAT, SO THAT A UNIFORM APPEARANCE IS OBTAINED AFTER THE COATING IS CURED.
- c. APPLY A STRIPE COAT PRIOR TO FULL TOP COAT APPLICATION BY BRUSH TO EDGES, WELDS, CREVICES, BOLT HEADS, AND OTHER SURFACE IRREGULARITIES WHEN APPLYING THE PRIMER COAT AND INTERMEDIATE SECOND COAT. THE STRIPE COAT MAY BE APPLIED TO THE SURFACE BY SPRAY AS LONG AS IT IS IMMEDIATELY AND THOROUGHLY WORKED INTO THESE AREAS BY BRUSH.

SUBMIT PROPOSED PREPARATION METHODS AND PRODUCT DATA FOR ALL COATINGS PROPOSED FOR USE TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO APPLICATION. TOP COAT COLOR SHALL BE AMS–STD 27041 (BLACK) PER AMS STANDARD 595A. SUBMIT PAINT COLOR SAMPLE TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING MATERIALS.

HANDLING

PROTECT ALL PAINTED RAILING SURFACES FROM DAMAGE DURING SHIPPING, HANDLING, AND INSTALLATION.

REPAIRS

FOLLOWING RAILING INSTALLATION, REPAIR ANY DAMAGE TO THE PAINTING FINISH IN ACCORDANCE WITH THE COATING MANUFACTURER’S RECOMMENDATIONS. SUBMIT THE PAINTING MANUFACTURER’S WRITTEN FIELD REPAIR AND RECOATING PROCEDURES TO THE ENGINEER PRIOR TO TOUCH–UP OPERATIONS. FOLLOWING FINAL INSTALLATION AND TOUCH–UP PAINTING, THE FINISHED SURFACES SHALL BE UNIFORM IN COLOR, SHEEN, TEXTURE AND HIDING ACROSS EACH CONTINUOUS SURFACE AREA WHEN VIEWED IN NATURAL DAYLIGHT AT NORMAL VIEWING ANGLES AND FROM DISTANCES NOT LESS THAN 39 INCHES FROM SURFACE. COMPONENTS DEEMED UNACCEPTABLE BY THE ENGINEER SHALL BE REMOVED AND RETURNED TO AN APPROVED COATING SHOP, AND SHALL BE COMPLETELY STRIPPED AND RECOATED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AT NO ADDITIONAL COST TO THE PROJECT.

METHOD OF MEASUREMENT


- 1. PROTECTIVE COATINGS FOR ORNAMENTAL METAL RAILING AND STEEL PIPE PEDESTRIAN HANDRAILING, INCLUDING BOTH GALVANIZING AND PAINTING, SHALL NOT BE MEASURED SEPARATELY.

BASIS OF PAYMENT

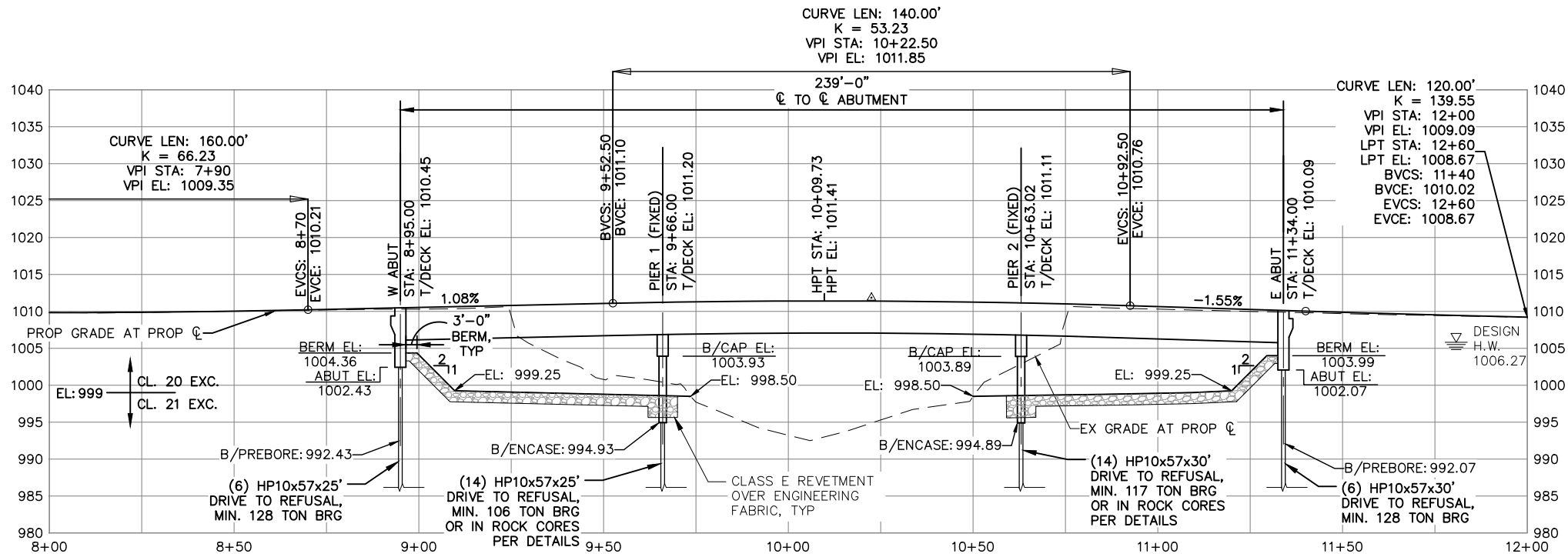
- 1. PROTECTIVE COATINGS FOR ORNAMENTAL METAL RAILING AND STEEL PIPE PEDESTRIAN HANDRAILING WILL BE INCLUDED IN THE PRICE BID PER LINEAL FOOT FOR ORNAMENTAL METAL RAILING. PAYMENT WILL BE FULL COMPENSATION FOR ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO SATISFACTORILY COMPLETE THE WORK.

RAILING NOTES:

- 1. WELD ALL COMPONENTS WITH ¼ INCH FILLET WELDS UNLESS NOTED OTHERWISE. GRIND WELDS AND CONNECTIONS AS REQUIRED TO PROVIDE A SMOOTH SURFACE, FREE OF BURRS.
- 2. RAILING MEMBERS SHALL COMPLY WITH ASTM A500 GR. C.
- 3. RAILING PLATES SHALL COMPLY WITH ASTM A572 GR. 50.
- 4. RAILING BOLTS SHALL COMPLY WITH ASTM A325 AND BE GALVANIZED AND PAINTED TO MATCH RAILING COMPONENTS U.N.O. FOR THE RAILING BOLTS SMALLER THAN ½” DIAMETER, ASTM A307 BOLTS MAY BE USED. OTHER RAILING NOTES AND REQUIREMENTS PER U AND V SHEETS SHALL STILL APPLY.
- 5. PROVIDE SUITABLE END CAPS FOR RAILINGS.
- 6. WELDING SHALL COMPLY WITH THE IOWA DOT STANDARD SPECIFICATIONS,, SECTION 2408.03.B.
- 7. FABRICATOR SHALL CONSULT WITH GALVANIZING FACILITY TO VERIFY PROPOSED RAIL SEGMENT LENGTHS CAN BE ACCOMPLISHED.
- 8. RAILING LAYOUT AND GEOMETRY SHALL BE FIELD VERIFIED PRIOR TO ORDERING MATERIALS OR INSTALLATION. IF CONTRACTOR ORDERS RAILING PRIOR TO FIELD VERIFICATION IT WILL BE AT THE CONTRACTOR’S RISK AT NO COST REPLACEMENT IF AS–BUILT LAYOUT DOES NOT MATCH DESIGN. SHOP DRAWINGS SHALL BE SUBMITTED SHOWING RAILING GEOMETRY, MATERIALS, AND QUANTITIES PER 1105.03 OF THE STANDARD SPECIFICATIONS.

			Design For 239’ x 32’ 0” SKEW PPCB BRIDGE 10TH ST SW OVER OTTER CREEK Station: 10+14.50		
			71’–0” END SPANS	97’–0” CENTER SPAN	
 800 556-4491		CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	RAILING NOTES	SHEET: U.6
					REV: .

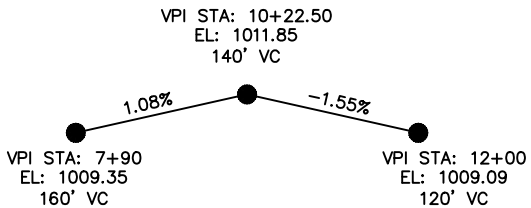
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FOR TEMPORARY EASEMENTS, REFER TO H SHEETS

BENCH MARKS			
B.M. NO.	ELEV.	DESCRIPTION	STATION AND OFFSET
101	1009.57	Benchmark 101 Pink Capped Rebar	7+73.90, 15.95' R
102	1007.88	Benchmark 102 Pink Capped Rebar	12+00.83, 16.50' L

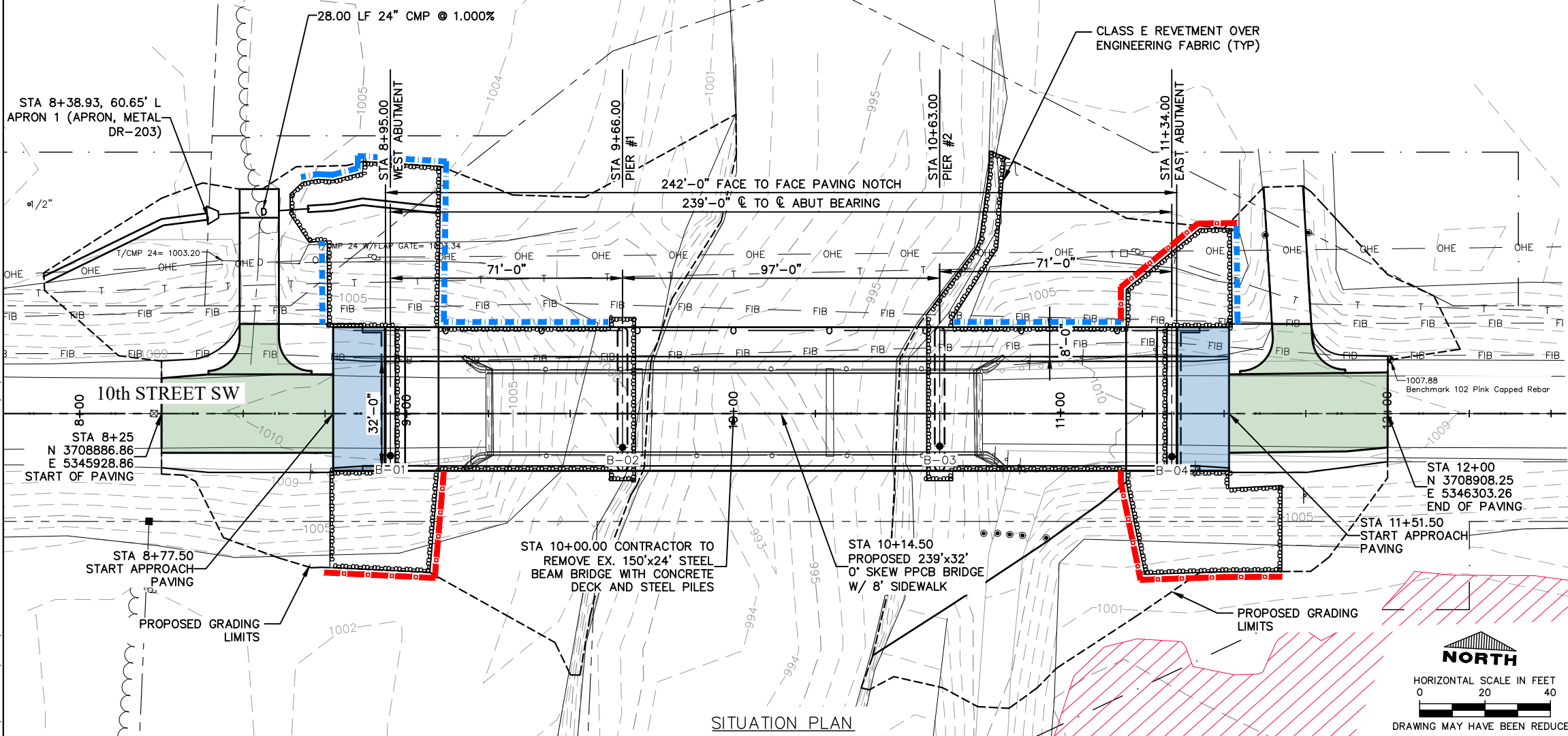
LEGEND	
REVTMENT DETAIL 3/B.1 EXTENTS	
REVTMENT DETAIL 4/B.1 EXTENTS	
WETLANDS	



PROPOSED GRADE
ON 10TH ST

NTS

PROFILE



SITUATION PLAN

NORTH

HORIZONTAL SCALE IN FEET
0 20 40

DRAWING MAY HAVE BEEN REDUCED

NOTES
TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.03' BELOW THE PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC PIER TYPE - ENCASED PILE BENT
CLASS E REVETMENT IS EMBEDDED.

LOCATION
CITY OF OELWEIN, FAYETTE COUNTY
T91N R9W, JEFFERSON TWP.
SW 1/4 SEC 28
OVER OTTER CREEK
FHWA STRUCTURE NO. 8920
42.663750 N, -91.920260 E
TRAFFIC: 820 VPD (2021)

HYDRAULIC DATA
DRAINAGE AREA 38.8 SQ. MI.
MAIN CHANNEL SLOPE 9.5 FT./MI.
DESIGN DISCHARGE 9290 CFS (100 YR)
DESIGN HIGH WATER 1006.27 FT. ELEV (100 YR)
REACH SLOPE (LOCAL) 7.9 FT./MI.
BRIDGE FLOW AREA 1878 SQ. FT. (100 YR)
DESIGN VELOCITY 5.0 FPS (100 YR)

Q₅₀ 7900 CFS NATURAL STAGE 1005.07 FT.
Q₁₀₀ 9290 CFS NATURAL STAGE 1005.69 FT.
CALCULATED DESIGN SCOUR (100 YR) = ELEV. 982.0 FT.
Q_{OVERTOPPING} 10000 CFS MIN. ROAD ELEV. 1006.07 FT.
Q₅₀₀ 13100 CFS STAGE WITH BACKWATER 1007.70 FT.
CALCULATED CHECK SCOUR (500 YR) = ELEV. 983.0 FT.

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

origin 800 556-4491

CITY OF OELWEIN

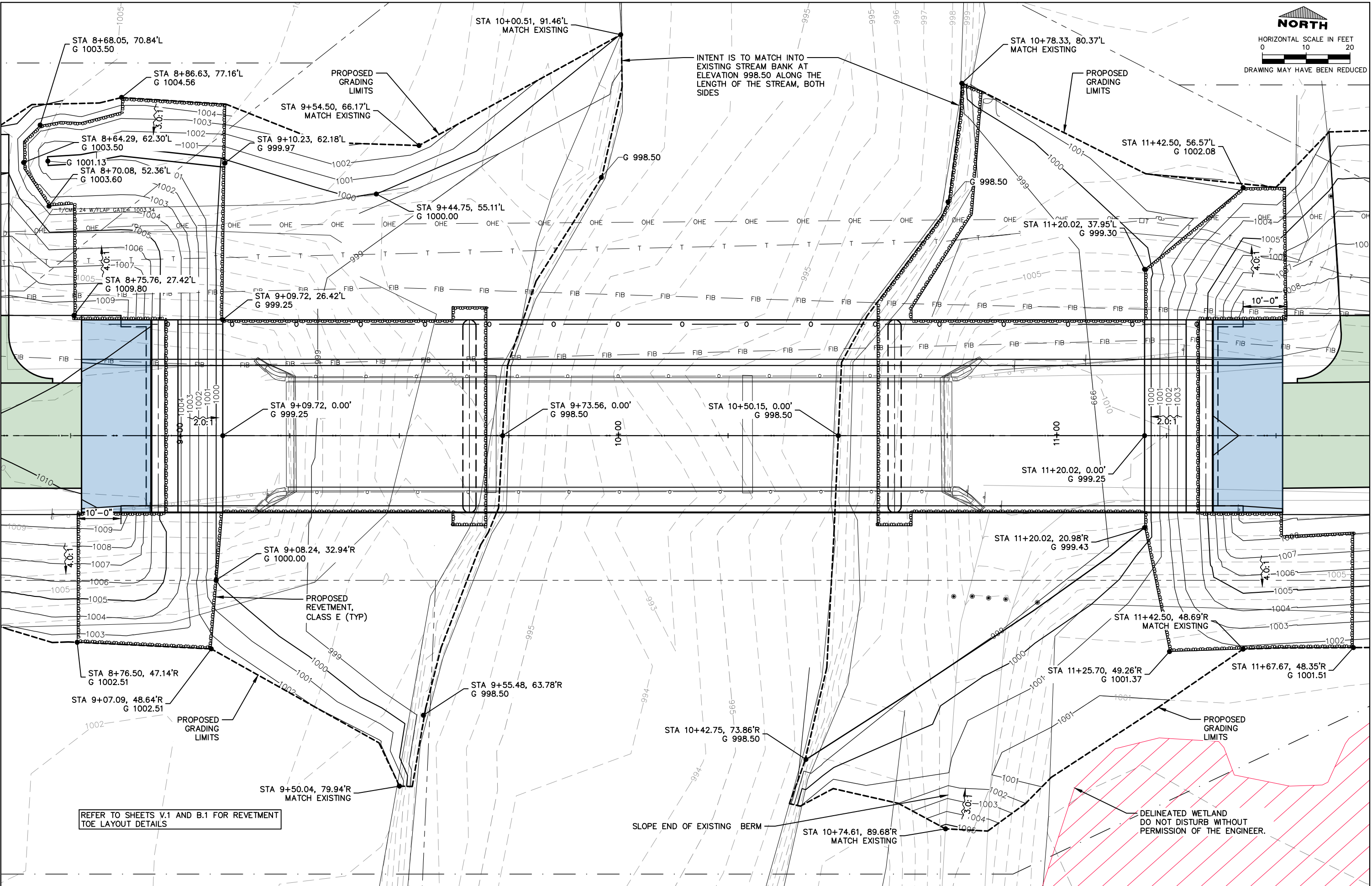
PROJECT NUMBER BRM-5657(614)-8N-33

SITUATION PLAN

SHEET: V.1

REV: .

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GENERAL BRIDGE NOTES:

IT IS THE INTENT OF THIS DESIGN TO CONSTRUCT A 239’–0”x44’–0” PPCB BRIDGE WITH A 0’ SKEW WITH SOLID BARRIER RAILS ALONG THE ROADWAY. THE BRIDGE CONSISTS OF A 32’–0” ROADWAY WITH A 8’–0” SIDEWALK ALONG THE NORTH EDGE. THE WINGS ARE SHORTENED AND DO NOT EXTEND ABOVE THE PAVING NOTCH TO FACILITATE THE APPROACH SLAB.

THESE BRIDGES ARE DESIGNED FOR HL–93 LOADING PLUS 20LBS. PER SQ.FT. OF ROADWAY FOR FUTURE WEARING SURFACE. SIX FEET OF APPROACH SLAB DEAD AND LIVE LOADS APPLIED TO ABUTMENTS.

THE FLOOR SLAB SHOWN INCLUDES ½” INTEGRAL WEARING SURFACE.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, SERIES OF 2017. REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60. CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f’c – 4,000 PSI. FOR STANDARD PRESTRESSED CONCRETE BEAMS, SEE PPCB SHEETS.

SOUNDING AND TEST BORING DATA SHOWN ON THE PLANS WERE ACCUMULATED FOR DESIGNING AND ESTIMATING PURPOSES ONLY. THEIR APPEARANCE ON THE PLANS DOES NOT CONSTITUTE A GUARANTEE THAT CONDITIONS OTHER THAN THOSE INDICATED WILL NOT BE ENCOUNTERED.

ABUTMENT PILE DESIGN NOTES:

THE CONTRACT LENGTH OF 25 FEET FOR THE WEST ABUTMENT PILES AND 30 FEET FOR THE EAST ABUTMENT PILES IS BASED ON A NON–COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 175 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.5 FOR SOIL AND 0.7 FOR ROCK END BEARING.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A NON–COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.5 FOR SOIL AND 0.7 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF PREBORE.

ABUTMENT PILE DRIVING NOTE:

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR ABUTMENT PILES IS 128 TONS AT END OF DRIVE OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. IN NO CASE SHALL A PILE BE EMBEDDED LESS THAN 6 FEET INTO DENSE SANDY SOIL BELOW PREBORE WITH AN ADDITIONAL 2 FEET OF PENETRATION INTO BEDROCK. IF MINIMUM EMBEDMENT CANNOT BE ACHIEVED, CONTACT ENGINEER TO DETERMINE IF ROCK CORING WILL BE REQUIRED. CONSTRUCTION CONTROL REQUIRES A MODIFIED IOWA DOT ENR FORMULA.

PIER PILE DESIGN NOTES:

THE CONTRACT LENGTH OF 25 FEET FOR THE PIER 1 PILES AND 30 FEET FOR THE PIER 2 PILES IS BASED ON A NON–COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 138 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.5 FOR SOIL AND 0.7 FOR ROCK END BEARING.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A NON–COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.5 FOR SOIL AND 0.7 FOR ROCK END BEARING. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF ENCASEMENT. FOR PIER 1, THE DESIGN SCOUR (200–YEAR) WAS ASSUMED TO AFFECT THE UPPER 5 FEET OF EMBEDDED PILE LENGTH AND CAUSE 12 KIPS OF DRIVING RESISTANCE. FOR PIER 2, DESIGN SCOUR (200–YEAR) WAS ASSUMED TO AFFECT THE UPPER 11 FEET OF EMBEDDED PILE LENGTH AND CAUSE 30 KIPS OF DRIVING RESISTANCE.

PIER PILE DRIVING NOTE:

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR PIER 1 PILES IS 106 TONS AND FOR PIER 2 PILES IS 117 TONS AT END OF DRIVE OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN UNLESS PILES REACH REFUSAL. SEE ROCK CORING DETAILS FOR PIER PILES. CONSTRUCTION CONTROL REQUIRES A MODIFIED IOWA DOT ENR FORMULA.

SUMMARY OF CONCRETE QUANTITIES	
LOCATION	STRUCTURAL CONCRETE
WEST ABUT. FOOTING	18.3
EAST ABUT. FOOTING	18.2
BRIDGE DECK **	355.5
(4) ABUTMENT WINGS	8.8
PIER 1 CAP & ENCASEMENT	47.1
PIER 2 CAP & ENCASEMENT	47.1
** INCLUDES ABUTMENT & PIER DIAPHRAGMS AND HAUNCHES	
TOTAL (CU. YDS.)	495.0

SUMMARY OF EPOXY COATED REINFORCING STEEL	
LOCATION	EPOXY REINFORCING STEEL
SUPERSTRUCTURE AND TWO ABUTMENTS	105341
(4) ABUTMENT WINGS	660
BARRIER RAILS	12064
PIER 1 ENCASEMENT & CAP	5133
PIER 2 ENCASEMENT & CAP	5133
TOTAL (LBS.)	128331

SUMMARY OF EXCAVATION		
LOCATION	CLASS 20 EXCAVATION	CLASS 21 EXCAVATION
WEST ABUTMENT	52	
EAST ABUTMENT	52	
PIER 1		53
PIER 2		53
TOTAL (CU. YDS.)	104	106

SUMMARY OF FOUNDATIONS					
LOCATION	SUBSTRUCTURE TYPE	PILE TYPE	NUMBER	LENGTH (L.F.)	TOTAL (L.F.)
WEST ABUTMENT	INTEGRAL ABUTMENT	HP10x57	6	25	150
EAST ABUTMENT	INTEGRAL ABUTMENT	HP10x57	6	30	180
PIER 1	ENCASED PILE BENT	HP10x57	14	25	350
PIER 2	ENCASED PILE BENT	HP10x57	14	30	420
TOTAL (LF)					1100

SUMMARY OF STRUCTURAL STEEL	
LOCATION	TOTAL (LBS.)
DIAPHRAGMS	4683.2
DECK DRAINS	1104.0
TOTL (LBS.)	5787.2

SUMMARY OF BEARINGS			
LOCATION	BEARING TYPE	NUMBER	ASSOCIATED BID ITEM
WEST ABUTMENT	3x3 BAR	5	INCIDENTAL ITEM
EAST ABUTMENT	3x3 BAR	5	INCIDENTAL ITEM
PIER 1	PLAIN NEOPRENE 1"	5	INCIDENTAL ITEM
PIER 2	PLAIN NEOPRENE 1"	5	INCIDENTAL ITEM

ROCK CORING NOTES:

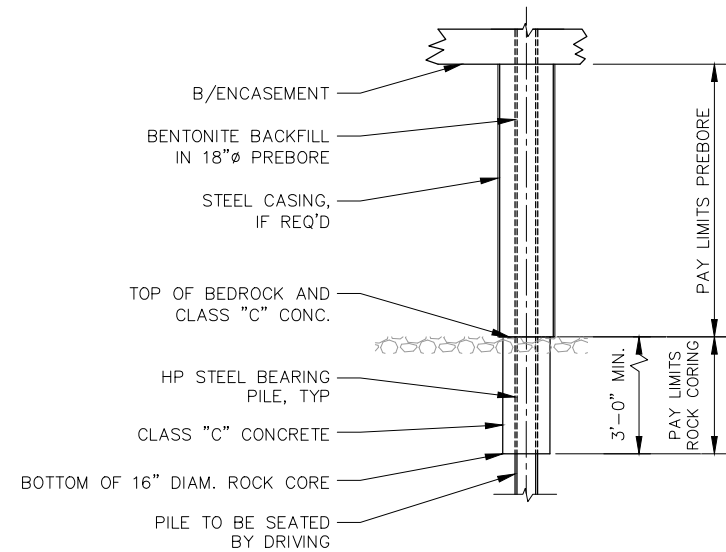
THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR (4) PILES IN EACH PIER AS NOTED AND COMPLETE ROCK CORING. HOLES SHALL BE PREBORED AND ROCK CORING PERFORMED UNLESS BEDROCK ELEVATIONS VARY SIGNIFICANTLY FROM ANTICIPATED ELEVATIONS. NOTIFY THE ENGINEER PRIOR TO PREBORING AND ROCK CORING OPERATIONS SO THAT FIELD DEPTHS AND MEASUREMENTS CAN BE VERIFIED.

THE 18 INCH DIAMETER PREBORED HOLE IN THE SOIL SHALL EXTEND FROM THE BOTTOM OF THE PIER ENCASEMENTS TO THE TOP OF THE BEDROCK STRATUM AS SHOWN ON THE SPS SHEETS WHICH IS ANTICIPATED TO BE ELEVATION 990 AT THE WEST PIER AND 984 AT THE EAST PIER. THE 16 INCH DIAMETER ROCK SOCKET SHALL THEN BE CORED SO THAT THE BOTTOM OF THE SOCKET SHALL BE AT LEAST 3 FEET INTO BEDROCK. CONTRACTOR SHALL PROVIDE A SUITABLE CASING IF NEEDED TO MAINTAIN OPEN CORE HOLES. THE EQUIPMENT USED TO PERFORM THE ROCK CORING SHALL BE CAPABLE OF AUGURING THE ANTICIPATED BEDROCK MATERIALS. THE CONTRACTOR SHALL CLEAN THE BOTTOM OF THE ROCK SOCKET BEFORE INSERTING PILES OR PLACING CONCRETE.

SEAT THE PILING IN THE BEDROCK BY DRIVING IT TO THE TARGET DRIVING RESISTANCE. THE NUMBER OF HAMMER BLOWS SHALL BE LIMITED TO PREVENT DAMAGE TO THE PILING. THE SOCKET SHALL BE BACKFILLED WITH 3 FEET OF CLASS "C" STRUCTURAL CONCRETE BEFORE OR AFTER DRIVING PILES. CONCRETE PLACED BEFORE PILES ARE DRIVEN SHALL REMAIN PLASTIC UNTIL PILE DRIVING IS COMPLETE. RETARDER MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. PILES SHALL BE BRACED IN THE CORRECT POSITION UNTIL CONCRETE HAS REACHED 4 KSI COMPRESSIVE STRENGTH.

THE WEST PIER 1 QUANTITIES ASSUME 4.9 FEET OF PREBORE PLUS 3.0 FEET OF ROCK CORING FOR EACH OF THE (4) NOTED PILES. THE EAST PIER 2 QUANTITIES ASSUME 10.9 FEET OF PREBORE PLUS 3.0 FEET OF ROCK CORING FOR EACH OF THE (4) NOTED PILES.

IF BEDROCK IS NOT ENCOUNTERED ABOVE ELEVATION 972, THEN NO ADDITIONAL PREBORING IN THE SOIL IS REQUIRED AND NO "ROCK CORING" QUANTITY SHALL BE MEASURED FOR PAYMENT, AND THE PILE SHALL BE DRIVEN TO THE TARGET DRIVING RESISTANCE. THE LENGTH OF PREBORING SHALL BE MEASURED AND PAID FOR AT THE PRICE BID FOR "PREBORED HOLES" INSTEAD OF "ROCK CORING". PREBORED HOLES SHALL BE FILLED WITH SATURATED SAND IF ROCK CORING IS NOT PERFORMED TO Laterally SUPPORT THE PILING.

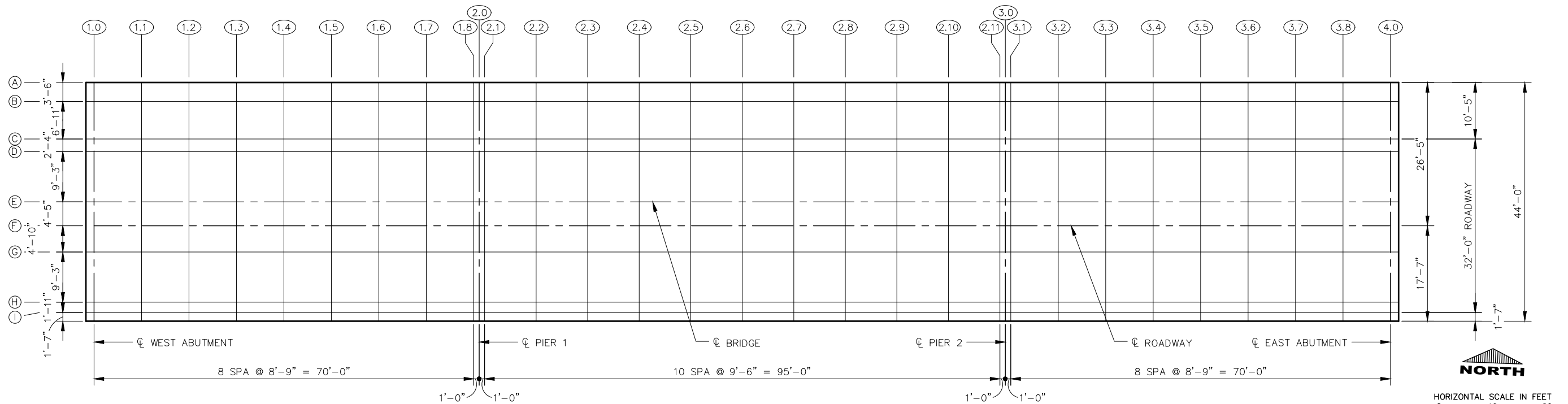


PILE ROCK CORE

Design For
239’ x 32’ 0” SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50

71’–0” END SPANS 97’–0” CENTER SPAN

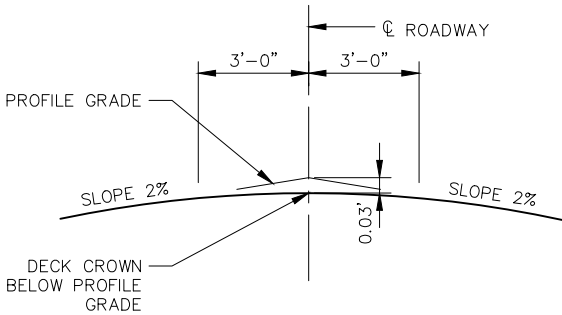
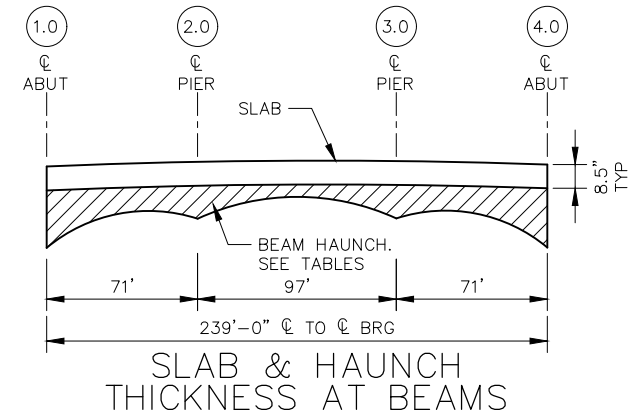
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DECK ELEVATION LAYOUT GRID

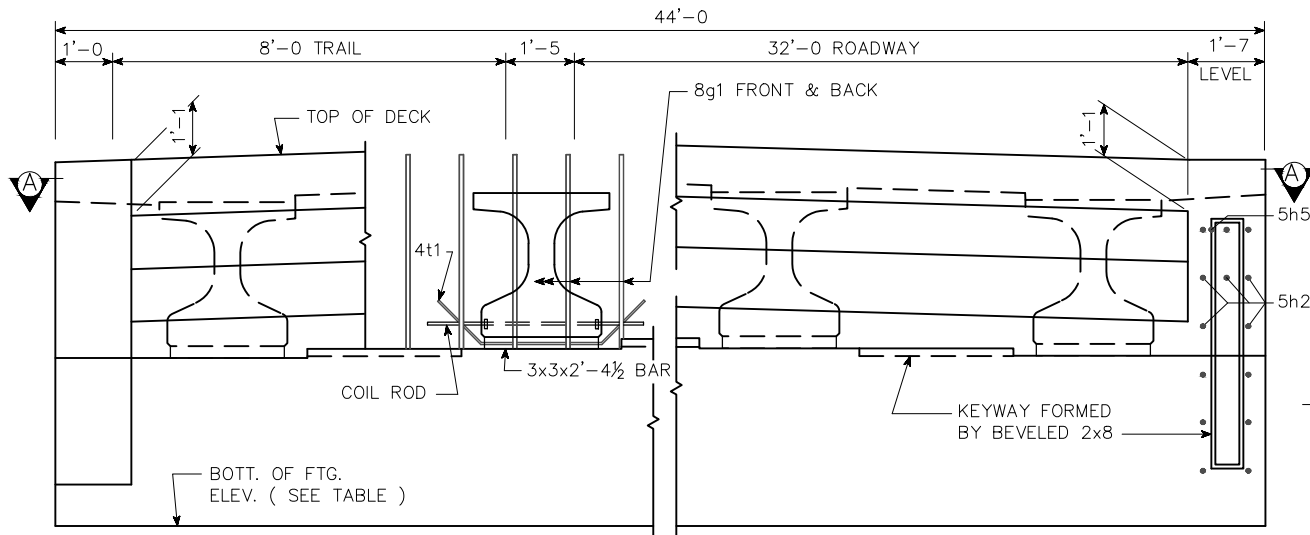
GRID LINE		LINE 1.0	LINE 1.1	LINE 1.2	LINE 1.3	LINE 1.4	LINE 1.5	LINE 1.6	LINE 1.7	LINE 1.8	LINE 2.0	LINE 2.1	LINE 2.2	LINE 2.3	LINE 2.4	LINE 2.5	LINE 2.6	LINE 2.7	LINE 2.8	LINE 2.9	LINE 2.10	LINE 2.11	LINE 3.0	LINE 3.1	LINE 3.2	LINE 3.3	LINE 3.4	LINE 3.5	LINE 3.6	LINE 3.7	LINE 3.8	LINE 4.0
ALL BEAMS	HAUNCH, INCHES	2.00	1.45	0.96	0.60	0.39	0.35	0.45	0.66	0.80		1.00	1.25	1.37	1.40	1.39	1.35	1.30	1.23	1.11	0.91	0.57		0.33	0.47	0.52	0.51	0.53	0.70	1.03	1.48	2.00
	HAUNCH, FEET	0.17	0.12	0.08	0.05	0.03	0.03	0.04	0.06	0.07		0.08	0.10	0.11	0.12	0.12	0.11	0.11	0.10	0.09	0.08	0.05		0.03	0.04	0.04	0.04	0.04	0.06	0.09	0.12	0.17
EDGE LINE A	TOP OF DECK	1010.00	1010.10	1010.19	1010.28	1010.38	1010.47	1010.57	1010.66	1010.74	1010.75	1010.76	1010.82	1010.88	1010.91	1010.93	1010.93	1010.91	1010.88	1010.82	1010.76	1010.67	1010.66	1010.65	1010.56	1010.44	1010.32	1010.18	1010.05	1009.91	1009.78	1009.64
EDGE LINE A	EDGE FORM ELEV.	1010.00	1010.14	1010.27	1010.39	1010.50	1010.58	1010.65	1010.71	1010.74		1010.76	1010.93	1011.07	1011.17	1011.24	1011.25	1011.22	1011.14	1011.02	1010.86	1010.67		1010.65	1010.60	1010.53	1010.43	1010.30	1010.16	1010.00	1009.82	1009.64
BEAM LINE B	TOP OF DECK	1010.06	1010.15	1010.24	1010.34	1010.43	1010.53	1010.62	1010.71	1010.79	1010.80	1010.81	1010.88	1010.93	1010.96	1010.98	1010.98	1010.96	1010.93	1010.88	1010.81	1010.72	1010.71	1010.70	1010.61	1010.50	1010.37	1010.24	1010.10	1009.96	1009.83	1009.69
BEAM LINE B	BLH ELEV.	1009.35	1009.49	1009.62	1009.74	1009.84	1009.93	1009.99	1010.05	1010.08		1010.10	1010.27	1010.41	1010.52	1010.58	1010.60	1010.56	1010.48	1010.36	1010.20	1010.02		1010.00	1009.95	1009.87	1009.77	1009.65	1009.50	1009.34	1009.17	1008.98
GUTTER LINE C	TOP OF DECK	1010.16	1010.25	1010.35	1010.44	1010.54	1010.63	1010.72	1010.82	1010.90	1010.91	1010.91	1010.98	1011.03	1011.07	1011.08	1011.08	1011.07	1011.03	1010.98	1010.91	1010.83	1010.82	1010.81	1010.71	1010.60	1010.48	1010.34	1010.20	1010.07	1009.93	1009.80
BEAM LINE D	TOP OF DECK	1010.21	1010.30	1010.39	1010.49	1010.58	1010.68	1010.77	1010.86	1010.94	1010.95	1010.96	1011.03	1011.08	1011.11	1011.13	1011.13	1011.11	1011.08	1011.03	1010.96	1010.88	1010.87	1010.86	1010.76	1010.65	1010.52	1010.39	1010.25	1010.12	1009.98	1009.84
BEAM LINE D	BLH ELEV.	1009.50	1009.64	1009.77	1009.89	1009.99	1010.08	1010.15	1010.20	1010.24		1010.25	1010.42	1010.56	1010.67	1010.73	1010.75	1010.71	1010.63	1010.51	1010.35	1010.17		1010.15	1010.10	1010.02	1009.92	1009.80	1009.65	1009.49	1009.32	1009.13
BEAM LINE E	TOP OF DECK	1010.39	1010.48	1010.58	1010.67	1010.77	1010.86	1010.96	1011.05	1011.13	1011.14	1011.15	1011.21	1011.26	1011.30	1011.31	1011.31	1011.30	1011.26	1011.21	1011.14	1011.06	1011.05	1011.04	1010.94	1010.83	1010.71	1010.57	1010.44	1010.30	1010.16	1010.03
BEAM LINE E	BLH ELEV.	1009.68	1009.82	1009.95	1010.07	1010.18	1010.26	1010.33	1010.39	1010.42		1010.44	1010.61	1010.75	1010.85	1010.92	1010.93	1010.90	1010.82	1010.70	1010.54	1010.35		1010.33	1010.28	1010.21	1010.11	1009.98	1009.84	1009.68	1009.50	1009.32
CENTERLINE F	TOP OF DECK	1010.45	1010.54	1010.64	1010.73	1010.83	1010.92	1011.01	1011.11	1011.19	1011.20	1011.20	1011.27	1011.32	1011.36	1011.37	1011.37	1011.36	1011.32	1011.27	1011.20	1011.12	1011.11	1011.10	1011.00	1010.89	1010.77	1010.63	1010.49	1010.36	1010.22	1010.09
BEAM LINE G	TOP OF DECK	1010.38	1010.48	1010.57	1010.66	1010.76	1010.85	1010.95	1011.04	1011.12	1011.13	1011.14	1011.20	1011.26	1011.29	1011.31	1011.31	1011.29	1011.26	1011.20	1011.14	1011.05	1011.04	1011.03	1010.94	1010.82	1010.70	1010.56	1010.43	1010.29	1010.16	1010.02
BEAM LINE G	BLH ELEV.	1009.67	1009.81	1009.95	1010.06	1010.17	1010.25	1010.32	1010.38	1010.41		1010.43	1010.60	1010.74	1010.85	1010.91	1010.92	1010.89	1010.81	1010.69	1010.53	1010.34		1010.32	1010.27	1010.20	1010.10	1009.97	1009.83	1009.67	1009.49	1009.31
BEAM LINE H	TOP OF DECK	1010.20	1010.29	1010.39	1010.48	1010.57	1010.67	1010.76	1010.85	1010.94	1010.94	1010.95	1011.02	1011.07	1011.10	1011.12	1011.12	1011.10	1011.07	1011.02	1010.95	1010.87	1010.86	1010.85	1010.75	1010.64	1010.51	1010.38	1010.24	1010.11	1009.97	1009.83
BEAM LINE H	BLH ELEV.	1009.49	1009.63	1009.76	1009.88	1009.98	1010.07	1010.14	1010.19	1010.23		1010.24	1010.41	1010.56	1010.66	1010.72	1010.74	1010.71	1010.63	1010.50	1010.35	1010.16		1010.14	1010.09	1010.01	1009.91	1009.79	1009.64	1009.48	1009.31	1009.13
GUTTER LINE I	TOP OF DECK	1010.16	1010.25	1010.35	1010.44	1010.54	1010.63	1010.72	1010.82	1010.90	1010.91	1010.91	1010.98	1011.03	1011.07	1011.08	1011.08	1011.07	1011.03	1010.98	1010.91	1010.83	1010.82	1010.81	1010.71	1010.60	1010.48	1010.34	1010.20	1010.07	1009.93	1009.80
GUTTER LINE I	EDGE FORM ELEV.	1010.16	1010.30	1010.43	1010.55	1010.65	1010.74	1010.81	1010.86	1010.90		1010.91	1011.08	1011.23	1011.33	1011.39	1011.41	1011.38	1011.30	1011.17	1011.02	1010.83		1010.81	1010.76	1010.68	1010.58	1010.46	1010.31	1010.15	1009.98	1009.80

BLH = BEAM LINE HAUNCH ELEVATION = TOP OF DECK - SLAB THICKNESS + DL DEFLECTION = BOTTOM OF SLAB ELEVATION BEFORE DECK PLACEMENT
EDGE FORM ELEV. = TOP OF DECK ELEVATION AT EDGE + DL DEFLECTION

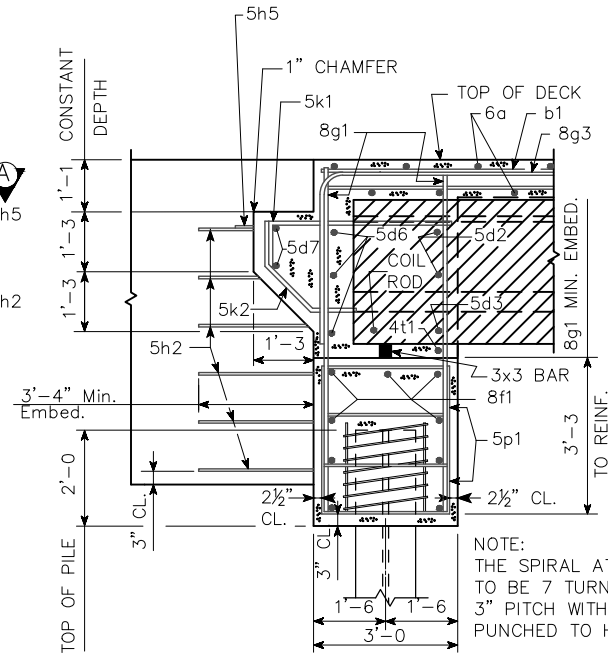


CROWN TEMPLATE

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50
71'-0" END SPANS 97'-0" CENTER SPAN

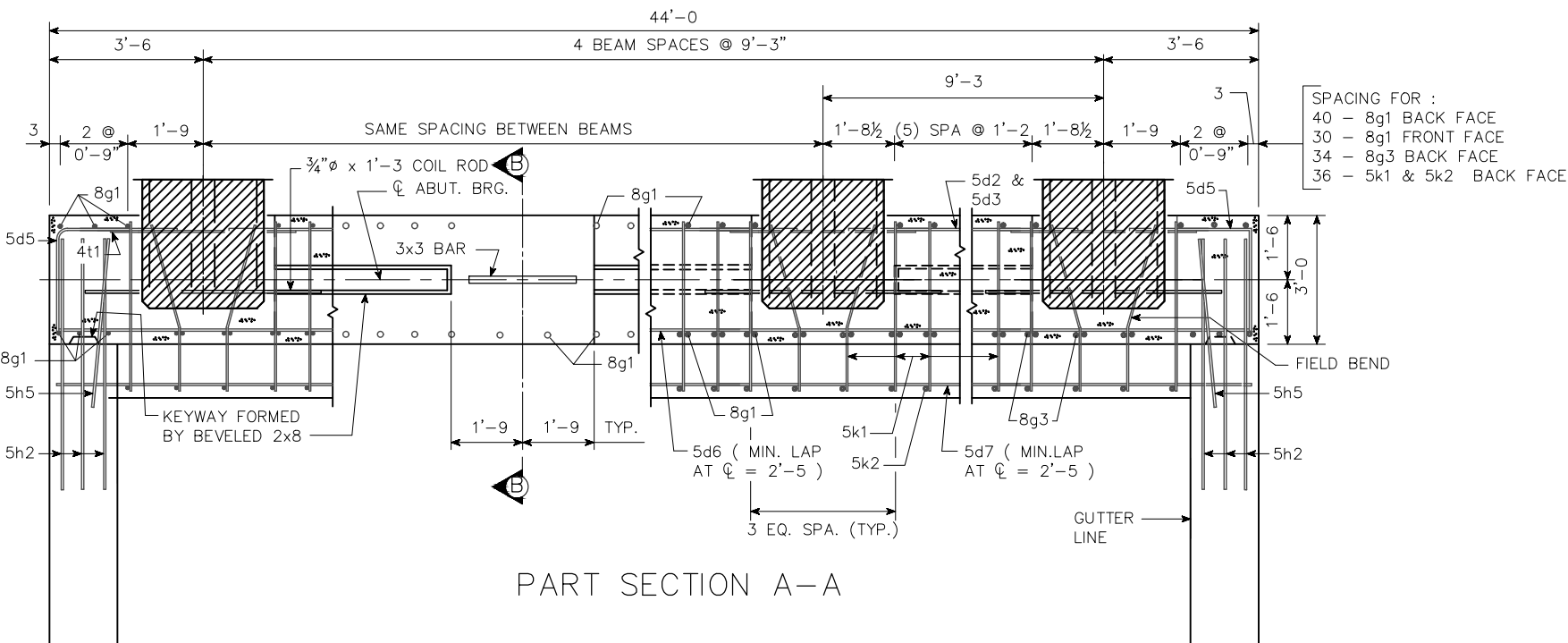


PART REAR ELEVATION AT ABUTMENT
(LOOKING UP STATION)

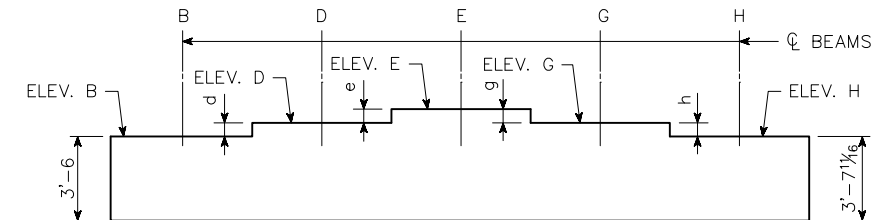


PART SECTION B-B

ABUTMENT BEARING ELEVATIONS						
	ELEV. B	ELEV. D	ELEV. E	ELEV. G	ELEV. H	B/FTG
WEST ABUT	1005.93	1006.08	1006.27	1006.26	1006.07	1002.43
STEP		1 3/4	2 1/4	1/8	2 1/4	
EAST ABUT	1005.57	1005.72	1005.90	1005.89	1005.71	1002.07
STEP		1 3/4	2 1/4	1/8	2 1/4	



PART SECTION A-A



ABUTMENT STEP DIAGRAM
(LOOKING UP STATION)

ABUTMENT CONCRETE QUANTITY	
LOCATION	QUANTITY
WEST ABUTMENT FOOTING	18.3
EAST ABUTMENT FOOTING	18.2
TOTAL (CU. YDS.)	36.5

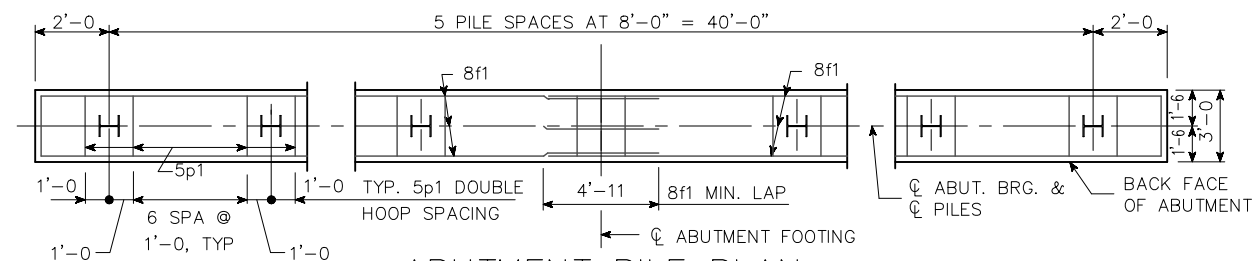
NOTE: CONCRETE QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

NOTE:
6 - HP 10x57 STEEL BEARING PILING
REQUIRED AT EACH ABUTMENT.

NOTE: BARRIER RAIL NOT SHOWN IN DETAILS.

ABUTMENT NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.
IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK OR BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE BRIDGE CONTRACTOR AT NO EXTRA COST TO THE STATE.



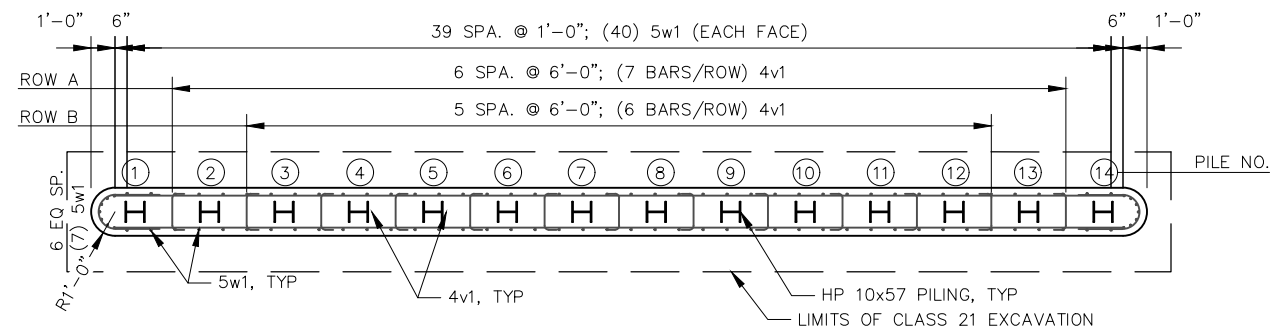
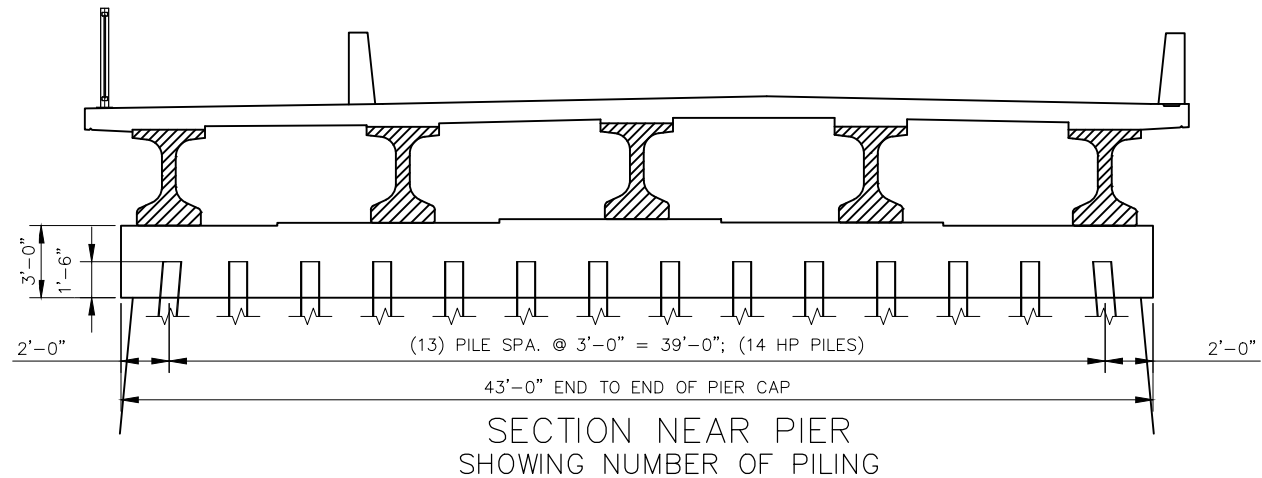
ABUTMENT PILE PLAN

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

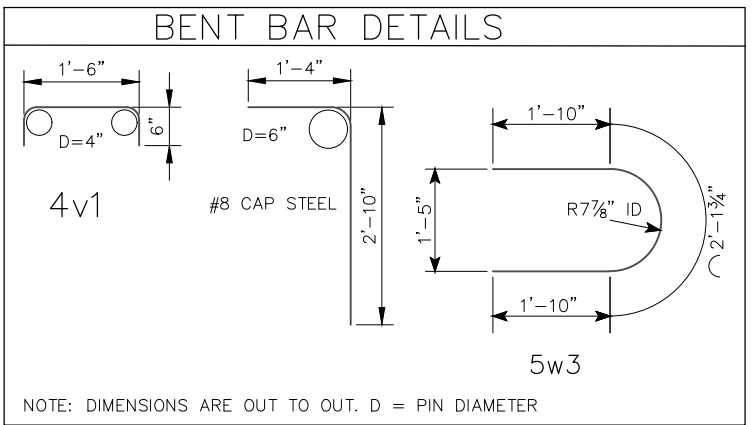
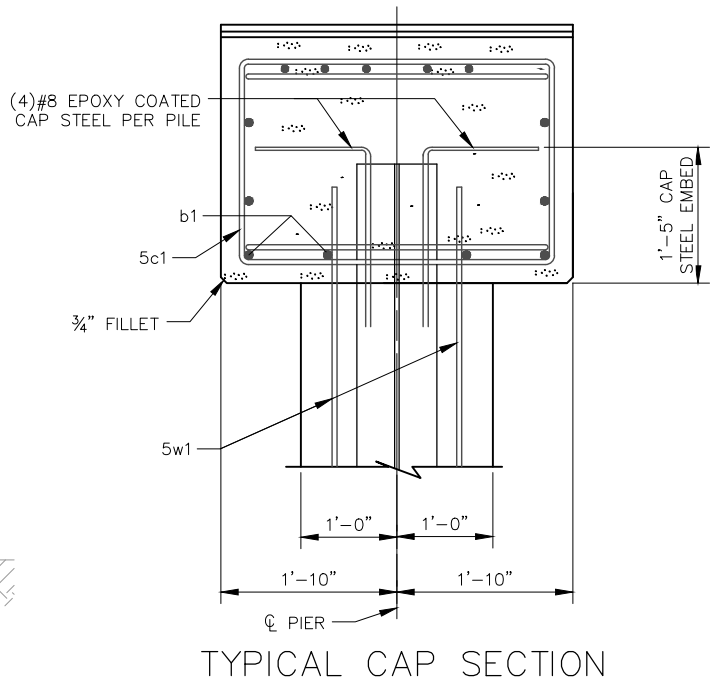
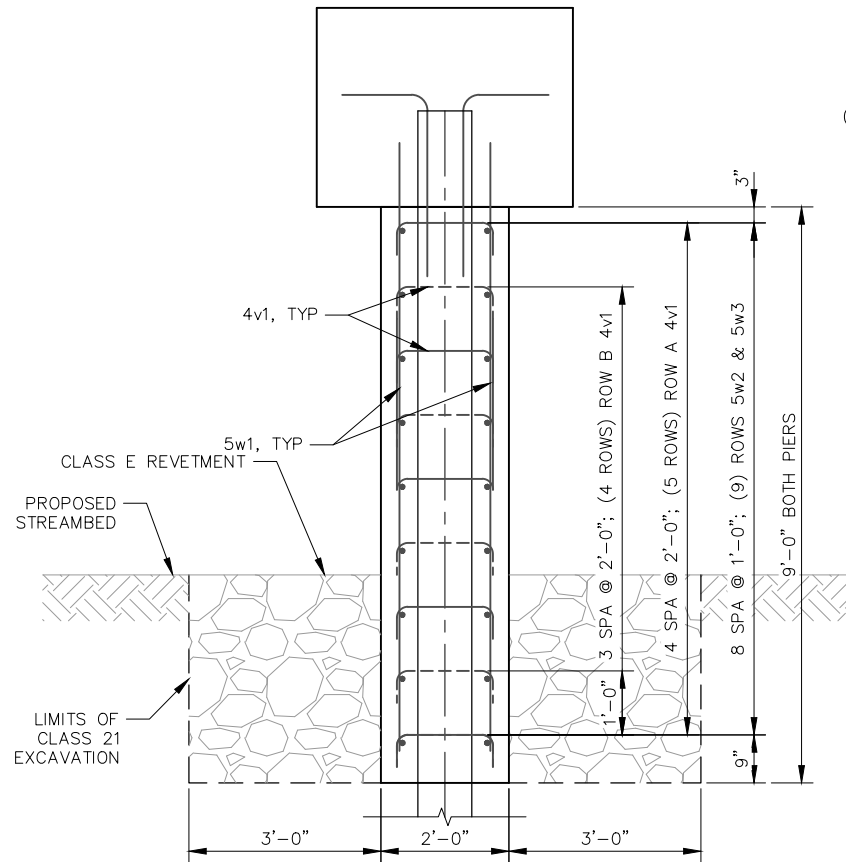
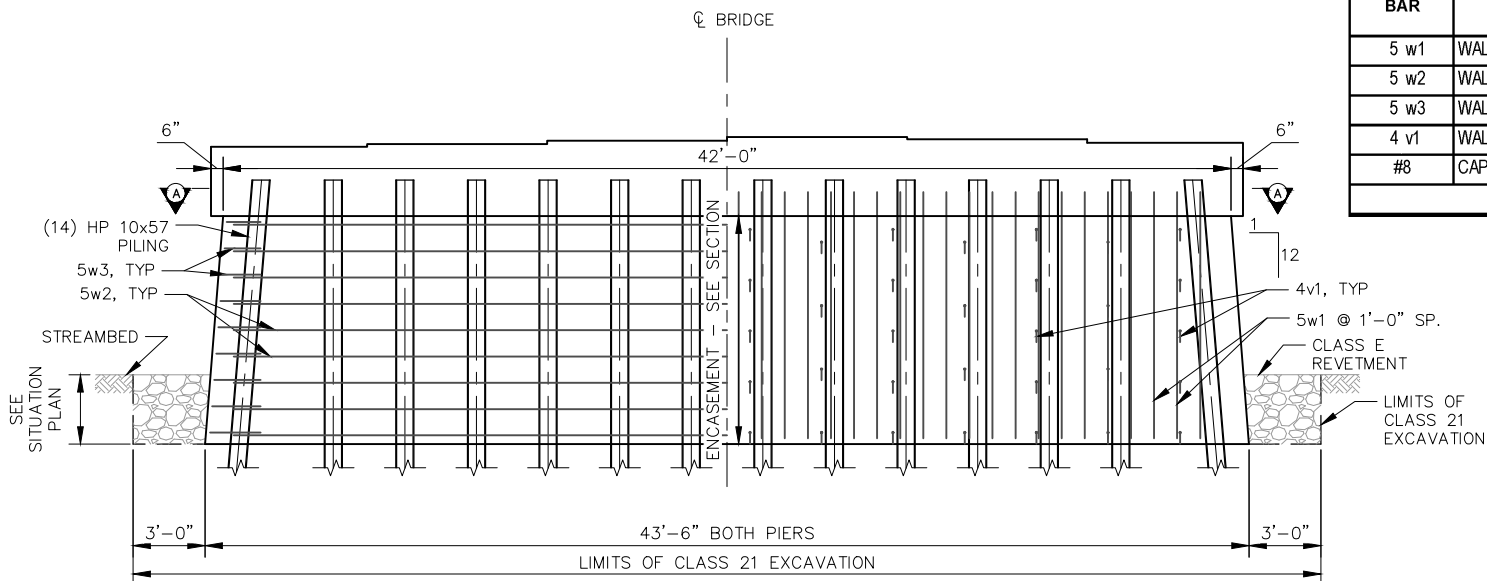
Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

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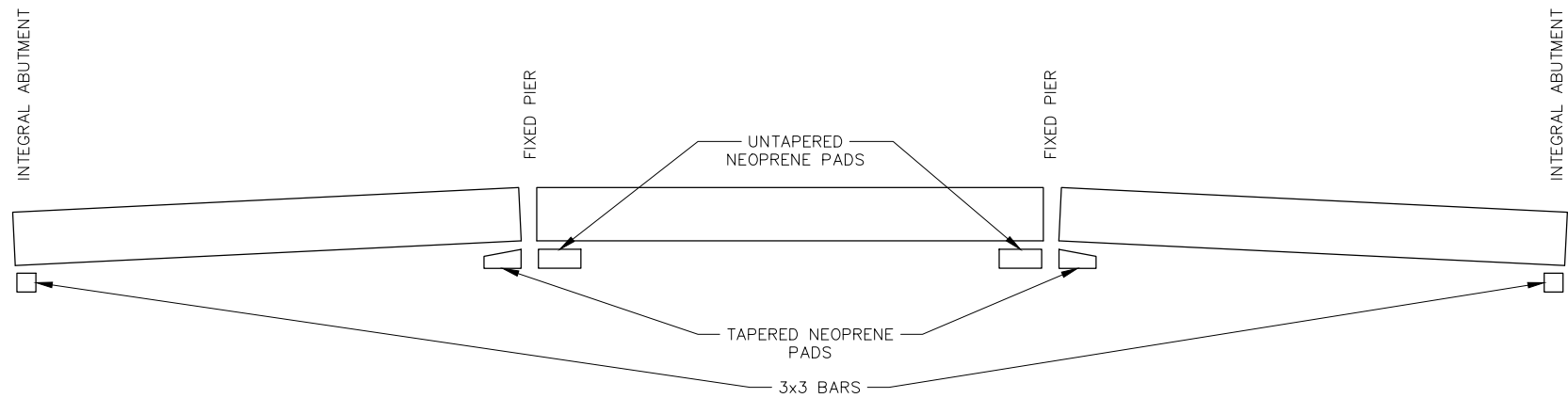
NOTE: INSTALL PILE NUMBERS 2, 6, 9, AND 13 IN ROCK CORES PER "PILE ROCK CORE" DETAILS.



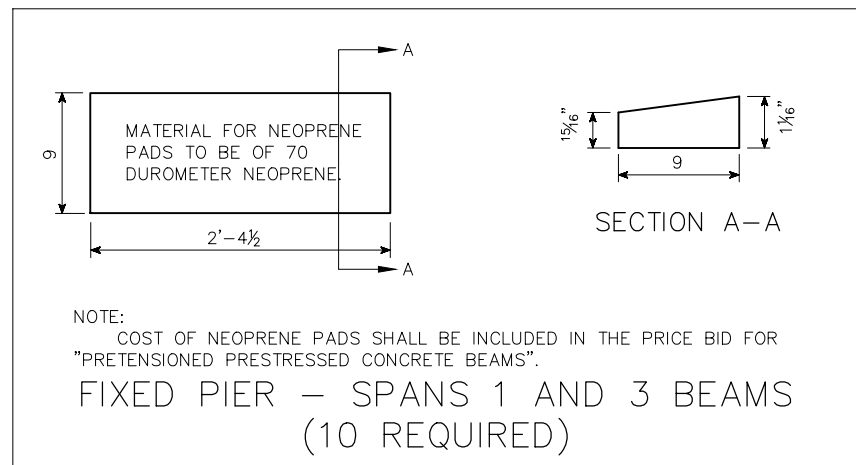
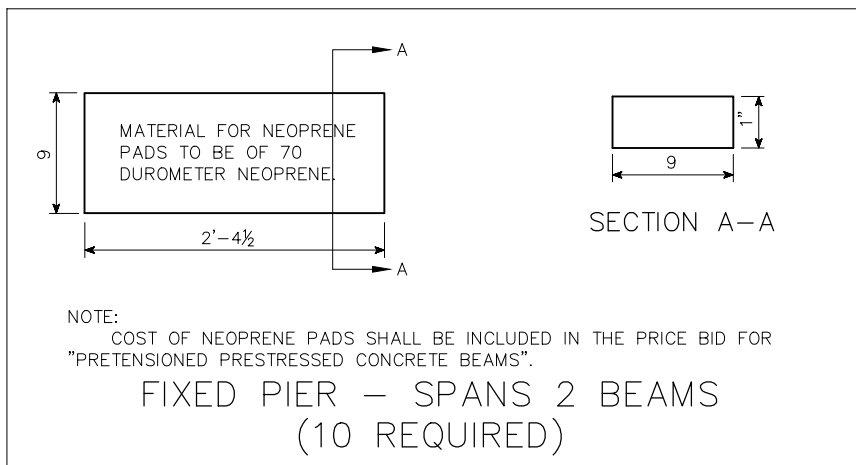
ESTIMATED QUANTITIES— ONE ENCASED PIER	
ITEM	UNIT
STRUCTURAL CONCRETE (BRIDGE)	28.2 C.Y.
EPOXY REINFORCING STEEL	2551 LB
CLASS 21 EXCAVATION	53 C.Y.

SEE V.7 FOR PIER CAP CONCRETE AND REINFORCING QUANTITIES

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50
71'-0" END SPANS 97'-0" CENTER SPAN



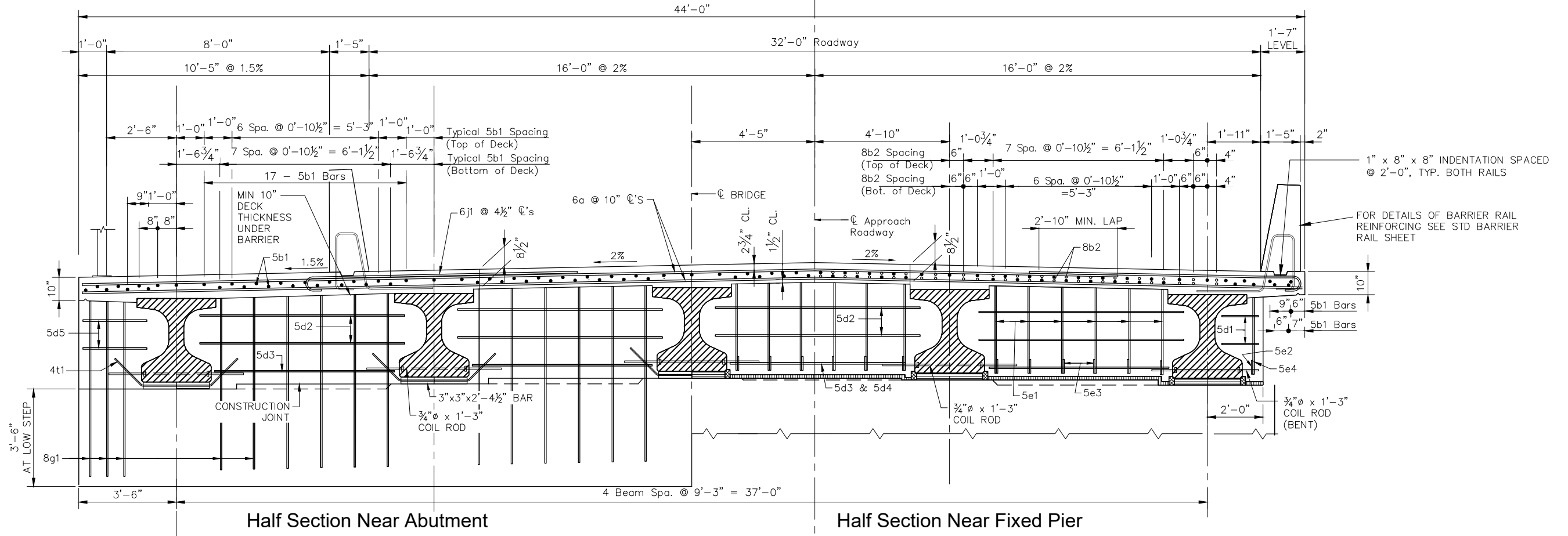
BEAM BEARING LAYOUT (NTS)



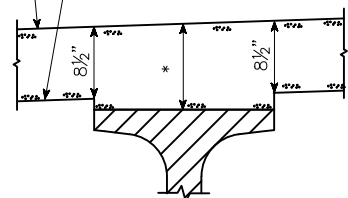
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

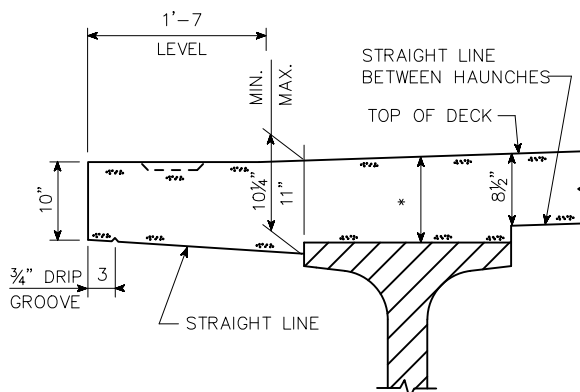
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TOP OF DECK
STRAIGHT LINE BETWEEN HAUNCHES EXCEPT BETWEEN BEAMS B AND D AS REQ'D. TO PROVIDE 10" DECK THICKNESS UNDER BARRIER RAIL



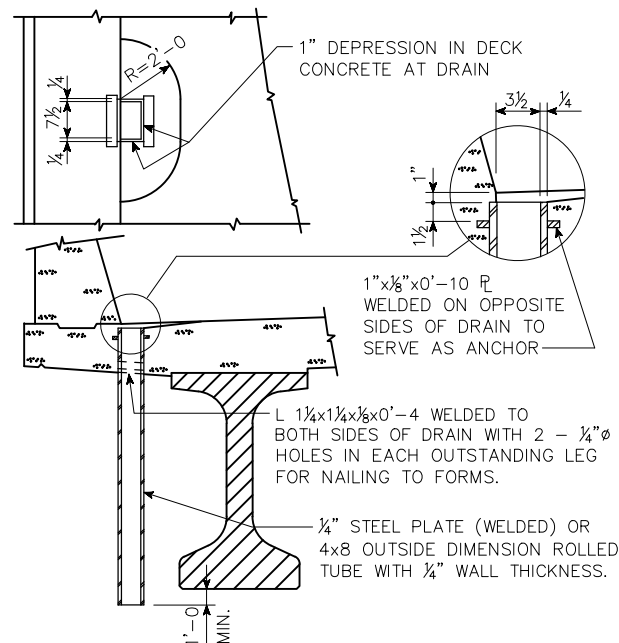
INTERIOR BEAMS



EXTERIOR BEAMS

TYPICAL DECK AND HAUNCH DETAIL

* FOR DECK THICKNESS OVER BEAMS SEE HAUNCH AND CAMBER DETAILS ON DESIGN SHEET V.4



DRAIN DETAILS

NOTE : DRAINS ARE TO BE GALVANIZED. 12 DRAINS REQUIRED. SEE V.17 FOR LOCATION. WEIGHT OF DRAINS IS INCLUDED IN THE QUANTITY FOR "STRUCTURAL STEEL". WEIGHT IS BASED ON ROLLED TUBE.

DATA FOR ONE DRAIN

BEAM SIZE	BTB
DRAIN WEIGHT (LBS.)	92
DRAIN LENGTH (FT.)	4'-9¾

SLAB AREA = 32.20 SF
SLAB AREA DOES NOT INCLUDE THE HAUNCH

SUPERSTRUCTURE NOTES:

THE BRIDGE DECK AS SHOWN INCLUDES ¾" INTEGRAL WEARING SURFACE.

THE PIER AND ABUTMENT DIAPHRAGM CONCRETE IS TO BE PLACED MONOLITHICALLY WITH THE BRIDGE DECK.

COST OF ALL RESILIENT JOINT FILLER MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)". ALL BEAMS ARE TO BE SET VERTICAL.

FORMS FOR THE DECK AND BARRIER RAIL ARE TO BE SUPPORTED BY THE PRESTRESSED CONCRETE BEAMS.

CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

ALL DECK AND DIAPHRAGM REINFORCING IS TO BE WIRED IN PLACE AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS PLACED.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2¾" CLEAR BELOW TOP OF DECK. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1½" CLEAR ABOVE BOTTOM OF DECK. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR HIGH CHAIRS OR DECK BOLSTERS SPACED 4'-0 APART. I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND DECK BOLSTERS.

COST OF BEARING MATERIAL IS TO BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

TRANSVERSE DECK REINFORCING MAY BE SPLICED WITH ONE LAP LOCATED AS FOLLOWS:

TOP BAR - LAP MIDWAY BETWEEN BEAMS (MIN. LAP = 2'-10).

BOTTOM BARS - LAP OVER BEAMS (MIN. LAP = 3'-7).

PAYMENT FOR REINFORCING BARS SHALL BE BASED ON NO SPLICES, AND NO ALLOWANCE SHALL BE MADE FOR THE ADDITIONAL LENGTH OF BAR REQUIRED FOR THE USE OF SPLICES.

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS

97'-0" CENTER SPAN

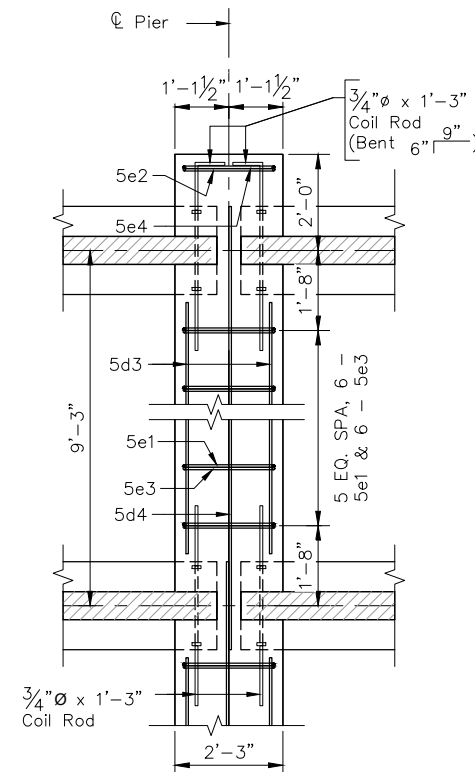
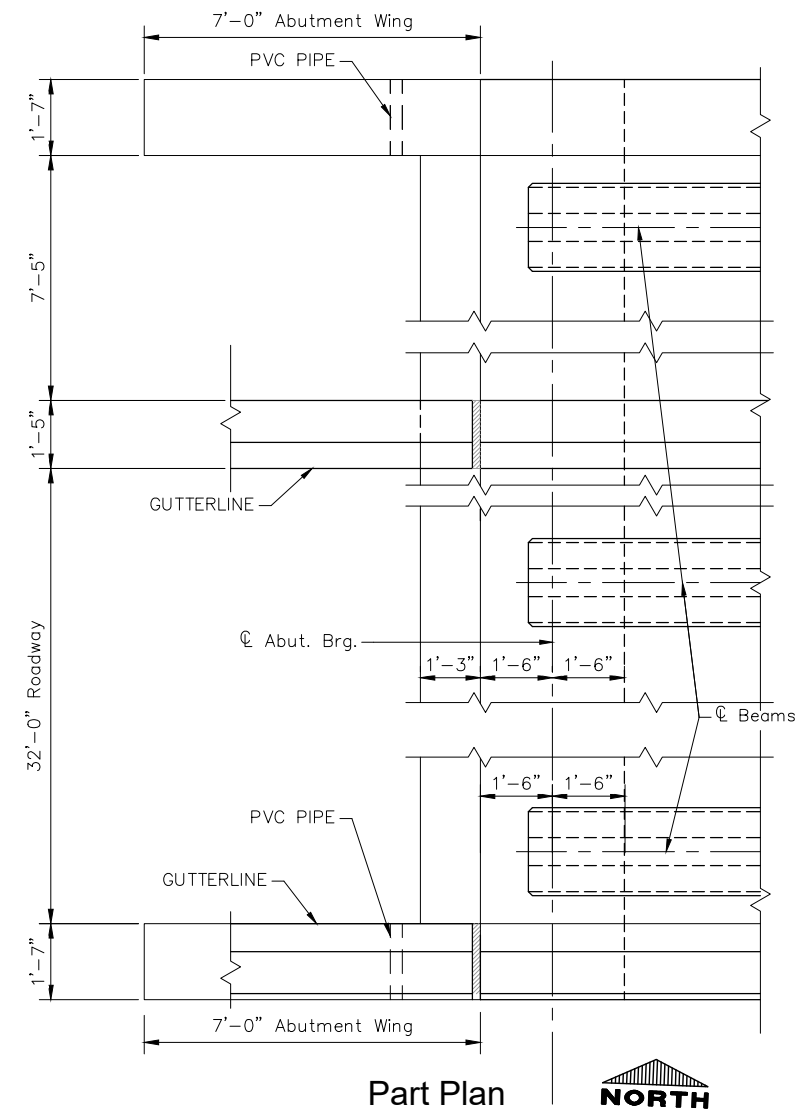
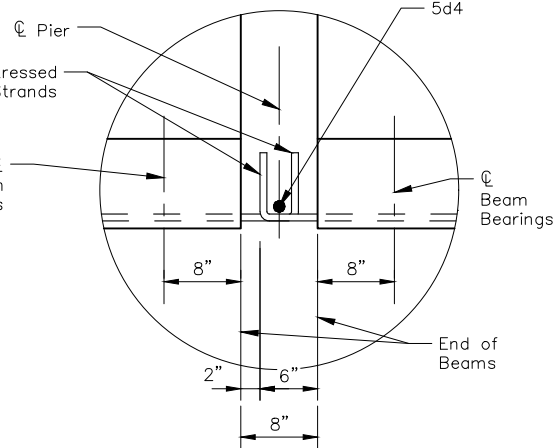
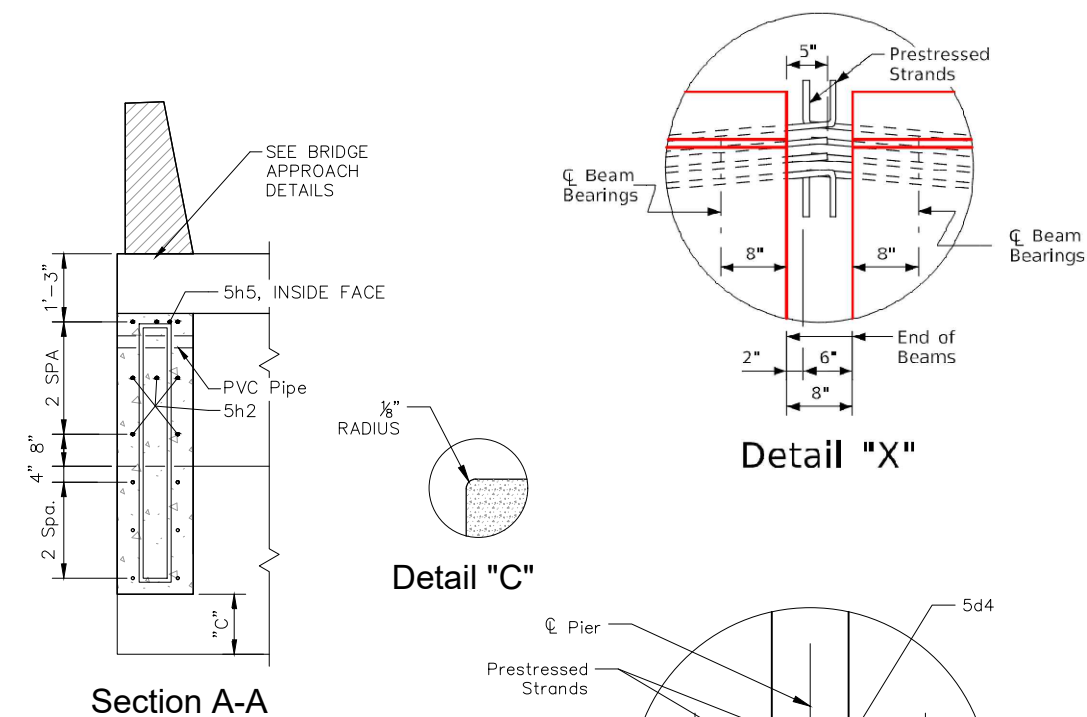
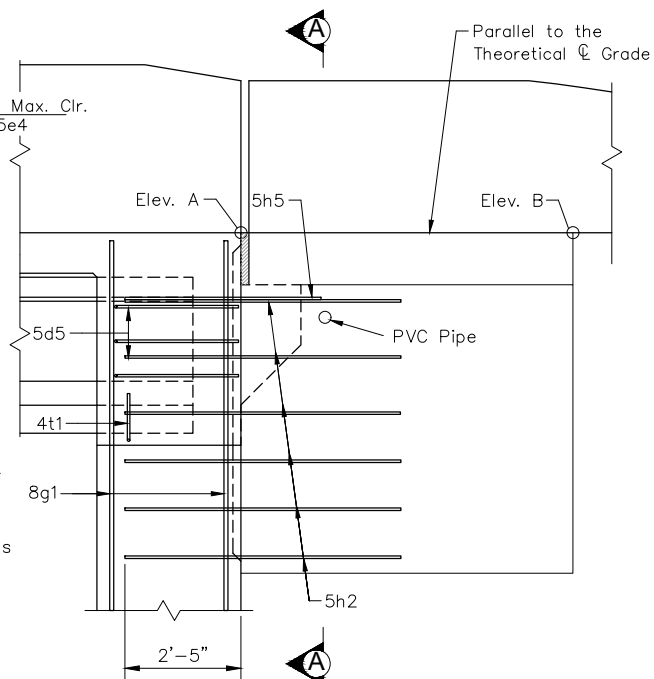
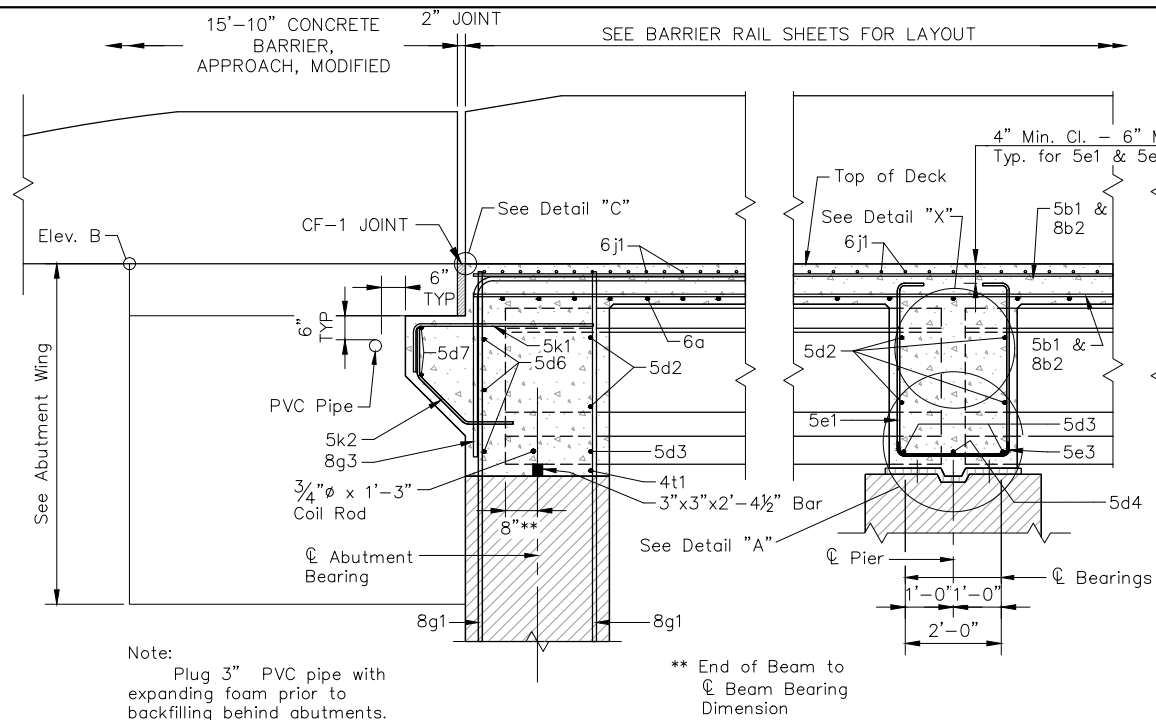
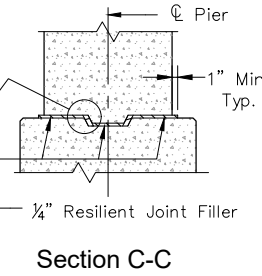
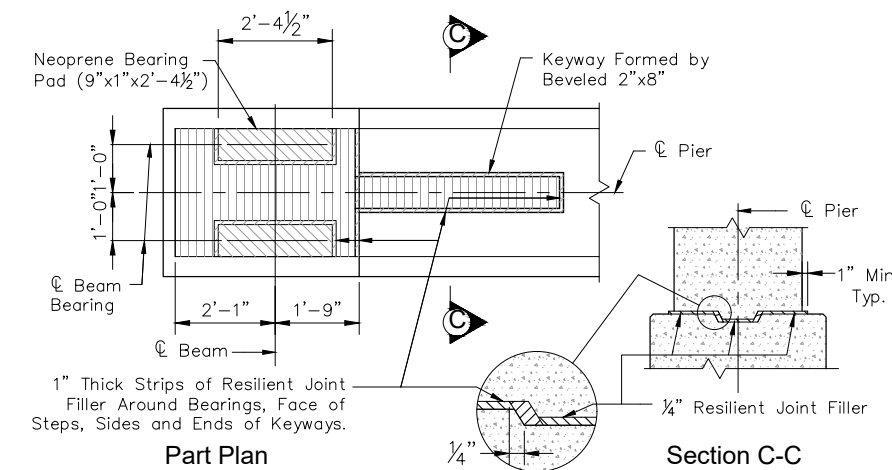


TABLE OF WINGWALL ELEVATIONS			
LOCATION	DIM "C"	ELEV. A	ELEV. B
N.W. WING	1'-0 5/8"	1009.99	1009.91
S.W. WING	1'-2 1/2"	1010.14	1010.07
N.E. WING	1'-0 5/8"	1009.62	1009.51
S.E. WING	1'-2 1/2"	1009.77	1009.66



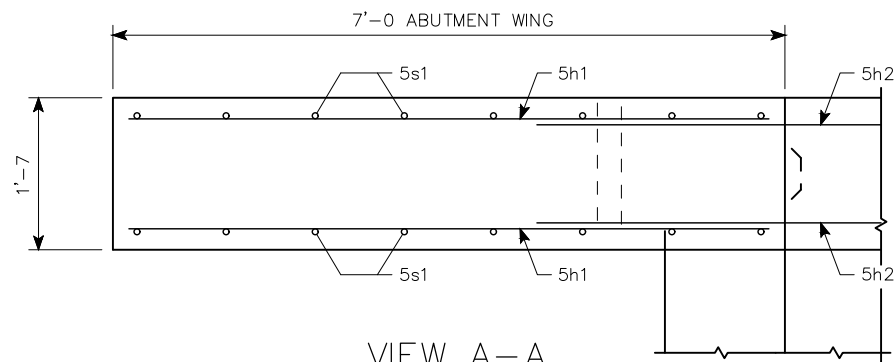
Top of Fixed Pier Details

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

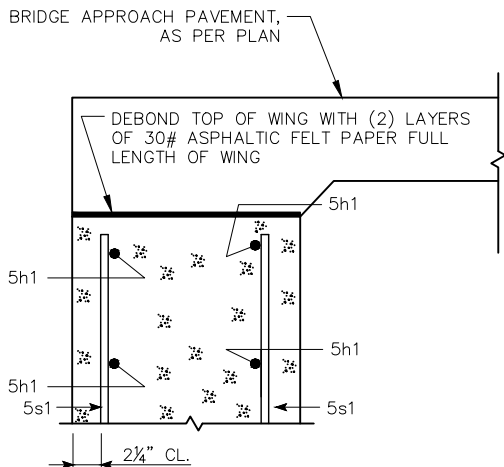
71'-0" END SPANS 97'-0" CENTER SPAN

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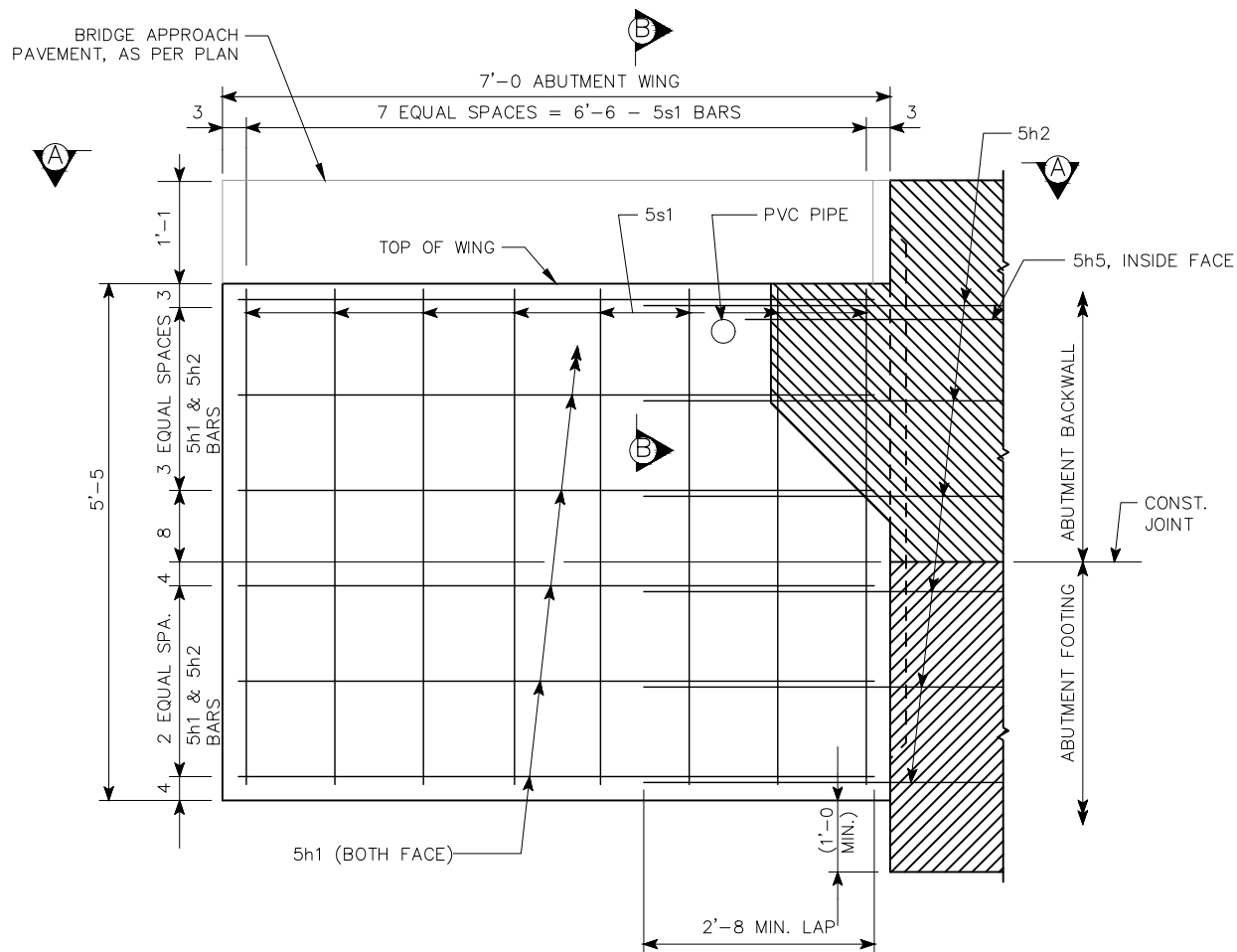


VIEW A-A

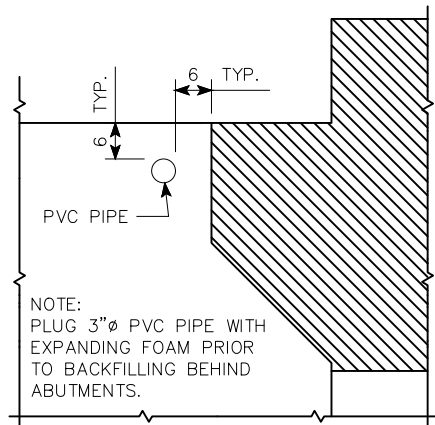
NOTE:
PLUG 3"Ø PVC PIPE WITH
EXPANDING FOAM PRIOR
TO BACKFILLING BEHIND
ABUTMENTS.



SECTION B-B



ABUTMENT WING - ELEVATION VIEW



PVC PIPE LOCATION

NOTE:
PLUG 3"Ø PVC PIPE WITH
EXPANDING FOAM PRIOR
TO BACKFILLING BEHIND
ABUTMENTS.

REINFORCING BAR LIST - ONE ABUT. WING

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
5h1	HORIZONTAL BOTH FACES		12	6'-8	83
5s1	VERTICAL BOTH FACES		16	4'-11	82
REINFORCING STEEL EPOXY COATED - TOTAL (LBS.)					165

CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
ONE ABUTMENT WING	2.2

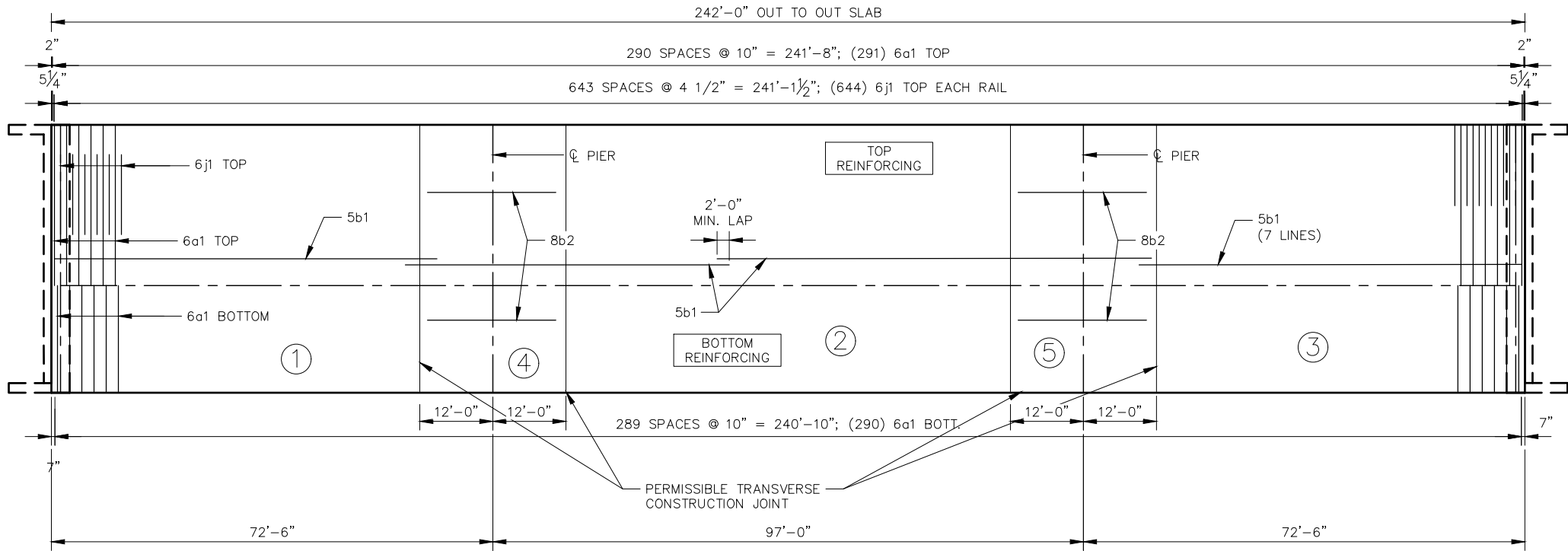
NOTE:
CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE
SUMMARY QUANTITIES SHEET.

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

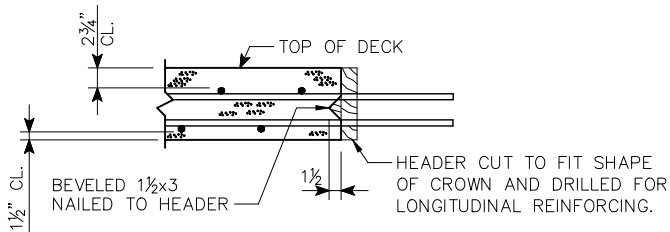
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TRANSVERSE REINFORCING LAYOUT AND
CONCRETE PLACEMENT DIAGRAM

CONCRETE PLACEMENT DIAGRAM

NOTE: CONCRETE DECK SHALL BE PLACED IN SECTIONS AND SEQUENCES INDICATED. ALTERNATE PROCEDURES FOR PLACING DECK CONCRETE MAY BE SUBMITTED FOR APPROVAL TOGETHER WITH A STATEMENT OF THE PROPOSED METHOD AND EVIDENCE THAT THE CONTRACTOR POSSESSES THE NECESSARY EQUIPMENT AND FACILITIES TO ACCOMPLISH THE REQUIRED RESULTS. FOR APPROVED ALTERNATE PROCEDURES THE ENGINEER SHALL DETERMINE IF A RETARDING ADMIXTURE IS REQUIRED TO MAINTAIN PLASTICITY OF THE CONCRETE DECK DURING PLACEMENT.



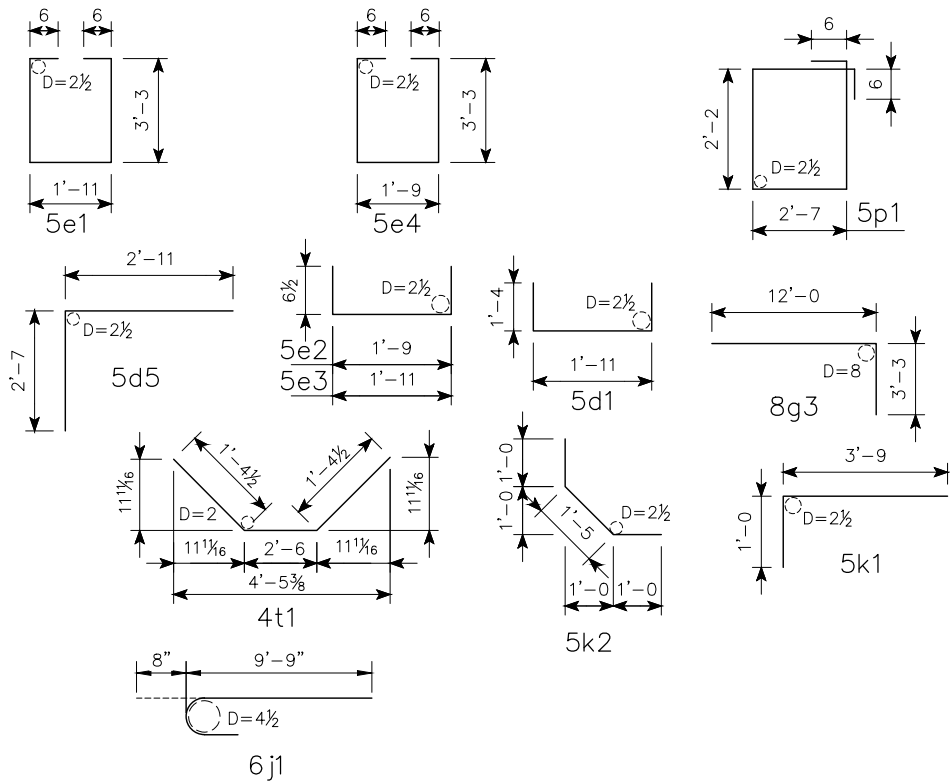
PERMISSIBLE TRANSVERSE
DECK CONSTRUCTION JOINT

CONCRETE PLACEMENT QTY	
LOCATION	QUANTITY
SECTION 1, DECK & ABUT. DIAPH.	90.5
SECTION 2, DECK	87
SECTION 3, DECK & ABUT. DIAPH.	90.5
SECTION 4, DECK & PIER DIAPH.	38.6
SECTION 5, DECK & PIER DIAPH.	38.6
HAUNCH*	10.3
TOTAL (CU. YDS.)	355.5

NOTE:
CONCRETE AND REINFORCING STEEL QUANTITIES ARE INCLUDED ON THE SUMMARY QUANTITIES SHEET.

* HAUNCH QUANTITY IS BASED ON AN AVERAGE HAUNCH THICKNESS OF 1"

BENT BAR DETAILS



NOTE: ALL DIMENSIONS ARE OUT TO OUT. D= PIN DIAMETER.

REINFORCING BAR LIST - ONE SUPERSTRUCTURE & TWO ABUTMENTS

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
				ft. - in.	
6 a1	SLAB, TRANV. TOP & BOT.	—	581	43' - 8	38106
5 b1	SLAB, LONGIT. TOP & BOT.	—	623	36' - 3	23555
8 b2	SLAB, LONGIT. TOP & BOT. AT PIERS*	—	176	23' - 8	11121
5 d1	PIER DIAPH. ENDS	□	8	4' - 7	38
5 d2	PIER & ABUT. DIAPH. LONGIT.	—	48	8' - 5	421
5 d3	PIER & ABUT. DIAPH. LONGIT. BOT.	—	24	6' - 5	161
5 d4	PIER DIAPH. LONGIT	—	2	40' - 8	85
5 d5	ABUT. DIAPH. ENDS	└─	8	5' - 6	46
5 d6	ABUT. DIAPH. LONGIT. B.F.	—	12	23' - 1	289
5 d7	PAVING NOTCH, LONGIT.	—	8	23' - 1	193
5 e1	PIER DIAPH. HOOPS FIXED PIER	□	48	9' - 5	471
5 e2	PIER DIAPH. TIES ENDS	└─	4	2' - 10	12
5 e3	PIER DIAPH. TIES	└─	48	3' - 0	150
5 e4	PIER DIAPH HOOPS FIXED PIER ENDS	□	4	9' - 3	39
8 f1	ABUT. FOOTING LONGIT. BOTH FACES	—	36	24' - 4	2339
8 g1	ABUT. VERT. B.F. & F.F.	—	140	7' - 1	2648
8 g3	ABUT. DIAPH. VERT. B.F.	└─	68	15' - 3	2769
5 h2	ABUT. TO WING ANCHOR, BOTH FACES	—	56	5' - 9	336
5 h5	ABUT. TO WING ANCHOR, INSIDE FACE, TOP	—	4	4' - 0	17
6 j1	TOP OF SLAB TRANVSE (AT RAILS)	└─	1288	10' - 5	20152
5 k1	PAVING NOTCH	└─	72	4' - 9	357
5 k2	PAVING NOTCH	└─	72	3' - 5	257
5 p1	ABUT. HOOPS	□	148	10' - 6	1621
4 t1	UNDER BEAMS AT ABUTMENTS	└─	10	5' - 3	35
#2	Pile Spiral **	⌀	12	38' - 6	77
	SPIRAL SPACERS, L 7/8 x 7/8 x 1/8 x 0.70 **	—	36	1' - 10	46
TOTAL REINFORCING STEEL EPOXY COATED					105341
*THE MIDPOINT OF THE b2 BAR IS TO BE PLACED AT CENTERLINE OF PIER					
** EPOXY COATING NOT REQUIRED FOR PILE SPIRAL AND SPACERS					

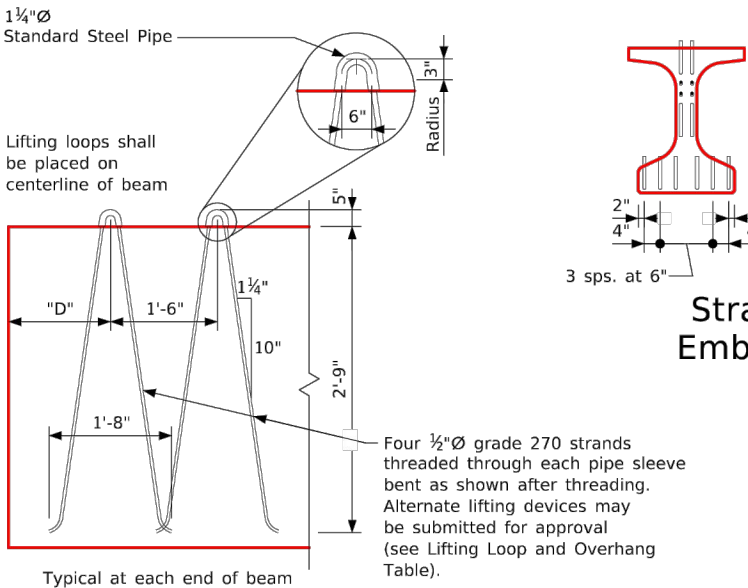
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS

97'-0" CENTER SPAN

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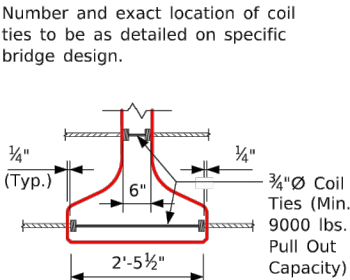


Lifting Loop Detail

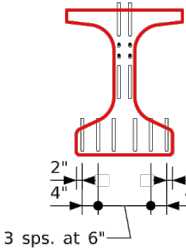
Lifting Loop and Overhang Table				
Beams	Lifting Loops Each End	# of Strands Per Loop	D	Beam Overhang (ft.)
BTB30-BTB75	1	4	2'-0"	**
BTB80-BTB85	2	4	2'-0"	7
BTB90	2	4	2'-6"	8.5
BTB95	2	4	2'-6"	11

** In accordance with Article 2407.03, K of the Standard Specifications.

Lifting loops shall carry loads equally.

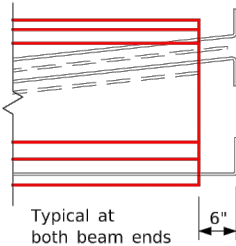


Coil Tie Detail



Strand Projection at Beam Ends When Embedded in Concrete End Diaphragms

The top and bottom for 2 rows or the top and 3rd rows of deflected strands are to be cut with 1'-2" projections which are to be shop bent as shown. The second row is to be cut with a 5" projection and the remaining top deflected strands in rows 4 and below are to be cut flush with beam face. Six bottom strands are to be cut with 1'-6" projections which are to be shop bent as shown. The remaining bottom strands are to be cut off reasonably flush with the concrete.



Design Stresses:

Design stresses for the following materials are to be in accordance with AASHTO LRFD Bridge Design Specifications, Series of 2017.
Reinforcing steel in accordance with Section 5, Grade 60.
Concrete in accordance with Section 5.
Prestressing steel in accordance with Section 5, Grade 270.

Specifications:

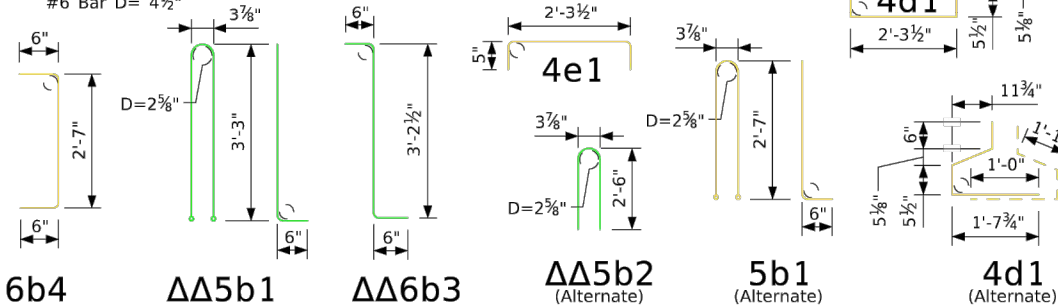
Construction: Standard Specifications of the Iowa Department of Transportation, current series, with current applicable special provisions and supplemental specifications.
Design: AASHTO LRFD, Series of 2017 with minor modifications.

Alternate Bar Notes:

Alternate bars shown in Bent Bar Details may be used in lieu of reinforcing bars shown in bar list. No additional payment shall be made for use of alternate bars.

Bent Bar Details

Note: All bar dimensions are out to out
D = Pin diameter for bending (unless otherwise shown)
#4 Bar D= 2"
#5 Bar D= 2 1/2"
#6 Bar D= 4 1/2"



BTB Beam Data																	
BTB Beam	Span Length ℓ-ℓ Bearing	Overall Beam Length (L)	Concrete Strength		Strand Size Dia. (in.)	Number of Strands		Total Initial Prestress ③ (kips)	Hold Down Force (kips)	Camber (in.) ⑤		Deflection (in.) Δ _D		Permissible Maximum Spacing	Weight (tons)	Concrete (cu. yd.)	Reinforcing Steel (weight lb.)
						Straight	Deflected					Immediate ① (elastic) Δ _I	Time ② (plastic) Δ _T				
			Steel Diaphragm	Steel Diaphragm						HL-93 Loading							
										Steel Diaphragm	Steel Diaphragm	Steel Diaphragm					
BTB30	30'-0"	31'-4"	4.50	5.00	0.60"	8	—	340	—	0.12"	0.22"	0.04"	0.01"	9'-3"	10.3	5.1	890
BTB35	35'-0"	36'-4"	4.50	5.00	0.60"	10	—	425	—	0.20"	0.37"	0.08"	0.02"	9'-3"	12.0	5.9	984
BTB40	40'-0"	41'-4"	4.50	5.00	0.60"	12	—	510	—	0.31"	0.58"	0.15"	0.04"	9'-3"	13.6	6.7	1072
BTB45	45'-0"	46'-4"	4.50	5.00	0.60"	12	—	510	—	0.37"	0.68"	0.22"	0.06"	9'-3"	15.2	7.5	1184
BTB50	50'-0"	51'-4"	4.50	5.00	0.60"	14	—	596	—	0.51"	0.94"	0.34"	0.09"	9'-3"	16.9	8.3	1324
BTB55	55'-0"	56'-4"	4.50	5.00	0.60"	16	—	681	—	0.66"	1.22"	0.49"	0.12"	9'-3"	18.5	9.2	1470
BTB60	60'-0"	61'-4"	4.50	5.00	0.60"	16	2	765	8.6	0.81"	1.51"	0.67"	0.17"	9'-3"	20.2	10.0	1557
BTB65	65'-0"	66'-4"	4.50	5.00	0.60"	18	2	851	8.0	1.05"	1.94"	0.95"	0.24"	9'-3"	21.8	10.8	1719
BTB70	70'-0"	71'-4"	5.00	5.50	0.60"	20	4	1021	14.0	1.35"	2.50"	1.18"	0.30"	9'-3"	23.5	11.6	1771
BTB75	75'-0"	76'-4"	5.50	6.50	0.60"	22	6	1191	20.6	1.67"	2.67"	1.54"	0.38"	9'-3"	25.1	12.4	1863
BTB80	80'-0"	81'-4"	6.00	7.00	0.60"	24	8	1361	20.8	1.97"	3.14"	1.94"	0.49"	9'-3"	26.8	13.2	2002
BTB85	85'-0"	86'-4"	6.50	7.50	0.60"	28	8	1531	19.7	2.76"	4.42"	2.41"	0.60"	9'-3"	28.4	14.0	2100
BTB90	90'-0"	91'-4"	7.50	8.50	0.60"	30	8	1616	18.6	3.07"	4.91"	2.90"	0.73"	9'-3"	30.0	14.8	2187
BTB95	95'-0"	96'-4"	8.00	9.50	0.60"	34	10	1871	20.1	3.68"	5.88"	3.47"	0.87"	9'-3"	31.7	15.7	2327

① Deflections at mid-span due to weight of deck and diaphragm. The deflections shown are for a deck (8.5") and haunch (1.5") weight of:
1.04 kips/ft. for 9'-3" beam spacing and one steel diaphragm (0.500 kips) at \bar{C} of span. For different deck and diaphragm weights, deflections will be directly proportional.

② Deflections due to the combined effect of creep due to weight of deck and shrinkage of deck.
Total beam deflections at \bar{C} of span, Δ_D , due to weight of deck and diaphragms for detailing purpose:
(A) $\Delta_D = \Delta_i + \Delta_T$ for simple span.
(B) $\Delta_D = \Delta_i + \frac{3}{4}\Delta_T$ for end spans of continuous bridge.
(C) $\Delta_D = \Delta_i + \frac{1}{2}\Delta_T$ for interior spans of continuous bridge.

③ Total initial prestress is based on 72.6% f's, f's= 270 ksi. and $A_s = 0.217 \text{ in}^2$.

④ Includes partial length debonded strands, see individual Beam Sheets for location and details.










⑤ Calculated design cambers are based on multipliers developed from research in Iowa.

Note: All mild reinforcing steel can be epoxy coated at Contractor's option without modification to bar length or details at no additional cost to the State.

ΔΔ 5b1 and 6b3 bars to be epoxy coated

* 6b3 and 6b4 bars to be used in pairs

Reinforcing Bar List

	Beam		BTB30		BTB35		BTB40		BTB45		BTB50		BTB55		BTB60		BTB65		BTB70		BTB75		BTB80		BTB85		BTB90		BTB95		Beam		
	Bar	Shape	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length		Bar	
ΔΔ * *	5a1		6	31'-1"	6	36'-1"	6	41'-1"	12	24'-9"	12	27'-3"	12	29'-9"	12	32'-3"	12	34'-9"	12	37'-3"	12	39'-9"	12	24'-0"	6	40'-0"	6	40'-0"	6	40'-0"	6	40'-0"	5a1
	5a2		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5a2
	5b1		17	7'-8"	21	7'-8"	25	7'-8"	29	7'-8"	37	7'-8"	43	7'-8"	47	7'-8"	55	7'-8"	59	7'-8"	63	7'-8"	67	7'-8"	71	7'-8"	75	7'-8"	83	7'-8"	5b1		
	6b3		36	4'-3"	36	4'-3"	36	4'-3"	36	4'-3"	36	4'-3"	36	4'-3"	36	4'-3"	40	4'-3"	36	4'-3"	36	4'-3"	32	4'-3"	32	4'-3"	32	4'-3"	32	4'-3"	32	4'-3"	6b3
	6b4		4	3'-7"	4	3'-7"	4	3'-7"	4	3'-7"	4	3'-7"	8	3'-7"	8	3'-7"	8	3'-7"	8	3'-7"	8	3'-7"	16	3'-7"	16	3'-7"	16	3'-7"	16	3'-7"	16	3'-7"	6b4
	4c1		45	2'-7"	53	2'-7"	57	2'-7"	63	2'-7"	69	2'-7"	73	2'-7"	77	2'-7"	81	2'-7"	87	2'-7"	93	2'-7"	97	2'-7"	107	2'-7"	111	2'-7"	117	2'-7"	117	2'-7"	4c1
	4d1		37	6'-5"	41	6'-5"	45	6'-5"	49	6'-5"	57	6'-5"	65	6'-5"	69	6'-5"	77	6'-5"	79	6'-5"	83	6'-5"	89	6'-5"	93	6'-5"	97	6'-5"	105	6'-5"	105	6'-5"	4d1
	4e1		24	3'-2"	24	3'-2"	24	3'-2"	24	3'-2"	24	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	24	3'-2"	24	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	26	3'-2"	4e1
	4h1		4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4	8'-0"	4h1

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS

97'-0" CENTER SPAN

origin 800 556-4491

CITY OF OELWEIN

PROJECT NUMBER BRM-5657(614)- -8N-33

BTB BEAM DATA DETAILS

SHEET: V.13

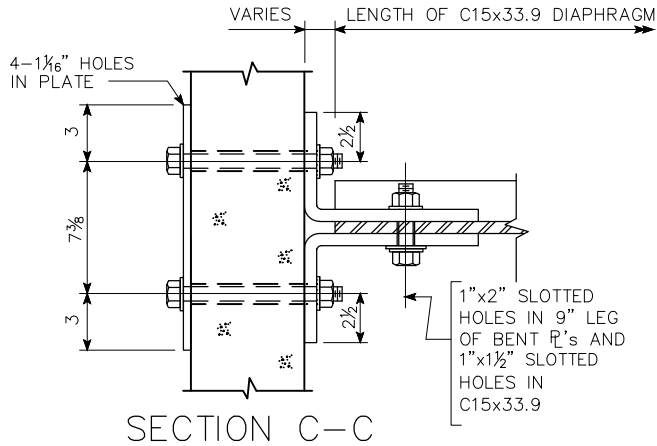
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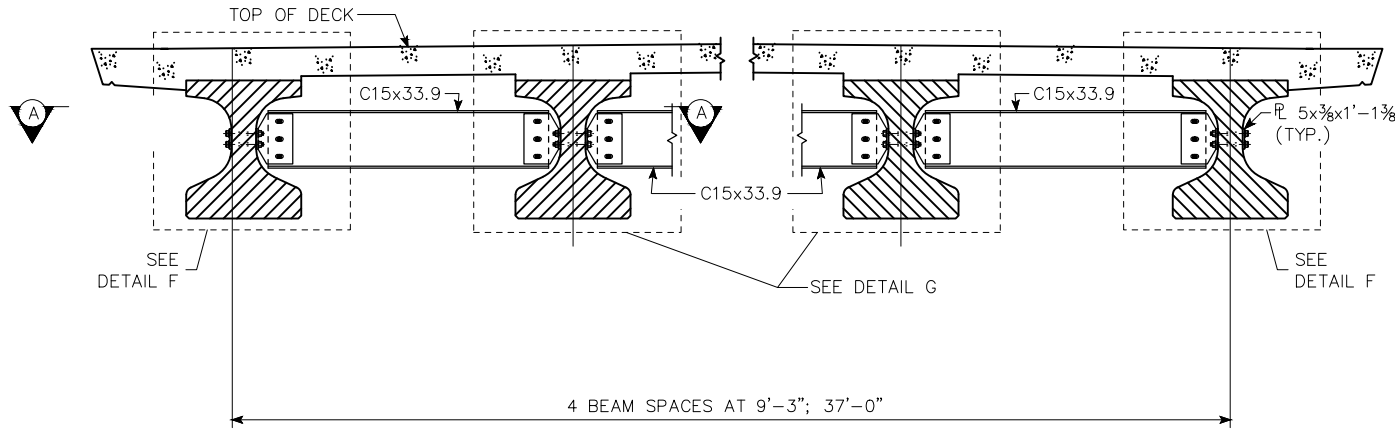
BULB TEE "B" BEAM INTERMEDIATE
DIAPHRAGM STRUCTURAL STEEL

ONE BEAM CONNECTION (DETAIL "F" AND/OR DETAIL "G")		WEIGHT	
	NO. OF BEAM CONNECTIONS		
4 - $\frac{7}{8}$ " ϕ x 9 $\frac{1}{4}$ H.S. BOLTS WITH NUTS & WASHERS = 9.6 LBS.	15		144
ONE DETAIL "G"	4 - BENT \bar{r} 9 x 6 x $\frac{1}{2}$ x 0'-11 = 93.6 LBS.	9	842.4
ONE DETAIL "F"	1 - BACKING \bar{r} 5 x $\frac{3}{8}$ x 1'-1 $\frac{3}{8}$ = 7.1 LBS.	6	42.6
	2 - BENT \bar{r} 9 x 6 x $\frac{1}{2}$ x 0'-11 = 46.8 LBS.	6	280.8
ONE DIAPHRAGM		NUMBER OF DIAPHRAGMS	
6 - $\frac{7}{8}$ " ϕ x 3" H.S.BOLTS WITH NUTS & WASHERS = 7.8 LBS		12	93.6
I - C15 x 33.9 = 33.9 LBS./FT.	LENGTH OF MEMBER	12	3279.8
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)			4683.2

NOTES:
ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.
SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.
ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.
THE $\frac{1}{2}$ " ϕ HOLES FOR THE $\frac{7}{8}$ " ϕ H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.
THE $\frac{7}{8}$ " ϕ H.S. BOLTS THROUGH THE WEB SHALL HAVE A THREAD LENGTH OF 3" MIN. AND 4" MAX. AND SHALL MEET THE REQUIREMENTS OF ASTM A449.
ALL BOLTS ARE TO BE TIGHTENED PRIOR TO PLACING BRIDGE FLOOR CONCRETE WITH THE FOLLOWING EXCEPTION: BOLTS IN DIAPHRAGMS LOCATED UNDER LONGITUDINAL BRIDGE FLOOR CONSTRUCTION JOINTS SHALL NOT BE TIGHTENED UNTIL STAGE TWO OF THE BRIDGE FLOOR HAS BEEN PLACED.

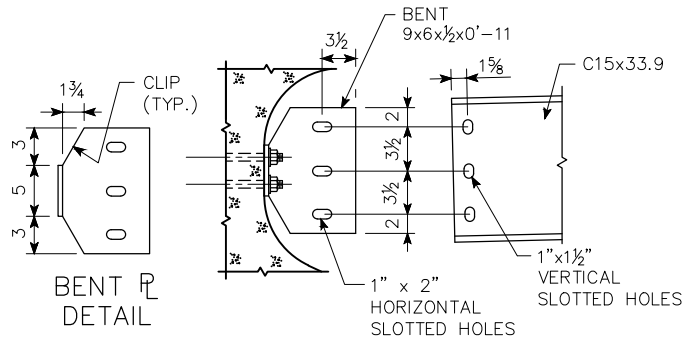


SECTION C-C

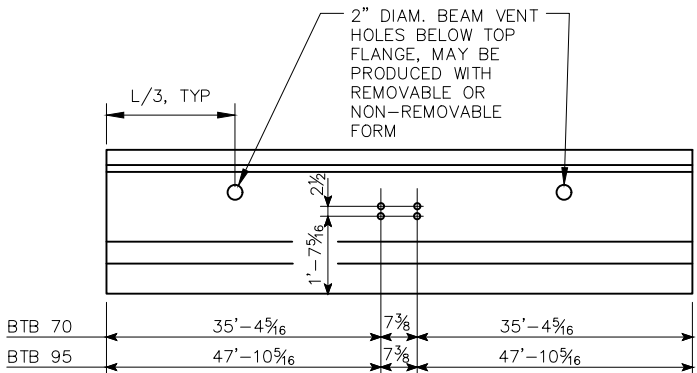


SECTION SHOWING INTERMEDIATE DIAPHRAGMS

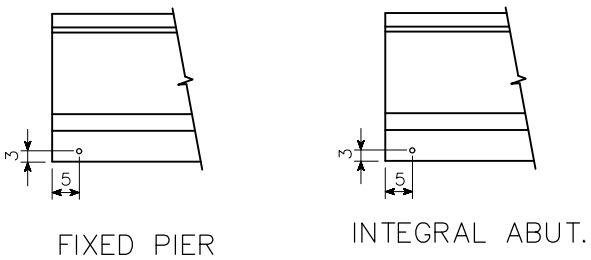
STRUCTURAL STEEL	
WEIGHT	4683.2 LBS.
NOTE: STRUCTURAL STEEL WEIGHT IS INCLUDED ON THE SUMMARY QUANTITIES SHEET.	



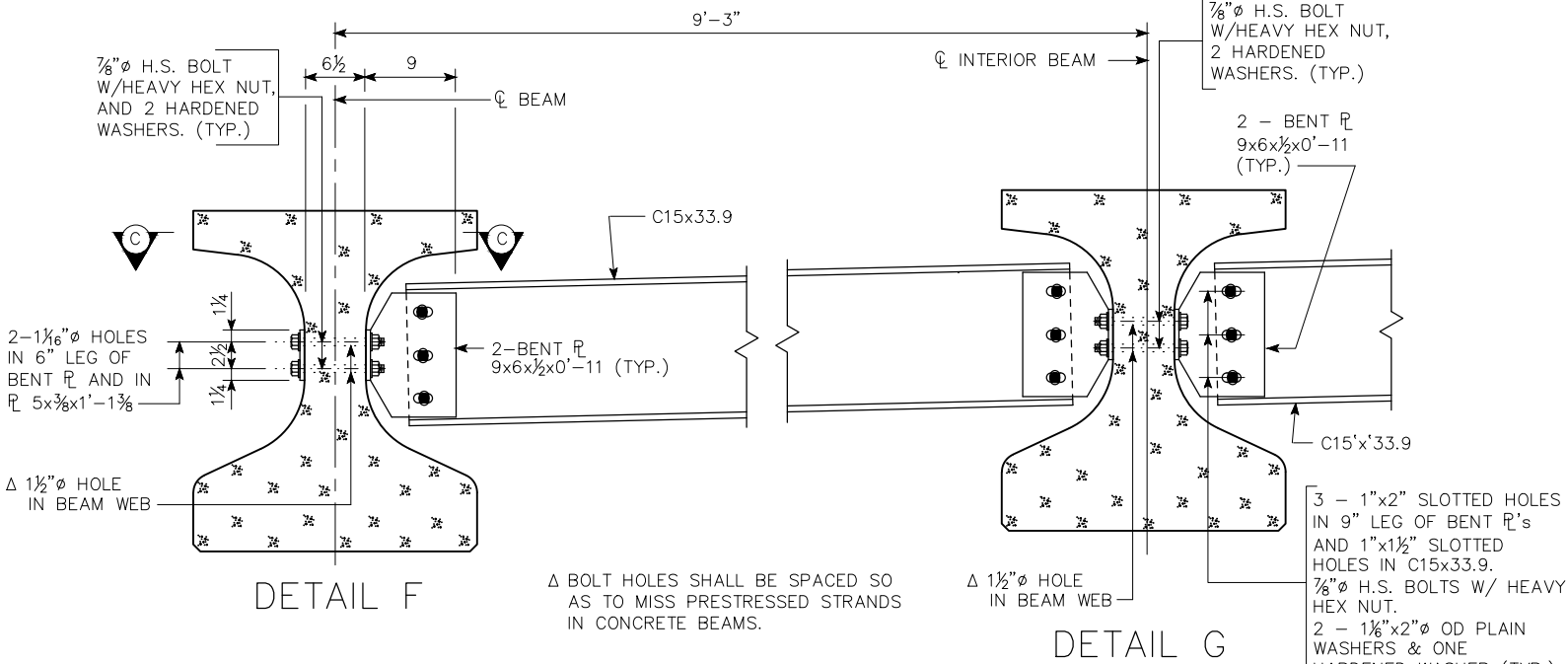
SLOTTED HOLE DETAILS



INTERMEDIATE DIAPHRAGM
BOLT HOLE AND BEAM
VENT LOCATIONS



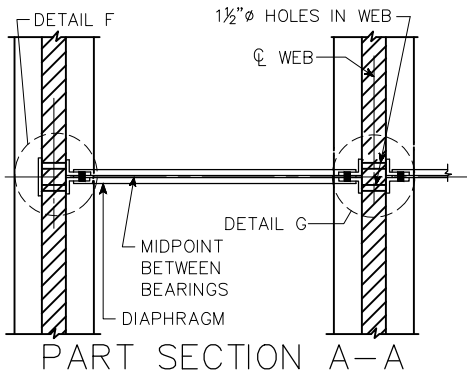
BEAM COIL TIE LOCATIONS



DETAIL F

DETAIL G

SECTION SHOWING INTERMEDIATE DIAPHRAGMS
AT EXTERIOR BAY



PART SECTION A-A

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

71'-0" END SPANS

97'-0" CENTER SPAN

BARRIER RAIL NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

THE PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE PLACED BETWEEN VERTICAL BARS AT A MINIMUM SPACING OF 20 FEET. CONSTRUCTION JOINT CONTACT SURFACES ARE TO BE COATED WITH AN APPROVED BOND BREAKER.

COST OF THE JOINT SEALER AND BOND BREAKER SHALL BE CONSIDERED INCIDENTAL TO OTHER CONSTRUCTION.

ALL BARRIER RAIL REINFORCING STEEL IS TO BE EPOXY COATED AS SHOWN.

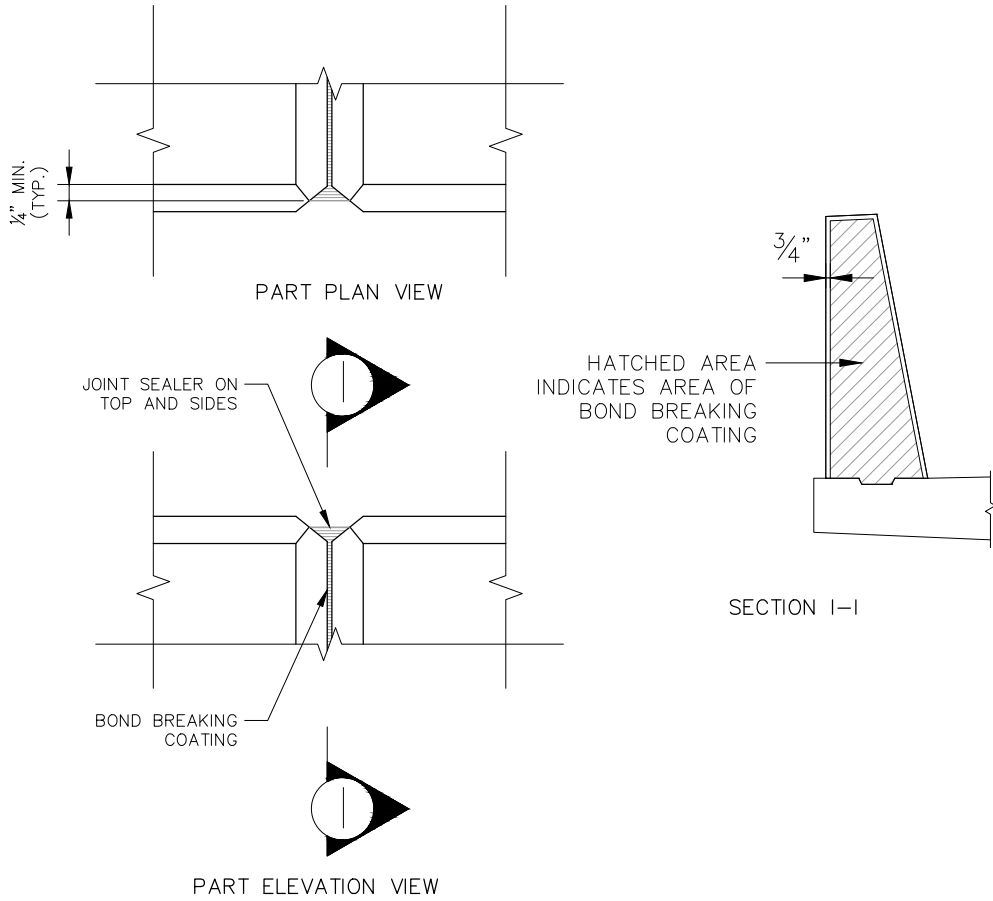
THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING REINFORCING STEEL, AND ALL OF THE EQUIPMENT AND LABOR REQUIRED TO ERECT THE RAIL IN ACCORDANCE WITH THESE PLANS AND CURRENT SPECIFICATIONS. IF CONDUIT IS REQUIRED IN THIS PLAN THE RIGID STEEL CONDUIT, JUNCTION BOXES AND FITTINGS INCLUDING LABOR AND ANY ADDITIONAL WORK TO DO THE INSTALLATION IS CONSIDERED INCIDENTAL TO THE COST OF THE RAILING.

THE JOINT SEALER SHALL BE LIGHT GRAY NONSAG LATEX CAULKING SEALER MARKETED FOR OUTDOOR USE. NO TESTING OR CERTIFICATION IS REQUIRED.

TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ∇ GRADE.

ALL EXPOSED CORNERS ON THE TOP OF THE BARRIER AND ALL OTHER CORNERS 90° OR SHARPER TO BE FILLETED WITH A $\frac{3}{4}$ " DRESSED AND BEVELED STRIP.

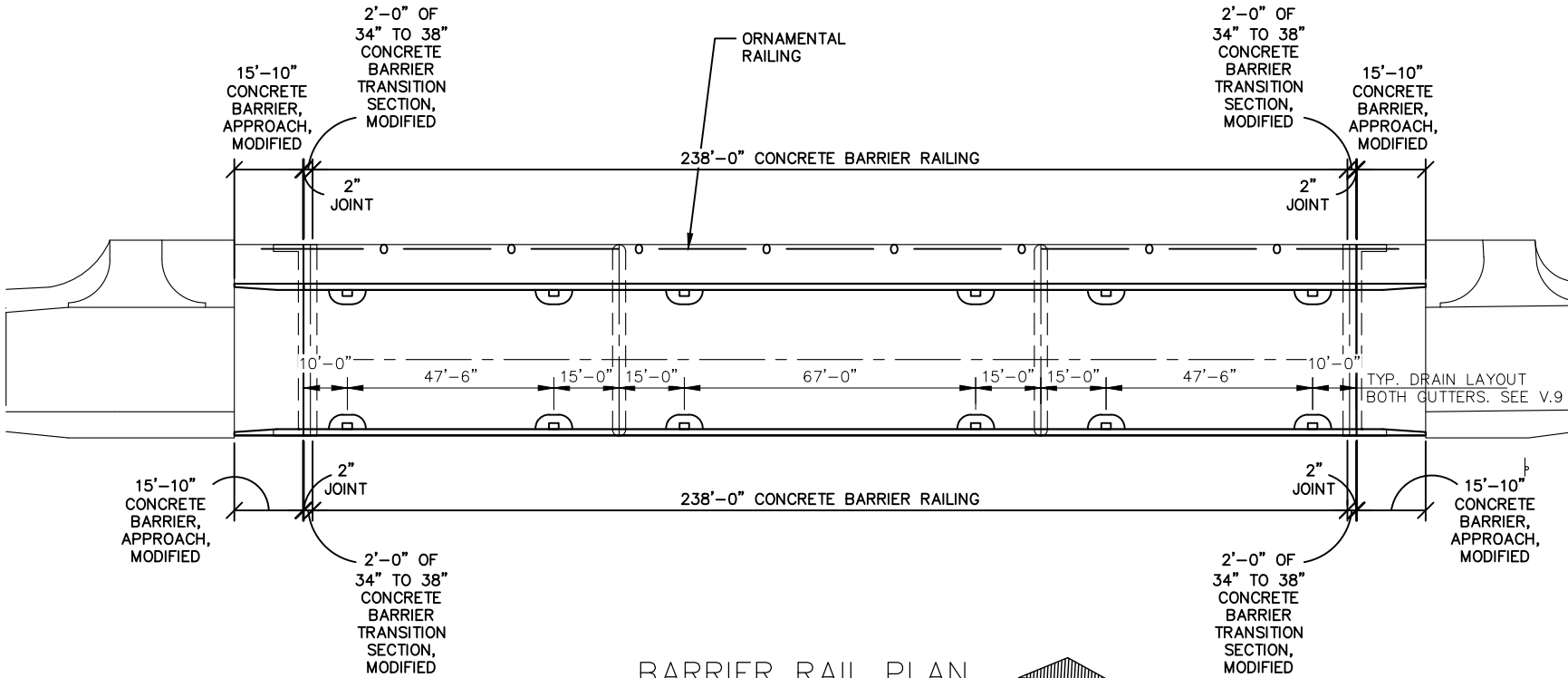
CROSS SECTIONAL AREA OF THE STANDARD AND SPECIAL SECTIONS OF THE BARRIER RAIL = 3.50 SQUARE FEET, EXCEPT THE 2'-10" SLOPED ENDS AT THE END SECTIONS.



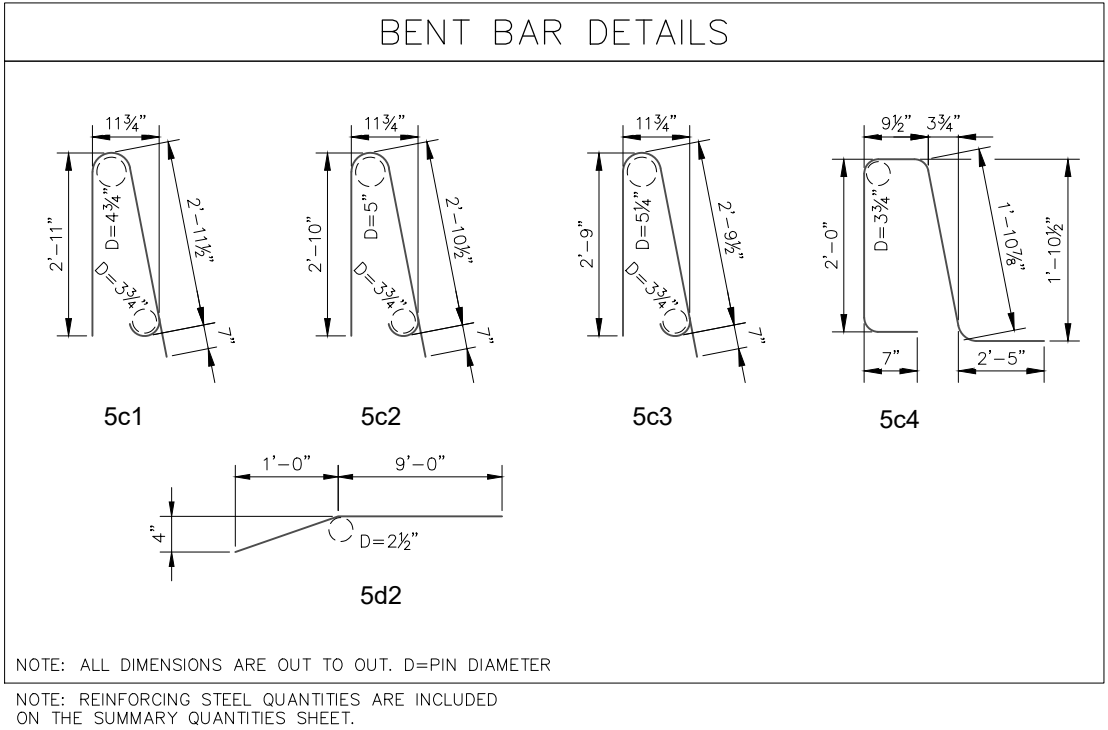
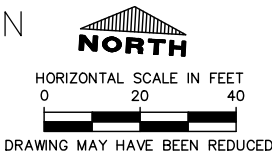
BARRIER RAIL JOINT DETAILS

REINFORCING BAR LIST - TWO BARRIER RAILS						
STANDARD SECTION	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
					ft'-in.	
	5 c1	VERTICAL		476	6'-8	3310
	5 c2	VERTICAL AT ENDS		4	6'-6	27
	5 c3	VERTICAL AT ENDS		4	6'-4	26
	5 c4	VERTICAL, LOWER		484	7'-3	3660
	5 d1	LONGITUDINAL		126	35'-6	4665
	5 d2	LONGITUDINAL AT ENDS		4	10'-0	42
	5 d3	LONGITUDINAL AT ENDS		32	10'-0	334
TOTAL EPOXY REINFORCING (LBS.)						12064

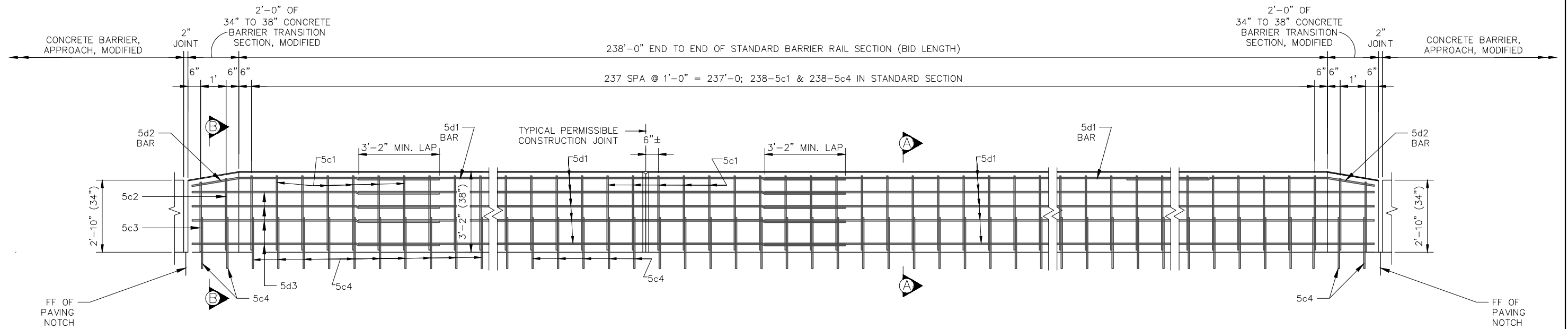
CONCRETE PLACEMENT SUMMARY		
SECTION		TOTAL
STANDARD SECTION 238'-0" AT 0.130 CY PER FOOT x 2 SIDES		61.9
34" TO 38" CONCRETE BARRIER TRANSITION SECTION, MODIFIED 8'-0" AT 0.129 CY PER FOOT		1.0
TOTAL (CY)		62.9
CONCRETE BARRIER RAIL QTYS		
ITEM	UNIT	TOTAL
STANDARD CONCRETE BARRIER RAILING	L.F.	476
34" TO 38" CONCRETE BARRIER TRANSITION SECTION, MODIFIED	EACH	4



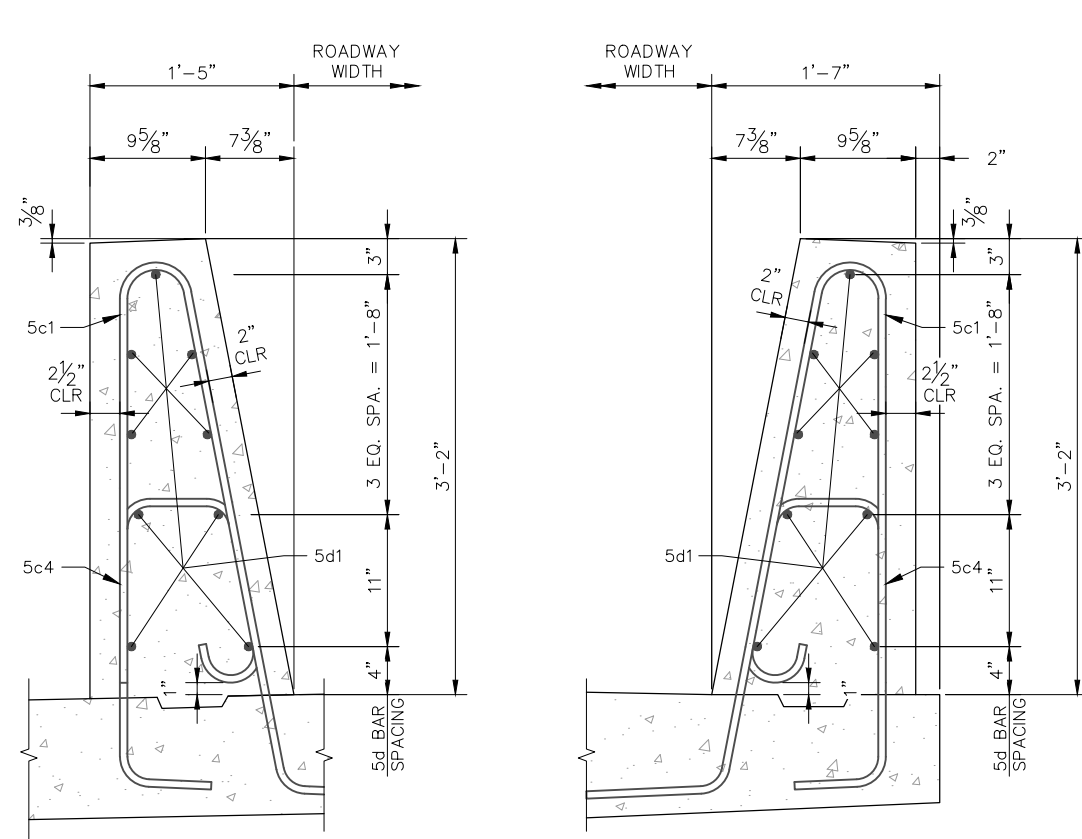
BARRIER RAIL PLAN



Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50
71'-0" END SPANS 97'-0" CENTER SPAN

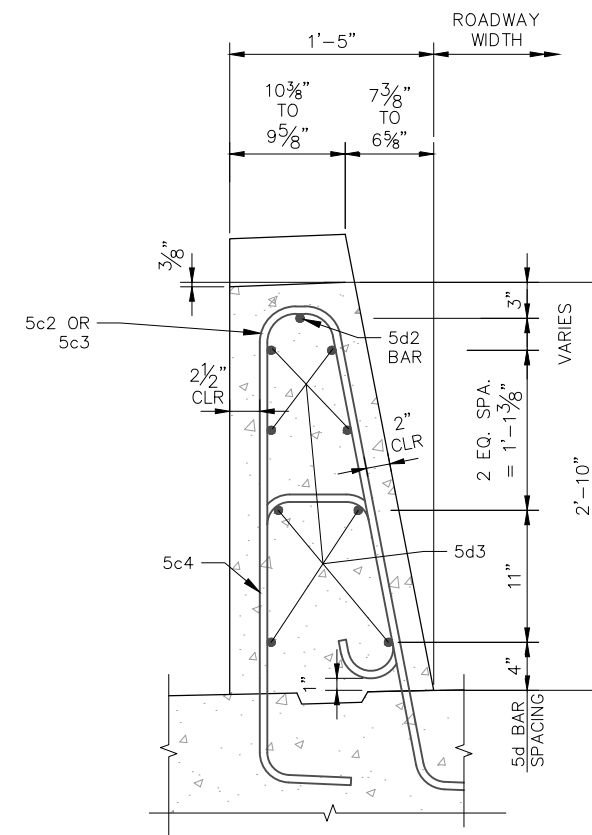


TYPICAL ELEVATION OF BARRIER RAIL



Part Section A-A
(NORTH)

Part Section A-A
(SOUTH)

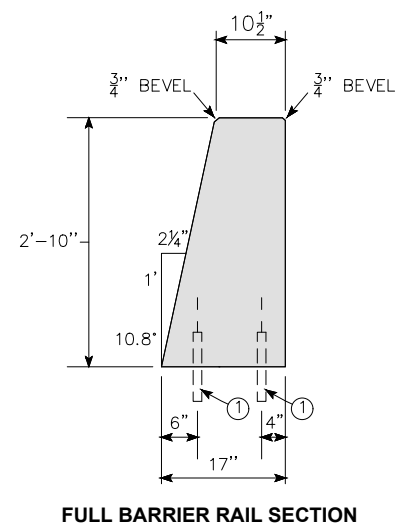
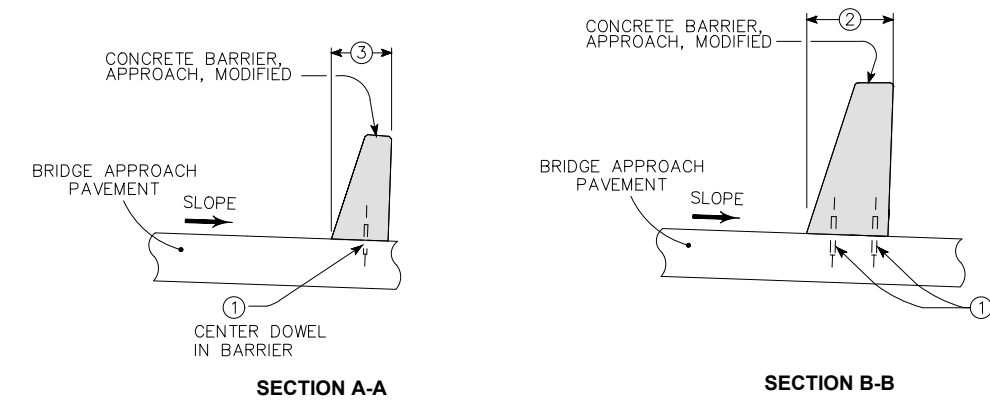


PART SECTION B-B
(NORTH)
(SIM SOUTH)

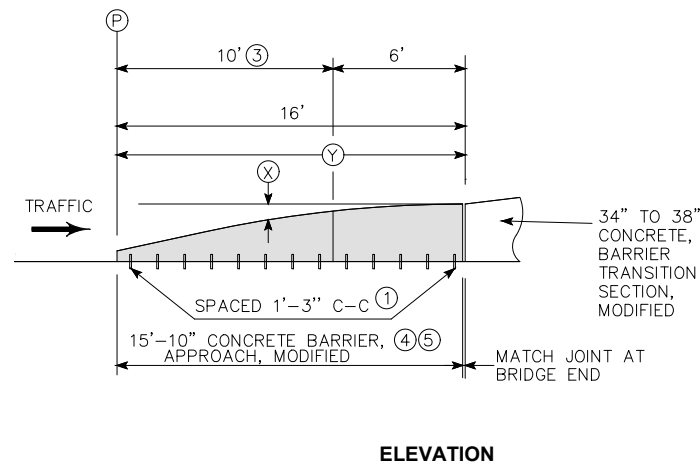
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK

Station: 10+14.50

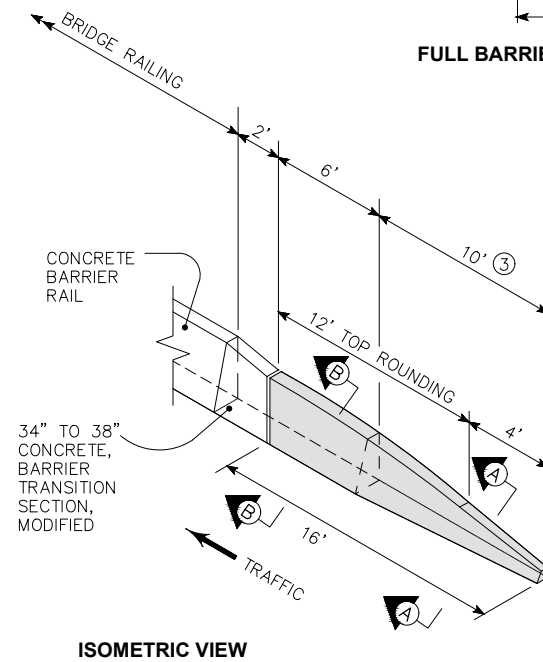
71'-0" END SPANS 97'-0" CENTER SPAN



- ① #8 X 8 INCH DEFORMED BARS OR 1 INCH DIAMETER SMOOTH.
- ② BOTTOM WIDTH OF BARRIER IS MAINTAINED AT 17 INCHES.
- ③ BOTTOM WIDTH OF BARRIER TRANSITIONS FROM 8 TO 17 INCHES.
- ④ PLACE NO DELINEATOR OR OBJECT MARKER IN FRONT OF, OR ON, THE BARRIER.
- ⑤ APPROXIMATELY 1.3 CUBIC YARDS OF CONCRETE ARE REQUIRED TO CONSTRUCT BARRIER AS SHOWN. AMOUNT MAY VARY DEPENDING ON INDIVIDUAL SITE REQUIREMENTS.



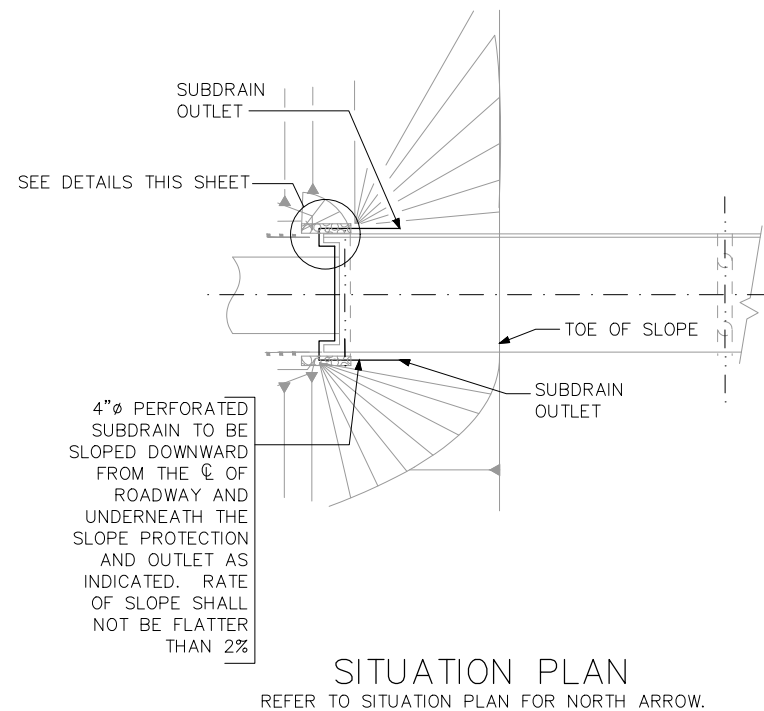
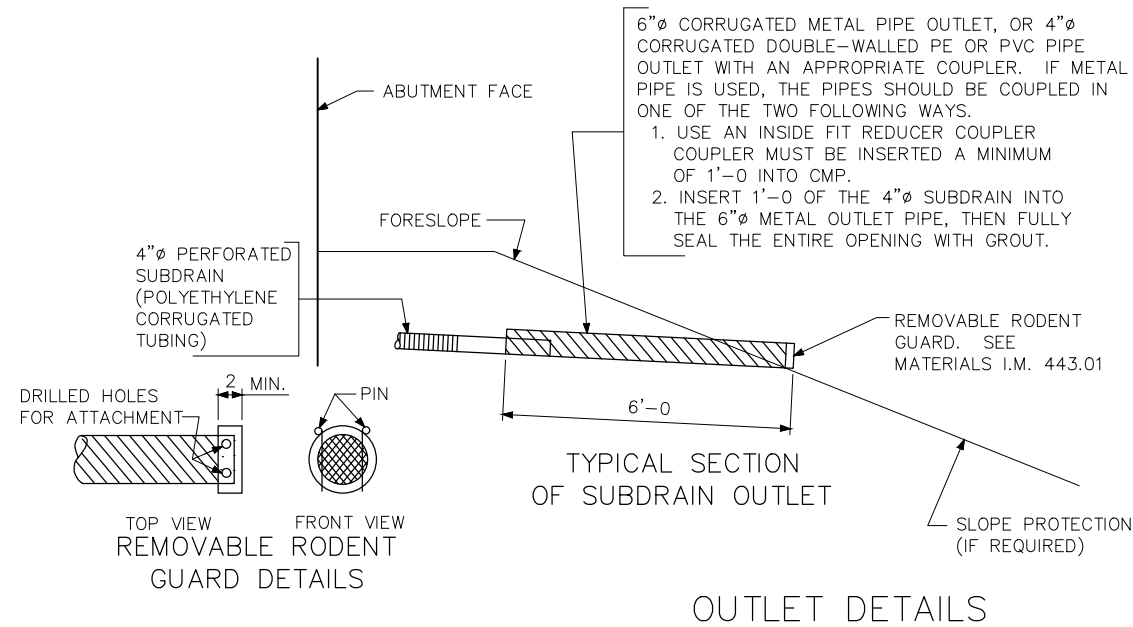
OFFSETS FOR ROUNDED BARRIER TOP																	
Y = DISTANCE FROM (P)	ft.	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
X = OFFSET TO ROUNDED TOP	ft.	2.13	1.91	1.70	1.48	1.26	1.06	0.87	0.70	0.54	0.42	0.30	0.20	0.12	0.06	0.02	0.00



Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
 Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

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SUBDRAIN NOTES:

SEE THIS SHEET FOR DETAILS OF PLACING ALL SUBDRAINS AND SUBDRAIN OUTLETS REQUIRED FOR THIS STRUCTURE.

THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS BEHIND THE ABUTMENT. THE SUBDRAINS SHALL BE 4" IN DIAMETER AND BE IN ACCORDANCE WITH ARTICLE 4143.01, B, OF THE STANDARD SPECIFICATIONS. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6'-0" LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD.

THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, POROUS BACKFILL, AND SUBDRAIN OUTLET IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)". NO EXTRA PAYMENT WILL BE MADE.

NOTE:
SEE ABUTMENT BACKFILL DETAILS SHEET FOR DETAILS NOT SHOWN ON THIS SHEET WHICH ARE PERTINENT TO THIS STRUCTURE.

Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50

71'-0" END SPANS 97'-0" CENTER SPAN

origin 800 556-4491

CITY OF OELWEIN

PROJECT NUMBER BRM-5657(614)- -8N-33

SUBDRAIN DETAILS

SHEET: V.20

REV: .

