

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BxB)B-1	CLARK	42	1
		ILLINOIS	CONTRACT NO. 74360	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

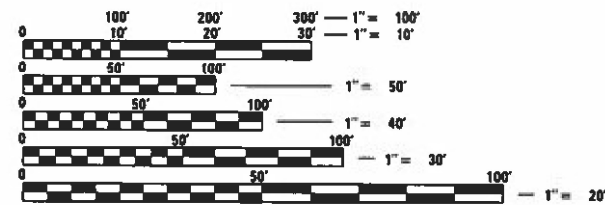
ADT = 3550

# PROPOSED HIGHWAY PLANS

F.A.S. ROUTE 1707 (U.S. RTE. 40)  
SECTION (BxB)B-1  
PROJECT STP-RA0M(402)  
BRIDGE REPLACEMENT  
CLARK COUNTY

C-97-038-09

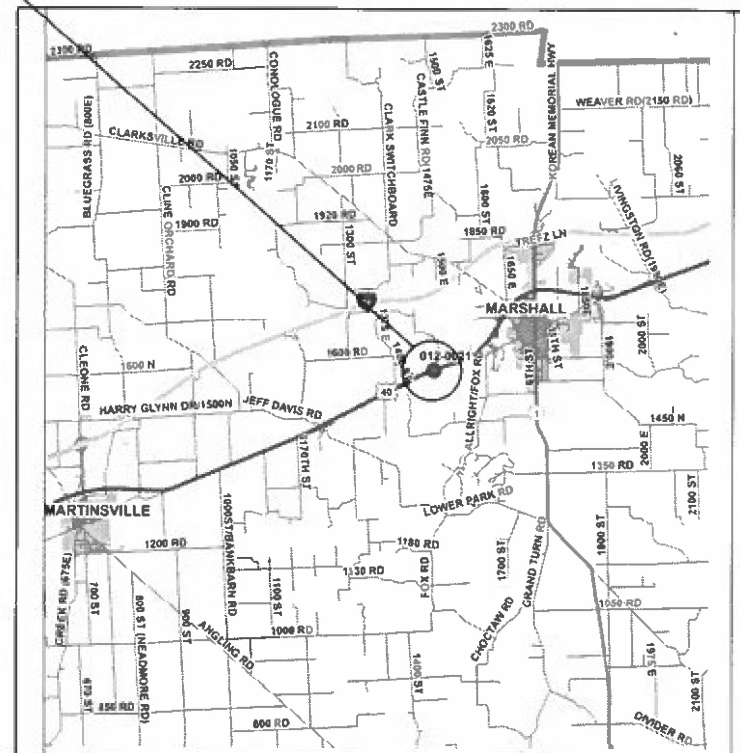
EXISTING SN 012-0021  
PROPOSED SN 012-0075



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS  
1-800-892-0123  
OR 811

PROJECT ENGINEER: MARK DAUGHERTY  
PROJECT MANAGER: DALTON LANE  
PHONE: (217)-342-8366  
CONTRACT NO. 74360



GROSS LENGTH = 339.6 FT. = 0.064 MILE  
NET LENGTH = 339.6 FT. = 0.064 MILE

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUBMITTED DECEMBER 15, 2021  
*Jeffrey P. Myrnes*  
REGIONAL ENGINEER

February 4, 2022  
*Stephen M. Laid*  
ENGINEER OF DESIGN AND ENVIRONMENT

February 1, 2022  
*Stephen M. Laid*  
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

## INDEX OF SHEETS

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39-42	CROSS SECTION SHEETS

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED FOLLOWING SHEET NUMBER 42.

STD NO.	
000001-08	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420401-13	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
515001-04	NAME PLATE FOR BRIDGES
601101-02	CONCRETE HEADWALL FOR PIPE UNDERDRAINS
630001-12	STEEL PLATE BEAM GUARDRAIL
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-17	TRAFFIC BARRIER TERMINAL, TYPE 6
667101-02	PERMANENT SURVEY MARKERS
668001-01	U.S. GEOLOGICAL SURVEY AND NATIONAL GEODETIC SURVEY BENCHMARKS RESETTING METHOD
701001-02	OFF ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701311-03	LANE CLOSURE 2L, 2W MOVING OPERATIONS-DAY ONLY
701901-08	TRAFFIC CONTROL DEVICES
780001-05	TYPICAL PAVEMENT MARKINGS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
BLR21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
420001-10	PAVEMENT JOINTS
725001-01	OBJECT AND TERMINAL MARKERS

## GENERAL NOTES

PAINT PAVEMENT MARKING LINE - 4" SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS, AS SHOWN IN THE PLANS, AND AS DETERMINED BY THE ENGINEER. THE TOTAL QUANTITY CALCULATED CONSISTS OF 80 FEET OF YELLOW AND 679 FEET OF WHITE.

THE MATERIAL USED FOR AGGREGATE WEDGE SHOULDER, TYPE B SHALL BE CRUSHED STONE, CRUSHED CONCRETE, OR RAP.

THE PLACEMENT OF THE PERIMETER EROSION BARRIER SHALL BE DETERMINED BY THE ENGINEER TO SUIT FIELD AND CONSTRUCTION CONDITIONS.

THE LOCATIONS AND/OR DEPTHS OF UNDERGROUND UTILITIES SHOWN HAVE BEEN TAKEN FROM INFORMATION FURNISHED BY THE UTILITY OWNERS AND MUST BE CONSIDERED APPROXIMATE. FIELD MARKINGS OF FACILITIES IN CRITICAL AREAS MAY BE OBTAINED BY PROVIDING A MINIMUM OF 48 HOURS ADVANCE NOTICE THROUGH THE J.U.L.I.E. SYSTEM BY CALLING 800-892-0123.

A TYPE I CAST IN PLACE PERMANENT SURVEY MARKER SHALL BE PLACED NEAR THE PROPOSED STRUCTURE. THE TABLET STYLE SHALL CONFORM TO STANDARD 667101-02 AND THE CAST IN PLACE BASE WILL CONFORM TO STANDARD 668001-01. THE LOCATION OF THE SURVEY MARKER SHALL BE DETERMINED BY THE ENGINEER AND THE CHIEF OF SURVEYS.

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE TO THIS PROJECT.

APPLICATION	AC/PG	DESIGN AIR VOIDS	MIXTURE COMPOSITION	FRICTION AGGREGATE	QUALITY MANAGEMENT
HMA SURFACE COURSE, MIX "C", N70 (1½")	PG 64-22	4.0% @ N=70	IL-9.5	MIXTURE C	QC/OA
HMA BINDER COURSE, IL-9.5FG, N70, (1¼")	PG 64-22	4.0% @ N=70	IL-9.5FG	N/A	QC/OA
HMA SHOULDERS, 8" (TOP LIFT 2")	PG 64-22	4.0% @ N=70	IL-9.5	MIXTURE C	QC/OA
HMA SHOULDERS, 8" (BOTTOM LIFT 6")	PG 64-22	4.0% @ N=70	IL-19.0	N/A	QC/OA

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN THE CALCULATING PLAN QUANTITIES:

AGGREGATE SHOULDERS	2.05 TONS/CU. YD.
BITUMINOUS MATERIALS (TACK COAT)	
MILLED SURFACE	0.05 LBS./SQ. FT.
BETWEEN HMA LIFTS	0.025 LBS./SQ. FT.
HOT-MIX ASPHALT	112 LBS./SQ. YD./INCH

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**INDEX OF SHEETS, STANDARDS &  
GENERAL NOTES**

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	2
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	

80% FED  
20% STATE

80% FED  
20% STATE

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0010		
20100110	TREE REMOVAL ( 6 TO 15 UNITS DIAMETER)	UNIT	67	67		
20200600	EXCAVATING AND GRADING EXISTING SHOULDER	UNIT	3	3		
20300100	CHANNEL EXCAVATION	CU YD	1400	1400		
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	75	75		
28000315	AGGREGATE DITCH CHECKS	TON	11	11		
28000400	PERIMETER EROSION BARRIER	FOOT	390	390		
28100109	STONE RIPRAP, CLASS A5	SQ YD	1331	1331		
28200200	FILTER FABRIC	SQ YD	1331	1331		
31101000	SUBBASE GRANULAR MATERIAL, TYPE B	TON	21	21		
40600290	BITUMINOUS MATERIALS ( TACK COAT)	POUND	184	184		
40602970	HOT-MIX ASPHALT BINDER COURSE, IL-9.5FG, N70	TON	13	13		
40604052	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70	TON	15	15		
42000080	PAVEMENT CONNECTOR ( PCC ) FOR BRIDGE APPROACH SLAB	SQ YD	192	192		

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0010		
44000100	PAVEMENT REMOVAL	SQ YD	430	430		
44000400	GUTTER REMOVAL	FOOT	427	427		
48102100	AGGREGATE WEDGE SHOULDER, TYPE B	TON	9	9		
48203029	HOT-MIX ASPHALT SHOULDERS, 8"	SQ YD	91	91		
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1		
50105220	PIPE CULVERT REMOVAL	FOOT	47	47		
50200100	STRUCTURE EXCAVATION	CU YD	223	223		
50200300	COFFERDAM EXCAVATION	CU YD	249	249		
50201101	COFFERDAM ( TYPE 1 ) ( LOCATION - 1 )	EACH	1	1		
50201102	COFFERDAM ( TYPE 1 ) ( LOCATION - 2 )	EACH	1	1		
50300225	CONCRETE STRUCTURES	CU YD	199.6	199.6		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	248.8	248.8		
50300260	BRIDGE DECK GROOVING	SQ YD	848	848		
50300300	PROTECTIVE COAT	SQ YD	1081	1081		

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF  
QUANTITIES**

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BX)B-1	CLARK	42	3
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	

80% FED  
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20% STATE

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0010		
50301350	CONCRETE SUPERSTRUCTURE ( APPROACH SLAB)	CU YD	213.3	213.3		
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1	1		
50500505	STUD SHEAR CONNECTORS	EACH	4230	4230		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	121310	121310		
51201610	FURNISHING STEEL PILES HP12X63	FOOT	801	801		
51201900	FURNISHING STEEL PILES HP14X89	FOOT	814	814		
51202305	DRIVING PILES	FOOT	1615	1615		
51203610	TEST PILE STEEL HP12X63	EACH	1	1		
51203900	TEST PILE STEEL HP14X89	EACH	1	1		
51500100	NAME PLATES	EACH	1	1		
52100510	ANCHOR BOLTS, 3/4"	EACH	24	24		
52100520	ANCHOR BOLTS, 1"	EACH	24	24		
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	128	128		
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	70	70		

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0010		
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	400	400		
* 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4		
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3	3		
* 63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	1	1		
63200310	GUARDRAIL REMOVAL	FOOT	632	632		
66700205	PERMANENT SURVEY MARKERS, TYPE I	EACH	1	1		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	8	8		
67100100	MOBILIZATION	L SUM	1	1		
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1		
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	28	28		
70300221	TEMPORARY PAVEMENT MARKING - LINE 4"- PAINT	FOOT	759	759		
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4		

\* SPECIALTY ITEM

REV. - MS

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF  
QUANTITIES

SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	4
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	



80% FED  
20% STATE

### SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
				0010		
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	759	759		
* 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	6	6		
* 78200010	BARRIER WALL REFLECTORS, TYPE B	EACH	5	5		
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	3	3		
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25	0.25		
X4401198	HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE	SO YD	182	182		
	DEPTH					
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR	L SUM	1	1		
	21					
Z0016702	DETOUR SIGNING	L SUM	1	1		
60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	153	153		

### SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		

\* SPECIALTY ITEM

REV. - MS

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>SUMMARY OF QUANTITIES</b>			
SCALE:	SHEET 3	OF 3	SHEETS
STA.	TO STA.		

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	5
		CONTRACT NO. 74360		
ILLINOIS FED. AID PROJECT				

**PAVEMENT SCHEDULE**

STATIONING		LENGTH FEET	PAVEMENT WIDTH FEET	LT SHOULDER WIDTH FEET	RT SHOULDER WIDTH FEET	HOT-MIX ASPHALT SURFACE REMOVAL, VARIABLE DEPTH SQ YD	BITUMINOUS MATERIALS (TACK COAT) POUND	HOT-MIX ASPHALT BINDER COURSE, IL-9.5FG, N70 TON	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70 TON	SUB-BASE GRANULAR MATERIAL, TYPE B TON	HOT-MIX ASPHALT SHOULDERS, 8" SQ YD	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB SQ YD
FROM	TO											
298+75.00	299+15.91	40.91	24	6	6	109.1	49.1	7.6	9.2	12.4	54.5	-
299+15.91	299+39.30	23.39	37	-	-	-	-	-	-	-	-	96.2
299+39.30	299+69.30	30.00	-	-	-	-	-	-	-	-	-	-
299+69.30	301+33.89	164.59	-	-	-	-	-	-	-	-	-	-
301+33.89	301+63.89	30.00	-	-	-	-	-	-	-	-	-	-
301+63.89	301+87.28	23.39	37	-	-	-	-	-	-	-	-	96.2
301+87.28	302+14.60	27.32	24	6	6	72.9	32.8	5.1	6.1	8.3	36.4	-
<b>TOTALS:</b>						182	184	13	15	21	91	192

**AGGREGATE SHOULDER SCHEDULE**

STATION		LENGTH FEET	WIDTH FEET	LT AVE. THICKNESS INCHES	RT AVE. THICKNESS INCHES	AGGREGATE WEDGE SHOULDER, TYPE B TON
FROM	TO					
298+75.00	299+45.90	70.90	3	2	1.75	5.0
299+45.90	299+62.70	16.80	3	2	-	0.6
299+62.70	301+40.50	177.80	-	-	-	-
301+40.50	301+57.30	16.80	3	-	1	0.3
301+57.30	302+14.60	57.30	2	1.75	1.75	2.5
302+14.60	302+21.00	6.40	2	1.75	1.75	0.3
302+21.00	302+29.70	8.70	2	1.75	-	0.2
<b>TOTAL:</b>						9

**EXCAVATING SHOULDER SCHEDULE**

STATIONING		LENGTH FEET	EXCAVATING AND GRADING EXISTING SHOULDERS UNIT
FROM	TO		
298+75.00	299+15.91	40.91	0.8
299+15.91	299+57.40	41.49	0.8
299+57.40	301+45.80	188.40	-
301+45.80	301+87.28	41.48	0.8
301+87.28	302+14.60	27.32	0.6
<b>TOTALS:</b>			3

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**STATE OF ILLINOIS  
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**SCHEDULE OF  
QUANTITIES**

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	6
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PAVEMENT REMOVAL SCHEDULE				
STATION		LENGTH	WIDTH	PAVEMENT REMOVAL
FROM	TO	FEET	FEET	SQ YD
299+15.91	299+87.00	71.09	25-28	209.3
301+15.10	301+87.28	72.18	29-26	220.6
TOTAL:				430

CULVERT REMOVAL SCHEDULE			
STATION	LT/RT	LENGTH	PIPE CULVERT REMOVAL
		FEET	FEET
301+12.00	RT	28.0	28.0
301+32.00	LT	19.0	19.0
TOTAL:			47

TREE REMOVAL SCHEDULE		
LOCATION	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	
	UNIT	
SOUTHWEST CORNER	35.5	
NORTHWEST CORNER	0	
SOUTHEAST CORNER	31.3	
NORTHEAST CORNER	0	
TOTAL:		67

GUTTER REMOVAL SCHEDULE				
STATIONING		LENGTH	GUTTER REMOVAL	
FROM	TO	LT/RT	FOOT	FOOT
298+75.00	299+75.00	RT	100.0	100.0
298+75.00	299+93.00	LT	118.0	118.0
301+15.00	302+21.00	RT	106.0	106.0
301+27.00	302+29.70	LT	102.7	102.7
TOTAL =				427

EMBANKMENT SCHEDULE					
STATIONING		AREA	AVE. THICKNESS	EMBANKMENT	
FROM	TO	SQ YD	INCH	CU YD	
301+24.00	301+50.00	18.78	2.00	1.04	
301+50.00	302+00.00	18.06	1.00	0.50	
TOTALS:				1.5	

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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SCHEDULE OF  
QUANTITIES**

SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)-1	CLARK	42	7
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	

DITCH CHECK SCHEDULE					
STATION	LT/RT	LENGTH	WIDTH	DEPTH	AGGREGATE DITCH CHECKS
		FEET	FEET	FEET	
300+75.00	RT	4	9	2	2.7
301+01.00	RT	4	9	2	2.7
301+27.00	RT	4	9	2	2.7
301+53.00	RT	4	9	2	2.7
TOTALS:					11

GUARDRAIL SCHEDULE								
LOCATION	GUARDRAIL REMOVAL	TRAFFIC BARRIER TERMINAL, TYPE 6	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	GUARDRAIL REFLECTORS, TYPE A	BARRIER WALL REFLECTORS, TYPE B	TERMINAL MARKER-DIRECT APPLIED
	FEET	EACH	FEET	EACH	EACH	EACH	EACH	EACH
NW CORNER	102.7	1	62.5	1	-	1	-	1
NE CORNER	175.7	1	100.0	-	1	1	-	1
SW CORNER	165.2	1	125.0	1	-	2	-	1
SE CORNER	188.4	1	112.5	1	-	2	-	1
NORTH PARAPET	-	-	-	-	-	-	3	-
SOUTH PARAPET	-	-	-	-	-	-	2	-
TOTALS:	632	4	400	3	1	6	5	4

PAVEMENT MARKING SCHEDULE				
STATIONING		LENGTH	TEMPORARY PAVEMENT MARKING-LINE 4" - PAINT	PAINT PAVEMENT MARKING-LINE 4"
FROM	TO	FEET	FEET	FEET
298+75.00	302+14.60	339.60	759.2	759.2
TOTALS:			759	759

SEEDING & FERTILIZING SCHEDULE										
STATIONING		LT/RT	AREA	SEEDING, CLASS 2 (SPECIAL)	TEMPORARY EROSION CONTROL SEEDING	NITROGEN FERTILIZER * NUTRIENT	PHOSPHORUS FERTILIZER * NUTRIENT	POTASSIUM FERTILIZER * NUTRIENT	AGRICULTURAL GROUND * LIMESTONE	MULCH, METHOD 1 *
FROM	TO		ACRE	ACRE	POUND	POUND	POUND	POUND	TON	ACRE
298+75.00	299+66.00	RT	0.06	0.06	19.2	5.8	5.8	5.8	0.3	0.06
298+75.00	299+98.00	LT	0.04	0.04	12.8	3.8	3.8	3.8	0.2	0.04
299+84.00	300+18.00	RT	0.02	0.02	4.8	1.4	1.4	1.4	0.1	0.02
300+20.00	300+40.00	LT	0.01	0.01	2.6	0.8	0.8	0.8	0.0	0.01
300+62.00	300+83.00	RT	0.01	0.01	3.2	0.9	0.9	0.9	0.0	0.01
300+85.00	301+19.00	LT	0.02	0.02	4.8	1.4	1.4	1.4	0.1	0.02
301+30.00	302+14.60	RT	0.06	0.06	16.9	5.1	5.1	5.1	0.2	0.06
301+62.00	302+14.60	LT	0.04	0.04	10.5	3.2	3.2	3.2	0.1	0.04
TOTALS:			0.25	75	22	22	22	22	1	0.25

\*INDICATES INFORMATION ONLY, NOT A PAY ITEM

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	DRAWN -	REVISED -
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PLOT DATE = 12/15/2021	DATE -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF  
QUANTITIES

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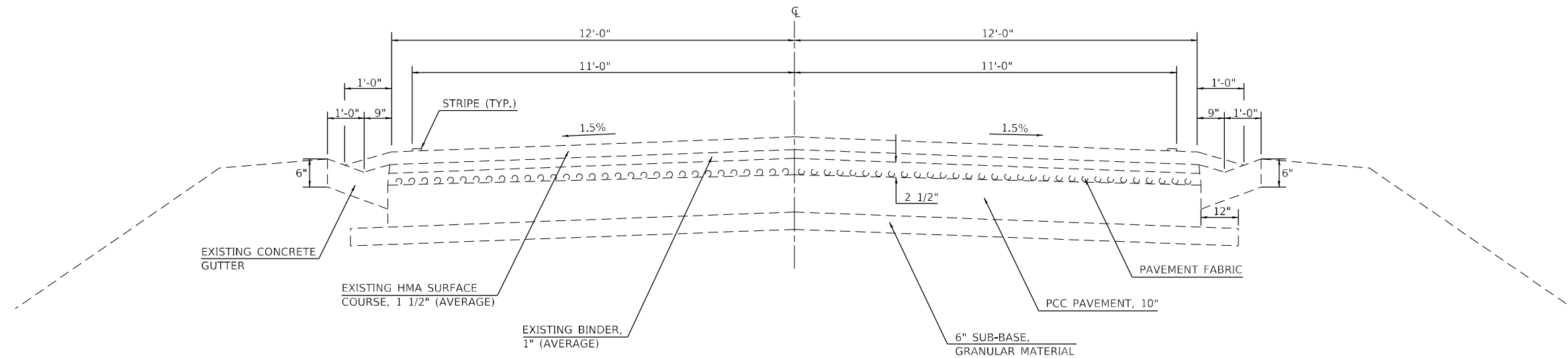
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1707	(B)B-1	CLARK	42	8
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

REV. - MS

BRIDGE STATIONS:  
STA. 299+85.53 TO STA. 301+16.79

## EXISTING TYPICAL CROSS SECTION

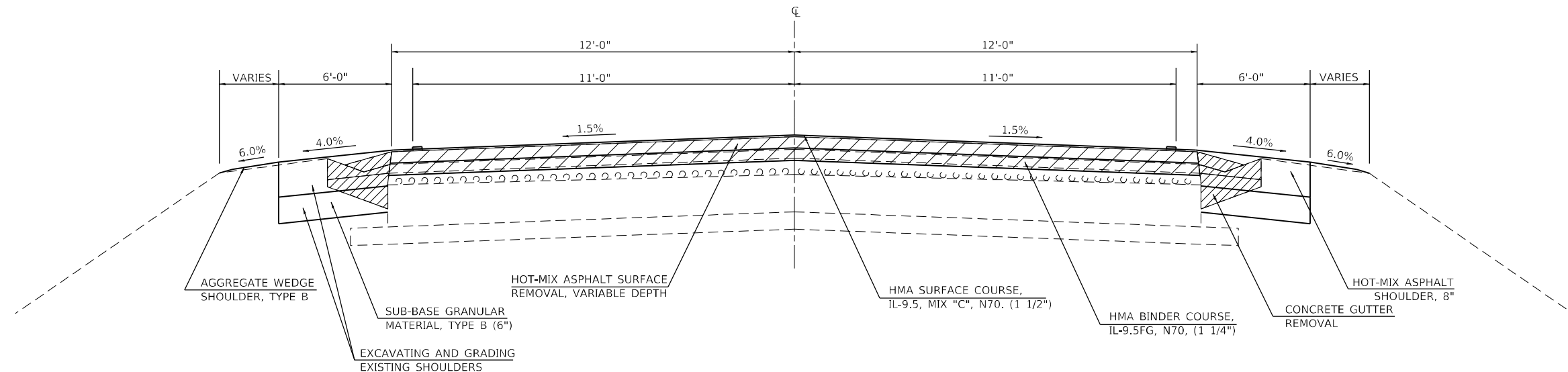
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301+87.28 302+14.60



NOTE: NOT DRAWN TO SCALE

## PROPOSED TYPICAL CROSS SECTION

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301+87.28 302+14.60



NOTE: NOT DRAWN TO SCALE

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

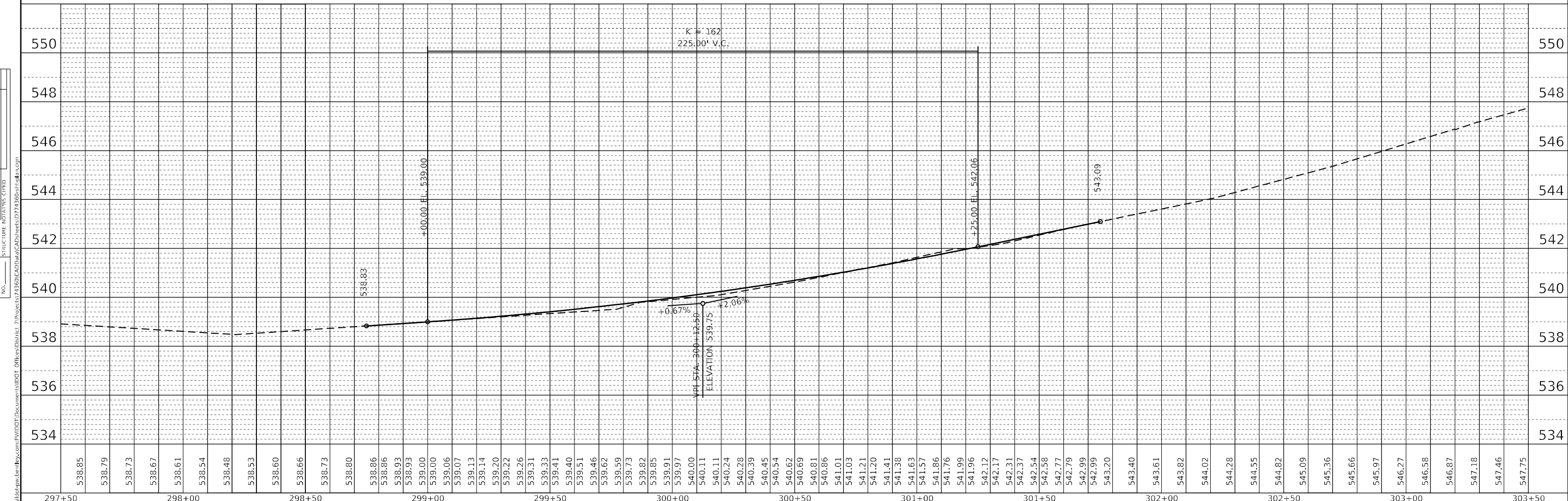
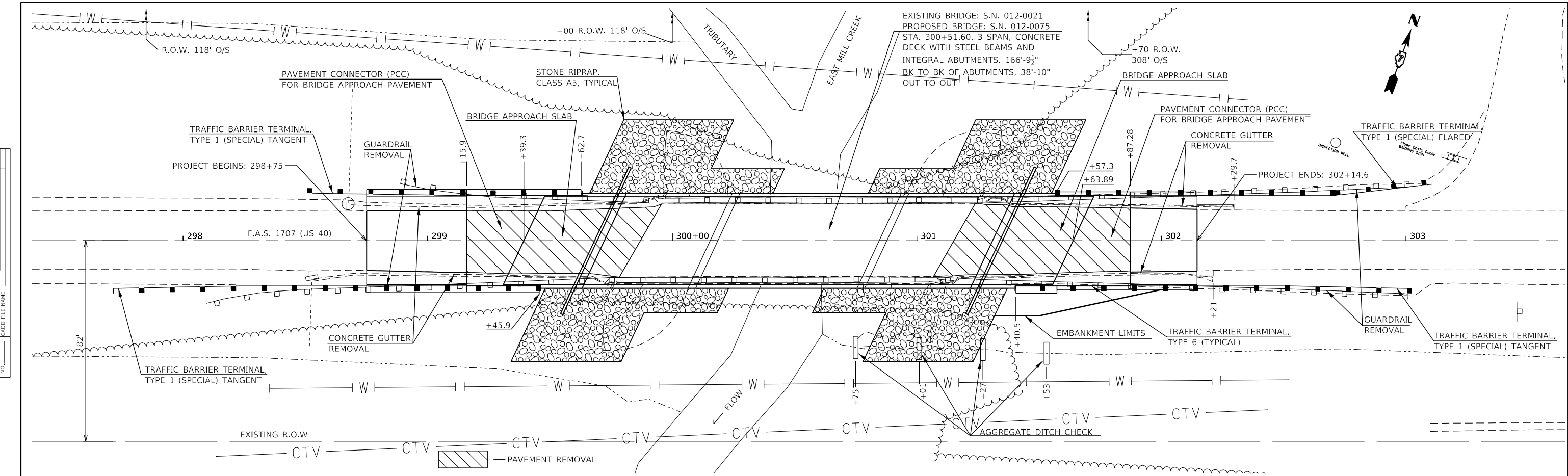
TYPICAL CROSS SECTIONS

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BxB)B-1	CLARK	42	9
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNMENT CHECKED	
	NOTE BOOK	
	NO.	
	CADD FILE NAME	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
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	NO.	

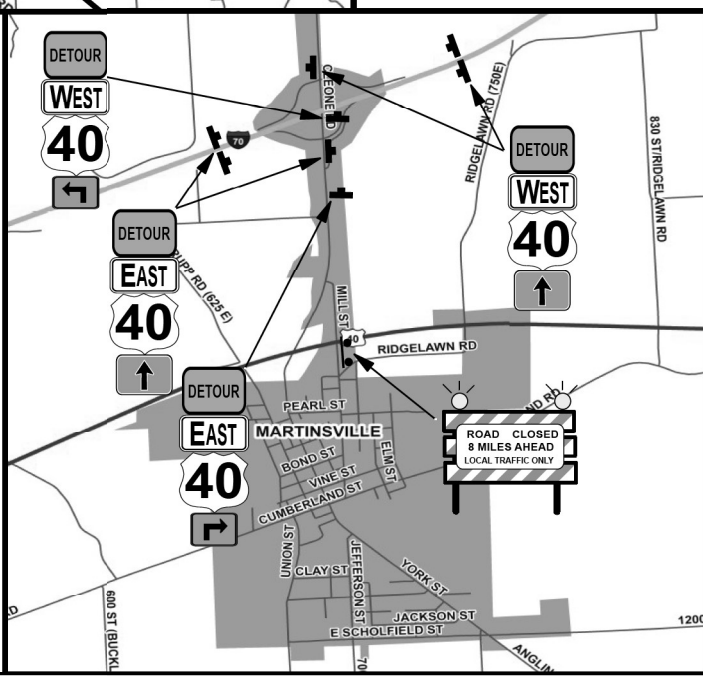
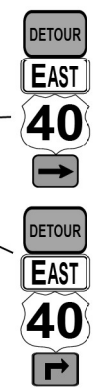
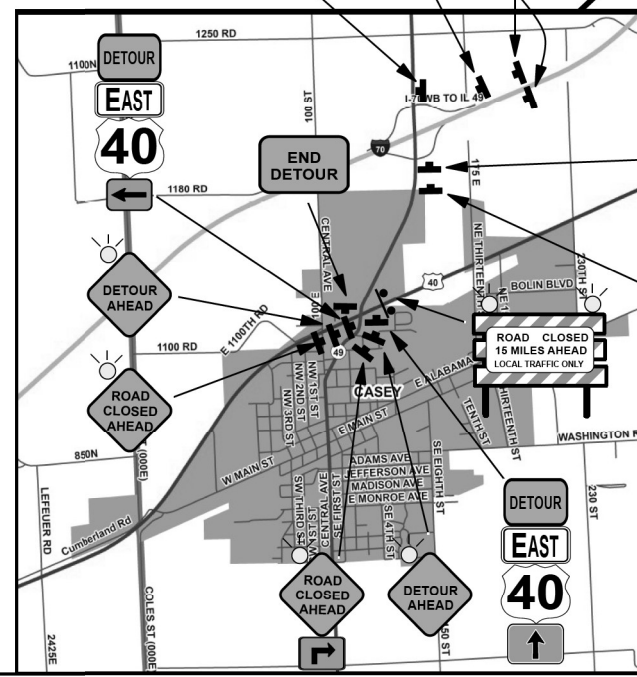
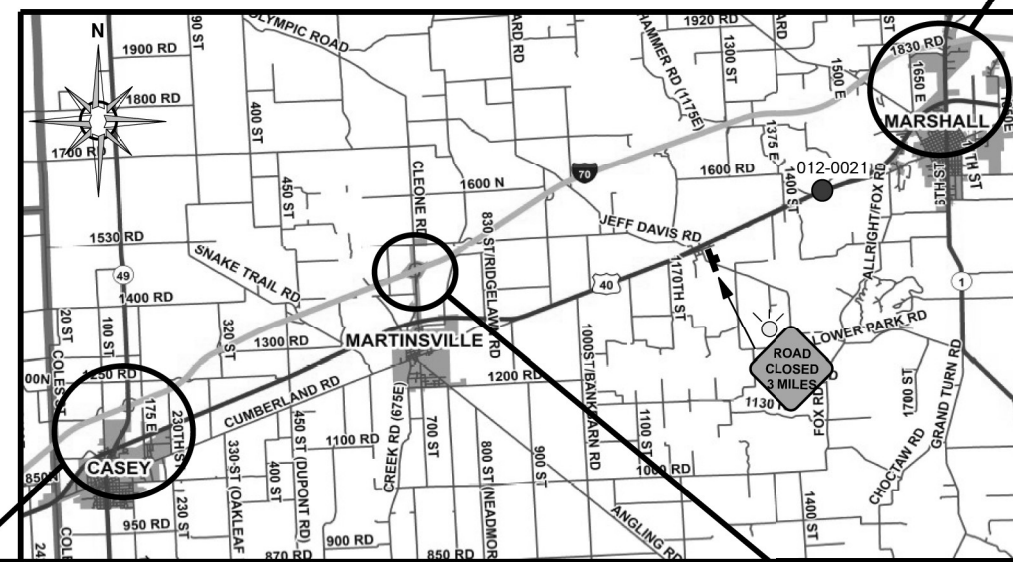
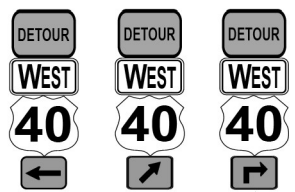
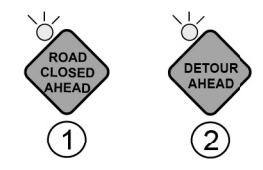
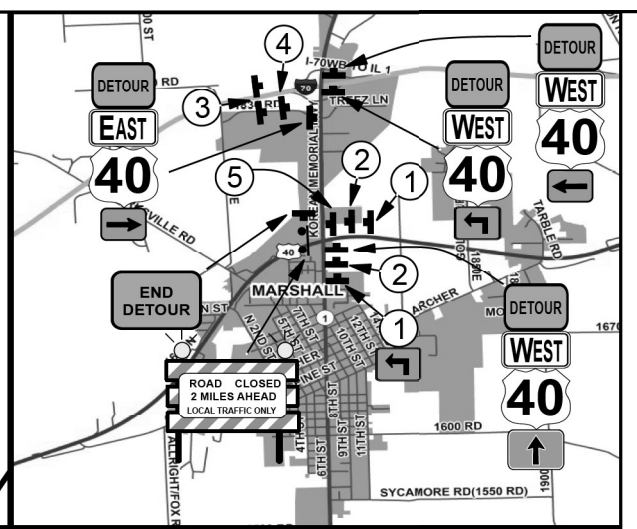
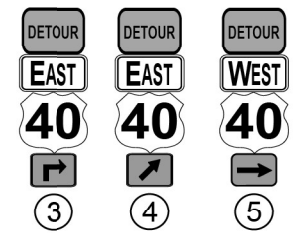


538.85	538.79	538.73	538.67	538.61	538.54	538.48	538.53	538.60	538.66	538.73	538.80	538.86	538.86	538.93	539.00	539.00	539.06	539.07	539.13	539.14	539.20	539.22	539.26	539.31	539.33	539.41	539.51	539.51	539.46	539.62	539.59	539.73	539.82	539.85	539.91	539.97	540.00	540.11	540.11	540.24	540.28	540.39	540.45	540.54	540.62	540.69	540.81	540.86	541.01	541.03	541.21	541.20	541.41	541.41	541.38	541.63	541.57	541.86	541.76	541.99	541.96	541.96	542.12	542.17	542.31	542.37	542.54	542.58	542.77	542.79	542.99	542.99	543.20	543.40	543.61	543.82	544.02	544.28	544.55	544.82	545.09	545.36	545.66	545.97	546.27	546.58	546.87	547.18	547.46	547.75
297+50	298+00	298+50	299+00	299+50	300+00	300+50	301+00	301+50	302+00	302+50	303+00	303+50	USER NAME = steffenmk DESIGNED - DRAWN - RW PLOT SCALE = 40,0000 * / in. PLOT DATE = 12/15/2021			DESIGNED - REVISIONS - CHECKED - DPM DATE - 1/9/2019			STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION			PLAN & PROFILE SCALE: SHEET 1 OF 1 SHEETS STA. 297+50 TO STA. 303+50			F.A.S. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO. 1707 (BxB)B-1 CLARK 42 10 CONTRACT NO. 74360 ILLINOIS FED. AID PROJECT																																																																	

### SIGN LEGEND

	W20-3-48		M3-2-3015		M6-3(O)-3018	
	W20-2-48		M3-4-3015			M5-1L/R(O)-3018
	W20-2(O)-48		M1-4a-36			M6-1L/R(O)-3018
	M4-8a(O)-3024		R11-3a-6030			M5-2R(O)-3018

### US 40 CLOSURE BY STANDARDS BLR 21 & 701901



74360

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DRAWN -	REVISED -	
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/15/2021	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**DETOUR MAP**  
SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	11
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

Benchmark: Permanent marker stamped L211 on northeast wingwall of SN 012-0021;  
Station 301+30, 20' Lt., Elevation 542.463

Existing Structure: Structure No. 012-0021 was originally constructed in 1952 as Route FA 12 Section B-XB. The original structure was a three span reinforced concrete deck girder with reinforced concrete deck supported on solid concrete piers and open abutments with channel realignment. Back-to-back abutment length is 131'-3" and out-to-out width of deck is 35'-8". The structure has a 30° skew. In 1993, the bridge railing was replaced under Section (C-X, B-X) RS & (X-1) RS-1. In 2011, a new bituminous wearing surface was installed on the bridge deck and approach slabs. Existing structure will be removed and replaced while traffic is detoured.

No Salvage

\*\* Hatched area indicates channel excavation. For quantities of pavement removal and channel excavation see Roadway Plans.

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

**DESIGN STRESSES**

**FIELD UNITS**

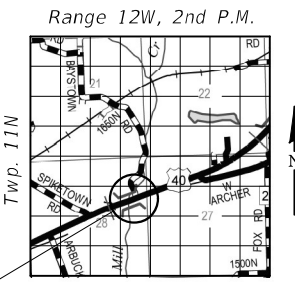
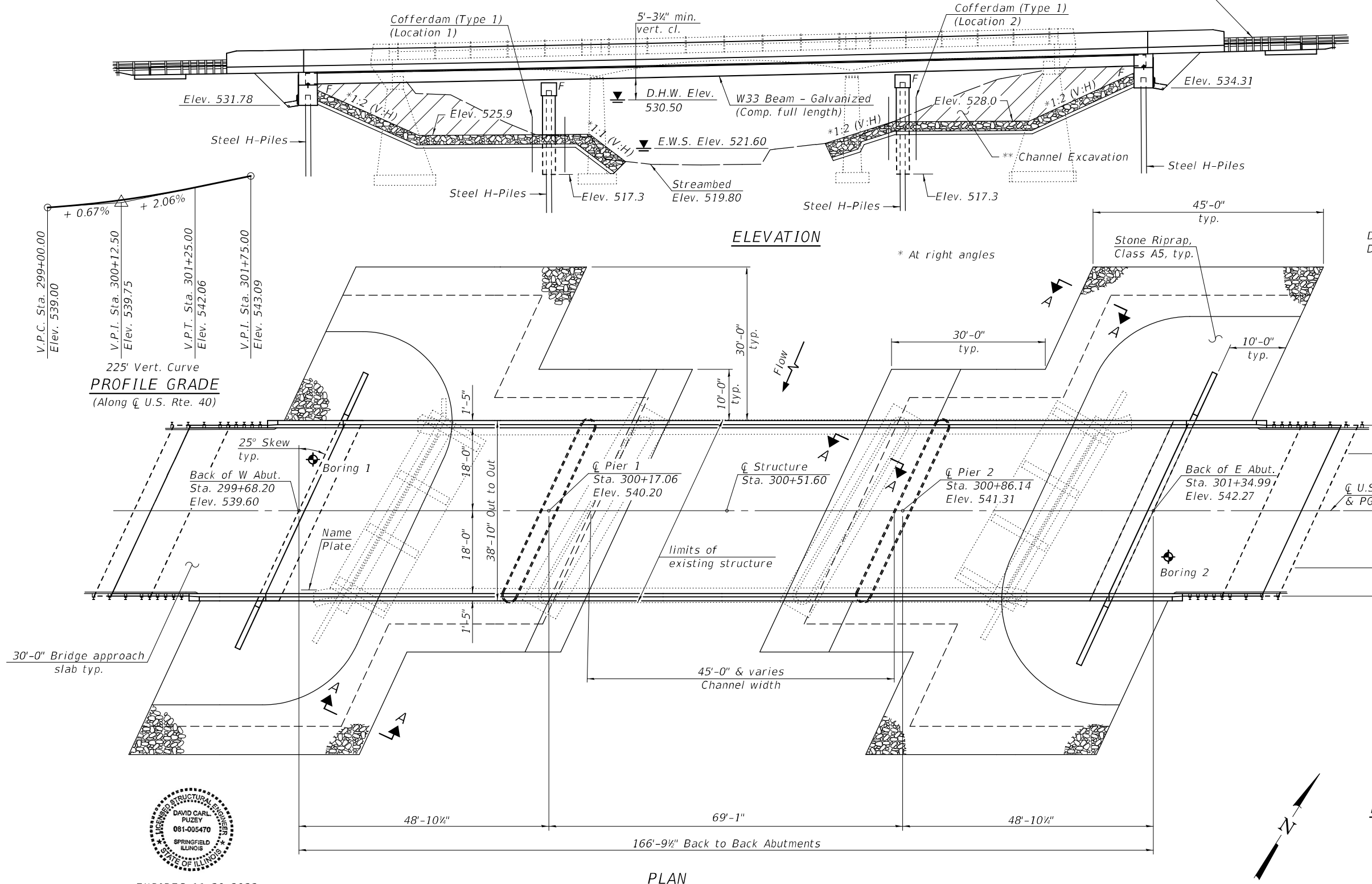
$f'_c = 3,500$  psi  
 $f'_c = 4,000$  psi (Superstructure Concrete)  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (M270 Grade 50)

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
 Design Spectral Acceleration at 1.0 sec. (SD1) = 0.175g  
 Design Spectral Acceleration at 0.2 sec. (SDS) = 0.365g  
 Soil Site Class = D

**LOADING HL-93**

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



**GENERAL PLAN & ELEVATION**  
**U.S. 40 OVER EAST MILL CREEK**  
**F.A.S. RTE. 1707 - SECTION (BXB)B-1**  
**CLARK COUNTY**  
**STA. 300+51.60**  
**STRUCTURE NO. 012-0075**

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DESIGNED - RYAN P. NEGANGARD	EXAMINED -
CHECKED - HAREEM I. DAR	PASSED -
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

DATE - 2-4-2022

REVISER -

REVISOR -

DAVID CARL PUZEY  
 ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BXB)B-1	CLARK	12	42

CONTRACT NO. 74360  
 ILLINOIS FED. AID PROJECT



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A5	Sq. Yd.		1331	1331
Filter Fabric	Sq. Yd.		1331	1331
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		216	216
Cofferdam Excavation	Cu. Yd.		249	249
Cofferdam (Type 1) (Location-1)	Each		1	1
Cofferdam (Type 1) (Location-2)	Each		1	1
Concrete Structures	Cu. Yd.		199.6	199.6
Concrete Superstructure	Cu. Yd.	248.8		248.8
Bridge Deck Grooving	Sq. Yd.		848	848
Protective Coat	Sq. Yd.		1081	1081
Concrete Superstructure (Approach Slab)	Cu. Yd.	106.7		106.7
Furnishing & Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	4230		4230
Reinforcement Bars, Epoxy Coated	Pound	102530	18790	121320
Furnishing Steel Piles HP12X63	Foot		801	801
Furnishing Steel Piles HP14X89	Foot		1110	1110
Driving Piles	Foot		1911	1911
Test Pile Steel HP12X63	Each		1	1
Test Pile Steel HP14X89	Each		1	1
Name Plates	Each	1		1
Anchor Bolts, 3/4"	Each	24		24
Anchor Bolts, 1"	Each	24		24
Granular Backfill for Structures	Cu. Yd.		128	128
Geocomposite Wall Drain	Sq. Yd.		70	70
Pipe Underdrain for Structures 4"	Foot		153	153

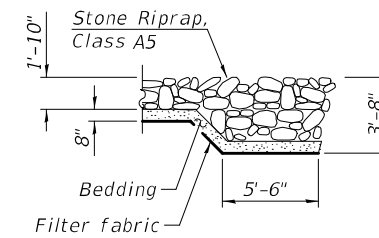
**GENERAL NOTES**

Fasteners shall be ASTM F 3125 Grade A325 Type 1. Fasteners shall be hot dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel." Bolts 7/8" Ø, holes 1 1/16" Ø, unless otherwise noted.

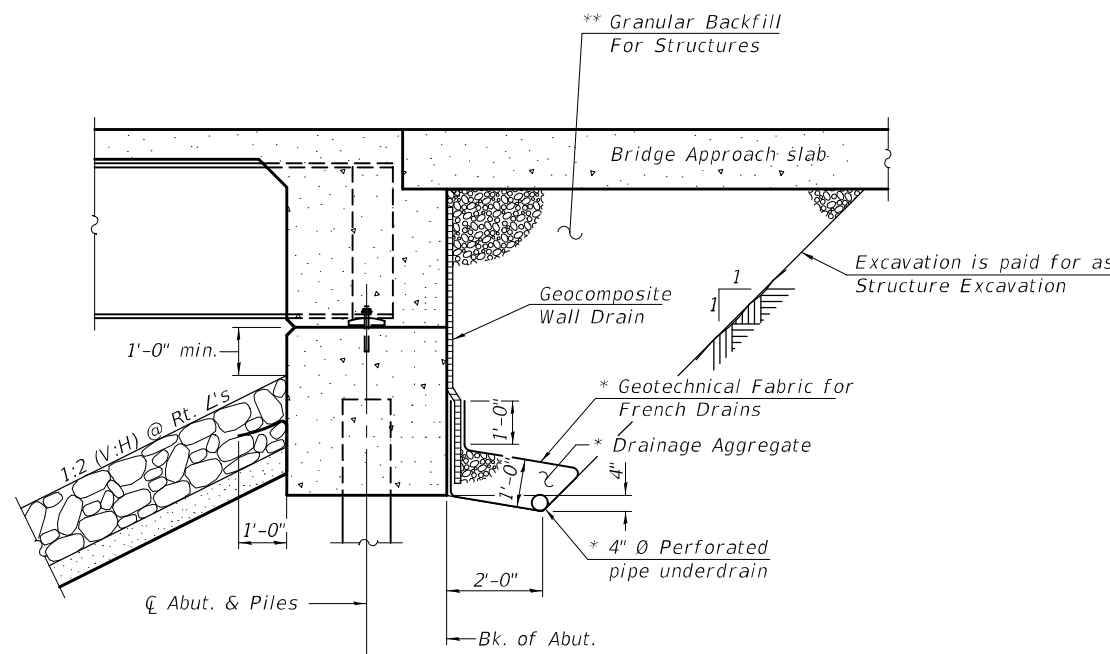
Calculated weight of Structural Steel = 125,920 lbs. (M270 Grade 50)  
 Calculated weight of Structural Steel = 19,430 lbs. (M270 Grade 36)  
 No field welding is permitted except as specified in the contract documents.  
 Reinforcement bars designated (E) shall be epoxy coated.  
 Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.  
 All new structural steel shall be galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."  
 Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.  
 The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.  
 The existing bearings contain lead plates. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.  
 The contractor is advised that the existing concrete superstructure is a continuous structure and removal must be done in a proper sequence, possibly with falsework support. See Special Provisions.

**INDEX OF SHEETS**

1	General Plan & Elevation
2	General Data
3-5	Top of Slab Elevations
6-7	Top of Approach Slab Elevations
8	Superstructure
9-10	Superstructure Details
11	Diaphragm Details
12-13	Approach Slab Details
14-15	Structural Steel Details
16	Bearing Details
17-18	Abutments
19	Abutment Details
20-21	Piers
22	Pier Details
23	Pile Details
24	Concrete Parapet Slipforming Options
25-27	Soil Boring Logs



**SECTION A-A**



**SECTION THRU INTEGRAL ABUTMENT**  
(Horiz. dim. @ Rt. L's)

\* Included in the cost of Pipe Underdrains for Structures.

\*\* Granular Backfill for Structures shall follow Std. Spec. 586 except the coarse aggregate shall be Grade CA7, CA11, or CA14. Granular backfill behind the abutments shall be compacted according to Article 205.06 of the Standard Specifications.

Note:  
 All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

**WATERWAY INFORMATION**

Flood Event	Freq Yr.	Discharge Ft <sup>3</sup> /s	Waterway Opening - ft <sup>2</sup>		Natural Head - ft.		Headwater Elevation ft.		
			Existing	Proposed	H.W.E. ft	Existing	Proposed	Existing	Proposed
			390	521	529.4	1.6	1.2	531.0	530.6
Design	50	5670	460	648	530.5	2.9	1.6	533.4	532.1
Base	100	6680	493	707	531.0	3.5	1.8	534.5	532.8
Scour Design Check	200	7747	513	743	531.3	4.2	2.1	535.5	533.4
Max Calc.	500	9230	548	798	531.8	5.1	2.5	536.9	534.3

10 year velocity through existing bridge = 7.8 ft./sec  
 10 year velocity through proposed bridge = 5.6 ft./sec

**DESIGN SCOUR ELEVATION TABLE**

Event/Limit	Design Scour Elevations (ft.)				
	W. Abut.	Pier 1	Pier 2	E. Abut.	Item 113
Q100	531.78	506.3	506.3	534.31	5
Q200	531.78	505.1	505.1	534.31	
Design	531.78	506.3	506.3	534.31	
Check	531.78	505.1	505.1	534.31	

STATION 300 + 51.60  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.S. RTE. 1707 SEC. (BXB)B-1  
 LOADING HL-93  
 STRUCTURE NO. 012-0075

**NAME PLATE**  
 See Std. 515001

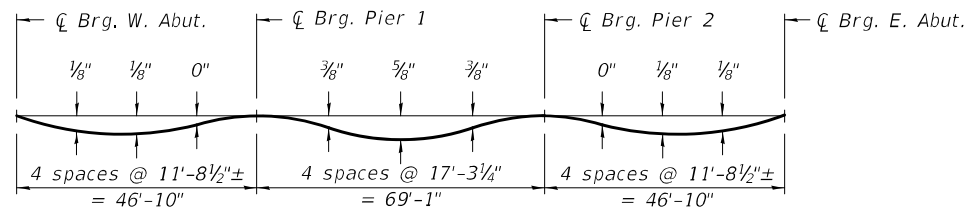
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DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>Jaime F. J. [Signature]</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>	REVISIONS -
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS -
CHECKED - R.P.N. / G.R.A.		

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA**  
**STRUCTURE NO. 012-0075**

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BXB)B-1	CLARK	13	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

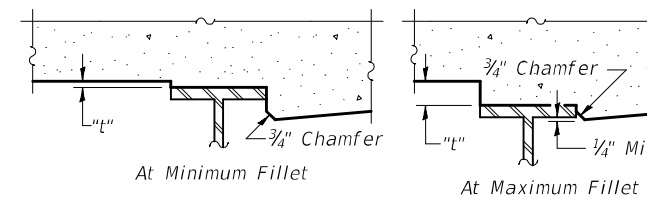


**DEAD LOAD DEFLECTION DIAGRAM**

(Includes weight of concrete only.)

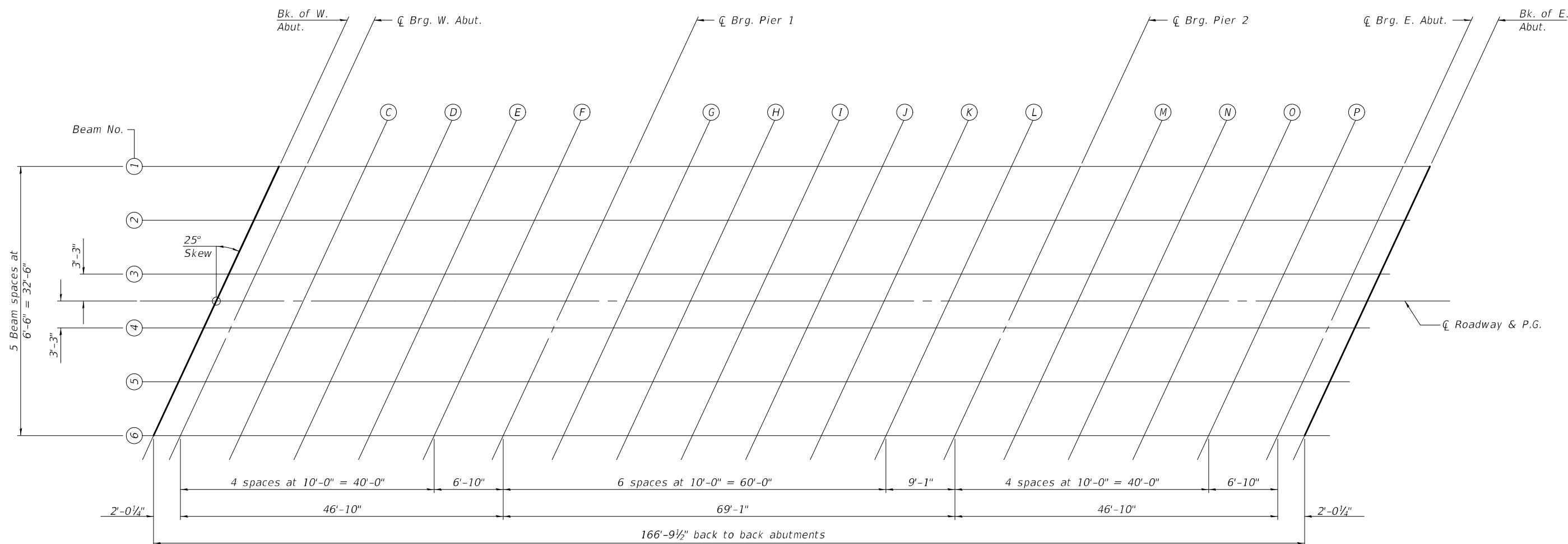
Note:

The above deflections 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 4 thru 5 of 27.

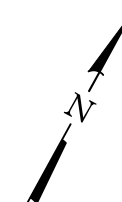


To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 4 thru 5 of 27, minus slab thickness, equals the fillet heights "t" above top flange of beams.

**FILLET HEIGHTS**



**PLAN**



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DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>Jaime F. J. [Signature]</i>
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

ENGINEER OF BRIDGES AND STRUCTURES

DATE - FEBRUARY 4, 2022
REVISED -
REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS  
STRUCTURE NO. 012-0075**

SHEET 3 OF 27 SHEETS

F.A.S. RTE. 1707	SECTION (BxB)B-1	COUNTY CLARK	SHEET NO. 14	TOTAL SHEETS 42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

**BEAM 1**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	299+75.78	-16.25	539.42	539.42
Q Brg. W. Abut.	299+77.80	-16.25	539.44	539.44
C	299+87.80	-16.25	539.56	539.57
D	299+97.80	-16.25	539.68	539.69
E	300+07.80	-16.25	539.81	539.82
F	300+17.80	-16.25	539.95	539.95
Q Brg. Pier 1	300+24.64	-16.25	540.04	540.04
G	300+34.64	-16.25	540.19	540.21
H	300+44.64	-16.25	540.34	540.38
I	300+54.64	-16.25	540.50	540.55
J	300+64.64	-16.25	540.67	540.71
K	300+74.64	-16.25	540.84	540.87
L	300+84.64	-16.25	541.02	541.03
Q Brg. Pier 2	300+93.72	-16.25	541.18	541.18
M	301+03.72	-16.25	541.37	541.37
N	301+13.72	-16.25	541.57	541.57
O	301+23.72	-16.25	541.77	541.78
P	301+33.72	-16.25	541.97	541.98
Q Brg. E. Abut.	301+40.54	-16.25	542.12	542.12
Bk. of E. Abut.	301+42.57	-16.25	542.16	542.16

**BEAM 2**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	299+72.75	-9.75	539.50	539.50
Q Brg. W. Abut.	299+74.77	-9.75	539.52	539.52
C	299+84.77	-9.75	539.64	539.65
D	299+94.77	-9.75	539.76	539.77
E	300+04.77	-9.75	539.89	539.89
F	300+14.77	-9.75	540.02	540.03
Q Brg. Pier 1	300+21.60	-9.75	540.12	540.12
G	300+31.60	-9.75	540.26	540.28
H	300+41.60	-9.75	540.42	540.45
I	300+51.60	-9.75	540.57	540.62
J	300+61.60	-9.75	540.74	540.78
K	300+71.60	-9.75	540.91	540.94
L	300+81.60	-9.75	541.08	541.10
Q Brg. Pier 2	300+90.69	-9.75	541.25	541.25
M	301+00.69	-9.75	541.43	541.43
N	301+10.69	-9.75	541.63	541.63
O	301+20.69	-9.75	541.83	541.83
P	301+30.69	-9.75	542.03	542.04
Q Brg. E. Abut.	301+37.51	-9.75	542.17	542.17
Bk. of E. Abut.	301+39.54	-9.75	542.21	542.21

**BEAM 3**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	299+69.72	-3.25	539.57	539.57
Q Brg. W. Abut.	299+71.74	-3.25	539.59	539.59
C	299+81.74	-3.25	539.70	539.71
D	299+91.74	-3.25	539.82	539.83
E	300+01.74	-3.25	539.95	539.95
F	300+11.74	-3.25	540.08	540.08
Q Brg. Pier 1	300+18.57	-3.25	540.17	540.17
G	300+28.57	-3.25	540.32	540.34
H	300+38.57	-3.25	540.47	540.50
I	300+48.57	-3.25	540.62	540.67
J	300+58.57	-3.25	540.78	540.83
K	300+68.57	-3.25	540.95	540.98
L	300+78.57	-3.25	541.12	541.14
Q Brg. Pier 2	300+87.66	-3.25	541.29	541.29
M	300+97.66	-3.25	541.47	541.47
N	301+07.66	-3.25	541.66	541.67
O	301+17.66	-3.25	541.86	541.87
P	301+27.66	-3.25	542.07	542.07
Q Brg. E. Abut.	301+34.48	-3.25	542.21	542.21
Bk. of E. Abut.	301+36.51	-3.25	542.25	542.25

**Q ROADWAY & P.G.**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	299+68.20	0.00	539.60	539.60
Q Brg. W. Abut.	299+70.22	0.00	539.62	539.62
C	299+80.22	0.00	539.73	539.74
D	299+90.22	0.00	539.85	539.86
E	300+00.22	0.00	539.98	539.98
F	300+10.22	0.00	540.11	540.11
Q Brg. Pier 1	300+17.06	0.00	540.20	540.20
G	300+27.06	0.00	540.34	540.36
H	300+37.06	0.00	540.49	540.53
I	300+47.06	0.00	540.65	540.69
J	300+57.06	0.00	540.81	540.85
K	300+67.06	0.00	540.97	541.01
L	300+77.06	0.00	541.15	541.16
Q Brg. Pier 2	300+86.14	0.00	541.31	541.31
M	300+96.14	0.00	541.49	541.49
N	301+06.14	0.00	541.68	541.69
O	301+16.14	0.00	541.88	541.89
P	301+26.14	0.00	542.08	542.09
Q Brg. E. Abut.	301+32.97	0.00	542.22	542.22
Bk. of E. Abut.	301+34.99	0.00	542.27	542.27

**BEAM 4**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	299+66.68	3.25	539.53	539.53
Q Brg. W. Abut.	299+68.71	3.25	539.55	539.55
C	299+78.71	3.25	539.67	539.67
D	299+88.71	3.25	539.79	539.79
E	299+98.71	3.25	539.91	539.91
F	300+08.71	3.25	540.04	540.04
Q Brg. Pier 1	300+15.54	3.25	540.13	540.13
G	300+25.54	3.25	540.27	540.29
H	300+35.54	3.25	540.42	540.46
I	300+45.54	3.25	540.57	540.62
J	300+55.54	3.25	540.73	540.78
K	300+65.54	3.25	540.90	540.93
L	300+75.54	3.25	541.07	541.09
Q Brg. Pier 2	300+84.63	3.25	541.23	541.23
M	300+94.63	3.25	541.42	541.42
N	301+04.63	3.25	541.61	541.61
O	301+14.63	3.25	541.80	541.81
P	301+24.63	3.25	542.00	542.01
Q Brg. E. Abut.	301+31.45	3.25	542.14	542.14
Bk. of E. Abut.	301+33.47	3.25	542.19	542.19

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DESIGNED - RYAN P. NEGANGARD	EXAMINED -
CHECKED - HAREEM I. DAR	PASSED -
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

DATE - FEBRUARY 4, 2022	REVISIONS
	REVISIONS

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS  
STRUCTURE NO. 012-0075**

SHEET 4 OF 27 SHEETS

F.A.S. RTE. 1707	SECTION (BxB)B-1	COUNTY CLARK	SHEET NO. 15	TOTAL SHEETS 42
CONTRACT NO. 74360				ILLINOIS FED. AID PROJECT

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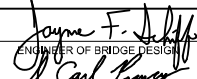

**BEAM 5**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	299+63.65	9.75	539.40	539.40
Q Brg. W. Abut.	299+65.68	9.75	539.42	539.42
C	299+75.68	9.75	539.53	539.54
D	299+85.68	9.75	539.65	539.66
E	299+95.68	9.75	539.77	539.78
F	300+05.68	9.75	539.90	539.90
Q Brg. Pier 1	300+12.51	9.75	539.99	539.99
G	300+22.51	9.75	540.13	540.15
H	300+32.51	9.75	540.28	540.31
I	300+42.51	9.75	540.43	540.48
J	300+52.51	9.75	540.59	540.63
K	300+62.51	9.75	540.75	540.78
L	300+72.51	9.75	540.92	540.94
Q Brg. Pier 2	300+81.60	9.75	541.08	541.08
M	300+91.60	9.75	541.26	541.26
N	301+01.60	9.75	541.45	541.46
O	301+11.60	9.75	541.64	541.65
P	301+21.60	9.75	541.84	541.85
Q Brg. E. Abut.	301+28.42	9.75	541.98	541.98
Bk. of E. Abut.	301+30.44	9.75	542.03	542.03

**BEAM 6**

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	299+60.62	16.25	539.25	539.25
Q Brg. W. Abut.	299+62.65	16.25	539.27	539.27
C	299+72.65	16.25	539.38	539.39
D	299+82.65	16.25	539.50	539.50
E	299+92.65	16.25	539.62	539.62
F	300+02.65	16.25	539.74	539.74
Q Brg. Pier 1	300+09.48	16.25	539.83	539.83
G	300+19.48	16.25	539.97	539.99
H	300+29.48	16.25	540.11	540.15
I	300+39.48	16.25	540.26	540.31
J	300+49.48	16.25	540.42	540.46
K	300+59.48	16.25	540.58	540.62
L	300+69.48	16.25	540.75	540.77
Q Brg. Pier 2	300+78.56	16.25	540.91	540.91
M	300+88.56	16.25	541.09	541.09
N	300+98.56	16.25	541.27	541.28
O	301+08.56	16.25	541.47	541.47
P	301+18.56	16.25	541.66	541.67
Q Brg. E. Abut.	301+25.39	16.25	541.80	541.80
Bk. of E. Abut.	301+27.41	16.25	541.84	541.84

DESIGNED - RYAN P. NEGANGARD	EXAMINED
CHECKED - HAREEM I. DAR	PASSED
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

  
 ENGINEER OF BRIDGE DESIGN  
  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - FEBRUARY 4, 2022
REVISED -
REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS  
 STRUCTURE NO. 012-0075**

SHEET 5 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	16	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

NORTH EDGE OF SHOULDER

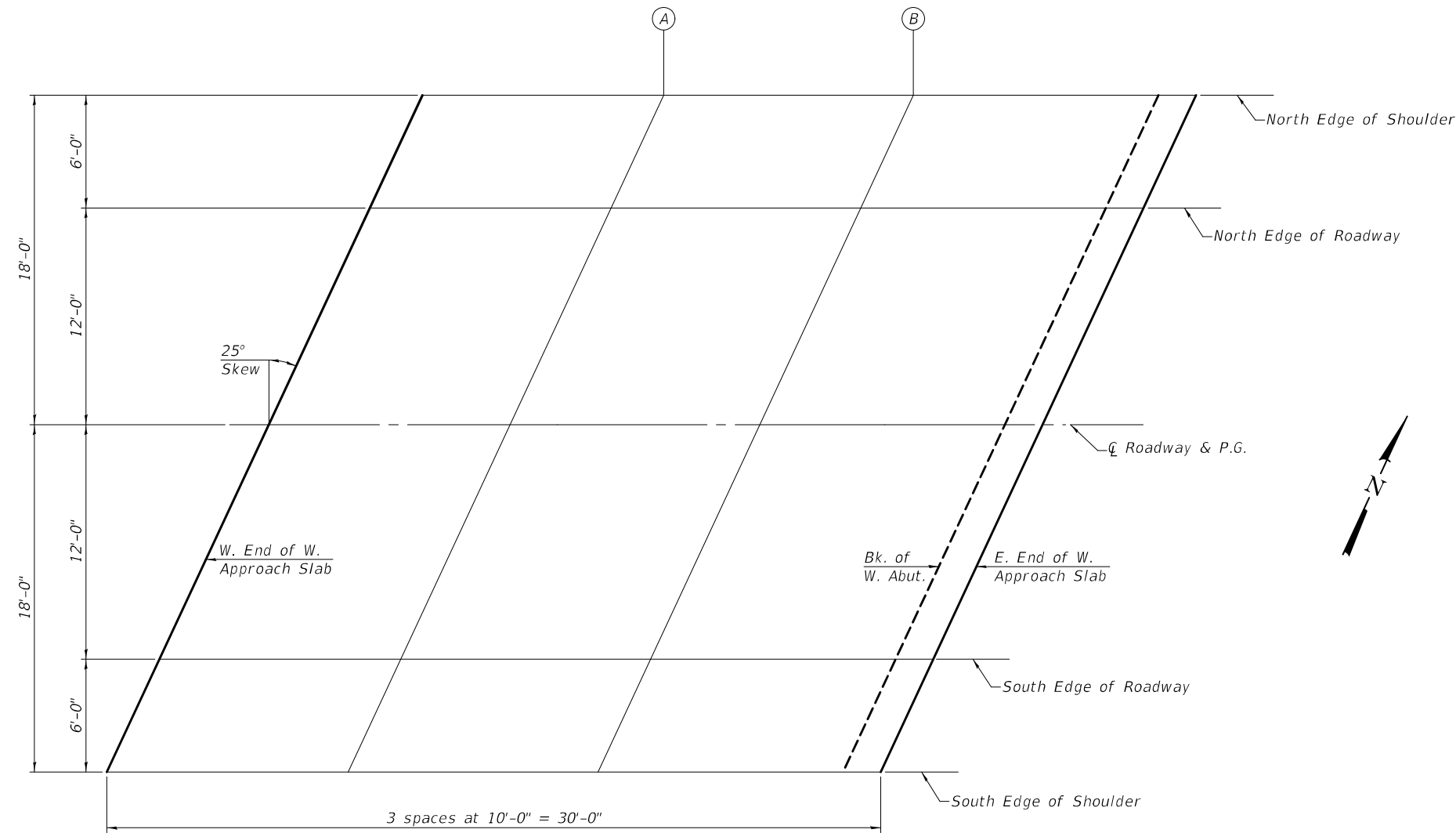
Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Apr.	299+47.70	-18.00	539.09
A	299+57.70	-18.00	539.19
B	299+67.70	-18.00	539.29
E. End of W. Apr.	299+77.70	-18.00	539.40

NORTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Apr.	299+44.90	-12.00	539.18
A	299+54.90	-12.00	539.28
B	299+64.90	-12.00	539.38
E. End of W. Apr.	299+74.90	-12.00	539.49

☉ ROADWAY & P.G.

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Apr.	299+39.30	0.00	539.31
A	299+49.30	0.00	539.40
B	299+59.30	0.00	539.50
E. End of W. Apr.	299+69.30	0.00	539.61



PLAN

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Apr.	299+33.71	12.00	539.08
A	299+43.71	12.00	539.17
B	299+53.71	12.00	539.27
E. End of W. Apr.	299+63.71	12.00	539.37

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of W. Apr.	299+30.91	18.00	538.94
A	299+40.91	18.00	539.02
B	299+50.91	18.00	539.12
E. End of W. Apr.	299+60.91	18.00	539.22

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DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>James F. Joffe</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl Perry</i>	REVISIONS
DRAWN - GLENN W. STOVER		REVISIONS
CHECKED - R.P.N. / G.R.A.		

ENGINEER OF BRIDGE DESIGN  
 ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TOP OF WEST APPROACH SLAB ELEVATIONS  
 STRUCTURE NO. 012-0075

SHEET 6 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BXB)B-1	CLARK	17	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr.	301+42.28	-18.00	542.12
Q	301+52.28	-18.00	542.32
R	301+62.28	-18.00	542.53
E. End of E. Appr.	301+72.28	-18.00	542.73

NORTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr.	301+39.48	-12.00	542.18
Q	301+49.48	-12.00	542.38
R	301+59.48	-12.00	542.59
E. End of E. Appr.	301+69.48	-12.00	542.80

☐ ROADWAY & P.G.

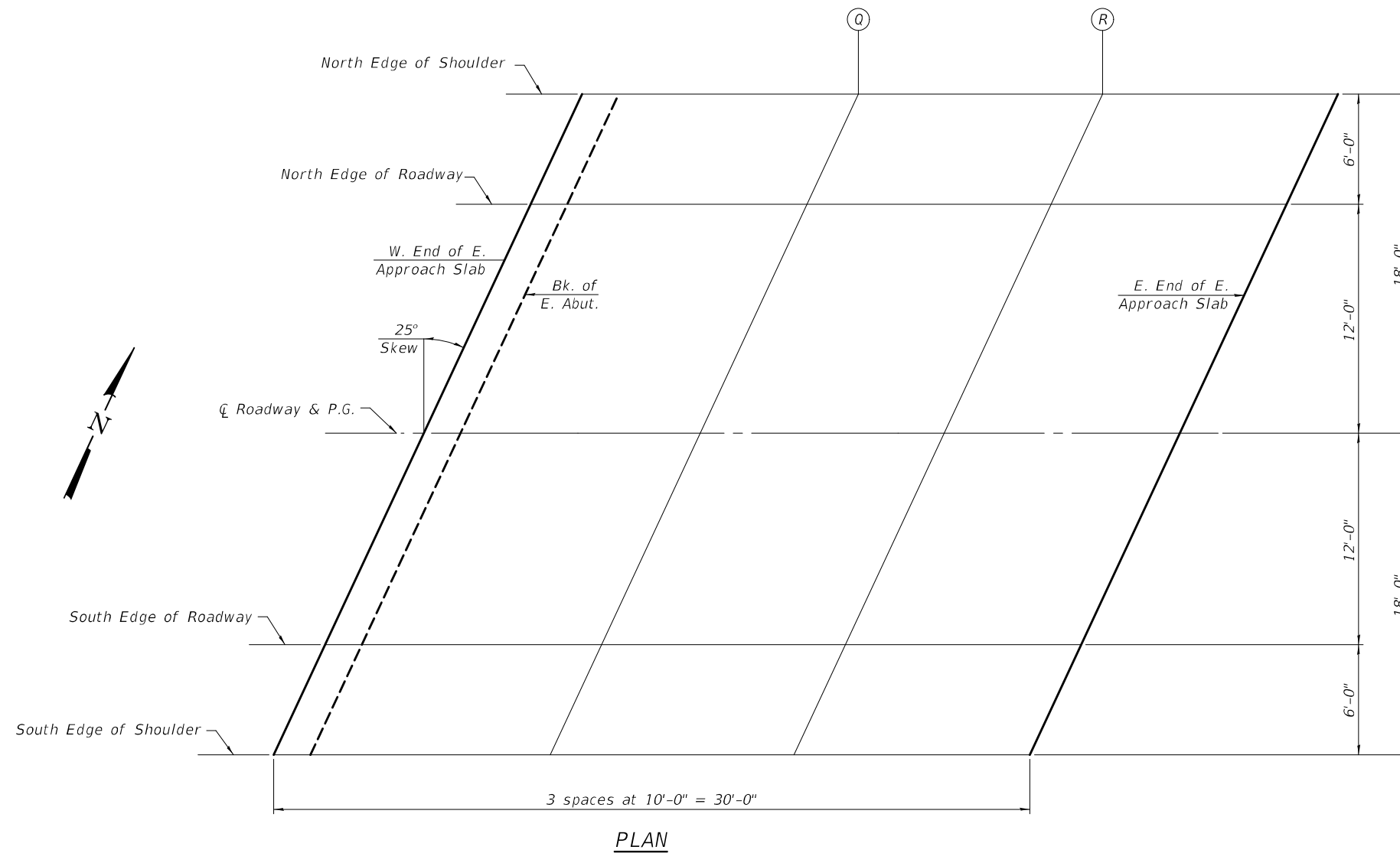
Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr.	301+33.89	0.00	542.24
Q	301+43.89	0.00	542.45
R	301+53.89	0.00	542.66
E. End of E. Appr.	301+63.89	0.00	542.86

SOUTH EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr.	301+28.29	12.00	541.95
Q	301+38.29	12.00	542.15
R	301+48.29	12.00	542.36
E. End of E. Appr.	301+58.29	12.00	542.57

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End of E. Appr.	301+25.49	18.00	541.77
Q	301+35.49	18.00	541.98
R	301+45.49	18.00	542.18
E. End of E. Appr.	301+55.49	18.00	542.39



PLAN

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DESIGNED - RYAN P. NEGANGARD	EXAMINED
CHECKED - HAREEM I. DAR	PASSED
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

DATE - FEBRUARY 4, 2022  
 ENGINEER OF BRIDGE DESIGN  
 ENGINEER OF BRIDGES AND STRUCTURES

REVISER	DATE
REVISION	
REVISION	

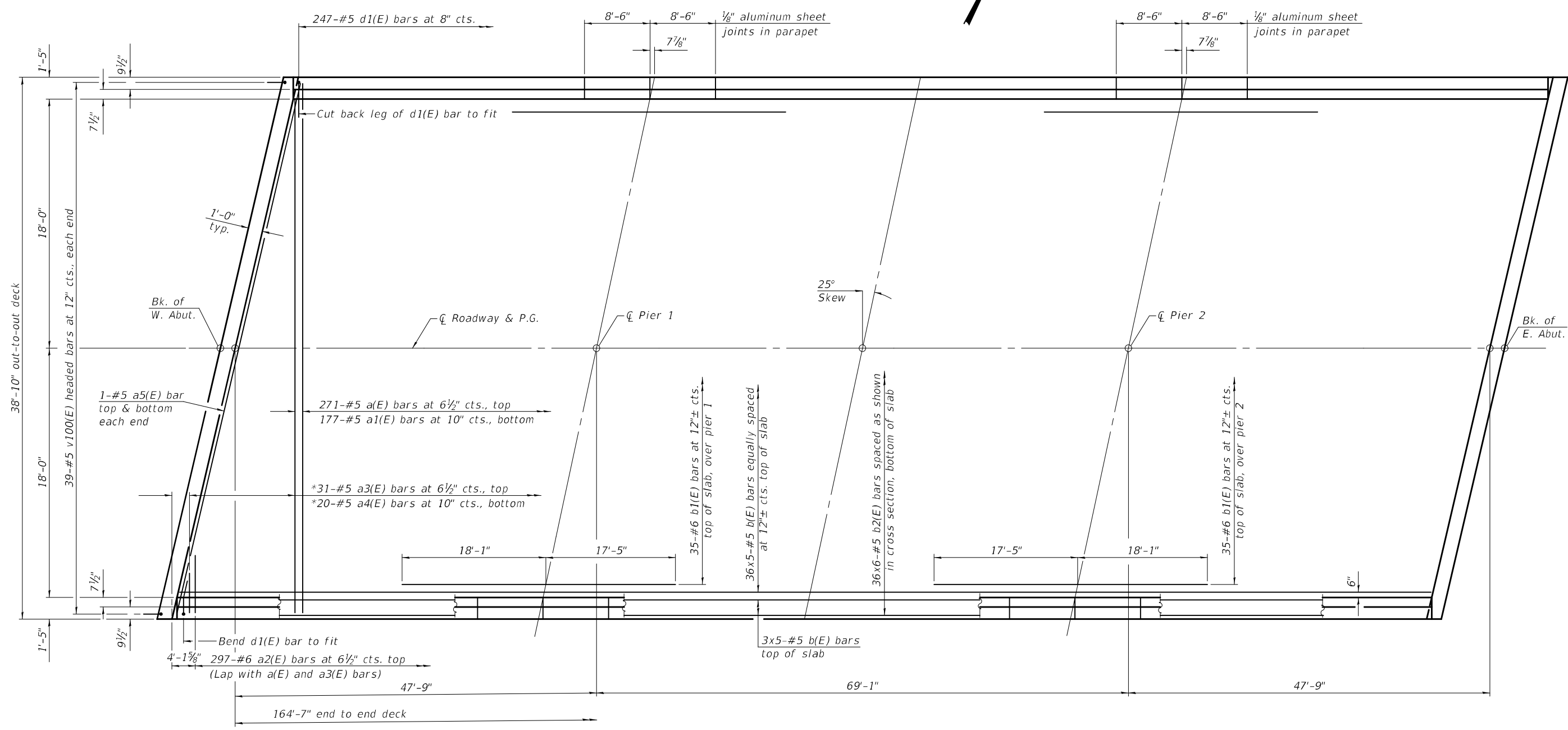
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TOP OF EAST APPROACH SLAB ELEVATIONS  
 STRUCTURE NO. 012-0075

SHEET 7 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	18	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

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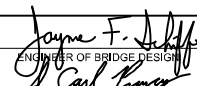

PLAN

**MINIMUM BAR LAP**  
 #5 bar = 3'-6"

\* See Field Cutting Diagram on sheet 10 of 27.

Notes:  
 See sheet 9 & 10 of 27 for superstructure details and Bill of Material.  
 Bars indicated thus 36 x 5-#5 etc. indicates 36 lines of bars with 5 lengths per line.

DESIGNED - RYAN P. NEGANGARD	EXAMINED
CHECKED - HAREEM I. DAR	PASSED
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

  
 ENGINEER OF BRIDGE DESIGN  
  
 ENGINEER OF BRIDGES AND STRUCTURES

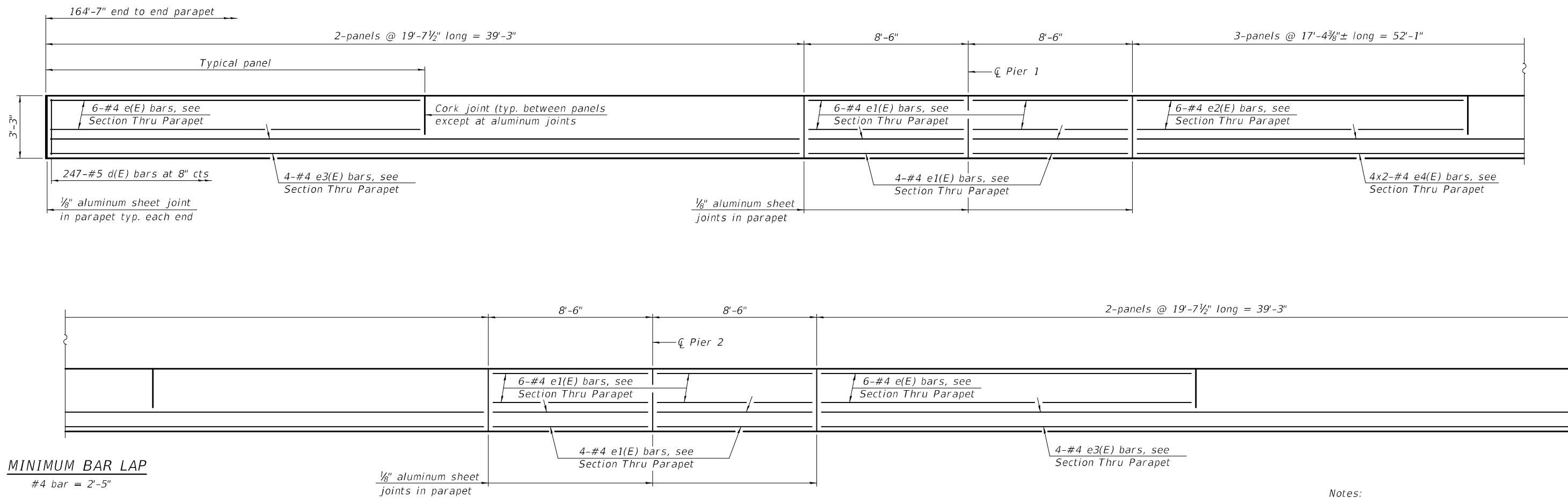
DATE - FEBRUARY 4, 2022
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STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE  
 STRUCTURE NO. 012-0075

SHEET 8 OF 27 SHEETS

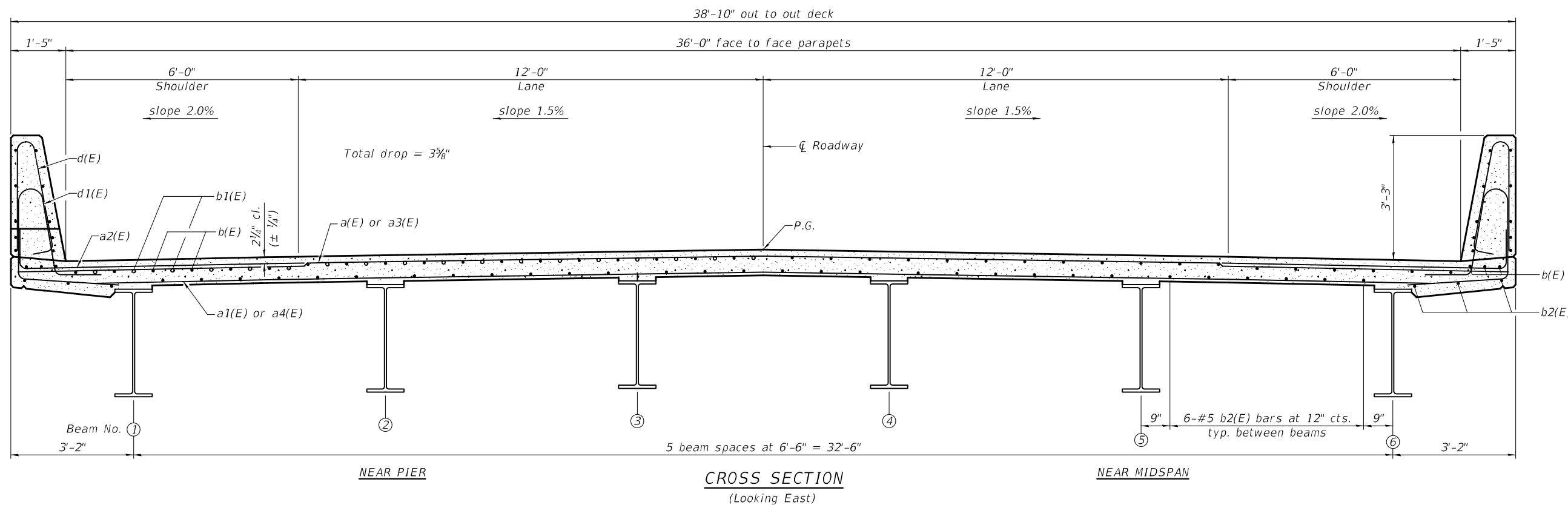
F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	19	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				



**MINIMUM BAR LAP**  
#4 bar = 2'-5"

**INSIDE ELEVATION OF PARAPET**

Notes:  
See sheet 10 of 27 for superstructure details and Bill of Material.  
Bars indicated thus 4 x 2-#4 etc. indicates 4 lines of bars with 2 lengths per line.



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DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>James F. [Signature]</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>	REVISED -
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
CHECKED - R.P.N. / G.R.A.		

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

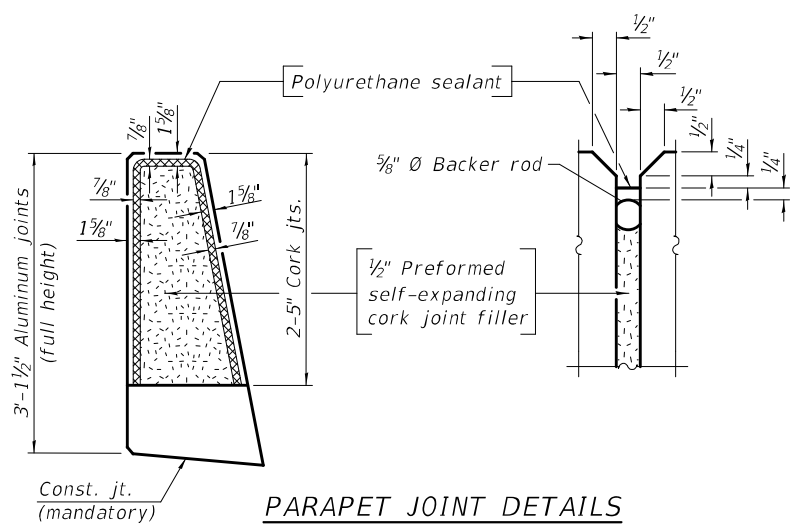
**SUPERSTRUCTURE DETAILS  
STRUCTURE NO. 012-0075**

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	20	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

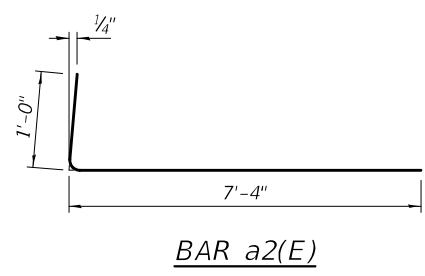
SHEET 9 OF 27 SHEETS



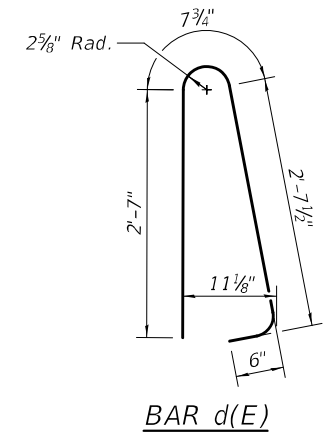
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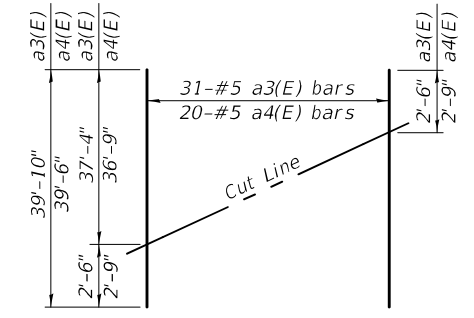
**PARAPET JOINT DETAILS**



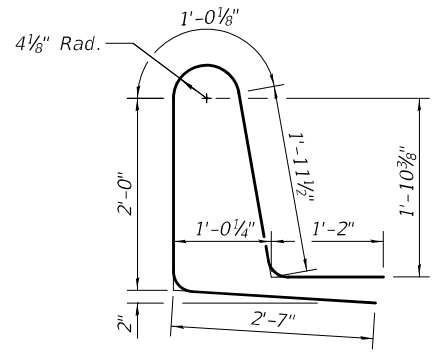
**BAR a2(E)**



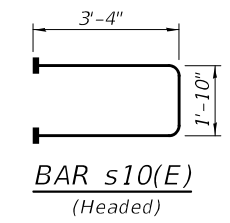
**BAR d(E)**



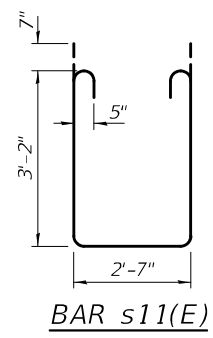
**FIELD CUTTING DIAGRAM**  
 Order a3(E) and a4(E) bars full length.  
 Cut as shown and use remainder of bars in opposite end of deck.



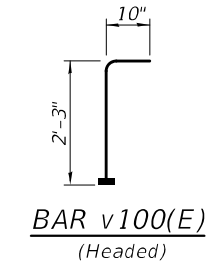
**BAR d1(E)**



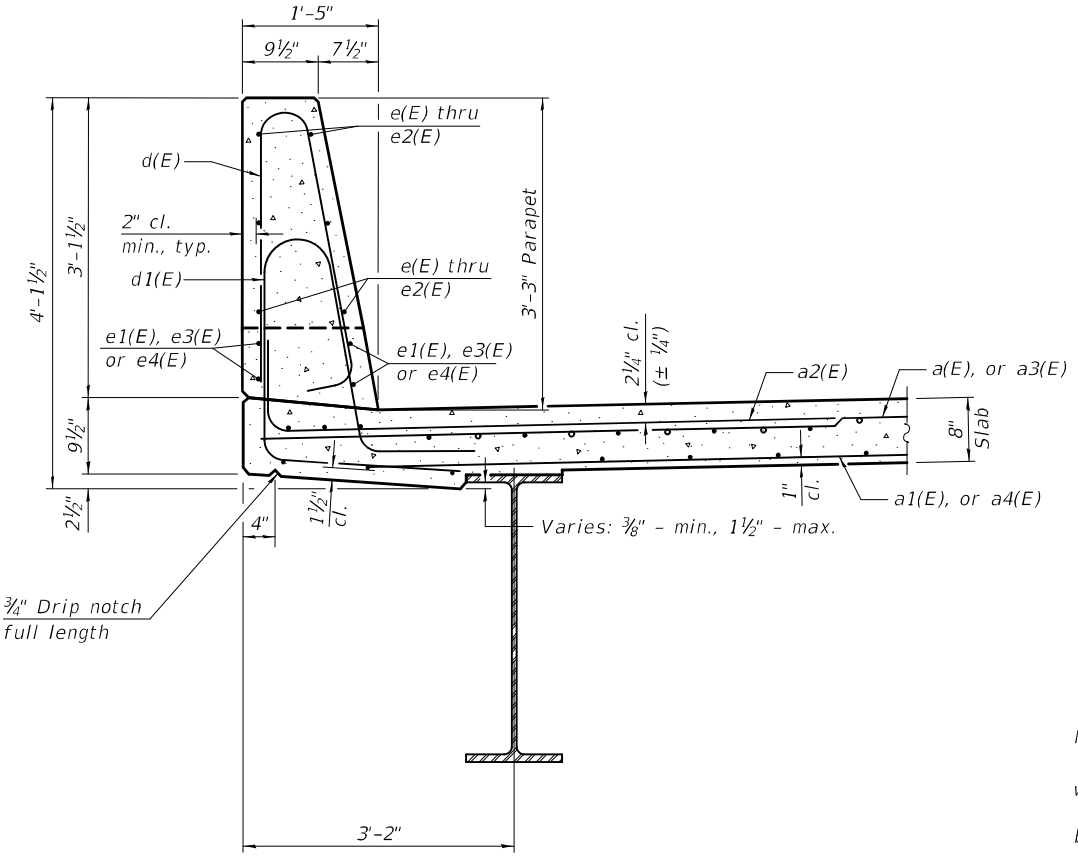
**BAR s10(E)**  
(Headed)



**BAR s11(E)**



**BAR v100(E)**  
(Headed)



**SECTION THRU PARAPET**

**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	271	#5	38'-6"	—
a1(E)	177	#5	36'-10"	—
a2(E)	594	#6	8'-4"	└
a3(E)	31	#5	39'-10"	—
a4(E)	20	#5	39'-6"	—
a5(E)	4	#5	42'-6"	—
b(E)	210	#5	35'-8"	—
b1(E)	70	#6	35'-6"	—
b2(E)	216	#5	30'-4"	—
d(E)	494	#5	6'-5"	└
d1(E)	494	#5	8'-9"	└
e(E)	48	#4	19'-4"	—
e1(E)	80	#4	8'-2"	—
e2(E)	36	#4	17'-1"	—
e3(E)	16	#4	38'-11"	—
e4(E)	16	#4	27'-1"	—
m10(E)	10	#6	42'-6"	—
m11(E)	40	#6	6'-9"	—
m12(E)	16	#6	3'-2"	—
s10(E)	72	#5	8'-6"	└
s11(E)	72	#5	10'-1"	└
v100(E)	78	#5	3'-1"	└
Reinforcement Bars, Epoxy Coated		Pound	58,540	
Concrete Superstructure		Cu. Yds.	241.0	

**Notes:**  
 The 1/8" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.  
 The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

DESIGNED - RYAN P. NEGANGARD
CHECKED - HAREEM I. DAR
DRAWN - GLENN W. STOVER
CHECKED - R.P.N. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

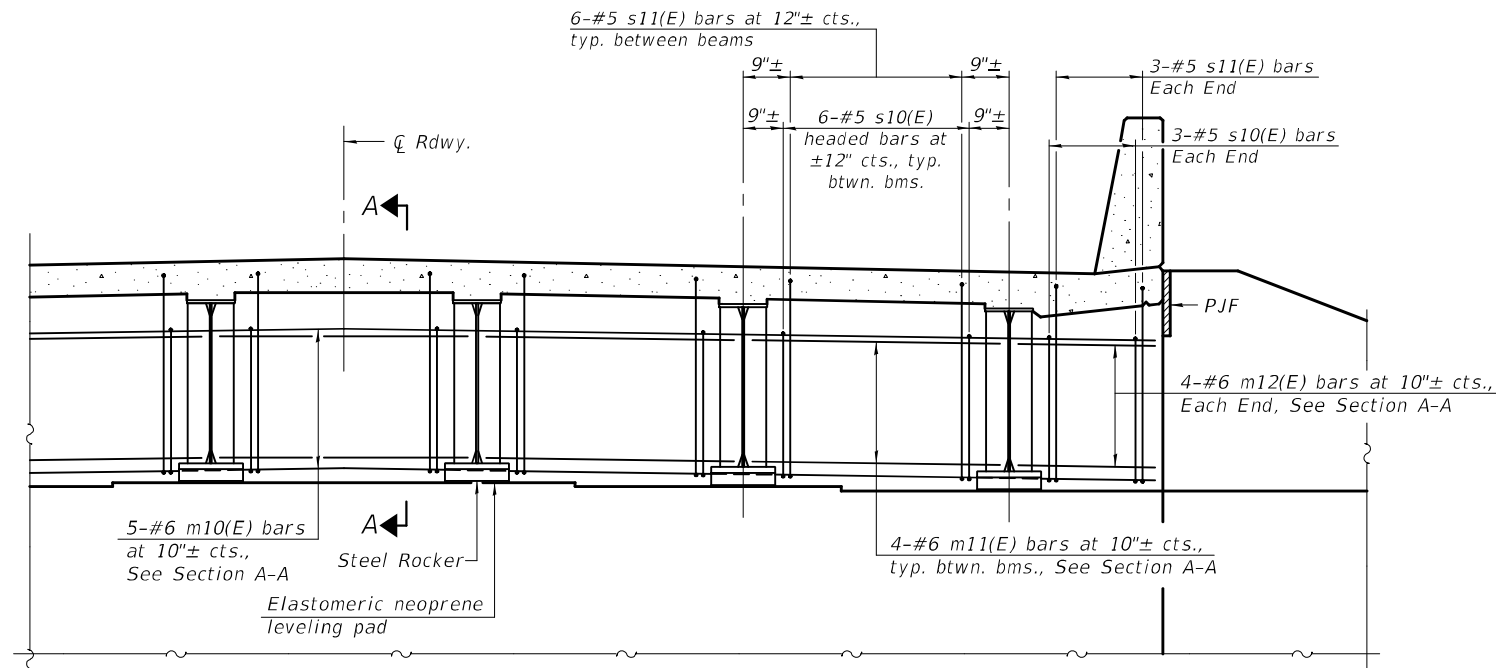
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REVISED -

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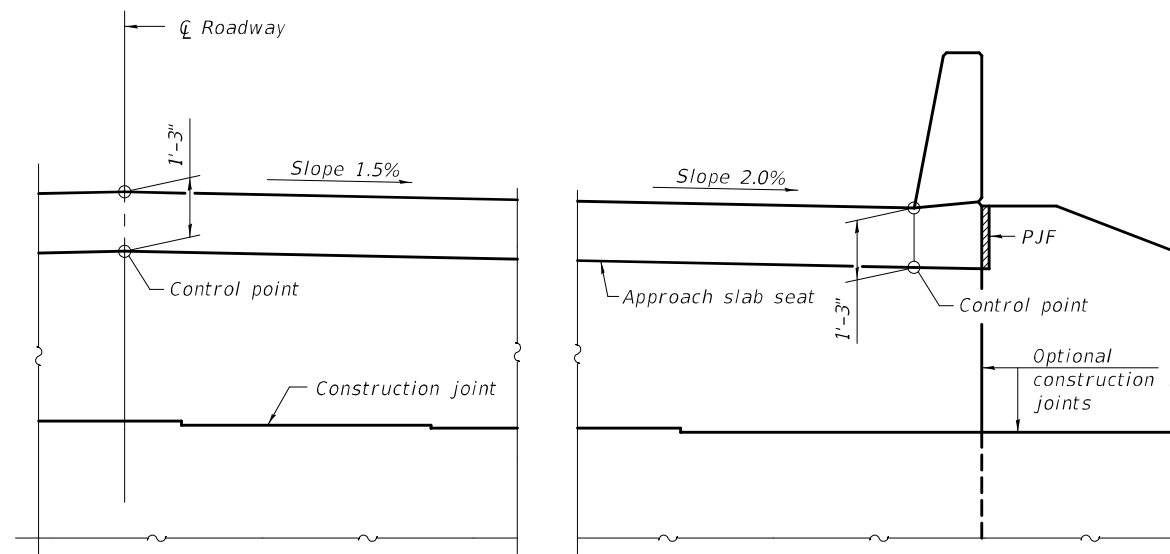
**SUPERSTRUCTURE DETAILS  
 STRUCTURE NO. 012-0075**

SHEET 10 OF 27 SHEETS

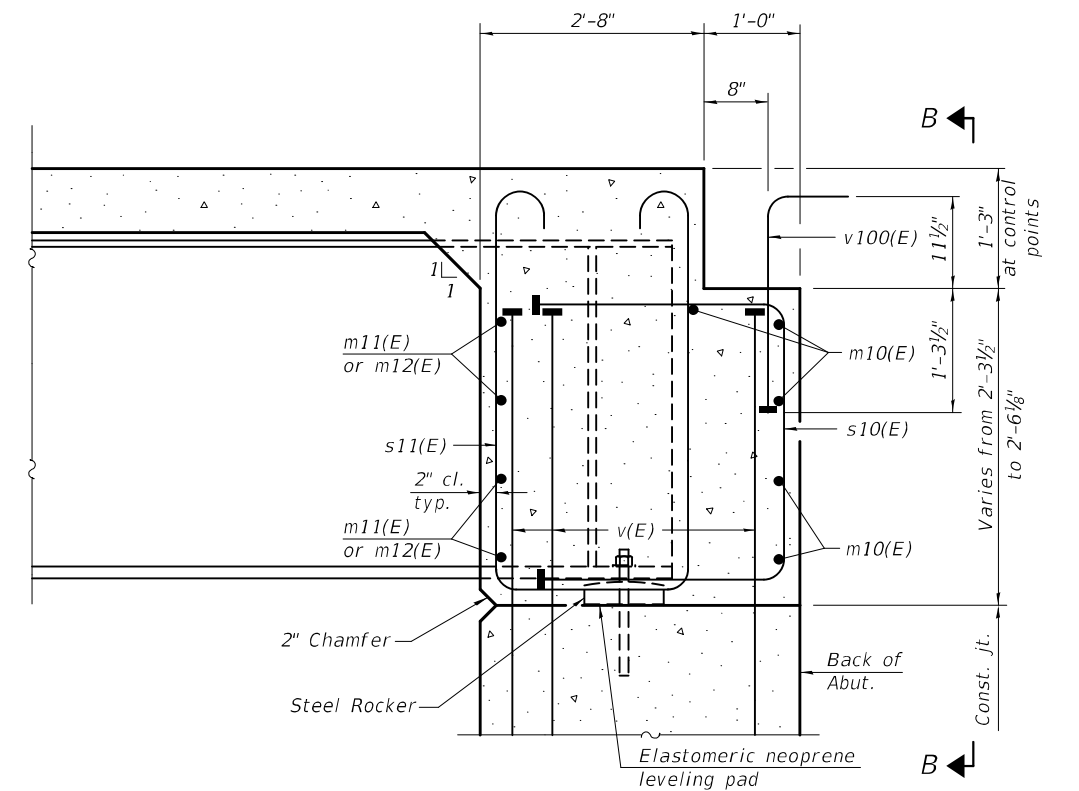
F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BXB)B-1	CLARK	21	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				



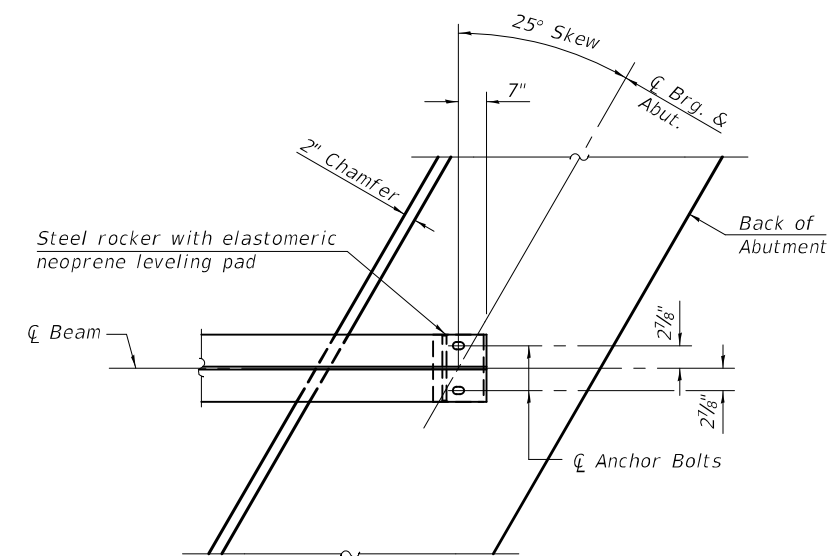
**DIAPHRAGM AT ABUTMENT**  
(Looking at front face)



**VIEW B-B**



**SECTION A-A**  
(at Rt. L's)



**PLAN AT ABUTMENT**  
(Showing bottom flange of beam)

Notes:  
See sheet 10 of 27 for superstructure details and Bill of Material.  
See sheet 13 of 27 for P.J.F. details.  
The s10(E) and s11(E) bars shall be placed parallel to the beams.  
Spacing for these bars shall be at right angles to the beams.  
The approach slab seat shall have a constant slope determined from the control points shown.

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DESIGNED	RYAN P. NEGANGARD
CHECKED	HAREEM I. DAR
DRAWN	GLENN W. STOVER
CHECKED	R.P.N. / G.R.A.

EXAMINED	<i>James F. [Signature]</i>
PASSED	<i>Carl [Signature]</i>

DATE	FEBRUARY 4, 2022
REVISED	-
REVISED	-

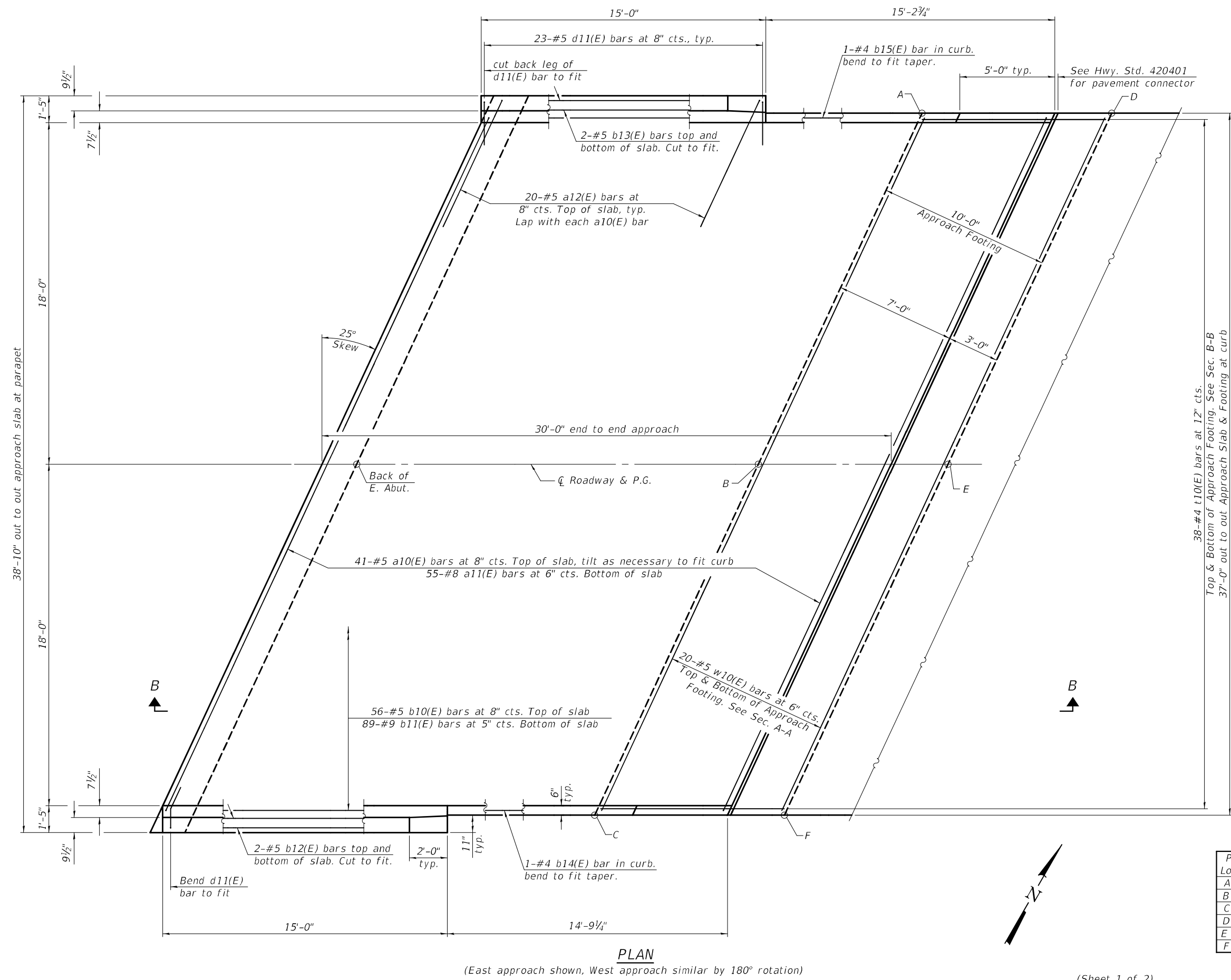
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS**  
**STRUCTURE NO. 012-0075**

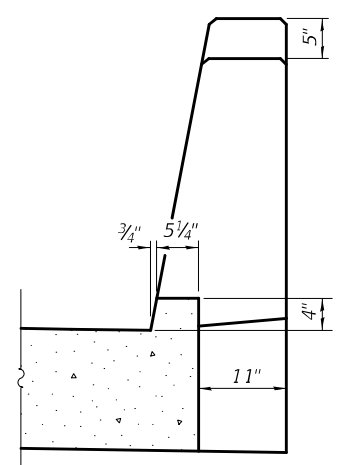
SHEET 11 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	22	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

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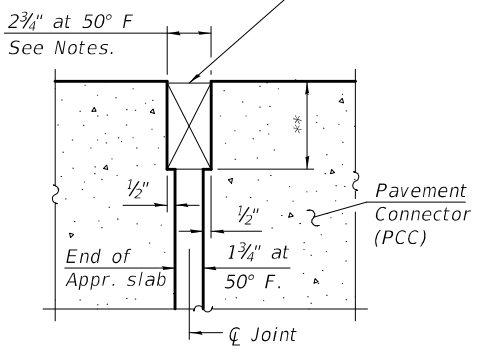


**PLAN**  
 (East approach shown, West approach similar by 180° rotation)



**VIEW A-A**

\* Expansion joint. See Special Provision "Preformed Pavement Joint Seal". Recess 1/4" minimum. Run out to out of curb



**DETAIL A**  
 (@ Rt. L's)

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

\*\* Per manufacturer recommendations

**TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING**

Point/Location	West Approach		Point/Location	East Approach	
	Top	Bottom		Top	Bottom
A - SE	537.74	536.91	A - NW	541.32	540.49
B - E C	538.13	537.30	B - W C	541.45	540.62
C - NE	537.91	537.08	C - SW	540.96	540.13
D - SW	537.65	536.82	D - NE	541.55	540.72
E - W C	538.03	537.20	E - E C	541.68	540.85
F - NW	537.80	536.97	F - SE	541.19	540.36

(Sheet 1 of 2)

DESIGNED - RYAN P. NEGANGARD  
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 CHECKED - R.P.N. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

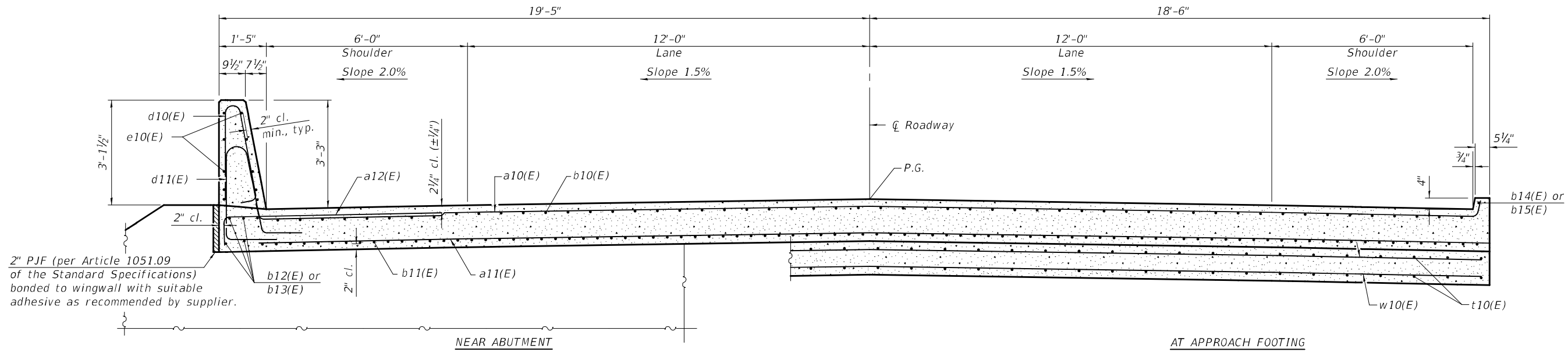
DATE - FEBRUARY 4, 2022  
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**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

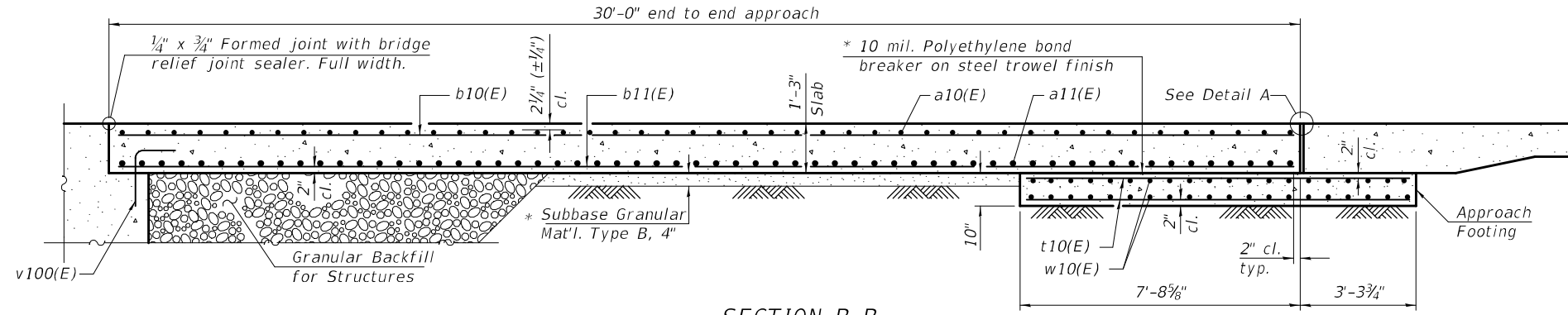
**BRIDGE APPROACH SLAB DETAILS**  
**STRUCTURE NO. 012-0075**

SHEET 12 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	23	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				



**CROSS SECTION**  
(Looking East)

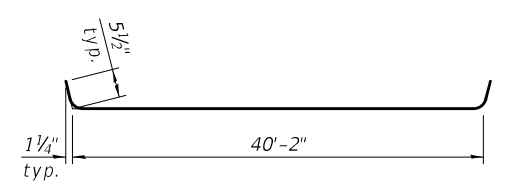


**SECTION B-B**

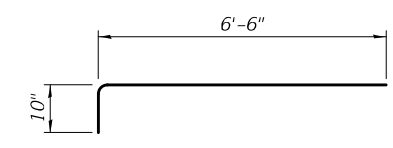
**Notes:**  
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.  
 Parapet concrete shall be paid for as Concrete Superstructure.  
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).  
 Approach footing concrete shall be paid for as Concrete Structures.  
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.  
 Cost of excavation for approach footing included with Concrete Structures.  
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 27.

**TWO APPROACHES**  
**BILL OF MATERIAL**

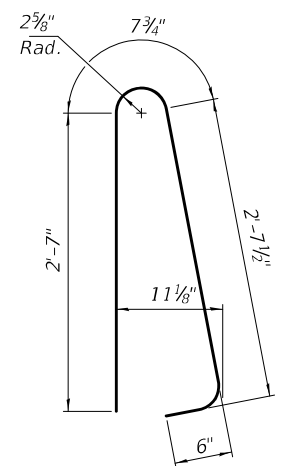
Bar	No.	Size	Length	Shape
a10(E)	82	#5	41'-1"	[Diagram]
a11(E)	110	#8	40'-5"	[Diagram]
a12(E)	80	#5	7'-4"	[Diagram]
b10(E)	112	#5	29'-8"	[Diagram]
b11(E)	178	#9	29'-8"	[Diagram]
b12(E)	8	#5	15'-2"	[Diagram]
b13(E)	8	#5	14'-3"	[Diagram]
b14(E)	2	#4	14'-7"	[Diagram]
b15(E)	2	#4	14'-10"	[Diagram]
d10(E)	92	#5	6'-5"	[Diagram]
d11(E)	92	#5	8'-6"	[Diagram]
e10(E)	40	#4	14'-8"	[Diagram]
t10(E)	152	#4	10'-8"	[Diagram]
w10(E)	80	#5	40'-6"	[Diagram]
Concrete Superstructure		Cu. Yd.	7.8	
Concrete Superstructure (Approach Slab)		Cu. Yd.	106.7	
Concrete Structures		Cu. Yd.	25.2	
Reinforcement Bars, Epoxy Coated		Pound	43,990	



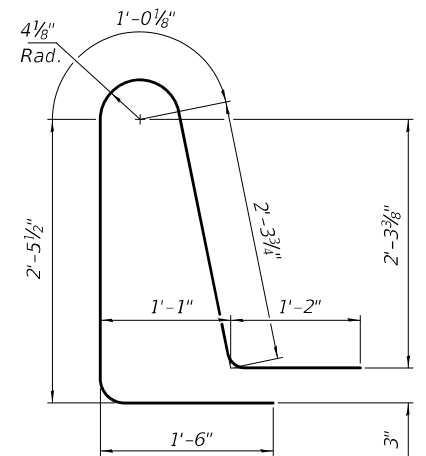
**BAR a10(E)**



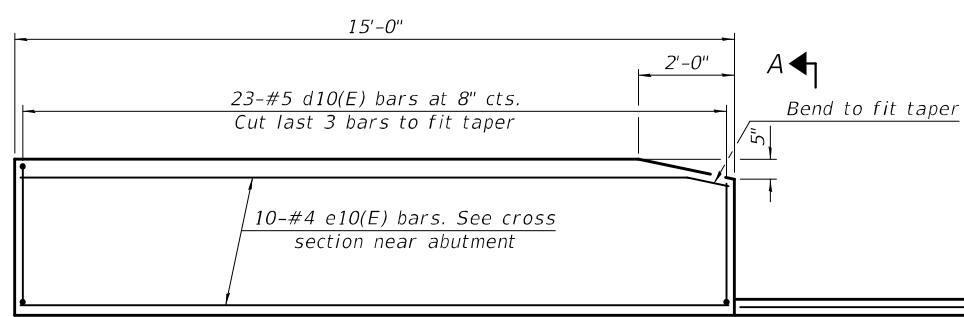
**BAR a12(E)**



**BAR d10(E)**



**BAR d11(E)**



**INSIDE ELEVATION OF PARAPET AND CURB**

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DESIGNED - RYAN P. NEGANGARD  
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 DRAWN - GLENN W. STOVER  
 CHECKED - R.P.N. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGES AND STRUCTURES

DATE - FEBRUARY 4, 2022  
 REVISED -  
 REVISED -

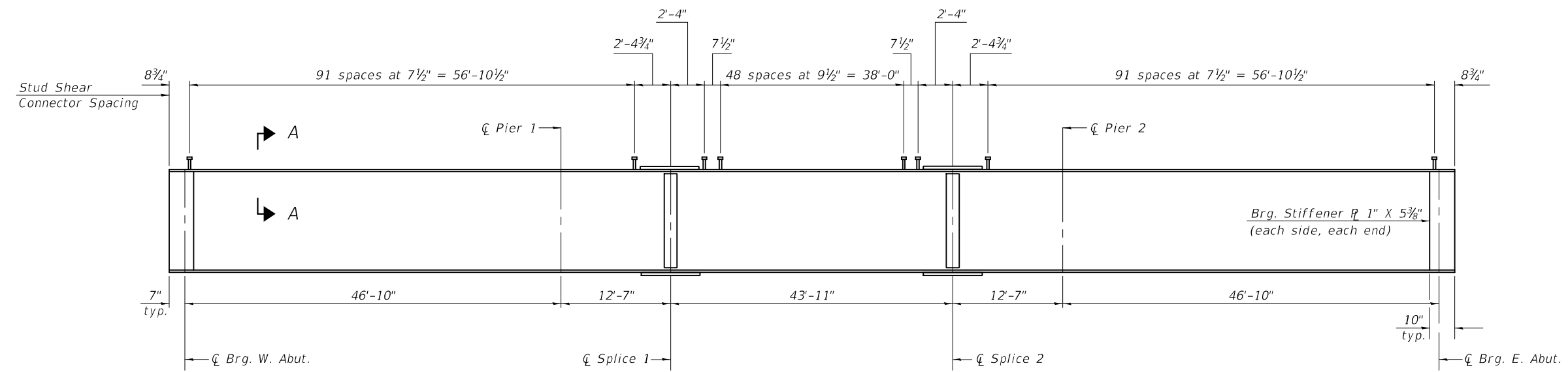
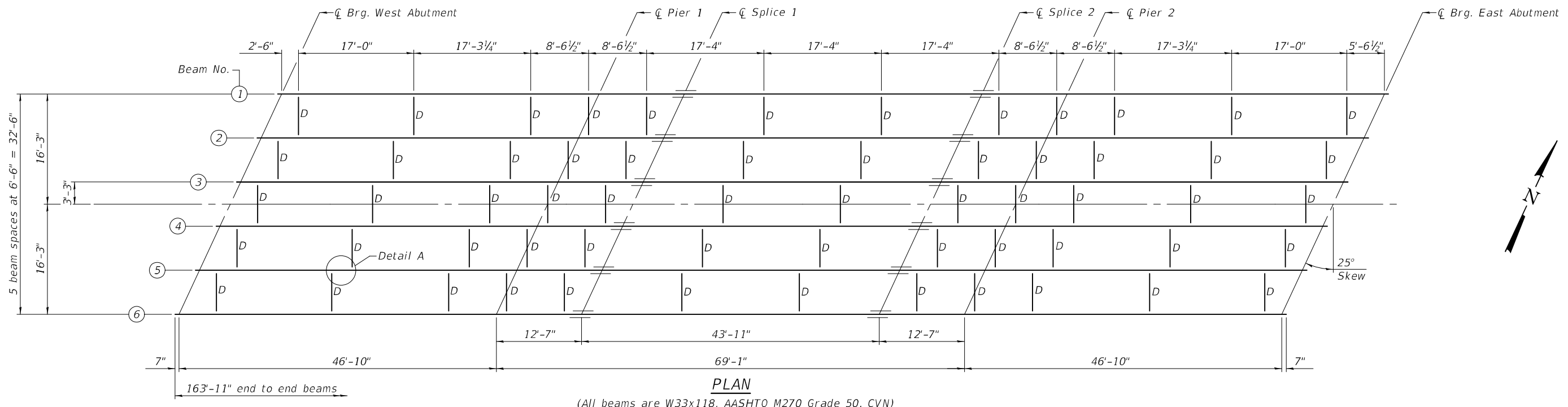
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

BRIDGE APPROACH SLAB DETAILS  
 STRUCTURE NO. 012-0075

SHEET 13 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	24	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

(Sheet 2 of 2)

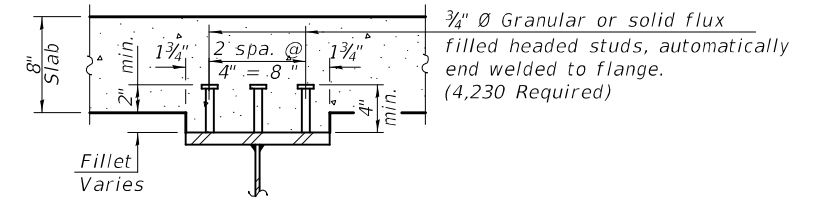


\* TOP OF BEAM ELEVATIONS

Location	☐ Brg. W. Abut.	☐ Brg. Pier 1	☐ Splice 1	☐ Splice 2	☐ Brg. Pier 2	☐ Brg. E. Abut.
Beam 1	538.71	539.31	539.47	540.19	540.44	541.38
Beam 2	538.79	539.38	539.54	540.26	540.51	541.44
Beam 3	538.86	539.45	539.60	540.30	540.55	541.48
Beam 4	538.82	539.40	539.55	540.25	540.50	541.41
Beam 5	538.69	539.26	539.41	540.10	540.35	541.25
Beam 6	538.54	539.10	539.25	539.93	540.17	541.07

\* For Fabrication use only

Note:  
See sheet 15 of 27 for additional notes and details.



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DESIGNED - RYAN P. NEGANGARD	EXAMINED
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DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

Signature: *James F. ...*  
ENGINEER OF BRIDGES AND STRUCTURES

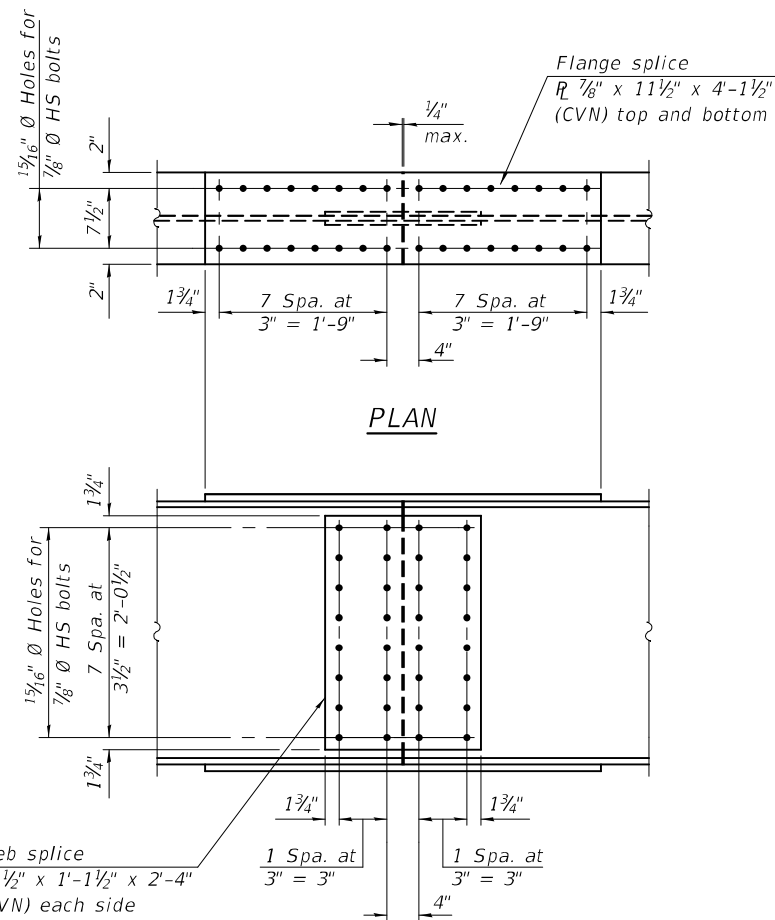
DATE - FEBRUARY 4, 2022
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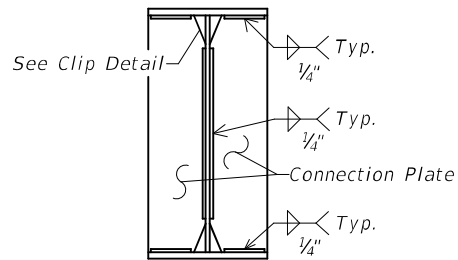
STRUCTURAL STEEL DETAILS  
STRUCTURE NO. 012-0075

SHEET 14 OF 27 SHEETS

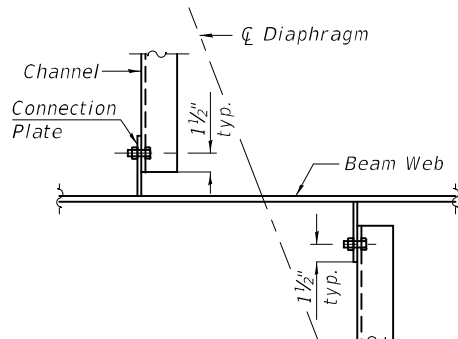
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CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				



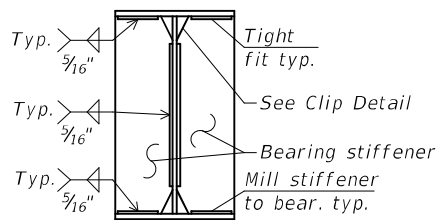
**ELEVATION  
SPLICE DETAIL**  
(12 Required)



**CONNECTION PLATE  
DETAIL**



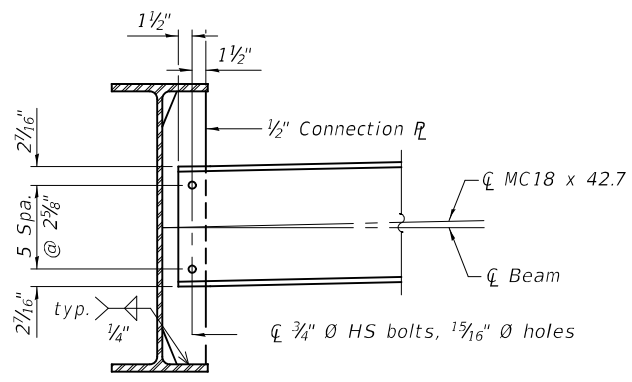
**DETAIL A**



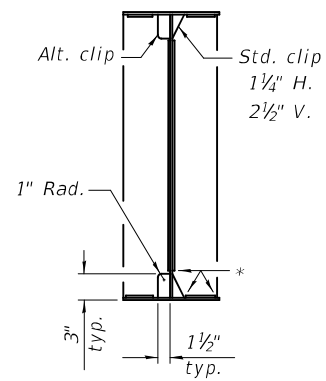
**BEARING STIFFENER  
DETAIL**

INTERIOR BEAM MOMENT TABLE				
		0.4 Span 1 or 0.6 Span 3	Pier 1 or Pier 2	0.5 Span 2
$I_s$	(in <sup>4</sup> )	5900	5900	5900
$I_c(n)$	(in <sup>4</sup> )	17201	17201	17201
$I_c(3n)$	(in <sup>4</sup> )	12933	12933	12933
$I_c(cr)$	(in <sup>4</sup> )	-	8333	-
$S_s$	(in <sup>3</sup> )	359	359	359
$S_c(n)$	(in <sup>3</sup> )	548	548	548
$S_c(3n)$	(in <sup>3</sup> )	499	499	499
$S_c(cr)$	(in <sup>3</sup> )	-	421	-
DC1	(k/')	0.821	0.821	0.821
$M_{DC1}$	(k)	98.1	295.0	194.8
DC2	(k/')	0.175	0.175	0.175
$M_{DC2}$	(k)	20.9	62.9	41.5
DW	(k/')	0.325	0.325	0.325
$M_{DW}$	(k)	38.8	116.8	77.1
LLDF		0.579	0.523	0.579
$M_{\pm IM}$	(k)	444.8	450.1	507.5
$M_u$ (Strength I)	(k)	985.4	1410.3	1299.2
$\phi_r M_n$	(k)	2690	-	2690
$f_s$ DC1	(ksi)	3.28	9.86	6.51
$f_s$ DC2	(ksi)	0.50	1.51	1.00
$f_s$ DW	(ksi)	0.93	2.81	1.85
$f_s$ ( $\pm IM$ )	(ksi)	9.74	9.86	11.11
$f_s$ (Service II)	(ksi)	17.38	27.00	23.81
$0.95R_h F_{yf}$	(ksi)	47.50	47.50	47.50
$f_s$ (Total)(Strength I)	(ksi)	-	-	-
$\phi_r F_n$	(ksi)	-	45.19	-
$V_f$	(k)	25.5	26.6	23.4

BEAM REACTION TABLE				
	Abutments		Piers	
	Interior	Exterior	Interior	Exterior
LLDF	0.707	0.600	0.707	0.600
OCF	1.113	1.113	-	-
$R_{DC1}$ (k)	12.9	12.8	53.9	53.3
$R_{DC2}$ (k)	2.8	2.8	11.5	11.5
$R_{DW}$ (k)	5.1	4.7	21.3	19.7
$R_{\pm}$ (k)	54.2	46.0	80.1	68.0
$R_{IM}$ (k)	14.3	12.1	16.2	13.7
$R_{TOTAL}$ (k)	89.3	78.4	183.0	166.2



**DIAPHRAGM D**



**WELD LIMITS & CLIP DETAILS**

\* Stop welds 1/4" (1/8"±) from edges as shown

Notes:  
Two hardened washers required for each set of oversized holes.  
Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Alternate channels, if utilized, shall be provided at no additional cost to the Department.  
All splice plates and bearing stiffeners shall be AASHTO M270, Grade 50.  
All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.  
"CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.

$I_s, S_s$  : Non-composite moment of inertia and section modulus of the steel section used for computing  $f_s$ (Total-Strength I, and Service II) due to non-composite dead loads (in<sup>4</sup> and in<sup>3</sup>).  
 $I_c(n), S_c(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$ (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).  
 $I_c(3n), S_c(3n)$ : Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing  $f_s$ (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).  
 $I_c(cr), S_c(cr)$ : Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing  $f_s$  (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).  
DC1: Un-factored non-composite dead load (kips/ft.).  
 $M_{DC1}$ : Un-factored moment due to non-composite dead load (kip-ft.).  
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).  
 $M_{DC2}$ : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).  
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).  
 $M_{DW}$ : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).  
LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.  
 $M_{\pm IM}$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).  
 $M_u$  (Strength I): Factored design moment (kip-ft.).  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\pm IM}$   
 $\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).  
 $f_s$  DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).  
 $M_{DC1} / S_{nc}$   
 $f_s$  DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).  
 $M_{DC2} / S_c(3n)$  or  $M_{DC2} / S_c(cr)$  as applicable.  
 $f_s$  DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).  
 $M_{DW} / S_c(3n)$  or  $M_{DW} / S_c(cr)$  as applicable.  
 $f_s$  ( $\pm IM$ ): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).  
 $M_{\pm IM} / S_c(n)$  or  $M_{\pm IM} / S_c(cr)$  as applicable.  
 $f_s$  (Service II): Sum of stresses as computed below (ksi).  
 $f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (\pm IM)$   
 $0.95R_h F_{yf}$ : Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).  
 $f_s$  (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).  
 $1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (\pm IM)$   
 $\phi_r F_n$ : Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).  
 $V_f$ : Maximum factored shear range in span computed according to Article 6.10.10.  
OCF: Obtuse Correction Factor applied to non-continuous exterior beam ends and computed according to Article 4.6.2.2.3c-1 or as further simplified by IDOT provisions.  
 $R_{DC1}$ : Un-factored reaction due to non-composite dead load (kip).  
 $R_{DC2}$ : Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).  
 $R_{DW}$ : Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).  
 $R_{\pm}$ : Un-factored live load reaction (kip).  
 $R_{IM}$ : Un-factored dynamic load allowance (impact) (kip).

MODEL: 0120075-74360-015  
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2/7/2022 10:51:05 AM

DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>James F. [Signature]</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>	REVISIONS -
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS -
CHECKED - R.P.N. / G.R.A.		

**STATE OF ILLINOIS  
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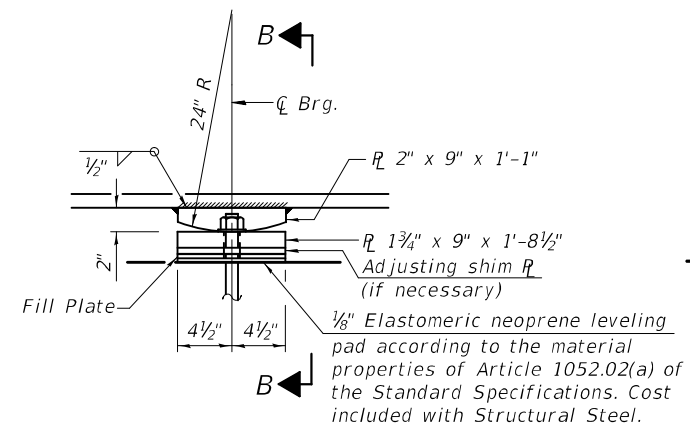
**STRUCTURAL STEEL DETAILS  
STRUCTURE NO. 012-0075**

SHEET 15 OF 27 SHEETS

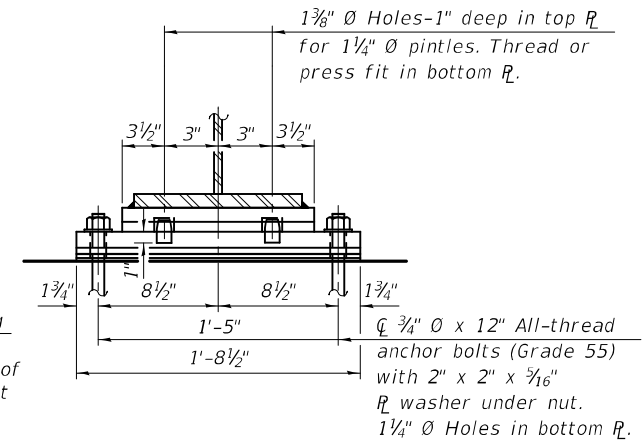
F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BXB)B-1	CLARK	26	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

**FILL PLATE THICKNESS TABLE**

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
West Abut.	0	0	7/8"	3/8"	0	0
Pier 1	0	0	3/4"	1/2"	0	0
Pier 2	0	1/8"	5/8"	0	0	0
East Abut.	0	3/8"	0	0	0	0

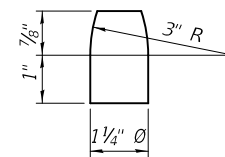


**ELEVATION AT PIER**



**SECTION B-B**

**FIXED BEARING**  
(12 Required)



**PINTLE**

Notes:

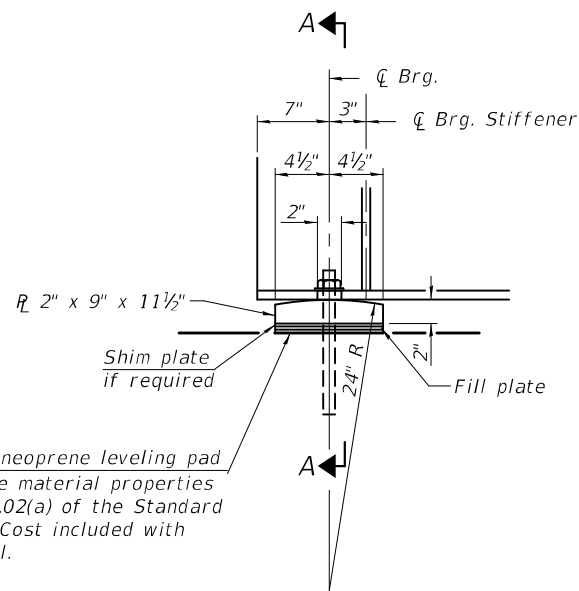
Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

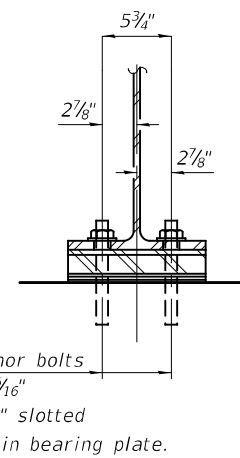
All bearing plates and pintles shall be AASHTO M270, Grade 50.

All bearing plates, shim and fill plates, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.

The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.



**ELEVATION AT ABUTMENT**



**SECTION A-A**

**FIXED BEARING**  
(12 Required)

**BILL OF MATERIAL**

Item	Unit	Total
Anchor Bolts, 3/4"	Each	24
Anchor Bolts, 1"	Each	24

MODEL: 0120075-74360-016  
FILE NAME: p:\w\p\w\benley.com\FWIDOT\Documents\Bureau of Bridges and Structures\Projects\0120075\CADD Plans\0120075-74360.dgn

DESIGNED - RYAN P. NEGANGARD  
CHECKED - HAREEM I. DAR  
DRAWN - GLENN W. STOVER  
CHECKED - R.P.N. / G.R.A.

EXAMINED  
PASSED  
ENGINEER OF BRIDGES AND STRUCTURES

DATE - FEBRUARY 4, 2022  
REVISED -  
REVISED -

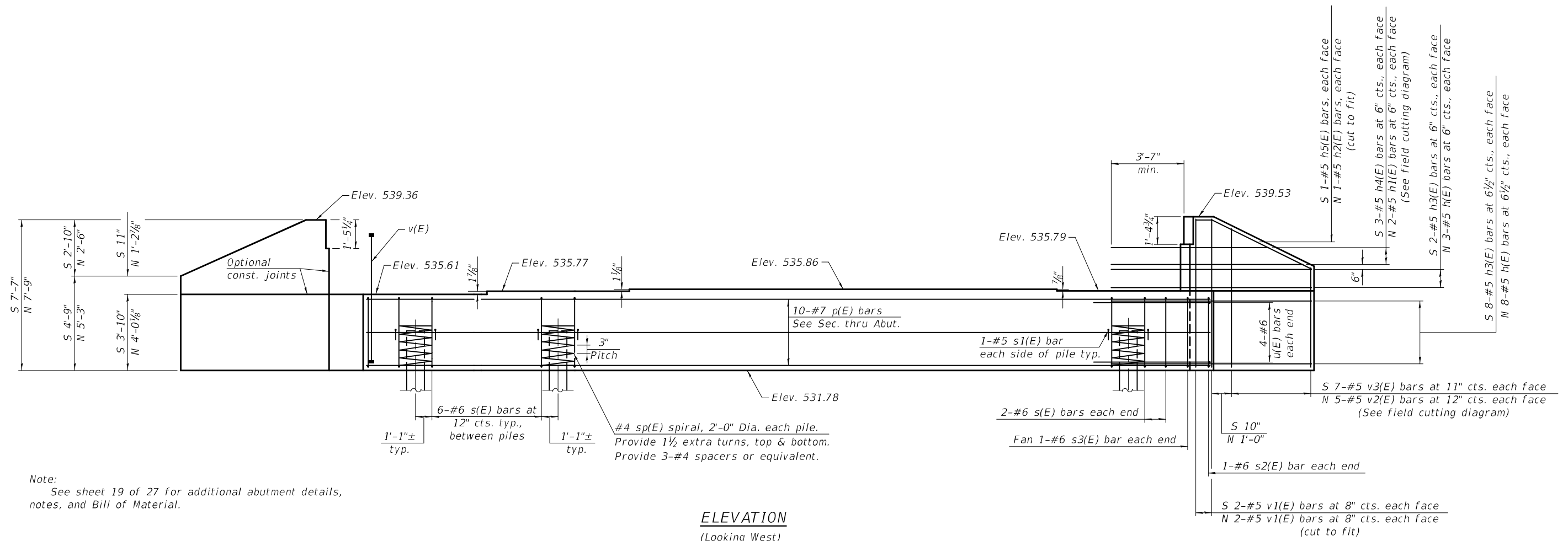
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS  
STRUCTURE NO. 012-0075

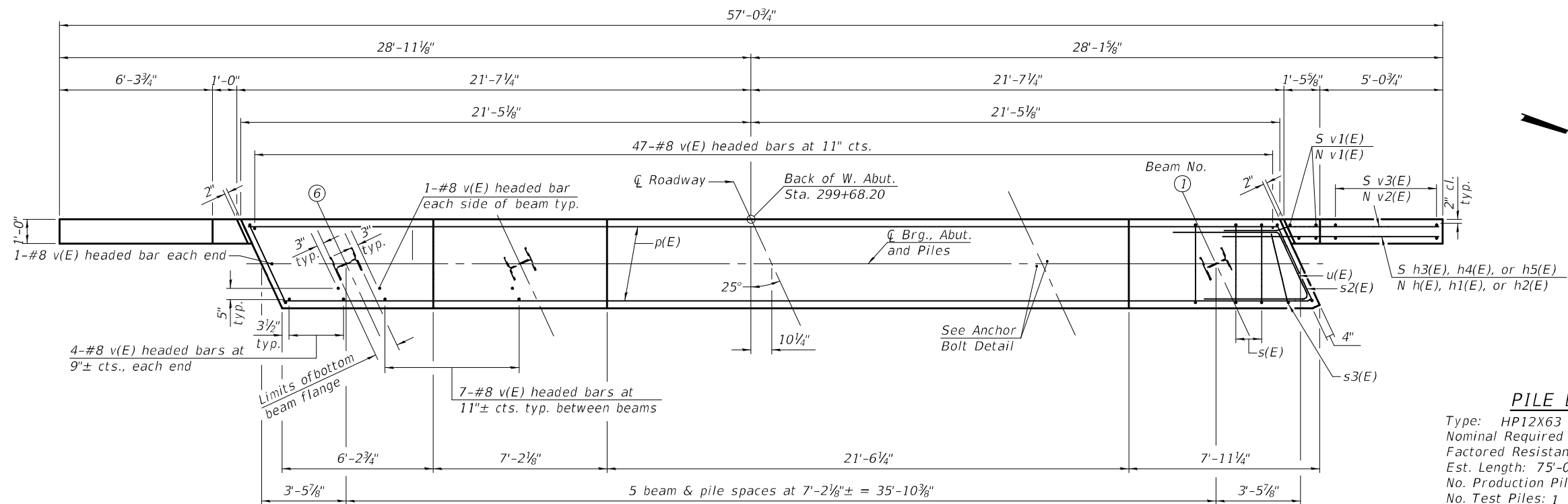
SHEET 16 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	27	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

2/7/2022 11:00:52 AM



**ELEVATION**  
(Looking West)



**PLAN**

**PILE DATA**

Type: HP12X63  
 Nominal Required Bearing: 497K  
 Factored Resistance Available: 273K  
 Est. Length: 75'-0"  
 No. Production Piles: 5  
 No. Test Piles: 1

Note:  
 See sheet 19 of 27 for additional abutment details, notes, and Bill of Material.

MODEL: 0120075-74360-017  
 FILE NAME: p:\w\p\w\benley.com\FWIDOT\Documents\IDOT Offices\Bureau of Bridges and Structures\Projects\0120075\CADD Plans\0120075-74360.dgn  
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DESIGNED - RYAN P. NEGANGARD	EXAMINED
CHECKED - HAREEM I. DAR	PASSED
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

DATE - FEBRUARY 4, 2022  
 REVISIONS:  
 REVISION -  
 REVISION -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

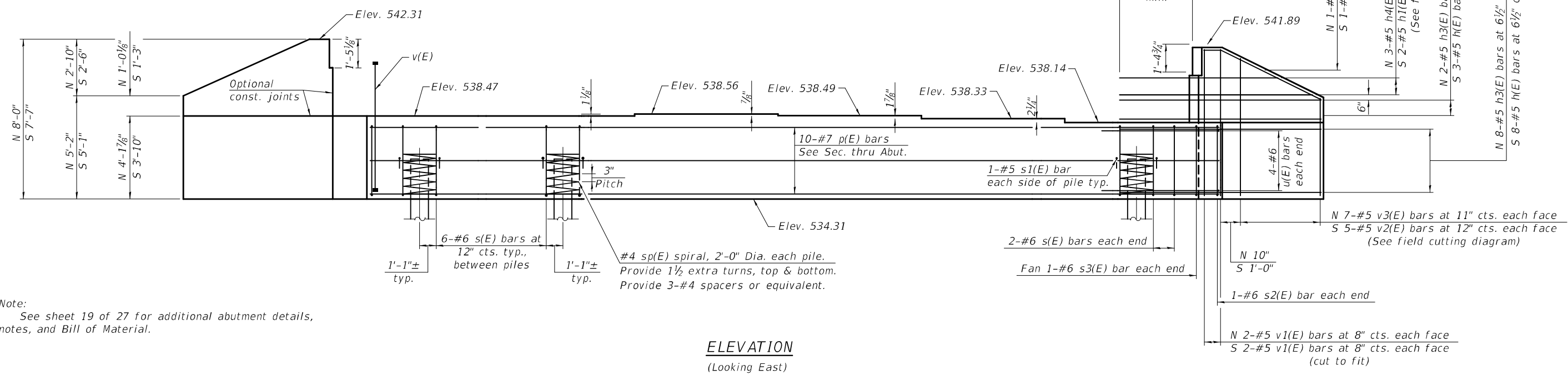
**WEST ABUTMENT**  
**STRUCTURE NO. 012-0075**

SHEET 17 OF 27 SHEETS

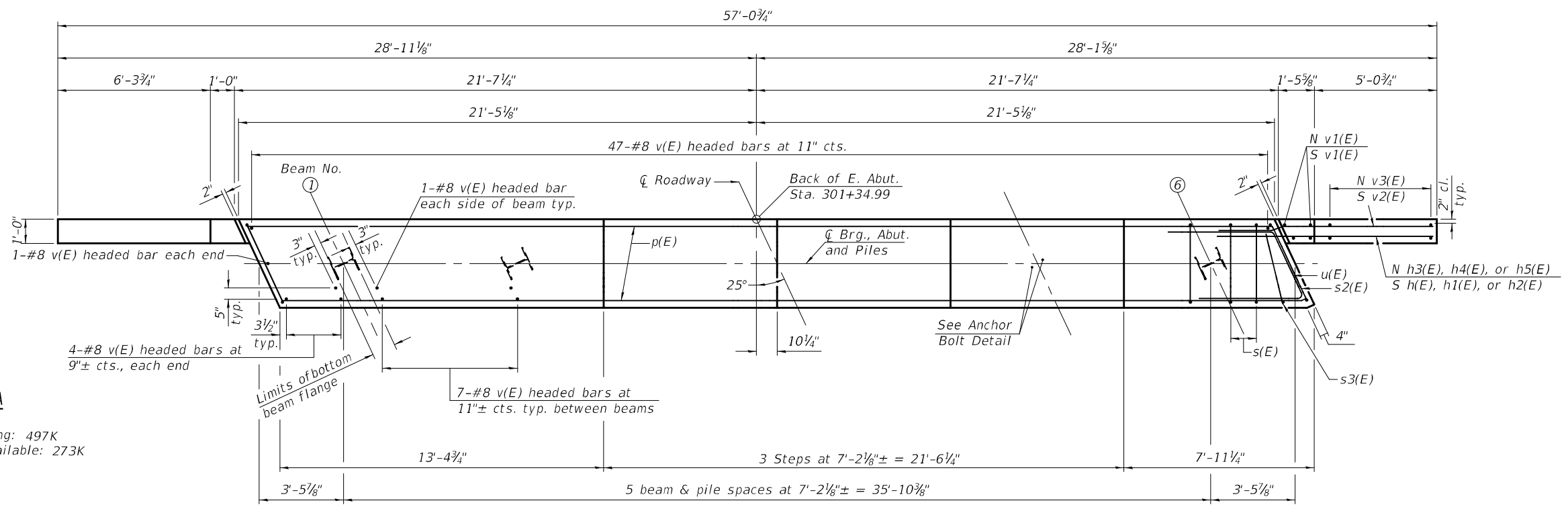
F.A.S. RTE. 1707	SECTION (BxB)B-1	COUNTY CLARK	SHEET NO. 28	TOTAL SHEETS 42
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	



MODEL: 0120075-74360-018  
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**ELEVATION**  
(Looking East)



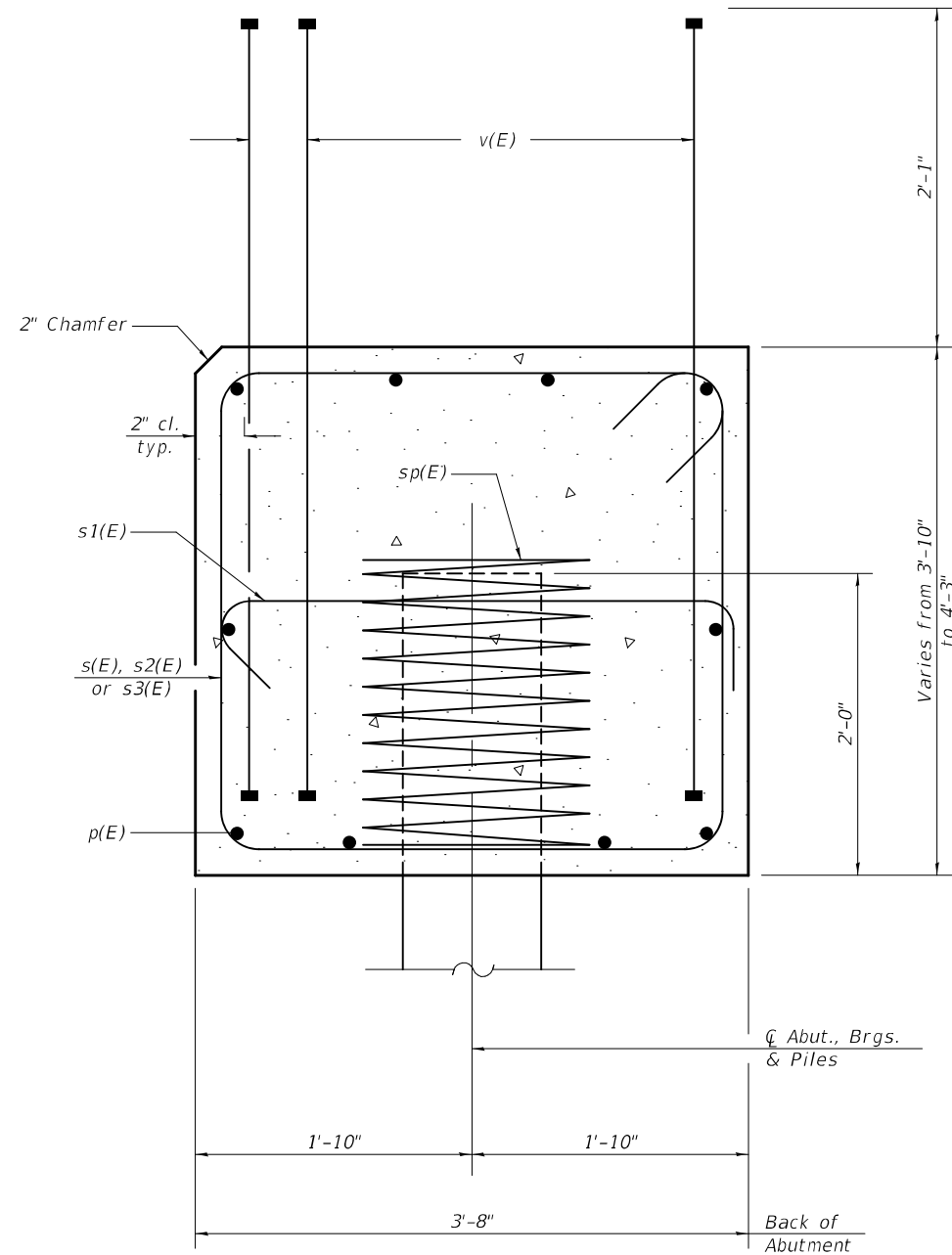
**PLAN**

**PILE DATA**

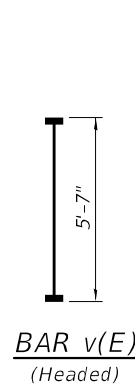
Type: HP12X63  
 Nominal Required Bearing: 497K  
 Factored Resistance Available: 273K  
 Est. Length: 71'-0"  
 No. Production Piles: 6  
 No. Test Piles: 0

DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>James F. [Signature]</i>	DATE - FEBRUARY 4, 2022	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EAST ABUTMENT STRUCTURE NO. 012-0075</b>	F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS	
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>	REVISER -			1707	(BxB)B-1	CLARK	29	42	
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -			CONTRACT NO. 74360					
CHECKED - R.P.N. / G.R.A.					SHEET 18 OF 27 SHEETS					
2/7/2022 11:04:25 AM			ILLINOIS FED. AID PROJECT							

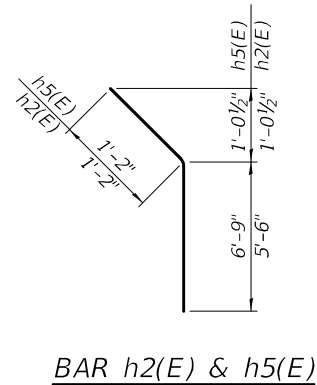
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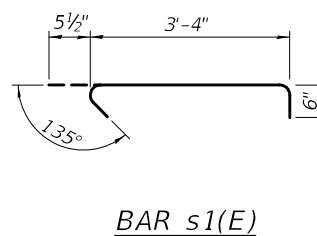
**SEC. THRU ABUTMENT**  
 Dimensions at right angles to abutment



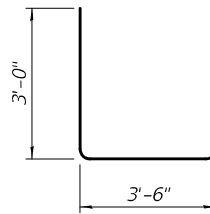
**BAR v(E)**  
 (Headed)



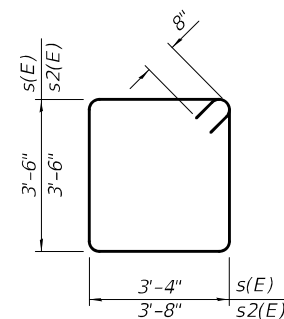
**BAR h2(E) & h5(E)**



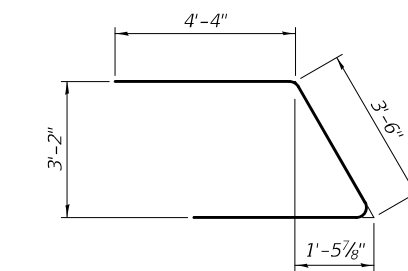
**BAR s1(E)**



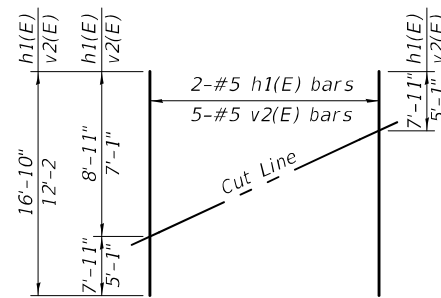
**BAR s3(E)**



**BAR s(E) & s2(E)**

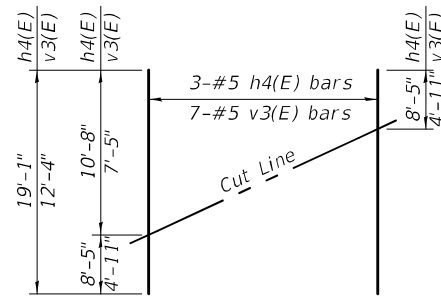


**BAR u(E)**



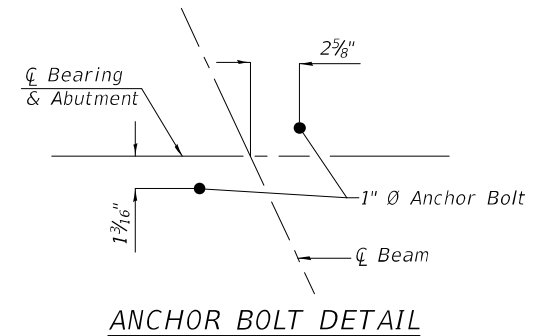
**NW & SE ABUTMENT  
 FIELD CUTTING DIAGRAM**

Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.



**SW & NE ABUTMENT  
 FIELD CUTTING DIAGRAM**

Order h4(E) and v3(E) full length. Cut as shown and use remainder of bars in opposite face.



**ANCHOR BOLT DETAIL**

**WEST ABUTMENT  
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	22	#5	10'-2"	—
h1(E)	2	#5	16'-10"	—
h2(E)	2	#5	6'-8"	—
h3(E)	20	#5	11'-5"	—
h4(E)	3	#5	19'-1"	—
h5(E)	2	#5	7'-11"	—
p(E)	10	#7	42'-6"	—
s(E)	34	#6	15'-0"	□
s1(E)	12	#5	4'-4"	┌┐
s2(E)	2	#6	15'-8"	┌┐
s3(E)	2	#6	9'-6"	┌┐
sp(E)	6	#4	2'-0"	W
u(E)	8	#6	12'-2"	└┘
v(E)	104	#8	5'-7"	—
v1(E)	8	#5	7'-8"	—
v2(E)	5	#5	12'-2"	—
v3(E)	7	#5	12'-4"	—
Structure Excavation	Cu. Yd.	104		
Concrete Structures	Cu. Yd.	26.8		
Reinforcement Bars, Epoxy Coated	Pound	4,550		
Furnishing Steel Piles HP12X63	Foot	375		
Driving Piles	Foot	375		
Test Pile Steel HP12X63	Each	1		

\* Length is height of spiral.

**EAST ABUTMENT  
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	22	#5	10'-2"	—
h1(E)	2	#5	16'-10"	—
h2(E)	2	#5	6'-8"	—
h3(E)	20	#5	11'-5"	—
h4(E)	3	#5	19'-1"	—
h5(E)	2	#5	7'-11"	—
p(E)	10	#7	42'-6"	—
s(E)	34	#6	15'-0"	□
s1(E)	12	#5	4'-4"	┌┐
s2(E)	2	#6	15'-8"	┌┐
s3(E)	2	#6	9'-6"	┌┐
sp(E)	6	#4	2'-0"	W
u(E)	8	#6	12'-2"	└┘
v(E)	104	#8	5'-7"	—
v1(E)	8	#5	7'-8"	—
v2(E)	5	#5	12'-2"	—
v3(E)	7	#5	12'-4"	—
Structure Excavation	Cu. Yd.	112		
Concrete Structures	Cu. Yd.	27.4		
Reinforcement Bars, Epoxy Coated	Pound	4,550		
Furnishing Steel Piles HP12X63	Foot	426		
Driving Piles	Foot	426		

\* Length is height of spiral.

Notes:  
 Pour steps monolithically with cap.  
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.  
 For details of piles see sheet 23 of 27.

DESIGNED - RYAN P. NEGANGARD  
 CHECKED - HAREEM I. DAR  
 DRAWN - GLENN W. STOVER  
 CHECKED - R.P.N. / G.R.A.

EXAMINED  
 PASSED  
 ENGINEER OF BRIDGE DESIGN  
 ENGINEER OF BRIDGES AND STRUCTURES

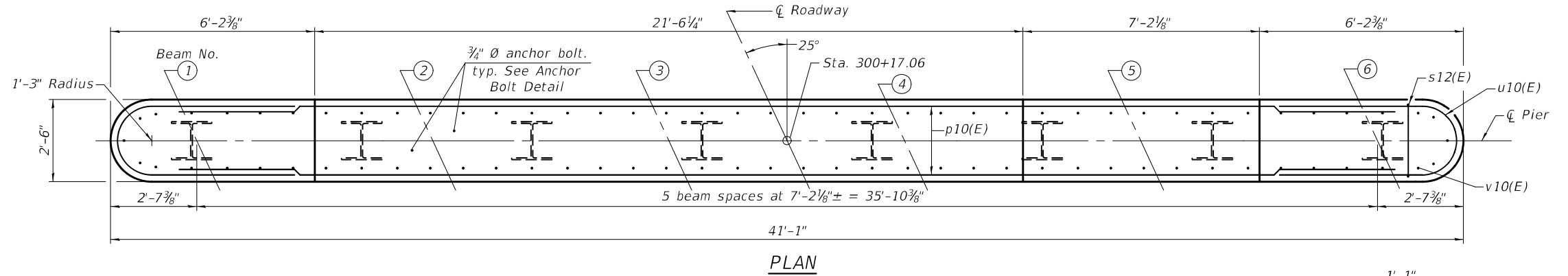
DATE - FEBRUARY 4, 2022  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

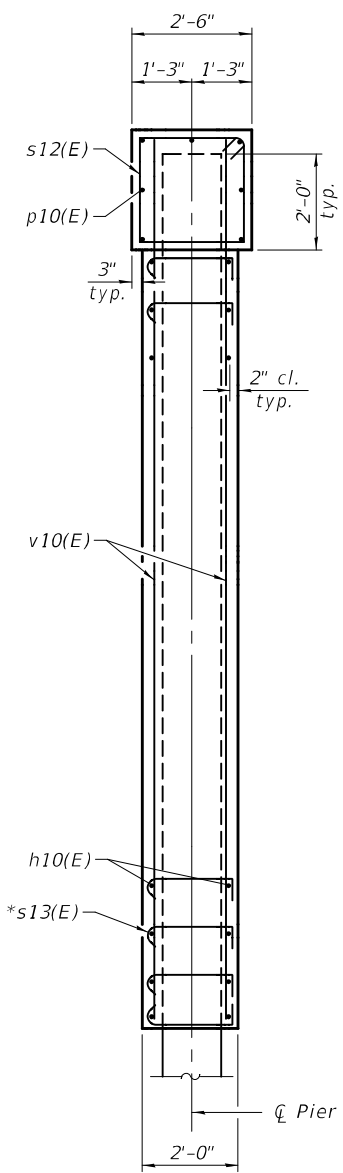
ABUTMENT DETAILS  
 STRUCTURE NO. 012-0075

SHEET 19 OF 27 SHEETS

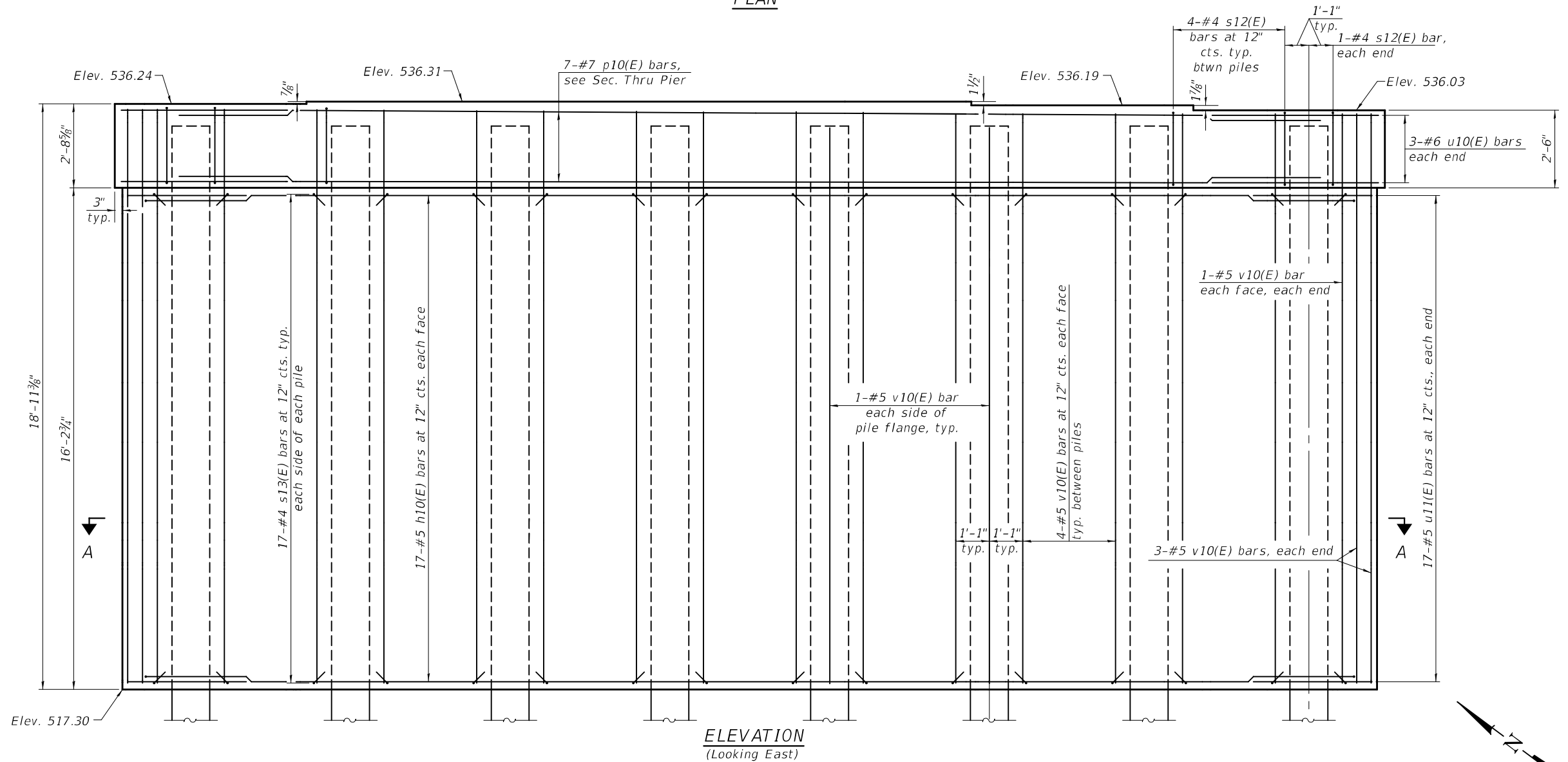
F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	30	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				



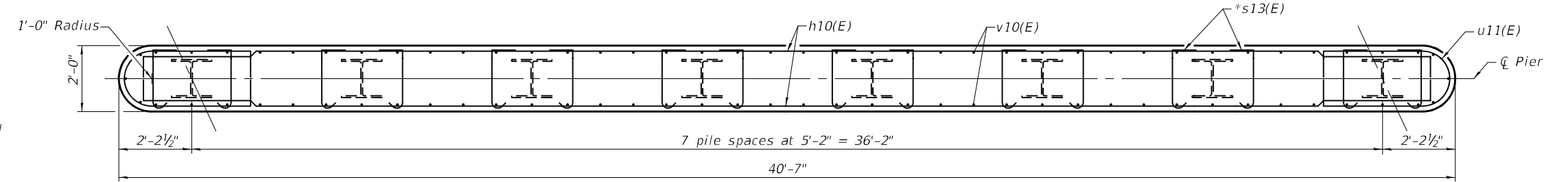
PLAN



SECTION THRU PIER



ELEVATION  
(Looking East)



SECTION A-A

Notes:  
 Pour steps monolithically with cap.  
 See sheet 22 of 27 for additional pier details and Bill of Material.  
 Space reinforcement in cap to miss anchor bolts. See sheet 23 of 27 for pile details.  
 \*Hook s13(E) bar around h10(E) & v10(E) bars.  
 Clear cover for s13(E) bar will be 1 1/2".

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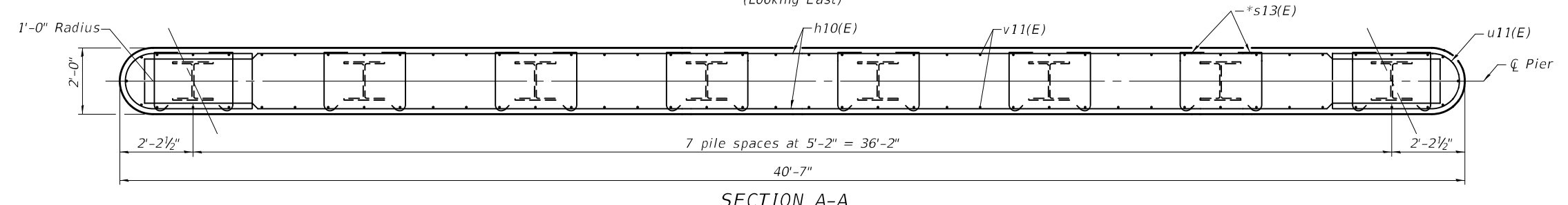
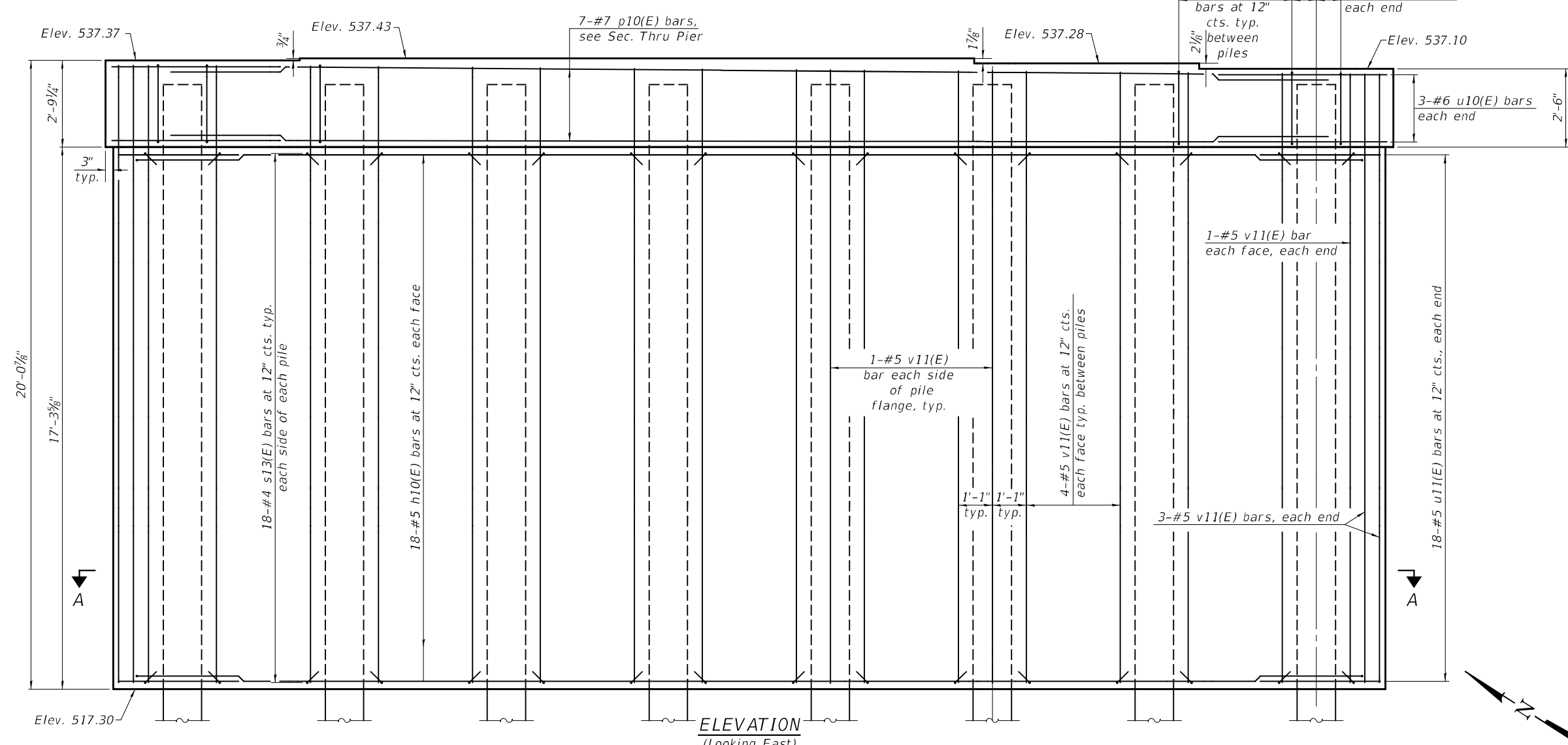
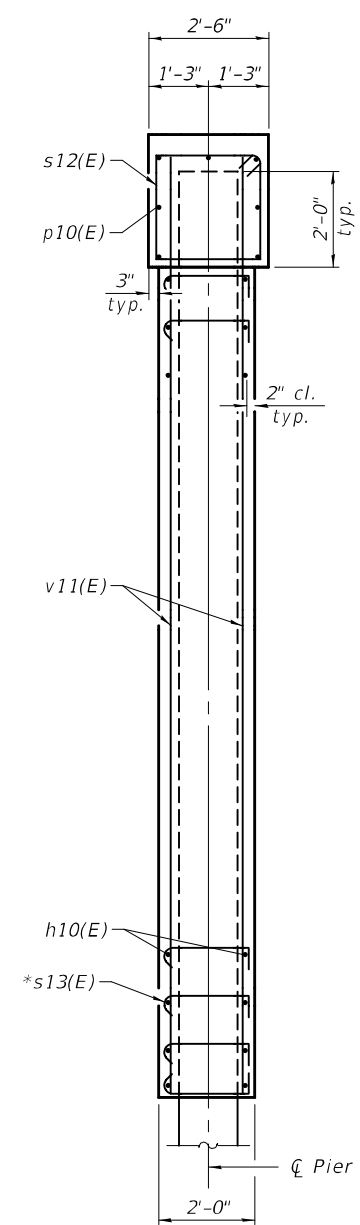
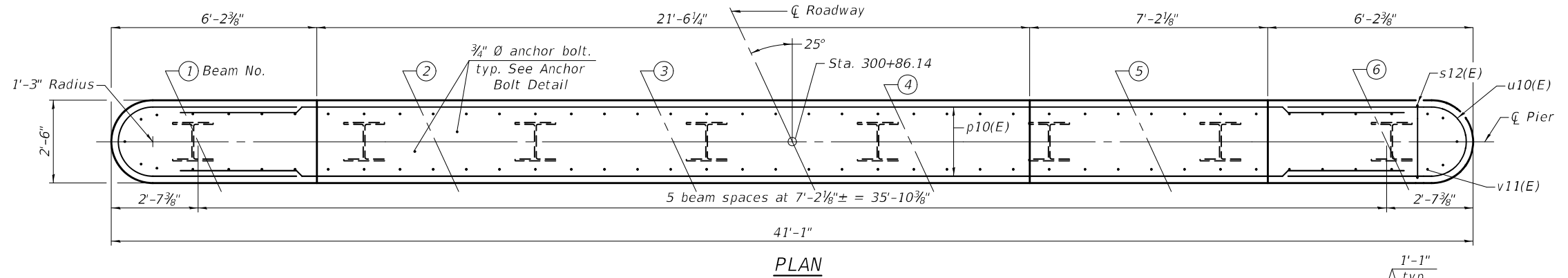
DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>James F. [Signature]</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>	REVISIONS
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS
CHECKED - R.P.N. / G.R.A.		

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 1  
 STRUCTURE NO. 012-0075

SHEET 20 OF 27 SHEETS

F.A.S. RTE. 1707	SECTION (BXB)B-1	COUNTY CLARK	SHEET NO. 31	TOTAL SHEETS 42
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	



Notes:  
 Pour steps monolithically with cap.  
 See sheet 22 of 27 for additional pier details and Bill of Material.  
 Space reinforcement in cap to miss anchor bolts. See sheet 23 of 27 for pile details.  
 \*Hook s13(E) bar around h10(E) & v11(E) bars. Clear cover for s13(E) bar will be 1 1/2".

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DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>Jaime F. [Signature]</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>	REVISIONS
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS
CHECKED - R.P.N. / G.R.A.		

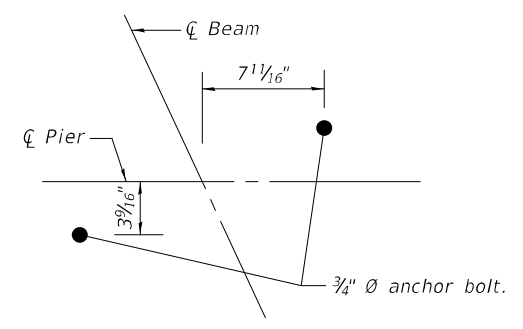
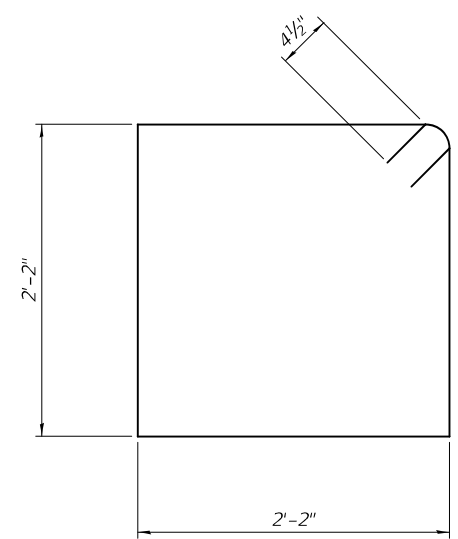
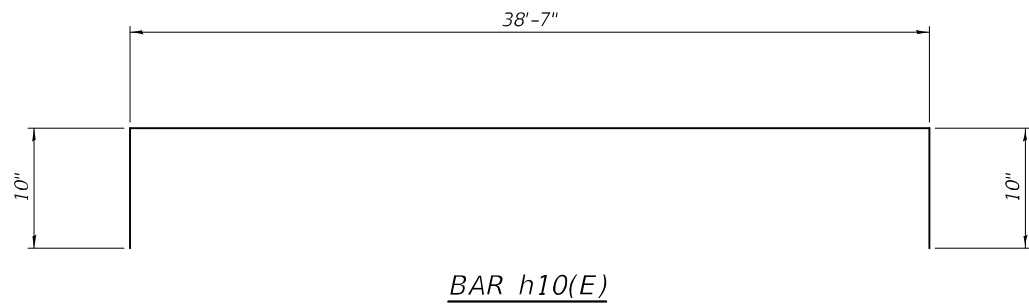
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PIER 2  
 STRUCTURE NO. 012-0075

F.A.S. RTE. 1707	SECTION (BXB)B-1	COUNTY CLARK	SHEET NO. 32	TOTAL SHEETS 42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

SHEET 21 OF 27 SHEETS

MODEL: 0120075-74360-022  
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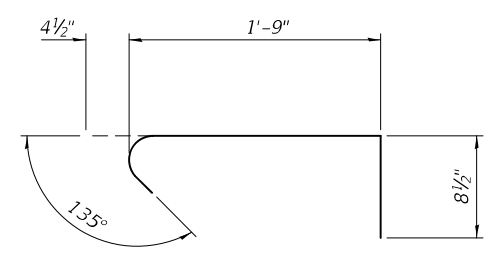
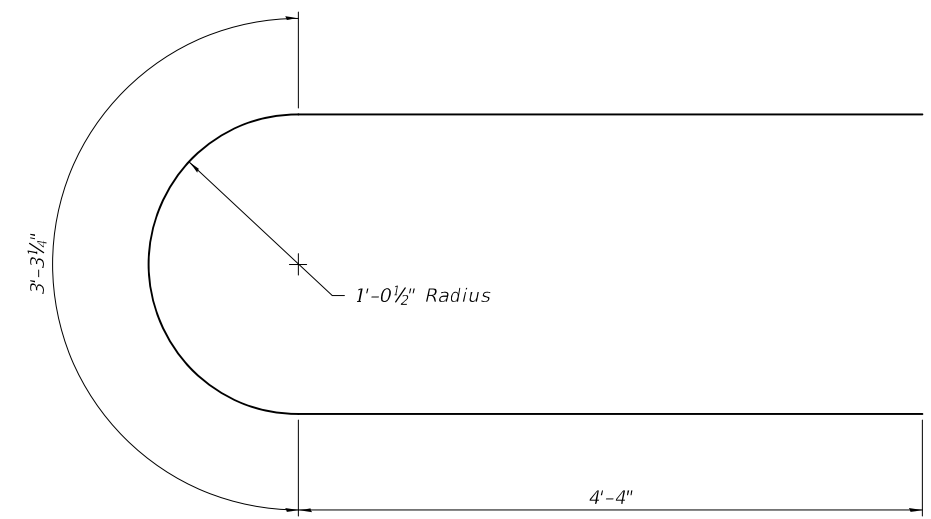


**PIER 1  
PILE DATA**

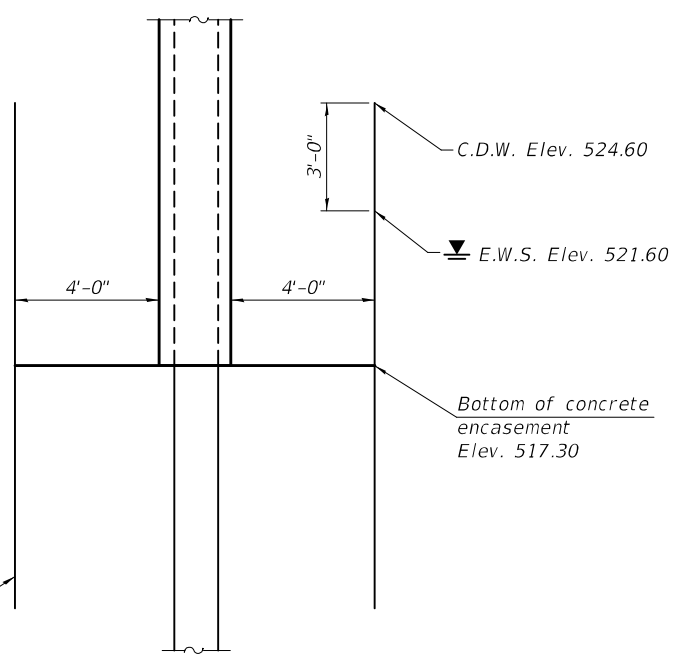
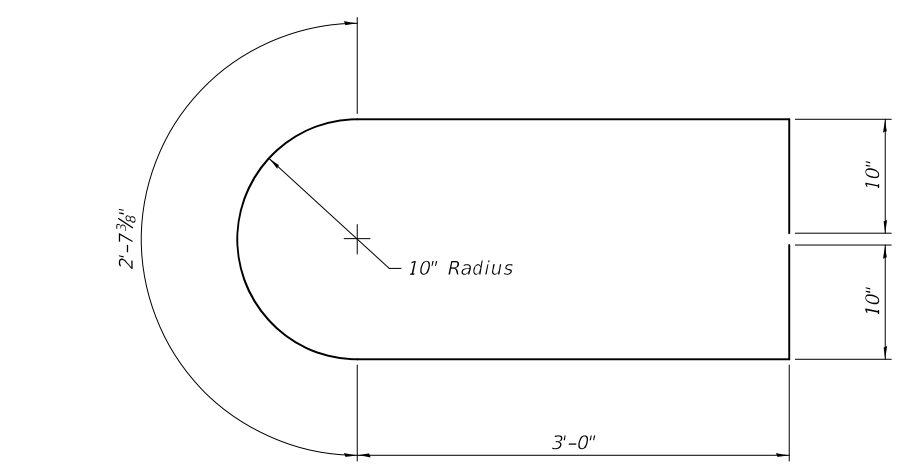
Type: HP 14x89  
 Nominal Required Bearing: 705k  
 Factored Resistance Available: 364k  
 Est. Length: 74'  
 No. Production Piles: 8  
 No. Test Piles: 0

**PIER 2  
PILE DATA**

Type: HP 14x89  
 Nominal Required Bearing: 705k  
 Factored Resistance Available: 360k  
 Est. Length: 74'  
 No. Production Piles: 7  
 No. Test Piles: 1



**ANCHOR BOLT DETAIL**



**PIER 1  
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h10(E)	34	#5	40'-3"	—
p10(E)	7	#7	38'-7"	—
s12(E)	30	#4	9'-5"	□
s13(E)	272	#4	2'-10"	┌
u10(E)	6	#6	12'-0"	U
u11(E)	34	#5	10'-4"	D
v10(E)	82	#5	18'-5"	—
Cofferdam Excavation			Cu. Yd.	110
Cofferdam (Type 1) (Location 1)			Each	1
Concrete Structures			Cu. Yd.	58.4
Reinforcement Bars, Epoxy Coated			Pound	4,730
Furnishing Steel Piles HP14X89			Foot	592
Driving Piles			Foot	592

**PIER 2  
BILL OF MATERIAL**

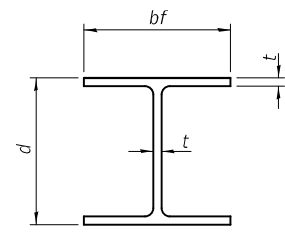
Bar	No.	Size	Length	Shape
h10(E)	36	#5	40'-3"	—
p10(E)	7	#7	38'-7"	—
s12(E)	30	#4	9'-5"	□
s13(E)	288	#4	2'-10"	┌
u10(E)	6	#6	12'-0"	U
u11(E)	36	#5	10'-4"	D
v11(E)	82	#5	19'-6"	—
Cofferdam Excavation			Cu. Yd.	139
Cofferdam (Type 1) (Location 2)			Each	1
Concrete Structures			Cu. Yd.	61.8
Reinforcement Bars, Epoxy Coated			Pound	4,960
Furnishing Steel Piles HP14X89			Foot	518
Driving Piles			Foot	518
Test Pile Steel HP14X89			Each	1

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PIER DETAILS  
STRUCTURE NO. 012-0075**

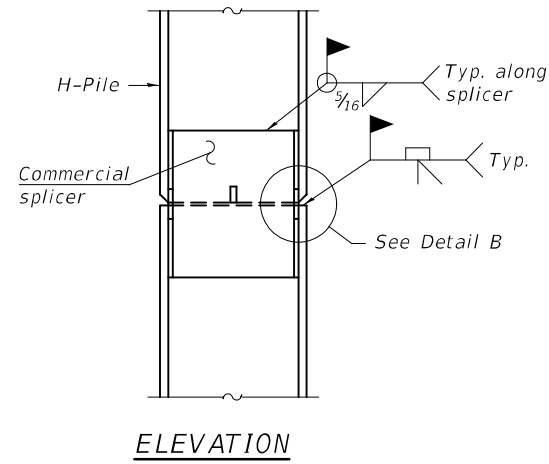
F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BXB)B-1	CLARK	33	42
CONTRACT NO. 74360				

DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>James F. J...</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl...</i>	REVISIONS
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISIONS
CHECKED - R.P.N. / G.R.A.		

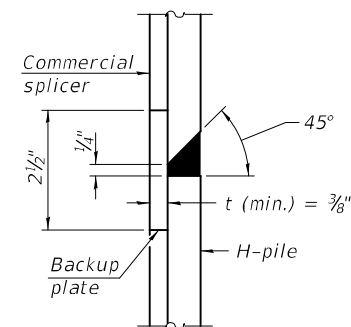


STEEL PILE TABLE

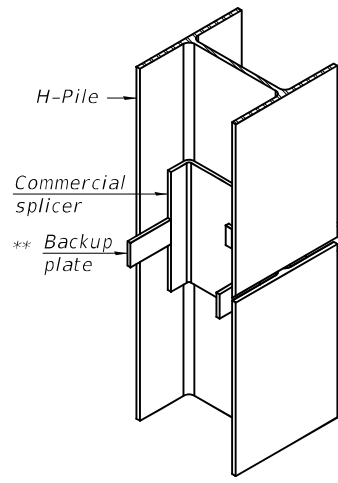
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

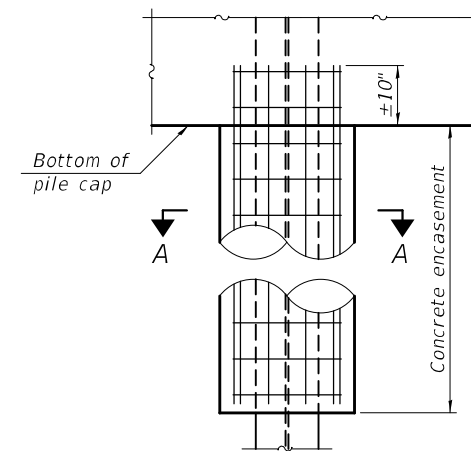


DETAIL "B"

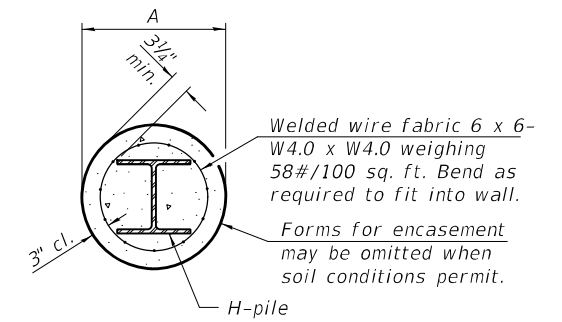


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

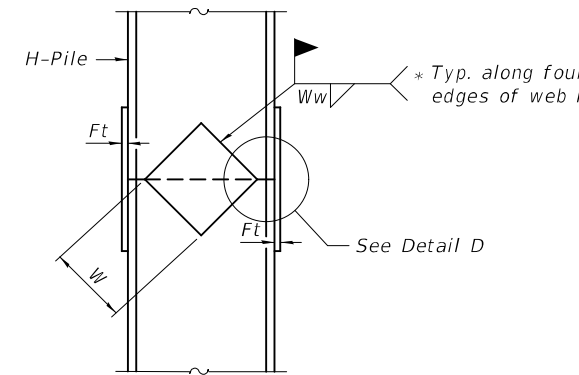


ELEVATION

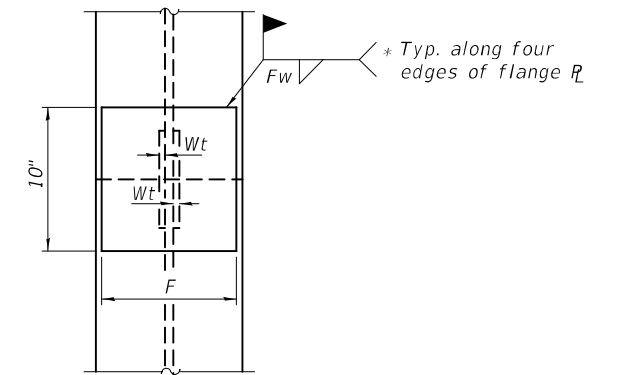


SECTION A-A

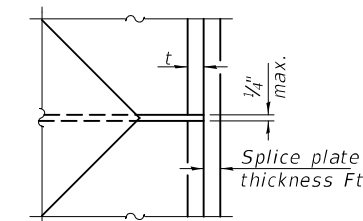
INDIVIDUAL PILE CONCRETE ENCASUREMENT (when specified)



ELEVATION



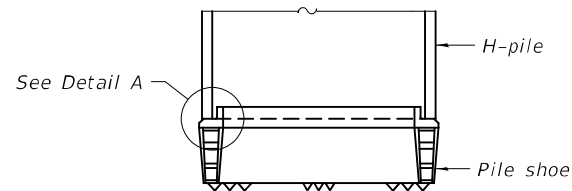
END VIEW



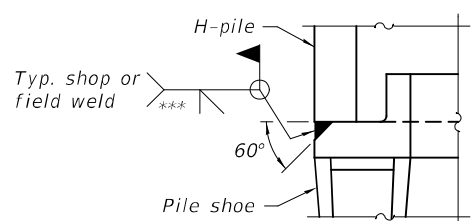
DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"



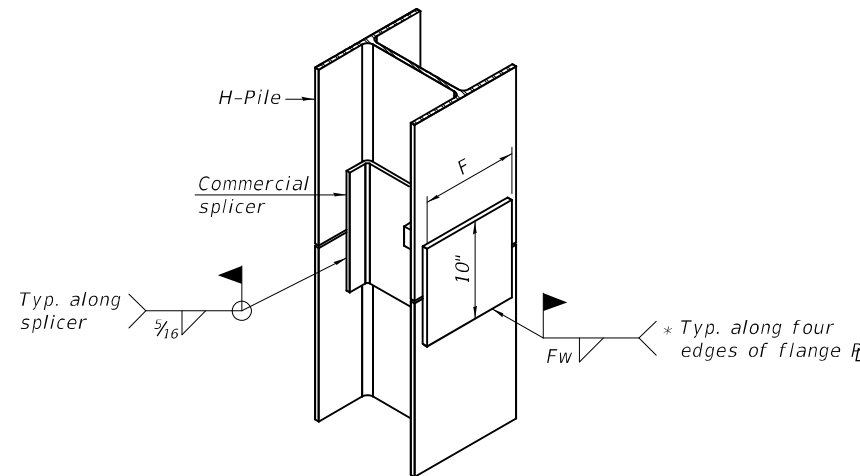
ELEVATION



DETAIL A

SHOE ATTACHMENT

Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- \* Interrupt welds 1/4" from end of web and/or each flange.
- \*\* Remove portions of backup plates that extend outside the flanges.
- \*\*\* Weld size per pile shoe manufacturer (5/16" min.).

MODEL: 0120075-74360-023  
FILE NAME: p:\v\dot-pw\benley.com\FWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0120075\CADD Plans\0120075-74360.dgn

F-HP 1-1-2020

DESIGNED - RYAN P. NEGANGARD	EXAMINED
CHECKED - HAREEM I. DAR	PASSED
DRAWN - GLENN W. STOVER	
CHECKED - R.P.N. / G.R.A.	

DATE - FEBRUARY 4, 2022  
  
 ENGINEER OF BRIDGE DESIGN  
  
 ENGINEER OF BRIDGES AND STRUCTURES

REVISIONS	
REVISION -	
REVISION -	

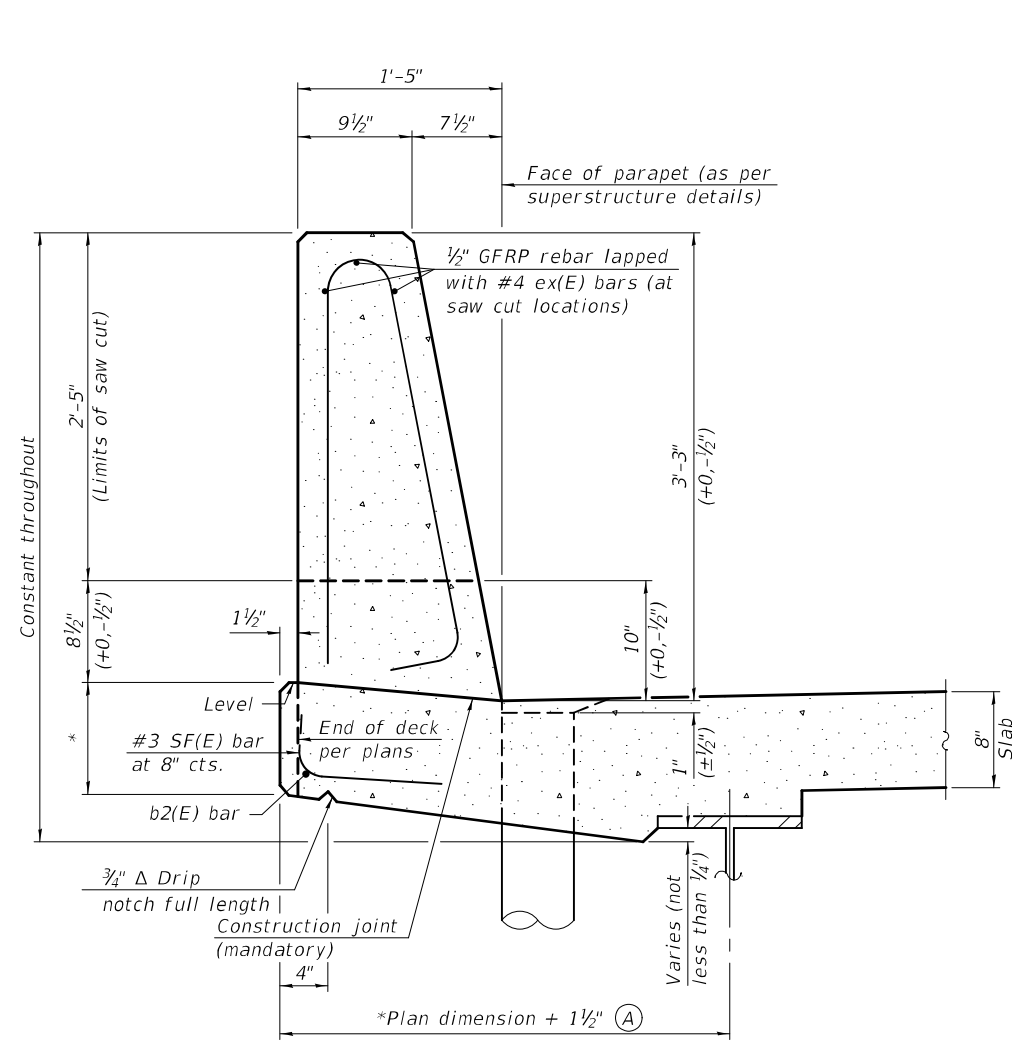
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS  
STRUCTURE NO. 012-0075

SHEET 23 OF 27 SHEETS

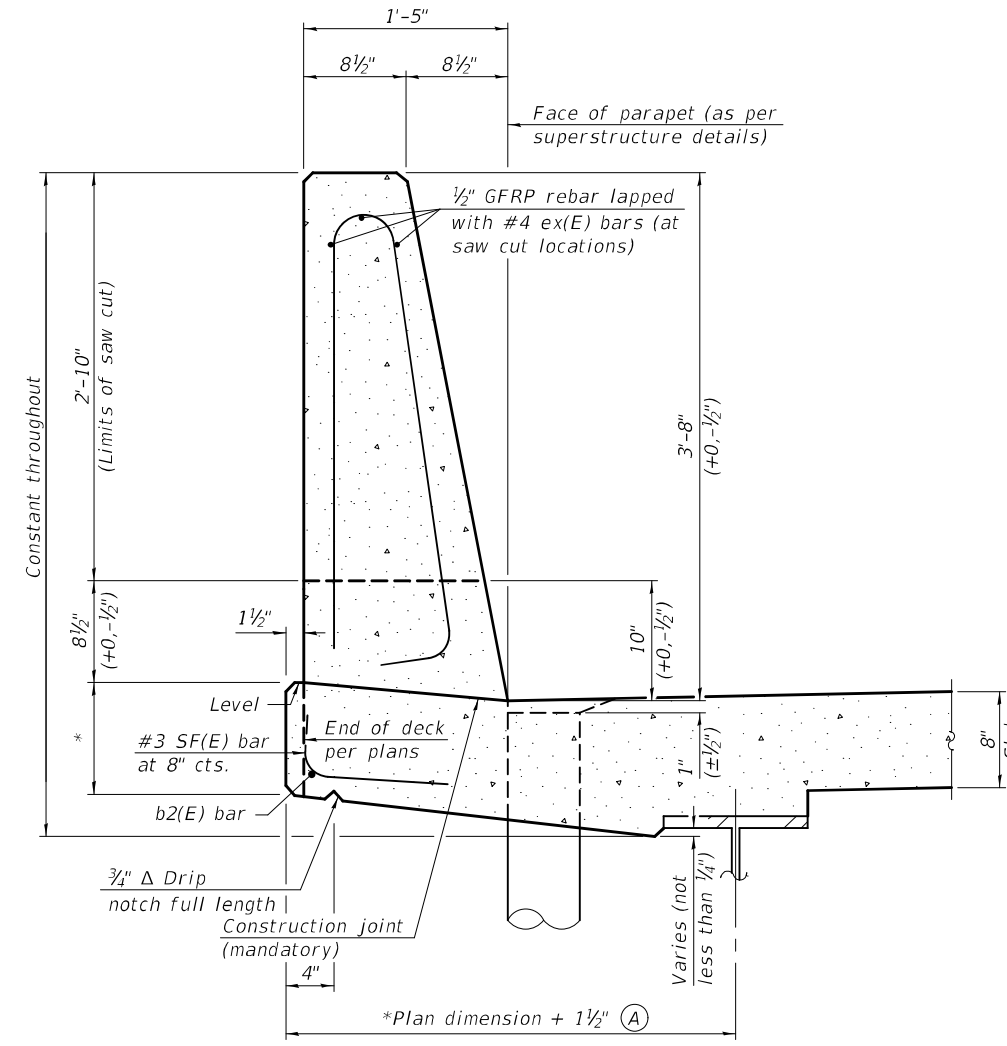
F.A.S. RTE. 1707	SECTION (BXB)B-1	COUNTY CLARK	SHEET NO. 34	TOTAL SHEETS 42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

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**39" CONSTANT-SLOPE  
PARAPET SECTION**

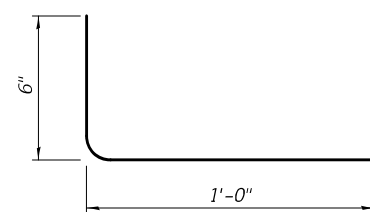
(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)



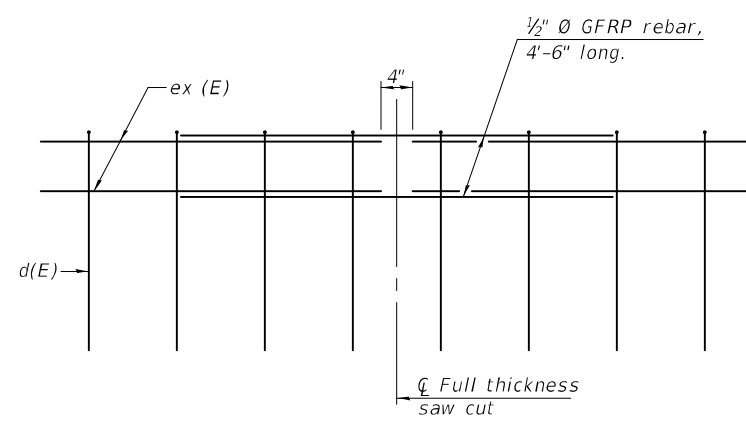
**44" CONSTANT-SLOPE  
PARAPET SECTION**

(Showing dimensions, d(E), and 1/2" Ø GFRP rebar)

\*See Superstructure Details.



**#3 (E) BAR**



**GFRP REBAR STIFFENING DETAIL**

(Place as shown in parapet section at each parapet joint location.)

Notes:  
All dimensions shall remain the same as shown on superstructure details, except dimension A which is to be revised as shown. Additional concrete needed to revise dimension A = 0.00348 cu. yds./ft. for 39" and 44" parapets.  
Place full depth aluminum sheets as shown on superstructure details.  
Replace all cork joint filler locations with a full thickness saw cut.  
Steel superstructure shown. Other superstructure types similar.

MODEL: 0120075-74360-024  
FILE NAME: p:\w\idol-ppw-bentley.com\FWIDOT\Documents\IDOT Offices\Bureau of Bridges and Structures\Projects\0120075\CADD Plans\0120075-74360.dgn

SFP 39-44 1-1-2020

DESIGNED	- RYAN P. NEGANGARD
CHECKED	- HAREEM I. DAR
DRAWN	- GLENN W. STOVER
CHECKED	- R.P.N. / G.R.A.

EXAMINED  
PASSED

*James F. Joffe*  
ENGINEER OF BRIDGE DESIGN

*Carl Perry*  
ENGINEER OF BRIDGES AND STRUCTURES

DATE	- FEBRUARY 4, 2022
REVISED	-
REVISED	-

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CONCRETE PARAPET SLIPFORMING OPTION  
STRUCTURE NO. 012-0075**

SHEET 24 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	35	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				



Illinois Department of Transportation  
Division of Highways  
Illinois Department of Transportation

### SOIL BORING LOG

Page 1 of 3

Date 1/8/19

ROUTE FAS 1707 (US 40) DESCRIPTION East Mill Creek, 2 Mile West of Marshall LOGGED BYE, Sandschafer

SECTION (BXB) B-1 LOCATION NE, SEC. 28, TWP. 11N, RNG. 12W, 3rd PM.  
Latitude N 39.379571, Longitude W 87.736120

COUNTY Clark DRILLING METHOD Hollow stem auger & split spoon HAMMER Auto 140#

STRUCT. NO. 012-0021 (E)  
Station 012-0075 (P)  
300+51.60

BORING NO. 1 West Abutment  
Station 299+93  
Offset 10.0 ft North  
Ground Surface Elev. 539.31 ft

DEPTH (ft)	BLOW COUNT	UNIFORMITY COEFFICIENT	MOISTURE (%)	SOIL DESCRIPTION	DEPTH (ft)	BLOW COUNT	UNIFORMITY COEFFICIENT	MOISTURE (%)	SOIL DESCRIPTION
0				5" Asphalt over 10" Concrete	0				Very soft, wet, gray, SANDY LOAM
538.06				Brown, Sandy LOAM	3	0.2	21		
	3			Soft, moist.	2	0.5	14		
	2				2				
534.81				Very stiff, moist, brown, CLAY LOAM	-5	1			514.31-25
	4	2.3	13	Medium, moist, gray CLAY	1	0.8	28		
	5				2				
532.31				Stiff, moist, brown, SILTY CLAY LOAM	3				
	4	1.3	17		1	1.2	28		
	5				1				
529.81				Stiff, moist, brown, CLAY LOAM	-10	3			Medium
	3	1.0	15		2	0.8	24		
	4				3				
	7	4.3	9	Hard.					
	10								
	2			Stiff.	-15	1			Stiff
523.81				Gray, SILTY LOAM	4	1.7	10		
	6				2	1.4	19		
	2			Soft, moist.					
	6	0.5	28						
519.31-20				Soft, moist, gray, SILTY LOAM	499.81				
	1				-40	5			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206), WH-Weight of Hammer, BBS, form 137 (Rev. 8-99)



Illinois Department of Transportation  
Division of Highways  
Illinois Department of Transportation

### SOIL BORING LOG

Page 2 of 3

Date 1/8/19

ROUTE FAS 1707 (US 40) DESCRIPTION East Mill Creek, 2 Mile West of Marshall LOGGED BYE, Sandschafer

SECTION (BXB) B-1 LOCATION NE, SEC. 28, TWP. 11N, RNG. 12W, 3rd PM.  
Latitude N 39.379571, Longitude W 87.736120

COUNTY Clark DRILLING METHOD Hollow stem auger & split spoon HAMMER Auto 140#

STRUCT. NO. 012-0021 (E)  
Station 012-0075 (P)  
300+51.60

BORING NO. 1 West Abutment  
Station 299+93  
Offset 10.0 ft North  
Ground Surface Elev. 539.31 ft

DEPTH (ft)	BLOW COUNT	UNIFORMITY COEFFICIENT	MOISTURE (%)	SOIL DESCRIPTION	DEPTH (ft)	BLOW COUNT	UNIFORMITY COEFFICIENT	MOISTURE (%)	SOIL DESCRIPTION
0				Soft, moist, gray, SILTY LOAM (continued)	3	0.5	24		Hard, moist, gray, CLAY LOAM TILL (continued)
	4				4				
494.81				Medium, moist, gray, SANDY LOAM	-45	2			-65
	2	0.7	18		2				
	3				3				
489.81				Stiff, moist gray, SILTY LOAM with fine-graded SAND	-50	13			469.81
	6	1.7	18		6				
	7				7				
	2			Stiff.	-55	1			-75
	3				2	1.4	19		
	6				3				
	2			Soft, moist.					
	6	0.5	28						
461.31				Very dense, moist, gray SANDY CLAY SHALE	50				50
					1-1/2"	NT	8		
				Borehole continued with rock	50				50
479.81					1/2"				
	6				459.31-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206), WH-Weight of Hammer, BBS, form 137 (Rev. 8-99)

MODEL: 0120075-74360-025  
FILE NAME: p:\w\p\w\benley.com\FWIDOT\Documents\DOT Offices\Bureau of Bridges and Structures\Projects\0120075\CADD Plans\0120075-74360.dgn

DESIGNED - RYAN P. NEGANGARD	EXAMINED - <i>James F. [Signature]</i>	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR	PASSED - <i>Carl [Signature]</i>	REVISER -
DRAWN - GLENN W. STOVER	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -
CHECKED - R.P.N. / G.R.A.		

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS  
STRUCTURE NO. 012-0075

SHEET 25 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BXB)B-1	CLARK	36	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				



<b style="font-size: 1.2em;">Illinois Department of Transportation</b> Division of Highways Illinois Department of Transportation			<b style="font-size: 1.2em;">ROCK CORE LOG</b>			Page 3 of 3		
<b>ROUTE</b> FAS 1707 (US 40) <b>DESCRIPTION</b> East Mill Creek, 2 Mile West of Marshall <b>LOGGED BY</b> Sandschafer			<b>DATE</b> 1/8/19					
<b>SECTION</b> (BxB) B-1 <b>LOCATION</b> NE, SEC. 28, TWP. 11N, RNG. 12W, 3rd PM, Latitude N 39.379571, Longitude W 87.756120								
<b>COUNTY</b> Clark <b>CORING METHOD</b> Rotary, surf set diamond bit								
<b>STRUCT. NO.</b> 012-0021 (E) 012-0075 (P) <b>Station</b> 300+51.60			<b>CORING BARREL TYPE &amp; SIZE</b> NW, conv dbl bbl, split inner					
<b>BORING NO.</b> 1 West Abutment <b>Station</b> 299+93 <b>Offset</b> 10.0 ft North <b>Ground Surface Elev.</b> 539.31 ft			<b>Core Diameter</b> 2.1 in <b>Top of Rock Elev.</b> 459.31 ft <b>Begin Core Elev.</b> 459.31 ft					
			<b>DEPTH (ft)</b>	<b>CORRECTION (%)</b>	<b>RECOVERY (%)</b>	<b>UNIT WEIGHT (pcf)</b>	<b>COEFFICIENT OF PERCENTAGE VARIATION (%)</b>	<b>STRENGTH (tsf)</b>
Gray, weathered, shaley SANDSTONE			459.31	B1C1	87	48	2.2	
Rock Core B1C1 at depth 82.4' to 83.0' - Qu = 342 tsf								
No recovery at bottom 0.6' of core run.								
Gray, weathered, shaley SANDSTONE			454.31	B1C2	100	58	2.4	
Rock Core B1C2 at depth 86.8' to 87.3' - Qu = 122 tsf								
Extent of Exploration			449.31	-90				
Benchmark: PSM Stamped L211 on NE Wingwall of Str No. 012-0021, Sta. 3301+30, 20' LT. End of Boring								
-95 -100								

Color pictures of the cores Available on Request  
 Cores will be stored for examination until 01/09/24  
 The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)  
 BBS form 138 (Rev. 8-99)

<b style="font-size: 1.2em;">Illinois Department of Transportation</b> Division of Highways Illinois Department of Transportation			<b style="font-size: 1.2em;">SOIL BORING LOG</b>			Page 1 of 3				
<b>ROUTE</b> FAS 1707 (US 40) <b>DESCRIPTION</b> East Mill Creek, 2 Mile West of Marshall <b>LOGGED BY</b> Sandschafer										
<b>SECTION</b> (BxB) B-1 <b>LOCATION</b> NE, SEC. 28, TWP. 11N, RNG. 12W, 3rd PM, Latitude N 39.379649, Longitude W 87.735551										
<b>COUNTY</b> Clark <b>DRILLING METHOD</b> Hollow stem auger & split spoon <b>HAMMER</b> Auto 140#										
<b>STRUCT. NO.</b> 012-0021 (E) 012-0075 (P) <b>Station</b> 300+51.60			<b>Surface Water Elev.</b> 521.02 ft <b>Stream Bed Elev.</b> 519.52 ft							
<b>BORING NO.</b> 2 East Abutment <b>Station</b> 301+60 <b>Offset</b> 9.0 ft South <b>Ground Surface Elev.</b> 542.17 ft			<b>Groundwater Elev.:</b> <b>First Encounter</b> 520.2 ft▽ <b>Upon Completion</b> 523.2 ft▽ <b>After 48 Hrs.</b> 523.7 ft▽							
			<b>DEPTH (ft)</b>	<b>BULGE (in)</b>	<b>SHAPE</b>	<b>UNIT WEIGHT (pcf)</b>	<b>WATER CONTENT (%)</b>	<b>LIQUID LIMIT (%)</b>	<b>PLASTICITY INDEX (%)</b>	<b>SPT (blows)</b>
3" Asphalt over 8-1/4" Concrete			541.17							
Brown, SANDY CLAY										
Medium, moist			520.17	4	3	0.9	12			7
Loose, wet, gray, fine-graded SAND				3	4	5				0.4
No recovery at bottom 0.6' of core run.				-5	1	3	12			3
Gray, weathered, shaley SANDSTONE			454.31	-85	3	3	0.9	12		1
Rock Core B1C2 at depth 86.8' to 87.3' - Qu = 122 tsf										0.8
Medium, moist, gray, SILTY CLAY			516.67	-25	2	1	1	30		30
Soft, moist, brown, CLAY LOAM			535.17	-10	2	2	2	25		25
Medium.				2	2	3	0.8	12		2
Very stiff, brown-gray marbled.			507.67	-15	2	3	2.1	19		2
Soft, moist, gray, SILTY CLAY LOAM			524.47	-3	5	8	1.8	17		1
Soft, moist, gray, SANDY LOAM			522.67	-7	8					0.5
Soft, moist, gray, SANDY LOAM			502.17	-40	10					21

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206), WH-Weight of Hammer.  
 BBS form 137 (Rev. 8-99)

DESIGNED - RYAN P. NEANGARD	EXAMINED	DATE - FEBRUARY 4, 2022
CHECKED - HAREEM I. DAR		
DRAWN - GLENN W. STOVER	PASSED	REVISER -
CHECKED - R.P.N. / G.R.A.		REVISIONS -

**Jayme F. Dar**  
 ENGINEER OF BRIDGE DESIGN

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS  
 STRUCTURE NO. 012-0075**

SHEET 26 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	37	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

Page 2 of 3

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 3/12/19

ROUTE FAS 1707 (US 40) DESCRIPTION East Mill Creek, 2 Mile West of Marshall LOGGED BY Sandschafer

SECTION (BxB) B-1 LOCATION NE, SEC. 28, TWP. 11N, RNG. 12W, 3rd PM,  
Latitude N 39,379649, Longitude W 87,735551

COUNTY Clark DRILLING METHOD Hollow stem auger & split spoon HAMMER Auto 140#

STRUCT. NO. <u>012-0021 (E)</u> <u>012-0075 (P)</u> Station <u>300+51.60</u>	D E P T H	B L O S S	U C S	M O I S T	Surface Water Elev. <u>521.02</u> ft				D E P T H	B L O S S	U C S	M O I S T	
					Stream Bed Elev. <u>519.52</u> ft								
BORING NO. <u>2 East Abutment</u> Station <u>301+60</u> Offset <u>9.0 ft South</u> Ground Surface Elev. <u>542.17</u> ft	(ft)	(/6")	(tsf)	(% )	Groundwater Elev.:				(ft)	(/6")	(tsf)	(% )	
					First Encounter <u>520.2</u> ft								
					Upon Completion <u>523.2</u> ft								
					After <u>48</u> Hrs. <u>523.7</u> ft								
Very stiff, moist, gray, CLAY LOAM TILL	9 12	2.9 B	13	Very dense, moist, gray, very fine graded SANDY LOAM with SILT (continued)				36 46	0.9 S	17			
				-45		6					-65		
Very stiff, moist, gray, SANDY LOAM TILL	7 8	2.5 B	15					-70	19 21	2.8 S	18		
				496.67		7						-55	
Hard, moist, dark gray, CLAY LOAM TILL	6 14	4.5 B	17					-70	21 24	2.8 S	18		
				492.67		7						-55	
	5			Brown chert and blue SANDY CLAY SHALE				-80	35				
		482.67		-60		467.17-75							

SOIL BORING 012-0021 SOIL ROCK 2019.GPJ IL\_DOT.GDT 5/6/21

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206), WH-Weight of Hammer, BBS, form 137 (Rev. 8-99)

Page 3 of 3

**Illinois Department of Transportation**  
Division of Highways  
Illinois Department of Transportation

## SOIL BORING LOG

Date 3/12/19

ROUTE FAS 1707 (US 40) DESCRIPTION East Mill Creek, 2 Mile West of Marshall LOGGED BY Sandschafer

SECTION (BxB) B-1 LOCATION NE, SEC. 28, TWP. 11N, RNG. 12W, 3rd PM,  
Latitude N 39,379649, Longitude W 87,735551

COUNTY Clark DRILLING METHOD Hollow stem auger & split spoon HAMMER Auto 140#

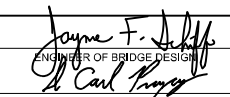

STRUCT. NO. <u>012-0021 (E)</u> <u>012-0075 (P)</u> Station <u>300+51.60</u>	D E P T H	B L O S S	U C S	M O I S T	Surface Water Elev. <u>521.02</u> ft				D E P T H	B L O S S	U C S	M O I S T	
					Stream Bed Elev. <u>519.52</u> ft								
BORING NO. <u>2 East Abutment</u> Station <u>301+60</u> Offset <u>9.0 ft South</u> Ground Surface Elev. <u>542.17</u> ft	(ft)	(/6")	(tsf)	(% )	Groundwater Elev.:				(ft)	(/6")	(tsf)	(% )	
					First Encounter <u>520.2</u> ft								
					Upon Completion <u>523.2</u> ft								
					After <u>48</u> Hrs. <u>523.7</u> ft								
Brown chert and blue SANDY CLAY SHALE (continued)	50 43	NT	12					-90	19 21	2.8 S	18		
				457.67		7						-95	
Very dense, moist, gray, CLAY SHALE	50 7/16	NT	14					-95	21 24	2.8 S	18		
				457.17-85		3/16						-100	
Extent of Exploration					50								
					3/16								
					50								
					3/16								
Benchmark: PSM Stamped L211 on NE Wingwall of Str No. 012-0021, Sta. 3301+30, 20' LT. End of Boring													

SOIL BORING 012-0021 SOIL ROCK 2019.GPJ IL\_DOT.GDT 5/6/21

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, E-Estimated)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206), WH-Weight of Hammer, BBS, form 137 (Rev. 8-99)

MODEL: 0120075-74360-027  
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2/7/2022 11:17:43 AM

DESIGNED - RYAN P. NEGANGARD  
CHECKED - HAREEM I. DAR  
DRAWN - GLENN W. STOVER  
CHECKED - R.P.N. / G.R.A.

EXAMINED   
PASSED   
ENGINEER OF BRIDGES AND STRUCTURES

DATE - FEBRUARY 4, 2022  
REVISED -  
REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOIL BORING LOGS  
STRUCTURE NO. 012-0075**

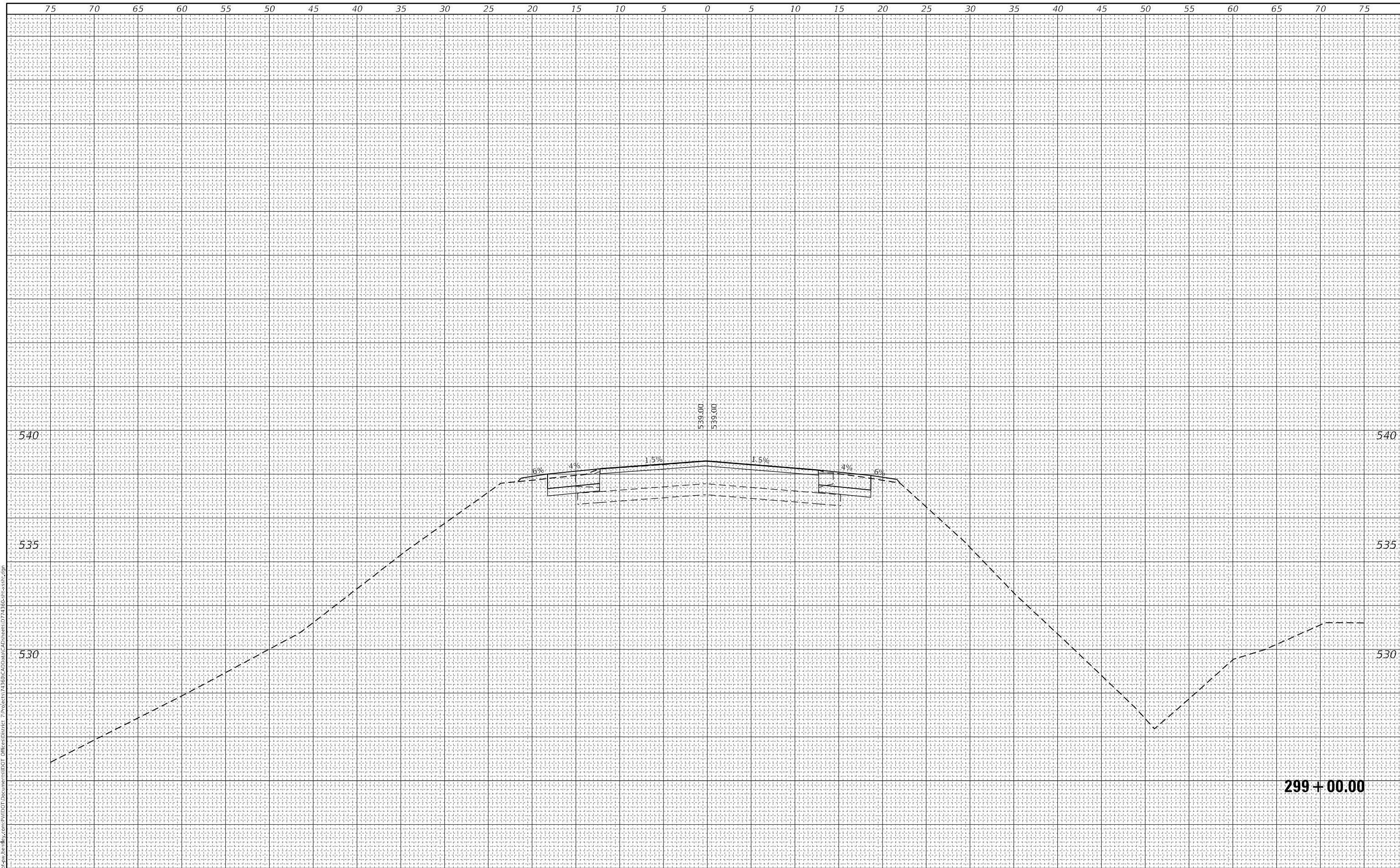
SHEET 27 OF 27 SHEETS

F.A.S. RTE.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
1707	(BxB)B-1	CLARK	38	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED	BY	DATE
	PLOTTED		
	TEMPLATE		
	AREAS CHECKED		

MODEL: Definit  
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USER NAME = stefenmk	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 10,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 12/15/2021	DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS**

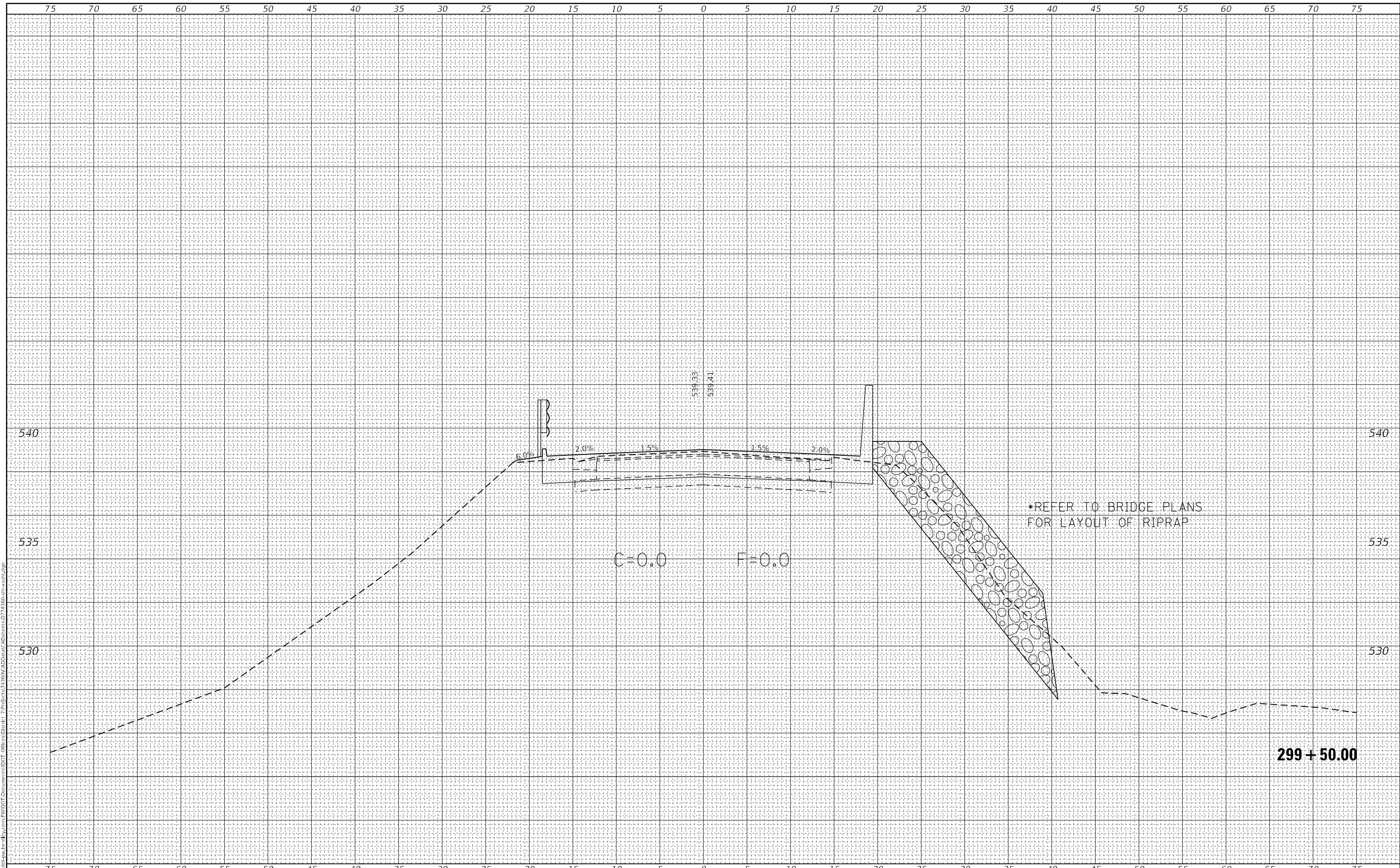
SCALE: SHEET 1 OF 4 SHEETS STA. 299+00.00 TO STA. 299+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	39
			CONTRACT NO. 74360	
ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	SURVEYED	BY	DATE
	NOTE BOOK		
	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED	BY	DATE
	NOTE BOOK		
	TEMPLATE		
	AREAS CHECKED		

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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS**

USER NAME = steffenmk	DESIGNED -	REVISED -
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PLOT DATE = 12/15/2021	CHECKED -	REVISED -
	DATE -	REVISED -

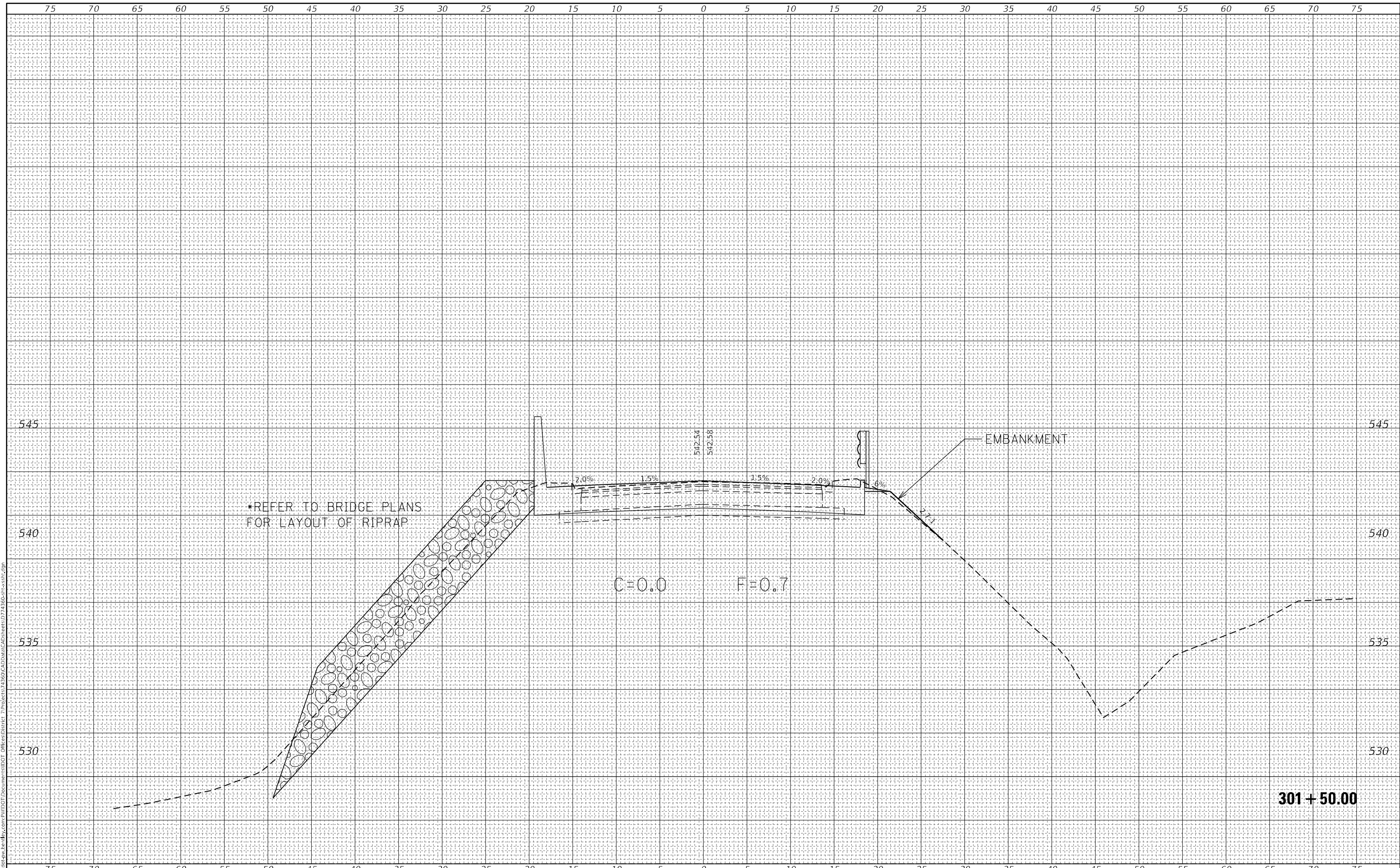
SCALE:	SHEET 2	OF 4	SHEETS	STA. 299+50.00	TO STA. 299+50.00
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	40
CONTRACT NO. 74360			ILLINOIS FED. AID PROJECT	

FINAL SURVEY NO.	SURVEYED	DATE
NOTE BOOK	PLOTTED	
AREAS CHECKED	TEMPLATE	
	AREAS CHECKED	

ORIGINAL SURVEY NO.	SURVEYED	DATE
	PLOTTED	
	TEMPLATE	
	AREAS CHECKED	
	AREAS CHECKED	

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USER NAME = stefenmk	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 10,0000 * / in.	CHECKED -	REVISED -
PLOT DATE = 12/15/2021	DATE -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS**

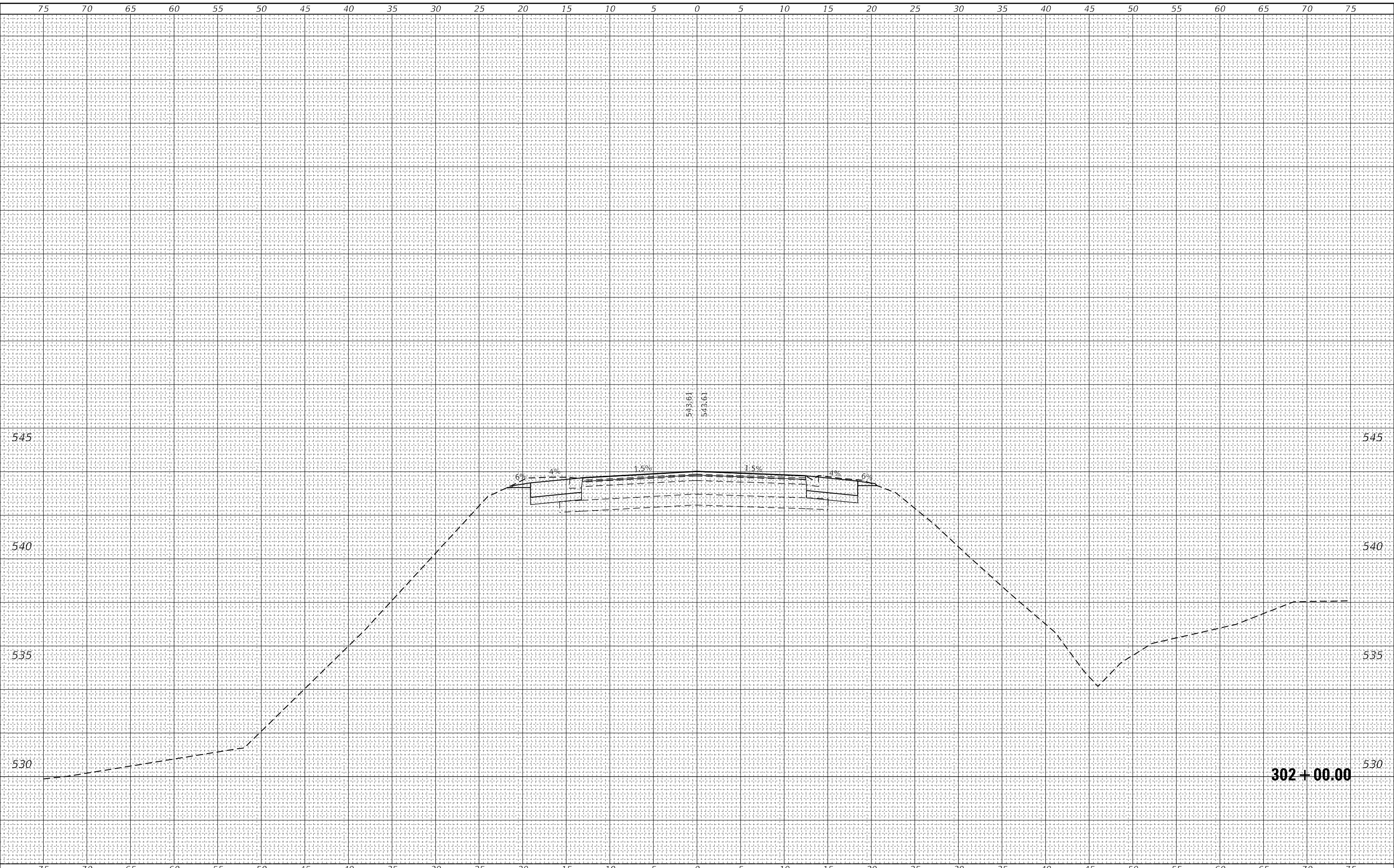
SCALE: SHEET 3 OF 4 SHEETS STA. 301+50.00 TO STA. 301+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	41
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS CHECKED	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
AREAS CHECKED	TEMPLATE		
	AREAS CHECKED		

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USER NAME = stefenmk	DESIGNED -	REVISED -
PLOT SCALE = 10,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 12/15/2021	CHECKED -	REVISED -
	DATE -	REVISED -

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

REVISED -	REVISED -
REVISED -	REVISED -
REVISED -	REVISED -
REVISED -	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS**

SCALE: SHEET 4 OF 4 SHEETS STA. 302+00.00 TO STA. 302+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1707	(BXB)B-1	CLARK	42	42
CONTRACT NO. 74360				
ILLINOIS FED. AID PROJECT				