CODE NUMBER	PAY ITEM		TOTAL QUANTITY	ROADWAY	ROADWAY	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	LIGHTING/ ITS
				90% FED		90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED
				10% STATE	100% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE
				0004	0004	0013	0010	0010	0010	0010	0044	0044	0044	0044	0044	0044	0021
				URBAN	URBAN	016-0461	016-1706	016-1714	016-1715	016-1718	016-1803	016-1805	016-1833	016-1834	016-1835	016-2311	URBAN
50157300	PROTECTIVE SHIELD	SQ YD	6,247			2,851			1,710			1,686					
50200100	STRUCTURE EXCAVATION	CU YD	9,602.3			50.0	272.0	471.0	1,671.0	51.3	798.0	3,695.0	276.0	1,203.0	538.0	577.0	
50300225	CONCRETE STRUCTURES	CU YD	2,968.7			158.8	202.4	533.6	1,943.3	120.7	9.9						
50300254	RUBBED FINISH	SQ FT	19,115	1			1,241	3,642	13,753	479	1						
50300255	CONCRETE SUPERSTRUCTURE	CU YD	5,280.4			711.5	244.6	785.8	2,245.1	169.6	135.3	338.0		144.3	69.9	436.3	
50300260	BRIDGE DECK GROOVING	SQ YD	2,239			2,239											
50300285	FORM LINER TEXTURED SURFACE	SQ FT	9,088	1			434	2,298	6,139	217	1						
50300300	PROTECTIVE COAT	SQ YD	19,836	1		2,372	978	2,924	11,065	1 737	516	771	18	305	150		
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	277.7				40.6	41.0	51.9	45.8	98.4						
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1.0			0.1	0.1	0.2	0.5	0.1							
50500505	STUD SHEAR CONNECTORS	EACH	67,428	1		13,299	3,600	10,530	37,347	1 2,274	378						
50800105	REINFORCEMENT BARS	POUND	939,150			11,650	79,380	183,220	582,120	82,780							
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,130,400	1		207,120	120,900	327,030	1,173,540	84,470 1	78,440	49,350	300	24,610	12,140	52,500	
50800515	BAR SPLICERS	EACH	133				34	30	38	31							

* DENOTES SPECIALTY ITEM ** DENOTES NON-PARTICIPATING ITEM % 0042

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	PLOT SCALE = 20.0000 ' / in.	CHECKED - JMG	REVISED -
	PLOT DATE = 7/31/2018	DATE - 7/30/2018	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET 6 OF 29 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	12
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

1 REV. 10/29/18 REV. 9/18/18

CODE NUMBER	PAY ITEM		TOTAL QUANTITY	ROADWAY	ROADWAY	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	LIGHTING/ ITS
				90% FED		90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED
				10% STATE	100% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE
				0004	0004	0013	0010	0010	0010	0010	0044	0044	0044	0044	0044	0044	0021
				URBAN	URBAN	016-0461	016-1706	016-1714	016-1715	016-1718	016-1803	016-1805	016-1833	016-1834	016-1835	016-2311	URBAN
50800530	MECHANICAL SPLICERS	EACH	938			6			788	120						24	
51100100	SLOPE WALL 4 INCH	SQ YD	8										8				
51500100	NAME PLATES	EACH	10				1	1	1	1	1	1	1	1	1	1	
51602000	PERMANENT CASING	FOOT	2,272				275	557	701	739							
				1						1							
51603000	DRILLED SHAFT IN SOIL	CU YD	3,889.5			58.0	477.0	848.1	2,242.4	264.0							
51604000	DRILLED SHAFT IN ROCK	CU YD	115.3			1.0	16.0	12.9	73.4	12.0							
52000110	PREFORMED JOINT STRIP SEAL	FOOT	263			36	34	124	38	31							
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	67			25			42								
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	20			20											
52100510	ANCHOR BOLTS, 3/4"	EACH	380					200	180								
52100520	ANCHOR BOLTS, 1"	EACH	358			90	80	20	128	40							
52100530	ANCHOR BOLTS, 1 1/4"	EACH	20			20											
52100540	ANCHOR BOLTS, 1 1/2"	EACH	74						44	30							
52200020	TEMPORARY SOIL RETENTION SYSTEM	SQ FT	8,463			539	2,426		4,894			502				102	

* DENOTES SPECIALTY ITEM ** DENOTES NON-PARTICIPATING ITEM % 0042

	CODE NUMBER	PAY ITEM		TOTAL QUANTITY	ROADWAY	ROADWAY	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	LIGHTING/ ITS
					90% FED		90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED
					10% STATE	100% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE
					0004	0004	0013	0010	0010	0010	0010	0044	0044	0044	0044	0044	0044	0021
					URBAN	URBAN	016-0461	016-1706	016-1714	016-1715	016-1718	016-1803	016-1805	016-1833	016-1834	016-1835	016-2311	URBAN
	64200116	SHOULDER RUMBLE STRIPS, 16 INCH	FOOT	2,991	2,991													
	64300260	IMPACT ATTENUATORS (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	5	5													
	64300370	IMPACT ATTENUATORS (FULLY REDIRECTIVE, WIDE), TEST LEVEL 3	EACH	5	5													
	66400305	CHAIN LINK FENCE, 6′	FOOT	126	126													
	66402900	CHAIN LINK GATES, 6′ X 6′ SINGLE	EACH	1	1													
*	66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	32,270	32,270													
*	66900450	SPECIAL WASTE PLANS AND REPORTS	L SUM	1	1													
*	66900530	SOIL DISPOSAL ANALYSIS	EACH	5	5													
	67100100	MOBILIZATION	L SUM	1	1													
	70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	240	240													
	70300240	TEMPORARY PAVEMENT MARKING - LINE 6″	FOOT	32,512.5	32,512.5													
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	11,387.5	11,387.5													
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	17,800.0	17,800.0													
	70600255	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EACH	4	4													

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* DENOTES SPECIALTY ITEM ** DENOTES NON-PARTICIPATING ITEM % 0042

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET 12 OF 29 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	18
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REV. 10/25/18 REV. 9/18/18

	CODE NUMBER	PAY ITEM		TOTAL QUANTITY	ROADWAY	ROADWAY	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	LIGHTING/ ITS
					90% FED		90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED
					10% STATE	100% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE
					0004	0004	0013	0010	0010	0010	0010	0044	0044	0044	0044	0044	0044	0021
					URBAN	URBAN	016-0461	016-1706	016-1714	016-1715	016-1718	016-1803	016-1805	016-1833	016-1834	016-1835	016-2311	URBAN
*	72800100	TELESCOPING STEEL SIGN SUPPORT	FOOT	16.0	16.0													
*	72900200	METAL POST - TYPE B	FOOT	189.0	189.0													
*	73300100	OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A (4'-0'' X 4'-6'')	FOOT	30.0	30.0													
						1												
*	73300300	OVERHEAD SIGN STRUCTURE - SPAN, TYPE III-A (5'-0'' X 7'-0'')	FOOT	135.0	135.0													
*	73304000	OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	FOOT	49.0	49.0													
						1												
*	73400200	DRILLED SHAFT CONCRETE FOUNDATIONS	CU YD	99.3	99.3													
*	73500105	RELOCATE STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE - SPAN	EACH	2	2													
*	73500205	RELOCATE OVERHEAD SIGN SUPERSTRUCTURE - SPAN	EACH	1	1													
*	73600100	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	EACH	3	3													
*	73600200	REMOVE OVERHEAD SIGN STRUCTURE - CANTILEVER	EACH	1	1													
*	73602000	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	EACH	5	5													
*	73700100	REMOVE GROUND MOUNTED SIGN SUPPORT	EACH	6	6													
*	73700200	REMOVE CONCRETE FOUNDATION - GROUND MOUNT	EACH	6	6													
*	73700300	REMOVE CONCRETE FOUNDATION - OVERHEAD	EACH	4	4													
*	78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4''	FOOT	1,391	1,391													

* DENOTES SPECIALTY ITEM ** DENOTES NON-PARTICIPATING ITEM % 0042

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET 14 OF 29 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	20
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REV. 10/25/18 REV. 9/18/18

	CODE NUMBER	PAY ITEM		TOTAL QUANTITY	ROADWAY	ROADWAY	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	LIGHTING/ ITS
					90% FED		90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED
					10% STATE	100% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE
					0004	0004	0013	0010	0010	0010	0010	0044	0044	0044	0044	0044	0044	0021
					URBAN	URBAN	016-0461	016-1706	016-1714	016-1715	016-1718	016-1803	016-1805	016-1833	016-1834	016-1835	016-2311	URBAN
*	87900200	DRILL EXISTING HANDHOLE	EACH	2														2
*	87900205	DRILL EXISTING HEAVY DUTY HANDHOLE	EACH	15														15
*	89502350	REMOVE AND REINSTALL ELECTRIC CABLE FROM CONDUIT	FOOT	3,790														3,790
*	89502380	REMOVE EXISTING HANDHOLE	EACH	4														4
	X0100015	GRANULAR BACKFILL SPECIAL	CU YD	26.5					19.0	4.8	2.7							
	X0200004	HIGH-EARLY-STRENGTH PORTLAND CEMENT CONCRETE PAVEMENT 11" (JOINTED)	SQ YD	325	325													
*	X0320023	CLOSED CIRCUIT TELEVISION DOME CAMERA, HD	EACH	4														4
	X0320051	CROSSHOLE SONIC LOGGING ACCESS DUCTS	FOOT	6,352 (1)			100	498	1,857	3,118	799 (1)							
	X0320052	CROSSHOLE SONIC LOGGING TESTING	EACH	31			1	3	8	17	2							
	X0321750	REMOVE TEMPORARY CONCRETE BARRIER, STATE OWNED	FOOT	2,949	2,949													
	X0321837	REMOVE SHEET PILING	L SUM	1									1					
*	X0322141	REMOVE TEMPORARY WOOD POLE	EACH	1														1
*	X0322433	LIGHT TOWER, SERVICE PAD	EACH	1														1
*	X0322441	DIGITAL LOOP DETECTOR SENSOR UNIT (4 CHANNEL)	EACH	3														3

* DENOTES SPECIALTY ITEM ** DENOTES NON-PARTICIPATING ITEM % 0042

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET 19 OF 29 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	25
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

(1) REV. 10/29/18 REV. 9/18/18

CODE NUMBER	PAY ITEM		TOTAL QUANTITY	ROADWAY	ROADWAY	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	LIGHTING/ ITS
				90% FED		90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED
				10% STATE	100% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE
				0004	0004	0013	0010	0010	0010	0010	0044	0044	0044	0044	0044	0044	0021
				URBAN	URBAN	016-0461	016-1706	016-1714	016-1715	016-1718	016-1803	016-1805	016-1833	016-1834	016-1835	016-2311	URBAN
X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	26.2 1							26.2 1							
X6370050	CONCRETE BARRIER WALL (SPECIAL)	FOOT	175	175													
X6370250	CONCRETE BARRIER, VARIABLE CROSS-SECTION 42" HEIGHT	FOOT	78	78													
X6370279	CONCRETE BARRIER, SINGLE FACE, 42 INCH HEIGHT (SPECIAL)	FOOT	1,495	1,495													
X6370700	CONCRETE BARRIER TRANSITION (SPECIAL)	FOOT	90	90													
X6430120	REMOVE IMPACT ATTENUATORS, NO SALVAGE	EACH	2	2													
X6431120	REMOVE IMPACT ATTENUATOR SAND MODULE	EACH	2	2													
X6640200	TEMPORARY CHAIN LINK FENCE	FOOT	104	104													
X6640302	CHAIN LINK FENCE REMOVAL (SPECIAL)	FOOT	595													595	
X6640704	TEMPORARY CHAIN LINK FENCE WITH SCREENING, 4'	FOOT	274	274													
X6700410	ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL)	CAL MO	22	22													
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1													
X7011015	TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS)	L SUM	1	1													
X7013820	TRAFFIC CONTROL SURVEILLANCE, EXPRESSWAYS	CAL DA	660	660													
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	2,640	2,640													

* DENOTES SPECIALTY ITEM ** DENOTES NON-PARTICIPATING ITEM % 0042

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET 25 OF 29 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	31
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REV. 10/29/18 REV. 9/18/18

	CODE NUMBER	PAY ITEM		TOTAL QUANTITY	ROADWAY	ROADWAY	BRIDGE	BRIDGE	BRIDGE	BRIDGE	BRIDGE	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	RETAINING WALL	LIGHTING/ ITS
					90% FED		90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED	90% FED
					10% STATE	100% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE	10% STATE
					0004	0004	0013	0010	0010	0010	0010	0044	0044	0044	0044	0044	0044	0021
					URBAN	URBAN	016-0461	016-1706	016-1714	016-1715	016-1718	016-1803	016-1805	016-1833	016-1834	016-1835	016-2311	URBAN
	X7035100	TEMPORARY EPOXY PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	166	166													
	X7035104	TEMPORARY EPOXY PAVEMENT MARKING - LINE 4"	FOOT	90,083	90,083													
	X7035105	TEMPORARY EPOXY PAVEMENT MARKING - LINE 5"	FOOT	16,450	16,450													
	X7035106	TEMPORARY EPOXY PAVEMENT MARKING - LINE 6"	FOOT	519	519													
	X7035108	TEMPORARY EPOXY PAVEMENT MARKING - LINE 8"	FOOT	26,389	26,389													
	X7035112	TEMPORARY EPOXY PAVEMENT MARKING - LINE 12"	FOOT	3,334	3,334													
	X7040125	PINNING TEMPORARY CONCRETE BARRIER	EACH	8,411	8,411													
	X7333095	OVERHEAD SIGN STRUCTURE - SPAN (SPECIAL)	FOOT	128.0	128.0	1												
*	X7830076	GROOVING FOR RECESSED PAVEMENT MARKING 9"	FOOT	4,827	4,827													
*	X8100863	INTERCEPT EXISTING CONDUIT	EACH	14														14
*	X8102845	UNDERGROUND CONDUIT, PVC, 4" DIA., SCHEDULE 80	FOOT	135														135
*	X8130115	DRILL EXISTING JUNCTION BOX	EACH	8														8
*	X8131168	JUNCTION BOX, NON-METALLIC, EMBEDDED IN STRUCTURE, 21" X 11" X 08"	EACH	9														9
*	X8420502	REMOVAL OF LIGHT TOWER, NO SALVAGE	EACH	2														2
*	X8420510	REMOVAL OF TOWER FOUNDATION	EACH	1														1

* DENOTES SPECIALTY ITEM ** DENOTES NON-PARTICIPATING ITEM % 0042

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET 26 OF 29 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	32
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REV. 10/25/18 REV. 9/18/18

SIGNING SCHEDULE

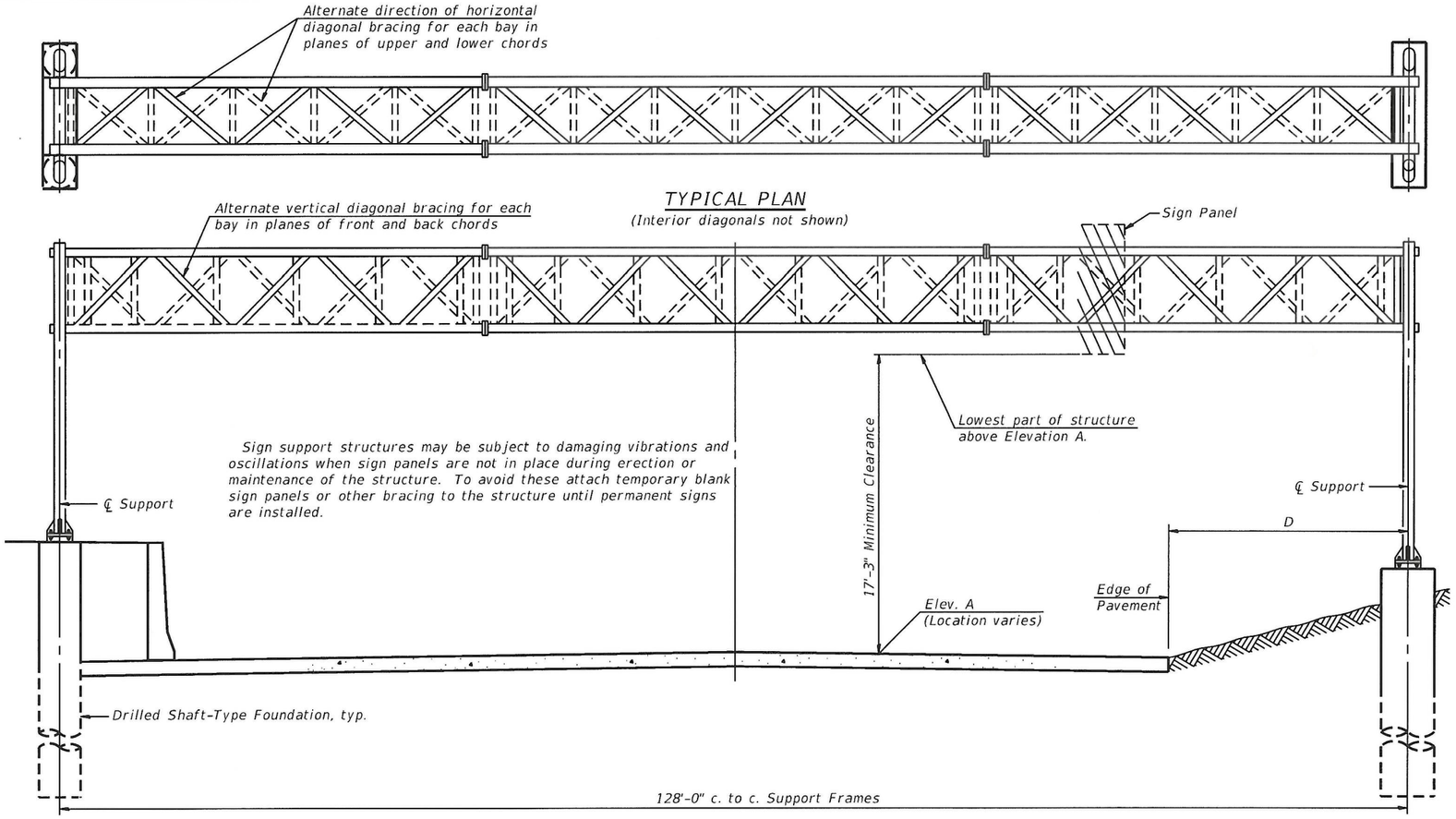
LOCATION	SIGN NO.	LEGEND / DESCRIPTION	CODE	ACTION	LOCATION (STATION / OFFSET)				SIGN PANEL DIMENSIONS		NUMBER OF POSTS	SIGN PANEL - TYPE 2	SIGN PANEL - TYPE 3	REMOVE SIGN PANEL - TYPE 2	REMOVE SIGN PANEL - TYPE 3	RELOCATE SIGN PANEL - TYPE 3	METAL POST - TYPE B	OVERHEAD SIGN STRUCTURE - SPAN, TYPE 1II-A	OVERHEAD SIGN STRUCTURE - SPAN (SPECIAL)	DRILLED SHAFT CONCRETE FOUNDATIONS	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	REMOVE OVERHEAD SIGN STRUCTURE - CANTILEVER	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	REMOVE GROUND MOUNTED SIGN SUPPORT	REMOVE CONCRETE FOUNDATION - GROUND MOUNT	REMOVE CONCRETE FOUNDATION - OVERHEAD
					EXISITING		PROPOSED		WIDTH	HEIGHT																
									(FT)	(FT)		(SQ FT)	(SQ FT)	(SQ FT)	(SQ FT)	(SQ FT)	(FOOT)	(FOOT)	(FOOT)	(CU YD)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)
SB I-90/94	SB-24-BM	EXIT 51 E, MONROE ST, 500 FEET	CUSTOM	EXISTING TO REMAIN	42+28.78	7.54' RT	-	-	14.0	7.5																
	SB-25-BM	EXIT 51 D, MADISON ST	CUSTOM	EXISTING TO REMAIN	42+28.78	7.54' RT	-	-	15.0	6.5																
	SB-26-OH	EXIT 51 E, MONROE ST	CUSTOM	REMOVE SIGN	39+14.92	5.44' LT	-	-	14.5	6.5					94.25							1				1
	SB-27-OH	EAST DAN RYAN EXPWY, INDIANA	CUSTOM	PROPOSED SIGN	-	-	38+57.20	1.57' LT	28.0	10.5			294.00													
	SB-28-OH	EXITS 51 H-J, EXITS 51 F-G, WEST EISENHOWER EXPWY, AURORA, ADAMS ST, IDA B WELLS DR, JACKSON BLVD, TAYLOR ST, EXIT ONLY	CUSTOM	PROPOSED SIGN	-	-	38+57.20	1.57' LT	36.0	18.0			648.00						128.0	65.5						
	SB-31-OH	EXIT 51 E, MONROE ST	CUSTOM	PROPOSED SIGN	-	-	38+57.20	1.57' LT	17.0	7.5			127.50													
	SB-33-BM	EXITS 51 F-G, EAST JACKSON BLVD, WEST ADAMS ST, EXIT ONLY	CUSTOM	REMOVE SIGN	37+27.06	8.33' LT	-	-	28.0	9.5					266.00								1			
	SB-34-WP	MERGE	W4-1	EXISTING TO REMAIN	33+48.95	66.31' RT	-	-	4.0	4.0	1															
	SB-35-BM	EAST CONGRESS PKWY, WEST EISENHOWER EXPWY, CHICAGO LOOP, WEST SUBURBS, EXIT ONLY	CUSTOM	REMOVE SIGN	32+57.19	8.68' RT	-	-	36.0	12.0					432.00								1			
	SB-36-BM	EXIT 51 G, EAST JACKSON BLVD	CUSTOM	EXISTING TO REMAIN	32+57.19	8.68' RT	-	-	16.0	11.0																
	SB-37-BM	EXIT 51 F, WEST ADAMS ST	CUSTOM	EXISTING TO REMAIN	32+57.19	8.68' RT	-	-	12.5	11.0																
	SB-38-BM	EXIT 51 I, EXIT 51 H, EAST CONGRESS PKWY, WEST EISENHOWER EXPWY, CHICAGO LOOP, WEST SUBURBS, EXIT ONLY	CUSTOM	REMOVE SIGN	27+89.71	14.01' LT	-	-	36.0	12.0					432.00								1			
	SB-39-BM	EXITS 51 H-J, AURORA, IDA B WELLS DR, TAYLOR ST, EXIT ONLY	CUSTOM	PROPOSED SIGN	-	-	27+89.71	14.01' LT	20.5	12.0			246.00													
	SB-40-OH	EAST RYAN EXPWY, INDIANA	CUSTOM	RELOCATE EXISTING SIGN	24+76.70	8.43' LT	-	-	29.0	10.5						304.50										
	SB-41-OH	EXIT 51 J, EXIT 51 H, EAST CONGRESS PKWY, WEST EISENHOWER EXPWY, CHICAGO LOOP, WEST SUBURBS, EXIT ONLY	CUSTOM	EXISTING TO REMAIN	24+76.70	8.43' LT	-	-	38.5	14.0																
	SB-42-OH	IDA B WELLS DR, TAYLOR ST	CUSTOM	PROPOSED SIGN	-	-	24+74.66	8.43' LT	16.5	6.0			99.00													
	SB-42A-OH	AURORA	CUSTOM	PROPOSED SIGN	-	-	24+74.66	8.43' LT	16.0	2.5			40.00													
	SB-42B-OH	EXIT 51 I-J	CUSTOM	PROPOSED SIGN	-	-	24+74.66	8.43' LT	9.5	2.0		19.00														
	SB-43-BW	EXIT GORE	E5-1	EXISTING TO REMAIN	23+23.38	33.88' LT	-	-	6.0	5.0	2															
	SB-44-BS	EXIT 52 A, TAYLOR ST, ROOSEVELT RD, 1/4 MILE	CUSTOM	REMOVE SIGN	7+14.14	26.84' LT	-	-	16.0	11.0	2				176.00									2	2	
	SB-45-WP	30 MPH RAMP	W13-3	REMOVE SIGN	7+14.14	26.84' LT	-	-	3.0	4.0	1			12.00												
	SB-46-OH	EXIT 53, STEVENSON EXPY, ST LOUIS, LAKE SHORE DR, 1 MILE	CUSTOM	REMOVE SIGN	5+34.31	16.86' RT	-	-	19.5	14.5					282.75											
	SB-47-OH	EXIT 52, 18TH ST, 3/4 MILE	CUSTOM	REMOVE SIGN	5+34.31	16.86' RT	-	-	11.0	14.5					159.50							1				2
	SB-48-OH	EXIT 52 A, TAYLOR ST, ROOSEVELT RD	CUSTOM	REMOVE SIGN	5+34.31	16.86' RT	-	-	21.0	14.5					304.50											
	SB-49-MP	MERGE	W4-1L	PROPOSED SIGN	-	-	5+74.27	22.81' LT	4.0	4.0	1	16.00					14.5									
	SB-50-OH	EXIT 53, STEVENSON EXPY, ST LOUIS, LAKE SHORE DR, 1 MILE	CUSTOM	PROPOSED SIGN	-	-	3+99.43	16.16' LT	19.5	15.0			292.50													
	SB-52-OH	EXIT 52 C, 18TH ST, 3/4 MILE	CUSTOM	PROPOSED SIGN	-	-	3+99.43	16.16' LT	11.5	9.0			103.50					135.0		33.8						
	SB-54-OH	EAST DAN RYAN EXPWY, INDIANA	CUSTOM	PROPOSED SIGN	-	-	3+99.43	16.16' LT	15.5	12.0			186.00													
	SB-55-OH	TAYLOR ST, ROOSEVELT RD, EXIT ONLY	CUSTOM	PROPOSED SIGN	-	-	3+99.43	16.16' LT	16.5	9.5			156.75													
	SB-57-BW	ACCIDENT INVESTIGATION SITE	CUSTOM	EXISTING TO REMAIN	208+76.57	47.30' RT	-	-	4.0	5.0	1															
	SB-58-WP	EAST	M3-2	EXISTING TO REMAIN	205+72.12	45.50' RT	-	-	3.0	1.5																
	SB-59-WP	I-90	M1-1	EXISTING TO REMAIN	205+72.12	45.50' RT	-	-	3.0	3.0	1															
	SB-60-WP	I-94	M1-1	EXISTING TO REMAIN	205+72.12	45.50' RT	-	-	3.0	3.0																
	SB-61-WP	ADDED LANE	W4-3	REMOVE SIGN	205+06.63	50.14' LT	-	-	4.0	4.0	1			16.00												
	SB-62-WP	CHICAGO GATEWAY GREEN	CUSTOM	EXISTING TO REMAIN	203+59.83	51.47' RT	-	-	4.0	6.5	1															
	SB-63-WP	45 MPH	R2-1	EXISTING TO REMAIN	200+13.99	38.87' RT	-	-	3.0	4.0	1															
RAMP SE	SE-01-OH	LEFT EXIT 51 I, EAST CONGRESS PKWY, CHICAGO LOOP, EXIT ONLY	CUSTOM	REMOVE SIGN	2399+53.53	16.74' RT	-	-	20.5	16.0					328.00											
											SUB-TOTAL	35.00	2193.25	28.00	2475.00	304.50	14.5	135.0	128.0	99.3	1	1	3	2	2	3

1

SIGNING SCHEDULE TOTALS

SIGN PANEL - TYPE 1	SIGN PANEL - TYPE 2	SIGN PANEL - TYPE 3	REMOVE SIGN PANEL - TYPE 1	REMOVE SIGN PANEL - TYPE 2	REMOVE SIGN PANEL - TYPE 3	RELOCATE SIGN PANEL - TYPE 1	RELOCATE SIGN PANEL - TYPE 3	TELESCOPING STEEL SIGN SUPPORT	METAL POST - TYPE B	OVERHEAD SIGN STRUCTURE - SPAN, TYPE I-A	OVERHEAD SIGN STRUCTURE - SPAN, TYPE III-A	OVERHEAD SIGN STRUCTURE - SPAN (SPECIAL)	DRILLED SHAFT CONCRETE FOUNDATIONS	OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	RELOCATE STRUCTURAL STEEL SUPPORT FOR OVERHEAD SIGN STRUCTURE - SPAN	RELOCATE OVERHEAD SIGN SUPERSTRUCTURE - SPAN	REMOVE OVERHEAD SIGN STRUCTURE - SPAN	REMOVE OVERHEAD SIGN STRUCTURE - CANTILEVER	REMOVE OVERHEAD SIGN STRUCTURE - BRIDGE MOUNTED	REMOVE GROUND MOUNTED SIGN SUPPORT	REMOVE CONCRETE FOUNDATION - GROUND MOUNT	REMOVE CONCRETE FOUNDATION - OVERHEAD
(SQ FT)	(SQ FT)	(SQ FT)	(SQ FT)	(SQ FT)	(SQ FT)	(SQ FT)	(SQ FT)	(FOOT)	(FOOT)	(FOOT)	(FOOT)	(FOOT)	(CU YD)	(FOOT)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)	(EACH)
15.00	203.00	5152.75	83.00	112.00	5185.50	6.25	1201.00	16.0	189.0	30.0	135.0	128.0	99.3	49.0	2	1	3	1	5	6	6	4

1



TYPICAL PLAN
(Interior diagonals not shown)

Sign support structures may be subject to damaging vibrations and oscillations when sign panels are not in place during erection or maintenance of the structure. To avoid these attach temporary blank sign panels or other bracing to the structure until permanent signs are installed.

TYPICAL ELEVATION
(Looking at Face of Signs**)

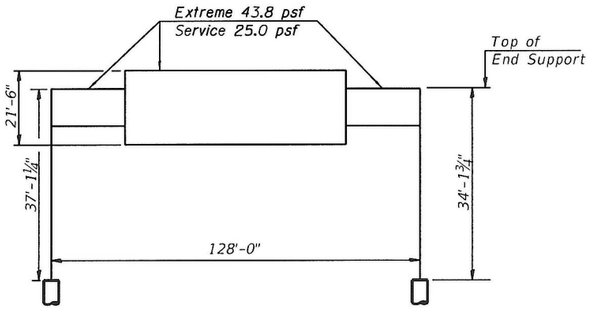
Elev. A = Elevation at point of minimum clearance to sign, walkway support or truss.

Structure Number	Station	Design Truss Type	c. to c. Supports	Elev. A	Dim. D	Height of Tallest Sign	Total Sign Area
1S016I094R051.3	Sta. 38+57.20(SB)	Special	128'-0"	579.45	23'-4½"	21'-6"	1720

WALKWAY: Walkway grating, walkway brackets, handrails, lighting and associated components shown in these plans on the traffic side of the sign structure/sign panel will not be installed with Contract 60X93. The truss grating and maintenance walkway behind the sign panel will be included with this pay item.

**Looking upstation for structures with signs both sides.

* If M270 Gr. 50W (M222) steel is proposed, chemistry for plate to be used shall first be approved by the Engineer as suitable for galvanizing and welding.



DESIGN WIND LOADING DIAGRAM

Parameters shown are based on 2015 AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition with 2018 interim revisions and are applicable for this Non-Standard Sign Structure only.

STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E. Il. Lic. No. 081-005738
Expires 11-30-2018
Date 09/25/2018 For Sheets SS-09 thru SS-17

1 Revised Sheet 10-10-2018

GENERAL NOTES

DESIGN: 2015 AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition with 2018 Interim Revisions. ("AASHTO Specifications")

CONSTRUCTION: Current (at time of letting) Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Supplemental Specifications and Special Provisions. ("Standard Specifications")

LOADING: 120 M.P.H. WIND VELOCITY

WALKWAY LOADING: Dead load plus 500 lbs. concentrated live load.

DESIGN STRESSES:
Field Units
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (reinforcement)

WELDING: All welds to be continuous unless otherwise shown. All welding to be done in accordance with current AWS D1.1 and D1.2 Structural Welding Codes (Steel and Aluminum) and the Standard Specifications.

MATERIALS: Aluminum Alloys as shown throughout plans. All Structural Steel Pipe shall be ASTM A53 Grade B or A500 Grade B or C. If A500 pipe is substituted for A53, then the outside diameter shall be as detailed and wall thickness greater than or equal to A53. All Structural Steel Plates and Shapes shall conform to AASHTO M270 Gr. 36, Gr. 50 or Gr. 50W. Stainless steel for shims, sleeves and handhole covers shall be ASTM A240, Type 302 or 304, or another alloy suitable for exterior exposure and acceptable to the Engineer. The steel pipe and stiffening ribs at the base plate for the column shall have a minimum longitudinal Charpy V-Notch (CVN) energy of 15 lb.-ft. at 40° F. (Zone 2) before galvanizing.*

FASTENERS FOR ALUMINUM TRUSSES: All bolts noted as "high strength" must satisfy the requirements of AASHTO M164 (ASTM A325), or approved alternate, and must have matching lock nuts. Threaded studs for splices (if Members interfere) must satisfy the requirements of ASTM A449, ASTM A193, Grade B7, or approved alternate, and must have matching lock nuts. Bolts and lock nuts not required to be high strength must satisfy the requirements of ASTM A307. All bolts and lock nuts must be hot dip galvanized per AASHTO M232. The lock nuts must have nylon or steel inserts. A stainless steel flat washer conforming to ASTM A240 Type 302 or 304, is required under both head and nut or under both nuts where threaded studs are used. High strength bolt installation shall conform to Article 505.04 (f) (2)d of the IDOT Standard Specifications for Road and Bridge Construction. Rotational capacity ("ROCAP") testing of bolts will not be required.

U-BOLTS AND EYEBOLTS: U-Bolts and Eyebolts must be produced from ASTM A276 Type 304, 304L, 316 or 316L, Condition A, cold finished stainless steel, or an equivalent material acceptable to the Engineer. All nuts for U-Bolts and Eyebolts must be lock nuts equivalent to ASTM A307 with nylon or steel inserts and hot dip galvanized per AASHTO M232. A stainless steel flat washer conforming to ASTM A240, Type 302 or 304, is required under each U-Bolt and Eyebolt lock nut.

GALVANIZING: All Steel Grating, Plates, Shapes and Pipe shall be Hot Dip Galvanized after fabrication in accordance with AASHTO M111. Painting is not permitted.

ANCHOR RODS: Shall conform to ASTM F1554 Gr. 105.

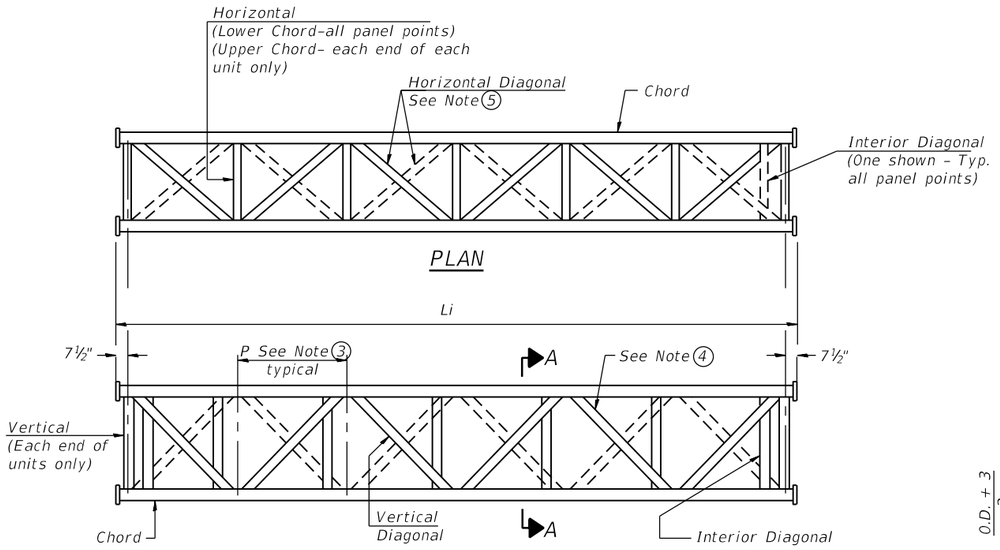
CONCRETE SURFACES: All concrete surfaces above an elevation 6" below the lowest final ground line at each foundation shall be cleaned and coated with Concrete Sealer in accordance with the Standard Specifications.

REINFORCEMENT BARS: Reinforcement Bars designated (E) shall be epoxy coated in accordance with the Standard Specifications.

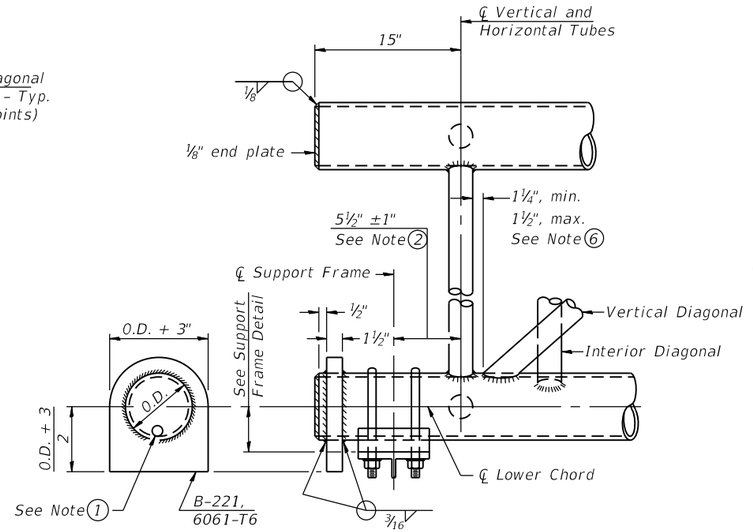
FOUNDATIONS: The contract unit price for Concrete Foundations and Drilled Shaft Concrete Foundations shall include reinforcement bars complete in place.

TOTAL BILL OF MATERIAL

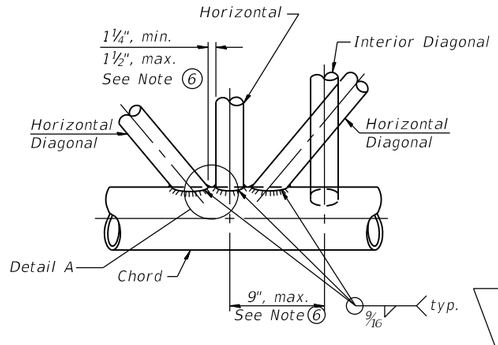
ITEM	UNIT	TOTAL
OVERHEAD SIGN STRUCTURE - SPAN (SPECIAL)	Foot	128
DRILLED SHAFT CONCRETE FOUNDATIONS	Cu. Yds	65.5

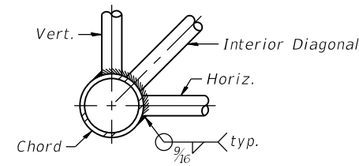


ELEVATION
TYPICAL INTERIOR UNIT
2 interior units required

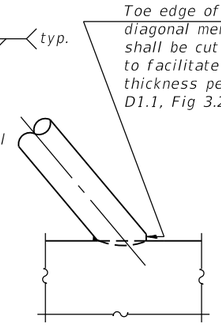


SUPPORT END DETAIL FOR EXTERIOR UNIT

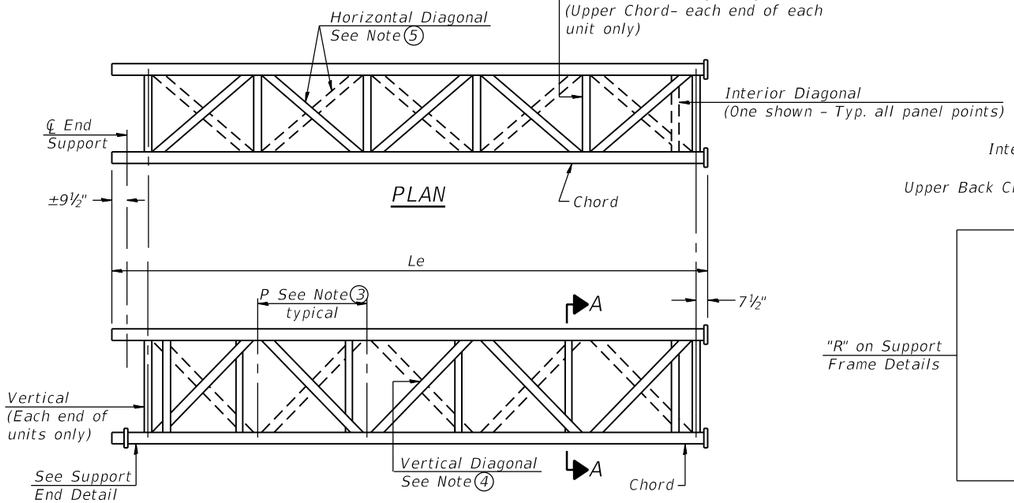




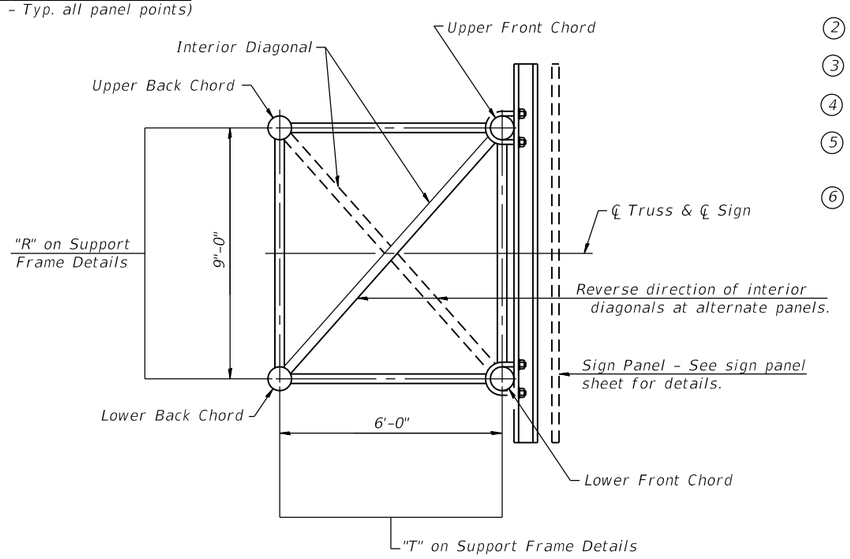
TYPICAL JOINT DETAILS



DETAIL A



ELEVATION
TYPICAL EXTERIOR UNIT
2 exterior units required



SECTION A–A

(1) Contractor may alternatively use standard aluminum drive-fit cap to close end. ½" Ø drain hole in end plate/drive-fit cap. (Typ. at ends of all chords)

(2) 5½" end dimension may vary by ±1" to provide uniform panel spacing (P).

(3) Panel spacing (P) shall be uniform for entire truss and equal 5'–1¾"

(4) Vertical Diagonals in front and back face shall alternate.

(5) Hidden lines show wind bracing alternates direction between planes of top and bottom chords.

(6) All diagonals shall be detailed for minimum offset from the panel point based on the following: Offset shall be such as to provide a 1¼" minimum to 1½" maximum clearance between any diagonal and any horizontal or vertical member, and to provide clearance for U-bolt connections of signs or walkway brackets.

⚠1 Revised Sheet 10-10-18

0S-A-2-SPECIAL

HBM ENGINEERING GROUP, LLC

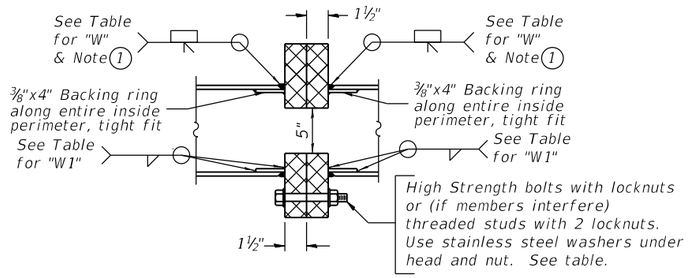
USER NAME = mustafa.alobaidi	DESIGNED - JJS, MA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES (SPECIAL) – ALUMINUM TRUSS DETAILS
	CHECKED - MI, MAI	REVISED -		
PLOT SCALE = N.T.S	DRAWN - EK	REVISED -		
PLOT DATE = 9/25/2018	CHECKED - MI, MAI	REVISED -		SHEET NO. SS-10 OF SS-32 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	520
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

FILE NAME: pw:\\6117479-PWINT.aecomonline.local:AECOM_D502_NAIDocuments\01 Americas\Transportation\60269938 Circle\Phase_II\000_CAD\008_Structural\Structural Structure_016-1718\Working\Sign Structures\0161718-60X93-SS302-SignStruct.dgn
3:29:52 PM

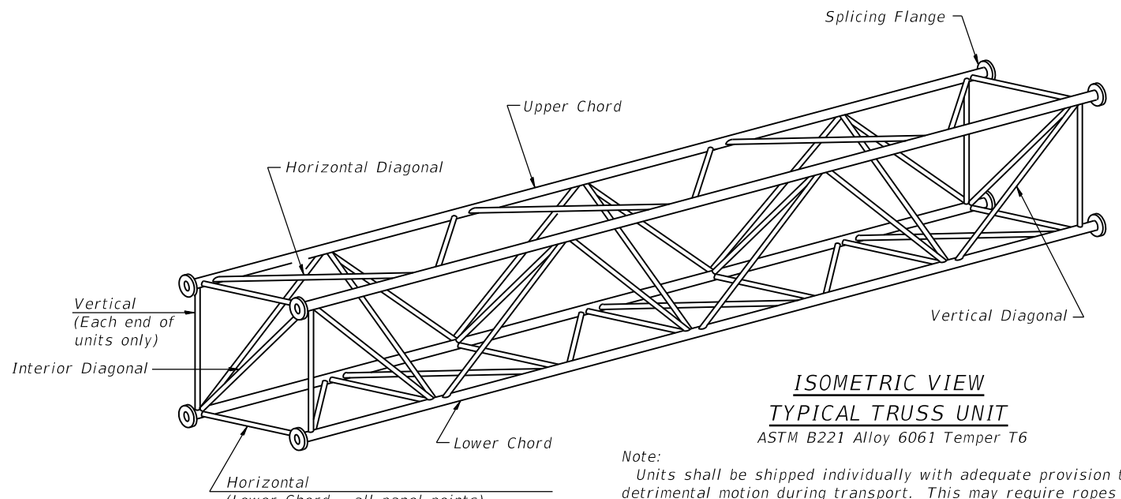
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical,Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(Le)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(Li)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W1		
1S016I094R051.3	Sta. 38+57.20 (SB)	Special	6	32'-9"	5'-1¾"	2	6	32'-1½"	5'-1¾"	10"	⅝"	5"	⅝"	2¼"	8	1¼"		¼"	14½"	18"



SECTION B-B

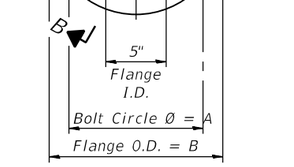
(1) Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to ensure proper field assembly.



ISOMETRIC VIEW
TYPICAL TRUSS UNIT

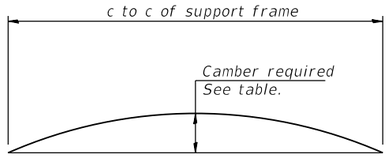
ASTM B221 Alloy 6061 Temper T6

Note:
Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.



SPLICING FLANGES

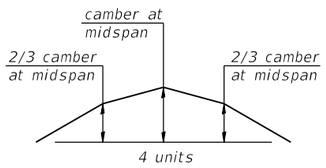
ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651



CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

CAMBER ATTAINMENT:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)

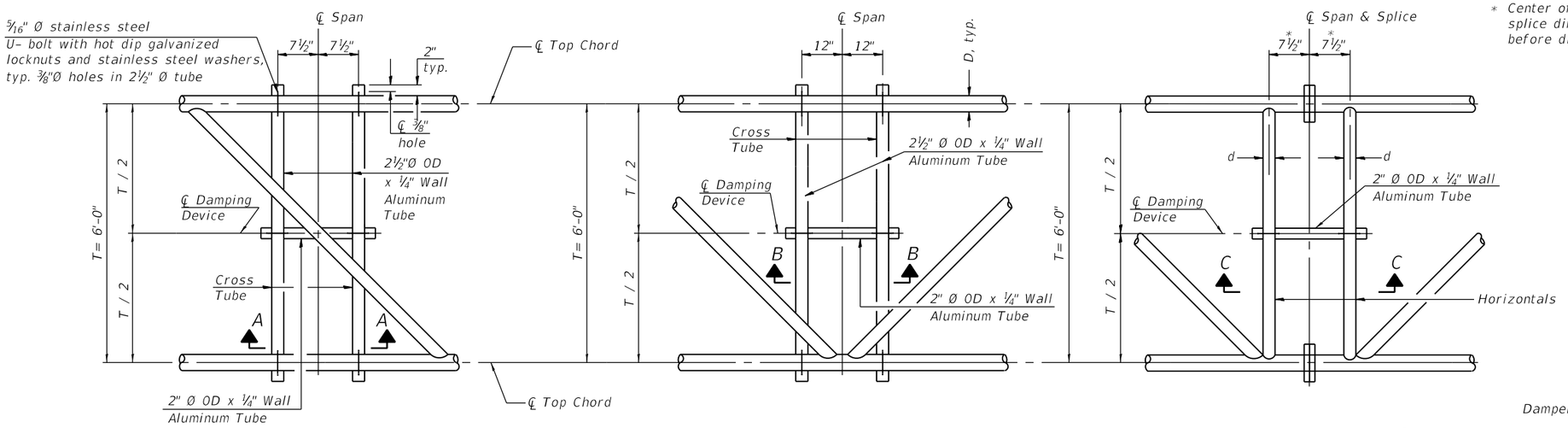
(1) Revised Sheet 10-10-18

OS4-A-2-SPECIAL

HBM ENGINEERING GROUP, LLC

USER NAME = mustafa.alobaidi	DESIGNED - JJS, MA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES (SPECIAL) – ALUMINUM TRUSS DETAILS
	CHECKED - MI, MAI	REVISED -		
PLOT SCALE = N.T.S	DRAWN - EK	REVISED -		
PLOT DATE = 10/9/2018	CHECKED - MI, MAI	REVISED -		SHEET NO. SS-11 OF SS-32 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	521
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



* Center of horizontal to center of splice dimension may vary. Verify before drilling holes in mounting tube.

PLAN DETAIL "A"
℄ Span between Panel Points

PLAN DETAIL "B"
℄ Span at Panel Point

PLAN DETAIL "C"
℄ Span at ℄ Chord Splice

NOTES

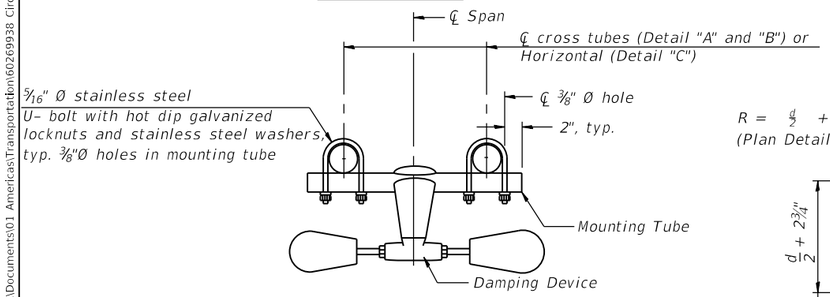
Damper: One damper per truss. (31 lbs. minimum Stockbridge-Type Aluminum – 29" minimum between ends of weights) Cost included in Overhead Sign Structure...

Materials: Materials: Aluminum tubes shall be ASTM B221 alloy 6061 temper T6. Cost included in Overhead Sign Structure...

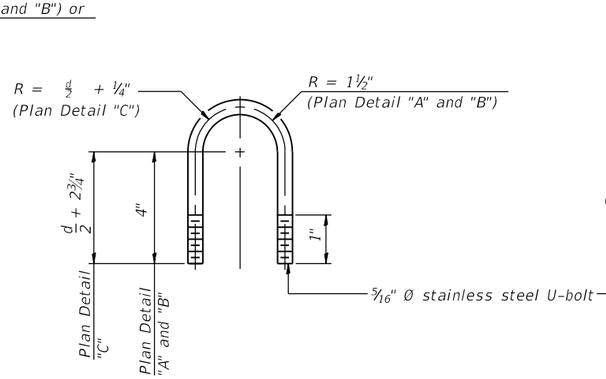
SECTION A-A

SECTION B-B

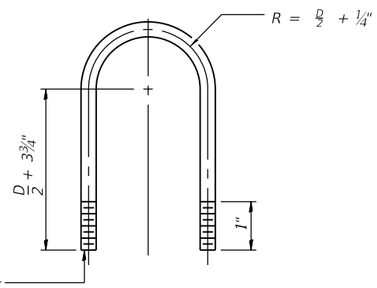
SECTION C-C



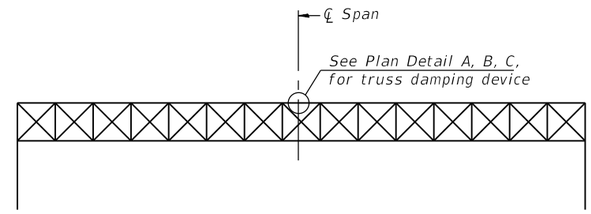
TRUSS DAMPING DEVICE CONNECTION DETAIL
(Typical)



DAMPING DEVICE MOUNTING TUBE U-BOLT DETAIL
(Typical)



TOP CHORD TO CROSS TUBE U-BOLT DETAIL
(Typical - Detail "A" and "B")



ELEVATION
Aluminum Overhead Sign Truss

⚠1 Revised Sheet 10-10-18

OS-A-D-SPECIAL

HBM ENGINEERING GROUP, LLC	USER NAME = mustafa.alobaidi	DESIGNED - JJS, MA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURE (SPECIAL) DAMPING DEVICE
		CHECKED - MI, MAI	REVISED -		
	PLOT SCALE = N.T.S	DRAWN - EK	REVISED -		SHEET NO. SS-12 OF SS-32 SHEETS
	PLOT DATE = 9/25/2018	CHECKED - MI, MAI	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	522
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

FILE NAME: pw:\\617479-PWINT.aecomonline.local:AECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 CirclePhase_II\000_CAD\008_StructuralStructure_016-1718WorkingSign Structures\0161718-60X93-SS304-SignStruct.dgn

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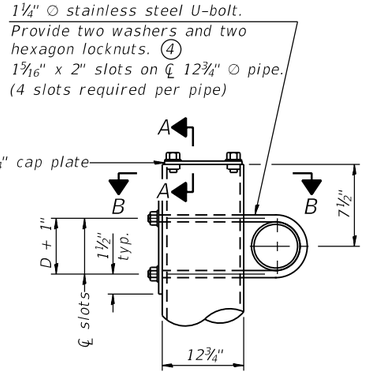
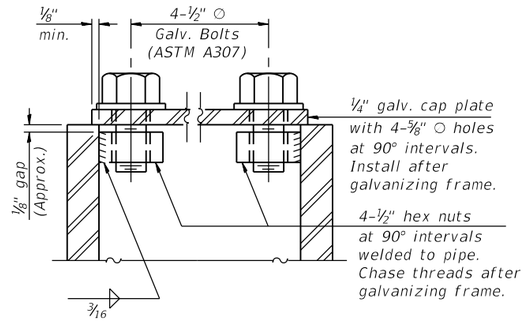
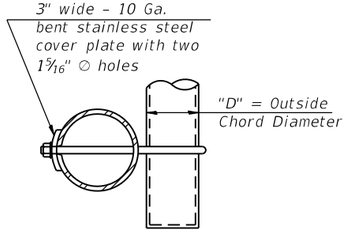


DETAIL A

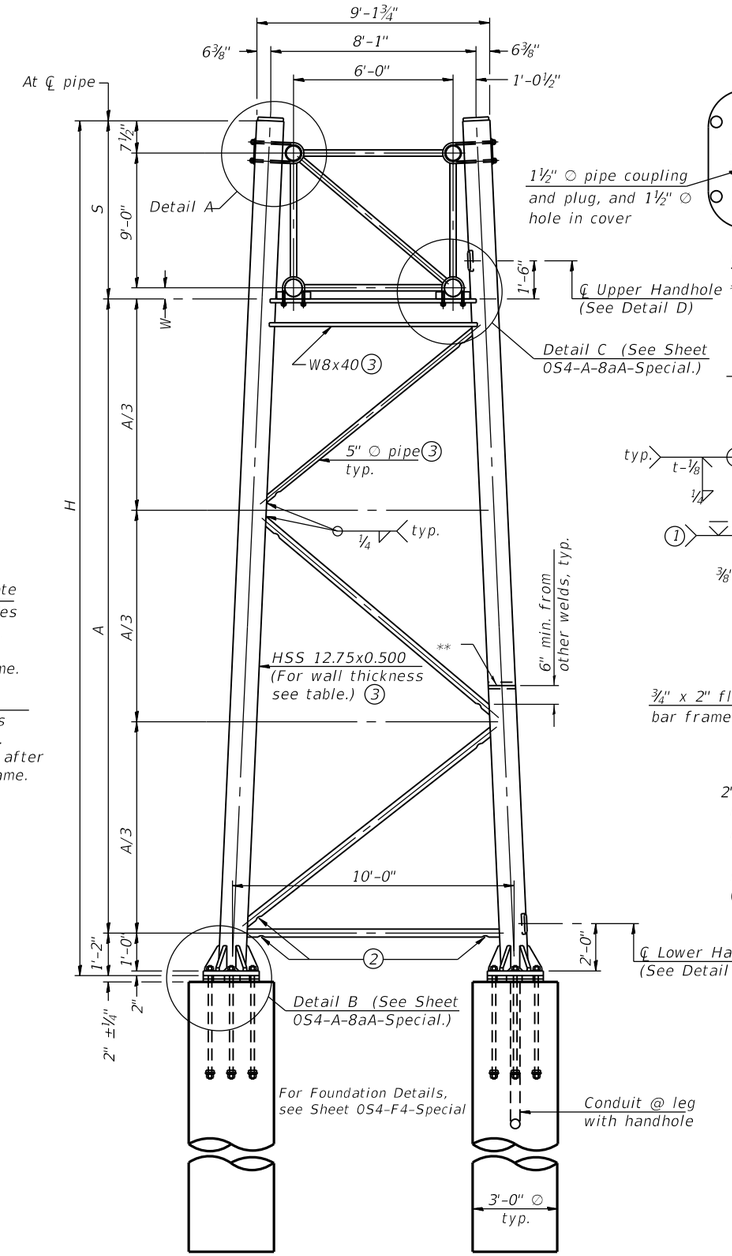


SECTION A-A

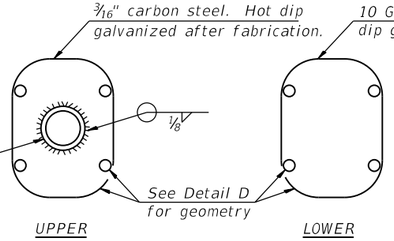
As an alternate to bolts, may use galvanized drive-fit caps installed after galvanizing frame.



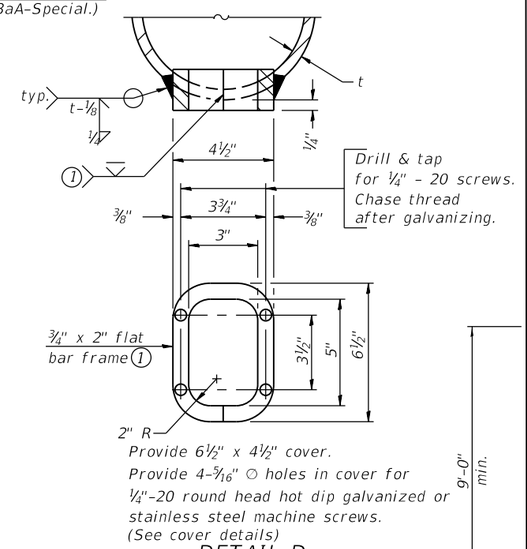
SECTION B-B



SIDE ELEVATION

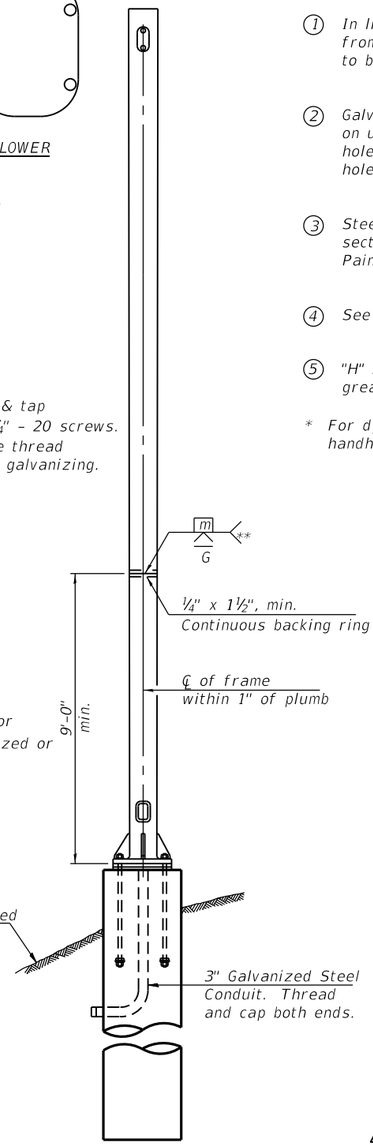


HANDHOLE COVERS



DETAIL D

Dimensions		
Truss Chord Nominal Dia.	W	S
10"	6¼"	10'-1¾"



END ELEVATION

Support Design Loads: See Sheet SS-09 for design and loading criteria.

(1) *In lieu of fabricated handhole frame as shown, may cut from 2" plate (rolling direction vertical). All cut faces to be ground to ANSI Roughness of 500 micro-inches in or less.*

(2) *Galvanizing vent holes of adequate size shall be provided on underside at each end of bracing pipes. Alternately, holes may be provided in wall of pipe column. All vent holes shall be drilled and de-burred, typ.*

(3) *Steel pipe, plate, carbon steel handhole covers and rolled sections shall be hot dip galvanized after fabrication. Painting is not permitted. See Sheet SS-09.*

(4) *See General Notes for fasteners.*

(5) *"H" based on 15'-0" or actual sign height (21'-6"), whichever is greater.*

* *For dynamic message sign installations, provide upper and lower handholes in both legs of each support frame.*

TRUSS SUPPORT DETAILS

HSS 12.75x0.500 Truss Support

** *One butt welded joint is allowed only on one post per support frame. If used, weld procedure must be pre-approved by Engineer and joint shall receive 100% RT or UT (tension criteria) at Contractor's expense.*

Structure Number	Station	Support Left	Support Right	Pipe Wall Thickness	H (5)	A
1S016I094R051.3	Sta. 38+57.20 (SB)	X		0.465"	31'-8¾"	20'-5"
1S016I094R051.3	Sta. 38+57.20 (SB)		X	0.465"	27'-11"	16'-7¼"

⚠1 Revised Sheet 10-10-18

0S4-A-8a-SPECIAL

HBM ENGINEERING GROUP, LLC

USER NAME = mustafa.alobaidi		DESIGNED - JJS, MA	REVISED -	
		CHECKED - MI, MAI	REVISED -	
PLOT SCALE = N.T.S		DRAWN - EK	REVISED -	
PLOT DATE = 10/9/2018		CHECKED - MI, MAI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES (SPECIAL) – SUPPORT FRAME FOR ALUMINUM TRUSS

SHEET NO. SS-13 OF SS-32 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	523
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

FILE NAME: pw:\\617479-PWINT.aecomonline.local:AECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 Circle\Phase_II\0000_CAD\008_StructuralStructure_016-1718\Working\Sign Structures\0161718-60X93-SS305-SignStruct.dgn

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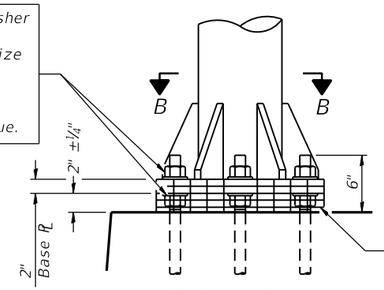
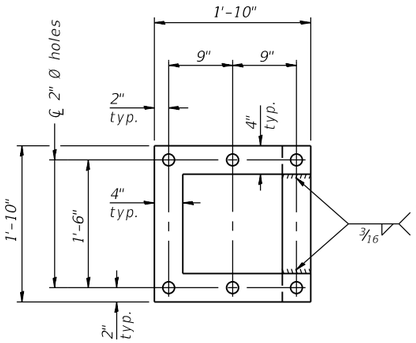
Hexagon locknut and washer (top), leveling nut and washer (bottom). Galvanize per AASHTO M232. Nuts shall each be tightened against base plate with 200 lb.-ft. minimum torque.



DETAIL B

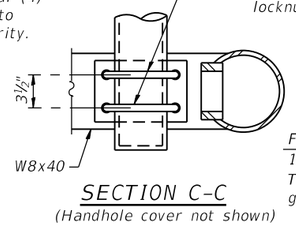
Ribs shall be cut to fit slope of pipe.

Stainless Steel Standard Grade Wire Cloth, 3" wide, ¼" maximum opening with a minimum wire diameter of AWG. No. 16 with a minimum 2" lap. Secure to base plate after erection with ¾" stainless steel banding.



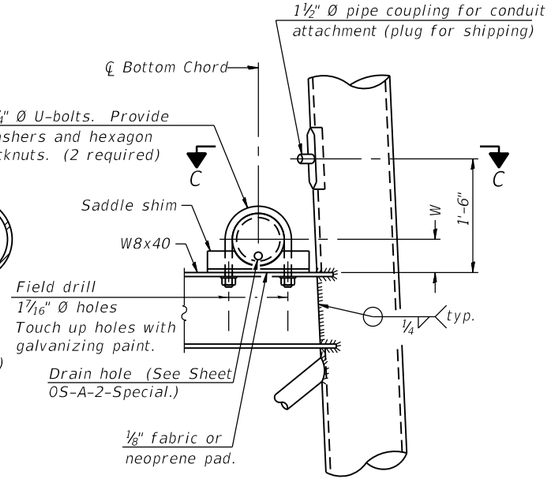
Optionally may use four (4) separate bars. Weld to maintain perpendicularity.

POSITIONING PLATE(S)

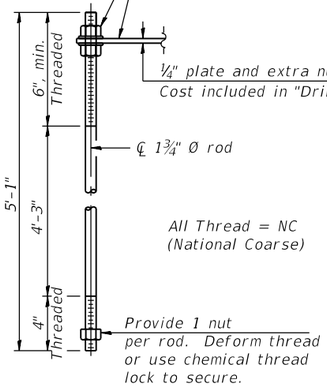


SECTION C-C

(Handhole cover not shown)



DETAIL C



At each location, provide ¼" thick positioning plate(s) and six (6) additional nuts to be used with leveling nuts to maintain anchor bolts position during concrete placement.

¼" plate and extra nuts become Contractor's property. Cost included in "Drilled Shaft Concrete Foundation".

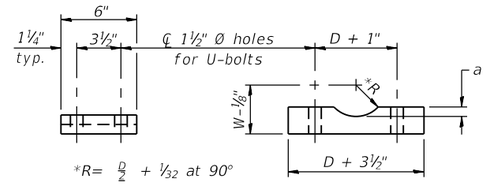
℄ 1¾" Ø rod

All Thread = NC (National Coarse)

Provide 1 nut per rod. Deform thread or use chemical thread lock to secure.

ANCHOR ROD DETAIL

Anchor rods shall conform to ASTM F1554 Grade 105 Galvanize upper 12" minimum per AASHTO M232. No welding shall be permitted on rods.



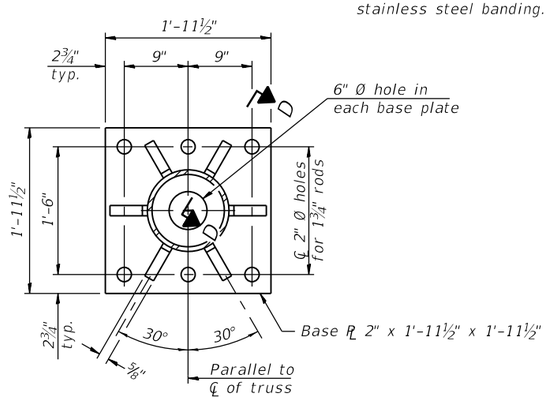
*R= D/2 + 1/32 at 90°

D = Outside Diameter of Chord.
For W, see Sheet OS4-A-8a-Special.

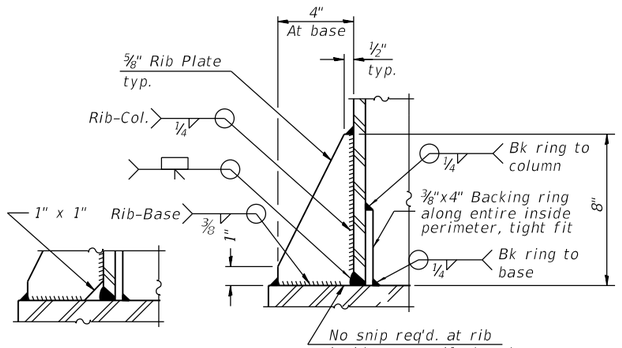
Truss Chord Nominal Dia.	a
10"	1½"

SADDLE SHIM DETAIL

ASTM B26 Alloy 356-F
or
ASTM B209 Alloy 6061-T651
(4 required per sign truss)



SECTION B-B



** Alternate detail if welding col. to base plate first, then snip inside corner of ribs. Terminate weld on rib ¼" from snip.

SECTION D-D

Revised Sheet
10-10-18

OS4-A-8aA-SPECIAL

HBM ENGINEERING GROUP, LLC

USER NAME = mustafa.alobaidi		DESIGNED - JJS, MA	REVISED -		
		CHECKED - MI, MAI	REVISED -		
PLOT SCALE = N.T.S		DRAWN - EK	REVISED -		
PLOT DATE = 10/9/2018		CHECKED - MI, MAI	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES (SPECIAL)
SUPPORT FRAME FOR ALUMINUM TRUSS
SHEET NO. SS-14 OF SS-32 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	524
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

FILE NAME: pw:\\617479-PWINT.aecomonline.local:AECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 CirclePhase_II\000_CAD\008_StructuralStructure_016-1718WorkingSign Structures\0161718-60X93-SS306-SignStruct.dgn

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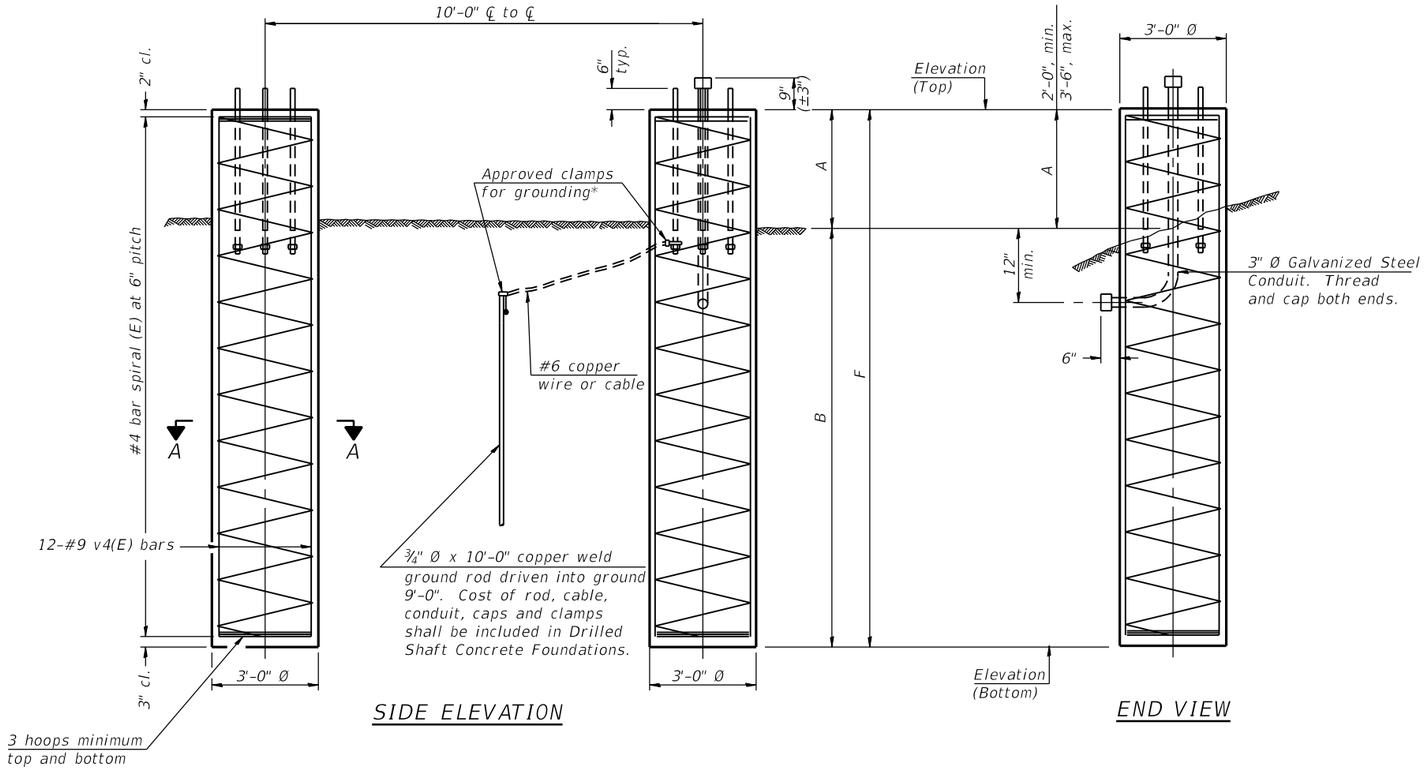
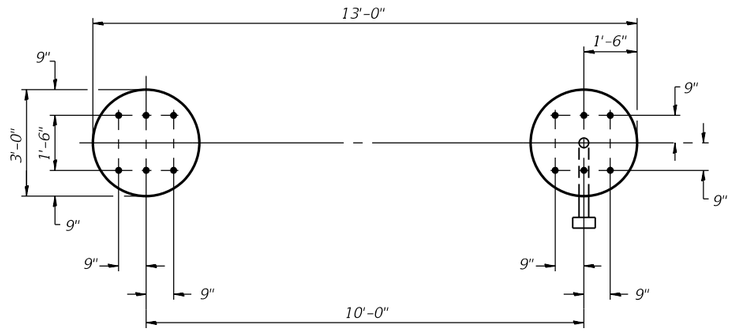


SIDE ELEVATION

END VIEW



PLAN

For anchor rod size and placement, see Sheet SS-14.

* Anchor rod shall be ground or filed to bright metal at clamp and cable connection location.

BAR LIST - EACH FOUNDATION

Bar	Number	Size	Length	Shape
v4(E)	24	#9	F less 5"	——
#4 bar spiral (E) - see Side Elevation				

NOTES:

If the conditions encountered are different than those indicated, the Contractor shall notify the Engineer to determine if the foundation dimensions need to be modified. If dimensions "B" or "F" are revised by more than 12" by the Contractor, "as-built" plans shall be prepared and submitted to the District Bureau of Operations for future reference.

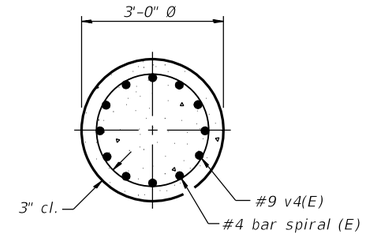
No sonotubes or decomposable forms shall be used below the lower conduit entrance.

Permanent metal forms or other shielding may not be left in place below that elevation without the Engineer's written permission.

Concrete shall be placed monolithically, without construction joints.

Backfill shall be placed per Article 502 of Standard Specification and prior to erection of support column.

A normal surface finish followed by a Concrete Sealer application will be required on concrete surfaces above the lowest elevation 6" below finished ground line. Cost included in Drilled Shaft Concrete Foundation.



SECTION A-A

⚠1 Revised Sheet 10-10-18

Structure Number	Station		Left Foundation				Right Foundation					Class DS Concrete (Cu. Yds.)
		Elevation Top	Elevation Bottom	A	B	F	Elevation Top	Elevation Bottom	A	B	F	
1S016I094R051.3	Sta. 38+57.20(SB)	581.94	521.94	3'-6"	56'-6"	60'-0"	585.75	520.75	2'-0"	63'-0"	65'-0"	65.5

0S4-F4-SPECIAL

HBM ENGINEERING GROUP, LLC	USER NAME = mustafa,alobaidi	DESIGNED - JJS, MA	CHECKED - MI, MAI	REVISED -
		CHECKED - MI, MAI		REVISED -
	PLOT SCALE = N.T.S	DRAWN - EK		REVISED -
	PLOT DATE = 9/25/2018	CHECKED - MI, MAI		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES (SPECIAL)
DRILLED SHAFT DETAILS

SHEET NO. SS-15 OF SS-32 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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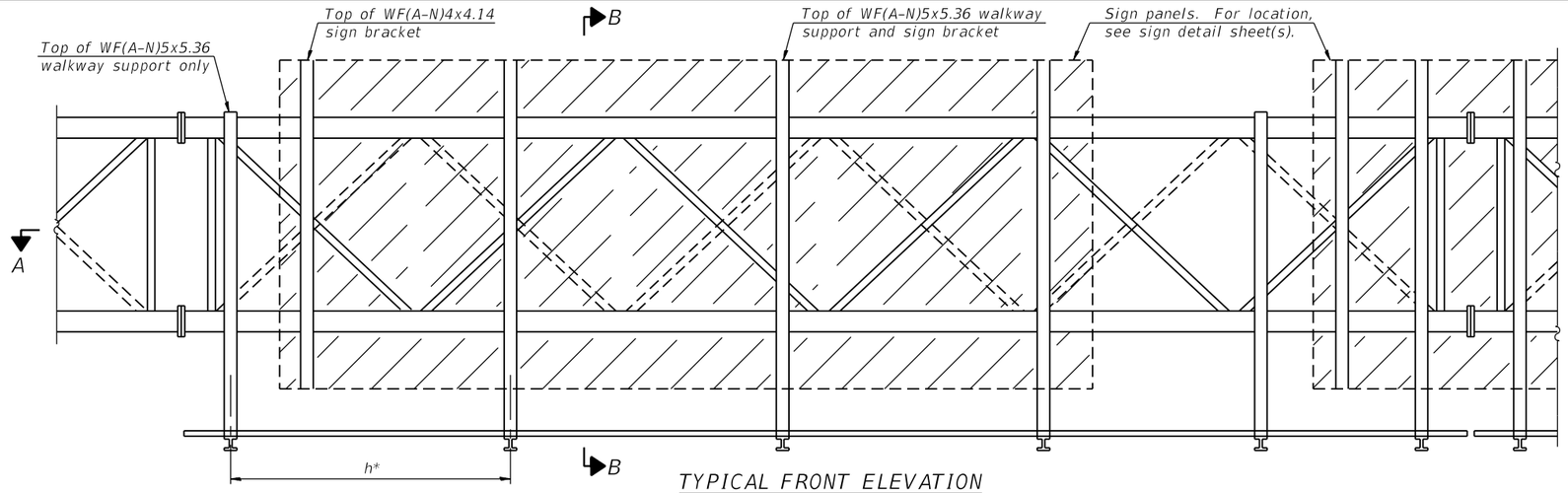
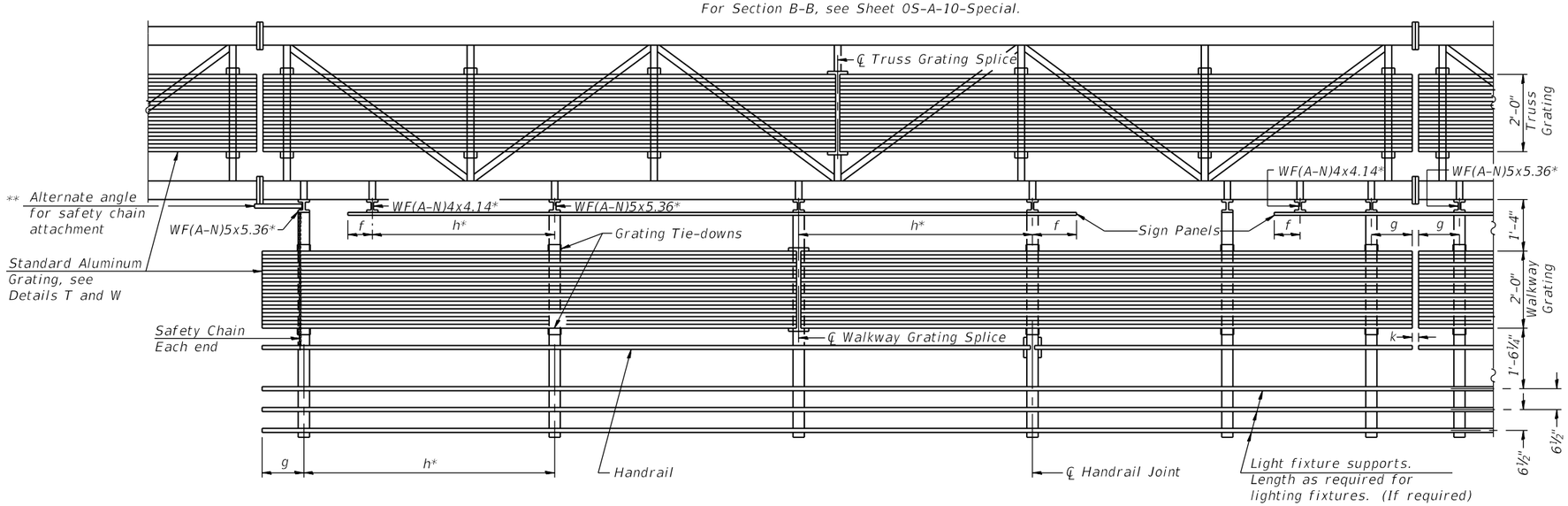
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		



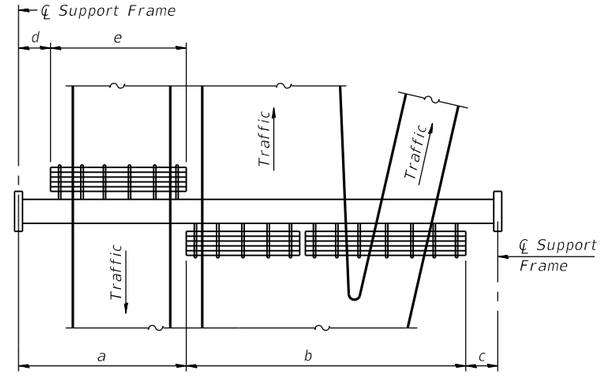
TYPICAL FRONT ELEVATION

With lights and handrail omitted for clarity.
For Section B-B, see Sheet 0S-A-10-Special.



SECTION A-A

Handrail and walkway shall span a minimum of three brackets between splices and/or gap joints.
Place all sign and walkway brackets as close to panel points as practical.
Handrail joints, grating, and light support splices placed as needed.



PLAN
WALKWAY AND HANDRAIL SKETCH

(Road plan beneath truss varies)

Structure Number	Station	a	b	c	d	e	Walkway Grating and Handrail Lengths
1S016I094R051.3	Sta. 38+57.20 (SB)	-	-	-	-	-	-

BRACKET TABLE

WF(A-N)4x4.14 or WF(A-N)5x5.36 ASTM B308, Alloy 6061-T6		
Sign Width		Number Brackets Required
Greater Than	Less Than or Equal To	
	8'-0"	3
8'-0"	14'-0"	4
14'-0"	20'-0"	6
20'-0"	26'-0"	7
26'-0"	32'-0"	9

Notes:

* *Space walkway brackets WF(A-N)5x5.36 and sign brackets WF(A-N)4x4.14 for efficiency and within limits shown:*

f = 12" maximum, 4" minimum (End of sign to ℄ of nearest bracket)
g = 12" maximum, 4" minimum (End of walkway grating to ℄ of nearest support bracket)
h = 4'-0" maximum (℄ to ℄ sign and/or walkway support brackets, WF(A-N)4x4.14 or WF(A-N)5x5.36)
k = 2" maximum gap between adjacent walkway grating sections and handrail ends

** *If walkway bracket at safety chain location is behind sign, add angle to bracket, see Alternate Safety Chain Attachment on IDOT standard Base Sheet 0S-A-11.*

For Details T and W, Section B-B and Grating Splice Details, see Sheet 0S-A-10-Special.
For Handrail Details, see IDOT standard Base Sheet 0S-A-11.

⚠1 Revised Sheet
10-10-18

Truss grating to facilitate inspection shall run full length (center to center of support frames) ±12" on overhead trusses. Cost of truss grating is included in "Overhead Sign Structure".

Walkway and Truss Grating width dimensions are nominal and may vary ±½" based on available standard widths.

0S-A-9-SPECIAL

HBM ENGINEERING GROUP, LLC

USER NAME = mustafa.alobaidi	DESIGNED - JJS, MA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OVERHEAD SIGN STRUCTURES (SPECIAL) ALUMINUM WALKWAY DETAILS	
	CHECKED - MI, MAI	REVISED -			
PLOT SCALE = N.T.S	DRAWN - EK	REVISED -			
PLOT DATE = 9/25/2018	CHECKED - MI, MAI	REVISED -		SHEET NO. SS-16 OF SS-32 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	526
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

FILE NAME: pw:\\6117479-PWINT.aecomonline.local:AECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 CirclePhase_II\000_CAD\008_StructuralStructure_016-1718\Working\Sign Structures\016-1718-60X93-55308-SignStruct.dgn

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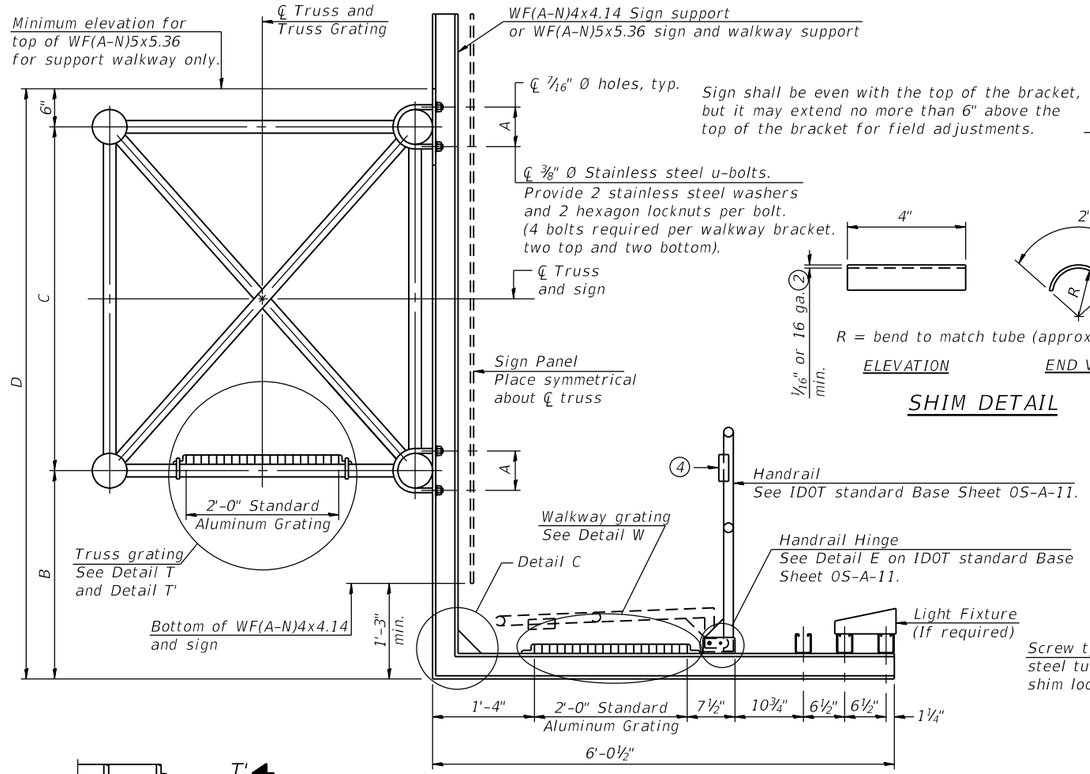
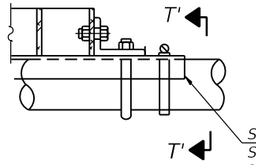


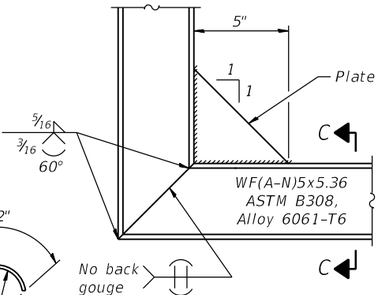
SECTION B-B



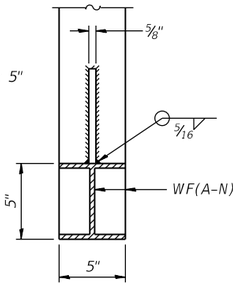
DETAIL T'

(Truss grating splice)

Details not shown same as Detail T. Alternate materials may be used subject to the Engineer's review and approval.

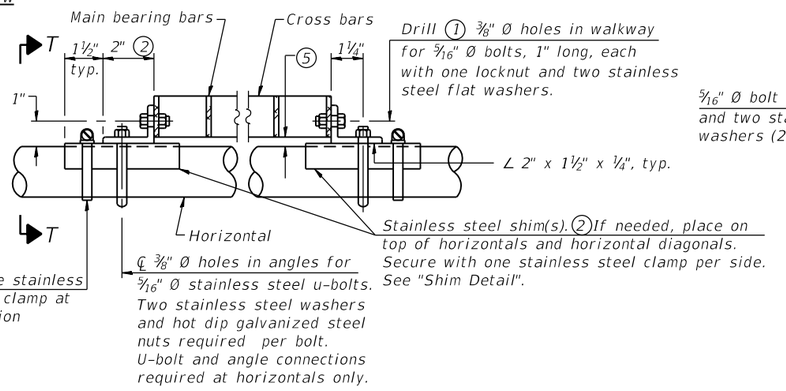


DETAIL C



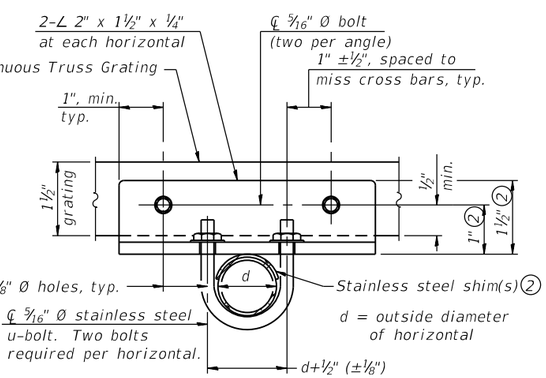
SECTION C-C

SHIM DETAIL

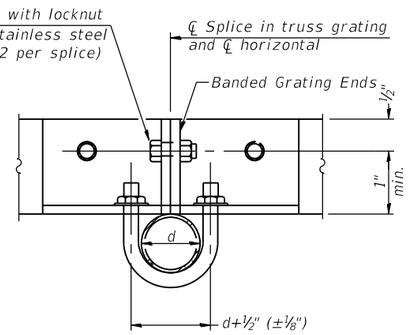


DETAIL T

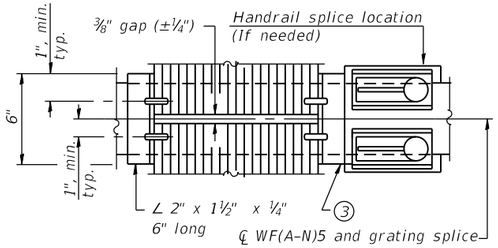
(Continuous Truss grating)



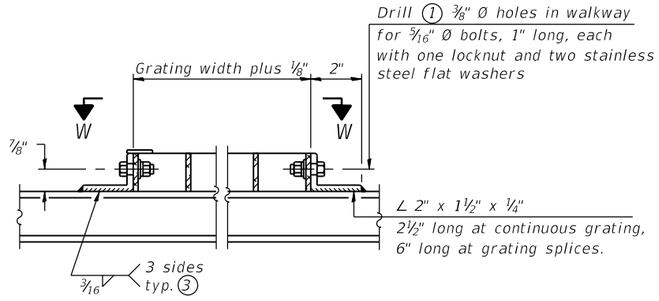
SECTION T-T



SECTION T'-T'

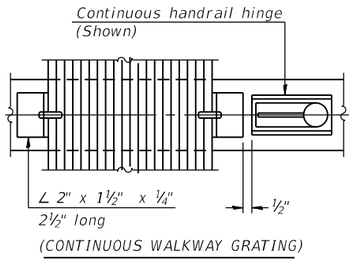


(AT WALKWAY GRATING SPLICE)



DETAIL W

(Walkway grating)



(CONTINUOUS WALKWAY GRATING)

SECTION W-W

SPECIFICATIONS FOR STANDARD ALUMINUM GRATING

Main Bearing Bars shall be ⅜" x 1½" on 1 3/16" centers and conform to ASTM B221 Alloy 6061-T6.

Cross bars shall be ⅜" x 1½" on 4" centers and conform to ASTM B221 Alloy 6063-T5 or 6061-T6.

OR

Aluminum Grating with modified "t" sections for main bearing bars shall meet the following requirements:

Main bars shall conform to ASTM B221 Alloy 6061-T6 and have a minimum section modulus equal to 0.0705 in.³ per bar, a depth of 1½", spaced on 1 3/16" centers.

Cross bars shall conform to ASTM B221 Alloy 6063-T5 or T-42 and spaced on 4" centers.

Structure Number	Station	A	(6) B	C	(6) D
1S016I094R051.3	Sta. 38+57.20(SB)	11"	7'-6"	9'-0"	17'-0"

(1) Drilling holes in grating may be done in shop or field, based on Contractor's preference and subject to accurate alignment.

(2) Stainless steel shims shall be placed as shown in Detail T if needed to compensate for alignment variations between horizontal and diagonal pipes beyond adjustment provided by angles. Thicker shims may be used subject to shims performing properly.

(3) If Handrail Joint present, weld angle to WF(A-N)5 and ¼" extension bars. (See IDOT standard Base Sheet 0S-A-11.)

(4) PL ⅛" x ½" x 2" welded to handrail posts to protect locations that contact grating.

(5) Tube to grating gap may vary from 0 to ½", max. to align walkway, allow for camber, etc.

(6) Based on actual height of tallest sign given on Sheet SS-09.

⚠1 Revised Sheet 10-10-18

0S-A-10-SPECIAL

HBM ENGINEERING GROUP, LLC

USER NAME = mustafa.alobaidi		DESIGNED - JJS, MA	REVISED -	
		CHECKED - MI, MAI	REVISED -	
PLOT SCALE = N.T.S		DRAWN - EK	REVISED -	
PLOT DATE = 9/25/2018		CHECKED - MI, MAI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGN STRUCTURES (SPECIAL)
ALUMINUM WALKWAY DETAILS
SHEET NO. SS-17 OF SS-32 SHEETS

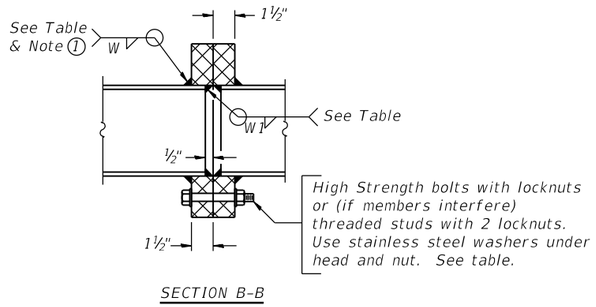
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	527
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

FILE NAME: pw:\\617479-PWINT.aecomonline.local:AECOM_DS02_NA\Documents\01 Americas\Transportation\60269938 Circle\Phase_II\000_CAD\008_Structural\Structure_016-1718\Working\Sign Structures\016I718-60X93-SS309-SignStruct.dgn

3:30:13 PM

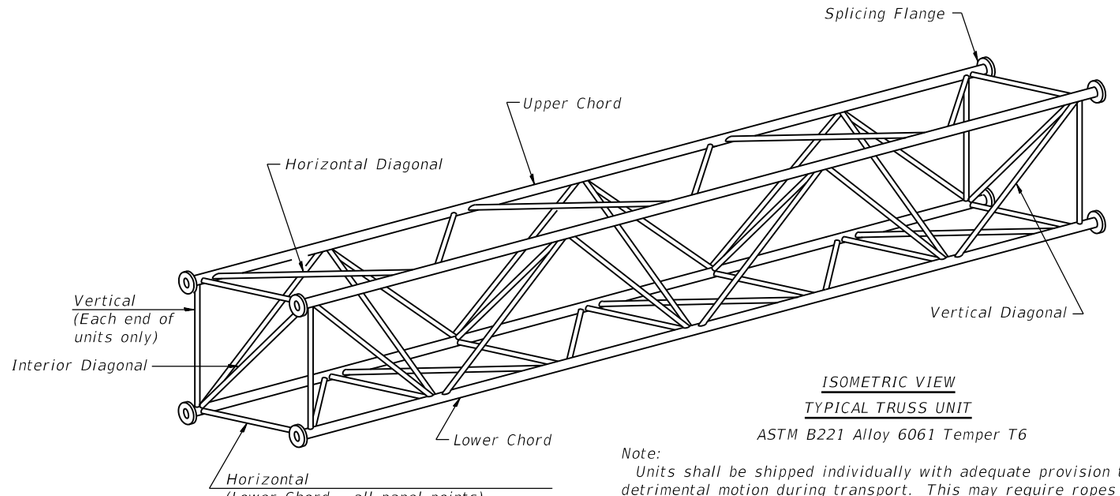
TRUSS UNIT TABLE

Structure Number	Station	Design Truss Type	Exterior Units (2)			Interior Unit				Upper & Lower Chord		Verticals; Horizontals; Vertical,Horizontal, and Interior Diagonals		Camber at Midspan	Splicing Flange					
			No. Panels per Unit	Unit Lgth.(Le)	Panel Lgth.(P)	No. Req'd.	No. Panels per Unit	Unit Lgth.(Li)	Panel Lgth.(P)	O.D.	Wall	O.D.	Wall		Bolts		Weld Sizes		A	B
															No./Splice	Dia.	W	W1		
1S016I094R051.9	Sta. 3+99.43	III-A	6	34'-6"	5'-5¼"	2	6	33'-10½"	5'-5¼"	7"	½"	3¼"	5/16"	3¾"	8	1"	9/16"	7/16"	11½"	15"



SECTION B-B

(1) Splicing Flanges shall be attached to each truss unit with the truss shop assembled to camber shown. Truss units shall be in proper alignment and flange surfaces shall be shop bolted into full contact before welding. Sufficient external welds or tacks shall be made to secure flanges until remaining welds are made after disassembly. Adjacent flanges shall be "match marked" to insure proper field assembly.

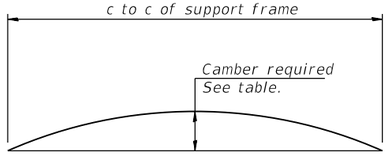


ISOMETRIC VIEW

TYPICAL TRUSS UNIT

ASTM B221 Alloy 6061 Temper T6

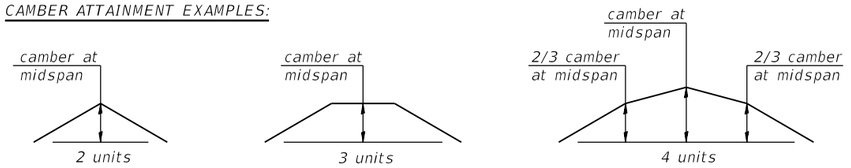
Note:
Units shall be shipped individually with adequate provision to prevent detrimental motion during transport. This may require ropes between horizontals and diagonals or energy dissipating (elastic) ties to the vehicle. The Contractor is responsible for maintaining the configuration and protection of the units.



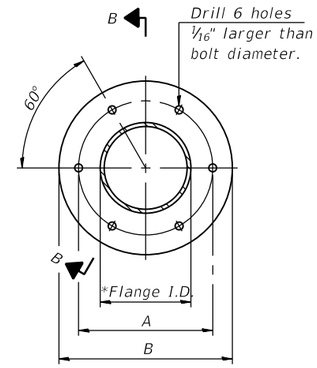
CAMBER DIAGRAM

Camber curve shown is theoretical. Actual camber attained by slope changes at splices between units.

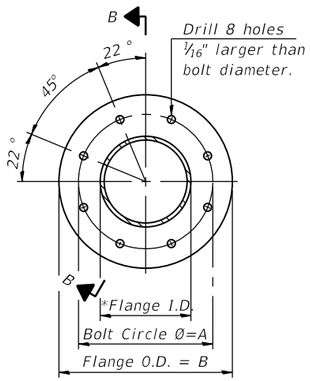
CAMBER ATTAINMENT EXAMPLES:



Camber shown is for fabrication only, measured with truss fully supported. (No-load condition)



TRUSS TYPES I-A, II-A, & III-A



TRUSS TYPES II-A & III-A

SPLICING FLANGES

ASTM B221, Alloy 6061-T6
or ASTM B209, Alloy 6061-T651
*To fit O.D. of Chord with maximum gap of 1/16".

1 Revised Sheet 10-10-18

0S4-A-2 2-17-2017

HBM ENGINEERING GROUP, LLC	USER NAME = marian.agamy	DESIGNED - JJS, MA	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - MI, MAI	REVISED -	
	PLOT SCALE = N.T.S	DRAWN - MAA	REVISED -	
	PLOT DATE = 10/9/2018	CHECKED - MI, MAI	REVISED -	

OVERHEAD SIGN STRUCTURES – ALUMINUM TRUSS DETAILS FOR TRUSS TYPES I-A, II-A AND III-A

SHEET NO. SS-20 OF SS-32 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	530
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

Bench Mark: Square cut at center of door entrance to 707 W. Harrison St; South side of Harrison St. ±90' west of west line of Des Plaines. Elev. 597.47. A t cut in the SE anchor bolt at the 11th street light N. of Roosevelt on the W. side of Halsted. Elev. 594.06.

Existing Structure: S.N. 016-2448 was originally built in 1960 under section 0101.6-1P. F.A.I. Route Number 94 carries WB I-290 traffic to NB I-90/94. The existing structure consists of a 5-span multi-beam superstructure and has an overall length of approx. 287'-0" and an out-to-out width of 29'-0". The existing superstructure consists of 7" thick concrete deck with 1½" overlay. The existing substructure units are founded on drilled shafts and sub piers and consist of a closed abutment and multi columns piers. The existing structure is to be removed and replaced.

Traffic Control: Existing Ramp WN & Ramp WS will be closed and traffic will be detoured during construction. Traffic on Ramp EN, I-290 and I-90/94 will be maintained with stage construction with exception of the full closure of Ramp EN during Stage 5 of Contract 60X93 and Stage 2 of Contract 60X79.

No Salvage.

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

1

LEGEND:

- Soil Boring Location
- W — Water Line
- E — Electric
- T — Telephone line
- CTV — Television line
- Combined Sewer
- Existing Storm Sewer
- FO — Fiber Optic
- G — Gas Line
- Fire Hydrant
- Light Pole
- Proposed Storm Sewer
- Proposed Inlet
- Proposed Manhole
- Proposed Catch Basin
- Point of Min. Vert. Cl.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications 7th Edition with 2015 & 2016 Interim Revisions

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

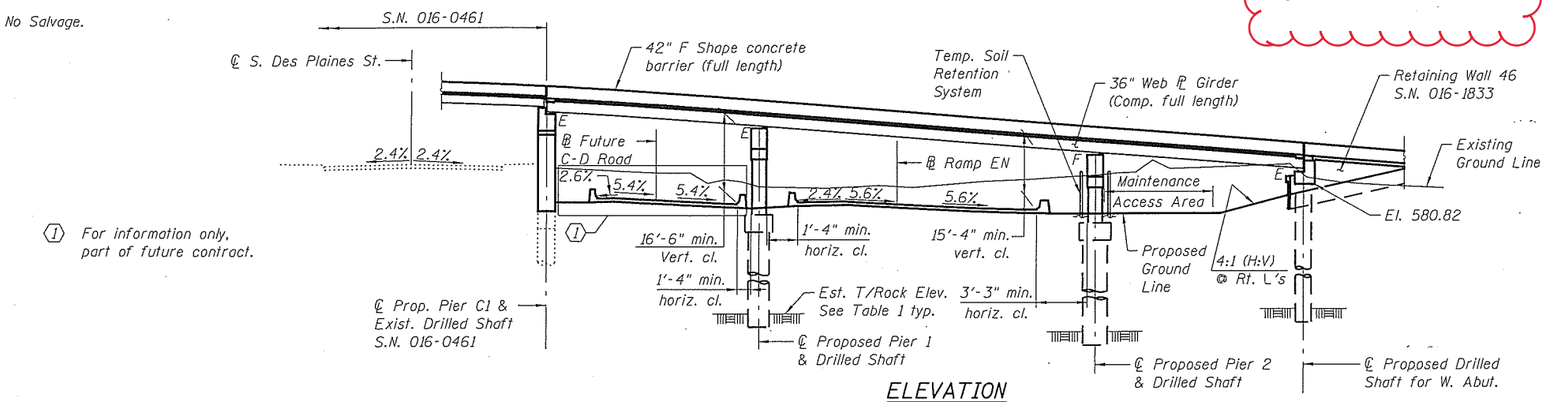
f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

SEISMIC DATA

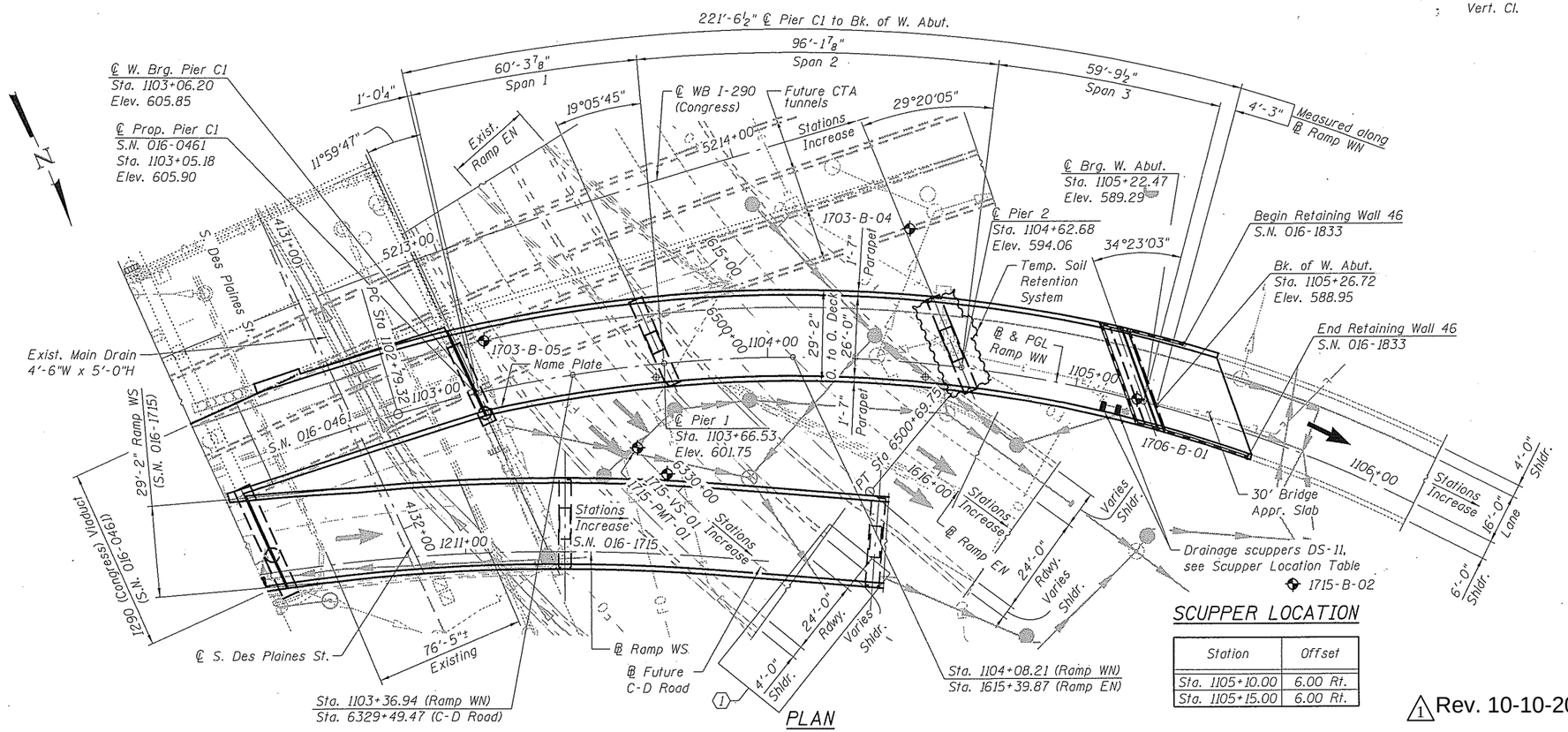
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.085g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.144g
Soil Site Class = D

TABLE 1

	Approx. T/Ground Elev.	Approx. T/Rock Elev.
Pier 1	583.10	480.40
Pier 2	582.70	478.70
W. Abut.	582.92	477.40



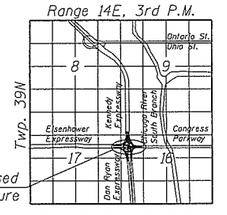
ELEVATION



PLAN

SCUPPER LOCATION

Station	Offset
Sta. 1105+10.00	6.00 Rt.
Sta. 1105+15.00	6.00 Rt.



LOCATION SKETCH

STATE OF ILLINOIS
JAMAL I. GRAINAWI
081-005161
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Jamal Grainawi
JAMAL I. GRAINAWI, S.E. Il. Lic. No. 081-005161
Expires 11-30-2018.
Date 7/18/18

1 Rev. 10-10-2018

GENERAL PLAN & ELEVATION
RAMP WN OVER
I-90/94 C-D ROAD/RAMP EN
F.A.I. RTE. 90/94/290
SECTION 2014-013R&B-R
COOK COUNTY
STATION 1104+08.21
STRUCTURE NO. 016-1706

WSP USA Inc.
30 N. LASALLE STREET
SUITE 4200
CHICAGO, IL 60602
TEL: (312) 782-8150
FAX: (312) 782-1684

USER NAME = ibrahimm1	DESIGNED - PJL	REVISED -	
	CHECKED - MI	REVISED -	
PLOT SCALE = N.T.S.	DRAWN - DCP	REVISED -	
PLOT DATE = 7/30/2018	CHECKED - JIG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S1-1 OF S1-45 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94	2014-013R&B	COOK	1972	616
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

0161706-60X93-S001-GPE.dgn

Bench Mark: Chisel "X" on chain bolt of fire hydrant in front of 555 W. Harrison St. Elev. 594.46.

Existing Structure: SN 016-2452. Constructed in 1960 under F.A.I. Route 1, Section 2424.28-B. Fourteen span bridge that measures 787'-4" from back of north abutment to centerline of east pier. Out-to-Out width of 29'-0". The spans are supported by 36" wide flange beams, concrete T-beams and a reinforced concrete slab. Substructure is reinforced concrete closed abutment, multi-column and solid wall piers founded on bell caissons. The existing bridge is to be removed and replaced.

The existing bridge will be closed and traffic will be detoured during construction. Traffic on I-290 and I-90/94 will be maintained with stage construction.

No Salvage.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.125g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.225g
Soil Site Class = E

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications
7th Edition with 2015 and 2016 Interim Specifications

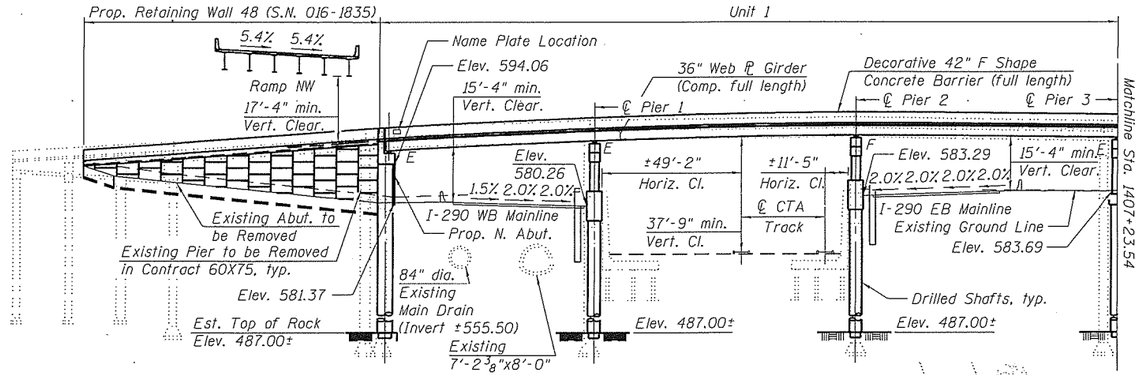
DESIGN STRESSES

FIELD UNITS

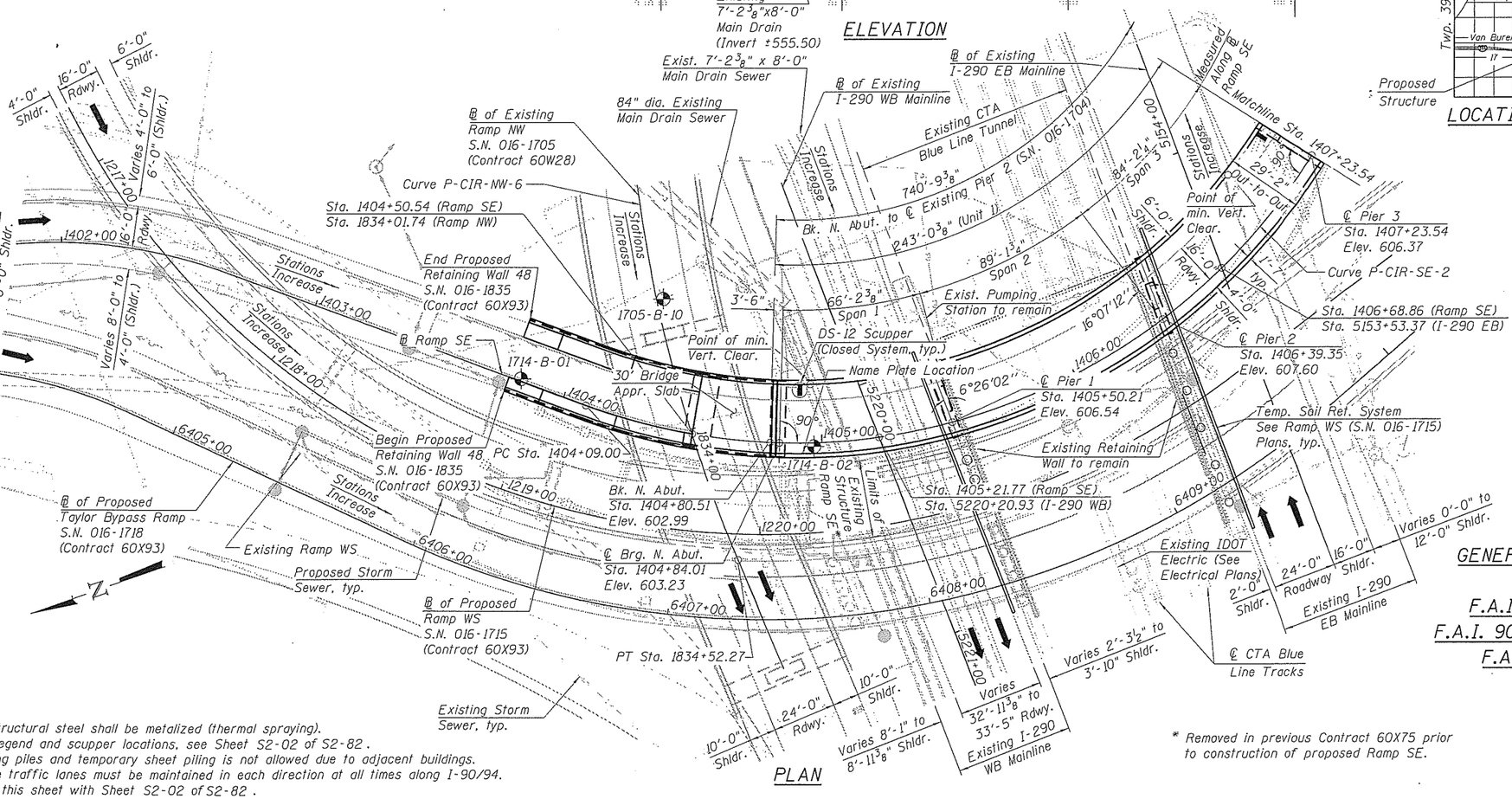
f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

LOADING HL-93

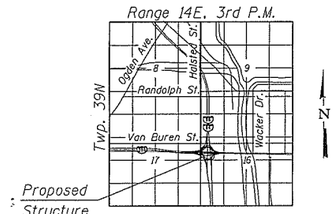
Allow 50#/sq. ft. for future wearing surface.



ELEVATION



PLAN



LOCATION SKETCH

MATTHEW D. SANTEFORD
081-007244
LICENSED
STRUCTURAL
ENGINEER
OF
STATE OF ILLINOIS

07/30/2018

MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

1

1 Rev. 10-10-18

Notes:
All structural steel shall be metalized (thermal spraying).
For legend and scupper locations, see Sheet S2-02 of S2-82.
Driving piles and temporary sheet piling is not allowed due to adjacent buildings.
Three traffic lanes must be maintained in each direction at all times along I-90/94.
Work this sheet with Sheet S2-02 of S2-82.

* Removed in previous Contract 60X75 prior to construction of proposed Ramp SE.

GENERAL PLAN AND ELEVATION - UNIT 1
RAMP SE OVER
F.A.I. 290 (EISENHOWER EXPRESSWAY), F.A.I. 90/94 (KENNEDY EXPRESSWAY) AND CTA F.A.I. 94 (I-90/94 SB TO I-290 EB)
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 1408+50.90
STRUCTURE NO. 016-1714

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0161714-60X93-S001-GPE1.dgn

Tran Systems

USER NAME = wjcolletti	DESIGNED - WJC	REVISED	
	CHECKED - MDS	REVISED	
PLOT SCALE = 48:0 ':" / in.	DRAWN - WJC	REVISED	
PLOT DATE = 7/26/2018	CHECKED - MDS	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

- SHEET NO. S2-01 OF S2-82 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	661
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES:

1. Fasteners shall be ASTM A325 Type 1, hot dip galvanized bolts. Bolts $^{7}/_{8}$ in. ϕ, holes $^{15}/_{16}$ in. ϕ, unless otherwise noted.
2. Calculated weight of Structural Steel = 900,960 pounds.
3. All structural steel shall be AASHTO M270 Grade 50.
4. All structural steel shall be metalized (thermal spraying) (see special provisions).
5. Expansion joint plates and attached bars shall be shop painted with the inorganic zinc rich primer.
6. No field welding is permitted except as specified in the contract documents.
7. Reinforcement bars designated (E) shall be epoxy coated.
8. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
9. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $^{1}/_{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
10. Concrete Sealer shall be applied to the designated areas of the Piers and Abutments.
11. The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent building foundations and the existing main drain. Any damage during construction shall be repaired by the contractor at his expense and no charge to the department. Driving piles and temporary sheet piling is not allowed.
12. Slipforming of parapets is not allowed.
13. For the Conduits Embedded in Structure details and quantities, see Civil and Electrical Plans. Embedded conduits shall be PVC.
14. For drilled shaft locations where permanent casing is required as shown on the plans, the casing will be paid for under the Permanent Casing pay item. If Contractor elects to use permanent casing for ease of construction in locations where permanent casing is not required on the plans, the casing will not be paid for separately and is included in the Drilled Shaft in Soil pay item.
15. Limited groundwater elevation data is available in the boring logs. In addition, groundwater may also be present in deeper granular layers. The groundwater may rise in the shafts to an elevation above the top of granular layers. The Contractor shall consider this information when choosing construction methods. The Contractor will not be compensated for issues related to the groundwater elevation.
16. The Contractor shall take all necessary precautions not to contaminate groundwater during the drilled shaft construction operation. Contractor is responsible for the proper containment and disposal of the contaminated groundwater and spoils resulting from Contractor's means and methods. No additional cost will be paid for this effort.
17. The Contractor shall field verify location of existing utilities prior to construction. The Contractor shall take precautions not to damage existing utilities. Any such damage shall be repaired by the Contractor at no additional cost.
18. Structural steel erection shall be accomplished by a steel erection contractor or subcontractor certified as an Advanced Certified Steel Erector (ACSE) by the American Institute of Steel Construction (AISC). See special provision for Erection of Complex Steel Structures.
19. The Drilled Shaft quantities and reinforcement detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft locations and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.
20. Based on the squeeze potential of the clay soils, the use of temporary casing will be required to Elevation 540.00 in order to properly construct the drilled shafts. Casing may be pulled or left in place, as determined by the Contractor at no cost to the Department.
21. The Contractor shall coordinate the construction of the proposed structure with the construction of the proposed Retaining Wall 48 and the proposed Ramp WS bridge. See MOT plan sheets and special provisions, including the Available Work Areas and Sequencing Requirements special provision, for additional construction and coordination requirements.
22. The Contractor shall provide vibration and displacement monitoring at the locations specified in the Special Provision for Construction Vibration Monitoring and Monitoring Adjacent Structures, to ensure that removal/construction activities in the vicinity of the structures do not have detrimental effects on building foundations. No additional compensation shall be provided to the Contractor for alternative means and methods, or additional precautionary measures, required during removal/construction activities to satisfy these requirements. See Contract Special Provisions for details.
23. The Contractor may encounter abandoned foundation elements that obstruct construction of the proposed structure. Removal and disposal of portion of abandoned foundation elements shall be per special provision "Abandoned Foundation Removal". See Civil plans for approximate location and quantity.

EXISTING STRUCTURE ASSESSMENT NOTES

1. In order to construct proposed superstructure and substructure elements, Contractor may elect to support temporary construction material and/or equipment, on the existing structures in the vicinity of the proposed structure. The Contractor shall submit Structural Assessment Report(s) for approval prior to beginning the work. See Special Provision.
2. An Existing Structure Information Package (ESIP) will be provided by the Department to the Contractor upon request.
3. The Contractor shall retain the services of an engineering firm, prequalified in the IDOT consultant selection category of Highway Bridge (Adv. Typical), for preparation of the Structural Assessment Report(s). Contractor's pre-approval shall not be applicable for this project. See Special Provision.

   Current existing structure Load Rating on file:

   S.N. 016-1713 (Harrison St over SB I-90/94)
   Inventory Rating Factor: 2.19 (HL-93)
   Operating Rating Factor: 2.84 (HL-93)
   Live Load Restriction: None

   S.N. 016-1029 (EB I-290 over I-90/94)
   Inventory: 0.86 (HS20)
   Operating: 1.43 (HS20)
   Live Load Restriction: None

   S.N. 016-1716 (Halsted St over I-290 & CTA)
   Inventory Rating Factor: 1.12 (HL-93)
   Operating Rating Factor: 1.45 (HL-93)
   Live Load Restriction: None

   S.N. 016-2450 (WB I-290 to SB I-90/94)
   Inventory: 0.71 (H20)
   Operating: 1.18 (H20)
   Live Load Restriction: None
4. Inventory and Operating Ratings and Live Load Restrictions are provided for information only. Inventory and Operating Ratings are based on live loading and configuration as noted. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and Live load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.
5. The contractor is advised that the existing structures may contain members in deteriorated conditions with reduced load carrying capacities. It is the Contractor's responsibility to account for the condition of existing structures when developing construction procedures for using them to support construction loads.
6. The contractor shall verify that the structural demands of the applied loads due to the Contractor's means and methods will not exceed the available capacity of the structure at the time loads are applied. Most likely, the Contractor will be required to provide additional shoring under the existing bridges (or other methods of retrofitting) to support construction loads. Design, installation and subsequent removal of such shoring system will be the responsibility of the Contractor and will not be paid separately.
7. The Contractor shall use caution and not damage any component of the existing structure. Upon completion of work and prior to allowing traffic back on the existing structure the contractor must restore existing structure in its original condition.

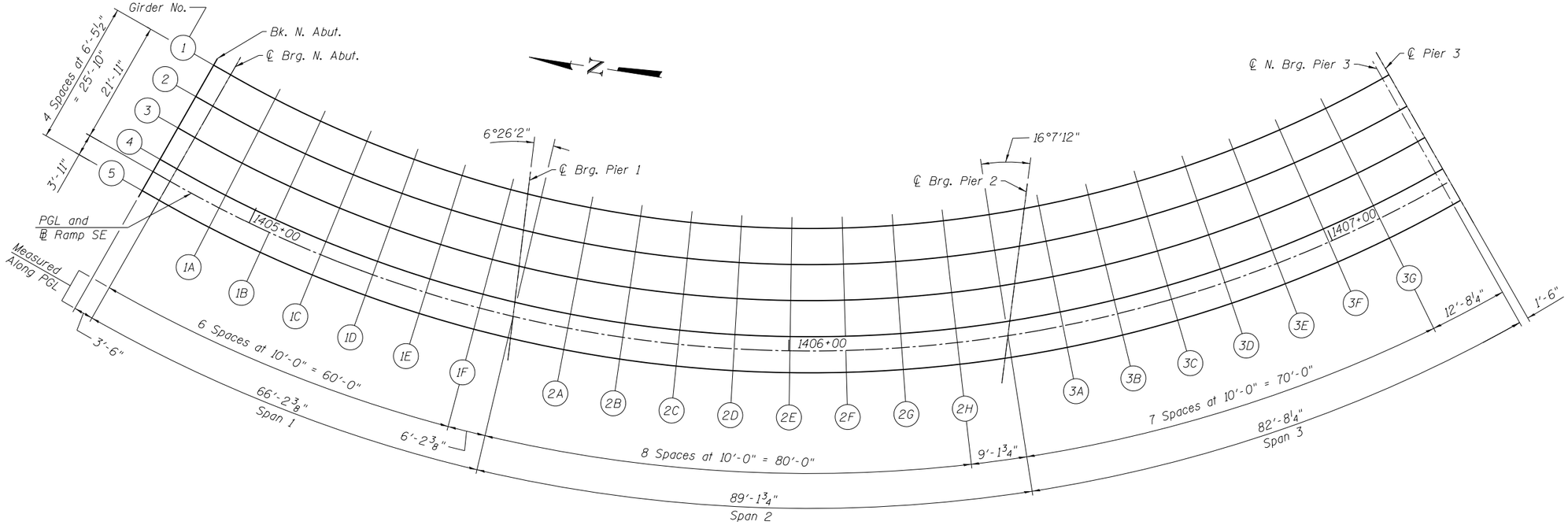
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total Quantity
Concrete Removal	Cu. Yd.		83	83
Structure Excavation	Cu. Yd.		471	471
Concrete Structures	Cu. Yd.		533.6	533.6
Rubbed Finish	Sq. Ft.		3,642	3,642
Concrete Superstructure	Cu. Yd.	785.8		785.8
Form Liner Textured Surface	Sq. Ft.		2,298	2,298
Protective Coat	Sq. Yd.	2,924		2,924
Concrete Superstructure (Approach Slab)	Cu. Yd.	41.0		41.0
Furnishing And Erecting Structural Steel	L. Sum	0.2		0.2
Stud Shear Connectors	Each	10,530		10,530
Reinforcement Bars	Pound		183,220	183,220
Reinforcement Bars, Epoxy Coated	Pound	222,420	104,610	327,030
Bar Splicers	Each		30	30
Name Plates	Each	1		1
Permanent Casing	Foot		557	557
Drilled Shaft In Soil	Cu. Yd.		848.1	848.1
Drilled Shaft In Rock	Cu. Yd.		12.9	12.9
Preformed Joint Strip Seal	Foot	124		124
Anchor Bolts, 3/4"	Each		200	200
Anchor Bolts, 1"	Each		20	20
Concrete Sealer	Sq. Ft.		8,713	8,713
Geocomposite Wall Drain	Sq. Yd.		47	47
Granular Backfill Special	Cu. Yd.		19	19
Crosshole Sonic Logging Access Ducts	Foot		1,857	1,857
Crosshole Sonic Logging Testing	Each		8	8
Earth Excavation (Special)	Cu. Yd.		37	37
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	2,130		2,130
High Load Multi-Rotational Bearings, Guided Expansion, 150K	Each	20		20
High Load Multi-Rotational Bearings, Guided Expansion, 200K	Each	10		10
High Load Multi-Rotational Bearings, Guided Expansion, 250K	Each	5		5
High Load Multi-Rotational Bearings, Guided Expansion, 300K	Each	5		5
High Load Multi-Rotational Bearings, Fixed - 250K	Each	5		5
High Load Multi-Rotational Bearings, Fixed - 300K	Each	5		5
High Load Multi-Rotational Bearings, Fixed - 450K	Each	5		5
Drainage Scuppers, DS-12	Each	7		7
Drainage System	L. Sum	0.1		0.1
Pipe Underdrains For Structures 4"	Foot		55	55
CTA Protective Shield	L. Sum	0.33		0.33

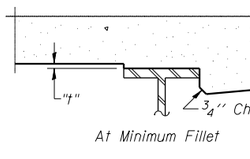
INDEX OF SHEETS

1

1 REVISED ENTIRE SHEET 10/29/18



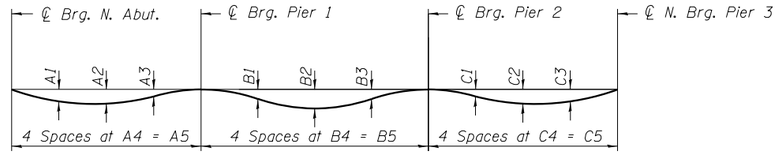
PLAN - UNIT 1



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets S2-08 and S2-09 of S2-82 , minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

Note:
The deflections below are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets S2-08 and S2-09 of S2-82.
Dead load deflection assumes a continuous deck pour sequence in the direction of increasing station.



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

	DEAD LOAD DEFLECTIONS														
	Span 1					Span 2					Span 3				
Girder No.	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	C5
1	⅛"	⅛"	⅛"	14'-4⅜"	57'-5⅜"	½"	⅞"	⅝"	22'-4⁹⁄₁₆"	89'-6³⁄₁₆"	⅛"	⅜"	⅜"	17'-1⁷⁄₁₆"	68'-5¾"
2	¼"	¼"	⅛"	15'-0⅛"	60'-0⁷⁄₁₆"	½"	¾"	½"	22'-4³⁄₁₆"	89'-4¹¹⁄₁₆"	¼"	½"	½"	18'-2¹⁄₁₆"	72'-8⅛"
3	¼"	⅜"	⅛"	15'-7¹³⁄₁₆"	62'-7⁵⁄₁₆"	⅜"	¾"	⅜"	22'-3¹³⁄₁₆"	89'-3⅜"	⅜"	¾"	⅝"	19'-2⁹⁄₁₆"	76'-10⅜"
4	⅜"	½"	¼"	16'-3⁹⁄₁₆"	65'-2³⁄₁₆"	⅜"	⅝"	¼"	22'-3⁹⁄₁₆"	89'-2⅛"	½"	1"	⅞"	20'-3⅛"	81'-0⁹⁄₁₆"
5	½"	⅝"	¼"	16'-11⁵⁄₁₆"	67'-9¼"	⅜"	½"	⅛"	22'-3¼"	89'-0⁷⁄₈"	⅝"	1¼"	1"	21'-3¹¹⁄₁₆"	85'-2⅝"

TranSystems

USER NAME = wjcolletti	DESIGNED - WJC	REVISED	
	CHECKED - JNP	REVISED	
PLOT SCALE = 21:4 ':in / in.	DRAWN - JNP	REVISED	
PLOT DATE = 8/21/2018	CHECKED - WJC/JM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 1 – UNIT 1
STRUCTURE NO. 016–1714
SHEET NO. S2-07 OF S2-82 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	667
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

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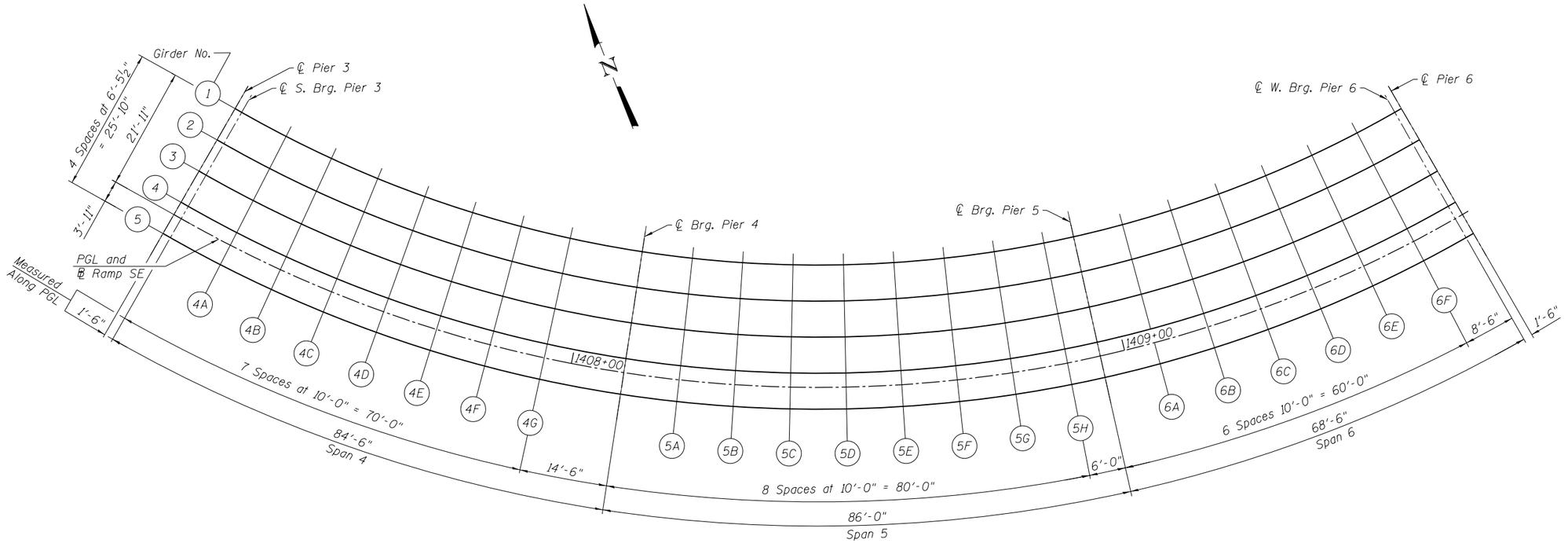
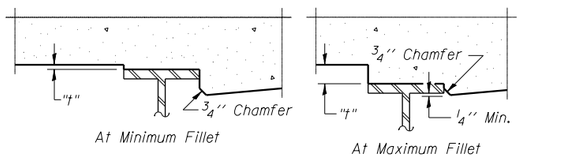
1 REVISED ENTIRE SHEET 10/29/18



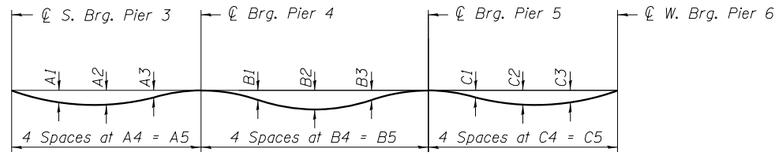
PLAN - UNIT 2



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets S2-11 and S2-12 of S2-82, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

Note:
The deflections below are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets S2-11 and S2-12 of S2-82.
Dead load deflection assumes a continuous deck pour sequence in the direction of increasing station.



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

	DEAD LOAD DEFLECTIONS														
	Span 4					Span 5					Span 6				
Girder No.	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4	C5
1	¾"	1"	⅝"	19'-1 7/16"	76'-5 13/16"	⅛"	⅜"	⅜"	19'-5½"	77'-10 1/16"	⅛"	⅜"	⅜"	15'-6"	62'-0"
2	⅞"	1⅛"	¾"	19'-8 9/16"	78'-10⅛"	⅛"	⅜"	⅜"	20'-0 3/4"	80'-2 15/16"	¼"	½"	½"	15'-11¾"	63'-11"
3	1"	1¼"	¾"	20'-3 5/8"	81'-2½"	⅛"	⅜"	¼"	20'-7 15/16"	82'-7 13/16"	¼"	⅝"	½"	16'-5½"	65'-10"
4	1⅛"	1½"	⅞"	20'-10 11/16"	83'-6 13/16"	⅛"	⅜"	¼"	21'-3 3/16"	85'-0 5/8"	⅜"	⅝"	½"	16'-11¼"	67'-8 15/16"
5	1 3/8"	1 5/8"	⅞"	21'-5 13/16"	85'-11 3/16"	⅛"	⅜"	¼"	21'-10⅜"	87'-5½"	⅜"	¾"	⅝"	17'-5"	69'-7 15/16"

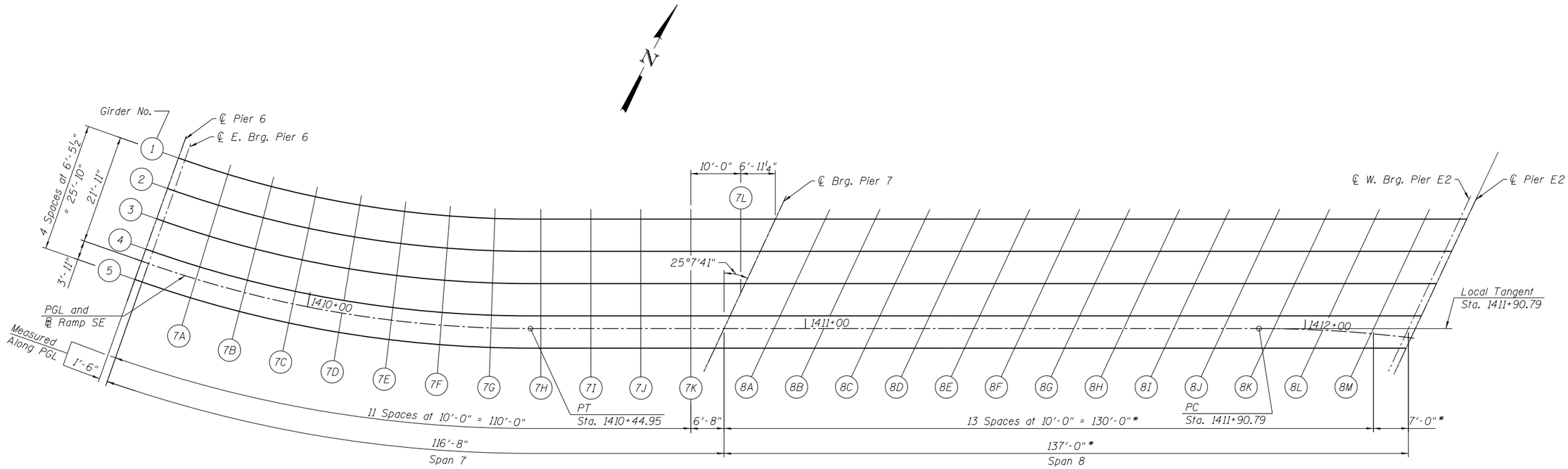
TranSystems	USER NAME = wjcollett1	DESIGNED - WJC	REVISED
		CHECKED - JNP	REVISED
	PLOT SCALE = 21:4 'sin / in.	DRAWN - JNP	REVISED
	PLOT DATE = 8/21/2018	CHECKED - WJC/JM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 1 – UNIT 2
STRUCTURE NO. 016–1714
SHEET NO. S2-10 OF S2-82 SHEETS

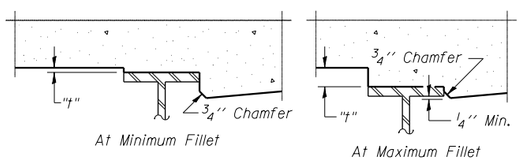
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	670
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18



*Dim. measured along local tangent

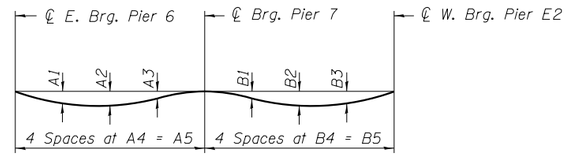
PLAN - UNIT 3



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets S2-14 and S2-15 of S2-82, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

Note:
The deflections below are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets S2-14 and S2-15 of S2-82.
Dead load deflection assumes a continuous deck pour sequence in the direction of increasing station.



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

	DEAD LOAD DEFLECTIONS									
	Span 7					Span 8				
Girder No.	A1	A2	A3	A4	A5	B1	B2	B3	B4*	B5*
1	5/8"	5/8"	1/8"	29'-10 5/8"	119'-6 9/16"	1 5/8"	3 1/4"	2 3/4"	34'-3"	137'-0"
2	3/4"	7/8"	1/4"	29'-8 1/16"	118'-8 3/8"	1 1/2"	3 1/8"	2 5/8"	34'-3"	137'-0"
3	1"	1"	3/8"	29'-5 9/16"	117'-10 1/8"	1 1/2"	3"	2 1/2"	34'-3"	137'-0"
4	1 1/4"	1 3/8"	1/2"	29'-3"	116'-11 15/16"	1 3/8"	2 3/4"	2 3/8"	34'-3"	137'-0"
5	1 1/2"	1 5/8"	5/8"	29'-0 7/16"	116'-1 11/16"	1 1/4"	2 5/8"	2 3/8"	34'-3"	137'-0"

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TranSystems

USER NAME = wjcolletti	DESIGNED - WJC	REVISED	
	CHECKED - JM	REVISED	
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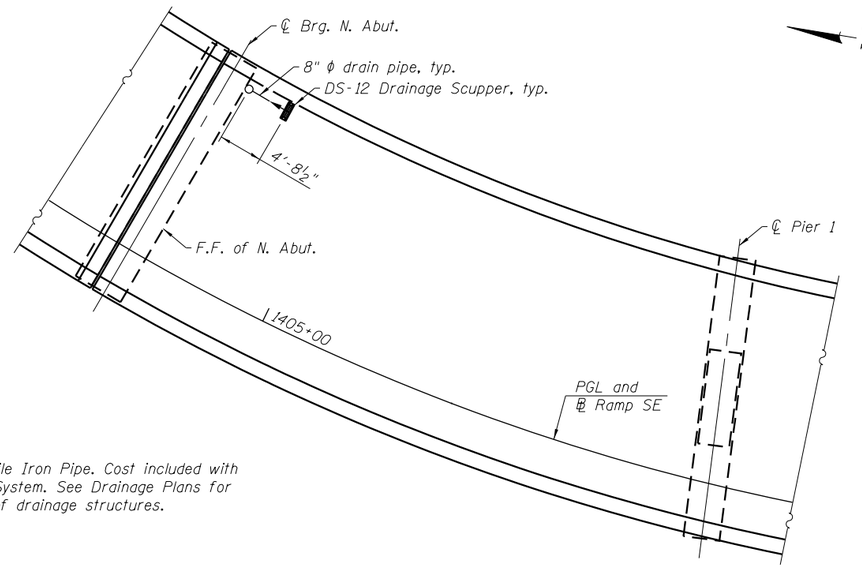
PLOT DATE = 8/21/2018	CHECKED - WJC/JM	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS 1 – UNIT 3
STRUCTURE NO. 016-1714
SHEET NO. S2-13 OF S2-82 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	673
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

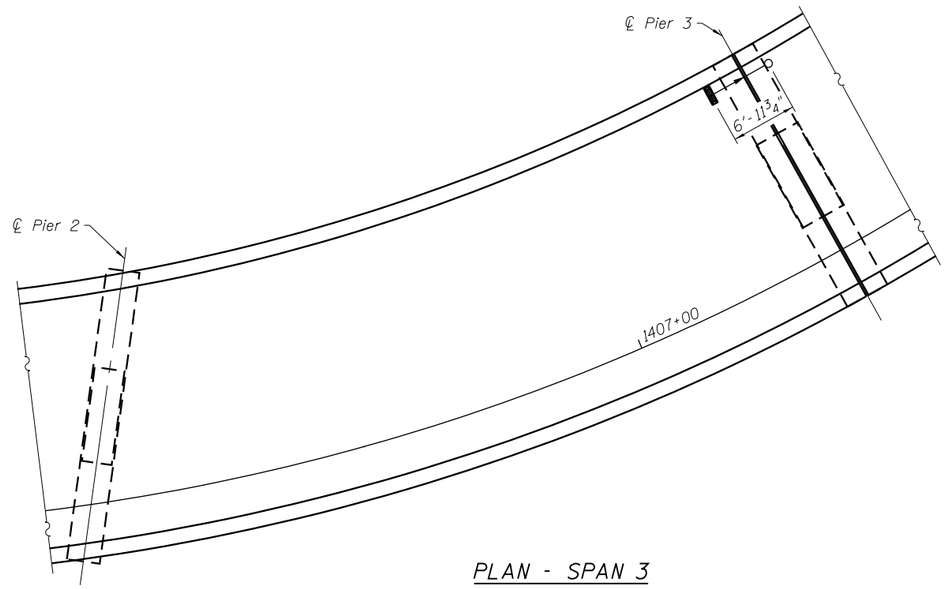
1 REVISED ENTIRE SHEET 10/29/18



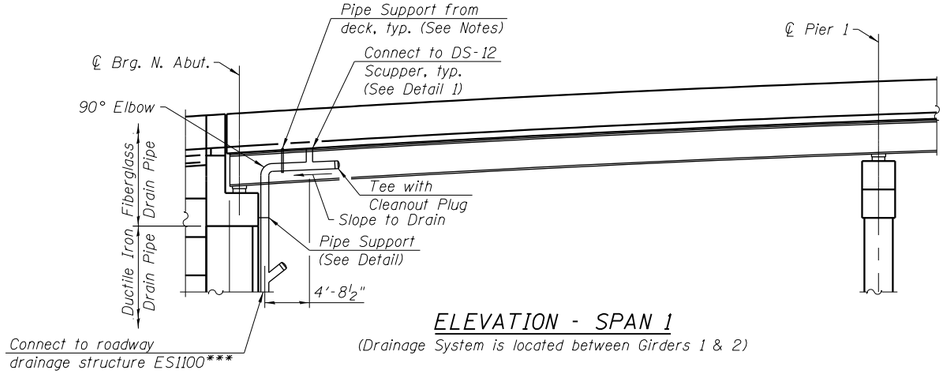
N

***8" ϕ Ductile Iron Pipe. Cost included with Drainage System. See Drainage Plans for locations of drainage structures.

PLAN - SPAN 1

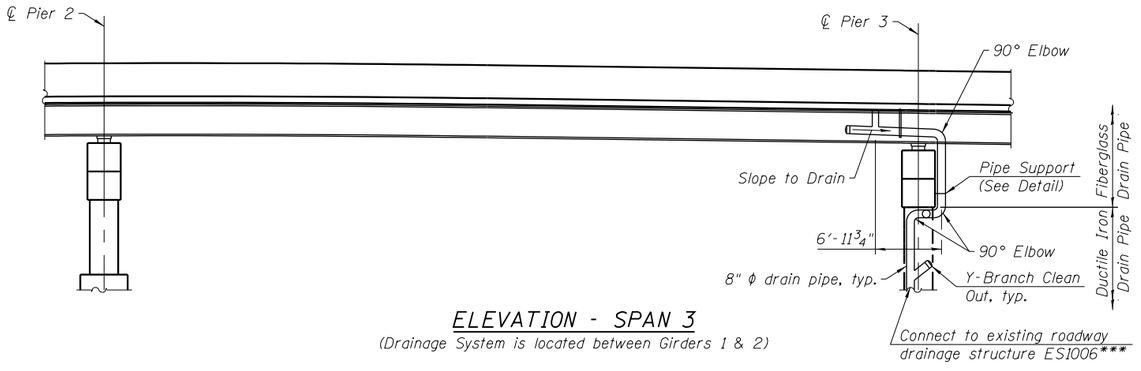


PLAN - SPAN 3



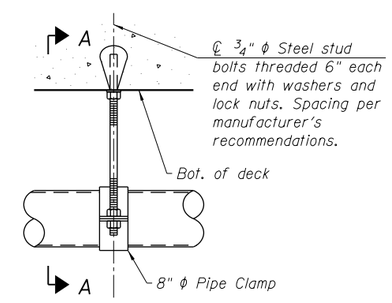
ELEVATION - SPAN 1

(Drainage System is located between Girders 1 & 2)

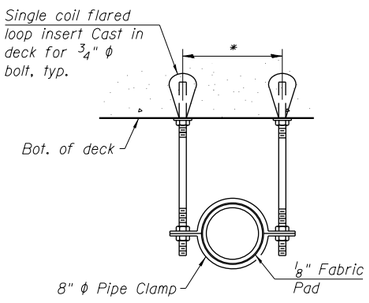


ELEVATION - SPAN 3

(Drainage System is located between Girders 1 & 2)

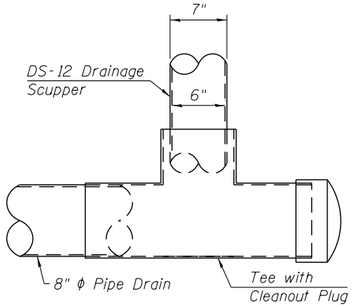


PIPE BRACKET DETAIL

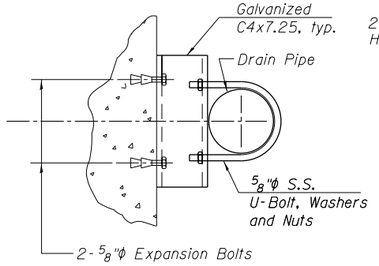


SECTION A-A

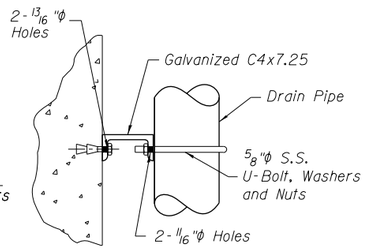
* Dimension as required by Pipe Clamp



DETAIL 1



PLAN



ELEVATION

PIPE SUPPORT DETAIL

LEGEND

Indicates direction of flow

Notes:

Provide structural support from proposed deck slab for drain pipe per manufacturer's recommendation, not to exceed 6' cts. Cost included with Drainage System.

All pipes, pipe fittings, brackets, inserts, bolts, and splash blocks needed shall be included with cost of Drainage System.

The drainage system shall be painted with a finish coat of gray, Munsell No. 5B 7/1. Cost included with Drainage System.

For Bill of Material and typical pier elevation, see sheet S2-34 of S2-82.

10:17:46 AM
08/17/14 60X93-S033-Drainage_System1.dgn

USER NAME = wjcolletti	DESIGNED - JNP	REVISED	
	CHECKED - WJC	REVISED	
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PLOT DATE = 8/21/2018	CHECKED - WJC	REVISED	

TranSystems

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE DRAINAGE SYSTEM 1
STRUCTURE NO. 016-1714
SHEET NO. S2-33 OF S2-82 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	693
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

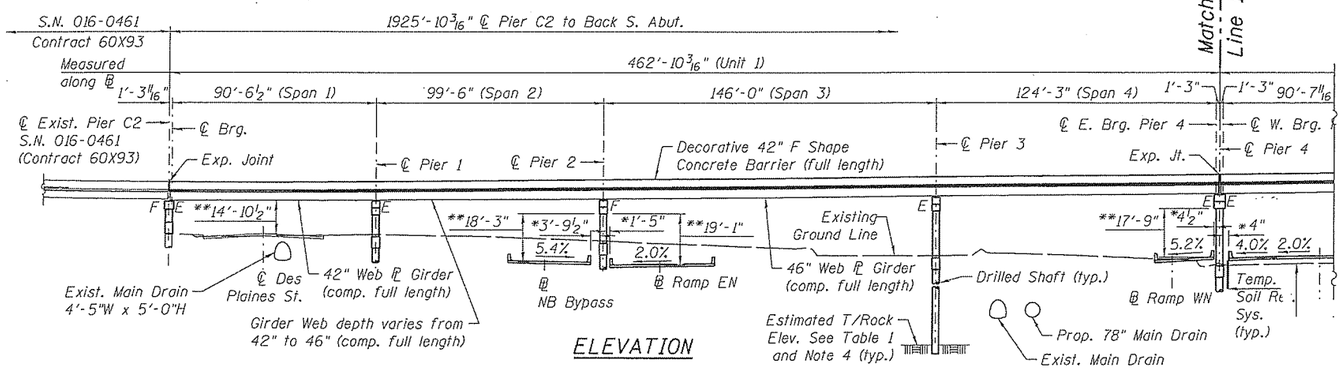
1 REVISED ENTIRE SHEET 10/29/18

Bench Mark: Square cut at center of door entrance to 707 W. Harrison St; South side of Harrison St. ±90' west of west line of Des Plaines. Elevation 597.47.
A t cut in the SE anchor bolt at the 11th street light N. of Roosevelt on the W. side of Halsted. Elev. = 594.06

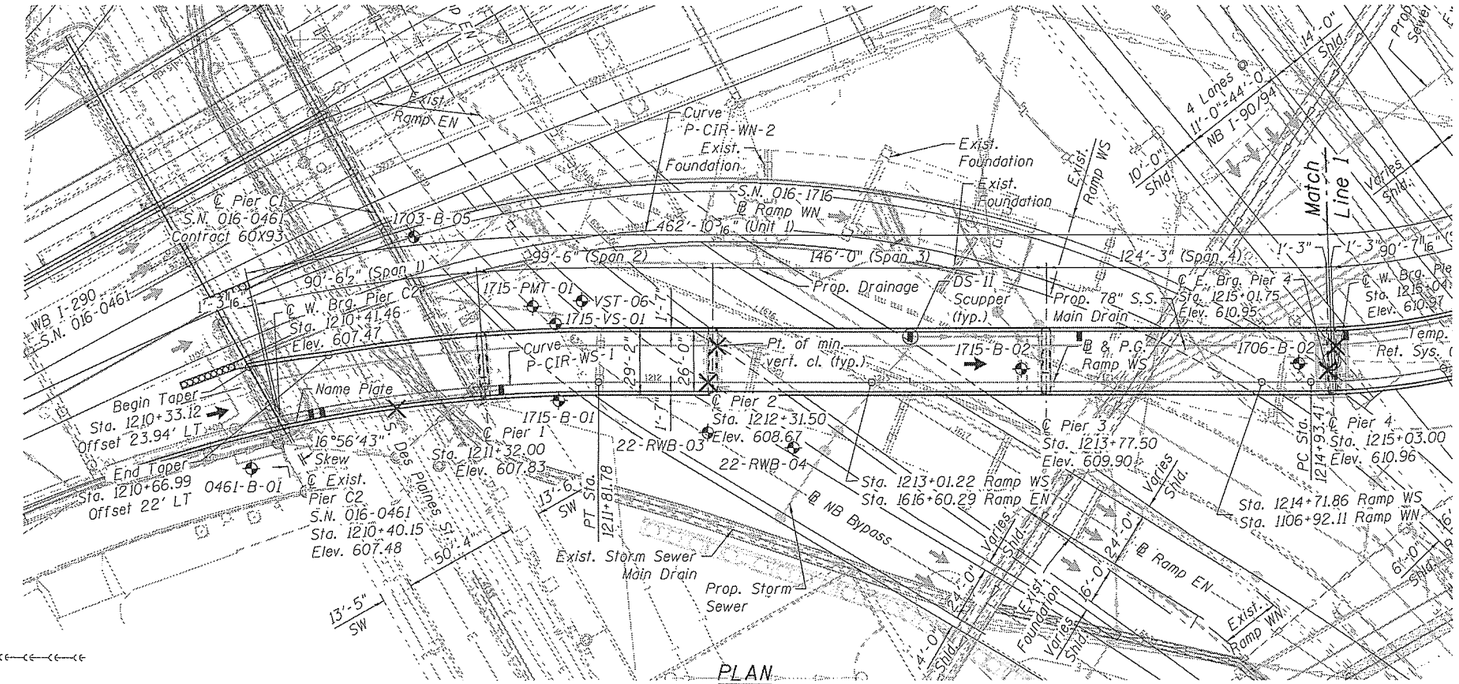
Existing Structure: S.N. 016-2450 was built in 1960 and carries WB I-290 traffic to SB I-90/94 over Ramp EN, Ramp NW, I-90/94, Ramp SE, I-290, CTA tracks & Ramp EN again. The existing twenty-span structure has an overall length of approx. 1329'-6". The existing superstructure consists of simple span wide-flange beams with 7 ½" thick concrete deck with 1 ½" overlay. The existing substructure consists of reinforced concrete abutment and multi-column piers. Existing substructure units are supported on caissons. Existing structure to be removed and replaced. Traffic to be detoured during construction.

Traffic Control: The exist. bridge will be closed for traffic and detoured during construction.

No salvage.



ELEVATION



PLAN

LEGEND:

- Combined Sewer
- Electric — E —
- Fiber Optic — FO —
- Exist. Storm Sewer
- Prop. Storm Sewer
- Water Line — W —
- Gas Line — G —
- Fire Hydrant
- Light Pole
- Point of Min. Vert. Clear. ×
- Soil Boring Location ⊕

NOTES:

1. Span lengths are measured along ℄ & P.G. Ramp WS.
2. All substructures are oriented 90° to ℄ Ramp WS unless noted otherwise.

* Min. Horizontal Clearance
** Min. Vertical Clearance

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications
7th Edition with 2015 and 2016 Interim Revisions

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

SEISMIC DATA

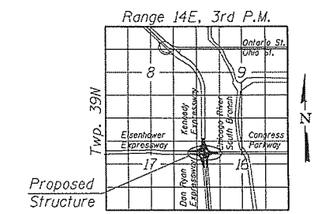
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.085g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.144g
Soil Site Class = D

TABLE 1

	Estimated T/Ground Elev.	Est. T/Rock Elev.
Pier 1	588.14	485.4
Pier 2	585.34	487.6
Pier 3	578.91	488.0
Pier 4	575.45	481.5
Pier 5	574.88	483.2
Pier 6	582.79	483.2
Pier 7	590.43	480.9
Pier 8	594.59	484.5
Pier 9	581.77	486.5
Pier 10	583.24	489.4
Pier 11	583.36	490.5
Pier 12	579.24	491.10
Pier 13	576.01	489.2
Pier 14	589.26	488.8
Pier 15	588.81	492.1
Pier 16	587.16	493.0
S. Abut	585.83	493.0

DS-11 SCUPPER LOCATION

Station	Offset
1210+60	RT
1210+65	RT-SAG
1211+39	RT
1213+19	LT
1213+72	LT
1215+10	LT
1215+96	LT
1219+10	LT
1220+49	LT-SAG
1220+54	LT
1221+86	LT
1221+91	LT
1223+03	RT
1223+37	RT
1223+53	RT
1224+52	RT
1226+79	RT
1228+29	RT
1229+45	RT
1229+50	RT



LOCATION SKETCH

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

STATE OF ILLINOIS
AMISH T. BHATT
081-006249
LICENSED STRUCTURAL ENGINEER

Amish T. Bhatt 07/30/2018
AMISH T. BHATT DATE
LICENSE EXPIRES 11/30/2018

1 Rev. 10-10-18

GENERAL PLAN & ELEVATION - 1
RAMP WS OVER I-90/94/290
F.A.I. RTE. 90/94/290
SECTION 2014-013R&B-R
COOK COUNTY
STATION 1216+37.21
STRUCTURE NO. 016-1715

USER NAME = vasudevana	DESIGNED - JXH	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - JXH	REVISED	
PLOT DATE = 7/30/2018	CHECKED - ATB	REVISED	

AECOM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-1715
SHEET NO. S3-01 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	743
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

0161715-60X93-S001-GPE-1

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal Of Existing Structures No. 2	Each	1		1
Protective Shield	Sq Yd	1,710		1,710
Structure Excavation	Cu Yd		1,671.0	1,671.0
Concrete Structures	Cu Yd	10.5	1,932.8	1,943.3
Concrete Superstructure	Cu Yd	2,245.1		2,245.1
Bridge Deck Grooving (Longitudinal)	Sq Yd	6,229		6,229
Rubbed Finish	Sq Ft		13,753	13,753
Form Liner Textured Surface	Sq Ft		6,139	6,139
Protective Coat	Sq Yd	11,065		11,065
Concrete Superstructure (Approach Slab)	Cu Yd	51.9		51.9
Furnishing And Erecting Structural Steel	L. Sum	0.5		0.5
Stud Shear Connectors	Each	37,347		37,347
Reinforcement Bars	Pound		582,120	582,120
Reinforcement Bars, Epoxy Coated	Pound	625,090	548,450	1,173,540
Bar Splicers	Each		38	38
Mechanical Splicers	Each		788	788
Name Plates	Each	1		1
Permanent Casing	Foot		701	701
Drilled Shaft In Soil	Cu Yd		2,242.4	2,242.4
Drilled Shaft In Rock	Cu Yd		73.4	73.4
Preformed Joint Strip Seal	Foot	38		38
Elastomeric Bearing Assembly, Type I	Each	42		42
Anchor Bolts, 3/4"	Each	180		180
Anchor Bolts, 1"	Each	128		128
Anchor Bolts, 1 1/2"	Each	44		44
Temporary Soil Retention System	Sq Ft		4,894	4,894
Concrete Sealer	Sq Ft		25,238	25,238
Geocomposite Wall Drain	Sq Yd		54	54
Drainage Scuppers, DS-11	Each	20		20
Drainage System	L. Sum	0.60		0.60
High Load Multi-Rotational Bearings ,Guided Expansion , 150k	Each	20		20
High Load Multi-Rotational Bearings ,Guided Expansion , 200k	Each	5		5
High Load Multi-Rotational Bearings ,Guided Expansion , 250k	Each	5		5
High Load Multi-Rotational Bearings ,Guided Expansion , 300k	Each	10		10
High Load Multi-Rotational Bearings ,Fixed , 300k	Each	10		10
High Load Multi-Rotational Bearings ,Fixed , 350k	Each	5		5
Pipe Underdrains For Structures 4"	Foot		38	38
Crosshole Sonic Logging Access Ducts	Foot		3,118	3,118
Crosshole Sonic Logging Testing	Each		17	17
Foundation Construction at Exisitng Obstructions	Each	4		4
Earth Excavation (Special)	Cu Yd		119.0	119.0
CTA Protective Shield	L. Sum	0.34		0.34
Soil Retention System	Sq Ft		758	758
Granular Backfill Special	Cu Yd		4.8	4.8
Modular Expansion Joint, Swivel 6"	Foot	150		150

STATION 1216+37.21
BUILT BY
STATE OF ILLINOIS
F.A.I. ROUTE 90/94/290
SECTION 2014-003R&B-R
LOADING HL-93
STRUCTURE NO. 016-1715

NAME PLATE

See Std. 515001

INDEX OF SHEETS

GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, hot dip galvanized bolts. Bolts $^{7}/_{8}$" ϕ, holes $^{15}/_{16}$" ϕ, unless otherwise noted.
2. Calculated weight of structural steel = 3,153,560 lbs.
3. All structural steel shall be AASHTO M270 Grade 50.
4. All structural steel shall be metalized (thermal spraying). See special provision for "Metallizing of Structural Steel".
5. No field welding is permitted except as specified in the contract documents.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of work; however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
8. If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
9. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
10. Concrete Sealer shall be applied to the designated areas of the abutment and piers.
11. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
12. Slipforming of the parapets is not allowed.
13. Structural steel erection shall be accomplished by an steel erection contractor or subcontractor certified as an Advanced Certified Steel Erector (ACSE) by the American Institute of Steel Construction (AISC). See special provision for "Erection of Complex Steel Structures".
14. For the Conduits Attached to Structure and Embedded in Structure details and quantities, see Civil and Electrical Plans. Embedded conduits shall be PVC.
15. For drilled shaft locations where permanent casing is required as shown on the plans, the casing will be paid for under the Permanent Casing pay item. If contractor elects to use permanent casing for ease of construction in locations where permanent casing is not required, the casing will not be paid for separately and shall be considered included in the Drilled Shaft in Soil pay item.
16. Limited groundwater elevation data is available in the boring logs. In addition, groundwater may also be present in deeper granular layers. The groundwater may rise in the shafts to an elevation above the top of granular layers. The Contractor shall consider this information when choosing construction methods. The Contractor will not be compensated for issues related to the groundwater elevation.
17. Contractor shall provide equipment, labor and materials as required to install drilled shafts thru existing known obstruction. Obstruction mitigation shall be as per Special Provision Foundation Construction at Existing Obstructions.
18. The Drilled Shaft quantities and reinforcement detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft locations and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.
19 The Contractor shall take all necessary precautions not to contaminate groundwater during the drilled shaft construction operation. Contractor is responsible for the proper containment and disposal of the contaminated groundwater and spoils resulting from Contractor's means and methods. No additional cost will be paid for this effort.
20. The Contractor shall field verify location of existing utilities prior to construction. The Contractor shall take precautions not to damage existing utilities. Any such damage shall be repaired by the Contractor at no additional cost.
21. The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge and other loads applied to the structures will not have detrimental effects on the adjacent structures, buildings and utilities. See Contract Special Provision for details.
22. The contractor shall provide vibration and displacement monitoring at the locations specified in the Special Provision for Construction Vibration Monitoring and Monitoring Adjacent Structures, to ensure that construction activities in the vicinity of the structures do not have detrimental effects on building foundations. No additional compensation shall be provided to the Contractor for alternative means and methods, or additional precautionary measures, required during removal/construction activities to satisfy these requirements. See Contract Special Provisions for details.
23. The Contractor shall coordinate the construction of proposed structure with the construction of shared Pier C2 (S.N. 016-0461), SB Taylor Bypass Ramp (S.N. 016-1718) and Retaining Wall 14 (S.N. 016-1803). The Contractor shall also coordinate proposed Pier 13 construction with the construction of proposed Retaining Wall 18 (S.N. 016-1807, Contract 60X79). See Available Work Areas and Sequencing Requirements Special Provision for additional information and requirements.
24. The Contractor may encounter abandoned foundation elements that obstruct construction of the proposed structure. Removal and disposal of portion of abandoned foundation elements shall be per special provision "Abandoned Foundation Removal". See Civil plans for approximate location and quantity.
25. Superstructure Unit 2 & 4 uses multiple fixed piers. The temperature during the anchor bolt installation will determine the temperature at which the fixed piers have no thermal stress. To minimize thermal stress, anchor bolt installation temperature should be as close to 50° F. as possible. For units with two fixed piers, the Contractor can install anchor bolts at one of the fixed pier of their choice at any temperature, but shall install anchor bolts at the second fixed pier when the temperature is between 40° F. & 60° F. This installation procedure shall be included in the Contractor's Erection Plan.
26. Based on the squeeze potential of the clay soils, the use of temporary casing will be required to two feet below the clay layer in order to properly construct the drilled shafts. Casing may be pulled or left in place as directed determined by the Contractor at no additional cost to the Department.

EXISTING STRUCTURE ASSESSMENT NOTES

1. In order to construct proposed superstructure & substructure elements, Contractor may elect to support temporary construction material and/or equipment, on the existing structures in the vicinity of the proposed structure. The Contractor shall submit Structural Assessment Report(s) for approval prior to beginning the work. See Special Provision.
2. An Existing Structure Information Package (ESIP) will be provided by the Department to the Contractor upon request.
3. The Contractor shall retain the services of an engineering firm, prequalified in the IDOT consultant selection category of Highway Bridge (Adv. Typical), for preparation of the Structural Assessment Report(s). Contractor's pre-approval shall not be applicable for this project. See Special Provision.

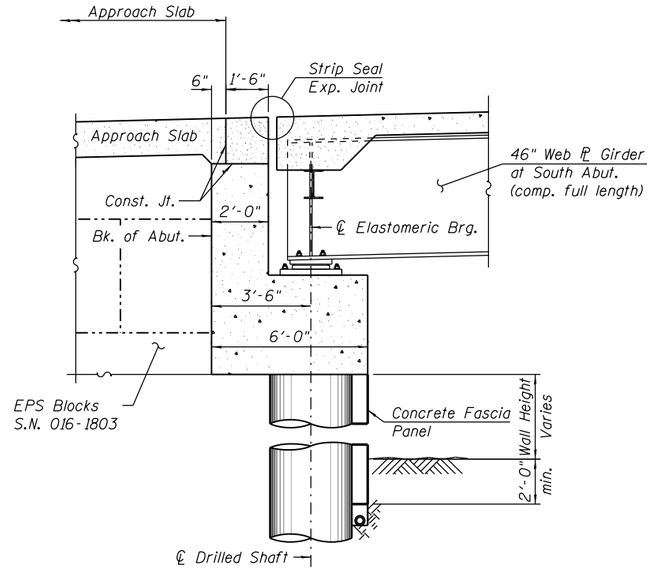
   Current existing structure Load Rating on file:

   S.N. 016-1713 (Harrison St over SB I-90/94)
   Inventory Rating Factor: 2.19 (HL-93)
   Operating Rating Factor: 2.84 (HL-93)
   Live Load Restriction: None

   S.N. 016-1703 (WB I-290 over I-90/94)
   Inventory Rating Factor: 1.21 (HL-93)
   Operating Rating Factor: 2.11 (HL-93)
   Live Load Restriction: None

   S.N. 0161716 (Halsted St over I-290 & CTA)
   Inventory Rating Factor: 1.12 (HL-93)
   Operating Rating Factor: 1.45 (HL-93)
   Live Load Restriction: None

   S.N. 016-2450 (WB I-290 to SB I-90/94)
   Inventory: 0.71 (H20)
   Operating: 1.18 (H20)
   Live Load Restriction: None
4. Inventory and Operating Ratings and Live Load Restrictions are provided for information only. Inventory and Operating Ratings are based on live loading and configuration as noted. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and Live load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.
5. The contractor is advised that the existing structures may contain members in deteriorated conditions with reduced load carrying capacities. It is the Contractor's responsibility to account for the condition of existing structures when developing construction procedures for using them to support construction loads.
6. The contractor shall verify that the structural demands of the applied loads due to the Contractor's means and methods will not exceed the available capacity of the structure at the time loads are applied. Most likely, the Contractor will be required to provide additional shoring under the existing bridges (or other methods of retrofitting) to support construction loads. Design, installation and subsequent removal of such shoring system will be the responsibility of the Contractor and will not be paid separately.
7. The Contractor shall use caution and not damage any component of the existing structure. Upon completion of work and prior to allowing traffic back on the existing structure the contractor must restore existing structure in its original condition.



SECTION THRU SOUTH ABUTMENT

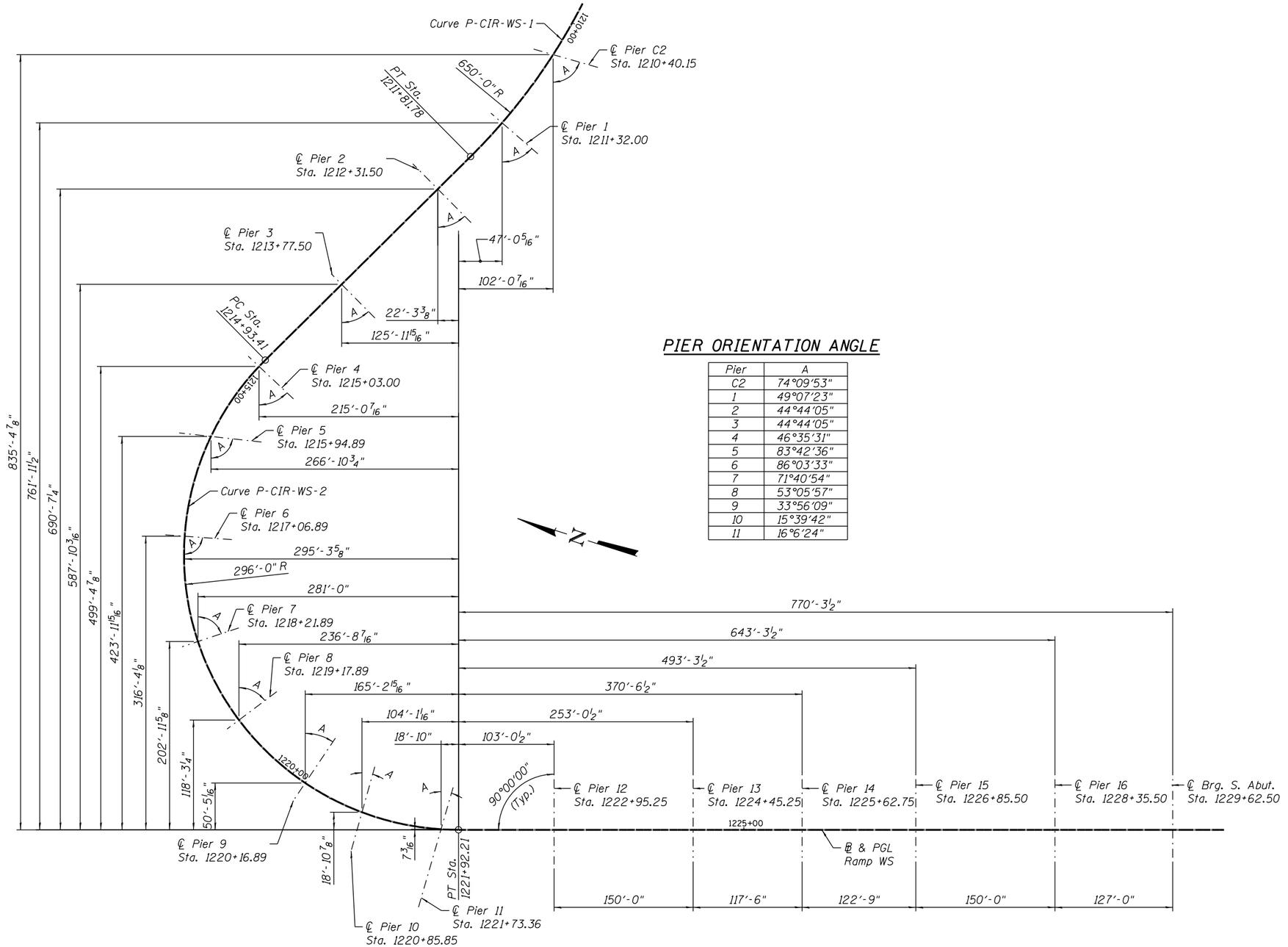
(Horiz. Dim. @ Rt. L's)

AECOM	USER NAME = bhatta	DESIGNED - JXH	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES AND ABUTMENT SECTION STRUCTURE NO. 016–1715
		CHECKED - ATB	REVISED		
	PLOT SCALE = N.T.S.	DRAWN - JXH	REVISED		SHEET NO. S3-05 OF S3-172
	PLOT DATE = 9/19/2018	CHECKED - ATB	REVISED		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	747
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

0161715-60X93-S005-GeneralNotes

1 REVISED ENTIRE SHEET 10/29/18



PIER ORIENTATION ANGLE

Pier	A
C2	74°09'53"
1	49°07'23"
2	44°44'05"
3	44°44'05"
4	46°35'31"
5	83°42'36"
6	86°03'33"
7	71°40'54"
8	53°05'57"
9	33°56'09"
10	15°39'42"
11	16°6'24"

OFFSET SKETCH

0161715-60X93-S007-Offset Sketch

AECOM

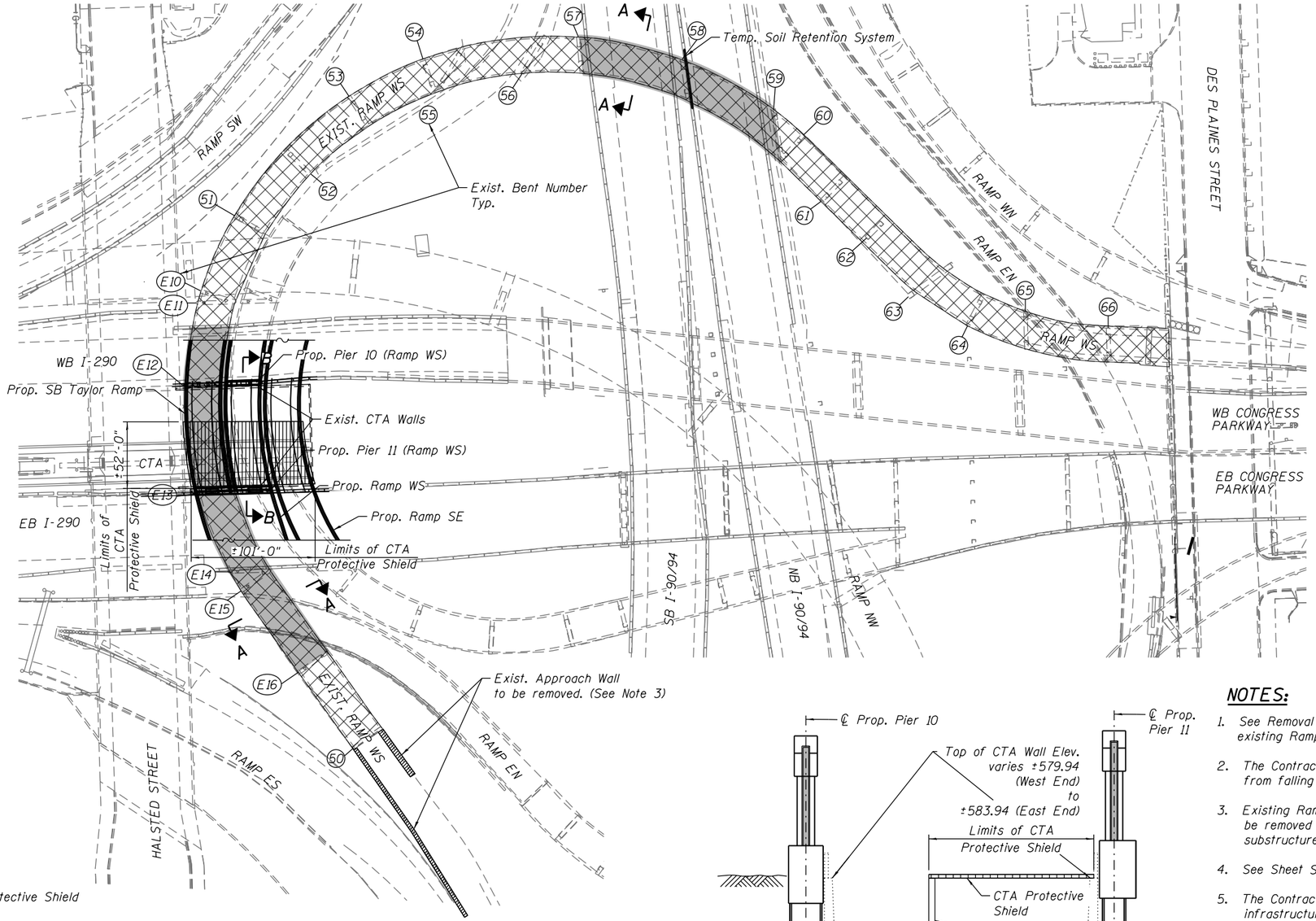
USER NAME = vasudevana	DESIGNED - JXH	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - JXH	REVISED	
PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

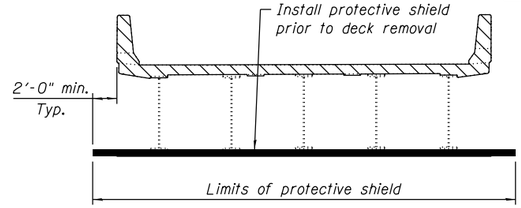
OFFSET SKETCH
STRUCTURE NO. 016–1715
SHEET NO. S3-07 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	749
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/29/18



PLAN



SECTION A-A

Note: Approximate length of the existing structure that requires Protective Shield is ±176'-0" over I-90/94 and ±290'-0" over I-290, CTA Tracks and Ramp EN.

EXIST. RAMP WS SUBSTRUCTURE REMOVAL ELEVATION TABLE

Exist. Bent No.	Removal Elev.
51	575.53
52	577.92
53	581.36
54	581.11
55	579.11
56	577.13
57	569.06
58	570.25
59	567.14
60	567.64
61	573.21
62	576.17
63	576.99
64*	574.09*
65	569.42
66	575.66
E10	573.31
E11	573.31
E12	575.94
E13	576.73
E14	574.44
E15	574.44
E16	574.69

*Existing north drilled shaft at Bent 64 to be removed to Elev. 568.80

SECTION B-B

NOTES:

1. See Removal of Existing Structures No. 2 Special Provisions for the removal of the existing Ramp WS structure (S.N. 016-2450) and the existing approach walls.
2. The Contractor shall install protective shield system to protect travelling public from falling objects during the removal of existing Ramp WS (S.N. 016-2450).
3. Existing Ramp WS (S.N. 016-2450) Bent 50 and approach retaining walls shall be removed to bottom of grade beam / footing elevation. Remaining substructure units shall be removed at elevation provided on this sheet.
4. See Sheet S3-12 for Temporary Soil Retention System details at Exist. Bent 58.
5. The Contractor shall install protective shield system to protect the existing CTA infrastructure from any falling objects during the demolition of existing structures and construction of Prop. Ramp WS (S.N. 016-1715), Ramp SE (S.N 016-1714) & SB Taylor Street Ramp (S.N. 016-1718). The Contractor shall install the CTA protective shield prior to any construction activity over and/or adjacent to CTA. CTA protective shield dimensions shown are conceptual only and subject to refinement by the Contractor. This work shall be in accordance with the Special Provision for CTA Protective Shield.
6. Work this sheet with Sheet S3-10.
7. See Sheet S3-08 for CTA Protective Shield details and notes.

LEGEND:

- CTA Protective Shield
- Existing Ramp WS Removal Paid For as Removal of Existing Structures No. 2
- Existing Ramp WS Approach Wall Removal Paid For as Removal of Existing Structures No. 2
- Protective Shield

0161715-60X93-S007A-StructRem

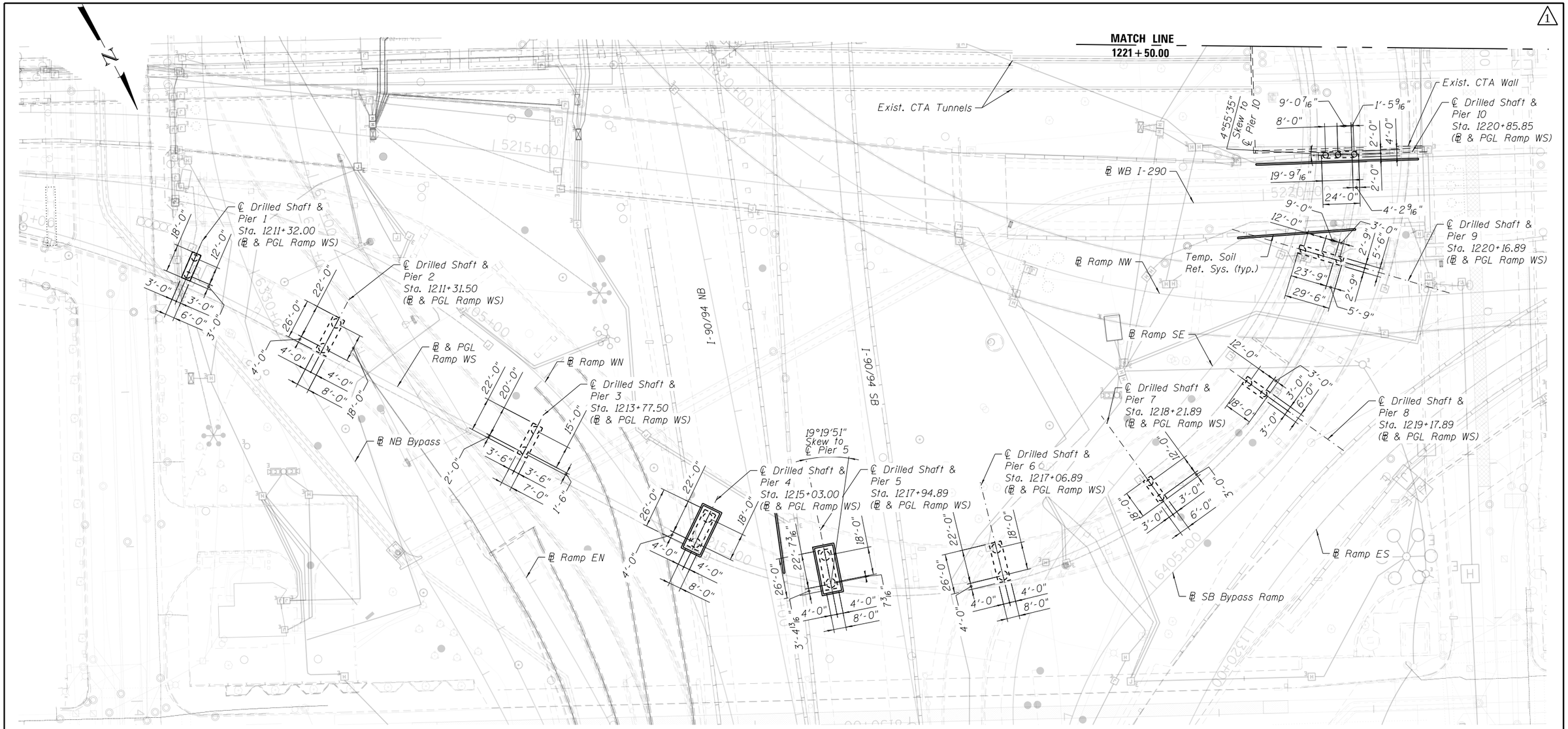
AECOM	USER NAME = bhatta	DESIGNED - AV	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 9/20/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE REMOVAL
STRUCTURE NO. 016-1715
SHEET NO. S3-08 OF S3-172

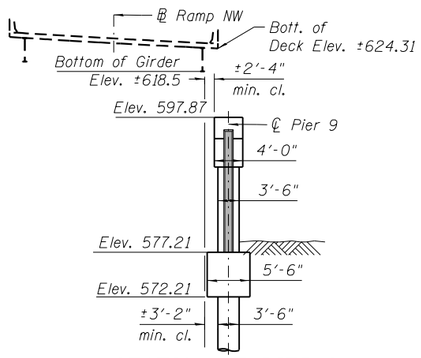
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	750
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18



LEGEND:

- Combined Sewer
- Electric — E —
- Fiber Optic — FO —
- Exist. Storm Sewer
- Prop. Storm Sewer
- Water Line — W —
- Gas Line — G —
- Fire Hydrant
- Light Pole



SECTION AT PIER 9

(Looking East)

SUBSTRUCTURE LAYOUT PLAN

NOTES:

1. All Substructure are oriented 90° to ℄ & PGL Ramp WS unless noted otherwise.
2. The Contractor shall take extreme caution next to all facilities during excavation, drilled shaft and footing construction or any other underground work. Any damage to utilities/facilities shall be repaired by the Contractor at no additional cost to the Department.
3. See sheet S3-12 for Temporary Soil Retention System details at Piers 4, 5, 9, 10.
4. It is anticipated that existing Ramp SE foundation elements conflict with the instalation of the Pier 8, 9, 10 & 11 drilled shafts. The Contractor shall provide the necessary equipment, labor and materials as required to construct proposed drilled shafts. This work shall be completed in accordance with the Special Provision Foundation Construction at Existing Obstructions.
5. The Contractor is advised that there is limited space available under existing Ramp NW (S.N. 016-1705) for the construction of the proposed Pier 9. The Contractor shall take necessary measures for the construction of the proposed Pier 9 drilled shafts, footing, column and cap. Finding suitable means and methods for the successful construction of Pier 9 is the responsibility of the Contractor. No additional costs shall be paid for this effort.
6. Work this sheet with sheet S3-10.
7. See Sheet S3-08 for CTA Protective Shield details and notes

AECOM

USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED	

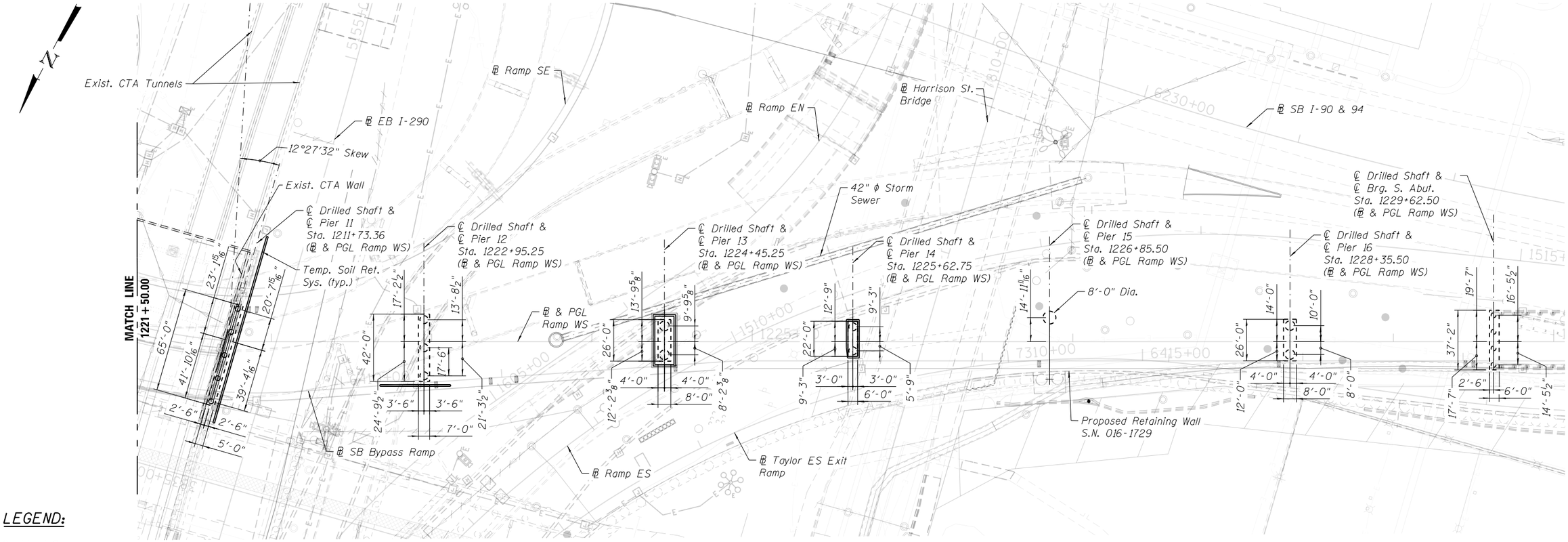
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE LAYOUT I
STRUCTURE NO. 016-1715
SHEET NO. S3-09 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	751
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

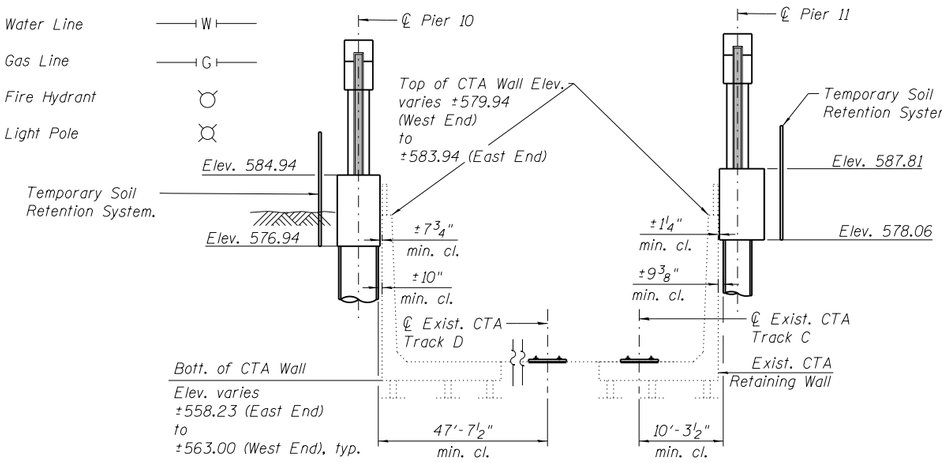
0161715-60X93-S008-Subleyout-1

1 REVISED ENTIRE SHEET 10/29/18



LEGEND:

- Combined Sewer
- Electric — E —
- Fiber Optic — FO —
- Prop. Storm Sewer
- Exist. Storm Sewer
- Water Line — W —
- Gas Line — G —
- Fire Hydrant
- Light Pole



SECTION AT PIER 10 & 11

SUBSTRUCTURE LAYOUT PLAN

NOTES:

1. All Substructure are oriented 90° to ℄ & PGL Ramp WS unless noted otherwise.
2. See sheet S3-12 for Temporary Soil Retention System details at Piers 11, 12, 13.
3. See sheet S3-11 for Drilled Shaft and Footing construction at Pier 14.
4. See sheet S3-12 for Soil Retention System at Pier 14.
5. All work adjacent to and over the existing CTA retaining wall and/or tracks shall conform to requirements identified within the CTA Flagging and Coordination Special Provision.
6. The Contractor must protect all CTA structures and elements at all times. The Contractor shall obtain approval from CTA prior to proceeding with any construction activity adjacent to CTA. Contractor shall take extreme precautions to not to damage existing CTA structures during the construction and shall not support any construction equipment and/or material from any elements of existing CTA structures. In case of placing wet concrete against any elements of CTA structures, the Contractor must ensure that no additional load is applied to those elements and provide structural calculations prepared by an Illinois Licensed Structural Engineer for review and approval. The Contractor is responsible for the structural integrity and stability of the existing CTA structures. Any damage to the existing CTA structures shall be repaired by the Contractor to the satisfaction of CTA and the Engineer at no additional cost.
7. Excavation around existing CTA retaining wall for the construction of the proposed piers 10 & 11 shall be performed per special provision Earth Excavation (Special) using only hand excavation or approved methods that would cause no damage to the existing CTA retaining wall. The limits of excavation work shall be identified prior to start of work. All planned excavation is subject to approval by the Engineer and CTA.
8. The location of existing CTA retaining wall has been identified using a combination of record drawings and topographical survey. Clearance information shown from the proposed Pier 10 & 11 to the existing CTA retaining wall is approximate and subject to variation. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction and/or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
9. The Contractor is advised that there is limited space available adjacent to existing CTA retaining wall for the construction of the proposed drilled shafts and pier crash wall at Pier 10 & 11. The Contractor shall take necessary measures for the construction of the proposed Pier 10 & 11. Finding suitable means and methods for the successful construction of Pier 10 & 11 is the responsibility of the Contractor. No additional costs shall be paid for this effort.
10. Proposed Pier 10 & 11 permanent casing shall be installed by twisting and/or pushing the casing in conjunction with drilled excavation inside of the permanent casing. The bottom of the permanent casing shall maintain minimum 2 ft. embedment into underlying soil below the bottom of shaft excavation elevation. Neither the Wet Method of construction nor the use of Temporary Casing will be permitted. See Special Provisions for Foundation Drilling Procedures.
11. Work this sheet with sheet S3-09.
12. See Sheet S3-08 for CTA Protective Shield details and notes.

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 8/27/2018	CHECKED - ATB	REVISED

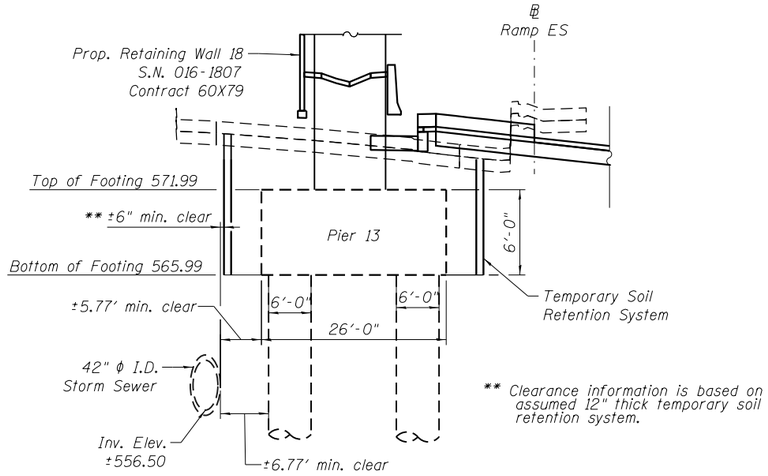
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE LAYOUT II
STRUCTURE NO. 016-1715
SHEET NO. S3-10 OF S3-172

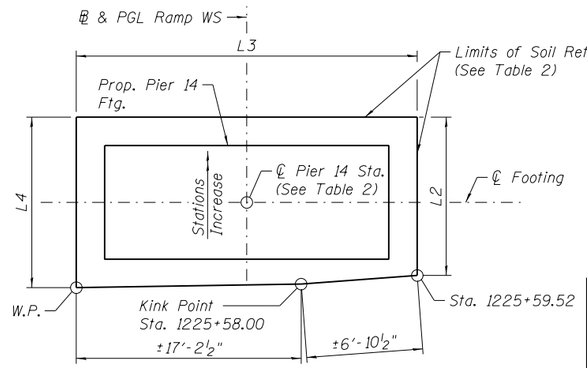
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	752
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

0161715-60X93-S009-Sublayout-II



SECTION AT PIER 13
(Looking South)

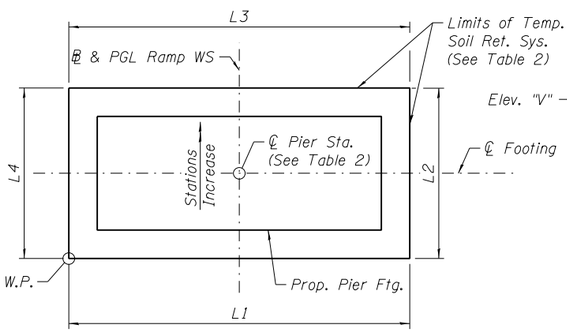


PLAN - PIER 14 SOIL RETENTION SYSTEM

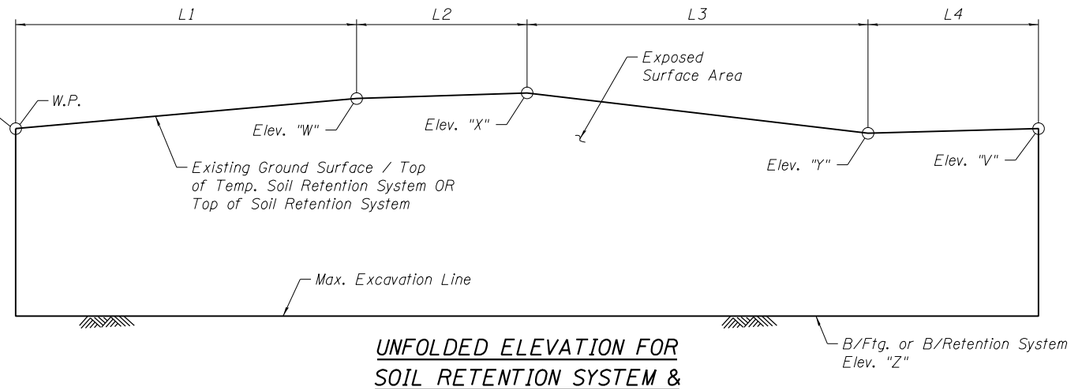
TABLE 2

Pier	Sta.	L1	L2	L3	L4	Elevation				
						V	W	X	Y	Z
4	1215+03.00	30'-0"	12'-0"	30'-0"	12'-0"	±574.42	±574.58	±574.65	±574.67	565.46
5	1225+94.89	30'-0"	12'-0"	30'-0"	12'-0"	±574.33	±574.91	±575.09	±574.54	565.38
13	1224+45.25	30'-0"	12'-0"	30'-0"	12'-0"	±576.09	±577.25	±578.63	±576.28	565.99
*14	1225+62.75	-	8'-0"	24'-0"	8'-0"	±576.93	±576.88	±577.89	±576.91	565.33

*See Note 4



PLAN - TEMP. SOIL RETENTION SYSTEM FOR PIER 4, 5 & 13



UNFOLDED ELEVATION FOR SOIL RETENTION SYSTEM & TEMPORARY SOIL RETENTION SYSTEM

NOTES:

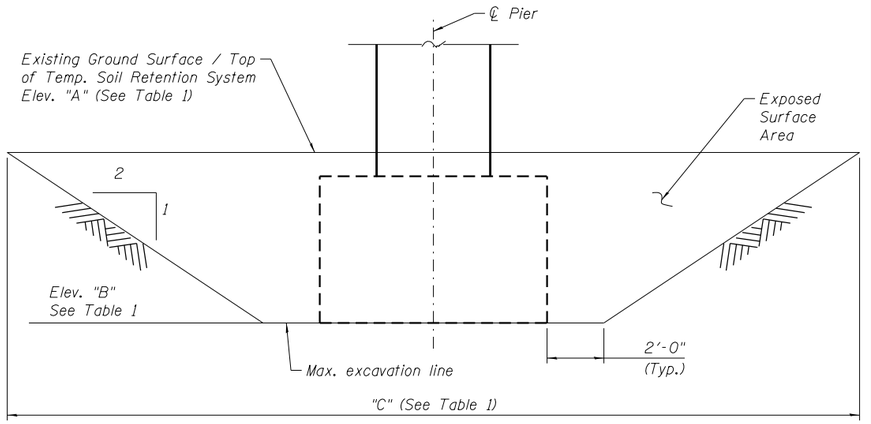
1. A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

2. Temporary Soil Retention System and Soil Retention System shall be installed without the use of impact-type pile drivers. The proposed equipment and procedures used for the installation shall be submitted to the Engineer for approval prior to their use. If vibratory equipment utilized, the Contractor shall also submit documentation regarding the operating noise levels and operating vibration characteristics of the equipment proposed. The approval of the equipment and procedure by the Engineer does not guarantee the performance in the field of the equipment will be acceptable. All provisions and requirements required under Constrction Vibration Monitoring, Monitoing Adjacent Structures and Noise Compliance shall apply to work performed under this items. The costs incurred finding suitable equipment and procedures shall be included in the cost of Temporary Soil Retention System and/or Soil Retention System. No additional costs shall be paid for this effort.

3. See Sheet S3-09 & S3-10 for locations of Temporary soil retention system.

4. Soil rentention system at Pier 14 shall be left in place and this work shall be in accordance with the Special Provision for Soil Retention System. Soil Retention system at Pier 14 shall be removed to elev. ±572.47, as approved by the Engineer, after construction of the Pier 14 is complete to facilitate the prop. pavement construction for EB Taylor Exit Ramp & Ramp ES.

5. See Sheet S3-11 for location of Soil Retention System at Pier 14.



ELEVATION - TEMP. SOIL RETENTION SYSTEM AT PIER 9, 10, 11, 12 & EXIST. BENT 58

TABLE 1

Structure	Elev. "A"	Elev. "B"	Length "C" (ft.)
Pier 9	±583.63	±572.21	77
Pier 10	±580.32	±575.46	103
Pier 11	±583.29	±578.06	134
Pier 12	±582.49	±571.73	45
Exist. Bent 58	±578.32	±570.25	49

BILL OF MATERIALS

Item	Unit	Total
Temporary Soil Retention System	Sq. Ft.	4,894
Soil Retention System	Sq. Ft.	758

0161715-60X93-S011-TSRS

AECOM

USER NAME = vasudevana	DESIGNED - AV	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY SOIL RETENTION SYSTEM DETAILS
STRUCTURE NO. 016-1715
SHEET NO. S3-12 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	754
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

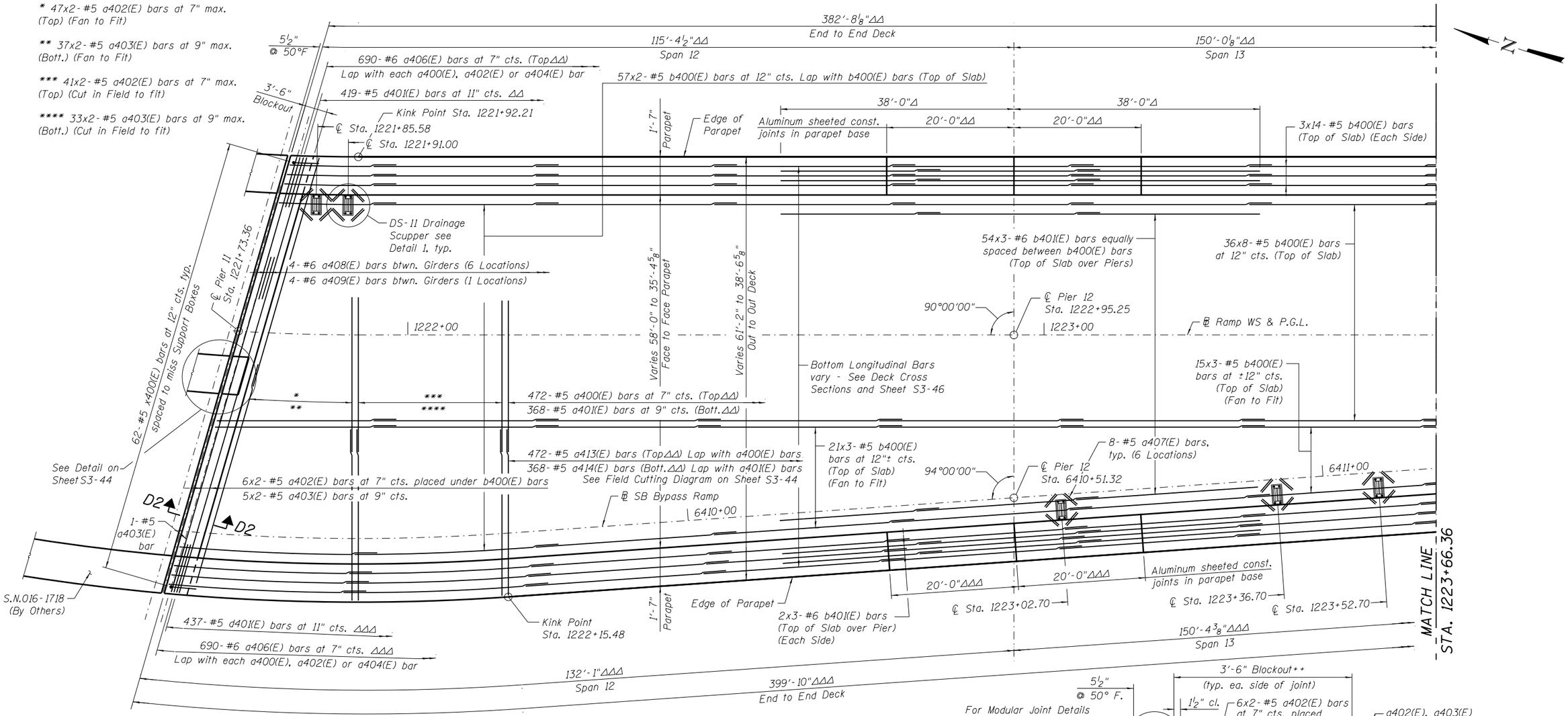
1 REVISED ENTIRE SHEET 10/29/18

* 47x2-#5 a402(E) bars at 7" max. (Top) (Fan to Fit)

** 37x2-#5 a403(E) bars at 9" max. (Bott.) (Fan to Fit)

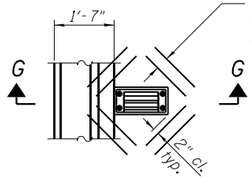
*** 41x2-#5 a402(E) bars at 7" max. (Top) (Cut in Field to fit)

**** 33x2-#5 a403(E) bars at 9" max. (Bott.) (Cut in Field to fit)



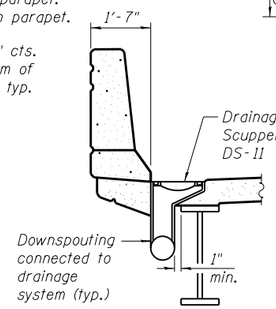
DECK PLAN I - UNIT 4

Δ Measured along ℄ Ramp WS (S.N. 016-1715).
ΔΔ Measured along inside face of north parapet.
ΔΔΔ Measured along inside face of south parapet.

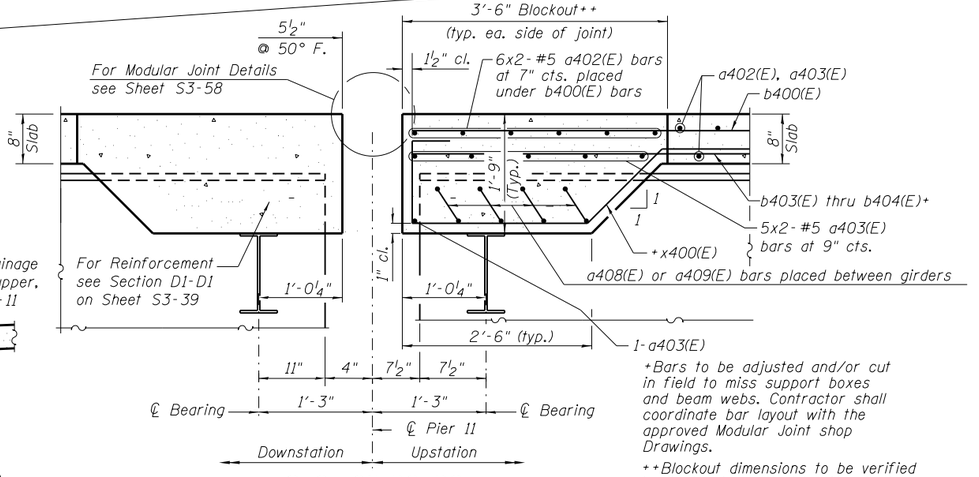


DETAIL 1
DRAINAGE SCUPPER DS-11

Note:
Reinforcement bars designated (E) shall be epoxy coated. Cut longitudinal reinforcement to clear drainage scuppers.



SECTION G-G



SECTION D2-D2

+Bars to be adjusted and/or cut in field to miss support boxes and beam webs. Contractor shall coordinate bar layout with the approved Modular Joint shop Drawings.

++Blockout dimensions to be verified by Contractor with Joint Manufacturer

NOTES:

1. Stations are along ℄ Ramp WS & PGL unless noted otherwise.
2. Minimum lap for #5 bars shall be 3'-6" and for #6 bars shall be 3'-7".
3. Bars indicated 41x12-#5 etc. indicates 41 lines of bars with 12 lengths per line.
4. Bend longitudinal reinforcement bars as required to fit in the field.
5. See Sheet S3-45 for parapet reinforcement.
6. See Sheet S3-46 for deck cross section.
7. See Sheet S3-46 for Bill of Material.
8. See Sheet S3-54 for DS-11 Drainage Scupper.
9. See Sheet S3-51 for Deck Pouring Sequence.

0161715-60X93-S041-DeckPlan-4

AECOM

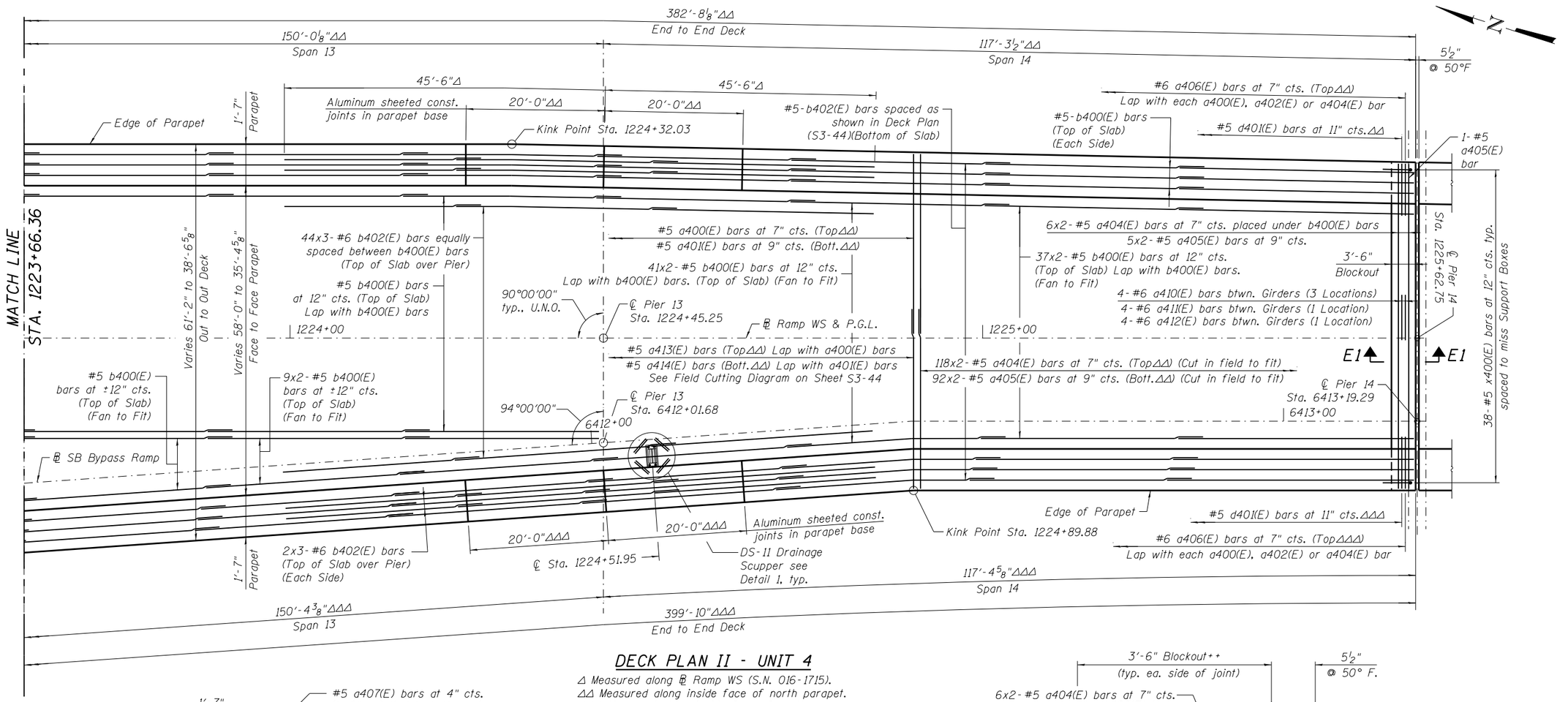
USER NAME = vasudevana	DESIGNED - ATM	REVISED	
	CHECKED - AV	REVISED	
PLOT SCALE = N.T.S.	DRAWN - ATM	REVISED	
PLOT DATE = 8/28/2018	CHECKED - AV	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN I – UNIT 4
STRUCTURE NO. 016–1715
SHEET NO. S3-42 OF S3-172

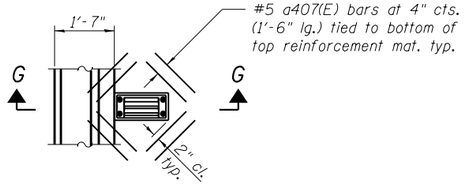
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	784
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18



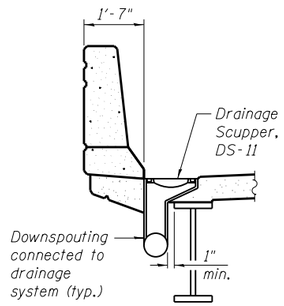
DECK PLAN II - UNIT 4

Δ Measured along ℄ Ramp WS (S.N. 016-1715).
ΔΔ Measured along inside face of north parapet.
ΔΔΔ Measured along inside face of south parapet.

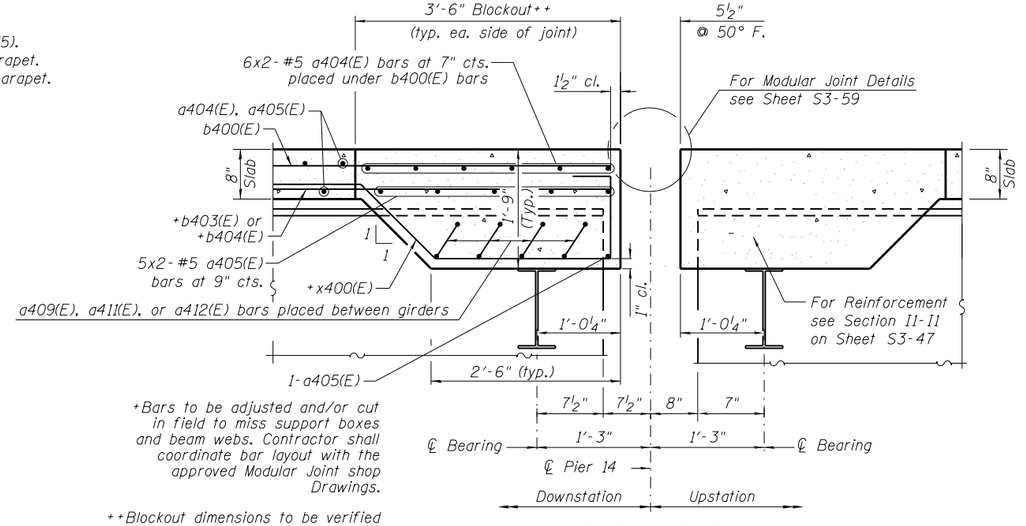


DETAIL 1
DRAINAGE SCUPPER DS-11

Note:
Reinforcement bars designated (E) shall be epoxy coated.
Cut longitudinal reinforcement to clear drainage scuppers.



SECTION G-G



SECTION E1-E1

+Bars to be adjusted and/or cut in field to miss support boxes and beam webs. Contractor shall coordinate bar layout with the approved Modular Joint shop Drawings.

++Blockout dimensions to be verified by Contractor with Joint Manufacturer

NOTES:

1. Stations are along ℄ Ramp WS & PGL unless noted otherwise.
2. Minimum lap for #5 bars shall be 3'-6" and for #6 bars shall be 3'-7".
3. Bars indicated 41x12-#5 etc. indicates 41 lines of bars with 12 lengths per line.
4. Bend longitudinal reinforcement bars as required to fit in the field.
5. See Sheet S3-45 for parapet reinforcement.
6. See Sheet S3-46 for deck cross section.
7. See Sheet S3-46 for Bill of Material.
8. See Sheet S3-54 for DS-11 Drainage Scupper.
9. See Sheet S3-51 for Deck Pouring Sequence.

AECOM	USER NAME = vasudevana	DESIGNED - ATM	REVISED
		CHECKED - AV	REVISED
	PLOT SCALE = N.T.S.	DRAWN - ATM	REVISED
	PLOT DATE = 8/28/2018	CHECKED - AV	REVISED

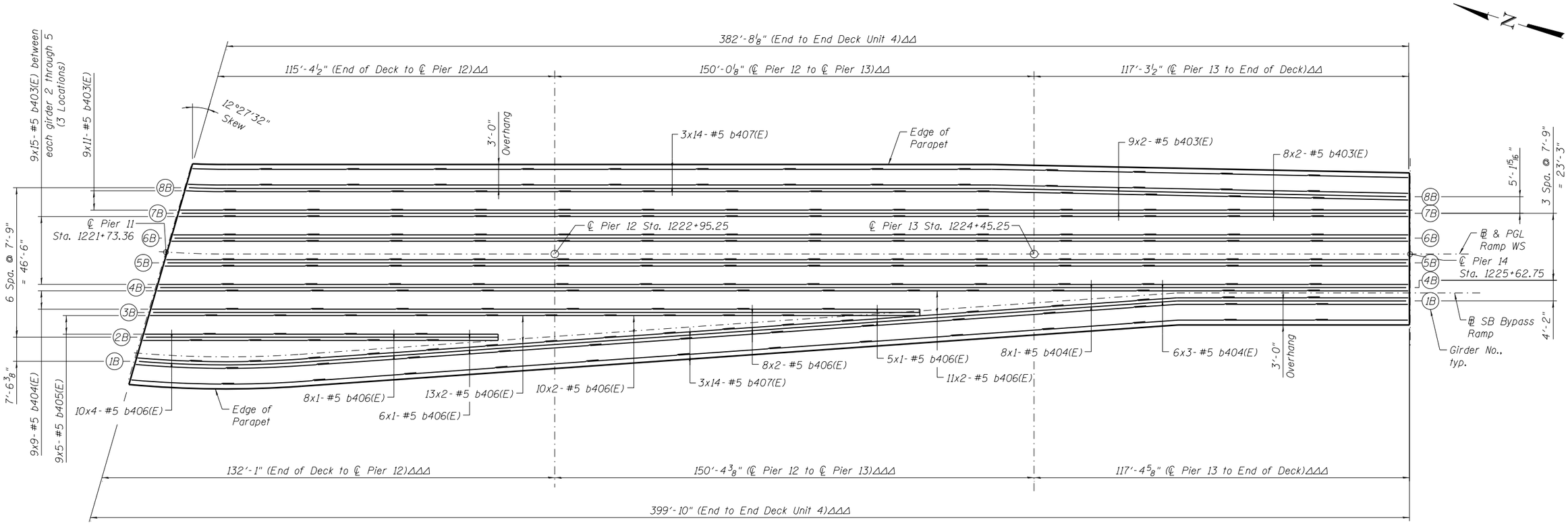
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN II – UNIT 4
STRUCTURE NO. 016–1715
SHEET NO. S3-43 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	785
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

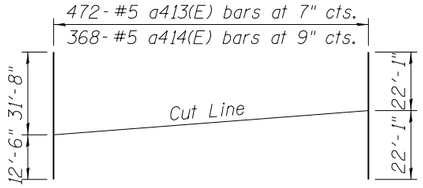
0161715-60X93-S042-DeckPlan-4

1 REVISED ENTIRE SHEET 10/29/18



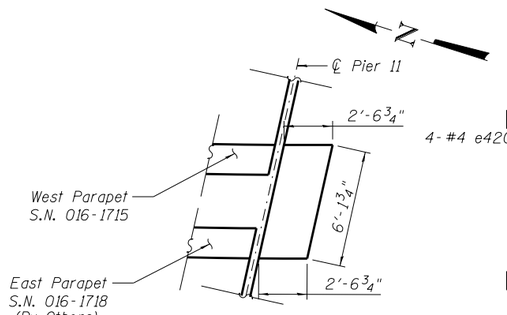
DECK PLAN III - UNIT 4
BOTTOM LONGITUDINAL REINFORCEMENT

ΔΔ Measured along inside face of north parapet.
ΔΔΔ Measured along inside face of south parapet.

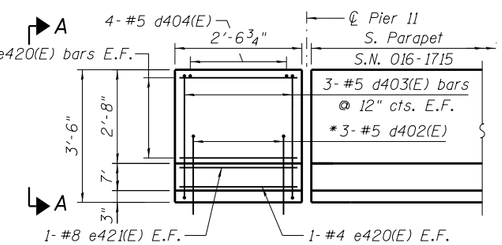


FIELD CUTTING DIAGRAM

Order a400(E) and a401(E) bars full length. Cut as shown and use remainder of bars at opposite end.

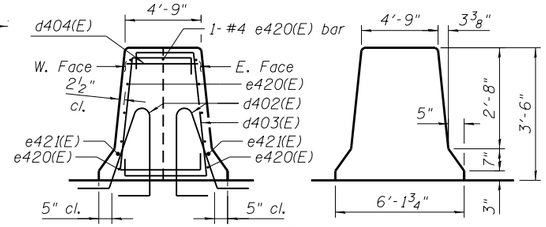


DETAIL A
PARAPET END BLOCK



ELEVATION OF PARAPET END BLOCK

(Looking West)



**Adjust In Field To miss Deck Reinforcement

VIEW A-A

(Looking North)

NOTES:

1. Stations are along ℄ Ramp WS & PGL unless noted otherwise.
2. Minimum lap for #5 bars shall be 3'-6".
3. Bars indicated 41x12-#5 etc. indicates 41 lines of bars with 12 lengths per line.
4. Bend longitudinal reinforcement bars as required to fit in the field.
5. Work this Sheet with Sheet Nos. S3-42, S3-43 & S3-46.
6. ⑤ indicates girder designations. See Deck Cross Sections and Framing Plan for Unit IV.

AECOM	USER NAME = vasudevana	DESIGNED - ATM	REVISED
		CHECKED - AV	REVISED
	PLOT SCALE = N.T.S.	DRAWN - ATM	REVISED
	PLOT DATE = 8/28/2018	CHECKED - AV	REVISED

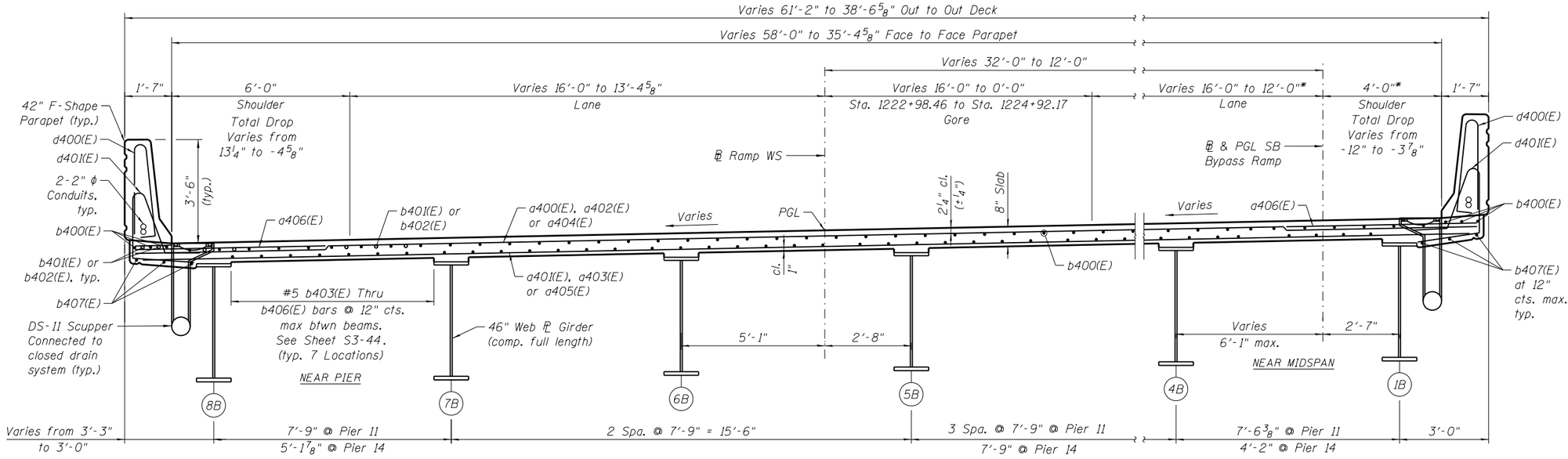
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN III – UNIT 4
STRUCTURE NO. 016-1715
SHEET NO. S3-44 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	786
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

0161715-60X93-S043-DeckPlan-4

1 REVISED ENTIRE SHEET 10/29/18

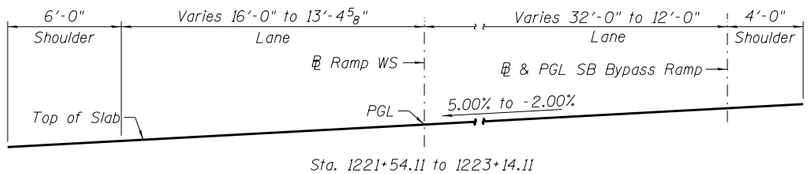


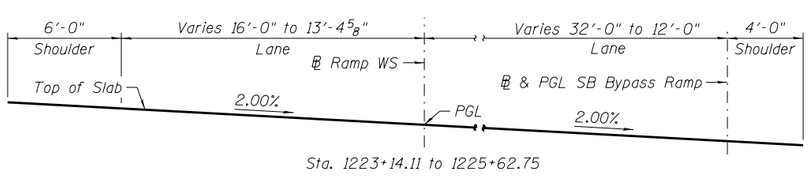
CROSS SECTION - UNIT 4

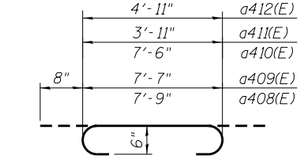
(Looking Upstation)

(Dimensions are measured perpendicular to ℄ Ramp WS (U.N.O.)

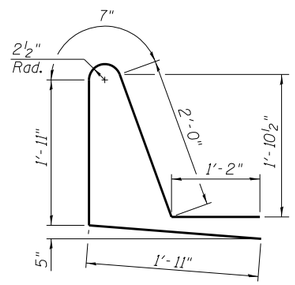
*Dimensions are measured perpendicular to ℄ SB Bypass Ramp



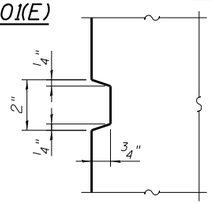




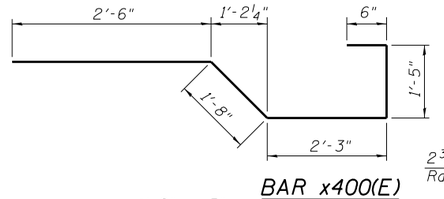
BAR a408(E) thru a413(E)



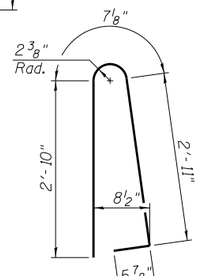
BAR d401(E)



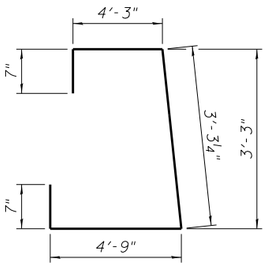
REVEAL DETAIL



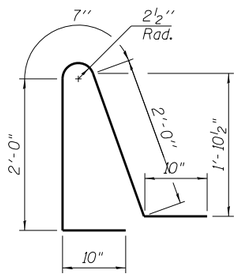
BAR x400(E)



BAR d400(E)



BAR d403(E)



BAR d402(E)

SECTION THRU PARAPET

** 2-2" ϕ Conduits for lighting in East Parapet

2-2" ϕ Conduits for ITS in West Parapet

SUPERSTRUCTURE BILL OF MATERIAL UNIT-4

Bar	No.	Size	Length	Shape
a400(E)	472	#5	31'-8"	
a401(E)	368	#5	31'-8"	
a402(E)	188	#5	32'-9"	
a403(E)	151	#5	32'-9"	
a404(E)	248	#5	21'-6"	
a405(E)	195	#5	21'-6"	
a406(E)	1380	#6	6'-6"	
a407(E)	48	#5	1'-6"	
a408(E)	24	#6	9'-1"	
a409(E)	4	#6	8'-11"	
a410(E)	12	#6	8'-10"	
a411(E)	4	#6	5'-3"	
a412(E)	4	#6	6'-3"	
a413(E)	236	#5	44'-2"	
a414(E)	184	#5	44'-2"	
b400(E)	768	#5	32'-1"	
b401(E)	174	#6	27'-9"	
b402(E)	144	#6	32'-9"	
b403(E)	538	#5	30'-0"	
b404(E)	107	#5	30'-3"	
b405(E)	45	#5	25'-8"	
b406(E)	143	#5	23'-0"	
b407(E)	84	#5	32'-7"	
d400(E)	968	#5	6'-10"	
d401(E)	856	#5	7'-7"	
d402(E)	3	#5	6'-3"	
d403(E)	3	#5	13'-5"	
d404(E)	4	#5	4'-3"	
e400(E)	7	#4	17'-8"	
e401(E)	119	#4	19'-0"	
e402(E)	64	#4	19'-8"	
e403(E)	70	#4	18'-0"	
e404(E)	7	#4	18'-0"	
e405(E)	7	#4	19'-8"	
e406(E)	7	#4	15'-1"	
e407(E)	7	#4	18'-4"	
e408(E)	7	#4	19'-9"	
e409(E)	4	#4	25'-10"	
e410(E)	4	#4	29'-5"	
e411(E)	8	#4	26'-4"	
e412(E)	4	#4	30'-0"	
e413(E)	4	#8	29'-6"	
e414(E)	4	#8	28'-3"	
e415(E)	4	#8	31'-11"	
e416(E)	8	#8	28'-9"	
e417(E)	4	#8	32'-5"	
e418(E)	4	#8	32'-0"	
e419(E)	8	#4	19'-8"	
e420(E)	11	#4	2'-2"	
e421(E)	2	#8	2'-2"	
x400(E)	100	#5	8'-4"	
Reinforcement Bars, Epoxy Coated		Pound	171,630	
Concrete Superstructure		Cu. Yd.	604.4	
Bridge Deck grooving (Longitudinal)		Sq. Yd.	1,897	
Protective Coat		Sq. Yd.	2,862	

AECOM

USER NAME = vasudevana	DESIGNED - ATM	REVISED	
	CHECKED - AV	REVISED	
PLOT SCALE = N.T.S.	DRAWN - ATM	REVISED	
PLOT DATE = 8/28/2018	CHECKED - AV	REVISED	

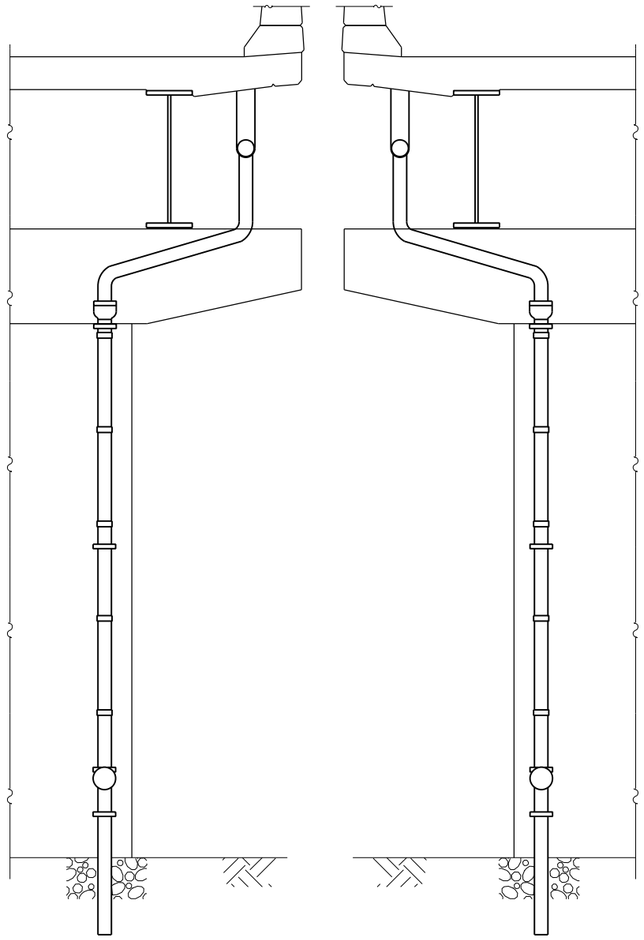
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK CROSS SECTION & DETAILS – UNIT 4
STRUCTURE NO. 016-1715
SHEET NO. S3-46 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	788
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

0161715-60X93-S045-Deck Xsect-4

1 REVISED ENTIRE SHEET 10/29/18



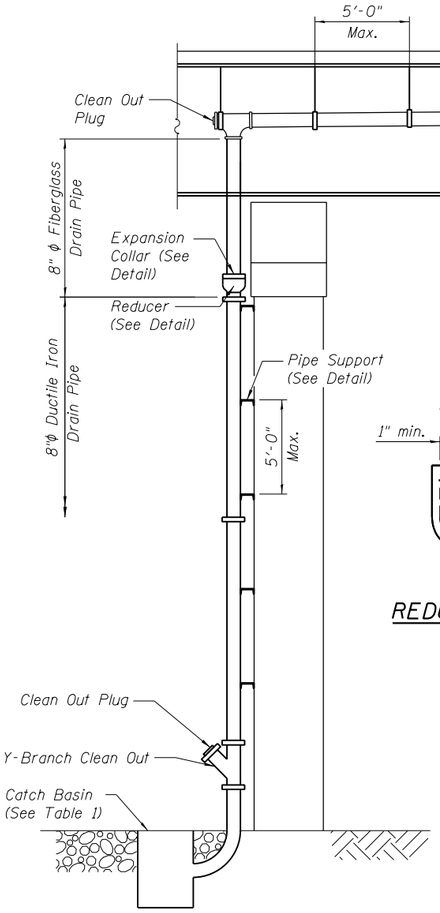
ELEVATION VIEW

@ Pier C2 (Looking West)
@ Pier 4 (Looking East)
@ Pier 9 (Looking North)
@ Pier 13 (Looking South)
@ Pier 15 (Looking South)**

**Drain to the east column and outlet into structure listed in Table 1

ELEVATION VIEW

@ Pier 2 (Looking East)
@ Pier 3 (Looking West)
@ Pier 8 (Looking South)
@ Pier 12 (Looking North)
@ Pier 16 (Looking North)

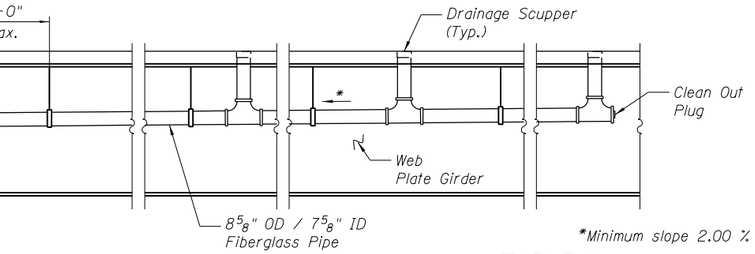


END VIEW

Multiple Scupper Run

DRAINAGE SYSTEM

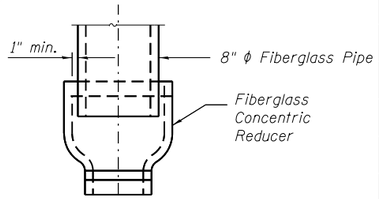
@ Pier C2
@ Pier 3
@ Pier 4
@ Pier 9
@ Pier 12
@ S. Abutment



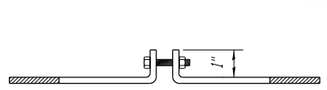
*Minimum slope 2.00 %

TABLE 1

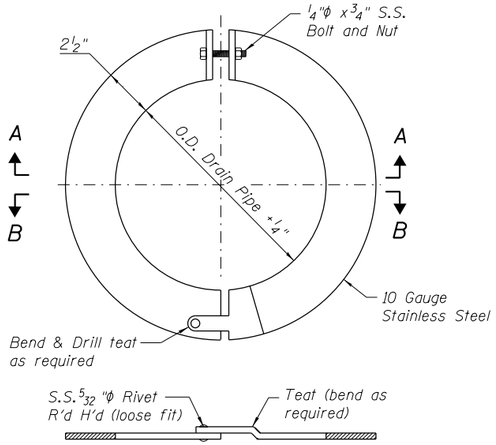
Location	Structure Number
Pier 1 to Pier C2	S2-03
Pier 2	FS201
Pier 3	S2-01
Pier 5 to Pier 4	ES211
Pier 8	S3-07
Pier 11 to Pier 9	S11-01
Pier 12	FS401
Pier 13	S4-07
Pier 15	S4-10A
Pier 16	S5-02
S. Abutment	ES506



REDUCER DETAIL

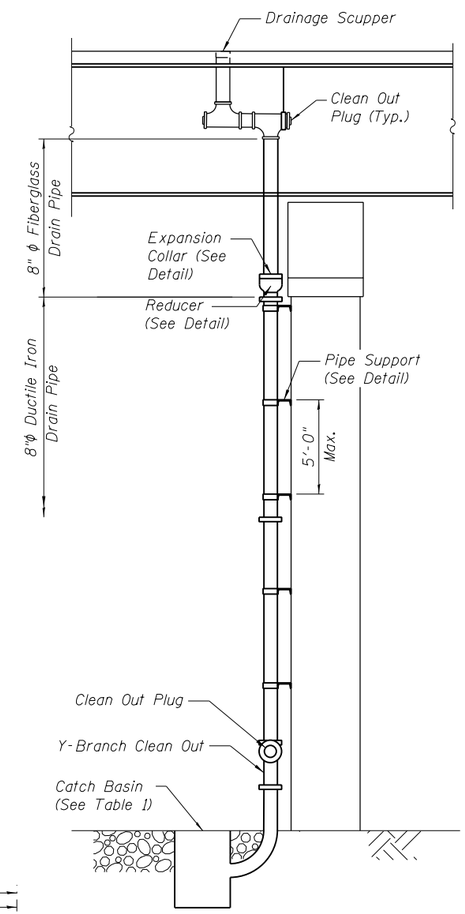


SECTION A-A



SECTION B-B

DETAIL OF EXPANSION COLLAR

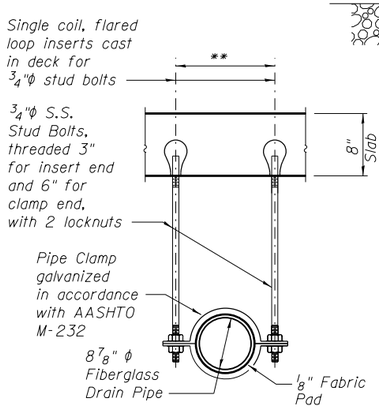


END VIEW

Single Scupper Run

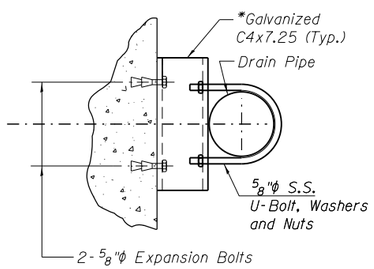
DRAINAGE SYSTEM

@ Pier 2
@ Pier 8
@ Pier 13
@ Pier 15
@ Pier 16

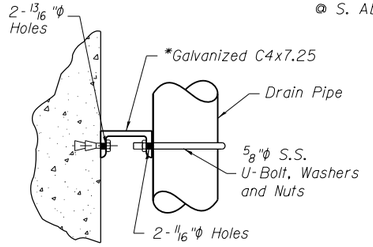


PIPE SUPPORT DETAIL

** Dimension as required by Pipe Clamp



PLAN



PIPE SUPPORT DETAIL

*Provide curved C6x8.2 to fit Round Pier Columns where needed

ELEVATION

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System	L. Sum	0.6

NOTES:

1. If piping configuration allows, the Contractor shall locate drain pipe for Piers 2, 3, 8, 9 and 12 within the reveals indicated in the Architectural Details. This installation, along with necessary additional pipe bends, supports and related appurtenances are included in the cost of Drainage System.
2. S.S. denotes Stainless Steel.

AECOM

USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/31/2018	CHECKED - ATB	REVISED	

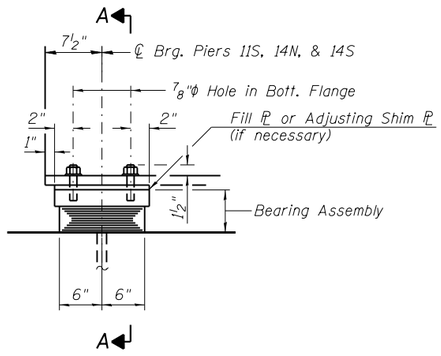
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SYSTEM
STRUCTURE NO. 016-1715
SHEET NO. S3-55 OF S3-172

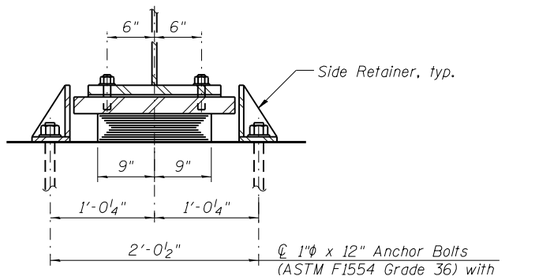
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	797
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

0161715-60X93-S054-DrainSystem

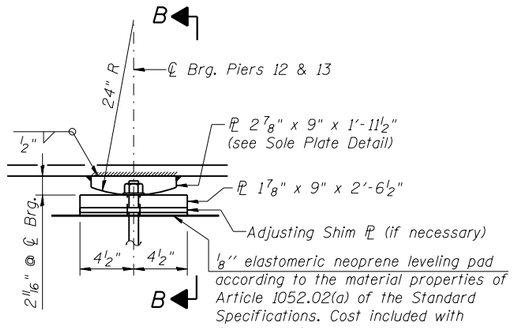
1 REVISED ENTIRE SHEET 10/29/18



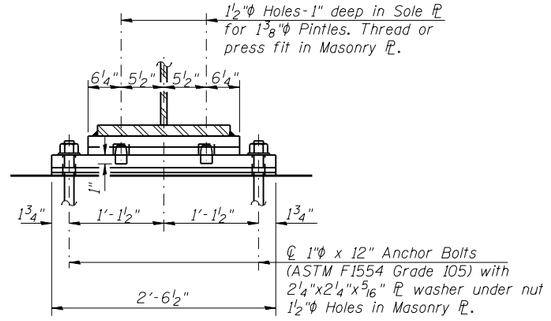
ELEVATION AT PIERS 11S, 14N, & 14S



SECTION A-A



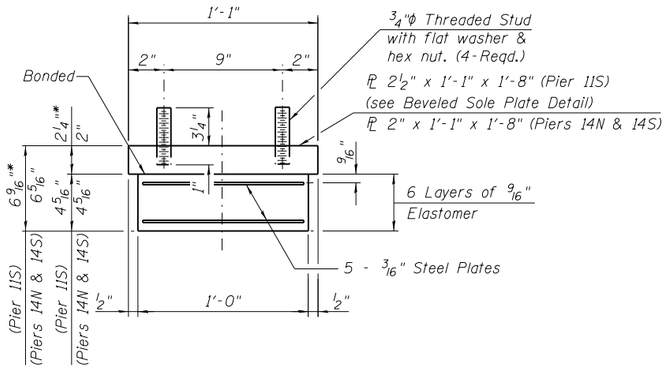
ELEVATION AT PIERS 12 & 13



SECTION B-B

TYPE I ELASTOMERIC EXP. BRG.

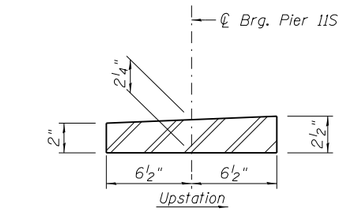
(Piers 11S, 14N, & 14S)



BEARING ASSEMBLY

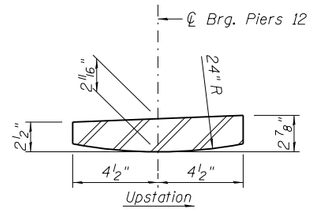
Note:
Shim plates shall not be placed under Bearing Assembly.

*Thickness @ ℄ Brg.



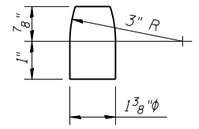
BEVELED SOLE PLATE DETAIL

(Pier 11S)



SOLE PLATE DETAIL

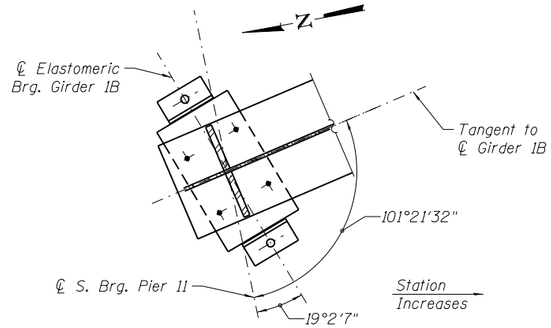
(Piers 12 & 13)



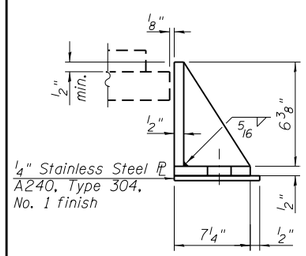
PINTLE

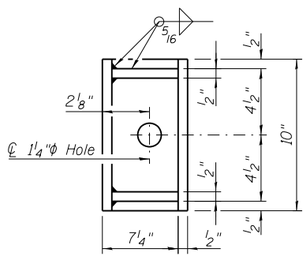
FIXED BEARING

(Piers 12 & 13)
(13 Req'd.)



GIRDER 1B - PIER 11S BEARING LAYOUT





SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

FILL PLATE THICKNESS

Pier	Girder	Fill ℙ Thickness
11N	1	-
	2	¾"
	3	1⅛"
	4	-
	5	-
14N	1B	¼"
	4B	-
	5B	-
	6B	⅜"
	7B	⅝"
	8B	¼"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	20
Anchor Bolts, 1"	Each	66

NOTES:

1. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
2. Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
3. Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
4. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
5. Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
6. Fixed Bearing included in "Furnishing and Erecting Structural Steel."
7. Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
8. All bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
9. The structural steel for fixed bearing (including pintles) and elastomeric Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.
10. Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

0161715-60X93-S093-BearingDet-2

AECOM

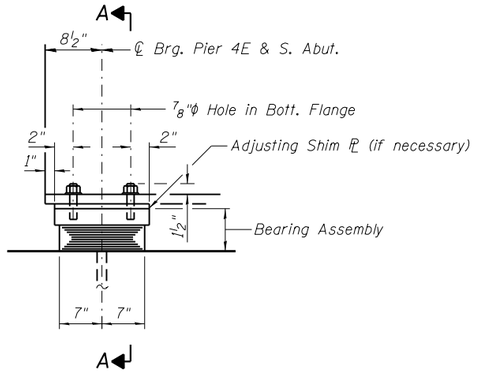
USER NAME = vasudevana	DESIGNED - SD	REVISED	
	CHECKED - CLS	REVISED	
PLOT SCALE = N.T.S.	DRAWN - SD	REVISED	
PLOT DATE = 8/27/2018	CHECKED - CLS	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

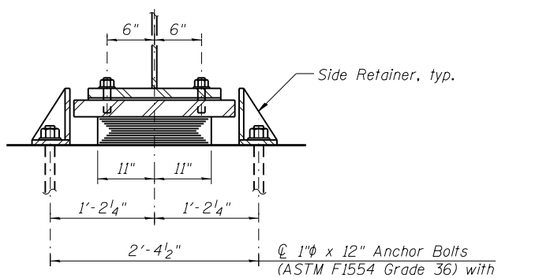
ELASTOMERIC BEARING DETAILS - 2
STRUCTURE NO. 016-1715
SHEET NO. S3-94 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	836
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18



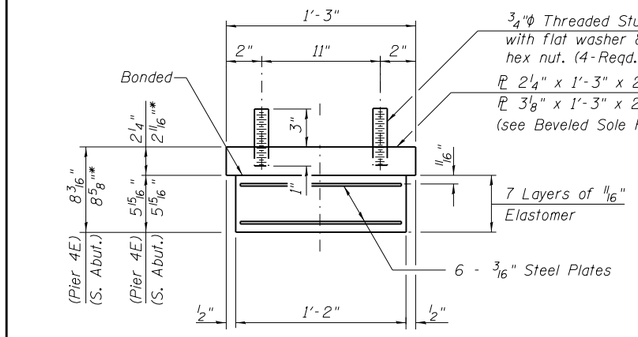
ELEVATION AT PIER 4E & S. ABUT.

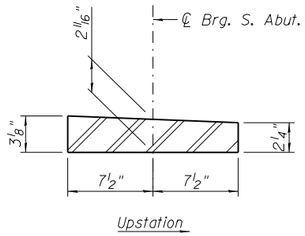


SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

(Pier 4E & S. Abut.)





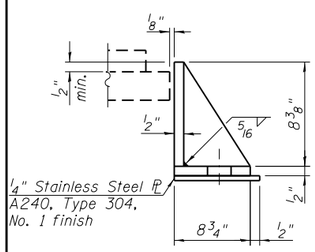
BEARING ASSEMBLY

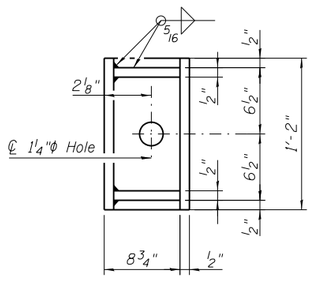
Note:
Shim plates shall not be placed under Bearing Assembly.

*Thickness @ ℄ Brg.

BEVELED SOLE PLATE DETAIL

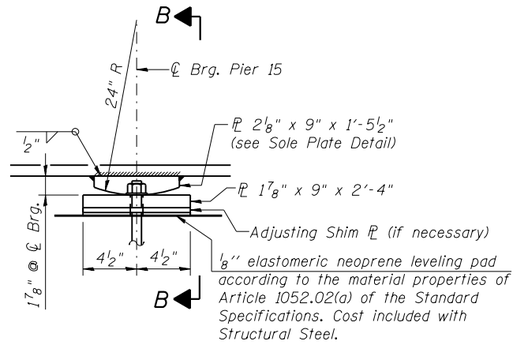
(S. Abut.)



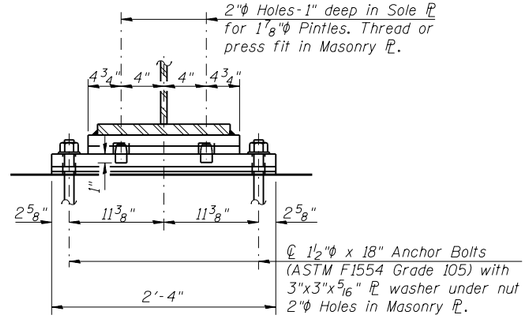


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



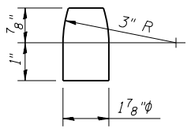
ELEVATION AT PIER 15



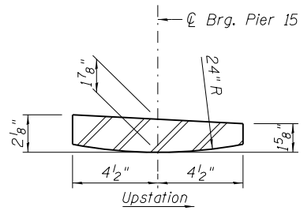
SECTION B-B

FIXED BEARING

(Pier 15)
(6 Req'd.)



PINTLE



SOLE PLATE DETAIL

NOTES:

1. Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
2. Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.
3. Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.
4. Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
5. Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.
6. Fixed Bearing included in "Furnishing and Erecting Structural Steel."
7. Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
8. All bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
9. The structural steel for fixed bearing (including pintles) and elastomeric Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.
10. Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	11
Anchor Bolts, 1"	Each	22
Anchor Bolts, 1½"	Each	12

0161715-60X93-S093a-BearingDet-3.dgn

AECOM

USER NAME = vasudevana	DESIGNED - SD	REVISED
	CHECKED - CLS	REVISED
PLOT SCALE = N.T.S.	DRAWN - SD	REVISED
PLOT DATE = 8/23/2018	CHECKED - CLS	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELASTOMERIC BEARING DETAILS – 3
STRUCTURE NO. 016–1715
SHEET NO. S3-95 OF S3-172

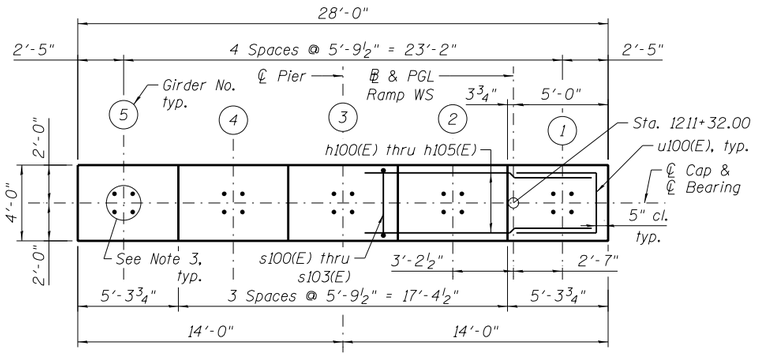
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	837
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

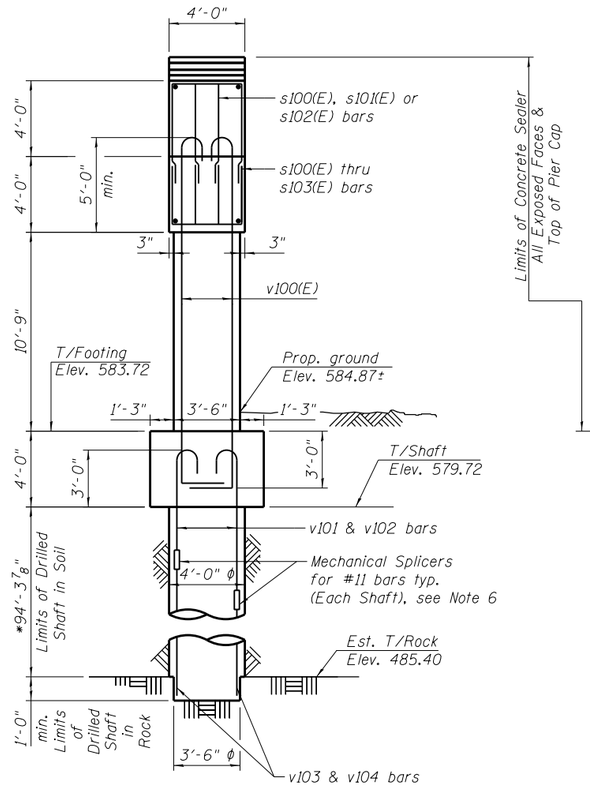
NOTES:

1. Pour steps monolithically with cap.
2. ℄ of Pier is radial to ℄ Ramp WS at Sta. 1211+32.00.
3. For Anchor Bolts Details, see sheets S3-93 thruS3-99 .
4. For Architectural Details, see sheets S3-137 thru S3-139 .
5. See sheet S3-101 for Sections and Details.
6. For Mechanical Splicer Details and Quantities see sheet S3-140 .

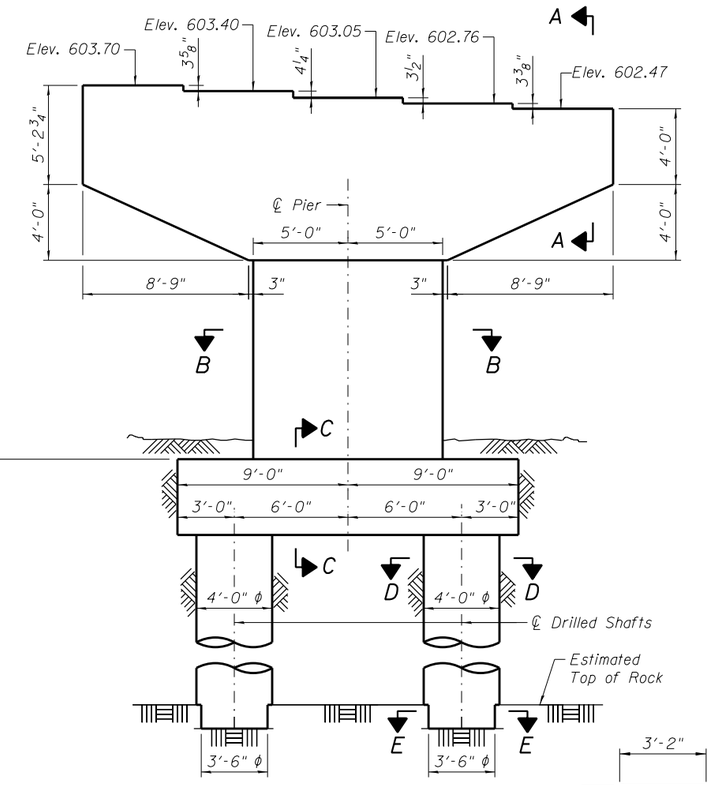
* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



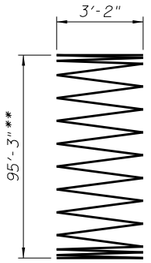
TOP PLAN



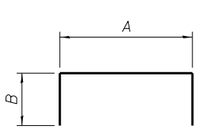
END VIEW



ELEVATION
(Looking Upstation)

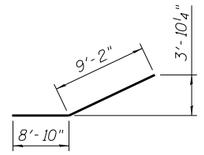


BAR sp100

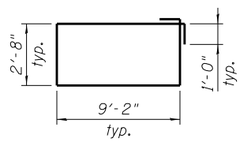


BENT BAR
A & B DIMENSIONS

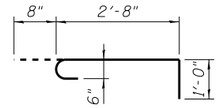
Bar	A	B
p100(E)	27'-2"	2'-0"
s100(E)	2'-1"	4'-7"
s101(E)	2'-1"	6'-0"
s102(E)	2'-1"	3'-10"
s103(E)	3'-2"	6'-0"
u100(E)	3'-2"	4'-5"
u101(E)	3'-2"	10"
u102(E)	5'-6"	4'-5"
w100(E)	17'-6"	2'-0"
w101(E)	17'-6"	2'-6"



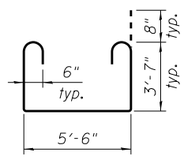
BAR p102(E)



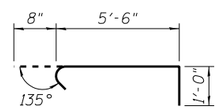
BAR s104(E)



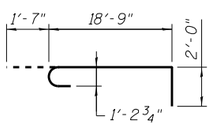
BAR s105(E)



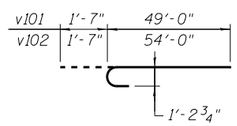
BAR t100(E)



BAR t101(E)



BAR v100(E)



BARS v101 & v102

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h100(E)	14	#7	27'-2"	
h101(E)	2	#7	13'-2"	
h102(E)	2	#7	16'-1"	
h103(E)	2	#7	18'-11"	
h104(E)	2	#7	21'-10"	
h105(E)	2	#7	24'-9"	
h106(E)	12	#5	5'-6"	
h107(E)	8	#5	4'-9"	
h108(E)	12	#6	17'-6"	
p100(E)	8	#11	31'-2"	
p101(E)	8	#11	26'-6"	
p102(E)	16	#8	18'-0"	
s100(E)	52	#5	11'-3"	
s101(E)	64	#5	14'-1"	
s102(E)	20	#5	9'-9"	
s103(E)	22	#5	15'-2"	
s104(E)	11	#6	25'-8"	
s105(E)	44	#6	4'-4"	
sp100	2	#6	95'-3"	
t100(E)	25	#6	14'-0"	
t101(E)	25	#6	7'-2"	
u100(E)	14	#6	12'-0"	
u101(E)	30	#5	4'-10"	
u102(E)	12	#6	14'-4"	
v100(E)	30	#11	22'-4"	
v101	16	#11	50'-7"	
v102	16	#11	55'-7"	
v103	16	#11	49'-0"	
v104	16	#11	44'-0"	
w100(E)	8	#11	21'-6"	
w101(E)	12	#11	22'-6"	

Concrete Structures	Cu. Yd.	60.4
Reinforcement Bars, Epoxy Coated	Pound	14,990
Reinforcement Bars	Pound	22,720
Drilled Shaft in Soil	Cu. Yd.	87.8
Drilled Shaft in Rock	Cu. Yd.	0.8
Structure Excavation	Cu. Yd.	66
Concrete Sealer	Sq. ft.	941
Crosshole Sonic Logging Testing	Each	1
Crosshole Sonic Logging Access Ducts	Foot	191

** Length is height of spiral.

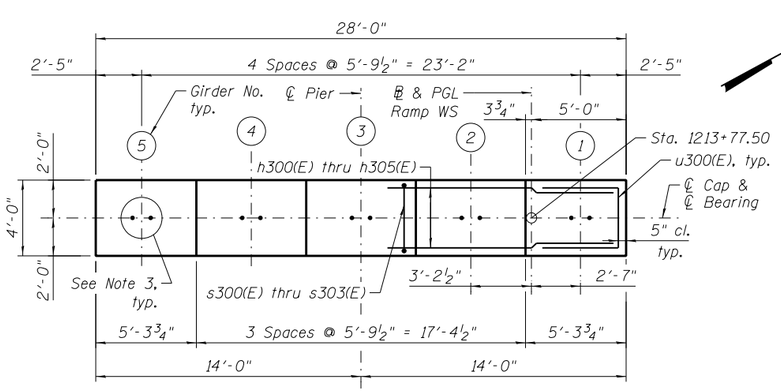
MIN. LAP LENGTH

#5 bars: 3'-2"
#8 bars: 7'-2"

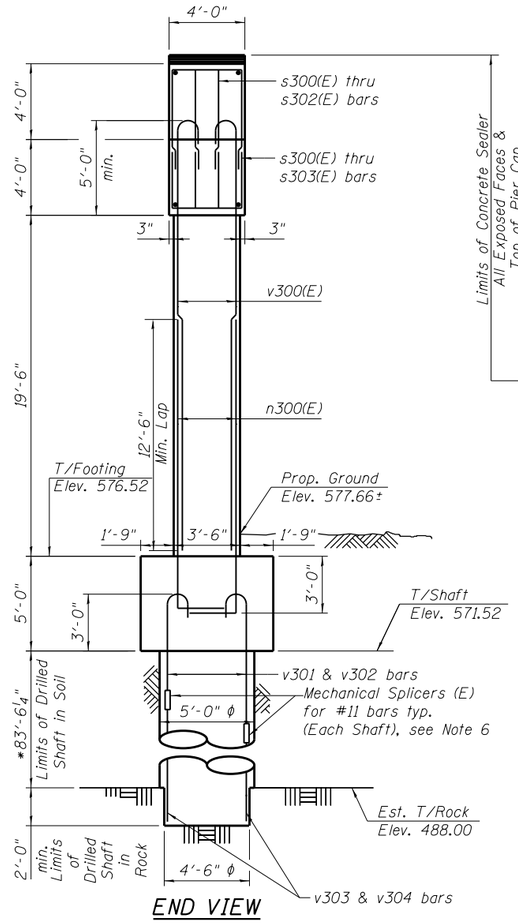
NOTES:

1. Pour steps monolithically with cap.
2. ℄ of Pier is radial to ℄ Ramp WS at Sta. 1213+77.50.
3. For Anchor Bolts Details, see sheets S3-93 thru S3-99 .
4. For Architectural Details, see sheets S3-137 thru S3-139 .
5. See sheet S3-105 for Sections and Details.
6. For Mechanical Splicer Details and Quantities, see sheet S3-140 .

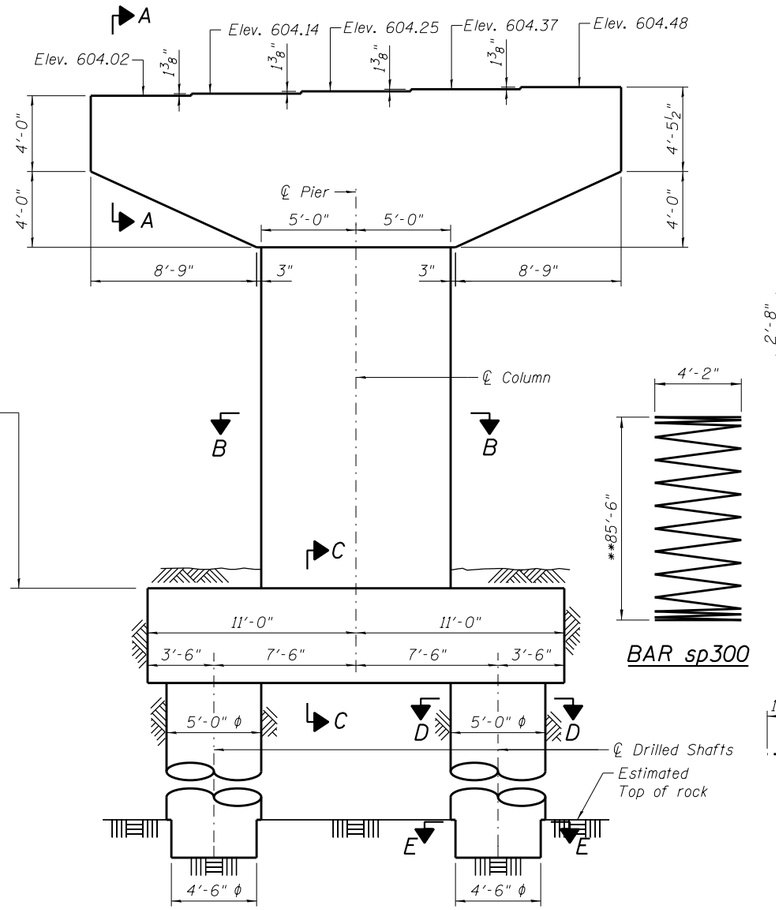
* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



TOP PLAN

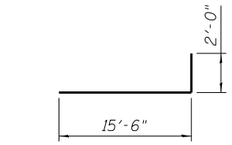


END VIEW

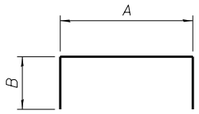


ELEVATION

(Looking Upstation)



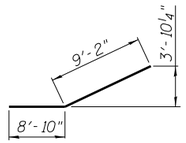
BAR n300(E)



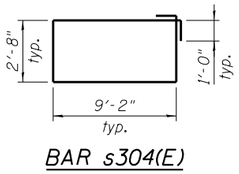
BENT BAR

A & B DIMENSIONS

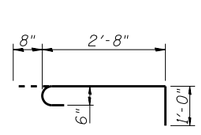
Bar	A	B
p300(E)	27'-2"	2'-0"
s300(E)	2'-1"	3'-10"
s301(E)	2'-1"	4'-5"
s302(E)	2'-1"	5'-6"
s303(E)	3'-2"	5'-6"
u300(E)	3'-2"	4'-5"
u301(E)	3'-2"	10"
u302(E)	6'-6"	4'-5"
w300(E)	21'-6"	2'-0"
w301(E)	21'-6"	3'-6"



BAR p302(E)

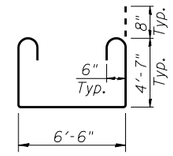


BAR s304(E)

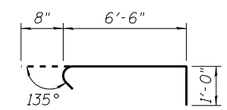


BAR s305(E)

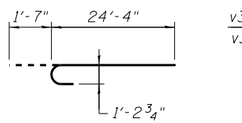
BAR sp300



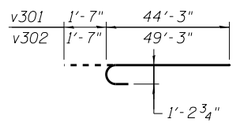
BAR t300(E)



BAR t301(E)



BAR v300(E)



BARS v301 & v302

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h300(E)	14	#7	27'-2"	
	h301(E)	2	#7	13'-2"	
	h302(E)	2	#7	16'-1"	
	h303(E)	2	#7	18'-11"	
	h304(E)	2	#7	21'-10"	
	h305(E)	2	#7	24'-9"	
	h306(E)	4	#5	4'-9"	
	h307(E)	4	#5	5'-6"	
	h308(E)	14	#7	21'-6"	
	n300(E)	30	#11	17'-6"	
	p300(E)	10	#11	31'-2"	
	p301(E)	10	#11	26'-6"	
	p302(E)	20	#8	18'-0"	
	s300(E)	36	#5	9'-9"	
	s301(E)	52	#5	10'-11"	
	s302(E)	76	#5	13'-1"	
	s303(E)	22	#5	14'-2"	
	s304(E)	19	#6	25'-8"	
	s305(E)	76	#6	4'-4"	
**	sp300	2	#6	85'-6"	
	t300(E)	34	#6	17'-0"	
	t301(E)	34	#6	8'-2"	
	u300(E)	14	#6	12'-0"	
	u301(E)	12	#5	4'-10"	
	u302(E)	14	#6	15'-4"	
	v300(E)	30	#11	25'-11"	
	v301	22	#11	45'-10"	
	v302	22	#11	50'-10"	
	v303	22	#11	44'-0"	
	v304	22	#11	39'-0"	
	w300(E)	12	#11	25'-6"	
	w301(E)	12	#11	28'-6"	
	w302(E)	12	#11	20'-10"	

Concrete Structures		Cu. Yd.	82.8
Reinforcement Bars, Epoxy Coated		Pound	23,010
Reinforcement Bars		Pound	27,850
Drilled Shaft in Soil		Cu. Yd.	121.5
Drilled Shaft in Rock		Cu. Yd.	2.4
Structure Excavation		Cu. Yd.	98.0
Concrete Sealer		Cu. Yd.	1150
Crosshole Sonic Logging Testing		Each	1
Crosshole Sonic Logging Access Ducts		Foot	172

** Length is height of spiral.

MIN. LAP LENGTH

#5 bars: 3'-2"
#8 bars: 7'-2"

USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - DD	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/23/2018	CHECKED - DD	REVISED	

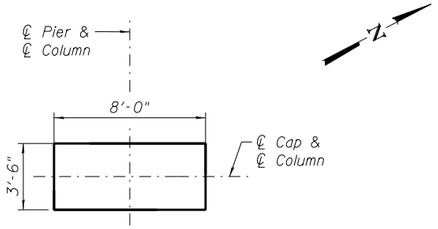
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3
STRUCTURE NO. 016-1715
SHEET NO. S3-104 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	846
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

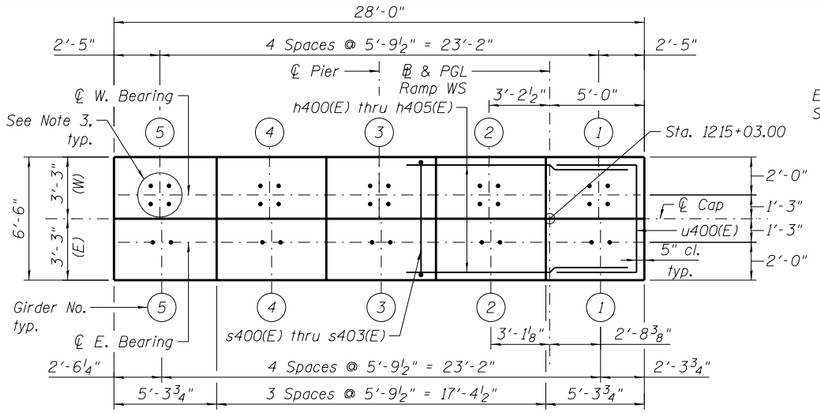
0161715-60X93-S102-Pier-3

1 REVISED ENTIRE SHEET 10/29/18

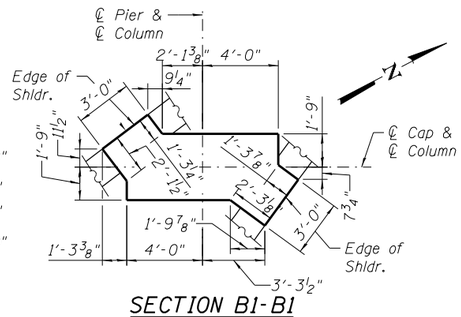


SECTION B2-B2

(See Sheet S3-107 for Column reinforcement details)

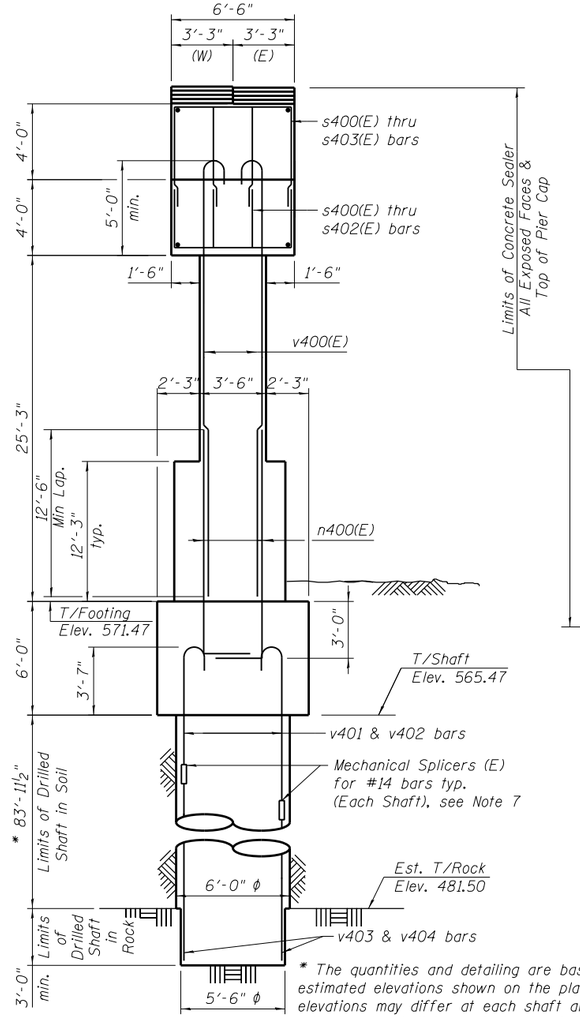


TOP PLAN



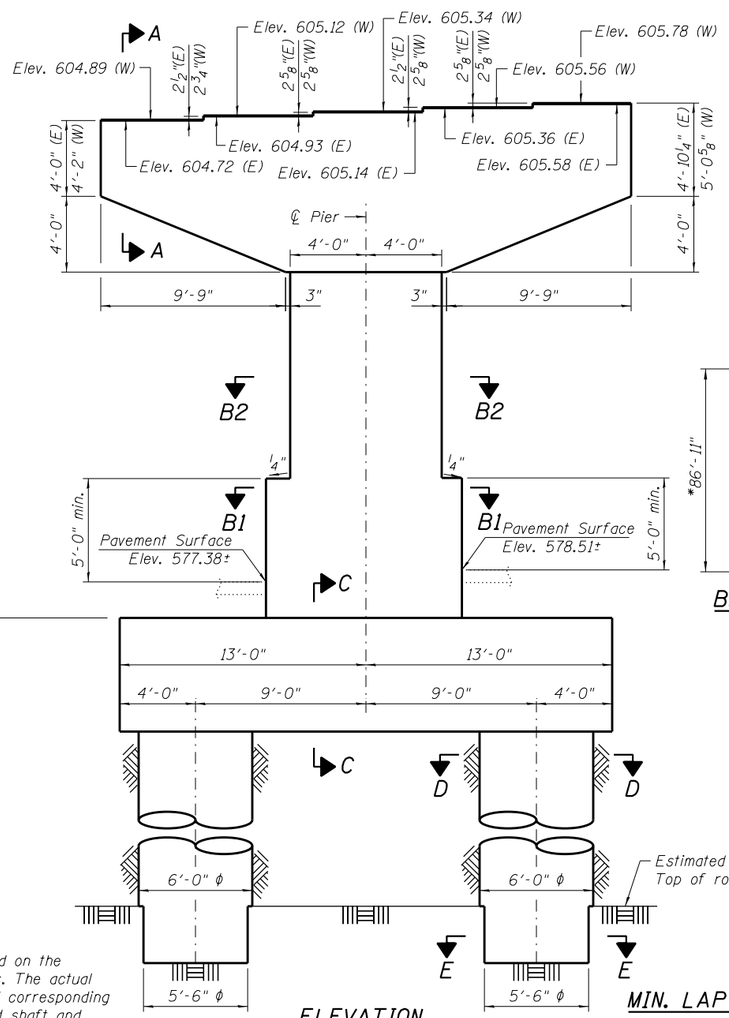
SECTION B1-B1

(See Sheet S3-107 for Column reinforcement details)



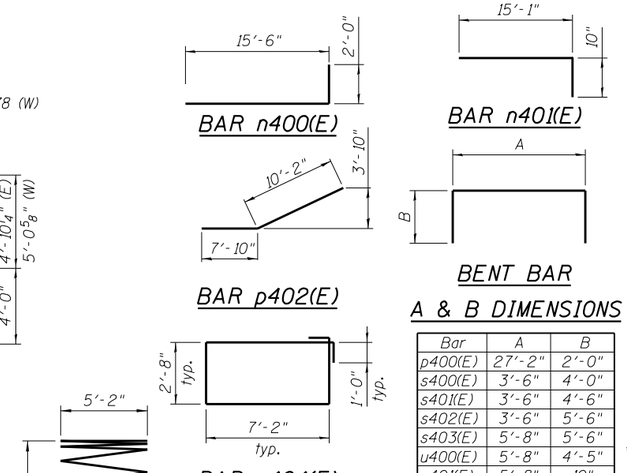
END VIEW

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.

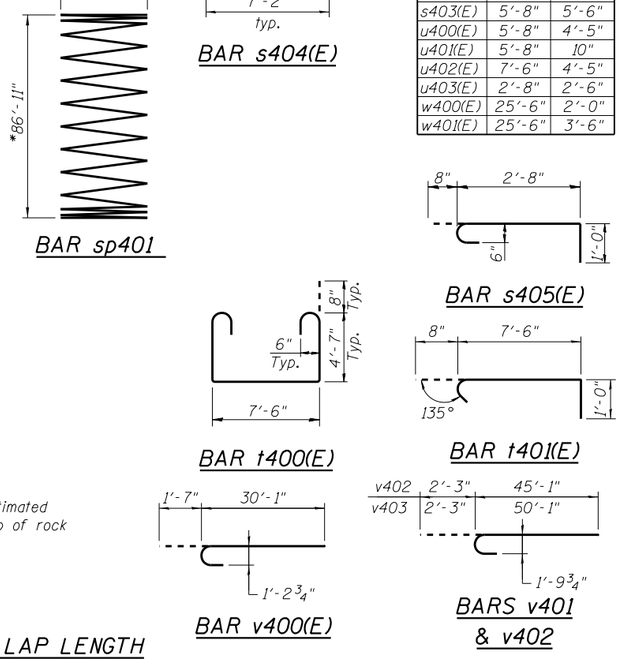


ELEVATION

(Looking Upstation)



Bar	A	B
p400(E)	27'-2"	2'-0"
s400(E)	3'-6"	4'-0"
s401(E)	3'-6"	4'-6"
s402(E)	3'-6"	5'-6"
s403(E)	5'-8"	5'-6"
u400(E)	5'-8"	4'-5"
u401(E)	5'-8"	10"
u402(E)	7'-6"	4'-5"
u403(E)	2'-8"	2'-6"
w400(E)	25'-6"	2'-0"
w401(E)	25'-6"	3'-6"



MIN. LAP LENGTH

#5 bars: 3'-2"
#8 bars: 7'-2"

**Length is height of spiral.

NOTES:

1. Pour steps monolithically with cap.
2. ℄ of Pier is radial to ℄ Ramp WS at Sta. 1215+03.00.
3. For Anchor Bolts Details see sheets S3-93 thru S3-99 .
4. For Architectural Details see sheets S3-137 thru S3-139 .
5. See sheet S3-107 for Sections and Details.
6. (W)-West Girder, (E)-East Girder.
7. For Mechanical Splicers details and quantites see sheet S3-140 .

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h400(E)	14	#7	27'-2"	
h401(E)	2	#7	11'-6"	
h402(E)	2	#7	14'-9"	
h403(E)	2	#7	18'-0"	
h404(E)	2	#7	21'-2"	
h405(E)	2	#7	24'-5"	
h406(E)	21	#5	5'-6"	
h407(E)	14	#5	4'-9"	
h408(E)	16	#7	25'-6"	
n400(E)	46	#11	17'-6"	
n401(E)	20	#5	15'-11"	
p400(E)	8	#11	31'-2"	
p401(E)	8	#11	26'-6"	
p402(E)	16	#8	18'-0"	
s400(E)	40	#5	11'-6"	
s401(E)	48	#5	12'-6"	
s402(E)	96	#5	14'-6"	
s403(E)	18	#5	16'-8"	
s404(E)	50	#6	21'-8"	
s405(E)	200	#6	4'-4"	
** sp400	2	#6	86'-11"	
t400(E)	52	#6	18'-0"	
t401(E)	52	#6	9'-2"	
u400(E)	14	#6	14'-6"	
u401(E)	30	#5	7'-4"	
u402(E)	16	#6	16'-4"	
u403(E)	13	#5	7'-8"	
v400(E)	46	#11	31'-8"	
v401	26	#14	47'-4"	
v402	26	#14	52'-4"	
v403	26	#14	45'-2"	
v404	26	#14	40'-2"	
w400(E)	12	#11	29'-6"	
w401(E)	12	#11	32'-6"	
w402(E)	12	#11	24'-10"	

Concrete Structures	Cu. Yd.	123.2
Reinforcement Bars, Epoxy Coated	Pound	32,230
Reinforcement Bars	Pound	45,420
Drilled Shaft in Soil	Cu. Yd.	175.9
Drilled Shaft in Rock	Cu. Yd.	5.3
Structure Excavation	Cu. Yd.	122
Concrete Sealer	Cu. Yd.	1424
Crosshole Sonic Logging Testing	Each	1
Crosshole Sonic Logging Access Ducts	Foot	174

AECOM

USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - DD	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/28/2018	CHECKED - DD	REVISED	

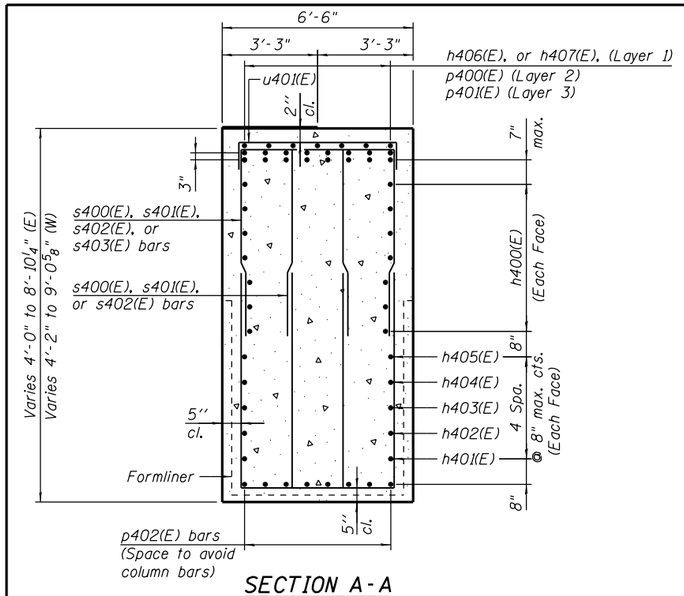
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4
STRUCTURE NO. 016-1715
SHEET NO. S3-106 OF S3-172

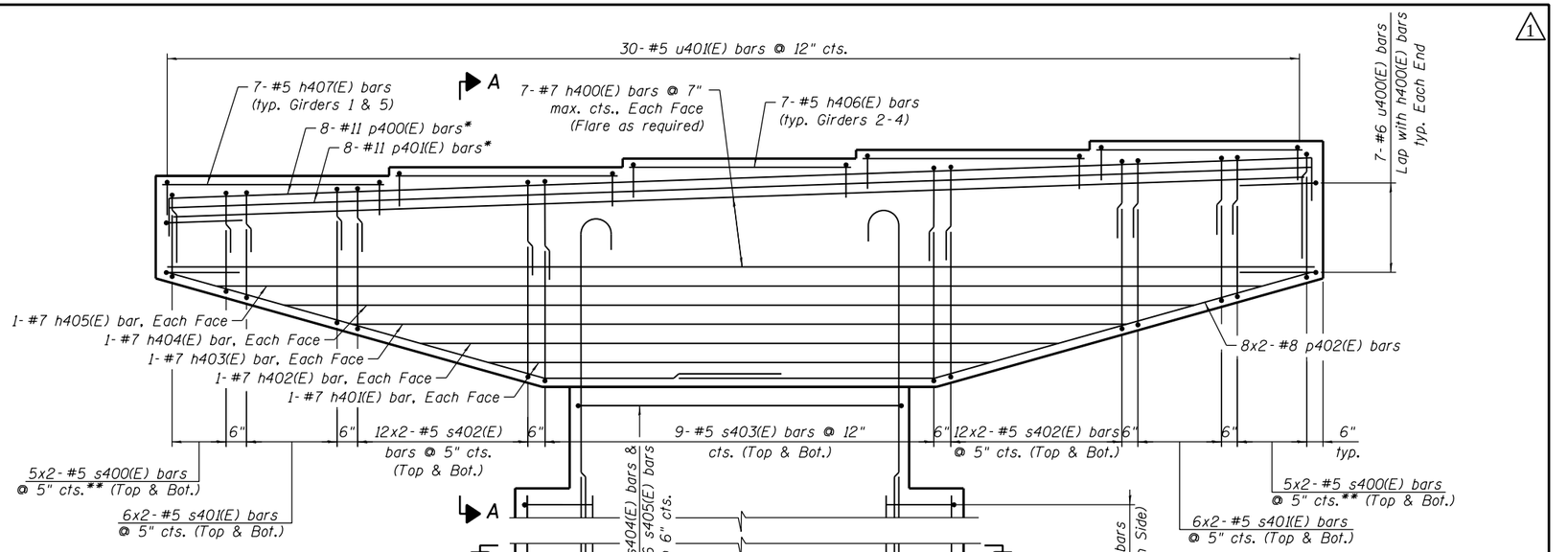
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	848
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

0161715-60X93-S104-Pier-4

1 REVISED ENTIRE SHEET 10/29/18

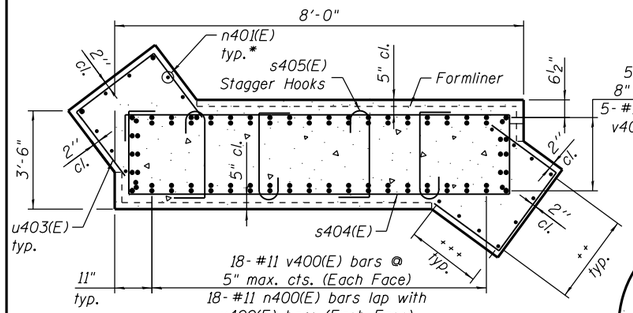


SECTION A-A



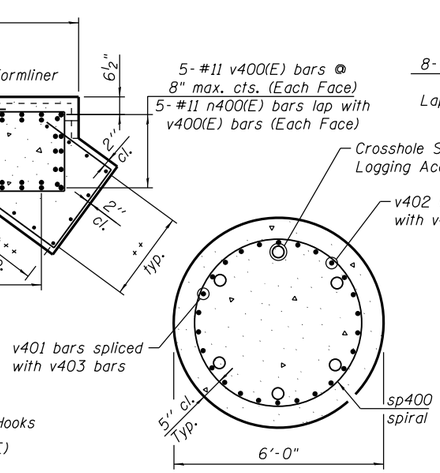
* Slope with bearing steps
** Field cut as required and maintain 3'-2" min. lap

ELEVATION
(Looking Upstation)

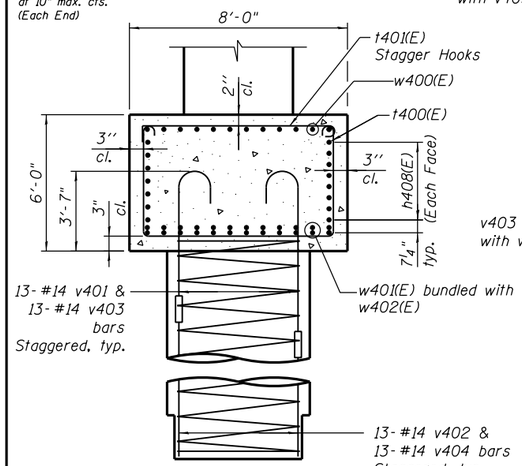


** 2-#5 n401(E) bars at 10" max. cts.
*** 4-#5 n401(E) bars at 10" max. cts. (Each End)

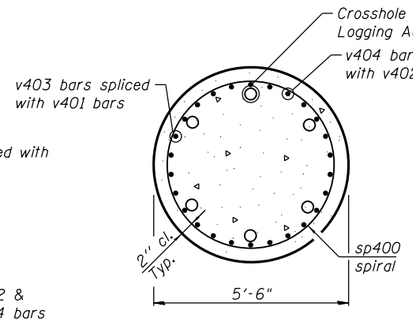
SECTION B-B



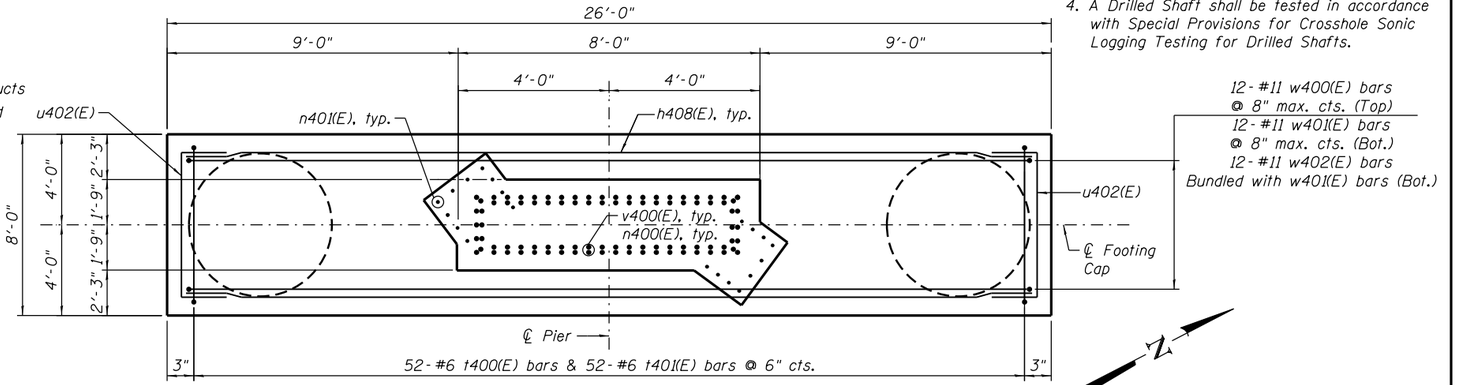
SECTION D-D



SECTION C-C



SECTION E-E



FOOTING PLAN

8-#6 u402(E) bars @ (Each End) Lap with h408(E) bars

12-#11 w400(E) bars @ 8" max. cts. (Top)
12-#11 w401(E) bars @ 8" max. cts. (Bot.)
12-#11 w402(E) bars Bundled with w401(E) bars (Bot.)

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp400 spiral
   1) Provide 1½ extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
   2) When splicing spiral reinforcement is necessary,the spirals shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging Testing for Drilled Shafts.

0161715-60X93-S105-Pier-4

AECOM	USER NAME = bhatta	DESIGNED - AV	REVISED
		CHECKED - DD	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 9/19/2018	CHECKED - DD	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 DETAILS
STRUCTURE NO. 016-1715
SHEET NO. S3-107 OF S3-172

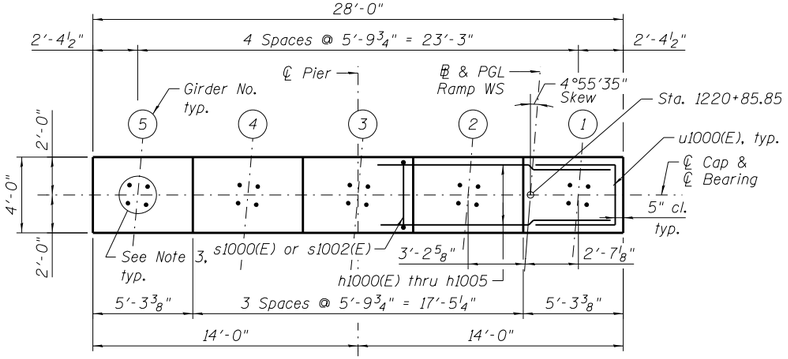
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	849
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

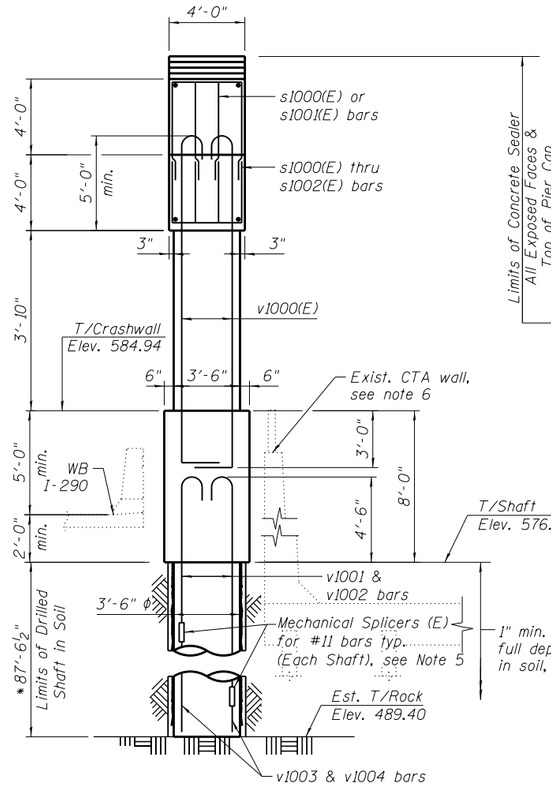
NOTES:

1. Pour steps monolithically with cap.
2. For Anchor Bolts Details see sheets S3-93 thru S3-99.
3. For Architectural Details see sheets S3-137 thru S3-139.
4. See sheet S3-119 for Sections and Details.
5. For Mechanical Splicers Details and Quantaties see sheet S3-140.
6. For clearances to Exist. CTA Wall see sheet S3-10.
7. The Contractor shall install permanent casing as a shaft excavation support method using procedures described in the Special Provisions for Foundation Drilling Procedures.
8. Granular Backfill shall be added between the crashwall and the CTA tunnel. This work shall be completed in accordance with the Special Provision Granular Backfill, Special.

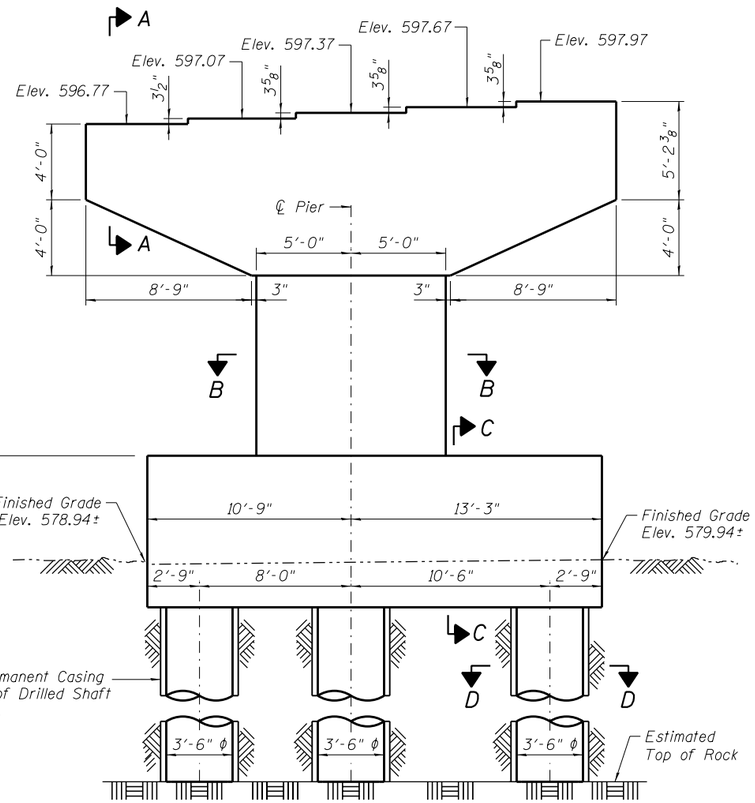
* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



TOP PLAN

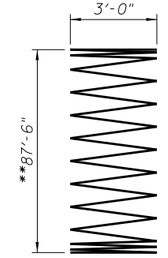


END VIEW

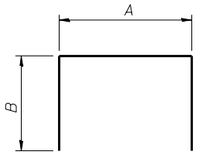


ELEVATION

(Looking Upstation)



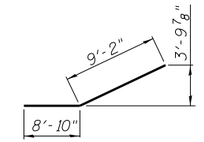
BAR sp1000



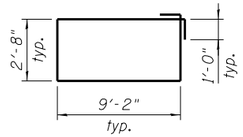
BARS

A & B DIMENSIONS

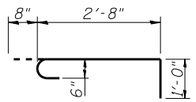
Bar	A	B
p1000(E)	27'-6"	2'-0"
s1000(E)	2'-1"	4'-6"
s1001(E)	2'-1"	5'-11"
s1002(E)	3'-2"	5'-11"
t1001(E)	3'-6"	7'-7"
t1002(E)	3'-6"	2'-0"
u1000(E)	3'-2"	4'-5"
u1001(E)	3'-2"	10"
u1002(E)	3'-6"	4'-5"
w1000(E)	23'-6"	2'-0"
w1001(E)	23'-6"	6'-6"



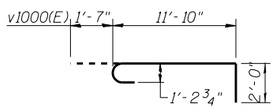
BAR p1001(E)



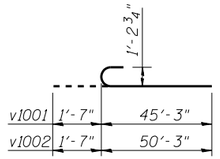
BAR s1003(E)



BAR s1004(E)



BAR v1000(E)



BARS v1001 & v1002

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h1000(E)	16	#7	27'-2"	
	h1001(E)	2	#7	13'-2"	
	h1002(E)	2	#7	16'-1"	
	h1003(E)	2	#7	18'-11"	
	h1004(E)	2	#7	21'-10"	
	h1005(E)	2	#7	24'-9"	
	h1006(E)	12	#5	5'-6"	
	h1007(E)	8	#5	4'-9"	
	h1008(E)	28	#7	23'-6"	
	p1000(E)	10	#11	31'-6"	
	p1001(E)	20	#8	18'-0"	
	s1000(E)	56	#5	11'-1"	
	s1001(E)	80	#5	13'-11"	
	s1002(E)	22	#5	15'-0"	
	s1003(E)	9	#6	25'-8"	
	s1004(E)	36	#6	4'-4"	
**	sp1000	3	#6	87'-6"	
	t1000(E)	48	#10	18'-8"	
	t1001(E)	48	#6	7'-6"	
	u1000(E)	16	#6	12'-0"	
	u1001(E)	30	#5	4'-10"	
	u1002(E)	28	#6	12'-4"	
	v1000(E)	30	#11	15'-5"	
	v1001	21	#11	46'-10"	
	v1002	21	#11	51'-10"	
	v1003	21	#11	46'-6"	
	v1004	21	#11	41'-6"	
	w1000(E)	12	#11	27'-6"	
	w1001(E)	12	#11	36'-6"	
	w1002(E)	12	#11	22'-10"	

Concrete Structures	Cu. Yd.	63.9
Reinforcement Bars, Epoxy Coated	Pound	21,450
Reinforcement Bars	Pound	28,390
Drilled Shaft in Soil	Cu. Yd.	93.6
Earth Excavation (Special)	Cu. Yd.	50
Permanent Casing	Foot	263
Concrete Sealer	Sq. ft.	754
Granular Backfill Special	Cu. Yd.	2.7
Crosshole Sonic Logging Testing	Each	1
Crosshole Sonic Logging Access Ducts	Foot	88

** Length is height of spiral.

MIN. LAP LENGTH

#5 bars: 3'-2"
#8 bars: 7'-2"

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED
		CHECKED - DD	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 8/27/2018	CHECKED - DD	REVISED

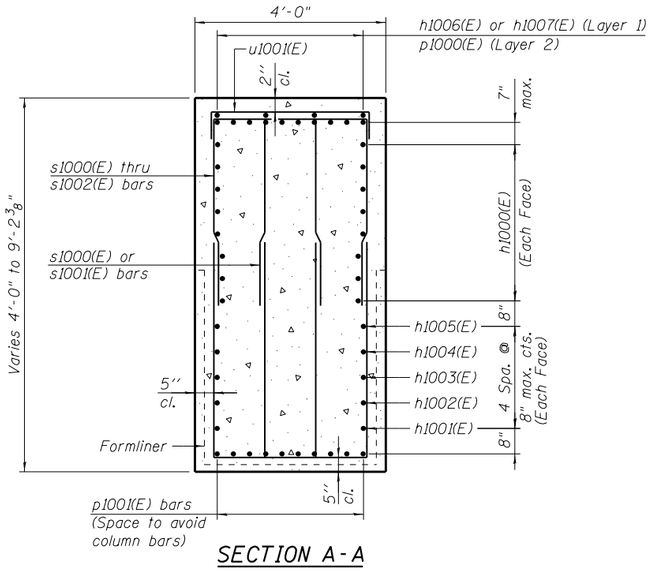
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10
STRUCTURE NO. 016-1715
SHEET NO. S3-118 OF S3-172

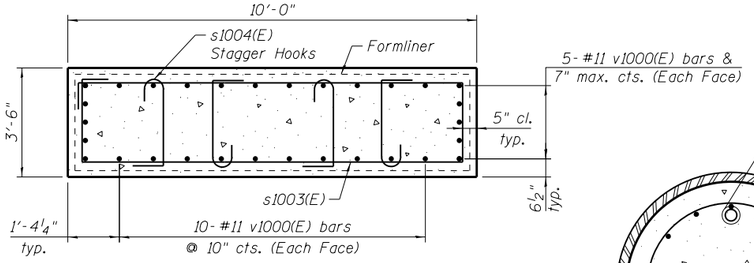
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	860
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

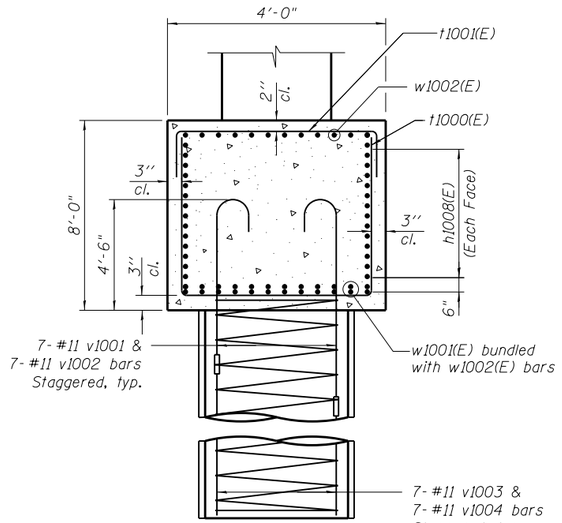
0161715-60X93-S116-Pier-10



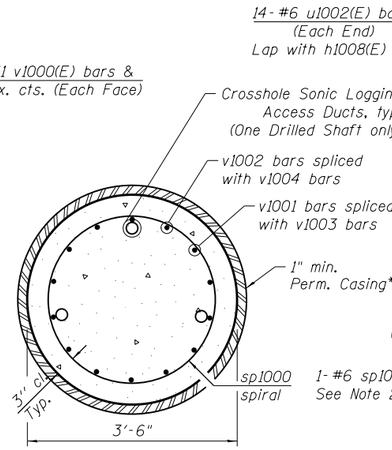
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

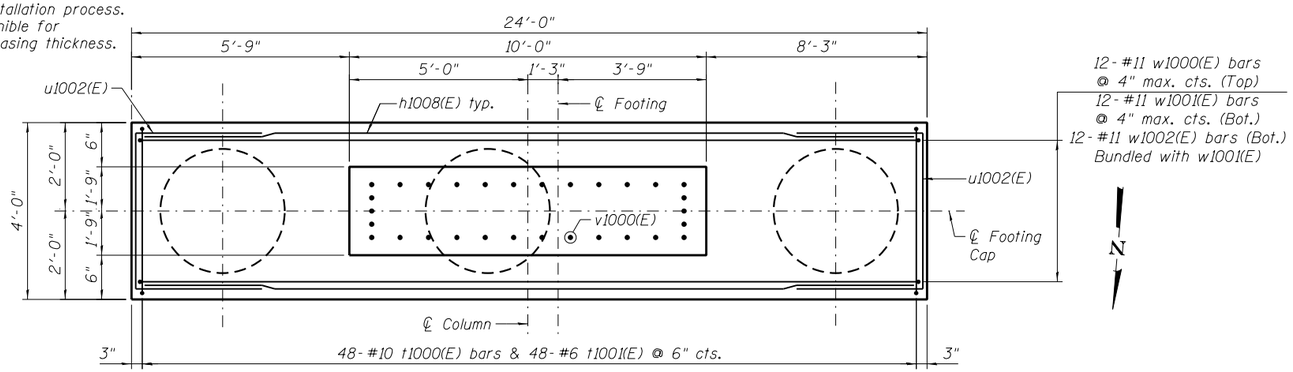
* Contractor may need to increase the permanent casing thickness to withstand the installation process. Contractor is responible for determining actual casing thickness.

ELEVATION
(Looking Upstation)

* Slope with bearing steps.
** Field cut as required and maintain 3'-2" lap.

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp1000 spiral
   1) Provide $1\frac{1}{2}$ extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
   2) When splicing spiral reinforcement is necessary, the spirals shall be provided with $1\frac{1}{2}$ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging Testing of Drillied Shafts.



CRASHWALL PLAN

USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED	

AECOM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 10 DETAILS
STRUCTURE NO. 016-1715
SHEET NO. S3-119 OF S3-172

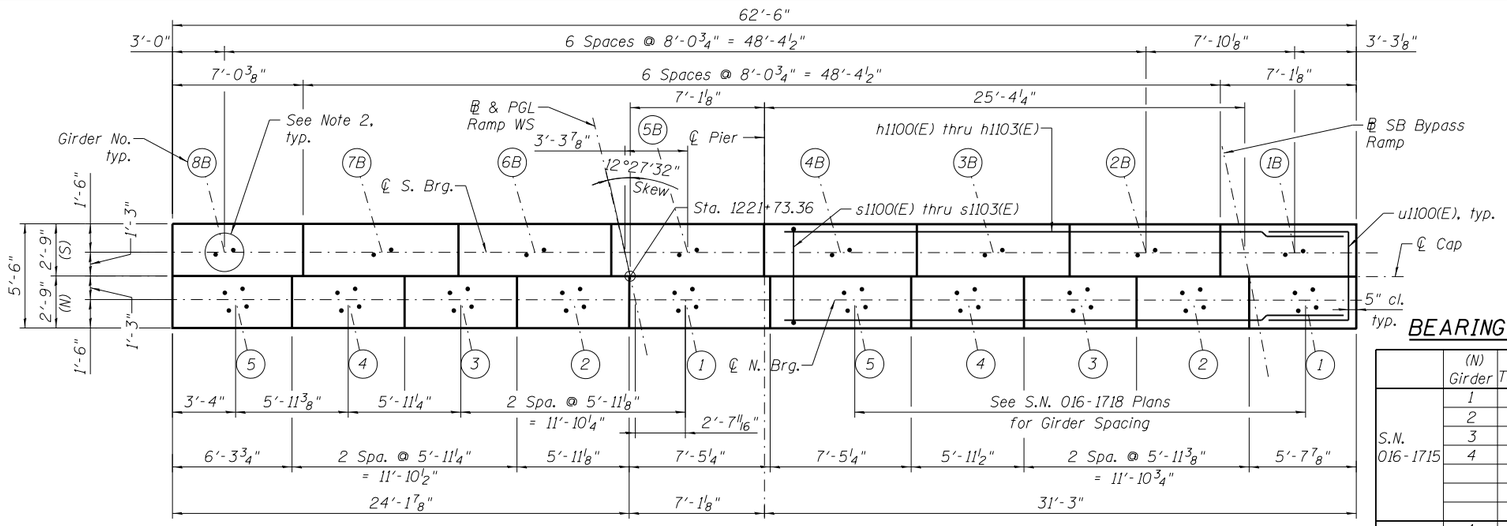
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	861
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/29/18

NOTES:

1. Pour steps monolithically with cap.
2. For Anchor Bolts Details see sheets S3-93 thru S3-99 .
3. For Architectural Details see sheets S3-137 thru S3-139 .
4. See sheet S3-121 & S3-122 for Sections and Details.
5. (N)-North Girder, (S)-South Girder
6. For Mechanical Splicers Details & Quantities see sheet S3-140 .
7. For clearances to Exist. CTA Wall see sheet S3-10 .
8. The Contractor shall install permanent casing as a shaft excavation support method using procedures described in the Special Provisions for Foundation Drilling Procedures.
9. Granular Backfill shall be added between the crashwall and the CTA tunnel. This work shall be completed in accordance with the Special Provision Granular Backfill, Special.

** The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.

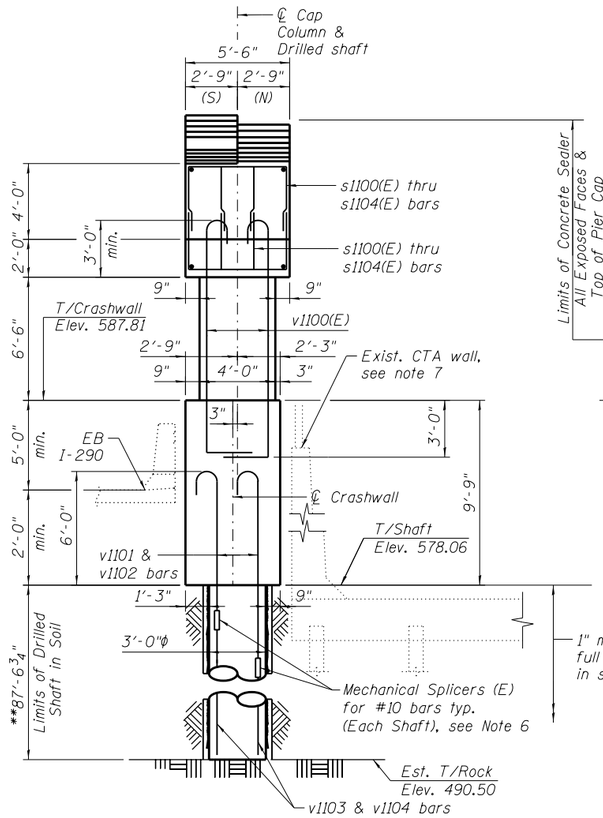


TOP PLAN

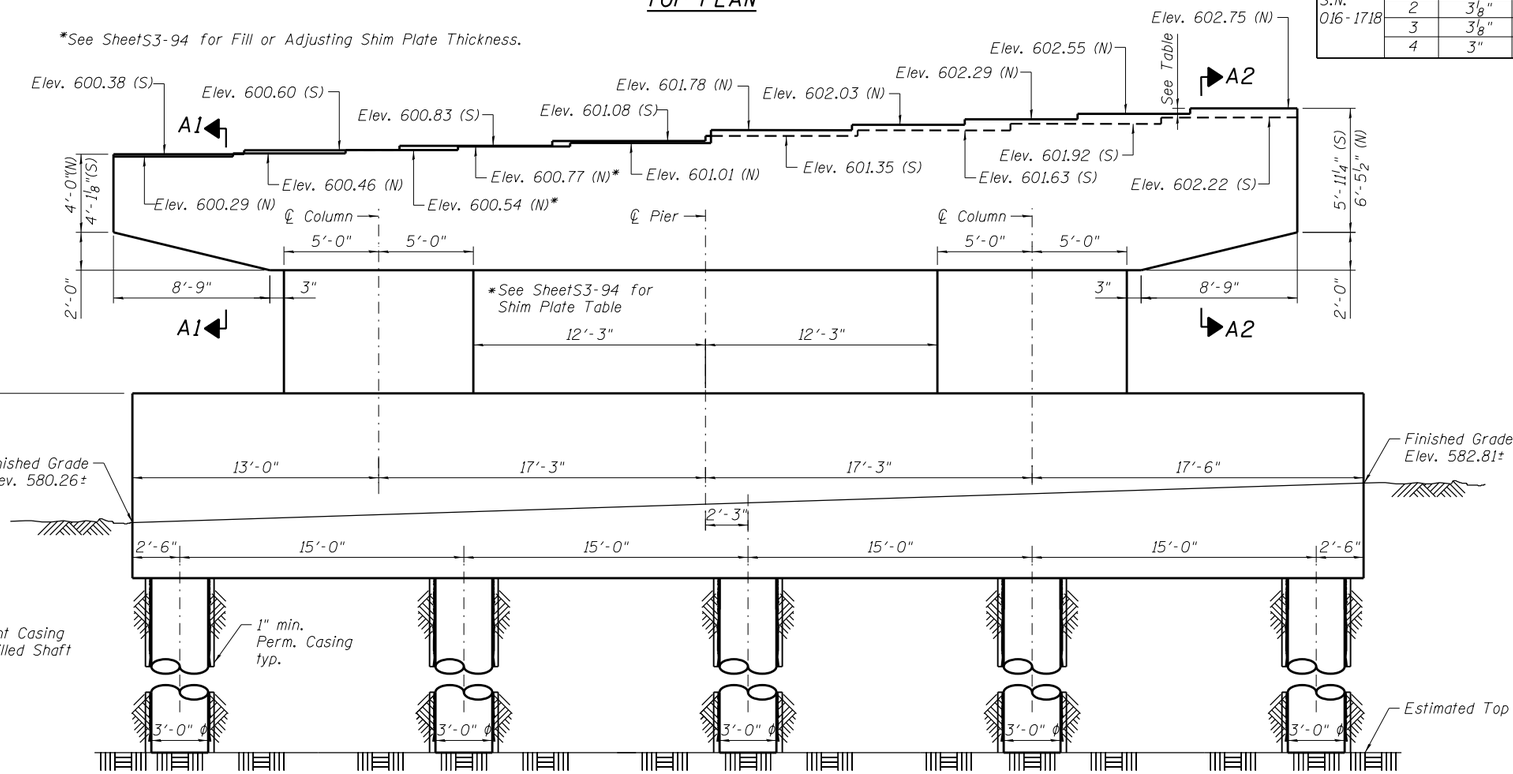
*See Sheet S3-94 for Fill or Adjusting Shim Plate Thickness.

BEARING STEPS TABLE

	(N) Girder	Seat Thickness	(S) Girder	Seat Thickness
S.N. 016-1715	1	2 7/8"	1B	3 5/8"
	2	2 3/4"	2B	3 1/2"
	3	7/8"	3B	3 3/8"
	4	2"	4B	3 1/4"
			5B	3"
			6B	2 3/4"
			7B	2 5/8"
S.N. 016-1718	1	2 3/8"		
	2	3 1/8"		
	3	3 1/8"		
	4	3"		



END VIEW



ELEVATION

(Looking Upstation)

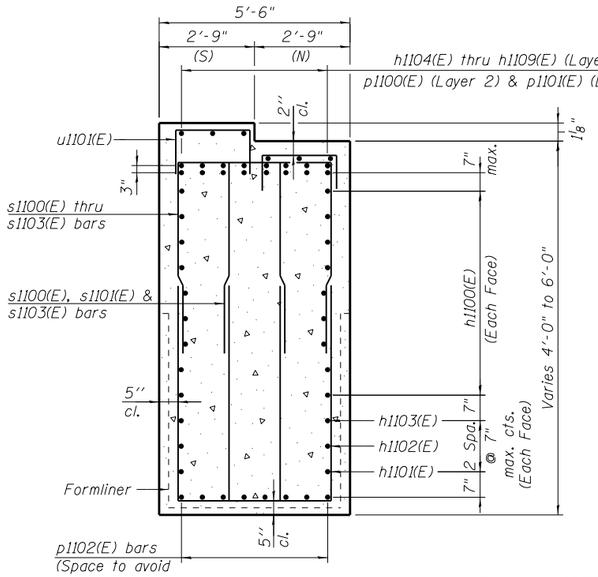
AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - ATB	REVISED	
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
	PLOT DATE = 8/27/2018	CHECKED - ATB	REVISED	

PIER 11
STRUCTURE NO. 016–1715
SHEET NO. S3-120 OF S3-172

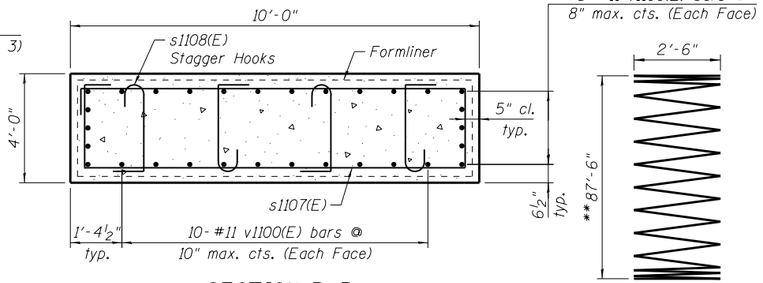
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	862
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

0161715-60X93-S118-Pier-11

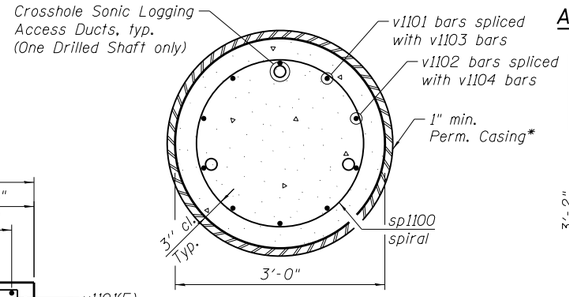


SECTION A1-A1



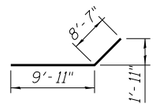
SECTION B-B

BAR sp1100

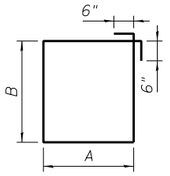


SECTION D-D

* Contractor may need to increase the permanent casing thickness to withstand the installation process. Contractor is responsible for determining actual casing thickness.

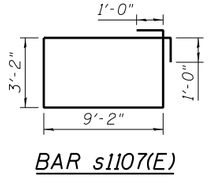


BAR p1102(E)

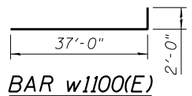


BARS
A & B DIMENSIONS

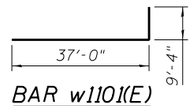
Bar	A	B
s1104(E)	2'-10"	3'-3"
s1105(E)	2'-10"	3'-6"
s1106(E)	2'-10"	3'-10"



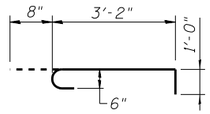
BAR s1107(E)



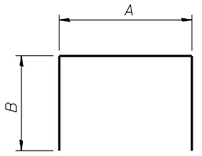
BAR w1100(E)



BAR w1101(E)

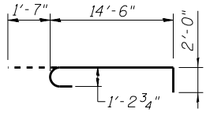


BAR s1108(E)

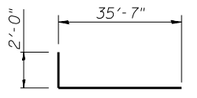


BARS
A & B DIMENSIONS

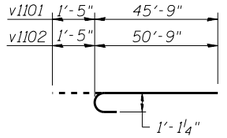
Bar	A	B
s1100(E)	2'-10"	4'-6"
s1101(E)	2'-10"	4'-10"
s1102(E)	4'-8"	5'-0"
s1103(E)	2'-10"	5'-0"
t1100(E)	4'-6"	9'-4"
t1101(E)	4'-6"	2'-0"
u1100(E)	4'-8"	4'-5"
u1101(E)	2'-2"	10"
u1102(E)	4'-6"	4'-5"



BAR v1100(E)



BAR p1100(E)



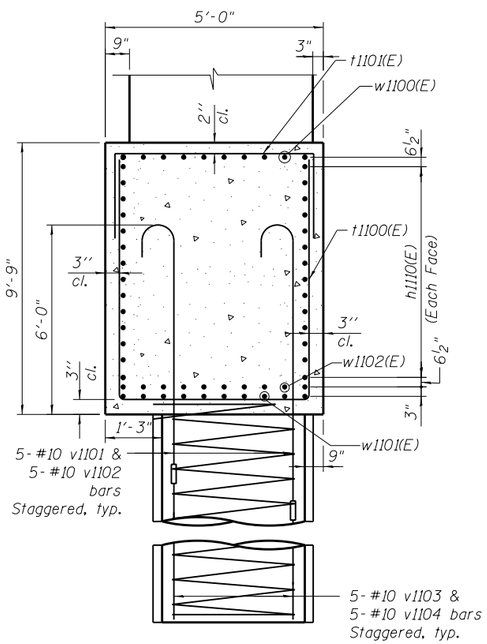
BARS v1101 & v1102

BILL OF MATERIAL

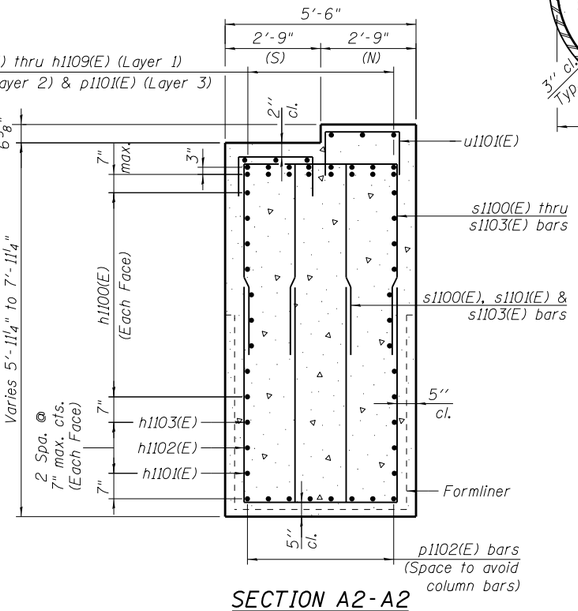
Bar	No.	Size	Length	Shape
h1100(E)	36	#7	33'-4"	
h1101(E)	4	#7	27'-6"	
h1102(E)	4	#7	29'-6"	
h1103(E)	4	#7	31'-7"	
h1104(E)	18	#5	5'-7"	
h1105(E)	3	#5	5'-9"	
h1106(E)	6	#5	7'-1"	
h1107(E)	3	#5	5'-1"	
h1108(E)	3	#5	6'-6"	
h1109(E)	18	#5	7'-8"	
h1110(E)	64	#7	34'-9"	
p1100(E)	16	#11	37'-7"	
p1101(E)	16	#11	35'-3"	
p1102(E)	16	#11	18'-6"	
p1103(E)	8	#11	44'-0"	
s1100(E)	16	#5	11'-10"	
s1101(E)	48	#5	12'-6"	
s1102(E)	44	#5	14'-8"	
s1103(E)	128	#5	12'-10"	
s1104(E)	1	#5	13'-2"	
s1105(E)	1	#5	13'-8"	
s1106(E)	1	#5	14'-4"	
s1107(E)	38	#6	26'-8"	
s1108(E)	152	#6	4'-10"	
** sp1100	5	#6	87'-6"	
t1100(E)	156	#10	23'-2"	
t1101(E)	156	#6	8'-6"	
u1100(E)	18	#6	13'-6"	
u1101(E)	126	#5	3'-10"	
u1102(E)	32	#6	13'-4"	
v1100(E)	60	#11	18'-1"	
v1101	25	#10	47'-2"	
v1102	25	#10	52'-2"	
v1103	25	#10	47'-6"	
v1104	25	#10	42'-6"	
w1100(E)	20	#11	39'-0"	
w1101(E)	20	#11	46'-4"	
w1102(E)	20	#11	36'-11"	

Concrete Structures	Cu. Yd.	223.3
Reinforcement Bars, Epoxy Coated	Pound	61,390
Reinforcement Bars	Pound	30,870
Drilled Shaft in Soil	Cu. Yd.	114.7
Earth Excavation, (Special)	Cu. Yd.	69
Permanent Casing	Foot	438
Concrete Sealer	Sq. ft.	1867
Granular Backfill Special	Cu. Yd.	2.1
Crosshole Sonic Logging Testing	Each	1
Crosshole Sonic Logging Access Ducts	Foot	88

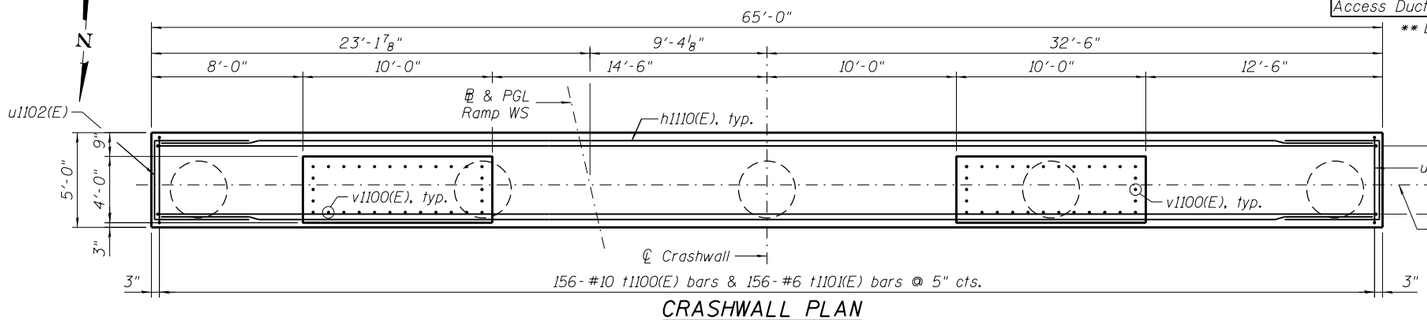
** Length is height of spiral.



SECTION C-C



SECTION A2-A2



CRASHWALL PLAN

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED	
		CHECKED - ATB	REVISED	
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
	PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED	

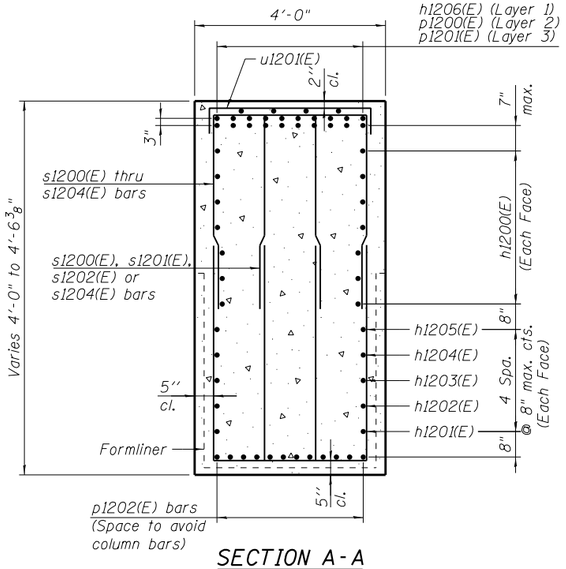
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 11 DETAILS – 2
STRUCTURE NO. 016–1715
SHEET NO. S3-122 OF S3-172

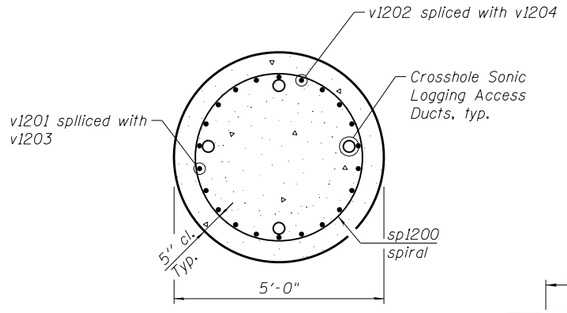
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	864
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

0161715-60X93-S120-Pier-11

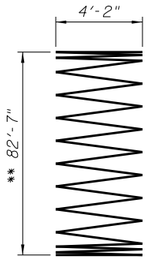
1 REVISED ENTIRE SHEET 10/29/18



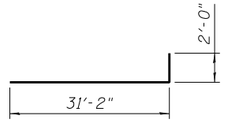
SECTION A-A



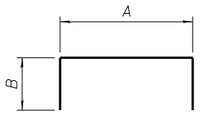
SECTION D-D



BAR sp1200



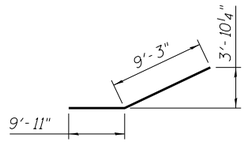
BAR p1200(E)



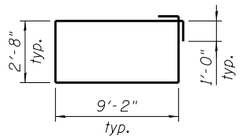
BENT BAR

A & B DIMENSIONS

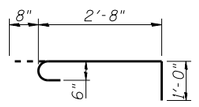
Bar	A	B
s1200(E)	2'-1"	3'-10"
s1201(E)	2'-1"	4'-7"
s1202(E)	2'-1"	5'-4"
s1203(E)	3'-2"	5'-10"
s1204(E)	2'-1"	5'-9"
w1200(E)	41'-6"	2'-0"
w1201(E)	41'-6"	3'-6"
u1200(E)	4'-2"	4'-5"
u1201(E)	3'-2"	10"
u1202(E)	6'-6"	4'-5"



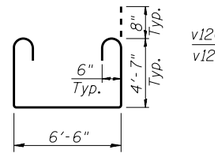
BAR p1202(E)



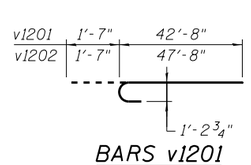
BAR s1205(E)



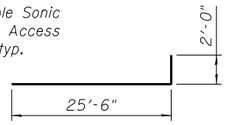
BAR s1206(E)



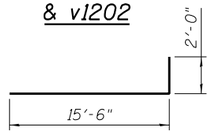
BAR t1200(E)



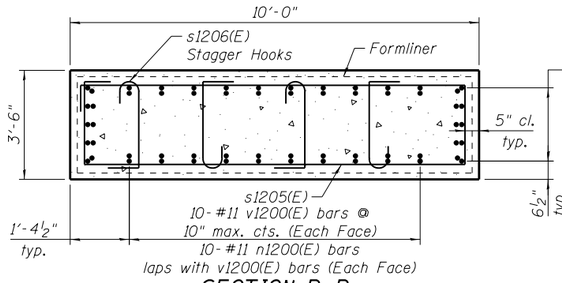
BARS v1201
& v1202



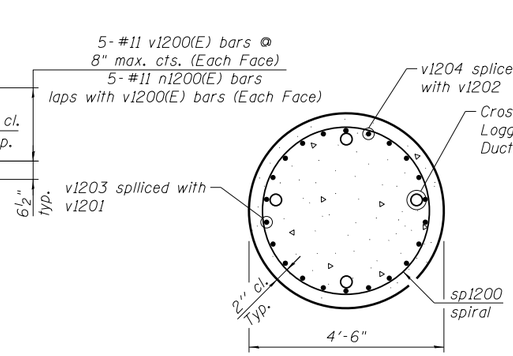
BAR w1200(E)



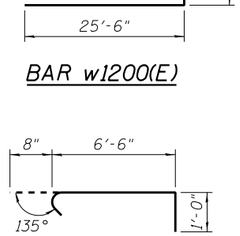
BAR n1200(E)



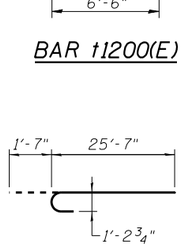
SECTION B-B



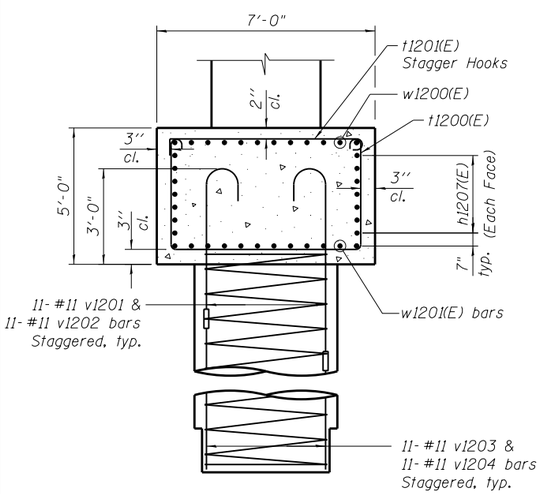
SECTION E-E



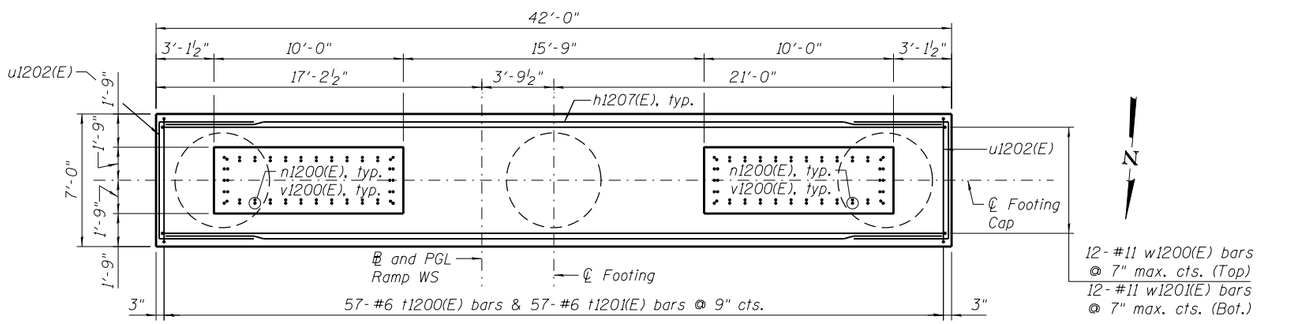
BAR t1201(E)



BAR v1200(E)



SECTION C-C



FOOTING PLAN

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1200(E)	28	#7	31'-2"	
h1201(E)	4	#7	22'-0"	
h1202(E)	4	#7	23'-5"	
h1203(E)	4	#7	24'-10"	
h1204(E)	4	#7	26'-4"	
h1205(E)	4	#7	27'-9"	
h1206(E)	4	#5	7'-5"	
h1207(E)	32	#7	23'-3"	
n1200(E)	60	#11	17'-6"	
p1200(E)	20	#11	33'-2"	
p1201(E)	20	#11	30'-10"	
p1202(E)	20	#11	19'-2"	
p1203(E)	10	#11	35'-3"	
s1200(E)	36	#5	9'-9"	
s1201(E)	48	#5	11'-3"	
s1202(E)	52	#5	12'-9"	
s1203(E)	44	#5	14'-10"	
s1204(E)	124	#6	13'-7"	
s1205(E)	44	#6	25'-8"	
s1206(E)	176	#6	4'-4"	
** sp1200	3	#6	82'-7"	
t1200(E)	57	#6	17'-0"	
t1201(E)	57	#6	8'-2"	
u1200(E)	14	#6	13'-0"	
u1201(E)	8	#5	4'-10"	
u1202(E)	16	#6	15'-4"	
v1200(E)	60	#11	27'-2"	
v1201	33	#11	44'-3"	
v1202	33	#11	49'-3"	
v1203	33	#11	42'-8"	
v1204	33	#11	37'-8"	
w1200(E)	12	#11	45'-6"	
w1201(E)	12	#11	48'-6"	
Concrete Structures			Cu. Yd.	169.1
Reinforcement Bars, Epoxy Coated			Pound	45,810
Reinforcement Bars			Pound	40,400
Drilled Shaft in Soil			Cu. Yd.	175.9
Drilled Shaft in Rock			Cu. Yd.	3.6
Structure Excavation			Cu. Yd.	143.0
Concrete Sealer			Sq. ft.	2322
Crosshole Sonic Logging Testing			Each	1
Crosshole Sonic Logging Access Ducts			Foot	248

** Length is height of spiral.

0161715-60X93-S123-Pier-12

AECOM

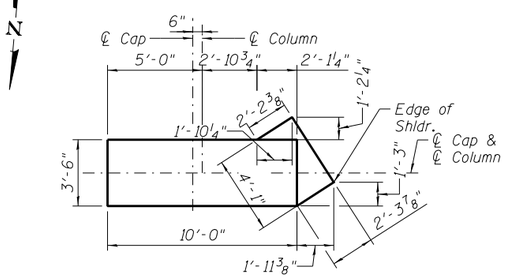
USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/29/2018	CHECKED - ATB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 12 DETAILS – 2
STRUCTURE NO. 016–1715
SHEET NO. S3-125 OF S3-172

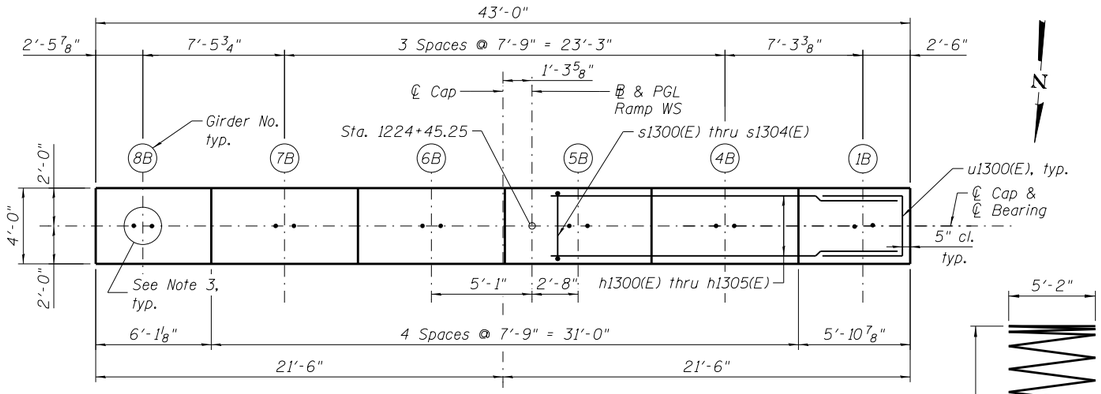
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	867
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/29/18

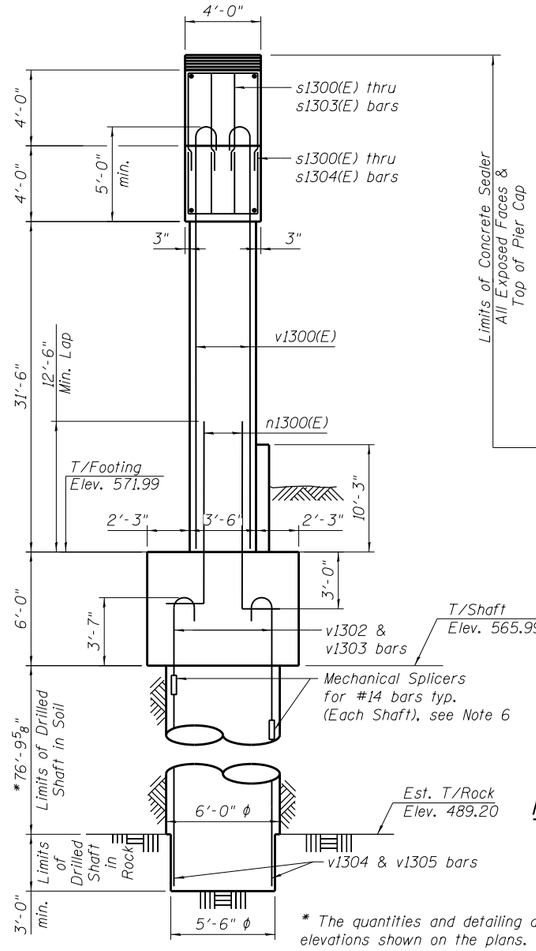


SECTION B-B

See Sheet S3-127 for reinforcement details



TOP PLAN

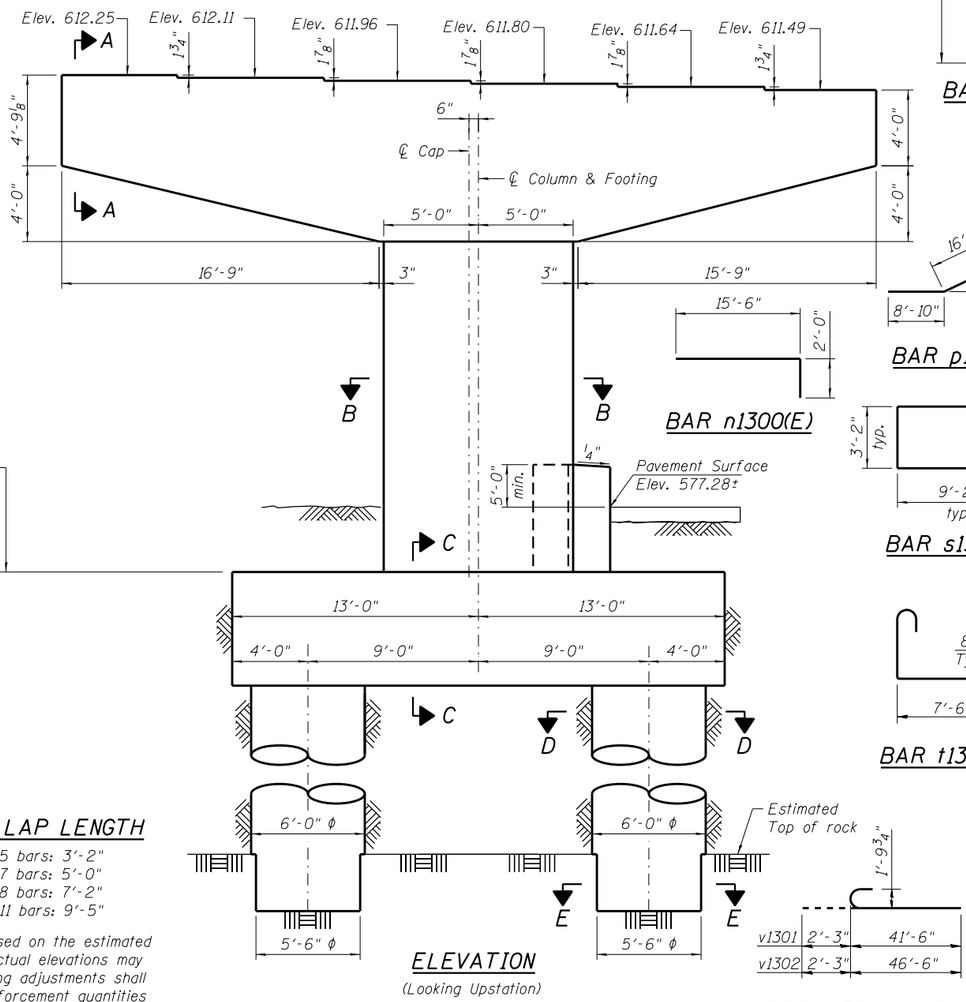


END VIEW

MIN. LAP LENGTH

#5 bars: 3'-2"
#7 bars: 5'-0"
#8 bars: 7'-2"
#11 bars: 9'-5"

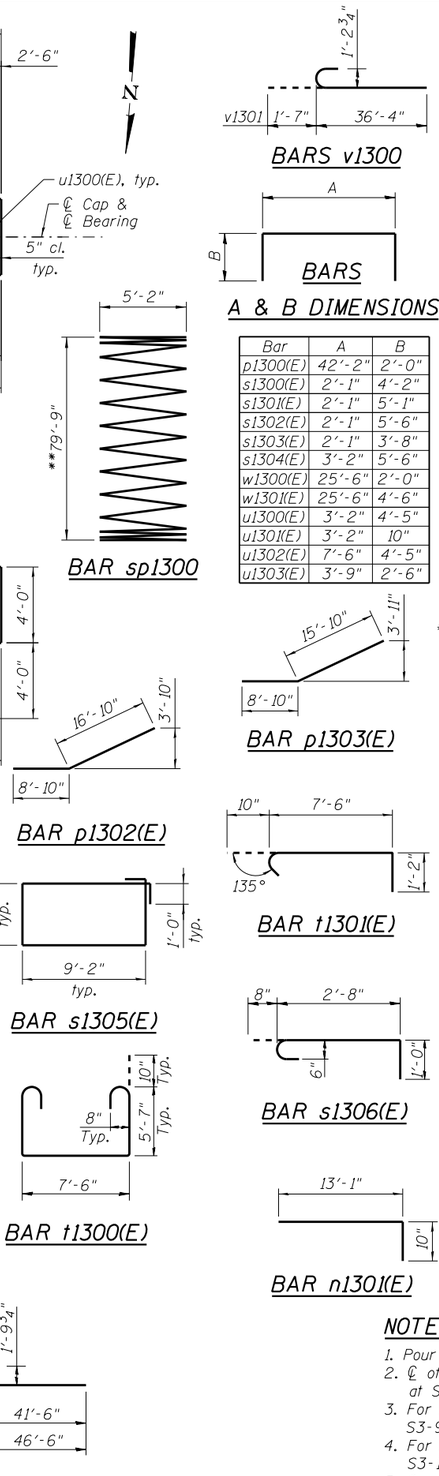
* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



ELEVATION

(Looking Upstation)

BARS v1301 & v1302



BAR sp1300

BAR p1302(E)

BAR s1305(E)

BAR t1300(E)

BARS v1300

BARS A & B DIMENSIONS

Bar	A	B
p1300(E)	42'-2"	2'-0"
s1300(E)	2'-1"	4'-2"
s1301(E)	2'-1"	5'-1"
s1302(E)	2'-1"	5'-6"
s1303(E)	2'-1"	3'-8"
s1304(E)	3'-2"	5'-6"
w1300(E)	25'-6"	2'-0"
w1301(E)	25'-6"	4'-6"
u1300(E)	3'-2"	4'-5"
u1301(E)	3'-2"	10"
u1302(E)	7'-6"	4'-5"
u1303(E)	3'-9"	2'-6"

BAR p1303(E)

BAR n1300(E)

BAR t1301(E)

BAR s1306(E)

BAR n1301(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1300(E)	28	#7	25'-7"	
h1301(E)	2	#7	15'-9"	
h1302(E)	2	#7	21'-2"	
h1303(E)	2	#7	26'-7"	
h1304(E)	2	#7	32'-0"	
h1305(E)	2	#7	37'-4"	
h1306(E)	5	#5	7'-5"	
h1307(E)	16	#7	25'-6"	
n1300(E)	58	#11	17'-6"	
n1301(E)	10	#5	12'-5"	
p1300(E)	10	#11	46'-2"	
p1301(E)	20	#11	41'-6"	
p1302(E)	10	#8	25'-8"	
p1303(E)	10	#8	24'-8"	
s1300(E)	72	#5	10'-5"	
s1301(E)	156	#5	12'-3"	
s1302(E)	44	#5	13'-1"	
s1303(E)	32	#5	9'-5"	
s1304(E)	22	#5	14'-2"	
s1305(E)	63	#6	26'-8"	
s1306(E)	252	#6	4'-4"	
** sp1300	2	#6	79'-9"	
t1300(E)	52	#7	20'-4"	
t1301(E)	52	#7	9'-6"	
u1300(E)	14	#6	12'-0"	
u1301(E)	8	#5	4'-10"	
u1302(E)	16	#6	16'-4"	
u1303(E)	10	#5	8'-9"	
v1300(E)	58	#11	37'-11"	
v1301	26	#14	43'-9"	
v1302	26	#14	48'-9"	
v1303	26	#14	41'-7"	
v1304	26	#14	36'-7"	
w1300(E)	22	#11	29'-6"	
w1301(E)	22	#11	34'-6"	
w1302(E)	22	#11	24'-10"	
Concrete Structures		Cu. Yd.	133.1	
Reinforcement Bars, Epoxy Coated		Pound	50,810	
Reinforcement Bars		Pound	41,870	
Drilled Shaft in Soil		Cu. Yd.	160.9	
Drilled Shaft in Rock		Cu. Yd.	5.3	
Structure Excavation		Cu. Yd.	148.0	
Concrete Sealer		Sq. ft.	1810	
Crosshole Sonic Logging Testing		Each	1	
Crosshole Sonic Logging Access Ducts		Foot	160	

** Length is height of spiral.

NOTES:

1. Pour steps monolithically with cap.
2. ℄ of Pier is radial to ℄ Ramp WS at Sta. 1224+45.25.
3. For Anchor Bolts Details see sheets S3-93 to S3-99 .
4. For Architectural Details see sheets S3-137 thru S3-139 .
5. See sheet S3-127 for Sections and Details.
6. For Mechanical Splicer Details & Quantities see sheet S3-140 .

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED

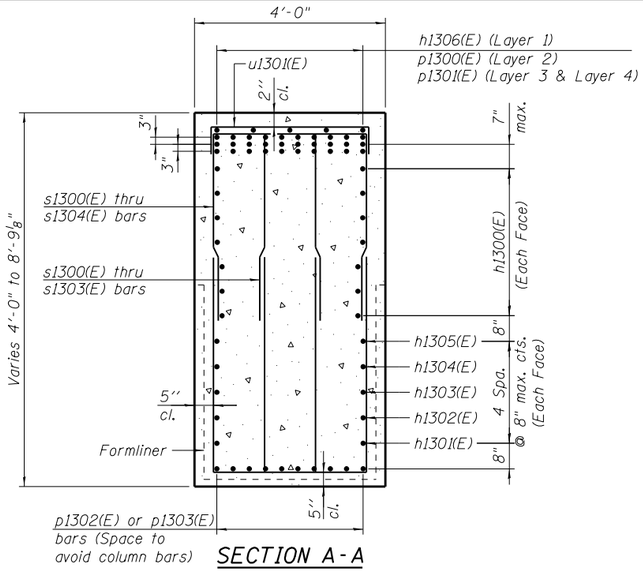
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 13
STRUCTURE NO. 016-1715
SHEET NO. S3-126 OF S3-172

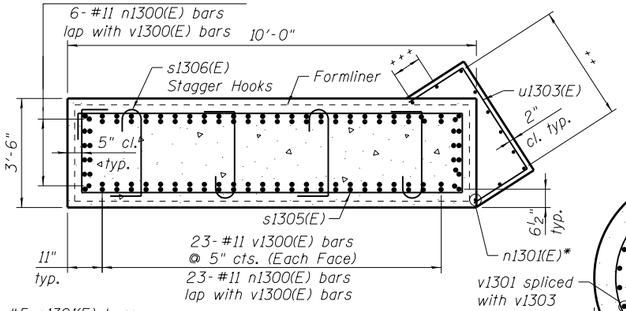
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	868
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

0161715-60X93-S124-Pier-13



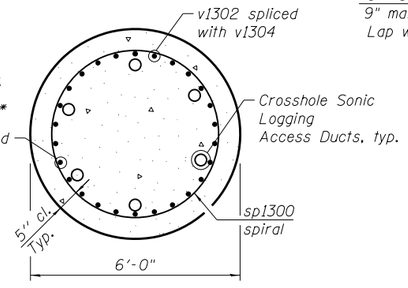
SECTION A-A



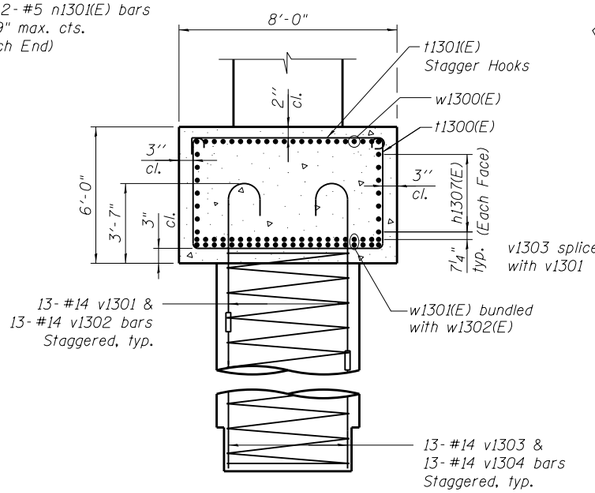
++ 6-#5 n1301(E) bars at 9" max. cts.

++ 2-#5 n1301(E) bars at 9" max. cts. (Each End)

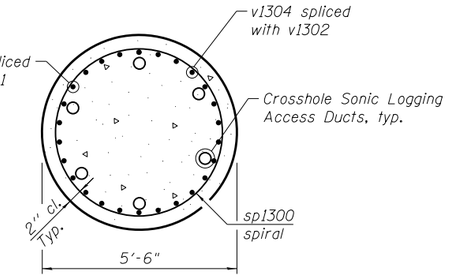
SECTION B-B



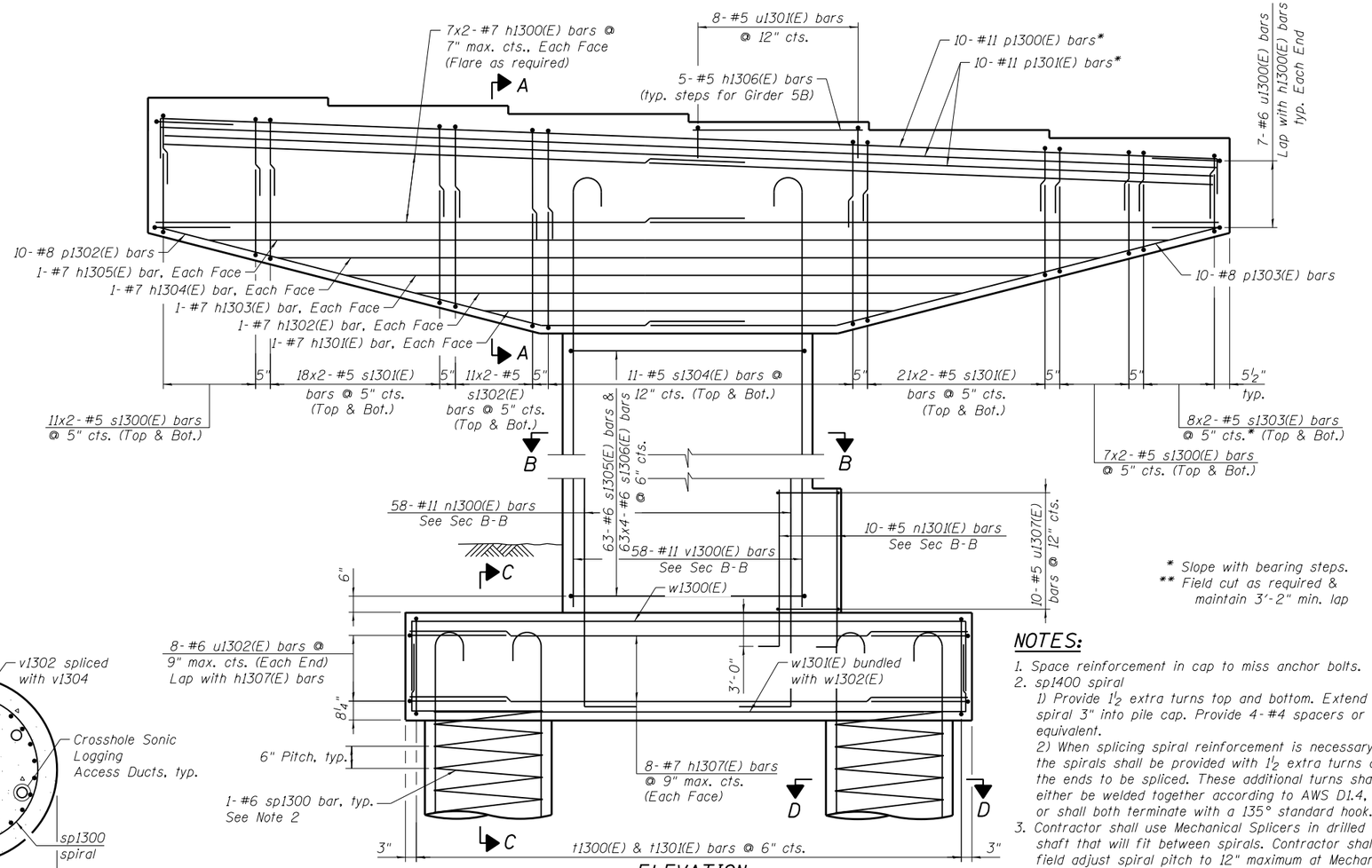
SECTION D-D



SECTION C-C



SECTION E-E



ELEVATION

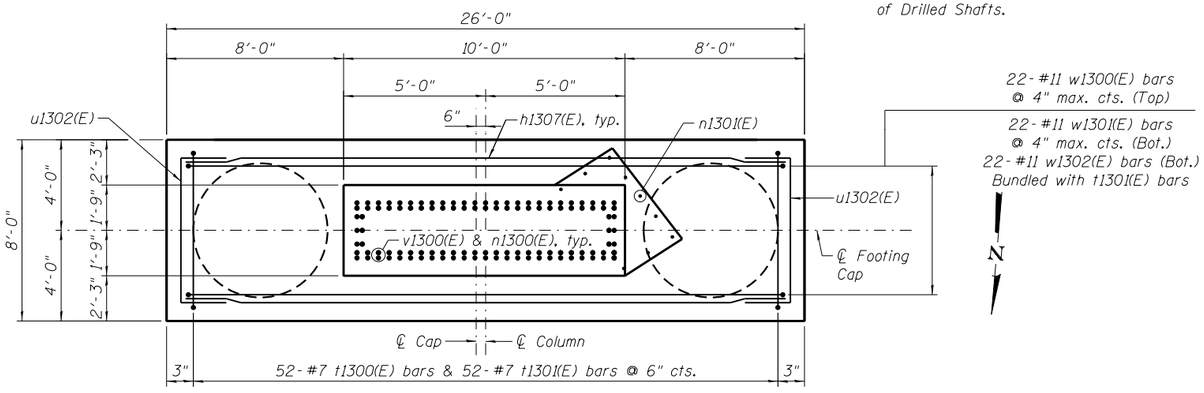
(Looking Upstation)

* Slope with bearing steps.

** Field cut as required & maintain 3'-2" min. lap

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp1400 spiral
   1) Provide 1½ extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
   2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging Testing of Drilled Shafts.



FOOTING PLAN

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 13 DETAILS – 1
STRUCTURE NO. 016–1715
SHEET NO. S3-127 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	869
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

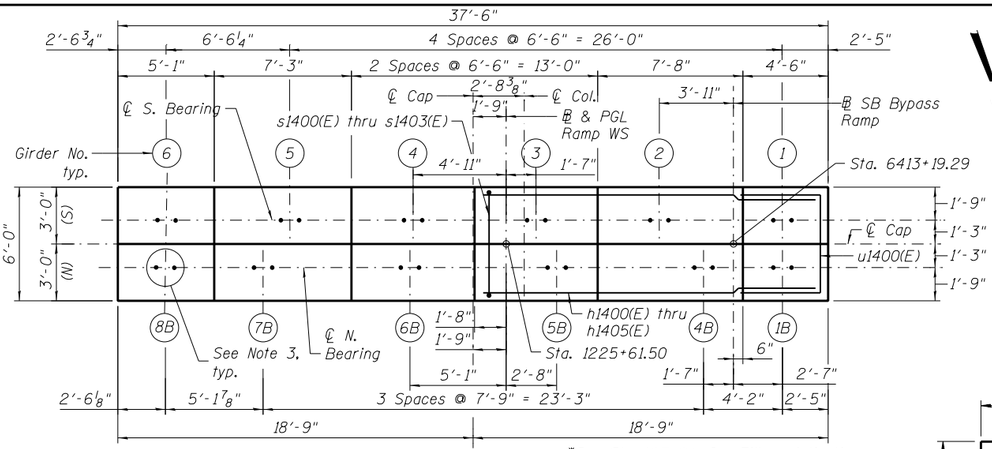
0161715-60X93-S125-Pier-13

1 REVISED ENTIRE SHEET 10/29/18

NOTES:

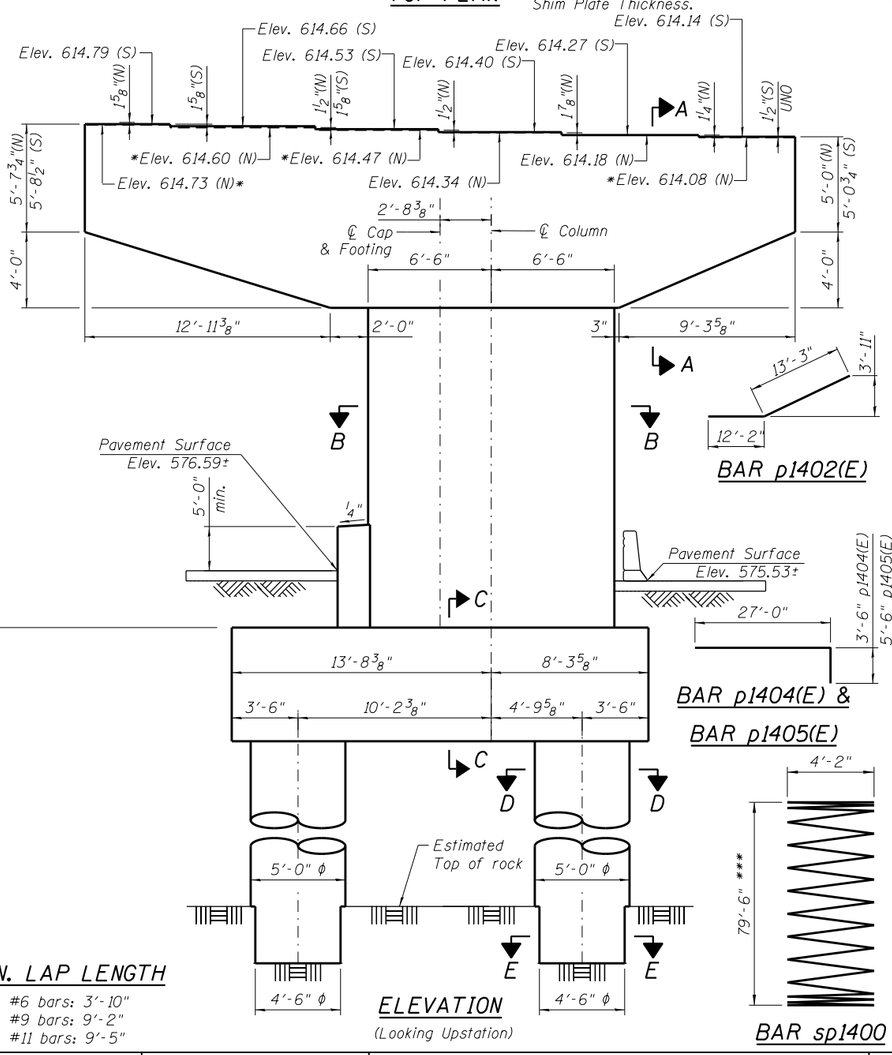
1. Pour steps monolithically with cap.
2. ℄ of Pier is radial to ℄ Ramp WS at Sta. 1225+61.50.
3. For Anchor Bolts Details see sheets S3-93 thru S3-99.
4. For Architectural Details see sheets S3-137 thru S3-139.
5. See sheet S3-129 for Sections and Details.
6. (N)-North Girder, (S)-South Girder
7. For Mechanical Splicer Details and Quantities see sheet S3-140.

** The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



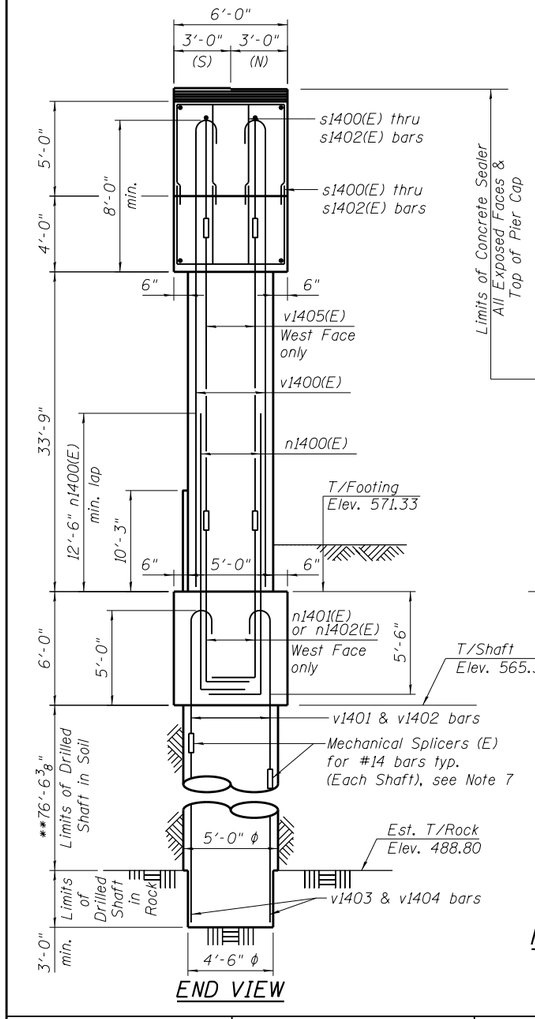
TOP PLAN

*See Sheet S3-94 for Fill or Adjusting Shim Plate Thickness.



ELEVATION

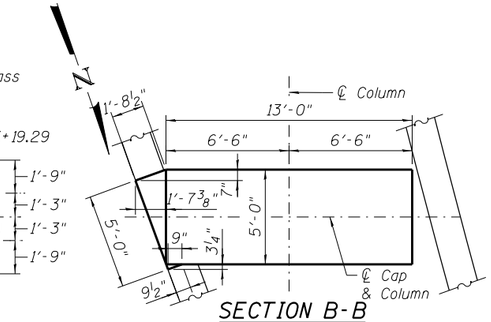
(Looking Upstation)



END VIEW

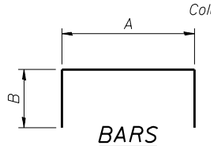
MIN. LAP LENGTH

#6 bars: 3'-10"
#9 bars: 9'-2"
#11 bars: 9'-5"



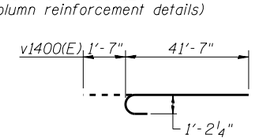
SECTION B-B

(See Sheet S3-129 for Column reinforcement details)

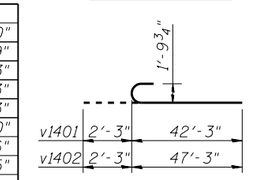


BARS A & B DIMENSIONS

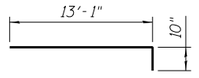
Bar	A	B
p1400(E)	37'-0"	2'-0"
s1400(E)	3'-1"	4'-9"
s1401(E)	3'-1"	5'-3"
s1402(E)	3'-1"	6'-3"
s1403(E)	3'-1"	6'-3"
w1400(E)	21'-6"	2'-0"
w1402(E)	21'-6"	4'-6"
u1400(E)	5'-2"	4'-5"
u1401(E)	5'-2"	10"
u1402(E)	5'-6"	4'-5"
u1403(E)	4'-8"	1'-6"



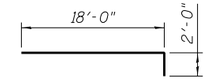
BAR v1400(E)



BARS v1401 & v1402 ***

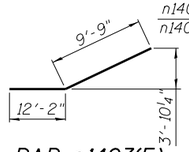


BAR n1403(E)

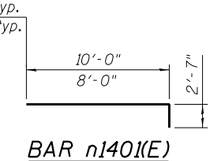


BAR n1400(E)

BAR p1402(E)

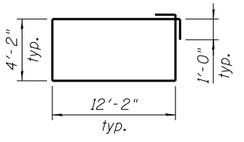


BAR p1403(E)

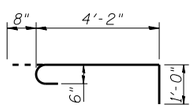


BAR n1401(E) & n1402(E)

BAR p1404(E) & BAR p1405(E)

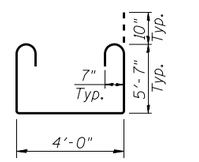


BAR s1404(E)

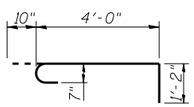


BAR s1405(E)

BAR sp1400



BAR t1400(E)



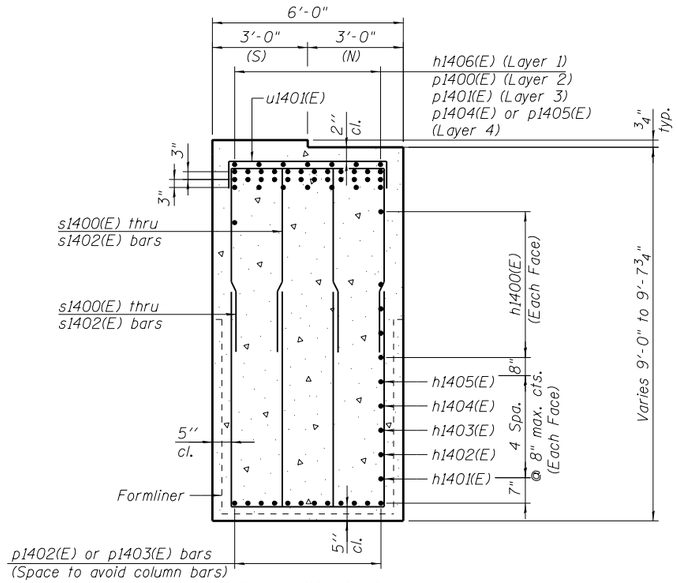
BAR t1401(E)

BILL OF MATERIAL

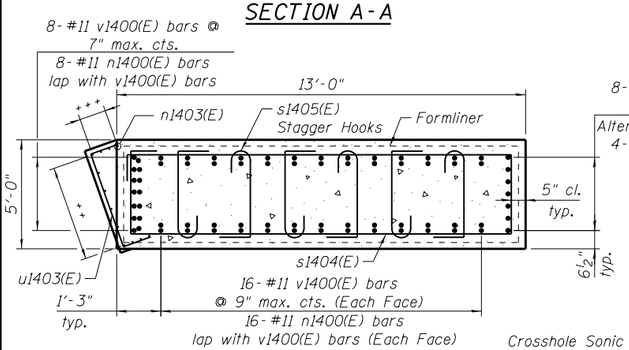
Bar	No.	Size	Length	Shape
h1400(E)	20	#9	24'-2"	
h1401(E)	2	#9	18'-8"	
h1402(E)	2	#9	22'-4"	
h1403(E)	2	#9	25'-11"	
h1404(E)	2	#9	29'-7"	
h1405(E)	2	#9	33'-2"	
h1406(E)	7	#5	6'-11"	
h1407(E)	28	#11	21'-6"	
n1400(E)	40	#11	20'-0"	
n1401(E)	4	#14	12'-7"	
n1402(E)	4	#14	10'-7"	
n1403(E)	13	#5	13'-11"	
p1400(E)	12	#11	41'-0"	
p1401(E)	12	#11	36'-4"	
p1402(E)	8	#9	25'-5"	
p1403(E)	8	#9	21'-11"	
p1404(E)	4	#14	30'-6"	
p1405(E)	4	#14	32'-6"	
s1400(E)	20	#6	12'-7"	
s1401(E)	64	#6	13'-7"	
s1402(E)	88	#6	15'-7"	
s1403(E)	120	#6	15'-7"	
s1404(E)	78	#6	34'-8"	
s1405(E)	468	#6	5'-10"	
sp1400	2	#6	79'-6"	
t1400(E)	84	#7	16'-10"	
t1401(E)	84	#7	6'-0"	
u1400(E)	10	#6	14'-0"	
u1401(E)	8	#5	6'-10"	
u1402(E)	14	#6	14'-4"	
u1403(E)	10	#5	7'-8"	
v1400(E)	40	#11	43'-2"	
v1401	22	#14	44'-6"	
v1402	22	#14	49'-6"	
v1403	22	#14	42'-0"	
v1404	22	#14	37'-0"	
v1405(E)	8	#14	34'-3"	
w1400(E)	9	#11	25'-6"	
w1401(E)	23	#11	20'-10"	
w1402(E)	14	#11	30'-6"	

Concrete Structures	Cu. Yd.	183.1
Reinforcement Bars, Epoxy Coated	Pound	55,660
Reinforcement Bars	Pound	35,490
Drilled Shaft in Soil	Cu. Yd.	111.3
Drilled Shaft in Rock	Cu. Yd.	3.6
Structure Excavation	Cu. Yd.	96
Concrete Sealer	Sq. ft.	2253
Crosshole Sonic Logging Testing	Each	1
Crosshole Sonic Logging Access Ducts	Foot	160

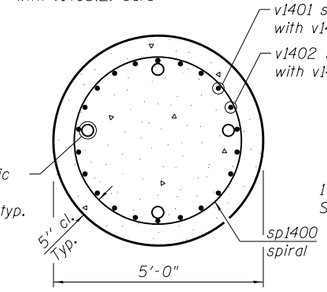
*** Length is height of spiral.



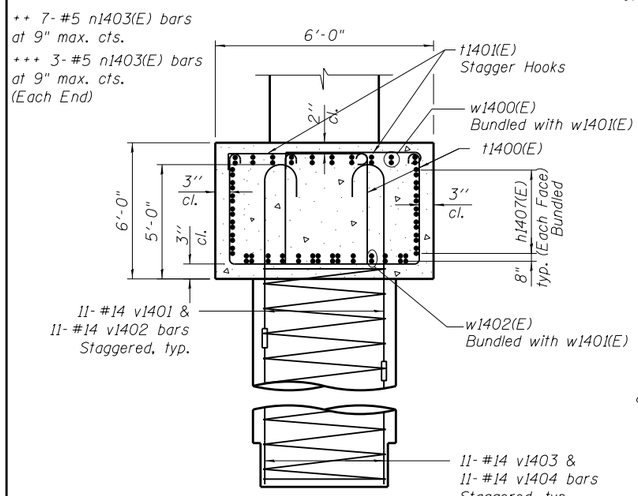
SECTION A-A



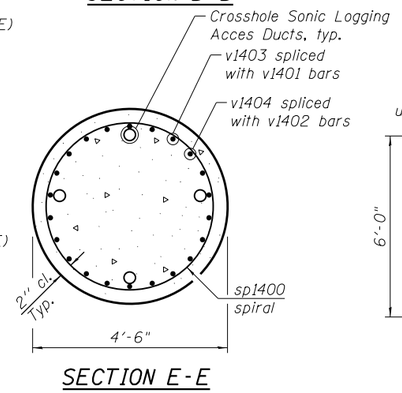
SECTION B-B



SECTION D-D



SECTION C-C



SECTION E-E

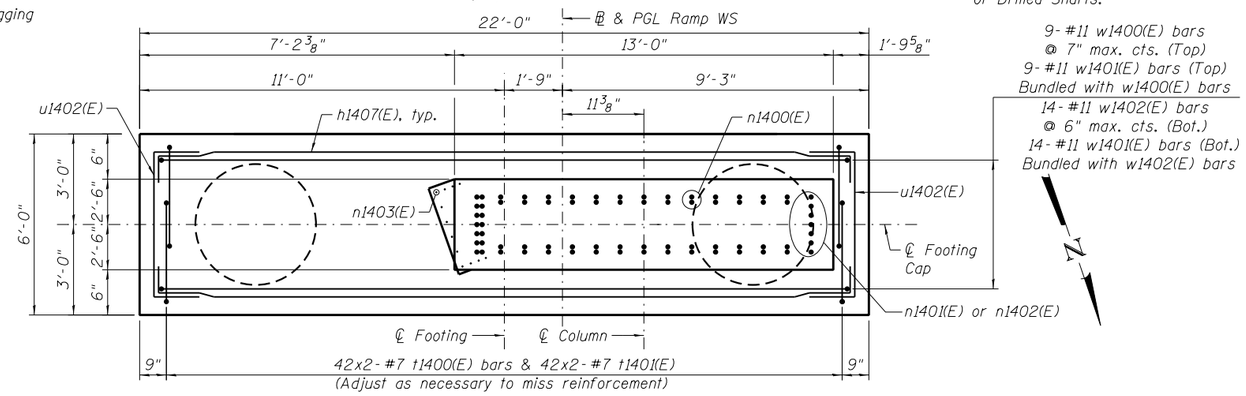
ELEVATION

(Looking Upstation)

* Slope with bearing steps.
** Field Cut as required & maintain 3'-10" min. lap.

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp1400 spiral
   1) Provide 1 1/2 extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
   2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging Testing of Drilled Shafts.



FOOTING PLAN

9-#11 w1400(E) bars @ 7" max. cts. (Top)
9-#11 w1401(E) bars (Top) Bundled with w1400(E) bars
14-#11 w1402(E) bars @ 6" max. cts. (Bot.)
14-#11 w1401(E) bars (Bot.) Bundled with w1402(E) bars

N

USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/31/2018	CHECKED - ATB	REVISED	

AECOM

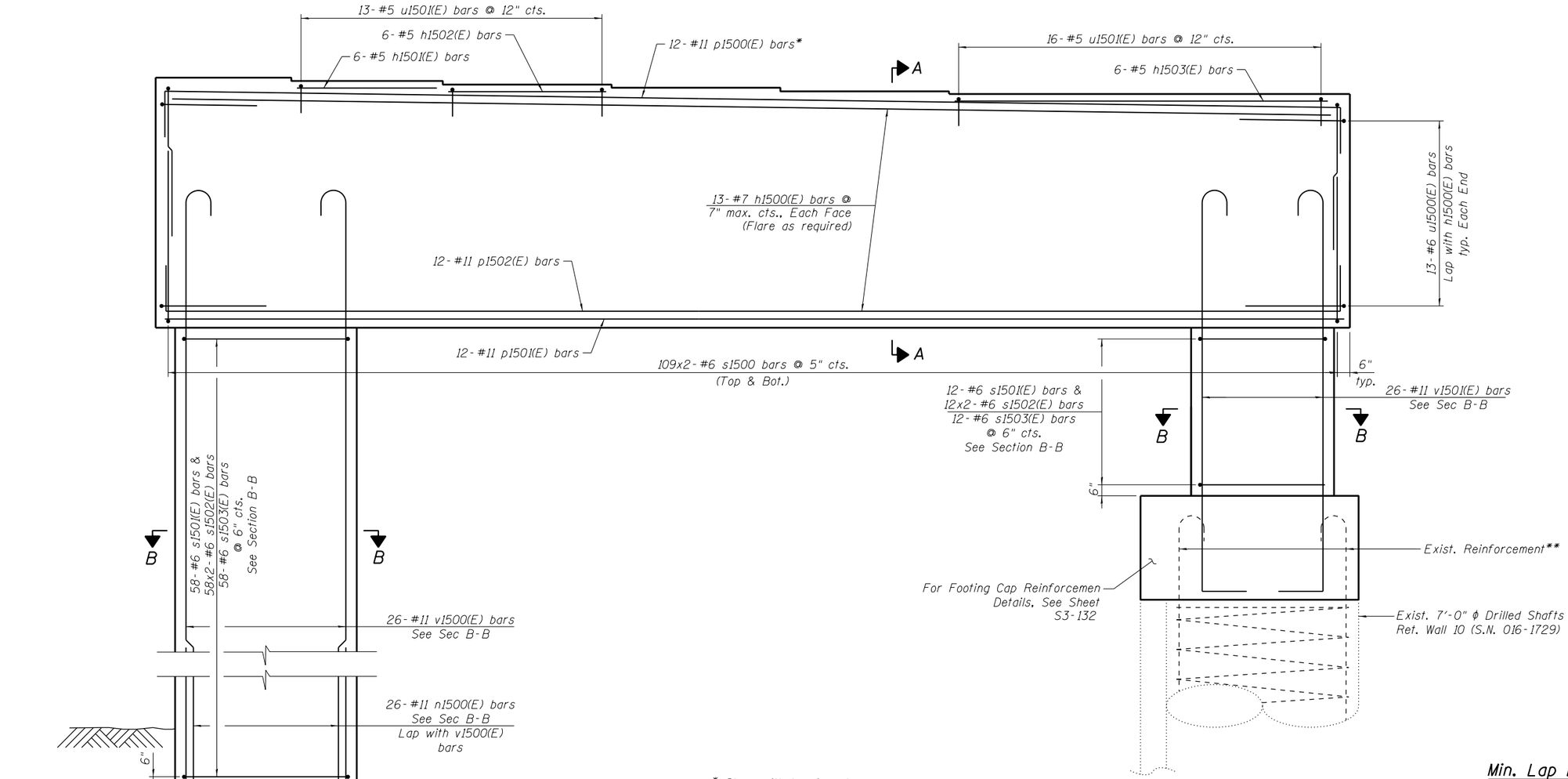
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 14 DETAILS – 1
STRUCTURE NO. 016–1715
SHEET NO. S3-129 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	871
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

0161715-60X93-S127-Pier-14



ELEVATION
(Looking Upstation)

* Slope with bearing steps.

** Existing drilled shaft reinforcement bars shall be cleaned, straightened and incorporated into new footing cap. Any existing reinforcement bars that are damaged during construction shall be repaired or replaced using an approved bar splicer or anchorage system. Cost shall be included with Concrete Structures.

Min. Lap Length

#6 bars = 3'-10"
#7 bars = 5'-0"
#11 bars = 9'-5"

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp1500 spiral
   1) Provide $1\frac{1}{2}$ extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
   2) When splicing spiral reinforcement is necessary, the spirals shall be provided with $1\frac{1}{2}$ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. Contractor shall test prop. Drilled Shaft in accordance with special provision for Crosshole Sonic Logging Testing of Drilled Shafts.

0161715-60X93-S129-Pier-15

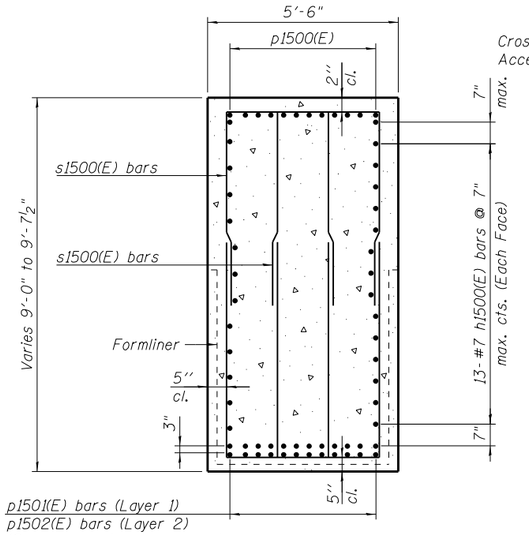
AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 8/30/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

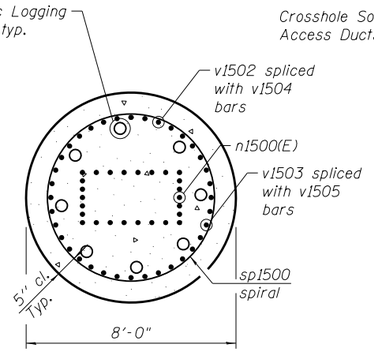
PIER 15 DETAILS – 1
STRUCTURE NO. 016–1715
SHEET NO. S3-131 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	873
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

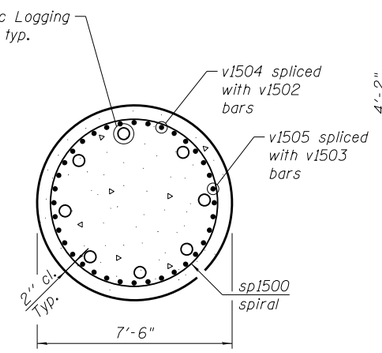
1 REVISED ENTIRE SHEET 10/29/18



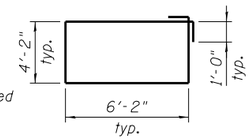
SECTION A-A



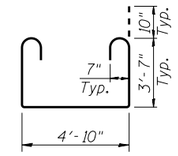
SECTION D-D



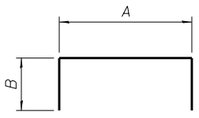
SECTION E-E



BAR s1501(E)



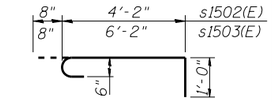
BAR t1500(E)



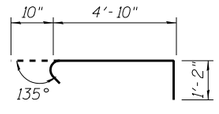
BENT BAR

A & B DIMENSIONS

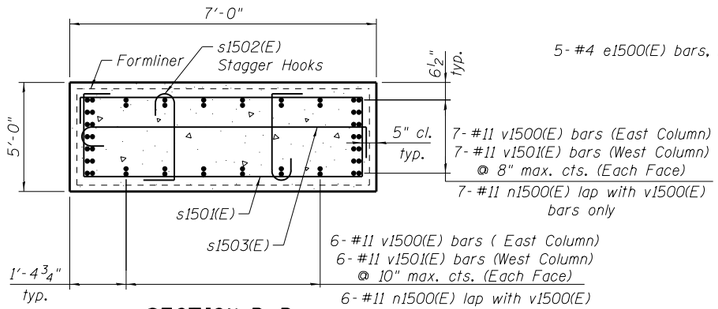
Bar	A	B
p1500(E)	45'-6"	2'-0"
p1501(E)	45'-6"	2'-0"
p1502(E)	45'-0"	2'-0"
s1500(E)	3'-6"	6'-6"
w1500(E)	19'-4"	2'-0"
w1501(E)	19'-4"	3'-0"
u1500(E)	4'-8"	4'-5"
u1501(E)	4'-8"	10"
u1502(E)	7'-6"	4'-5"



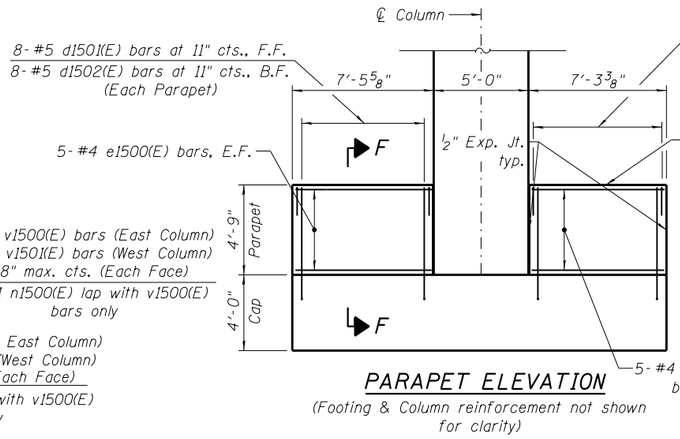
BAR s1502(E) & s1503(E)



BAR t1501(E)

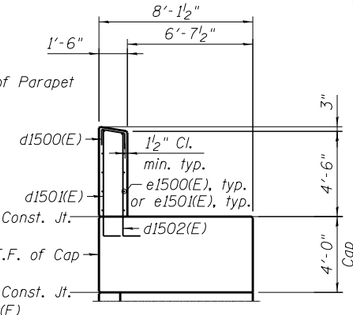


SECTION B-B



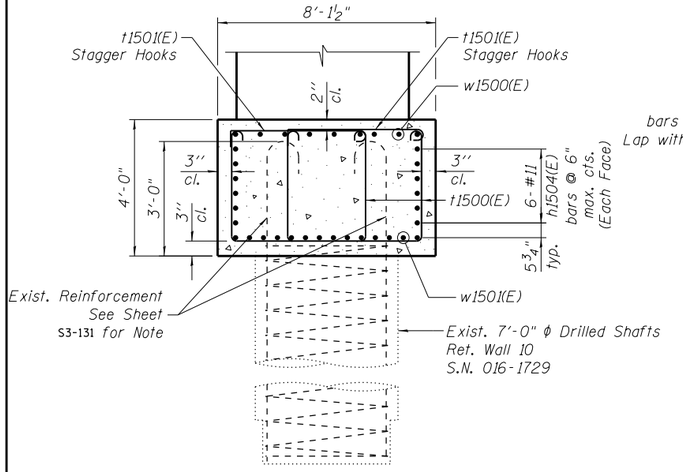
PARAPET ELEVATION

(Footing & Column reinforcement not shown for clarity)

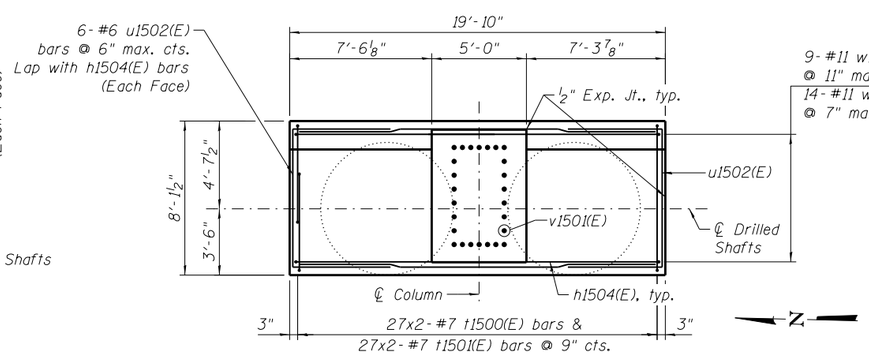


SECTION F-F

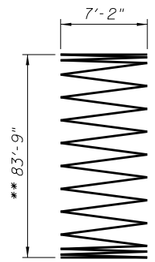
(Footing reinforcement not shown for clarity)



SECTION C-C



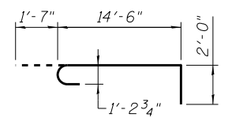
FOOTING PLAN



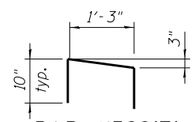
BAR sp1500

BAR n1500(E)

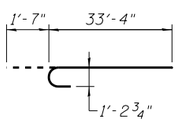
BAR d1501(E) & d1502(E)



BAR v1501(E)



BAR d1500(E)



BAR v1500(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d1500(E)	16	#5	2'-11"	
d1501(E)	16	#5	6'-5"	
d1502(E)	16	#5	6'-2"	
e1500(E)	10	#4	7'-1"	
e1501(E)	10	#4	6'-11"	
h1500(E)	26	#7	45'-6"	
h1501(E)	6	#5	5'-8"	
h1502(E)	6	#5	6'-4"	
h1503(E)	6	#5	15'-3"	
h1504(E)	12	#11	19'-4"	
n1500(E)	26	#11	20'-6"	
p1500(E)	12	#11	49'-6"	
p1501(E)	12	#11	49'-6"	
p1502(E)	12	#11	49'-0"	
s1500(E)	436	#6	16'-6"	
s1501(E)	70	#6	22'-8"	
s1502(E)	140	#6	5'-10"	
s1503(E)	70	#6	7'-10"	
** sp1500	1	#6	83'-9"	
t1500(E)	54	#7	13'-8"	
t1501(E)	54	#7	6'-10"	
u1500(E)	26	#6	13'-6"	
u1501(E)	29	#5	6'-4"	
u1502(E)	12	#6	16'-4"	
v1500(E)	26	#11	34'-11"	
v1501(E)	26	#11	18'-1"	
v1502	18	#14	42'-0"	
v1503	18	#14	47'-0"	
v1504	18	#14	41'-9"	
v1505	18	#14	36'-9"	
w1500(E)	9	#11	23'-4"	
w1501(E)	14	#11	25'-4"	
Concrete Structures		Cu. Yd.	160.4	
Reinforcement Bars, Epoxy Coated		Pound	44,460	
Reinforcement Bars		Pound	28,030	
Drilled Shaft in Soil		Cu. Yd.	151.4	
Drilled Shaft in Rock		Cu. Yd.	5.0	
Structure Excavation		Cu. Yd.	1.0	
Concrete Sealer		Sq. ft.	2452	
Crosshole Sonic Logging Testing		Each	1	
Crosshole Sonic Logging Access Ducts		Foot	85	

** Length is height of spiral.

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 9/19/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 15 DETAILS – 2
STRUCTURE NO. 016–1715
SHEET NO. S3-132 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	874
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

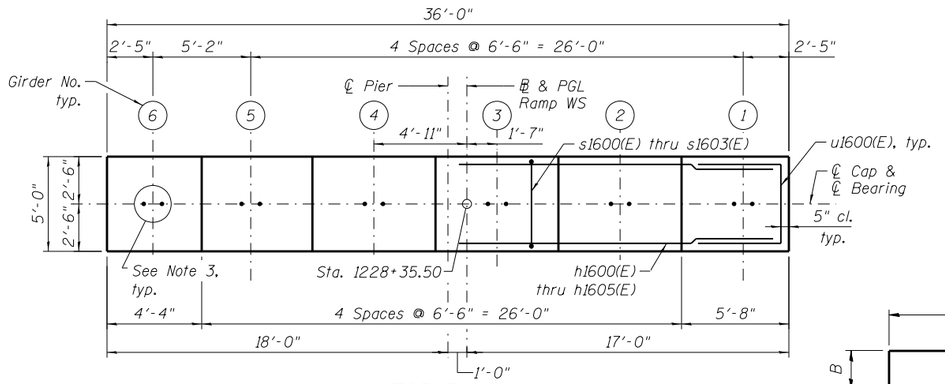
0161715-60X93-S130-Pier-15

1 REVISED ENTIRE SHEET 10/29/18

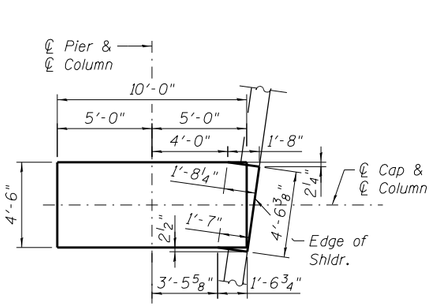
NOTES:

1. Pour steps monolithically with cap.
2. ℄ of Pier is radial to ℄ Ramp WS at Sta. 1228+35.50.
3. For Anchor Bolts Details see sheets S3-93 to S3-99.
4. For Architectural Details see sheets S3-137 thru S3-139.
5. See sheet S3-134 for Sections and Details.
6. For Mechanical Splicer Details & Quantities see sheet S3-140.

* The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.

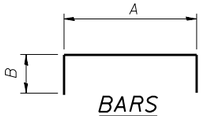


TOP PLAN



SECTION B-B

See SheetS3-134 for Reinfrocement details



BARS

A & B DIMENSIONS

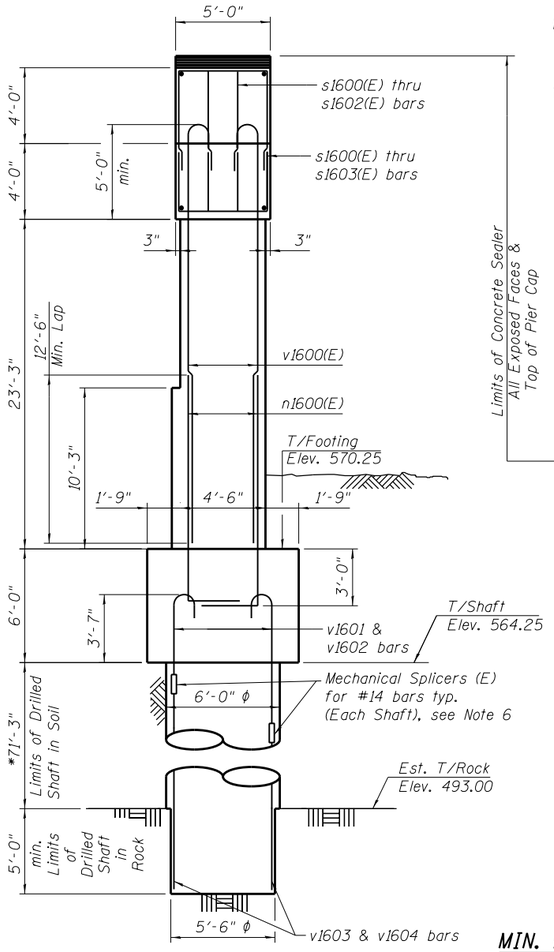
Bar	A	B
p1600(E)	35'-2"	2'-0"
s1600(E)	2'-7"	3'-10"
s1601(E)	2'-7"	4'-7"
s1602(E)	2'-7"	5'-6"
s1603(E)	4'-2"	5'-6"
w1600(E)	25'-6"	2'-0"
w1601(E)	25'-6"	4'-6"
u1600(E)	4'-2"	4'-5"
u1601(E)	4'-2"	10"
u1602(E)	7'-6"	4'-5"
u1603(E)	4'-2"	2'-0"

BILL OF MATERIAL

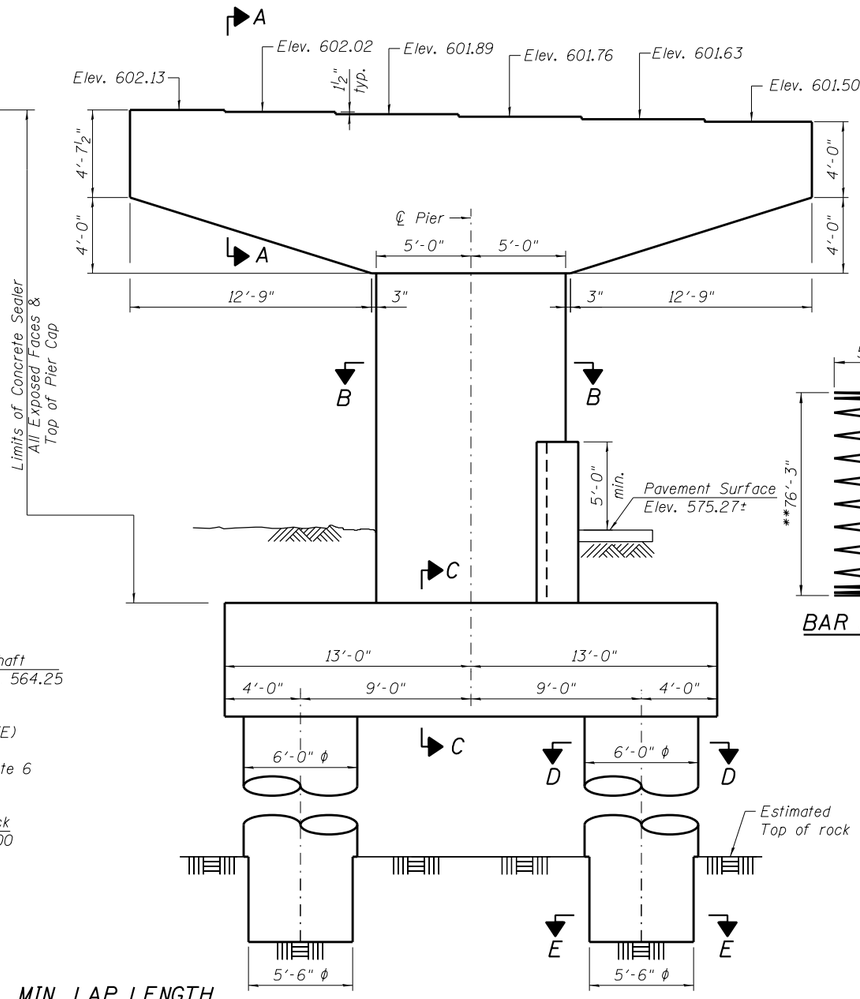
Bar	No.	Size	Length	Shape
h1600(E)	14	#7	35'-2"	
h1601(E)	2	#7	12'-11"	
h1602(E)	2	#7	17'-6"	
h1603(E)	2	#7	22'-0"	
h1604(E)	2	#7	26'-7"	
h1605(E)	2	#7	31'-2"	
h1606(E)	6	#5	3'-9"	
h1607(E)	12	#5	6'-1"	
h1608(E)	16	#7	25'-6"	
n1600(E)	56	#11	17'-6"	
n1601(E)	8	#5	13'-11"	
p1600(E)	12	#11	39'-2"	
p1601(E)	24	#11	34'-6"	
p1602(E)	24	#8	22'-0"	
s1600(E)	44	#5	10'-3"	
s1601(E)	68	#5	11'-9"	
s1602(E)	96	#5	13'-7"	
s1603(E)	22	#5	15'-2"	
s1604(E)	58	#6	27'-8"	
s1605(E)	232	#6	5'-4"	
** sp1600	2	#6	76'-3"	
t1600(E)	52	#7	20'-4"	
t1601(E)	52	#7	9'-6"	
u1600(E)	14	#6	13'-0"	
u1601(E)	18	#5	5'-10"	
u1602(E)	16	#6	16'-4"	
u1603(E)	10	#6	8'-2"	
v1600(E)	56	#11	29'-1"	
v1601	26	#14	42'-0"	
v1602	26	#14	47'-0"	
v1603	26	#14	39'-10"	
v1604	26	#14	34'-10"	
w1600(E)	22	#11	29'-6"	
w1601(E)	22	#11	34'-6"	
w1602(E)	22	#11	24'-10"	

Concrete Structures	Cu. Yd.	131.2
Reinforcement Bars. Epoxy Coated	Pound	46,410
Reinforcement Bars	Pound	40,140
Drilled Shaft in Soil	Cu. Yd.	149.3
Drilled Shaft in Rock	Cu. Yd.	8.8
Structure Excavation	Cu. Yd.	130.0
Concrete Sealer	Sq. ft.	1546
Crosshole Sonic Logging Testing	Each	1
Crosshole Sonic Logging Access Ducts	Foot	153

** Length is height of spiral.



END VIEW



ELEVATION

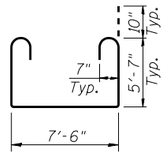
(Looking Upstation)

MIN. LAP LENGTH

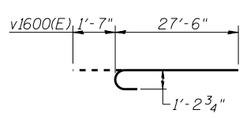
#5 bars: 3'-2"
#8 bars: 7'-2"

BAR sp1600

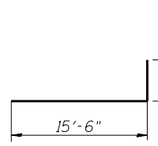
BAR p1602(E)



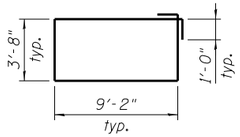
BAR t1600(E)



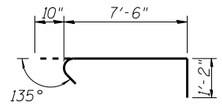
BAR v1600(E)



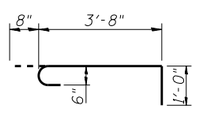
BAR n1600(E)



BAR s1604(E)



BAR t1601(E)



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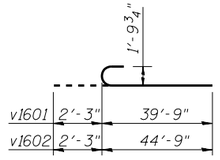
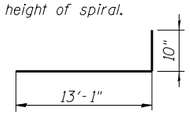


BARS v1601 & v1602



BAR n1601(E)

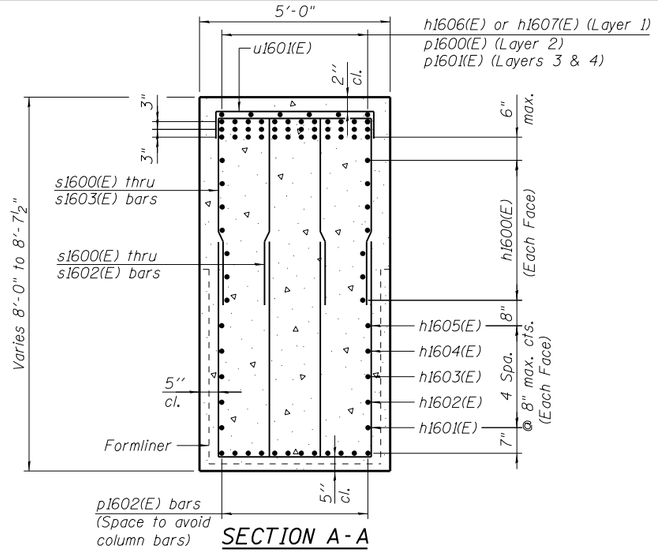
AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - ATB	REVISED	
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
	PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED	

PIER 16
STRUCTURE NO. 016-1715
SHEET NO. S3-133 OF S3-172

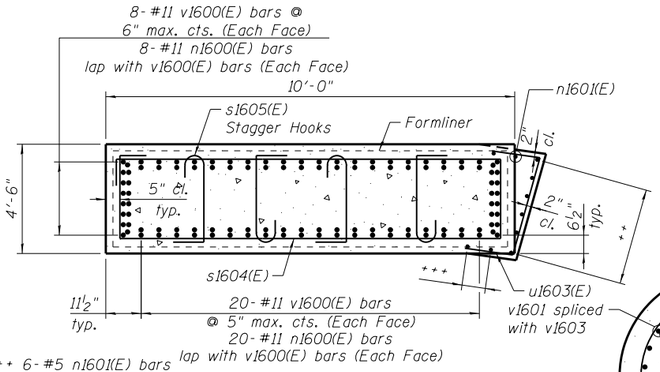
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	875
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

0161715-60X93-S131-Pier-16

1 REVISED ENTIRE SHEET 10/29/18



SECTION A-A



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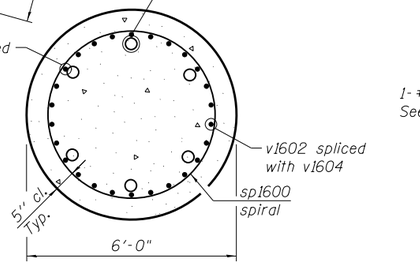
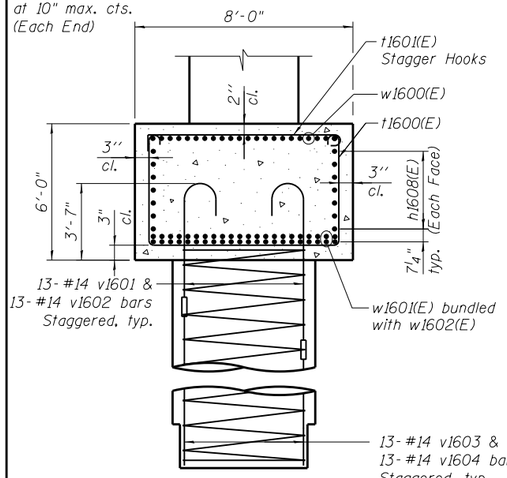
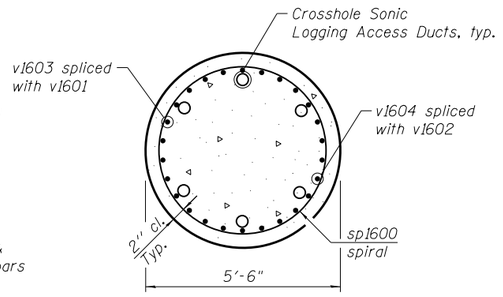


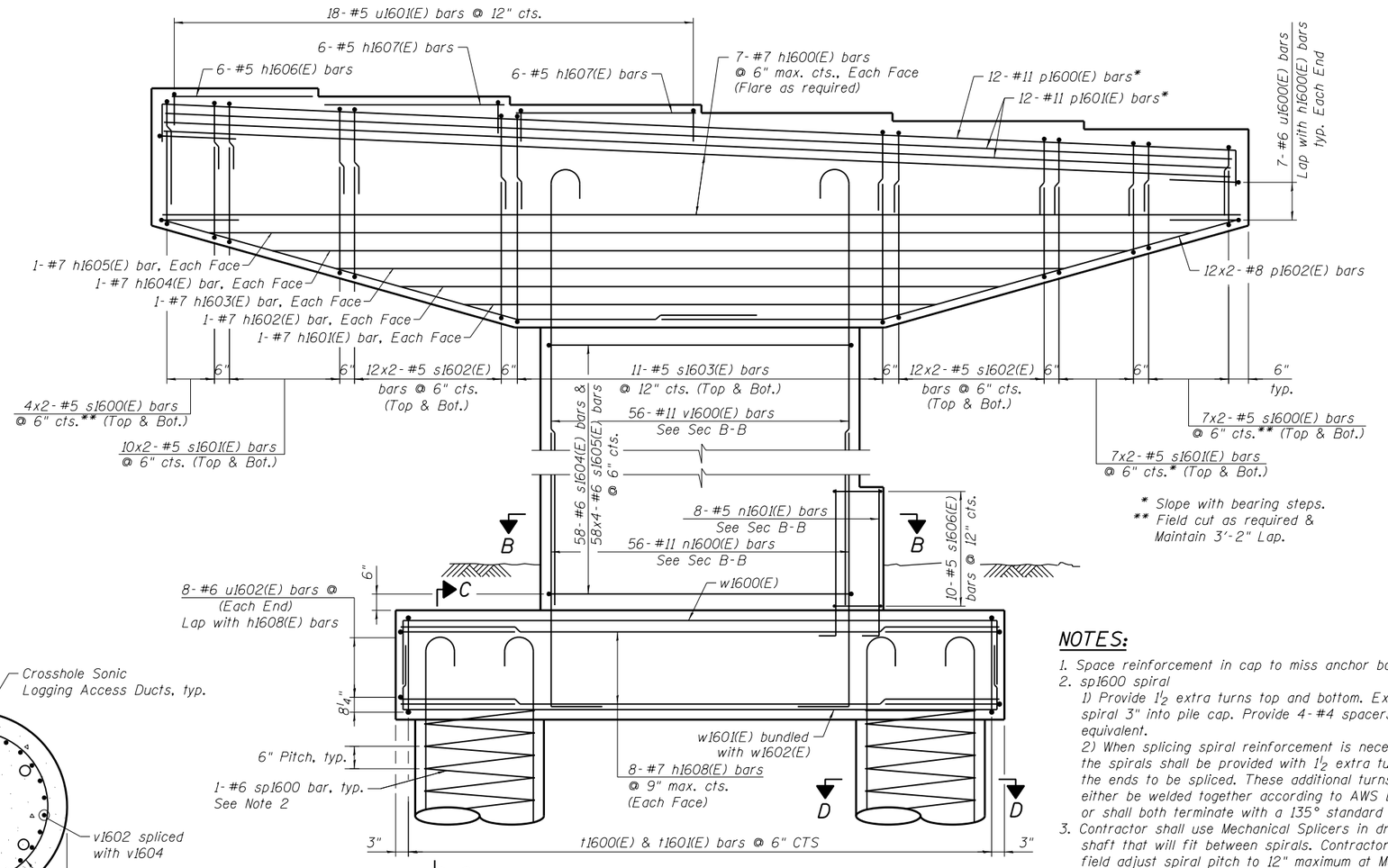
SECTION D-D



SECTION C-C



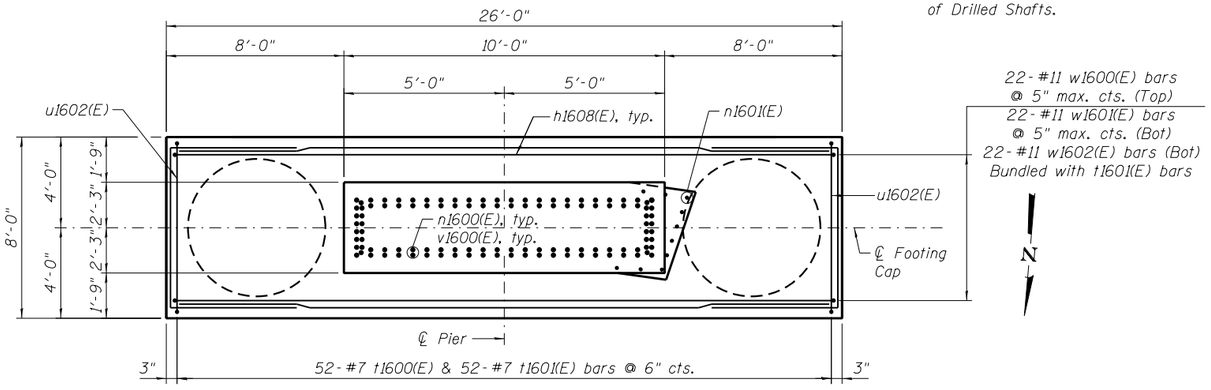
SECTION E-E



ELEVATION
(Looking Upstation)

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. sp1600 spiral
   1) Provide 1½ extra turns top and bottom. Extend spiral 3" into pile cap. Provide 4-#4 spacers or equivalent.
   2) When splicing spiral reinforcement is necessary, the spirals shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4, or shall both terminate with a 135° standard hook.
3. Contractor shall use Mechanical Splicers in drilled shaft that will fit between spirals. Contractor shall field adjust spiral pitch to 12" maximum at Mechanical Splicer locations.
4. A Drilled Shaft shall be tested in accordance with Special Provisions for Crosshole Sonic Logging Testing of Drilled Shafts.



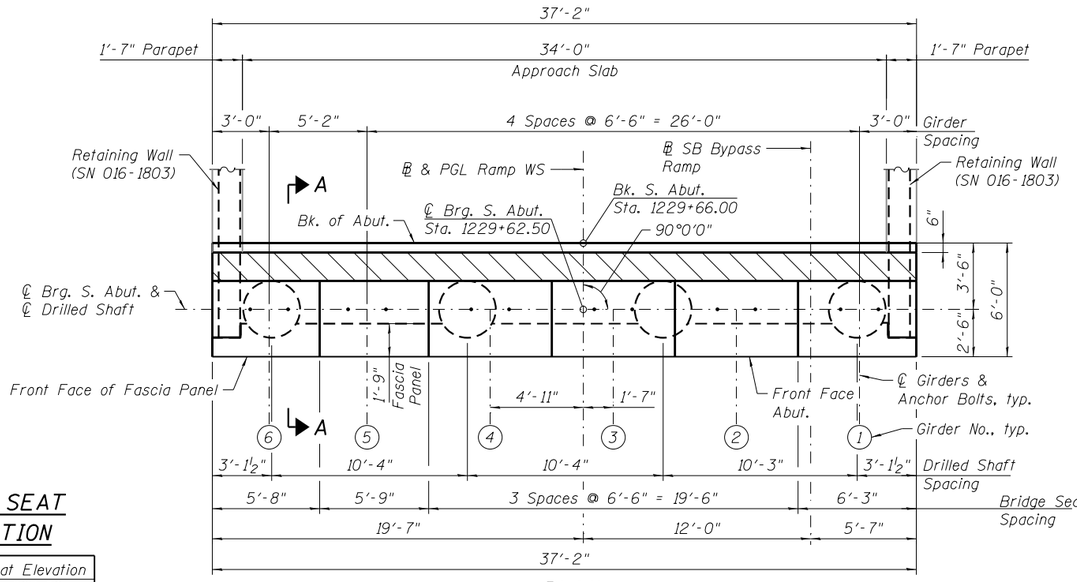
FOOTING PLAN

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 16 DETAILS STRUCTURE NO. 016-1715 SHEET NO. S3-134 OF S3-172
		CHECKED - ATB	REVISED		
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED		
	PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED		

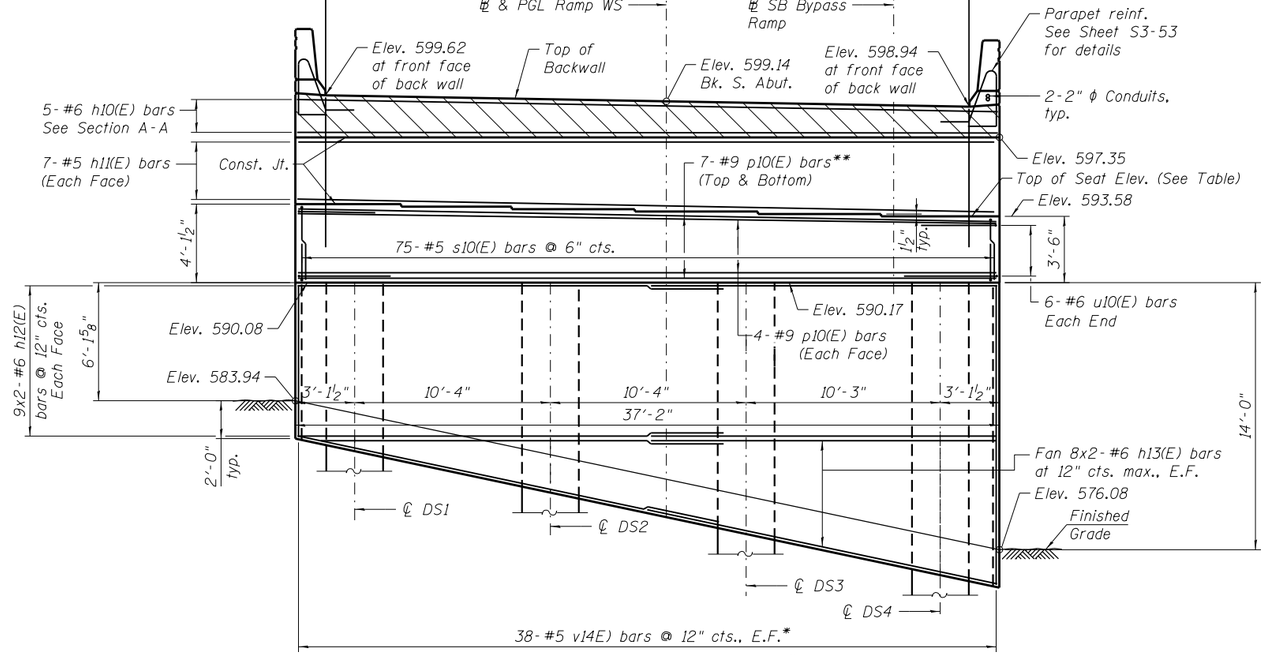
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	876
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

0161715-60X93-S132-Pier-16



PLAN

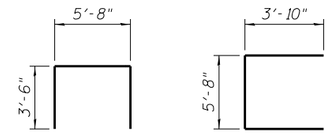


ELEVATION
(Looking Upstation)

* See Field Cutting Diagram
** Slope Top bars with Bearing Seats.

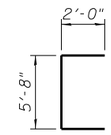
TOP OF SEAT ELEVATION

Girder No.	Seat Elevation
1	593.58
2	593.71
3	593.84
4	593.97
5	594.10
6	594.21

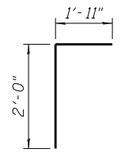


BAR s10(E)

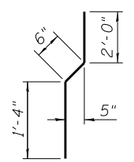
BAR u10(E)



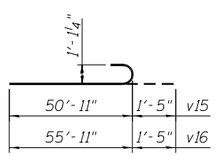
BAR u11(E)



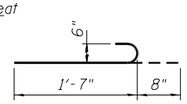
BAR v10(E)



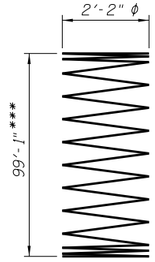
BAR v11(E)



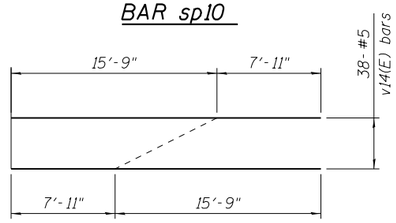
BAR v15 & BAR v16



BAR d10(E)



BAR sp10



FIELD CUTTING DIAGRAM

Order v14(E) bars Full Length. Cut as shown & use remainder of bars in opposite face.

NOTES:

1. Pour steps monolithically with cap.
2. For Anchor Bolt Details, see Sheet S3-95 .
3. Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
4. Concrete Sealer shall be applied to abutment backwall, bearing seats and exposed faces of abutment cap & fascia panel.
5. Space bars in cap to miss anchor bolts.
6. For Section A-A, see Sheet S3-136 .
7. A Drilled Shaft shall be tested in accordance with Special Provision for Crosshole Sonic Logging Testing of Drilled Shafts.

SOUTH ABUTMENT BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	d10(E)	132	#6	2'-3"	⟶
	h10(E)	5	#6	36'-10"	——
	h11(E)	14	#5	36'-10"	——
	h12(E)	36	#6	20'-4"	——
	h13(E)	32	#6	20'-9"	——
	p10(E)	22	#9	36'-10"	——
	s10(E)	150	#5	12'-8"	⊔
***	sp10	4	#5	99'-1"	∿∿
	u10(E)	12	#6	13'-4"	⊏
	v10(E)	38	#5	3'-11"	⌞
	v11(E)	38	#5	3'-10"	⌝
	v12(E)	38	#5	7'-7"	——
	v13(E)	38	#5	5'-2"	——
	v14(E)	38	#5	23'-8"	——
	v15	20	#10	52'-4"	⟶
	v16	20	#10	57'-4"	⟶
	v17	20	#10	50'-11"	——
	v18	20	#10	45'-11"	——

Concrete Structures	Cu. Yd.	57.8
Reinforcement Bars, Epoxy Coated	Pound	10,090
Reinforcement Bars	Pound	23,490
Drilled Shaft in Soil	Cu. Yd.	101.7
Drilled Shaft in Rock	Cu. Yd.	1.5
Concrete Sealer	Sq. ft	1,877
Structure Excavation	Cu. Yd.	13.0
Crosshole Sonic Logging Testing	Each	1
Crosshole Sonic Logging Access Ducts	Foot	397
Geocomposite Wall Drain	Sq. Yd	54
Pipe Underdrain for Structures, 4"	Foot	38

***Length is height of spiral

TYP. MIN. LAP LENGTH

#6 bar: 3'-10"
#5 bar: 3'-2"

0161715-60X93-S133-SouthAbut

AECOM

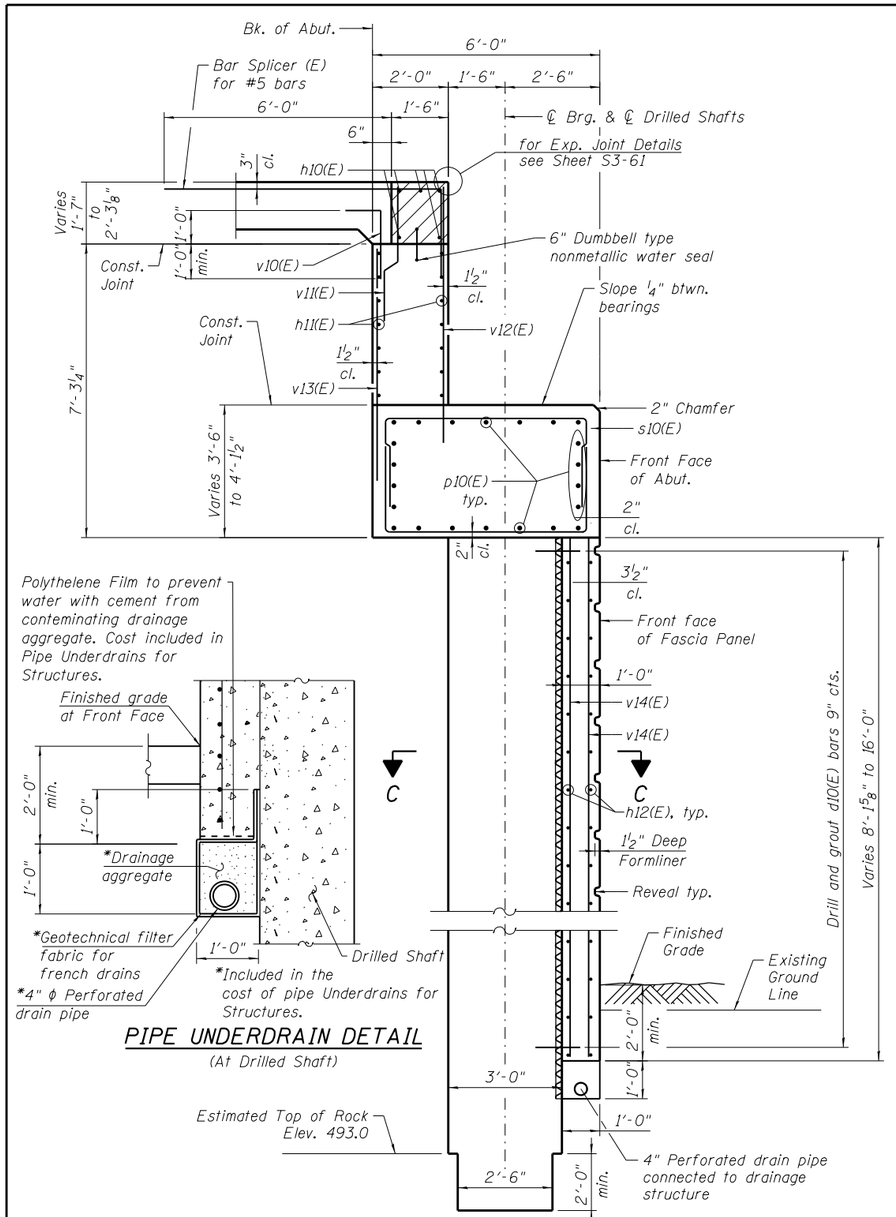
USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/30/2018	CHECKED - ATB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 016-1715
SHEET NO. S3-135 OF S3-172

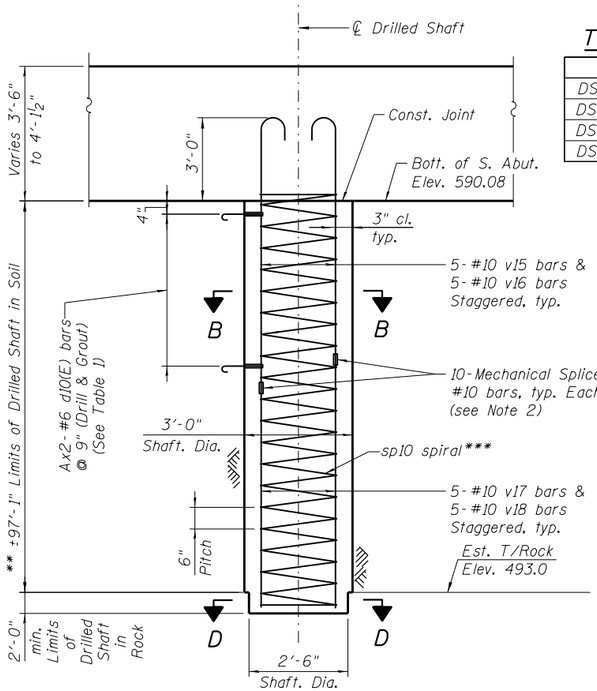
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	877
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18



PIPE UNDERDRAIN DETAIL
(At Drilled Shaft)

SECTION A-A



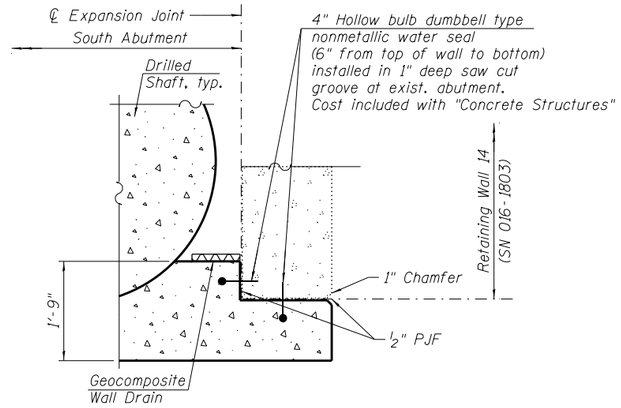
ABUTMENT SHAFT ELEVATION

** Quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.

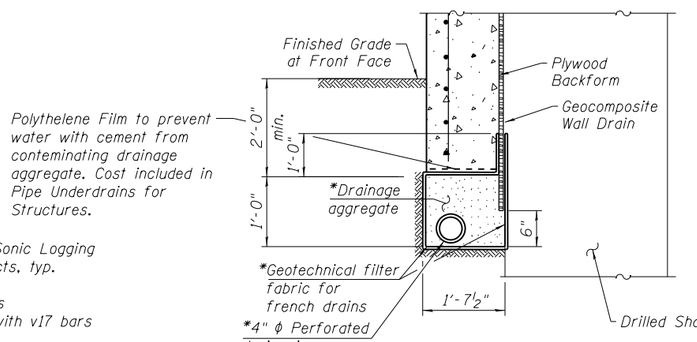
*** Provide 1½" extra turns Top & Bottom of each Drilled Shaft.

TABLE 1

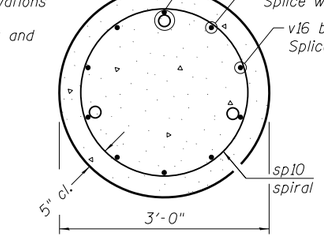
	"A"
DS-1	12
DS-2	15
DS-3	18
DS-4	21



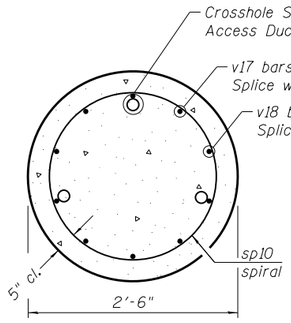
EXPANSION JOINT DETAILS AT SOUTH ABUTMENT



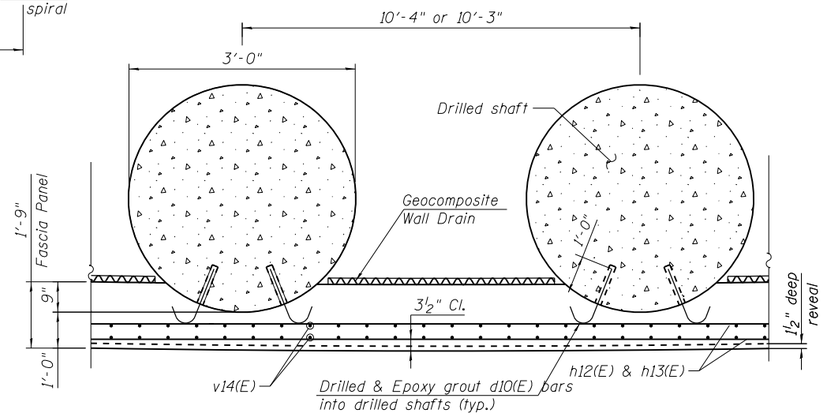
PIPE UNDERDRAIN DETAIL
(Between Drilled Shaft)
* Included in the cost of pipe underdrains for structures.



SECTION B-B



SECTION D-D



SECTION C-C
(Shaft Reinforcement not shown for clarity)

NOTES:

1. When splicing spiral reinforcement is necessary, the spiral shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4 or shall both terminate with a 135° standard hook.
2. For mechanical splicer details and quantities see S3-140 .
3. Drilled Shaft quantity from top of existing ground elev. to bottom of abutment cap elev. shall be included with Drilled Shaft In Soil.
4. Contractor shall use Mechanical splicers in drilled shafts that will fit between spirals. Contractor shall field adjust spiral pitch to 12" max. at Mechanical Splicer location.
5. Drilling & Grouting shall be per Section 584 of the standard Specifications. Enbedment depth shall be 12". Cost shall be included with drilled shaft in soil.

AECOM

USER NAME = vasudevana	DESIGNED - AV	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - AV	REVISED	
PLOT DATE = 8/30/2018	CHECKED - ATB	REVISED	

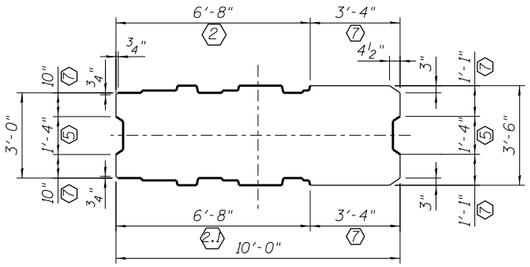
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS
STRUCTURE NO. 016–1715
SHEET NO. S3-136 OF S3-172

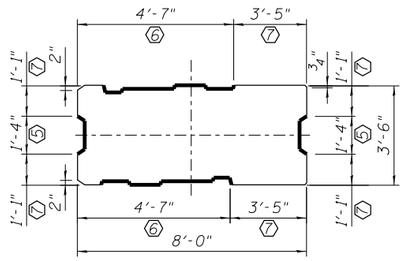
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	878
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

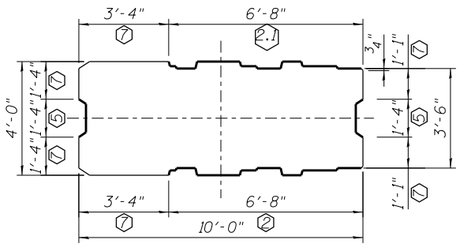
0161715-60X93-S134-SouthAbutDet



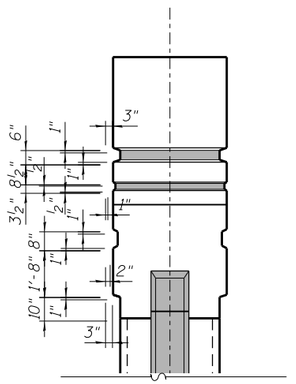
FORMLINER LAYOUT
TYP. FOR COLUMNS AT
PIER 1, 2, 3, 5, 6, 7, 8, 9, 10, 12, & 13



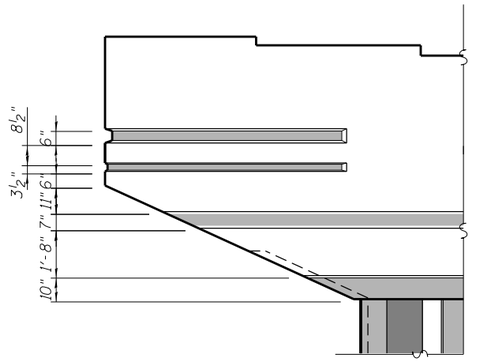
FORMLINER LAYOUT
COLUMN AT PIER 4



FORMLINER LAYOUT
COLUMN AT PIER 11

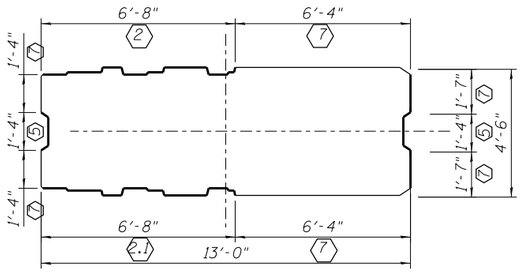


DETAIL A

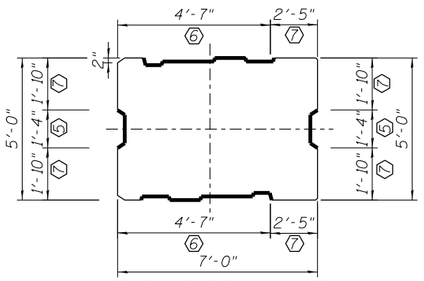


DETAIL B

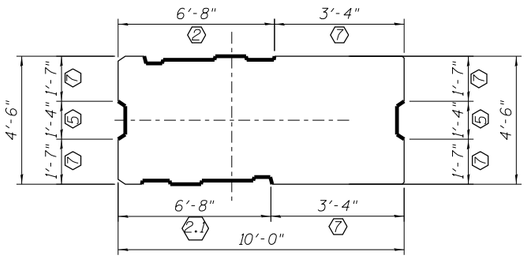
PIER CAP REVEAL DETAIL, TYP @ ALL PIERS, UNO



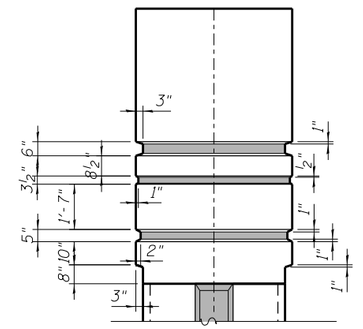
FORMLINER LAYOUT
COLUMN AT PIER 14



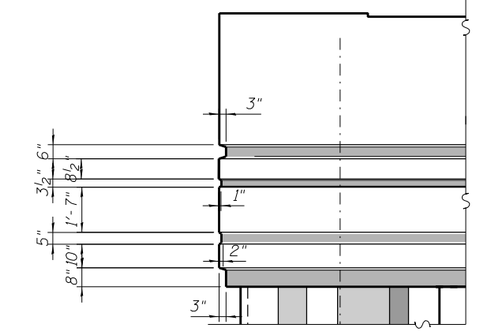
FORMLINER LAYOUT
COLUMN AT PIER 15



FORMLINER LAYOUT
AT PIER 16



DETAIL C



PIER CAP REVEAL DETAIL AT PIER 15

LEGEND:

① ② 1.1 2.1 ③ ④ ⑤ ⑥ Formliner Panel Designation

⑦ Contractor's form: Rubbed Finish at all concrete surface on columns and pier caps, exposed to view and not indicated as textured formliner or textured reveal.

Ⓐ Texture: Light Sandblast: Max Depth: 0.0625"

Ⓑ Texture: Medium Sandblast: Max Depth: 0.125"

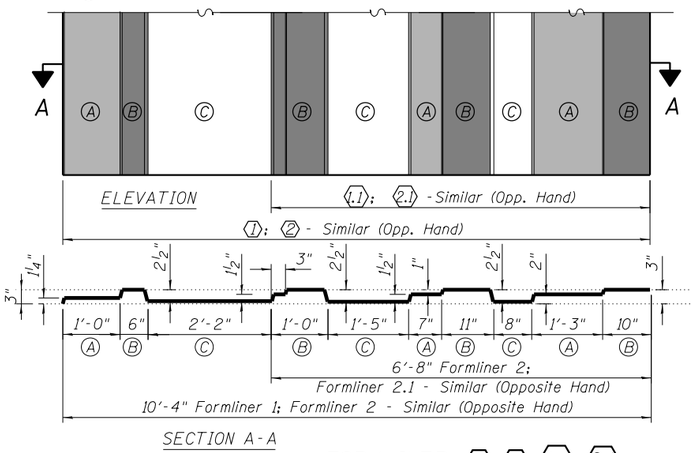
Ⓒ Texture: Smooth

NOTES:

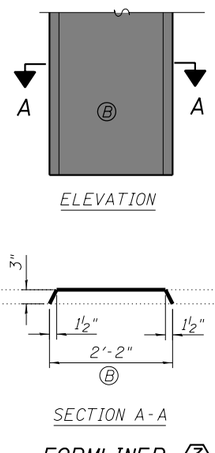
1. Verify / coordinate pier dimensions with drawings S-98 - S3-131.
2. Unless otherwise noted on plans, draft at formliner will be 1/4" per inch depth, typ.
2. Maximum depth of formliner texture at columns and maximum depth of reveals at pier caps is 3".

TABLE 1

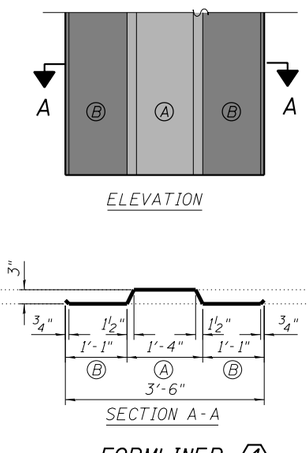
Pier	Formliner Quantity (Sq.Ft.)	Rubbed Finish Quantity (Sq.Ft.)
1	213	608
2	479	733
3	399	682
4	204	704
5	503	794
6	362	681
7	245	620
8	189	648
9	236	615
10	96	543
11	249	1,123
12	797	1,320
13	610	1,049
14	688	1,266
15	482	1,468
16	387	899



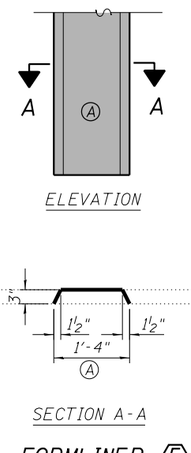
FORMLINER 1 2 1.1 2.1



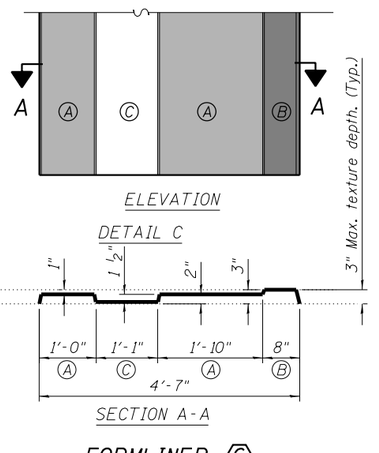
FORMLINER 3



FORMLINER 4



FORMLINER 5



FORMLINER 6

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Form Liner Textured Surface	Sq. Ft.	6,139
Rubbed Finish	Sq. Ft.	13,753

AECOM	USER NAME = vasudevana	DESIGNED - MR	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 8/28/2018	CHECKED - ATB	REVISED

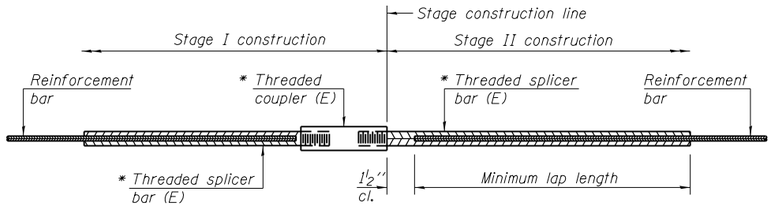
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARCHITECTURAL DETAILS – III
STRUCTURE NO. 016-1715
SHEET NO. S3-139 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	881
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

0161715-60X93-S137-Arch III

1 REVISED ENTIRE SHEET 10/29/18

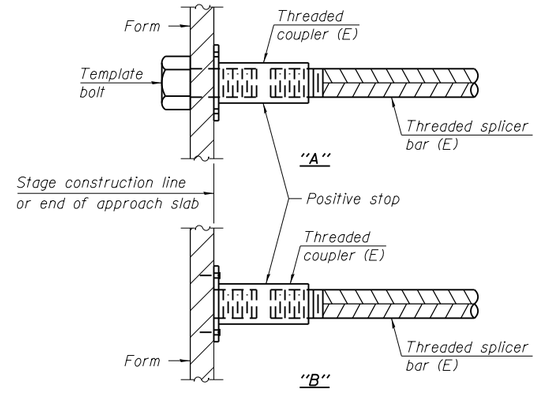


STANDARD BAR SPLICER ASSEMBLY

Threaded splicer bar length = min. lap length + 1½" + thread length

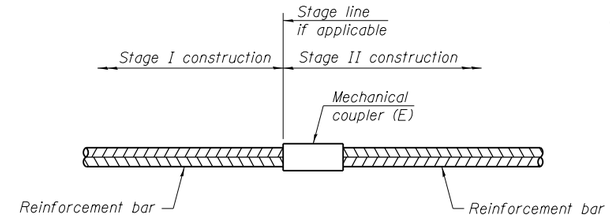
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. of Assemblies Required	Minimum lap length



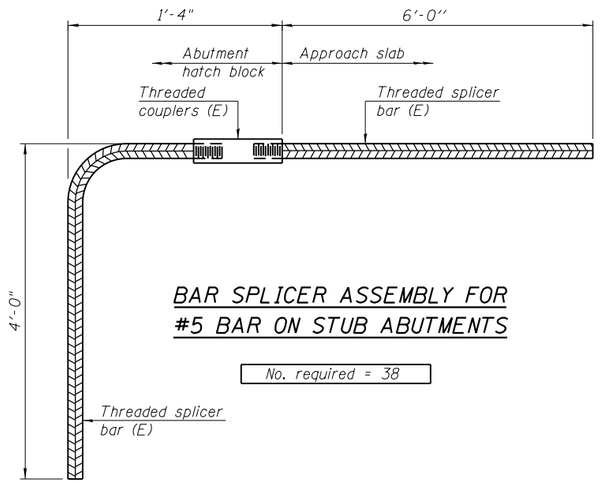
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	#11	32
Pier 2	#14	52
Pier 3	#11	44
Pier 4	#14	52
Pier 5	#14	52
Pier 6	#14	52
Pier 7	#11	32
Pier 8	#11	32
Pier 9	#11	42
Pier 10	#11	42
Pier 11	#10	50
Pier 12	#11	66
Pier 13	#14	52
Pier 14	#14	60
Pier 15	#14	36
Pier 16	#14	52
S. Abutment	#10	40



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 38

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

2-17-2017

AECOM	USER NAME = vasudevana	DESIGNED - AV	REVISED
		CHECKED - ATB	REVISED
	PLOT SCALE = N.T.S.	DRAWN - AV	REVISED
	PLOT DATE = 8/23/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER AND MECHANIC SPLICER DETAILS
STRUCTURE NO. 016-1715
SHEET NO. S3-140 OF S3-172

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	882
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

0161715-60X93-S138-Bar Splice

Benchmark: Cut square at southeast corner of Van Buren St. and Halsted St., on northeast corner of first step of decorative pillar. Elevation 594.00.

Existing Structure: None

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition, with 2015 & 2016 Interim Revisions

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

LOADING HL-93

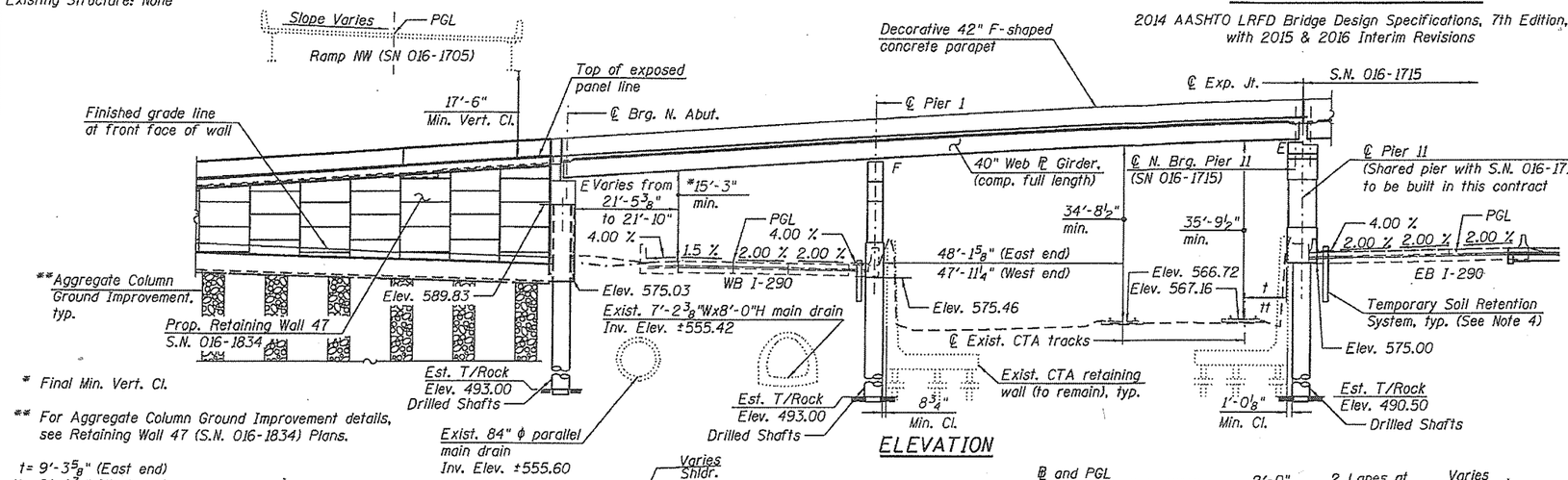
Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.085g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.144g
Soil Site Class = D

NOTES:

1. For Offset Sketch, Profile Grade Lines and Curve Data, see Sheet S4-02
2. For Index of Sheets and Total Bill of Material, see Sheet S4-03
3. For General Notes and Existing Structure Assessment Notes, see Sheet S4-04.
4. For Temporary Soil Retention System Details, see proposed Ramp WS (S.N. 016-1715) Plans.

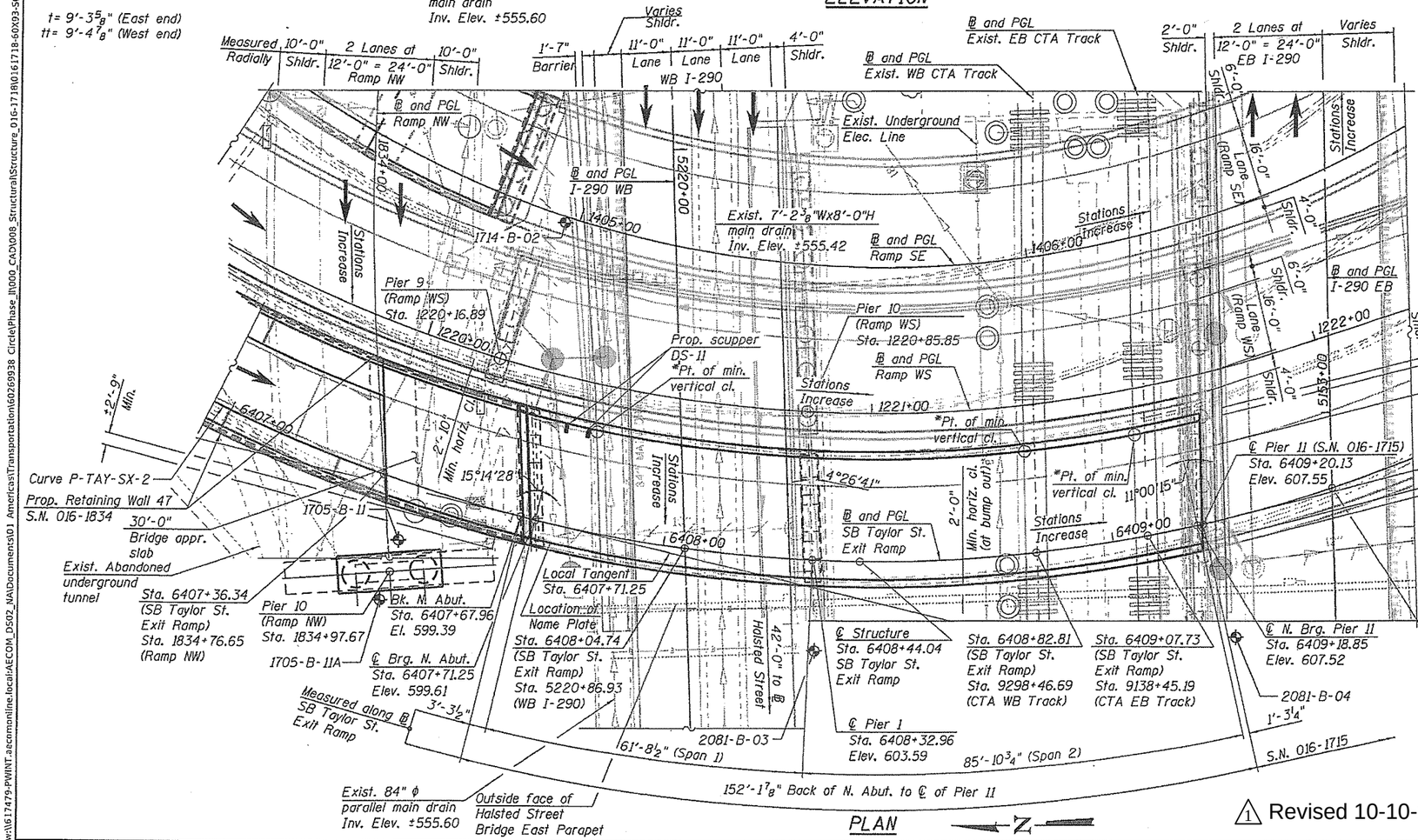


ELEVATION

* Final Min. Vert. Cl.

** For Aggregate Column Ground Improvement details, see Retaining Wall 47 (S.N. 016-1834) Plans.

t = 9'-3 5/8" (East end)
tt = 9'-4 7/8" (West end)



PLAN

SCUPPER LOCATION

Station	Offset
6407+73.79	22.00' Lt.
6407+78.79	22.00' Lt.

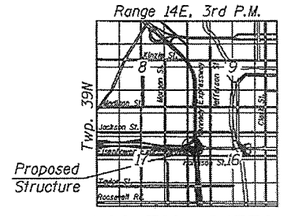
APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures
1

Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E. Il. Lic. No. 081-005738
Expires 11-30-2018
Date 07/30/18 For Sheets S4-01 thru S4-38

STATE OF ILLINOIS — MOUSSA A. ISSA — 081-005738 — CHICAGO, ILLINOIS — LICENSED STRUCTURAL ENGINEER

LEGEND:

- Soil Boring
- Temporary Soil Retention System
- Junction Box
- Exist. Manhole
- Electric
- Exist. Storm Sewer
- Prop. Storm Sewer
- Aband. Sewer
- Prop. Catch Basin
- Exist. Catch Basin



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
SB TAYLOR ST. EXIT RAMP
OVER F.A.I. RTE. 290
(EISENHOWER EXPRESSWAY) AND CTA
F.A.I. RTE. 90/94/290
SECTION 2014-013R&B-R
COOK COUNTY
STATION 6408+44.04
STRUCTURE NO. 016-1718

1 Revised 10-10-18

HBM ENGINEERING GROUP, LLC

USER NAME = ahmad.issa		DESIGNED - MI, JJS		REVISED -	
		CHECKED - WM, JJS, LAB		REVISED -	
PLOT SCALE = N.T.S		DRAWN - JJS, WM		REVISED -	
PLOT DATE = 7/30/2018		CHECKED - MI, MAI		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

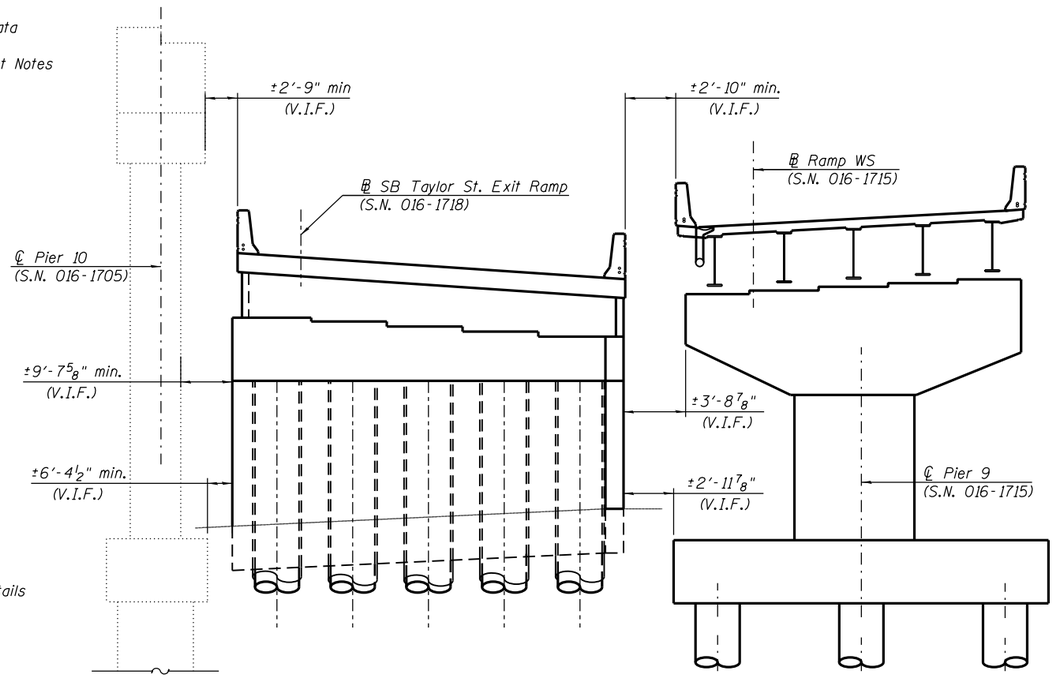
SHEET NO. S4-01 OF S4-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	915
		CONTRACT NO. 60X93		
		ILLINOIS	FED. AID PROJECT	

FILE NAME: pw:\\617479-PWINT.aecomonline.local:AECOM_D502_NA\Documents\01 Americas\Transportation\60269938 Circle\Phase_II\000_CAD\008_Structural\Structural\Structure_016-1718\016-1718-60X93-S001-GPE

11:51:15 AM

INDEX OF SHEETS



ELEVATION AT NORTH ABUTMENT

(Looking North)

TOTAL BILL OF MATERIAL

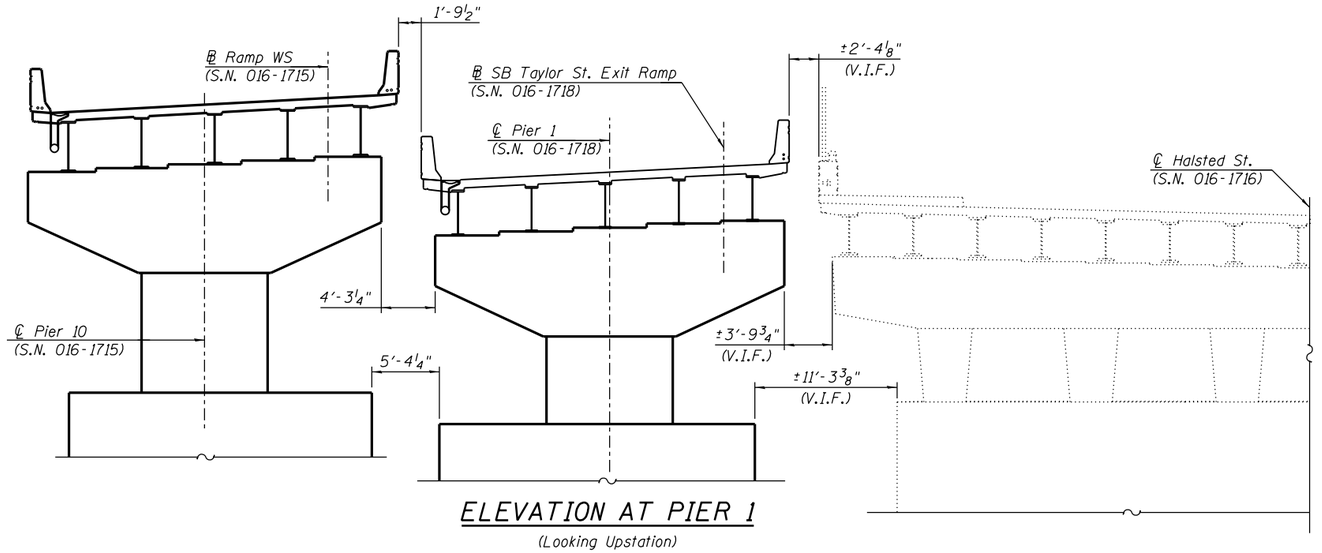
ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	CU YD	-	51.3	51.3
Concrete Structures	CU YD	-	120.7	120.7
Rubbed Finish	SQ FT	-	479	479
Concrete Superstructure	CU YD	169.6	-	169.6
Form Liner Textured Surface	SQ FT	-	217	217
Protective Coat	SQ YD	737	-	737
Concrete Superstructure (Approach Slab)	CU YD	45.8	-	45.8
Furnishing And Erecting Structural Steel	L SUM	0.10	-	0.10
Stud Shear Connectors	EACH	2,124	150	2,274
Reinforcement Bars	POUND	-	82,780	82,780
Reinforcement Bars, Epoxy Coated	POUND	61,760	22,710	84,470
Bar Splicers	EACH	31	-	31
Mechanical Splicers	EACH	-	120	120
Name Plates	EACH	1	-	1
Permanent Casing	FOOT	-	739	739
Drilled Shaft In Soil	CU YD	-	264.0	264.0
Drilled Shaft In Rock	CU YD	-	12.0	12.0
Preformed Joint Strip Seal	FOOT	31	-	31
Anchor Bolts, 1"	EACH	40	-	40
Anchor Bolts, 1 1/2"	EACH	30	-	30
Concrete Sealer	SQ FT	-	1,932	1,932
Granular Backfill Special	CU YD	-	2.7	2.7
Crosshole Sonic Logging Access Ducts	FOOT	-	779	779
Crosshole Sonic Logging Testing	EACH	-	2	2
Foundation Construction At Existing Obstructions	EACH	-	7	7
Earth Excavation (Special)	CU YD	-	14.0	14.0
Bridge Deck Grooving (Longitudinal)	SQ YD	463	-	463
High Load Multi-Rotational Bearings, Guided Expansion, 150K	EACH	10	-	10
High Load Multi-Rotational Bearings, Fixed - 300K	EACH	5	-	5
Granular Backfill For Structures	CU YD	-	26.2	26.2
Drainage Scuppers, Ds-11	EACH	2	-	2
Drainage System	L SUM	0.10	-	0.10
* CTA Protective Shield	L SUM	0.33	-	0.33

*CTA Protective Shield shall be as per the Special Provision "CTA Protective Shield". See Ramp WS (S.N. 016-1715) (Contract 60X93) Plans for details.

STATION 6408+44.04
BUILT 20-- BY
STATE OF ILLINOIS
F.A.I. RTE. 90/94/290
SEC. 2014-013R&B-R
LOADING HL-93
STRUCTURE NO. 016-1718

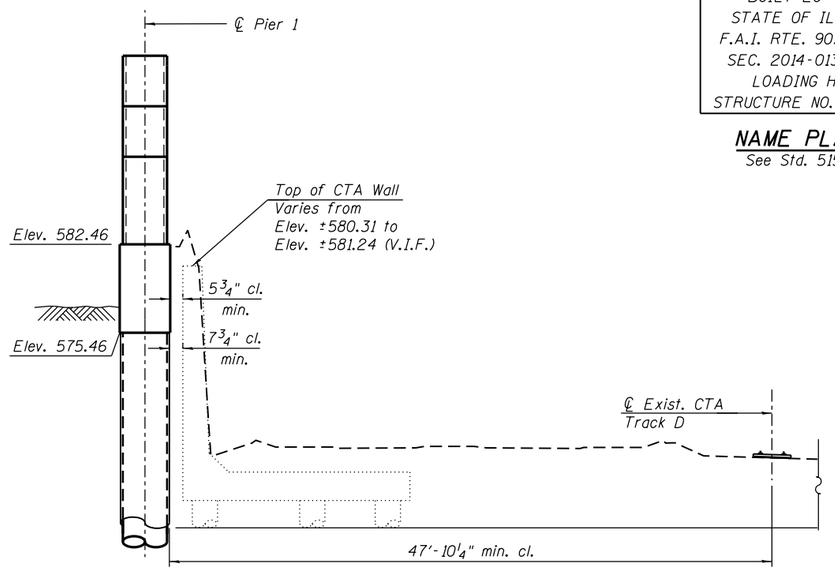
NAME PLATE

See Std. 515001



ELEVATION AT PIER 1

(Looking Upstation)



SECTION AT PIER 1

HBM ENGINEERING GROUP, LLC	USER NAME = marian.agamy	DESIGNED - MI, JJS	REVISED -	
		CHECKED - MI, LAB	REVISED -	
	PLOT SCALE = N.T.S	DRAWN - WM	REVISED -	
	PLOT DATE = 9/19/2018	CHECKED - MI, MAI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIAL AND INDEX OF SHEETS
STRUCTURE NO. 016-1718
SHEET NO. S4-03 OF S4-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	917
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/29/18

FILE NAME: pw:\\617479-PWINT.aecomonline.local:AECOM_D502_NAIDocuments\01 Americas\Transportation\60269938 Circle\Phase_II\000_CAD\008_Structural\Structure_016-1718\01617I8-60X93-S003-BOM
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GENERAL NOTES

1. Fasteners shall be ASTM A325 Type 1, hot-dipped galvanized bolts. Bolts $\frac{7}{8}$" ϕ, holes $\frac{15}{16}$" ϕ, unless otherwise noted.
2. Calculated weight of Structural Steel = 177,860 lbs.
3. All structural steel shall be AASHTO M 270 Grade 50.
4. All structural steel shall be metalized (thermal spraying). See Special Provision for "Metalizing of Structural Steel".
5. No field welding is permitted except as specified in the contract documents.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
8. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
9. Concrete Sealer shall be applied to the designated areas of the abutment and pier.
10. Structural steel erection shall be accomplished by a steel erection contractor or subcontractor certified as an Advanced Certified Steel Erector (ACSE) by the American Institute of Steel Construction (AISC). See Special Provision for "Erection of Complex Steel Structures".
11. Existing/Abandoned foundation elements (drilld shafts, etc.) are present at the proposed locations of North Abutment and Pier 1. The Contractor shall provide equipment, labor and materials as required to install drilled shafts thru existing known obstructions. Obstruction mitigation shall be as per the Special Provision for Foundation Construction at Existing Obstructions. If, in the course of drilling, interference with an existing element is observed through which the drill cannot proceed, the contractor shall immediately notify the Engineer and work shall cease until such time as an appropriate solution is provided. All costs for such coordination shall be included with Foundation Construction at Existing Obstructions.
12. The drilled shaft quantities and reinforcement detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft location and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.
13. ~~"System 1" shall be utilized to top coat all metalized steel. See Special Provision for "Metalizing of Structural Steel" for details.~~ 1
14. The Contractor shall field-verify the locations of existing utilities prior to construction and take all precautions not to damage existing utilities. Any such damage shall be repaired by the Contractor at no additional cost to the Department.
15. The Contractor shall exercise extreme caution during removal and construction to make certain that removal/construction activities, live load surcharge, structure excavation and other loads applied to the structures will not have detrimental effects on the adjacent structures (including CTA Retaining Walls), buildings, 84" diameter and 7'-2$\frac{3}{8}$"Wx8'-0"H existing main drains located along the I-290 westbound roadway (between the North Abutment and Pier 1) and/or other utilities. See Contract Special Provisions for details. Any damage to the existing elements during removal/construction shall be repaired by the Contractor, at his/her expense, and at no charge to the Department.
16. Slipforming of the parapet is not allowed.
17. For the Conduits Embedded in Structure details and quantities, see Roadway and Electrical Plans.
18. For drilled shaft locations where permanent casting is required as shown on the plans, the casing will be paid for under the Permanent Casing pay item. If the Contractor elects to use permanent Casing for ease of construction in locations where permanent casing is not required on the plans, the casing will not be paid for separately and is included in the Drilled Shaft in Soil pay item.
19. Limited groundwater elevation data is available in the boring logs. In addition, groundwater may also be present in deeper granular layers. The groundwater may rise in the shafts to an elevation above the top of granular layers. The Contractor shall consider this information when choosing construction methods. The Contractor will not be compensated for issues related to the groundwater elevation.
20. The Contractor shall take all necessary precautions not to contaminate groundwater during the drilled shaft construction operation. Contractor is responsible for the proper containment and disposal of the contaminated groundwater and spoils resulting from Contractor's means and methods. No additional cost will be paid for this effort.
21. Based on the squeeze potential of the soft clay soils, the use of temporary casing will be required to two feet below the soft clay layer in order to properly construct the drilled shafts. Casing may be pulled or left in place, as determined by the Contractor, at no additional cost to the Department.
22. The existing drainage manholes at the northwest corner of the proposed abutment and Retaining Wall 47 (S.N. 016-1834) shall be relocated to avoid conflict with proposed construction. See Drainage and Utility Plans for details.
23. The Contractor shall provide vibration and displacement monitoring at the locations specified in the Special Provisions for Construction Vibration Monitoring and Monitoring Adjacent Structures to ensure that removal/construction activities in the vicinity of the structures do not have detrimental effects on building foundations. No additional compensation shall be provided to the Contractor for alternative means and methods, or additional precautionary measures, required during removal/construction activities to satisfy these requirements. See Contract Special Provisions for details.
24. The Contractor shall coordinate the construction of the proposed structure with the construction of the proposed Retaining Wall 47 (S.N. 016-1834) and the proposed Ramp WS Bridge (S.N. 016-1715). See MOT plan sheets and Contract Special Provisions, including the Available Work Areas and Sequencing Requirements Special Provision, for additional construction and coordination requirements.
25. The Contractor may encounter abandoned foundation elements including, but not limited to, sheet piles, drilled shafts and steel piles, that obstruct construction of the proposed structure. Removal and disposal of portions of abandoned foundation elements shall be as per the Special Provision for Abandoned Foundation Removal. See Roadway Plans for approximate locations and quantities.
26. The Contractor shall install a protective shield system to protect the existing CTA infrastructure from any falling objects during the demolition of the existing structures and the construction of proposed Ramp WS (S.N. 016-1715), Ramp SE (S.N. 016-1714) and SB Taylor Street Exit Ramp (S.N. 016-1718). The Contractor shall install the CTA Protective Shield prior to any construction activity over and/or adjacent to CTA. This work shall be in accordance with the Special Provision for CTA Protective Shield.

EXISTING STRUCTURE ASSESSMENT NOTES

1. In order to construct proposed superstructure and substructure elements, the Contractor may elect to support temporary construction material and/or equipment on the existing structures in the vicinity of the proposed structure. The Contractor shall submit Structural Assessment Report(s) for approval prior to beginning the work. See Special Provision.
2. An Existing Structure Information Package (ESIP) will be provided by the Department to the Contractor upon request.
3. The Contractor shall retain the services of an engineering firm, prequalified in the IDOT consultant selection category of Highway Bridge (Adv. Typical), for preparation of the Structural Assessment Report(s). Contractor's pre-approval shall not be applicable for this project. See Special Provision.

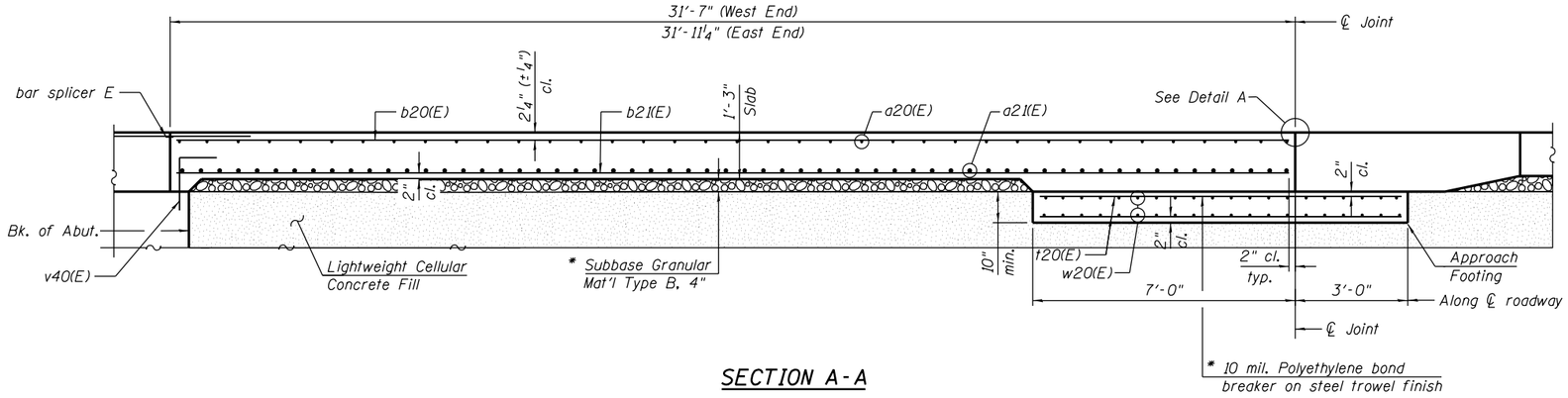
   Current existing structure Load Rating on file:

   S.N. 016-1713 (Harrison St over SB I-90/94)
   Inventory Rating Factor: 2.19 (HL-93)
   Operating Rating Factor: 2.84 (HL-93)
   Live Load Restriction: None

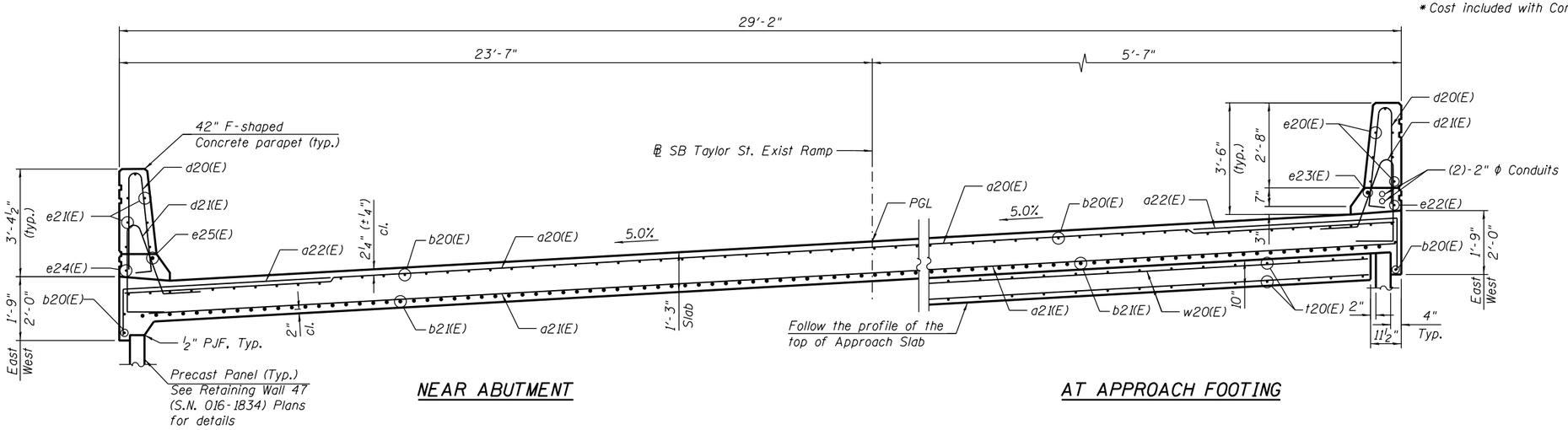
   S.N. 016-1703 (WB I-290 over I-90/94)
   Inventory Rating Factor: 1.21 (HL-93)
   Operating Rating Factor: 2.11 (HL-93)
   Live Load Restriction: None

   S.N. 016-1716 (Halsted St over I-290 & CTA)
   Inventory Rating Factor: 1.12 (HL-93)
   Operating Rating Factor: 1.45 (HL-93)
   Live Load Restriction: None

   S.N. 016-2450 (WB I-290 to SB I-90/94)
   Inventory: 0.71 (H20)
   Operating: 1.18 (H20)
   Live Load Restriction: None
4. Inventory and Operating Ratings, and Live Load Restrictions, are provided for information only. Inventory and Operating Ratings are based on live loading and configuration as noted. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and Live load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.
5. The Contractor is advised that the existing structures may contain members in deteriorated conditions with reduced load-carrying capacities. It is the Contractor's responsibility to account for the condition of existing structures when developing construction procedures for using them to support construction loads.
6. The Contractor shall verify that the structural demands of the applied loads due to the Contractor's means and methods will not exceed the available capacity of the structure at the time loads are applied. Most likely, the Contractor will be required to provide additional shoring under the existing bridges (or other methods of retrofitting) to support construction loads. Design, installation and subsequent removal of such shoring system will be the responsibility of the Contractor and will not be paid separately.
7. The Contractor shall use caution and not damage any component of the existing structure. Upon completion of work, and prior to allowing traffic back on the existing structure, the Contractor must restore the existing structure to its original condition.



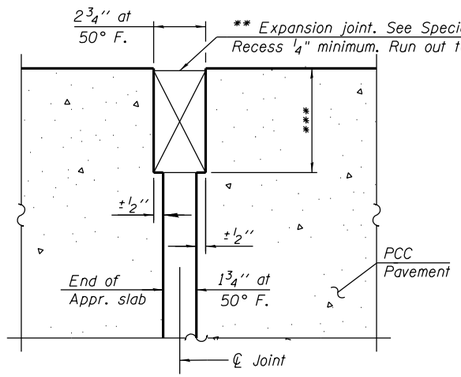
SECTION A-A



NEAR ABUTMENT

AT APPROACH FOOTING

SECTION B-B



DETAIL A

Joint Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.

** Cost included with Concrete Superstructure (Approach Slab).

*** Per manufacturer recommendations.

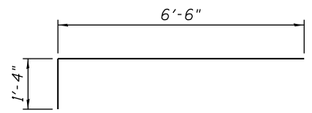
NOTES:

1. Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
2. Parapet Concrete shall be paid for as Concrete Superstructure.
3. Approach footing concrete shall be paid for as Concrete Structures.
4. Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
5. For v40(E) bar details, see Sheet S4-28 .
6. The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
7. For bar splicer details, see Sheet S4-33 .
8. Cost of excavation for approach footing included with Concrete Structures.
9. For MSE Retaining Wall, Lightweight Cellular Concrete Fill, Anchorage Slab, and drainage treatment details, see Retaining Wall 47 (S.N. 016-1834) Plans.
10. For additional parapet details, see Sheet S4-12 .

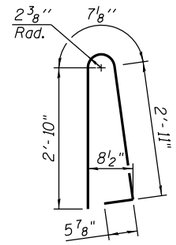
* Cost included with Concrete Superstructure (Approach Slab).

BILL OF MATERIAL

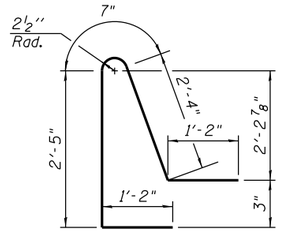
Bar	No.	Size	Length	Shape
a20(E)	46	#5	31'-0"	
a21(E)	61	#8	31'-0"	
a22(E)	92	#5	7'-10"	
b20(E)	47	#5	31'-6"	
b21(E)	72	#9	31'-6"	
d20(E)	88	#5	6'-10"	
d21(E)	70	#5	7'-8"	
e20(E)	14	#4	15'-6"	
e21(E)	14	#4	15'-8"	
e22(E)	1	#4	31'-3"	
e23(E)	1	#8	31'-3"	
e24(E)	1	#4	31'-7"	
e25(E)	1	#8	31'-7"	
t20(E)	30	#4	10'-5"	
w20(E)	40	#5	29'-6"	
Concrete Structures		Cu Yd	9.1	
Bridge Deck Grooving (Longitudinal)		Sq Yd	83	
Concrete Superstructure		Cu Yd	9	
Protective Coat		Sq Yd	129	
Concrete Superstructure (Approach Slab)		Cu Yd	45.8	
Reinforcement Bars, Epoxy Coated		Pound	19,680	



BAR a22(E)



BAR d20(E)



BAR d21(E)

Minimum Bar Laps	
Bar	Lap
#5	3'-2"
#8	6'-9"

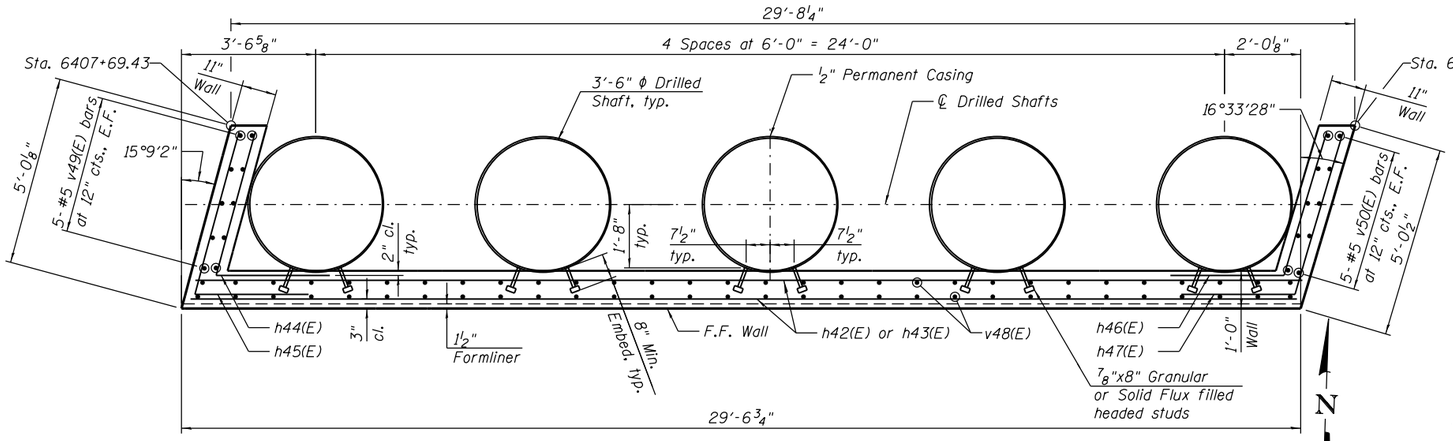
HBM ENGINEERING GROUP, LLC	USER NAME = marlan.agamy	DESIGNED - EK, MAA	REVISED -	
		CHECKED - MI, JJS	REVISED -	
	PLOT SCALE = N.T.S	DRAWN - EK	REVISED -	
	PLOT DATE = 9/19/2018	CHECKED - MI, MAI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH APPROACH SLAB DETAILS
STRUCTURE NO. 016-1718
SHEET NO. S4-13 OF S4-38 SHEETS

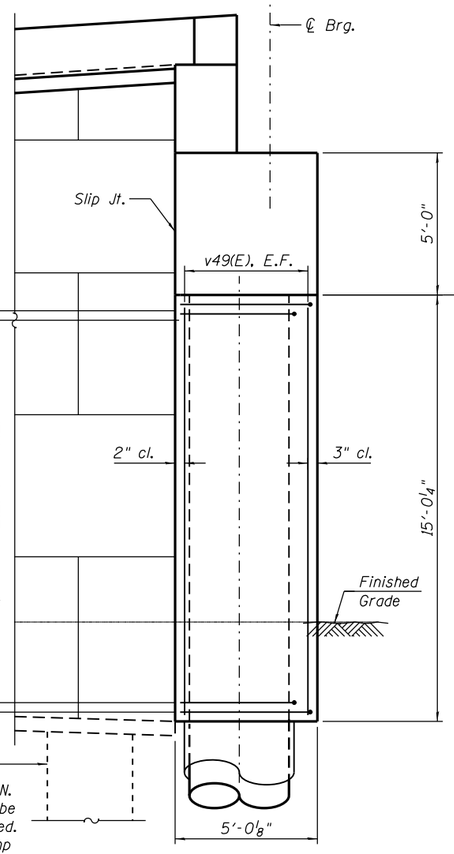
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	927
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/29/18



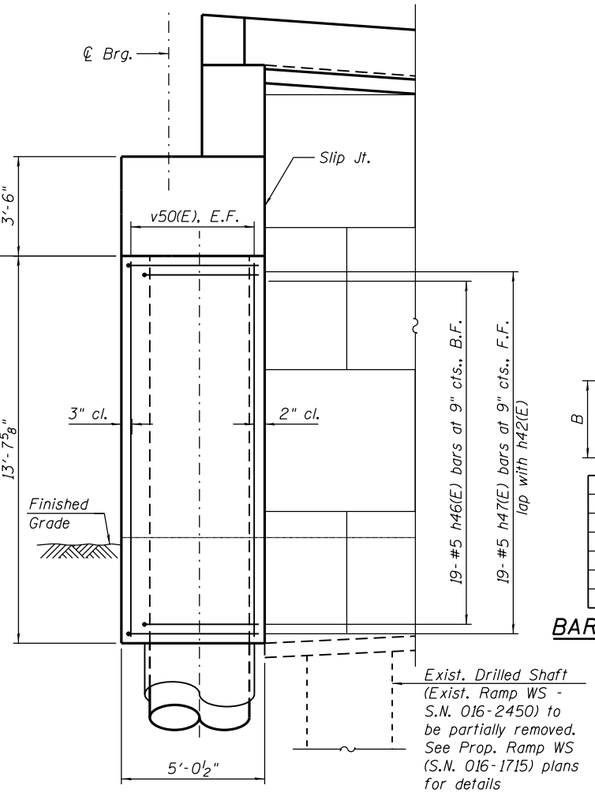
SECTION B-B

(Abutment and drilled shafts reinforcement not shown for clarity)



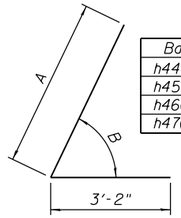
NORTHWEST WALL ELEVATION

(Abutment View shown along Front Face of Wall)
(Looking East)



NORTHEAST WALL ELEVATION

(Abutment View shown along Front Face of Wall)
(Looking West)

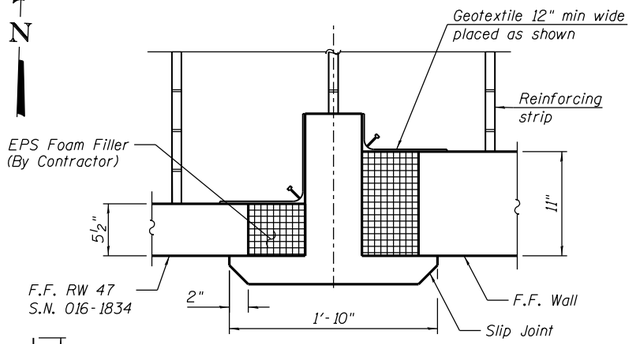


Bar	A	B
h44(E)	4'-0"	74°50'58"
h45(E)	4'-8"	74°50'58"
h46(E)	4'-0"	106°33'28"
h47(E)	4'-8"	106°33'28"

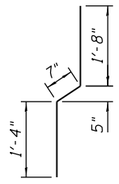
BARS h44(E) thru h47(E)

NOTE:

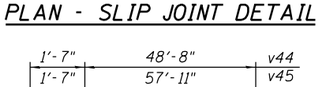
1. Proper installation of foam filler and geotextile at slip joints is imperative in preventing loss of backfill material.



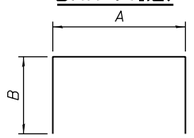
PLAN - SLIP JOINT DETAIL



BAR v41(E)

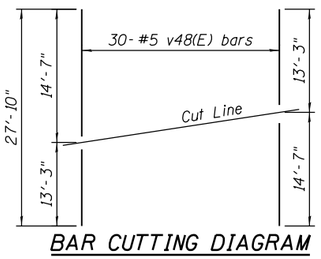


BARS v44 and v45

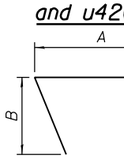


Bar	A	B
s40(E)	4'-6"	3'-10"
s41(E)	4'-6"	3'-6"
s42(E)	4'-6"	3'-0"
s43(E)	4'-8"	3'-10"
s44(E)	4'-8"	3'-0"
u42(E)	4'-6"	1'-6"

BARS s40(E) thru s44(E) and u42(E)

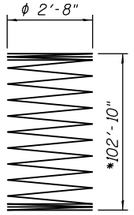


BAR CUTTING DIAGRAM

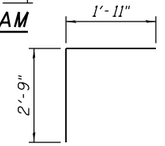


Bar	A	B	C
u40(E)	4'-8"	3'-10"	105°09'02"
u41(E)	4'-8"	3'-10"	106°33'28"

BARS u40(E) and u41(E)



BAR sp40



BAR v40(E)

Minimum Bar Laps	
Bar	Lap
#5	3'-2"
#6	3'-10"
#8	5'-1"
#11	9'-3"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h40(E)	5	#5	30'-6"	
h41(E)	10	#6	29'-5"	
h42(E)	36	#5	29'-3"	
h43(E)	6	#5	29'-4"	
h44(E)	21	#5	7'-2"	
h45(E)	21	#5	7'-10"	
h46(E)	19	#5	7'-2"	
h47(E)	19	#5	7'-10"	
p40(E)	12	#6	29'-3"	
p41(E)	10	#5	29'-3"	
p42(E)	24	#5	6'-10"	
p43(E)	6	#5	5'-11"	
s40(E)	24	#5	12'-2"	
s41(E)	24	#5	11'-6"	
s42(E)	12	#5	10'-6"	
s43(E)	2	#5	12'-4"	
s44(E)	2	#5	10'-8"	
* sp40	5	#5	102'-10"	
u40(E)	7	#6	12'-4"	
u41(E)	7	#6	12'-4"	
u42(E)	35	#5	7'-6"	
v40(E)	31	#5	4'-8"	
v41(E)	31	#5	3'-7"	
v42(E)	31	#5	7'-11"	
v43(E)	31	#5	6'-5"	
v44	30	#11	50'-3"	
v45	30	#11	59'-6"	
v46	30	#11	65'-2"	
v47	30	#11	55'-11"	
v48(E)	30	#5	27'-10"	
v49(E)	10	#5	14'-7"	
v50(E)	10	#5	13'-3"	
Structure Excavation		Cu Yd	51.3	
Concrete Structures		Cu Yd	50.0	
Concrete Superstructure		Cu Yd	2.7	
Protective Coat		Sq Yd	7.0	
Stud Shear Connectors		Each	150	
Reinforcement Bars		Pound	45,930	
Reinforcement Bars, Epoxy Coated		Pound	6,750	
Permanent Casing		Foot	485	
Drilled Shaft in Soil		Cu Yd	173	
Drilled Shaft in Rock		Cu Yd	8	
Concrete Sealer		Sq Ft	932	
Crosshole Sonic Logging Access Ducts		Foot	514	
Crosshole Sonic Logging Testing		Each	1	
Foundation Construction at Existing Obstructions		Each	4	
Granular Backfill for Structures		Cu Yd	17.0	

*Length is height of spiral

1 REVISED ENTIRE SHEET 10/29/18

HBM ENGINEERING GROUP, LLC

USER NAME = marian.agamy	DESIGNED - WM, SK	REVISED -		
	CHECKED - MI, LAB	REVISED -		
PLOT SCALE = N.T.S	DRAWN - WM, SK	REVISED -		
PLOT DATE = 9/10/2018	CHECKED - MI, MAI	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT DETAILS II
STRUCTURE NO. 016-1718
SHEET NO. S4-28 OF S4-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	942
		CONTRACT NO. 60X93		
		ILLINOIS	FED. AID PROJECT	

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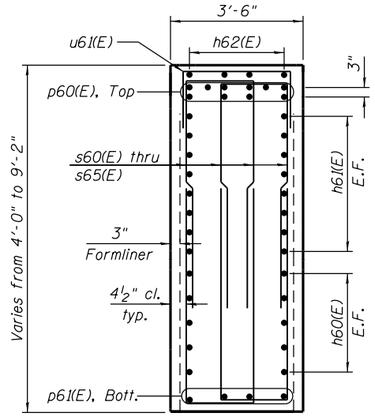
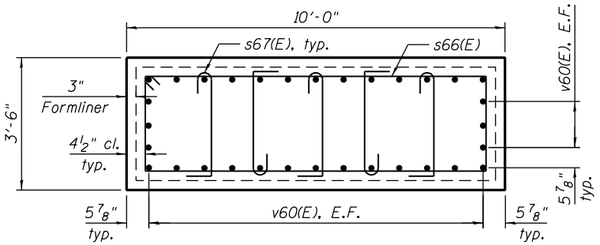
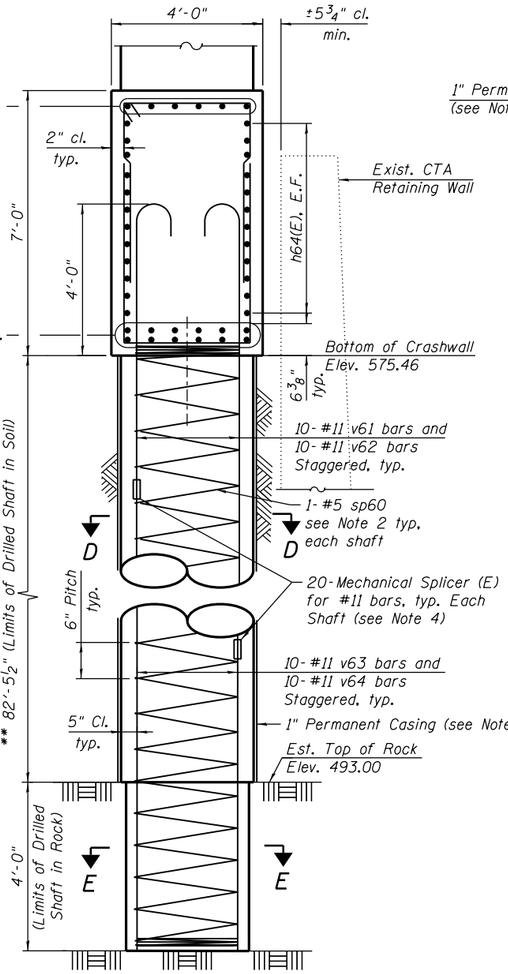


SECTION A-A

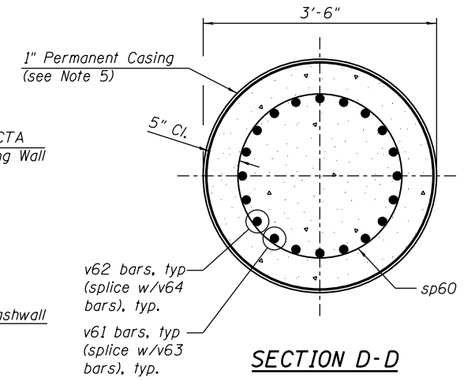


SECTION B-B

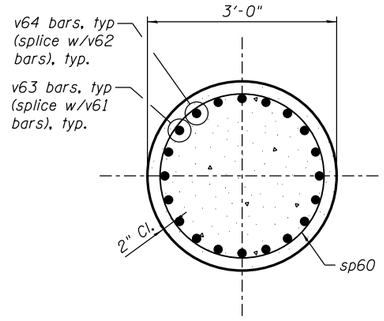


SECTION C-C

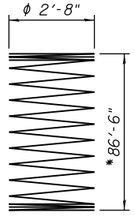
** The quantities and detailing are based on the estimated elevations shown on the plans. The actual elevations may differ at each shaft and corresponding adjustments shall be made to the drilled shaft and reinforcement quantities and payment limits.



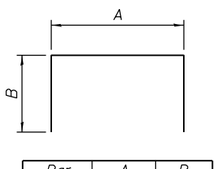
SECTION D-D



SECTION E-E

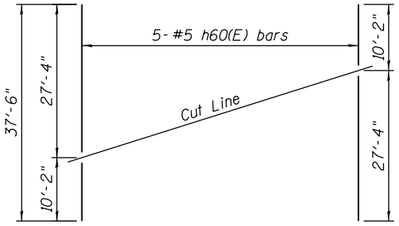


BAR sp60

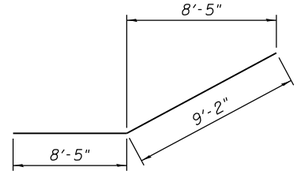


Bar	A	B
p60(E)	27'-4"	3'-0"
s60(E)	1'-9"	3'-9"
s61(E)	1'-9"	4'-6"
s62(E)	1'-9"	5'-6"
s63(E)	1'-9"	5'-10"
s64(E)	1'-9"	5'-1"
s65(E)	1'-9"	4'-4"
s68(E)	3'-8"	5'-7"
t60(E)	24'-8"	1'-0"
t61(E)	24'-8"	1'-10"
u60(E)	2'-9"	3'-10"
u61(E)	2'-9"	1'-6"
u62(E)	3'-8"	3'-10"

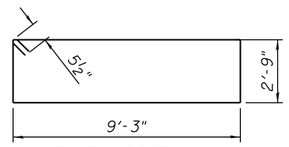
BARS p60(E), s60(E) thru s68(E), t60(E), t61(E), and u60(E) thru u62(E)



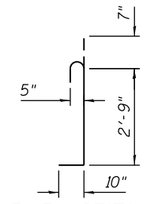
BAR CUTTING DIAGRAM



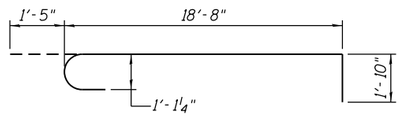
BAR p61(E)



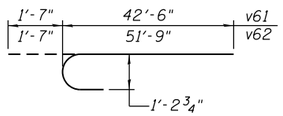
BAR s66(E)



BAR s67(E)



BAR v60



BARS v61 and v62

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h60(E)	5	#6	37'-6"	
h61(E)	16	#6	27'-4"	
h62(E)	16	#5	6'-8"	
h63(E)	4	#5	4'-9"	
h64(E)	24	#6	24'-8"	
p60(E)	10	#9	33'-4"	
p61(E)	8	#9	17'-7"	
s60(E)	12	#5	9'-3"	
s61(E)	28	#5	10'-9"	
s62(E)	28	#5	12'-9"	
s63(E)	112	#5	13'-5"	
s64(E)	28	#5	11'-11"	
s65(E)	12	#5	10'-5"	
s66(E)	8	#5	24'-11"	
s67(E)	40	#5	4'-2"	
s68(E)	102	#7	14'-10"	
* sp60	3	#5	86'-6"	
t60(E)	6	#10	26'-8"	
t61(E)	12	#10	28'-4"	
u60(E)	16	#6	10'-5"	
u61(E)	28	#5	5'-9"	
u62(E)	28	#6	11'-4"	
v60(E)	32	#10	21'-11"	
v61	30	#11	44'-1"	
v62	30	#11	53'-4"	
v63	30	#11	57'-0"	
v64	30	#11	47'-9"	

Concrete Structures	Cu Yd	61.6
Reinforcement Bars	Pound	36,850
Reinforcement Bars, Epoxy Coated	Pound	15,960
Permanent Casing	Foot	254
Drilled Shaft in Soil	Cu Yd	91.0
Drilled Shaft in Rock	Cu Yd	4.0
Concrete Sealer	Sq Ft	1000
Granular Backfill Special	Cu Yd	2.7
Crosshole Sonic Logging Access Ducts	Foot	265
Crosshole Sonic Logging Testing	Each	1
Foundation Construction At Existing Obstructions	Each	3
Earth Excavation (Special)	Cu Yd	14.0
Granular Backfill for Structures	Cu Yd	9.2

* Length is height of spiral

Minimum Bar Laps	
Bar	Lap
#5	3'-2"
#6	3'-10"
#7	4'-5"
#9	6'-3"
#10	7'-8"
#11	9'-3"

NOTES:

1. For reveal details, see Sheet S4-32.

2. #5 sp60 spiral
   (a) Provide 1 1/2 extra turns, shop welded together per AWS D1.4 top and bottom. Extend spiral 3" into pier cap. Provide 4-#4 spacers or equivalent.
   (b) When splicing spiral reinforcement is necessary, the spiral shall be provided with 1 1/2 extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4 or shall both terminate with a 135°standard hook.
   (c) Spirals are measured vertically.

3. For details and quantity of Bar Splicers, see Sheet S4-33.

4. Contractor shall use Mechanical splicers in drilled shafts that will fit between spirals. Contractor shall field adjust spiral pitch to 12" max. at Mechanical Splicer location.

5. Contractor may need to increase the casing thickness to withstand the installation process. The Estimated Top of Rock/Bottom of Permanent Casing Elevation is shown. The limits of casing shall be adjusted as necessary, and as approved, such that the actual installed casing length extends to the as-encountered top of rock at each shaft. See Article 516.06(d) of the Standard Specifications.

6. A drilled shaft shall be tested in accordance with the Special Provisions for Crosshole Sonic Logging Testing of Drilled Shafts.

7. Proposed Piers 1 and 11 permanent casing shall be installed by twisting and/or pushing the casing in conjunction with drilled excavation inside of the permanent casing. The bottom of the permanent casing shall maintain minimum 2 ft. embedment into underlying soil below the bottom of shaft excavation elevation. Neither the Wet Method of construction nor the use of Temporary Casing will be permitted. See Special Provisions for Foundation Drilling Procedures.

8. Excavation around the existing CTA retaining wall for the construction of the proposed pier shall be performed per Special Provision for Earth Excavation (Special) using only hand excavation or approved methods that would cause no damage to the existing CTA retaining wall. The limits of excavation shall be identified prior to start of work. All planned excavation is subject to approval by the Engineer and CTA.

1 REVISED ENTIRE SHEET 10/29/18

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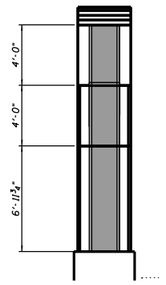
HBM ENGINEERING GROUP, LLC

USER NAME = marian.agamy	DESIGNED - WM, SK	REVISED -
	CHECKED - MI, JJS	REVISED -
PLOT SCALE = N.T.S	DRAWN - WM, SK	REVISED -
PLOT DATE = 9/19/2018	CHECKED - MI, MAI	REVISED -

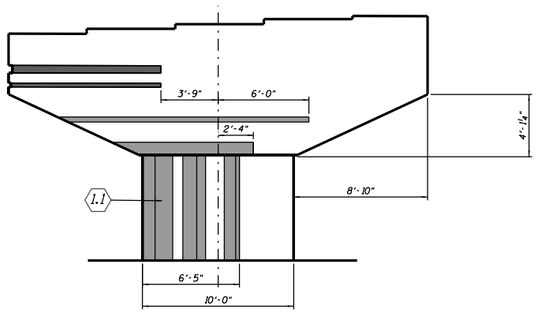
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 SECTIONS AND DETAILS
STRUCTURE NO. 016-1718
SHEET NO. S4-31 OF S4-38 SHEETS

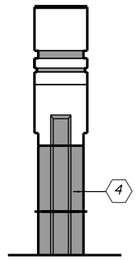
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	945
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		



ELEVATION C



ELEVATION A



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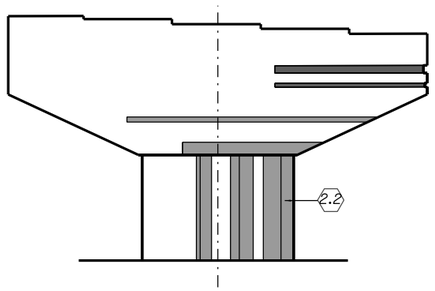
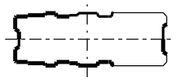
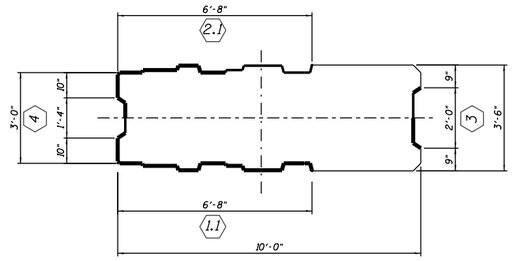


ELEVATION B

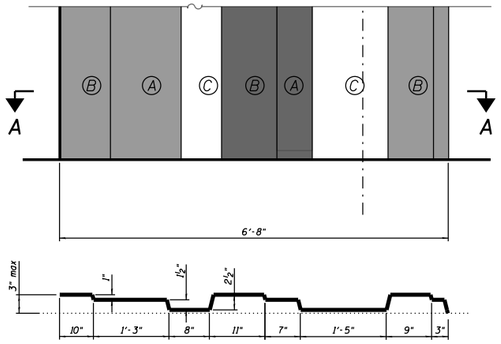
NOTES:

1. For Pier and Pier Cap Dimensions, see Sheets S4-30 and S4-31 .
2. Unless otherwise noted on plans, draft at formliner will be 1/4" per inch depth, typ.
3. Maximum depth of formliner texture at columns and maximum depth of reveals at pier caps is 3".



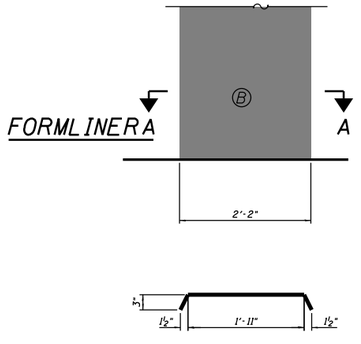


FORMLINER LAYOUT



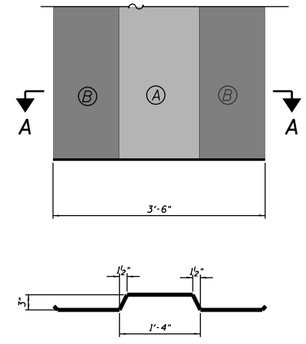
SECTION A-A

FORMLINER 1.1



SECTION A-A

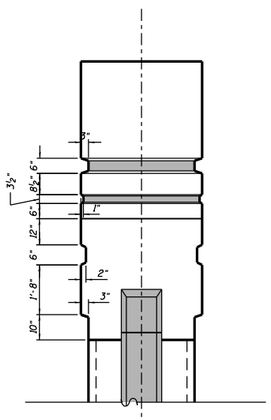
FORMLINER 3



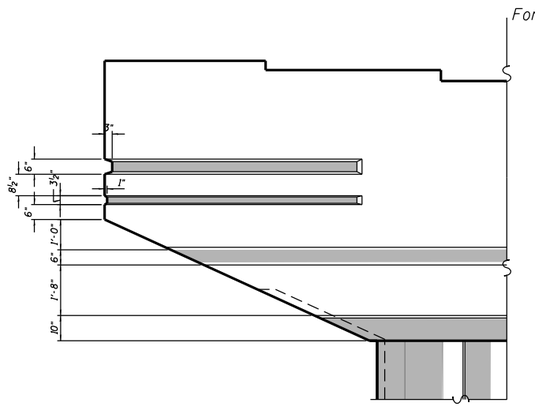
SECTION A-A

FORMLINER 4

Formliner 2.1 - Similar (Opposite Hand)



DETAIL A



DETAIL B

LEGEND:

1.1 2.1 5 6 Formliner Panel Designation

7 Contractor's form: Rubbed Finish at all concrete surface on columns and pier caps, exposed to view and not indicated as textured formliner or textured reveal.

A Texture: Light Sandblast: Max Depth: 0.0625"
B Texture: Medium Sandblast: Max Depth: 0.125"
C Texture: Smooth

NOTES:

1. Verify / coordinate pier dimensions with drawings S4-30 & S4-31
2. Unless otherwise noted on plans, draft at formliner will be ¼" per inch depth, typ.
3. Maximum depth of formliner texture at columns and maximum depth of reveals at pier caps is 3".
4. The Contractor can choose to reuse formliners from Contract 60W28/ Structure 016-1705
5. Designation of formliners: 1.1 , 2.2 , 5 and 6, used in these drawings, matches the designations used for IDOT Contract 60W28/ Structure 016-1705.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Rubbed Finish	Sq Ft	479
Form Liner Textured Surface	Sq Ft	217

PIER CAP REVEAL DETAIL

HBM ENGINEERING GROUP, LLC

USER NAME = marian.agamy		DESIGNED - MR	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 1 ARCHITECTURAL DETAILS STRUCTURE NO. 016-1718
		CHECKED - JJS	REVISED -		
PLOT SCALE = N.T.S		DRAWN - MR	REVISED -		
PLOT DATE = 9/19/2018		CHECKED - MI, MAI	REVISED -		SHEET NO. S4-32 OF S4-38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	946
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

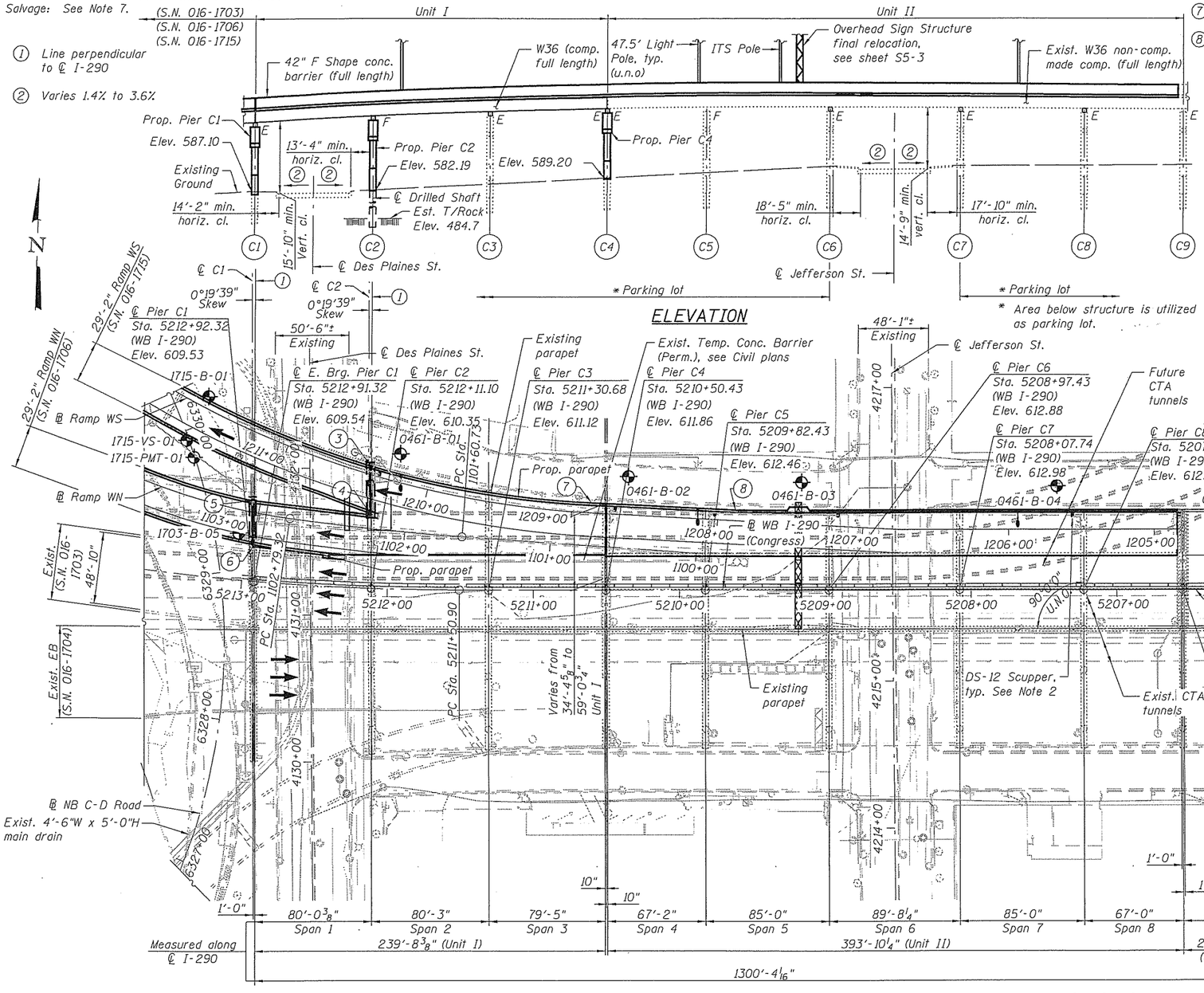
1 REVISED ENTIRE SHEET 10/29/18

Bench Mark: Square cut at center of door entrance to 707 W. Harrison St; South side of Harrison St. ±90′ west of west line of Des Plaines. Elevation 597.47. A + cut in the SE anchor bolt at the 11th street light N. of Roosevelt on the W. side of Halsted. Elev. = 594.06.

Existing Structure: S.N. 016-0461 was originally built in 1952 as F.A. Route Number 131, Section 062-2424.4. The existing structure consists of 16 main spans of multi-unit steel continuous multi-beam superstructures with additional entrance and exit ramp spans along Spans 12 and 13. The existing structure has an overall length of approximately 1301′-4" and an average out-to-out width of approximately 162′-0" for the main spans and 25′-0" for the ramp spans. The substructure units are founded on drilled shafts and consist of 17 multi column piers. The existing bridge is to be rehabilitated through a combination of partial removal and replacement and repairs. Portions of S.N. 016-0461 not included in this Contract were rehabilitated under Contract 62B76, 60X78 and 60X75.

Traffic Control: Two lanes of mainline traffic will be maintained during construction. Canal Street Entrance Ramp will be closed during stage construction. Ramp traffic will be closed during construction and traffic will be detoured via local loads.

Salvage: See Note 7.



PLAN

1 Rev. 10-10-18

③ Sta. 5212+14.60 (WB I-290) offset 83.30′ Rt.

④ Sta. 5212+13.06 (WB I-290) offset 49.92′ Rt.

⑤ Sta. 5212+97.33 (WB I-290) offset 54.68′ Rt.

⑥ Sta. 5212+94.31 (WB I-290) offset 23.64′ Rt.

⑦ Sta. 5210+60.50 (WB I-290) offset 59.31′ Rt.

⑧ Sta. 5209+61.15 (WB I-290) offset 54.25′ Rt.

Notes:
1. For Scope of Work, see sheet S5-2.
2. For locations of Scuppers, Light poles, ITS poles, and OH Sign structures, see sheet S5-3.
3. For Curve Data and Geometric Layout, see sheet S5-4.
4. For Profile Grades, see sheet S5-5 and S5-6.
5. For ℄ Pier & ℄ I-290 Intersect Stationing, see sheet S5-6.
6. For Protective Shield limits, see sheet S5-8.
7. Existing Temporary Support System C & D from Contract 60X78 shall be salvaged, see sheet S5-9.
8. Skew is taken from a line normal to ℄ I-290.
9. Existing utilities attached to structure will be maintained/relocated during construction.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications 7th Edition (Spans 1-3)
2002 AASHTO Standard Specifications for Highway Bridges (Spans 4-16)

DESIGN STRESSES

FIELD UNITS (New Construction)

f′c = 3,500 psi
f′c = 4,000 psi (Superstructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

FIELD UNITS (Exist. Construction)

f′c = 3,500 psi
fy = 60,000 psi (Deck Reinforcement)
fy = 40,000 psi (Pier Reinforcement)
fy = 33,000 psi (ASTM A7)

LOADING HL-93 (SPANS 1-3 & PIER C1 THRU C4)
LOADING HS20-44 & ALT. MILITARY (SPANS 4-16)

Allow 25#/sq. ft. for future wearing surface

SEISMIC DATA

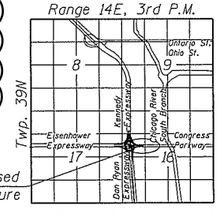
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.085
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.144
Soil Site Type = D

STATE OF ILLINOIS
JAMAL I. GRAINAWI
081-005161
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Jamal Grainawi
JAMAL I. GRAINAWI, S.E. Il. Lic. No. 081-005161
Expires 11-30-2018.
Date 7/18/18

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

1



LOCATION SKETCH

LEGEND:

- W — Water Line
- E — Electric
- T — Telephone line
- CTV — Television line
- Combined Sewer
- Storm Sewer
- Point of min. vert. cl.
- Soil Boring Location

GENERAL PLAN & ELEVATION
WB I-290 (CONGRESS) VIADUCT OVER DES PLAINES ST. TO CANAL ST.
F.A.I. ROUTE 90/94/290
SECTION 2014-013 R&B-R,
COOK COUNTY
STATION 5165+03.09
STRUCTURE NO. 016-0461

WSP USA Inc.
30 N. LASALLE STREET
SUITE 4200
CHICAGO, IL 60602
TEL: (312) 782-8150
FAX: (312) 782-1684

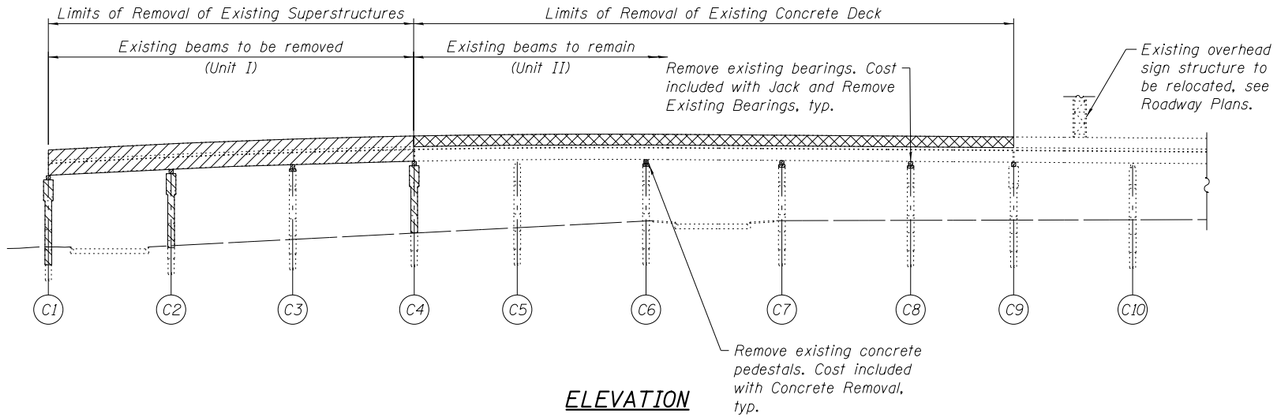
USER NAME = ibrahimm1	DESIGNED - NJP	REVISED -	
	CHECKED - PJL	REVISED -	
PLOT SCALE = N.T.S.	DRAWN - NJP	REVISED -	
PLOT DATE = 7/30/2018	CHECKED - JIG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

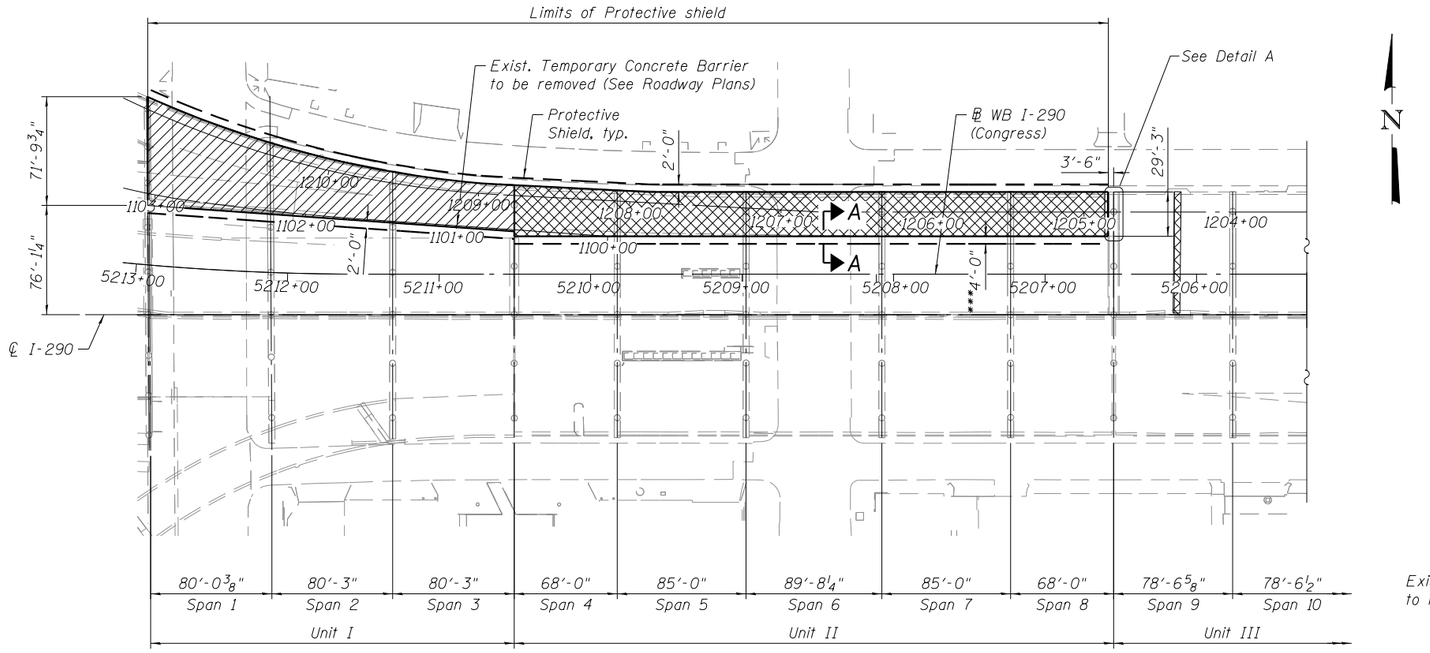
SHEET NO. S5-1 OF S5-72 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	953
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

D160461-60X93-S001-GPE.dgn

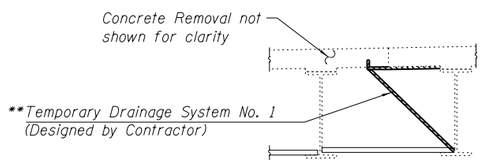


ELEVATION



PLAN

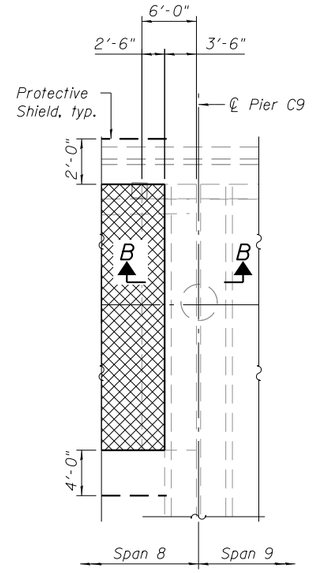
*** Within Unit II



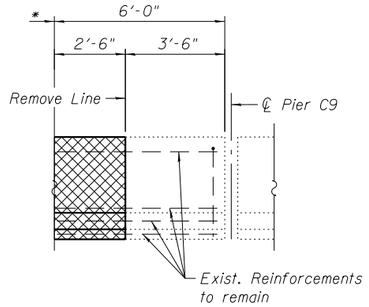
SECTION A-A

Unit II shown, (Unit I Similar)

** For minimum cross-sectional area of Temporary Drainage System, see Special Provision.

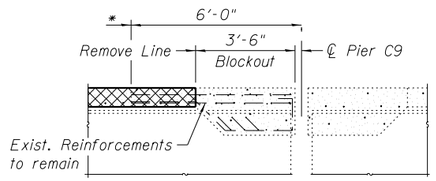


DETAIL A



PARAPET REMOVAL DETAIL-PIER C9

* Exist. Construction Joint per Contract 60X78



SECTION B-B

* Exist. Construction Joint per Contract 60X78

Notes:
1. Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Removal of Existing Concrete Deck.
2. All superstructure removal occuring within Unit I shall be included in the cost of Removal of Existing Superstructures.
3. For additional removal details and quantities, see sheets S5-9 & S5-10.

LEGEND:

- Removal of Existing Superstructures
- Concrete Removal
- Removal of Existing Concrete Deck
- Protective Shield

BILL OF MATERIAL

Item	Unit	Quantity
Removal of Existing Superstructures	Each	1
Removal of Existing Concrete Deck	Each	1
Protective Shield	Sq Yd	2,851
Temporary Drainage System No. 1	L. Sum	1

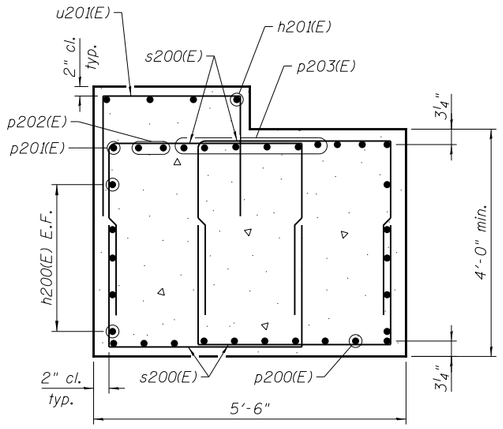
WSP USA Inc.
30 N. LASALLE STREET
SUITE 4200
CHICAGO, IL 60602
TEL: (312) 782-8150
FAX: (312) 782-1684

USER NAME = Ibrahimmi	DESIGNED - NJP	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE REMOVAL DETAILS I STRUCTURE NO. 016-0461
	CHECKED - IJL/MI	REVISED -		
PLOT SCALE = N.T.S.	DRAWN - NJP	REVISED -		
PLOT DATE = 9/19/2018	CHECKED - JIG	REVISED -		SHEET NO. S5-8 OF S5-72 SHEETS

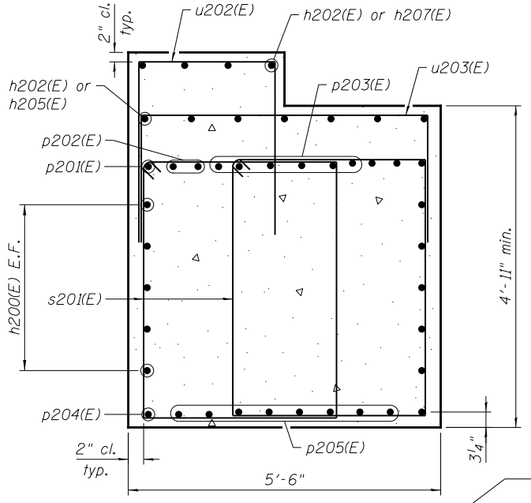
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	960
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

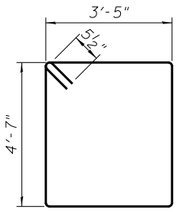
0160461-60X93-S008-ESR.dgn



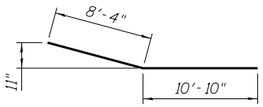
SECTION A-A



SECTION B-B



BAR s201(E)



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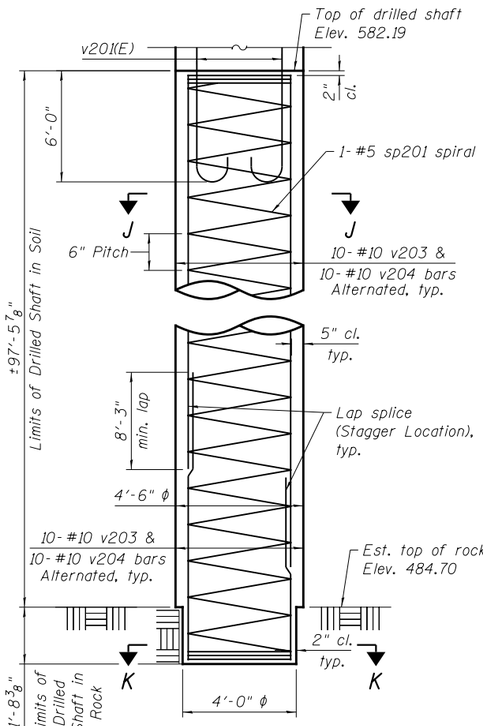
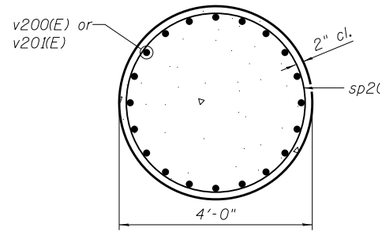
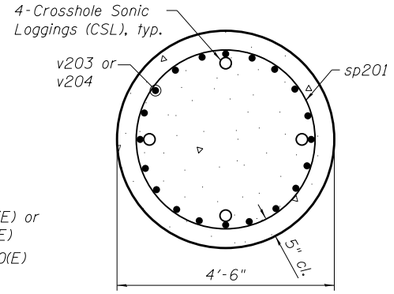


SECTION F-F

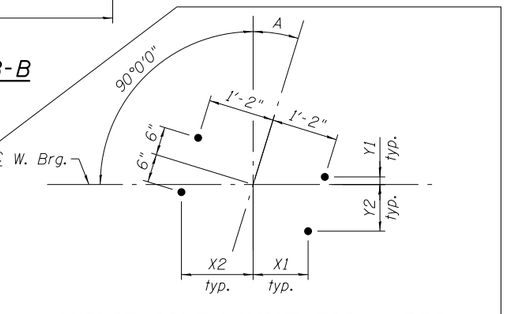


SECTION C-C

For Information Only
Part of Ramp WS (S.N. 016-1715)

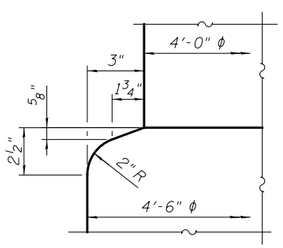


SECTION J-J

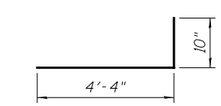


ANCHOR BOLT LAYOUT FOR W. BRG.

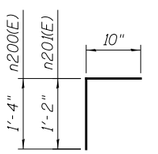
Girder	A	X1	X2	Y1	Y2
1	19°38'48''	$11\frac{3}{16}$"	1'-$3\frac{3}{16}$"	$\frac{15}{16}$"	$10\frac{3}{8}$"
2	16°40'11''	$11\frac{11}{16}$"	1'-$3\frac{1}{8}$"	$1\frac{3}{4}$"	$9\frac{3}{4}$"
3	16°49'14''	$11\frac{11}{16}$"	1'-$3\frac{1}{8}$"	$1\frac{11}{16}$"	$9\frac{13}{16}$"
4	16°58'27''	$11\frac{5}{8}$"	1'-$3\frac{1}{8}$"	$1\frac{5}{8}$"	$9\frac{13}{16}$"
5	17°07'50''	$11\frac{5}{8}$"	1'-$3\frac{1}{8}$"	$1\frac{5}{8}$"	$9\frac{7}{8}$"



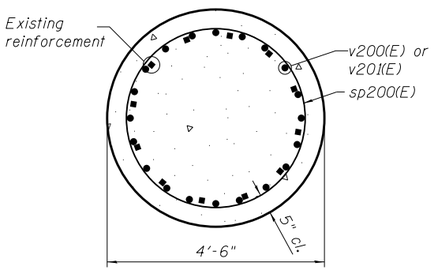
DETAIL A



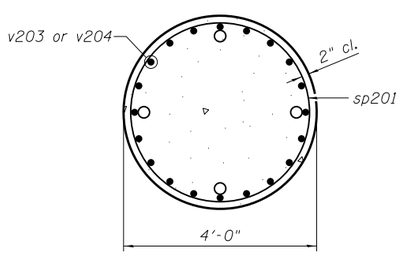
BAR h209(E)



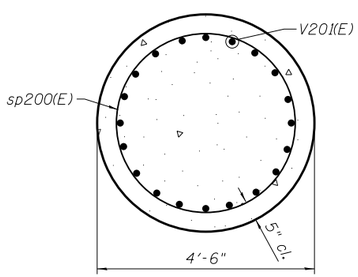
BARS n200(E) & n201(E)



SECTION D-D



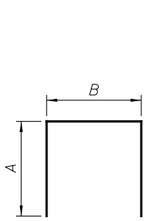
SECTION K-K



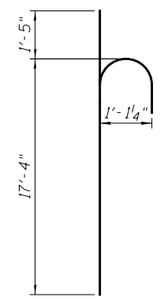
SECTION E-E

A & B DIMENSIONS

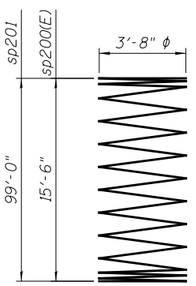
Bar	A	B
s200(E)	3'-10"	3'-5"
s202(E)	3'-11"	3'-5"
u200(E)	3'-3"	5'-0"
u201(E)	1'-9"	2'-4"
u202(E)	2'-4"	2'-4"
u203(E)	1'-10"	5'-2"
u204(E)	4'-3"	5'-2"
u205(E)	3'-3"	5'-2"
u206(E)	3'-7"	2'-10"
u207(E)	6'-9"	5'-2"
u208(E)	4'-3"	3'-8"



BARS



BAR v201(E)



BARS sp200(E) & sp201

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h200(E)	20	#5	29'-0"	
	h201(E)	4	#5	13'-1"	
	h202(E)	11	#5	8'-4"	
	h203(E)	7	#5	22'-5"	
	h204(E)	7	#5	10'-1"	
	h205(E)	7	#5	15'-4"	
	h206(E)	4	#5	3'-8"	
	h207(E)	4	#5	14'-2"	
	h208(E)	2	#5	24'-10"	
	h209(E)	5	#5	5'-2"	
	n200(E)	42	#5	2'-2"	
	n201(E)	6	#5	2'-0"	
	n202(E)	8	#5	1'-6"	
**	n203(E)	6	#10	4'-11"	
	p200(E)	10	#10	19'-2"	
	p201(E)	2	#10	54'-8"	
	p202(E)	4	#10	52'-8"	
**	p203(E)	6	#10	50'-0"	
	p204(E)	2	#10	46'-4"	
	p205(E)	8	#10	42'-2"	
	s200(E)	44	#5	11'-1"	
	s201(E)	82	#5	16'-11"	
	s202(E)	40	#5	11'-3"	
*	sp200(E)	2	#5	15'-6"	
*	sp201	1	#5	99'-0"	
	u200(E)	6	#5	11'-6"	
	u201(E)	12	#5	5'-10"	
	u202(E)	40	#5	7'-0"	
	u203(E)	22	#5	8'-10"	
	u204(E)	10	#5	13'-8"	
	u205(E)	2	#5	11'-8"	
	u206(E)	6	#5	10'-0"	
	u207(E)	4	#5	18'-8"	
	u208(E)	2	#5	12'-2"	
	v200(E)	20	#10	13'-1"	
	v201(E)	60	#10	18'-9"	
	v202(E)	2	#5	6'-10"	
	v203	20	#10	60'-0"	
	v204	20	#10	47'-3"	
	Mechanical Splicers		Each	6	
	Structure Excavation		Cu. Yd.	39	
	Concrete Structures		Cu. Yd.	82.9	
	Reinforcement Bars, Epoxy Coated		Pound	17,050	
	Reinforcement Bars		Pound	11,650	
	Concrete Sealer		Sq. Ft.	1,775	
	Drilled Shaft in Soil		Cu. Yd.	58	
	Drilled Shaft in Rock		Cu. Yd.	1	
	Crosshole Sonic Logging Access Ducts		Foot	100	
	Crosshole Sonic Logging Testing		Each	1	

* Length is height of spiral
** Length is estimated and shall be verified based on type of Mechanical Splicer

Notes:
1. Perform Crosshole Sonic Logging (CSL) testing on Drilled Shaft.
2. The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock elevations and the final top of shaft elevation.
3. For #5 sp201 spiral:
   1) Provide 1½ extra turns top and bottom. Provide 4-#4 spacers or equivalent.
   2) When splicing spiral reinforcement is necessary, the spiral shall be provided with 1½ extra turns at the ends to be spliced. These additional turns shall either be welded together according to AWS D1.4 or shall both terminate with a 135° standard hook.
4. See approved list of Mechanical Splicers for alternatives.

WSP USA Inc.
30 N. LASALLE STREET
SUITE 4200
CHICAGO, IL 60602
TEL: (312) 782-8150
FAX: (312) 782-1684

USER NAME = Ibrahimm1	DESIGNED - IJL	REVISED -	
	CHECKED - MI	REVISED -	
PLOT SCALE = N.T.S.	DRAWN - IJL	REVISED -	
PLOT DATE = 9/19/2018	CHECKED - JIG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER C2 DETAILS II
STRUCTURE NO. 016-0461
SHEET NO. S5-55 OF S5-72 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	1007
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/29/18

0160461-60X93-S055-PC2.dgn

Bench Mark: Chisel "X" on chain bolt of fire hydrant in front of 555 W. Harrison St. Elev. 594.46.

Existing Structure: None.

The existing Ramp WS Bridge (S.N. 016-1715) will be closed and traffic will be detoured during construction. Traffic on I-290 and I-90/94 will be maintained with stage construction.

No Salvage.

Notes:
Wall offsets are measured from the ℄ of Ramp WS to the front face of panels.
F.F. denotes Front Face.
B.F. denotes Back Face.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications 7th Edition with 2015 and 2016 Interim Specifications

DESIGN STRESSES

FIELD UNITS

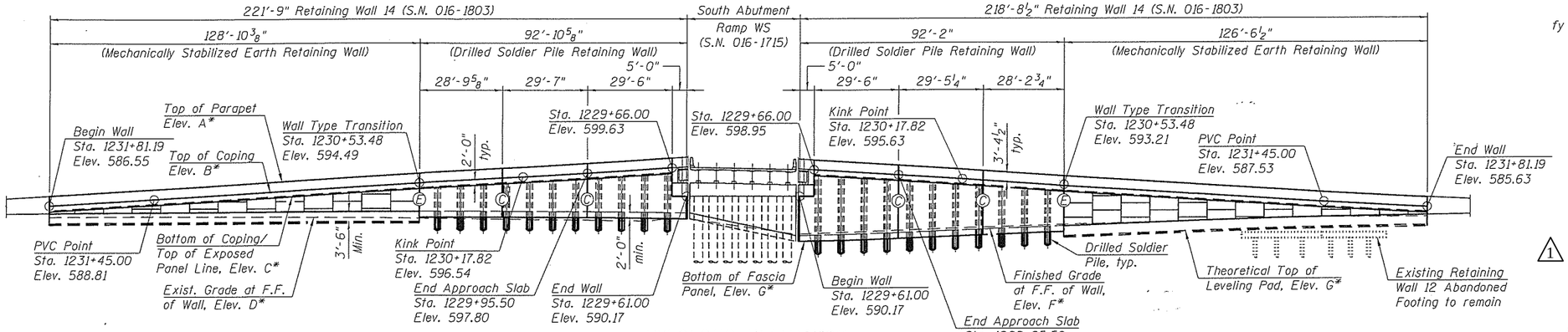
f'c = 3,500 psi (Cast-In-Place Facing)
f'c = 4,000 psi (Anchorage Slab & Concrete Slab)
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 4,500 psi

SOLDIER PILES

fy = 50,000 psi (AASHTO M270 Gr. 50)



* For elevations, see Table 1 on Sheet S6-03 of S6-21.

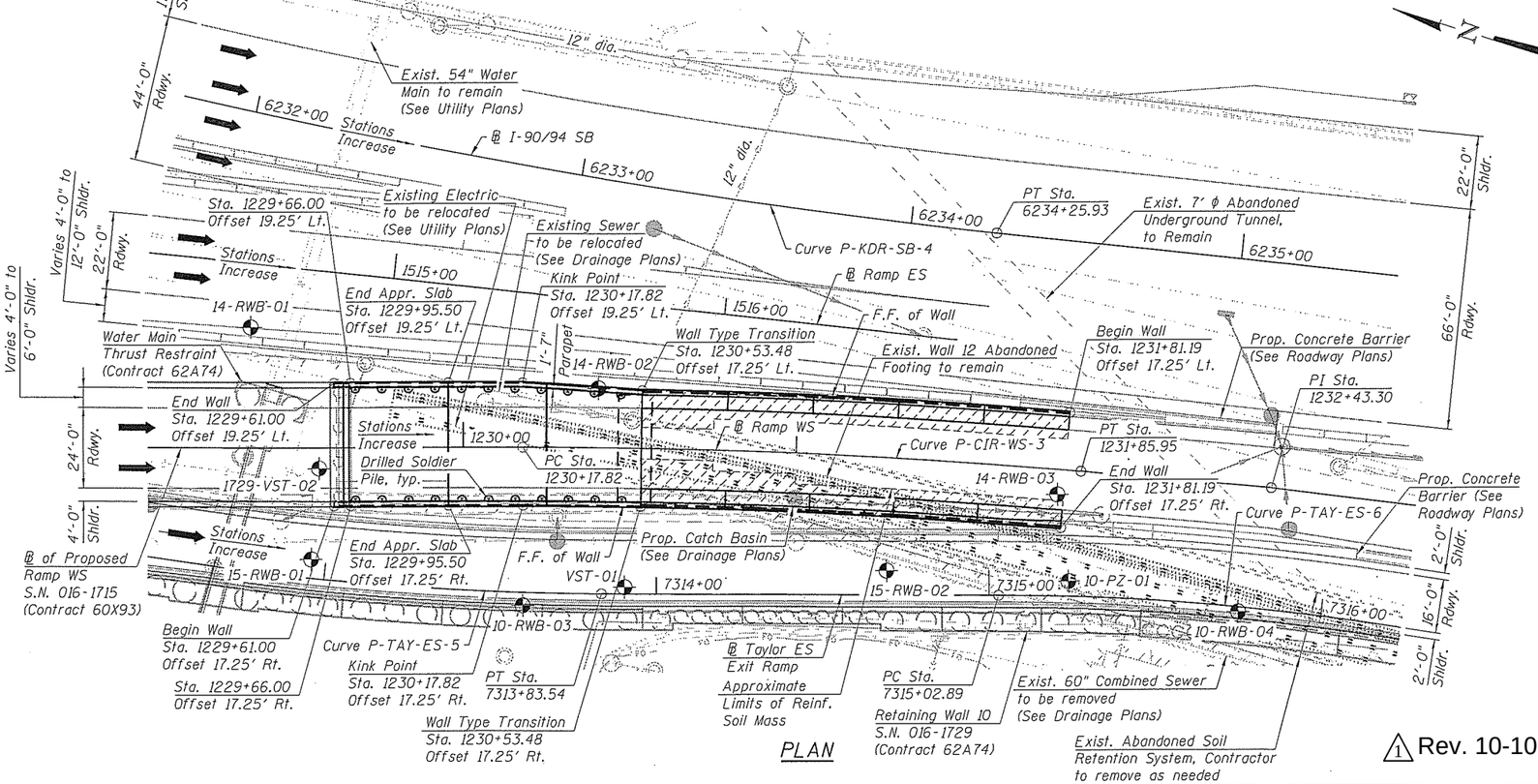
UNFOLDED ELEVATION

(Looking at F.F. of Wall, Proposed Concrete Barrier Not Shown for Clarity)

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures
1

LEGEND

Electric	E	Light Pole	
Water	W	Soil Boring	
Exist. Storm Sewer		Construction Joint	©
Prop. Storm Sewer		Expansion Joint	Ⓔ
Combined Sewer		Limits of Soil Reinforcement	
Prop. Catch Basin			



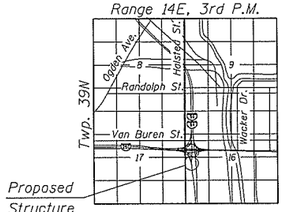
PLAN

1 Rev. 10-10-18

MATTHEW D. SANTEFORD 081-007244 LICENSED STRUCTURAL ENGINEER OF STATE OF ILLINOIS

07/30/2018

MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
RETAINING WALL 14 ALONG RAMP WS
F.A.I 94 (I-290 WB TO I-90/94 SB)
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 1229+61.00 TO STATION 1231+81.19
STRUCTURE NO. 016-1803

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -	
	CHECKED - DJG	REVISED -	
PLOT SCALE = 42.666667 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

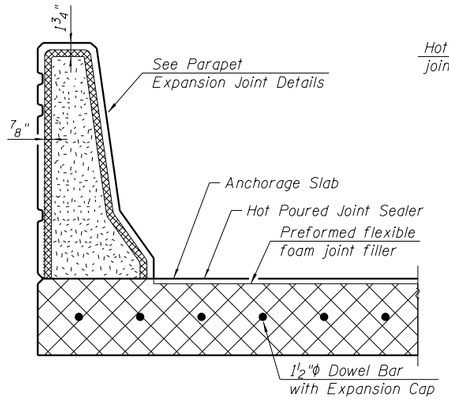
TranSystems

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

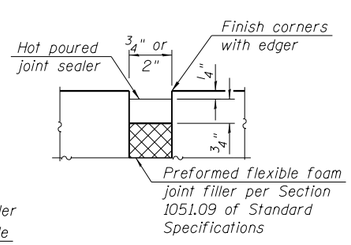
SHEET NO. S6-01 OF S6-22 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	1025
		CONTRACT NO.	60X93	
		ILLINOIS	FED. AID PROJECT	

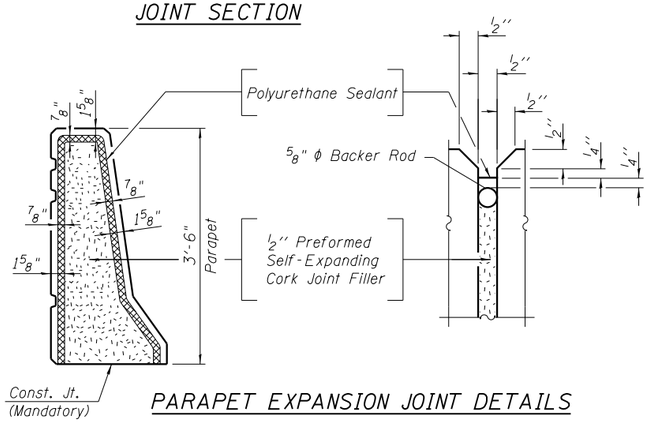
5:33:11 PM PW:\\617479-PWINT.AECOMONLINE.LOCAL:AECOM_DS02_NA\DOCUMENTS\01 AMERICAS\TRANSPORTATION\60269938 CIRCLE\PHASE_II\DOD_CAD\DOD8_STRUCTURAL\STRUCTURE_016-1803\SHEETS\016I803-60X93-SD01-GPE_DGN



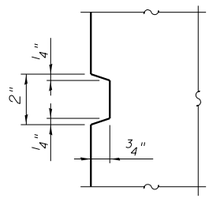
TRANSVERSE EXPANSION JOINT SECTION



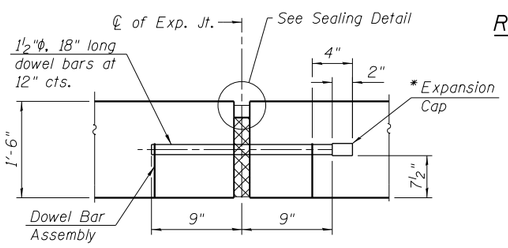
SEALER DETAIL



PARAPET EXPANSION JOINT DETAILS



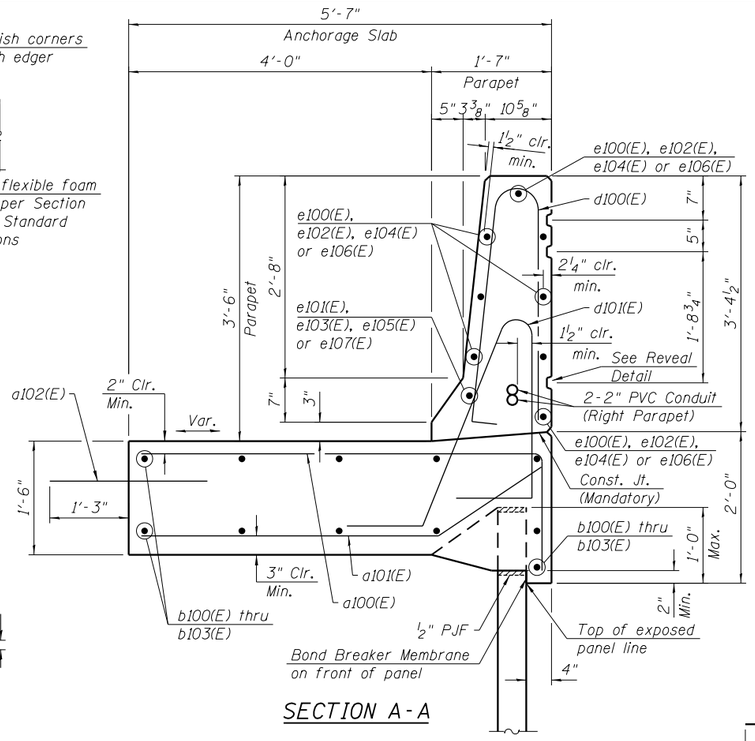
REVEAL DETAIL



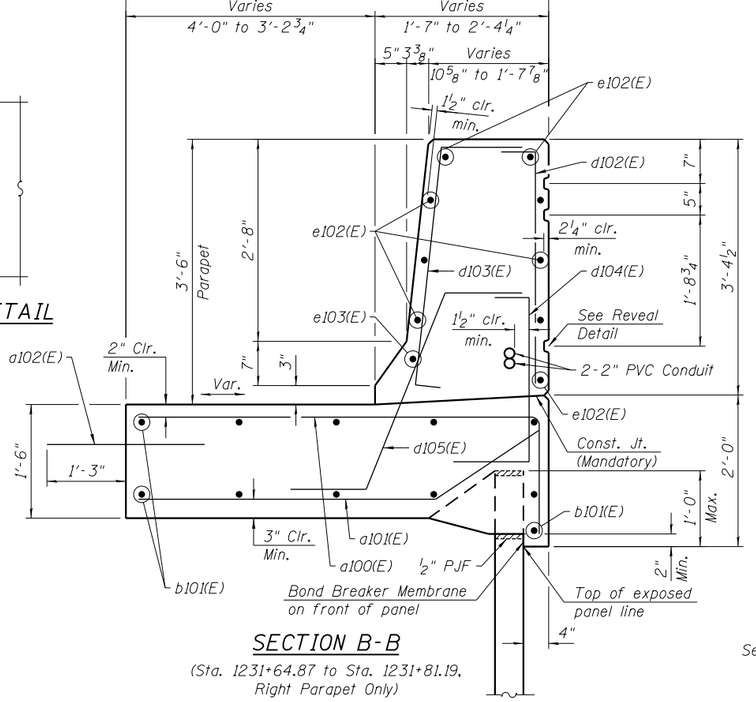
ANCHORAGE SLAB TO ANCHORAGE SLAB TRANSVERSE EXPANSION JOINT

Expansion Joint Filler, Sealer and Dowel Bars included in cost of Concrete Superstructure.

*Expansion caps shall be installed on the exposed end of each dowel bar once header has been removed and the joint filler material has been installed.

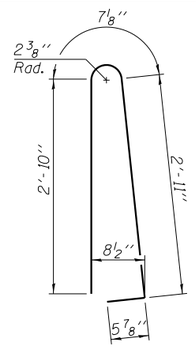


SECTION A-A

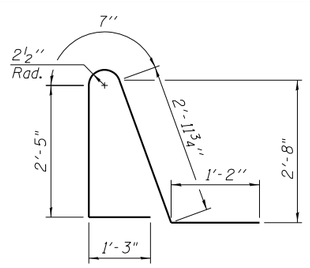


SECTION B-B

(Sta. 1231+64.87 to Sta. 1231+81.19. Right Parapet Only)



BAR d100(E)



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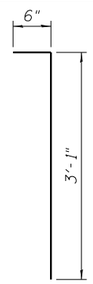
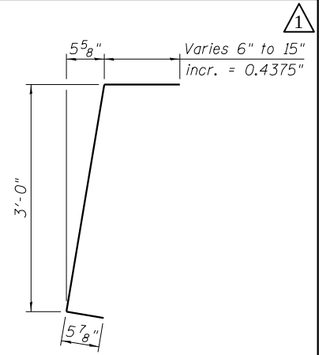


BAR d102(E)



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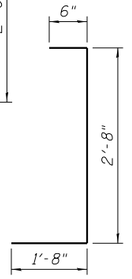

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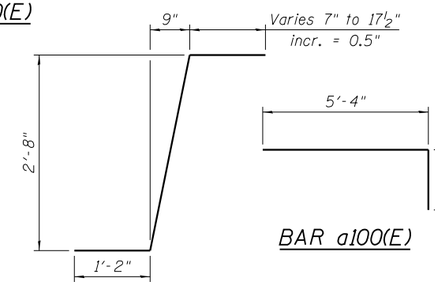
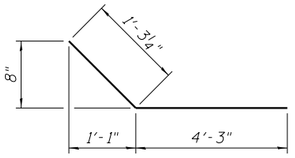


BAR d105(E)

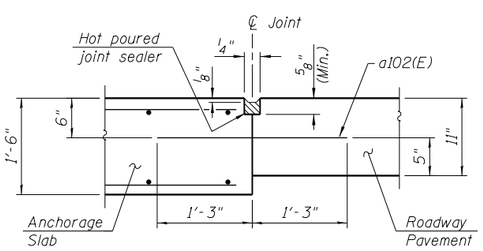
BAR a100(E)



BARS a101(E)

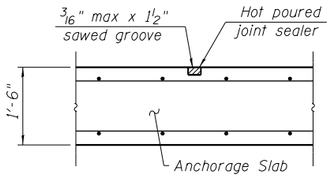
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a100(E)	614	#6	6'-11"	⌐
a101(E)	310	#6	5'-6"	⌒
a102(E)	88	#6	2'-6"	—
b100(E)	33	#5	28'-8"	—
b101(E)	22	#5	25'-0"	—
b102(E)	33	#5	29'-5"	—
b103(E)	22	#5	25'-6"	—
d100(E)	319	#5	6'-10"	⌊
d101(E)	319	#5	8'-5"	⌊
d102(E)	22	#5	3'-7"	⌐
d103(E)	22	#5	4'-5"	⌐
d104(E)	22	#5	4'-6"	⌋
d105(E)	22	#5	4'-6"	∫
e100(E)	24	#4	28'-0"	—
e101(E)	3	#8	32'-0"	—
e102(E)	16	#4	25'-0"	—
e103(E)	2	#8	25'-0"	—
e104(E)	24	#4	28'-6"	—
e105(E)	3	#8	32'-6"	—
e106(E)	16	#4	25'-5"	—
e107(E)	2	#8	25'-5"	—
Structure Excavation		Cu. Yd.	576	
Concrete Superstructure		Cu. Yd.	118.6	
Protective Coat		Sq. Yd.	242	
Reinforcement Bars, Epoxy Coated		Pound	20,120	
Concrete Sealer		Sq. Yd.	2,811	
Bridge Deck Grooving (Longitudinal)		Sq. Yd.	115	



LONGITUDINAL CONSTRUCTION JOINT

See Article 420.05 & 420.12 of the Standard Specifications



TRANSVERSE CONTRACTION JOINT

See Article 420.05 & 420.12 of the Standard Specifications

Notes:

All edges shall be chamfered 3/4 inches.

Protective coat shall be applied to the parapet top and interior vertical surface above ground line and top face of anchorage slab.

Bars indicated thus 3x4- #5 etc. indicates 3 lines of bars with 4 lengths per line.

See Sheet S6-02 of S6-21 for additional notes for MSE wall suppliers.

The Polyurethane Sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

1 REVISED ENTIRE SHEET 10/29/18

TranSystems

USER NAME = wjcolletti	DESIGNED - KRS	REVISED -
	CHECKED - DJG	REVISED -
PLOT SCALE = 0.1667 ' / in.	DRAWN - MJR	REVISED -
PLOT DATE = 9/19/2018	CHECKED - KRS/WJC	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PARAPET AND ANCHORAGE SLAB DETAILS
RETAINING WALL 14 (STRUCTURE NO. 016-1803)

SHEET NO. S6-08 OF S6-22 SHEETS

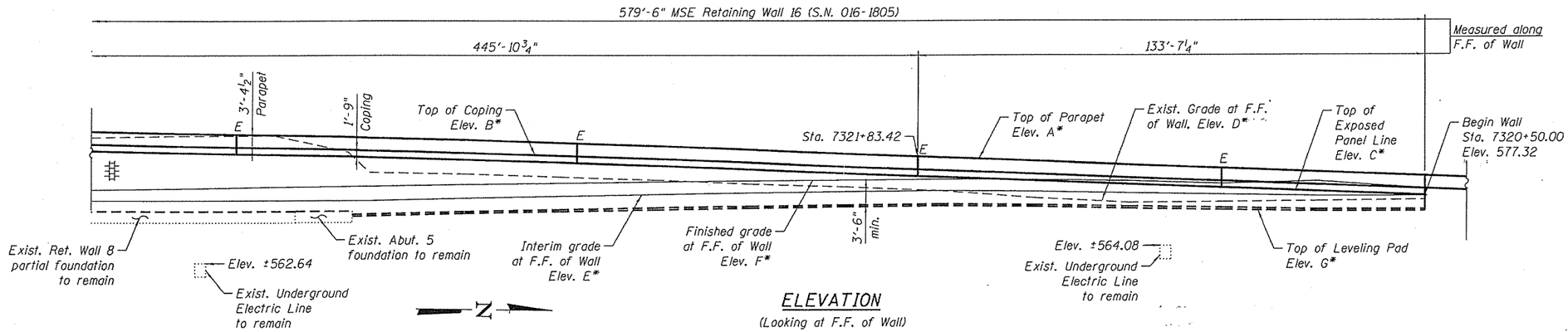
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	1032
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

4102807 PM
0161803-60X93-S008-AnchSlab_Details.dgn

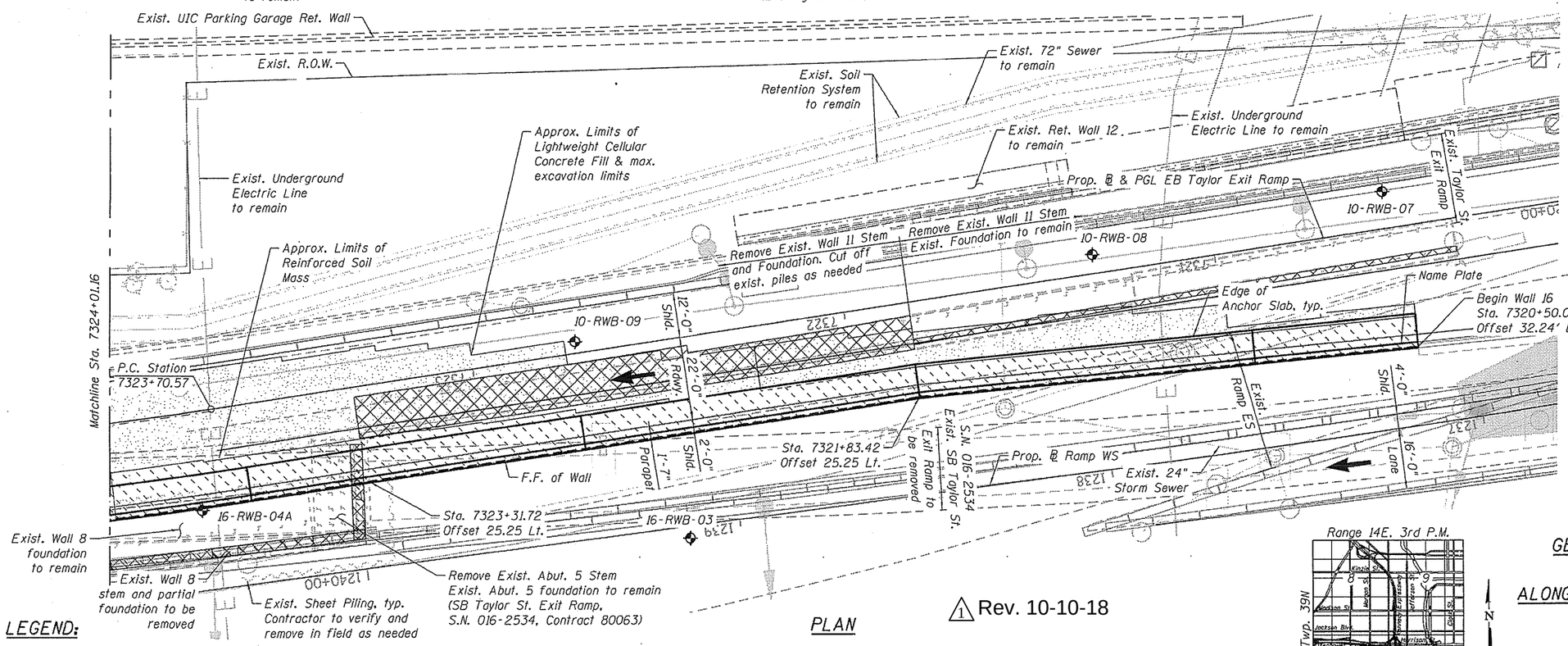
Bench Mark: Cut "X" on NE Bolt of Taylor St. on SW corner of Roosevelt and Union St. Elev. 593.36.

Existing Structure: S.N. 016-2534 was built in 1988 and carries traffic for Taylor St exit ramp from SB I-90/94. Exist. four span structure has an overall length of approx. 428'. The exist. superstructure consists of steel beams with 7½" thick concrete deck. The exist. substructure consists of reinforced concrete high wall abutment and piers supported on steel pile foundation. Existing structure to be removed.
Exist. Cast-In-Place Ret. Wall 8 was built under two separate contracts in 1986 & 1987. Total length of the wall is approx. 282'-9" with max. height of 23'-11". Exist. wall is supported on steel H-pile foundation. Steel sheet piling used during wall construction was cut-off at the top of wall footing elev.
Exist. Cast-In-Place Ret. Wall 11 was built in 1987. Total length of wall is approx. 296'-4" with max. height of 10'-6". Wall is supported on steel H-piles.

Traffic Control: SB Taylor St. Exit Ramp Structure and EB Taylor St. Exit Ramp will be closed and traffic will be detoured during construction. Traffic along SB I-90/94 will be maintained.



ELEVATION
(Looking at F.F. of Wall)



PLAN

⚠1 Rev. 10-10-18

LEGEND:

- Soil Boring Location
- Water Line
- Electric
- Fiber Optic
- Television Line
- Combined Sewer
- Exist. Storm Sewer
- Proposed Storm Sewer
- Gas Line
- Fire Hydrant
- Light Pole
- Exist. HP Pile
- Telephone line
- E Expansion Joint
- Proposed Barrier
- Exist. Ret. Wall 8 & 11 and Exist. Abut. 5 Removal
- Lightweight Fill outside of Reinf. Soil Mass
- Aprox. limits of reinforced soil mass

LOCATION SKETCH

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 & 2016 Interims

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 4,500 psi (Precast Panels)

* For Elevations, see Elevations Table on Sheets S7-08 thru S7-11.

NOTES:

1. Stations and offsets are measured along Prop. ℄ & PGL EB Taylor Exit Ramp to the front face the precast panels.
2. F.F. denotes Front Face.
3. B.F. denotes Back Face.

⚠1

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

STATE OF ILLINOIS
AMISH T. BHATT
081-006249
LICENSED STRUCTURAL ENGINEER

Amish T. Bhatt 07/30/2018
AMISH T. BHATT DATE
LICENSE EXPIRES 11/30/2018

GENERAL PLAN & ELEVATION I
RETAINING WALL 16
ALONG EB TAYLOR STREET EXIT RAMP
F.A.I. RTE. 90/94/290
SECTION 2014-013R&B-R
COOK COUNTY
STA. 7320+50.00 TO STA. 7326+25.98
STRUCTURE NO. 016-1805

AECOM

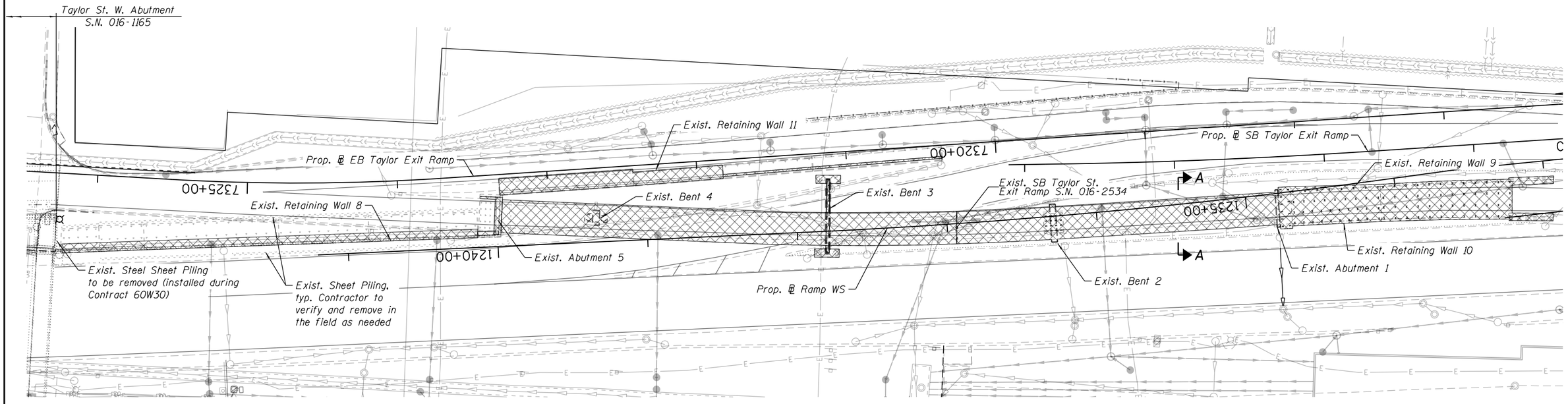
USER NAME = $USER	DESIGNED - MK	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MK	REVISED
PLOT DATE = 7/30/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RETAINING WALL 16 (STRUCTURE NO. 016-1805)
SHEET NO. S7-01 OF S7-26 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	1047
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

0161805-60X93-S7-01-GPE



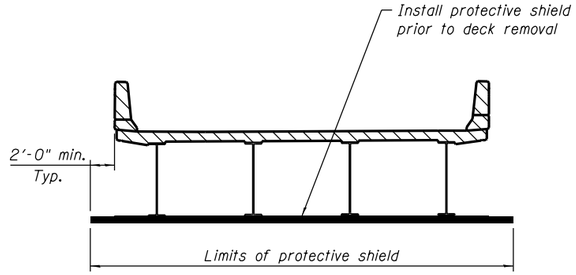
PLAN - EXISTING STRUCTURES REMOVAL

NOTES:

1. See Sheets S7-05 to S7-07 for additional existing structure removal details.
2. Removal of the existing SB I-90/94 to Taylor Street Exist Ramp structure (S.N. 016-2534) and the existing North approcah Retaining Wall 9 and 10 shall be per Special Provision for the See Removal of Existing Structures No. 3. See Table 1 for Minimum Removal Elevation at each substructure unit of existing Taylor Street Exit Ramp structure (S.N. 016-2534). See Sheet S7-05 for existing Abutment 5 removal details.
3. See Removal of Existing Structures No. 4 Special Provisions for the removal of the existing Retaining Wall 8 along SB I-90/94.
4. See Removal of Existing Structures No. 5 Special Provisions for the removal of the existing Retaining Wall 11 along East side of SB I-90/94 to Taylor Street Exit Ramp.
5. The Contractor shall install protective sheild system to protect travelling public from falling objects during the removal of existing S.N. 016-2534 (SB Taylor Street Exit Ramp). See Section A-A for the limits of Protective Shield.
6. See Remove Sheet Piling Special Provisions for the removal of the existing Steel Sheet Piling at North end of the West Abutment of Taylor Street Bridge (S.N. 016-1165).
7. Sheet piling left in place during the construction of Existing Retaining Wall 8 may be in conflict with proposed wall construction. Contractor shall verify in the field and remove sheet piling that is in conflicts with proposed wall construction. Cost shall be included with the Removal of Existing Structures No. 5.

EXISTING STRUCTURES REMOVAL ELEVATION TABLE

Exist. Structure	Minimum Removal Elev.
Retaining Wall 9	Bottom of Footing
Retaining Wall 10	Bottom of Footing
Abutment 1	±573.94
Bent 2	±571.69
Bent 3 West Column	±568.69
Bent 3 East Column	±568.69
Bent 4	±568.19



SECTION A-A

Note: Approximate length of the existing structure that requires Protective Shield is ±520'-0".

LEGEND:

- Exist. Structure Removal
- W — Water Line
- E — Electric
- Combined Sewer
- Exist. Storm Sewer
- Proposed Storm Sewer
- Light Pole
- Fire Hydrant

AECOM	USER NAME = $USER	DESIGNED - MK	REVISED	
		CHECKED - ATB	REVISED	
	PLOT SCALE = N.T.S.	DRAWN - MK	REVISED	
	PLOT DATE = 9/10/2018	CHECKED - ATB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURES REMOVAL I
RETAINING WALL 16 (STRUCTURE NO. 016-1805)
SHEET NO. S7-04 OF S7-26 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	1050
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

01618O5-60X93-S7-04-RemPlan.dgn

1 REVISED ENTIRE SHEET 10/29/18

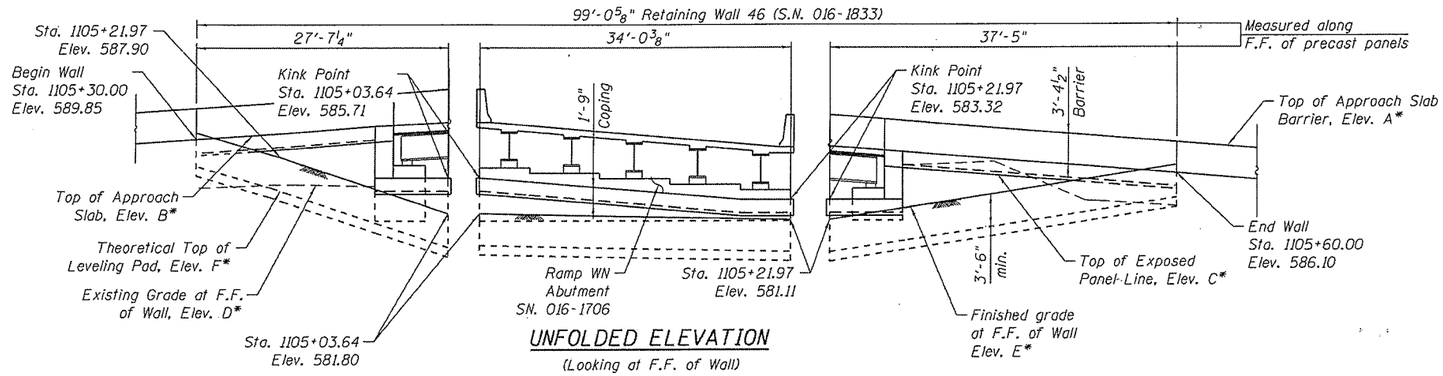
Bench Mark: Square cut at center of door entrance to 707 W. Harrison St; South side of Harrison St. ±90' west of west line of Des Plaines. Elev. 597.47.

Existing Structure: None.

Traffic Control: Exist. Ramp WN & Ramp WS will be closed and traffic will be detoured during construction. Traffic on Ramp EN, I-290 and I-90/94 will be maintained with stage construction.

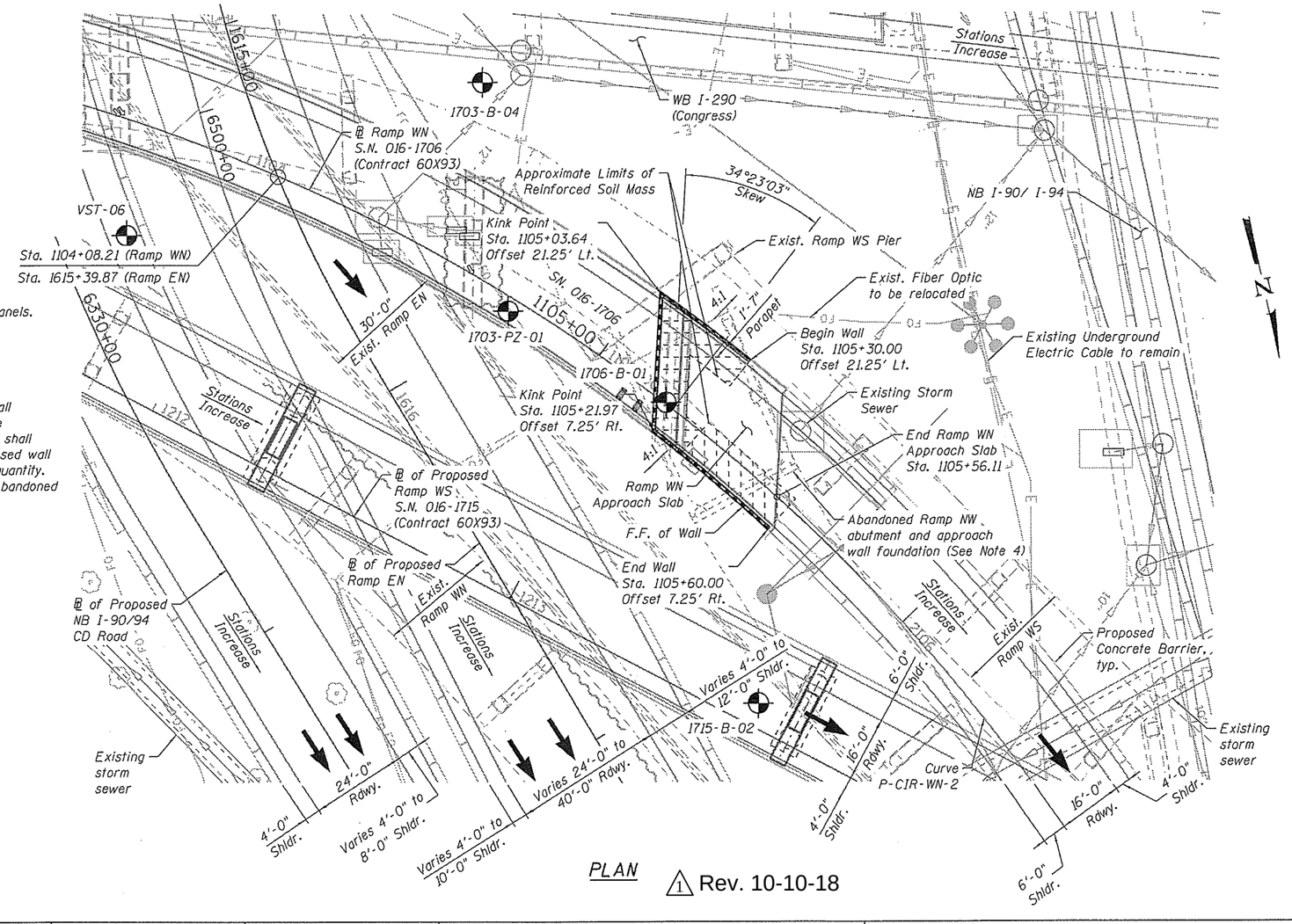
No Salvage.

* For Elevations, see Elevations Table on Sheet S8-02.



UNFOLDED ELEVATION

(Looking at F.F. of Wall)



PLAN

1 Rev. 10-10-18

NOTES:

1. Stations and offsets are measured along @ Ramp WN to the front face of the precast panels.
2. F.F. denotes Front Face.
3. Abutment drilled shafts not shown for clarity.
4. Abandoned Ramp NW abutment and approach wall foundation elements may be in conflict with the proposed wall 46 construction. The Contractor shall remove any such conflicts that impedes proposed wall construction. See Civil plans for location and quantity. This work shall be per Special Provision for Abandoned Foundation Removal.

LEGEND:

- Soil Boring Location
- W — Water Line
- E — Electric
- T — Telephone line
- CTV — Television line
- Combined Sewer
- Storm Sewer
- FO — Fiber Optic
- G — Gas Line
- Fire Hydrant
- Light Pole
- Catch Basin

DESIGN STRESSES

FIELD UNITS

f'c = 3.500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 4,500 psi

DESIGN SPECIFICATIONS

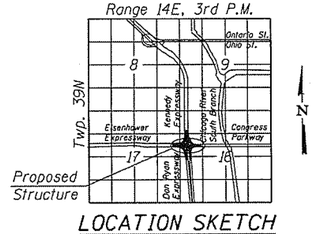
2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 & 2016 Interim Revisions

STATE OF ILLINOIS
AMISH T. BHATT
081-006249
LICENSED STRUCTURAL ENGINEER

Amish T. Bhatt 07/30/2018
AMISH T. BHATT DATE
LICENSE EXPIRES 11/30/2018

1

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures



LOCATION SKETCH

GENERAL PLAN & ELEVATION
RETAINING WALL 46
ALONG RAMP WN
F.A.I. RTE. 90/94/290
SECTION 2014-013R&B-R
COOK COUNTY
STA. 1105+30.00 TO STA. 1105+60.00
STRUCTURE NO. 016-1833

USER NAME = $USER	DESIGNED - MK	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - MK	REVISED	
PLOT DATE = 7/30/2018	CHECKED - ATB	REVISED	

AECOM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-1833
SHEET NO. S8-01 OF S8-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	1073
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

016-1833-60x93-St1-01-GPE.dgn

1

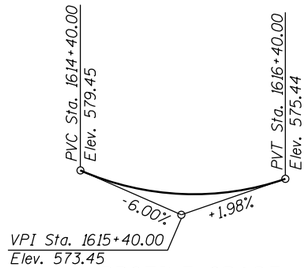
GENERAL NOTES:

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Protective coat shall be applied to the designated areas of the MSE Coping.
3. The Contractor shall field verify location of existing underground utilities and shall take all precautions to protect existing underground utilities during the construction of the wall. Any damage to the existing utilities shall be responsibility of the Contractor.
4. Stations and offsets for the wall are given from the baseline Ramp WN to the front face of the precast panels.
5. MSE Supplier to design load transfer systems within reinforced soil mass to accommodate drainage structures and abutment drilled shaft foundations.
6. Lightweight Cellular Concrete Fill shall be Class III, see Special Provisions.
7. MSE Wall supplier shall design the MSE Wall using granular reinforced mass with minimum effective internal friction angle of 34 degrees and unit weight of 120 lbs./cu. ft. For embankment behind granular reinforced mass, an embankment unit weight of 120 lbs./cu. ft and an effective friction angle of 30 degrees shall be used in the wall system design.
8. Quantity for Lightweight Cellular Concrete Fill includes reinforced soil mass and fill area between reinforced soil mass and fill area as shown in cross section; Type is specified as Class III (District 1) Lightweight Fill.
9. See Special Provision for Mechanically Stabilized Earth Retaining Wall, Special for design and construction requirements.
10. Contractor shall coordinate proposed wall 46 construction with Ramp WN abutment (Contract 60X93) and proposed Ramp EN roadway construction (Contract 60X79). See MOT plan sheets and special provisions for additional construction and coordination requirements.

TOTAL BILL OF MATERIAL

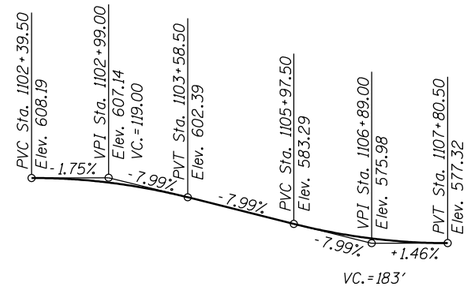
ITEM	UNIT	TOTAL
Structure Excavation	Cu Yd	276
Protective Coat	Sq Yd	18
Reinforcement Bars, Epoxy Coated	Pound	300
Mechanically Stabilized Earth Retaining Wall, Special	Sq Ft	347
Lightweight Cellular Concrete Fill	Cu Yd	176
Slope Wall 4"	Sq Yd	8
Name Plates	Each	1

INDEX OF SHEETS:



PROFILE GRADE

(Along ℄ Ramp EN)



PROFILE GRADE

(Along ℄ Ramp WN)

CURVE DATA

(Ramp EN)

PROP. CURVE P-CIR-EN-2
P.I. Sta. = 1624+72.31
Δ = 158° 53' 11" (Lt.)
D = 16° 51' 06"
R = 340.00'
T =1,824.37'
L = 942.85'
E = 1,515.78'
e = 5.60%
T.R. = 36'
S.E. Run = 102'
P.C. Sta. = 1606+47.94
P.T. Sta. = 1615+90.79
DS = 30

CURVE DATA

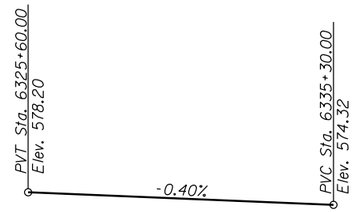
(NB Bypass)

PROP. CURVE P-NCD-NX-4
P.I. Sta. = 6328+76.78
Δ = 59° 05' 41" (Lt.)
D = 14° 08' 50"
R = 405.00'
T = 229.58'
L = 417.72'
E = 60.54'
e = 5.40%
T.R. = 36
S.E. Run = 98'
P.C. Sta. = 6326+47.20
P.T. Sta. = 6330+64.91
DS = 30

CURVE DATA

(Ramp WN)

PROP. CURVE P-CIR-WN-2
P.I. Sta. = 1105+88.67
Δ = 69° 00' 44" (Rt.)
D = 12° 43' 57"
R = 450.00'
T = 309.35'
L = 542.02'
E = 96.07'
e = 5.20%
T.R. = NA
S.E. Run = 46'
P.C. Sta. = 1102+79.32
P.T. Sta. = 1108+21.34
DS = 30



PROFILE GRADE

(Along ℄ NB Bypass)

ELEVATIONS TABLE

STATION	OFFSET	ELEVATION A	ELEVATION B	ELEVATION C	ELEVATION D	ELEVATION E	ELEVATION F
1105+03.64	21'-3" Lt.	595.33	585.71 *	583.96	584.55	581.80	578.30
1105+10.00	21'-3" Lt.	594.83	585.71 *	583.96	584.69	583.91	580.41
1105+20.00	21'-3" Lt.	594.03	590.65	588.90	584.92	587.24	583.74
1105+21.97	21'-3" Lt.	593.87	590.49	588.74	584.95	587.90	584.40
1105+30.00	21'-3" Lt.	593.23	589.85	588.10	584.55	590.57	587.07
1105+21.97	7'-3" Rt.	592.52	583.32 *	581.57	586.71	581.11	577.61
1105+30.00	7'-3" Rt.	591.88	588.50	586.75	587.01	582.35	578.85
1105+40.00	7'-3" Rt.	591.08	587.70	585.95	587.41	583.89	580.39
1105+50.00	7'-3" Rt.	590.28	586.90	585.15	583.12	585.43	581.93
1105+51.39	7'-3" Rt.	590.17	586.79	585.04	583.08	585.65	582.15
1105+60.00	7'-3" Rt.	589.48	586.10	584.35	582.52	586.98	583.48

Elevation A: Top of Approach Slab Barrier
Elevation B: Top of Approach Slab
Elevation C: Top of Exposed Panel Line
Elevation D: Existing Grade at F.F. of Wall
Elevation E: Finished Grade at F.F. of Wall
Elevation F: Theoretical Top of Leveling Pad

* Top of Concrete Coping Elev.

SUGGESTED SEQUENCE OF CONSTRUCTION

1. Locate existing utilities that are to remain. Contractor to coordinate any required improvements to or removals of existing utilities with utility owner(s). See Utility Location Plans and ITS Plans.
2. Excavate for Wall 46 and remove any abandoned foundation elements of Ramp NW that are in conflict with the proposed wall 46 construction.
3. Install drilled shafts for S.N. 016-1706 West Abutment.
4. Construct Wall 46 and West Abutment of S.N. 016-1706.
5. Place lightweight fill.
6. Install Approach Slab of S.N. 016-1706.
7. No portions of the wall shall be compromised by excavation for other elements of work, including the West Abutment of S.N. 016-1706. If the sequencing of work requires that the wall construction is staged, the stage line shall be located at a panel edge with any exposed lightweight fill protected from damage.

STATION 1105+30.00 TO 1105+60.00
BUILT 20__ BY
STATE OF ILLINOIS
F.A.I RTE. 90/94 SEC 2014-013R&B-R
LOADING HL-93
STRUCTURE NO. 016-1833

NAME PLATE

See Std. 515001

016-1833-60X93-SHT-02-GenNote.dgn

AECOM

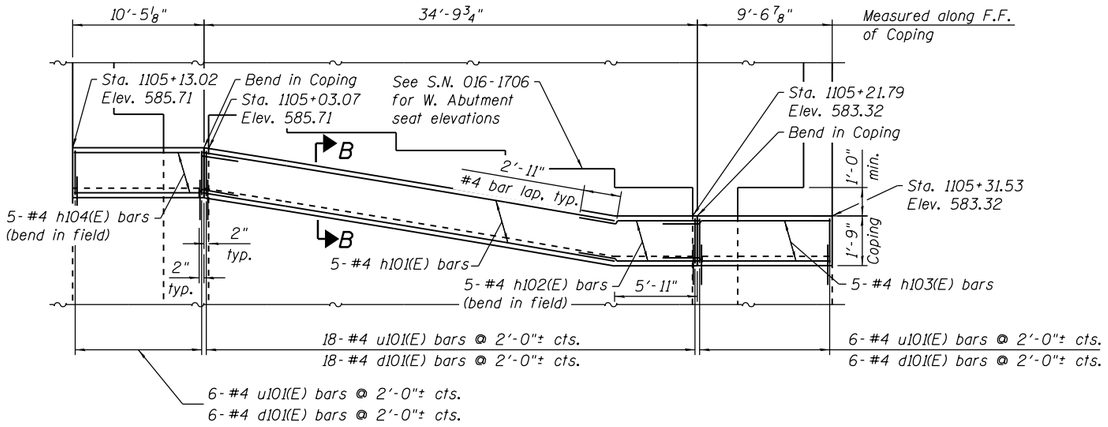
USER NAME = $USER	DESIGNED - MK	REVISED	
	CHECKED - ATB	REVISED	
PLOT SCALE = N.T.S.	DRAWN - MK	REVISED	
PLOT DATE = 7/30/2018	CHECKED - ATB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, INDEX OF SHEETS AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 016-1833
SHEET NO. S8-02 OF S8-11 SHEETS

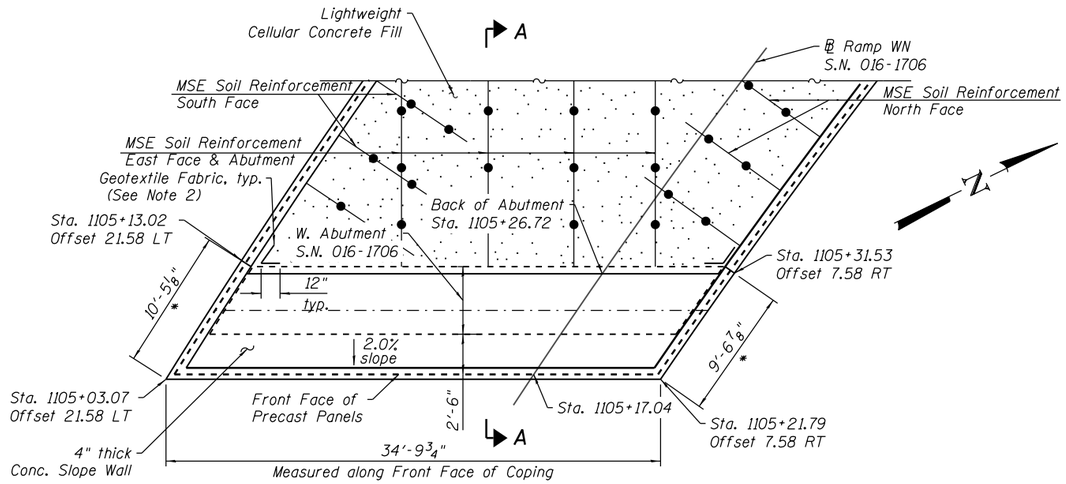
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	1074
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

1 REVISED ENTIRE SHEET 10/29/18



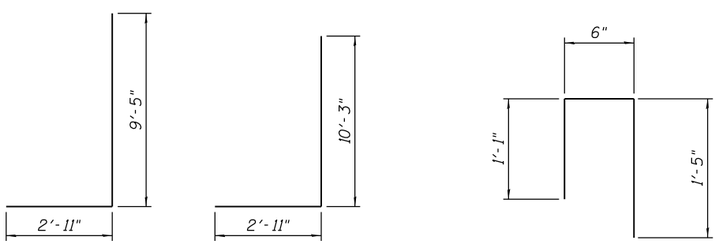
ELEVATION
EAST FACE MSE WALL CONCRETE COPING

(North and South Face unfolded)

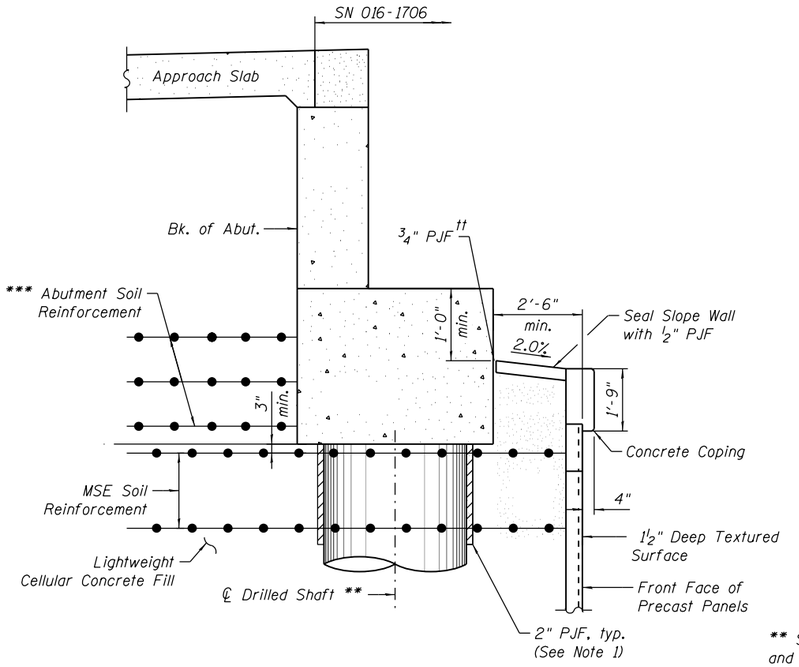


* Measured along Front Face of Coping

PLAN
CONCRETE COPING AND ABUTMENT MSE WRAP AROUND



BAR h103(E) BAR h104(E) BAR u101(E)



SECTION A-A
SECTION THROUGH ABUTMENT

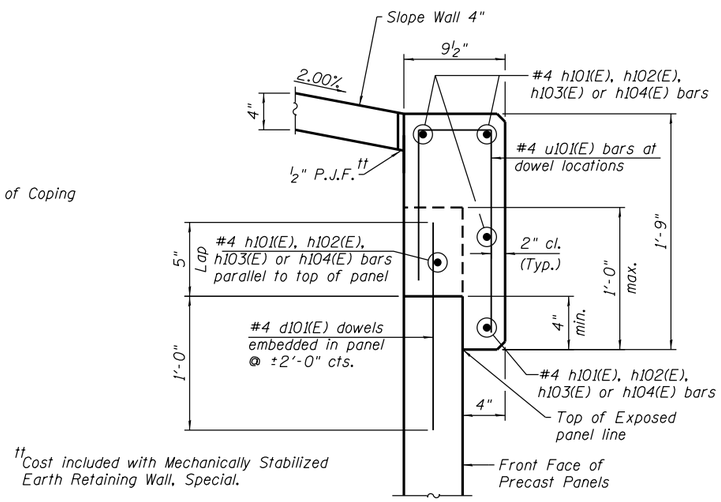
(Horiz. Dim. @ Rt. L's)

** See S.N. 016-1706 plans for size, spacing and number of drilled shafts.

*** Abutment Soil Reinforcement to resist lateral loads in lieu of drilled shafts. The MSE Wall supplier shall design the abutment soil reinforcement to resist a horizontal force of 3 kips/ft. of abutment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d101(E)	30	#4	1'-5"	——
h101(E)	5	#4	28'-10"	——
h102(E)	5	#4	8'-9"	——
h103(E)	5	#4	12'-4"	⌐
h104(E)	5	#4	13'-2"	⌐
u101(E)	30	#4	3'-0"	⌐
Structure Excavation		Cu Yd	276	
Protective Coat		Sq Yd	18	
Reinforcement Bars, Epoxy Coated		Pound	300	
Slope Wall 4"		Sq Yd	8	



tt Cost included with Mechanically Stabilized Earth Retaining Wall, Special.

SECTION B-B
CONCRETE COPING

NOTES:

1. Install 2" PJF from bottom of abutment to top of leveling pad. Cost is included with Lightweight Cellular Concrete Fill.
2. Cost of Geotextile Fabric and Concrete Coping is included in cost of Mechanically Stabilized Earth Retaining Wall, Special.

016-1833-60X93-SHT-04-MSE Details.dgn

AECOM

USER NAME = $USER	DESIGNED - MK	REVISED
	CHECKED - ATB	REVISED
PLOT SCALE = N.T.S.	DRAWN - MK	REVISED
PLOT DATE = 9/10/2018	CHECKED - ATB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MSE WRAP AROUND DETAILS
STRUCTURE NO. 016–1833
SHEET NO. S8-04 OF S8-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	1972	1076
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

1 REVISED ENTIRE SHEET 10/29/18

Bench Mark: Cut square at southeast corner of Van Buren St. and Halstad St., on northeast corner of first step of decorative pillar. Elev. 594.00

Existing Structure: None

The existing Ramp WS bridge will be closed and traffic will be detoured during construction. Traffic on I-290 and I-90/94 will be maintained with stage construction.

No Salvage.

Notes:
Wall offsets are measured from the ℄ of SB Taylor St. Exit Ramp to the front face of precast panels.
F.F. denotes Front Face.
B.F. denotes Back Face.
Aggregate columns must be spaced to avoid interference with existing utilities to remain, proposed utilities to be installed, and proposed substructure foundations.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications 7th Edition with 2015 and 2016 Interim Specifications

DESIGN STRESSES

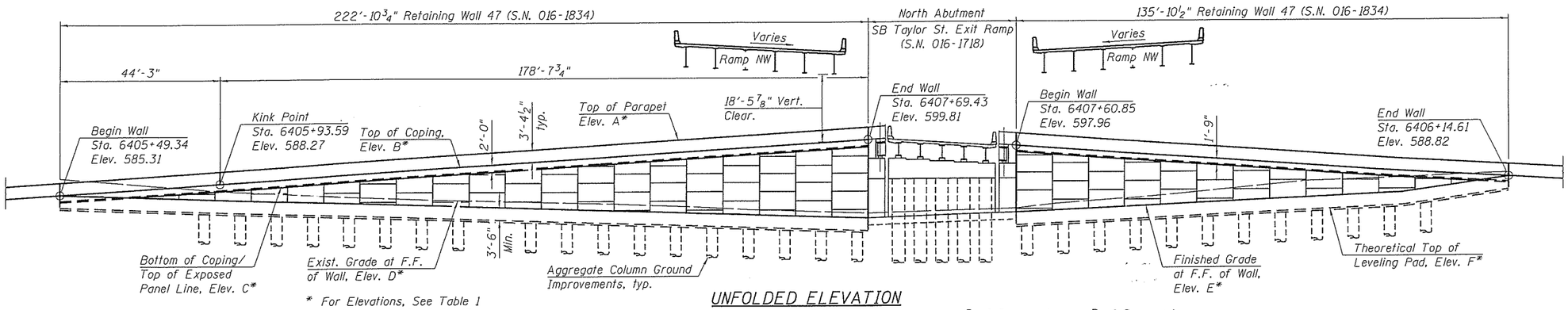
FIELD UNITS	PRECAST UNITS
f'c = 4,000 psi	f'c = 4,500 psi
fy = 60,000 psi (Reinf.)	

CURVE DATA
(Along ℄ SB Taylor St. Exit Ramp)

P-TAY-SX-2
P.I. Sta. = 6408+06.27
Δ = 65° 55' 10" (LT)
D = 17° 28' 06"
R = 328.00'
T = 212.68'
L = 377.37'
E = 62.92'
e = 5.00%
T.R. = 46'
S.E. Run = 114'
P.C. Sta. = 6405+93.59
P.T. Sta. = 6409+70.96

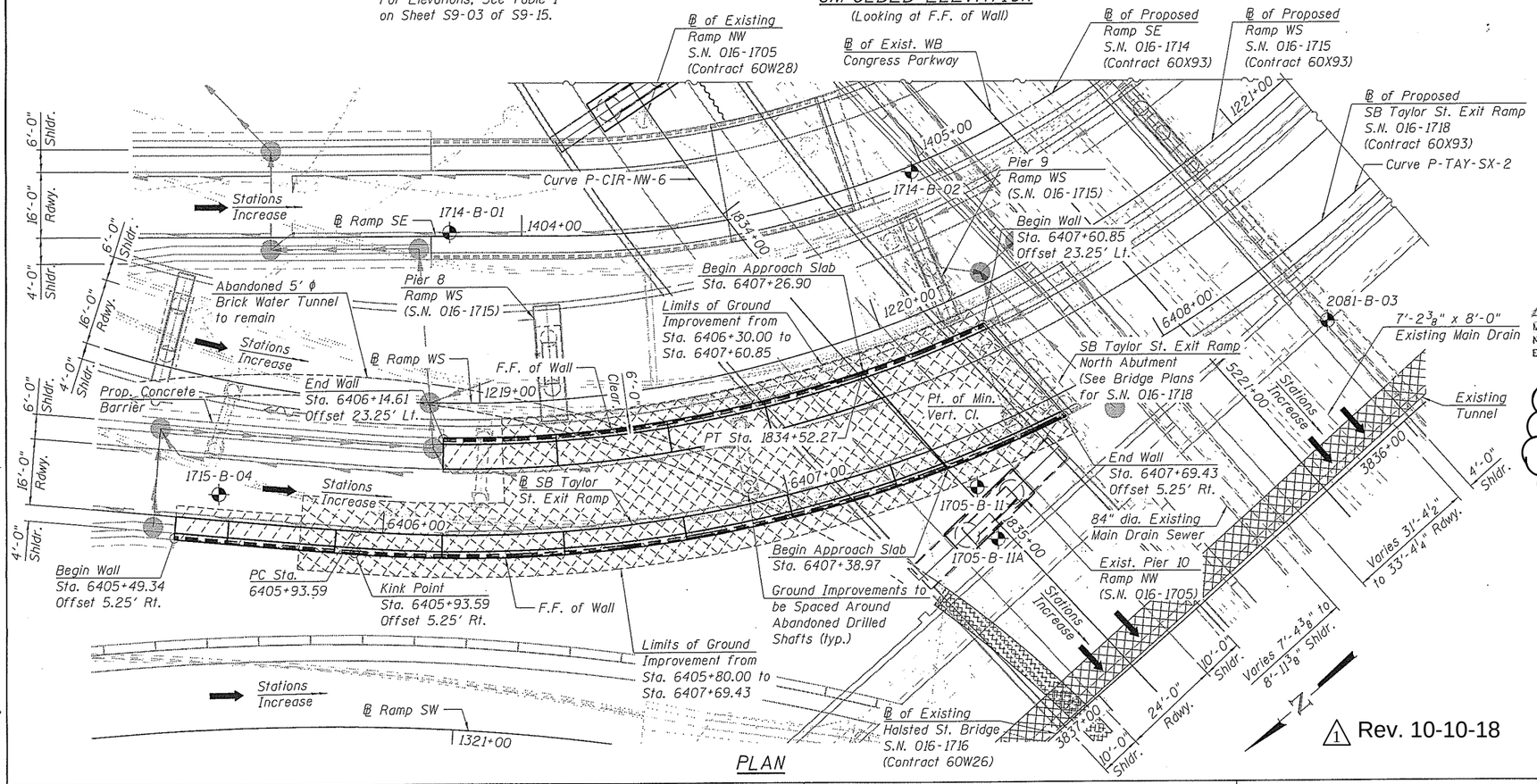
CURVE DATA
(Ramp NW)

P-CIR-NW-6
P.I. Sta. = 1831+44.22
Δ = 88° 30' 25" (LT)
D = 10° 36' 37"
R = 540.00'
T = 526.11'
L = 834.16'
E = 213.92'
e = 5.4%
T.R. = NA
S.E. Run = 66'
P.C. Sta. = 1826+18.11
P.T. Sta. = 1834+52.27



* For Elevations, See Table 1 on Sheet S9-03 of S9-15.

UNFOLDED ELEVATION
(Looking at F.F. of Wall)



PLAN

LEGEND

- Electric —E—
- Fiber Optic —FO—
- Exist. Storm Sewer
- Light Pole
- Soil Boring
- Limits of Soil Reinforcement
- Limits of Soil Reinforcement With Ground Improvements

MATTHEW D. SANTEFORD 081-007244 LICENSED STRUCTURAL ENGINEER OF STATE OF ILLINOIS

07/30/2018

MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018

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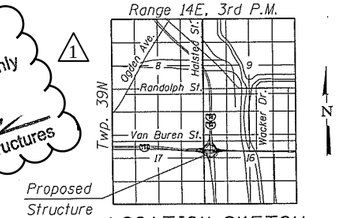
Engineer of Bridges & Structures



LOCATION SKETCH

1 Rev. 10-10-18

GENERAL PLAN AND ELEVATION
RETAINING WALL 47 ALONG
F.A.I 94 (SB I-90/94 TAYLOR ST. EXIT RAMP)
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 6405+49.34 TO STATION 6407+69.43
STRUCTURE NO. 016-1834

USER NAME = wjcolletti	DESIGNED - DJG	REVISED -	
	CHECKED - KRS	REVISED -	
PLOT SCALE = 32.00 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

Tran Systems

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S9-01 OF S9-15 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	1084
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

3.05.62 PM
0161834-60X93-S001-GPE.dgn

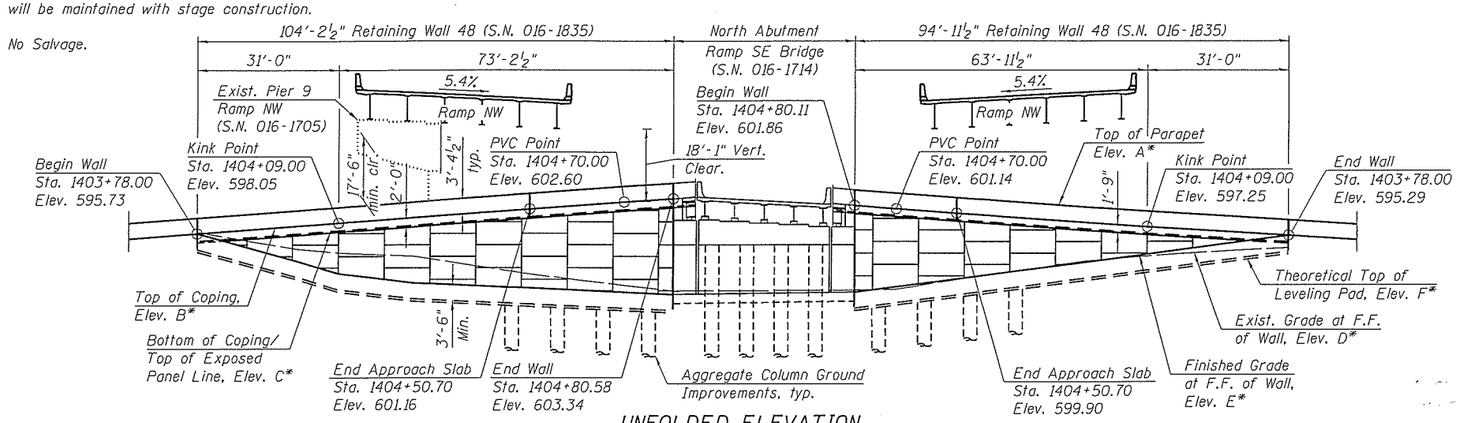
Bench Mark: Chisel "X" on chain bolt of fire hydrant in front of 555 W. Harrison St. Elev. 594.46.

Existing Structure: SN 016-2452. Constructed in 1960 under F.A.I. Route 1, Section 2424.28-B. Fourteen span bridge that measures 787'-4" from back of north abutment to centerline of east pier. Out-to-out width of 29'-0". The spans are supported by 36" wide flange beams, concrete T-beams and a reinforced concrete slab. Substructure is reinforced concrete closed abutment, multi-column and solid wall piers founded on bell caissons. The existing bridge is to be removed and replaced.

The existing bridge will be closed and traffic will be detoured during construction. Traffic on I-290 and I-90/94 will be maintained with stage construction.

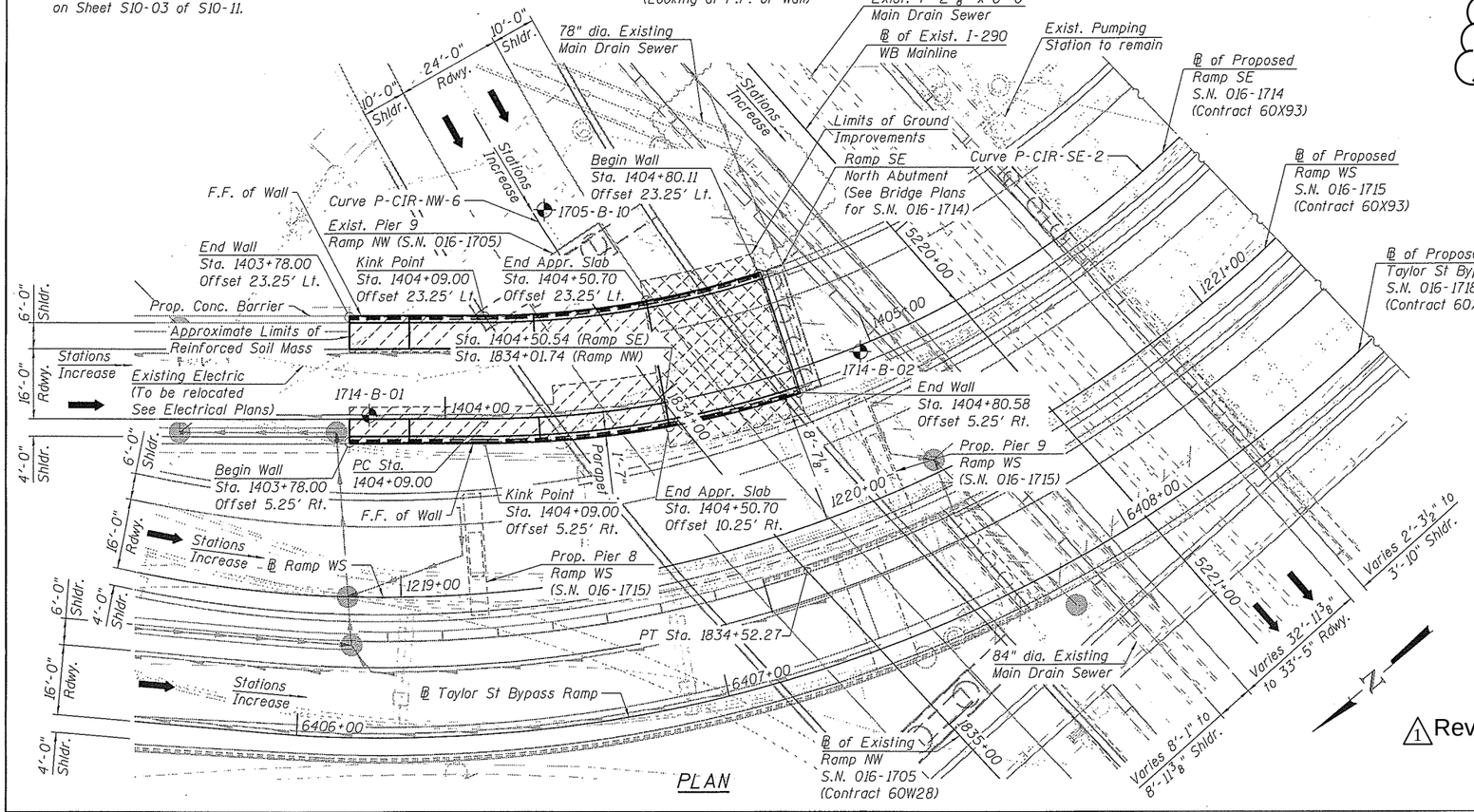
No Salvage.

Notes:
Wall offsets are measured from the ℄ of Ramp SE to the front face of precast panels.
F.F. denotes Front Face.
B.F. denotes Back Face.
Aggregate columns must be spaced to avoid interference with existing utilities to remain, proposed utilities to be installed, and proposed substructure foundations.



* For elevations, see Table 1 on Sheet S10-03 of S10-11.

UNFOLDED ELEVATION
(Looking at F.F. of Wall)



PLAN

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications 7th Edition with 2015 and 2016 Interim Specifications

DESIGN STRESSES

FIELD UNITS

f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 4,500 psi

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Engineer of Bridges & Structures
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MATTHEW D. SANTEFORD
081-007244
LICENSED STRUCTURAL ENGINEER
OF
STATE OF ILLINOIS

07/30/2018

MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018

CURVE DATA
(Ramp SE)

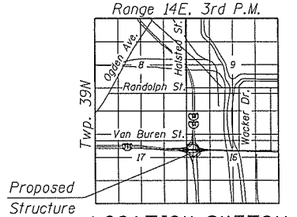
P-CIR-SE-2
P.I. Sta. = 1415+83.08
Δ = 157°44'18" (LT)
D = 24°48'12"
R = 231.00'
T = 1174.08'
L = 635.96'
E = 965.59'
e = 5.6%
T.R. = NA
S.E. Run = 128'
P.C. Sta. = 1404+09.00
P.T. Sta. = 1410+44.95

CURVE DATA
(Ramp NW)

P-CIR-NW-6
P.I. Sta. = 1831+44.22
Δ = 88°30'25" (LT)
D = 10°36'37"
R = 540.00'
T = 526.11'
L = 834.16'
E = 213.92'
e = 5.4%
T.R. = NA
S.E. Run = 66'
P.C. Sta. = 1826+18.11
P.T. Sta. = 1834+52.27

LEGEND

Electric —E—
Exist. Storm Sewer
Light Pole
Soil Boring
Limits of Soil Reinforcement
Limits of Soil Reinforcement With Ground Improvements



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
RETAINING WALL 48 ALONG RAMP SE
F.A.I. 94 (I-90/94 SB TO I-290 EB)
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 1403+78.00 TO STATION 1404+80.58
STRUCTURE NO. 016-1835

1 Rev. 10-10-18

USER NAME = wjcollett	DESIGNED - DJG	REVISED -	
	CHECKED - KRS	REVISED -	
PLOT SCALE = 32.00 ' / in.	DRAWN - MJR	REVISED -	
PLOT DATE = 7/26/2018	CHECKED - KRS/WJC	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S10-01 OF S10-11 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	1099
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

310643 PM
016835-60X93-5001-GPE.dgn

Bench Mark: Chisel "X" on chain bolt of fire hydrant in front of 555 W. Harrison St. Elev. 594.46.

Existing Structure: Existing Retaining Wall 12. Constructed in 1987 under Sections 2526.6-IP-R-3, 2626.2-2B-DM, and 0101.6-IP-R(85). Reinforced concrete cantilever wall on steel H piles. Total length of 914'-4 3/8" from Harrison Street to Taylor Street. Exposed height varies 2'-10" to 18'-3". The existing fence and top part of the wall is to be removed and replaced with a concrete parapet on anchorage slab.

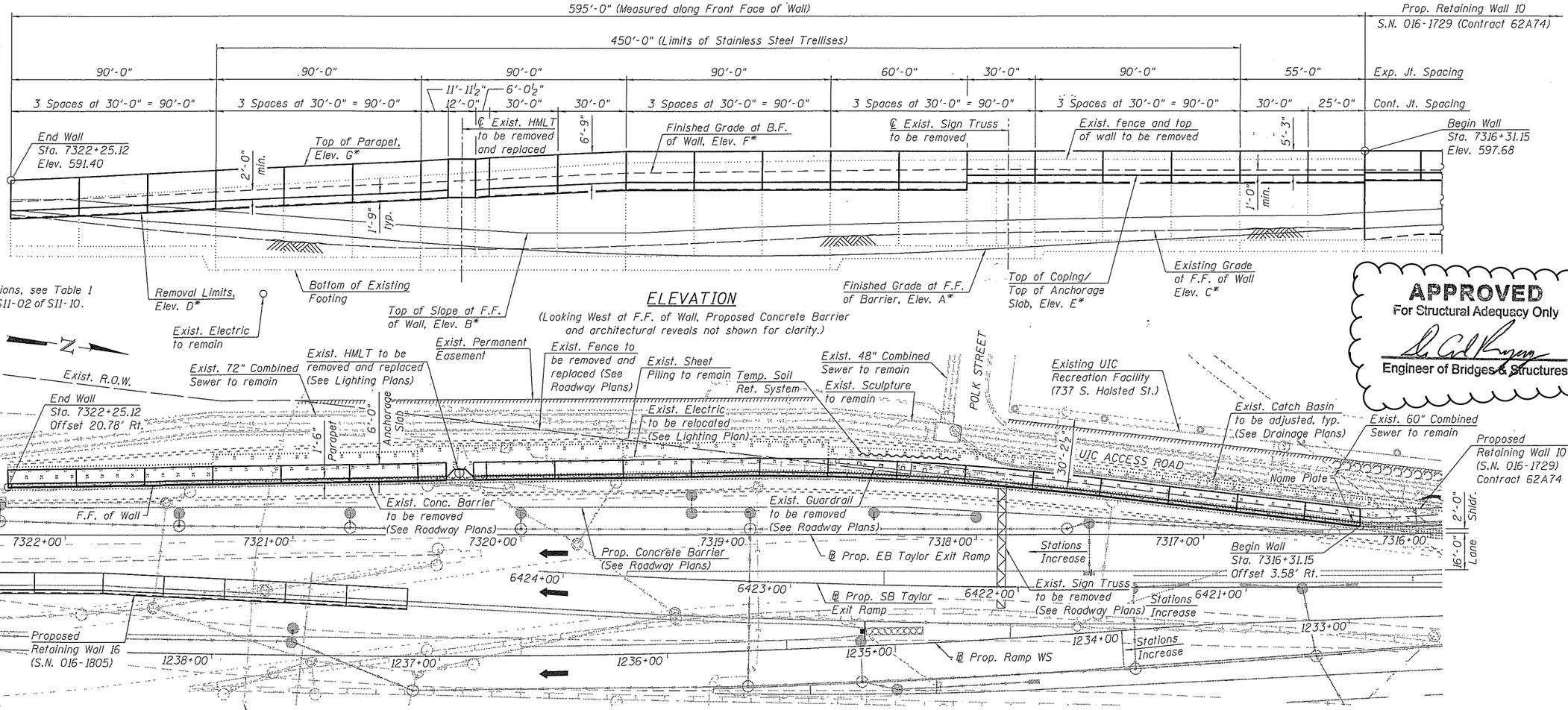
Existing Taylor Exit Ramp will be closed during construction.

No Salvage.

SCOPE OF WORK:

1. Remove existing fence and wall to elevation specified in Elevation View.
2. Repair spalls, delaminated concrete, and cracks on the front face of existing wall.
3. Replace top portion of existing wall with parapet on top of anchorage slab.

Notes:
F.F. denotes Front Face.
B.F. denotes Back Face.



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DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

2017 AASHTO LRFD Bridge Design Specifications 8th Edition

DESIGN STRESSES

FIELD UNITS

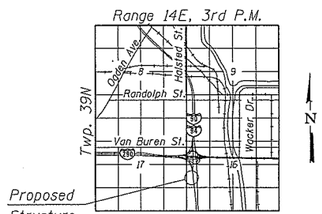
f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)

EXISTING UNITS

fc = 1,200 psi
fs = 20,000 psi (Reinforcement)

LEGEND:

Ex. Chain Link Fence — X —
Ex. Combined Sewer
Ex. Electric — E —
Ex. Storm Sewer
Prop. Storm Sewer



LOCATION SKETCH

1 Rev. 10-10-18

GENERAL PLAN AND ELEVATION
EXISTING RETAINING WALL 12 ALONG EB TAYLOR EXIT RAMP
SECTION 2014-013 R&B-R
COOK COUNTY
STATION 7316+31.15 TO STATION 7322+25.12
STRUCTURE NO. 016-2311

MATTHEW D. SANTEFORD 081-007244 LICENSED STRUCTURAL ENGINEER OF STATE OF ILLINOIS
07/30/2018
MATTHEW D. SANTEFORD, P.E., S.E.
NO. 081-007244
EXP. DATE 11/30/2018

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0162311-60X93-S001-CPE.dgn

Tran Systems

USER NAME = wjcolletti	DESIGNED - TJA	REVISED -
	CHECKED - WJC/MDS	REVISED -
PLOT SCALE = 48:0 '1' / in.	DRAWN - TJA	REVISED -
PLOT DATE = 7/26/2018	CHECKED - WJC/MDS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S11-01 OF S11-10 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013 R&B-R	COOK	1972	1110
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		