

BRIDGE REPLACEMENT - CCS
LETTING DATE
NOVEMBER 17, 2026
BRM-8295(604)--8N-33

281_01
9/28/22

SECTION 404 PERMIT AND CONDITIONS

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NO. 14. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT WEBSITE (HTTP://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-2025-1297.



Highway Division
PLANS OF PROPOSED IMPROVEMENTS ON THE
URBAN ROAD SYSTEM
CITY OF WEST UNION
BRM-8295(604)--8N-33
BRIDGE REPLACEMENT - CCS
IN THE CITY OF WEST UNION, ON N PINE ST,
OVER GLOVERS CREEK, S9 T94N R08W

SCALES: As Noted

REFER TO THE PROPOSAL FORM FOR LIST OF APPLICABLE SPECIFICATIONS.

SEE SHEET C.3 FOR STANDARD ROAD PLAN TABULATION.

DESIGN SPEED: 30 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. REFER TO SHEET J.1 FOR ADDITIONAL TRAFFIC CONTROL PLANS.

B.O.P. STATION 30+62.88
E.O.P. STATION 33+62.19
FHWA STRUCTURE NO. 012590

IOWA 811

ONE CALLSM

1 (800) 292 - 8989

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

AADT 870 V.P.D. 2021

TOTAL SHEETS
51

PROJECT NUMBER
BRM-8295(604)--8N-33

INDEX OF SHEETS

105-3
10-18-05

NO.	DESCRIPTION
A.1 - A.2	TITLE SHEET, LEGENDS AND ABBREVIATIONS
B.1 - B.2	TYPICAL SECTIONS
C.1 - C.5	ESTIMATE OF QUANTITIES, STANDARD ROAD PLANS, & GENERAL INFORMATION
* D.1	PLAN & PROFILES (MAINLINE)
G.1	SURVEY CONTROL
H.1	EASEMENTS
J.1 - J.2	TRAFFIC CONTROL
* L.1 - L.4	INTERSECTION STAKING & JOINTING
M.1 - M.2	STORM SEWER
MSA.1	SANITARY SEWER
MWM.1-MWM.2	WATER MAIN
* RR.1	EROSION CONTROL
* S.1	SIDEWALK PLAN
SPS.1 - SPS.2	SOIL BORINGS
U.1 - U.3	DETAILS
* V.1	SITUATION PLAN
V.2 - V.16	BRIDGE DETAILS
W.1 - W.5	CROSS SECTIONS (MAINLINE)
* COLOR PLAN SHEETS	

MILEAGE SUMMARY

105-1
09-27-94

DIV.	LOCATION	LIN. FT.	MILES
1	N. PINE STREET LINCOLN WAY	STA 30+62.88 TO 33+62.19 STA 50+96.51 TO 51+39.60	299.31 43.09
	TOTAL	342.40	0.065

UTILITY CONTACTS:

ALLIANT ENERGY
DESIGN CONTACT: JULIE MOORE
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EMAIL: NATHAN.GESSNER@LUMEN.COM

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EMAIL: ASNYDER@NFV.K12.IA.US

CONTACT: JOE GRIFFITH (SUPERINTENDENT)
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EMAIL: JGRIFFITH@NFY.K12.IA.US

HAWKEYE TELEPHONE
CONTACT: CRAIG SCHMITT
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EMAIL: CRAIG.SCHMITT@HAWKEYETELEPHONE.COM

CITY OF WEST UNION
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EMAIL: WUWATER@WESTUNION.COM

CONTACT: SCOTT JOHANSEN (WASTEWATER)
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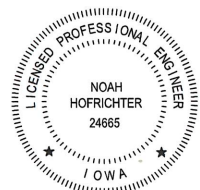
BLACK HILLS ENERGY DECORAH
CONTACT: JEFF FJELSTUL
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MEDIACOM
CONTACT: MARTY MORGAN
EMAIL: MMORGAN2@MEDIACOMCC.COM
OFFICE: 319-235-2197 x3371
CELL: 845-801-2142

CONTACT: DEWEY CALLAN
EMAIL: DCALLAN@MEDIACOMCC.COM
PHONE: 319-493-8319

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	NOAH J. HOFRICHTER	CIVIL
J.1	ANDREW JOHN GOEDKEN	CIVIL
SPS.1	MATTHEW J. REISDORFER	GEOTECHNICAL
V.1	COURTNEY E. WAND	STRUCTURAL



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 8/14/2026
NOAH HOFRICHTER DATE

PE 24665 12/31/2027
LICENSE # RENEWAL DATE

PAGES OR SHEETS COVERED BY THIS CERTIFICATION:
INDEX THIS SHEET EXCEPT J, MSA, MWM, SPS, AND V SHEETS



800 556-4491

CITY OF WEST UNION

PROJECT NUMBER BRM-8295(604)--8N-33

COVER SHEET

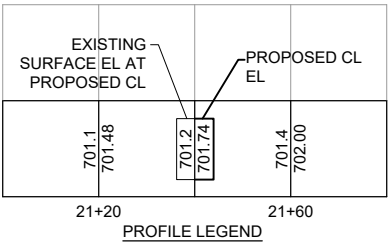
SHEET: A.1

REV: .

P:\24\050\DRAWINGS\CIVIL\24050.ZZ A SHEETS.DWG 8/18/2026 11:11:58 AM DAVE SCHWARZ

ABBREVIATIONS

Δ	CENTRAL ANGLE	FD	FLOOR DRAIN	R	RADIUS
A/C	AIR CONDITIONING(ER)	FDN	FOUNDATION	R&R	REMOVE & REPLACE
AC	ACRES	F.E.	FIELD ENTRANCE	R&S	REMOVE & SALVAGE
A.F.F.	ABOVE FINISHED FLOOR	FES	FLARED END SECTION	RCB	REINFORCED CONCRETE BOX
AGG	AGGREGATE	F-F	FACE TO FACE	RCAP	REINFORCED CONCRETE ARCH PIPE
AOH	ARROW ON HYDRANT	FFE	FINISH FLOOR ELEVATION	RCP	REINFORCED CONCRETE PIPE
ARCH	ARCHITECTURAL	FG	FORM GRADE	RD	ROAD
ASPH	ASPHALT	FIN GR	FINISHED GRADE	REBAR	REINFORCING BAR
AVG	AVERAGE	FL	FLOWLINE	REF	REFERENCE
		FLG	FLANGE	REINF	REINFORCING/REINFORCED
		FLR	FLOOR	REV	REVISION
B-B	B/C - B/C	FM	FORCE MAIN	RIM	RIM ELEVATION
B/C, BOC	BACK OF CURB	FND	FOUND	ROW	RIGHT OF WAY
B/DITCH	BOTTOM OF DITCH	FT	FOOT/FEET	RP	RADIUS POINT
BFP	BACKFLOW PREVENTOR	FTG	FOOTING	RS	RESILIENT SEAT
B/L	BASE LINE	FUT	FUTURE	RT	RIGHT
B/S	BOTTOM OF SLOPE	FV	FIELD VERIFY		
BLDG	BUILDING			S	SOUTH
B.M.	BENCH MARK	G	GUTTER	S=	SUPERELEVATION
BOP	BEGINNING OF PROJECT	GC	GENERAL CONTRACTOR	SAN	SANITARY
BOT	BOTTOM	GALV	GALVANIZED	SANS	SANITARY SEWER
BSMT	BASEMENT	GND	GROUND	SB	SOIL BORING
BV	BUTTERFLY VALVE	GRAN	GRANULAR	SCH	SCHEDULE
		GRD	GRADE	SD	SUB DRAIN
		GV	GATE VALVE	SEC	SECTION
C&G	CURB AND GUTTER			SE'LY	SOUTHEASTERLY
CATV	CABLE TELEVISION	HMA	HOT MIX ASPHALT	SF	SQUARE FOOT
CB	CATCH BASIN	HORIZ	HORIZONTAL	S.F.D.	STEP FOOTING DOWN
C-C	CENTER TO CENTER	HPT	HIGH POINT	SHT	SHEET
CF	CUBIC FEET	HSD	HEADLIGHT STOPPING DISTANCE	SIG.	SIGNAL
CH	CHORD	HYD	HYDRANT	SIM.	SIMILAR
CH BRG	CHORD BEARING			S'LY	SOUTHERLY
CIP	CAST IRON PIPE	ID	INSIDE DIA/INSIDE DIM	SOG	SLAB ON GRADE
C-I-P	CAST-IN-PLACE	IE	INVERT ELEVATION	SPEC	SPECIFICATION
CISP	CAST IRON SOIL PIPE	IMP	IMPROVEMENTS	SS	STAINLESS STEEL
CJ	CONTROL JOINT	IN	INCHES	SSD	STOPPING SIGHT DISTANCE
CL	CENTERLINE	INV	INVERT	ST	STREET
CLR	CLEAR	IP	IRON PIPE	STA	STATION
CMP	CORRUGATED METAL PIPE			STD	STANDARD
CMU	CONCRETE MASONRY UNIT	JB	JUNCTION BOX	STL	STEEL
CO	CLEAN OUT	JT	JOINT/JOINT LENGTH	STM	STORM
COL	COLUMN	K	RATE OF VERT CURVATURE	STMS	STORM SEWER
COMP	COMPACTED			SW'LY	SOUTHWESTERLY
CONC	CONCRETE	L	LENGTH OF CURVE	SY	SQUARE YARD
CONN	CONNECTION	LAT	LATERAL		
CONST	CONSTRUCTION	LF	LINEAL FOOT	T	TANGENT LENGTH
CONT	CONTINUOUS	LONG	LONGITUDINAL	T/B	TOP OF BANK
COR	CORNER	LP	LIGHT POLE	T/DITCH	TOP OF DITCH
CP	CONTROL POINT	LPT	LOW POINT	T/C, TC	TOP OF CURB
CPE	CORRUGATED POLYETHYLENE PIPE	LT	LEFT	T/GRAV	TOP OF GRAVEL
CRST	CRUSHED STONE			T/WALL	TOP OF WALL
CSP	CORRUGATED STEEL PIPE	MAX	MAXIMUM	T/P, TP	TOP OF PAVEMENT
CTRD	CENTERED	ME	MATCH EXISTING	T/S	TOP OF SLOPE
CTR	CENTER	MH	MANHOLE	T/SUB	TOP OF SUBGRADE
CULT	CULTIVATED	MIN	MINIMUM	T/W, TW	TOP OF WALK
CV	CHECK VALVE	MISC	MISCELLANEOUS	T/WM	TOP OF WATER MAIN
CY	CUBIC YARD	MON	MONUMENT	T & B	TOP AND BOTTOM
		MP	MILE POST	T.O.B.	TOP OF BEAM
D	DEGREE OF CURVE			T.O.B.L.	TOP OF BRICK LEDGE
DIA (Ø)	DIAMETER	N	NORTH	T.O.C.	TOP OF CONCRETE
DIP	DUCTILE IRON PIPE	N/A	NOT APPLICABLE	T.O.E.F.	TOP OF EXISTING FOOTING
DN	DOWN	NE'LY	NORTHEASTERLY	T.O.F.	TOP OF FOOTING
DRWY	DRIVEWAY	N'LY	NORTHERLY	T.O.M.	TOP OF MASONRY
DS	DOWNSPOUT	NO/#	NUMBER	T.O.P.	TOP OF PIER
DWG(S)	DRAWING(S)	NIC	NOT IN CONTRACT	T.O.S.	TOP OF STEEL
DWL(S)	DOWEL(S)	NTS	NOT TO SCALE	TCE	TEMP CONSTRUCTION EASEMENT
		NW'LY	NORTHWESTERLY	TEL	TELEPHONE
E	EAST			TEMP	TEMPORARY
E'LY	EASTERLY	OC	ON CENTER	THK	THICK / THICKNESS
EA	EACH	OD	OUTSIDE DIAMETER	TWP	TOWNSHIP
EJ	EXPANSION JOINT			TYP	TYPICAL
EL	ELEVATION				
ELEC	ELECTRICAL	PC	POINT OF CURVE	U	UTILITY
ELEV	ELEVATOR	PERF	PERFORATED	UAC	USE AS CONSTRUCTED
EMBED	EMBEDMENT	PI	POINT OF INTERSECTION	UE	UTILITY EASEMENT
ENGR	ENGINEER	P/L	PROPERTY LINE	UL	UNDERWRITERS LABORATORIES, INC.
ENTR	ENTRANCE	PM	PRINCIPAL MERIDIAN	ULFM	UNDERWRITERS LABORATORIES FACTORY MUTUAL
EOP	END OF PROJECT	POB	POINT OF BEGINNING	UNO	UNLESS NOTED OTHERWISE
EOR	END OF RADIUS	POC	POINT OF CURVE		
E/P	EDGE OF PAVEMENT	POT	POINT OF TANGENT	VAR	VARIES
EQ	EQUAL	PRC	POINT OF REVERSE CURVE	VC	VERTICAL CURVE
E/S	EDGE OF SHOULDER	PRELIM	PRELIMINARY	VCP	VITRIFIED CLAY PIPE
ESMT	EASEMENT	PROP	PROPOSED	VER	VERIFY
EST	ESTIMATE	PRV	PRESSURE REDUCING VALVE	VERT	VERTICAL
EX	EXISTING	PT	POINT OF TANGENCY	VOL	VOLUME
EXC	EXCAVATE/EXCAVATION	PVC	POLYVINYL CHLORIDE	VPC	VERT POINT OF CURVE
EXP	EXPANSION	PVMT	PAVEMENT	VPI	VERT POINT OF INTERSECTION
EXT	EXTERIOR			VPT	VERT POINT OF TANGENCY
EXTD	EXTEND	QTY	QUANTITY		
EW	EACH WAY			W	WEST
				W/	WITH
				WLY	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



LEGEND

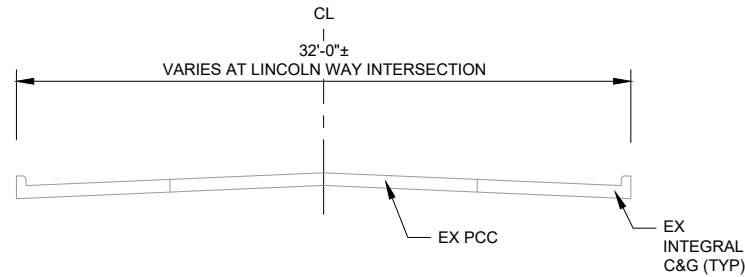
EXISTING		PROPOSED	EXISTING		PROPOSED
---	PROPERTY/ROW LINE	---		CATCH BASIN	
---	EASEMENT	---		AREA INTAKE	
---	SECTION LINE	---		STORM MANHOLE	
---	QUARTER SECTION LINE	---		SANITARY MANHOLE	
---	QUARTER QUARTER SECTION LINE	---		UTILITY MANHOLE	
---	CENTERLINE	---		WATER VALVE MANHOLE	
---	STORM SEWER	---		FIRE HYDRANT	
---	SUB DRAIN	---		WATER SHUT OFF	
---	SANITARY SEWER	---		WATER VALVE	
---	FORCE MAIN	---		YARD HYDRANT	
---	WATER LINE	---		GAS VALVE	
---	GAS LINE	---		SIGN	
---	OVERHEAD ELECTRIC	---		UTILITY POLE	
---	UNDERGROUND ELECTRIC	---		UTILITY POLE WITH LIGHT	
---	OVERHEAD TELEPHONE	---		TRAFFIC SIGNAL POLE	
---	UNDERGROUND TELEPHONE	---		GUY ANCHOR	
---	OVERHEAD TELEVISION	---		LIGHT POLE	
---	UNDERGROUND TELEVISION	---		UTILITY PEDESTAL	
---	FIBER OPTIC	---		WELL	
---	WIRE FENCE	---		MAILBOX	
---	CHAINLINK FENCE	---		WATER LEVEL	
---	WOOD FENCE	---		BOLLARD	
---	SILT FENCE	---		SOIL BORING	
---	PERIMETER CONTROL	---		POST INDICATOR VALVE	
---	CONTOUR LINE	---		DECIDUOUS TREE W/ TRUNK DIA.	
---	RAILROAD TRACKS	---		CONIFEROUS TREE W/ TRUNK DIA.	
---	GUARD RAIL	---		SHRUB OR BUSH	
---	SPOT ELEVATION	---			
---	DIRECTION OF FLOW	---			
---	TREE LINE	---			
---	REVTMENT EXTENTS	---			
---	EROSION STONE	---			
UTILITY LINES WITH DESIGNATORS WRAPPED IN PARENTHESIS SUCH AS (W) or (G) ARE LOCATED BASED ON MAP OR GIS DATA					

SURVEY

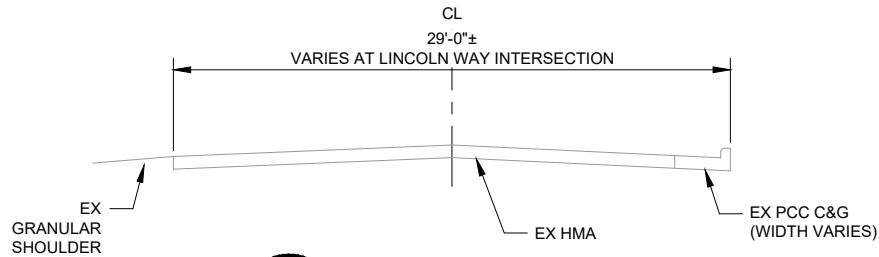
■	FOUND REBAR
●	FOUND IRON PIPE
○	SET REBAR

Design For
80'x46' LA 15° SKEW 2 SPAN CCS BRIDGE
N PINE ST OVER GLOVERS CREEK
Station: 31+95

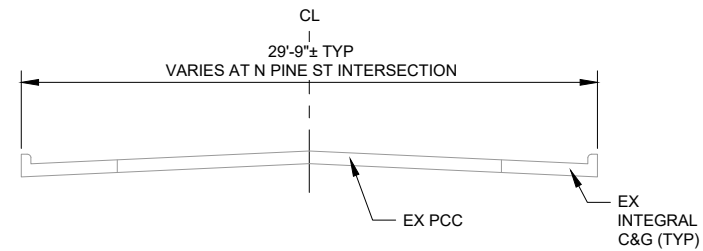
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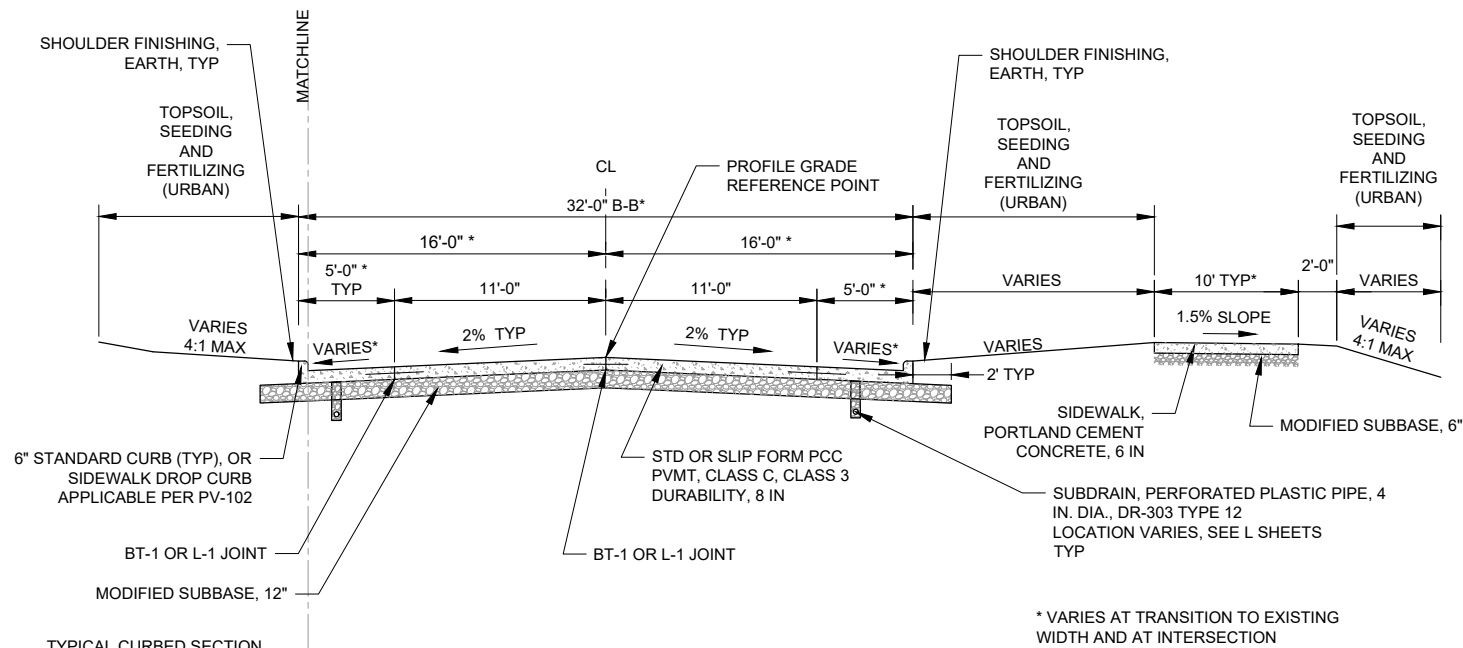
1
B.1
EXISTING TYPICAL SECTION - N PINE ST
STA 30+63 TO 31+00
NOT TO SCALE



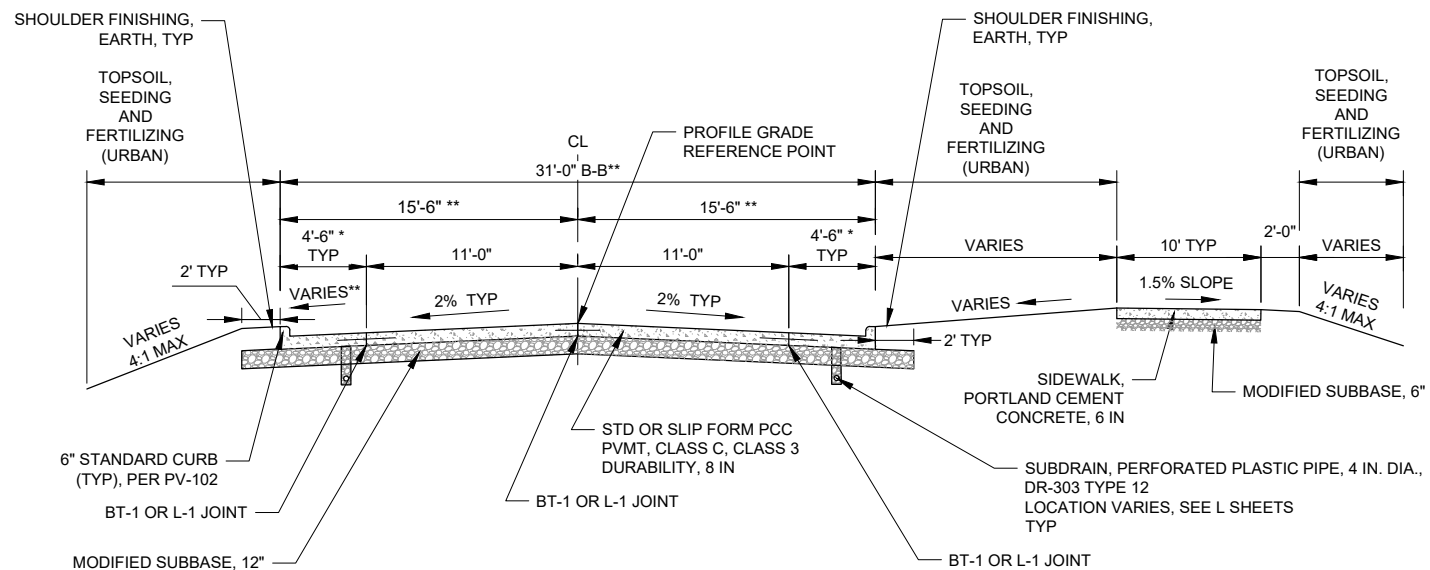
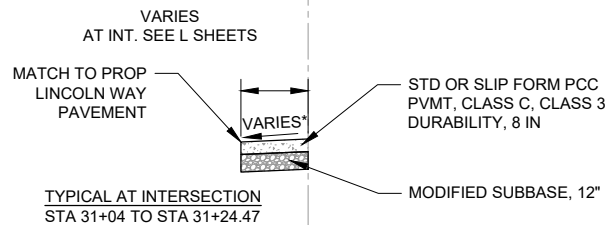
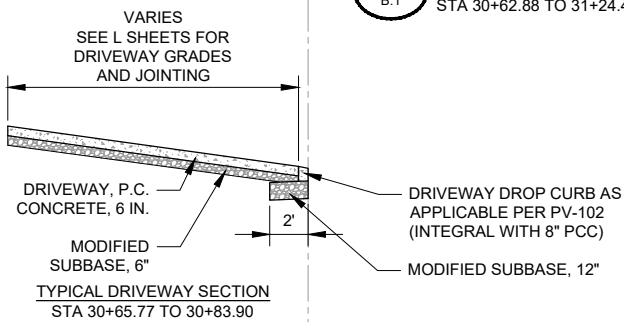
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B.1
EXISTING TYPICAL SECTION - N PINE ST
STA 31+00 TO 31+62
STA 31+95 TO 33+62
NOT TO SCALE



5
B.1
EXISTING TYPICAL SECTION - LINCOLN WAY
STA 50+96 TO 51+45
NOT TO SCALE



2
B.1
TYPICAL SECTION - NORTH PINE ST
STA 30+62.88 TO 31+24.47
NOT TO SCALE

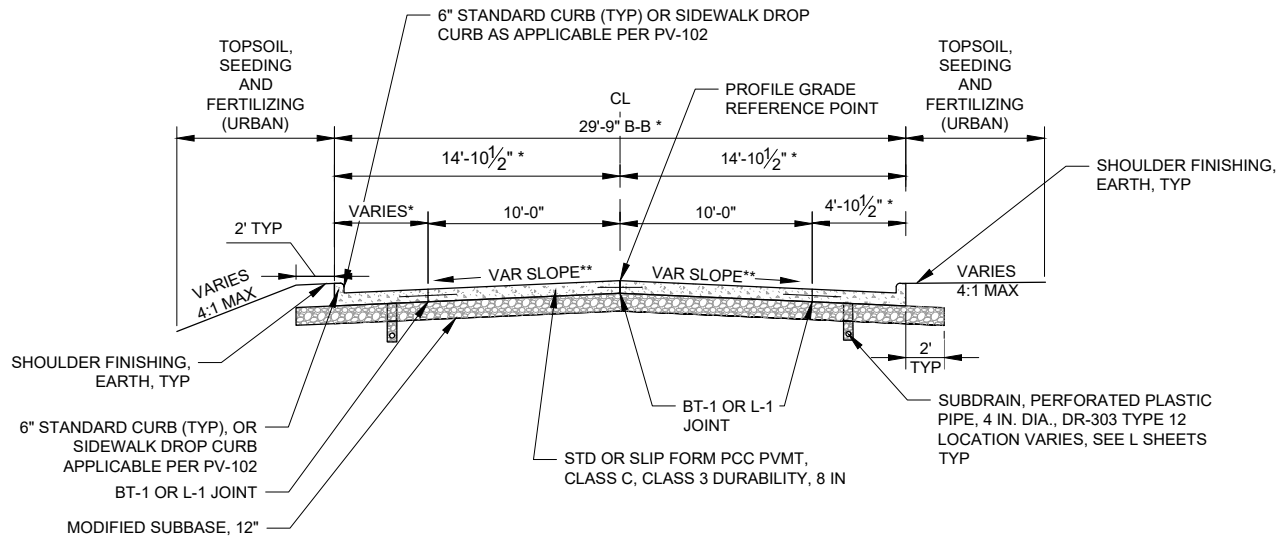


3
B.1
TYPICAL SECTION - NORTH PINE ST
STA 32+65.52 TO 33+62.19
NOT TO SCALE

** VARIES AT TRANSITION TO EXISTING WIDTH AND TO BRIDGE APPROACH PANEL

Design For
80'x46' LA 15° SKEW 2 SPAN CCS BRIDGE
N PINE ST OVER GLOVERS CREEK
Station: 31+95

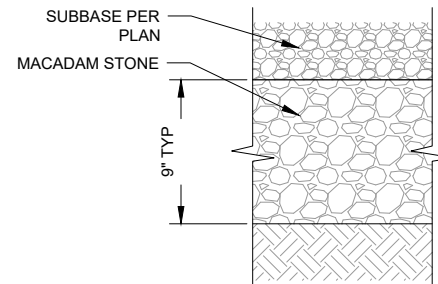
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1
B.2 **TYPICAL SECTION - LINCOLN WAY**
STA 50+96.45 TO 51+39.60
NOT TO SCALE

* OVERALL WIDTH OF ROAD WIDEN BY APPROXIMATELY 3" TO MATCH EXISTING WIDTH WITHIN THE RECONSTRUCTION AREA AND VARIES MORE SIGNIFICANTLY AT INTERSECTION RADII. SEE L SHEETS.

** CROSS SLOPE IS VARIABLE, AND IN SOME AREAS SLOPE OF LANE PANEL DIFFERS FROM GUTTER PANEL DUE TO INTAKES OR INTERSECTION DRAINAGE. SEE L SHEETS.



TO BE PLACED AT SPOT LOCATIONS WHERE SUBGRADE IN CUT SECTIONS IS NOT STABLE AFTER PROOF-ROLLING AS APPROVED BY THE ENGINEER. 9" THICKNESS MAY BE ALTERED DEPENDING ON CONDITIONS ENCOUNTERED.

ADDITIONAL OVER EXCAVATION MAY BE REQUIRED IF SUBGRADE CONDITION WARRANTS, IF APPROVED BY THE ENGINEER. OVER EXCAVATION WILL BE PAID PER THE STANDARD SPECIFICATIONS.

2
B.2 **TYPICAL SECTION - LINCOLN WAY**
NOT TO SCALE

Design For
80'x46' LA 15° SKEW 2 SPAN CCS BRIDGE
N PINE ST OVER GLOVERS CREEK
Station: 31+95

P:\24\050\DRAWINGS\CIVIL\24050 ZZ C SHEETS.DWG 8/18/2026 11:12:09 AM DAVE SCHWARZ

OPINION OF PROBABLE CONSTRUCTION COST - 80' 2-Span CCS						PROJECT #
City of West Union, Fayette Co. - IOWA DOT BHM-8295(604)--8K-33						24050
REF. NO.	ITEM CODE	BID ITEM DESCRIPTION	UNITS	ROADWAY QUANTITIES	BRIDGE QUANTITIES	TOTAL
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	685		685
2	2104-2713020	EXCAVATION, CLASS 13, CHANNEL	CY		1416	1416
3	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	223		223
4	2115-0100000	MODIFIED SUBBASE	CY	312		312
5	2123-7450020	SHOULDER FINISHING, EARTH	STA	3.8		3.8
6	2210-0475290	MACADAM STONE BASE	TON	200		200
7	2301-0685550	BRIDGE APPROACH PAVEMENT, AS PER PLAN	SY		239.1	239.1
8	2301-1033080	STD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3, 8 IN.	SY	722		722
9	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS		1	1
10	2402-2720000	EXCAVATION, CLASS 20	CY		150	150
11	2402-2721000	EXCAVATION, CLASS 21	CY		215	215
12	2402-2722000	EXCAVATION, CLASS 22	CY		22	22
13	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	8.4		8.4
14	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY		432.8	432.8
15	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB		79393	79393
16	2414-6424038	CONCRETE BARRIER RAIL, 3'-8"	LF		176.7	176.7
17	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	1		1
18	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	1		1
19	2435-0130148	MANHOLE, SANITARY SEWER, SW-301, 48 IN.	EACH	1		1
20	2435-0140148	MANHOLE, STORM SEWER, SW-401, 48 IN.	EACH	2		2
21	2435-0250100	INTAKE, SW-501	EACH	2		2
22	2435-0250248	INTAKE, SW-502, 48 IN.	EACH	2		2
23	2435-0250500	INTAKE, SW-505	EACH	2		2
24	2501-0201057	PILES, STEEL, HP 10 X 57	LF		360	360
25	2501-6335010	PREBORED HOLES	LF		95.2	95.2
26	2502-8212204	SUBDRAIN, PERFORATED PLASTIC PIPE, 4 IN. DIA.	LF	477		477
27	2502-8221303	SUBDRAIN OUTLET, DR-303	EACH	8		8
28	2502-8221305	SUBDRAIN OUTLET, DR-305	EACH	2		2
29	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.	LF	46		46
30	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.	LF	122		122
31	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.	LF	20		20
32	2503-0116324	STORM SEWER GRAVITY MAIN, TRENCHED, 2000D LOW CLEARANCE CONCRETE PIPE, EQUIVALENT DIAMETER 24 IN.	LF	56		56
33	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	90		90
34	2504-0110008	SANITARY SEWER GRAVITY MAIN, TRENCHED, 8 IN.	LF	184		184
35	2507-3250005	ENGINEERING FABRIC	SY		525	525
36	2507-6800061	REVTMENT, CLASS E	TON		600	600
37	2510-6745850	REMOVAL OF PAVEMENT	SY	1046		1046
38	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	EACH	3		3
39	2511-6745900	REMOVAL OF SIDEWALK	SY	123		123
40	2511-7526006	SIDEWALK, P.C. CONCRETE, 6 IN.	SY	244.1		244.1
41	2511-7528101	DETECTABLE WARNINGS	SF	40		40
42	2513-0471001	CONCRETE BARRIER, APPROACH, MODIFIED	EACH	3		3
43	2515-2475006	DRIVEWAY, P.C. CONCRETE, 6 IN.	SY	30.5		30.5
44	2515-6745600	REMOVAL OF PAVED DRIVEWAY	SY	30		30
45	2519-1002072	FENCE, CHAIN LINK, 72" HEIGHT	LF		121.1	121.1
46	2524-6765010	REMOVE AND REINSTALL SIGN AS PER PLAN	EACH	6		6
47	2524-6765210	REMOVAL OF TYPE A SIGN ASSEMBLY	EACH	2		2
48	2524-9100030	OBJECT MARKER, TYPE 3	EACH	1		1
49	2524-9275100	WOOD POSTS FOR TYPE A OR B SIGNS, 4 IN. X 4 IN.	LF	60		60
50	2524-9325001	TYPE A SIGNS, SHEET ALUMINUM	SF	11		11
51	2526-8285010	CONSTRUCTION SURVEY, MONUMENT PRESERVATION	LS	1		1

OPINION OF PROBABLE CONSTRUCTION COST - 80' 2-Span CCS						PROJECT #
City of West Union, Fayette Co. - IOWA DOT BHM-8295(604)--8K-33						24050
52	2526-8285020	CONSTRUCTION SURVEY, CONTROL POINT SURVEY	LS	1		1
53	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1		1
54	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	6.96		6.96
55	2528-2518000	SAFETY CLOSURE	EACH	3	2	5
56	2528-8445110	TRAFFIC CONTROL	LS	1		1
57	2533-4980005	MOBILIZATION	LS	1		1
58	2554-0112006	WATER MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 6 IN.	LF	202		202
59	2554-0112008	WATER MAIN, TRENCHED, DUCTILE IRON PIPE (DIP), 8 IN.	LF	63		63
60	2554-0203000	FITTINGS BY WEIGHT, DUCTILE IRON PIPE	LBS	999		999
61	2554-0207006	VALVE, GATE, DIP, 6 IN.	EACH	3		3
62	2554-0207008	VALVE, GATE, DIP, 8 IN.	EACH	1		1
63	2554-0209006	VALVE REMOVAL, 6 IN.	EACH	2		2
64	2554-0210201	FIRE HYDRANT ASSEMBLY, WM-201	EACH	1		1
65	2554-0210205	FIRE HYDRANT ASSEMBLY REMOVAL	EACH	1		1
66	2599-9999007	EXPLORATORY EXCAVATION	HOURL	8		8
67	2599-9999009	ROCK CORING	LF		42	42
68	2601-2634100	MULCHING	ACRE	0.5		0.5
69	2601-2636044	SEEDING AND FERTILIZING (URBAN)	ACRE	1		1
70	2601-2642120	STABILIZING CROP - SEEDING AND FERTILIZING (URBAN)	ACRE	0.5		0.5
71	2602-0000020	SILT FENCE	LF	375		375
72	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	375		375
73	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	190		190
74	2602-0000150	STABILIZED CONSTRUCTION ENTRANCE, EC-303	LF	100		100
75	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	650		650
76	2602-0000351	REMOVAL OF PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE	LF	650		650

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ESTIMATE REFERENCE INFORMATION		ESTIMATE REFERENCE INFORMATION	
City of West Union, Fayette Co. - IOWA DOT BHM-8295(604)--8K-33		City of West Union, Fayette Co. - IOWA DOT BHM-8295(604)--8K-33	
DATA BELOW IS FOR INFORMATION ONLY AND DOES NOT CONSTITUTE A BASIS FOR EXTRA WORK ORDER REQUESTS		DATA BELOW IS FOR INFORMATION ONLY AND DOES NOT CONSTITUTE A BASIS FOR EXTRA WORK ORDER REQUESTS	
REF. NO.	DESCRIPTION	REF. NO.	DESCRIPTION
1	SEE SHEET C.3 FOR AN EARTHWORK SUMMARY TABLE. VOLUME INCLUDES EARTHWORK FOR ROADWAY CONSTRUCTION AND GRADING, EXCEPT FOR THE EXCAVATION, CLASS 13, CHANNEL AREA. CLASS 10 EXCAVATION VOLUMES ARE BASED ON THE CUT AND FILL VOLUMES OUTSIDE OF THE FACE OF BRIDGE ABUTMENT AND WINGS. QUANTITIES IN TABLE ARE ADJUSTED FOR REVETMENT, CLASS E EMBEDMENT. QUANTITIES ARE ALSO ADJUSTED FOR PCC AND HMA PAVEMENT REMOVAL USING ASSUMED PAVEMENT THICKNESSES NOTED WITH THE TABULATION. UNSUITABLE MATERIAL MAY NOT BE USED AS EMBANKMENT FILL. THE PLAN QUANTITY FOR THIS ITEM IS BASED ON THE TOTAL NUMBER OF CUT YARDS ANTICIPATED AS SUMMARIZED IN THE TABLE, REGARDLESS OF WHETHER IT IS PLACED ON SITE AS FILL OR WILL BE WASTE. THE CONTRACTOR IS RESPONSIBLE FOR WASTING ALL EXCESS MATERIAL THAT IS NOT NEEDED FOR EMBANKMENT CONSTRUCTION OR WHICH IS UNSUITABLE MATERIAL AND WASTE WILL NOT BE MEASURED SEPARATELY. MEASUREMENT FOR THE EXCAVATION, CLASS 10, ROADWAY AND BORROW WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS.	38	FOR REMOVAL OF TWO INTAKES AT THE INTERSECTION OF N. PINE ST AND LINCOLN WAY, AND ONE INTAKE ALONG THE RIGHT SIDE CURB NORTH OF THE EXISTING BRIDGE.
2	SEE SHEET C.3 FOR AN EARTHWORK SUMMARY TABLE. VOLUME INCLUDES EARTHWORK FOR CHANNEL GRADING IN AREA, WHICH IS DEFINED AS THE AREA BETWEEN THE FACE OF THE ABUTMENT AND WINGS OF THE BRIDGE, BUT NOT INCLUDING THE STRUCTURE CLASS 20, 21, AND 22 EXCAVATION. QUANTITIES ARE ADJUSTED FOR REVETMENT, CLASS E EMBEDMENT. QUANTITIES ARE ALSO ADJUSTED FOR PCC AND HMA PAVEMENT REMOVAL USING ASSUMED PAVEMENT THICKNESSES NOTED WITH THE TABULATION. UNSUITABLE MATERIAL MAY NOT BE USED AS EMBANKMENT FILL. THE PLAN QUANTITY FOR THIS ITEM IS BASED ON THE TOTAL NUMBER OF CUT YARDS ANTICIPATED AS SUMMARIZED IN THE TABLE, REGARDLESS OF WHETHER IT IS PLACED ON SITE AS FILL OR WILL BE WASTE. THE CONTRACTOR IS RESPONSIBLE FOR WASTING ALL EXCESS MATERIAL THAT IS NOT NEEDED FOR EMBANKMENT CONSTRUCTION OR WHICH IS UNSUITABLE MATERIAL AND WASTE WILL NOT BE MEASURED SEPARATELY. MEASUREMENT FOR THE EXCAVATION, CLASS 13, CHANNEL WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS.	39	FOR REMOVAL OF EXISTING SIDEWALK ALONG THE EAST SIDE OF N PINE ST. MEASUREMENT FOR REMOVAL OF SIDEWALK WILL BE THE SQUARE YARDS SHOWN IN THE CONTRACT DOCUMENTS.
3	QUANTITY IN PLANS ASSUMES A TYPICAL FINAL PLACEMENT THICKNESS OF 6 INCHES, EXCEPT FOR AN ADJUSTMENT FOR THE 2' BEHIND CURBS WHERE IT IS ASSUMED AS PART OF BACKFILLING AFTER PAVING THE TOTAL THICKNESS WILL BE 14 INCHES. IF EXISTING TOPSOIL IS THICKER IN AREAS WHERE ROADWAY EMBANKMENT IS TO BE PLACED, REMOVE FULL DEPTH OF TOPSOIL. QUANTITY CALCULATED IS BASED ON AREA WHERE TOPSOIL IS TO BE PLACED WITH 0% SHRINK FACTOR (IN-PLACE VOLUME). INCLUDES EFFORTS TO BACKFILL ADJACENT TO SIDEWALKS. CONTRACTOR IS RESPONSIBLE FOR WASTING ANY EXCESS MATERIAL AND WASTE WILL NOT BE MEASURED OR PAID SEPARATELY.	40	CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. FOR ALL SIDEWALK WITHIN THE PROJECT LIMITS. SEE S SHEET FOR SPECIFIC CURB RAMP GRADES, AND W SHEETS FOR SIDEWALK GRADES AWAY FROM CURB RAMPS. SIDEWALK APPROACH SLAB AT BRIDGE IS PAID SEPARATELY. LONGITUDINAL CONTRACTION JOINTS SHALL TYPICALLY BE PROVIDED AT MAXIMUM SPACING THAT IS BASED ON THE WIDTH + 2 UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4	FOR USE UNDER PAVEMENT AND UNDER SIDEWALKS AS SHOWN IN THE TYPICAL SECTIONS IN THE B SHEETS. MODIFIED SUBBASE UNDER BRIDGE APPROACH PAVEMENT, AS PER PLAN AND THE SIDEWALK APPROACHES PAID AS STRUCTURAL CONCRETE (MISCELLANEOUS) IS NOT PAID SEPARATELY UNDER THIS ITEM.	41	FOR USE AT CURB RAMPS, SEE S SHEET.
5	AS SHOWN ON THE B SHEET TYPICAL SECTIONS FOR BACKFILLING BEHIND CURBS AND NEXT TO APPROACH PAVEMENT AT LOCATIONS WHERE CONTRACTOR OPERATIONS ARE ANTICIPATED TO REQUIRE PLACEMENT OF ADDITIONAL THICKNESS OF EARTHWORK OR TOPSOIL BEHIND THE CURB. DOES NOT INCLUDE AREAS ADJACENT TO SIDEWALKS, THOSE AREAS SHALL BE BACKFILLED WITH TOPSOIL AND THAT WORK IS INCIDENTAL TO THE TOPSOIL BID ITEM.	42	SEE DETAILS ON V SHEETS FOR A MODIFIED BA-108 CONCRETE BARRIER RAIL END SECTION WITH THE LENGTH ADJUSTED TO 26 LF. CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. INCLUDES ALL CONCRETE AND REINFORCING STEEL. METHOD OF MEASUREMENT SHALL BE BY COUNT FOR EACH END SECTION. BASIS OF PAYMENT WILL BE THE CONTRACT UNIT PRICE FOR EACH END SECTION. PAYMENT IS CONSIDERED FULL COMPENSATION FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO CONSTRUCT THE COMPLETE CONCRETE BARRIER, APPROACH, MODIFIED SECTION IN CONFORMANCE WITH THE PLAN DETAILS.
6	FOR USE AS A STABILIZATION STONE AS INDICATED IN DETAIL ON SHEET B.2 AT LOCATIONS WHERE SUBGRADE DOES NOT PASS A PROOFROLL. IF OVEREXCAVATION IS REQUIRED FOR PLACEMENT OF THE STONE, MEASUREMENT AND PAYMENT SHALL BE PER SECTION 2102 OF THE STANDARD SPECIFICATIONS.	43	CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. FOR USE AT THE RESIDENTIAL DRIVEWAYS NEAR THE SOUTH END OF PROJECT. SEE L SHEETS.
7	CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. SEE SHEETS U.1 AND U.2 FOR DETAILS INCLUDING METHOD OF MEASUREMENT AND BASIS OF PAYMENT. INCLUDES PAVING UNDER A PORTION OF BA-108 CONCRETE BARRIER RAIL. 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.	44	FOR RESIDENTIAL DRIVEWAY NEAR STA 30+75 LEFT. EXISTING DRIVEWAY ACCESS SHALL BE MAINTAINED WHENEVER CONSTRUCTION OPERATIONS DO NOT DIRECTLY REQUIRE BLOCKING OR ACTIVE CONSTRUCTION WITHIN THE AREA OF THE DRIVEWAY.
8	CONTRACTOR SHALL SUPPLY 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. PAYMENT WILL NOT BE ADJUSTED FOR THICKNESS DETERMINATION. SEE L SHEETS FOR GEOMETRIC AND JOINTING DETAILS.	45	AT BRIDGE EAST DECK EDGE AND SE, NE, AND NW WINGS PER V.16.
9	FOR REMOVAL OF THE EXISTING SINGLE SPAN 34'X33' CONCRETE ARCH VEHICLE BRIDGE PER SITUATION PLAN. REMOVAL OF THE 3-SPAN 100'X6' PEDESTRIAN BRIDGE IS CONSIDERED INCIDENTAL TO THIS BID ITEM. SEE GENERAL NOTES ON C.3 FOR HAZARDOUS MATERIAL NOTES. THE CITY WILL REMOVE THE EXISTING OBJECT MARKER SIGNS PRIOR TO BRIDGE REMOVAL.	46	SEE J SHEETS FOR LOCATIONS AND C SHEETS FOR TABULATION. METHOD OF MEASUREMENT: EACH SIGN PLACARD REMOVED AND REINSTALLED WIL BE COUNTED FOR PAYMENT. SIGNS CURRENTLY MOUNTED TO WOOD POSTS WILL BE MOUNTED TO NEW WOOD POSTS. NEW WOOD POSTS ARE A SEPARATE ITEM. SIGNS CURRENTLY MOUNTED TO METAL POSTS WILL BE MOUNTED IN THE NEW LOCATION USING THE EXISTING METAL POST. BASIS OF PAYMENT: INCLUDES ALL MATERIALS, EQUIPMENT AND LABOR TO FULLY REMOVE THE SIGN PLACARD AND SECURELY MOUNT IT TO THE WOOD OR METAL POST IN THE DESIGNATED LOCATION. NO SEPARATE PAYMENT WILL BE MADE FOR REMOVING OR REINSTALLING EXISTING METAL POSTS TO BE REUSED.
10	AT BRIDGE ABUTMENTS, 75 CY PER ABUTMENT.	47	SEE J SHEETS FOR LOCATIONS AND C SHEETS FOR TABULATION. METHOD OF MEASUREMENT: EACH SIGN ASSEMBLY REMOVED SHALL BE COUNTED FOR PAYMENT. BASIS OF PAYMENT: INCLUDES ALL MATERIALS, EQUIPMENT AND LABOR TO FULLY REMOVE THE SIGN ASSMBLY (PLACARD, POST AND BASE, IF PRESENT). REMOVED SIGN ASSEMBLY MATERIALS SHALL BECOME PROPERTY OF THE CONTRACTOR.
11	AT BRIDGE PIER ABOVE BEDROCK	48	FOR INSTALLATION AT END OF THE BARRIER RAIL AT SW CORNER OF THE BRIDGE AS SHOWN ON SHEET J.2 AND PER DETAILS OF SI-173. METHOD OF MEASUREMENT: BY THE COUNT OF EACH INSTALLATION INSTALLED, CONSISTING OF THE COMPLETE SIGN AND POST. BASIS OF PAYMENT: PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING, FABRICATING, AND ERECTING THE SIGNS COMPLETE, INCLUDING FURNISHING OF THE BLANK, APPLICATION OF REFLECTIVE SHEETING, AND ALL MOUNTING HARDWARE.
12	AT BRIDGE PIER FOR BEDROCK EXCAVATION PER V SHEETS	49	SEE J SHEETS FOR LOCATIONS AND C SHEETS FOR TABULATION. ALL NEW SIGNS AND SIGNS TO BE REMOVED AND REINSTALLED ON EXISTING WOOD POSTS TO BE MOUNTED TO NEW WOOD POSTS.
13	FOR REINFORCED SIDEWALK APPROACH PANELS PER U.3. CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION. EPOXY COATED REINFORCING STEEL, JOINT MATERIALS, AND ARE INCIDENTAL TO THIS ITEM.	50	SEE J SHEETS FOR LOCATIONS AND C SHEETS FOR TABULATION.
14	CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. INCLUDES COST OF CONCRETE SEALER AND STEEL DECK DRAINS PER V SHEETS.	51	THIS ITEM IS FOR PRESERVATION AND RESTORATION AT THE COMPLETION OF CONSTRUCTION OF ANY EXISTING PROPERTY PINS, SECTION CORNERS, OR OTHER EXISTING RIGHT OF WAY MARKERS THAT ARE CURRENTLY PRESENT ALONG THE CORRIDOR AND WHICH WILL BE DISTURBED BY CONSTRUCTION ACTIVITIES. MONUMENTATION IS KNOWN TO INCLUDE THE FOLLOWING TWO ITEMS, BUT CONTRACTOR'S SURVEY SHALL ALSO VERIFY WHETHER ANY ADDITIONAL MONUMENTATION EXISTS: A KNOWN EXISTING SECTION CORNER IN THE CENTER OF THE N PINE ST AND LINCOLN WAY INTERSECTION AND WILL BE DISTURBED BY CONSTRUCTION ACTIVITES. AN EXISTING PROPERTY CORNER MONUMENT AT APPROX STA 31+00 LT IS ANTICIPATED TO BE DISTURBED BY STORM SEWER AND WATER MAIN INSTALLATION. SEE G SHEET FOR LOCATION OF THESE ITEMS.
15	-	52	SEE G SHEET FOR EXISTING CONTROL, BENCHMARKS, AND ALIGNMENT.
16	CONTRACTOR SHALL SUPPLY CERTIFIED PLANT INSPECTION. INCLUDES RAILING ON BRIDGE DECK AND SW WINGWALL. SEE DETAILS ON V SHEETS.	53	SEE G SHEET FOR EXISTING CONTROL, BENCHMARKS, AND ALIGNMENT. A DIGITAL FILE IN XML FORMAT OF THE FINISHED PROPOSED TOP GRADING SURFACE, CENTERLINE ALIGNMENTS FOR N PINE ST AND LINCOLN WAY, AND CENTERLINE PROFILES WILL BE PROVIDED UPON REQUEST.
17	SEE M SHEETS	54	SEE J SHEETS FOR LOCATIONS AND C SHEETS FOR TABULATION. CROSS WALK MARKINGS SHOWN AT 6' WIDTH. THE STANDARD LINE FACTOR FOR CBW6 LINE TYPE OF 10 WILL BE USED TO CALCULATE PAYMENT FOR CROSSWALKS.
18	SEE M SHEETS.	55	INSTALL AT EACH END OF THE PROJECT AND ON LINCOLN WAY, AND INSTALL HAZARD CLOSURES IN THE BRIDGE AREA.
19	SEE TABULATION AND DETAIL ON SHEET MSA.1. CONTRACTOR SHALL FURNISH CERTIFIED PLANT INSPECTION FOR ANY CAST IN PLACE COMPONENTS.	56	INCLUDES PEDESTRIAN PROTECTION. INCLUDES DETOUR SIGNING AS INDICATED ON THE J SHEET.
20	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. CONTRACTOR SHALL FURNISH CERTIFIED PLANT INSPECTION FOR ANY CAST IN PLACE COMPONENTS. VERIFICATION OF CURRENT PIPE LOCATIONS MAY BE REQUIRED FOR STRUCTURE MH 10 PRIOR TO FINALIZING APPROVAL OF SHOP DRAWINGS.	57	ANY TEMPORARY STREAM CROSSINGS USED DURING CONSTRUCTION SHALL BE PER STANDARD ROAD PLAN EW-401 AND 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).
21	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. CONTRACTOR SHALL FURNISH CERTIFIED PLANT INSPECTION FOR ANY CAST IN PLACE COMPONENTS.	58	SEE MWM.2 FOR LOCATIONS AND MWM.1 FOR TABULATION. INCLUDES TRACER WIRE. PIPE BACKFILL UNDER AND WITHIN 5' OF PAVEMENT SHALL MEET GRADATION NO. 32 AND SHALL BE INCLUDED IN THE COST OF PIPE INSTALLATION.
22	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. CONTRACTOR SHALL FURNISH CERTIFIED PLANT INSPECTION FOR ANY CAST IN PLACE COMPONENTS.	59	SEE MWM.2 FOR LOCATIONS AND MWM.1 FOR TABULATION. INCLUDES TRACER WIRE. PIPE BACKFILL UNDER AND WITHIN 5' OF PAVEMENT SHALL MEET GRADATION NO. 32 AND SHALL BE INCLUDED IN THE COST OF PIPE INSTALLATION.
23	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. CONTRACTOR SHALL FURNISH CERTIFIED PLANT INSPECTION FOR ANY CAST IN PLACE COMPONENTS.	60	SEE MWM.2 FOR LOCATIONS AND MWM.1 FOR TABULATION. ADDITIONAL 15% ADDED TO ACCOUNT FOR UNFORSEEN CONDITIONS REQUIRING ADDITIONAL FITTINGS. USE OF FITTINGS NOT CALLED FOR IN THE TABULATION SHALL BE APPROVED BY THE ENGINEER.
24	AT ABUTMENTS. MAIN ABUTMENT BODY PILES ARE TO BE INSTALLED IN PREBORED HOLES WITH ROCK CORES. SEE PILE DRIVING AND ROCK CORING NOTES ON V.3.	61	SEE MWM.2 FOR LOCATIONS. SEE MWM.1 FOR TABULATION.
25	AT ABUTMENT PILES. SEE V.3 FOR HOW PREBORE QUANTITIES WERE ESTIMATED. THE FOLLOWING COSTS SHALL BE INCIDENTAL TO THE CONSTRUCTION PRICE: PREBORING TO THE TOP OF THE BEDROCK TO OBTAIN ACCESS FOR ROCK CORING, DISPOSING OF ALL EXCAVATED MATERIAL, ANY CASING REQUIRED TO KEEP HOLE OPEN, AND BACKFILLING THE HOLES FROM THE TOP OF ROCK SOCKET CONCRETE TO THE BOTTOM OF FOOTING ELEVATION WITH SATURATED SAND MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 4110, GRADATION 1.	62	SEE MWM.2 FOR LOCATIONS. SEE MWM.1 FOR TABULATION.
26	FOR SUBDRAIN UNDER THE ROADWAY PCC PAVEMENT AS SHOWN ON THE B SHEETS AND WITH THE LAYOUT SHOWN ON SHEET M.2. SUBDRAIN FOR BRIDGE ABUTMENTS IS NOT INCLUDED IN THIS ITEM AND IS INCIDENTAL TO OTHER BID ITEMS AS NOTED ON THE V SHEETS.	63	
27	FOR CONNECTION TO INTAKES AS SHOWN ON SHEET M.2.	64	HYDRANT TO BE A MUELLER SUPER CENTURION. EXTERIOR COATING TO BE MANUFACTURER-APPLIED YELLOW BODY WITH GREEN BONNET AND CAPS. INCLUDES DISINFECTION, BLOW OFF AND ADDITIONAL FITTINGS AS REQUIRED. SEE MWM.2 FOR LOCATIONS. SEE MWM.1 FOR TABULATION.
28	FOR OUTLET OF ROADWAY SUBDRAINS AS SHOWN ON SHEET M.2. OUTLETS OF THE SUBDRAIN FOR BRIDGE ABUTMENTS ARE NOT INCLUDED IN THIS ITEM AND IS INCIDENTAL TO OTHER BID ITEMS AS NOTED ON THE V SHEETS.	65	
29	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. ALL JOINTS TO BE RUBBER O-RING OR PROFILE GASKETED JOINTS. BEDDING SHALL BE CLASS R-1. PIPE BACKFILL UNDER AND WITHIN 5' OF PAVEMENT SHALL MEET GRADATION NO. 32 AND SHALL BE INCLUDED IN THE COST OF PIPE INSTALLATION.	66	FOR USE TO CONFIRM THE LOCATION OF WATER MAIN, EXISTING STORM SEWER CONNECTION, OR OTHER SIMILAR ITEM IF NECESSARY AND IF PRIOR APPROVAL IS GRANTED BY THE ENGINEER. THIS PAY ITEM CAN BE USED FOR EXCAVATION EFFORTS TO LOCATE EXISTING PRIVATE UTILITIES THAT ARE IN DIRECT CONFLICT WITH PROPOSED PROJECT ELEMENTS IF THAT EXCAVATION MUST OCCUR AS A SEPARATE OPERATION FROM EFFORTS OTHERWISE ALREADY ASSOCIATED WITH INSTALLATION OF THE PROPOSED PROJECT ELEMENTS AS DETERMINED BY THE ENGINEER. METHOD OF MEASUREMENT: BY THE 0.25 HOUR INCREMENT FOR TIME SPENT PERFORMING ACTIVE EXCAVATION TO LOCATE THE EXISTING UTILITY LINE AND BACKFILLING ANY EXCAVATION. BASIS OF PAYMENT: ITEM SHALL BE FULL COMPENSATION FOR ALL EQUIPMENT, LABOR, AND MATERIALS NEEDED FOR EXCAVATION AND BACKFILLING OPERATIONS TO LOCATE THE EXISTING UTILITY LINE.
30	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. ALL JOINTS FROM APRONS TO THE FIRST INTAKE UPSTREAM SHALL BE TIED. ALL JOINTS TO BE RUBBER O-RING OR PROFILE GASKETED JOINTS. BEDDING SHALL BE CLASS R-1. PIPE BACKFILL UNDER AND WITHIN 5' OF PAVEMENT SHALL MEET GRADATION NO. 32 AND SHALL BE INCLUDED IN THE COST OF PIPE INSTALLATION.	67	AT BRIDGE ABUTMENTS. METHOD OF MEASUREMENT-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. BASIS OF PAYMENT: THE PRICE BID INCLUDES THE COST OF PREDRILLING 16 INCH DIAMETER ROCK SOCKETS INTO BEDROCK. THE QUANTITY OF 'ROCK CORING' IS BASED ON CORING 3 FEET INTO THE ROCK FOR SEVEN PILES IN EACH ABUTMENT (DOES NOT INCLUDE WING PILES). THE FOLLOWING COSTS SHALL BE INCIDENTAL TO THE CONSTRUCTION PRICE: DRILLING THE BEDROCK, DISPOSING OF ALL EXCAVATED MATERIAL, ANY CASING REQUIRED TO KEEP HOLE OPEN, AND FURNISHING AND PLACING CLASS 'C' STRUCTURAL CONCRETE TO BACKFILL THE SOCKET TO THE REQUIRED ELEVATION. IF ABUTMENT PILES CAN BE DRIVEN TO A MINIMUM 27 FEET OF LENGTH BELOW ABUTMENT FOOTING, NO MEASUREMENT OR PAYMENT WILL BE MADE FOR 'CORING ROCK SOCKET'. SEE NOTES ON V.3.
31	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. ALL JOINTS FROM APRONS TO THE FIRST INTAKE UPSTREAM SHALL BE TIED. ALL JOINTS TO BE RUBBER O-RING OR PROFILE GASKETED JOINTS. BEDDING SHALL BE CLASS R-1. PIPE BACKFILL UNDER AND WITHIN 5' OF PAVEMENT SHALL MEET GRADATION NO. 32 AND SHALL BE INCLUDED IN THE COST OF PIPE INSTALLATION.	68	ALL DISTURBED AREAS OUTSIDE STREAMBED WITHOUT STONE OR PAVEMENT. REFER TO SHEET RR.1. QUANTITY IN PLANS HAS ADDITIONAL UNDISTRIBUTED AREA ASSUMED COMPARED TO AREAS ASSUMED FOR TOPSOIL AS AN ALLOWANCE FOR ADDITIONAL DISTURBED AREAS WITHIN TEMPORARY EASEMENTS THAT MAY NEED TO BE RESEEDDED. QUANTITY IN PLANS ASSUMES MULCHING MAY BE NEEDED FOR BOTH STABILIZING CROP AND FINAL PERMANENT SEEDING APPLICATIONS. SUBSTITUTION OF HYDRAULIC MULCHING PER SECTION 2601. E. 2. WILL BE ALLOWED.
32	SEE TABULATION ON SHEET M.1 AND DETAIL ON SHEET M.2. ALL JOINTS TO BE RUBBER O-RING OR PROFILE GASKETED JOINTS. BEDDING SHALL BE CLASS R-5. PIPE BACKFILL UNDER AND WITHIN 5' OF PAVEMENT SHALL MEET GRADATION NO. 32 AND SHALL BE INCLUDED IN THE COST OF PIPE INSTALLATION.	69	FOR USE AT LOCATION AS NOTED ON SHEET RR.1. QUANTITY IN PLANS HAS ADDITIONAL UNDISTRIBUTED AREA ASSUMED COMPARED TO AREAS ASSUMED FOR TOPSOIL AS AN ALLOWANCE FOR ADDITIONAL DISTURBED AREAS WITHIN TEMPORARY EASEMENTS THAT MAY NEED TO BE RESEEDDED.
33	FOR REMOVAL OF EXISTING STORM SEWER IN CONFLICT WITH THE PROPOSED PROJECT. ONE SYSTEM OF 18 IN DIA PIPE IS UNDER LINCOLN WAY FROM APPROX STA 30+85 TO STA 36+60 LT AND OUTLETS INTO THE STREAM. REMOVAL OF CONCRETE AND MATERIALS AT OUTLET OF PIPE IS CONSIDERED INCIDENTAL TO THIS ITEM. REMOVAL AT POINT OF CONNECTION TO NEW STORM SEWER SHALL BE COMPELTED WITH A SAWCUT OR AN EXISTING PIPE JOINT. THE SECOND 18 IN DIA PIPE IS THE OUTLET OF THE INTAKE AT THE LOW POINT OF THE ROADWAY NORTH OF THE BRIDGE FROM APPROXIMATELY STA 32+08 TO 32+33 RT.	70	FOR USE IF NEEDED AS AN EROSION CONTROL MEASURE DURING SEQUENCING OF GRADING OR IF SEEDING SEASON REQUIREMENTS OF STANDARD SPECIFICATIONS DELAYS PLACEMENT OF PERMANENT SEEDING. QUANTITY INDICATED IN THE PLANS ASSUMED TO BE THE SAME AS THE PERMANENT URBAN SEED AREA.
34	SEE TABULATION AND DETAIL ON SHEET MSA.1. PIPE SHALL BE C900 DR18. PIPE BACKFILL UNDER AND WITHIN 5' OF PAVEMENT SHALL MEET GRADATION NO. 32 AND SHALL BE INCLUDED IN THE COST OF PIPE INSTALLATION. CONNECTIONS TO EXISTING SANITARY PIPE AND COUPLINGS SHALL BE INCLUDED IN THE COST OF THE PIPE INSTALLATION.	71	FOR USE ON SLOPES TO PREVENT EROSION AND AS PERIMETER CONTROL TO PREVENT SEDIMENT FROM LEAVING SITE. PRELIMINARY DEVICE LOCATIONS ARE SHOWN ON SHEET RR.1. PRIOR TO PLACEMENT, VERIFY LOCATIONS WITH THE ENGINEER. BID QUANTITY INCLUDES 20% ADDITIONAL QUANTITY FOR FIELD ADJUSTMENTS AND REPLACEMENT.
35	PLACED UNDER THE REVETMENT AS SHOWN ON SHEET RR.1. NOTE ANCHORAGE OF THE ENGINEERING FABRIC AS PER THE DETAILS ON SHEET B.3. FABRIC UNDER REVETMENT SHALL BE INSTALLED AS SOON AS BERM GRADING IS COMPLETE AS EROSION CONTROL MEASURE. IF ENGINEERING FABRIC IS NOT IMMEDIATELY INSTALLED, SILT FENCE OR PERIMETER AND SLOPE CONTROL DEVICE SHALL BE INSTALLED TO PREVENT EROSION INTO THE STREAM.	72	REMOVE DEVICES ONLY WITH APPROVAL OF THE ENGINEER. THE CITY OF WEST UNION MAY ELECT TO REMOVE SOME OF THE SILT FENCE STILL IN PLACE AT THE END OF THE PROJECT.
36	PLACED AS SHOWN ON THE RR.1 SHEET.	73	THIS ITEM IS INCLUDED FOR CLEANOUT AND REPAIR OF THE SILT FENCE DURING THE PROJECT. BID QUANTITY IS ESTIMATED TO BE ABOUT 50% OF THE BID QUANTITY FOR SILT FENCE.
37	PAVEMENT TYPE INCLUDES BOTH PCC AND HMA FOR DIFFERENT SEGMENTS OF THE PROJECT AS INDICATED ON THE B SHEET TYPICAL SECTIONS. NO INFORMATION ON EXISTING PAVEMENT THICKNESS WAS AVAILABLE. CONCRETE ROAD PAVEMENT IS ANTICIPATED TO BE 7" TO 9" TYPICAL THICKNESS. HMA PAVEMENT THICKNESS IS ANTICIPATED TO BE 4" TO 6" IN TOTAL THICKNESS. INCLUDES AREA OF CONCRETE CURB AND GUTTER ADJACENT TO HMA PAVEMENT. SAWCUT A CLEAN EDGE OF REMAINING PAVEMENT AT ALL REMOVAL LIMITS. MEASUREMENT FOR REMOVAL OF PAVEMENT WILL BE THE SQUARE YARDS SHOWN IN THE CONTRACT DOCUMENTS.	74	PLACED TO PREVENT TRACKING ON PUBLIC STREETS. CONFIRM PLACEMENT LOCATIONS WITH THE ENGINEER. DUE TO SHORT PROJECT LENGTH, QUANTITY IN PLANS ASSUMES EACH ENTRANCE IS ONLY 50 LF.
		75	FOR USE ALONG THE STREAM PRIOR TO PLACEMENT OF EROSION FABRIC AND REVETMENT, OR AT OTHER LOCATIONS AS DIRECTED BY ENGINEER. PRELIMINARY DEVICE LOCATIONS ARE SHOWN ON SHEET RR.1. MAY BE USED INSTEAD OF SILT FENCE AT LOCATIONS IDENTIFIED FOR USE OF SILT FENCE. PRIOR TO PLACEMENT, VERIFY LOCATIONS WITH ENGINEER. BID QUANTITY INCLUDES 30% ADDITIONAL QUANTITY FOR FIELD ADJUSTMENTS AND REPLACEMENT.
		76	REMOVE DEVICES ONLY WITH APPROVAL OF THE ENGINEER. THE CITY OF WEST UNION MAY ELECT TO REMOVE SOME OF THE SILT FENCE STILL IN PLACE AT THE END OF THE PROJECT.

 **800 556-4491**

CITY OF WEST UNION

PROJECT NUMBER BRM-8295(604)--8N-33

QUANTITIES AND REFERENCE NOTES

SHEET: C.2

REV: .

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105-4 10-20-26		
STANDARD ROAD PLANS		
The following Standard Road Plans apply to construction work on this project.		
Number	Date	Title
DR-101	04-18-17	Pipe Culvert (Bedding and Backfill)
DR-104	04-19-16	Depth of Cover Tables for Concrete and Corrugated Pipe
DR-201	10-17-23	Concrete Aprons
DR-303	10-17-17	Subdrains (Longitudinal)
DR-305	04-19-22	Subdrain Outlets (Standard Subdrain, Pressure Release and Special)
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-303	10-19-21	Stabilized Construction Entrance
EW-101	10-17-17	Embankment and Rebuilding Embankments
EW-401	10-20-15	Temporary Stream Crossing, Causeway, or Equipment Pad
MI-220	04-15-25	Detectable Warnings and Pedestrian Ramp
PM-110	10-15-24	Line Types
PV-101	10-20-26	Joints
PV-102	10-21-25	PCC Curb Details
PV-103	10-21-25	Manhole Boxouts in PCC Pavement
SI-101	04-19-16	Locations - Type 'A' Signs
SI-111	04-19-16	Support Structures - Wood Posts
SI-172	10-18-22	Delineators
SW-101	10-21-25	Trench Bedding and Backfill Zones
SW-102	10-21-25	Rigid Gravity Pipe Trench Bedding
SW-211	10-21-25	Storm Sewer Pipe Connections
SW-401	10-21-25	Circular Storm Sewer Manhole
SW-501	10-21-25	Single Grate Intake
SW-502	10-21-25	Circular Single Grate Intake
SW-505	10-21-25	Double Grate Intake
SW-601	10-21-25	Castings for Sanitary Sewer Manholes
SW-602	10-21-25	Castings for Storm Sewer Manholes
SW-603	10-21-25	Castings for Grate Intakes
TC-001	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-211	10-15-19	Lane Closure on Low Volume Roadway
TC-212	04-18-23	Spot Location Lane Closure with Flaggers
TC-252	10-20-26	Routes Closed to Traffic
TC-601	10-15-19	Pedestrian Detour
WM-102	10-21-25	Tracer System
WM-201	10-21-25	Fire Hydrant Assembly

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 CITY. 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. 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 CITY.

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

THE EXISTING BRIDGE DOES NOT CONTAIN ANY PAINTED STEEL SURFACES TO TEST FOR LEAD OR CHROMIUM. NO SUSPECT ASBESTOS MATERIALS ARE KNOWN. IF HAZARDOUS MATERIALS ARE DISCOVERED DURING CONSTRUCTION, CEASE WORK AND NOTIFY CONTRACTING AUTHORITY.

TABULATION OF SAFETY CLOSURES			
Refer to Section 2518 of the Standard Specifications			
STATION	CLOSURE TYPE		REMARKS
	Road Qty.	Hazard Qty.	
30+50	1		BEGINNING OF PAVING (N. PINE ST)
31+50		1	SOUTH ABUTMENT (N. PINE ST)
32+50		1	NORTH ABUTMENT (N. PINE ST)
33+65	1		END OF PAVING (N. PINE ST)
50+80	1		BEGINNING OF PAVING (LINCOLN WAY)

282.03 9/28/22
TEMPORARY STREAM CROSSING, CAUSEWAY, OR EQUIPMENT PAD
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.

UTILITY NOTES:

THE FOLLOWING NOTES ARE BASED UPON UTILITY COORDINATION COMPLETED AS PART OF THE PROJECT DESIGN PROCESS. THIS INFORMATION IS PROVIDED AS A SUPPLEMENT TO THE CONTRACTOR'S RESPONSIBILITIES UNDER THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

ALLIANT ENERGY
ALLIANT ENERGY HAS AN OVERHEAD LINE AND UTILITY POLES ALONG THE EAST SIDE OF N. PINE STREET AND UNDERGROUND ELECTRIC FACILITIES NEAR THE SOUTH END OF THE PROJECT ALONG N PINE STREET AND LINCOLN WAY THAT WILL BE IN CONFLICT WITH PROPOSED PROJECT ELEMENTS.

FOR THE OVERHEAD ELECTRIC LINES AND POLES, ALLIANT ENERGY HAS INDICATED THAT WITH SUFFICIENT PRIOR NOTICE THEY WILL BE ABLE TO TAKE DOWN OVERHEAD LINES AND REMOVE/RELOCATE POLES WITHIN THE PROJECT LIMITS DURING CONSTRUCTION ACTIVITIES THAT MAY NEED OVERHEAD CLEARANCE THAT IS NOT OTHERWISE AVAILABLE IF THE WIRES ARE PRESENT. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF THREE WEEKS NOTICE TO ALLIANT ENERGY AND THE ENGINEER PRIOR TO NEEDING ADJUSTMENTS COMPLETED TO ALLOW CONSTRUCTION OR TO PROVIDE SUFFICIENT CLEARANCES. THE CONTRACTOR SHALL PROVIDE THE UTILITY WITH A SCHEDULE OF WHEN WORK ACTIVITIES REQUIRING THE ADDITIONAL CLEARANCE WILL BE COMPLETED TO ALLOW THE FACILITIES TO BE REINSTALLED.

ALLIANT ENERGY HAS AN UNDERGROUND ELECTRIC LINE THAT CROSSES UNDER N. PINE ST FROM APPROXIMATELY STA 30+70 TO STA 31+10 AND EXTENDING ALONG THE SOUTH SIDE OF LINCOLN WAY. THE FACILITY APPEARS TO BE IN CONFLICT WITH THE PROPOSED STORM SEWER AND ALSO POSSIBLY THE WATER AND SANITARY SEWER FACILITIES BUT IS NOT WITHIN THE FOOTPRINT OF THE PROPOSED BRIDGE. ALLIANT ENERGY INDICATES THAT PRIOR TO CONSTRUCTION THEY WILL BE ABLE TO TEMPORARILY DE-ENERGIZE AND ABANDON IN PLACE THIS SEGMENT OF THE UNDERGROUND FACILITY. ANY REINSTALLATION OF THIS FACILITY BY ALLIANT ENERGY WOULD BE COMPLETED AFTER CONSTRUCTION IS COMPLETE.

BLACK HILLS ENERGY
BLACK HILLS ENERGY HAS EXISTING GAS FACILITIES WITHIN THE PROJECT LIMITS. BASED UPON INFORMATION PROVIDED BY THE UTILITY, THIS INCLUDES AN UNDERGROUND STEEL GAS LINE RUNNING GENERALLY NORTH-SOUTH ALONG THE WEST SIDE OF N. PINE ST., INCLUDING CROSSING UNDER LINCOLN WAY, AND A STEEL GAS SERVICE LINE CROSSING UNDER N PINE ST NEAR STA 32+25.

BLACK HILLS ENERGY INDICATES THAT THE SERVICE LINE CROSSING N PINE STREET THAT APPEARS TO BE IN CONFLICT WITH THE NORTH BRIDGE ABUTMENT WILL BE RELOCATED PRIOR TO CONSTRUCTION. THE INTENT OF THE UTILITY IS TO RELOCATE THE SERVICE LINE TO CROSS THE ROAD FURTHER NORTH ALONG N. PINE ST. AT A LOCATION THAT IS ANTICIPATED TO STILL BE WITHIN THE PROJECT LIMITS BUT AT SUFFICIENT DEPTH TO AVOID CONFLICT WITH PROPOSED PROJECT ELEMENTS.

BLACK HILLS ENERGY INDICATES THAT THE UTILITY INTENDS TO RELOCATE DURING CONSTRUCTION THE PORTION OF THE GAS LINE FACILITY ON THE WEST SIDE OF N. PINE STREET AND AT THE LINCOLN WAY INTERSECTION THAT IS EXPECTED TO BE IN CONFLICT WITH PROPOSED PROJECT ELEMENTS. THE GAS LINE APPEARS TO BE IN CONFLICT WITH THE PROPOSED STORM SEWER AND POSSIBLY THE WATER AND SANITARY SEWER FACILITIES BUT IS NOT WITHIN THE FOOTPRINT OF THE PROPOSED BRIDGE. THE INTENT IS FOR WORK TO BE COMPLETED BY BLACK HILLS ENERGY DURING CONSTRUCTION IN COORDINATION WITH THE CONTRACTOR'S SCHEDULE TO ALLOW CONFIRMATION THAT THE FINAL LOCATION OF THE RELOCATED LINE AVOIDS CONFLICT WITH ANY PROJECT ELEMENTS OR CONTRACTOR OPERATIONS. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO WEEKS OF NOTICE TO BLACK HILLS ENERGY AND THE ENGINEER PRIOR TO THE CONTRACTOR'S SCHEDULE REQUIRING THAT THE ADJUSTMENT BE COMPLETED. BLACK HILLS ENERGY INDICATES THIS NOTIFICATION TIMELINE WILL ALLOW FOR SCHEDULING OF A COORDINATION MEETING BETWEEN BLACK HILLS ENERGY AND THE CONTRACTOR AND THEN SUBSEQUENT COMPLETION OF THE RELOCATION.

NORTH FAYETTE VALLEY SCHOOL DISTRICT
NORTH FAYETTE VALLEY SCHOOL DISTRICT HAS AN EXISTING UNDERGROUND FIBER CONDUIT LOCATED ALONG THE EAST SIDE OF N. PINE ST. WITHIN THE PROJECT LIMITS. BASED UPON INFORMATION PROVIDED BY THE SCHOOL DISTRICT, THE FIBER CONDUIT IS UNDERSTOOD TO BE JUST TO THE EAST OF THE EXISTING SIDEWALK AND PEDESTRIAN BRIDGE STRUCTURE, WITH THE EXACT DEPTH NOT DETERMINED. THE FACILITY OWNER INDICATES A COPPER TRACE WIRE WAS INSTALLED APPROXIMATELY 1' ABOVE THE FIBER CONDUIT. THE FACILITY OWNER INDICATES NO CONFLICTS ARE ANTICIPATED WITH FINAL PROPOSED PROJECT ELEMENTS AND THAT NO CHANGES OR ADJUSTMENTS ARE PLANNED PRIOR TO CONSTRUCTION. THE FIBER LINE MAY BE ENCOUNTERED DURING TEMPORARY EXCAVATION FOR SOME PROJECT ELEMENTS INCLUDING BUT NOT LIMITED TO THE PROPOSED WATER MAIN OR SANITARY SEWER. THE CONTRACTOR SHALL USE CAUTION WHEN WORKING AROUND THE EXISTING FACILITY.

LUMEN/CENTURYLINK
LUMEN HAS AN UNDERGROUND CABLE ON THE EAST SIDE OF NORTH PINE STREET THAT IS IN CONFLICT WITH THE PROPOSED CONSTRUCTION. BASED UPON INFORMATION PROVIDED BY THE UTILITY, LUMEN WILL COMPLETE ADJUSTMENTS TO ALLOW THE FACILITY TO BE ABANDONED IN PLACE AND NO LONGER ACTIVE PRIOR TO CONSTRUCTION TO RESOLVE THE CONFLICT.

MEDIACOM
MEDIACOM HAS FACILITIES ALONG NORTH PINE STREET TO THE NORTH AND SOUTH OF, BUT NOT WITHIN, THE PROJECT LIMITS. NO MEDIACOM FACILITIES ARE EXPECTED TO BE IMPACTED BY THE PROJECT AND NO ADJUSTMENTS ARE PLANNED.

HAWKEYE TELEPHONE
HAWKEYE TELEPHONE HAS FACILITIES JUST BEYOND THE PROJECT LIMITS TO THE SOUTH END ALONG NORTH PINE STREET AND TO THE WEST ALONG LINCOLN WAY. NO HAWKEYE TELEPHONE FACILITIES ARE EXPECTED TO BE IMPACTED BY THE PROJECT AND NO ADJUSTMENTS ARE PLANNED.

24050 BRIDGE REPLACEMENT, CCS N. PINE ST., WEST UNION, IOWA							
EARTHWORK SUMMARY							
LOCATION	A	B	C	D	E	F	G
	TOTAL ROADWAY CUT UNADJUSTED	UNUSABLE EXISTING PAVEMENT VOLUME	TOTAL ROADWAY CUT, ADJUSTED (EXCAVATION, CLASS 10, ROADWAY & BORROW)	TOTAL ROADWAY FILL, ADJUSTED (1.3 SHRINK FACTOR)	CHANNEL AREA CUT, UNADJUSTED (EXCAVATION, CLASS 13, CHANNEL)	CHANNEL AREA FILL, ADJUSTED (1.3 SHRINK FACTOR)	CLASS 20 EXCAVATION
SOUTH OF BRIDGE	367	85	282	22	-	-	-
SOUTH BRIDGE BERM	-	-	-	-	270	35	-
NORTH OF BRIDGE	447	44	403	29	-	-	-
NORTH BRIDGE BERM	-	-	-	-	1146	6	-
BRIDGE (SOUTH ABUTMENT)	-	-	-	-	-	-	75
BRIDGE (NORTH ABUTMENT)	-	-	-	-	-	-	75
TOTALS:	814 CY	129 CY	685 CY	51 CY	1416 CY	41 CY	150 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 - QUANTITIES WERE ADJUSTED FOR PAVEMENT REMOVALS. IT WAS ASSUMED 7" FOR EX PCC AND 4" FOR EX HMA. - CLASS 21 AND CLASS 22 WERE NOT INCLUDED IN EXCAVATION QUANTITIES TABLE AS THEY ARE BOTH ASSUMED WASTE.							

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112-06 10/20/2026																				
BRIDGE APPROACH SECTION																				
Refer to BR Series.																				
* Not a Bid Item																				
Bridge Station	End	Skew Ahead Left (Degrees)	Skew Ahead Right (Degrees)	(T) Thickness (IN)	Pay Length	Non-Reinf. Area (SY)	Single Reinf. Area (SY)	Double-Reinf. Area (SY)	SRP Approach	SRP Abutment Type	SRP Abutting Pavement	Perforated * 4" Subdrain (LF)	Subdrain * Outlet (STA)	Subdrain * Outlet Side	Porous * Backfill (CY)	Class 'A' * Crushed Stone Backfill (CY)	Modified * Subbase (TON)	Polymer * Grid (SY)	Special * Backfill (TON)	Remarks
31+24.02	N	15.00		10"	SEE U SHTS			123.30									125			SEE U SHEETS
32+65.97	S	15.00		10"	SEE U SHTS			115.80									115			SEE U SHEETS

113-01

3/29/2024

SIDEWALKS

See MI-220 and S Sheets

Line No.	Intersection/Road	Quadrant/Side	Side	A (FT)	B (FT)	S %	Sidewalk Thickness (IN)	Sidewalk Length (FT)	Sidewalk Width (FT)	Sidewalk Area (SY)	4" PCC Sidewalk (SY)	6" PCC Sidewalk (SY)	8" PCC Sidewalk (SY)	10" PCC Sidewalk (SY)	Detectable Warnings (SF)	Remarks
1	NORTH PINE ST	SE	Right	Varies	Varies	Varies	6					77.0			10	SEE S SHEETS
2	NORTH PINE ST	NE	Right	Varies	Varies	Varies	6					147.4			0	SEE S SHEETS
3	NORTH PINE ST	SW	Left	Varies	Varies	Varies	6					14.3			20	SEE S SHEETS
4	NORTH PINE ST	NW	Left	Varies	Varies	Varies	6					5.4			10	SEE S SHEETS

108 22

11/25/25

PAVEMENT MARKING LINE TYPES

Line factors based on 6-inch wide continuous line.

*BCY4 - Place on the same side of the roadway to match existing markings near the project.

**NPY4 - Estimating purposes only. No Passing Zone Lines will be located in the field.

***MNY6 - Factor of 1.00 includes number of 6-inch passes to cover median nose area.

BCY4: Broken Centerline (Yellow) @ 0.17

BCY6: Broken Centerline (Yellow) @ 0.25

BLC6: Broken Line Contrast (White/Black) @ 0.50

BLW4: Broken Lane Line (White) @ 0.17

BLW6: Broken Lane Line (White) @ 0.25

CBW6: Crosswalk Bar (White) @ 10.00

CHW8: Channelizing Line (White) @ 1.33

CHW10: Channelizing Line (White) @ 1.67

CHY8: Channelizing Line (Yellow) @ 1.33

CHY10: Channelizing Line (Yellow) @ 1.67

CLW6: Crosswalk Line (White) @ 2.00

DCY4: Double Centerline (Yellow) @ 1.34

DCY6: Double Centerline (Yellow) @ 2.00

DDY4: Double Dotted Line (Yellow) @ 0.44

DDY6: Double Dotted Line (Yellow) @ 0.67

DLW4: Dotted Line (White) @ 0.22

DLW6: Dotted Line (White) @ 0.33

DLY4: Dotted Line (Yellow) @ 0.22

DLY6: Dotted Line (Yellow) @ 0.33

ELW4: Edge Line Right (White) @ 0.67

ELW6: Edge Line Right (White) @ 1.00

ELY4: Edge Line Left (Yellow) @ 0.67

ELY6: Edge Line Left (Yellow) @ 1.00

LDW8: Lane Drop (White) @ 0.33

LDW10: Lane Drop (White) @ 0.42

MNY6: Median Nose (Yellow) @ 1.00

NPY4: No Passing Zone Line (Yellow) @ 0.84

NPY6: No Passing Zone Line (Yellow) @ 1.25

RLW4: Ramp Edge Line Right (White) @ 0.67

RLW6: Ramp Edge Line Right (White) @ 1.00

RLY4: Ramp Edge Line Left (Yellow) @ 0.67

RLY6: Ramp Edge Line Left (Yellow) @ 1.00

SLW2: Stop Line (White) @ 4.00

SLW4: Solid Lane Line (White) @ 0.67

SLW6: Solid Lane Line (White) @ 1.00

SPW4: Sloped Curb 4" (White) @ 2.16

SPW6: Sloped Curb 6" (White) @ 2.28

SPY4: Sloped Curb 4" (Yellow) @ 2.16

SPY6: Sloped Curb 6" (Yellow) @ 2.28

STW6: Standard Curb 6" (Yellow) @ 2.03

STY6: Standard Curb 6" (Yellow) @ 2.03

YLW2: Yield Line (White) @ 1.15

Line No.	Road ID	Station From	Station To	Lane	Marking Type	Left	Center	Right	Groove Marking Needed?	Groove Qty. (STA)	BCY4* Factored (STA)	BLW4 Factored (STA)	CBW6 (STA)	DCY4 Factored (STA)	ELY4 Factored (STA)	SLW2 (STA)	Remarks
1.0	LINCOLN WAY	31+10.00	31+40.00	2-Lane	Waterborne/Solvent Paint								0.30				5' WIDE CROSS WALK ON LINCOLN WAY
2.0	NORTH PINE ST	30+97.58	30+97.42	2-Lane	Waterborne/Solvent Paint								0.34				5' WIDE CROSS WALK ON N PINE ST
3.0	LINCOLN WAY	31+12.48	31+26.58	2-Lane	Waterborne/Solvent Paint											0.14	

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190-51																								
02-10-23																								
MATERIALS FOR TYPE 'A' SIGNS																								
TYPE A SIGNING TYPICALS	SIGN NUMBER	DIR OF TRAVEL	SIGN LOCATION	WOOD POSTS		PERFORATED SQUARE STEEL TUBE						Steel Rect. Tube			TYPE A SIGN MOUNTING BRACKETS						INSTALLATION			REMARKS
				NO. OF POSTS	4 x 6		LEG 1 FT	LEG 2 FT	LEG 3 FT	ANCHOR			NO. OF POSTS	POST LENGTH FT	ANCHORS EACH	ONE POST BRACKET	TWO POST	AUXILIARY	H	F	F1	TYPE	DIM 'X' FT	
			LEG 1		LEG 2	CONC				SOIL	SLIPBASE													
			STATION		FT	FT				FT	FT	FT												
	S1-1	NB	30+89.09, 19.23' R	0																				TO BE MOUNTED WITH EXISTING W16-7P
	S1-1	SB	32+74.91, 20.75' L	1	12																			
	W16-9P	SB	32+74.91, 20.75' L																					TO BE MOUNTED ON SAME POST AS S1-1

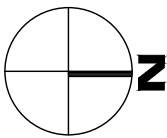
190-61									
02-10-23									
EXISTING SIGNS TO BE REINSTALLED									
SIGN DESCRIPTION	DIRECTION OF TRAVEL	LOCATION STATION	NUMBER OF POSTS	SQUARE TUBE STEEL POSTS	WOOD POSTS		INSTALLATION		SEE SIGNING NOTES
					4" x 4"	4" x 6"	TYPE	DIM 'X'	
					LF	LF			
D3-1 (2)	NB	30+97.61					A		NEW STA 31+51.24
R1-1	EB	31+03.76	1.0		12.0		A		NEW STA 31+07.63
S1-1	SB	31+51.85	1.0		12.0		A		NEW STA 31+01.89
W16-7P	NB	31+20.64	1.0		12.0		A		NEW STA 30+89.09, S1-1 TO BE REPLACED
R2-1 25 MPH	NB	32+77.27	1.0		12.0		A		NEW STA SAME AS EXISTING

190-66 09-29-23			
SUMMARY OF TYPE 'A' SIGNS			
Sign Number	Quantity	Size	Total Sign Area
	EACH	IN	SF
S1-1	2	36 X 36	9.0
W16-9P	1	24 X 12	2.0

190_62
2/13/23

EXISTING SIGNS TO BE REMOVED										
This Data Entry Sheet fills Tab 190-62 effective 10-15-13										
SIGN NUMBER OR DESCRIPTION	LOCATION STATION	DIRECTION OF TRAVEL	TYPE 'A' SIGN ASSEMBLY	TYPE 'B' SIGN ASSEMBLY	REMOVE & REINSTALL EXISTING SIGNS		CONCRETE FOUNDATION	SUPPORT STRUCTURE & FOUNDATION	APPLICABLE SIGNING NOTES	REMARKS
										
			EACH	EACH	EACH	EACH	EACH	EACH		
WEIGHT LIMIT	31+45.34	NB	1							
WEIGHT LIMIT	32+10.72	SB	1							

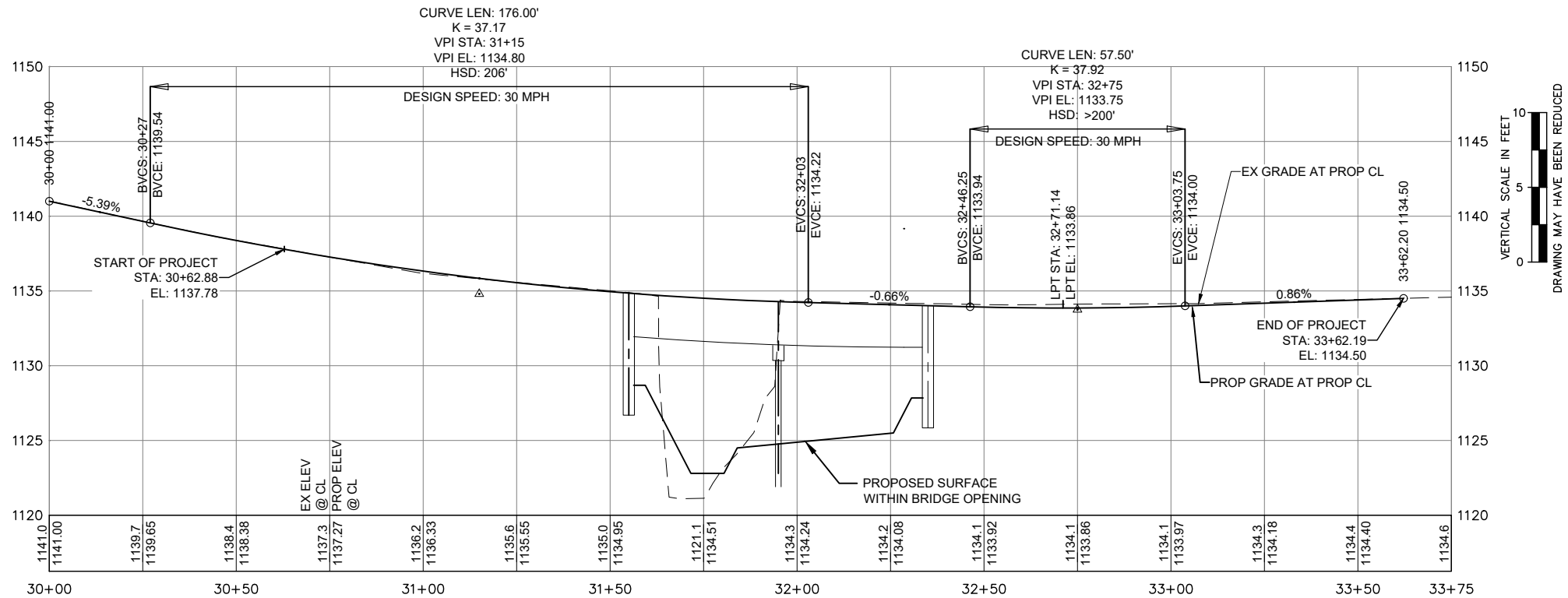
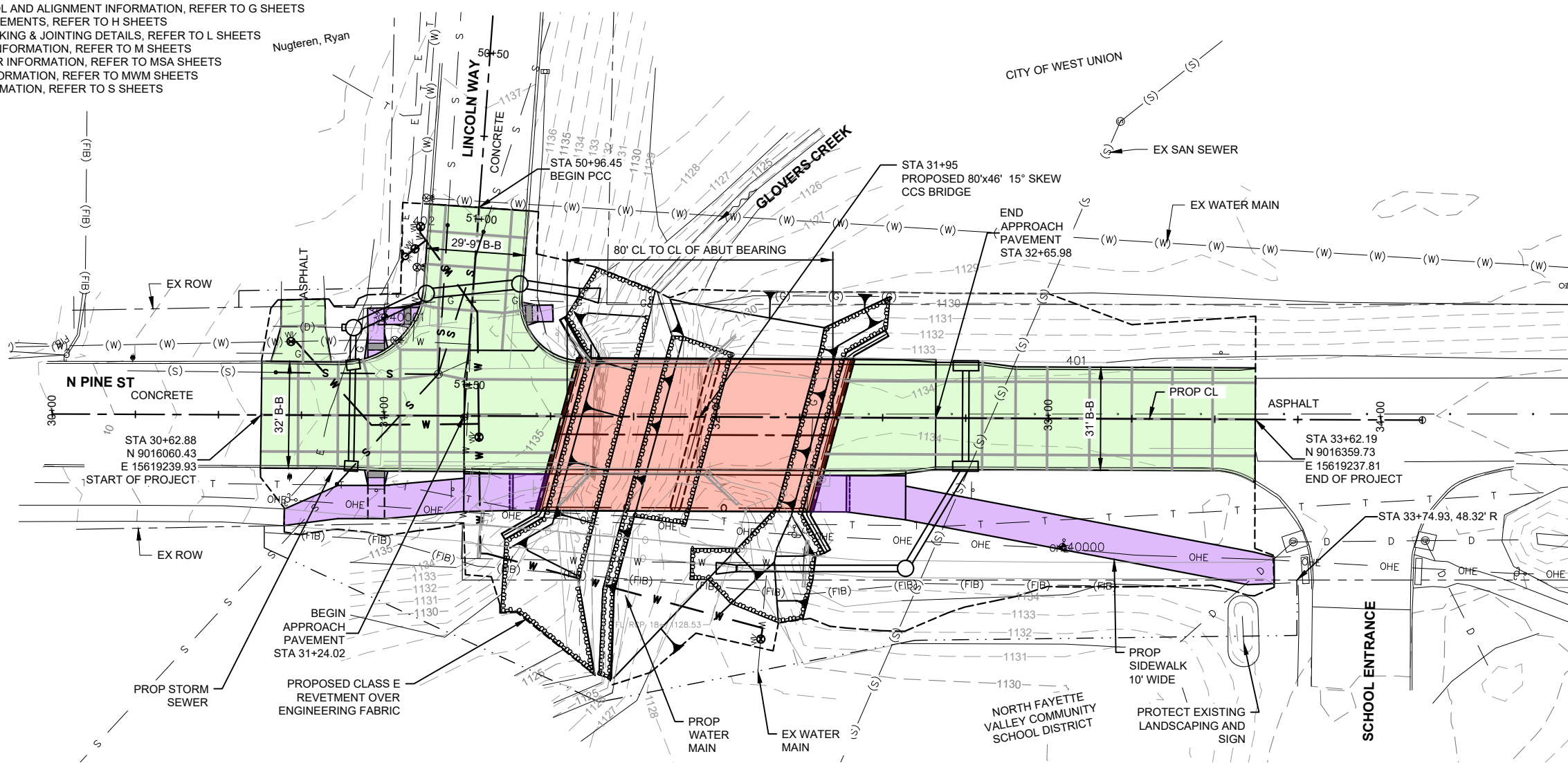
FOR SURVEY CONTROL AND ALIGNMENT INFORMATION, REFER TO G SHEETS
FOR TEMPORARY EASEMENTS, REFER TO H SHEETS
FOR GEOMETRIC, STAKING & JOINTING DETAILS, REFER TO L SHEETS
FOR STORM SEWER INFORMATION, REFER TO M SHEETS
FOR SANITARY SEWER INFORMATION, REFER TO MSA SHEETS
FOR WATER MAIN INFORMATION, REFER TO MWM SHEETS
FOR SIDEWALK INFORMATION, REFER TO S SHEETS



HORIZONTAL SCALE IN FEET
0 20 40
DRAWING MAY HAVE BEEN REDUCED

LEGEND

- PROPOSED BRIDGE
- PROPOSED ROADWAY
- PROPOSED SIDEWALK



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origin 800 556-4491

CITY OF WEST UNION

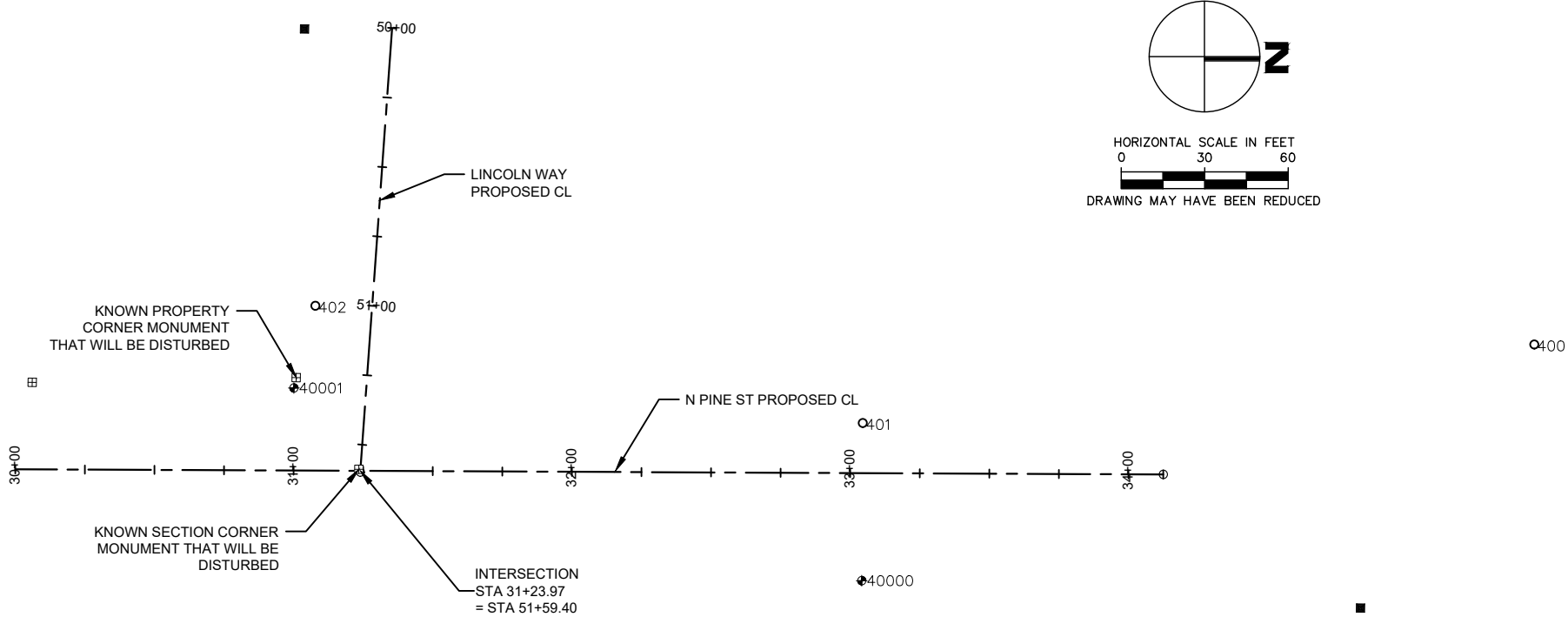
PROJECT NUMBER BRM-8295(604)--8N-33

PLAN AND PROFILE

SHEET: D.1

REV: .

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HORIZONTAL CONTROL
THE HORIZONTAL COORDINATES ON THIS PROJECT ARE BASED ON IOWA REGIONAL COORDINATE SYSTEM, ZONE 5 (WATERLOO).

NOTE: ELEVATION OF HORIZONTAL CONTROL POINTS ARE PROVIDED FOR INFORMATION ONLY AND MAY BE SUBJECT TO VERTICAL MOVEMENT. IT SHALL BE THE RESPONSIBILITY OF ANYONE MAKING USE OF THESE ELEVATIONS TO VERIFY THEM WITH VALID BENCHMARKS AS LISTED ON THESE PLANS.

HORIZONTAL CONTROL				
POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
400	9016542.78	15619189.25	1132.44	CONTROL POINT REBAR 5\8 X 60
401	9016301.84	15619220.27	1133.77	CONTROL POINT REBAR 3/8 X 18
402	9016104.65	15619180.45	1136.52	CONTROL POINT REBAR 3/8 X 18

VERTICAL CONTROL
THE ELEVATIONS ON THIS PROJECT ARE BASED ON NAVD 1988.

BENCH MARKS		
BENCHMARK NO.	ELEVATION	DESCRIPTION
40000	1135.91	B.M. SET RR SPIKE WEST SIDE PP
40001	1139.19	B.M. CXS NORTH BOLT HYD

Alignment Name: Lincoln Way
Station Range: Start: 50+00.00, End: 51+59.84
Description: CL of Lincoln Way

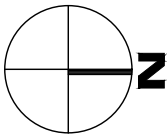
Begin 24050 Lincoln Way		
N 9,016,131.1122 E 15,619,080.3925	50+00.00	
Line (1)		
S86° 32' 48.31"E 159.842'		
N 9,016,121.4843 E 15,619,239.9445	51+59.84	
Line (1)		
N 9,016,121.4843 E 15,619,239.9445	51+59.84	
End 24050 Lincoln Way		

Alignment Length: 159.842'

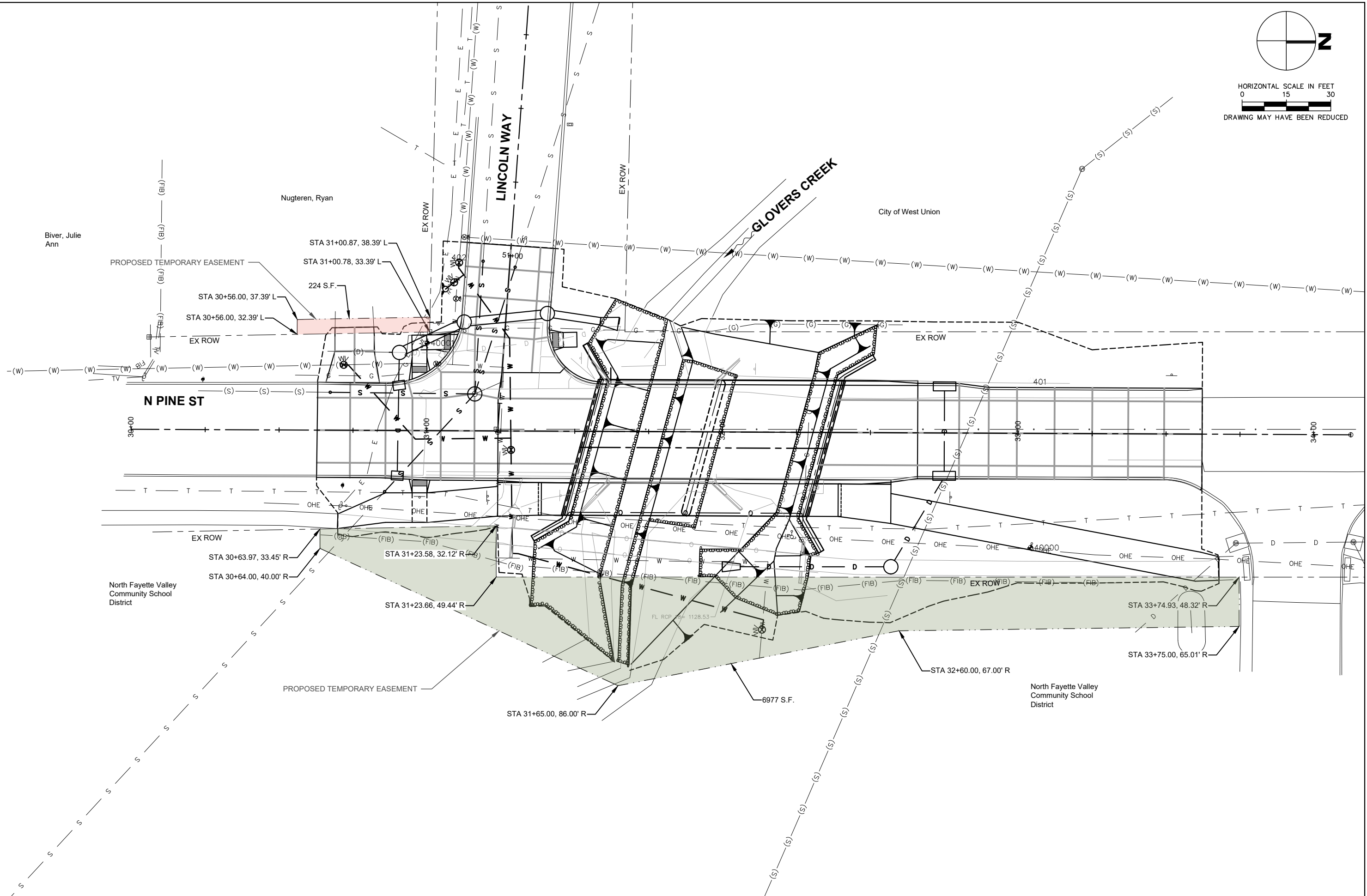
Alignment Name: N Pine St
Station Range: Start: 30+00.00, End: 34+12.48
Description: CL of N Pine St

Begin 24050 N Pine St		
N 9,015,997.5487 E 15,619,240.3776	30+00.00	
Line (1)		
N0° 24' 20.54"W 412.477'		
N 9,016,410.0155 E 15,619,237.4569	34+12.48	
Line (1)		
N 9,016,410.0155 E 15,619,237.4569	34+12.48	
End 24050 N Pine St		

Alignment Length: 412.477'



HORIZONTAL SCALE IN FEET
0 15 30
DRAWING MAY HAVE BEEN REDUCED



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SIGN LEGEND

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

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

C **N PINE ST**
M1-94H, 12"x24"
BLACK ON ORANGE

E **ROAD CLOSED 0.25 MILES AHEAD LOCAL TRAFFIC ONLY**
R11-4, 60"x30"

D **ROAD CLOSED 0.75 MILES AHEAD LOCAL TRAFFIC ONLY**
R11-4, 60"x30"

F **END DETOUR**
D3-1, BLACK ON ORANGE
6" UPPERCASE
4.5" LOWERCASE

G **DETOUR**
M1-94H, 12"x24"
BLACK ON ORANGE

I **ROAD CLOSED AHEAD**
W20-3, 48"x48"
BLACK ON ORANGE

J **DETOUR AHEAD**
W20-2, 48"x48"
BLACK ON ORANGE

K **R3-1, 24"x24"**

L **R3-2, 24"x24"**

M **N PINE ST**
M1-94H, 12"x24"
BLACK ON ORANGE

N **ROAD CLOSED 0.75 MILES AHEAD LOCAL TRAFFIC ONLY**
R11-4, 60"x30"

O **DETOUR**
M4-10, 48"x18"

TRAFFIC CONTROL NOTES

1. PINE STREET BETWEEN LINCOLN WAY (INCLUDING THE INTERSECTION) AND THE SOUTH ENTRANCE TO NORTH FAYETTE VALLEY HIGH SCHOOL WILL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION. PROPERTY ACCESS SHALL BE MAINTAINED AT ALL TIMES.
2. THE LOCATION FOR STORAGE OF EQUIPMENT AND WORKER 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 MOTORIST'S VIEW OR PERMANENT SIGNING.
5. ALL WORK WITHIN HIGHWAY 18 AND HIGHWAY 150 RIGHT OF WAY SHALL BE PERFORMED BY THE CONTRACTOR BETWEEN 30 MINUTES BEFORE SUNRISE TO 30 MINUTES BEFORE SUNSET. DETOUR SIGNING MAY BE PLACED WITH IOWA DOT SIGNS IF 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 CONVERED 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 THE AREA RESIDENTS AND BUSINESSES. THE CONTRACTOR SHALL ALSO PROVIDE NOTICE TO THE IOWA DOT MAINTENANCE SUPERVISOR PRIOR TO INSTALLING DETOUR SIGNS ON HIGHWAY 18 AND HIGHWAY 150.
8. THE CONTRACTOR SHALL ALSO PROVIDE A MINIMUM 2 WEEK NOTICE TO THE FAYETTE COUNTY ENGBINEER'S OFFICE AND COMPLETE THE FAYETTE COUNTY WORK IN ROW PERMIT FOUND AT: <https://fayettecounty.iowa.gov/departments/engineer/>
9. BARRICADES IN SAFETY CLOSURES SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD ROAD PLAN TC-252. ROADWAY SAFETY CLOSURES OF NORTH PINE STREET SHALL EXTEND BEYOND THE BACK OF WALK ADJACENT TO NORTH PINE STREET UPON CLOSURE OF EXISTING PEDESTRIAN BRIDGE
10. PEDESTRIAN ROUTE CLOSURES SHALL BE INSTALLED PER TC-601.

GABRIEL ZITTERGUEN
EMAIL: GABRIEL.ZITTERGUEN@IOWADOT.US
PHONE: 563-880-4519

FAYETTE COUNTY ENGINEER
JOEL FANTZ
EMAIL: ENGINEER@CO.FAYETTE.IA.US
PHONE: 563-422-3552

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.

Andrew John Goedken 08-17-20

ANDREW JOHN GOEDKEN DATE

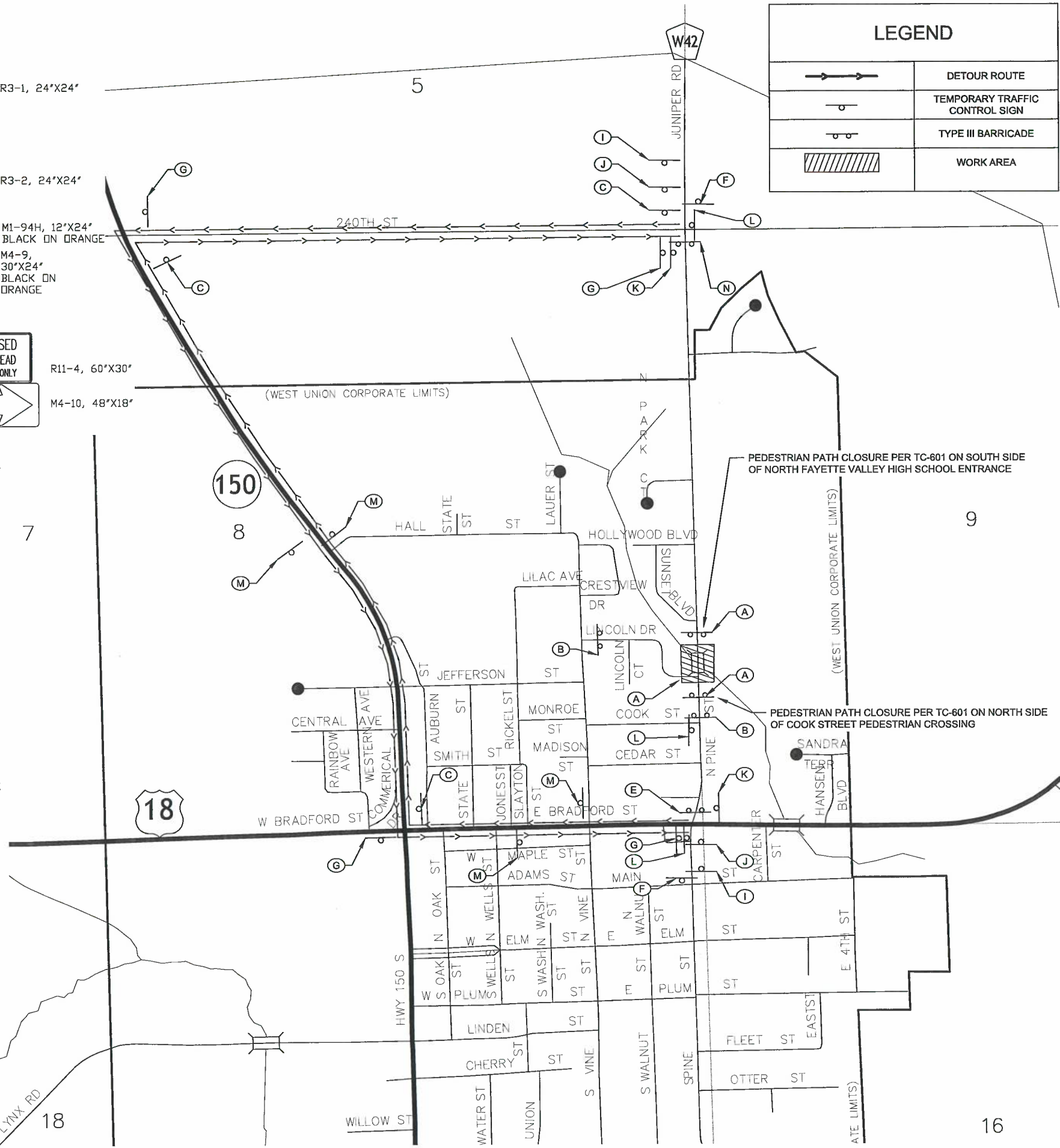
PE 24716 12/31/2027

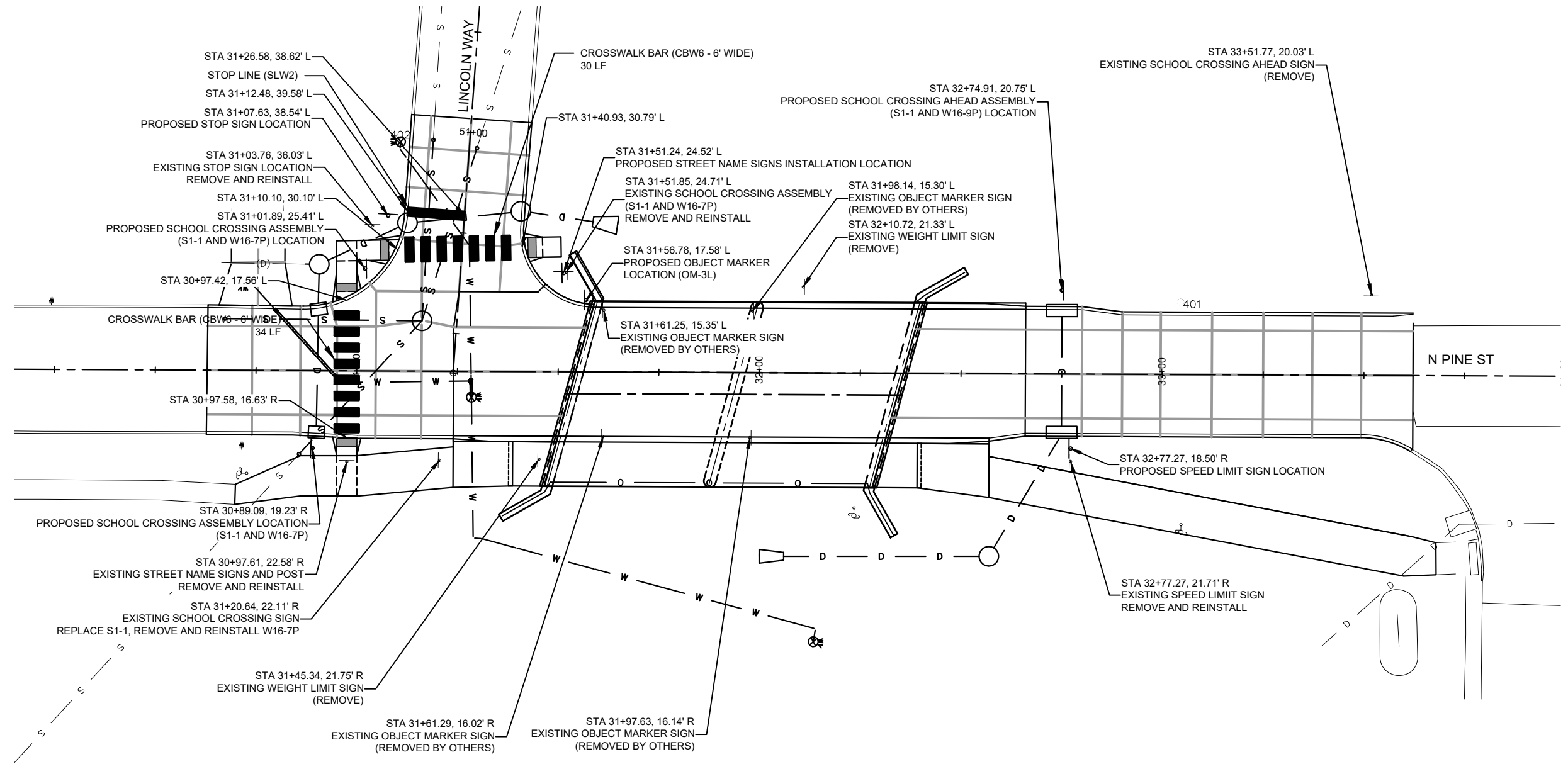
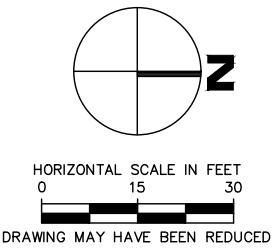
LICENSE # RENEWAL DATE

PAGES OR SHEETS COVERED BY THIS CERTIFICATION:
J.1, J.2, MSA.1, MWM.1, MWM.2

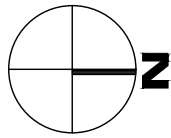
LEGEND

	DETOUR ROUTE
	TEMPORARY TRAFFIC CONTROL SIGN
	TYPE III BARRICADE
	WORK AREA





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

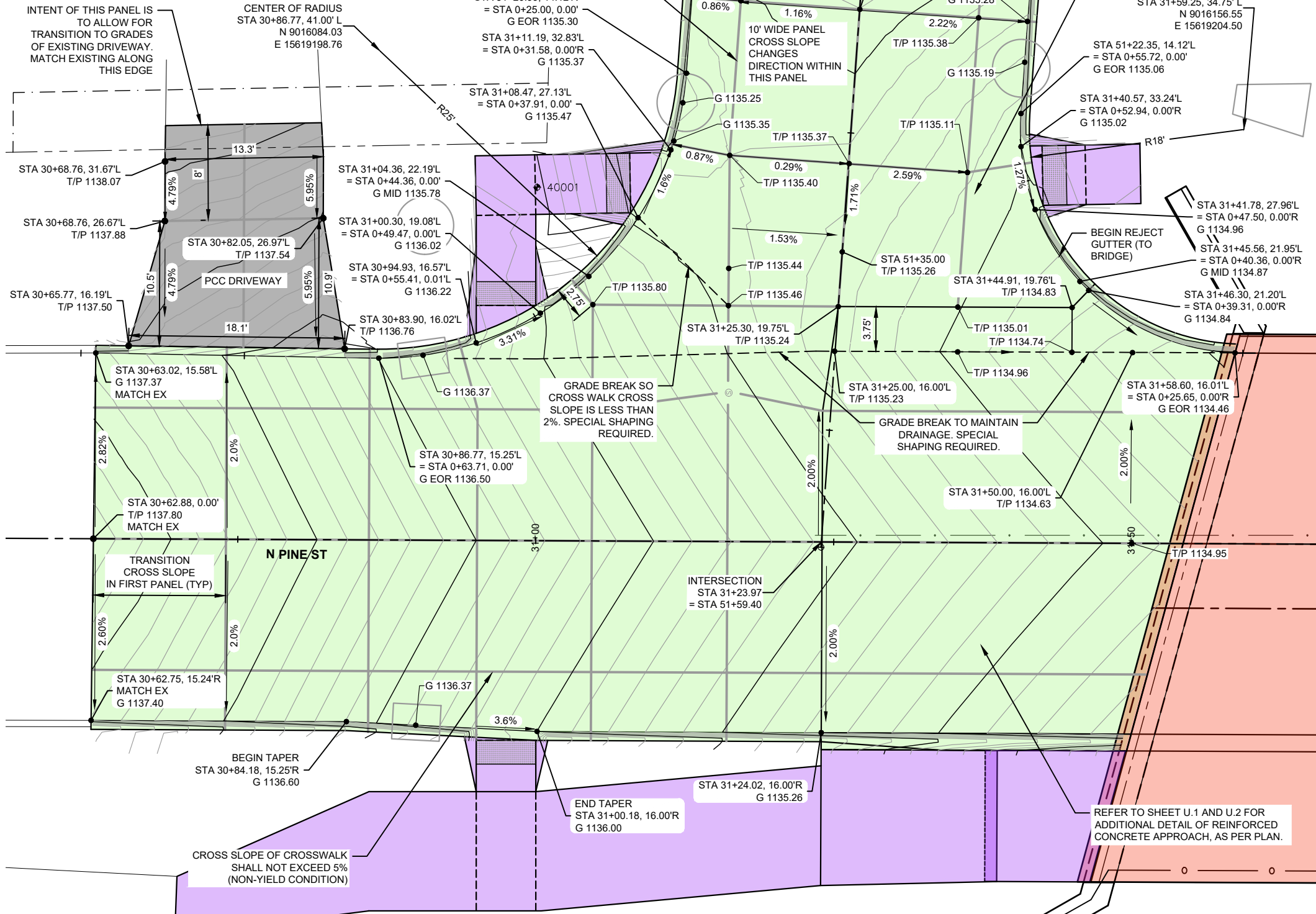
GENERAL NOTES
STA & OFF LABELED AT GUTTER ARE ASSUMED TO BE 0.75' FROM BACK OF CURB LOCATION (MEASURED PERPENDICULAR TO CURB). GRADES ARE EQUIVALENT TO FORM GRADE AT BACK OF CURB.

SPECIAL SHAPING REQUIRED FOR PANELS WITHIN THE INTERSECTION AREA TO PROVIDE DESIRED DRAINAGE PATTERN.

SEE S SHEETS FOR SIDEWALK LAYOUT AND GRADE INFORMATION.

SEE M SHEETS FOR STORM SEWER INTAKE ELEVATIONS.

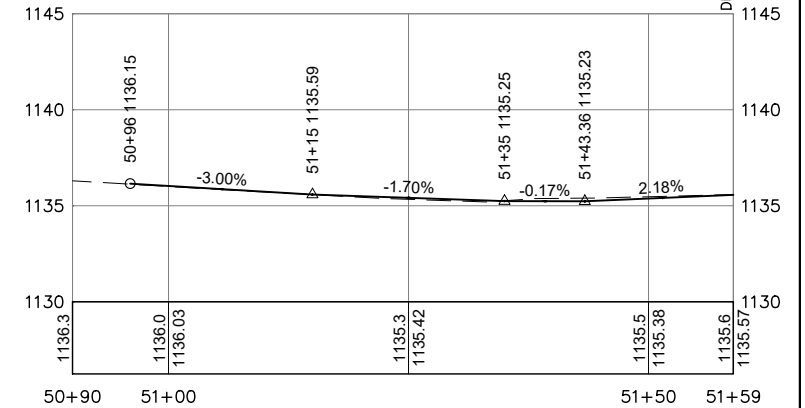
CONTOURS SHOWN ARE PROPOSED FINISHED TOP ELEVATION AT 0.1' INTERVALS. ELEVATIONS CAN BE INFERRED BASED ON THE GRADE LABELS.



PROFILES FOR REFERENCE
NOTE: HORIZONTAL SCALE OF PROFILES IS DIFFERENT THAN PLAN VIEW AT LEFT

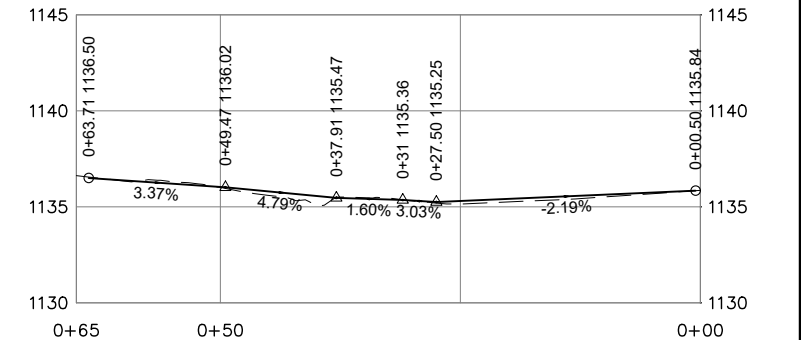
HORIZONTAL SCALE IN FEET
0 10 20
DRAWING MAY HAVE BEEN REDUCED

LINCOLN WAY CENTERLINE PROFILE

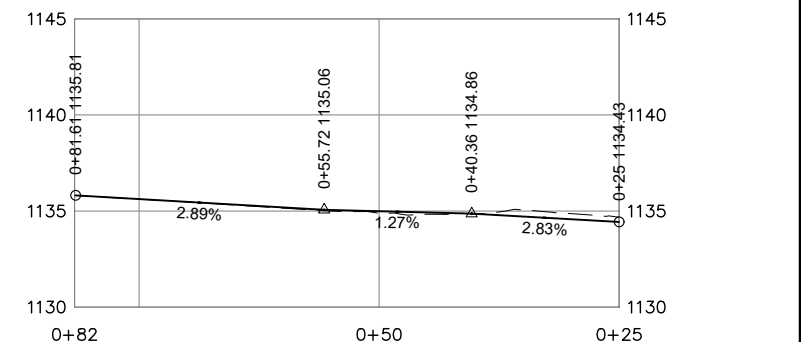


24050 Lincoln Way PROFILE

CURB RETURN PROFILES
RETURN ALIGNMENTS/PROFILES ARE LOCATED AT GUTTER FLOW LINE (0.75' OFFSET FROM BACK OF CURB)



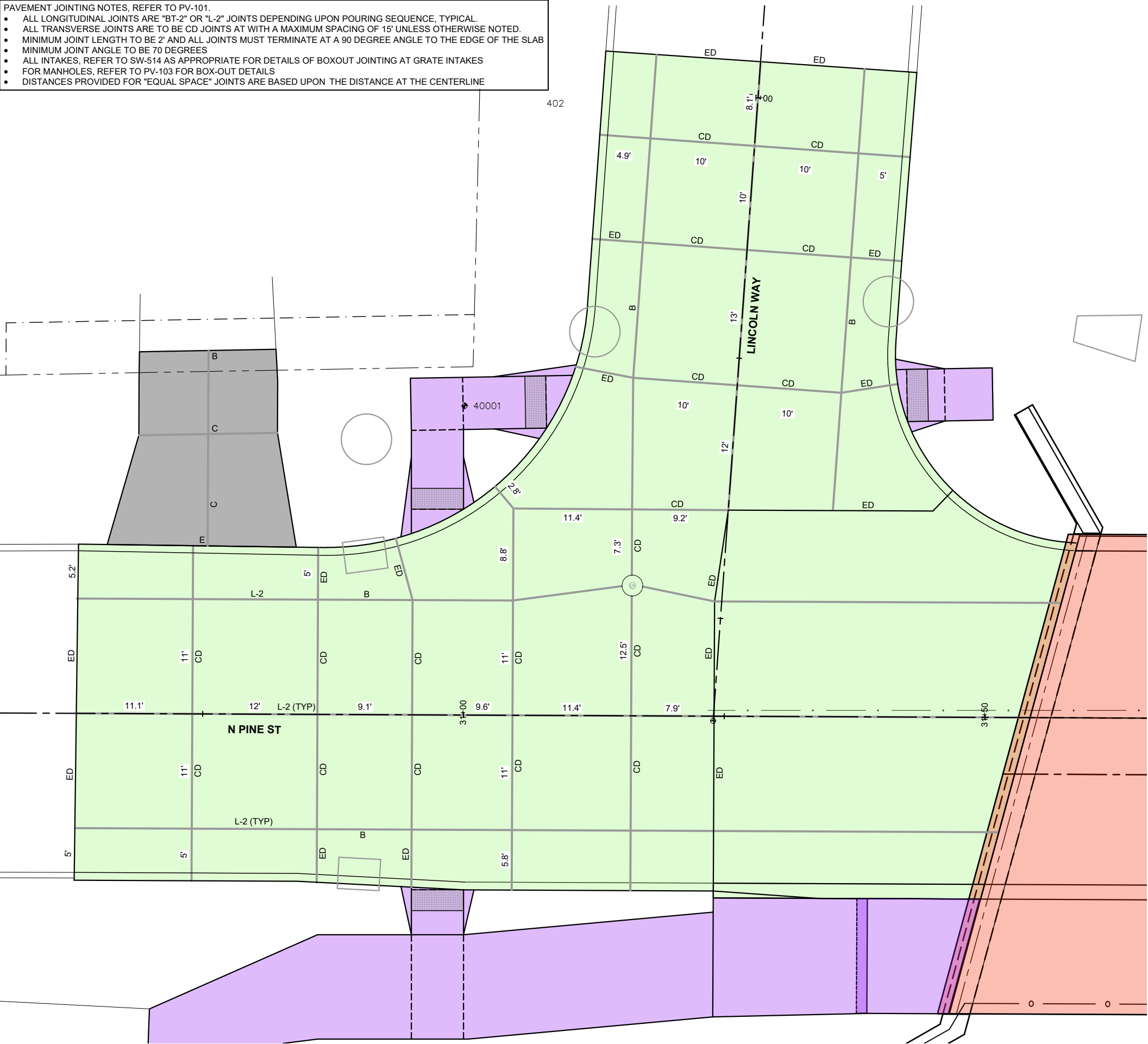
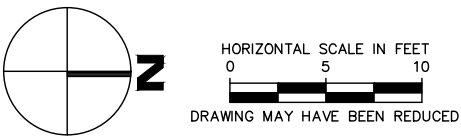
24050 CR Pine-LincolnWay SW PROFILE



24050 CR Pine-LincolnWay NW PROFILE

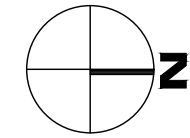
GEOMETRIC, STAKING DETAILS
AND EDGE RETURN PROFILES INTERSECTION OF N PINE ST AND LINCOLN WAY

- PAVEMENT JOINTING NOTES, REFER TO PV-101.
- ALL LONGITUDINAL JOINTS ARE "BT-2" OR "L-2" JOINTS DEPENDING UPON POURING SEQUENCE, TYPICAL.
 - ALL TRANSVERSE JOINTS ARE TO BE CD JOINTS AT WITH A MAXIMUM SPACING OF 15' UNLESS OTHERWISE NOTED.
 - MINIMUM JOINT LENGTH TO BE 2' AND ALL JOINTS MUST TERMINATE AT A 90 DEGREE ANGLE TO THE EDGE OF THE SLAB
 - MINIMUM JOINT ANGLE TO BE 70 DEGREES
 - ALL INTAKES, REFER TO SW-514 AS APPROPRIATE FOR DETAILS OF BOXOUT JOINTING AT GRATE INTAKES
 - FOR MANHOLES, REFER TO PV-103 FOR BOX-OUT DETAILS
 - DISTANCES PROVIDED FOR "EQUAL SPACE" JOINTS ARE BASED UPON THE DISTANCE AT THE CENTERLINE



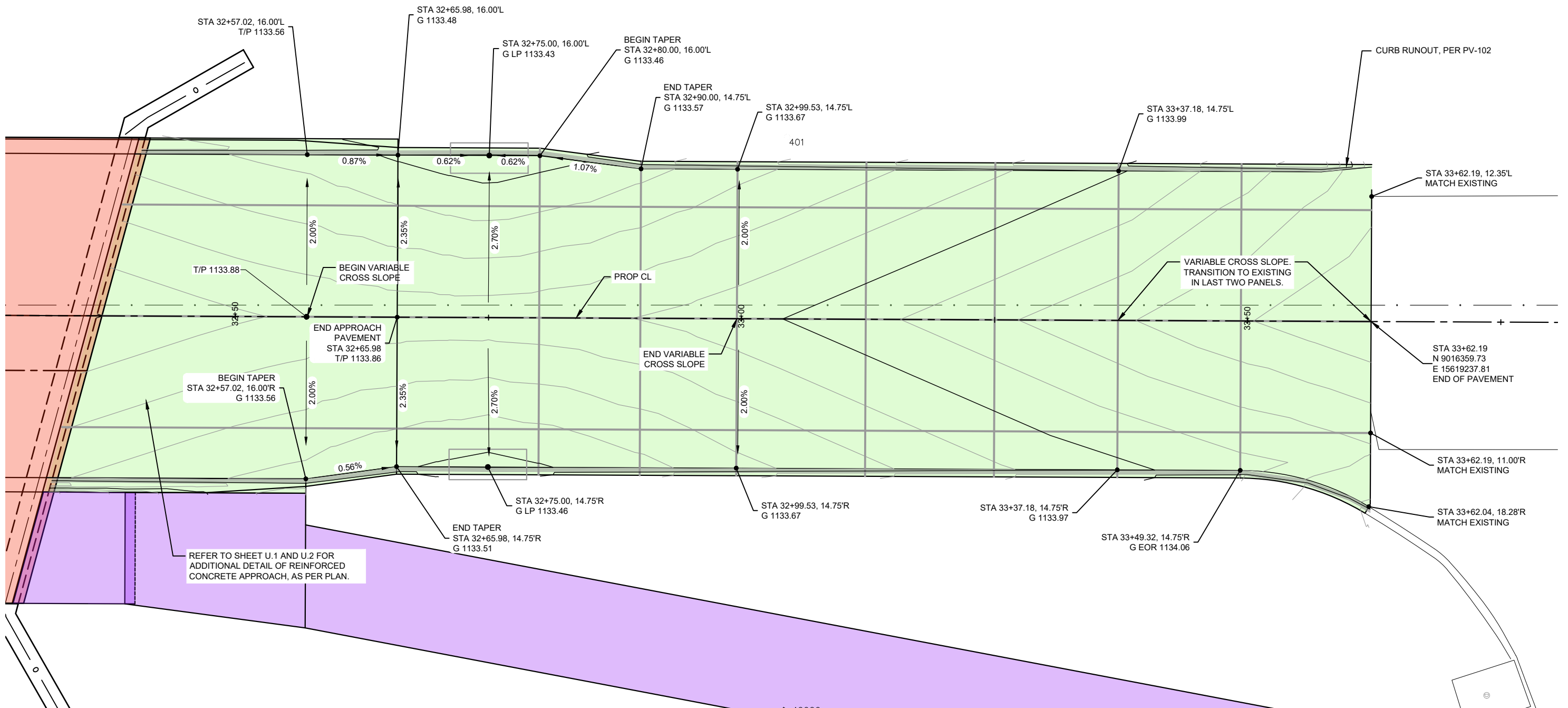
P:\24\050\DRAWINGS\CIVIL\24050.ZZ L-JOINTING.DWG 8/18/2026 11:13:13 AM DAVE SCHWARZ

CONTOURS SHOWN ARE PROPOSED FINISHED TOP ELEVATION AT 0.1' INTERVALS. ELEVATIONS CAN BE INFERRED BASED ON THE GRADE LABELS.



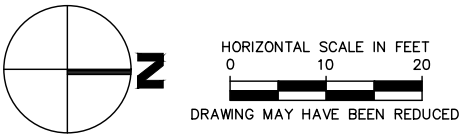
HORIZONTAL SCALE IN FEET
0 5 10
DRAWING MAY HAVE BEEN REDUCED

—(G)—(G)—(G)—(G)—(G)—(G)—(G)—(G)—

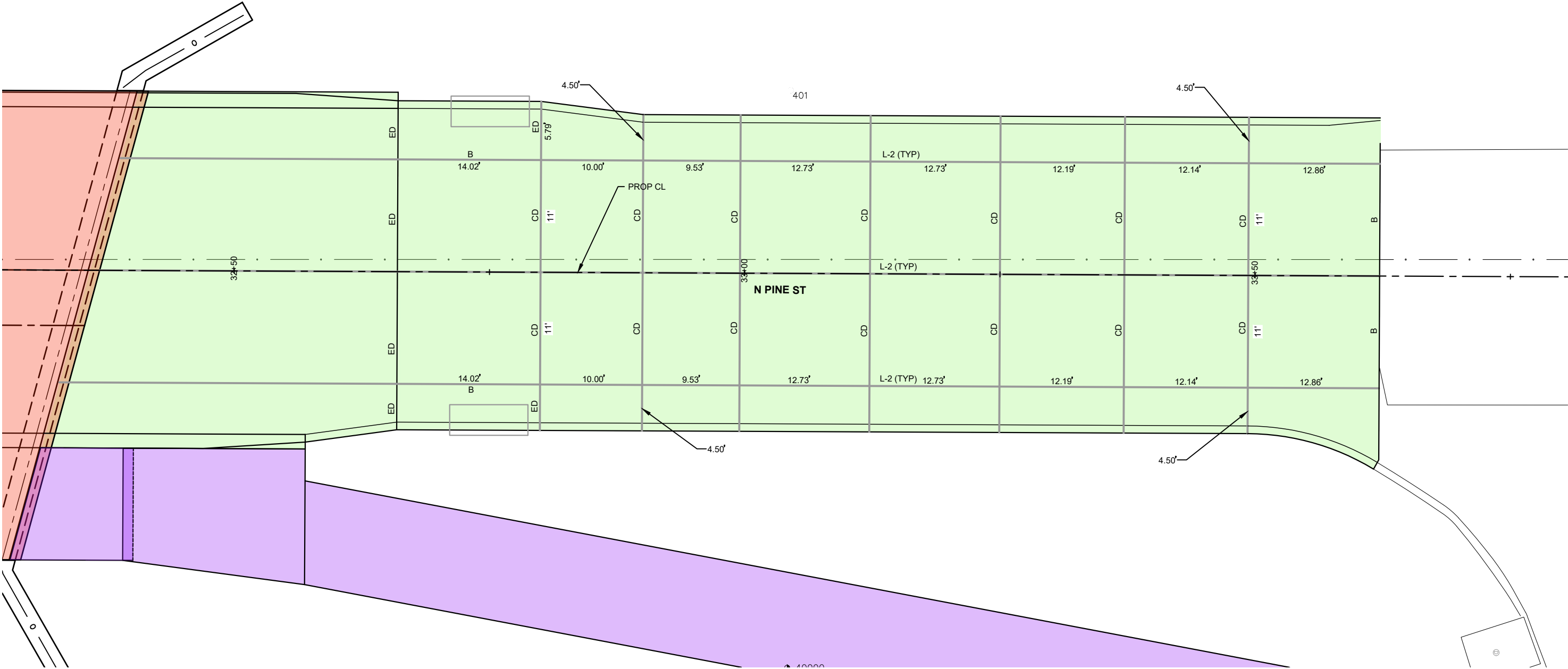


GEOMETRIC, STAKING DETAILS N PINE STREET N OF BRIDGE

- PAVEMENT JOINTING NOTES, REFER TO PV-101.
- ALL LONGITUDINAL JOINTS ARE "BT-2" OR "L-2" JOINTS DEPENDING UPON POURING SEQUENCE, TYPICAL.
 - ALL TRANSVERSE JOINTS ARE TO BE CD JOINTS AT WITH A MAXIMUM SPACING OF 15' UNLESS OTHERWISE NOTED.
 - MINIMUM JOINT LENGTH TO BE 2' AND ALL JOINTS MUST TERMINATE AT A 90 DEGREE ANGLE TO THE EDGE OF THE SLAB.
 - MINIMUM JOINT ANGLE TO BE 70 DEGREES
 - ALL INTAKES, REFER TO SW-514 AS APPROPRIATE FOR DETAILS OF BOXOUT JOINTING AT GRATE INTAKES
 - FOR MANHOLES, REFER TO PV-103 FOR BOX-OUT DETAILS
 - DISTANCES PROVIDED FOR "EQUAL SPACE" JOINTS ARE BASED UPON THE DISTANCE AT THE CENTERLINE



— (G) — (G) — (G) — (G) — (G) — (G) — (G) — (G) —



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STORM SEWER

(1) Diameter or equivalent diameter

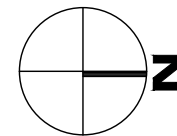
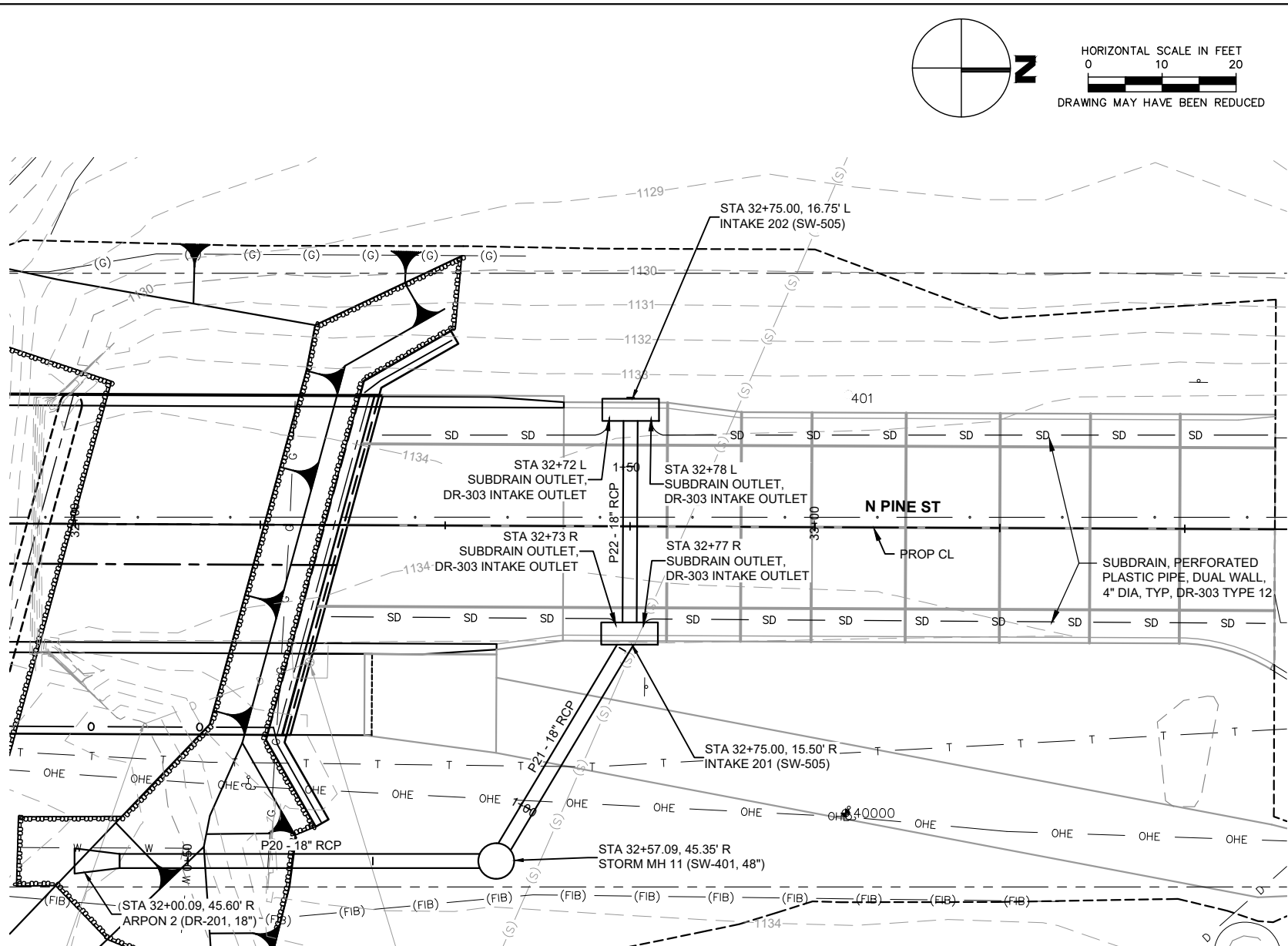
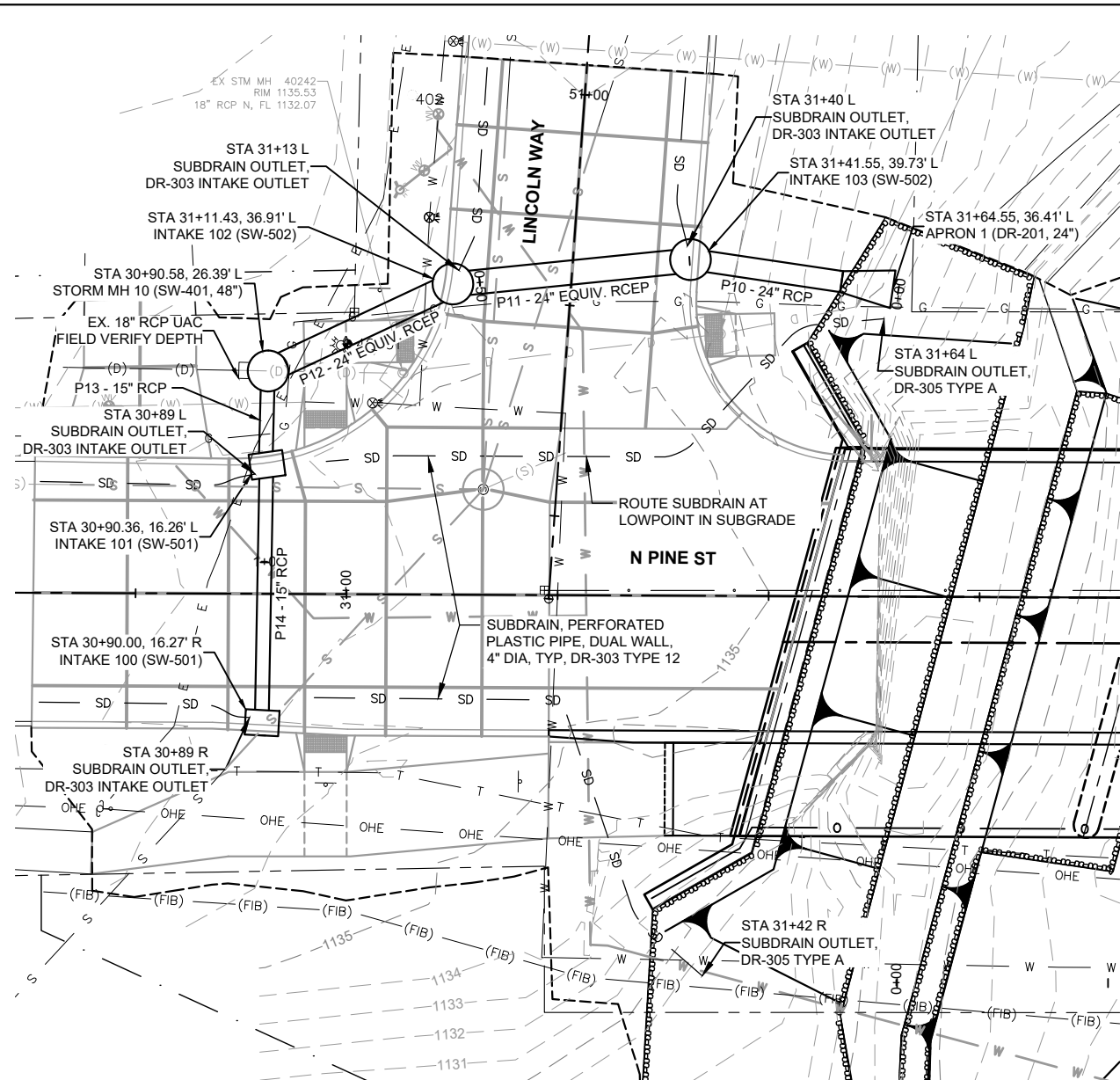
* Bid Item

** For SW-545

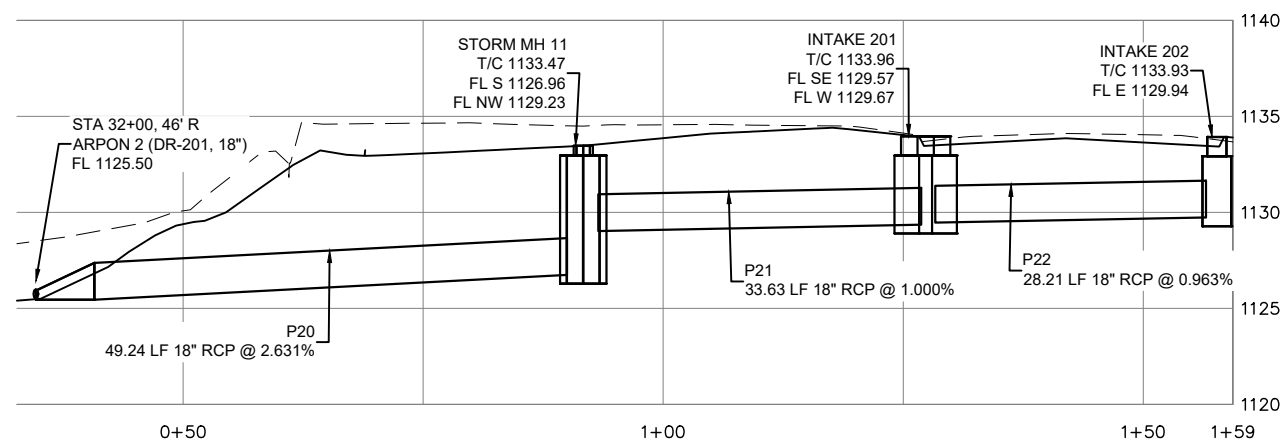
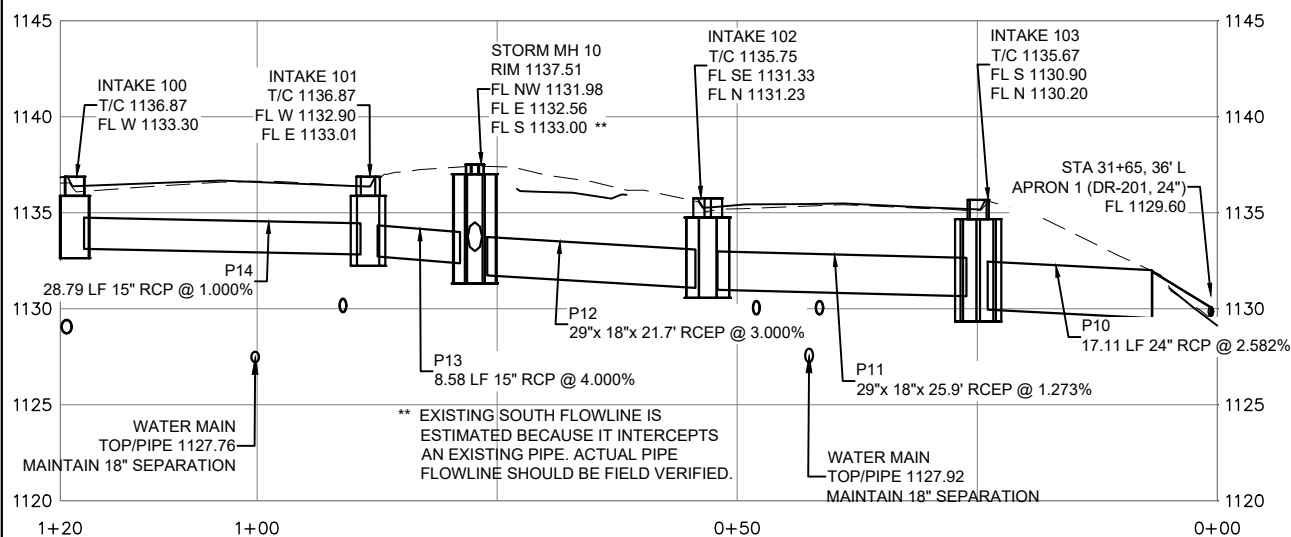
Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each end of the Design Length to account for estimated length of center of structures.

No.	Location Station	Offset	Type or Standard Road Plan*	Form Grade Elev.	Bottom Well Elev.	Notes	Line Number	Intake / Utility Access No. From	Intake / Utility Access No. To	Class 'D'	Pipe Size (IN)	Bid Length* (FT)	Design Length (FT)	Slope %	Connected Pipe Joint (DR-121)	Flow Line Inlet Elev.	Flow Line Outlet Elev.	Flow Line Other Elev.	Pipe Profile Sheet No.	Notes
APRON 1	31+64.55	36.41' L	DR-201																	
							P10	APRON 1	INTAKE 103	2000	24	19.15	17.15	2.582%	Type 2	1130.20	1129.70	1129.60	M.2	OTHER ELEV, APRON 1 OUTLET FL
INTAKE 103	31+41.55	39.73' L	SW-502	1135.17	1129.70	48", SW-603 TYPE R														
							P11	INTAKE 103	INTAKE 102	2000	29 X 18	29.90	25.90	1.273%		1131.23	1130.90		M.2	
INTAKE 102	31+11.43	36.91' L	SW-502	1135.25	1130.73	48", SW-603 TYPE R														
							P12	INTAKE 102	STM MH 10	2000	29 X 18	25.70	21.70	3.000%		1131.98	1131.33		M.2	
STM MH 10	30+90.58	26.39' L	SW-401	1137.51	1131.48	48", SW-602 TYPE F														
							P13	STM MH 10	INTAKE 101	2000	15	12.58	8.58	4.000%		1132.90	1132.56		M.2	
INTAKE 101	30+90.36	16.26' L	SW-501	1136.37	1132.40	SW-603 TYPE R														
							P14	INTAKE 101	INTAKE 100	2000	15	32.79	28.79	1.000%		1133.30	1133.01		M.2	
INTAKE 100	30+90.00	16.27' R	SW-501	1136.37	1132.80	SW-603 TYPE R														
APRON 2	32+00.09	45.60' R	DR-201																	
							P20	APRON 2	STM MH 11	2000	18	51.24	49.24	2.631%	Type 2	1126.96	1125.66	1125.50	M.2	OTHER ELEV, APRON 2 OUTLET FL
STM MH 11	32+57.09	45.35' R	SW-401	1133.47	1126.46	48", SW-602 TYPE F														
							P21	STM MH 11	INTAKE 201	2000	18	37.63	33.63	1.000%		1129.57	1129.23		M.2	
INTAKE 201	32+75	15.50' R	SW-505	1133.46	1129.07	(2) SW-603 TYPE R														
							P22	INTAKE 201	INTAKE 202	2000	18	32.21	28.21	0.963%		1129.94	1129.67		M.2	
INTAKE 202	32+75	16.75' L	SW-505	1133.43	1129.44	(2) SW-603 TYPE R														

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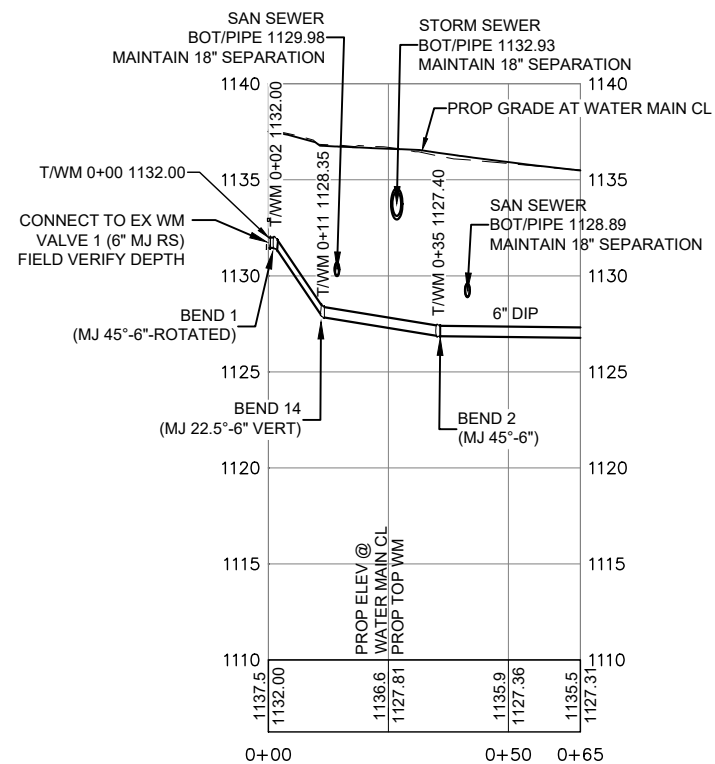
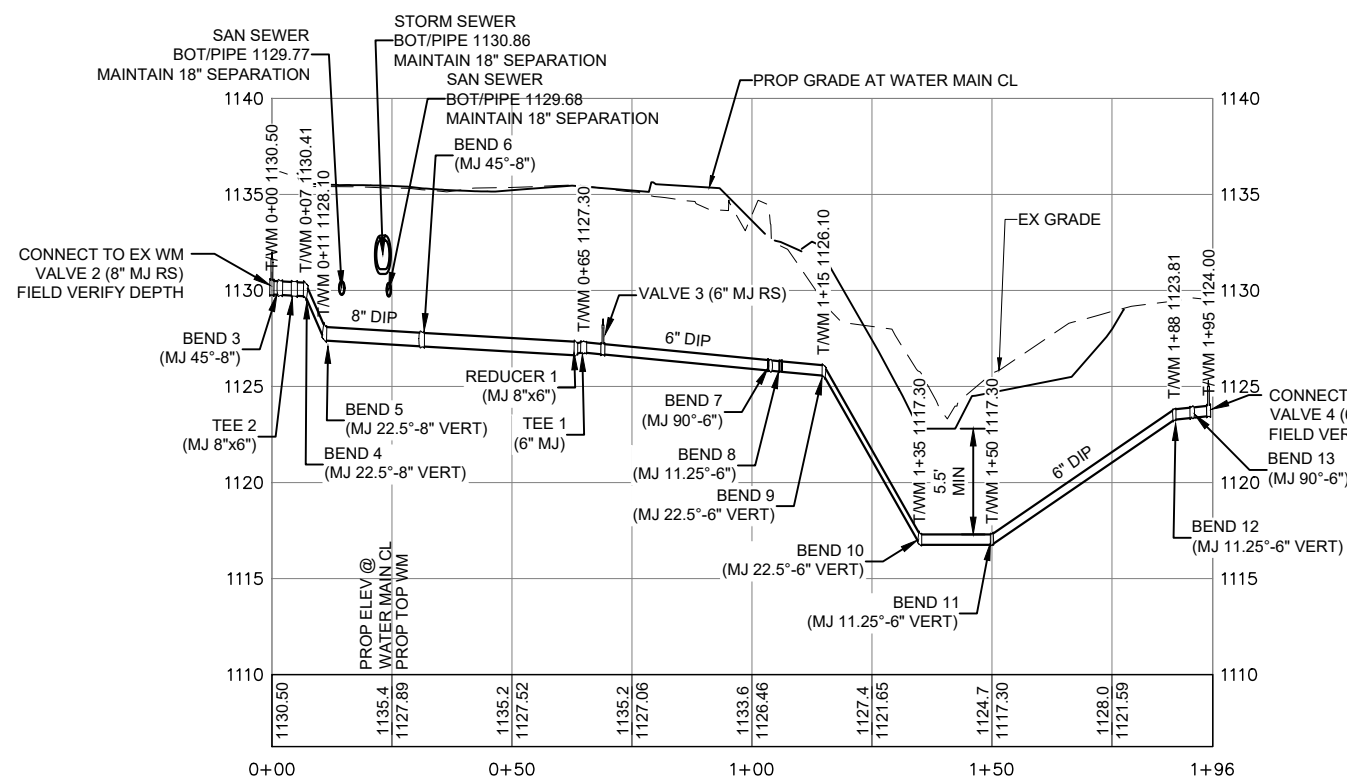
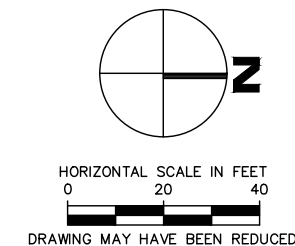
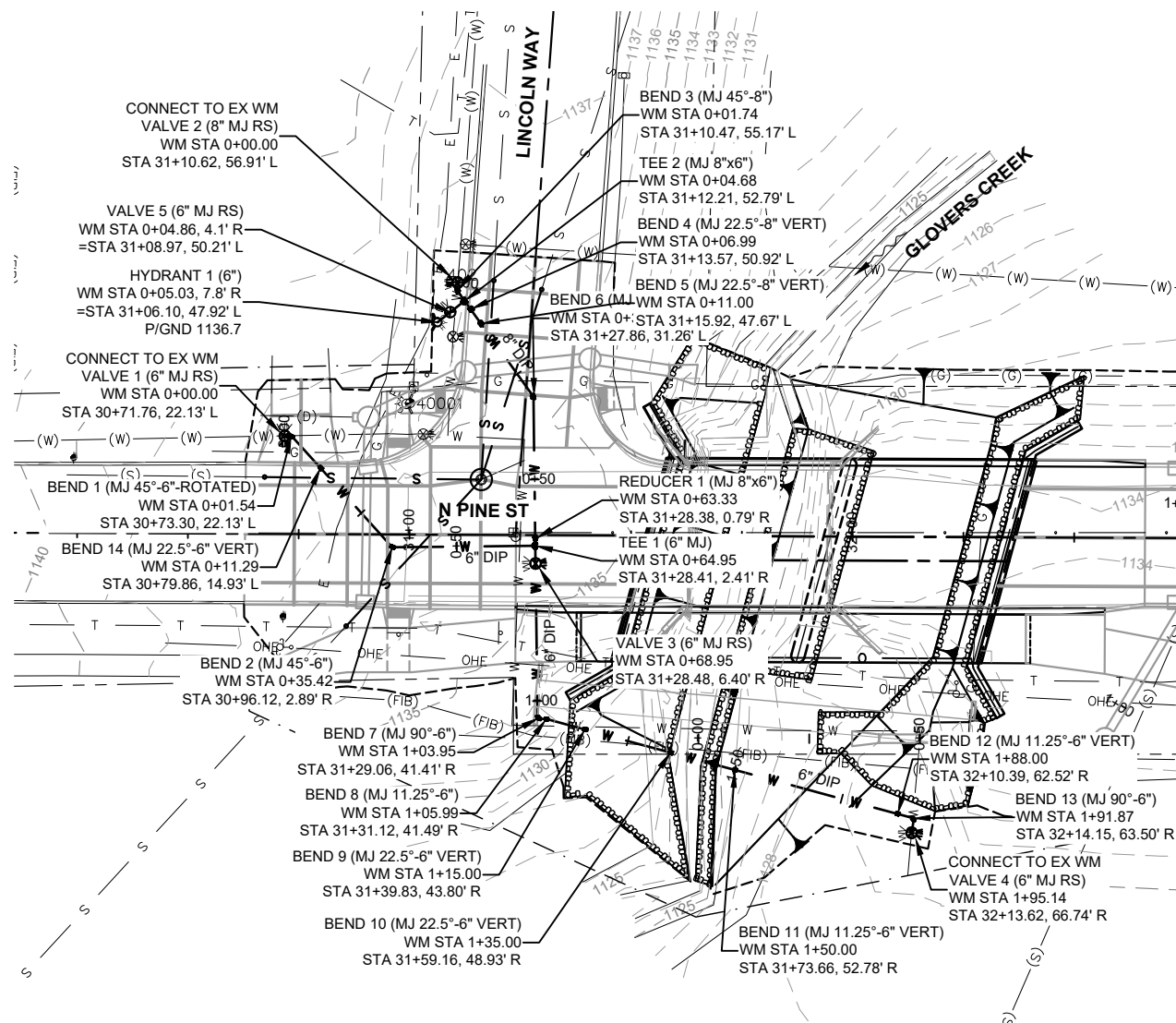
HORIZONTAL SCALE IN FEET
0 10 20
DRAWING MAY HAVE BEEN REDUCED



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

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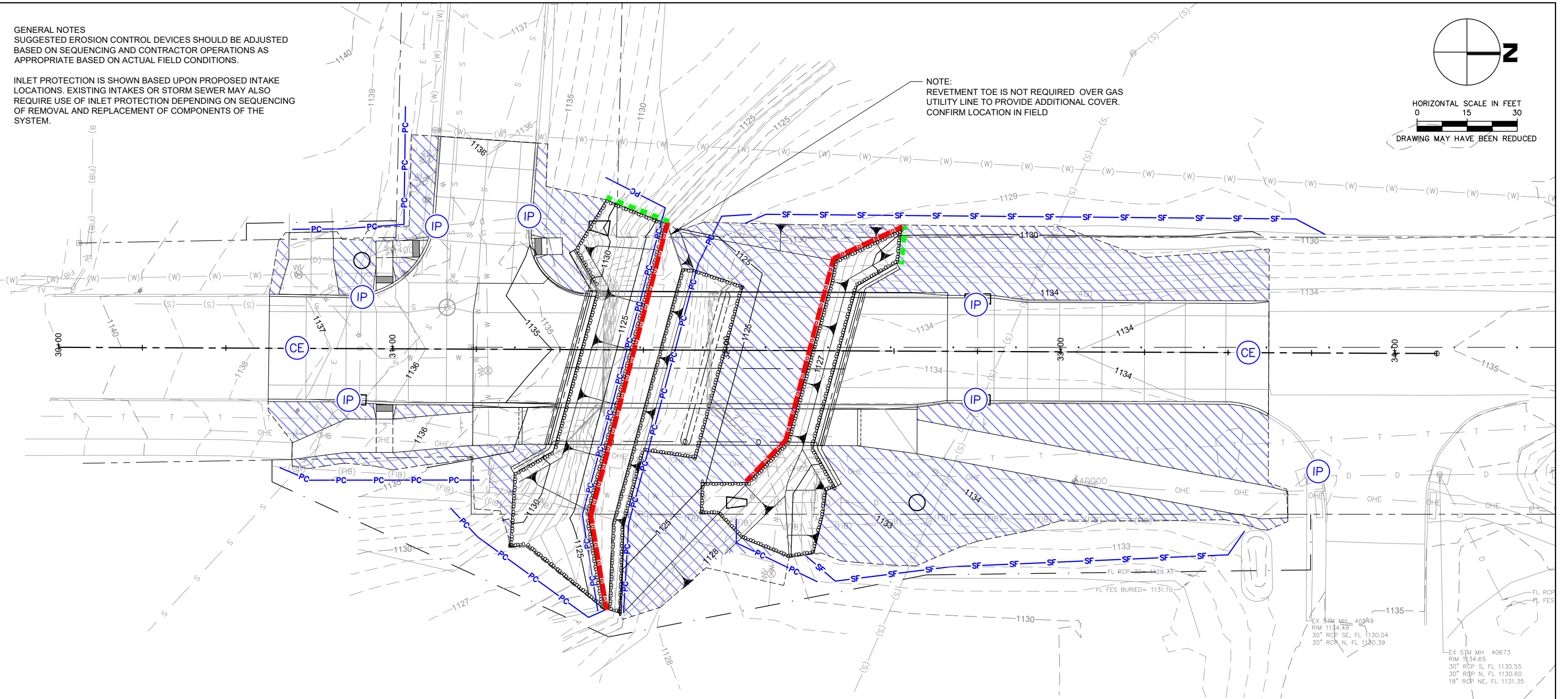
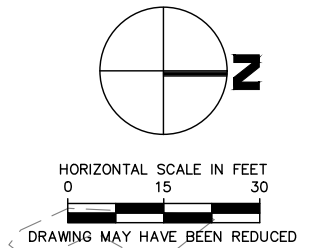
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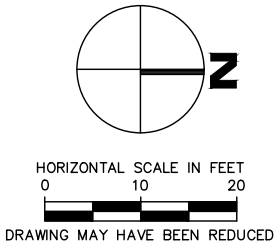
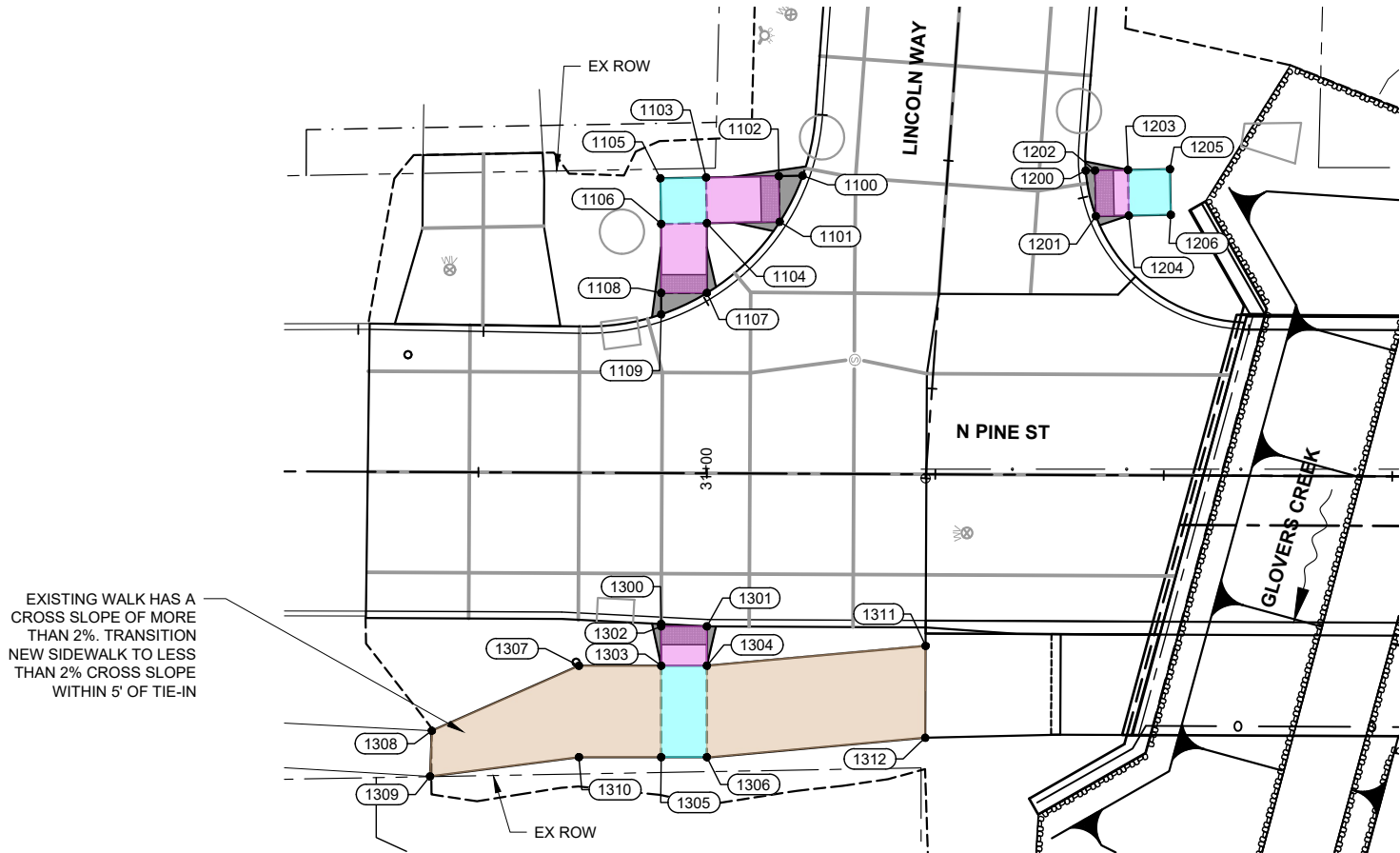
GENERAL NOTES
SUGGESTED EROSION CONTROL DEVICES SHOULD BE ADJUSTED
BASED ON SEQUENCING AND CONTRACTOR OPERATIONS AS
APPROPRIATE BASED ON ACTUAL FIELD CONDITIONS.

INLET PROTECTION IS SHOWN BASED UPON PROPOSED INTAKE
LOCATIONS. EXISTING INTAKES OR STORM SEWER MAY ALSO
REQUIRE USE OF INLET PROTECTION DEPENDING ON SEQUENCING
OF REMOVAL AND REPLACEMENT OF COMPONENTS OF THE
SYSTEM.

NOTE:
REVEMENT TOE IS NOT REQUIRED OVER GAS
UTILITY LINE TO PROVIDE ADDITIONAL COVER.
CONFIRM LOCATION IN FIELD



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LEGEND	
	PROPOSED LANDING/TURNING AREA
	PROPOSED SIDEWALK
	PROPOSED RAMP
	PROPOSED SPECIAL SHAPING
	PROPOSED DETECTABLE WARNINGS

SIDEWALK COMPLIANCE													113-10A MODIFIED			
See 5 Sheets																
* Does not include curb																
① Staking required by Contracting Authority per Article 2511.03 of the Standard Specifications.																
② Refer to tabulation 113-01 for bid quantities.																
Point to Point		Sidewalk Designation	- " PCC Sidewalk ②	Distance*	Δ Elevation	Slope	Acceptable Constructed Range	Staking Required on this Quadrant? ①	Measured Slope	Initials	Remarks	FOR INFORMATION ONLY: VALUES USED TO DETERMINE DESIGNED SLOPES				
				FT	FT	%	Pos. or Neg.	①	%			Point	Northing	Easting	Elevation	
1100	1101	Crosswalk Cross Slope - Yield Condition	6	5.63	0.09	1.7%	0.0% to 2.0%	Yes Yes				1100	9016107.63	15619207.00	1135.39	
1100	1102	Landing/Turning Space	6	2.59	0.02	0.9%	0.1% to 2.0%					1101	9016105.19	15619212.07	1135.49	
1101	1102	Crosswalk Cross Slope - Yield Condition	6	5.00	-0.07	-1.4%	0.0% to 2.0%					1102	9016105.04	15619207.07	1135.42	
1101	1104	Ramp Running Slope	6	7.97	0.60	7.5%	0.5% to 8.3%					1103	9016097.08	15619207.31	1136.01	
1102	1103	Ramp Running Slope	6	7.97	0.60	7.5%	0.5% to 8.3%					1104	9016097.23	15619212.30	1136.09	
1103	1104	Landing/Turning Space	6	5.00	0.07	1.5%	0.1% to 2.0%					1105	9016092.08	15619207.45	1136.06	
1103	1105	Landing/Turning Space	6	5.00	0.05	1.0%	0.1% to 2.0%					1106	9016092.23	15619212.45	1136.14	
1104	1106	Landing/Turning Space	6	5.00	0.05	1.0%	0.1% to 2.0%					1107	9016097.32	15619219.94	1136.04	
1105	1106	Landing/Turning Space	6	5.00	0.07	1.5%	0.1% to 2.0%					1108	9016092.32	15619220.00	1136.21	
1104	1107	Ramp Running Slope	6	7.63	-0.05	-0.6%	0.5% to 8.3%					1109	9016092.35	15619222.34	1136.23	
1106	1108	Ramp Running Slope	6	7.55	0.07	0.9%	0.5% to 8.3%				1200	9016138.62	15619206.08	1135.04		
1107	1108	Crosswalk Cross Slope - No Yield Condition	6	5.00	0.16	3.3%	0.0% to 5.0%				1201	9016139.79	15619211.05	1134.98		
1108	1109	Landing/Turning Space	6	2.34	0.03	1.1%	0.1% to 2.0%				1202	9016139.64	15619206.05	1135.05		
1107	1109	Crosswalk Cross Slope - No Yield Condition	6	5.52	0.19	3.5%	0.0% to 5.0%				1203	9016143.25	15619205.95	1135.19		
											1204	9016143.40	15619210.94	1135.12		
											1205	9016147.84	15619205.81	1135.15		
1200	1201	Crosswalk Cross Slope - Yield Condition	6	5.10	-0.06	-1.3%	0.0% to 2.0%				1206	9016147.99	15619210.81	1135.08		
1200	1202	Landing/Turning Space	6	1.02	0.01	0.6%	0.1% to 2.0%				1300	9016092.74	15619256.20	1136.20		
1201	1202	Crosswalk Cross Slope - Yield Condition	6	5.00	0.07	1.4%	0.0% to 2.0%				1301	9016097.74	15619256.41	1136.03		
1201	1204	Ramp Running Slope	6	3.61	0.14	4.0%	0.5% to 8.3%				1302	9016092.74	15619256.47	1136.20		
1202	1203	Ramp Running Slope	6	3.61	0.14	4.0%	0.5% to 8.3%				1303	9016092.79	15619260.78	1136.34		
1203	1204	Landing/Turning Space	6	5.00	-0.07	-1.4%	0.1% to 2.0%				1304	9016097.79	15619260.72	1136.28		
1203	1205	Landing/Turning Space	6	4.60	-0.05	-1.0%	0.1% to 2.0%				1305	9016092.91	15619270.78	1136.19		
1204	1206	Landing/Turning Space	6	4.60	-0.05	-1.0%	0.1% to 2.0%				1306	9016097.91	15619270.72	1136.13		
1205	1206	Landing/Turning Space	6	5.00	-0.07	-1.4%	0.1% to 2.0%				1307	9016083.79	15619260.88	1136.70		
											1308	9016067.77	15619268.18	1137.39		
1300	1301	Crosswalk Cross Slope - No Yield Condition	6	5.01	-0.17	-3.4%	0.0% to 5.0%				1309	9016067.64	15619273.17	1137.26		
1300	1302	Landing/Turning Space	6	0.27	0.00	-0.4%	0.1% to 2.0%				1310	9016083.91	15619270.88	1136.54		
1301	1302	Crosswalk Cross Slope - No Yield Condition	6	5.00	0.17	3.4%	0.0% to 5.0%				1311	9016121.70	15619258.28	1135.72		
1301	1304	Ramp Running Slope	6	4.31	0.25	5.8%	0.5% to 8.3%				1312	9016121.77	15619268.32	1135.57		
1302	1303	Ramp Running Slope	6	4.31	0.14	3.3%	0.5% to 8.3%									
1303	1304	Landing/Turning Space	6	5.00	-0.06	-1.2%	0.1% to 2.0%									
1303	1305	Landing/Turning Space	6	10.00	-0.15	-1.5%	0.1% to 2.0%									
1304	1306	Landing/Turning Space	6	10.00	-0.15	-1.5%	0.1% to 2.0%									
1305	1306	Landing/Turning Space	6	5.00	-0.06	-1.2%	0.1% to 2.0%									
1303	1307	Sidewalk Running Slope	6	9.00	0.36	3.9%	0.5% to 5.0%									
1307	1308	Sidewalk Running Slope	6	17.60	0.70	3.9%	0.5% to 5.0%									
1305	1310	Sidewalk Running Slope	6	9.00	0.35	3.9%	0.5% to 5.0%									
1310	1309	Sidewalk Running Slope	6	16.43	0.72	4.4%	0.5% to 5.0%	Yes								
1307	1310	Sidewalk Cross Slope	6	10.00	-0.15	-1.5%	0.5% to 2.0%									
1308	1309	Match Existing Cross Slope	6	4.99	-0.13	-2.6%	Match Existing									
1304	1311	Sidewalk Running Slope	6	24.03	-0.56	-2.3%	0.5% to 5.0%									
1306	1312	Sidewalk Running Slope	6	23.99	-0.56	-2.3%	0.5% to 5.0%									
1311	1312	Sidewalk Cross Slope	6	10.05	-0.15	-1.5%	0.5% to 2.0%									
4491		CITY OF WEST UNION		PROJECT NUMBER BRM-8295(604)--8N-33				SIDEWALK PLAN				SHEET: S.1				

LOG OF BORING

CHOSEN VALLEY TESTING



PROJECT: 25617.25.IAW Design Phase Geotechnical Evaluation Proposed Pine Street Bridge Replacement N Pine Street West Union, Iowa				BORING: B-01		
				LOCATION: See attached sketch		
				DATE: 10/15/2025	SCALE: 1" = 3'	
Elev. 1129.0	Depth 0.0	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
		CL OL	Slightly Organic SANDY LEAN CLAY trace of gravel, dark brown, wet. (Topsoil)			Elevations estimated to the nearest foot based on contours from a preliminary site plan provided by Origin Design dated 3/13/2025. PP = 1.0 tsf, MC = 33.9%
1127.0	2.0	CL	LEAN CLAY brown to dark brown, wet, rather soft. (Loess) (IADOT: Stiff Silty Clay)	5		
1125.0	4.0	CL	LEAN CLAY trace of gravel, trac eof iron staining to about 6.5 feet, light brown to brown, wet, soft to rather soft. (Colluvium) (IADOT: Soft Silty Clay)	3		PP = 0.75 tsf, MC = 31.1% PP = 1.0 tsf, MC = 20.8%
1121.0	8.0	SP	POORLY-GRADED SAND with GRAVEL mostly medium grained, trace of clay to about 9 feet, brown, waterbearing, loose. (Alluvium) (IADOT: Silty Sand)	4	▽	Water encountered at about 8 feet during drilling.
1117.5	11.5	CL	SANDY LEAN CLAY with GRAVEL brown, wet, hard. (Alluvium) (IADOT: Very Firm Glacial Clay)	8		
1116.0	13.0	SM	SILTY SAND with GRAVEL mostly fine grained, light brown, moist, very dense. (Weathered Limestone) (IADOT: Granular Material)	*		* 16 / 100 = 2"
1115.5	13.5		LIMESTONE (Cedar Valley Group)			Recovery = 73.3% RQD = 28.3%
						Recovery = 76.7% RQD = 27.5%
						Recovery = 97.5% RQD = 64.2%
1103.0	26.0		End of boring. Boring sealed upon completion.			

LOG OF BORING

CHOSEN VALLEY TESTING



PROJECT: 25617.25.IAW Design Phase Geotechnical Evaluation Proposed Pine Street Bridge Replacement N Pine Street West Union, Iowa				BORING: B-02		
				LOCATION: See attached sketch		
				DATE: 10/15/2025	SCALE: 1" = 3'	
Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
1128.0	0.0	CL OL	Slightly Organic SANDY LEAN CLAY trace of gravel, dark brown, wet. (Topsoil)			Elevations estimated to the nearest foot based on contours from a preliminary site plan provided by Origin Design dated 3/13/2025. PP = 4.0 tsf, MC = 20.7%
1126.0	2.0	CL	SANDY LEAN CLAY trace of gravel, dark brown to black, wet, medium. (B-Horizon) (IADOT: Stiff Silty Clay)	7		
1124.0	4.0	CL	LEAN CLAY trace of gravel, black, wet, medium. (B-Horizon) (IADOT: Stiff Silty Clay)	6		
1121.5	6.5	SM	SILTY SAND mostly fine grained, trace of gravel, trace of clay, light brown, moist, medium dense. (Residuum) (IADOT: Fine Sand)	20	▽	
1119.0	9.0	SM	SILTY SAND with GRAVEL mostly fine grained, trace of clay, light grey, moist, medium dense. (Residuum) (IADOT: Coarse Sand)	26		
1116.5	11.5	GM	SILTY GRAVEL to SILTY SAND mostly fine grained, light brown, moist, very dense. (Weathered Limestone) (IADOT: Granular Material)	*		* 100 = 3"
1116.0	12.0		Auger refusal at about 12 feet during drilling, presumably on bedrock. Boring sealed upon completion.			

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.

July 31, 2026

(signature)

(date)

Printed or typed name: Matthew J. Reisdorfer, PE.

License number: 22234

My license renewal date is December 31, 2027

Pages or sheets covered by this seal: SPS.1, SPS.2

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LOG OF BORING

CHOSEN VALLEY TESTING



PROJECT: 25617.25.IAW Design Phase Geotechnical Evaluation Proposed Pine Street Bridge Replacement N Pine Street West Union, Iowa				BORING: B-03		
				LOCATION: See attached sketch		
				DATE: 10/15/2025	SCALE: 1" = 3'	
Elev.	Depth	USCS Symbol	Description of Materials (ASTM D 2487/2488)	BPF	WL	Tests and Notes
1136.0	0.0	CL	<u>LEAN CLAY</u> trace of gravel, dark brown, wet, rather stiff. (Fill) (IADOT: Firm Silty Clay)			Elevations estimated to the nearest foot based on contours from a preliminary site plan provided by Origin Design dated 3/13/2025. PP = 2.75 tsf, MC = 22.5%
1132.0	4.0	CL	<u>LEAN CLAY with GRAVEL and CONCRETE</u> brown, wet, rather stiff. (Fill) (IADOT: Firm Silty Clay)	12		
1129.5	6.5	CH	<u>FAT CLAY</u> trace of gravel, brown, wet, medium. (Residuum) (IADOT: Stiff Silty Clay)	11		
1127.0	9.0	CH	<u>FAT CLAY with GRAVEL</u> brown, wet, rather stiff. (Residuum) (IADOT: Firm Silty Clay)	7		PP = 2.0 tsf, MC = 43.9%
1124.5	11.5	SM	<u>SILTY SAND with GRAVEL</u> mostly fine grained, light brown, moist, very dense. (Weathered Limestone) (IADOT: Granular Material)	10		* 100 = 2"
1123.0	13.0	GM	<u>SILTY GRAVEL</u> mostly fine grained, light brown, moist, very dense. (Weathered Limestone) (IADOT: Granular Material)	*		
1122.5	13.5		Auger refusal at about 13.5 feet during drilling, presumably on bedrock. Boring sealed upon completion.			

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

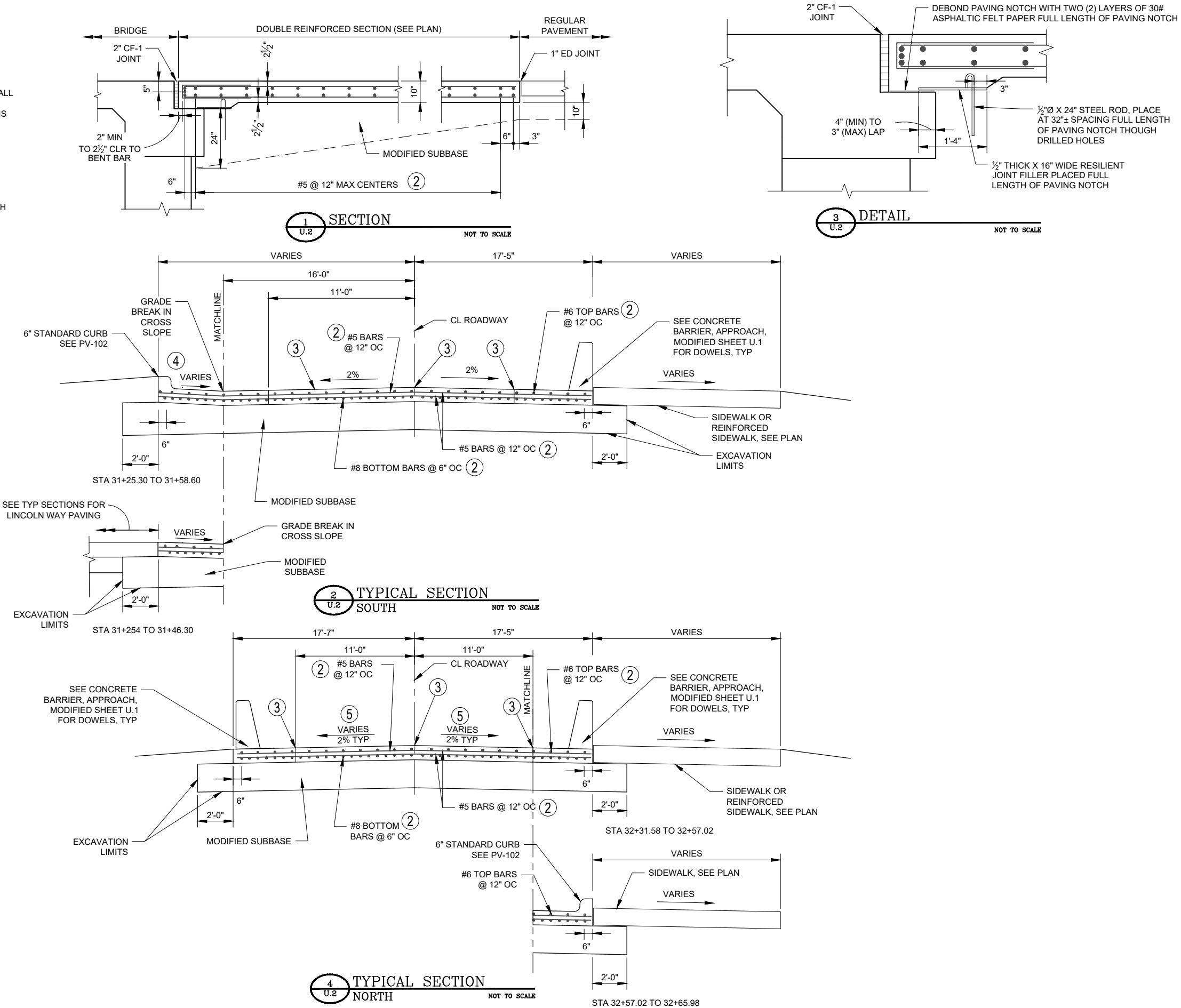
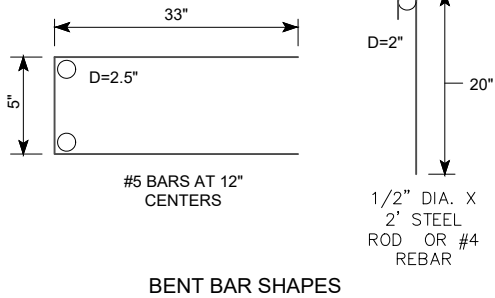
CONTRACT ITEM:

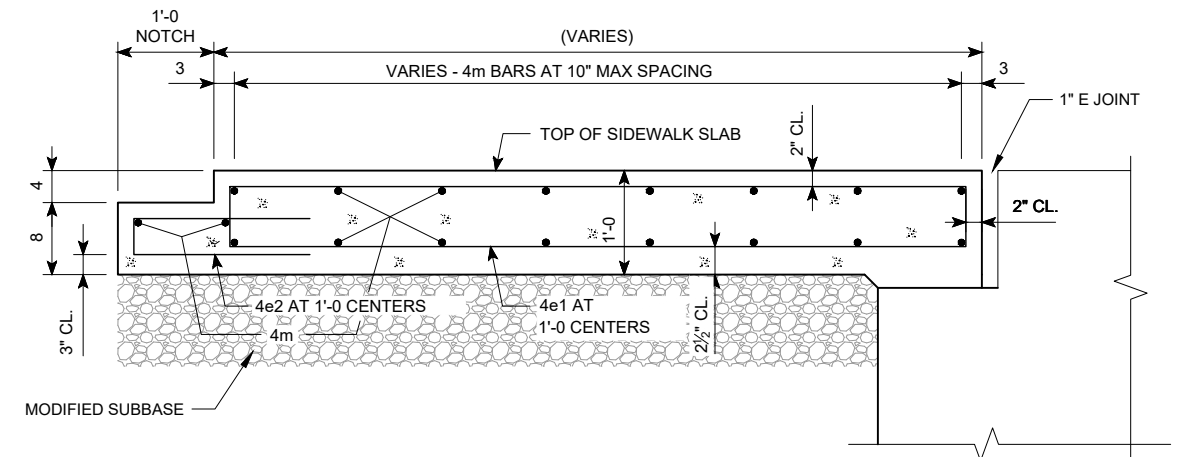
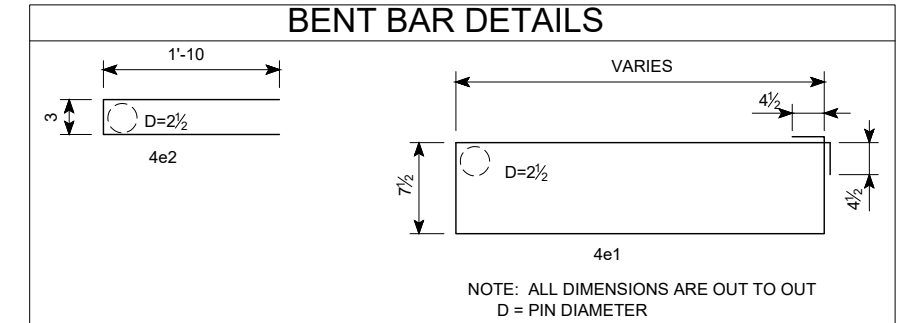
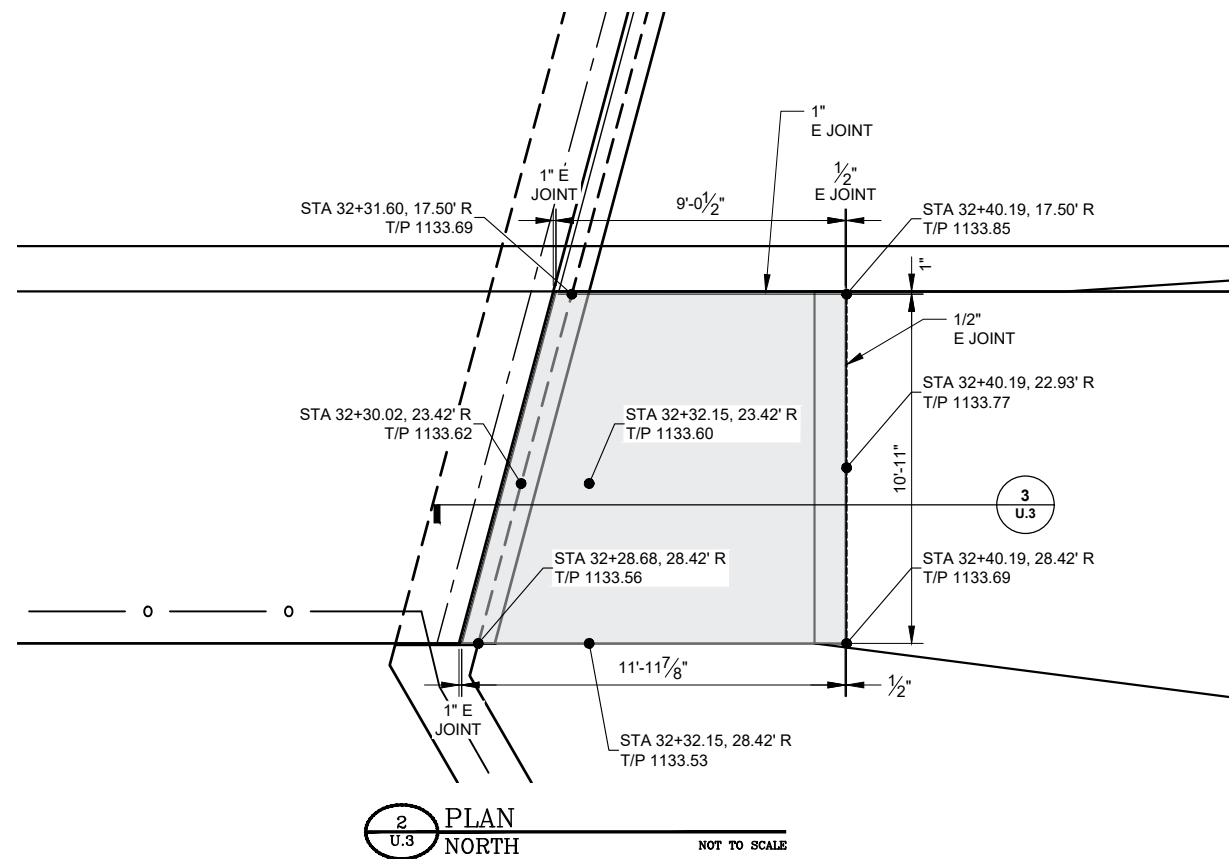
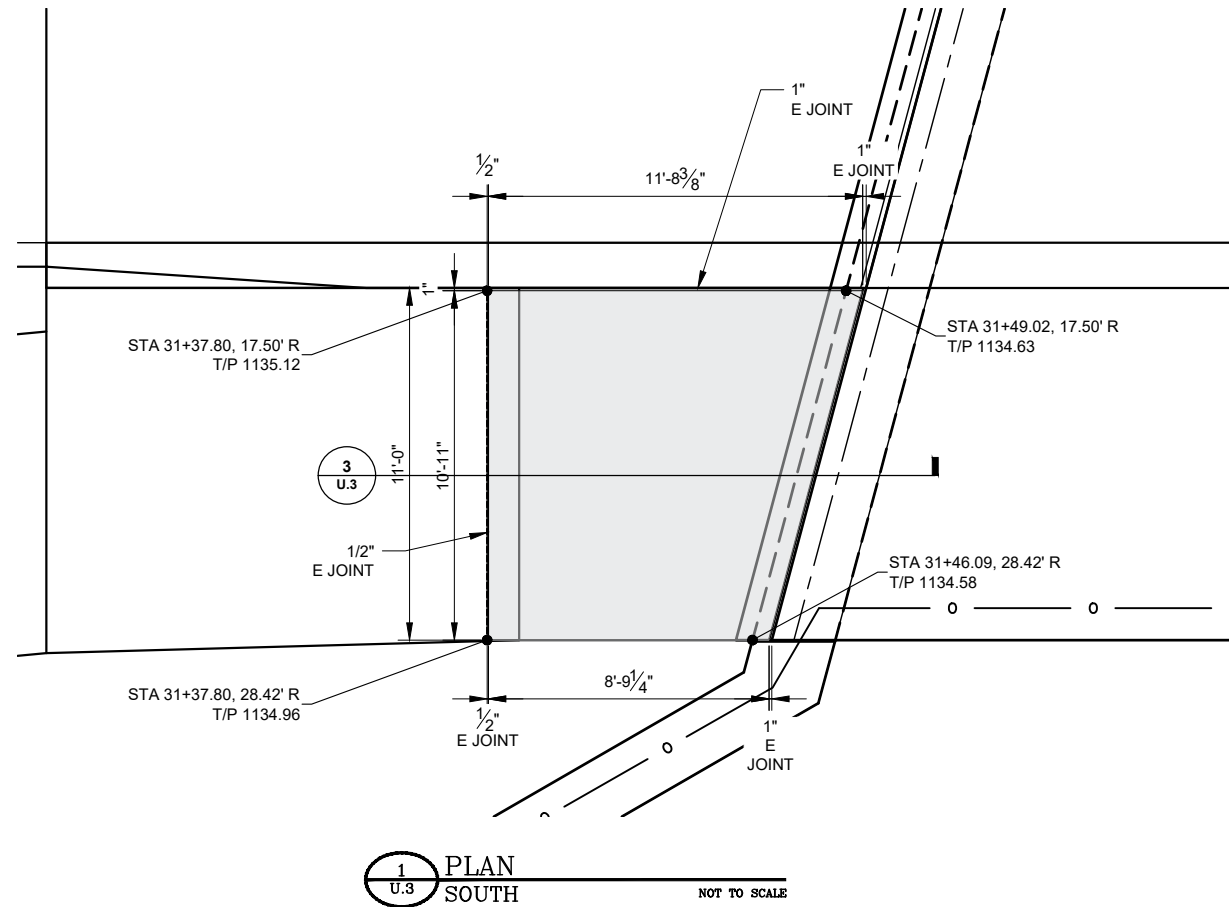
BRIDGE APPROACH, PAVEMENT, AS PER PLAN

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:
- SAW CUTTING
 - FURNISHING AND INSTALLING REINFORCED STEEL, TIE BARS, AND DOWEL ASSEMBLIES
 - PLACING, FINISHING, TEXTURING, GROOVING, AND CURING
 - ALL JOINT CONSTRUCTION
 - MODIFIED SUBBASE (UNDER APPROACH PAVEMENT ONLY)
 - 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 LONGITUDINAL JOINT: (PV-101, IDOT STANDARD ROAD PLANS)
SINGLE POUR - SAW CUT JOINT PER PV-101 DETAIL B.
TWO POURS - USE BT-4 JOINT.
- 4 REFER TO SHEET L.1 FOR INFORMATION ON SLOPES AND GRADE BREAK. THIS VARIABLE WIDTH CURB PANEL AT INTERSECTION ONLY HAS A CURB HEAD AT SELECT LOCATIONS, AND A VARIABLE SLOPE IS REQUIRED TO MATCH INTERSECTION GRADES.
- 5 REFER TO SHEET L.4 FOR INFORMATION ON SLOPES. TYPICAL CROSS SLOPE IS 2% BUT VARIABLE SLOPE IS REQUIRED WITHIN A PORTION OF THE APPROACH SLAB DUE TO TRANSITIONS IN CURB LINE ELEVATION TO MAINTAIN FLOW.





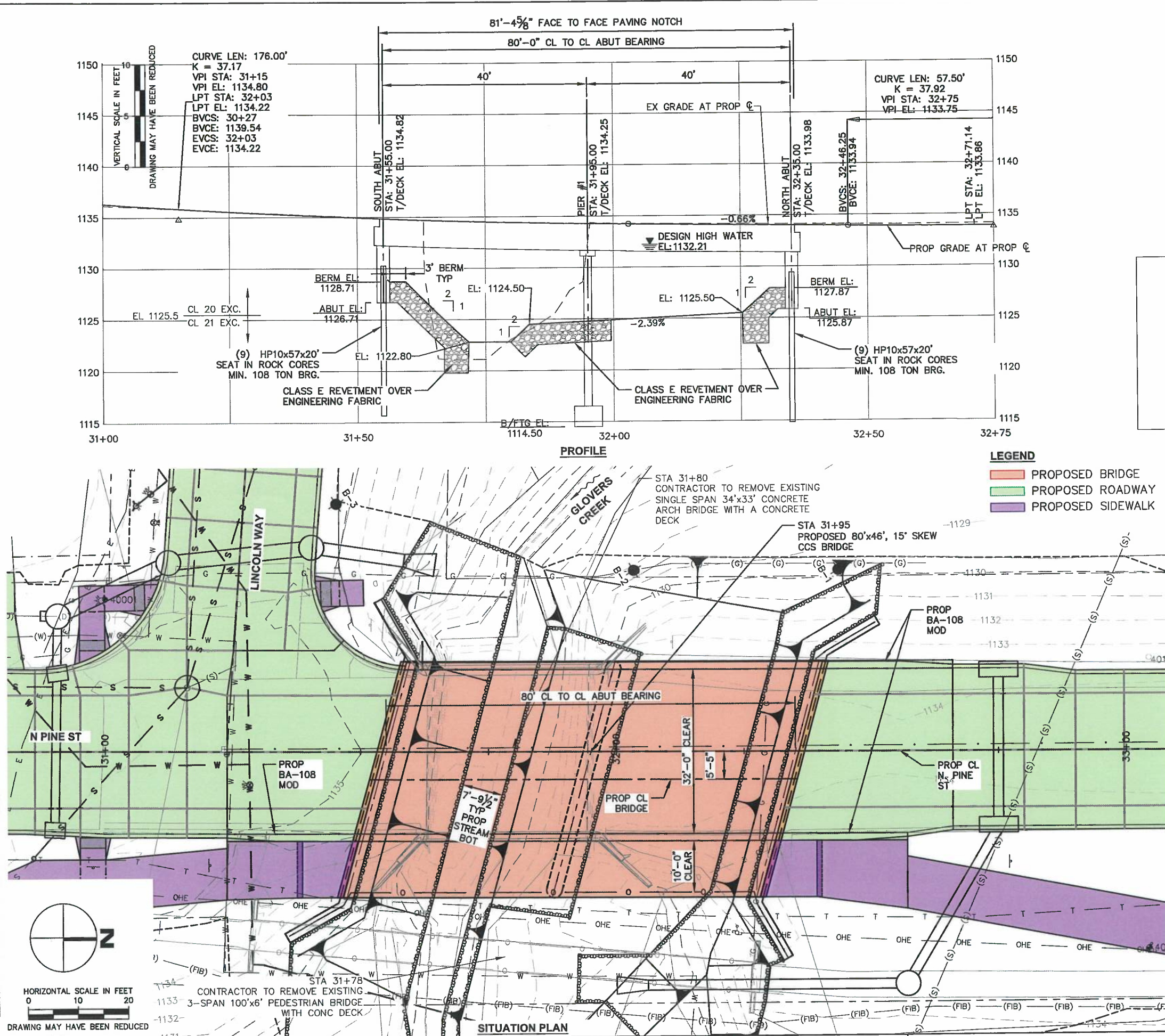
3
U.3 SECTION NOT TO SCALE

PLACE 4m BARS PERPENDICULAR TO CL OF ROADWAY AND TRIM AS NECESSARY TO FIT SKEW WITH 2" MIN CLEARANCE. EPOXY COAT ALL CUT ENDS.

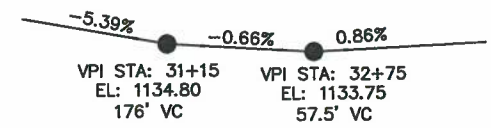
NOTE:
REINFORCED SIDEWALK SHALL BE PAID AS
"STRUCTURAL CONCRETE (MISCELLANEOUS)"

ITEM INCLUDES COST OF PROVIDING AND INSTALLING
EPOXY COATED REINFORCING STEEL PER DETAILS, AS
WELL AS MODIFIED SUBBASE MATERIAL UNDER THE
REINFORCED SIDEWALK PANELS..

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BENCH MARKS		
BENCHMARK NO.	ELEVATION	DESCRIPTION
40000	1135.91	B.M. SET RR SPIKE WEST SIDE PP
40001	1139.19	B.M. CXS NORTH BOLT HYD



PROPOSED GRADE
ON N PINE STREET
NTS



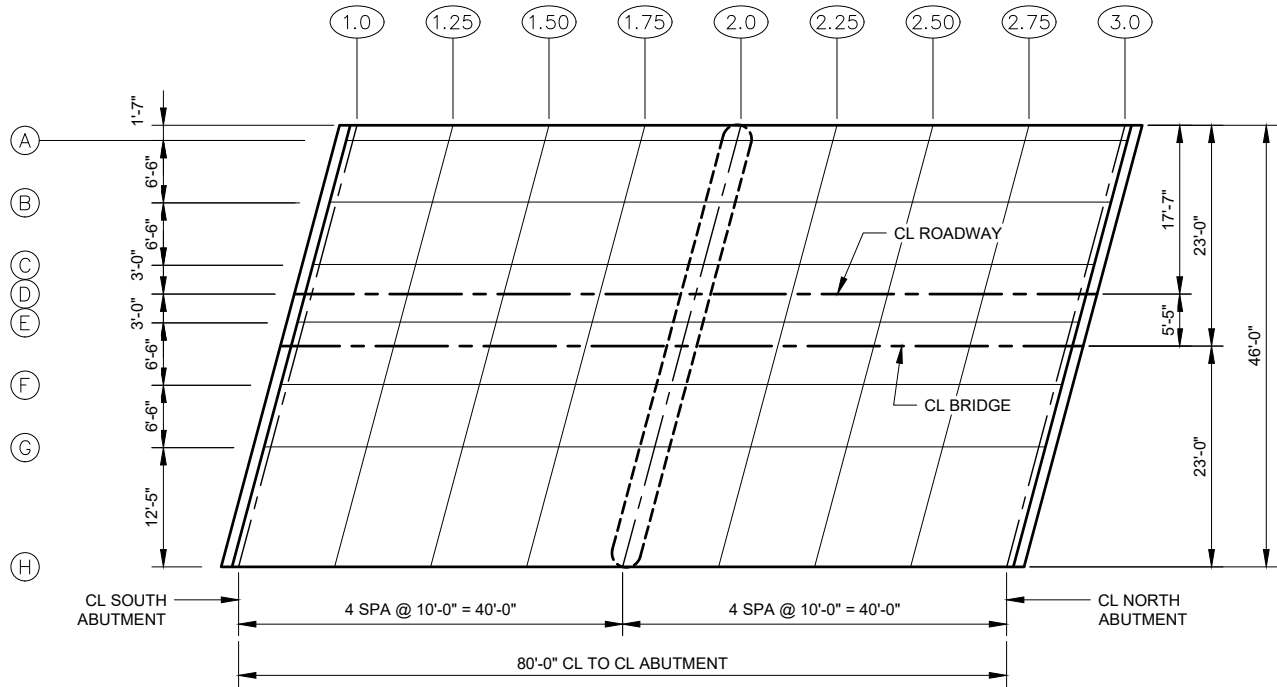
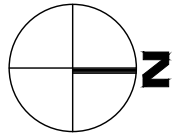
I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA

FOR ORIGIN DESIGN CO.
Courtney E. Wand 8/17/26
COURTNEY E. WAND DATE
PE 23610 12/31/2027
LICENSE # RENEWAL DATE
PAGES OR SHEETS COVERED BY THIS CERTIFICATION:
V SHEETS

NOTES		
PROFILE GRADE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.		
PIER TYPE - ENCASED PILE BENT		
CLASS E REVETMENT IS EMBEDDED.		
LOCATION		
FAYETTE COUNTY		
T94N R8W		
SE 1/4 SEC 8 & SW 1/4 SEC 9		
OVER GLOVERS CREEK		
FHWA STRUCTURE NO. 12590		
42.967883 N, -91.804634 E		
TRAFFIC: 870 VPD (2021)		
HYDRAULIC DATA		
DRAINAGE AREA	3.05	SQ. ML
MAIN CHANNEL SLOPE	29.8	FT./ML
DESIGN DISCHARGE	2940	CFS (100 YR)
DESIGN HIGH WATER	1132.21	FT. ELEV (100 YR)
REACH SLOPE (LOCAL)	11.6	FT./ML
BRIDGE FLOW AREA	458	SQ. FT. (100 YR)
DESIGN VELOCITY	6.4	FPS (100 YR)
Q ₅₀₀	2420	CFS NATURAL STAGE 1131.09 FT.
Q ₁₀₀	2940	CFS NATURAL STAGE 1131.55 FT.
CALCULATED DESIGN SCOUR (200 YR) = ELEV.		1120.0 FT.
Q _{OVERTOPPING}	3960	CFS MIN. ROAD ELEV. 1133.86 FT.
Q ₅₀₀	4220	CFS STAGE WITH BACKWATER 1134.58 FT.
CALCULATED CHECK SCOUR (500 YR) = ELEV.		1119.6 FT.

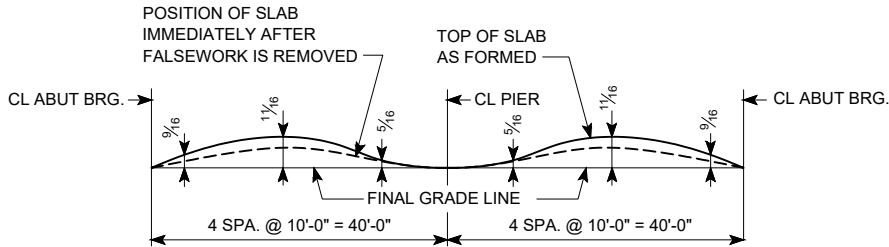
Design For
80'x46' LA 15° SKEW 2 SPAN CCS BRIDGE
N PINE ST OVER GLOVERS CREEK
Station: 31+95

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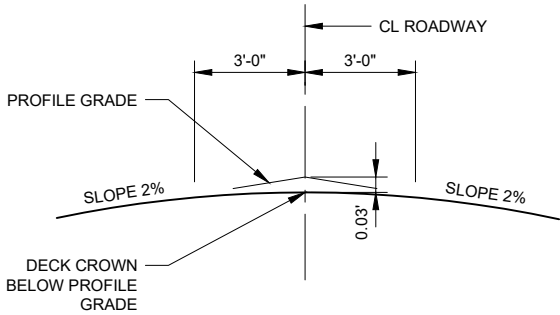
DECK ELEVATION LAYOUT GRID

Top of Deck Elevations										
Grid Line		Line 1.00	Line 1.25	Line 1.50	Line 1.75	Line 2.00	Line 2.25	Line 2.50	Line 2.75	Line 3.0
Line A	Station	31+59.29	31+69.29	31+79.29	31+89.29	31+99.29	32+09.29	32+19.29	32+29.29	32+39.29
Line A	Top of Slab	1134.45	1134.28	1134.13	1134.02	1133.93	1133.86	1133.80	1133.73	1133.67
Line B	Station	31+57.55	31+67.55	31+77.55	31+87.55	31+97.55	32+07.55	32+17.55	32+27.55	32+37.55
Line B	Top of Slab	1134.61	1134.43	1134.29	1134.17	1134.07	1134.00	1133.94	1133.87	1133.81
Line C	Station	31+55.80	31+65.80	31+75.80	31+85.80	31+95.80	32+05.80	32+15.80	32+25.80	32+35.80
Line C	Top of Slab	1134.77	1134.59	1134.44	1134.32	1134.22	1134.15	1134.08	1134.01	1133.95
Line D	Station	31+55.00	31+65.00	31+75.00	31+85.00	31+95.00	32+05.00	32+15.00	32+25.00	32+35.00
Line D	Top of Slab	1134.82	1134.64	1134.48	1134.35	1134.25	1134.18	1134.11	1134.05	1133.98
Line E	Station	31+54.20	31+64.20	31+74.20	31+84.20	31+94.20	32+04.20	32+14.20	32+24.20	32+34.20
Line E	Top of Slab	1134.80	1134.62	1134.46	1134.33	1134.23	1134.16	1134.09	1134.02	1133.96
Line F	Station	31+52.45	31+62.45	31+72.45	31+82.45	31+92.45	32+02.45	32+12.45	32+22.45	32+32.45
Line F	Top of Slab	1134.71	1134.52	1134.36	1134.22	1134.12	1134.04	1133.97	1133.91	1133.84
Line G	Station	31+50.71	31+60.71	31+70.71	31+80.71	31+90.71	32+00.71	32+10.71	32+20.71	32+30.71
Line G	Top of Slab	1134.61	1134.42	1134.26	1134.12	1134.00	1133.92	1133.85	1133.79	1133.72
Line H	Station	31+47.39	31+57.39	31+67.39	31+77.39	31+87.39	31+97.39	32+07.39	32+17.39	32+27.39
Line H	Top of Slab	1134.50	1134.30	1134.12	1133.97	1133.85	1133.76	1133.69	1133.62	1133.56
NOTE: Top of Slab Elevation = TOP OF FINISHED CONCRETE AFTER FORM REMOVAL										
Top of Form Elevations		Line 1.00	Line 1.25	Line 1.50	Line 1.75	Line 2.00	Line 2.25	Line 2.50	Line 2.75	Line 3.0
Line A	Top of Form	1132.53	1132.41	1132.27	1132.13	1132.01	1131.97	1131.94	1131.86	1131.75
Line B	Top of Form	1132.69	1132.56	1132.43	1132.28	1132.16	1132.11	1132.08	1132.00	1131.89
Line C	Top of Form	1132.86	1132.72	1132.58	1132.43	1132.30	1132.26	1132.22	1132.14	1132.03
Line D	Top of Form	1132.90	1132.77	1132.62	1132.46	1132.34	1132.29	1132.25	1132.18	1132.07
Line E	Top of Form	1132.89	1132.75	1132.60	1132.44	1132.31	1132.27	1132.23	1132.15	1132.04
Line F	Top of Form	1132.79	1132.65	1132.50	1132.33	1132.20	1132.15	1132.11	1132.04	1131.92
Line G	Top of Form	1132.70	1132.55	1132.40	1132.23	1132.09	1132.03	1131.99	1131.92	1131.81
Line H	Top of Form	1132.52	1132.36	1132.20	1132.02	1131.87	1131.81	1131.77	1131.69	1131.58
NOTE: Top of Form Elevation = TOP OF FORM INCLUDING INCREASE FOR FORM CAMBER										



FORM CAMBER DIAGRAM

THIS DIAGRAM SHOWS THE FORM CAMBER REQUIRED TO COMPENSATE FOR THE ANTICIPATED ULTIMATE DEAD LOAD DEFLECTION WHICH CONSISTS OF THE IMMEDIATE SHORT TERM DEFLECTION PLUS ANTICIPATED LONG-TERM DEFLECTION (ASSUMED TO BE 3X THE SHORT TERM DEFLECTION). THE ABOVE DIMENSIONS DO NOT INCLUDE ANY ALLOWANCE FOR FORM DEFLECTION OR FALSEWORK SETTLEMENT.



CROWN TEMPLATE

SEE CROSS SECTION FOR SIDEWALK SLOPE

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED, SERIES OF 2017.
REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, $f_c=4,000$ p.s.i.
HL-93 LIVE LOAD PLUS 20 lbs. PER SQUARE FOOT FOR FUTURE WEARING SURFACE AND 90 PSF PEDESTRIAN LOADING ON SIDEWALK. SIX FOOT OF APPROACH SLAB DEAD & LIVE LOAD INCLUDED IN ABUTMENT LOADS. THE SLAB AS SHOWN INCLUDES ½" INTEGRAL WEARING SURFACE.

GENERAL BRIDGE NOTES:

FILL MAY BE EVENLY PLACED ON BOTH SIDES OF EACH ABUTMENT FROM THE BOTTOM OF THE ABUTMENT TO THE TOP OF THE BERM ELEVATIONS BEFORE THE SUPERSTRUCTURE IS IN PLACE. DO NOT PLACE FILL ABOVE 3'-0" FROM THE TOP OF THE BERM ELEVATION UNTIL THE SUPERSTRUCTURE IS IN PLACE.

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

ABUTMENT PILE DESIGN NOTES:

THE CONTRACT LENGTH OF 20 FEET FOR THE ABUTMENT PILES IS BASED ON A NON-COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 151 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.5 FOR SOIL AND 0.7 FOR ROCK END BEARING. THE SOUTH ABUTMENT PILE LENGTH WAS BASED ON THE BEDROCK ELEVATIONS FROM B-01 AND B-02 INSTEAD OF B-03 IN CASE OF BEDROCK ELEVATION VARIATION.

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 AND SEATED INTO ROCK CORES PER ROCK CORING DETAILS.

ABUTMENT PILE DRIVING NOTE:

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR ABUTMENT PILES IS 108 TONS AT END OF DRIVE OR RETAP. THE PILE CONTRACT LENGTH SHALL BE DRIVEN AS PER PLAN PER NOTES FOR ROCK CORING. WING PILES DO NOT REQUIRE PREBORING OR ROCK CORES AND MAY BE DRIVEN NORMALLY WITHOUT MINIMUM EMBEDMENT REQUIREMENTS. CONSTRUCTION CONTROL REQUIRES A MODIFIED IOWA DOT ENR FORMULA.

ROCK CORING NOTES:

THE BRIDGE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES AND COMPLETE ROCK CORING. WING PILES DO NOT REQUIRE PREBORE OR ROCK CORING AND MAY BE DRIVEN NORMALLY TO REFUSAL PER PILE DRIVING NOTES. 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 ABUTMENTS TO THE TOP OF THE BEDROCK STRATUM AS SHOWN ON THE SPS SHEETS WHICH IS ANTICIPATED TO BE ELEVATION 1123.0 AT THE SOUTH ABUTMENT AND 1116.0 AT THE NORTH ABUTMENT. 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.

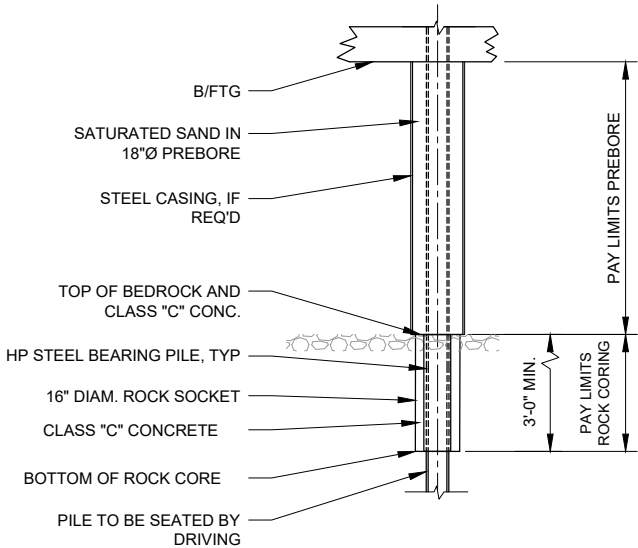
THE SOUTH ABUTMENT QUANTITIES ASSUME (7) PILES WITH 3.7 FEET OF PREBORE PLUS 3.0 FEET OF ROCK CORING FOR EACH PILE. THE NORTH ABUTMENT QUANTITIES ASSUME (7) PILES WITH 9.9 FEET OF PREBORE PLUS 3.0 FEET OF ROCK CORING FOR EACH PILE.

SUMMARY OF CONCRETE QUANTITIES	
LOCATION	STRUCTURAL CONCRETE
NORTH ABUTMENT AND WINGS	39.1
SOUTH ABUTMENT AND WINGS	39.2
BRIDGE DECK **	283.1
PIER STEM AND FOOTING	71.4
** INCLUDES ABUTMENT HAUNCHES AND MONO PIER CAP	
TOTAL (CU. YDS.)	432.8

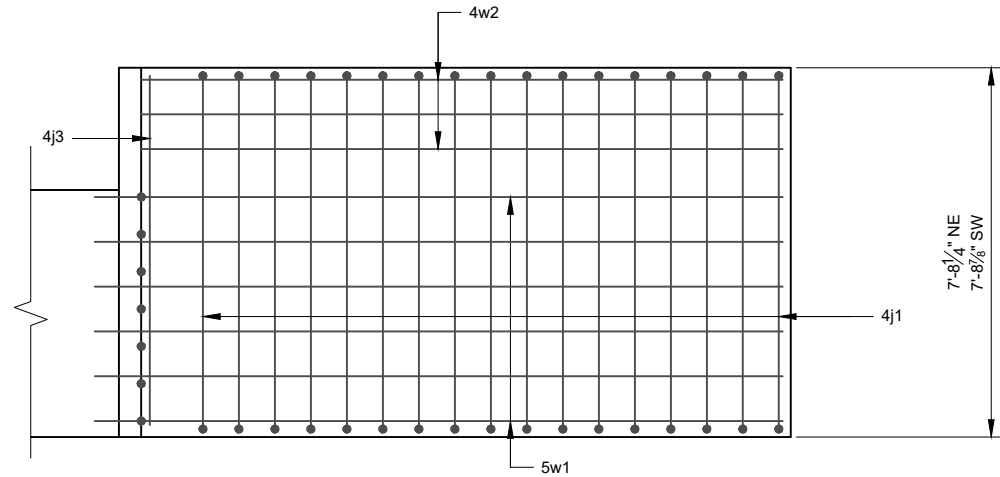
SUMMARY OF REINFORCING STEEL	
LOCATION	EPOXY COATED REINFORCING STEEL
SUPERSTRUCTURE	56094
(2) ABUTMENTS AND (4) WINGS	7745
PIER STEM AND FOOTING	6948
CONCRETE BARRIER RAIL, 3'-8"	8606
TOTAL (LBS.)	79393

SUMMARY OF FOUNDATIONS					
LOCATION	SUBSTRUCTURE TYPE	FOUNDATION TYPE	NUMBER	LENGTH (L.F.)	TOTAL (L.F.)
NORTH ABUTMENT	INTEGRAL ABUTMENT	HP10x57*	9	20	180
SOUTH ABUTMENT	INTEGRAL ABUTMENT	HP10x57*	9	20	180
PIER	DIAPHRAGM	SPREAD FOOTING	-	-	-
*SEE ROCK CORING NOTES					
TOTAL (LF)					360

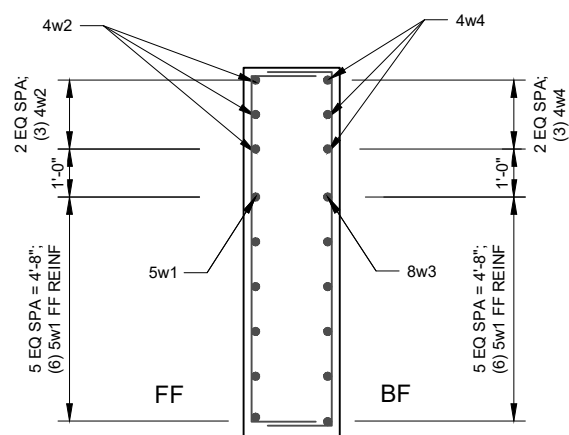
SUMMARY OF EXCAVATION			
LOCATION	CLASS 20 EXCAVATION	CLASS 21 EXCAVATION	CLASS 22 EXCAVATION
NORTH ABUTMENT	75		
SOUTH ABUTMENT	75		
PIER		215	22
TOTAL (CU. YDS.)	150	215	22



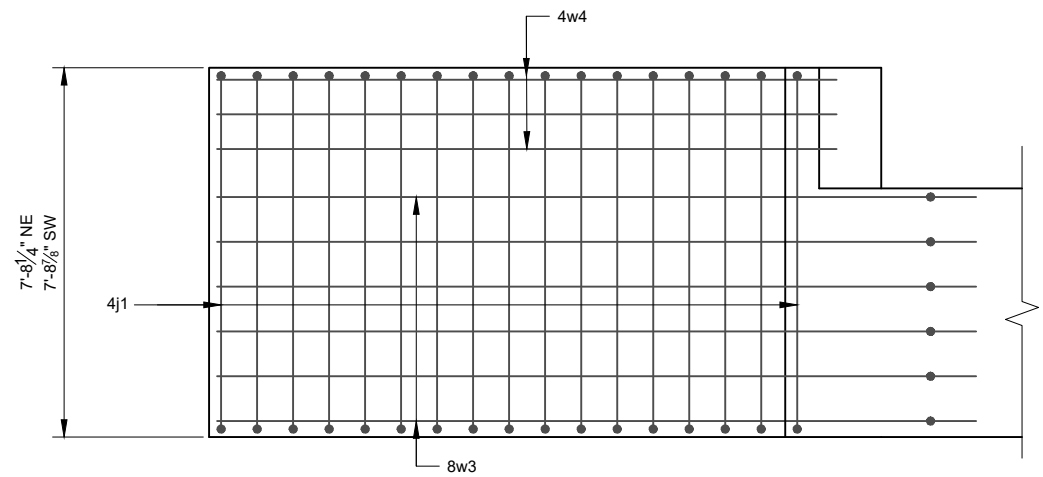
PILE ROCK CORE



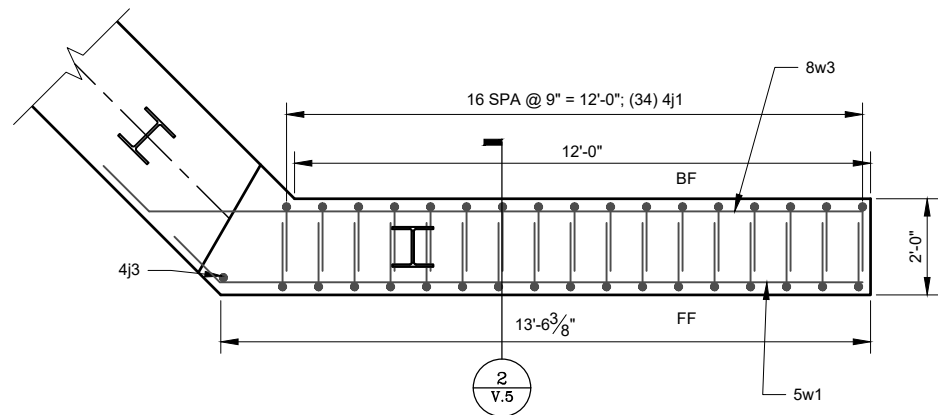
1
V.5
FF ELEVATION
NE & SW WING
NOT TO SCALE



2
V.5
SECTION
NE & SW WING
NOT TO SCALE

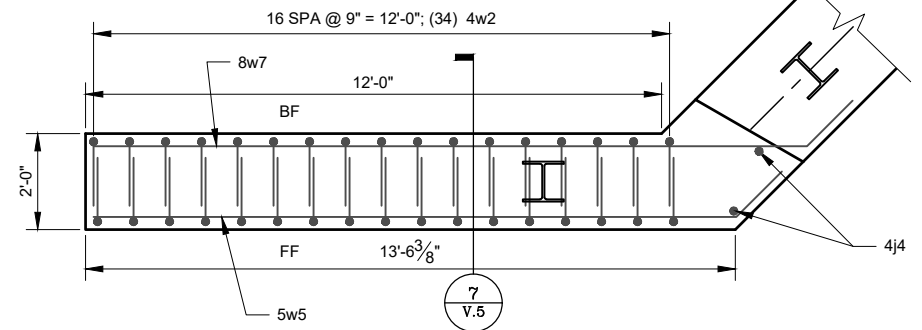


3
V.5
BF ELEVATION
NE & SW WING
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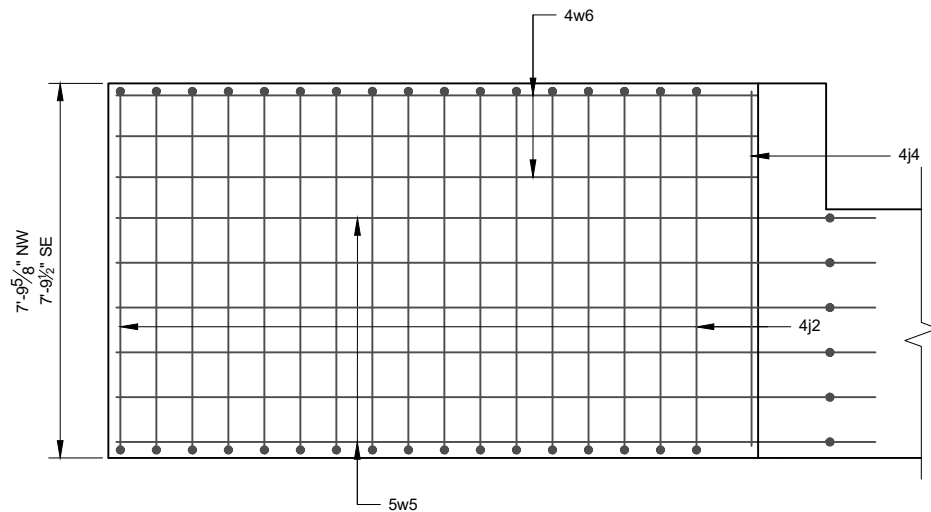


4
V.5
PLAN VIEW
NE & SW WING
NOT TO SCALE

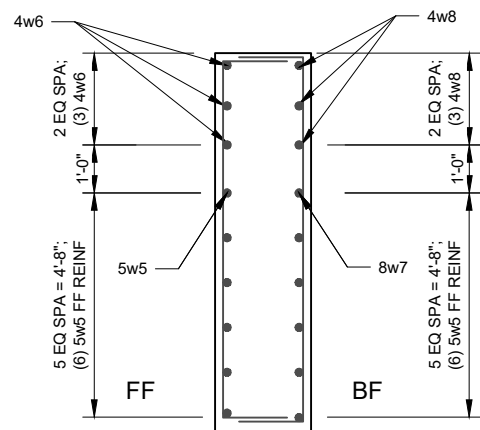
NOTE: CONTRACTOR HAS THE OPTION TO CONSTRUCT WINGS WITH A HORIZONTAL CONSTRUCTION JOINT WITH KEYWAY AT THE ELEVATION OF THE TOP OF ABUTMENT BACKWALL. IF THIS OPTIONAL JOINT IS USED, INSTALL 12\"/>



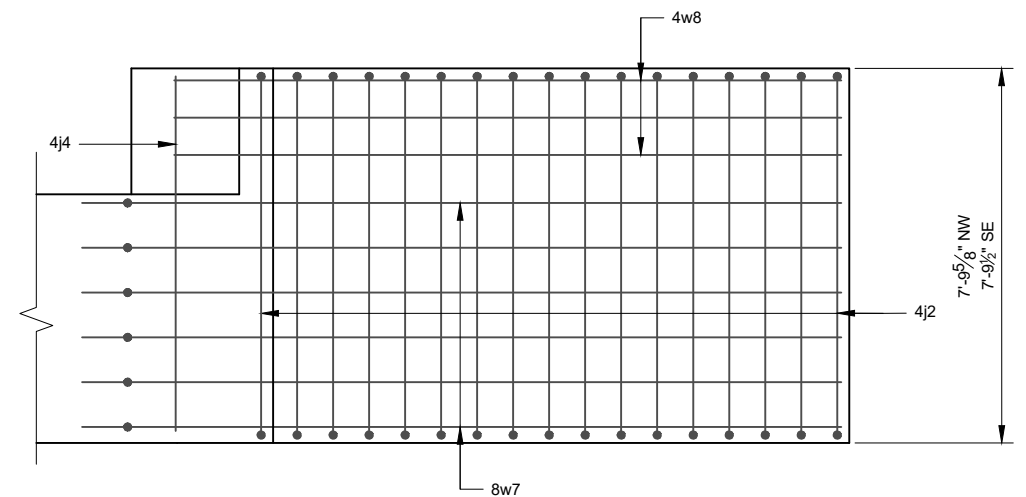
5
V.5
PLAN VIEW
NW & SE WING
NOT TO SCALE



6
V.5
FF ELEVATION
NW & SE WING
NOT TO SCALE



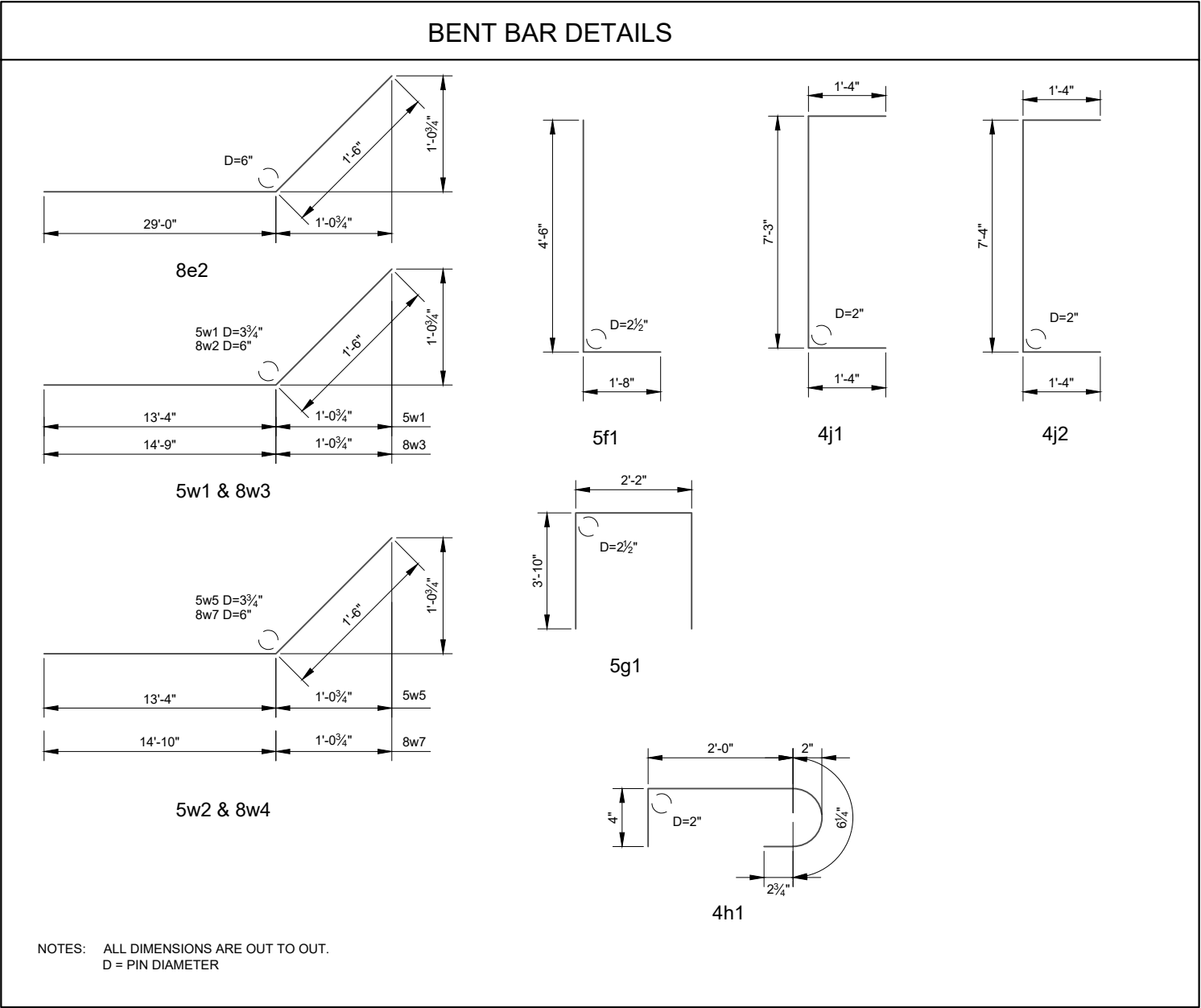
7
V.5
SECTION
NW & SE WING
NOT TO SCALE



8
V.5
BF ELEVATION
NW & SE WING
NOT TO SCALE

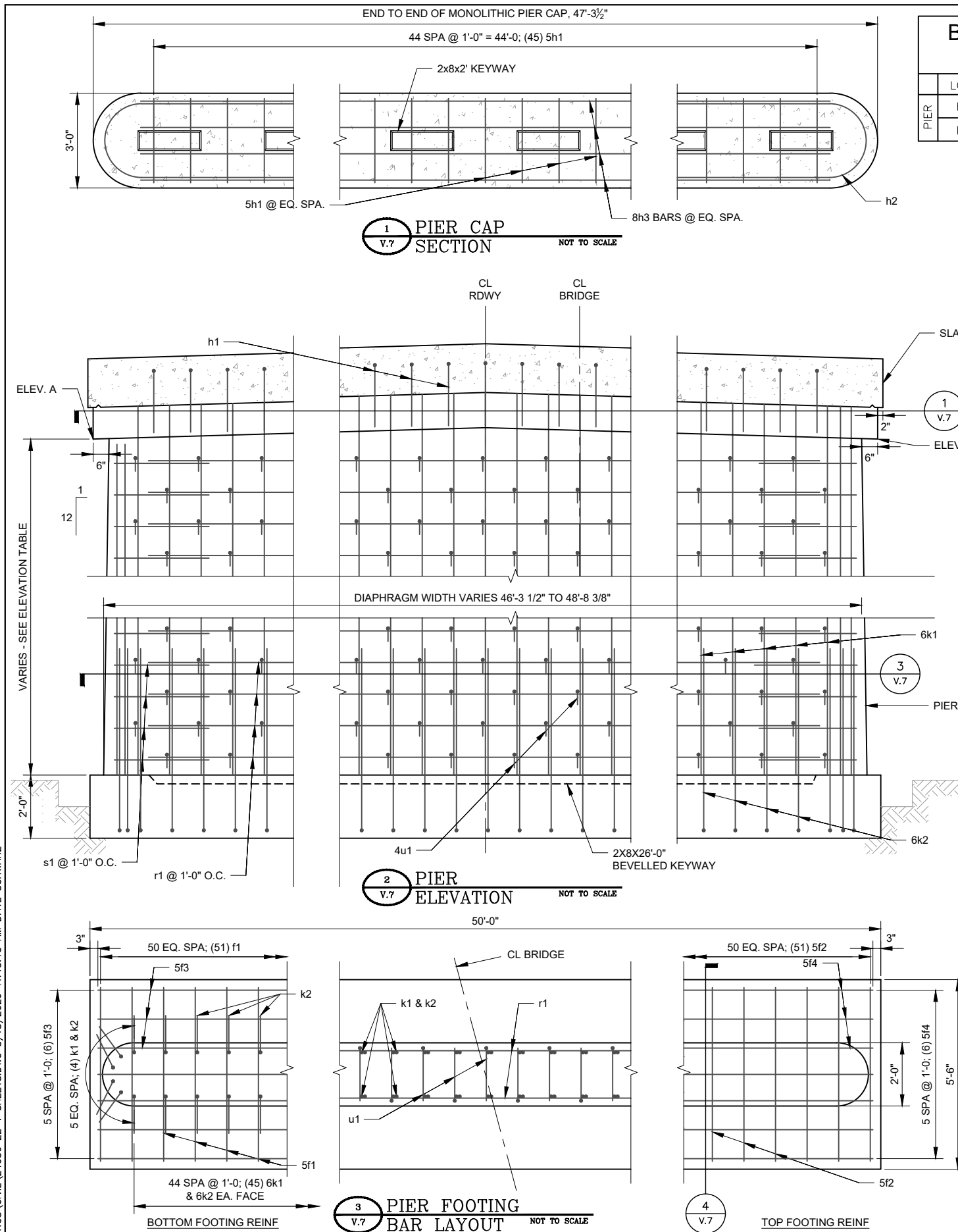
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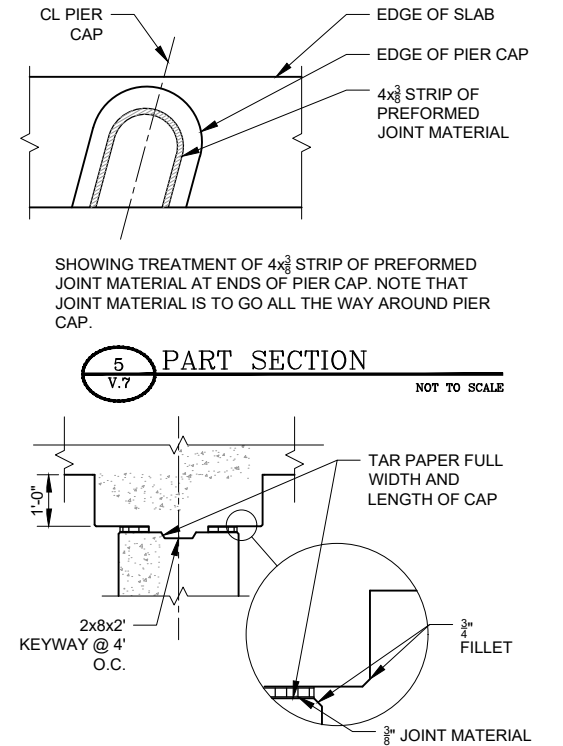
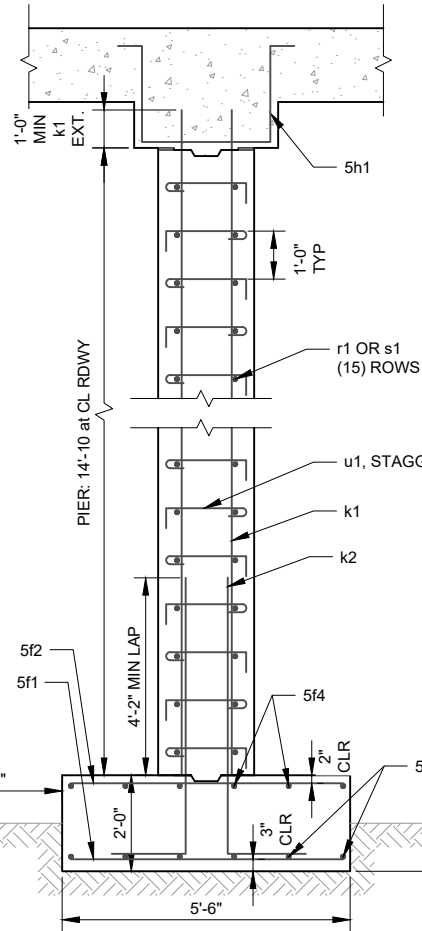


REINFORCING BAR LIST - TWO ABUTMENTS						
EPOXY COATED REINFORCING	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
					ft ' - in.	lb
	5 e1	ABUT. BODY HORIZ. FF		12	50 ' - 0	626
	8 e2	ABUT. BODY HORIZ. BF		24	30 ' - 6	1954
	5 f1	ABUT. BODY VERT. FF & BF		200	6 ' - 2	1286
	5 g1	ABUT. BODY TOP		100	9 ' - 10	1026
	4 h1	BACKWALL TIES		48	3 ' - 1	99
	5 h2	ABUT. DECK DOWELS		92	2 ' - 0	192
	4 j1	WING VERT. NE & SW		68	9 ' - 11	450
	4 j2	WING VERT. NW & SE		68	10 ' - 0	454
	4 j3	WING VERT., CORNER NE & SW		2	7 ' - 3	10
	4 j4	WING VERT., CORNER NW & SE		4	7 ' - 4	20
	5 w1	WING, HORIZ. FF NE & SW		12	14 ' - 10	186
	4 w2	WING HORIZ. FF TOP, NE & SW		6	13 ' - 4	53
	8 w3	WING, HORIZ. BF NE & SW		12	16 ' - 3	521
	4 w4	WING HORIZ. BF TOP, NE & SW		6	12 ' - 10	51
	5 w5	WING HORIZ. FF NW & SE		12	14 ' - 10	186
	4 w6	WING HORIZ. FF TOP, NW & SE		6	13 ' - 4	53
	8 w7	WING HORIZ. BF NW & SE		12	16 ' - 4	523
4 w8	WING HORIZ. BF TOP, NW & SE		6	13 ' - 10	55	
TOTAL REINFORCING STEEL EPOXY COATED, LB						7745

ABUTMENT CONCRETE SUMMARY	CY
NORTH ABUTMENT BODY	22.9
NORTHWEST WING	8.4
NORTHEAST WING	7.8
SOUTH ABUTMENT BODY	22.9
SOUTHWEST WING	7.9
SOUTHEAST WING	8.4
TOTAL	78.3



BOTTOM PIER CAP ELEVATIONS		
	LOCATION	ELEVATION
PIER	ELEV A	1130.98
	ELEV B	1130.87



FOOTING NOTES:
THESE SPREAD FOOTINGS ARE DETAILED TO BE USED WITH THE MONOLITHIC CAP DETAILS.

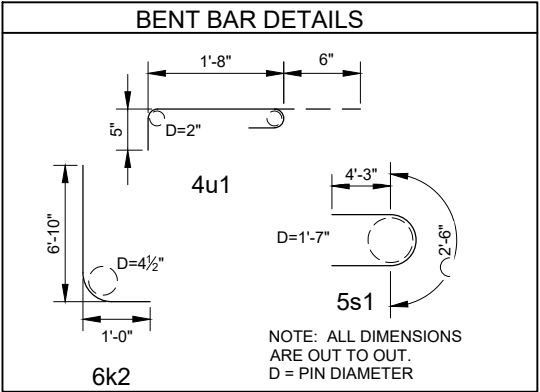
ROCK ELEVATIONS ARE APPROXIMATE AND ARE TO BE FIELD VERIFIED. THESE SPREAD FOOTINGS SHALL EXTEND 12" INCH MIN INTO UNWEATHERED FOUNDATION ROCK AND THE LAST 12 INCHES OF ROCK EXCAVATION SHALL BE TO NEAT LINES OF MASONRY. THE FOUNDATION ROCK SHALL HAVE A MINIMUM LRFD FACTORED BEARING RESISTANCE OF 12.0 KIPS PER SQUARE FOOT (ALLOWABLE SERVICE LOAD BEARING VALUE OF AT LEAST 10.3 KIPS PER SQUARE FOOT).

IF BEDROCK ELEVATIONS VARY, PIER STEM HEIGHT MAY BE INCREASED UP TO 15'-10" HEIGHT. FOOTING DOWELS ARE DETAILED WITH 1' EXTRA LENGTH DUE TO POTENTIAL VARIABILITY TO MAINTAIN MINIMUM LAP. COORDINATE WITH ENGINEER FOR ADJUSTMENTS TO ADD HORIZONTAL REINFORCING AND CONCRETE IN CASE OF MODIFICATIONS TO THE PIER STEM HEIGHT. CONTACT ENGINEER IF CONDITIONS EXCEEDING THESE ARE ENCOUNTERED.

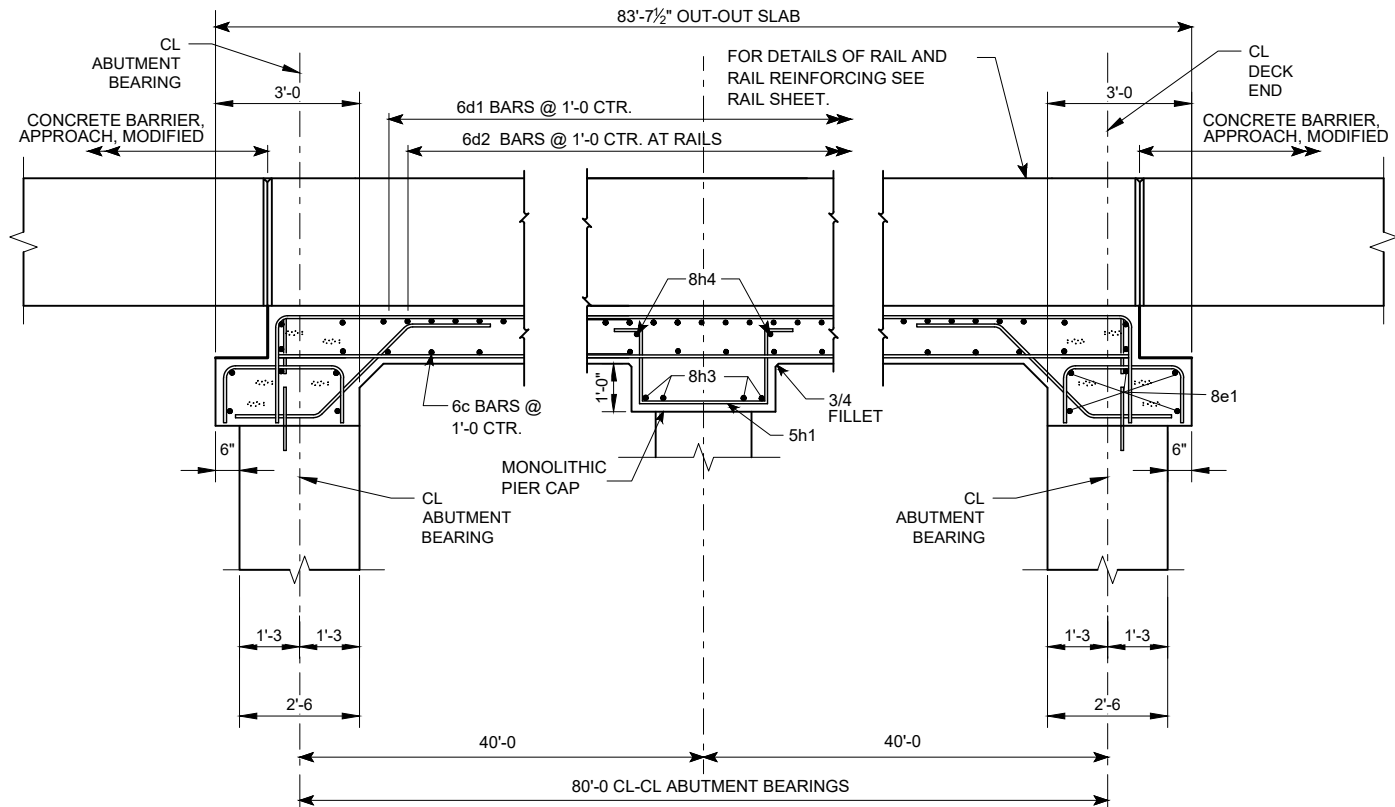
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REINFORCING BAR LIST - DIAPHRAGM PIER & FTG					
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
				ft. - in.	lb
5 f1	FOOTING, TRANSV. BOTT.		51	5' - 0	266
5 f2	FOOTING, TRANSV. TOP		51	5' - 0	266
5 f3	FOOTING, LONGIT., BOTT.		6	49' - 6	310
5 f4	FOOTING, LONGIT., TOP		6	49' - 6	310
6 k1	WALL VERTICAL		98	15' - 10	2331
6 k2	WALL DOWEL		98	7' - 10	1153
4 u1	WALL TIES		338	2' - 7	583
5 r1	WALL HORIZONTAL		30	44' - 3	1385
5 s1	WALL HORIZONTAL - ENDS		30	11' - 0	344
TOTAL EPOXY COATED REINFORCING, ONE PIER					6948
CONCRETE REQUIRED FOR PIER FOOTING = 20.4 CU. YD. CONCRETE REQUIRED FOR PIER WALL DIAPHRAGM = 51.0 CU. YD. CLASS 22 EXCAVATION FOR PIER FOOTING = 22 CU. YD.					

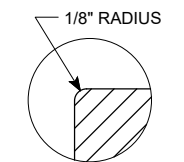
NOTE
MONOLITHIC PIER CAP BARS ARE INCLUDED IN SUPERSTRUCTURE BAR LIST



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PART LONGITUDINAL SECTION NEAR GUTTER LINE



DETAIL "A"

SUPERSTRUCTURE CONCRETE QUANTITIES	
LOCATION	QUANTITY, CY
DECK & PAVING NOTCHES	270.2
NORTH ABUTMENT HAUNCH	3.8
SOUTH ABUTMENT HAUNCH	3.9
MONO PIER CAP	5.2
TOTAL STR. CONC. CY	283.1

SUPERSTRUCTURE NOTES:

THE SLAB AS SHOWN INCLUDES A 1/2 INCH INTEGRAL WEARING SURFACE.

THE MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN. ALL REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE. SEE "BAR CHAIR NOTE".

ALL REINFORCING SHALL BE GRADE 60.

THE CONCRETE SLAB IS TO BE PLACED WITH A MINIMUM OF CONSTRUCTION JOINTS. PROCEDURES FOR PLACING SLAB CONCRETE SHALL 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 RESULT. SLAB FALSEWORK SHALL BE REMOVED PRIOR TO CONSTRUCTION OF THE BARRIER RAILS.

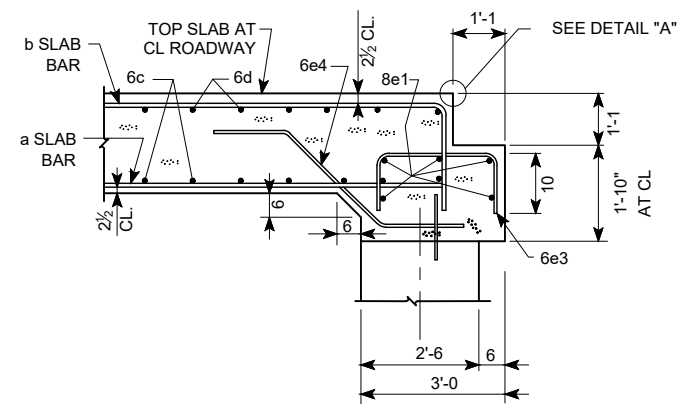
NOTE THAT WHEN PORTLAND CEMENT APPROACH PAVEMENT IS PLACED, COMPRESSIBLE JOINT MATERIAL MUST BE USED BETWEEN PAVEMENT AND END OF BRIDGE.

COST OF FURNISHING AND PLACING 3"Ø PVC PIPE IN EACH WING IS INCLUDED IN THE PRICE BID FOR STRUCTURAL CONCRETE.

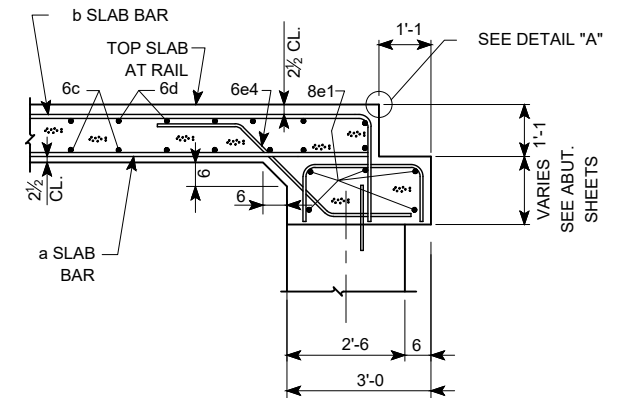
BAR CHAIR NOTE:

TOP MAT OF REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS LONGITUDINALLY AND TRANSVERSELY. THE BOTTOM MAT OF 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 SLAB BOLSTERS SPACED 4'-0 APART.

I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND SLAB BOLSTERS.

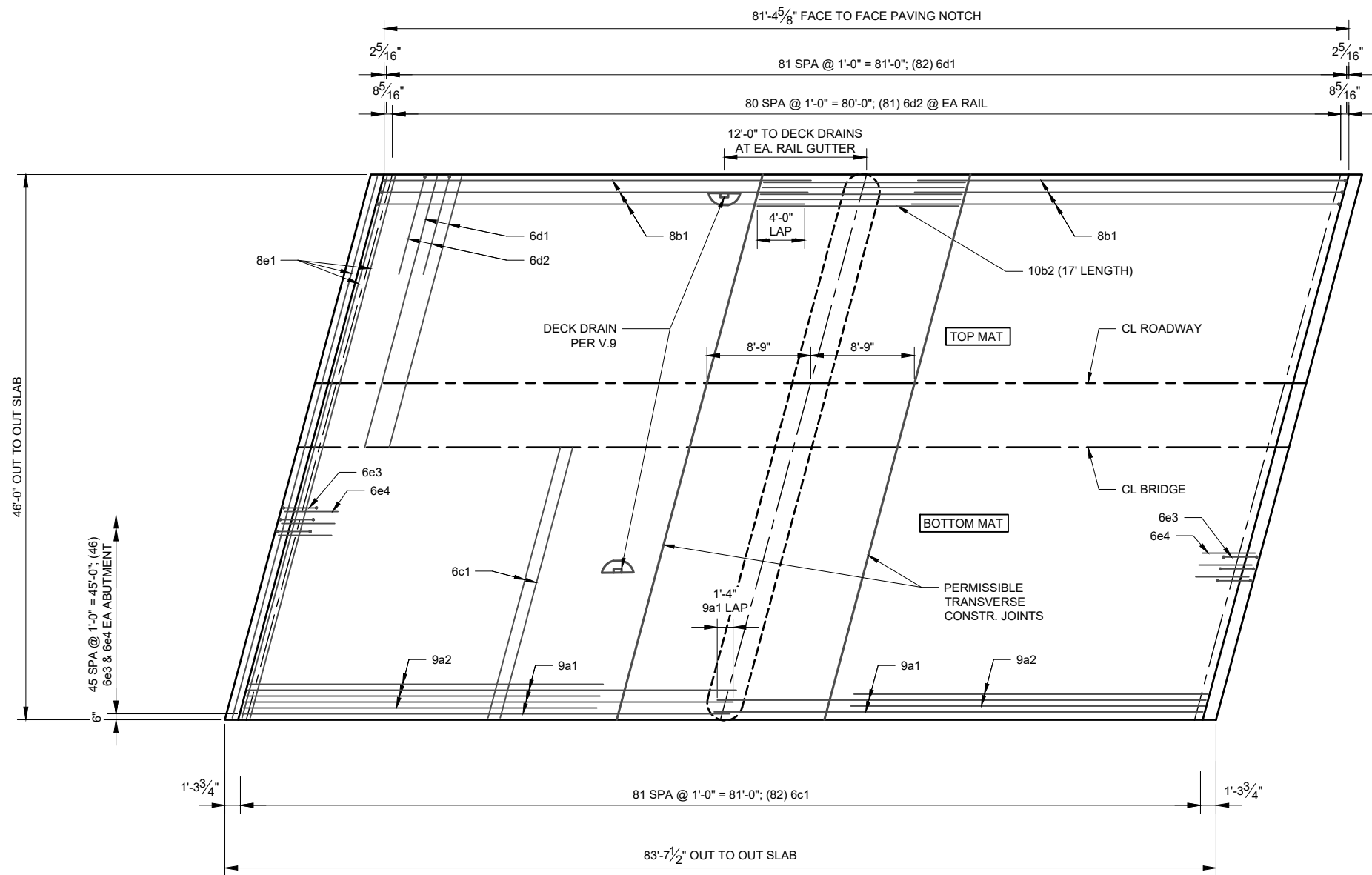


SECTION NORMAL
TO ABUTMENT AT CL

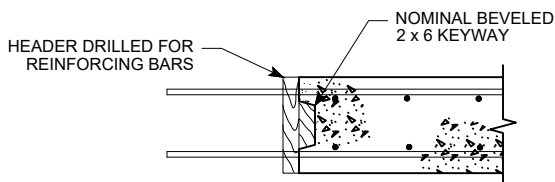
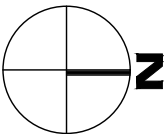


SECTION NORMAL TO
ABUTMENT AT SLAB EDGES

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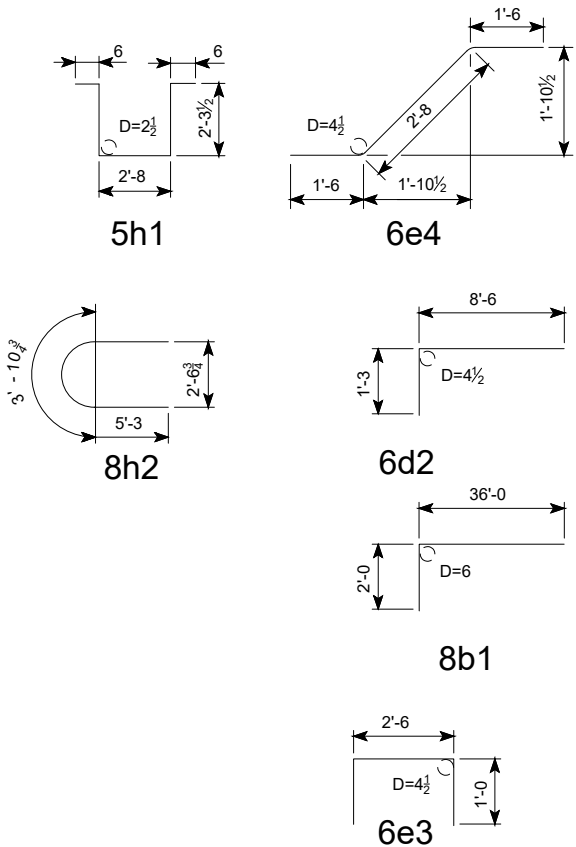
SLAB REINF LAYOUT



TRANSVERSE
CONSTRUCTION JOINT

REINFORCING BAR LIST - ONE SUPERSTRUCTURE						
EPOXY COATED REINFORCING	BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
					ft. in.	lb
	9 a1	SLAB, LONGIT. BOT.		94	41'-3	13184
	9 a2	SLAB, LONGIT. BOT.		92	29'-0	9071
	8 b1	SLAB, LONGIT. TOP		92	38'-0	9334
	10 b2	SLAB, LONGIT. TOP AT PIER		91	17'-0	6657
	6 c1	SLAB, TRANSV. BOT.		82	47'-3	5819
	6 d1	SLAB, TRANSV. TOP		82	47'-3	5819
	6 d2	SLAB, TRANSV. TOP AT RAILS		162	9'-9	2372
	8 e1	SLAB HAUNCH AT ABUT.		10	47'-2	1259
	6 e3	SLAB TIES AT ABUT.		92	4'-6	622
	6 e4	SLAB TIES AT ABUT.		92	5'-8	783
	5 h1	MONO PIER CAP TIES		45	8'-3	387
	8 h2	MONO PIER CAP ENDS		2	14'-5	77
	8 h3	PIER CAP, BOT. LONGIT.		4	44'-0	470
	8 h4	PIER CAP, TOP LONGIT.		2	45'-0	240
	TOTAL REINFORCING STEEL EPOXY COATED, LB					56094

BENT BAR DETAILS



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

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NOTE:

SUBDRAIN SHALL SLOPE DOWNWARD 2% FROM ϵ 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.

ABUTMENT BACKFILL PROCESS:

SEE V.3 FOR RESTRICTIONS ON PLACING BACKFILL BEFORE SUPERSTRUCTURE IS IN PLACE.

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.

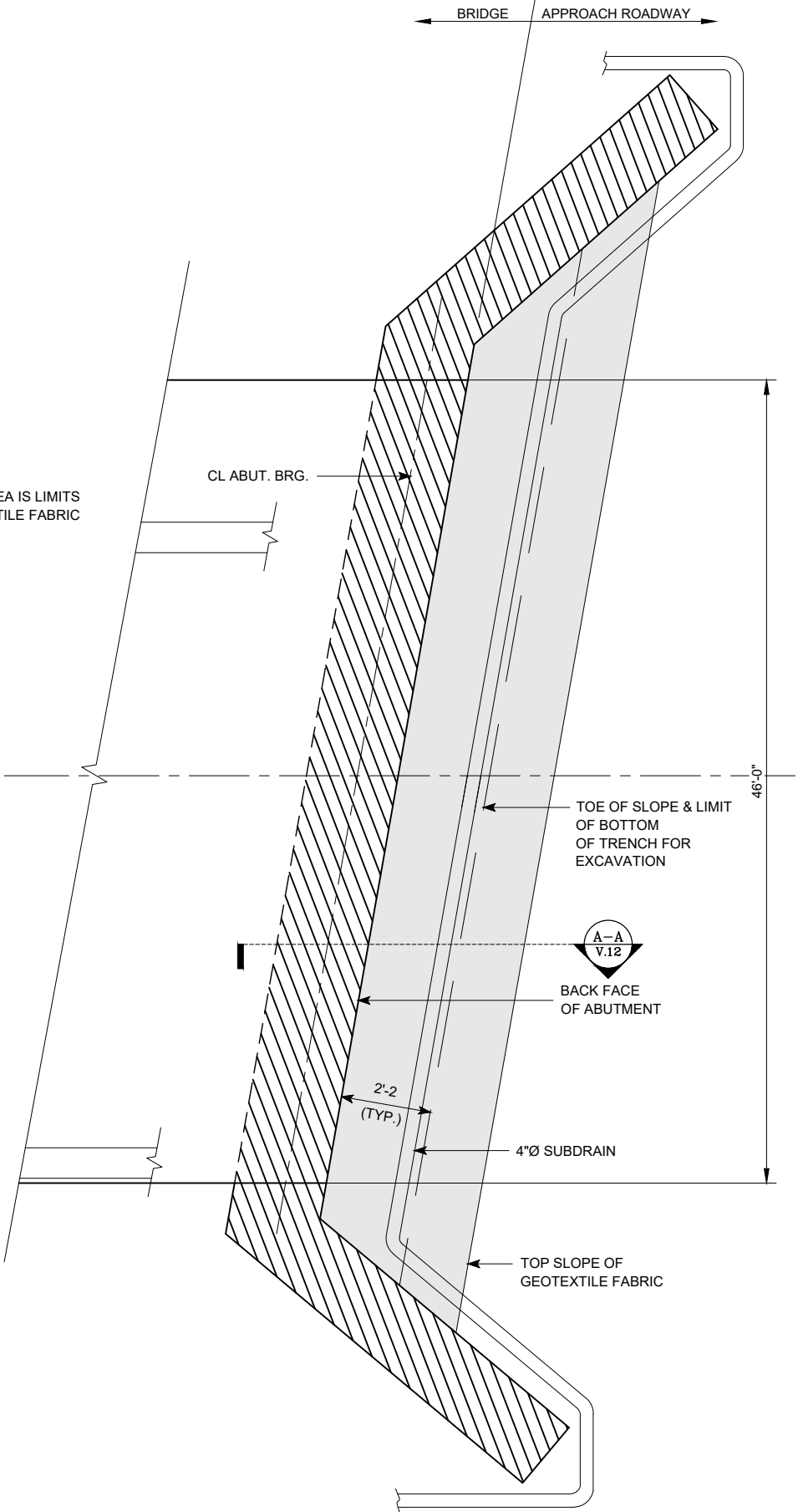
WHEN THE FABRIC IS IN PLACE, THE SUBDRAIN SHALL BE INSTALLED DIRECTLY ON THE FABRIC AT THE TOE OF THE REAR EXCAVATION SLOPE. A SLOT WILL NEED TO BE CUT IN THE FABRIC AT THE POINT WHERE THE SUBDRAIN EXITS THE FABRIC NEAR THE END OF THE ABUTMENT WING WALL.

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

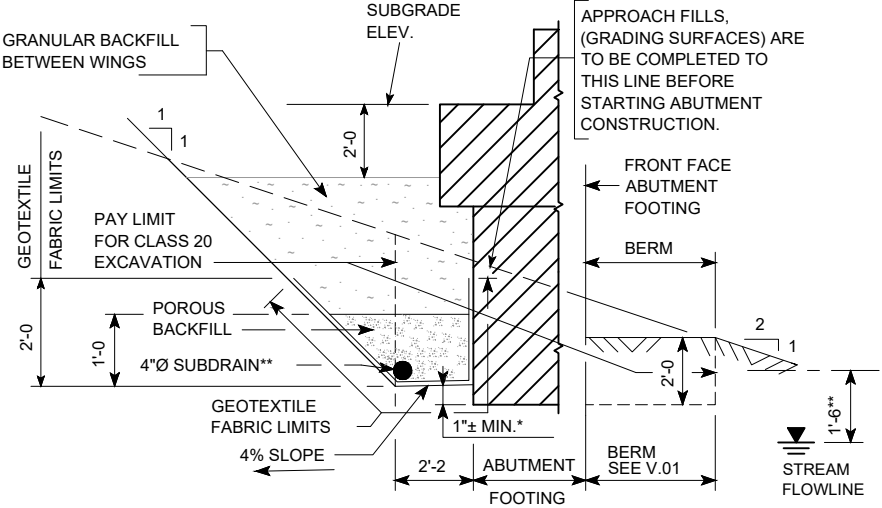
THE REMAINING WORK INVOLVES BACKFILLING WITH GRANULAR BACKFILL. THE BACKFILL SHALL BE PLACED IN INDIVIDUAL LIFTS, AND COMPACTED WITH VIBRATORY COMPACTION TO ENSURE FULL CONSOLIDATION. LIMIT THE LOOSE LIFTS TO NO MORE THAN 1 FOOT OF THICKNESS.

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

NOTE:
SHADED AREA IS LIMITS
OF GEOTEXTILE FABRIC



SKewed ABUTMENT PLAN

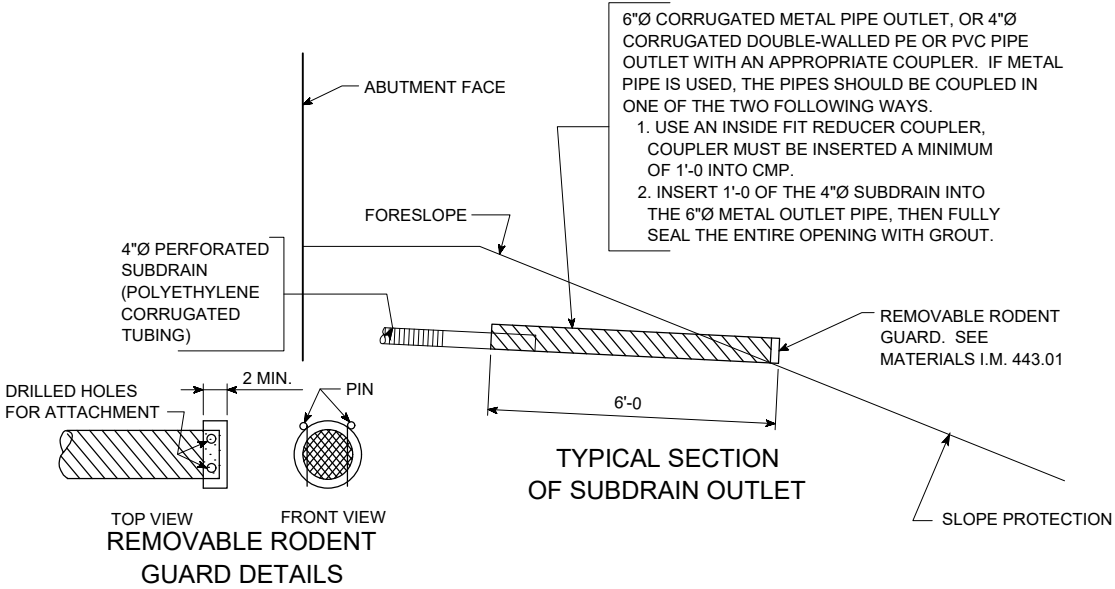


SECTION A-A
BACKFILL DETAILS

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

*DIMENSION VARIES DUE TO 2% SUBDRAIN SLOPE.

**LOCATE SUBDRAIN MIN OF 1'-6" ABOVE THE STREAM FLOWLINE



OUTLET DETAILS

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 IS TO BE EPOXY COATED AS SHOWN.

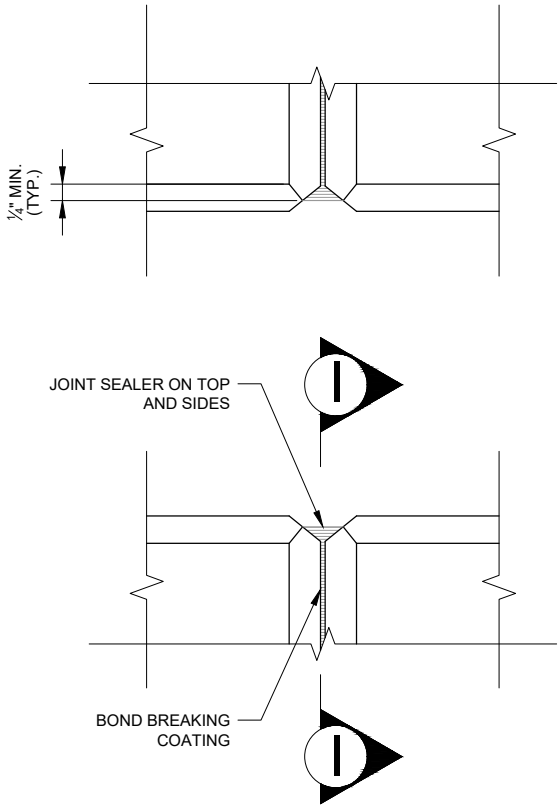
THE CONCRETE BARRIER RAIL IS TO BE BID ON A LINEAL FOOT BASIS. THE NUMBER OF LINEAL FEET OF BARRIER RAIL INSTALLED WILL BE PAID FOR AT THE CONTRACT PRICE PER LINEAL FOOT BASED ON PLAN QUANTITIES. PRICE BID FOR CONCRETE BARRIER RAILING SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EXCLUDING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

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

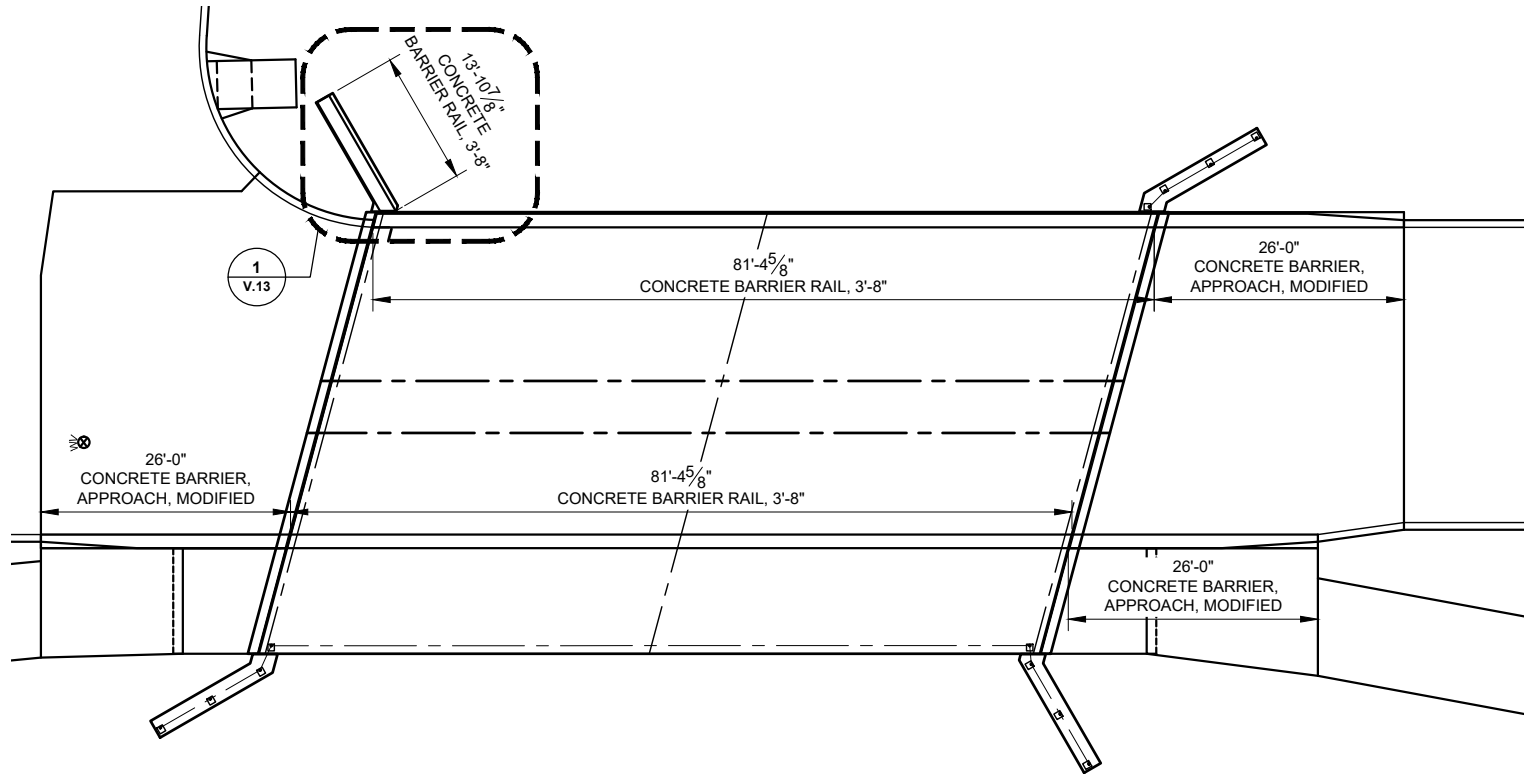
TOP OF THE BARRIER RAIL IS TO BE PARALLEL TO THE THEORETICAL CENTERLINE GRADE.

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

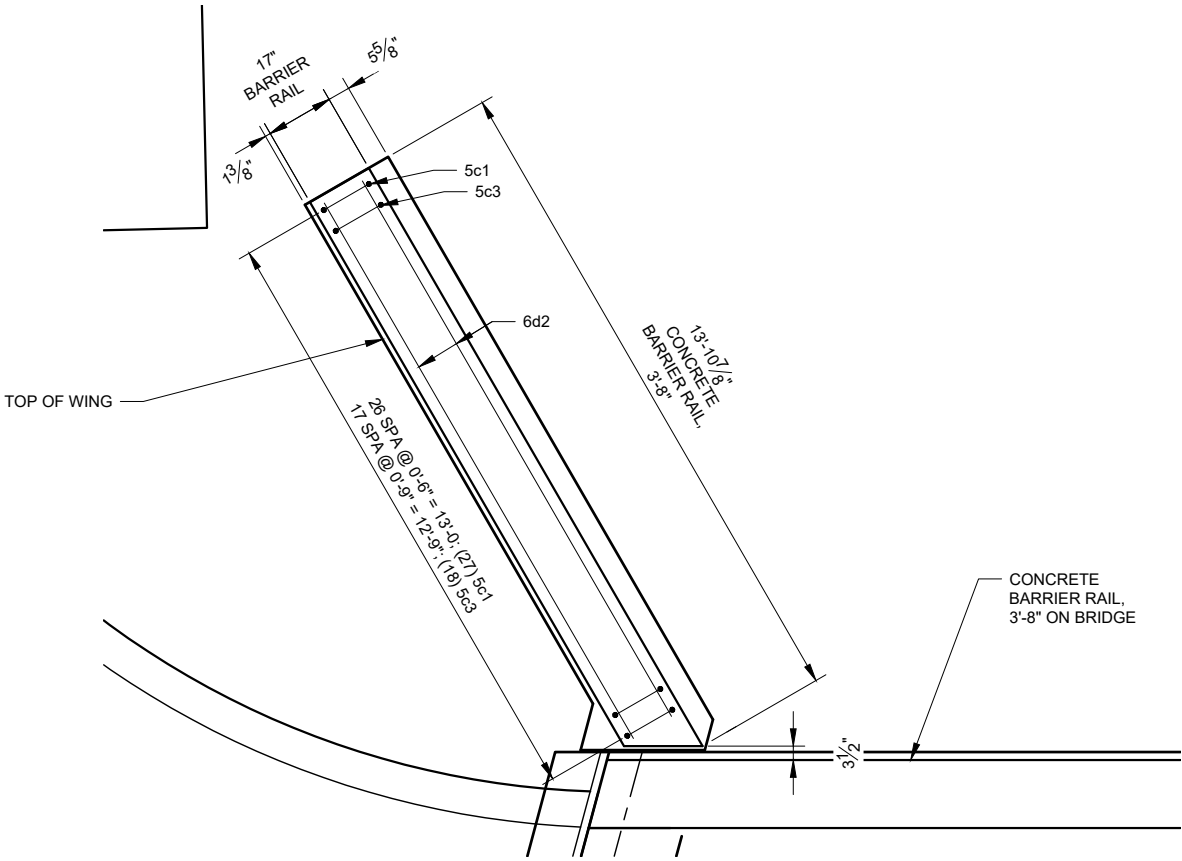
CROSS SECTIONAL AREA OF THE STANDARD SECTION OF THE BARRIER RAIL = 3.90 SQUARE FEET.



PART ELEVATION VIEW
BARRIER RAIL JOINT DETAILS



BARRIER RAIL OVERALL PLAN
NOT TO SCALE

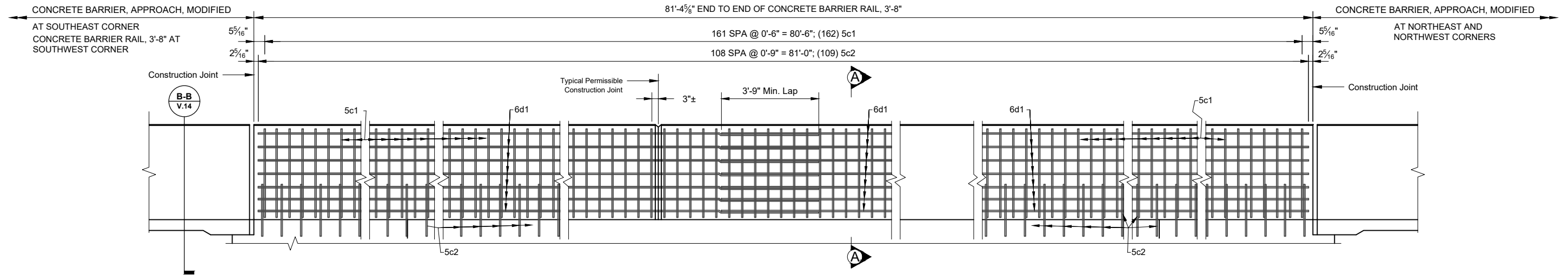


1 SW BARRIER RAIL PLAN
V.13 NOT TO SCALE

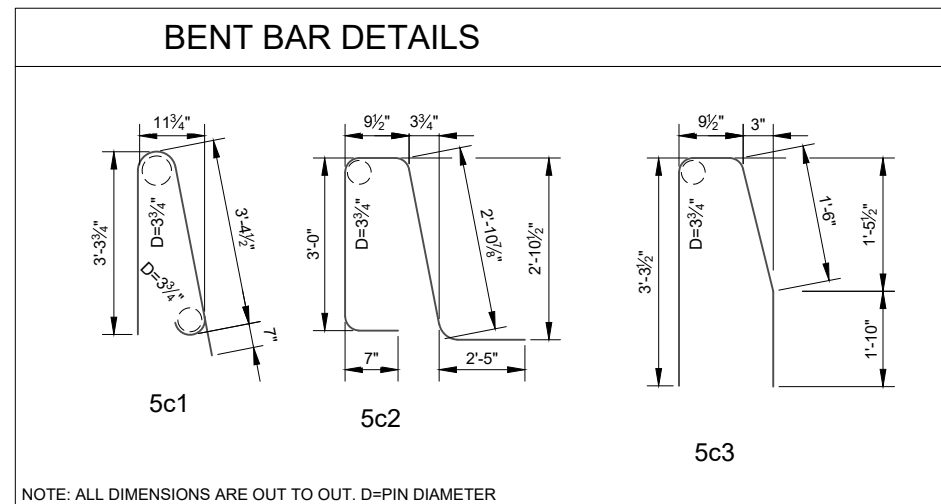
CONCRETE PLACEMENT SUMMARY	
SECTION	TOTAL
STANDARD SECTION 162'-9 1/4" AT 0.144 CU. YD. PER FT.	23.44
SOUTHWEST WING 13'-10 7/8" AT 0.144 CU. YD. PER FT.	2.00
TOTAL (CU. YD.)	25.44

CONCRETE BARRIER RAIL QUANTITIES		
ITEM	UNIT	AMOUNT
CONCRETE BARRIER RAIL, 3'-8"	L.F.	176.7

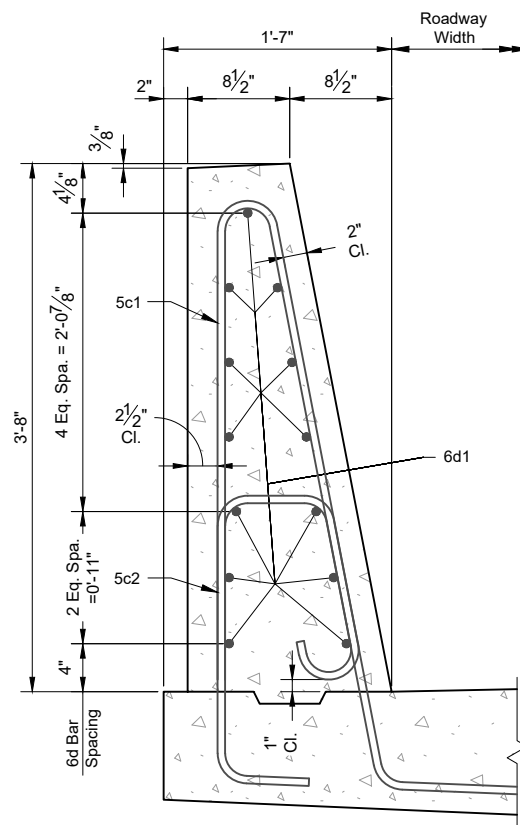
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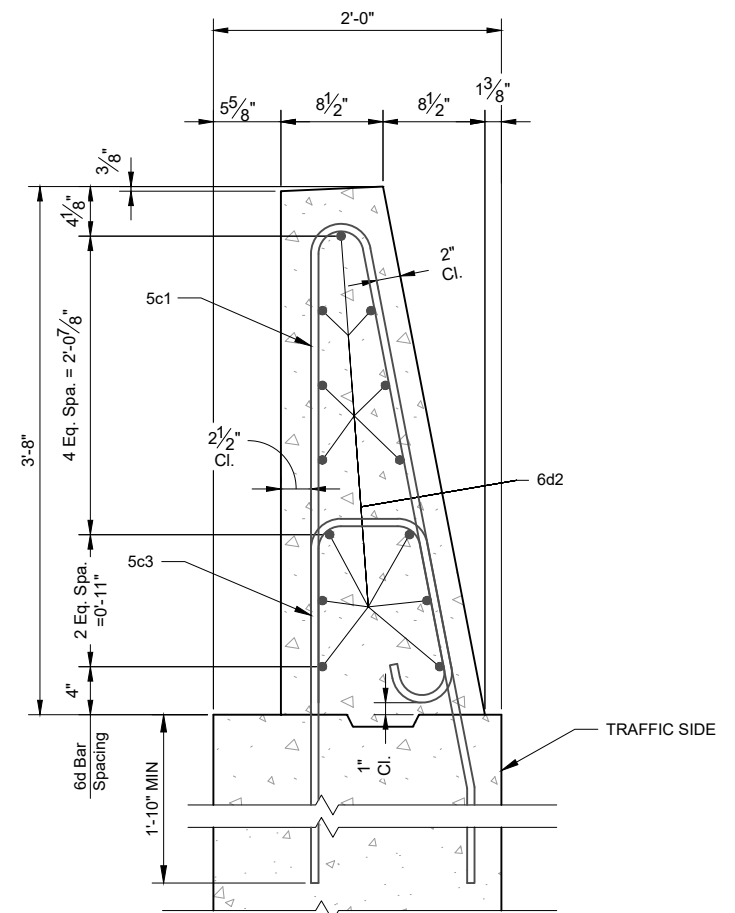
Elevation of Barrier Rail



REINFORCING BAR LIST - TWO BARRIER RAILS					
BAR	LOCATION	SHAPE	NO.	LENGTH ft. - in.	WEIGHT
5 c1	VERTICAL		351	7' - 4	2685
5 c2	VERTICAL		218	9' - 9	2217
5 c3	VERTICAL, SW WING		18	7' - 5	139
6 d1	HORIZONTAL		52	42' - 5	3313
6 d2	HORIZONTAL, SW WING		13	12' - 11	252
TOTAL EPOXY REINFORCING, TWO RAILS, LB					8606



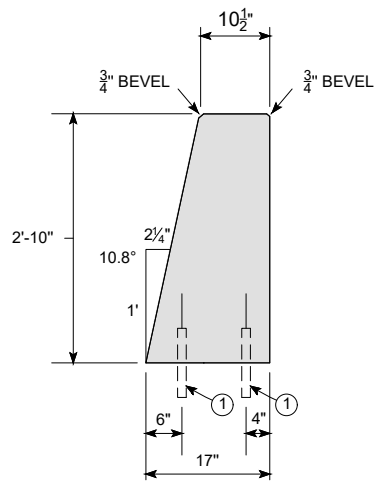
Part Section A-A



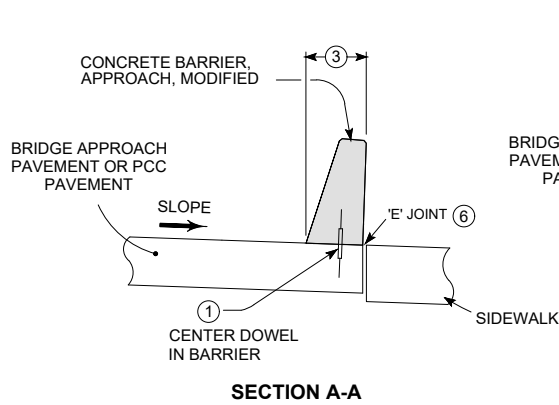
Part Section B-B

AT SOUTHWEST WING

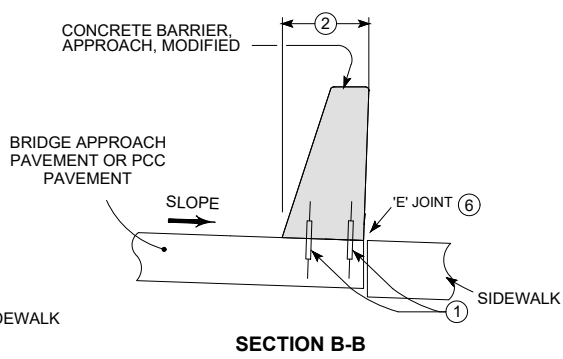
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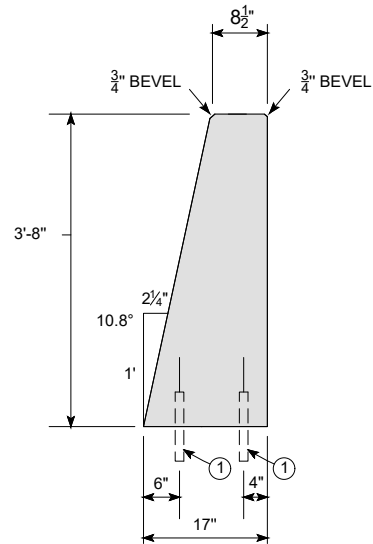
34" FULL BARRIER RAIL SECTION



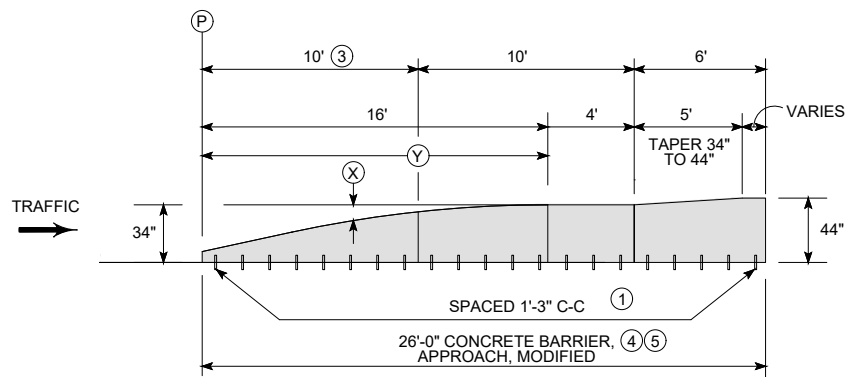
SECTION A-A



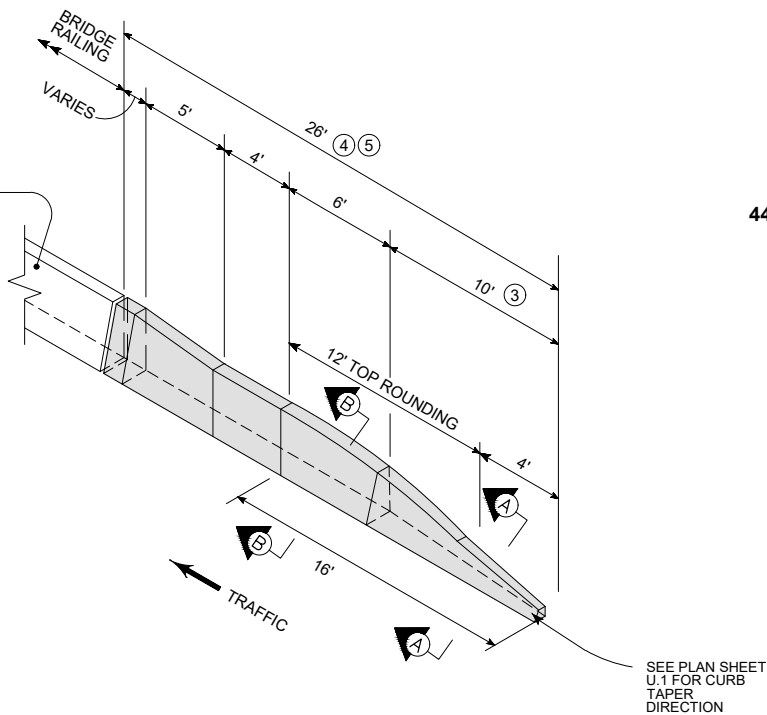
SECTION B-B



44" FULL BARRIER RAIL SECTION



TYPICAL ELEVATION



ISOMETRIC VIEW

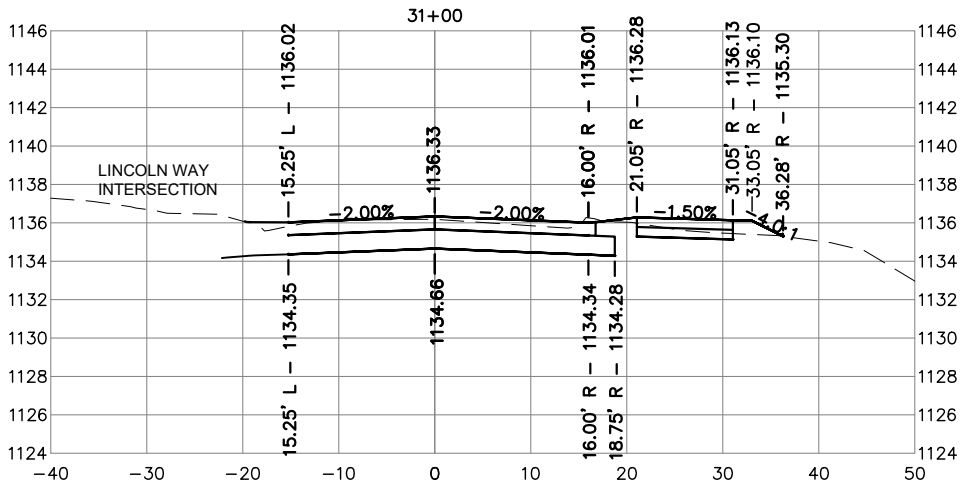
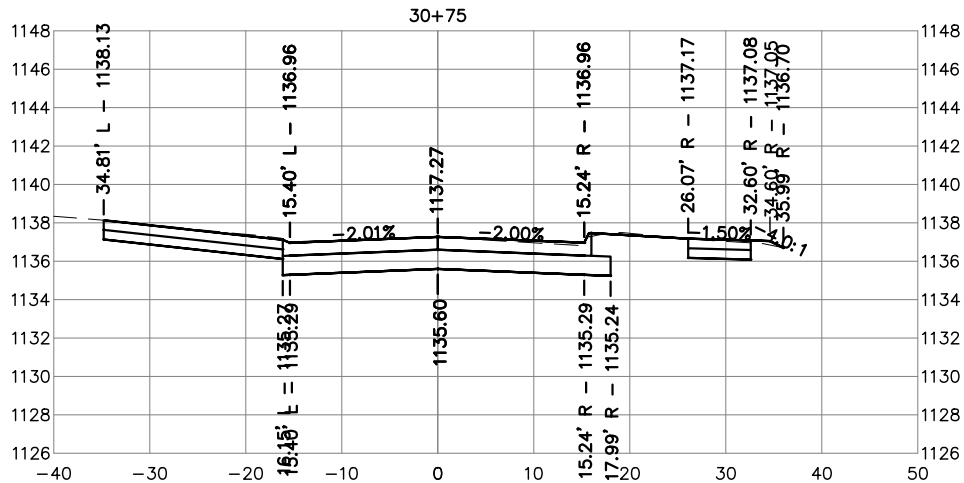
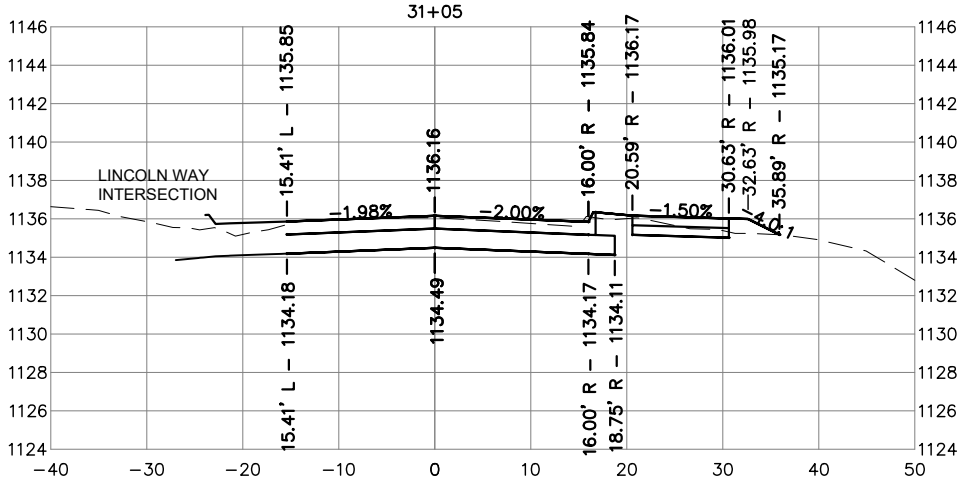
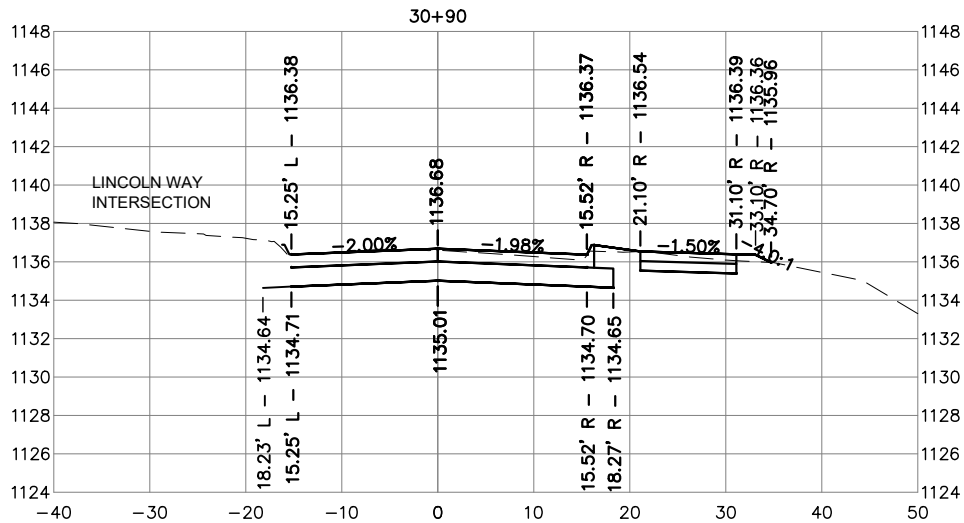
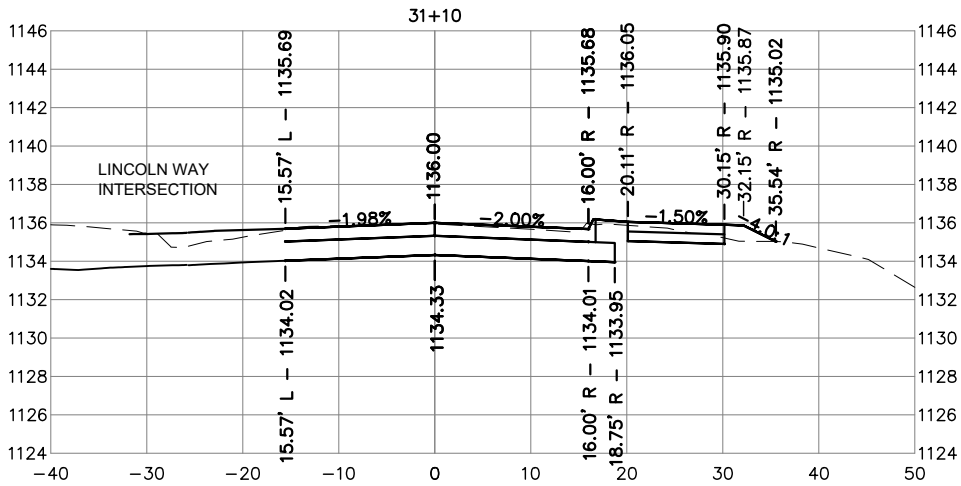
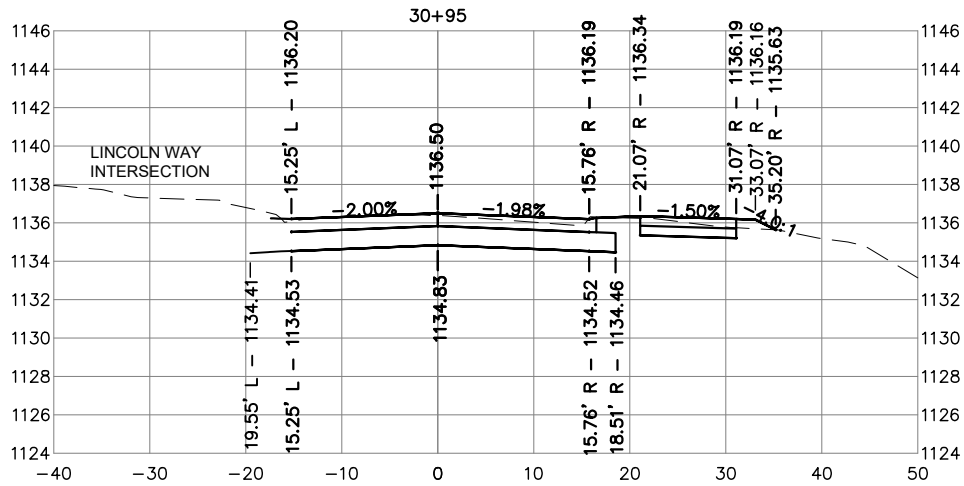
INSTALL A "C" JOINT IN CONCRETE APPROACH BARRIER TO MATCH THE LOCATION OF EACH JOINT IN BOTH ROADWAY AND BRIDGE APPROACH PAVEMENT.

- 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 DUE TO BRIDGE SKEW, LENGTH OF BARRIER RAIL VARIES BETWEEN THE FRONT FACE AND BACK FACE OF RAIL. LONG DIMENSION FOR BARRIER RAIL (26'-0") IS ALWAYS DIMENSIONED ON TRAFFIC SIDE.
- ⑥ FOR JOINT DETAIL, SEE PV-101

OFFSETS FOR ROUNDED BARRIER TOP

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

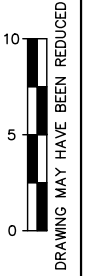
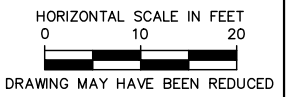
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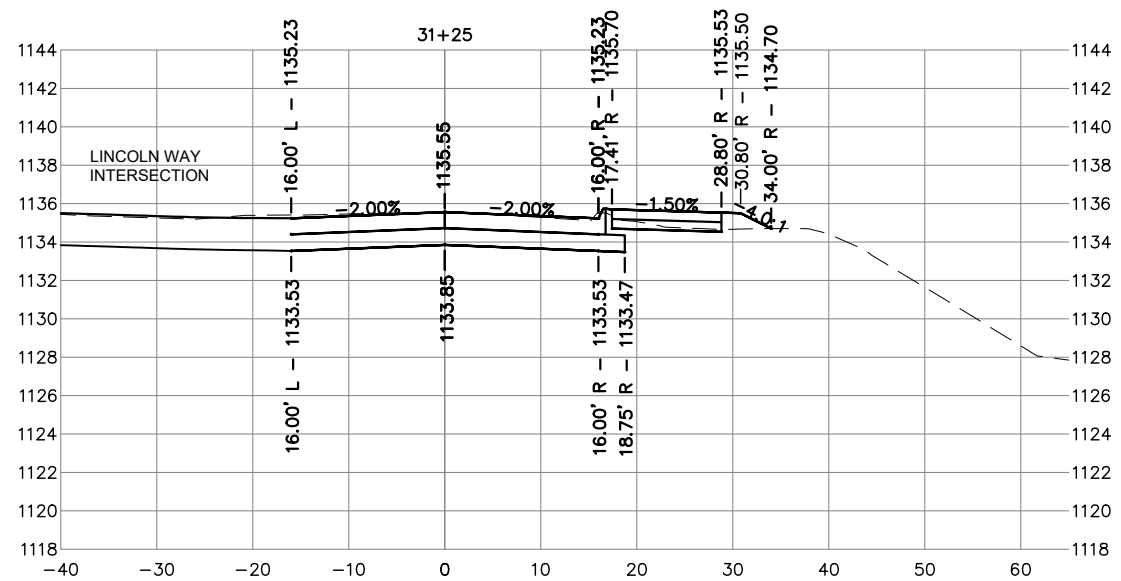
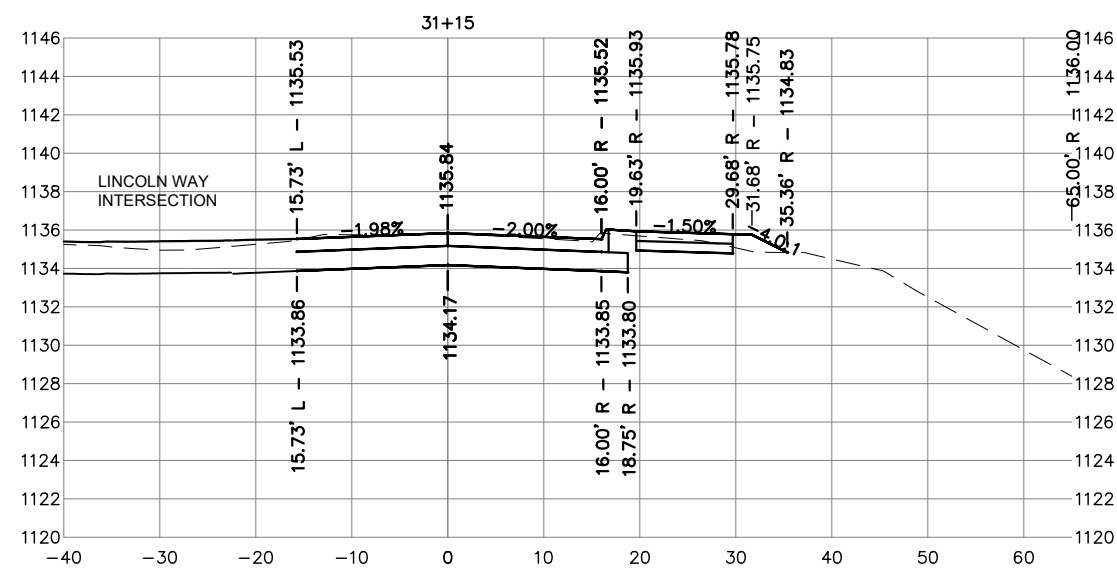
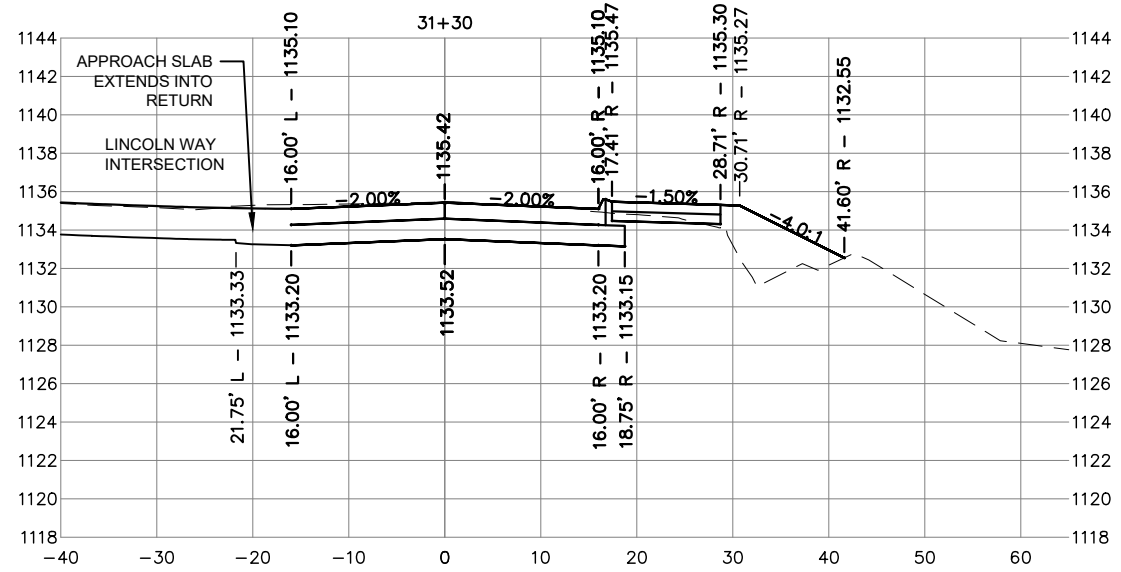
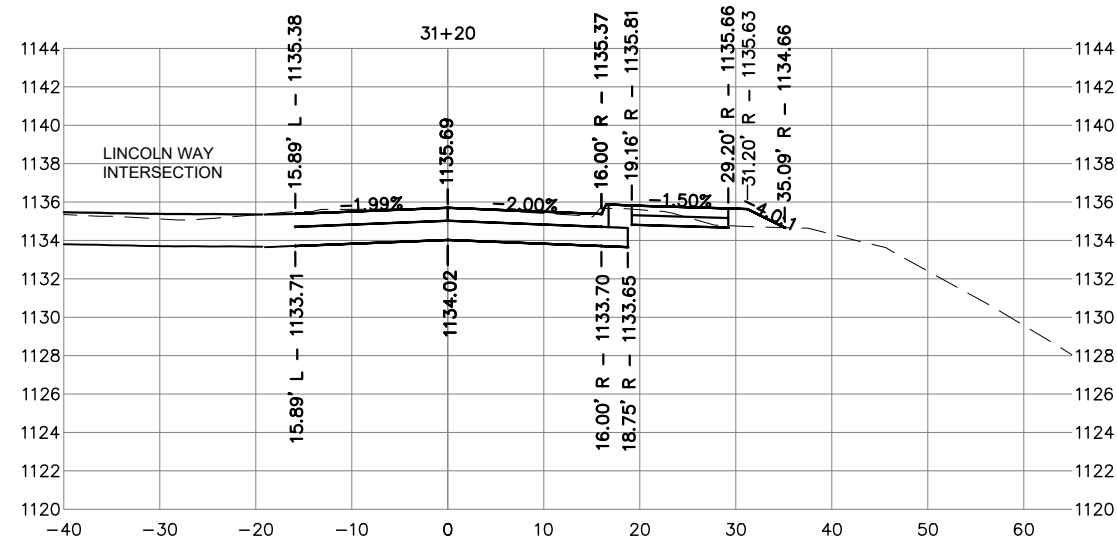
HORIZONTAL SCALE IN FEET
0 10 20
DRAWING MAY HAVE BEEN REDUCED

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

CROSS SECTIONS STA 30+90 TO STA 31+53.71
LINCOLN WAY INTERSECTION
SEE SHEET L.1 FOR DETAILED OFFSET AND ELEVATIONS
SEE SHEET B.1 FOR LAYER THICKNESSES



CROSS SECTIONS STA 30+90 TO STA 31+53.71
LINCOLN WAY INTERSECTION
SEE SHEET L.1 FOR DETAILED OFFSET AND ELEVATIONS
SEE SHEET B.1 FOR LAYER THICKNESSES

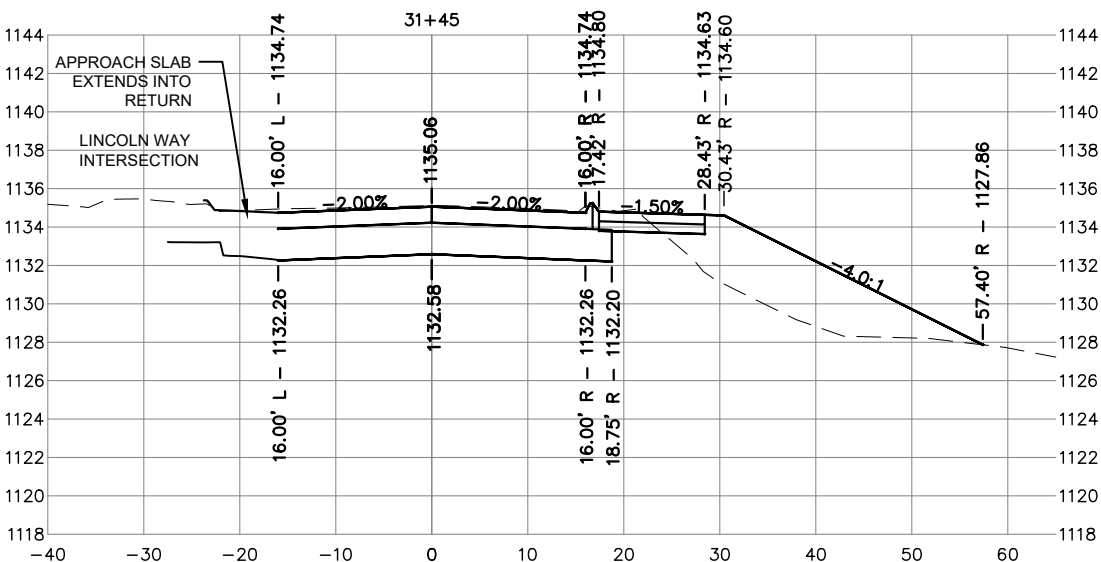
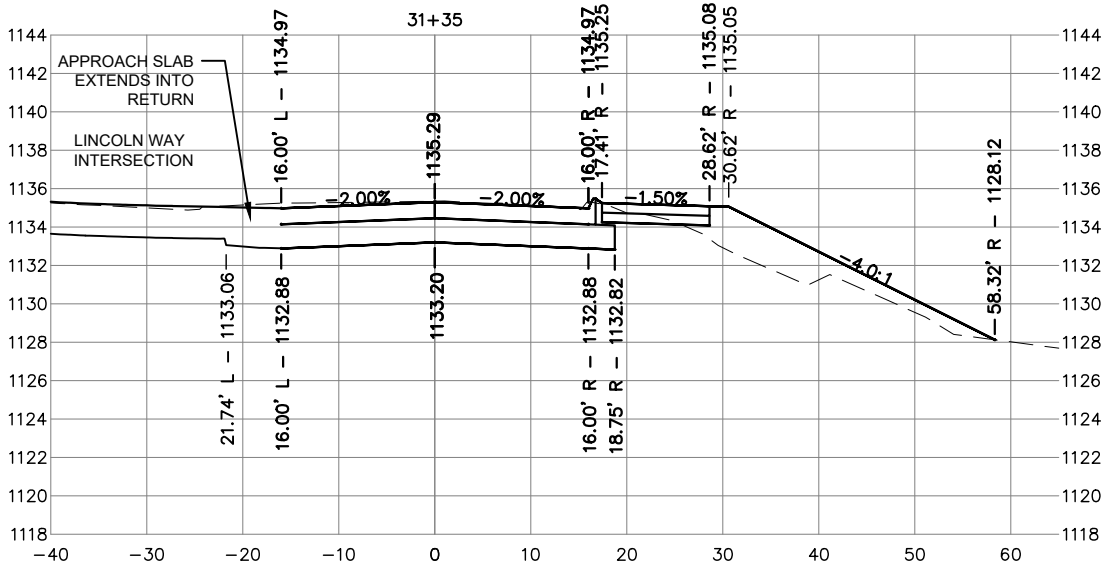
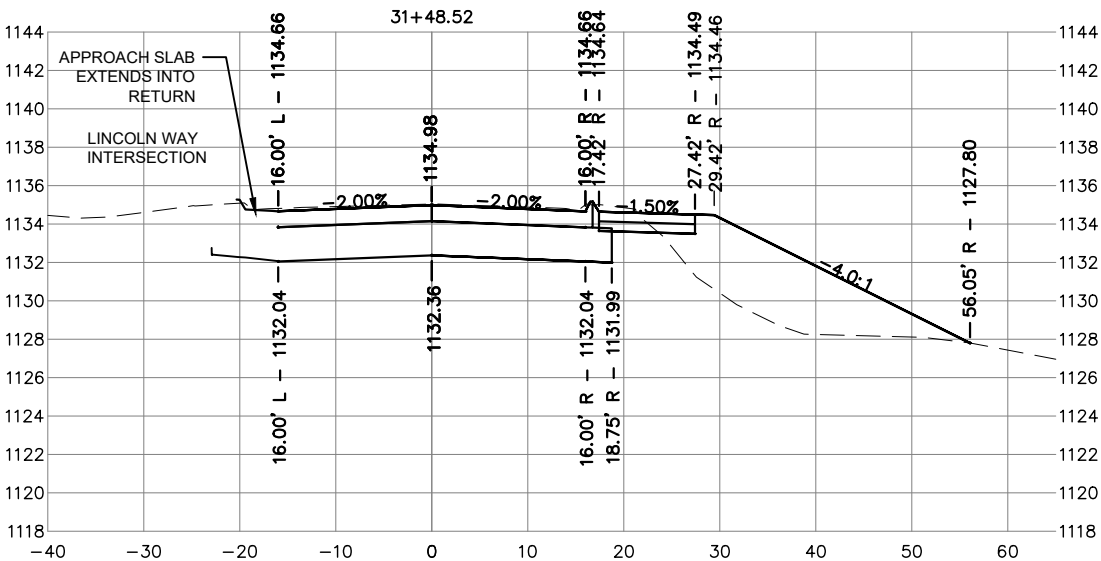
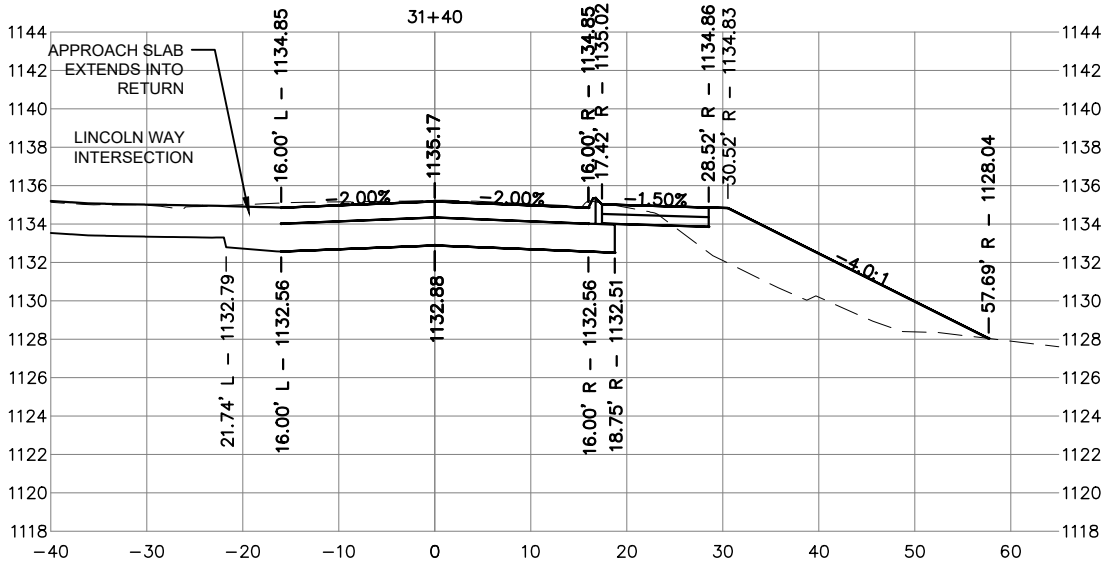


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HORIZONTAL SCALE IN FEET
0 10 20
DRAWING MAY HAVE BEEN REDUCED

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

CROSS SECTIONS STA 30+90 TO STA 31+53.71
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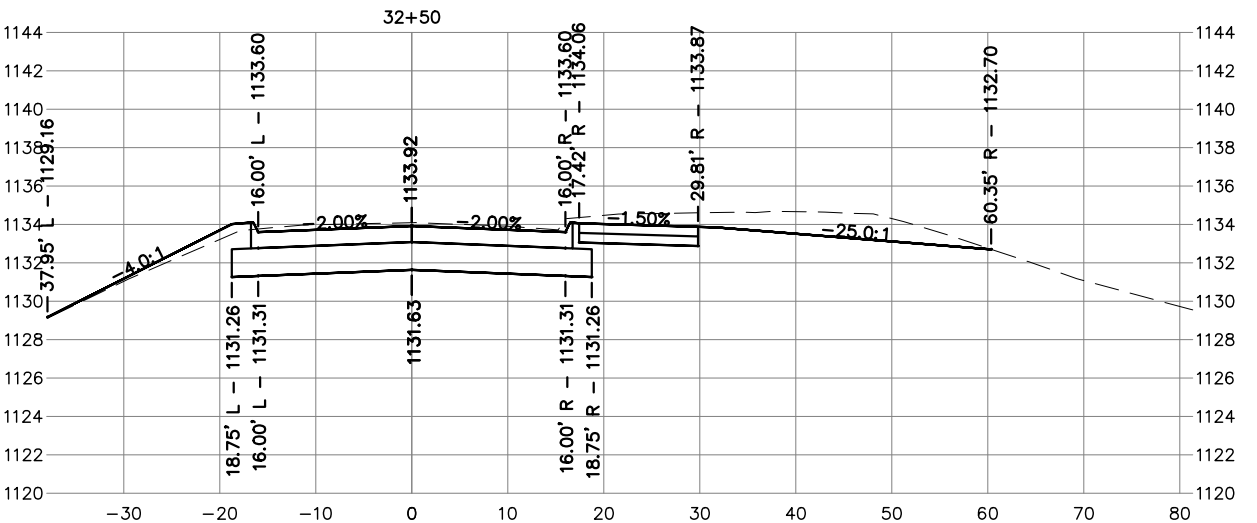
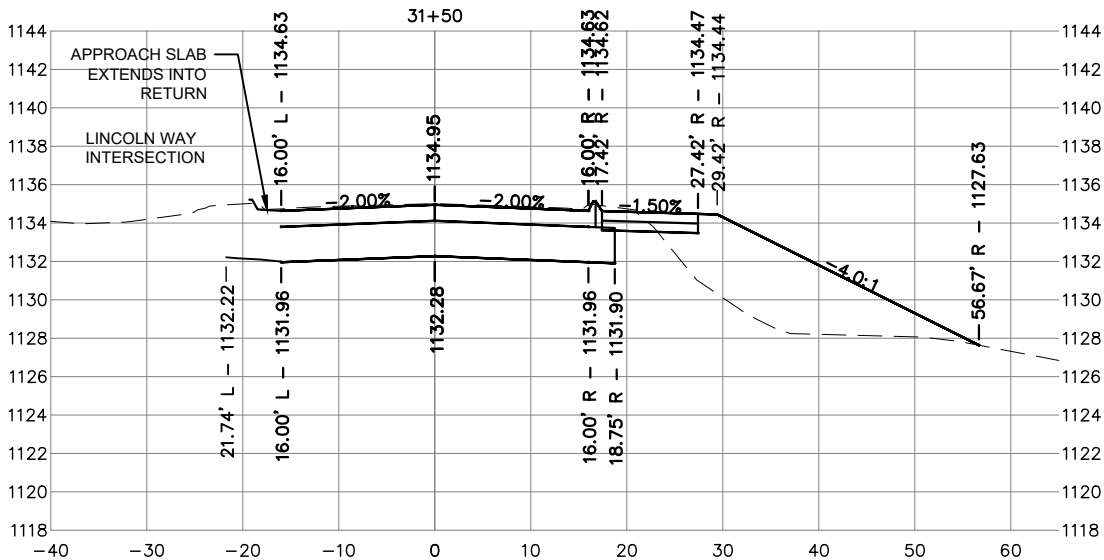
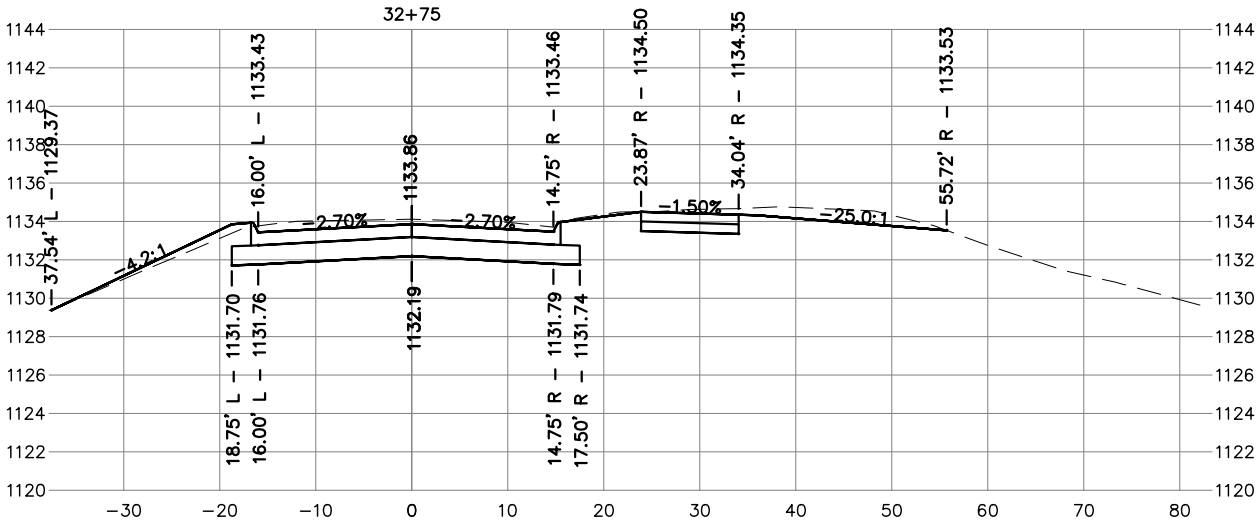
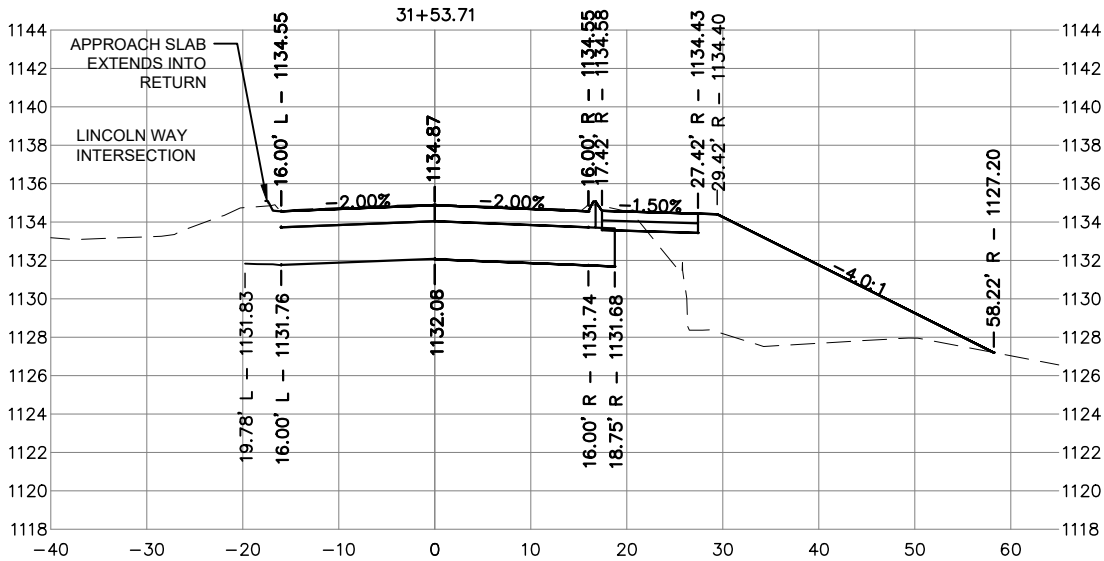


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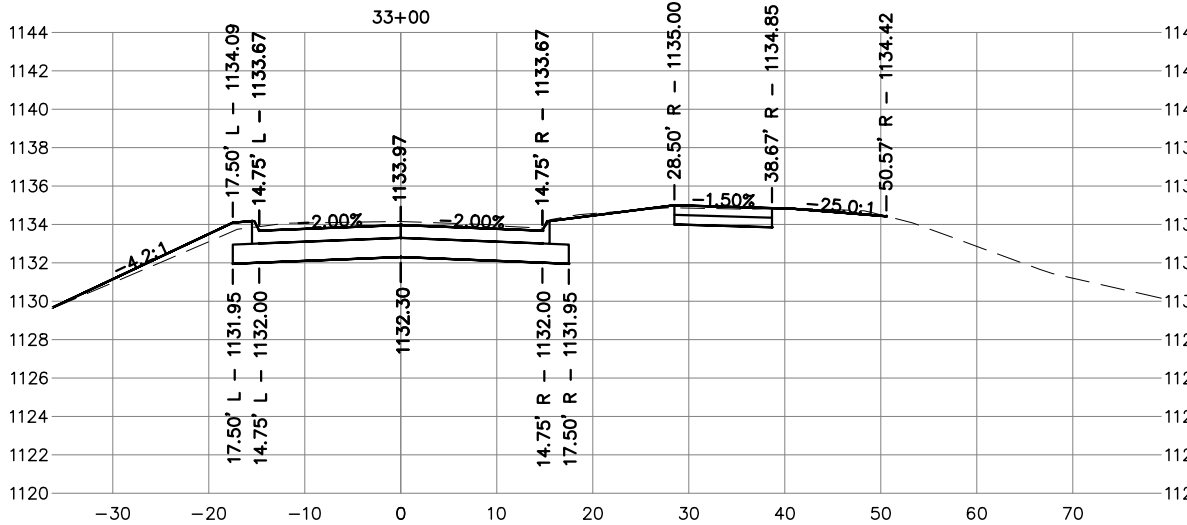
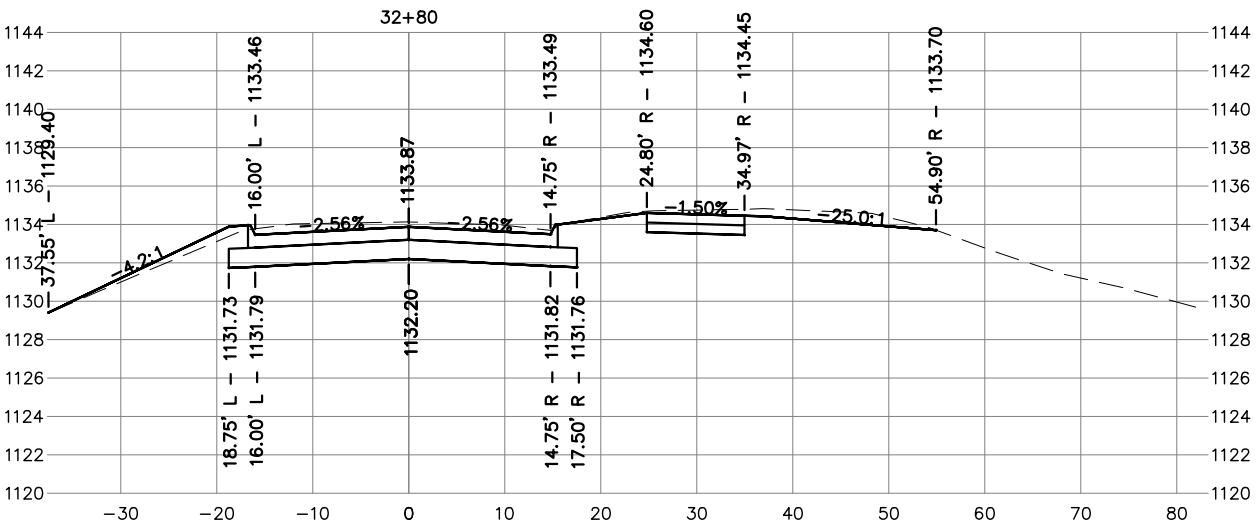
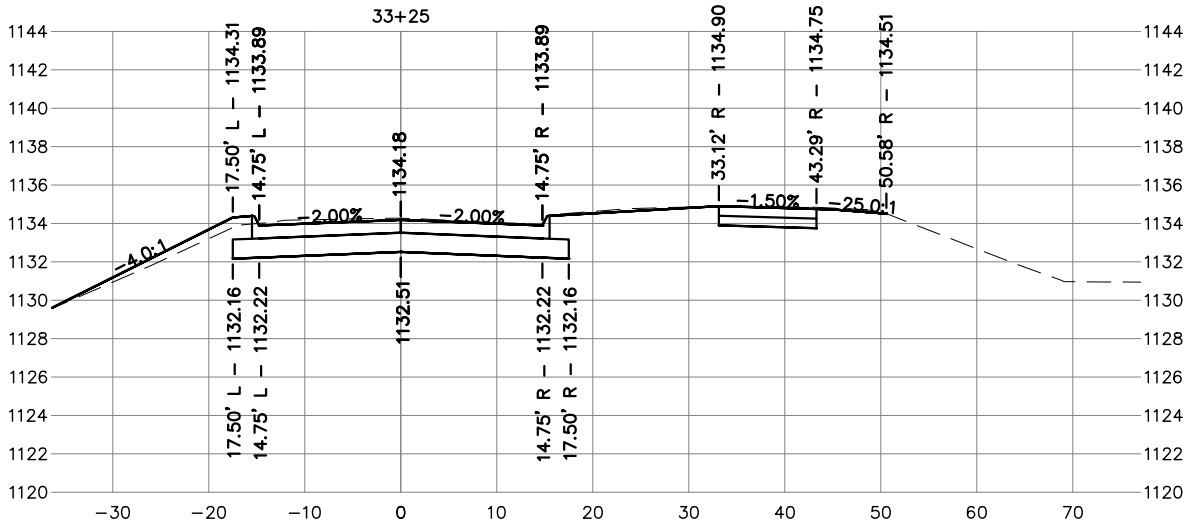
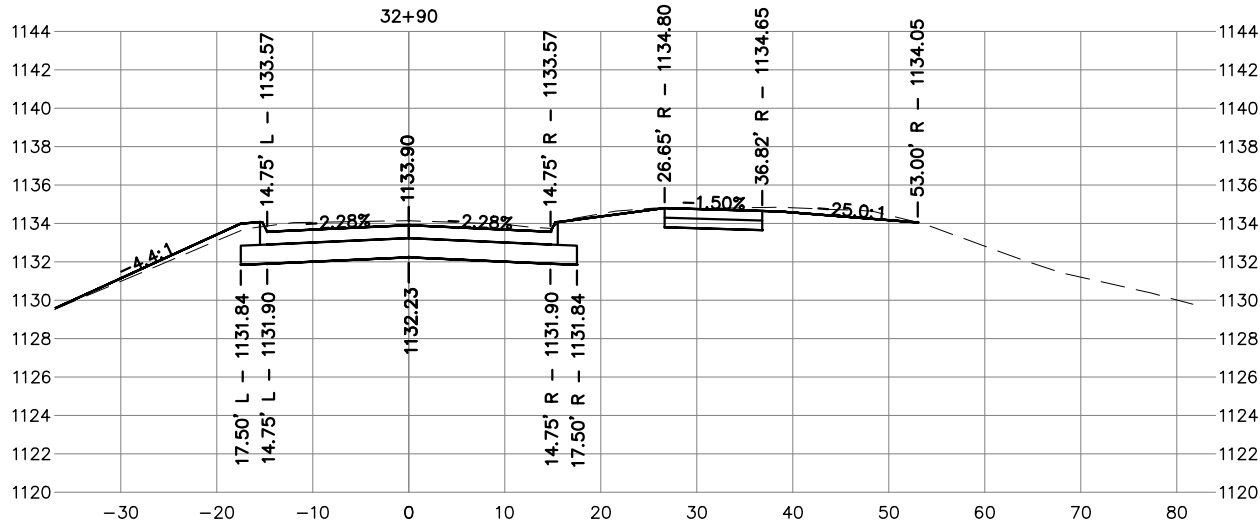
HORIZONTAL SCALE IN FEET
0 10 20
DRAWING MAY HAVE BEEN REDUCED

VERTICAL SCALE IN FEET
0 5 10
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CROSS SECTIONS STA 30+90 TO STA 31+53.71
LINCOLN WAY INTERSECTION
SEE SHEET L.1 FOR DETAILED OFFSET AND ELEVATIONS
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HORIZONTAL SCALE IN FEET
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DRAWING MAY HAVE BEEN REDUCED

VERTICAL SCALE IN FEET
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DRAWING MAY HAVE BEEN REDUCED