BRIDGE REPLACEMENT – PPCB
LETTING DATE
MARCH 18, 2025
BRM–5657(614)– –8N–33

281–1
09–28–22

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

IOWA DOT

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

TOTAL SHEETS
40

PROJECT NUMBER
BRM–5657(614)– –8N–33

INDEX OF SHEETS

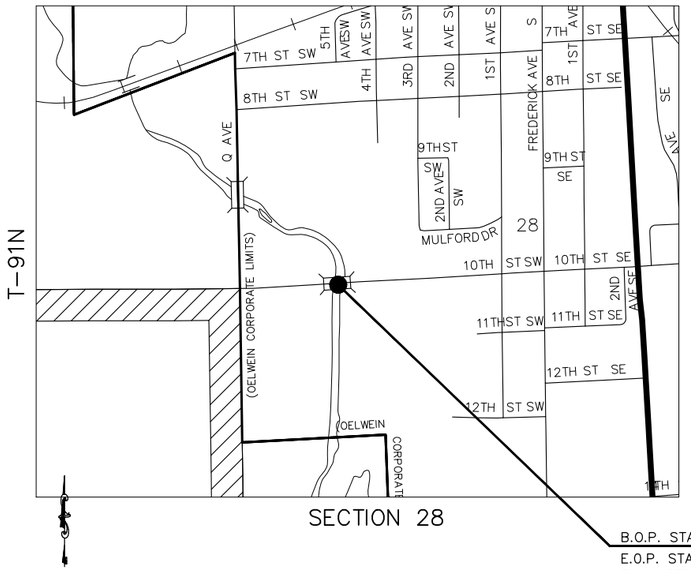
105–3
10–18–05

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

R–9W



APPROX. SCALE:

0 1/4 1/2
SCALE IN MILES

LOCATION MAP

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.

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

IOWA 811 ONE CALL SM
1 (800) 292 - 8989

UTILITY CONTACTS:

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

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

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

INDEX OF SEALS

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

origin design
WORKING ON TOMORROW.
800 556-4491
origindesign.com

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@ORIGINDESIGN.COM

LICENSED PROFESSIONAL ENGINEER
NOAH HOFRICHTER
24665
IOWA

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 — 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

AADT 820 V.P.D. 2021

CITY OF OELWEIN

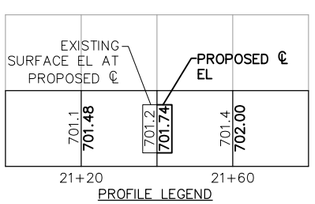
P:\23\036\DRAWINGS\CIVIL\23036 ZZ A SHEETS.DWG 11/27/2024 8:33:51 AM JOE RETTENBERGER

ABBREVIATIONS

Δ	CENTRAL ANGLE
A/C	AIR CONDITIONING(ER)
AC	ACRES
A.F.F.	ABOVE FINISHED FLOOR
AGG	AGGREGATE
AOH	ARROW ON HYDRANT
ARCH	ARCHITECTURAL
ASPH	ASPHALT
AVG	AVERAGE
B–B	B/C – B/C
B/C, BOC	BACK OF CURB
B/DITCH	BOTTOM OF DITCH
BFP	BACKFLOW PREVENTOR
B/L	BASE LINE
B/S	BOTTOM OF SLOPE
BLDG	BUILDING
B.M.	BENCH MARK
BOP	BEGINNING OF PROJECT
BOT	BOTTOM
BSMT	BASEMENT
BV	BUTTERFLY VALVE
C&G	CURB AND GUTTER
CATV	CABLE TELEVISION
CB	CATCH BASIN
C–C	CENTER TO CENTER
CF	CUBIC FEET
CH	CHORD
CH BRG	CHORD BEARING
CIP	CAST IRON PIPE
C–I–P	CAST–IN–PLACE
CISP	CAST IRON SOIL PIPE
CJ	CONTROL JOINT
℄ OR CL	CENTERLINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMP	COMPACTED
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COR	CORNER
CP	CONTROL POINT
CPE	CORRUGATED POLYETHYLENE PIPE
CRST	CRUSHED STONE
CSP	CORRUGATED STEEL PIPE
CTRD	CENTERED
CTR	CENTER
CULT	CULTIVATED
CV	CHECK VALVE
CY	CUBIC YARD
D	DEGREE OF CURVE
DIA (ø)	DIAMETER
DIP	DUCTILE IRON PIPE
DN	DOWN
DRWY	DRIVEWAY
DS	DOWNSPOUT
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
E	EAST
E'LY	EASTERLY
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDMENT
ENGR	ENGINEER
ENTR	ENTRANCE
EOP	END OF PROJECT
EOR	END OF RADIUS
E/P	EDGE OF PAVEMENT
EQ	EQUAL
E/S	EDGE OF SHOULDER
ESMT	EASEMENT
EST	ESTIMATE
EX	EXISTING
EXC	EXCAVATE/EXCAVATION
EXP	EXPANSION
EXT	EXTERIOR
EXTD	EXTEND
EW	EACH WAY

FD	FLOOR DRAIN
FDN	FOUNDATION
F.E.	FIELD ENTRANCE
FES	FLARED END SECTION
F–F	FACE TO FACE
FFE	FINISH FLOOR ELEVATION
FG	FORM GRADE
FIN GR	FINISHED GRADE
FL	FLOWLINE
FLG	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FND	FOUND
FT	FOOT/FEET
FTG	FOOTING
FUT	FUTURE
FV	FIELD VERIFY
G	GUTTER
GC	GENERAL CONTRACTOR
GALV	GALVANIZED
GND	GROUND
GRAN	GRANULAR
GRD	GRADE
GV	GATE VALVE
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HPT	HIGH POINT
HSD	HEADLIGHT STOPPING DISTANCE
HYD	HYDRANT
ID	INSIDE DIA/INSIDE DIM
IE	INVERT ELEVATION
IMP	IMPROVEMENTS
IN	INCHES
INV	INVERT
IP	IRON PIPE
JB	JUNCTION BOX
JT	JOINT/JOINT LENGTH
K	RATE OF VERT CURVATURE
L	LENGTH OF CURVE
LAT	LATERAL
LF	LINEAL FOOT
LONG	LONGITUDINAL
LP	LIGHT POLE
LPT	LOW POINT
LT	LEFT
MAX	MAXIMUM
ME	MATCH EXISTING
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MP	MILE POST
N	NORTH
N/A	NOT APPLICABLE
NE'LY	NORTHEASTERLY
N'LY	NORTHERLY
NO/#	NUMBER
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NW'LY	NORTHWESTERLY
OC	ON CENTER
OD	OUTSIDE DIAMETER
PC	POINT OF CURVE
PERF	PERFORATED
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PM	PRINCIPAL MERIDIAN
POB	POINT OF BEGINNING
POC	POINT OF CURVE
POT	POINT OF TANGENT
PRC	POINT OF REVERSE CURVE
PRELIM	PRELIMINARY
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
QTY	QUANTITY

R	RADIUS
R&R	REMOVE & REPLACE
R&S	REMOVE & SALVAGE
RCB	REINFORCED CONCRETE BOX
RCAP	REINFORCED CONCRETE ARCH PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REBAR	REINFORCING BAR
REF	REFERENCE
REINF	REINFORCING/REINFORCED
REV	REVISION
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
RP	RADIUS POINT
RS	RESILIENT SEAT
RT	RIGHT
S	SOUTH
S=	SUPERELEVATION
SAN	SANITARY
SANS	SANITARY SEWER
SB	SOIL BORING
SCH	SCHEDULE
SD	SUB DRAIN
SEC	SECTION
SE'LY	SOUTHEASTERLY
SF	SQUARE FOOT
S.F.D.	STEP FOOTING DOWN
SHT	SHEET
SIG.	SIGNAL
SIM.	SIMILAR
S'LY	SOUTHERLY
SOG	SLAB ON GRADE
SPEC	SPECIFICATION
SS	STAINLESS STEEL
SSD	STOPPING SIGHT DISTANCE
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STM	STORM
STMS	STORM SEWER
SW'LY	SOUTHWESTERLY
SY	SQUARE YARD
T	TANGENT LENGTH
T/B	TOP OF BANK
T/DITCH	TOP OF DITCH
T/C, TC	TOP OF CURB
T/GRAV	TOP OF GRAVEL
T/WALL	TOP OF WALL
T/P, TP	TOP OF PAVEMENT
T/S	TOP OF SLOPE
T/SUB	TOP OF SUBGRADE
T/W, TW	TOP OF WALK
T/WM	TOP OF WATER MAIN
T & B	TOP AND BOTTOM
T.O.B.	TOP OF BEAM
T.O.B.L.	TOP OF BRICK LEDGE
T.O.C.	TOP OF CONCRETE
T.O.E.F.	TOP OF EXISTING FOOTING
T.O.F.	TOP OF FOOTING
T.O.M.	TOP OF MASONRY
T.O.P.	TOP OF PIER
T.O.S.	TOP OF STEEL
TCE	TEMP CONSTRUCTION EASEMENT
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICK / THICKNESS
TWP	TOWNSHIP
TYP	TYPICAL
U	UTILITY
UAC	USE AS CONSTRUCTED
UE	UTILITY EASEMENT
UL	UNDERWRITERS LABORATORIES, INC.
ULFM	UNDERWRITERS LABORATORIES FACTORY MUTUAL
UNO	UNLESS NOTED OTHERWISE
VAR	VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VER	VERIFY
VERT	VERTICAL
VOL	VOLUME
VPC	VERT POINT OF CURVE
VPI	VERT POINT OF INTERSECTION
VPT	VERT POINT OF TANGENCY
W	WEST
W/	WITH
W'LY	WESTERLY
WM	WATER MAIN
W/O	WITHOUT
W.P.	WORKING POINT
WD	WOOD
WSO	WATER SHUT OFF
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
YD	YARD



PROFILE LEGEND

LEGEND

EXISTING		PROPOSED
	PROPERTY/ROW LINE	
	EASEMENT	
	SECTION LINE	
	QUARTER SECTION LINE	
	QUARTER QUARTER SECTION LINE	
	CENTERLINE	
D	STORM SEWER	D
SD	SUB DRAIN	SD
S	SANITARY SEWER	S
FM	FORCE MAIN	FM
W	WATER LINE	
G	GAS LINE	G
OHE	OVERHEAD ELECTRIC	OHE
E	UNDERGROUND ELECTRIC	E
OHT	OVERHEAD TELEPHONE	OHT
T	UNDERGROUND TELEPHONE	T
OHTV	OVERHEAD TELEVISION	OHTV
TV	UNDERGROUND TELEVISION	TV
FIB	FIBER OPTIC	FIB
X	WIRE FENCE	X
O	CHAINLINK FENCE	O
□	WOOD FENCE	□
SF	SILT FENCE	SF
PC	PERIMETER CONTROL	PC
-000-	CONTOUR LINE	000
	RAILROAD TRACKS	
	GUARD RAIL	
+ 0.00	SPOT ELEVATION	+ 0.00
	DIRECTION OF FLOW	
	TREE LINE	
	REVETMENT EXTENTS	
	EROSION STONE	

EXISTING		PROPOSED
	CATCH BASIN	
	AREA INTAKE	
Ⓓ	STORM MANHOLE	Ⓓ
Ⓢ	SANITARY MANHOLE	Ⓢ
Ⓤ	UTILITY MANHOLE	Ⓤ
Ⓥ	WATER VALVE MANHOLE	Ⓥ
	FIRE HYDRANT	
	WATER SHUT OFF	
WV	WATER VALVE	
	YARD HYDRANT	
GV	GAS VALVE	GV
	SIGN	
	UTILITY POLE	
	UTILITY POLE WITH LIGHT	
	TRAFFIC SIGNAL POLE	
	GUY ANCHOR	
	LIGHT POLE	
	UTILITY PEDESTAL	
Ⓦ	WELL	Ⓦ
	MAILBOX	
	WATER LEVEL	
	BOLLARD	
	SOIL BORING	
PIV	POST INDICATOR VALVE	PIV
	DECIDUOUS TREE W/ TRUNK DIA.	
	CONIFEROUS TREE W/ TRUNK DIA.	
	SHRUB OR BUSH	

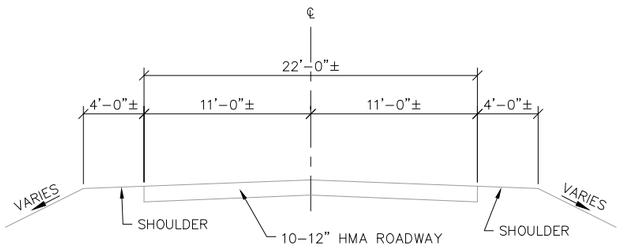
UTILITY LINES WITH DESIGNATORS WRAPPED IN PARENTHESIS SUCH AS (W) or (G) ARE LOCATED BASED ON MAP OR GIS DATA

SURVEY

■	FOUND REBAR
●	FOUND IRON PIPE
○	SET REBAR

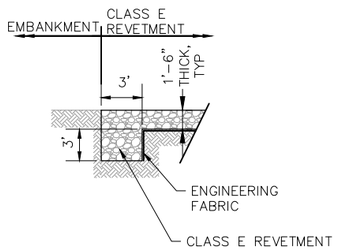
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50

71'–0" END SPANS 97'–0" CENTER SPAN



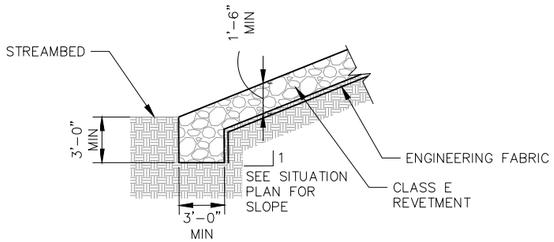
1 B.1 EXISTING SECTION

NOT TO SCALE



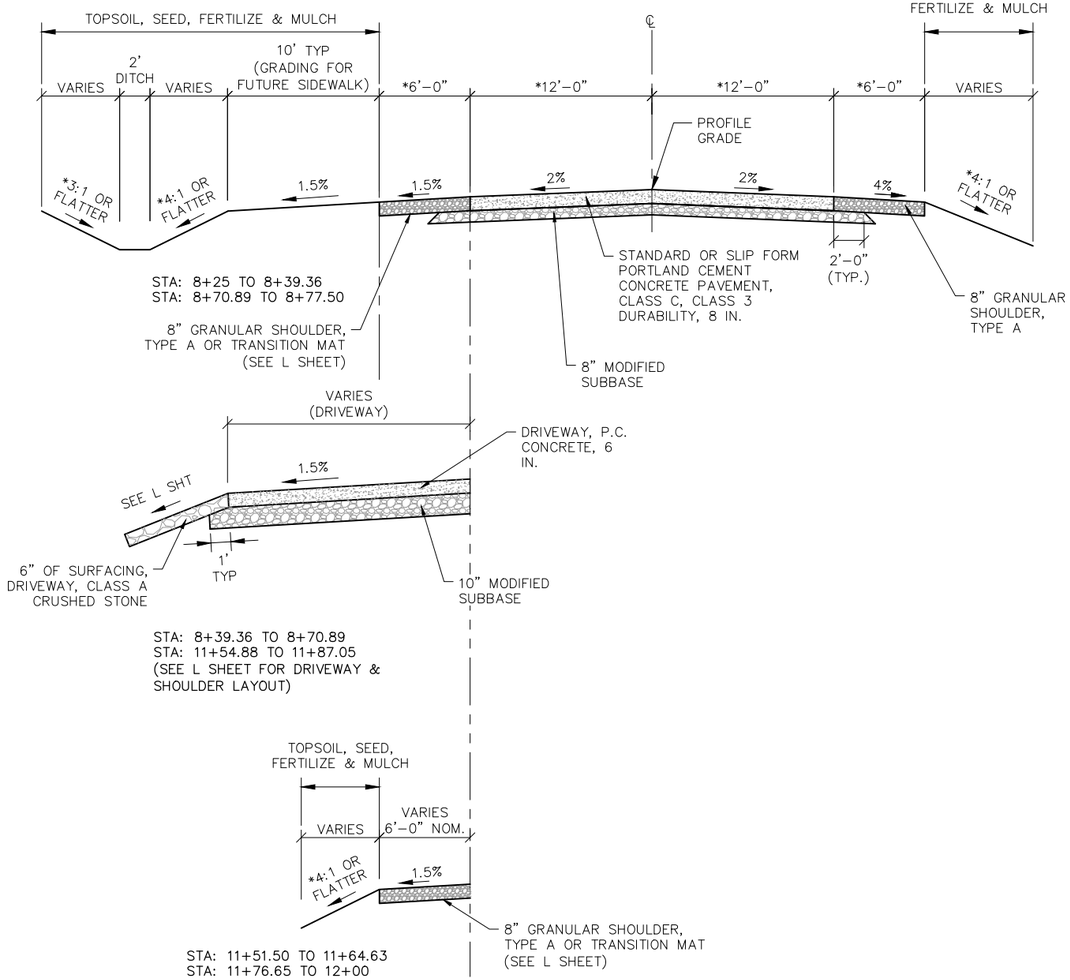
3 B.1 TRENCH END ANCHOR DETAIL

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

origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	TYPICAL SECTIONS	SHEET: B.1	REV: .

P:\23\036\DRAWINGS\CIVIL\23036 ZZ B SHEETS_1.DWG 11/27/2024 8:33:55 AM JOE RETTENBERGER

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	REVETMENT, 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

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 EXISITNG 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

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

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	04-19-22	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 TOTAL ROADWAY CUT UNADJUSTED	B UNUSABLE EXISTING PAVEMENT VOLUME	C TOTAL ROADWAY CUT, ADJUSTED **(EXCAVATION, CLASS 10, ROADWAY & BORROW)**	D TOTAL ROADWAY FILL, ADJUSTED (1.3 SHRINK FACTOR)	E CHANNEL AREA CUT, UNADJUSTED **(EXCAVATION, CLASS 13, CHANNEL)**	F CHANNEL AREA FILL, ADJUSTED (1.3 SHRINK FACTOR)	G **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**

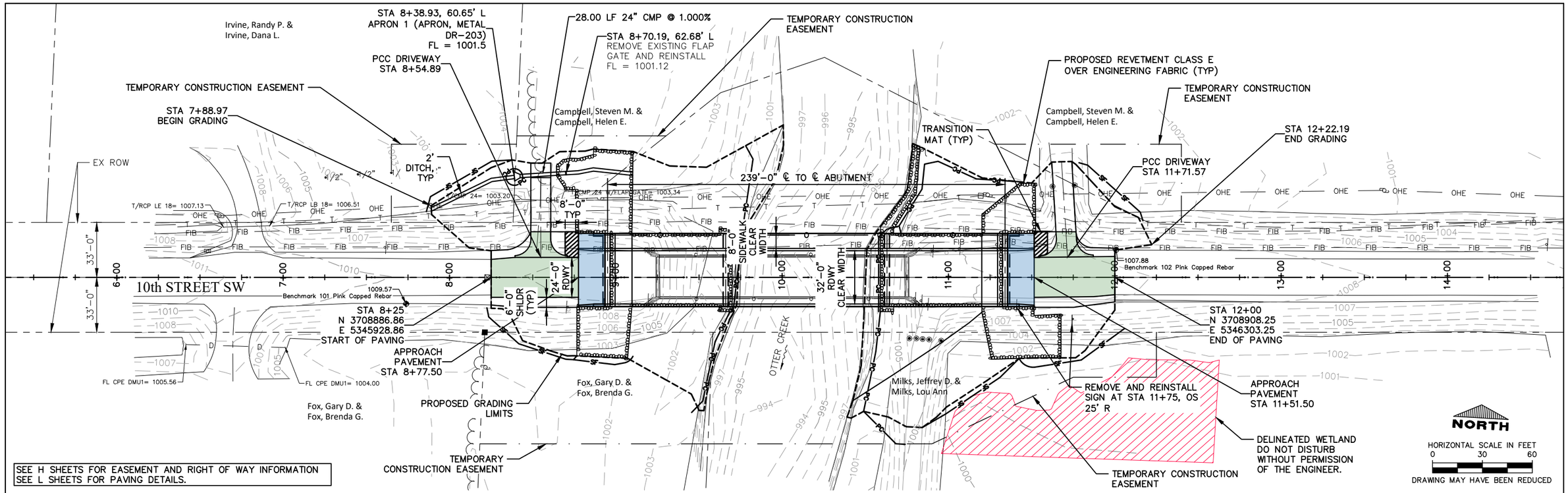
NOTES:
- ALL VALUES IN CUBIC YARDS
- BOLD TITLES/VALUES INDICATE PAY ITEMS AND QUANTITIES
- ALL QUANTITIES INCLUDE EXCAVATION FOR EMBEDMENT OF CLASS E REVETMENT AS APPROPRIATE
- QUANTITIES NOT ADJUSTED FOR TOPSOIL

112-06
2/22/2024

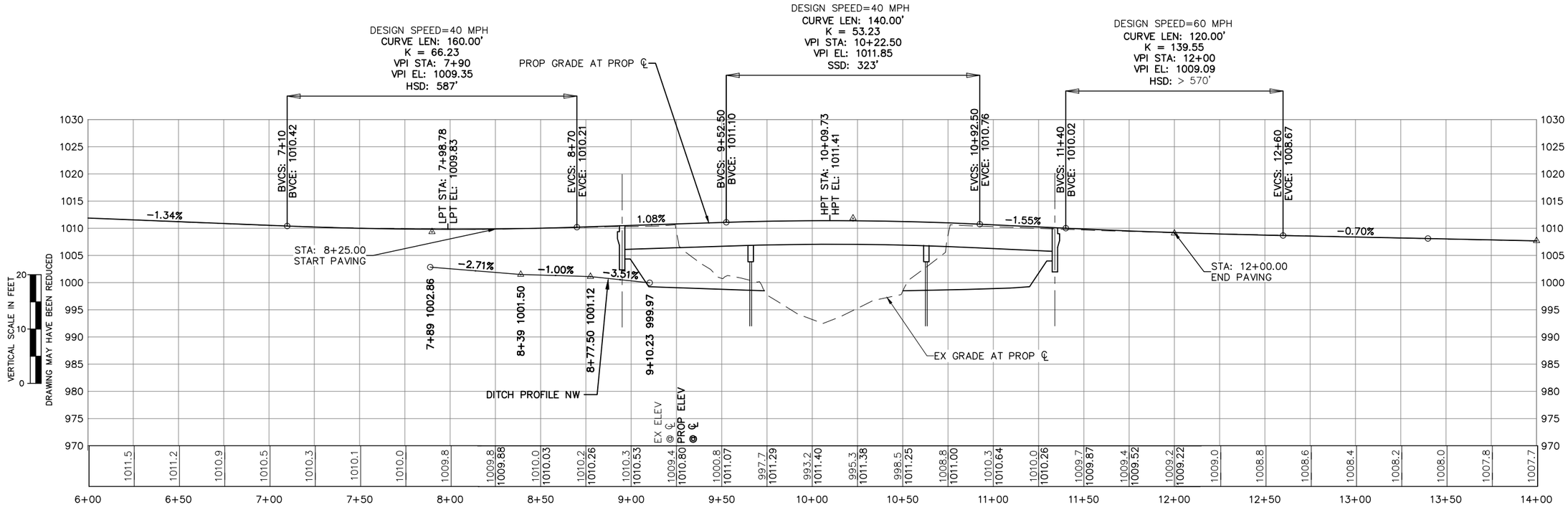
BRIDGE APPROACH SECTION

* 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



SEE H SHEETS FOR EASEMENT AND RIGHT OF WAY INFORMATION
SEE L SHEETS FOR PAVING DETAILS.



NORTH

HORIZONTAL SCALE IN FEET
0 20 40

DRAWING MAY HAVE BEEN REDUCED

Campbell, Steven M. &
Campbell, Helen E.

Irvine, Randy P. &
Irvine, Dana L.

STA 10+25.48, 132.14' L

EXISTING ROW

STA 9+62.99, 110.93' L

Campbell, Steven M. &
Campbell, Helen E.

STA 8+40.49, 85.00' L
STA 8+40.27, 80.00' L
STA 7+65.00, 80.00' L
TEMPORARY EASEMENT

STA 9+30.19, 85.00' L
TEMPORARY EASEMENT

STA 11+27.82, 80.00' L

TEMPORARY EASEMENT

STA 12+40.00, 80.00' L

ø1/2" ø1/2" ø1/2"

STA 7+65.00, 33.00' L
STA 8+64.42, 33.00' L

STA 12+20.05, 33.00' L
STA 12+40.00, 33.00' L

1007.88
Benchmark 102 Pink Capped Rebar

8+00 9+00 10+00 11+00 12+00 13+00

1009.57
101 Pink Capped Rebar

10TH STREET SW ℄

EXISTING ROW

STA 8+21.18, 33.00' R

STA 9+58.30, 33.00' R

STA 12+25.00, 33.00' R

STA 11+75.00, 60.00' R

STA 12+25.00, 60.00' R

Fox, Gary D. &
Fox, Brenda G.

Fox, Gary D. &
Fox, Brenda G.

TEMPORARY EASEMENT

STA 8+18.23, 100.00' R

STA 9+55.35, 100.00' R

STA 10+90.00, 100.00' R

Milks, Jeffrey D. &
Milks, Lou Ann

P:\23\036\DRAWINGS\CIVIL\23036 ZZ H SHEETS.DWG 11/27/2024 8:34:12 AM JOE RETTENBERGER

origin civil 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	EASEMENT PLAN	SHEET: H.1	REV: .

SIGN LEGEND

Ⓐ 

R11-2, 48"X30"
(TO BE PLACED IN ROAD)
SAFETY CLOSURE

Ⓑ 

R11-4, 60"X30"
(TO BE PLACED STAGGERED IN ROAD)

Ⓒ 

M1-94H, 12"X24"
BLACK ON ORANGE
M4-9R, 30"X24"
BLACK ON ORANGE

Ⓓ 

M4-9R, 30"X24"
BLACK ON ORANGE

Ⓔ 

R11-4, 60"X30"

Ⓕ 

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

Ⓖ 

M1-94H, 12"X24"
BLACK ON ORANGE
M4-9L, 30"X24"
BLACK ON ORANGE

Ⓗ 

M4-9L, 30"X24"
BLACK ON ORANGE

Ⓙ 

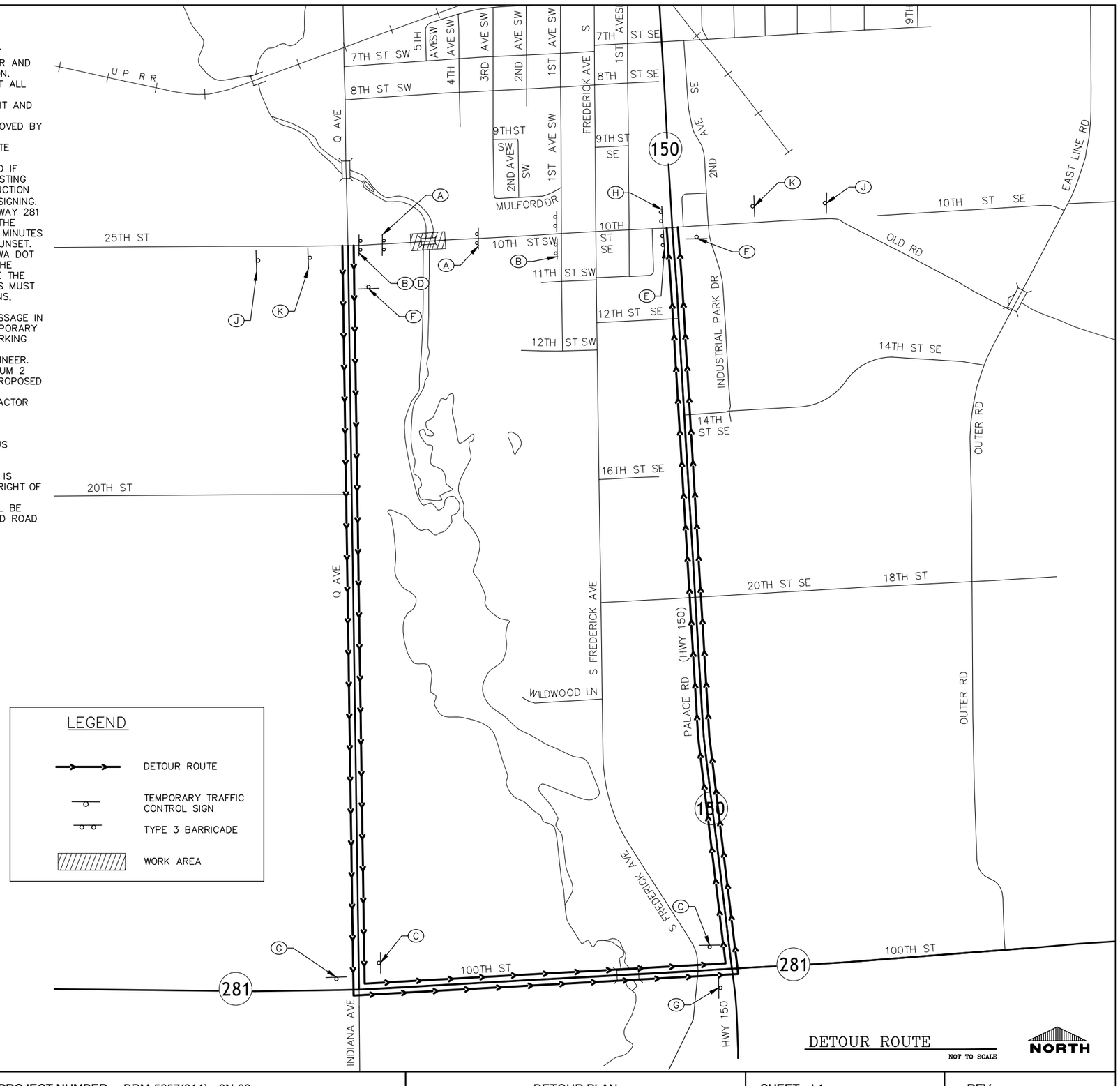
W20-3,
48"X48"
BLACK ON
ORANGE

Ⓚ 

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@IOWADOT.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

NORTH

P:\23\036\DRAWINGS\CIVIL\23036 ZZ J SHEETS.DWG 11/27/2024 8:34:16 AM JOE RETTENBERGER

origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	DETOUR PLAN	SHEET: J.1	REV: .

SEE D.1 FOR PIPE INFO

STA 8+48.89, 68.66'L
G 1004.60

STA 8+60.89, 68.66'L
G 1005.00

STA 8+77.27, 64.08' L
G 1001.11

STA 8+48.89, 59.92' L
G 1004.77

STA 8+60.89, 59.92' L
G 1004.98

STA 8+25.58, 57.58' L
G 1001.87

2'-0" DITCH

3.0:1

12'-0"

6" OF SURFACING, DRIVEWAY, CLASS A CRUSHED STONE

6.9:1

4.0:1

T/CMP 24= 1003.20

T/CMP 24 W/FLAP GATE= 1003.34

STA 8+25.00, 27.41'L
G 1009.41

STA 8+48.89, 27.41'L
T/P 1009.55

STA 8+60.89, 27.41'L
T/P 1009.65

STA 8+77.50, 26.42'L
T/P 1009.81

GRADE BREAK

T/P 1009.59

PROPOSED GRANULAR SHOULDER

STA 8+48.89, 23.00'L
T/P 1009.61

STA 8+60.89, 22.70'L
T/P 1009.72

8'-0" (TYP)

PROPOSED GRANULAR SHOULDER

1.50%

T/P 1009.70

GRANULAR SHOULDER

T/P 1009.74

T/P 1009.85

T/P 1009.94

R10'-0"

BT-2 OR L-2

10.0'

7.7'

CT

5.4'

5'-5"

STA 8+39.36, 13.01'L
T/P 1009.70

STA 8+70.89, 13.00'L
T/P 1009.96

SEE U SHEETS FOR APPROACH PAVEMENT INFORMATION

STA 8+25.00, 10.82'L
MATCH EXISTING

STA 8+51.97, 12.00'L
T/P 1009.80

STA 8+54.89, 12.00'L
T/P 1009.83

T/P 1010.05

T/P 1009.93

2.00%

T/P 1009.88
MATCH EX

T/P 1010.15

T/P 1010.29

14.4'
BT-2 OR L-2 (TYP)

12.6'

12.9'

8+50

8+75

24'-0"

T/P 1010.04

STA 8+77.50
START OF BRIDGE APPROACH PAVEMENT, AS PER PLAN

10th STREET SW

JOINT (TYP)

STA 8+24.96, 10.57'R
MATCH EXISTING

T/P 1009.91

T/P 1010.05

1'-3" PAVING NOTCH

21'-4¾" FV

10'-9⅞"

10'-6⅞"

STA 8+39.36, 12.00'R
T/P 1009.70

STA 8+51.97, 12.00'R
T/P 1009.80

STA 8+77.50, 17.41'R
T/P 1009.94

4.00%

STA 8+39.36, 18.00'R
G 1009.32

PROPOSED GRANULAR SHOULDER

4.0:1

WEST DRIVEWAY

SEE SHEET V.2 FOR GRADING UNDER BRIDGE

STA 11+62.10, 69.27'L
G 1003.41

STA 11+74.10, 69.63'L
G 1003.42

STA 11+50.00, 56.65'L
G 1001.99

PAVEMENT JOINTING NOTES, REFER TO PV-101

- ALL LONGITUDINAL JOINTS ARE "BT-2" OR "L-2" JOINTS DEPENDING ON SEQUENCING, TYPICAL
- ALL TRANSVERSE JOINTS IN 8" PAVEMENT ARE TO BE CD JOINTS WITH A MAXIMUM SPACING OF 20' UNLESS OTHERWISE NOTED
- MINIMUM JOINT LENGTH TO BE 2'
- JOINTS SHOULD TERMINATE AT 90° ANGLES TO THE SLAB WHERE POSSIBLE
- MINIMUM JOINT ANGLE TO BE 70°
- KEYED JOINTS ARE NOT ALLOWED
- ROADWAY CENTERLINE JOINTS ARE INTENDED TO LINE UP WITH THE EXISTING CENTER OF ROADWAY PAVEMENT, WHICH DOES NOT ALWAYS MATCH THE CENTERLINE ESTABLISHED BASED ON PROPERTY OWNERSHIP AND EXISTING ROAD RIGHT OF WAY.

STA 12+00.02, 42.50'L
G 1002.16

STA 11+64.63, 27.42'L
T/P 1009.19

PROPOSED GRANULAR SHOULDER

STA 11+51.50, 26.42'L
T/P 1009.37

STA 11+76.65, 27.42'L
T/P 1009.03

GRANULAR SHOULDER

12'-0⅛"

T/P 1009.10

STA 11+71.24, 17.42'L
T/P 1009.25

PROPOSED GRANULAR SHOULDER

T/P 1009.24

T/P 1009.50

T/P 1009.15

STA 11+87.05, 13.42'L
T/P 1009.11

STA 11+54.88, 13.00'L
T/P 1009.54

T/P 1009.39

STA 12+00.00, 12.58'L
MATCH EXISTING

8.1'

7.7'

8.4'

8.3'

8.0'

7.5'

T/P 1009.61

T/P 1009.56

STA 11+87.05, 12.42'L
T/P 1009.12

STA 11+71.56, 12.24'L
T/P 1009.32

STA 11+79.56, 12.28'L
T/P 1009.07

STA 11+51.50
END OF BRIDGE APPROACH PAVEMENT, AS PER PLAN

11+50

11+75

11.8'

12.5'

BT-2 OR L-2 (TYP)

10th STREET SW

T/P 1009.85

JOINT (TYP)

STA 12+00.00, 0.57'L
MATCH EXISTING

1'-3" PAVING NOTCH

STA 11+75.00, 11.72'R
T/P 1009.29

STA 12+00.00, 10.38'R
MATCH EXISTING

10'-11¼"

21'-10⅝" FV

10'-11¾"

STA 11+51.50, 12.00'R
T/P 1009.61

STA 11+63.25, 11.86'R
T/P 1009.44

STA 11+87.50, 11.57'R
T/P 1009.13

STA 11+51.50, 17.42'R
T/P 1009.50

PROPOSED GRANULAR SHOULDER

STA 11+75.20, 18.00'R
G 1008.98

EAST DRIVEWAY

NORTH

HORIZONTAL SCALE IN FEET
0 5 10
DRAWING MAY HAVE BEEN REDUCED

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origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	PAVING PLANS	SHEET: L.1	REV: .

LOG OF BORING

CHOSEN VALLEY TESTING

Chosen Valley Testing, Inc.

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

CVT STANDARD 23253.24.IAW (OELWEIN 10TH ST SW BRIDGE REPLACEMENT).GPJ LOG A GNNN06.GDT 6/10/24

23253.24.IAW B-01 page 1 of 1

LOG OF BORING

CHOSEN VALLEY TESTING

Chosen Valley Testing, Inc.

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 SC	**POORLY-GRADED SAND to CLAYEY SAND** mostly medium grained, trace of gravel, trace of wood, dark grey, waterbearing, loose. (Alluvium) (IADOT: Silty Sand)	5	▽	Water encountered at about 12.5 feet during drilling.
997.5	14.0	SC	**CLAYEY SAND with GRAVEL** mostly medium grained, trace of wood, black, waterbearing, medium dense. (Alluvium) (IADOT: Clayey Sand)	16		
995.5	16.0	SP	**POORLY-GRADED SAND** mostly medium grained, trace of gravel, grey, waterbearing, loose. (Alluvium) (IADOT: Fine Sand)	8		
991.5	20.0	SP		26		
990.5	21.0		**POORLY-GRADED SAND with GRAVEL** mostly medium grained, grey, moist, medium dense. (Alluvium) (IADOT: Gravely Sand)			
990.0	21.5	GM	**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.			

CVT STANDARD 23253.24.IAW (OELWEIN 10TH ST SW BRIDGE REPLACEMENT).GPJ LOG A GNNN06.GDT 6/10/24

23253.24.IAW B-02 page 1 of 1

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. REISDORFER
22234
IOWA

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

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origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	SOIL BORING	SHEET: SPS.1	REV: .

LOG OF BORING

CHOSEN VALLEY TESTING

Chosen Valley Testing, Inc.

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		
999.0	11.5	SP	**POORLY-GRADED SAND** mostly medium grained, trace of gravel, dark grey, waterbearing, loose. (Alluvium) (IADOT: Fine Sand)	8	▽	Water encountered at about 13 feet during drilling.
996.5	14.0	CL	**LEAN CLAY with SAND** trace of gravel, black, wet, rather soft. (Alluvium) (IADOT: Soft Silty Clay)	4		PP = 1.5 tsf
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.			

CVT STANDARD 23253.24.IAW (OELWEIN 10TH ST SW BRIDGE REPLACEMENT).GPJ LOG A GNN06.GDT 6/1/24

23253.24.IAW B-03 page 1 of 1

LOG OF BORING

CHOSEN VALLEY TESTING

Chosen Valley Testing, Inc.

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. 1009.8	Depth 0.0	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
1008.9	0.9		**10" ASPHALT**			Elevations provided by Origin Design.
1007.8	2.0	SP	**POORLY-GRADED SAND** mostly medium grained, black, moist. (Fill) (IADOT: Fine Sand)	21		
1005.8	4.0	SC	**CLAYEY SAND** mostly medium grained, trace of gravel, dark brown to dark grey, moist, medium dense. (Alluvium) (IADOT: Clayey Sand)	16		
1003.3	6.5	CL	**SANDY LEAN CLAY** trace of gravel, dark brown to dark grey, wet, stiff. (Alluvium) (IADOT: Firm-Very Firm Glacial Clay)	4		
998.3	11.5	SC	**CLAYEY SAND** mostly medium grained, trace of gravel, black, moist, loose. (Alluvium) (IADOT: Silty Sand)	9		
995.8	14.0	SP SC	**POORLY-GRADED SAND to CLAYEY SAND** mostly medium grained, trace of gravel, black, moist, loose. (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 6	▽	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)	9		
982.8	27.0	SM	**SILTY SAND with GRAVEL** mostly fine grained, trace of clay, light brown, moist, medium dense. (Weathered Dolomite) (IADOT: Granular Material)	18		
979.3	30.5		Auger refusal at about 30.5 feet during drilling, presumably on bedrock. Boring sealed upon completion.			

CVT STANDARD 23253.24.IAW (OELWEIN 10TH ST SW BRIDGE REPLACEMENT).GPJ LOG A GNN06.GDT 6/1/24

23253.24.IAW B-04 page 1 of 1

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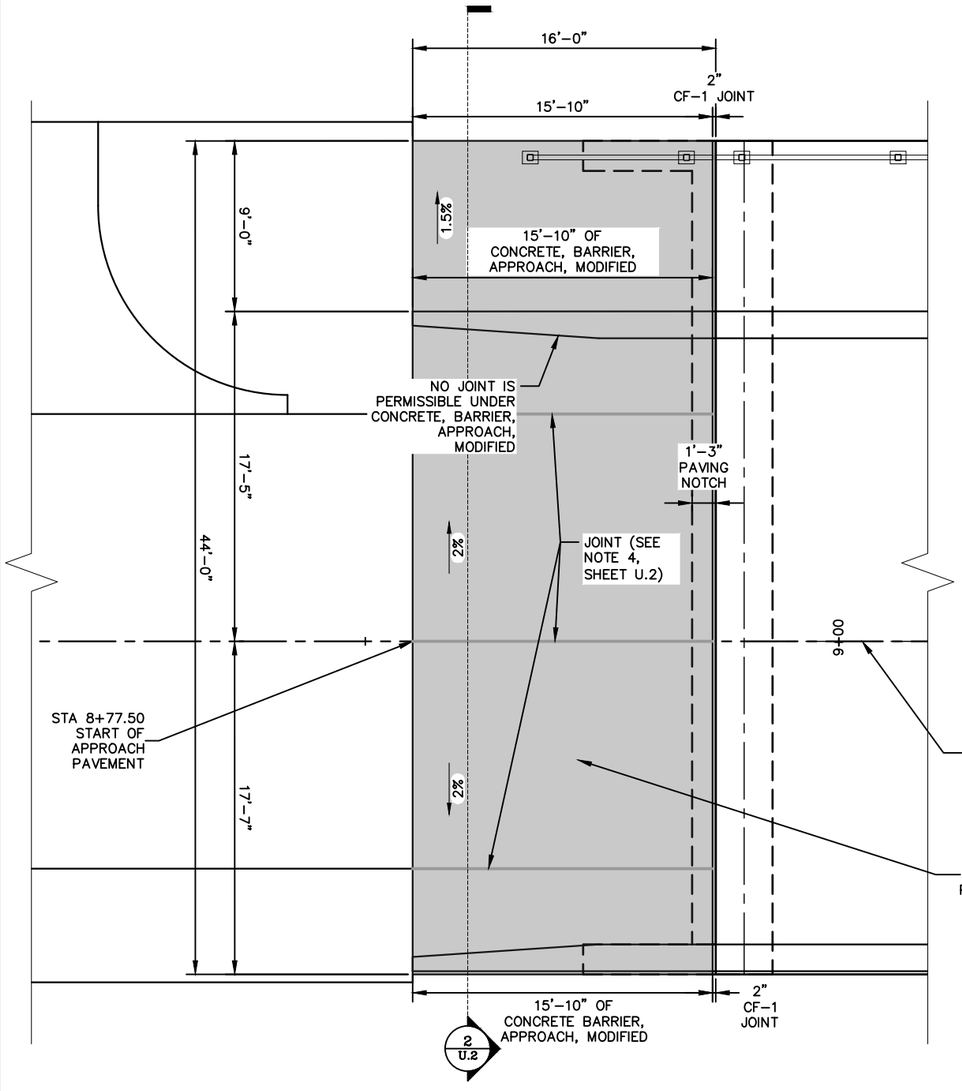
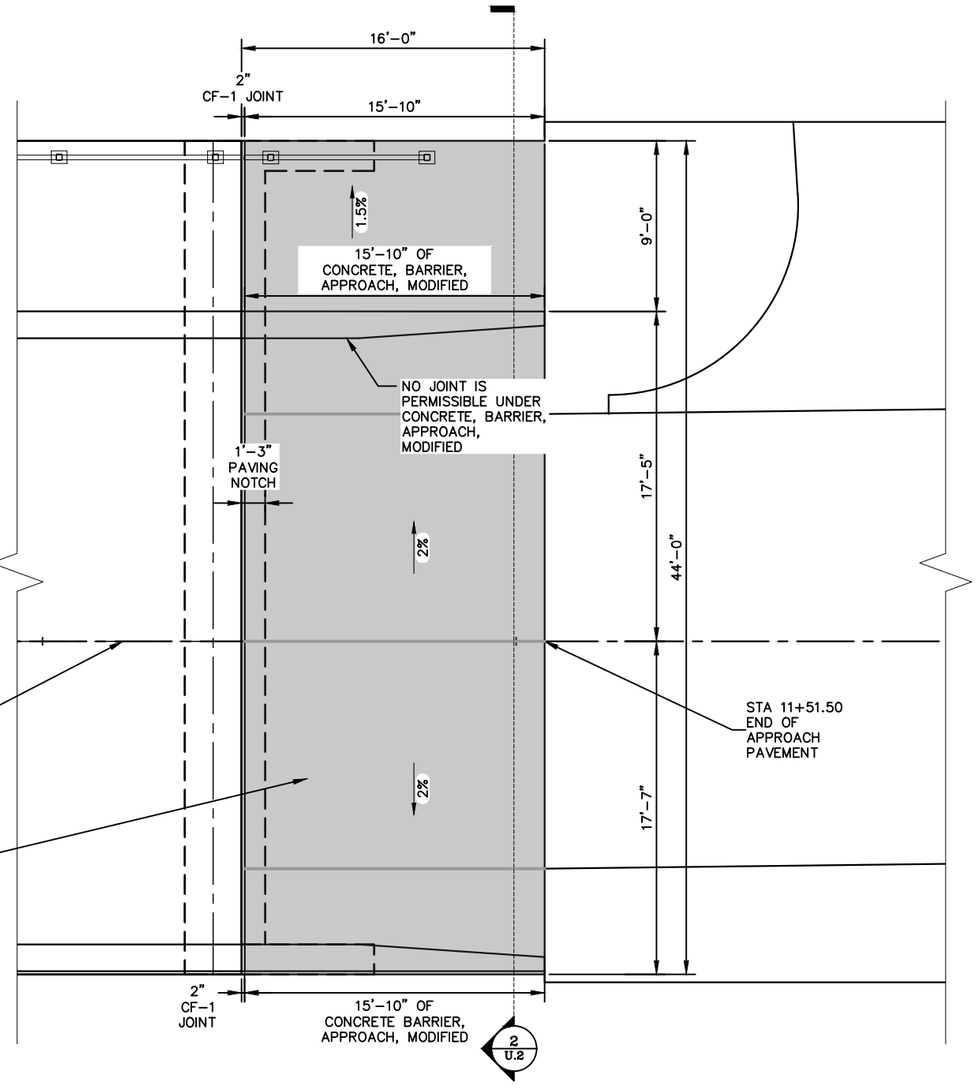


WEST APPROACH



EAST APPROACH

LICENSED PROFESSIONAL ENGINEER
COURTNEY E. WAND
23610
IOWA

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 E. WAND — DATE

PE 23610 — 12/31/2025

LICENSE # — RENEWAL DATE

PAGES OR SHEETS COVERED BY THIS CERTIFICATION:

U & V SHEETS

NORTH

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 design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	APPROACH DETAILS	SHEET: U.1	REV: .

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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

1. METHOD OF MEASUREMENT FOR BRIDGE APPROACH, AS PER PLAN SHALL BE THE SQUARE YARDS SHOWN IN THE CONTRACT DOCUMENTS.
2. 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

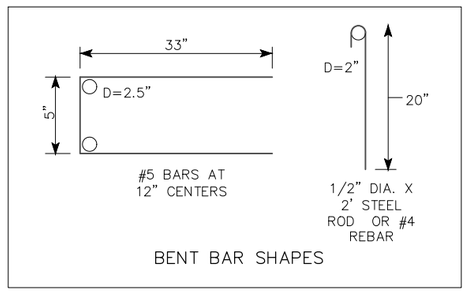
(1) 2" MIN. TO 2 1/2" MAX. CLEAR TO BENT BAR.

(2) MINIMUM LAP LENGTH: #5 Bars – 18"
#6 Bars – 27"
#8 Bars – 48"

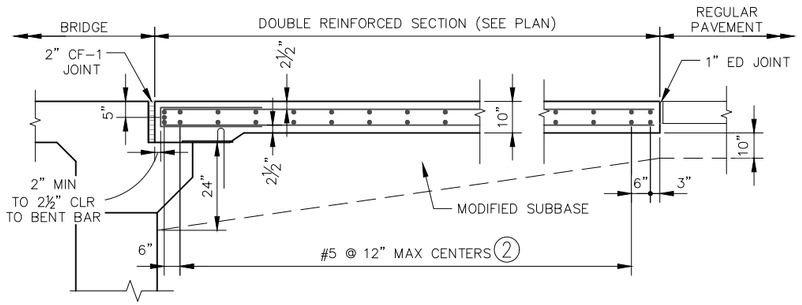
(3) PLACE ADDITIONAL #5 BAR PARALLEL TO SKEWED FACE.

(4) LONGITUDINAL JOINT: (PV-101, IDOT STANDARD ROAD PLANS)

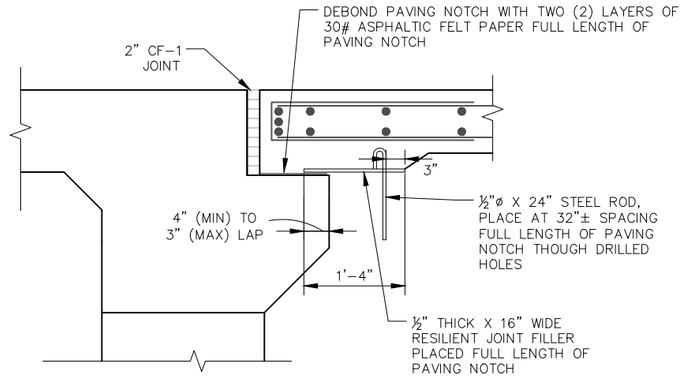
SINGLE POUR – SAW CUT JOINT PER PV-101 DETAIL B.
TWO POURS – USE BT-4 JOINT.



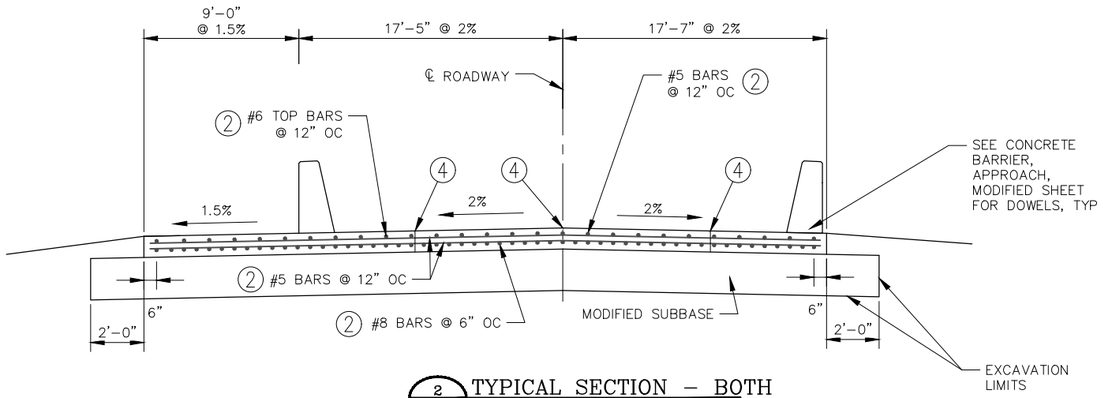
BENT BAR SHAPES



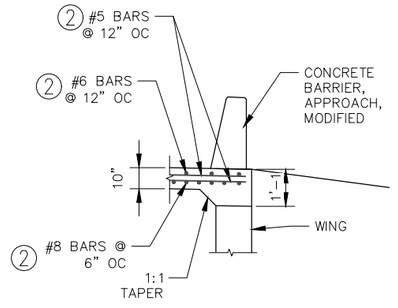
1 / U.2 SECTION
NOT TO SCALE



3 / U.2 DETAIL
NOT TO SCALE



2 / U.2 TYPICAL SECTION – BOTH
NOT TO SCALE



4 / U.2 SECTION AT SOUTH WINGS
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

origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	APPROACH DETAILS	SHEET: U.2	REV: .

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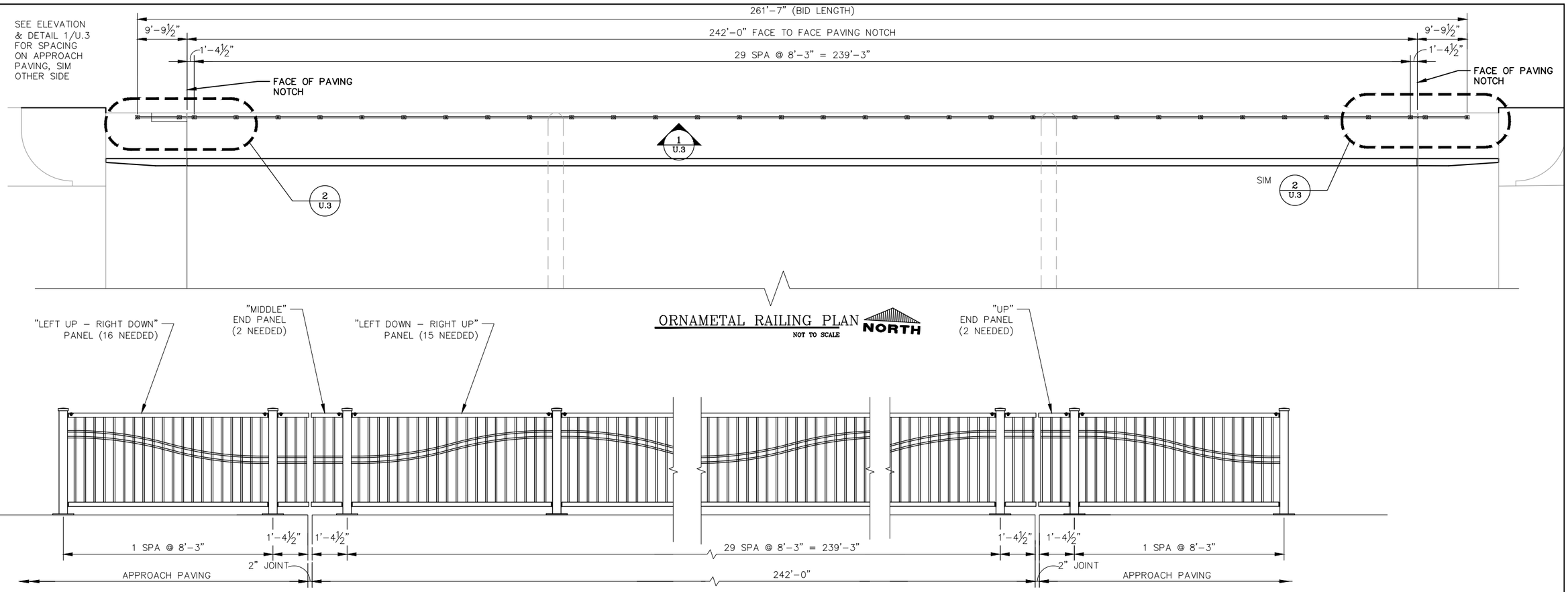
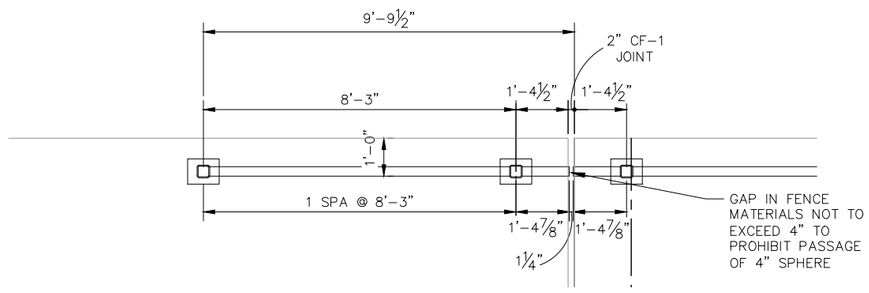


ORNAMETAL RAILING PLAN — NOT TO SCALE — NORTH

1 U.3 ORNAMENTAL 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

origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	BRIDGE RAILING PLAN & DETAILS	SHEET: U.3	REV: .

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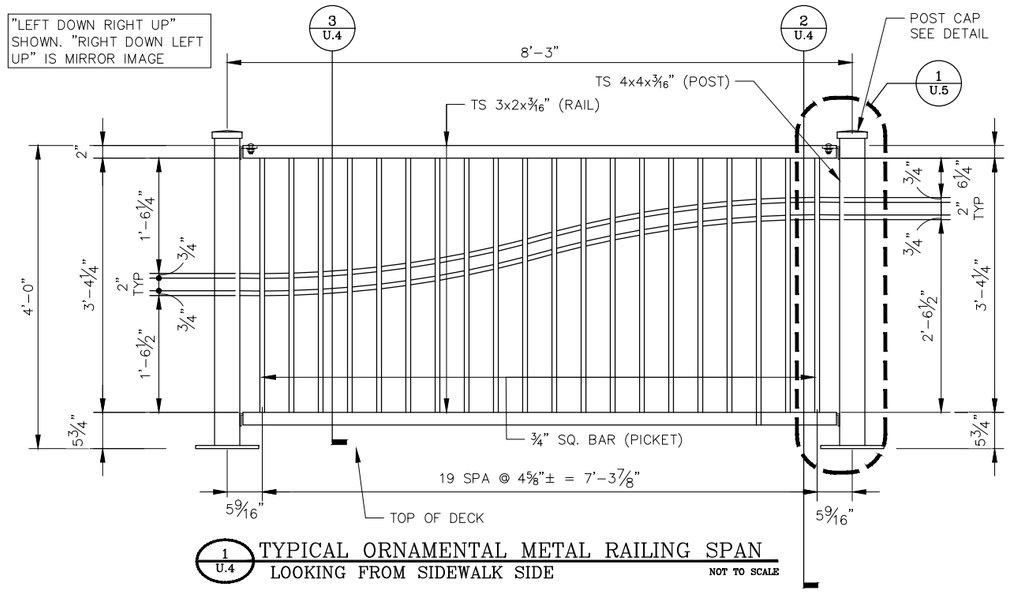
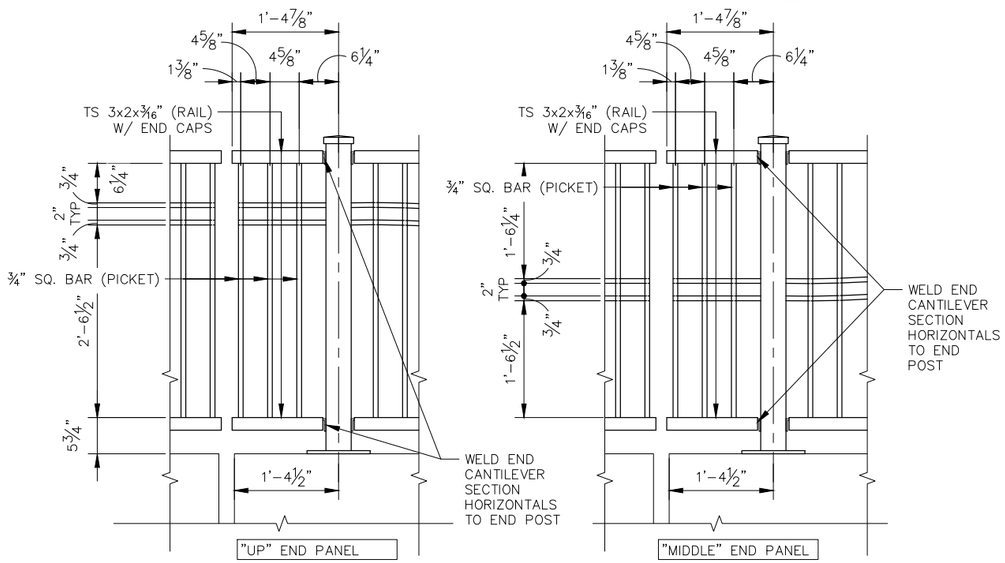
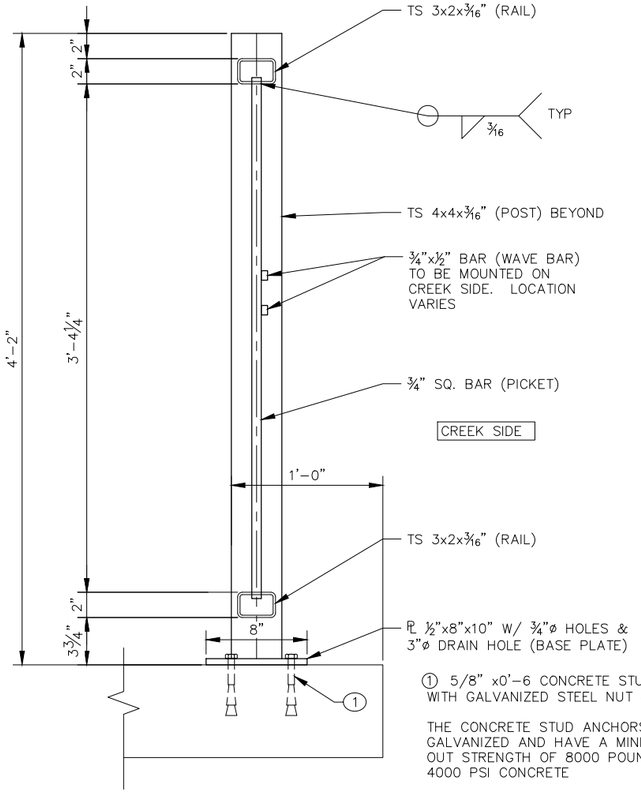


1 U.4 TYPICAL ORNAMENTAL METAL RAILING SPAN
LOOKING FROM SIDEWALK SIDE NOT TO SCALE

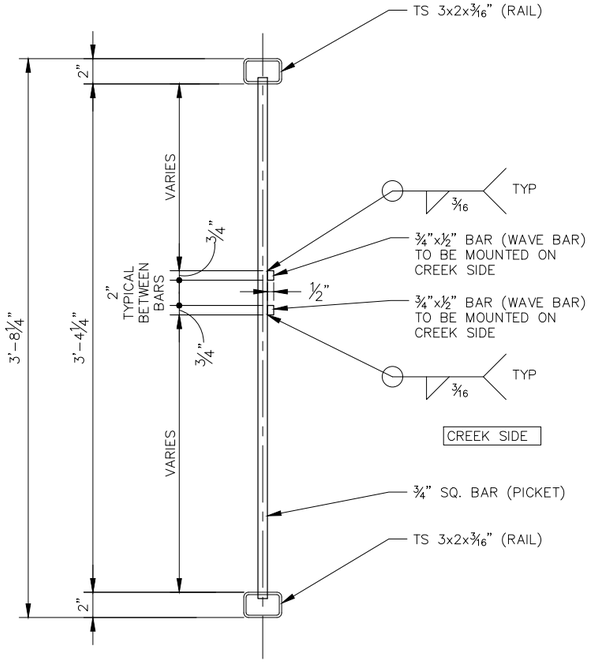


4 U.4 TYP ORNAMENTAL METAL RAILING END
NOT TO SCALE

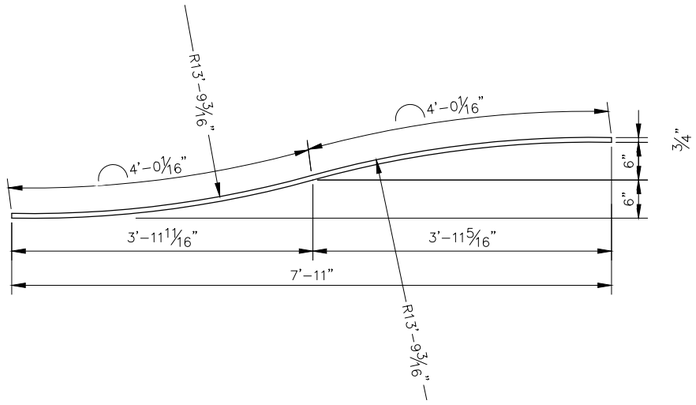
POST CAP NOT SHOWN FOR CLARITY



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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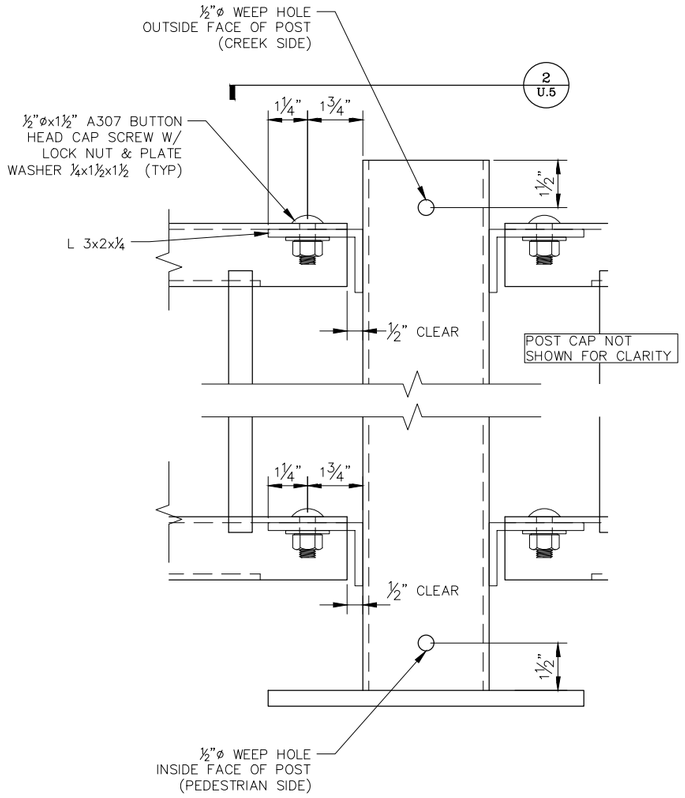
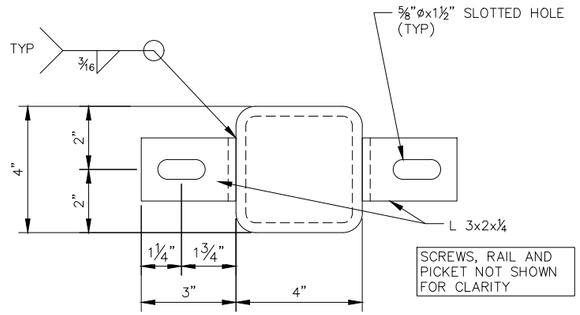
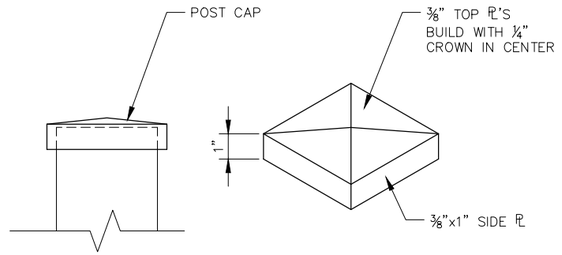
origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	BRIDGE RAILING DETAILS	SHEET: U.4	REV: .



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

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 design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	BRIDGE RAILING DETAILS	SHEET: U.5	REV: .

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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 ⅛ 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

origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	RAILING NOTES	SHEET: U.6	REV: .

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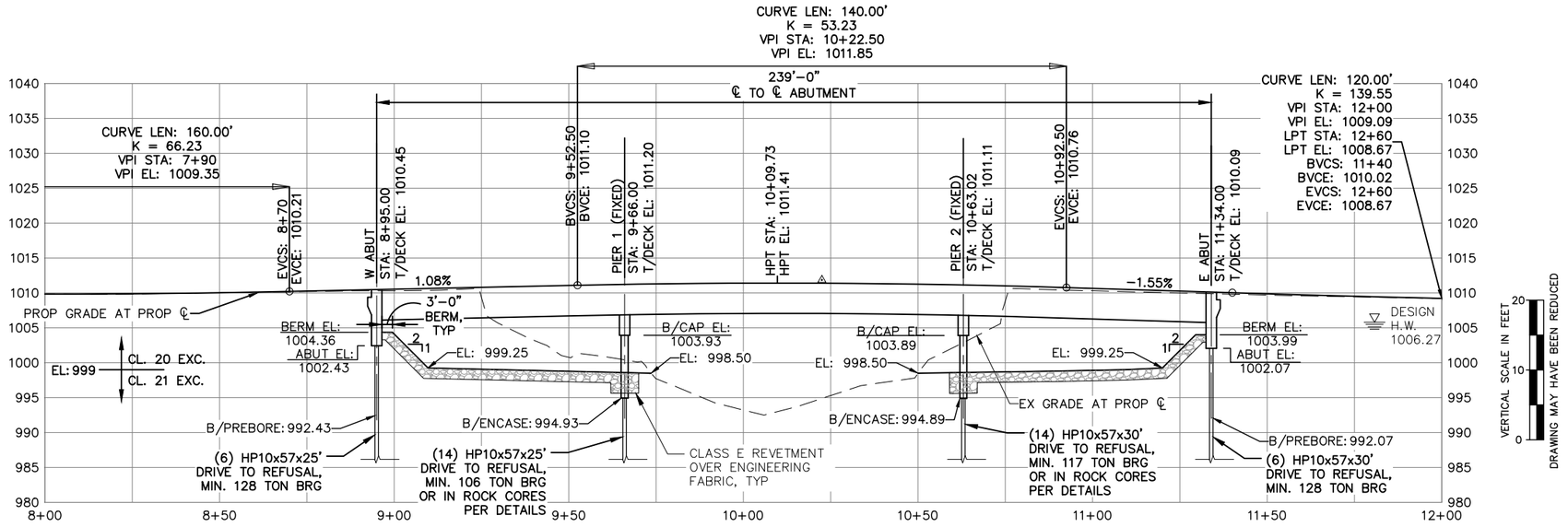


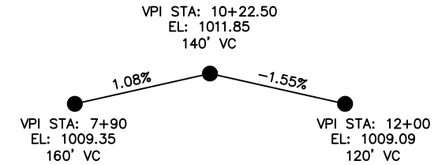
FOR TEMPORARY EASEMENTS, REFER TO H SHEETS

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

- REVETMENT DETAIL 3/B.1 EXTENTS
- REVETMENT DETAIL 4/B.1 EXTENTS
- WETLANDS

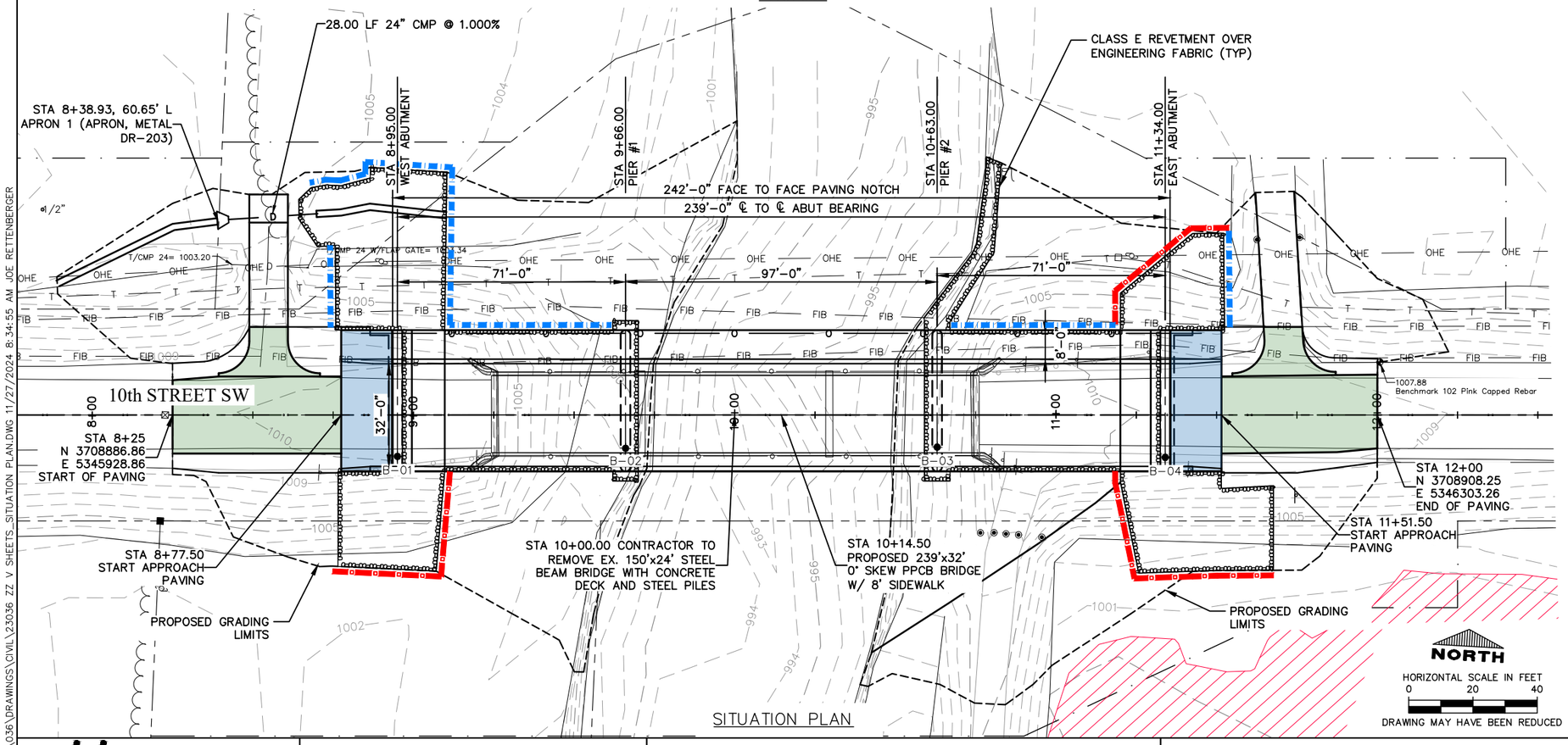
VERTICAL SCALE IN FEET 0 10 20
DRAWING MAY HAVE BEEN REDUCED



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.
SW1/4 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)

Q_{50}	7900	CFS	NATURAL STAGE	1005.07	FT.
Q_{100}	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.
Q_{500}	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

NORTH

HORIZONTAL SCALE IN FEET
0 10 20
DRAWING MAY HAVE BEEN REDUCED

STA 8+68.05, 70.84'L
G 1003.50

STA 8+86.63, 77.16'L
G 1004.56

PROPOSED GRADING LIMITS

STA 9+54.50, 66.17'L
MATCH EXISTING

STA 8+64.29, 62.30'L
G 1003.50

STA 9+10.23, 62.18'L
G 999.97

G 1001.13

STA 8+70.08, 52.36'L
G 1003.60

1"CMP, 24 W/FLAP GATE< 1003.34

STA 9+44.75, 55.11'L
G 1000.00

STA 8+75.76, 27.42'L
G 1009.80

STA 9+09.72, 26.42'L
G 999.25

STA 10+00.51, 91.46'L
MATCH EXISTING

INTENT IS TO MATCH INTO EXISTING STREAM BANK AT ELEVATION 998.50 ALONG THE LENGTH OF THE STREAM, BOTH SIDES

G 998.50

STA 10+78.33, 80.37'L
MATCH EXISTING

PROPOSED GRADING LIMITS

STA 11+42.50, 56.57'L
G 1002.08

G 998.50

STA 11+20.02, 37.95'L
G 999.30

3.0:1

4.0:1

2.0:1

10'-0"

9+00

10+00

11+00

STA 9+09.72, 0.00'
G 999.25

STA 9+73.56, 0.00'
G 998.50

STA 10+50.15, 0.00'
G 998.50

STA 11+20.02, 0.00'
G 999.25

STA 11+20.02, 20.98'R
G 999.43

STA 9+08.24, 32.94'R
G 1000.00

PROPOSED REVETMENT, CLASS E (TYP)

STA 8+76.50, 47.14'R
G 1002.51

STA 9+07.09, 48.64'R
G 1002.51

PROPOSED GRADING LIMITS

STA 9+55.48, 63.78'R
G 998.50

STA 9+50.04, 79.94'R
MATCH EXISTING

REFER TO SHEETS V.1 AND B.1 FOR REVETMENT TOE LAYOUT DETAILS

STA 10+42.75, 73.86'R
G 998.50

SLOPE END OF EXISTING BERM

STA 10+74.61, 89.68'R
MATCH EXISTING

STA 11+42.50, 48.69'R
MATCH EXISTING

STA 11+25.70, 49.26'R
G 1001.37

STA 11+67.67, 48.35'R
G 1001.51

PROPOSED GRADING LIMITS

DELINEATED WETLAND
DO NOT DISTURB WITHOUT PERMISSION OF THE ENGINEER.

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origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	BERM GRADING PLAN	SHEET: V.2	REV: .

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:

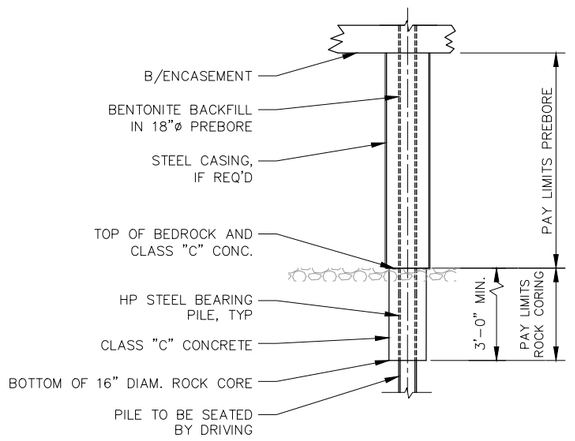
THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR (4) PILES IN EACH PIER AS NOTED AND COMPLETE ROCK CORING. HOLES SHALL BE PREBORED AND ROCK CORING PERFORMED UNLESS BEDROCK ELEVATIONS VARY SIGNIFICANTLY FROM ANTICIPATED ELEVATIONS. NOTIFY THE ENGINEER PRIOR TO PREBORING AND ROCK CORING OPERATIONS SO THAT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

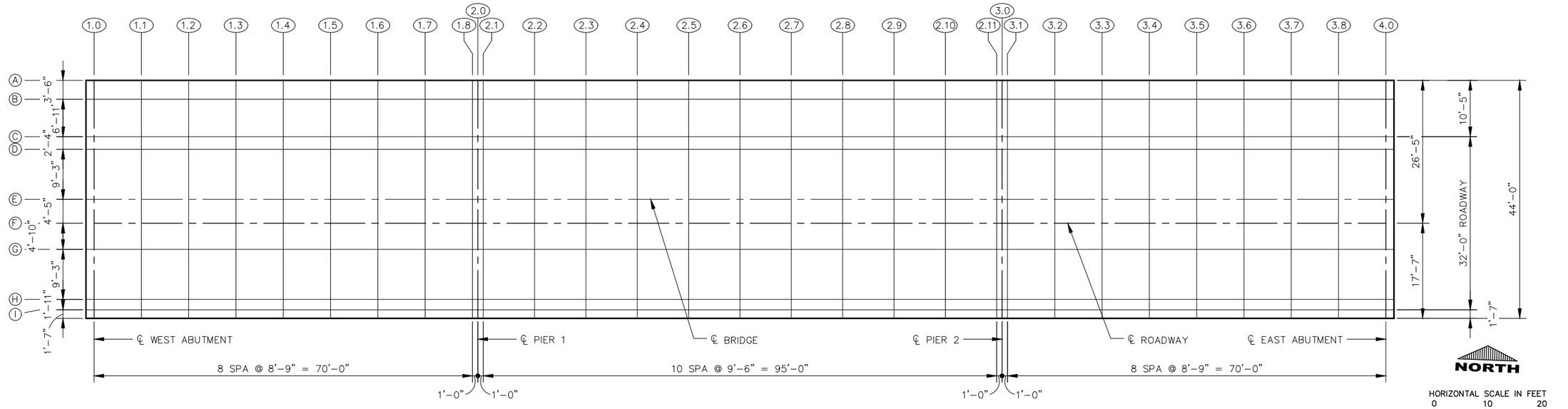
IF BEDROCK IS NOT ENCOUNTERED ABOVE ELEVATION 972, THEN NO ADDITIONAL PREBORING IN THE SOIL IS REQUIRED AND NO "ROCK CORING" QUANTITY SHALL BE MEASURED FOR PAYMENT, AND THE PILE SHALL BE DRIVEN TO THE TARGET DRIVING RESISTANCE. THE LENGTH OF PREBORING SHALL BE MEASURED AND PAID FOR AT THE PRICE BID FOR "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

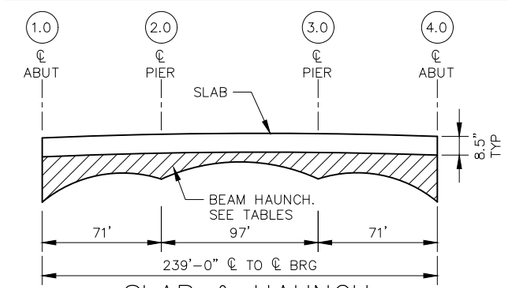


HORIZONTAL SCALE IN FEET
0 10 20
DRAWING MAY HAVE BEEN REDUCED

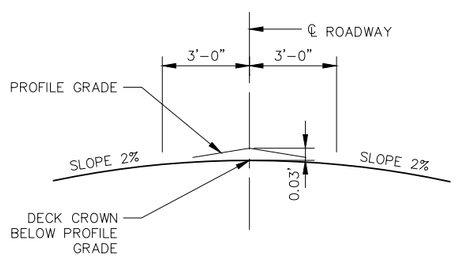
DECK ELEVATION LAYOUT GRID

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
ALL BEAMS	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



SLAB & HAUNCH THICKNESS AT BEAMS



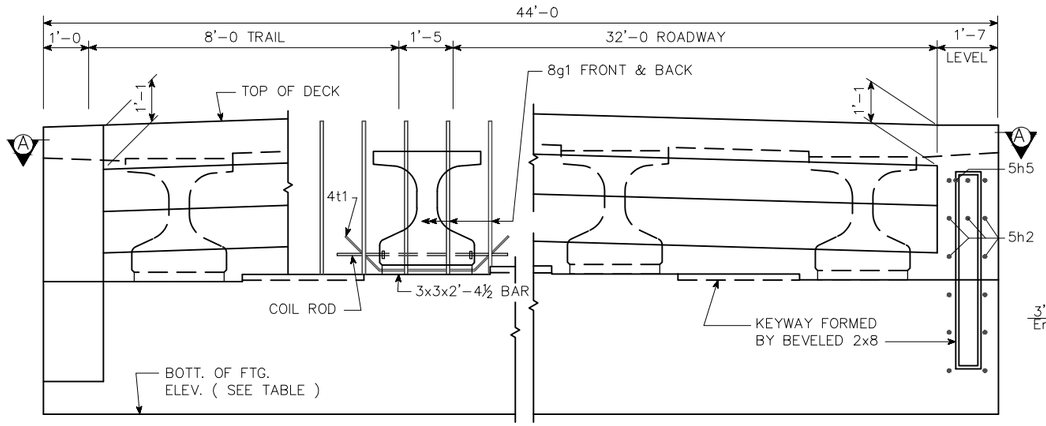
CROWN TEMPLATE

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

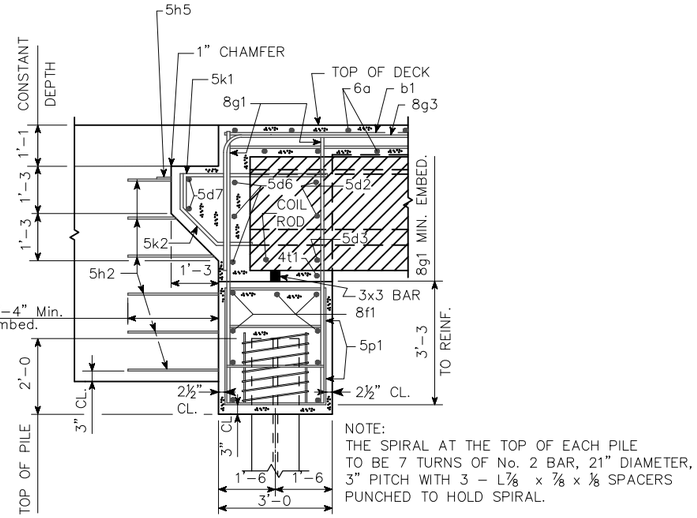
origin design 800 556-4491 | CITY OF OELWEIN | PROJECT NUMBER BRM-5657(614)- -8N-33 | DECK ELEVATIONS | SHEET: V.4 | REV: .

P:\23\036\DRAWINGS\CIVIL\23036 ZZ V SHEETS_2.DWG 11/27/2024 8:35:05 AM JOE RETTENBERGER



PART REAR ELEVATION AT ABUTMENT

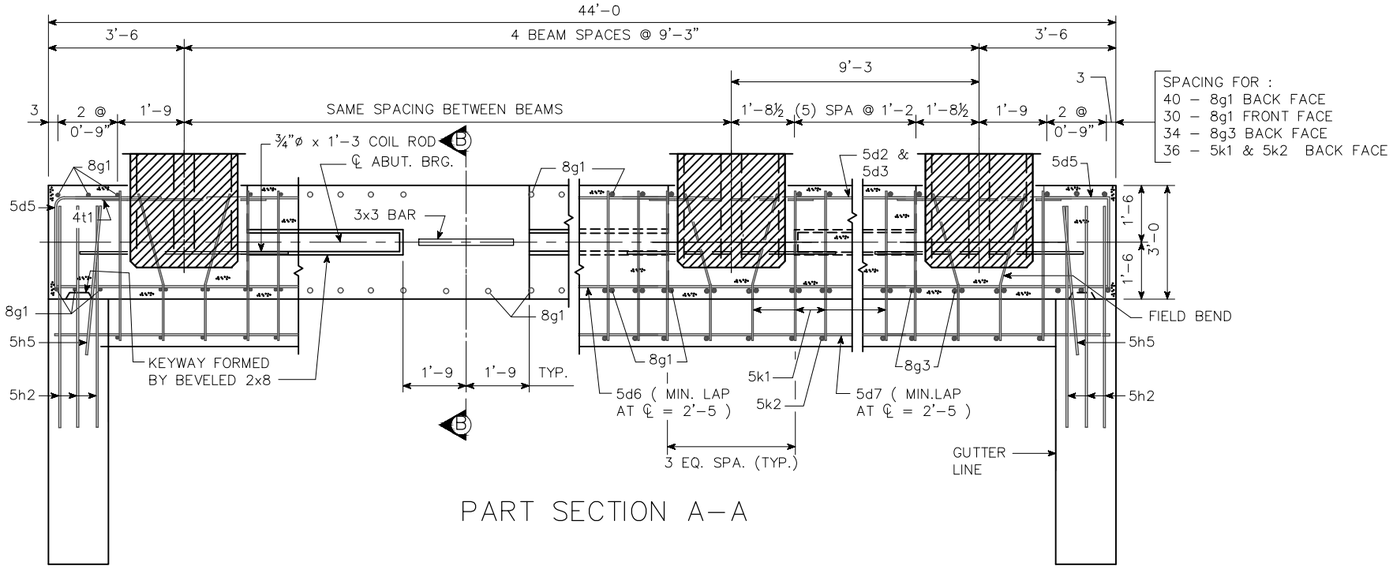
(LOOKING UP STATION)



NOTE:
THE SPIRAL AT THE TOP OF EACH PILE TO BE 7 TURNS OF No. 2 BAR, 21" DIAMETER, 3" PITCH WITH 3 – L⅞ x ⅞ x ⅛ SPACERS PUNCHED TO HOLD SPIRAL.

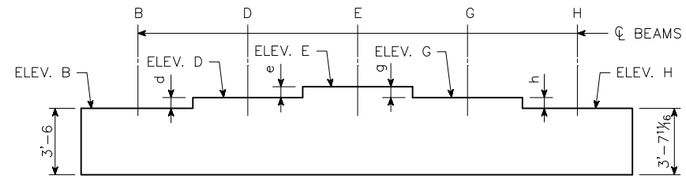
PART SECTION B–B

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	



SPACING FOR :
40 – 8g1 BACK FACE
30 – 8g1 FRONT FACE
34 – 8g3 BACK FACE
36 – 5k1 & 5k2 BACK FACE

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.

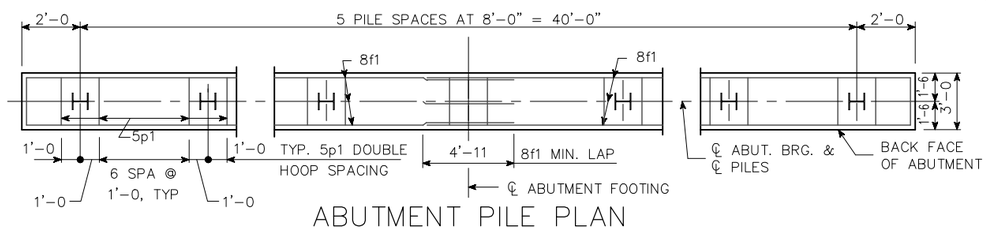
NOTE:
6 – HP 10x57 STEEL BEARING PILING REQUIRED AT EACH ABUTMENT.

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.

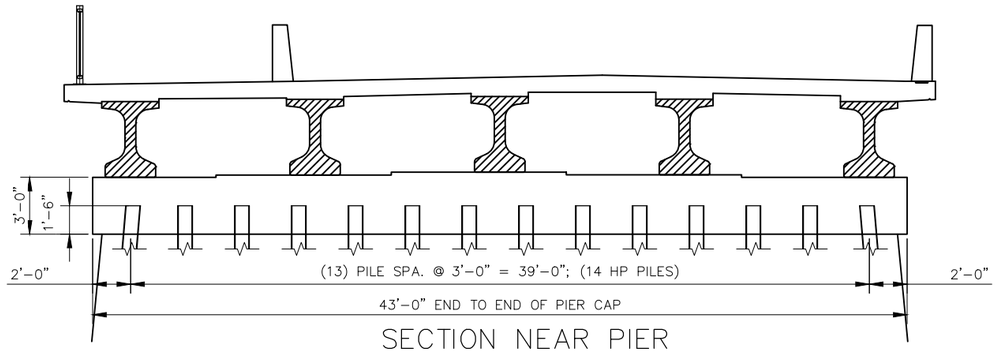
IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK OR BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE BRIDGE CONTRACTOR AT NO EXTRA COST TO THE STATE.



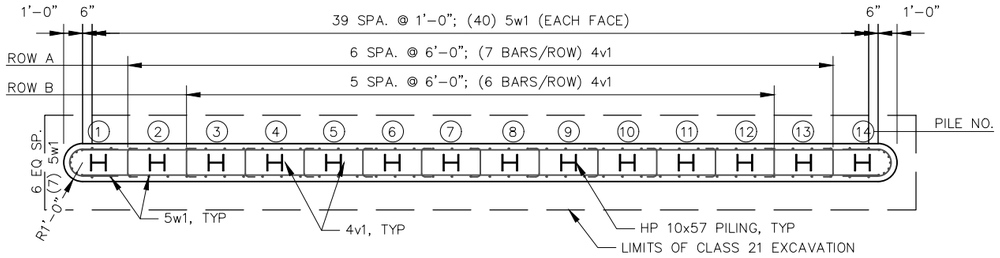
ABUTMENT PILE PLAN

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

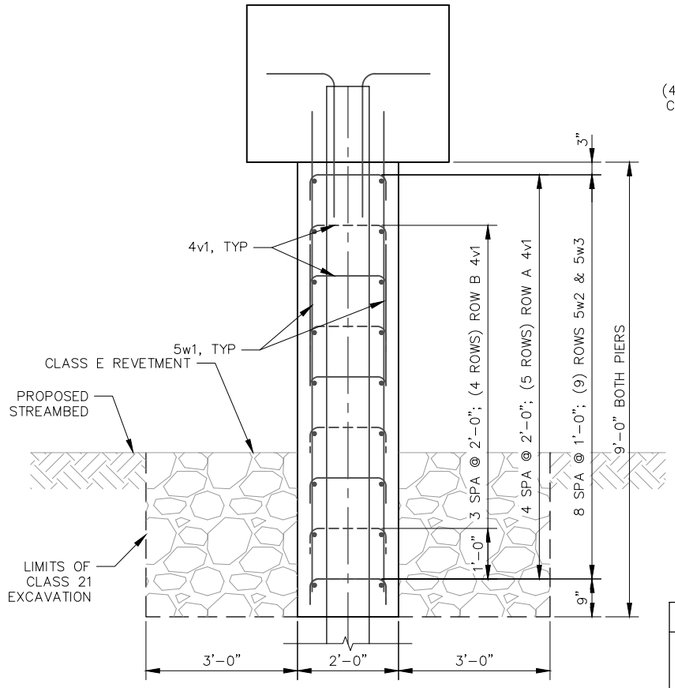


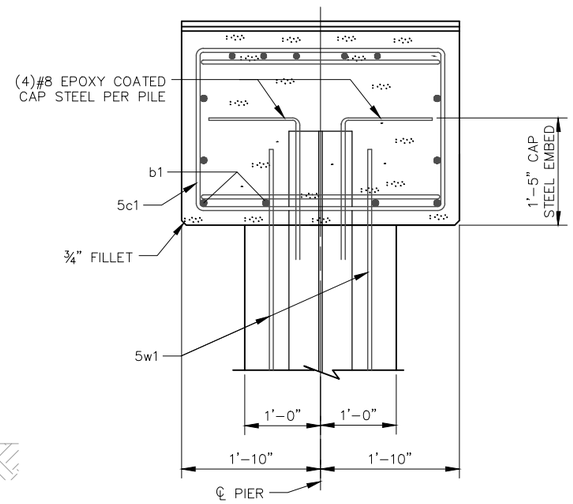
SECTION NEAR PIER
SHOWING NUMBER OF PILING



SECTION A–A

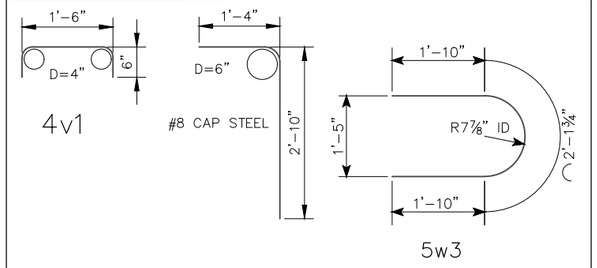
NOTE: INSTALL PILE NUMBERS 2, 6, 9, AND 13 IN ROCK CORES PER "PILE ROCK CORE" DETAILS.



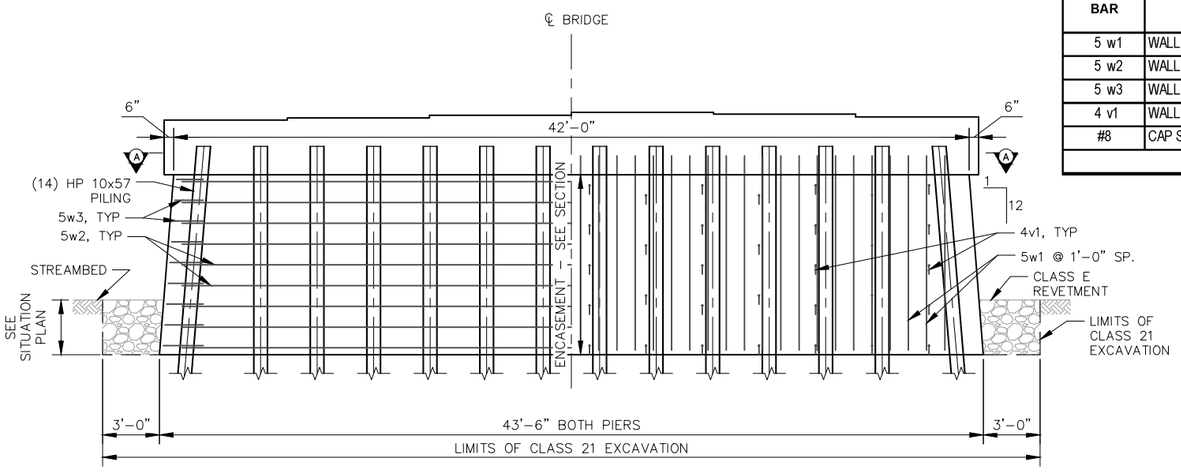


TYPICAL CAP SECTION

BENT BAR DETAILS



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



REINFORCING BAR LIST - ONE SOLID ENCASED PILE BENT PIER					
BAR	LOCATION	SHAPE	NO.	LENGTH ft. - in.	WEIGHT
5 w1	WALL VERTICAL	——	94	9 '-9	956
5 w2	WALL HORIZONTAL, VARIES 40'-0" to 41'-4"	——	18	VARIES	763
5 w3	WALL HORIZONTAL - ENDS	⊃	18	5 '-10	110
4 v1	WALL TIES	⊓	59	2 '-6	99
#8	CAP STEEL	⊓	56	4 '-2	623
TOTAL EPOXY REINFORCING, ONE PIER, LB					2551

PIER ELEVATIONS

LOCATION	B/CAP	B/ENCASEMENT
PIER 1	1003.93	994.93
PIER 2	1003.89	994.89

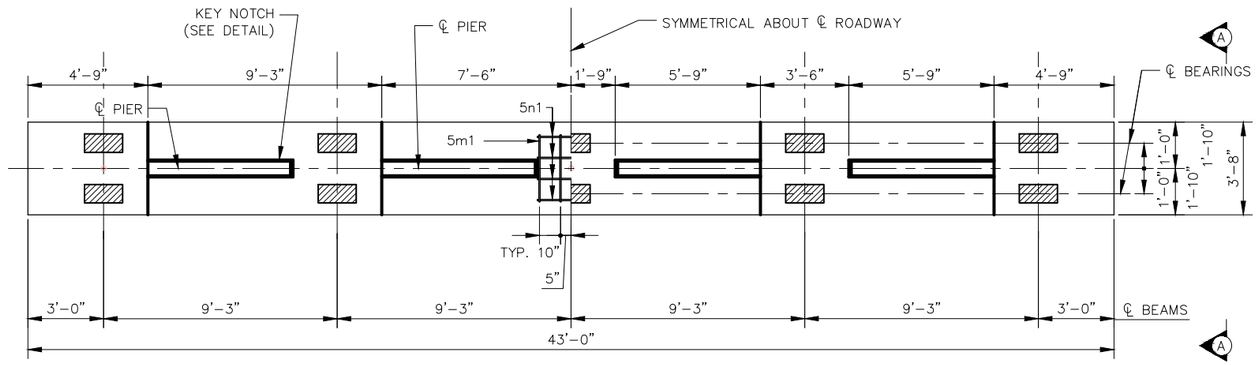
ESTIMATED QUANTITIES– ONE ENCASED PIER

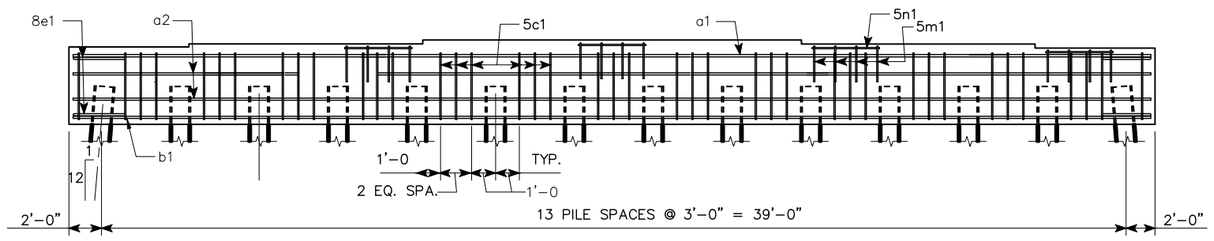
ITEM	UNIT
STRUCTURAL CONCRETE (BRIDGE)	28.2 C.Y.
EPOXY REINFORCING STEEL	2551 LB
CLASS 21 EXCAVATION	53 C.Y.

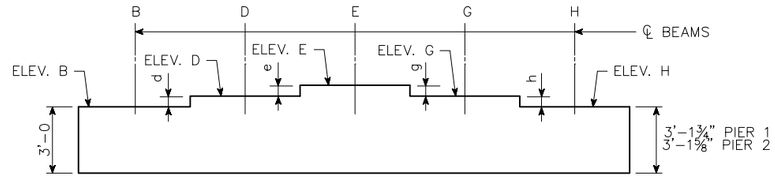
Δ SEE V.7 FOR PIER CAP CONCRETE AND REINFORCING QUANTITIES

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







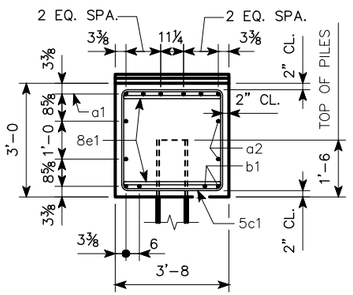
PIER STEP DIAGRAM

(LOOKING UP STATION)

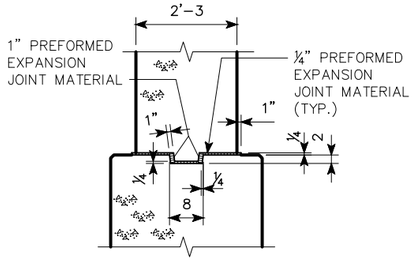
PIER BEAM BEARING ELEVATIONS					
	ELEV. B	ELEV. D	ELEV. E	ELEV. G	ELEV. H
PIER 1	1006.93	1007.09	1007.27	1007.26	1007.08
STEP		1 13/16	2 1/4	1/8	2 1/4
PIER 2	1006.89	1007.04	1007.22	1007.21	1007.03
STEP		1 13/16	2 1/4	1/8	2 1/4

PIER STRUCTURE ELEVATIONS				
	B/FTG.	B/CAP	H, FT.	COLUMN
PIER 1	994.93	1003.93	12.0	9.00
PIER 2	994.89	1003.89	12.0	9.00

REINFORCING BAR LIST - ONE PILE CAP					
BAR	LOCATION	SHAPE	NO.	LENGTH ft. - in.	WEIGHT
9 a1	PILE CAP HORIZ., TOP	———	6	42 '-8	870
8 a2	PILE CAP HORIZ., SIDES	———	4	42 '-8	456
8 b1	PILE CAP HORIZ., BOTT.	———	4	42 '-8	456
5 c1	PILE CAP HOOPS	▭	41	13 '-0	556
8 e1	PILE CAP HORIZ., AT ENDS	⌐	4	8 '-9	93
5 m1	PILE CAP HORIZ., AT ENDS	⌐	16	6 '-4	106
5 n1	PILE CAP HORIZ., AT ENDS	———	16	2 '-8	45
TOTAL EPOXY REINFORCING, ONE PIER PILE CAP					2582

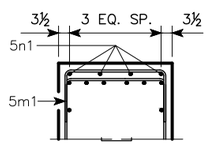


VIEW A–A



KEYED NOTCH DETAIL

(FIXED PIER ONLY)

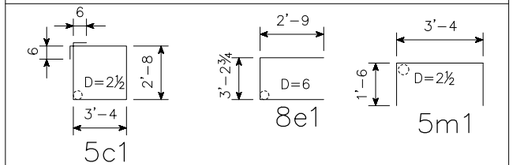


5m1 & 5n1 BAR LAYOUT

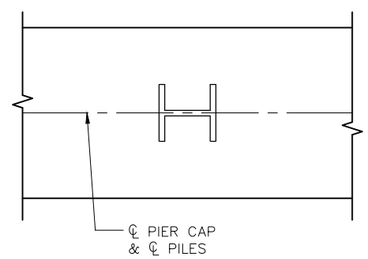
PIER CAP CONCRETE QUANTITY	
LOCATION	QUANTITY
PIER CAP #1	18.9
PIER CAP #2	18.9
TOTAL (CU. YDS.)	37.9

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

BENT BAR DETAILS



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



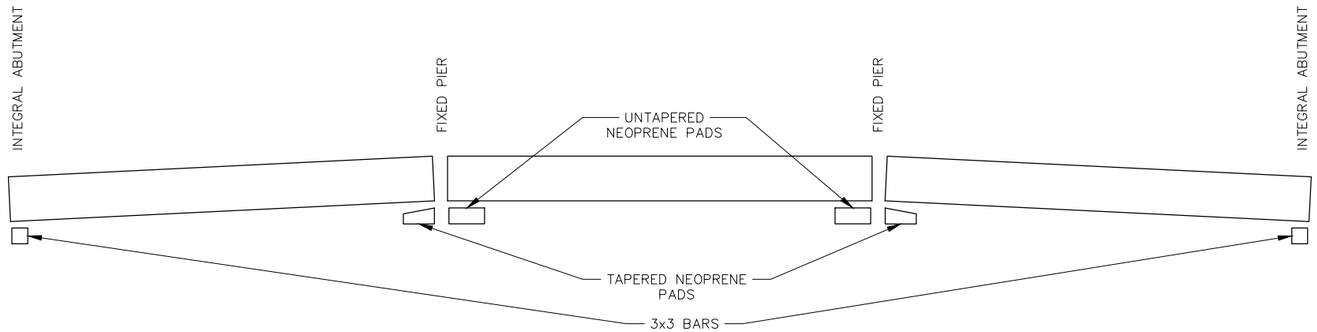
PILE ORIENTATION DETAIL

PILE BENT NOTES:

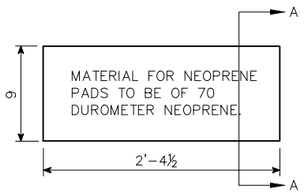
MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

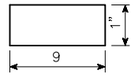
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50

71'–0" END SPANS 97'–0" CENTER SPAN



BEAM BEARING LAYOUT (NTS)

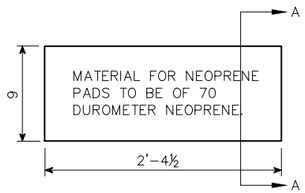


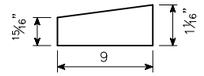


SECTION A–A

NOTE:
COST OF NEOPRENE PADS SHALL BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

FIXED PIER – SPANS 2 BEAMS
(10 REQUIRED)





SECTION A–A

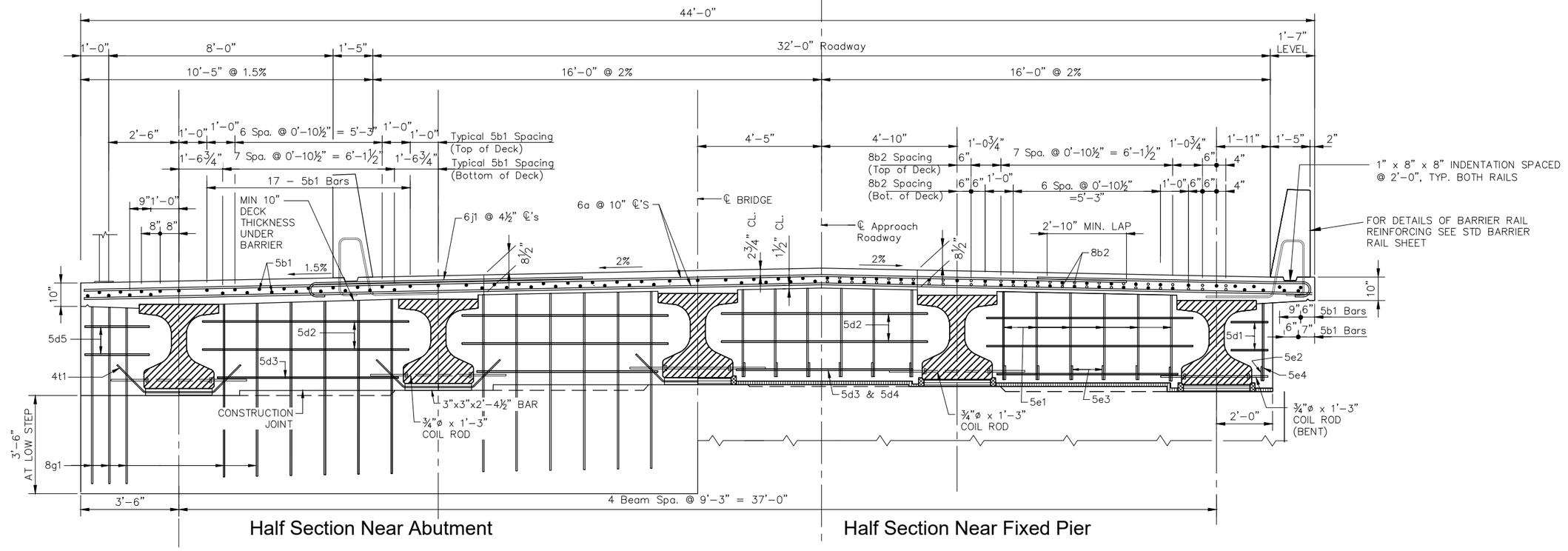
NOTE:
COST OF NEOPRENE PADS SHALL BE INCLUDED IN THE PRICE BID FOR "PRETENSIONED PRESTRESSED CONCRETE BEAMS".

FIXED PIER – SPANS 1 AND 3 BEAMS
(10 REQUIRED)

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

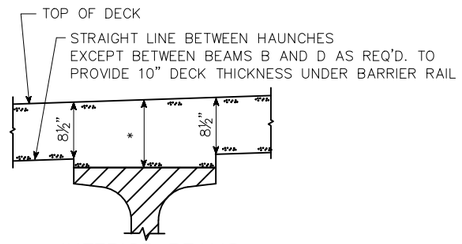
origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	PIER BEARING DETAILS	SHEET: V.8	REV: .



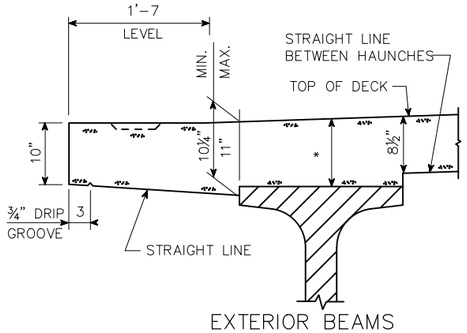
Half Section Near Abutment

Half Section Near Fixed Pier

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



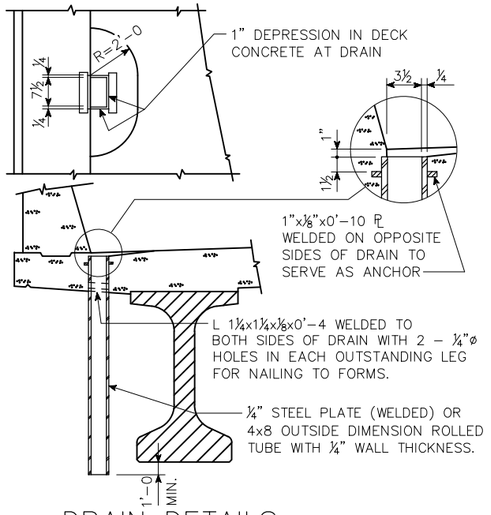
INTERIOR BEAMS



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

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:

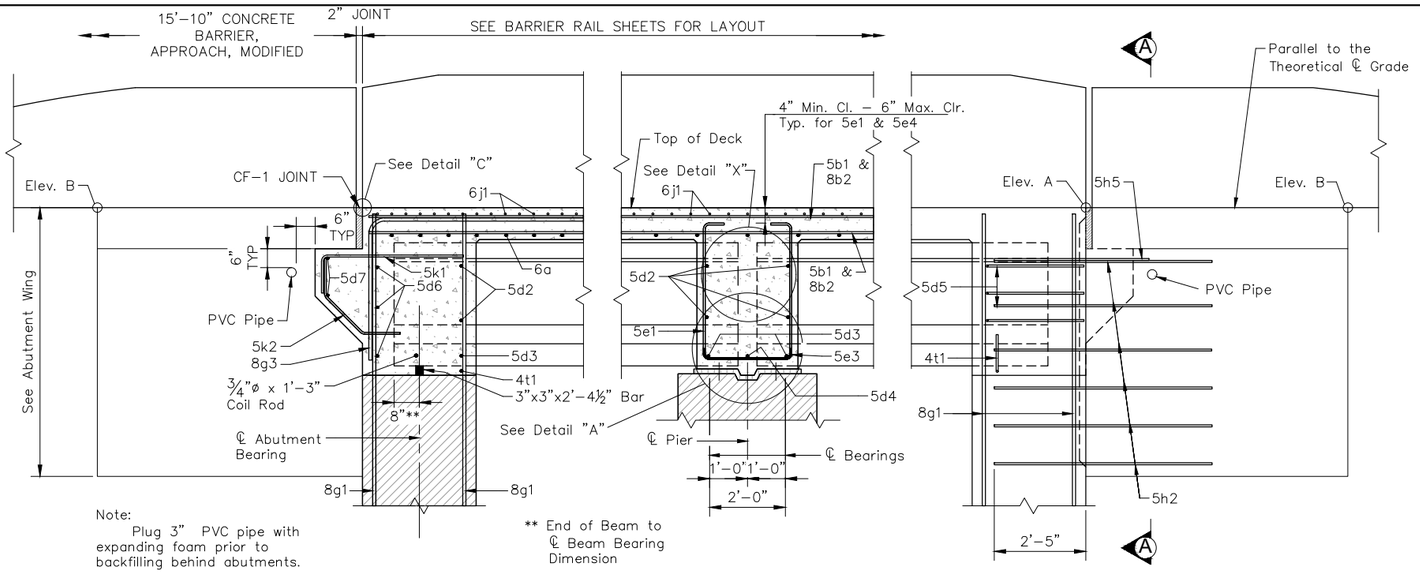
TOP BAR - LAP MIDWAY BETWEEN BEAMS (MIN. LAP = 2'-10).

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

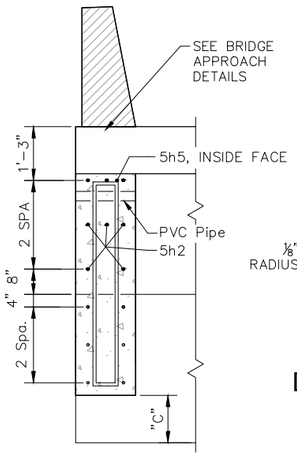
71'-0" END SPANS 97'-0" CENTER SPAN



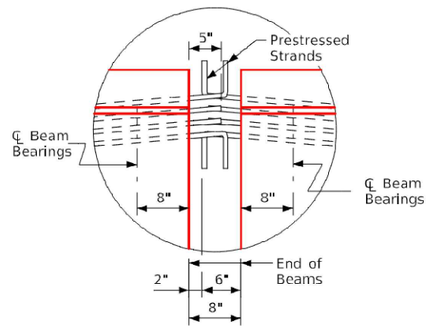
Part Longitudinal Section Near Gutter

(For details of Intermediate Diaphragm see Design Sheet V.16)

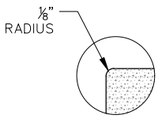
Part End View at Abutment



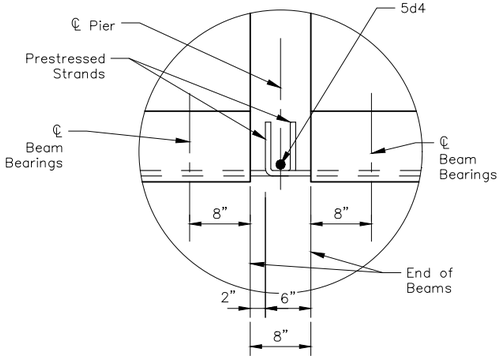
Section A-A



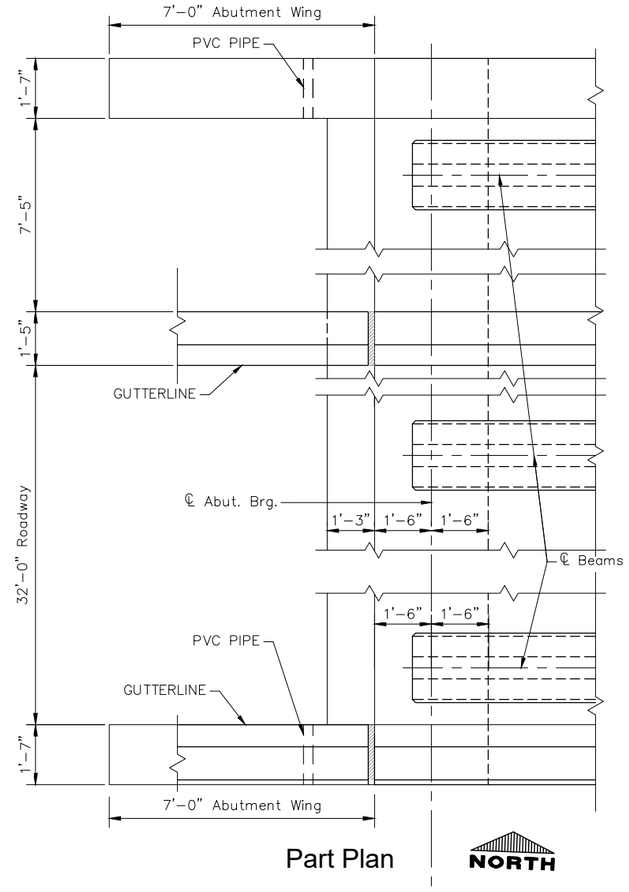
Detail "X"



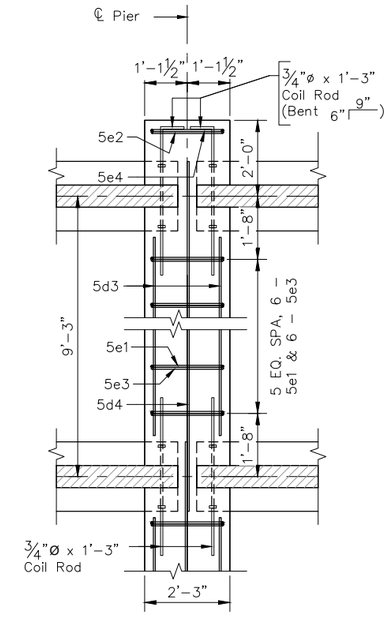
Detail "C"



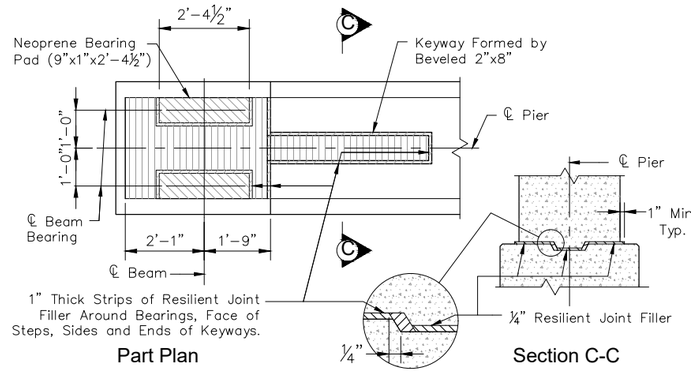
Detail "A"



Part Plan



Part Section at Pier



Part Plan

Section C-C

Top of Fixed Pier Details

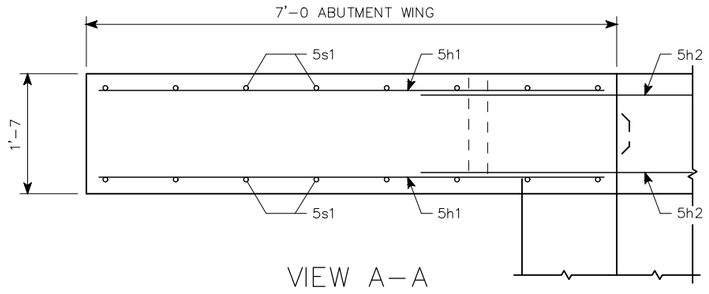
TABLE OF WINGWALL ELEVATIONS			
LOCATION	DIM "C"	ELEV. A	ELEV. B
N.W. WING	1'–0 5/8"	1009.99	1009.91
S.W. WING	1'–2 1/2"	1010.14	1010.07
N.E. WING	1'–0 5/8"	1009.62	1009.51
S.E. WING	1'–2 1/2"	1009.77	1009.66

Design For

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

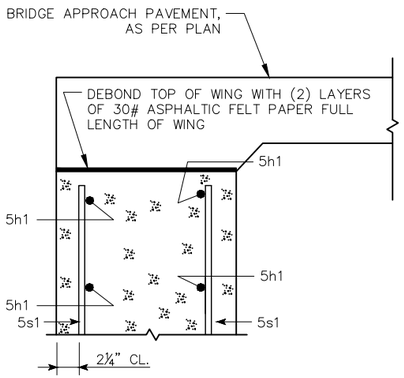
Station: 10+14.50

71'–0" END SPANS 97'–0" CENTER SPAN



VIEW A-A

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



SECTION B-B

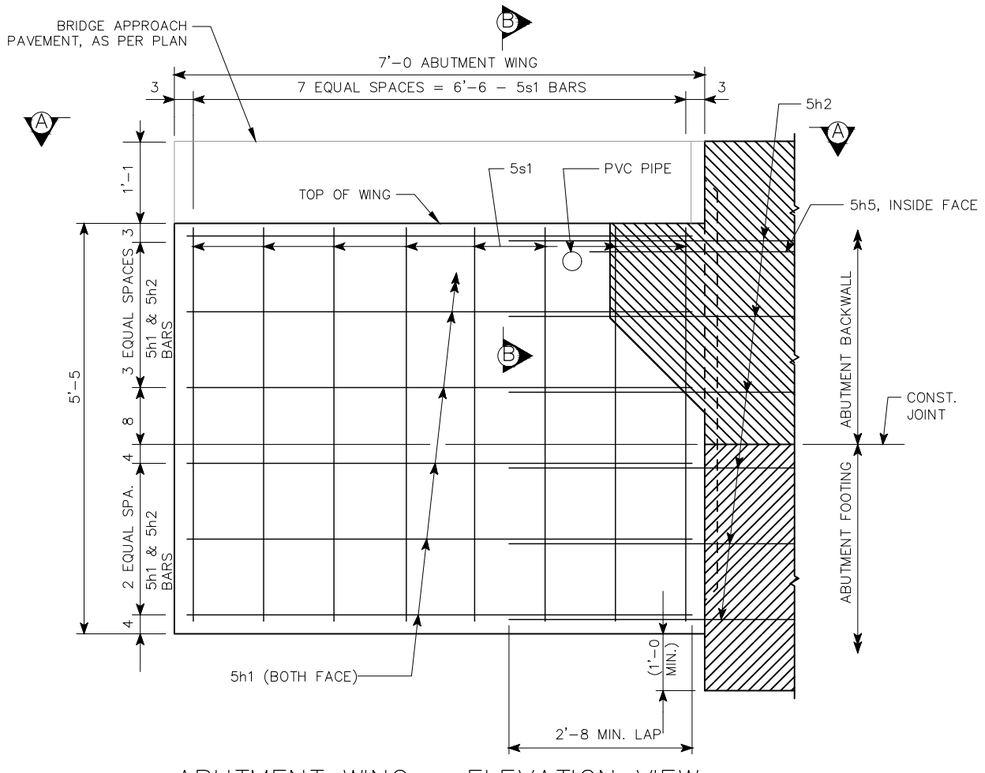
REINFORCING BAR LIST - ONE ABUT. WING

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

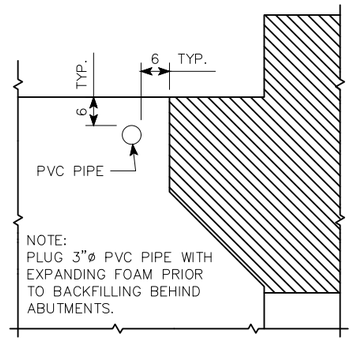
CONCRETE PLACEMENT SUMMARY

CONCRETE	TOTAL
ONE ABUTMENT WING	2.2

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



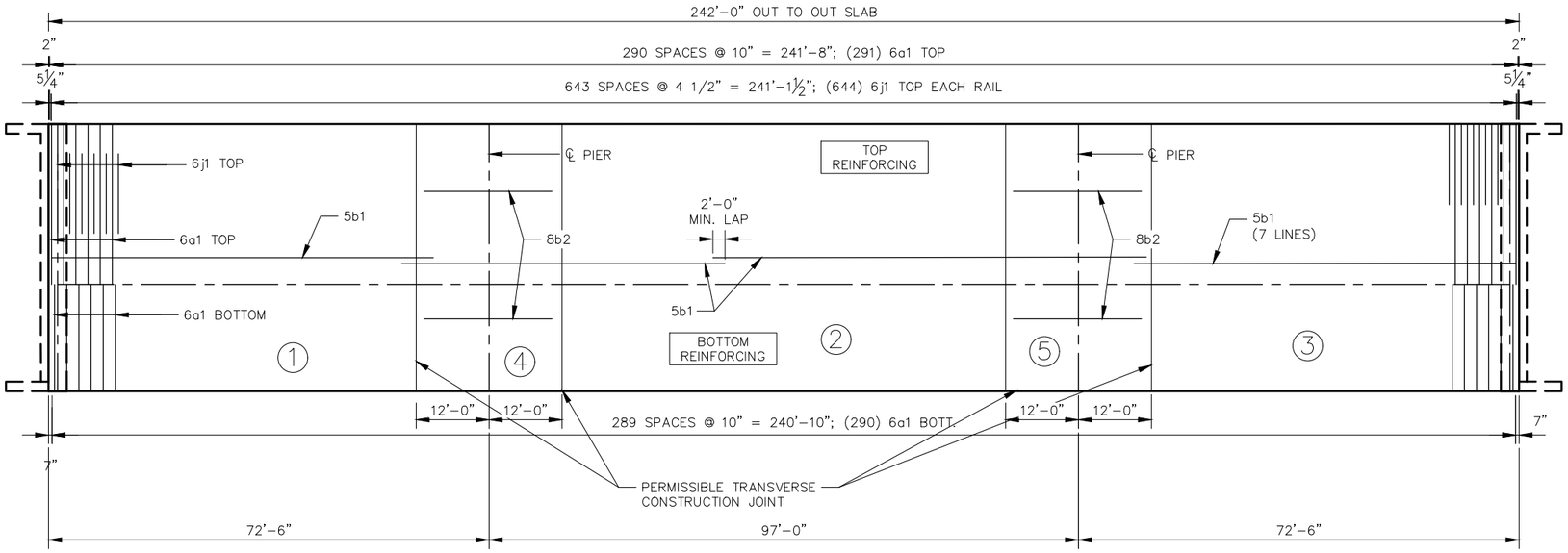
ABUTMENT WING - ELEVATION VIEW



PVC PIPE LOCATION

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

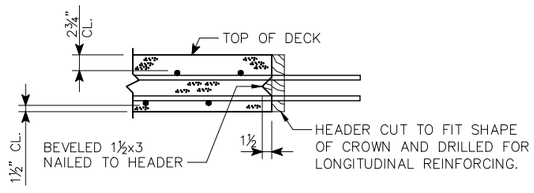


TRANSVERSE REINFORCING LAYOUT AND CONCRETE PLACEMENT DIAGRAM

NORTH

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.



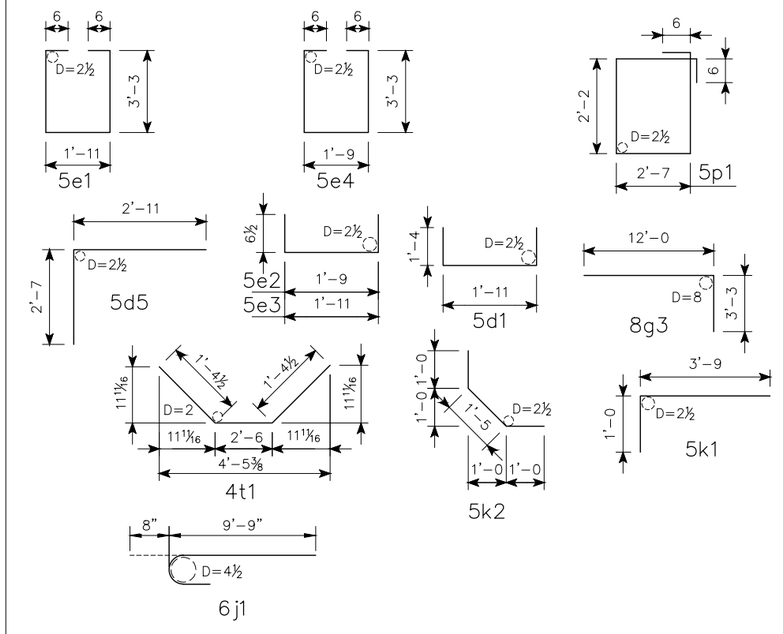
PERMISSIBLE TRANSVERSE DECK CONSTRUCTION JOINT

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

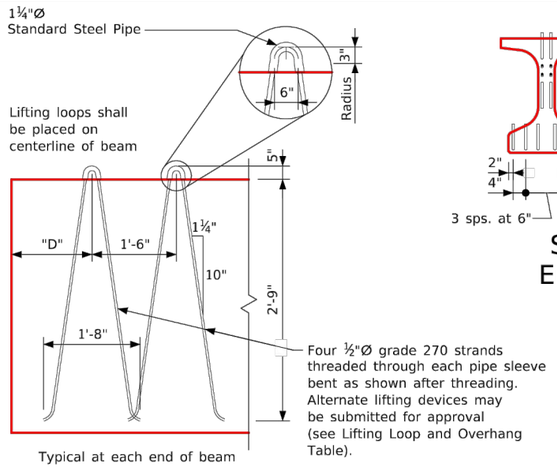
EPOXY COATED REINFORCING

BAR	LOCATION	SHAPE	NO.	LENGTH ft '- in.	WEIGHT
6 a1	SLAB, TRANV. TOP & BOTT.	———	581	43 '- 8	38106
5 b1	SLAB, LONGIT. TOP & BOTT.	———	623	36 '- 3	23555
8 b2	SLAB, LONGIT. TOP & BOTT. 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. BOTT.	———	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 TRANVSERSE (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

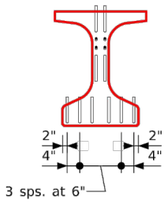
*THE MIDPOINT OF THE b2 BAR IS TO BE PLACED AT CENTERLINE OF PIER
** EPOXY COATING NOT REQUIRED FOR PILE SPIRAL AND SPACERS

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

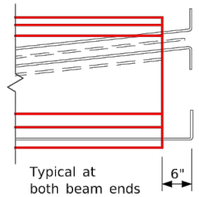
71'–0" END SPANS 97'–0" CENTER SPAN



Lifting Loop Detail



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.



Strand Projection at Beam Ends When Embedded in Concrete End Diaphragms

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.

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.

BTB Beam Data

BTB Beam	Span Length ℄-℄ Bearing	Overall Beam Length (L)	Concrete Strength f'ci (ksi.)	Concrete Strength f'c (ksi.)	Strand Size Dia. (in.)	Number of Strands Straight	Number of Strands Deflected	③ Total Initial Prestress (kips)	Hold Down Force (kips)	Camber (in.) ⑤ At Release	Camber (in.) ⑤ After Losses	Deflection (in.) Δ_D Immediate ① (elastic) Δ_I Steel Diaphragm	Deflection (in.) Δ_D Time ② (plastic) Δ_T Steel Diaphragm	Permissible Maximum Spacing HL-93 Loading Steel Diaphragm	Weight (tons)	Concrete (cu. yd.)	Reinforcing Steel (weight lb.)
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
④ 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 ℄ of span. For different deck and diapragm 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 ℄ 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 As= 0.217 $in.^2$.

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

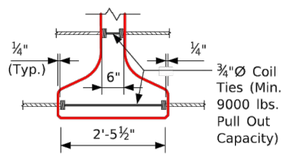
⑤ Calculated design cambers are based on multipliers developed from research in Iowa.

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.

Beam Notes:

These beams are designed for AASHTO live loads as indicated in above table with an allowance of 20 lbs. per square foot of roadway for future wearing surface.
All PPC beams shall use high performance concrete ('HPC') in accordance with the Standard Specifications.
Hold down points for deflected strands may be moved toward ends of beam a distance of 0.05 L maximum at producer's option.
All prestressing strands except lifting loop strands shall be 0.60 in. nominal diameter (nominal steel area = 0.217 $in.^2$) and conform to ASTM A416 Grade 270 Low Relaxation Strands. Minimum strand breaking strength shall be 58.6 kips.
Tops of beams are to be struck off level and finished as per Materials I.M.570.
Bearings shall be as detailed on other design sheets.
Beams to be used in bridges made continuous by the poured in place deck, are to be at least 28 days old before the deck is placed unless a shorter curing time is approved by the Bridge Engineer.
The portions of the prestressed beams that are to be embedded in the abutment and pier diaphragms shall be roughened for a distance of 10" from the beam end by sandblasting or other approved methods to provide suitable bond between the beam and the diaphragm in accordance with Article 2403.03, I, of the Standard Specifications.
All beams are to be increased in length to compensate for elastic shortening, creep and shrinkage.
For transporting, the allowable overhang is shown in the Lifting Loop and Overhang Table.
Holes must be cast in the web to accommodate the steel diaphragm attachments as detailed on the Steel Diaphragm Detail Sheet.
If sole plate is required for bearing, sole plate is to be set in forms when beam is cast and formed out below to exclude concrete as detailed on the Bearing Sheet.
If stub abutments are used, all strands at the ends of beams at stub abutments shall be cut off reasonably flush with the concrete.
Minimum concrete f'c (at 28 days) and minimum f'ci at release are located in the BTB Beam Data Table above.
Four 0.60 in. diameter strands stressed to not more than 5000 lbs. each may be used in lieu of bars 5a1 and 5a2 in the top flange.
When expansion joints are used, concrete sealer shall be applied to the prestressed beam end sections. The sealing shall be in accordance with materials I.M.570 (Fabricator Application) and I.M.491.12 (Contractor Application).

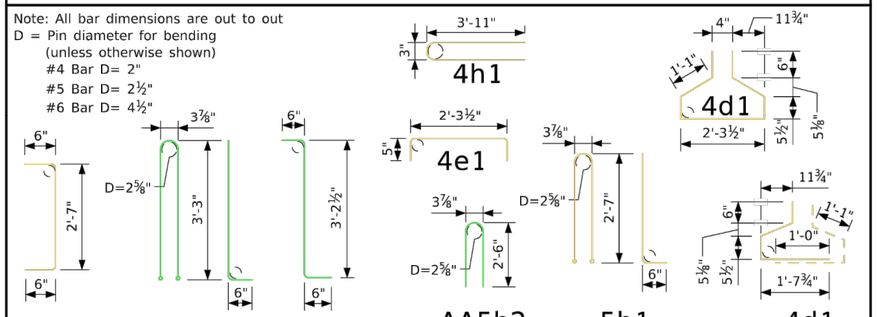
Number and exact location of coil ties to be as detailed on specific bridge design.



Coil Tie Detail

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= 2½"
#6 Bar D= 4½"



ΔΔ 5b1 and 6b3 bars to be epoxy coated

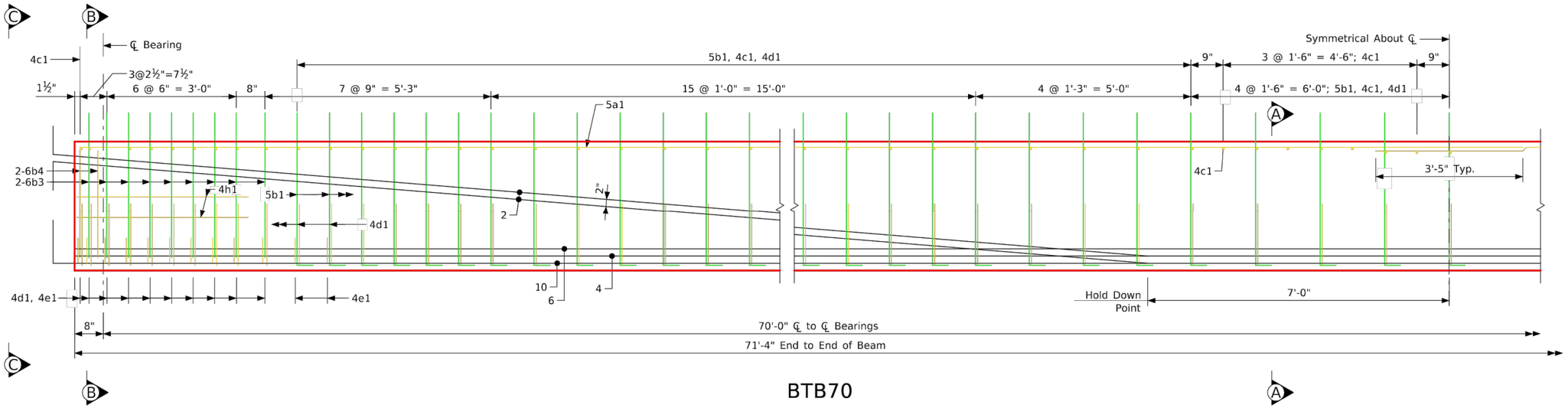
✱ 6b3 and 6b4 bars to be used in pairs

Reinforcing Bar List

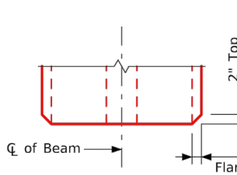
	Beam Bar	Beam Shape	BTB30 No.	BTB30 Length	BTB35 No.	BTB35 Length	BTB40 No.	BTB40 Length	BTB45 No.	BTB45 Length	BTB50 No.	BTB50 Length	BTB55 No.	BTB55 Length	BTB60 No.	BTB60 Length	BTB65 No.	BTB65 Length	BTB70 No.	BTB70 Length	BTB75 No.	BTB75 Length	BTB80 No.	BTB80 Length	BTB85 No.	BTB85 Length	BTB90 No.	BTB90 Length	BTB95 No.	BTB95 Length	Beam Bar	
	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"	12	26'-6"	12	29'-0"	12	31'-6"	5a1	
	5a2		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6	40'-0"	6	40'-0"	6	40'-0"	6	40'-0"	5a2	
ΔΔ	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	ΔΔ
ΔΔ✱	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"	6b3	ΔΔ✱
✱	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"	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"	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"	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"	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"	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

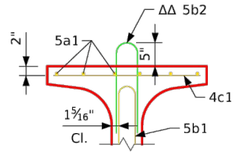


BTB70



Top View

The top flange beam corners are to be chamfered 2" as shown at both ends of the beam.

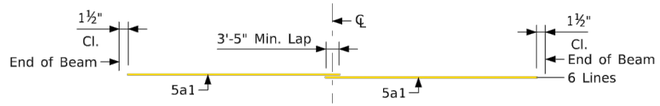


Section A-A
(Alternate)

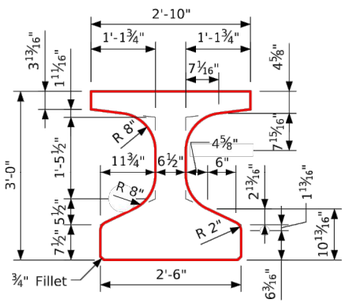
See Alternate Bar Note on Standard Sheet 4750.

Area = 631.7 in.^{2}
$\bar{y}_b$ = 17.14 in.
I = 99,980 in.^{4}

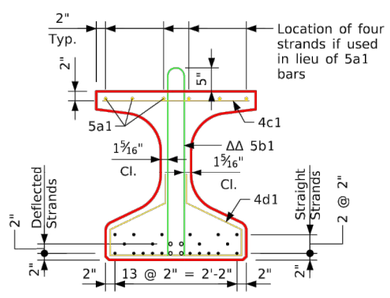
Beam Section Properties



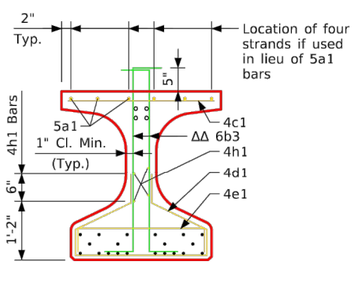
Top Flange Longitudinal Bar Layout



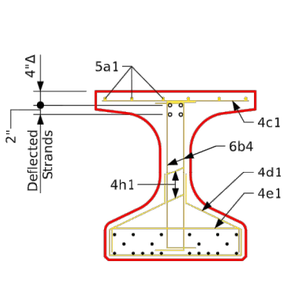
BTB Beam Cross Section



Section A-A



Section B-B

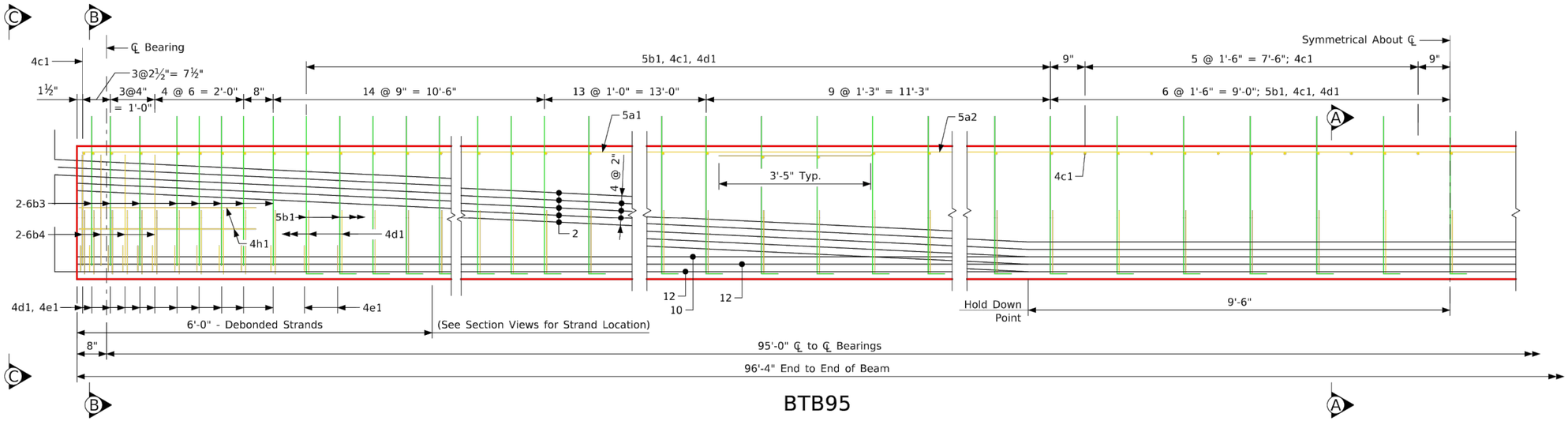


View C-C

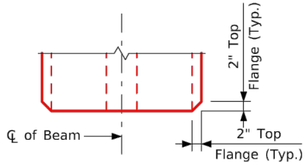
° Deflected Strands
Δ Dimensions at End of Beam
ΔΔ Epoxy Coated Bars

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

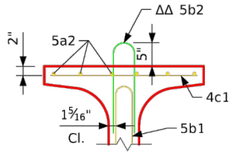


BTB95



Top View

The top flange beam corners are to be chamfered 2" as shown at both ends of the beam.

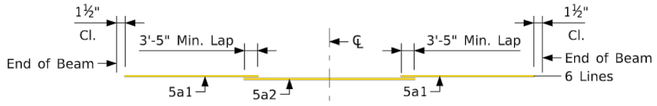


Section A-A
(Alternate)

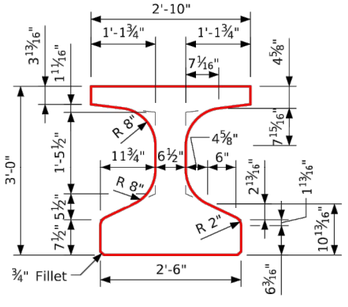
See Alternate Bar Note on Standard Sheet 4750.

Area = 631.7 in.^{2}
$\bar{y}_b$ = 17.14 in.
I = 99,980 in.^{4}

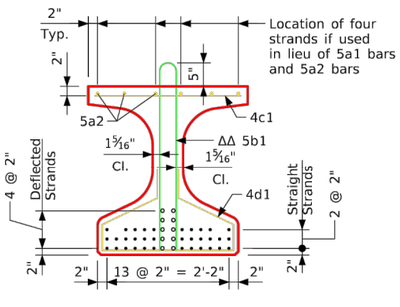
Beam Section Properties



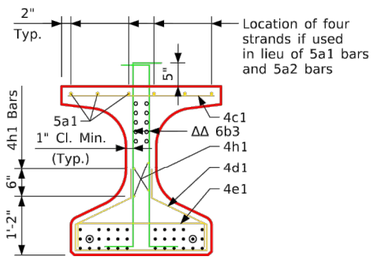
Top Flange Longitudinal Bar Layout



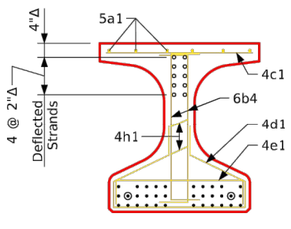
BTB Beam Cross Section



Section A-A



Section B-B



View C-C

° Deflected Strands
Δ Dimensions at End of Beam
ΔΔ Epoxy Coated Bars
⊙ Strands Debonded 6'-0" from Beam Ends

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 design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	BTB95 BEAM DETAILS	SHEET: V.15	REV: .

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BULB TEE "B" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL

ONE BEAM CONNECTION (DETAIL "F" AND/OR DETAIL "G")		NO. OF BEAM CONNECTIONS	WEIGHT
4 – 7/8"ø x 9¼ H.S. BOLTS WITH NUTS & WASHERS = 9.6 LBS.		15	144
ONE DETAIL "G"	4 – BENT PL 9 x 6 x ½ x 0'–11 = 93.6 LBS.	9	842.4
ONE DETAIL "F"	1 – BACKING PL 5 x ⅜ x 1'–1⅜ = 7.1 LBS.	6	42.6
	2 – BENT PL 9 x 6 x ½ x 0'–11 = 46.8 LBS.	6	280.8
ONE DIAPHRAGM			
		NUMBER OF DIAPHRAGMS	
6 – 7/8"ø x 3" H.S.BOLTS WITH NUTS & WASHERS = 7.8 LBS		12	93.6
	LENGTH OF MEMBER		
1 – C15 x 33.9 = 33.9 LBS./FT.	8'–0¾	12	3279.8
INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL – TOTAL (LBS.)			4683.2

NOTES:

ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

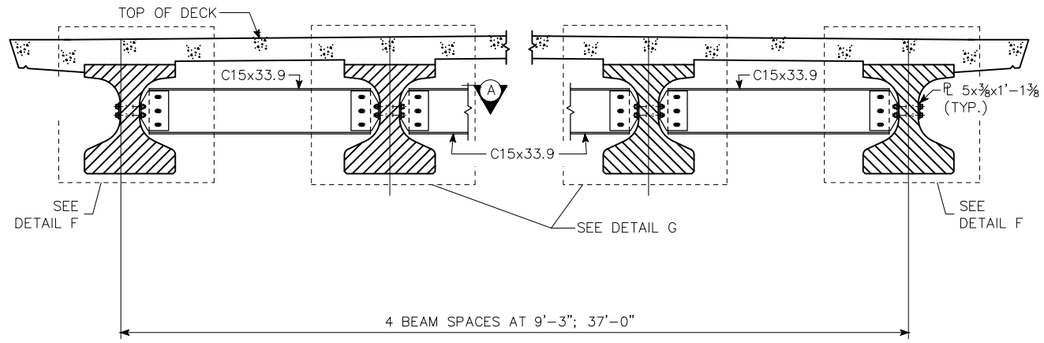
SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.

ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.

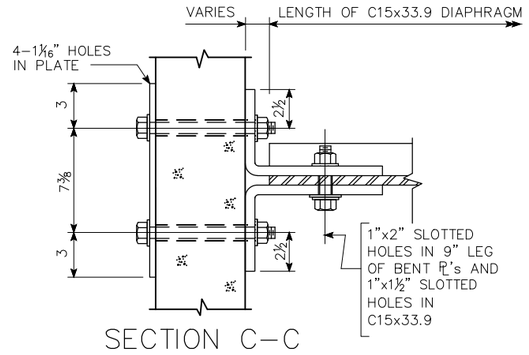
THE 1½"ø HOLES FOR THE 7/8"ø H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.

THE 7/8"ø 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.



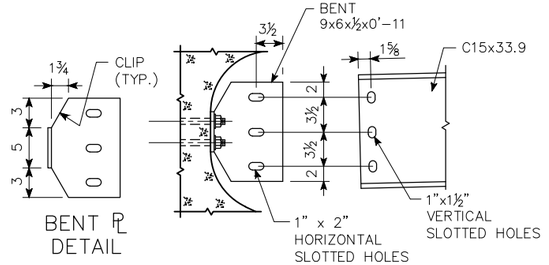
SECTION SHOWING INTERMEDIATE DIAPHRAGMS



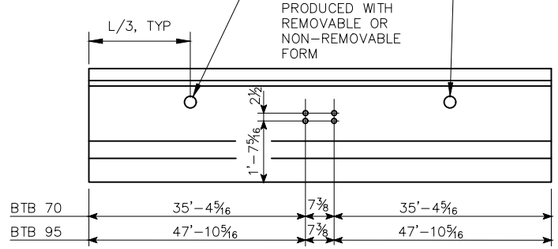
SECTION C–C

STRUCTURAL STEEL	
WEIGHT	4683.2 LBS.

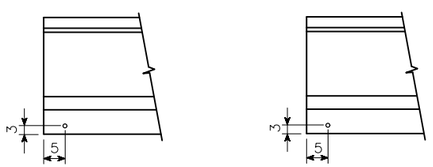
NOTE: STRUCTURAL STEEL WEIGHT IS INCLUDED ON THE SUMMARY QUANTITIES SHEET.



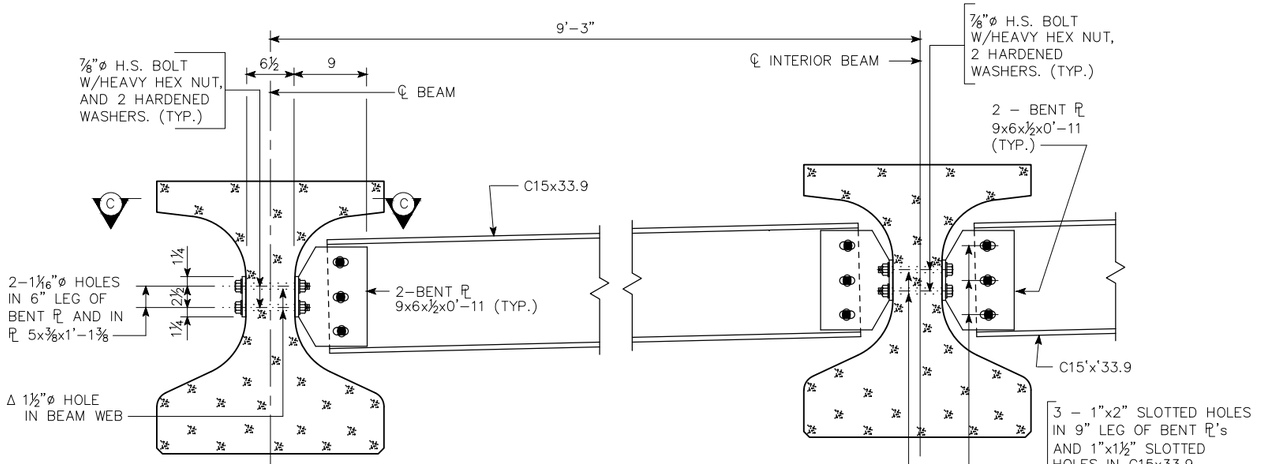
SLOTTED HOLE DETAILS



INTERMEDIATE DIAPHRAGM BOLT HOLE AND BEAM VENT LOCATIONS



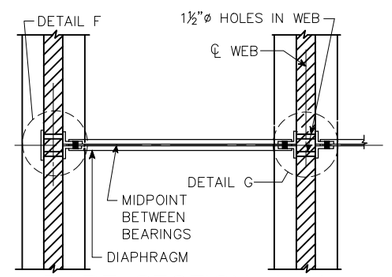
BEAM COIL TIE LOCATIONS



DETAIL F

Δ BOLT HOLES SHALL BE SPACED SO AS TO MISS PRESTRESSED STRANDS IN CONCRETE BEAMS.

DETAIL G



PART SECTION A–A

SECTION SHOWING INTERMEDIATE DIAPHRAGMS AT EXTERIOR BAY

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.

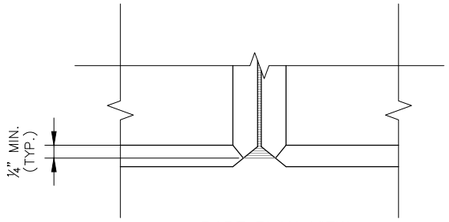
THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAR FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING 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.

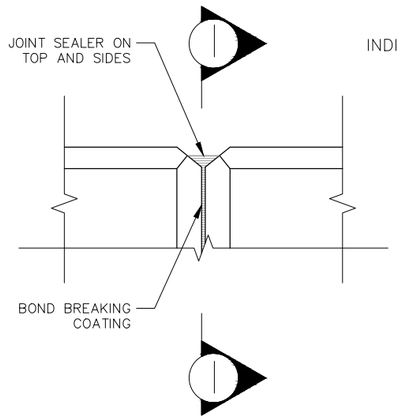
TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL ℄ GRADE.

ALL EXPOSED CORNERS ON THE TOP OF THE BARRIER AND ALL OTHER CORNERS 90° OR SHARPER TO BE FILLETED WITH A ¾" DRESSED AND BEVELED STRIP.

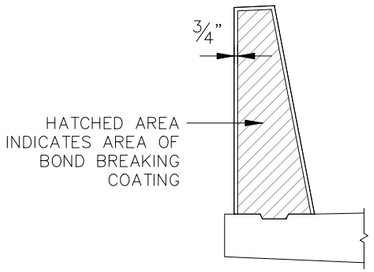
CROSS SECTIONAL AREA OF THE STANDARD AND SPECIAL SECTIONS OF THE BARRIER RAIL = 3.50 SQUARE FEET, EXCEPT THE 2'–10" SLOPED ENDS AT THE END SECTIONS.



PART PLAN VIEW



PART ELEVATION VIEW



SECTION I–I

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

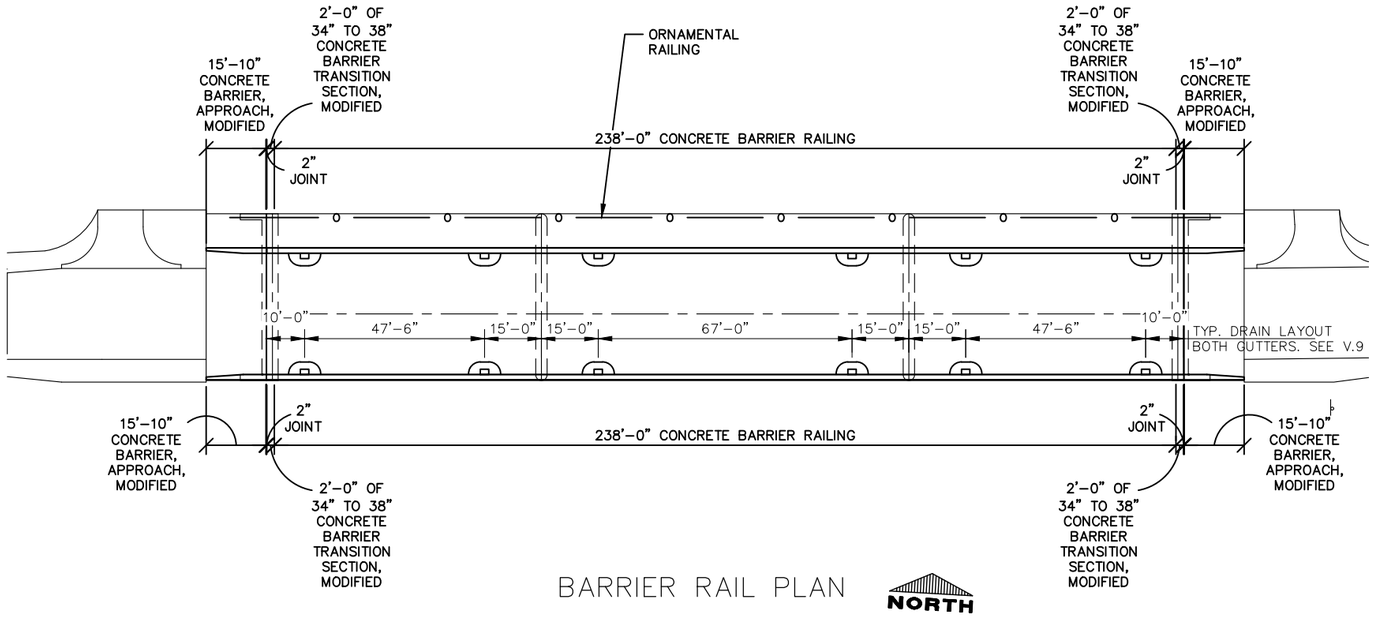
CONCRETE PLACEMENT SUMMARY

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 JOINT DETAILS



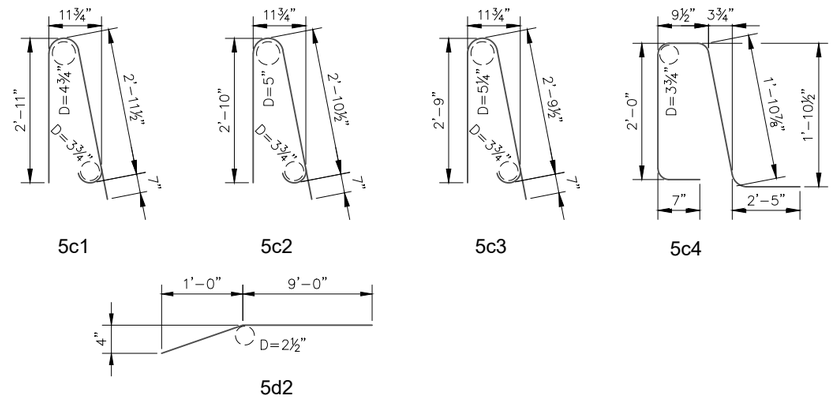
BARRIER RAIL PLAN

NORTH

HORIZONTAL SCALE IN FEET
0 20 40

DRAWING MAY HAVE BEEN REDUCED

BENT BAR DETAILS



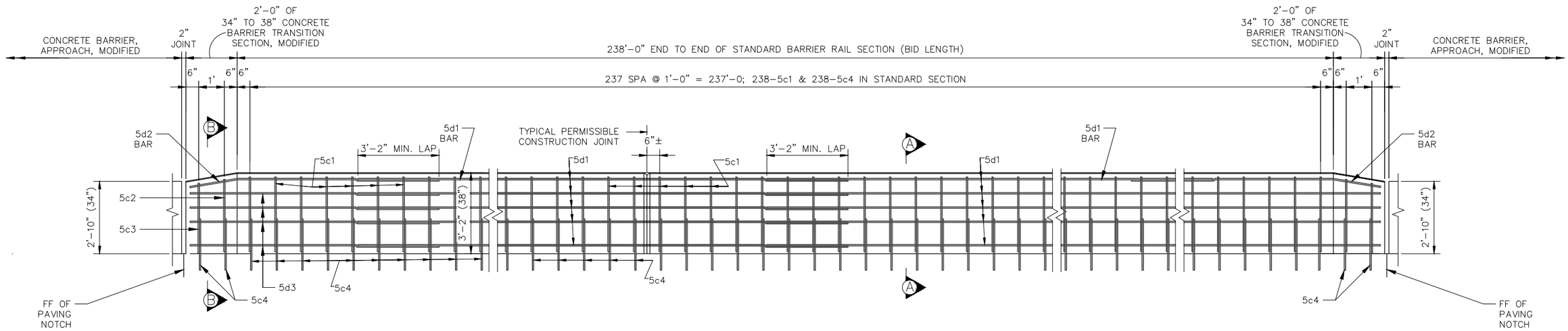
NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER

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

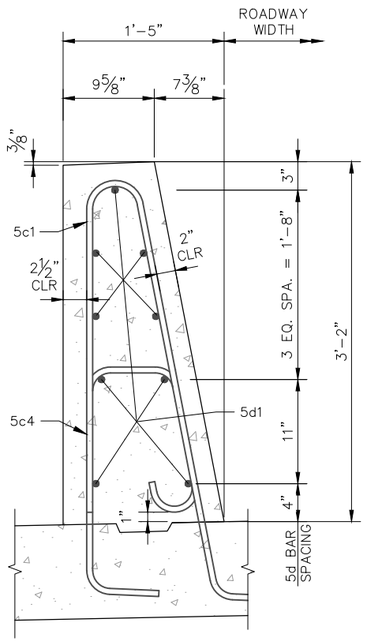
Design For
239' x 32' 0" SKEW PPCB BRIDGE
10TH ST SW OVER OTTER CREEK
Station: 10+14.50

71'–0" END SPANS 97'–0" CENTER SPAN

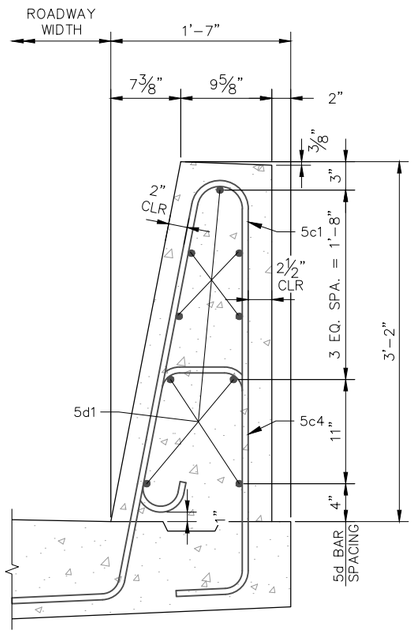
P:\23\036\DRAWINGS\CIVIL\23036 ZZ V SHEETS_5.DWG 11/27/2024 8:35:33 AM JOE RETTENBERGER



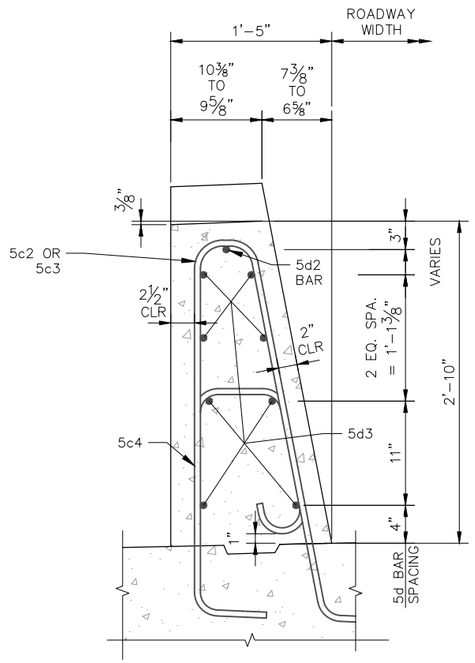
TYPICAL ELEVATION OF BARRIER RAIL



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

origin design 800 556-4491	CITY OF OELWEIN	PROJECT NUMBER BRM-5657(614)- -8N-33	BARRIER RAIL (TL-4)-INTEGRAL ABUT. MODIFIED	SHEET: V.18	REV: .

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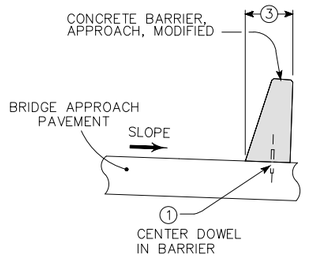
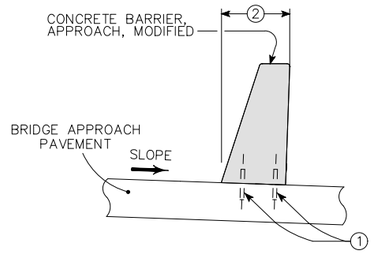
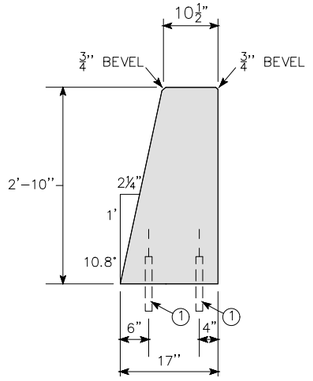


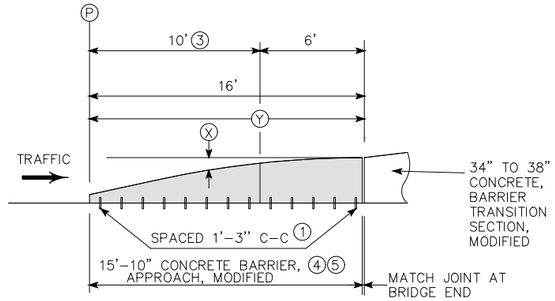
SECTION A-A



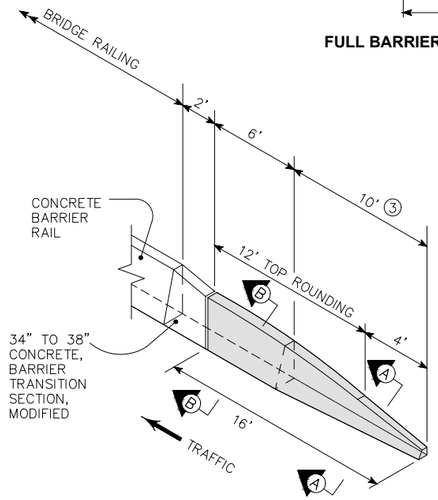
SECTION B-B



FULL BARRIER RAIL SECTION



ELEVATION



ISOMETRIC VIEW

OFFSETS FOR ROUNDED BARRIER TOP																	
Y = DISTANCE FROM Ⓟ	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

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.

Design For
239' x 32' 0" SKEW PPCB BRIDGE
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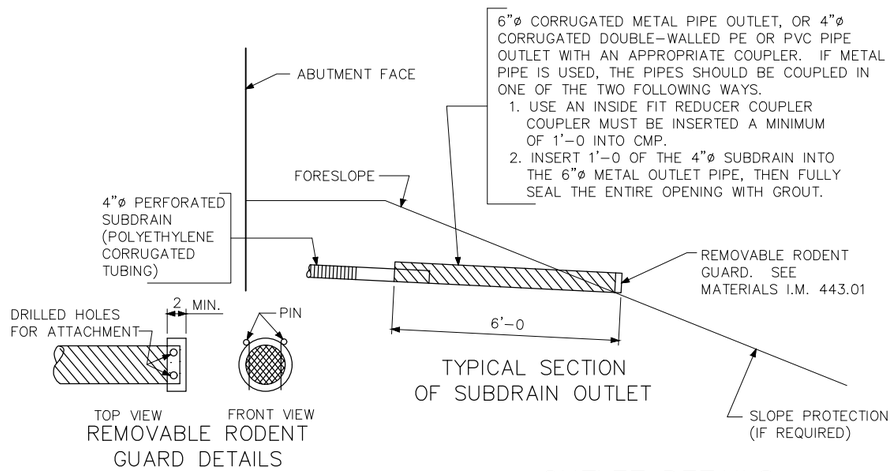
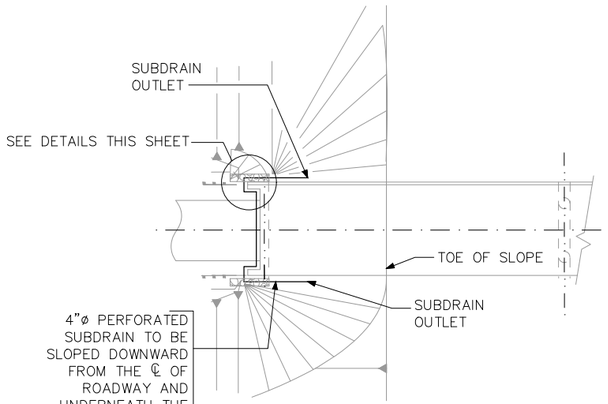
71'–0" END SPANS 97'–0" CENTER SPAN



OUTLET DETAILS



SITUATION PLAN

REFER TO SITUATION PLAN FOR NORTH ARROW.

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.

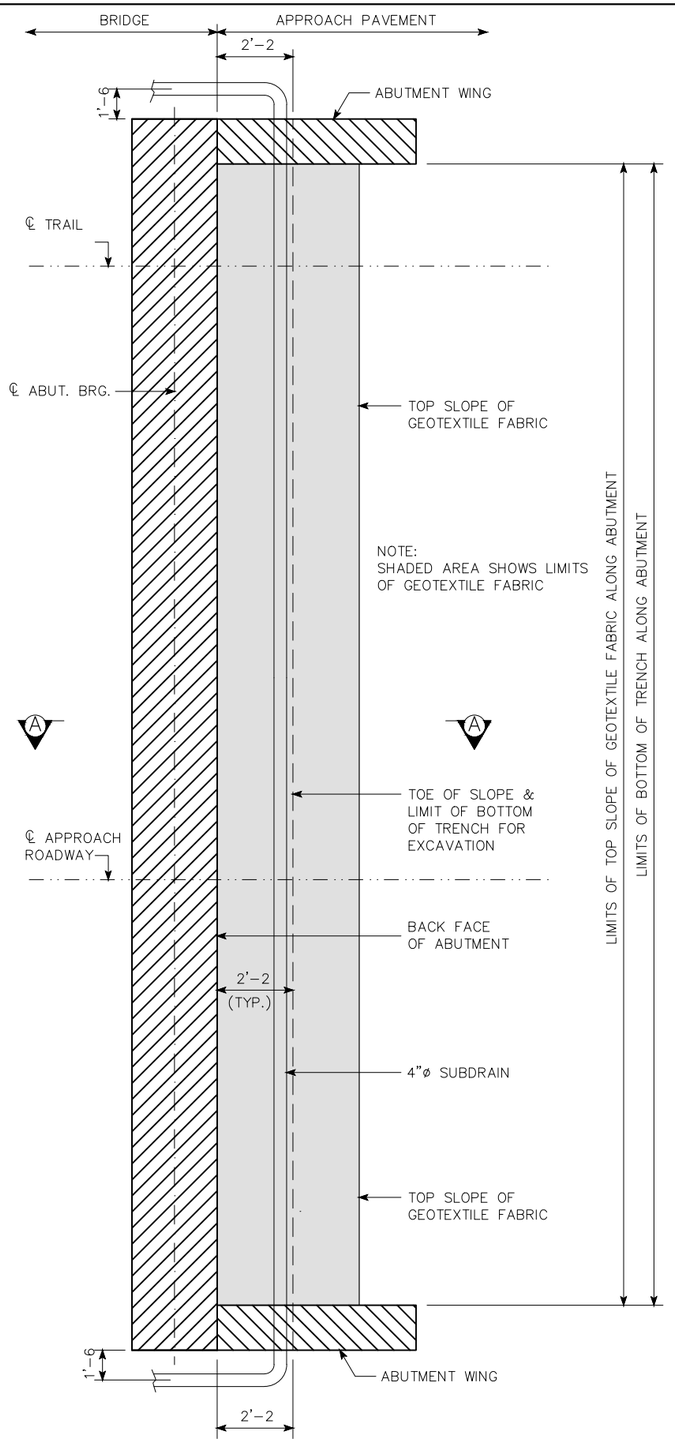
THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.

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



ABUTMENT PLAN WITHOUT WING EXTENSIONS

ABUTMENT BACKFILL PROCESS:

THE BASE OF THE EXCAVATION SUBGRADE BEHIND THE ABUTMENT IS TO BE GRADED WITH A 4% SLOPE AWAY FROM THE ABUTMENT FOOTING AND A 2% CROSS SLOPE IN THE DIRECTION OF THE SUBDRAIN OUTLET. THIS EXCAVATION SHAPING IS TO BE DONE PRIOR TO BEGINNING INSTALLATION OF THE GEOTEXTILE AND BACKFILL MATERIAL.

AFTER THE SUBGRADE HAS BEEN SHAPED, THE GEOTEXTILE FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN. THE FABRIC IS INTENDED TO BE INSTALLED IN THE BASE OF THE EXCAVATION AND EXTENDED VERTICALLY UP THE ABUTMENT BACKWALL, ABUTMENT WING WALLS, AND EXCAVATION FACE TO A HEIGHT THAT WILL BE APPROXIMATELY 1 TO 2 FOOT HIGHER THAN THE HEIGHT OF THE POROUS BACKFILL PLACEMENT AS SHOWN IN THE "BACKFILL DETAILS" ON THIS SHEET. THE STRIPS OF THE FABRIC PLACED SHALL OVERLAP APPROXIMATELY 1 FOOT AND SHALL BE PINNED IN PLACE. THE FABRIC SHALL BE ATTACHED TO THE ABUTMENT BY USING LATH FOLDED IN THE FABRIC AND SECURED TO THE CONCRETE WITH SHALLOW CONCRETE NAILS. THE FABRIC PLACED AGAINST THE EXCAVATION FACE SHALL BE PINNED.

WHEN THE FABRIC IS IN PLACE, THE SUBDRAIN SHALL BE INSTALLED DIRECTLY ON THE FABRIC AT THE TOE OF THE REAR EXCAVATION SLOPE. A SLOT WILL NEED TO BE CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING WALL.

POROUS BACKFILL IS THEN PLACED AND LEVELED, NO COMPACTION IS REQUIRED.

THE REMAINING WORK INVOLVES BACKFILLING WITH FLOODABLE BACKFILL, SURFACE FLOODING, AND VIBRATORY COMPACTION. THE FLOODABLE BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE FLOODABLE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, SURFACE FLOODED, AND COMPACTED WITH VIBRATORY COMPACTION TO ENSURE FULL CONSOLIDATION. LIMIT THE LOOSE LIFTS TO NO MORE THAN 2 FEET OF THICKNESS.

START SURFACE FLOODING FOR EACH FLOODABLE BACKFILL LIFT AT THE HIGH POINT OF THE SUBDRAIN AND PROGRESS TO THE LOW POINT WHERE THE SUBDRAIN EXITS THE FABRIC. TO ENSURE UNIFORM SURFACE FLOODING, WATER RUNNING FULL IN A 2-INCH DIAMETER HOSE SHOULD BE SPRAYED IN SUCCESSIVE 6-FOOT TO 8-FOOT INCREMENTS FOR 5 MINUTES WITHIN EACH INCREMENT.

FLOODABLE BACKFILL LIFT PLACEMENT, FLOODING, AND COMPACTION SHALL PROGRESS UNTIL THE REQUIRED FULL THICKNESS OF THE ABUTMENT BACKFILL HAS BEEN COMPLETED.

WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT.

THE COST OF WATER REQUIRED FOR FLOODING, SUBDRAINS, POROUS BACKFILL, FLOODABLE BACKFILL, AND GEOTEXTILE FABRIC FURNISHED AT THE BRIDGE ABUTMENTS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR STRUCTURAL CONCRETE.

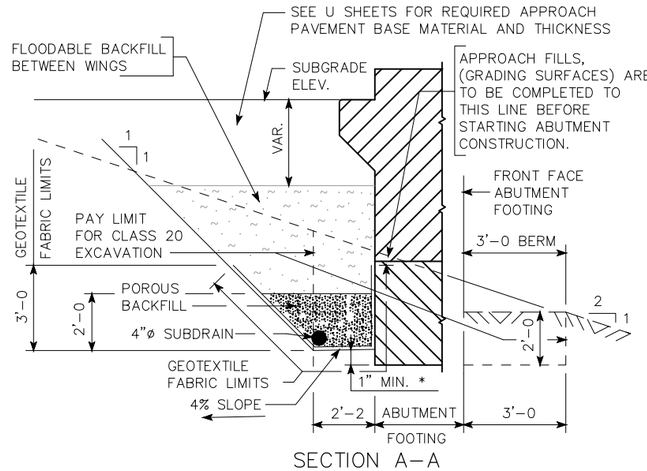
NOTE:
SEE SUBDRAIN DETAILS SHEET FOR DETAILS NOT SHOWN ON THIS SHEET WHICH ARE PERTINENT TO THIS STRUCTURE.

NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM ℄ APPROACH ROADWAY WHEN OUTLETTING BOTH SIDES OF THE ABUTMENT.

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM HIGH END WHEN OUTLETTING AT ONE END OF THE ABUTMENT.

THE GEOTEXTILE FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 6 OF THE STANDARD SPECIFICATIONS. IF THE ENGINEERING FABRIC IS LAPPED THE LAPS SHALL BE A MINIMUM OF ONE FOOT IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP AND STAPLED FOR CONTINUITY.



SECTION A-A

BACKFILL DETAILS

NOTE: GEOTEXTILE FABRIC WILL BE ATTACHED TO FACE OF ABUTMENT FOOTING AND WINGS.

*DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

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