

* 60 + 8 = 68 TOTAL SHEETS

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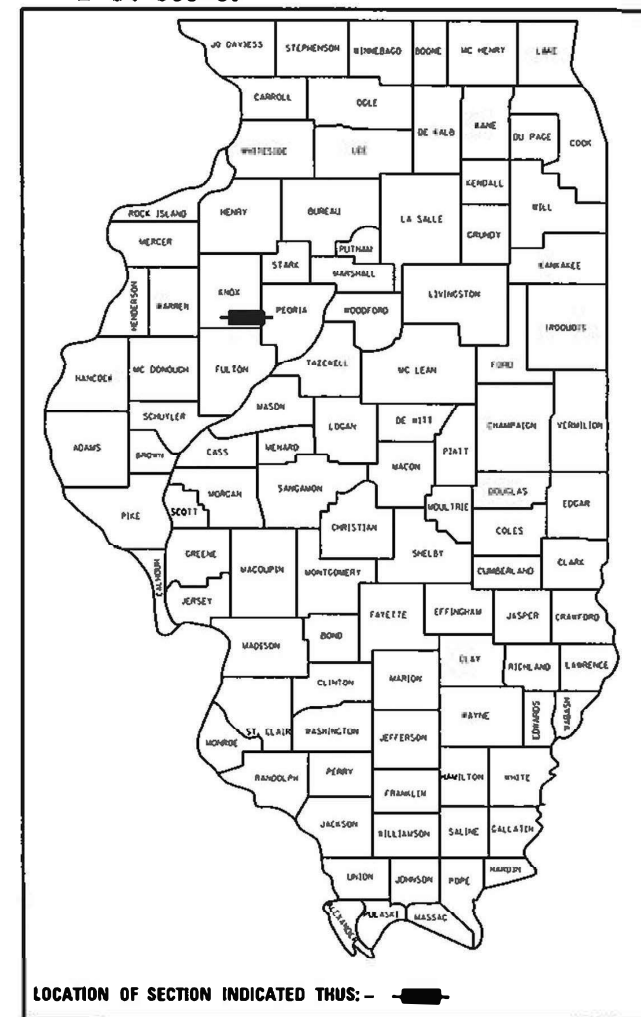
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

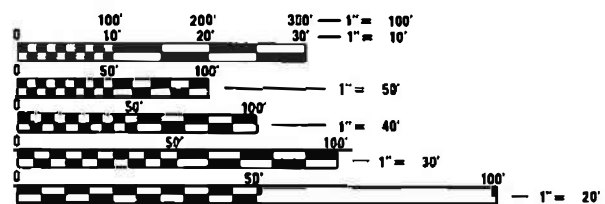
IL ROUTE 8 OVER HICKORY CREEK
F.A.S. ROUTE 380
SECTION 44BR-1
PROJECT: STP-SY1L(276)
BRIDGE REPLACEMENT
KNOX COUNTY

FOR A LIST OF HIGHWAY STANDARDS, SEE SHEET NO. 2

D-94-089-07



FUNCTIONAL CLASSIFICATION
RURAL MAJOR COLLECTOR
 2019 ADT = 1050
 S.U. = 5.9% M.U. = 3.5%



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. DO NOT SCALE PLANS FOR DIMENSIONS NOT GIVEN.

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

PROJECT ENGINEER: MIKE JACOBS
PROJECT MANAGER: RICH DOTSON

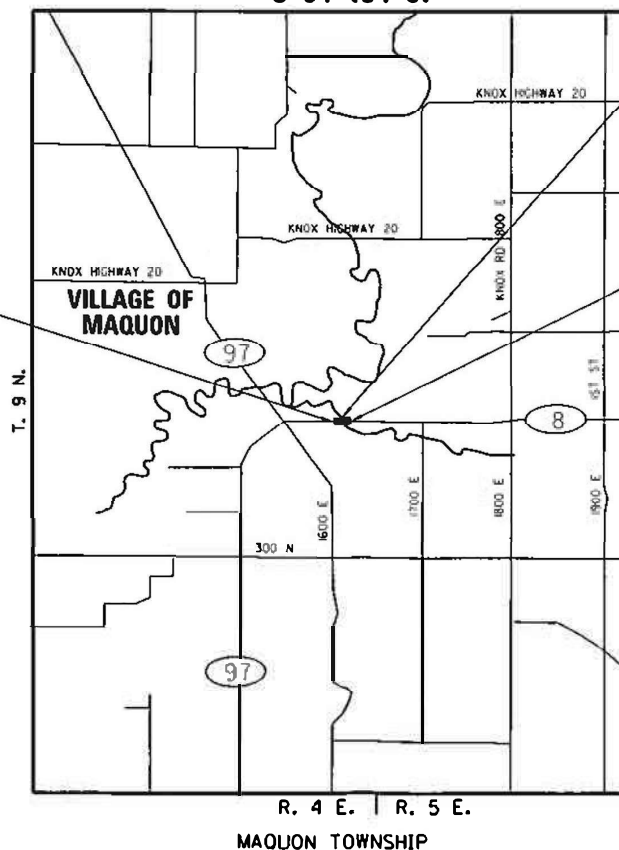
CONTRACT NO. 68755

PROJECT BEGINS
STA. 1909 + 75.0

EXPIRES 11/30/2023
Jeremy Buching
 SIGNATURE
 10/15/2021
 DATE

CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS
 DECATUR (217) 492-8544
 SCHLAUSBURG (773) 714-0050
 ROCKFORD (815) 499-0050
 184-001397

C-94-134-07



PROPOSED STRUCTURE
STA. 1911 + 80.50
PR SN 048-0094
EX SN 048-0017

PROJECT ENDS
STA. 1913 + 75.0

LOCATION MAP
 NOT TO SCALE

GROSS LENGTH OF PROJECT = 400.0 LIN. FT. = 0.08 MILES
 NET LENGTH OF PROJECT = 400.0 LIN. FT. = 0.08 MILES

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED *October 21* 20 *21*

Tom A. James
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

December 10 20 21

Steph M. Smith
 ENGINEER OF DESIGN AND ENVIRONMENT

December 10 20 21

Steph M. Smith
 DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

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CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONST. CODE	
				FED/STATE	BRIDGE
				80/20	
				0010	
				SN 048-0005	
50300225	CONCRETE STRUCTURES	CU YD	56.3	56.3	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	87.9	87.9	
50300260	BRIDGE DECK GROOVING	SQ YD	453	453	
50300300	PROTECTIVE COAT	SQ YD	483	483	
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	90	90	
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1	1	
50500505	STUD SHEAR CONNECTORS	EACH	1260	1260	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	60370	60370	
50800515	BAR SPLICERS	EACH	544	544	
50901050	STEEL RAILING, TYPE SM	FOOT	212	212	
51201610	FURNISHING STEEL PILES HP 12 X 63	FOOT	285	285	
51202305	DRIVING PILES	FOOT	285	285	
51203610	TEST PILE STEEL HP 12 X 63	EACH	2	2	
51500100	NAME PLATES	EACH	1	1	

USER NAME = jacobsmr	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / 1in.	CHECKED -	REVISED -
PLOT DATE = 9/3/2020	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	44BR-1	KNOX	60	5
			CONTRACT NO. 68755	
ILLINOIS FED. AID PROJECT				

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CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONST. CODE
				FED/STATE
				80/20
				BRIDGE
				0010
				SN 048-0005
70106700	TEMPORARY RUMBLE STRIP	EACH	12	12
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	528	528
70400100	TEMPORARY CONCRETE BARRIER	FOOT	323	323
70307120	TEMPORARY PAVEMENT MARKING - LINE 4", TYPE IV TAPE	FOOT	1584	1584
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	323	323
70400125	PINNING TEMPORARY CONCRETE BARRIER	EACH	76	76
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	2
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4
* 78009004	MODIFIED URETHANE MARKING - LINE 4"	FOOT	900	900
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	5	5
* 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	8	8
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	5	5
78300202	PAVEMENT MARKING REMOVAL - WATER BLASTING	SO FT	328	328
Z0001002	GUARDRAIL AGGREGATE EROSION CONTROL	TON	123	123

*= SPECIALTY ITEM

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	DATE -	REVISED -

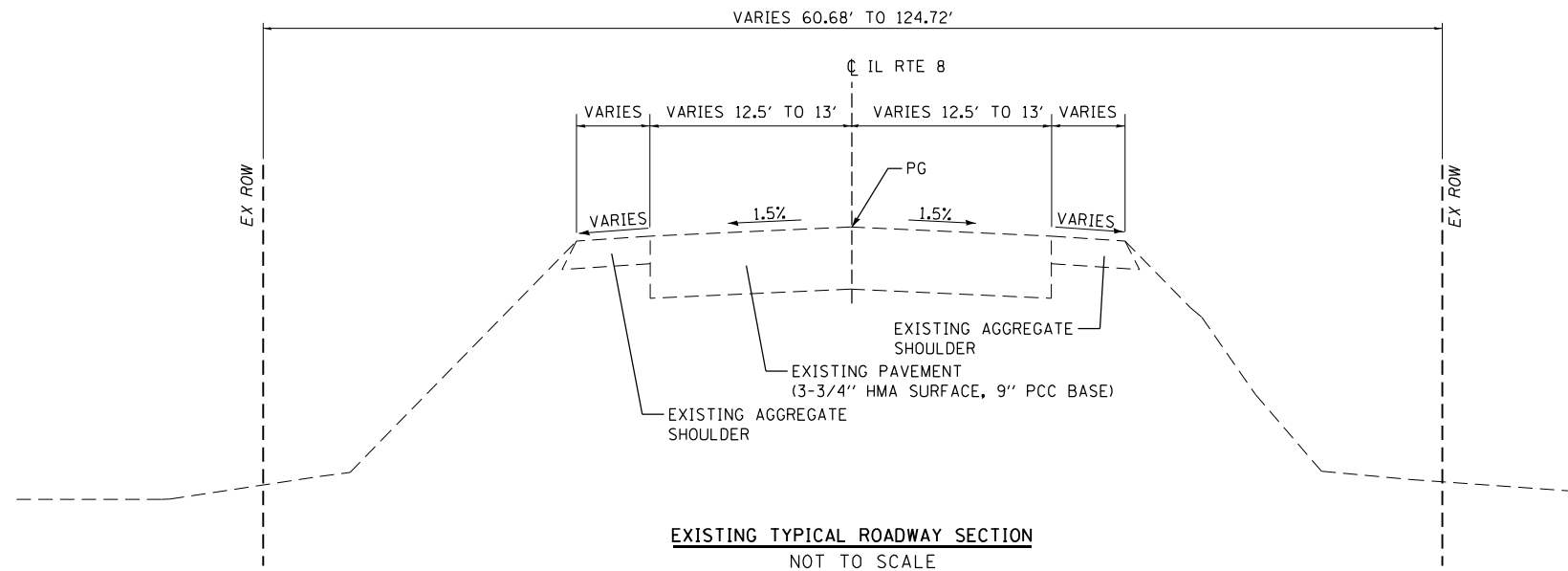
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

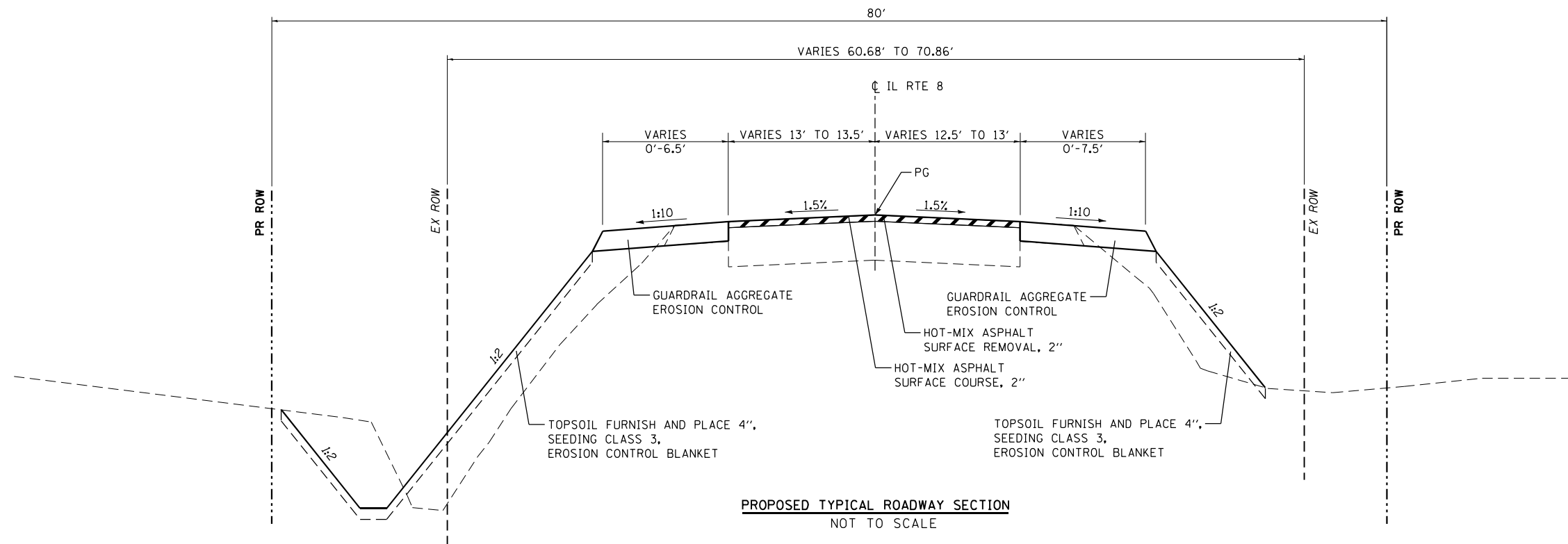
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	44BR-1	KNOX	60	7
			CONTRACT NO. 68755	

ILLINOIS FED. AID PROJECT

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EXISTING TYPICAL ROADWAY SECTION
NOT TO SCALE
STA 1908+00 TO STA 1917+00



PROPOSED TYPICAL ROADWAY SECTION
NOT TO SCALE

LEFT	RIGHT
STA 1909+75.00 TO STA 1910+29.54	STA 1910+75.00 TO STA 1910+09.27
AND	AND
STA 1913+52.32 TO STA 1913+75.00	STA 1913+08.78 TO STA 1913+75.00

USER NAME = jacobsmr	DESIGNED -	REVISED -
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PLOT SCALE = 100.0000' / 1" =	CHECKED -	REVISED -
PLOT DATE = 9/3/2020	DATE -	REVISED -

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	9
CONTRACT NO. 68755				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PAVING SCHEDULE

LOCATION				31100500	40600275	40600290	40604010	42000080	44200050	48203033	48301000	Z0001002
STATION	TO	STATION	OFFSET	SUBBASE GRANULAR MATERIAL TYPE A 6" (SQ YD)	BITUMINOUS MATERIALS (PRIME COAT) (POUND)	BITUMINOUS MATERIALS (TACK COAT) (POUND)	HOT-MIX ASPHALT SURFACE COURSE MIX "D", N50 (TON)	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB (SQ YD)	WELDED WIRE REINF. (SQ YD)	HOT-MIX ASPHALT SHOULDERS 9" (SQ YD)	PROTECTIVE COAT (SQ YD)	GUARDRAIL AGGREGATE EROSION CONTROL (TON)
1910+94.80	TO	1911+15.40	LT/RT	73.5								
1912+45.60	TO	1912+66.30	LT/RT	73.5								
1909+75.00	TO	1910+94.75	LT/RT			374	39					
1912+66.25	TO	1913+75.00	LT/RT			340	35					
1910+09.27	TO	1910+94.75	RT		75	12				23.7		
1910+29.54	TO	1910+94.75	LT		41	7				13		
1912+66.25	TO	1913+52.32	RT		65	12				11.8		
1912+66.25	TO	1913+08.78	LT		37	5				20.5		
1910+94.80	TO	1911+12.60	LT/RT					63.5	63.5		63.5	
1912+48.40	TO	1912+66.20	LT/RT					63.5	63.5		63.5	
1909+63.25	TO	1911+44.78	RT									35
1909+90.70	TO	1911+38.37	LT									28
1912+22.62	TO	1913+53.78	RT									25
1912+16.62	TO	1913+96.05	LT									34
TOTALS				147	750	218	74	127	127	69	127	123

PAVEMENT MARKING SCHEDULE

LOCATION					78009004	78100100
STATION	TO	STATION	LT/RT	COLOR	MOD URETHENE PAVEMENT MARKING LINE - 4" FOOT	RAISED REFLECTIVE PAVEMENT MARKER EACH
1909+75.00	TO	1913+75.00	LT	WHITE	400	
1919+75.00	TO	1913+75.00	RT	WHITE	400	
1909+75.00	TO	1913+75.00	CL	YELLOW	100	5
TOTALS					900	5

R. O. W. MARKERS

LOCATION			66600105
STATION	OFFSET (FT)		FURNISH & ERECT R. O. W. MARKERS
1909+75.00	30.00	LT	1
1909+75.00	30.69	RT	1
1910+00.00	45.00	RT	1
1910+20.00	44.00	LT	1
1911+70.00	79.17	LT	1
1912+34.01	45.00	LT	1
1913+00.00	45.00	LT	1
1913+50.00	45.00	RT	1
1913+75.00	40.00	LT	1
1913+75.00	30.94	RT	1
TOTALS			10

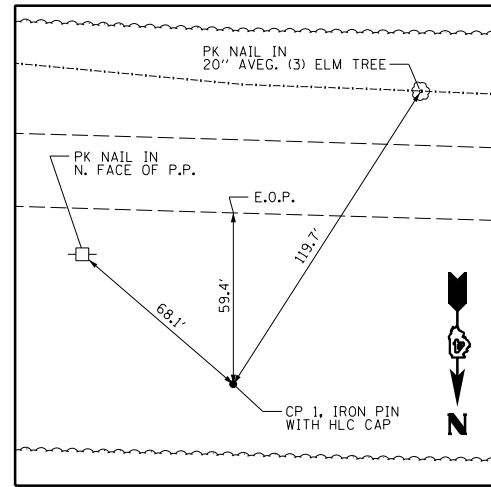
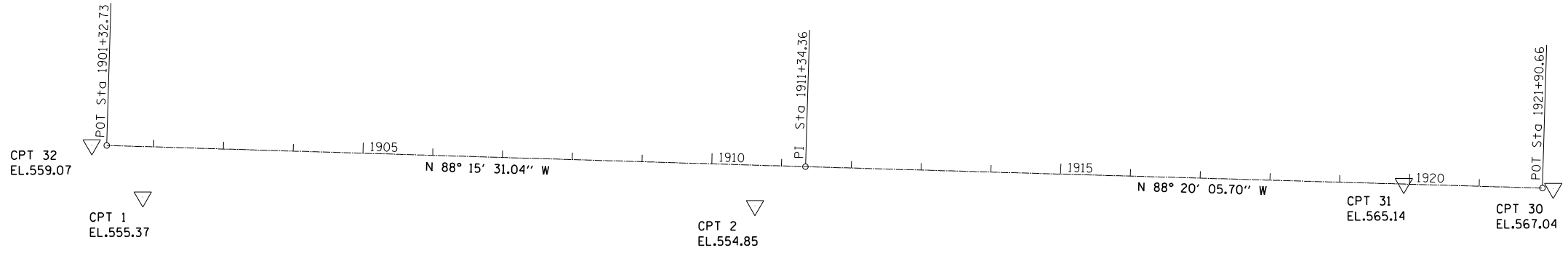
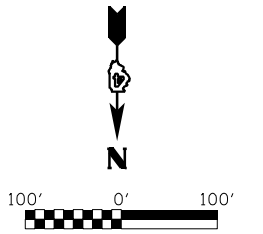
GUARDRAIL SCHEDULE

LOCATION				63000003	63100087	63100167	72501000	78200005
STATION	TO	STATION	OFFSET (FT)	STEEL PLATE BEAM GUARDRAIL TYPE A, 9FT POSTS LENGTH (FT)	TRAFFIC BARRIER TERMINAL TYPE 6A EACH	TRAFFIC BARRIER TERMINAL TYPE 1, (SPECIAL) TANGENT EACH	TERMINAL MARKER DIRECT APPLIED EACH	GR REFLECTORS TY A EACH
1910+19.25			RT				1	2
1910+19.25	TO	1910+56.75	RT			1		
1910+56.75	TO	1911+06.75	RT	50.0				
1911+06.75	TO	1911+46.04	RT		1			
1910+62.22			LT				1	2
1910+62.22	TO	1910+99.72	LT			1		
1910+99.72	TO	1911+39.02	LT		1			
1912+15.53	TO	1912+54.82	LT		1			
1912+54.82	TO	1913+04.82	LT	50.0				
1913+04.82	TO	1913+42.32	LT			1		
1913+42.32			LT				1	2
1912+21.99	TO	1912+61.28	RT		1			
1912+61.28	TO	1912+98.78	RT			1		
1912+98.00			RT				1	2
TOTAL				100.0	4	4	4	8

LOCATION			66700205
STATION	LOCATION		PERMANENT SURVEY MARKERS TY I
1910+00.00	0.00 (POT)		1
1913+00.00	0.00 (POT)		1
048-0094	TOP OF NW WINGWALL		1

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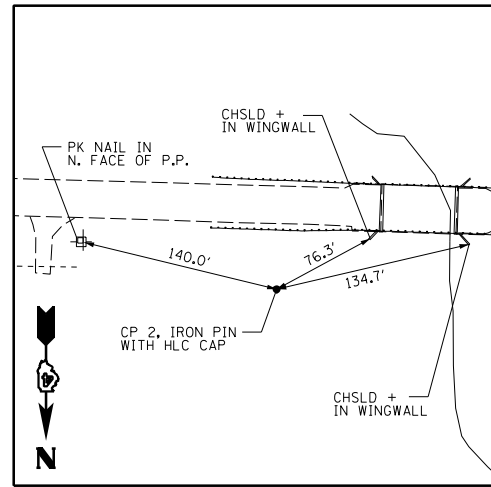
ALIGNMENT COORDINATES - IL 8			
IL 8	STATION	N	E
POT	1901+32.731	1,497,525.54	2,306,235.36
PI	1911+34.361	1,497,555.98	2,305,234.19
POT	1921+90.661	1,497,586.67	2,304,178.33



CONTROL POINT #1
 SET IRON PIN WITH HLC CAP
 STA. 1901+86.59, 72.25' RT.
 N. 1,497,599.387
 E. 2,306,183.723
 ELEV. 555.37

BENCHMARK 17
 ELEV. 558.63

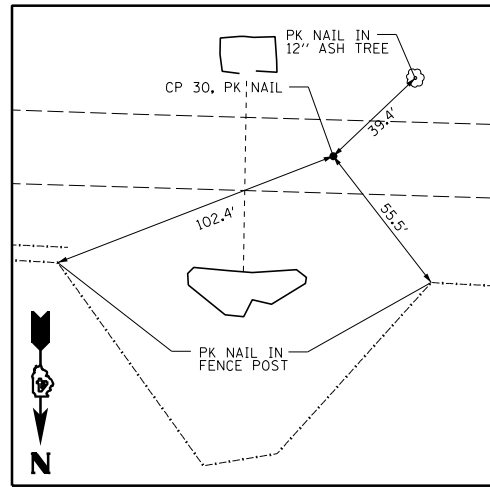
CHISLED SQUARE, ON NORTHEAST WINGWALL OF EXISTING BRIDGE.



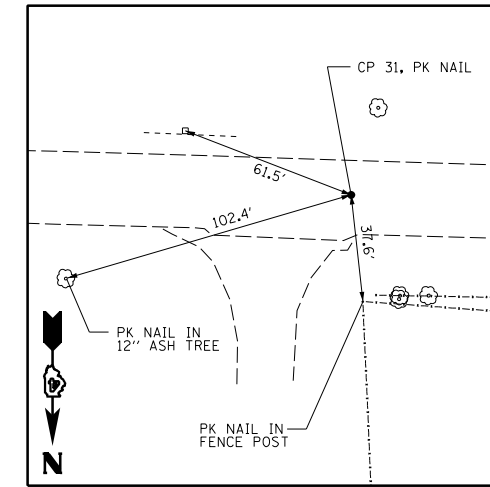
CONTROL POINT #2
 SET IRON PIN WITH HLC CAP
 STA. 1910+63.64, 58.15' RT.
 N. 1,497,611.946
 E. 2,305,306.641
 ELEV. 554.85

BENCHMARK 18
 ELEV. 558.61

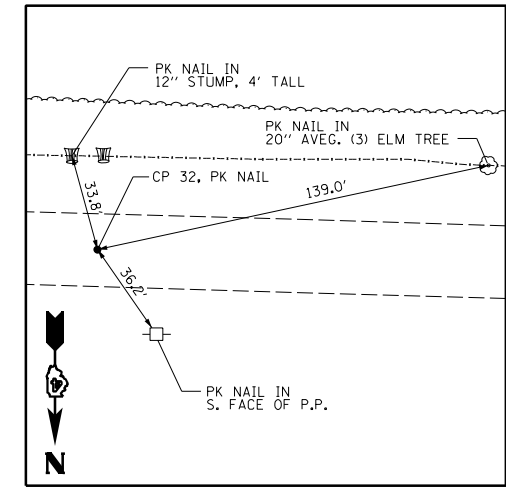
CHISLED SQUARE, ON SOUTHWEST WINGWALL OF EXISTING BRIDGE.



CONTROL POINT #30
 SET P-K NAIL
 STA. 1922+06.11, 0.14' RT.
 N. 1,497,587.256
 E. 2,304,162.900
 ELEV. 567.04



CONTROL POINT #31
 FND P-K NAIL
 STA. 1919+91.86, 0.68' LT.
 N. 1,497,580.209
 E. 2,304,377.033
 ELEV. 565.14



CONTROL POINT #32
 SET P-K NAIL
 STA. 1901+11.39, 0.02' LT.
 N. 1,497,524.913
 E. 2,306,256.687
 ELEV. 559.07

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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

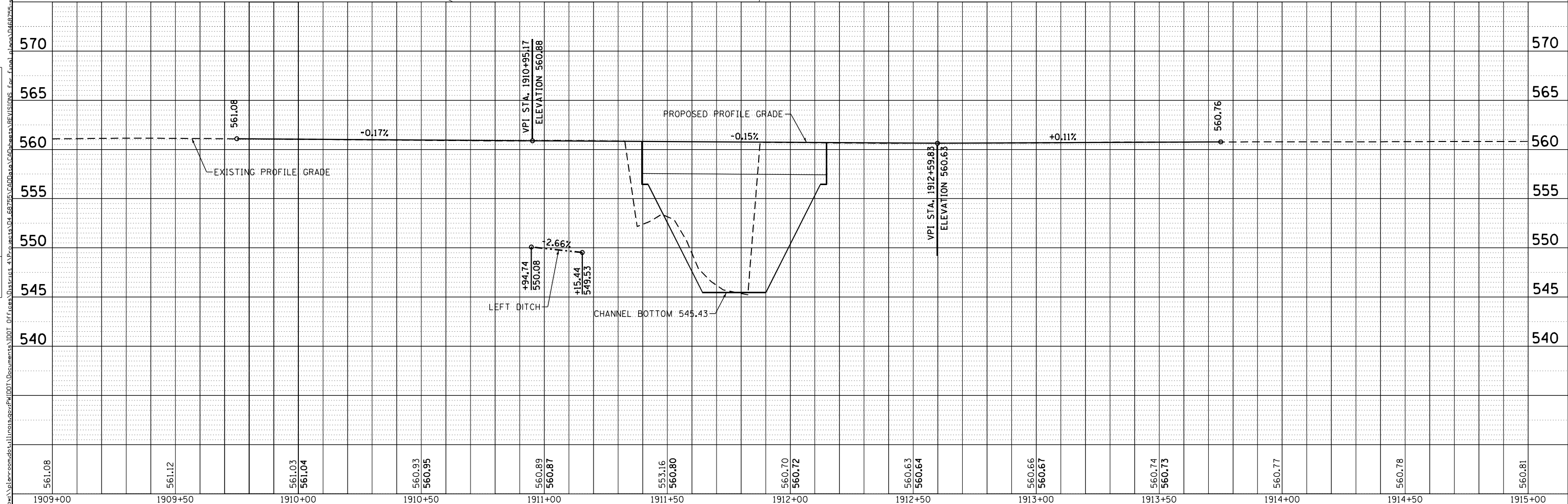
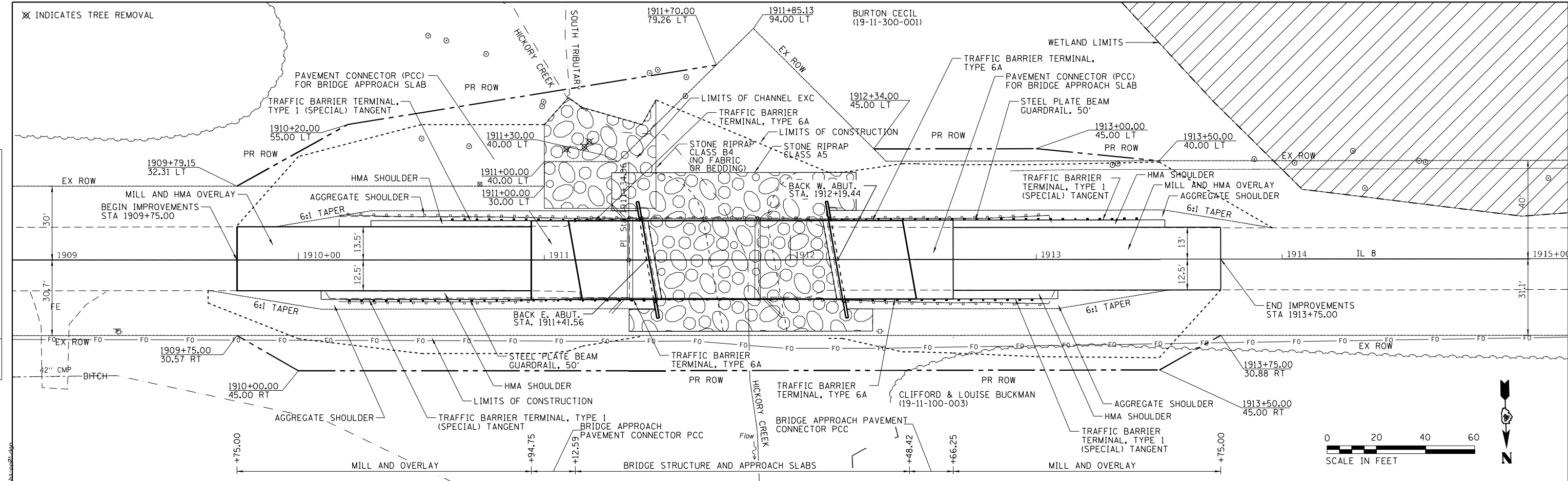
ALIGNMENT, TIES AND BENCHMARKS			
IL 8			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	14
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

FIELD BOOK 5497.02

DATE	
BY	
PLAN	SURVEYED
	NOTED
	CHECKED
	FILE NAME

DATE	
BY	
PROFILE	SURVEYED
	GRADES
	CHECKED
	STRUCTURE
	NOT AT THIS OFFICE



561.08	561.12	561.03 561.04	560.93 560.95	560.89 560.87	553.16 560.80	560.70 560.72	560.63 560.64	560.66 560.67	560.74 560.73	560.77	560.78	560.81
1909+00	1909+50	1910+00	1910+50	1911+00	1911+50	1912+00	1912+50	1913+00	1913+50	1914+00	1914+50	1915+00

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

USER NAME = jacobsmr	DESIGNED -	REVISED -
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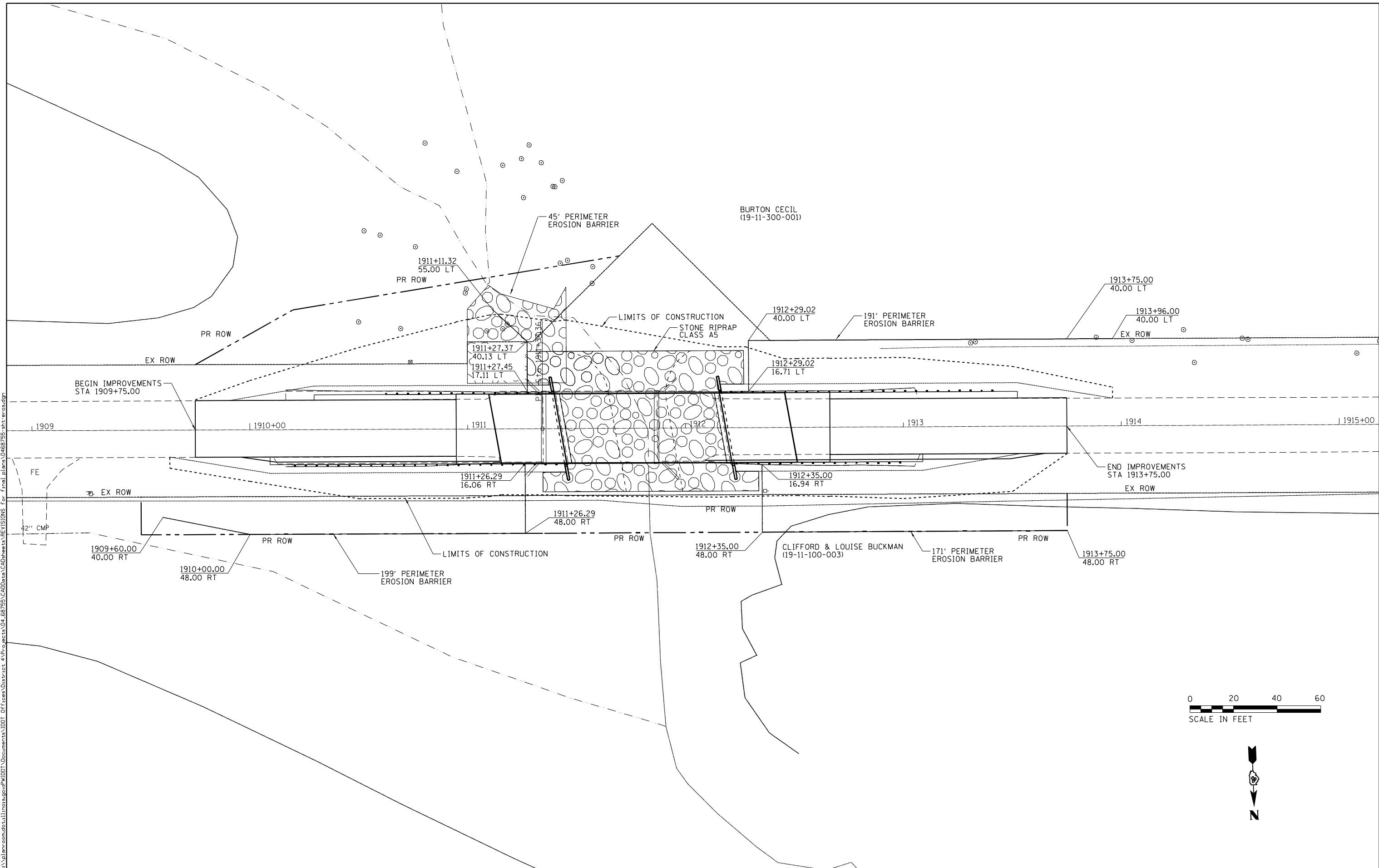
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS RTE 8
PLAN AND PROFILE

SCALE: SHEET OF SHEETS STA. 1909+00.00 TO STA. 1915+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	15
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

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PLOT DATE = 9/3/2020	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EROSION AND SEDIMENT CONTROL
IL 8**

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	16
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

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GENERAL STAGING NOTES

1. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
2. USE AGGREGATE AT DRIVEWAYS AS REQUIRED TO MAINTAIN TEMPORARY ACCESS AND AT THE DIRECTION OF THE ENGINEER.
3. THE CONTRACTOR SHALL REMOVE EXISTING PAVEMENT MARKINGS WHERE REQUIRED TO AVOID CONFLICT WITH TEMPORARY PAVEMENT MARKINGS.
4. ALL REQUIRED TEMPORARY CONSTRUCTION SIGNS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE M.U.T.C.D. THE COST OF FURNISHING, INSTALLING, AND RELOCATING THESE SIGNS WHERE NECESSARY ARE TO BE INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS.
5. A MINIMUM OF FORTY-EIGHT HOURS BEFORE STARTING EXCAVATION THE CONTRACTOR SHALL CALL J.U.L.I.E. (1-800-892-0123) TO HAVE THE LOCATION OF THE EXISTING UTILITIES MARKED. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES.
6. THE CONTRACTORS' OPERATIONS AND TEMPORARY STORAGE ACTIVITIES SHALL BE LIMITED TO THE PUBLIC RIGHT OF WAY. ADDITIONAL STAGING AREAS ADJACENT TO THE PROJECT AREA ARE SUBJECT TO PRIOR APPROVAL OF THE ENGINEER.
7. TEMPORARY CONCRETE BARRIERS WILL BE ANCHORED PER MOST RECENT VERSION OF THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS TO THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION. TEMPORARY CONCRETE BARRIER SHALL BE PINNED WHERE INDICATED ON THE PLANS. TEMPORARY CONCRETE BARRIER LOCATED ON THE BRIDGE DECK SHALL BE RESTRAINED WITH THE RETAINER ASSEMBLY AS DETAILED WITHIN THE STRUCTURAL PLANS.
8. DROP-OFFS SHALL BE LIMITED AS SPECIFIED IN SECTION 701 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
9. TRAFFIC CONTROL SURVEILLANCE SHALL BE REQUIRED AS SPECIFIED IN SECTION 701 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
10. TEMPORARY EROSION CONTROL SEEDING MAY BE REQUIRED PER ARTICLE 280 OF THE SSRB, APPLICABLE SECTIONS OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY REGULATIONS, OR AS DIRECTED BY THE ENGINEER. TEMPORARY SEEDING SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR TEMPORARY EROSION CONTROL SEEDING. THE CONTRACTOR MAY PLACE PERMANENT SEEDING ON DISTURBED AREAS PER ARTICLE 250 OF THE SSRB FOLLOWING ANY WORK STAGE WHERE FURTHER DISTURBANCE OF THE SOIL IS UNLIKELY.

TEMPORARY TRAFFIC SIGNAL NOTES

1. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH STANDARD 701321, EXCEPT WHERE MODIFIED IN THE PLANS AND SPECIAL PROVISIONS, OR AS DIRECTED BY THE ENGINEER.
2. TWO PHASE SIGNAL OPERATION IS REQUIRED. THE ENGINEER OF TRAFFIC SHALL APPROVE ALL TIMING PARAMETERS. A MINIMUM OF FORTY-EIGHT HOURS PRIOR TO SIGNAL ACTIVATION, THE CONTRACTOR SHALL CONTACT THE DISTRICT 4 TRAFFIC SIGNAL TECHNICIAN AT (309) 671-4474.
3. THE CONTRACTOR SHALL INSTALL A CONVENTIONAL TRAFFIC SIGNAL INSTALLATION THAT HAS ALL OF THE REQUIRED FUNCTIONALITY DESCRIBED WITHIN THE CONTRACT PLANS AND SPECIAL PROVISIONS.
4. THE CONTRACTOR SHALL INSTALL ADVANCED DETECTOR LOOPS FOR BOTH MAINLINE APPROACHES FOR USE WITH THE TEMPORARY TRAFFIC SIGNALS IN ACCORDANCE WITH HIGHWAY STANDARD 701321. THE BUREAU OF OPERATION SHALL APPROVE THE DETECTOR LOOP LOCATIONS PRIOR TO INSTALLATION. THE CONTRACTOR MAY ELECT TO UTILIZE MICROWAVE DETECTION.
5. ALL TRAFFIC SIGNAL SECTIONS SHALL HAVE 12" DIAMETER LED LENSES.
6. THE TEMPORARY TRAFFIC SIGNAL HEADS SHALL BE PLACED AT THE LOCATIONS INDICATED ON THE PLAN SHEETS OR AS DIRECTED BY THE ENGINEER.
7. THE CONTRACTOR SHALL FURNISH AND INSTALL A TEMPORARY ELECTRICAL SERVICE FOR THE TRAFFIC SIGNALS. THE CONTRACTOR SHALL PROVIDE ELECTRICAL CABLE, WOOD POLES, SERVICE DISCONNECT, AND ALL OTHER ITEMS REQUIRED FOR THE TEMPORARY SERVICE INSTALLATION. THE CONTRACTOR SHALL FIELD VERIFY THE DISTANCE FROM THE TEMPORARY TRAFFIC SIGNALS TO THE TEMPORARY ELECTRICAL SERVICE PRIOR TO BIDDING.
8. TEMPORARY TRAFFIC SIGNAL HEADS SHALL HAVE A YELLOW, RETRO-REFLECTIVE BACKPLATE.
9. TEMPORARY PORTABLE SIGNALS SHALL BE ALLOWED.

STAGE 1A CONSTRUCTION OF NORTH SIDE

1. USE TRAFFIC CONTROL STANDARDS 701001, 701006, 701201, AND 701306 AS NEEDED AND APPLICABLE.
2. WIDEN EXISTING NORTH EMBANKMENT PER PLAN AND INSTALL TEMPORARY PAVEMENT WIDENING. PAVEMENT WIDENING SHALL BE COMPLETED IN ONE DAY TO PREVENT DROPOFF.

STAGE 1B CONSTRUCTION OF SOUTH SIDE

1. INSTALL SIGNS, TEMPORARY RUMBLE STRIPS, TEMPORARY SIGNALS, BARRICADES, TEMPORARY CONCRETE BARRIER, TEMPORARY IMPACT ATTENUATORS, WALL REFLECTORS, AND TEMPORARY PAVEMENT MARKINGS PER STANDARD 701321-17 OR AS DIRECTED BY THE ENGINEER.
2. EXISTING GUARDRAIL ON NORTH SIDE TO REMAIN IN PLACE DURING STAGE 1 CONSTRUCTION.
3. REMOVE EXISTING GUARDRAIL, SHOULDERS, PAVEMENT, AND STRUCTURE ON SOUTH SIDE.
4. CONSTRUCT THE SOUTH SIDE OF THE PROPOSED STRUCTURE AS SHOWN ON THE PLANS.
5. WIDEN EMBANKMENT AND CONSTRUCT BRIDGE APPROACHES, CONNECTORS, AND GUARDRAIL LOCATED ON THE SOUTH SIDE AS SHOWN ON THE PLANS.
6. CONSTRUCT FULL-DEPTH SHOULDER STRUCTURE, EXCEPT FOR THE SURFACE COURSE, AND AGGREGATE SHOULDER.

PRE-STAGE 2 RECONFIGURE TRAFFIC FOR STAGE 2

1. REMOVE STAGE 1 TRAFFIC CONFIGURATION AND INSTALL STAGE 2 SIGNS, TEMPORARY RUMBLE STRIPS, TEMPORARY SIGNALS, BARRICADES, TEMPORARY CONCRETE BARRIER, TEMPORARY IMPACT ATTENUATORS, WALL REFLECTORS, AND TEMPORARY PAVEMENT MARKINGS PER STANDARD 701321-17 OR AS DIRECTED BY THE ENGINEER.

STAGE 2 CONSTRUCTION OF NORTH SIDE

1. REMOVE EXISTING GUARDRAIL, SHOULDERS, PAVEMENT, AND STRUCTURE ON NORTH SIDE.
2. CONSTRUCT THE NORTH SIDE OF THE PROPOSED STRUCTURE AS SHOWN ON THE PLANS.
3. WIDEN EMBANKMENT AND CONSTRUCT BRIDGE APPROACHES, CONNECTORS, AND GUARDRAIL LOCATED ON THE NORTH SIDE AS SHOWN ON THE PLANS.
4. CONSTRUCT FULL-DEPTH SHOULDER STRUCTURE, EXCEPT FOR THE SURFACE COURSE, AND AGGREGATE SHOULDERS.

STAGE 3 PAVEMENT IMPROVEMENTS

1. REMOVE STAGE 2 TRAFFIC CONFIGURATION AND TEMPORARY CONCRETE BARRIER AND TEMPORARY IMPACT ATTENUATORS.
2. COMPLETE REMAINING ELEMENTS OF PAVEMENT IMPROVEMENTS, INCLUDING MILLING AND OVERLAY OF EASTBOUND AND WESTBOUND PAVEMENT AND SHOULDER SURFACE COURSE.
3. FINAL CHANNEL EXCAVATION AND PLACE RIP RAP.
4. FINAL PAVEMENT STRIPING PER STANDARD 780001-05 AND DISTRICT STANDARD 780001-D4.
5. CLEAN UP CONSTRUCTION RESIDUE AND DEBRIS. FINAL SEEDING.
6. TRAFFIC CONTROL STANDARD 701311-03 AND FLAGGERS MAY BE USED DURING STAGE 3 PAVING OPERATIONS IN LIEU OF TEMPORARY TRAFFIC SIGNALS, PROVIDED FLAGGERS MAINTAIN VISUAL AND RADIO CONTACT. FLAGGERS SHALL MAINTAIN A CLEAR LINE OF SIGHT AT ALL TIMES.

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

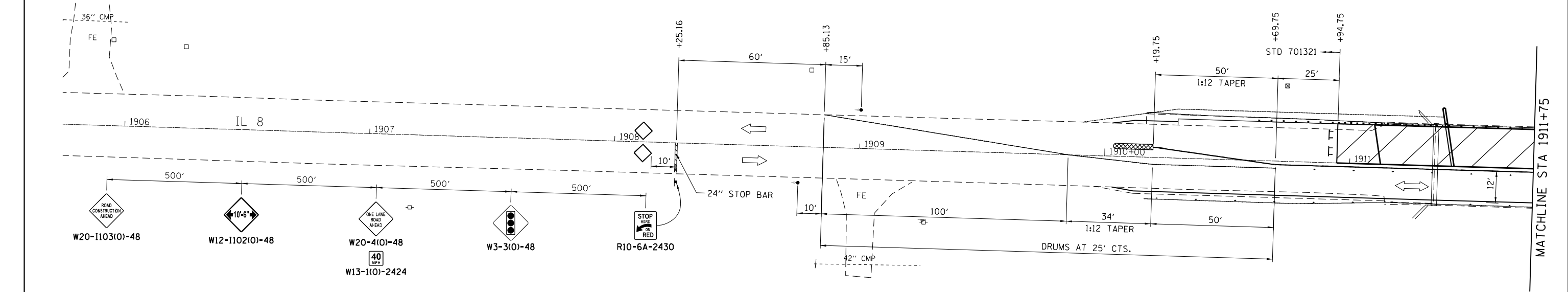
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**MAINTENANCE OF TRAFFIC - NOTES
IL 8**

SCALE: SHEET 1 OF 5 SHEETS STA. TO STA.

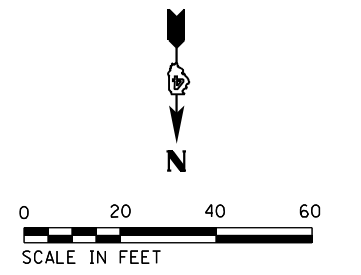
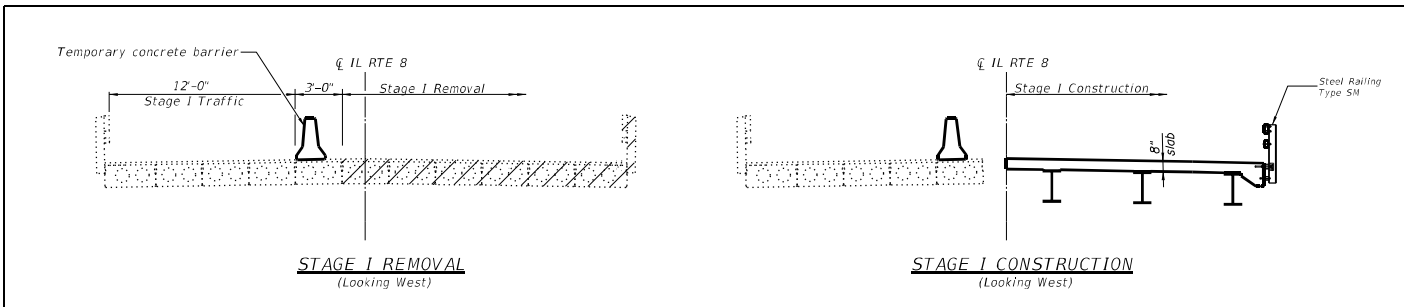
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	17
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				



STAGE 1B

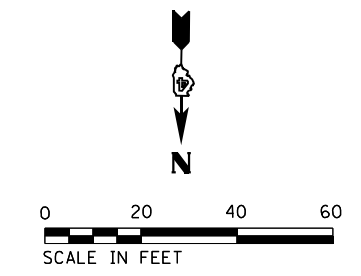
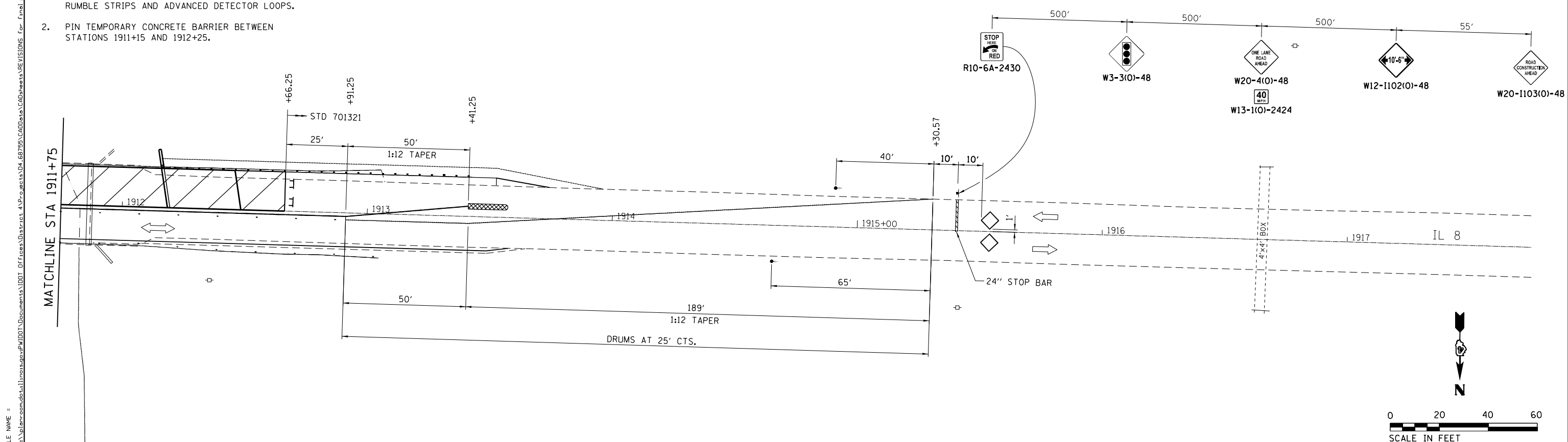
EB SIDE:
 STD 701321 LANE CLOSURE, 2W, 2L, BRIDGE REPAIR WITH BARRIER

WB SIDE:
 DEMOLISH SOUTH 1/2 OF EXISTING BRIDGE AND REMOVE PAV'T CONNECTOR.
 CONSTRUCT NEW BRIDGE, APPROACH SLABS, AND PAV'T CONNECTOR.
 WIDEN EMBANKMENT AND PLACE FULL-DEPTH SHOULDER,
 AGGREGATE SHOULDER, AND GUARDRAILS.



NOTE:

- SEE STARDARD 701321 FOR LOCATION OF TEMPORARY RUMBLE STRIPS AND ADVANCED DETECTOR LOOPS.
- PIN TEMPORARY CONCRETE BARRIER BETWEEN STATIONS 1911+15 AND 1912+25.



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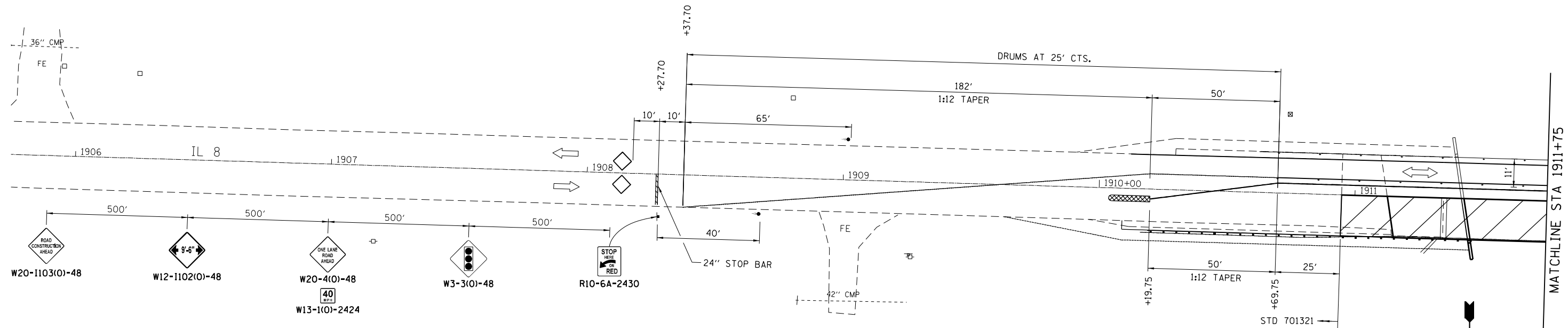
CHASTAIN & ASSOCIATES LLC
 CONSULTING ENGINEERS
 184-001397

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PLOT DATE = 1/24/2020		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - STAGE 1B
IL 8
 SCALE: SHEET 3 OF 5 SHEETS STA. 1906+00 TO STA. 1917+00

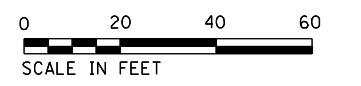
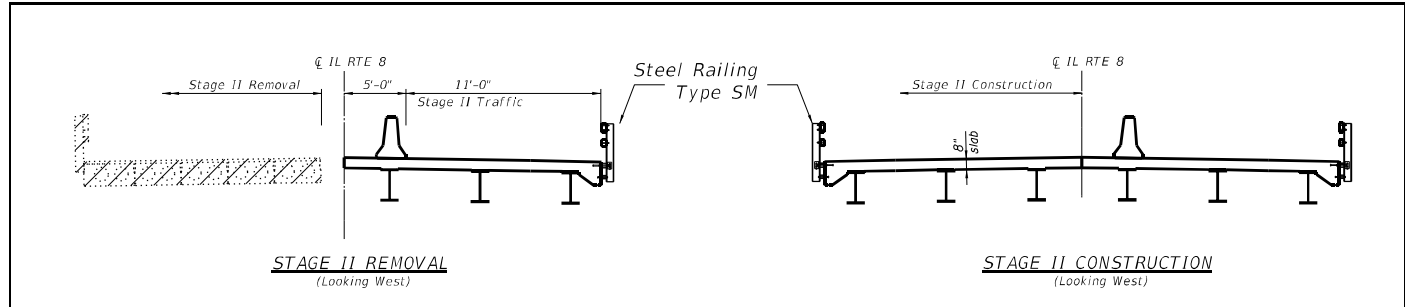
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CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				



STAGE 2

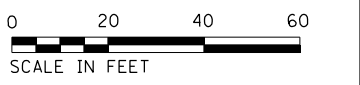
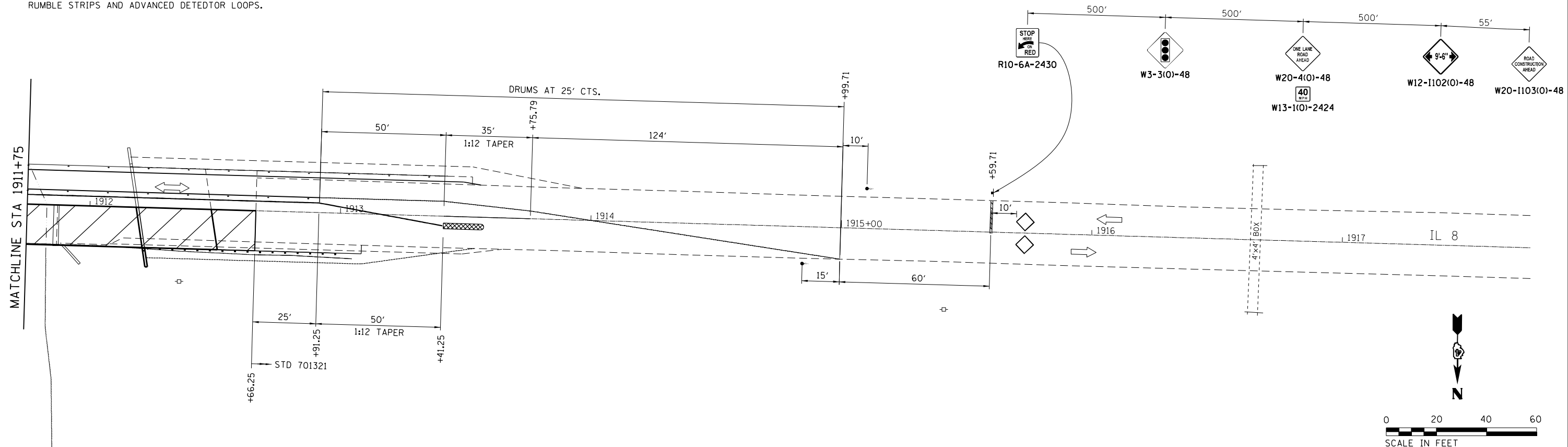
STD 701321 LANE CLOSURE, 2W, 2L, BRIDGE REPAIR WITH BARRIER

EB SIDE:
 DEMOLISH NORTH 1/2 OF EXISTING BRIDGE.
 CONSTRUCT NEW BRIDGE, APPROACH SLABS, AND PAV'T CONNECTOR.
 WIDEN FILL AND PLACE FULL-DEPTH SHOULDER,
 AGGREGATE SHOULDER, AND GUARDRAILS.



NOTE:

- SEE STARDARD 701321 FOR LOCATION OF TEMPORARY RUMBLE STRIPS AND ADVANCED DETEDTOR LOOPS.



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 184-001397

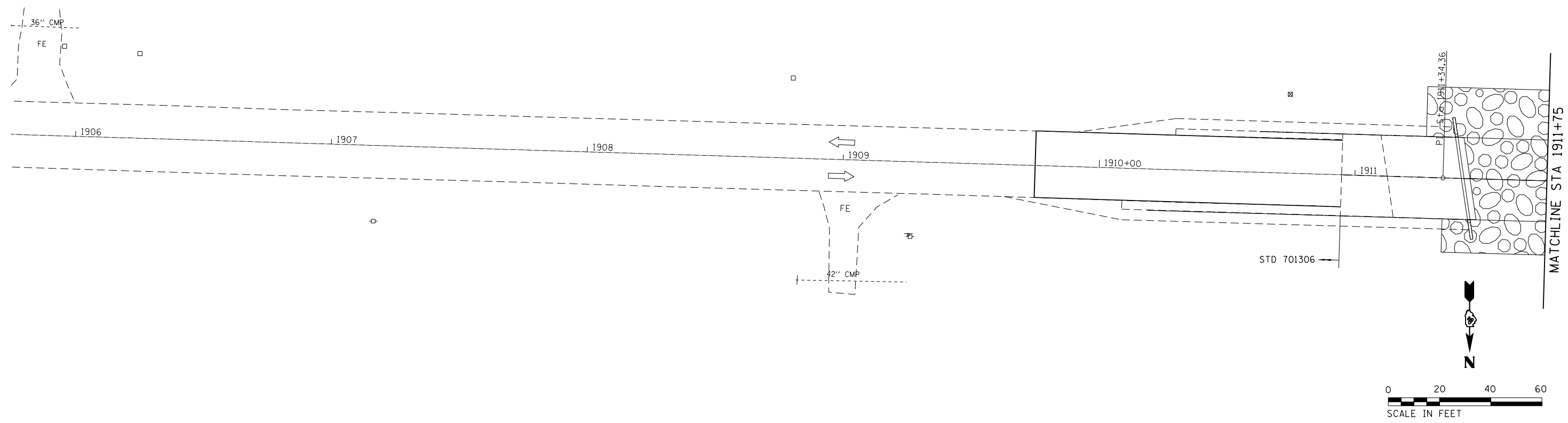
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PLOT DATE = 1/24/2020		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC - STAGE 2
IL 8
 SCALE: SHEET 4 OF 5 SHEETS STA. 1906+00 TO STA. 1917+00

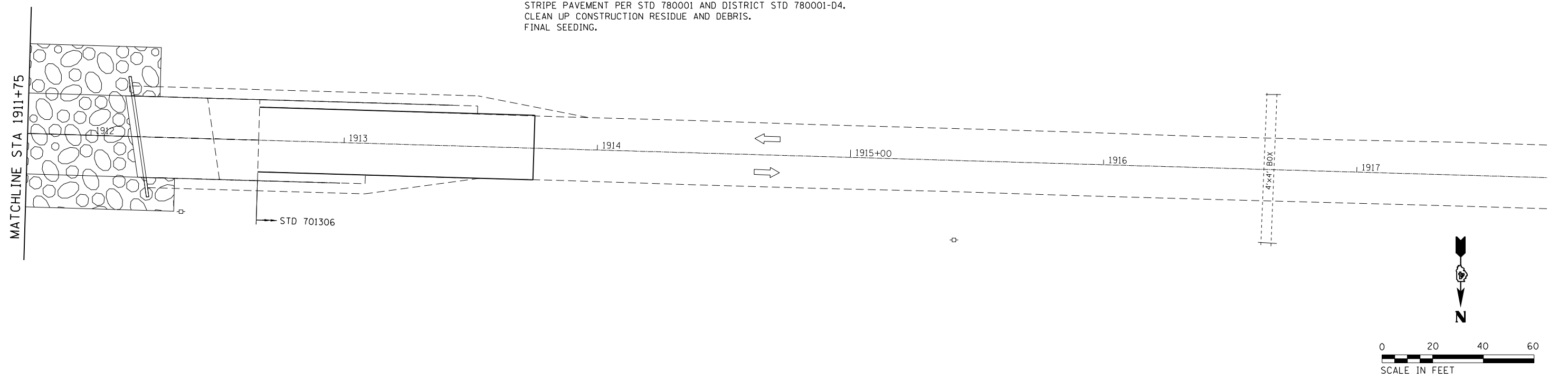
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CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

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STAGE 3

REMOVE CENTER BARRIER AND STD 701321
 USE STD 701306 LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS FOR SPEEDS > 45MPH
 MILL & OVERLAY EB & WB PAVEMENT AND FULL-DEPTH SHOULDERS. TEMPORARY RAMPS SHALL BE USED IF TRAFFIC IS OPENED ON MILLED SURFACE.
 FINAL CHANNEL EXCAVATION AND PLACE RIP RAP.
 STRIPE PAVEMENT PER STD 780001 AND DISTRICT STD 780001-D4.
 CLEAN UP CONSTRUCTION RESIDUE AND DEBRIS.
 FINAL SEEDING.



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 CONSULTING ENGINEERS
 184-001397

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PLOT DATE = 1/27/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MAINTENANCE OF TRAFFIC- STAGE 3	
IL 8	
SCALE:	SHEET 5 OF 5 SHEETS STA. 1906+00 TO STA. 1917+00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	21
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

BM 17: Chiseled square on northeast wing wall on existing bridge carrying IL 8 over Hickory Creek. Elev 558.64

BM 18: Chiseled square on southwest wing wall on existing bridge carrying IL 8 over Hickory Creek. Elev 558.62

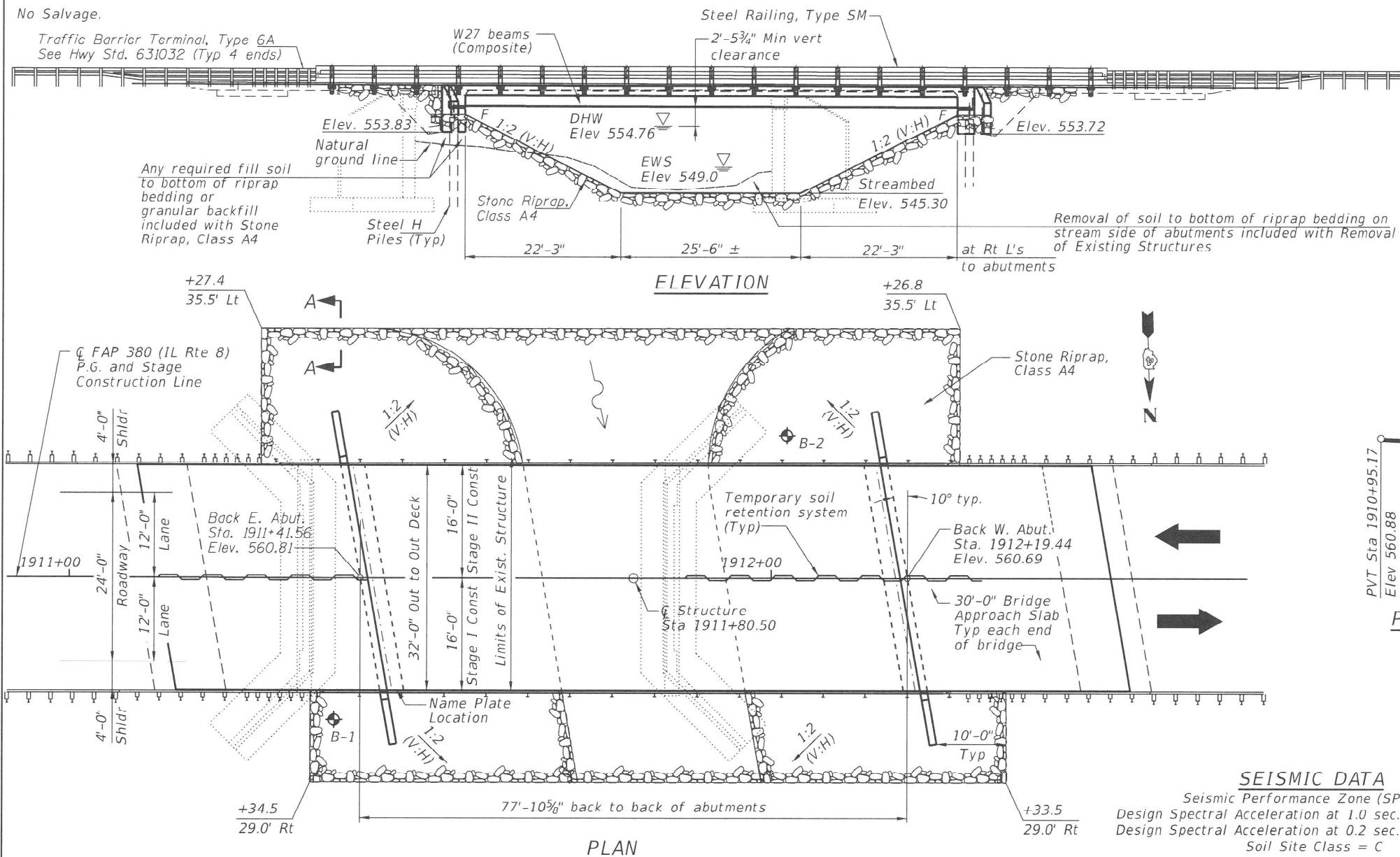
Existing Structure (SN 048-0017):

Single span PPC deck beam superstructure on closed abutments on spread footings supported by untreated timber piling. The structure length is 52.8' back to back abutments and the width is 33.0' out to out.

Traffic will be maintained using staged construction. The existing staging details are based on inspection data from November 2015. The ability of the existing PPC deck beams to carry stage traffic loads shall be re-verified during the construction phase based on the most recent inspection data available at that time.

No Salvage.

Traffic Barrier Terminal, Type 6A
See Hwy Std. 631032 (Typ 4 ends)

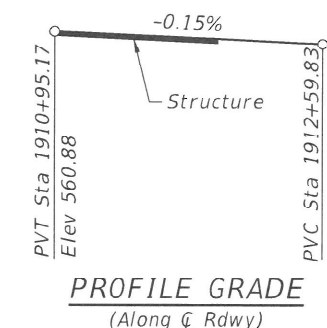
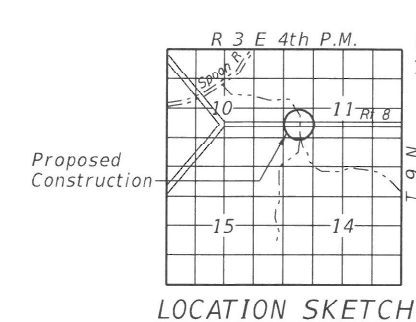


INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 General Data
- 3 Stage Construction Details
- 4 Temporary Concrete Barrier for Stage Construction
- 5-6 Top of Slab Elevations
- 7 Top of Slab Elevations East Approach
- 8 Top of Slab Elevations West Approach
- 9 Superstructure
- 10 Diaphragm Details
- 11-12 Bridge Approach Slab Details
- 13 Steel Railing, Type SM
- 14 Framing Plan and Girder Elevations
- 15 Structural Steel Details
- 16 East Abutment
- 17 West Abutment
- 18 HP Pile Data
- 19 Bar Splicer Assembly Details
- 20 Boring Logs

STATION 1911+80.50
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. ROUTE 380 SEC 44BR-1
LOADING HL-93
STRUCTURE NO. 048-0094

NAME PLATE
See Std. 515001



SEISMIC DATA
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.076g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.122g
Soil Site Class = C

APPROVED
For Structural Adequacy Only
Carl King
Engineer of Bridges & Structures

DATE SIGNED : 10/22/21
LIC. EXP. DATE : 11/30/2022

DESIGN SPECIFICATIONS
2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2016 Interims

DESIGN STRESSES
FIELD UNITS
f'c = 3,500 psi
f'c = 5,000 psi (Superstructure concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

LOADING HL-93
Allow 50#/sq. ft. for future wearing surface.

WATERWAY INFORMATION

Drainage Area = 9.05 sq mi Exist Low Grade Elev. 559.38 @ Sta. 1901+75
Prop Low Grade Elev. 559.38 @ Sta. 1901+75

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft. Headwater El.			
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	1,700	265	383	554.25	1.14	1.09	555.39	555.34
Base	100	3,150	299	426	554.93	2.19	1.73	557.12	556.66
Overtop Exist	180	3,540	305	-	555.06	2.63	-	557.69	-
Overtop Prop	238	3,720	-	438	555.12	-	2.02	-	557.14
Max. Calc.	500	4,240	315	447	555.26	3.48	2.32	558.74	557.58

10 year velocity through existing bridge = 5.76 fps
10 year velocity through proposed bridge = 3.67 fps

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)			Item 113
	E. Abut.	W. Abut.	Item 113	
Q100	553.83	553.72		8
Q200	553.83	553.72		
Design	553.83	553.72		
Check	553.83	553.72		

GENERAL PLAN AND ELEVATION
IL ROUTE 8 OVER
HICKORY CREEK
F.A.P. ROUTE 380
SECTION 44BR-1
KNOX COUNTY
STATION 1911+80.50
STRUCTURE NUMBER 048-0094

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DESIGNED: KEF
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 048-0094

SHEET 1 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	22

CONTRACT NO. 68755

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 3/4-in. Ø, holes 15/16-in. Ø, unless otherwise noted.

Calculated weight of Structural Steel = 88,630 lbs (M270 Grade 50)

Calculated weight of Structural Steel = 4,450 lbs (M270 Grade 36)

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia beams, masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Blue, Munsell No. 10B 3/6.

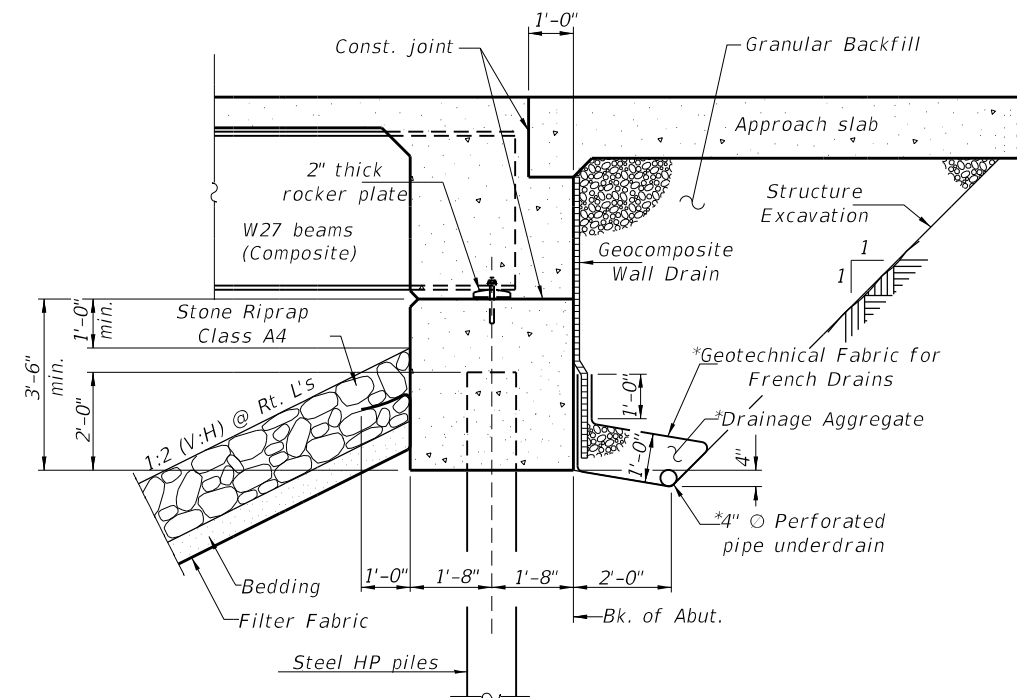
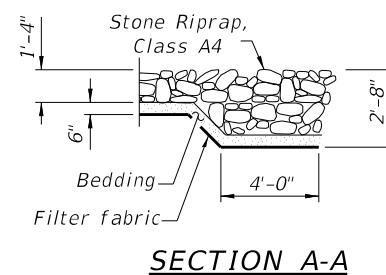
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure. The Contractor shall sawcut the upper portion of the existing abutment at the stage removal line before Stage 1 removal to ensure the remaining portion will not be prematurely damaged.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		632	632
Filter Fabric	Sq. Yd.		632	632
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		158	158
Concrete Structures	Cu. Yd.		56.3	56.3
Concrete Superstructure	Cu. Yd.	87.9		87.9
Bridge Deck Grooving	Sq. Yd.	453		453
Protective Coat	Sq. Yd.	483		483
Concrete Superstructure (Approach Slab)	Cu. Yd.	90.0		90.0
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1,260		1,260
Reinforcement Bars, Epoxy Coated	Pound	50,740	9,630	60,370
Bar Splicers	Each	444	100	544
Steel Railing, Type SM	Foot	212		212
Furnishing Steel Piles, HP 12X63	Foot		285	285
Driving Piles	Foot		285	285
Test Pile Steel HP 12X63	Each		2	2
Name Plates	Each	1		1
Anchor Bolts, 1"	Each		24	24
Temporary Soil Retention System	Sq. Ft.		544	544
Geocomposite Wall Drain	Sq. Yd.		57	57
Granular Backfill for Structures	Cu. Yd.		97	97
Asbestos Bearing Pad Removal	Each	22		22
Pipe Underdrains for Structures 4"	Foot		121	121



SECTION THRU INTEGRAL ABUTMENT

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

*Included in the cost of Pipe Underdrains for Structures 4". See Special Provisions.

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 Art. 601.05 of the Standard Specifications and Highway Standard 601101.)

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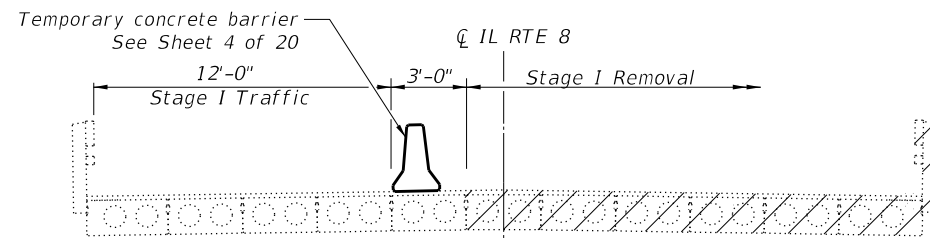
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

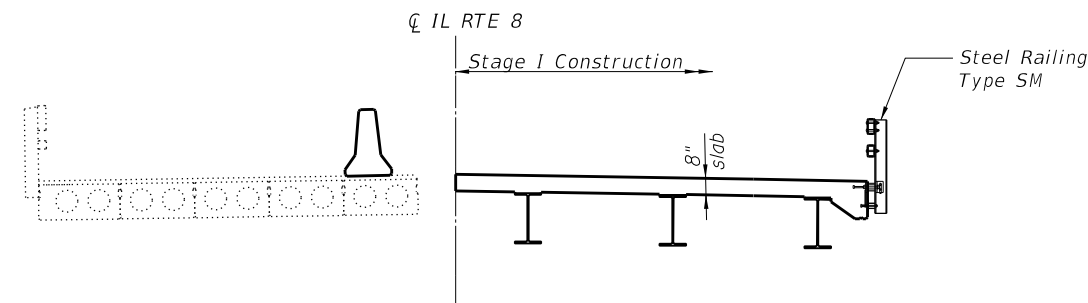
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STRUCTURE NO. 048-0094**

SHEET 2 OF 20 SHEETS

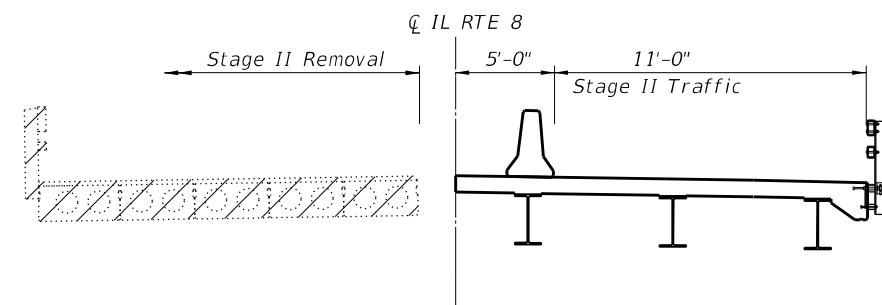
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	23
CONTRACT NO. 68755				
		ILLINOIS	FED. AID PROJECT	



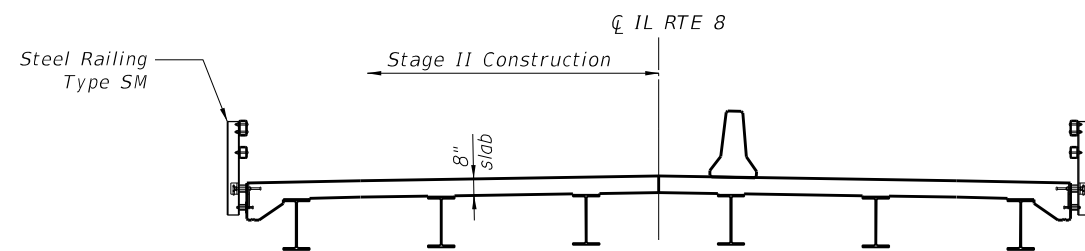
STAGE I REMOVAL
(Looking West)



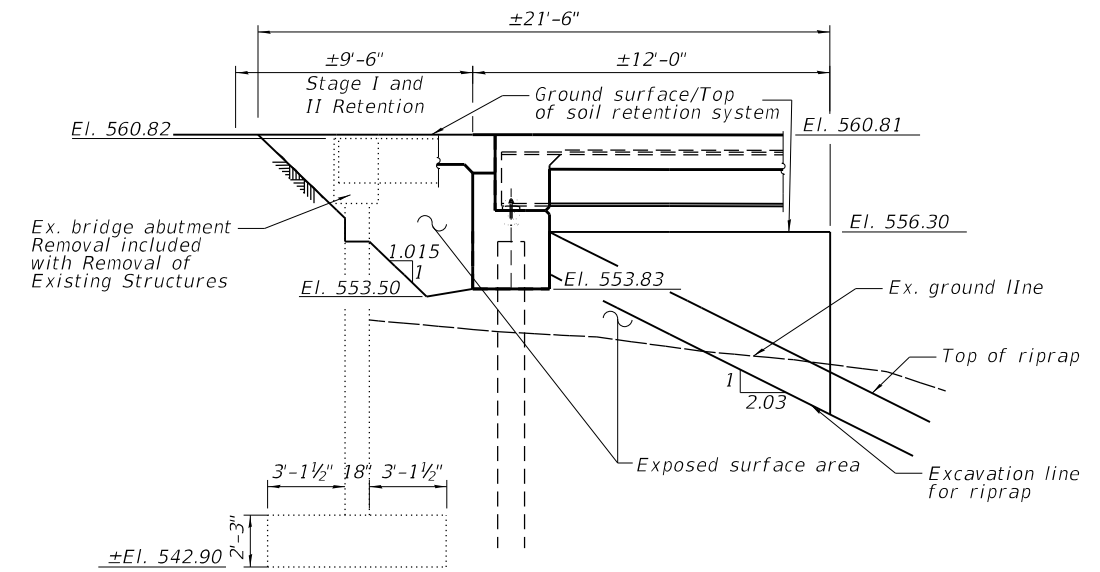
STAGE I CONSTRUCTION
(Looking West)



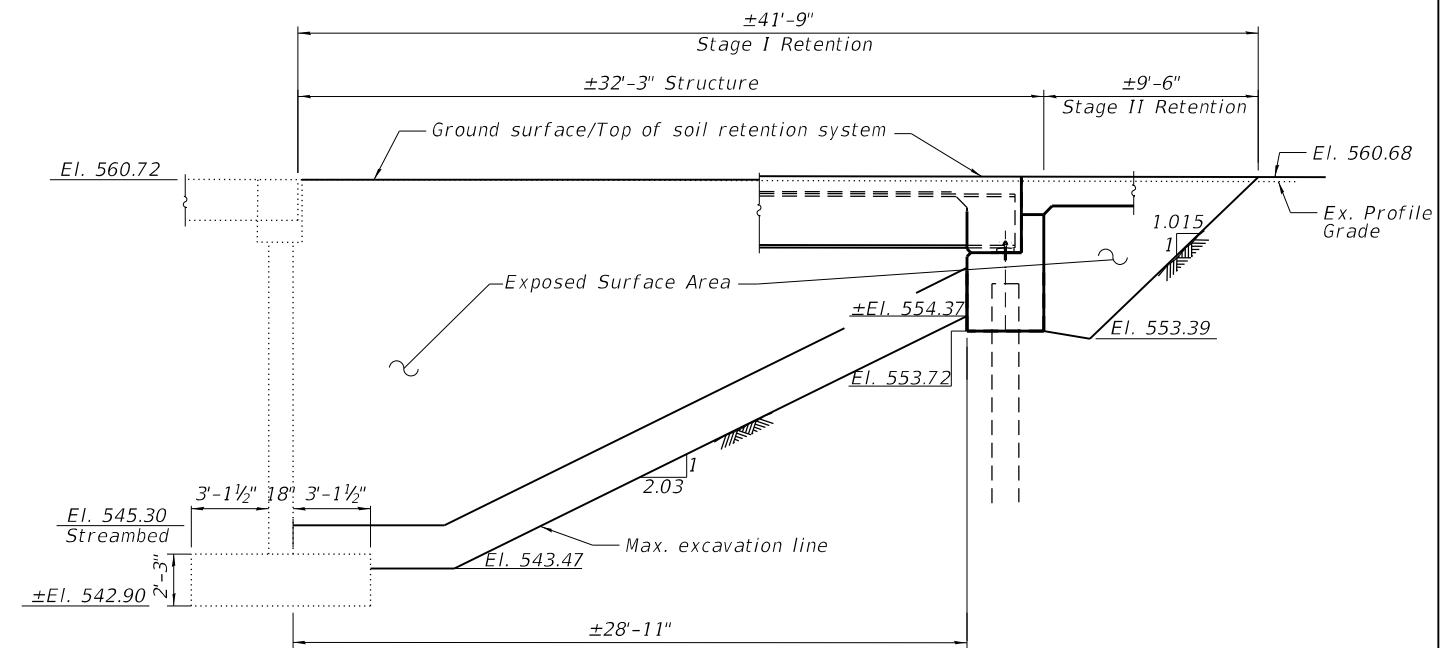
STAGE II REMOVAL
(Looking West)



STAGE II CONSTRUCTION
(Looking West)



TEMPORARY SOIL RETENTION SYSTEM
(East Abutment)



TEMPORARY SOIL RETENTION SYSTEM
(West Abutment)

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

The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Soil Retention System.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 048-0094

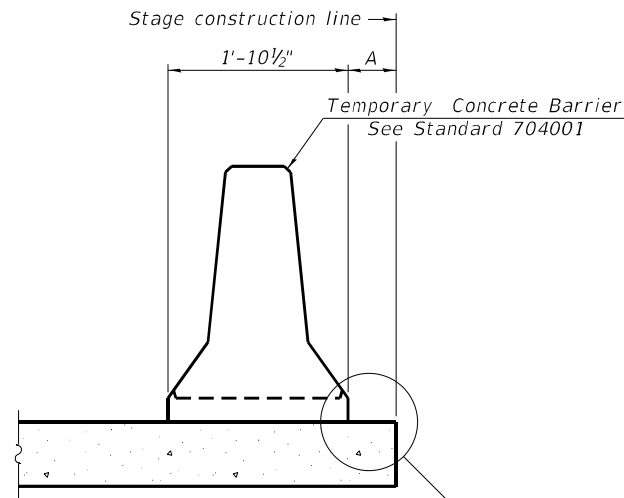
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	24
CONTRACT NO. 68755				

SHEET 3 OF 20 SHEETS

ILLINOIS FED. AID PROJECT

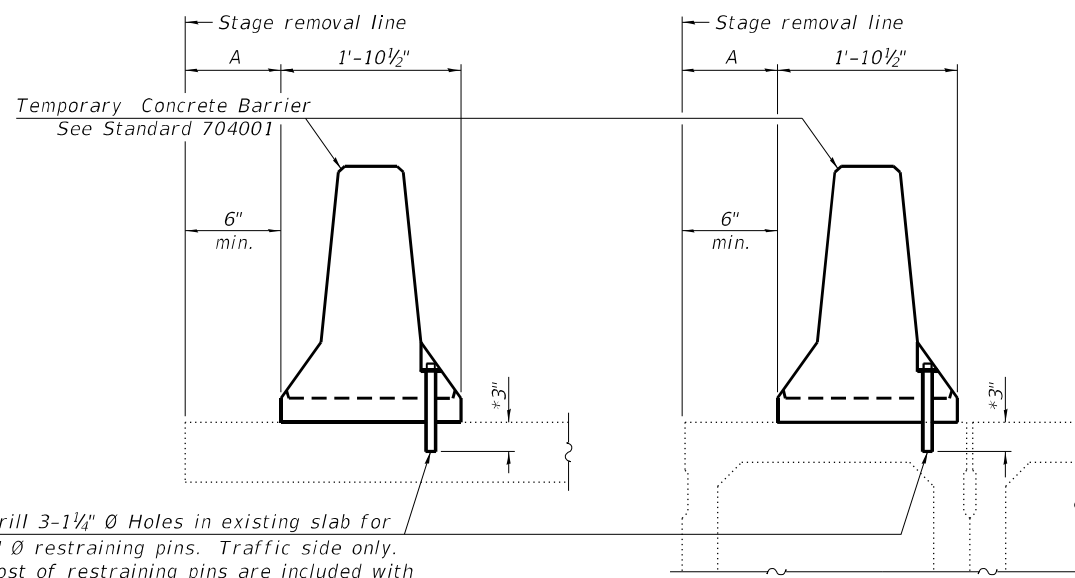


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PLOT DATE =	DRAWN - BKR	REVISED -
	CHECKED - DDB	REVISED -



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM

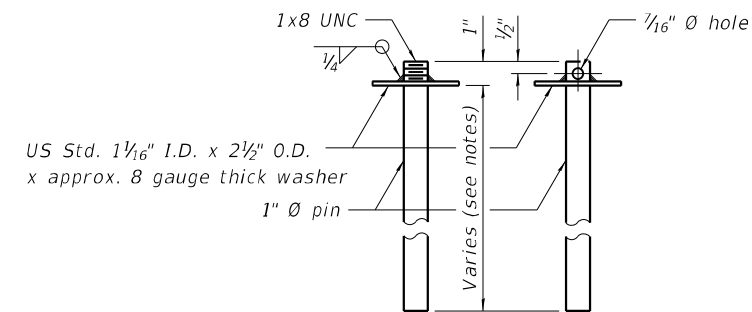


Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

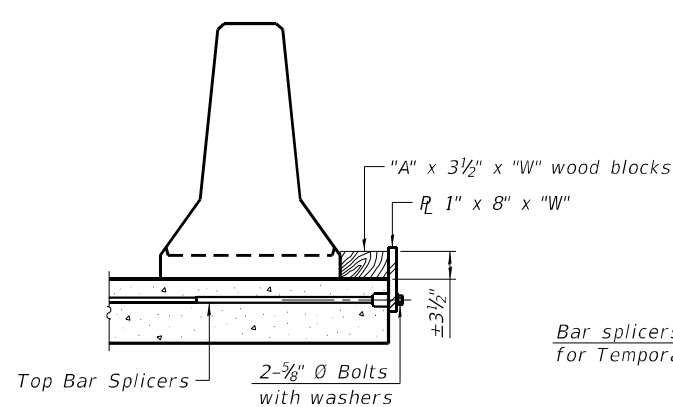
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

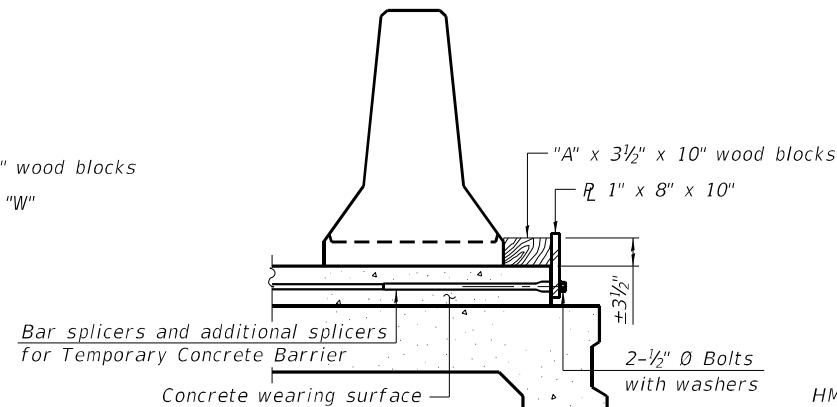


RESTRAINING PIN

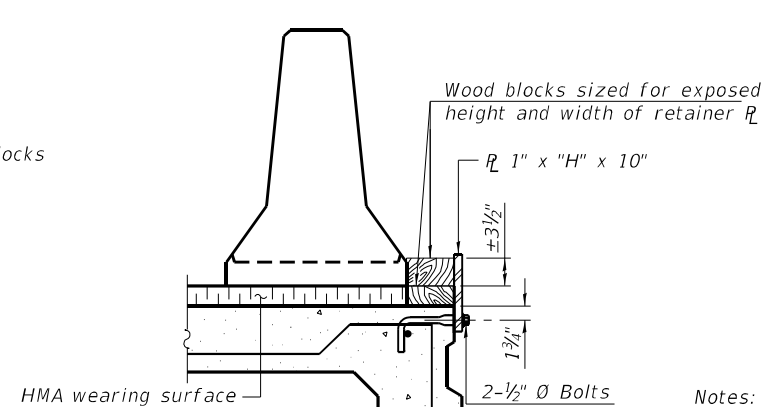
SECTIONS THRU SLAB OR DECK BEAM



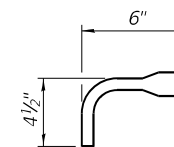
DETAIL I



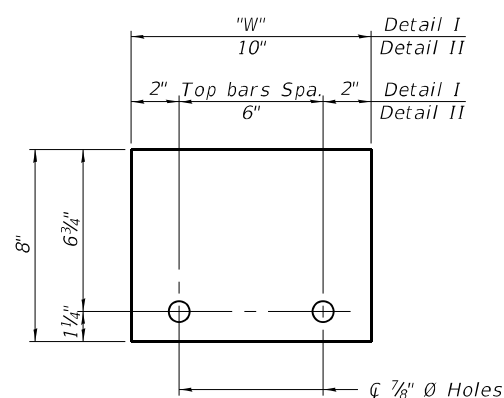
DETAIL II



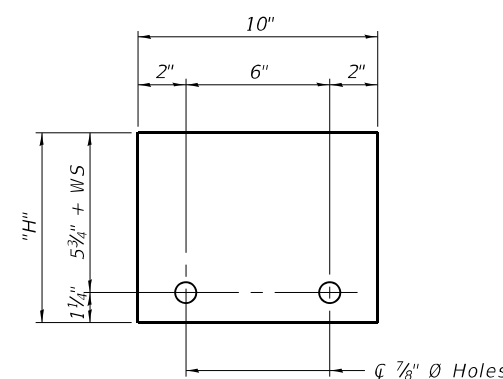
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W" (Detail I and II)



STEEL RETAINER R 1" x "H" x 10" (Detail III)

Notes:
 Cost of retainer assembly is included with Temporary Concrete Barrier.
 A retainer assembly shall be located at the approximate $\frac{1}{2}$ of each temporary concrete barrier.
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6' to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.
 Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.
 Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27 10-12-2021



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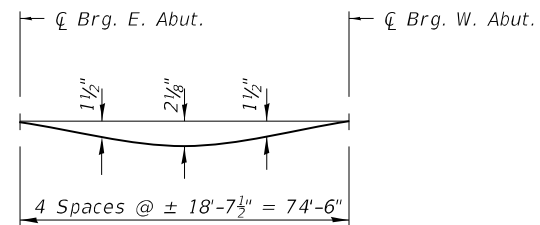
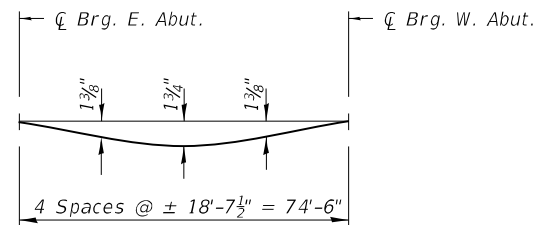
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 048-0094

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	25
CONTRACT NO. 68755				

SHEET 4 OF 20 SHEETS

ILLINOIS FED. AID PROJECT

MODEL: Default
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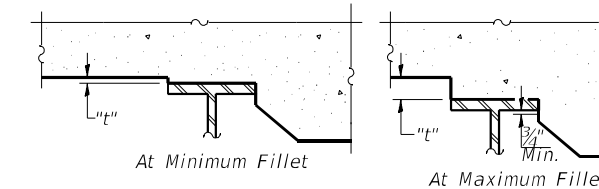
DEAD LOAD DEFLECTION DIAGRAM INT. GIRDER
(Includes weight of concrete only.)

DEAD LOAD DEFLECTION DIAGRAM EXT. GIRDER
(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 5 and 6 of 20.

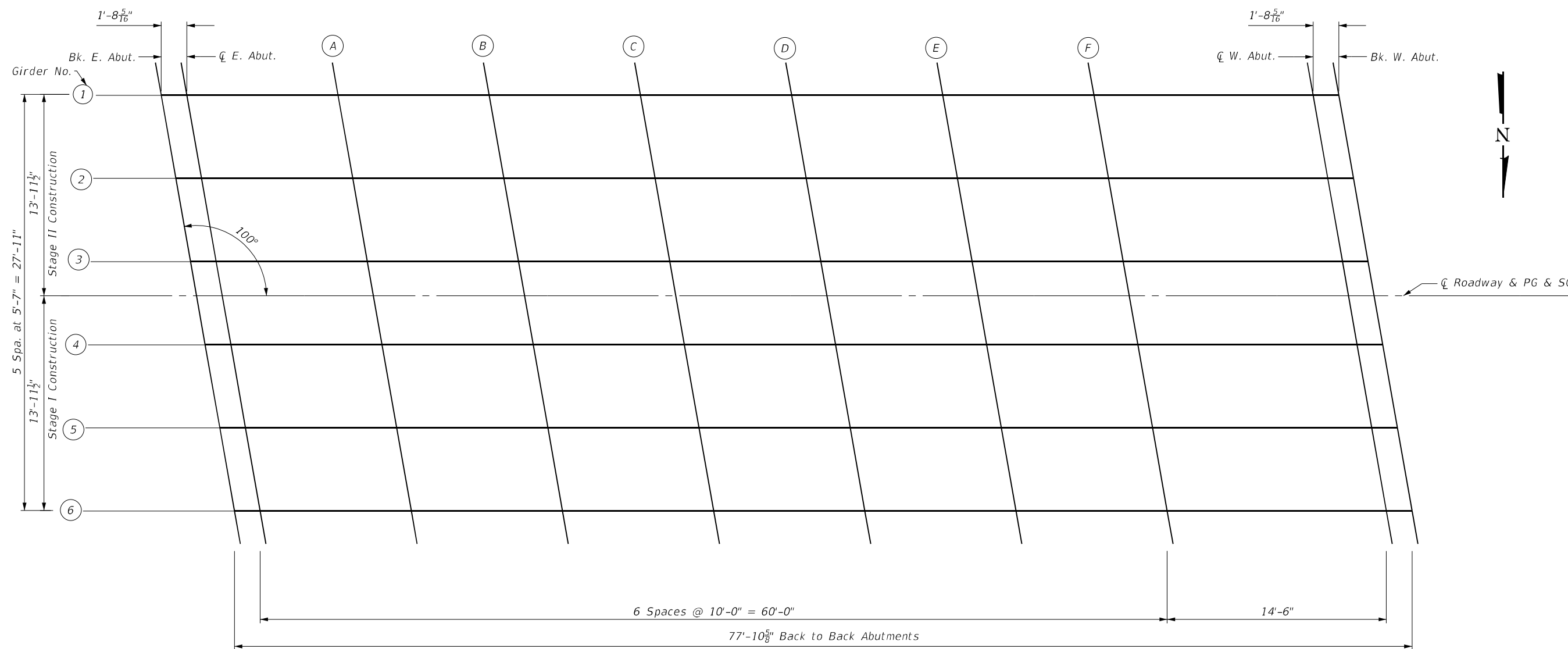
PG & SCL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
BK. E. ABUT.	1911+41.56	0.00	560.81	560.81
CL. BRG. E. ABUT.	1911+43.25	0.00	560.81	560.81
A	1911+53.25	0.00	560.79	560.86
B	1911+63.25	0.00	560.78	560.89
C	1911+73.25	0.00	560.76	560.91
D	1911+83.25	0.00	560.75	560.90
E	1911+93.25	0.00	560.73	560.86
F	1912+03.25	0.00	560.72	560.81
CL BRG. W. ABUT.	1912+17.75	0.00	560.69	560.69
BK. W. ABUT.	1912+19.44	0.00	560.69	560.69



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheets 5 and 6 of 20. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 5 and 6 of 20, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



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TOP OF SLAB ELEVATIONS
STRUCTURE NO. 048-0094

SHEET 5 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	26
CONTRACT NO. 68755				

ILLINOIS FED. AID PROJECT

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
BK. E. ABUT	1911+39.10	-13.96	560.58	560.58
CL. BRG. E. ABUT.	1911+40.79	-13.96	560.58	560.58
A	1911+50.79	-13.96	560.57	560.64
B	1911+60.79	-13.96	560.55	560.69
C	1911+70.79	-13.96	560.54	560.71
D	1911+80.79	-13.96	560.52	560.70
E	1911+90.79	-13.96	560.51	560.66
F	1912+00.79	-13.96	560.49	560.60
CL BRG. W. ABUT.	1912+15.29	-13.96	560.47	560.47
BK. W. ABUT.	1912+16.98	-13.96	560.47	560.47

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
BK. E. ABUT	1911+40.08	-8.37	560.68	560.68
CL. BRG. E. ABUT.	1911+41.77	-8.37	560.68	560.68
A	1911+51.77	-8.37	560.66	560.73
B	1911+61.77	-8.37	560.65	560.76
C	1911+71.77	-8.37	560.63	560.78
D	1911+81.77	-8.37	560.62	560.77
E	1911+91.77	-8.37	560.60	560.73
F	1912+01.77	-8.37	560.59	560.68
CL BRG. W. ABUT.	1912+16.27	-8.37	560.57	560.57
BK. W. ABUT.	1912+17.96	-8.37	560.56	560.56

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
BK. E. ABUT	1911+41.07	-2.79	560.77	560.77
CL. BRG. E. ABUT.	1911+42.76	-2.79	560.76	560.76
A	1911+52.76	-2.79	560.75	560.81
B	1911+62.76	-2.79	560.73	560.85
C	1911+72.76	-2.79	560.72	560.86
D	1911+82.76	-2.79	560.70	560.85
E	1911+92.76	-2.79	560.69	560.82
F	1912+02.76	-2.79	560.67	560.76
CL BRG. W. ABUT.	1912+17.26	-2.79	560.65	560.65
BK. W. ABUT.	1912+18.95	-2.79	560.65	560.65

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
BK. E. ABUT	1911+42.05	2.79	560.77	560.77
CL. BRG. E. ABUT.	1911+43.74	2.79	560.76	560.76
A	1911+53.74	2.79	560.75	560.81
B	1911+63.74	2.79	560.73	560.85
C	1911+73.74	2.79	560.72	560.86
D	1911+83.74	2.79	560.70	560.85
E	1911+93.74	2.79	560.69	560.82
F	1912+03.74	2.79	560.67	560.76
CL BRG. W. ABUT.	1912+18.24	2.79	560.65	560.65
BK. W. ABUT.	1912+19.93	2.79	560.65	560.65

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
BK. E. ABUT	1911+43.04	8.37	560.68	560.68
CL. BRG. E. ABUT.	1911+44.73	8.37	560.67	560.67
A	1911+54.73	8.37	560.66	560.72
B	1911+64.73	8.37	560.64	560.76
C	1911+74.73	8.37	560.63	560.77
D	1911+84.73	8.37	560.61	560.76
E	1911+94.73	8.37	560.60	560.73
F	1912+04.73	8.37	560.58	560.67
CL BRG. W. ABUT.	1912+19.23	8.37	560.56	560.56
BK. W. ABUT.	1912+20.92	8.37	560.56	560.56

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
BK. E. ABUT	1911+44.02	13.96	560.58	560.58
CL. BRG. E. ABUT.	1911+45.71	13.96	560.57	560.57
A	1911+55.71	13.96	560.56	560.63
B	1911+65.71	13.96	560.54	560.68
C	1911+75.71	13.96	560.53	560.70
D	1911+85.71	13.96	560.51	560.69
E	1911+95.71	13.96	560.50	560.65
F	1912+05.71	13.96	560.48	560.59
CL BRG. W. ABUT.	1912+20.21	13.96	560.46	560.46
BK. W. ABUT.	1912+21.90	13.96	560.46	560.46

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TOP OF SLAB ELEVATIONS
 STRUCTURE NO. 048-0094

SHEET 6 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	27
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

SOUTH EDGE OF SHOULDER

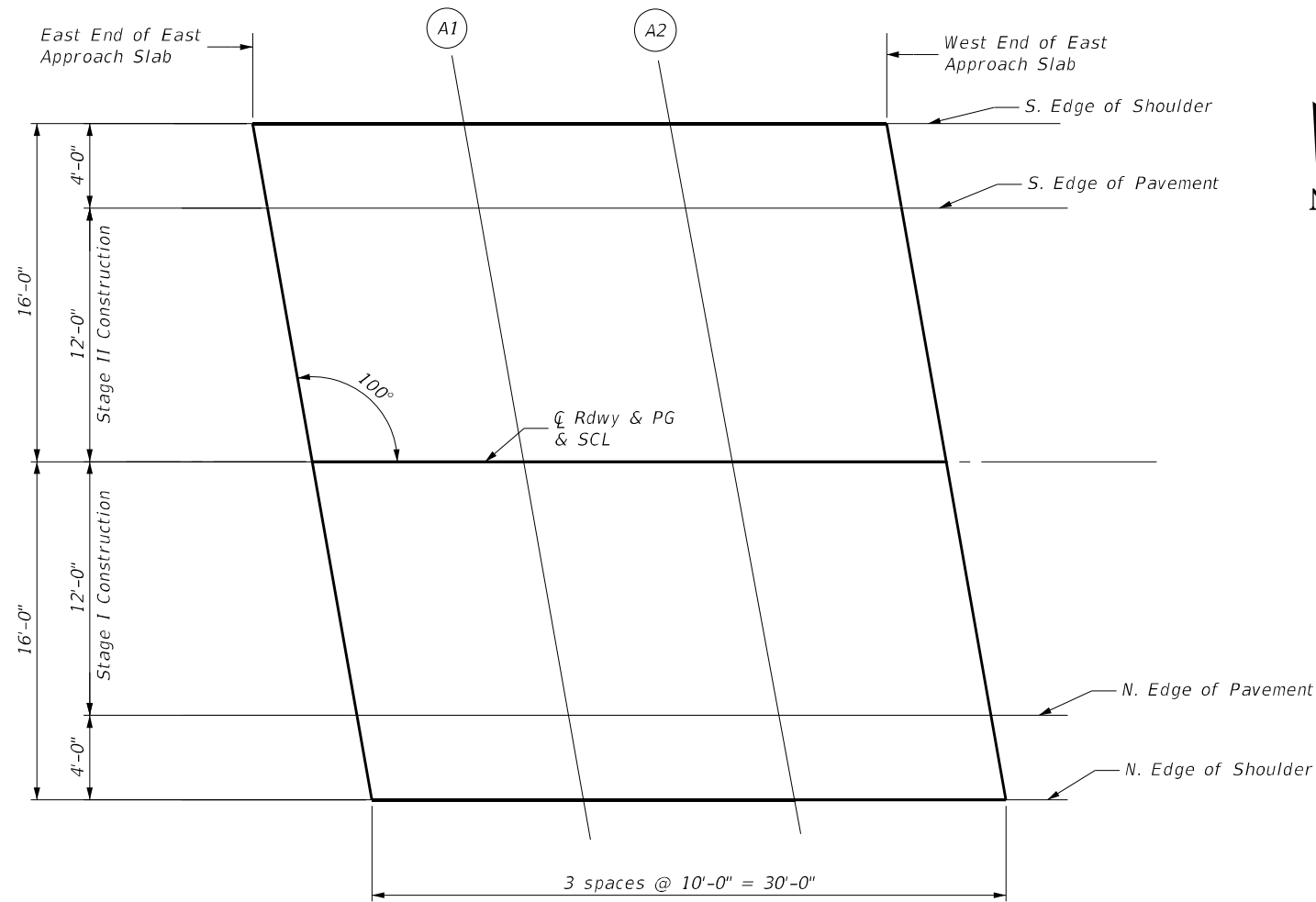
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF EAST APPR. PAV'T.	1911+09.75	-16.00	560.59
A1	1911+19.75	-16.00	560.57
A2	1911+29.75	-16.00	560.56
WEST END OF EAST APPR. PAV'T	1911+39.75	-16.00	560.54

SOUTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF EAST APPR. PAV'T.	1911+10.46	-12.00	560.67
A1	1911+20.46	-12.00	560.65
A2	1911+30.46	-12.00	560.64
WEST END OF EAST APPR. PAV'T	1911+40.46	-12.00	560.62

PROFILE GRADE & STAGE CL

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF EAST APPR. PAV'T.	1911+12.58	0.00	560.85
A1	1911+22.58	0.00	560.84
A2	1911+32.58	0.00	560.82
WEST END OF EAST APPR. PAV'T	1911+42.58	0.00	560.81



PLAN

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF EAST APPR. PAV'T.	1911+14.69	12.00	560.66
A1	1911+24.69	12.00	560.65
A2	1911+34.69	12.00	560.63
WEST END OF EAST APPR. PAV'T	1911+44.69	12.00	560.62

NORTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF EAST APPR. PAV'T.	1911+15.40	16.00	560.58
A1	1911+25.40	16.00	560.56
A2	1911+35.40	16.00	560.55
WEST END OF EAST APPR. PAV'T	1911+45.40	16.00	560.53

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DEPARTMENT OF TRANSPORTATION**

**TOP OF E APPROACH SLAB ELEVATIONS
STRUCTURE NO. 048-0094**

SHEET 7 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	28
CONTRACT NO. 68755				

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SOUTH EDGE OF SHOULDER

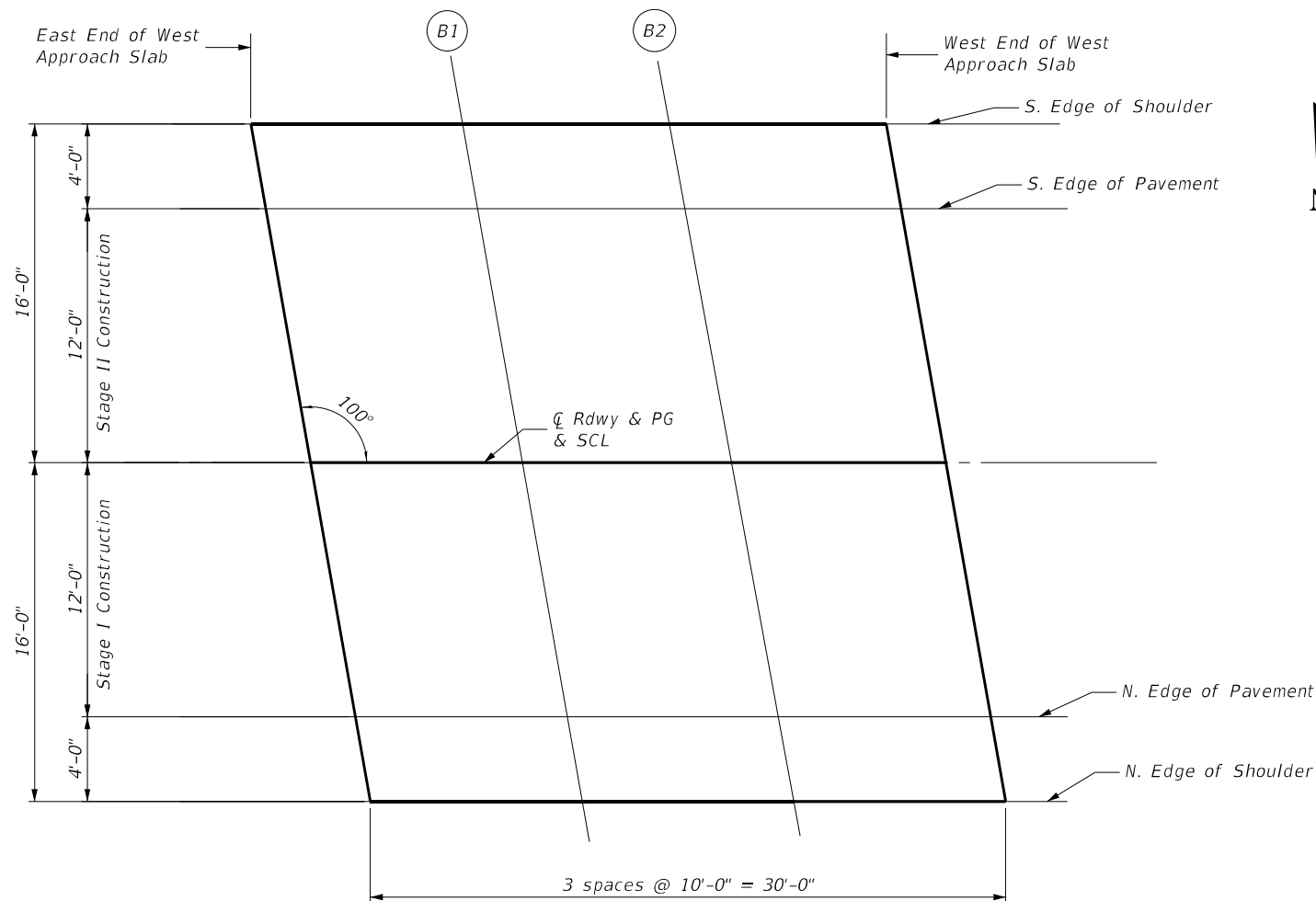
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF WEST APPR. PAV'T.	1912+15.60	-16.00	560.43
B1	1912+25.60	-16.00	560.41
B2	1912+35.60	-16.00	560.40
WEST END OF WEST APPR. PAV'T	1912+45.60	-16.00	560.38

SOUTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF WEST APPR. PAV'T.	1912+16.31	-12.00	560.51
B1	1912+26.31	-12.00	560.49
B2	1912+36.31	-12.00	560.48
WEST END OF WEST APPR. PAV'T	1912+46.31	-12.00	560.46

PROFILE GRADE & STAGE CL

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF WEST APPR. PAV'T.	1912+18.42	0.00	560.69
B1	1912+28.42	0.00	560.68
B2	1912+38.42	0.00	560.66
WEST END OF WEST APPR. PAV'T	1912+48.42	0.00	560.65



PLAN

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF WEST APPR. PAV'T.	1912+20.54	12.00	560.50
B1	1912+30.54	12.00	560.49
B2	1912+40.54	12.00	560.47
WEST END OF WEST APPR. PAV'T	1912+50.54	12.00	560.46

NORTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS
EAST END OF WEST APPR. PAV'T.	1912+21.25	16.00	560.42
B1	1912+31.25	16.00	560.40
B2	1912+41.25	16.00	560.39
WEST END OF WEST APPR. PAV'T	1912+51.25	16.00	560.37

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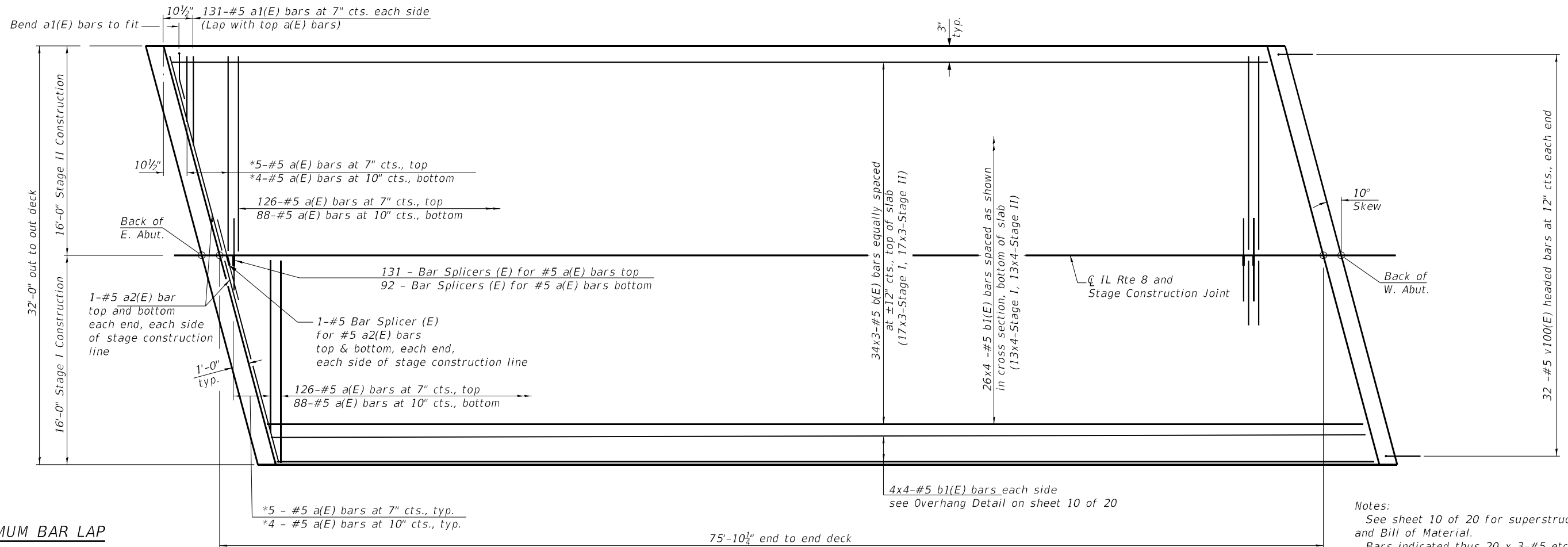
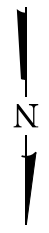
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DEPARTMENT OF TRANSPORTATION**

**TOP OF W APPROACH SLAB ELEVATIONS
STRUCTURE NO. 048-0094**

SHEET 8 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	29
CONTRACT NO. 68755				

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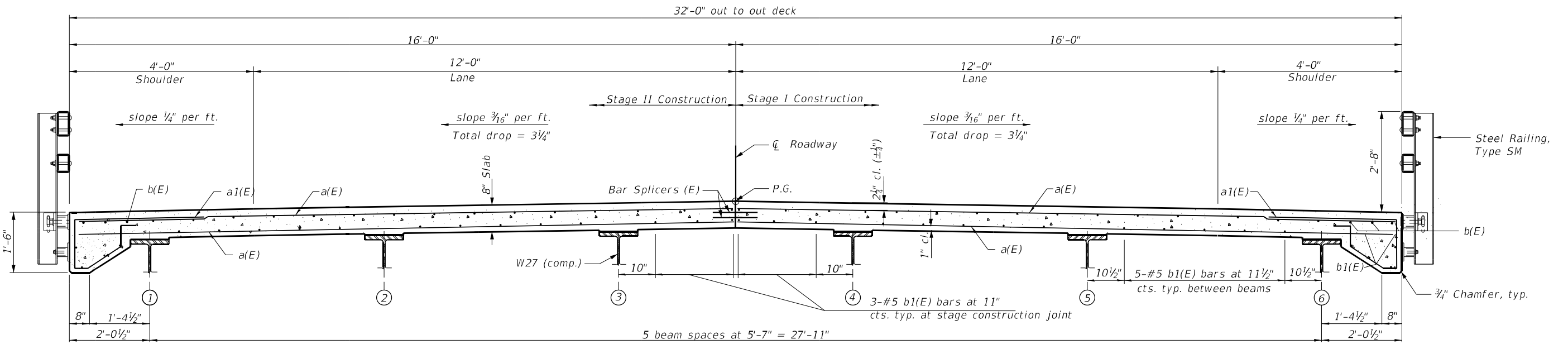


MINIMUM BAR LAP
#5 bar = 3'-2"

* Order a(E) bars full length.
Cut to fit skew and use remainder
of bars in opposite end.

Notes:
See sheet 10 of 20 for superstructure details
and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates
20 lines of bars with 3 lengths per line.
The studs of the anchor devices shall be placed
below the top reinforcement bars and the outermost
longitudinal reinforcement bar shall be placed
directly above the studs of the rail post
anchor device.

PLAN



CROSS SECTION
(Looking West)

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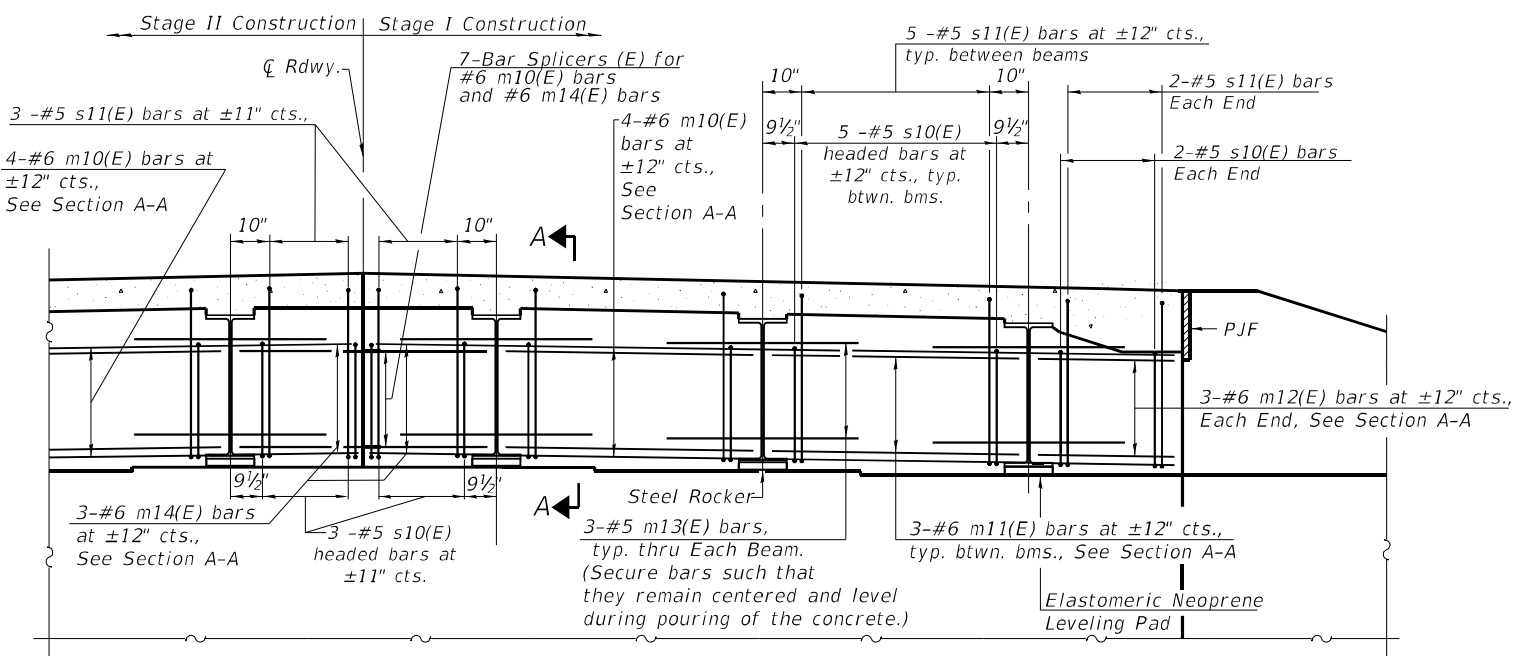
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SUPERSTRUCTURE
STRUCTURE NO. 048-0094

SHEET 9 OF 20 SHEETS

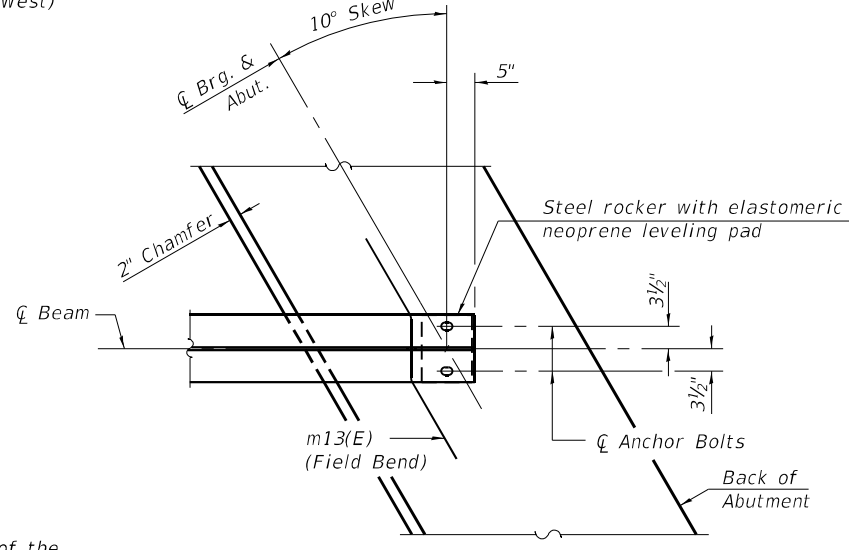
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380	44BR-1	KNOX	60	30
CONTRACT NO. 68755				

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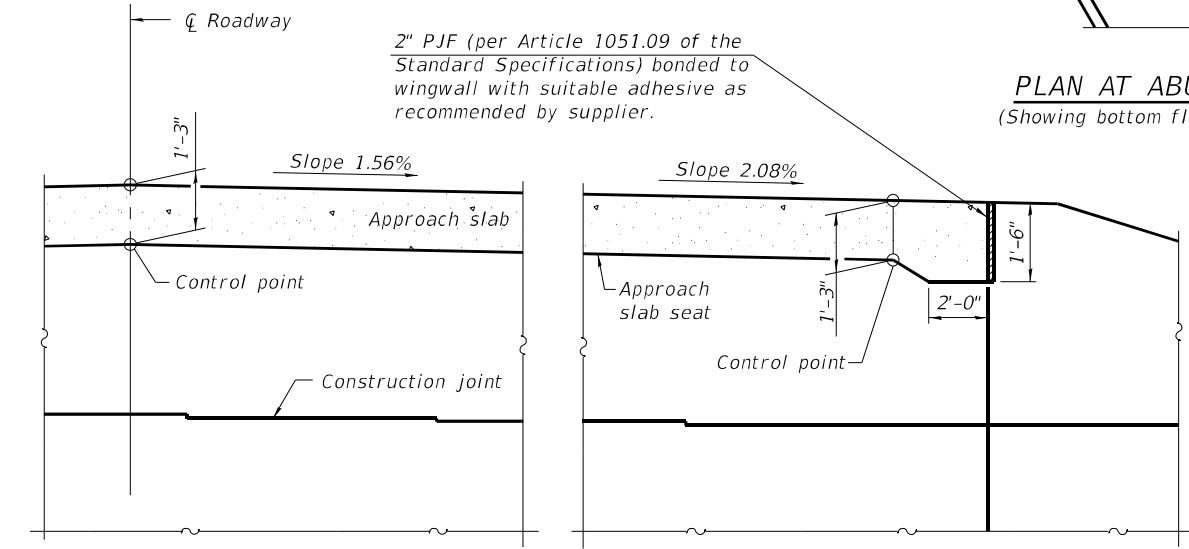


DIAPHRAGM AT WEST ABUTMENT
(Looking West)

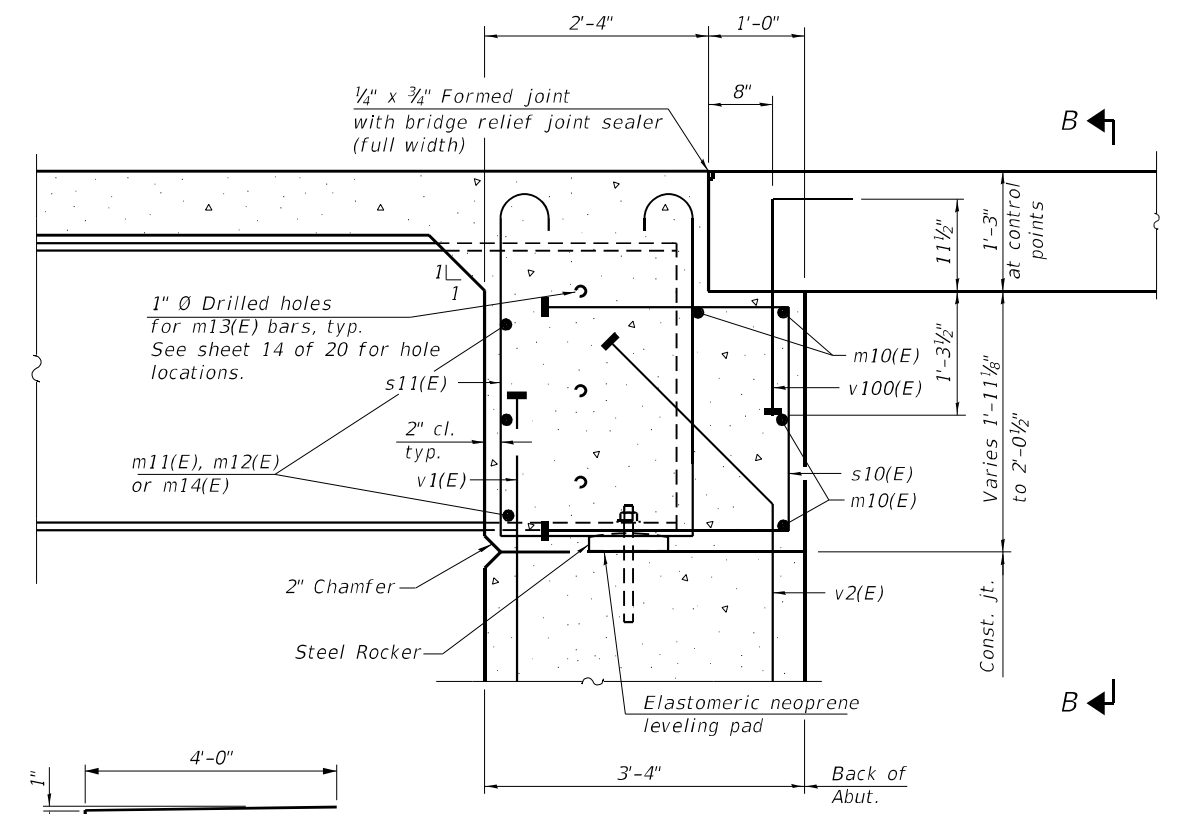
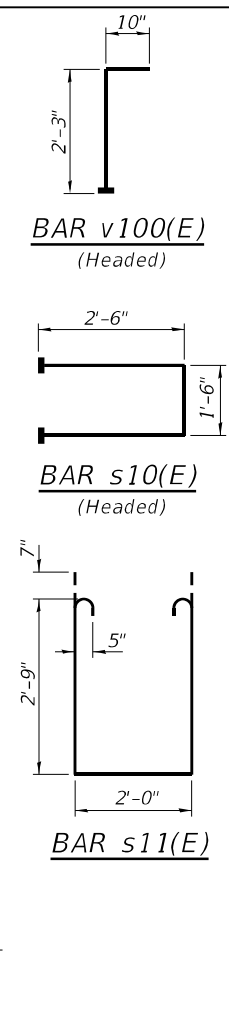
Notes:
 For details of bars v1(E) and v2(E) see sheets 16 and 17 of 20.
 The s10(E) and s11(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
 The approach slab seat shall have a constant slope determined from the control points shown.
 For bearing details see sheet 15 of 20.
 Beams shall be braced for stability during erection and remain braced until deck is poured and cured.
 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.



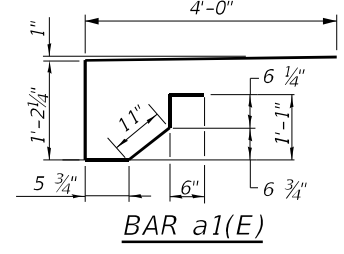
PLAN AT ABUTMENT
(Showing bottom flange of beam)



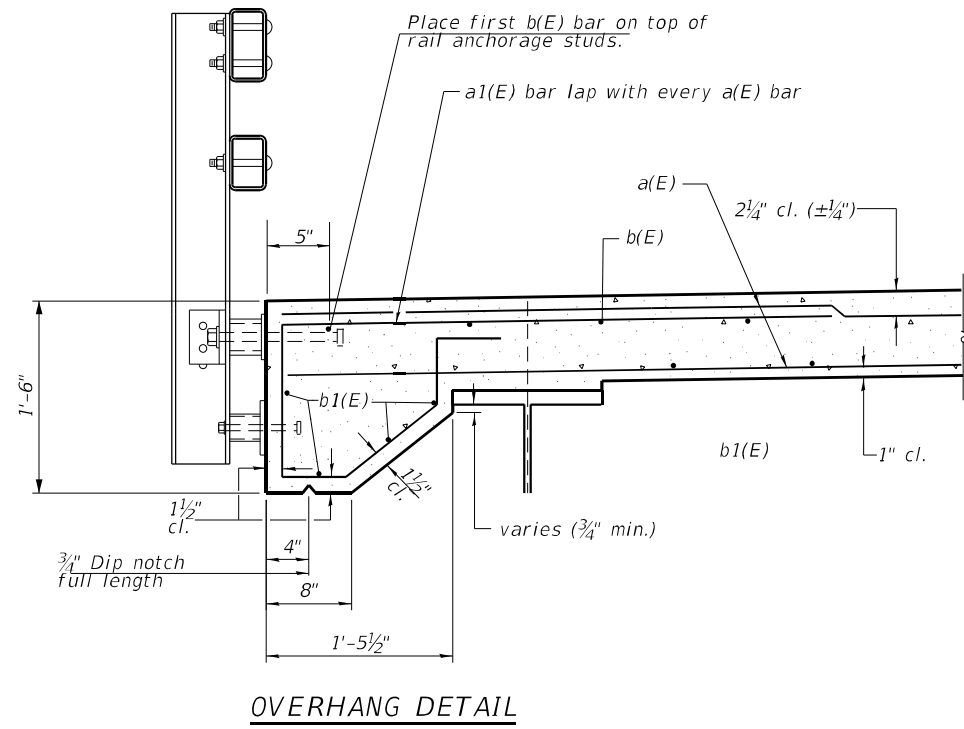
SECTION B-B



SECTION A-A
(at Rt. Z's)



BAR a1(E)



OVERHANG DETAIL

SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	446	#5	15'-8"	—
a1(E)	262	#5	7'-7"	⌋
a2(E)	8	#5	15'-11"	—
b(E)	102	#5	27'-4"	—
b1(E)	136	#5	21'-4"	—
m10(E)	16	#6	16'-0"	—
m11(E)	24	#6	5'-4"	—
m12(E)	12	#6	1'-9"	—
m13(E)	36	#5	4'-0"	—
m14(E)	12	#6	2'-6"	—
s10(E)	60	#5	6'-6"	⌋
s11(E)	60	#5	8'-8"	⌋
v100(E)	64	#5	3'-1"	⌋
Reinforcement Bars, Epoxy Coated		Lbs.	17,380	
Concrete Superstructure		Cu. Yds.	87.9	

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DIAPHRAGM DETAILS
STRUCTURE NO. 048-0094

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	31
CONTRACT NO. 68755				

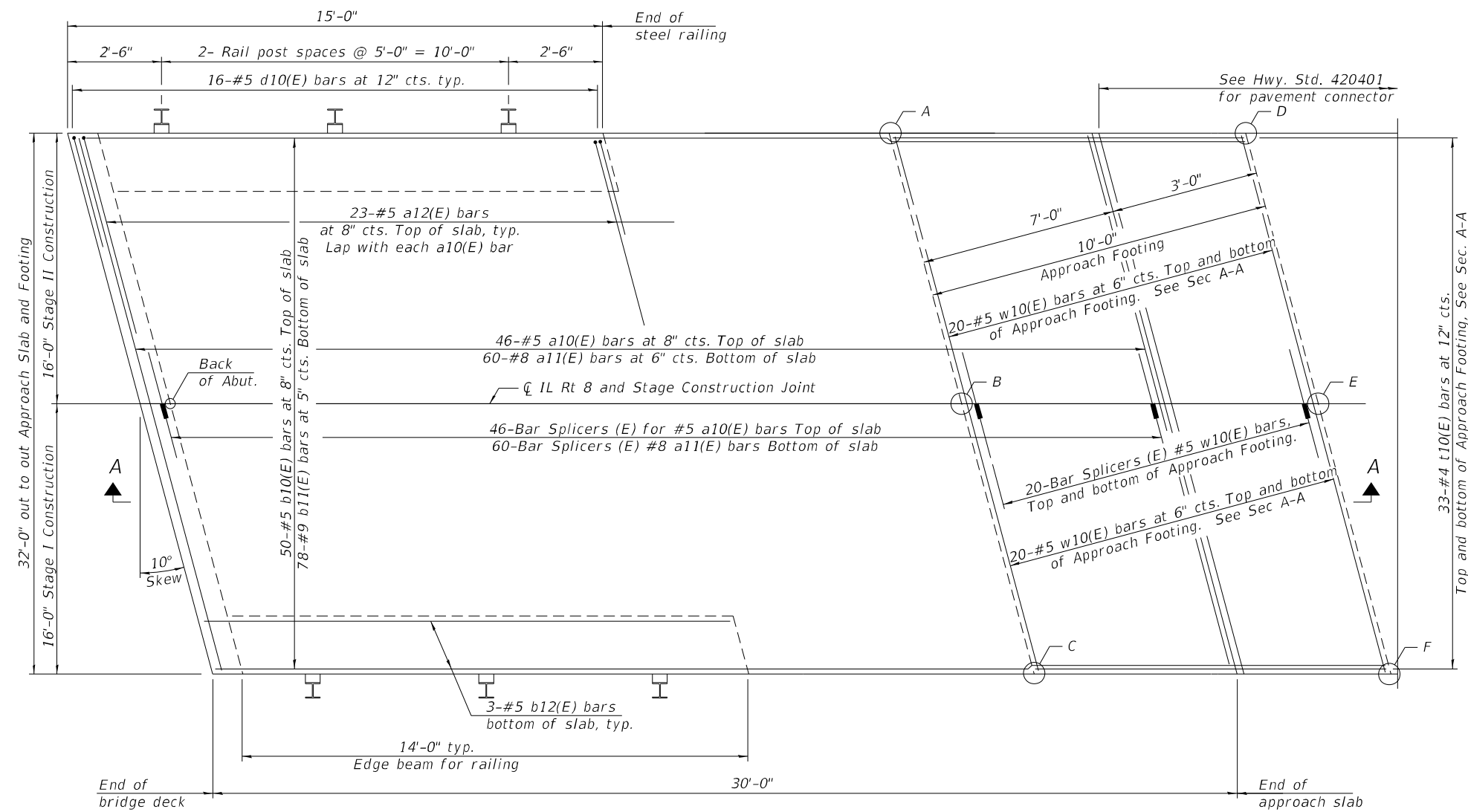
SHEET 10 OF 20 SHEETS

ILLINOIS FED. AID PROJECT

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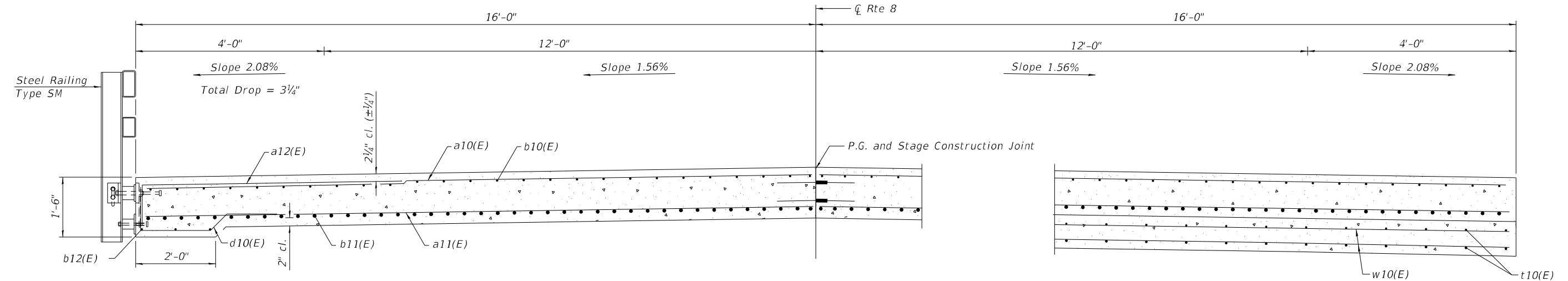
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TOP AND BOTTOM ELEVATIONS
FOR APPROACH FOOTING

Point	East Approach		Point	West Approach	
	Top	Bottom		Top	Bottom
A (NW)	559.32	558.49	A (SE)	559.14	558.31
B	559.59	558.76	B	559.41	558.58
C (SW)	559.33	558.50	C (NE)	559.14	558.31
D (NE)	559.33	558.50	D (SW)	559.13	558.30
E	559.61	558.78	E	559.40	558.57
F (SE)	559.34	558.51	F (NW)	559.12	558.29

PLAN
(West Approach shown, East Approach similar)



NEAR ABUTMENT

CROSS SECTION
(Looking West)

AT APPROACH FOOTING

(Sheet 1 of 2)

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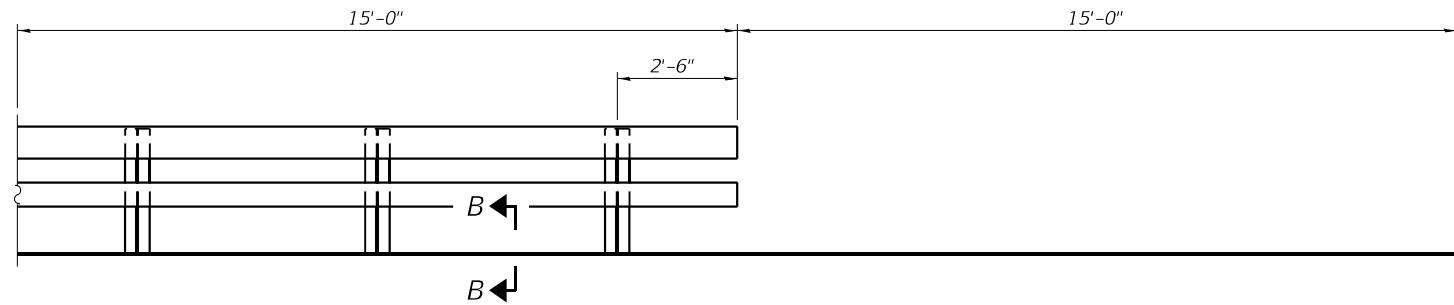
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 048-0094

SHEET 11 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	32
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

SDATES \$TIMES\$



INSIDE ELEVATION OF RAILING

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.

Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

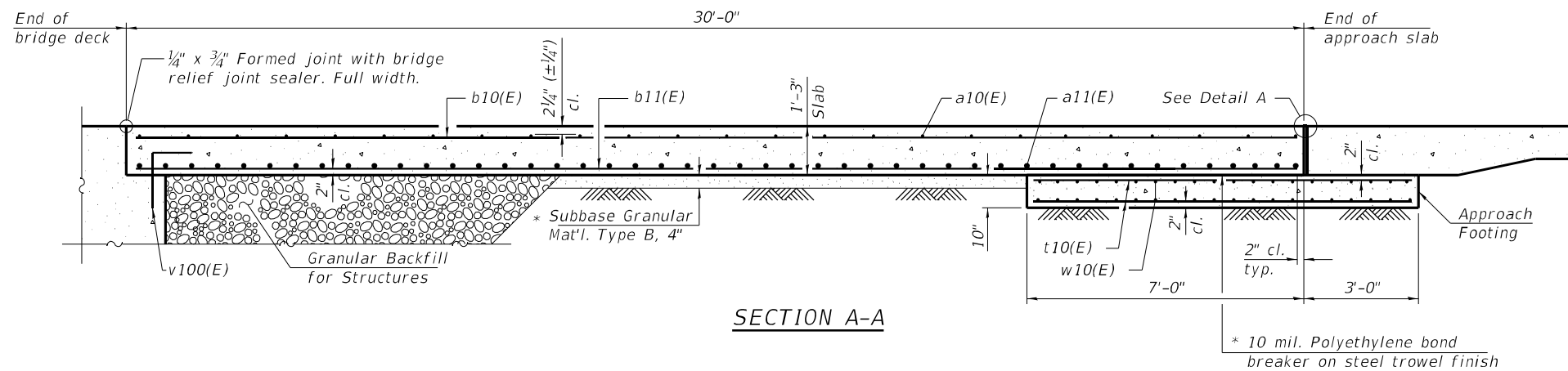
Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.

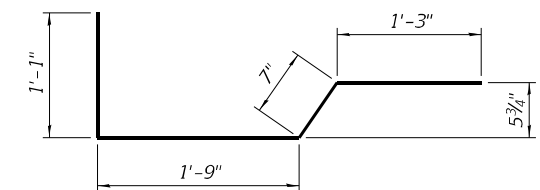
Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 20.

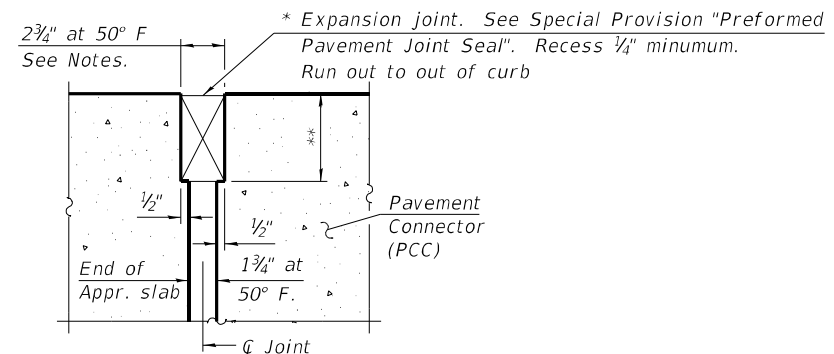
For details and Bill of Material for Steel Railing, Type SM, see sheet 13 of 20.



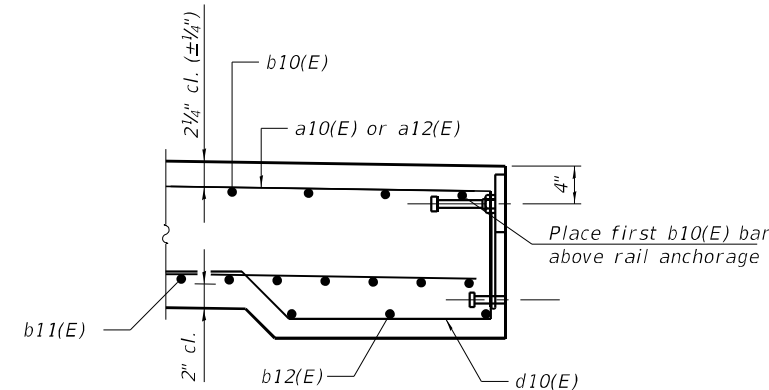
SECTION A-A



BAR d10(E)



DETAIL A



SECTION B-B



BAR a12(E)

**TWO APPROACHES
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a10(E)	184	#5	16'-0"	—	
a11(E)	240	#8	16'-0"	—	
a12(E)	92	#5	7'-6"	—	
b10(E)	100	#5	29'-8"	—	
b11(E)	156	#9	29'-8"	—	
b12(E)	12	#5	13'-8"	—	
d10(E)	64	#5	4'-8"	—	
t10(E)	132	#4	9'-10"	—	
w10(E)	160	#5	16'-0"	—	
Concrete Superstructure (Approach Slab)				Cu. Yd.	90.0
Concrete Structures				Cu. Yd.	20.1
Reinforcement Bars, Epoxy Coated				Pound	36,890

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

BA-CIP-R34-0 8-11-2017

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 048-0094

SHEET 12 OF 20 SHEETS

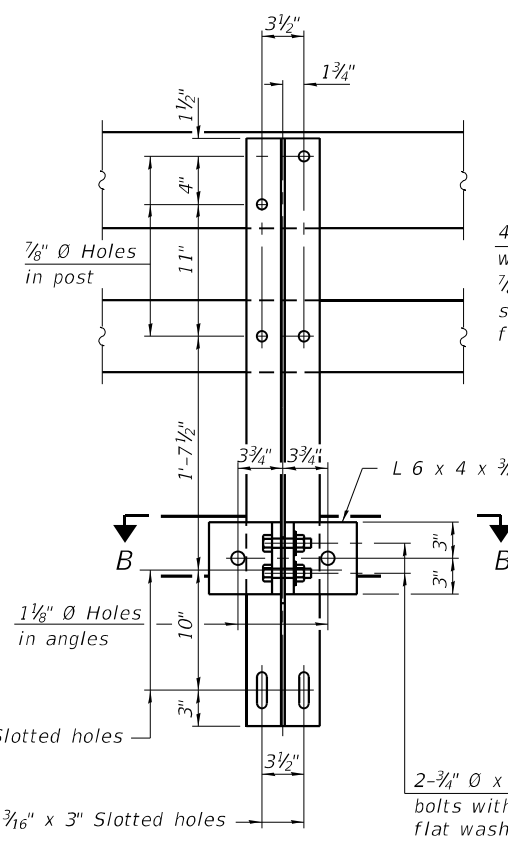
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	33
CONTRACT NO. 68755				

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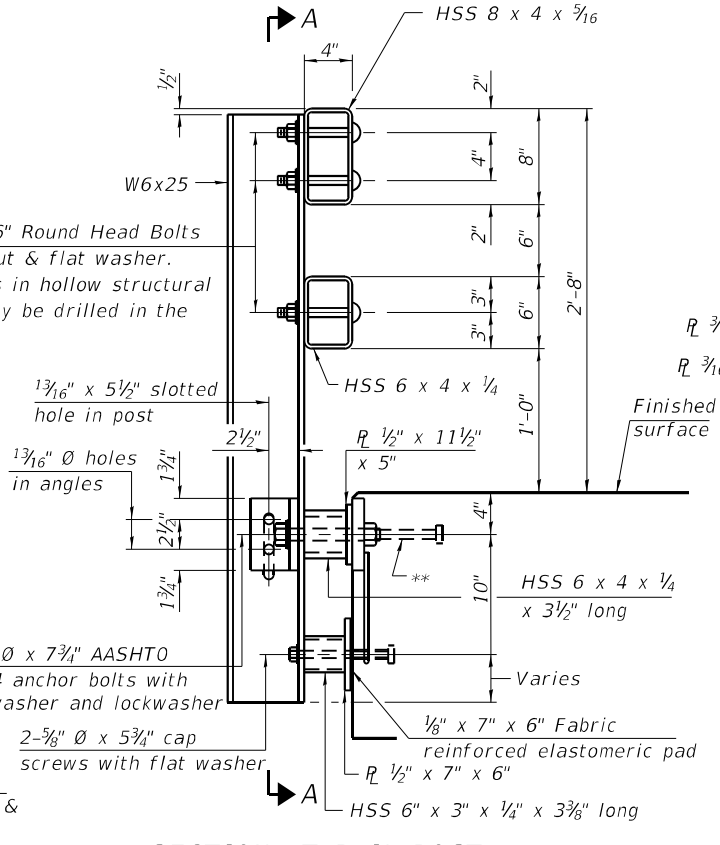
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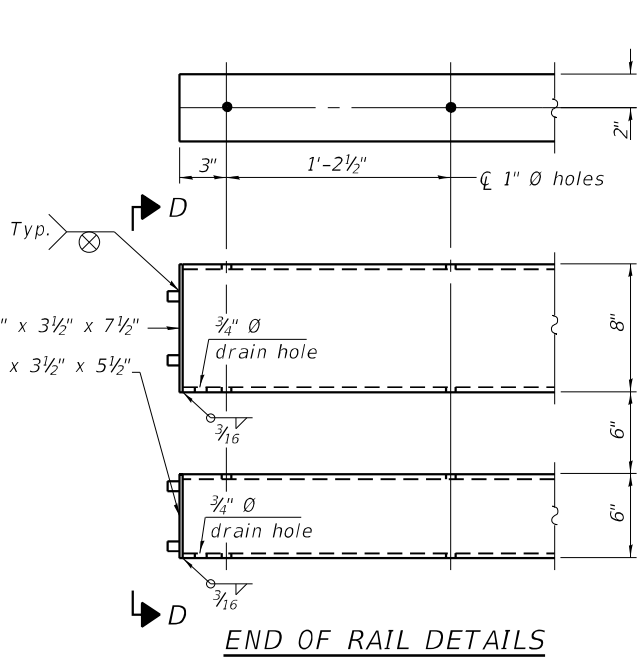
SECTION A-A

4-3/4" \varnothing x 6" Round Head Bolts with locknut & flat washer.
 7/8" \varnothing holes in hollow structural section may be drilled in the field.

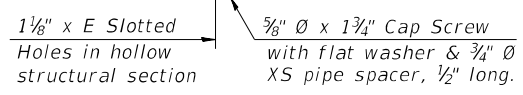


SECTION AT RAIL POST

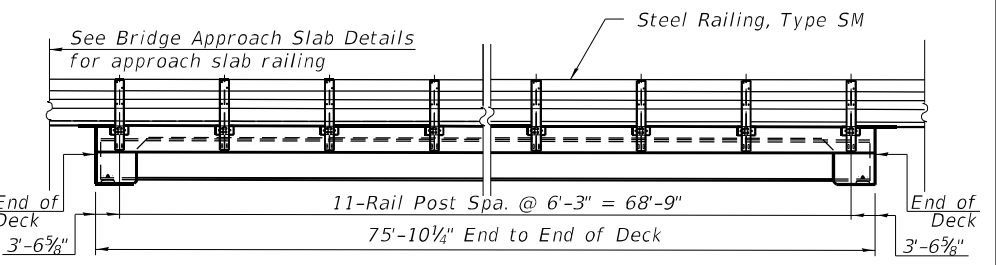
2-1" \varnothing x 7 3/4" AASHTO M-164 anchor bolts with flat washer and lockwasher
 2-5/8" \varnothing x 5 3/4" cap screws with flat washer
 1/8" x 7" x 6" Fabric reinforced elastomeric pad
 R 1/2" x 7" x 6"



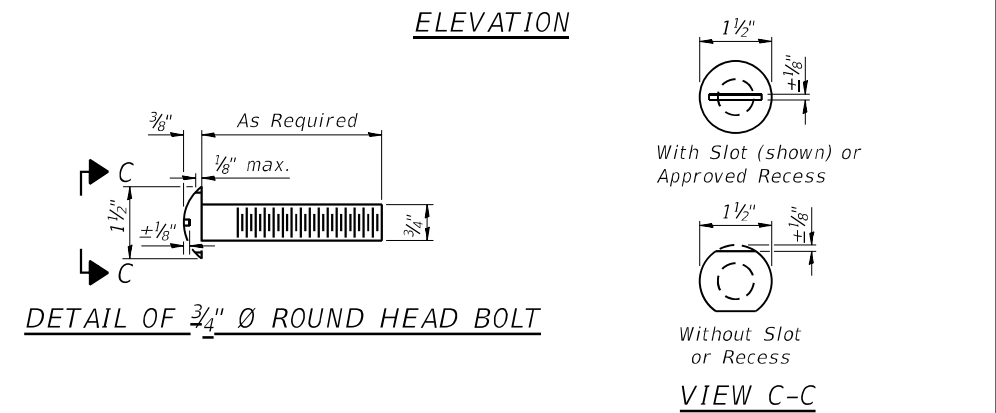
END OF RAIL DETAILS



RAIL SPLICE CONNECTION AT EXPANSION JT.

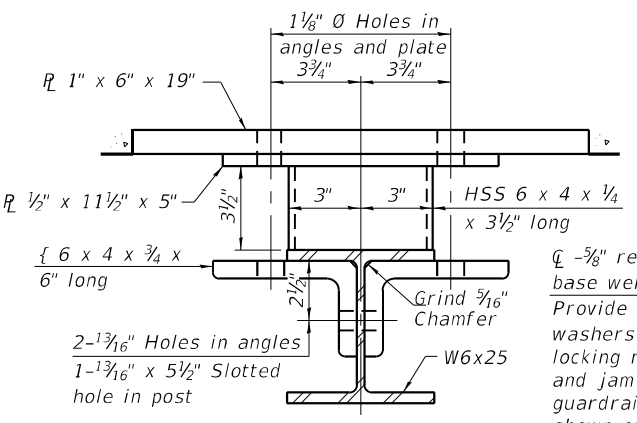


ELEVATION



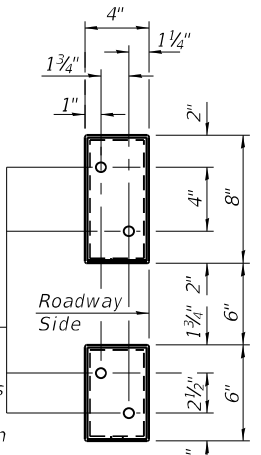
DETAIL OF 3/4" \varnothing ROUND HEAD BOLT

VIEW C-C

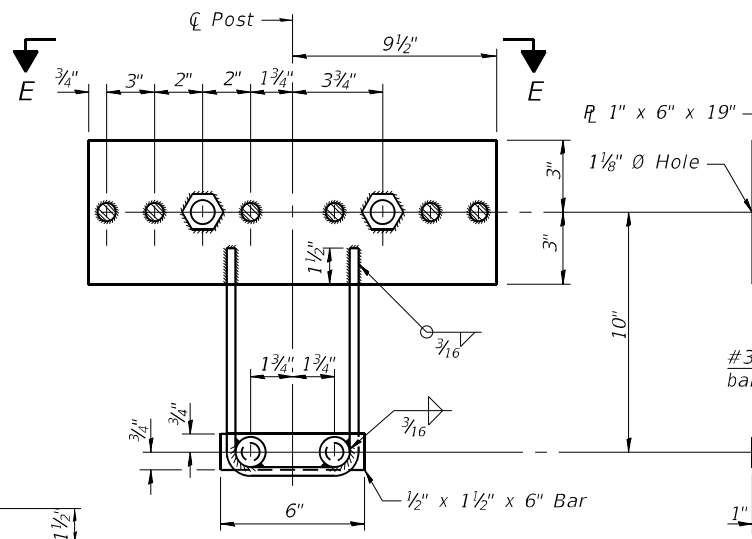


SECTION B-B

1/8" \varnothing Holes in angles and plate
 3/4" Chamfer
 W6x25
 2-1 3/16" Holes in angles
 1-1 3/16" x 5 1/2" Slotted hole in post

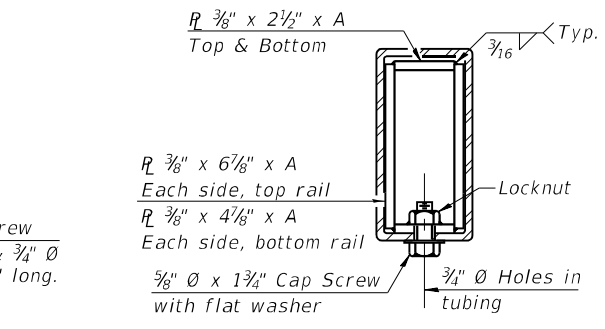


VIEW D-D

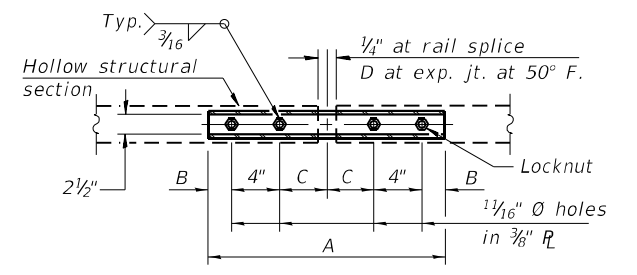


ANCHOR DEVICE

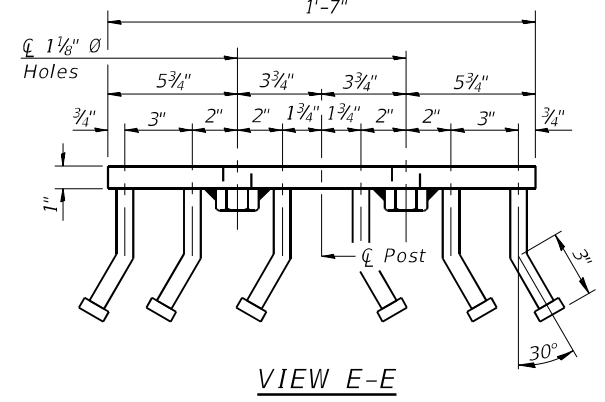
*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.



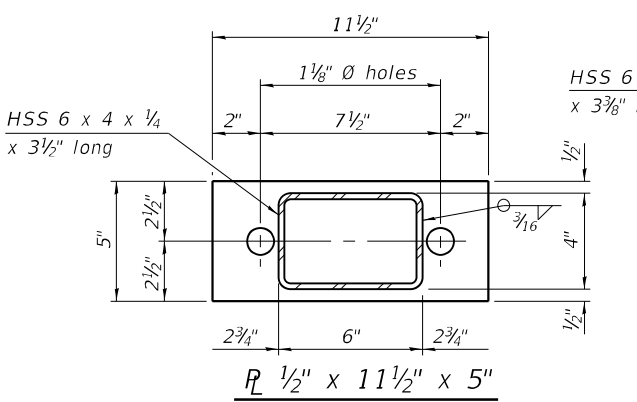
SECTION AT RAIL SPLICE



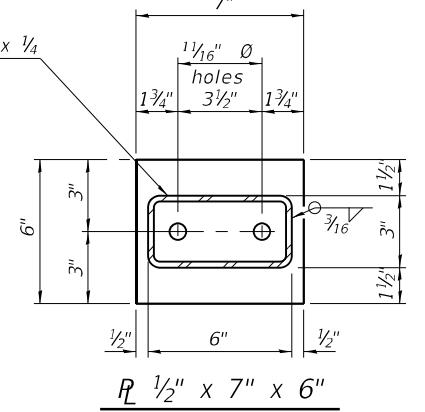
PLAN-BOTT. SPLICE R TYPICAL



VIEW E-E



R 1/2" x 11 1/2" x 5"



R 1/2" x 7" x 6"

SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	—

T = Total movement at expansion joint as shown on the design plans.

Notes:
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
 Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
 ** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	212



USER NAME	DESIGNED	CHECKED	REVISIONS
=	KEF	DDB	-
PLOT SCALE	DRAWN	REVISIONS	-
=	BKR	REVISIONS	-
PLOT DATE	CHECKED	REVISIONS	-
=	DDB	REVISIONS	-

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

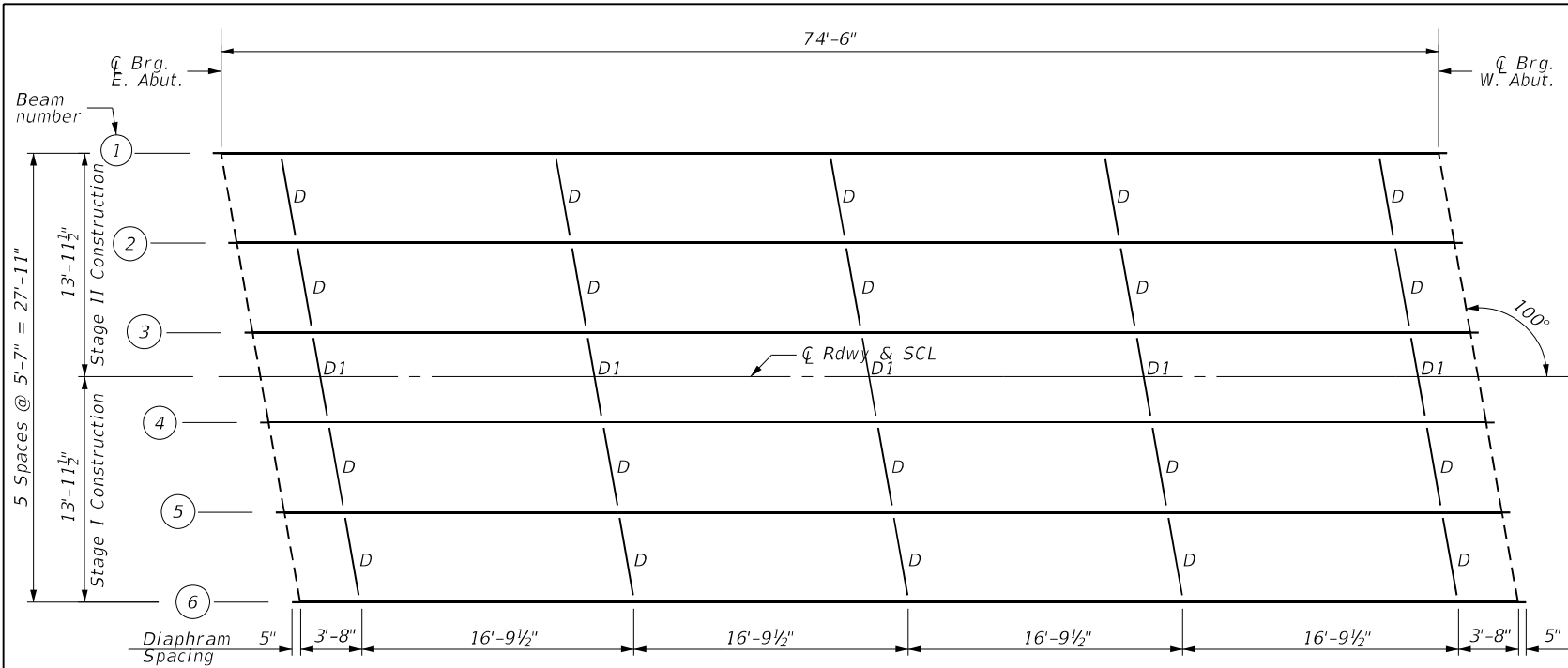
**STEEL RAILING, TYPE SM
 STRUCTURE NO. 048-0094**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	34

CONTRACT NO. 68755

SHEET 13 OF 20 SHEETS

ILLINOIS FED. AID PROJECT



FRAMING PLAN

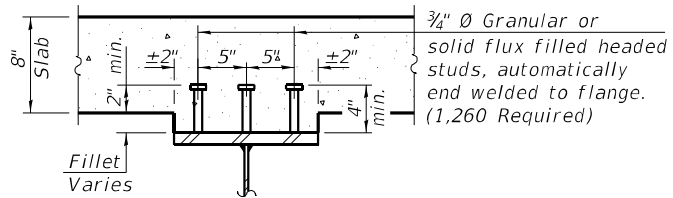
INTERIOR GIRDER MOMENT TABLE		0.5 Sp. I
Is	(in ⁴)	7,860
Ic(n)	(in ⁴)	19,123
Ic(3n)	(in ⁴)	13,655
Ic(cr)	(in ⁴)	-
Ss	(in ³)	559
Sc(n)	(in ³)	790
Sc(3n)	(in ³)	706
Sc(cr)	(in ³)	-
DC1	(k/ft)	0.81
MDC1	(k)	561.3
DC2	(k/ft)	0.02
MDC2	(k)	13.9
DW	(k/ft)	0.28
MDW	(k)	193.6
LLDF		0.476
M _L + IM	(k)	885
M _u (Strength I)	(k)	2,691
Øf Mn	(k)	3,564
fs DC1	(ksi)	12.05
fs DC2	(ksi)	0.24
fs DW	(ksi)	3.29
fs (L+IM)	(ksi)	14.59
fs (Service II)	(ksi)	34.5
0.95Rh Fyf	(ksi)	47.5
fs (Total)(Strength I)	(ksi)	-
Øf Fn	(ksi)	-
Vf	(k)	23.2

	GIRDER REACTION TABLE	
	Abut.	
	Interior	Exterior
LLDF	0.640	0.514
OCF	-	1.0353
RDC1 (k)	30.2	33.1
RDC2 (k)	0.7	2.2
RDW (k)	10.0	10.0
R _L (k)	55.6	46.2
R _{IM} (k)	13.3	11.1
RTotal (k)	109.8	102.6

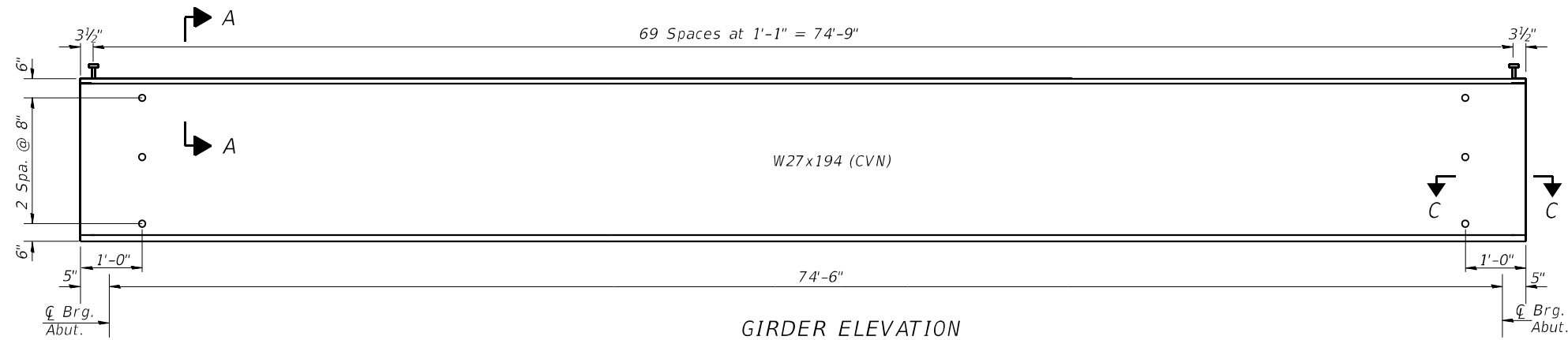
TOP OF BEAM ELEVATIONS

	Ø E. Abut.	Ø W. Abut.
Girder 1	559.86	559.75
Girder 2	559.96	559.85
Girder 3	560.04	559.93
Girder 4	560.04	559.93
Girder 5	559.95	559.84
Girder 6	559.85	559.74

*For Fabrication use only



SECTION A-A



GIRDER ELEVATION

- Is, Ss: Non-composite moment of inertia and section modulus of the steel section used for computing fs(Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).
- Ic(n), Sc(n): Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing fs(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.⁴ and in.³).
- Ic(3n), Sc(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing fs(Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
- Ic(cr), Sc(cr): Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing fs (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.⁴ and in.³).
- DC1: Un-factored non-composite dead load (kips/ft.).
- MDC1: 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.).
- MDC2: 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.).
- MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- M_L + IM: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
- M_u (Strength I): Factored design moment (kip-ft.).
- 1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_L + IM
- Øf Mn: 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.).
- fs DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
- MDC1 / S_{sc}
- fs DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
- MDC2 / Sc(3n) or MDC2 / Sc(cr) as applicable.
- fs DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
- MDW / Sc(3n) or MDW / Sc(cr) as applicable.
- fs (L+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_L + IM / Sc(n) or M_L + IM / Sc(cr) as applicable.
- fs (Service II): Sum of stresses as computed below (ksi).
- fsDC1 + fsDC2 + fsDW + 1.3 fs(L+IM)
- 0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
- fs (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
- 1.25 (fsDC1 + fsDC2) + 1.5 fsDW + 1.75 fs(L+IM)
- Øf Fn: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
- Vf: Maximum factored shear range in span computed according to Article 6.10.10.

NOTES

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

"CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.

All beams are W27x194, AASHTO M270, Grade 50 (NTR)

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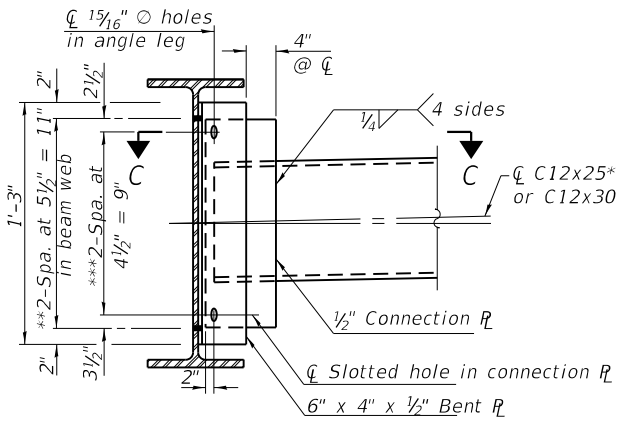
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

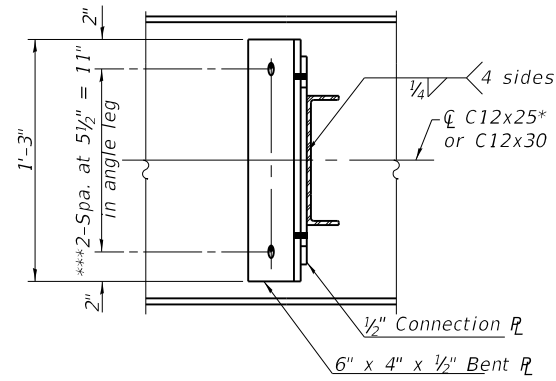
FRAMING PLAN AND GIRDER ELEVATIONS
STRUCTURE NO. 048-0094

SHEET 14 OF 20 SHEETS

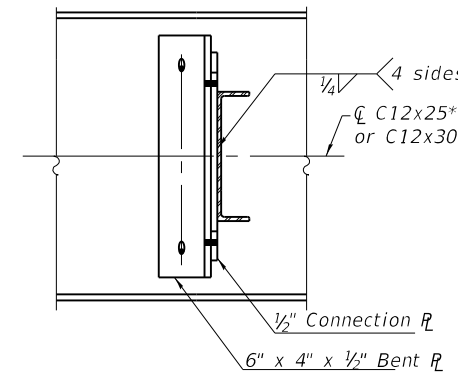
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380	44BR-1	KNOX	60	35
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				



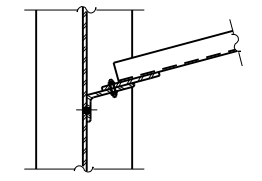
**INITIAL BOLT
ERECTION POSITION**



**INITIAL BOLT
ERECTION POSITION**



**FINAL ERECTION POSITION
AFTER STAGE II DECK POUR**



SECTION C-C

NOTES FOR DIAPHRAGM D1 AT STAGE CONSTRUCTION JOINT

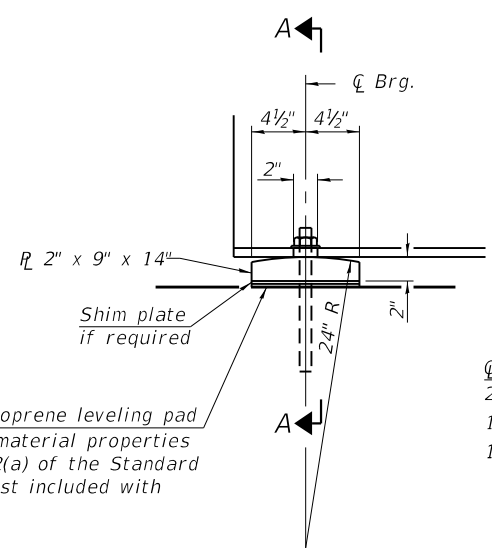
To accommodate the deflection during Stage II deck placement, use 1 3/16" wide X 1 7/8" long slotted holes in the angle leg at the web and in the connection plate at both ends of the diaphragm. (North side of Girder 3 and South side of Girder 4)

***Bolts in slotted holes shall be finger tightened until the Stage II deck has been placed. Position the slots so bolts move from one end with no concrete load to the opposite end after concrete placement. The slotted holes in the angle leg and connection plate shall be positioned as shown to allow the bolts to move to the final erection positions under deck load. The holes shall be positioned to allow maximum bolt displacement without laterally stressing the beams.

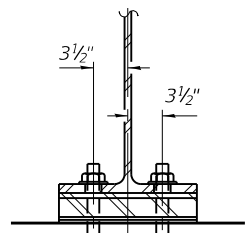
Two hardened washers required for each set of oversized holes.
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
The alternate, if utilized, shall be provided at no additional cost to the Department.
***3/4" Ø HS bolts, 1 3/16" Ø holes.

DIAPHRAGM D1

(North side beam 3 connection shown. South side connection similar to connections shown for Diaphragm D)
(5 Required)



ELEVATION AT ABUTMENT



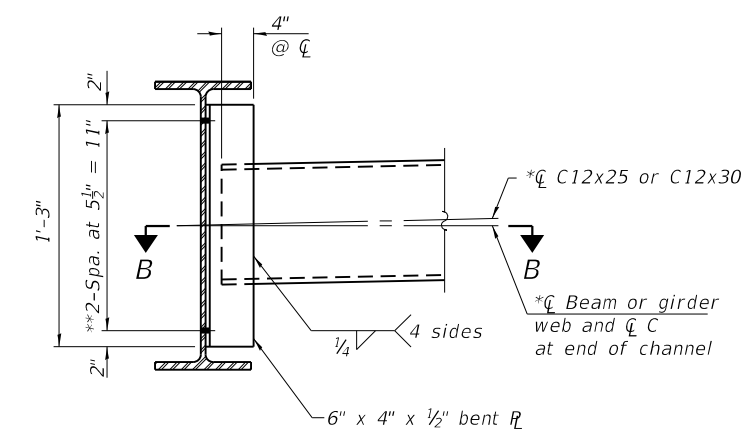
SECTION A-A

1/8" elastomeric neoprene leveling pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

1/2" Ø holes in bearing plate.

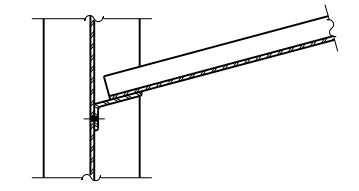
**FIXED BEARING
(12 Required)**

Notes:
Anchor bolts shall be according to Article 521.06 of the Standard Specifications.
Beams shall be braced for stability during erection and remain braced until deck is poured and cured.
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.



**INTERIOR DIAPHRAGM D
(20 Required)**

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
The alternate, if utilized, shall be provided at no additional cost to the Department.
***3/4" Ø HS bolts, 1 3/16" Ø holes



SECTION B-B

MODEL: Default
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PLOT SCALE =	CHECKED - DDB	REVISED -
PLOT DATE =	DRAWN - BKR	REVISED -
	CHECKED - DDB	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

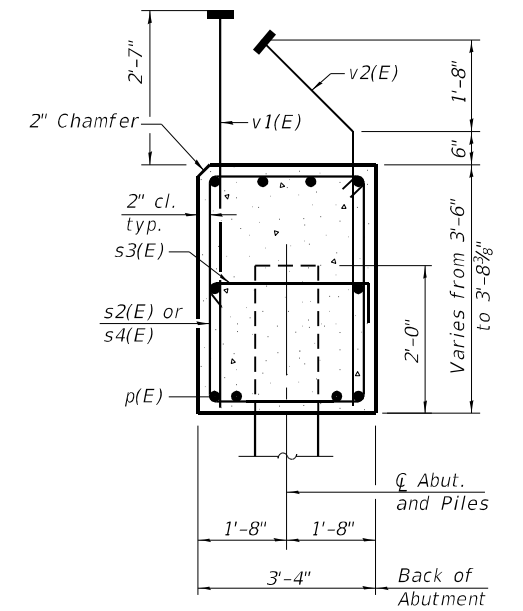
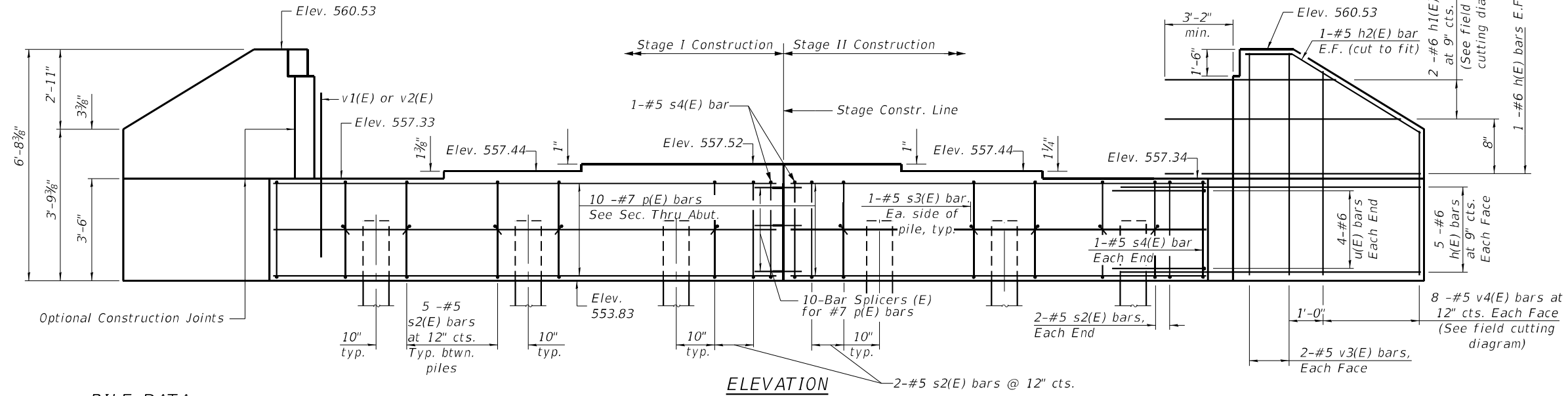
**STRUCTURAL STEEL DETAILS
STRUCTURE NO. 048-0094**

SHEET 15 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	36
CONTRACT NO. 68755				

ILLINOIS FED. AID PROJECT

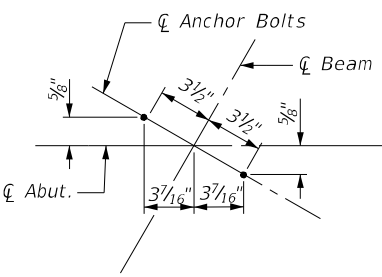
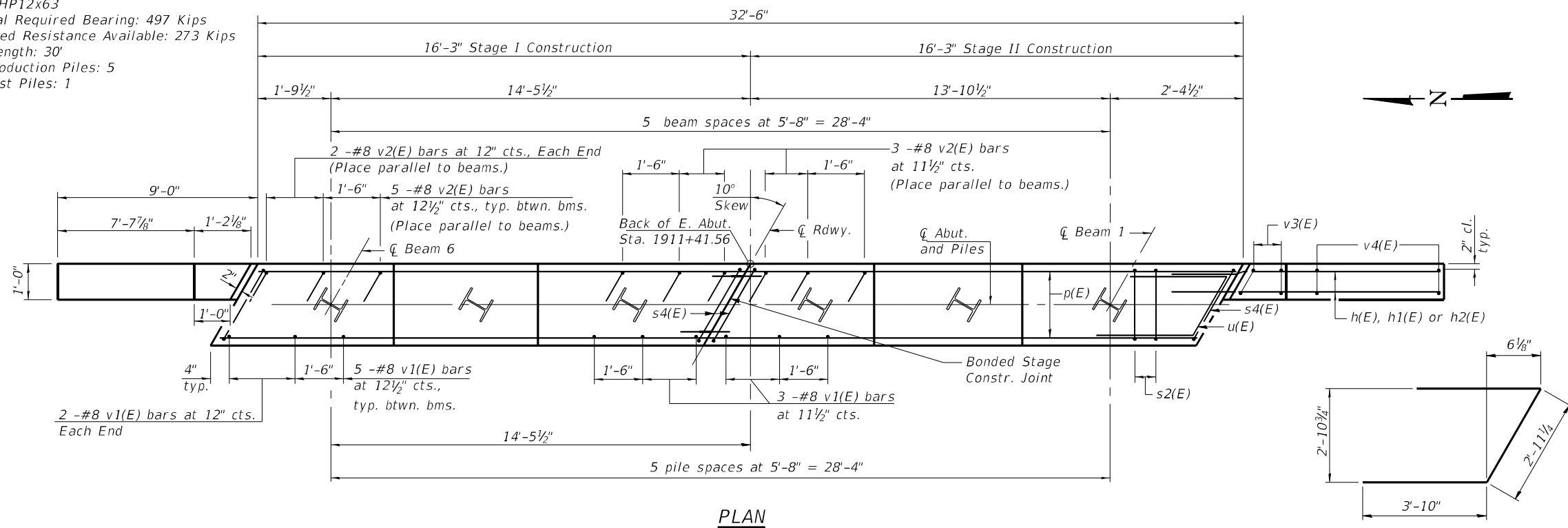
Notes:
Pour steps monolithically with cap.



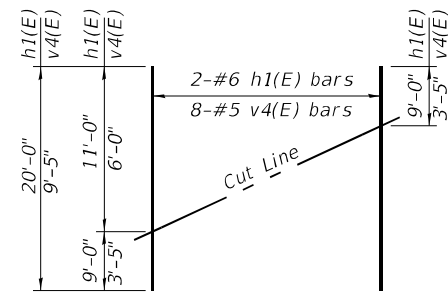
SEC. THRU ABUT.
Dimensions at right angles to abutment.

PILE DATA

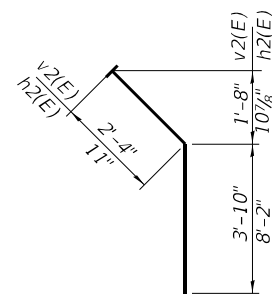
Type: HP12x63
Nominal Required Bearing: 497 Kips
Factored Resistance Available: 273 Kips
Est. Length: 30'
No. Production Piles: 5
No. Test Piles: 1



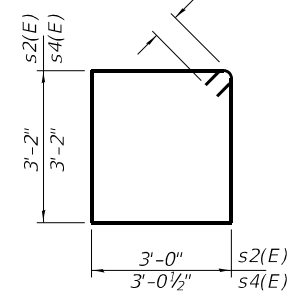
ANCHOR BOLT LAYOUT
Note: Space reinforcement to miss anchor bolts



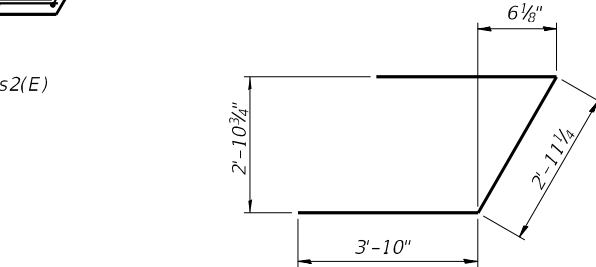
FIELD CUTTING DIAGRAM
Order h1(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



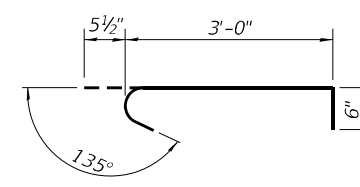
BAR v2(E) & h2(E)
(v2(E) is headed, h2(E) is not)



BAR s2(E) & s4(E)



BAR u(E)



BAR s3(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	24	#6	12'-5"	—
h1(E)	4	#6	20'-0"	—
h2(E)	4	#5	9'-1"	—
p(E)	20	#7	15'-11"	—
s2(E)	28	#5	13'-3"	□
s3(E)	12	#5	4'-0"	□
s4(E)	4	#5	13'-4"	□
u(E)	8	#6	10'-7"	—
*v1(E)	30	#8	5'-11"	—
*v2(E)	30	#8	6'-2"	—
v3(E)	8	#5	6'-4"	—
v4(E)	16	#5	9'-5"	—
*Headed Bar				
Structure Excavation			Cu. Yd.	34
Concrete Structures			Cu. Yd.	18.1
Reinforcement Bars, Epoxy Coated			Pound	3,050
Furnishing - Piles, HP 12x63			Foot	150
Driving Piles			Foot	150
Test Pile, HP 12x63			Each	1

For details of piles see sheet 18 of 20.

Note:
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.

MODEL: Default
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4/26/2019 2:35:47 PM



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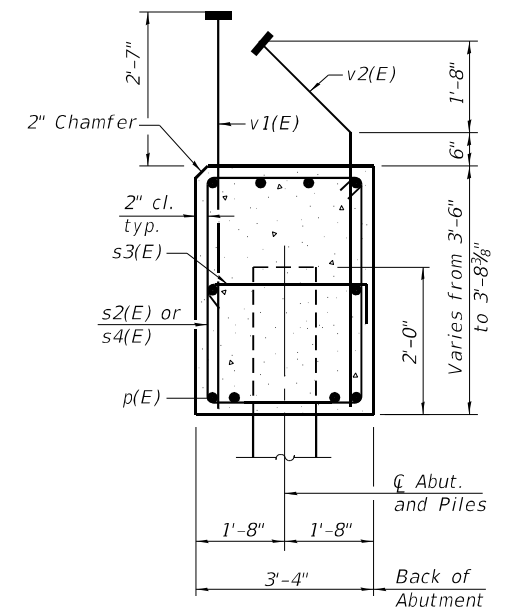
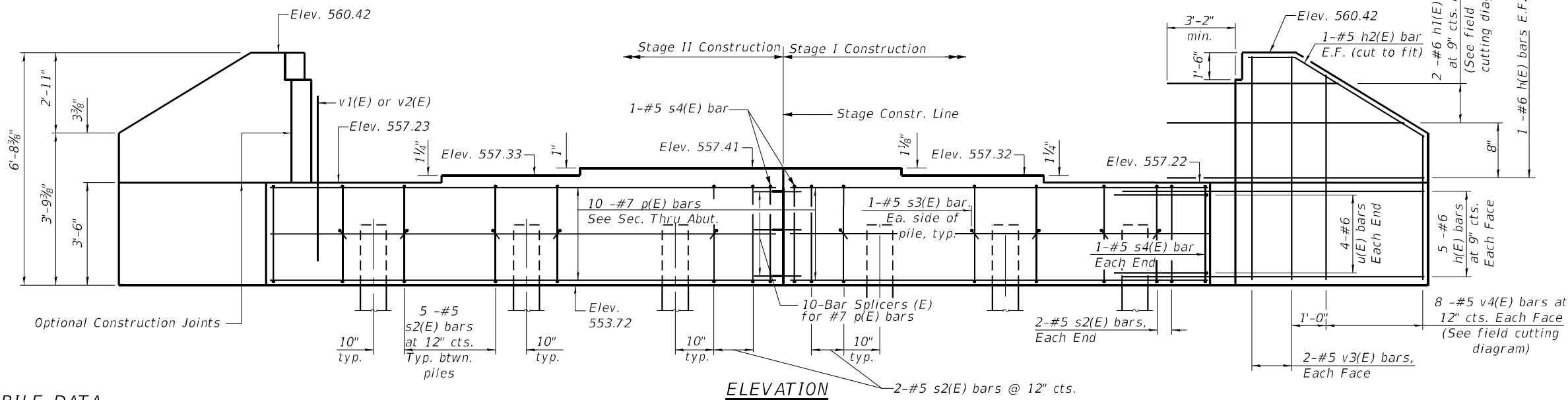
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 048-0094

SHEET 16 OF 20 SHEETS

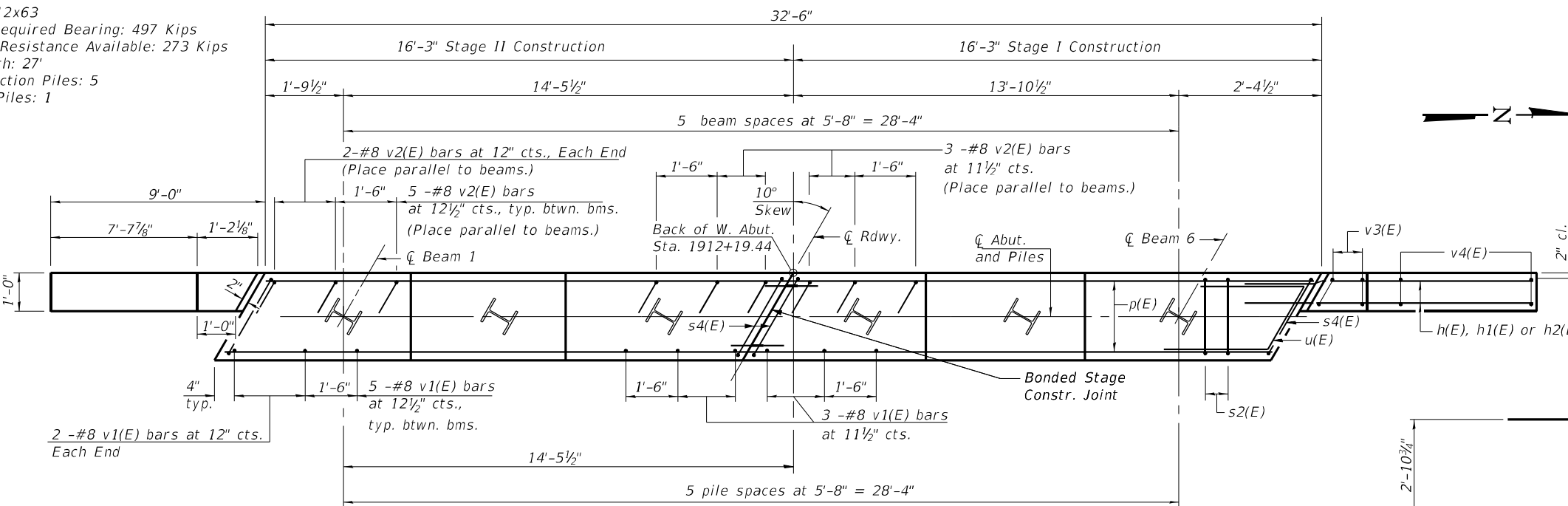
F.A.P. RTE. 380	SECTION 44BR-1	COUNTY KNOX	TOTAL SHEETS 60	SHEET NO. 37
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

Notes:
Pour steps monolithically with cap.

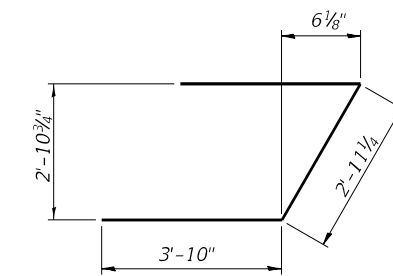


PILE DATA

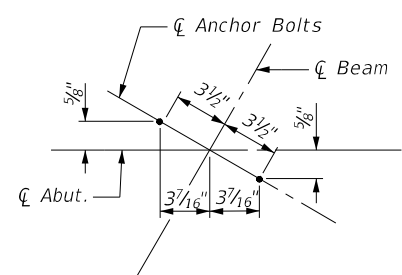
Type: HP12x63
Nominal Required Bearing: 497 Kips
Factored Resistance Available: 273 Kips
Est. Length: 27'
No. Production Piles: 5
No. Test Piles: 1



PLAN

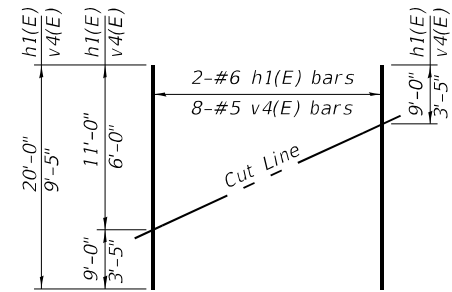


BAR u(E)



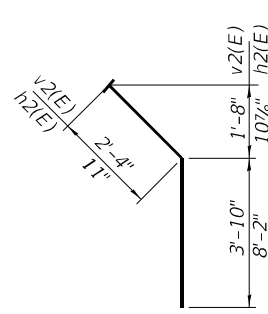
ANCHOR BOLT LAYOUT

Note: Space reinforcement to miss anchor bolts



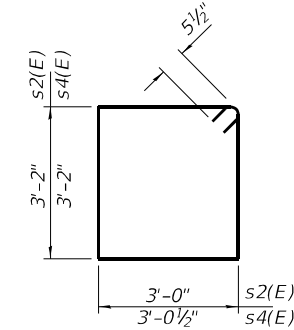
FIELD CUTTING DIAGRAM

Order h1(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.

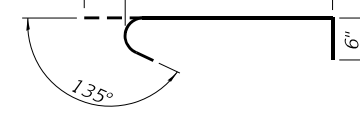


BAR v2(E) & h2(E)

(v2(E) is headed, h2(E) is not)



BAR s2(E) & s4(E)



BAR s3(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	24	#6	12'-5"	—
h1(E)	4	#6	20'-0"	—
h2(E)	4	#5	9'-1"	—
p(E)	20	#7	15'-11"	—
s2(E)	28	#5	13'-3"	□
s3(E)	12	#5	4'-0"	□
s4(E)	4	#5	13'-4"	□
u(E)	8	#6	10'-7"	—
*v1(E)	30	#8	5'-11"	—
*v2(E)	30	#8	6'-2"	—
v3(E)	8	#5	6'-4"	—
v4(E)	16	#5	9'-5"	—
*Headed Bar				
Structure Excavation		Cu. Yd.	124	
Concrete Structures		Cu. Yd.	18.1	
Reinforcement Bars, Epoxy Coated		Pound	3,050	
Furnishing - Piles, HP 12x63		Foot	135	
Driving Piles		Foot	135	
Test Pile, HP 12x63		Each	1	

For details of piles see sheet 18 of 20.

Note:
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.

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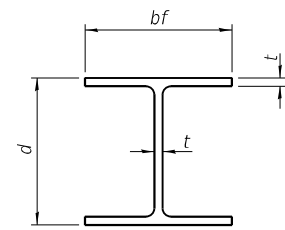
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT
STRUCTURE NO. 048-0094

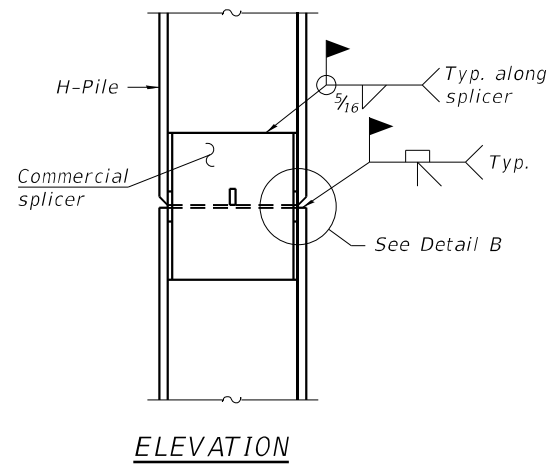
SHEET 17 OF 20 SHEETS

F.A.P. RTE. 380	SECTION 44BR-1	COUNTY KNOX	TOTAL SHEETS 60	SHEET NO. 38
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				

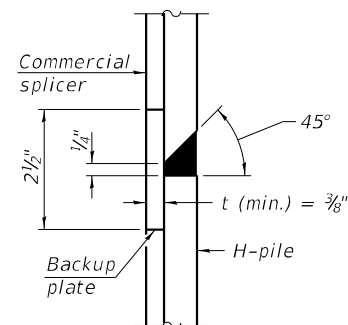


STEEL PILE TABLE

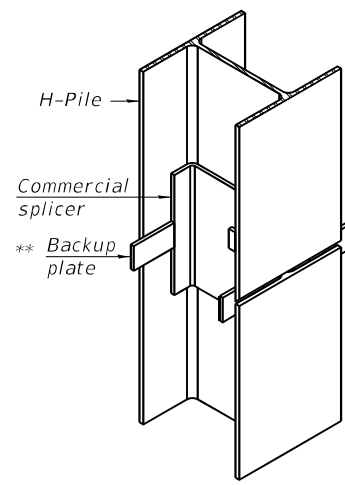
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 3/8"	14 3/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"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

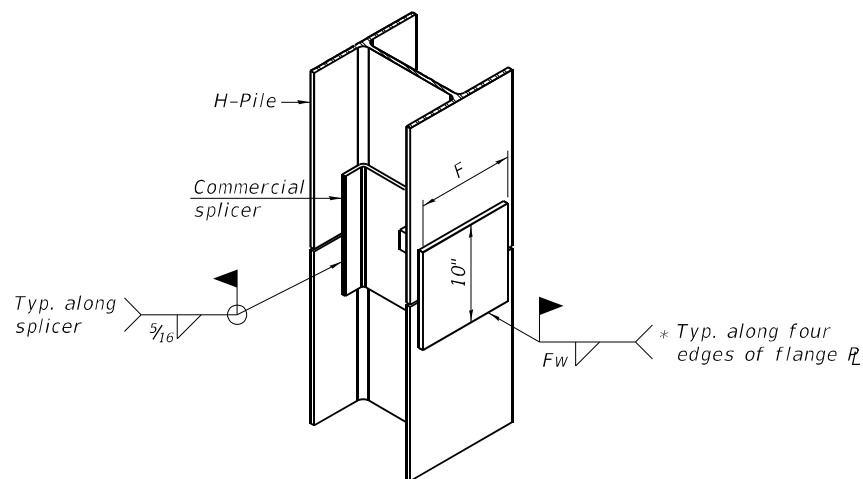


DETAIL "B"



ISOMETRIC VIEW

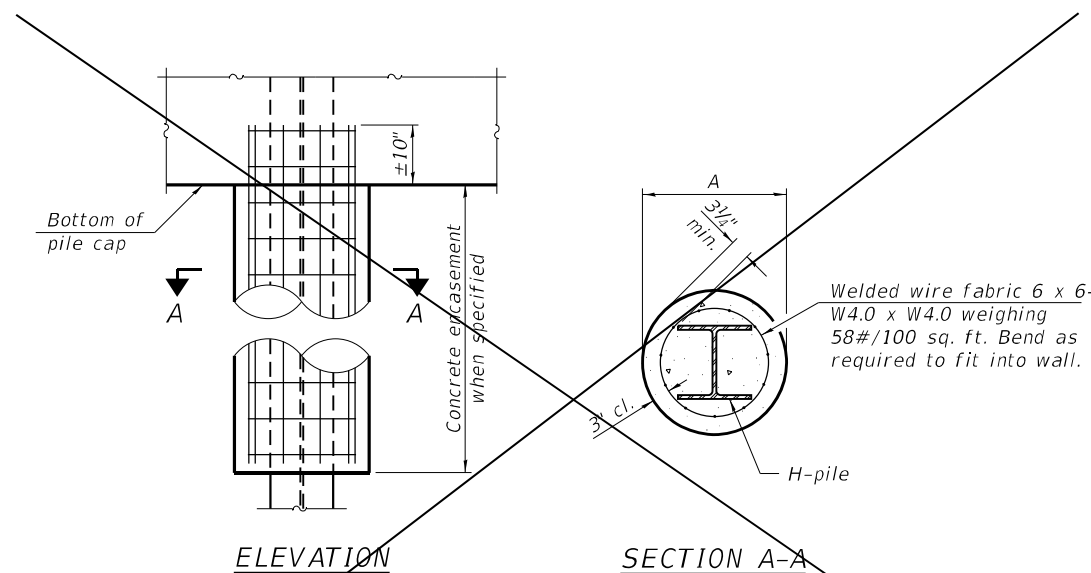
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

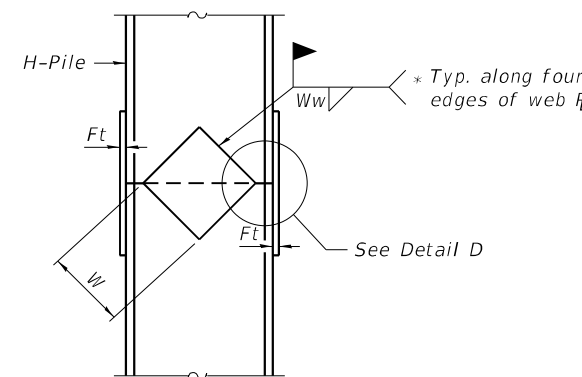
- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).



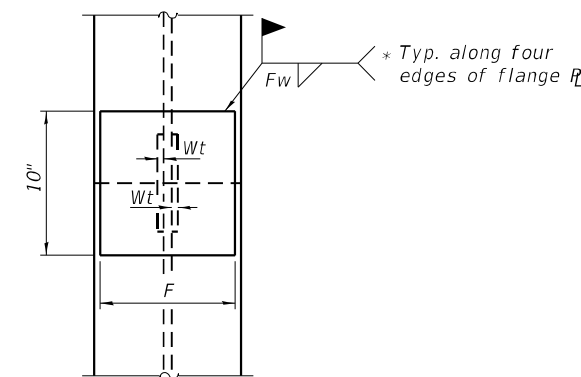
ELEVATION

SECTION A-A

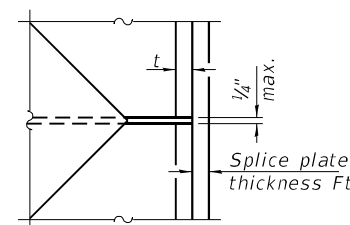
INDIVIDUAL PILE CONCRETE ENCASUREMENT
(Forms for encasement may be omitted when soil conditions permit).



ELEVATION



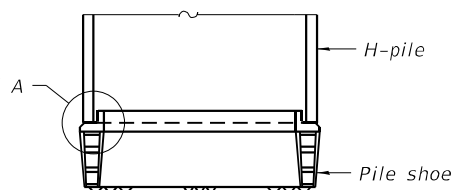
END VIEW



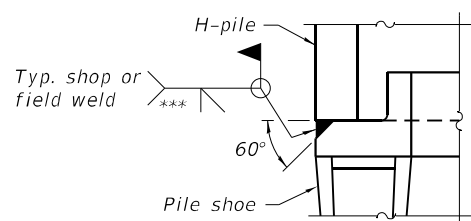
DETAIL D

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.

F-HP 8-11-2017



USER NAME =	DESIGNED - KEF	REVISED -
PILOT SCALE =	CHECKED - DDB	REVISED -
PILOT DATE =	DRAWN - BKR	REVISED -
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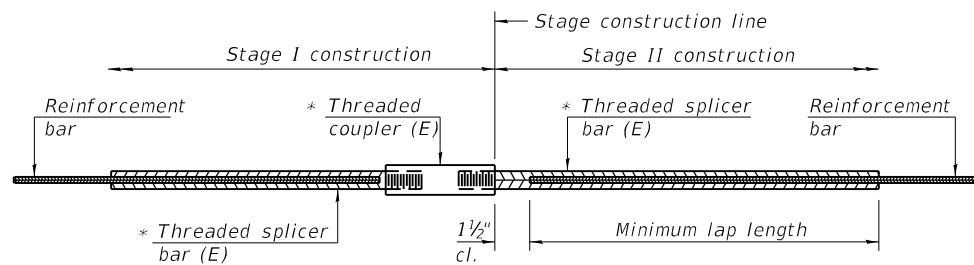
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 048-0094

SHEET 18 OF 20 SHEETS

F.A.P. RTE. = 380	SECTION = 44BR-1	COUNTY = KNOX	TOTAL SHEETS = 60	SHEET NO. = 39
CONTRACT NO. 68755				

ILLINOIS FED. AID PROJECT

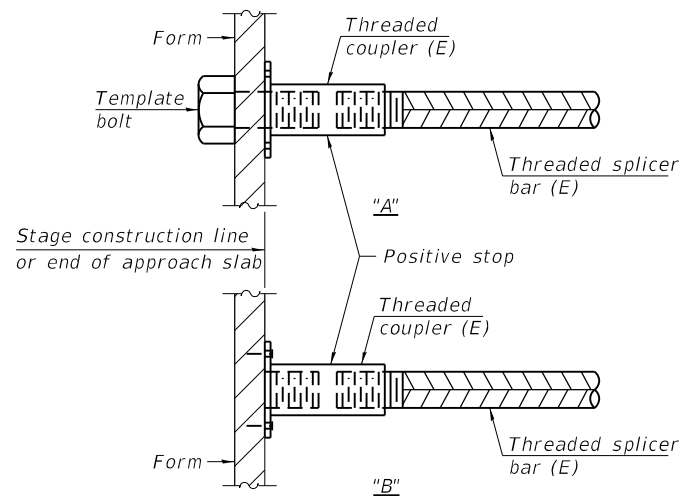


STANDARD BAR SPLICER ASSEMBLY

Threaded splicer bar length = min. lap length + 1 1/2" + thread length

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

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	218	3'-2"
Abut. Diaphragms	#6	14	2'-9"
Appr. Slabs	#5	92	3'-0"
Appr. Slabs	#8	120	4'-9"
Appr. Slab Ftg.	#5	80	3'-2"
Abut. Caps	#7	20	5'-0"

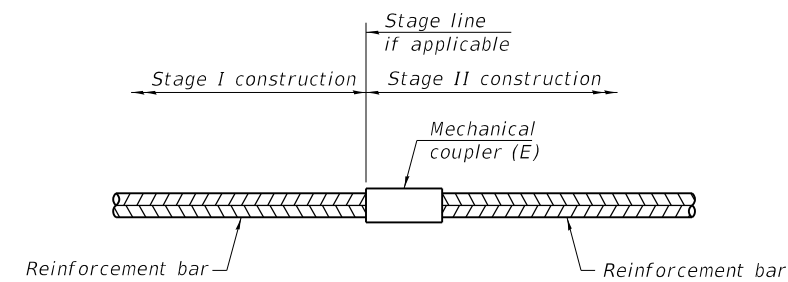


INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.

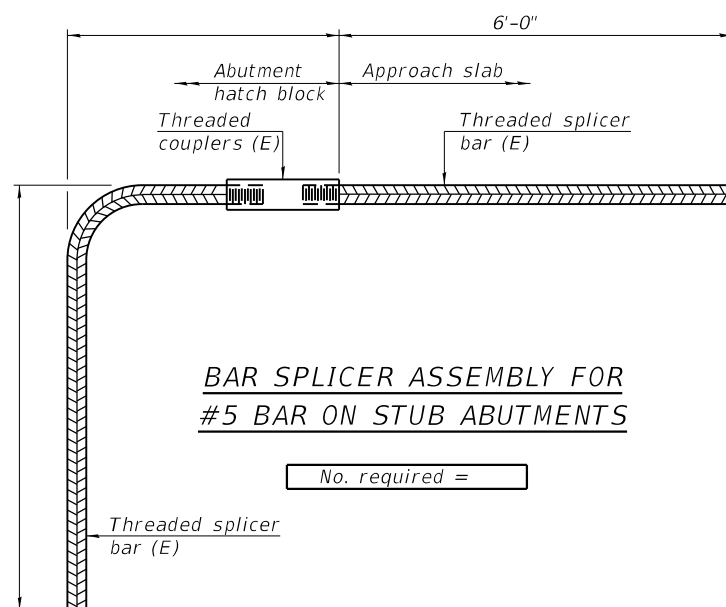
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



NOTES

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

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

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

MODEL: Default
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BSD-1

2-17-2017



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 048-0094

SHEET 19 OF 20 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	40
CONTRACT NO. 68755				

ILLINOIS FED. AID PROJECT



Illinois Department of Transportation

SOIL BORING LOG

Date 11/17/11

ROUTE IL8 DESCRIPTION Illinois Route 8 over Hickory Creek LOGGED BY JM

SECTION 44 BR-1 LOCATION SEC. 11, TWP. 9N, RNG. 3E

COUNTY Knox DRILLING METHOD HOLLOW STEM WASH BORING HAMMER TYPE AUTO

Table with columns for Depth (ft), Blows (6"), SPT (tsf), Moisture (%), and Soil Description. Includes data for Surface Water Elev., Stream Bed Elev., Groundwater Elev., and various soil layers like SANDY CLAY LOAM, CLAY, and SHALE.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, form 137 (Rev. 8-99) Page 19



SOIL BORING LOG

Date 11/17/11

ROUTE IL8 DESCRIPTION Illinois Route 8 over Hickory Creek LOGGED BY JM

SECTION 44 BR-1 LOCATION SEC. 11, TWP. 9N, RNG. 3E

COUNTY Knox DRILLING METHOD HOLLOW STEM WASH BORING HAMMER TYPE AUTO

Table with columns for Depth (ft), Blows (6"), SPT (tsf), Moisture (%), and Soil Description. Includes data for Surface Water Elev., Stream Bed Elev., Groundwater Elev., and various soil layers like SANDY CLAY LOAM, CLAY, and SHALE.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) BBS, form 137 (Rev. 8-99) Page 20

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Table with columns for USER NAME, DESIGNED, CHECKED, PLOT SCALE, PLOT DATE, REVISED, and DRAWN.

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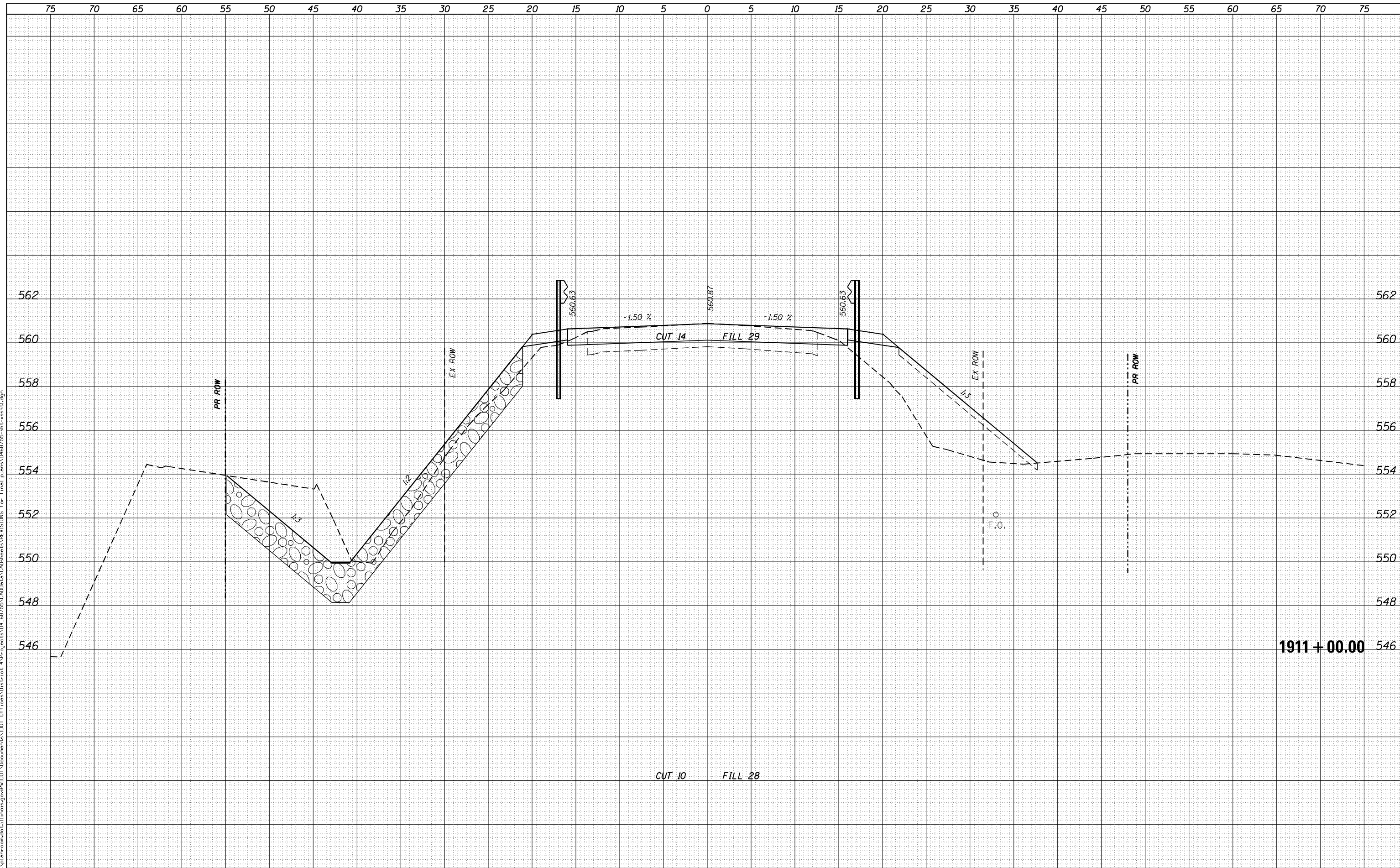
BORING LOGS STRUCTURE NO. 048-0094 SHEET 20 OF 20 SHEETS

Table with columns for F.A.P. RTE., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., and CONTRACT NO.

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BY	
FINISHED SURVEY	
PLOTTED TEMPLATE	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
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1911+00.00

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

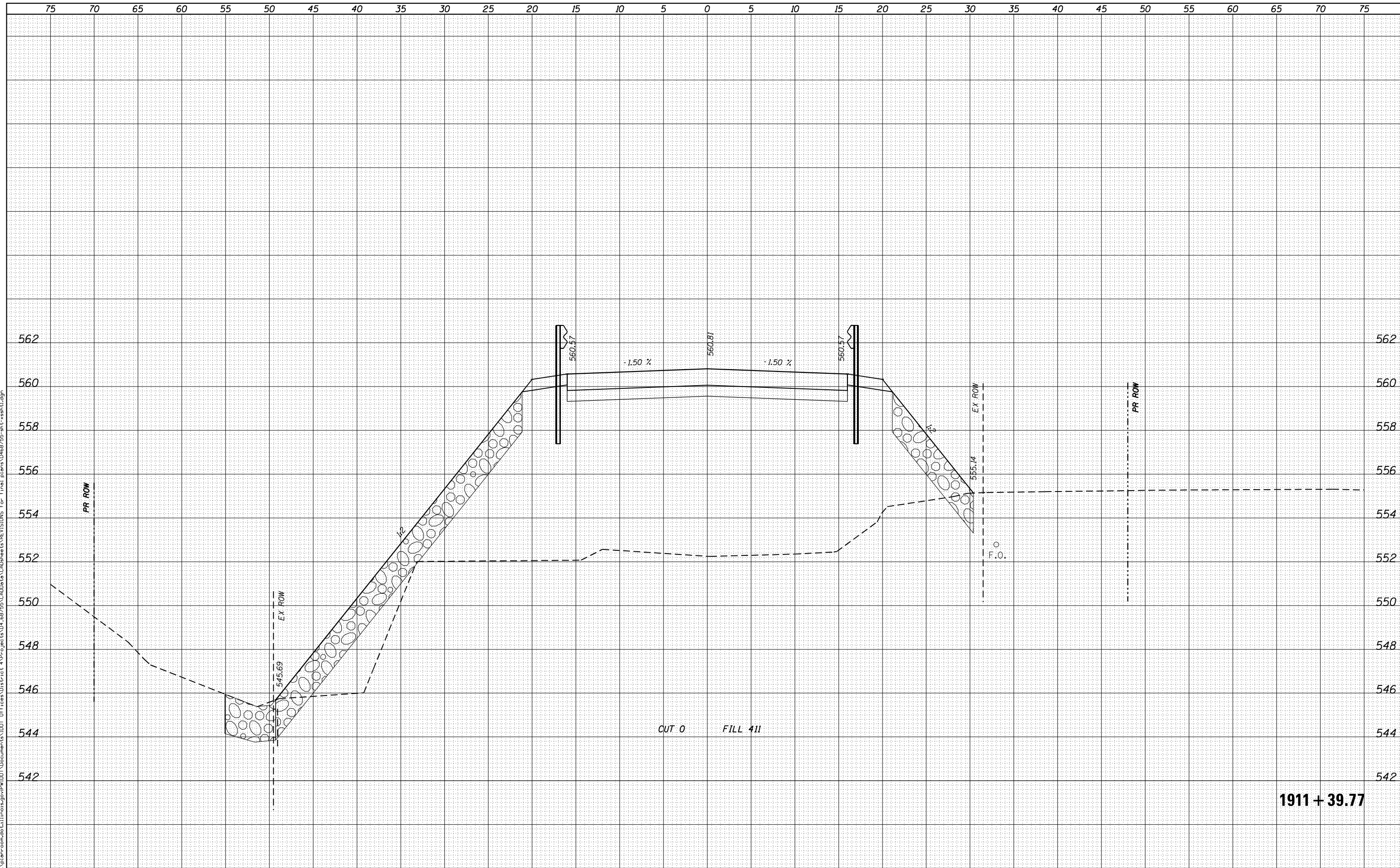
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	44
			CONTRACT NO. 68755	
ILLINOIS FED. AID PROJECT				

DATE	
BY	
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NOTE BOOK	
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BY	
ORIGINAL SURVEY	
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1911 + 39.77

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

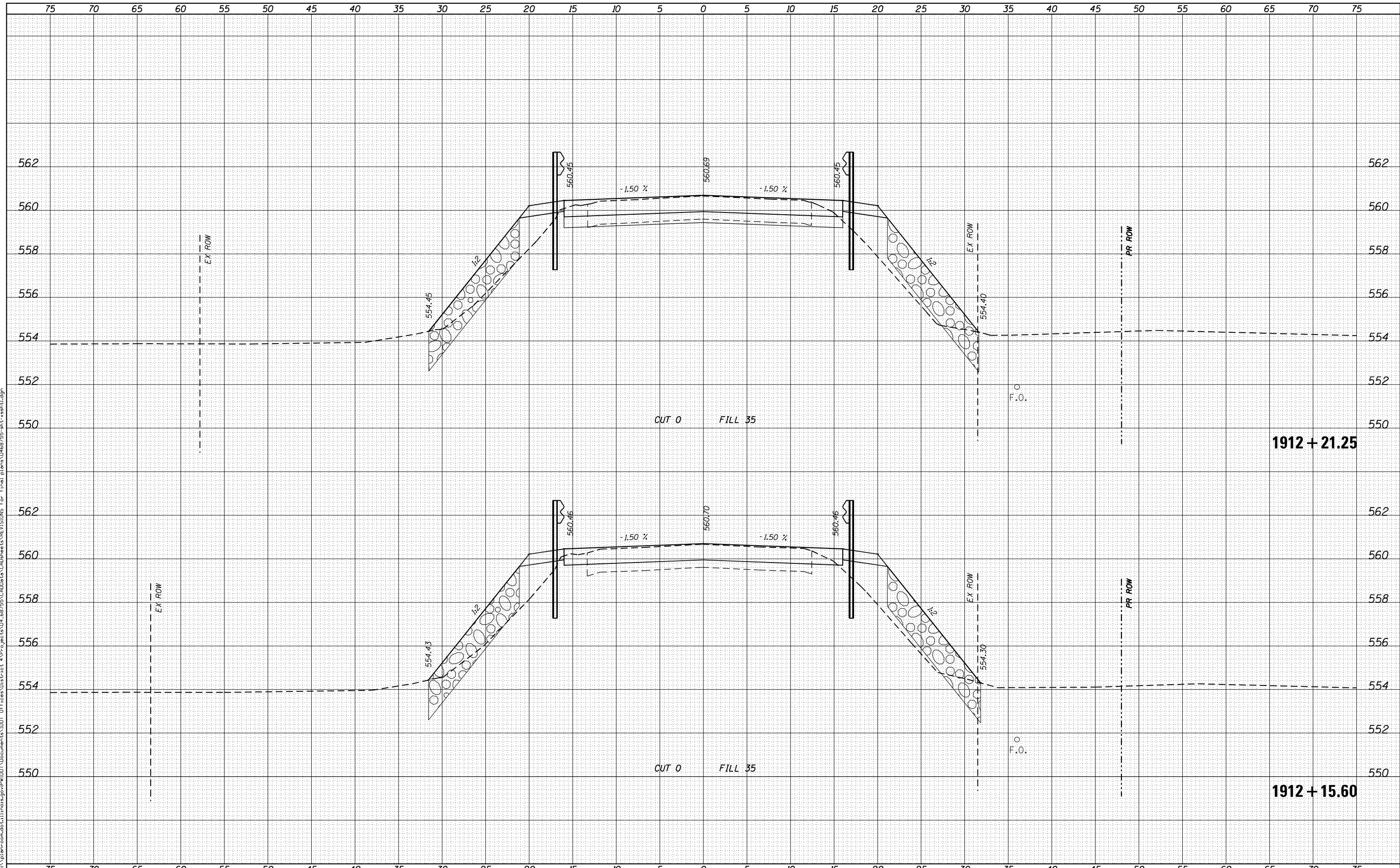
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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			CONTRACT NO. 68755	
ILLINOIS FED. AID PROJECT				

DATE	
BY	
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NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
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	AREAS
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DATE	
BY	
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NOTE BOOK	PLOTTED
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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

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DESIGNED -	REVISD -
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CHECKED -	REVISD -
DATE -	REVISD -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

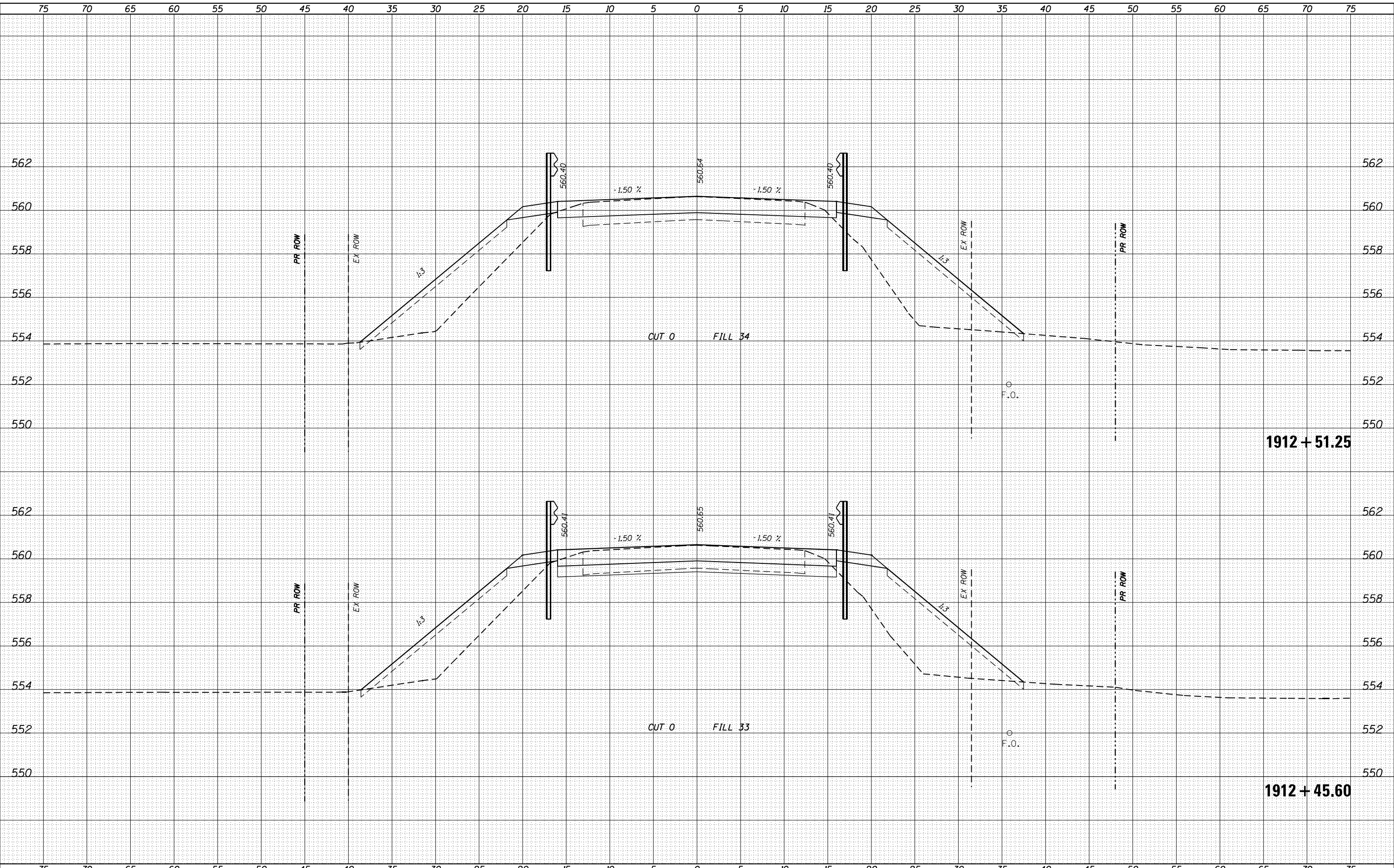
CROSS SECTIONS	
SCALE:	SHEET OF SHEETS STA. 1912+15.60 TO STA. 1912+21.25

F.A.S. RTE. 380	SECTION 44BR-1	COUNTY KNOX	TOTAL SHEETS 60	SHEET NO. 49
			CONTRACT NO. 68755	
ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINISHED SURVEY	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
NO. AREAS CHECKED	

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

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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

USER NAME = jacobsmr	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 10.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 9/3/2020	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

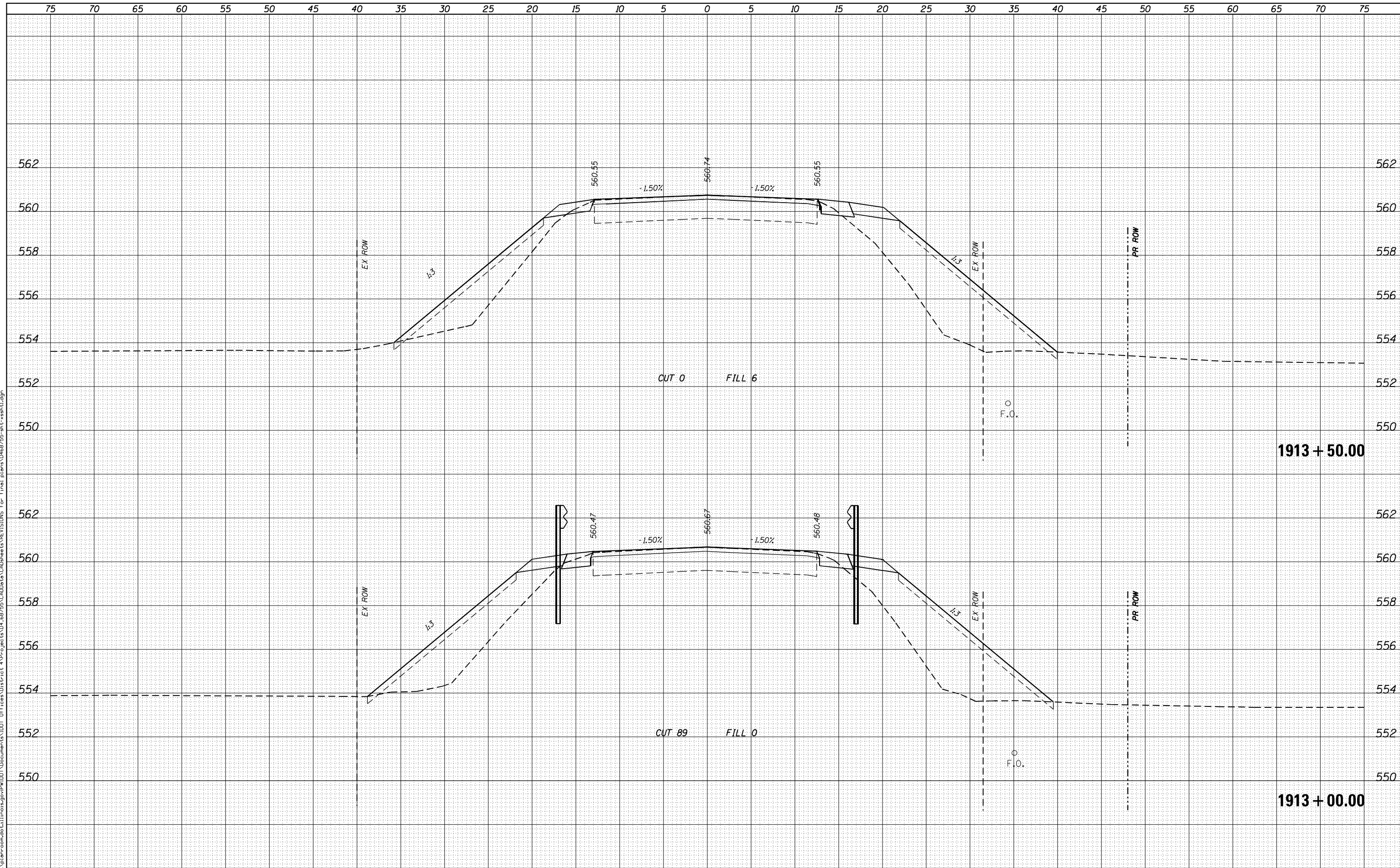
CROSS SECTIONS			
SCALE:	SHEET	OF	SHEETS
			STA. 1912+45.60 TO STA. 1912+51.25

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	50
				CONTRACT NO. 68755
ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINISHED SURVEY	
PLOTTED TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

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

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CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

USER NAME = jacobsmr	DESIGNED -	REVISED -
PLOT SCALE = 10.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 9/3/2020	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

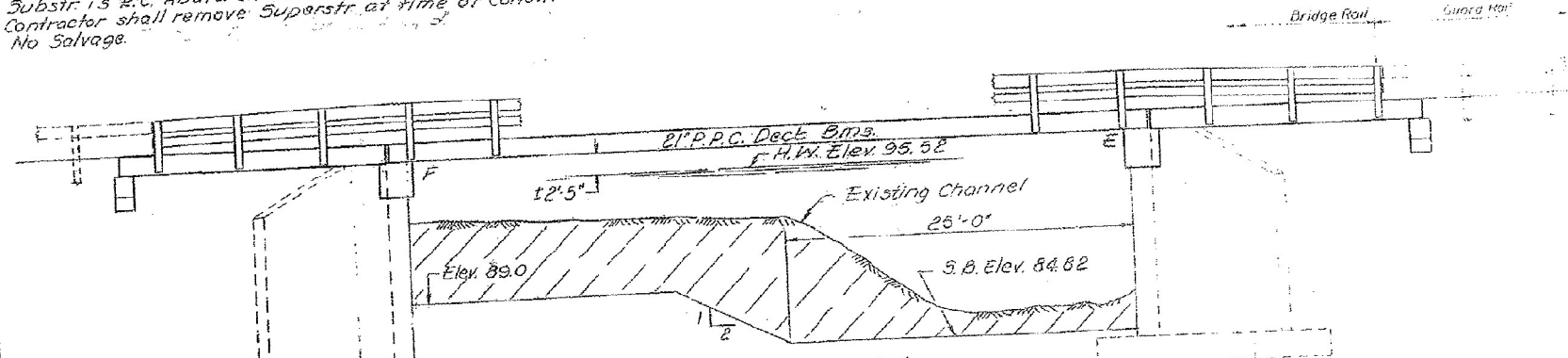
CROSS SECTIONS	
SCALE:	SHEET OF SHEETS
STA. 1913+00.00 TO STA. 1913+50.00	

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	52
			CONTRACT NO. 68755	
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

PROJECT NO.	SECTION	SHEET NO.	TOTAL SHEETS
448R	KNX	15	7

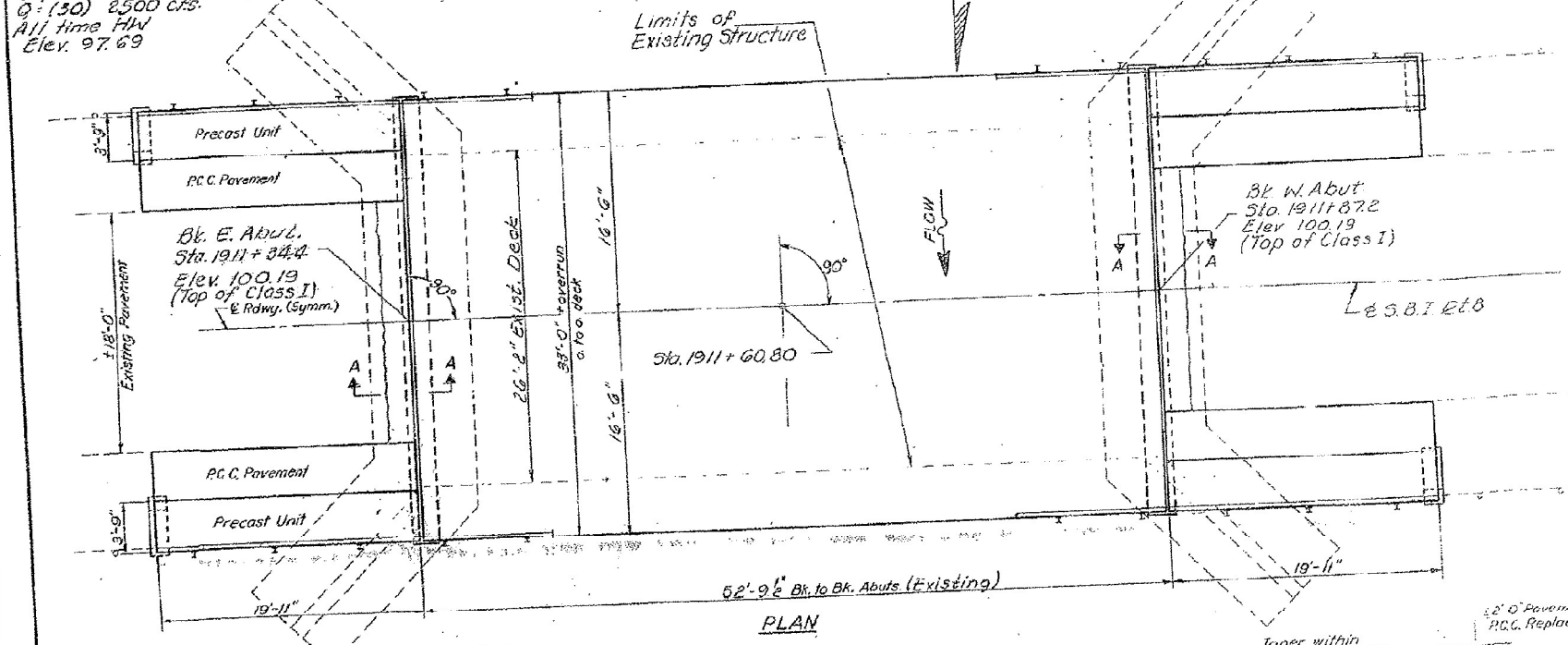
B.M. Chiseled square on top of Southeast wingwall Elev. 100.00
Existing Structure: Built as S.B.I. Rt. 8-5ec. 44B Sta. 1911+85 in 1926. Superstr. Painted Concrete through Girder.
Substr. is R.C. Abut. on wood piles.
Contractor shall remove Superstr. at time of constr. No Salvage.



WATERWAY INFORMATION

Drainage Area 5560 Acres
Character Level, cultivated
Present Opening 376 Sq. Ft.
Prop'd Opening 455 Sq. Ft.
Prop'd Opening 455 Sq. Ft.
Q = (50) 8500 cfs.
All time HW Elev. 97.69

Hatched Area to be excavated within R.O.W. limits.
ELEVATION

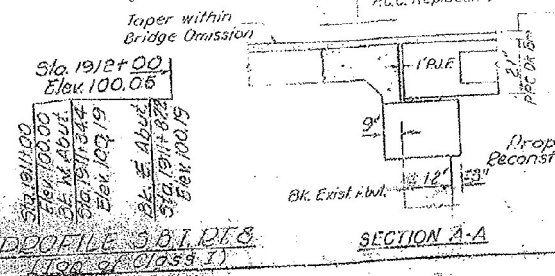


PLAN

DESIGNED **F. Mercado**
CHECKED **G.B. Miller**
DRAWN **J.L. Armstrong**
CHECKED **SDM**

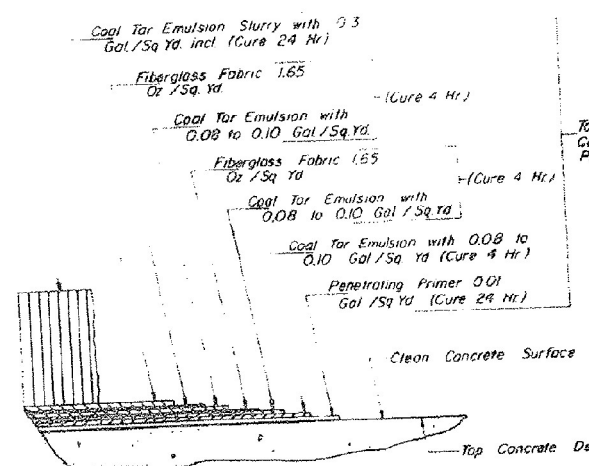
EXAMINED **NAVIGABLE**
PASSED
APPROVED

DESIGN STRESSES
FIELD UNITS: $f_c = 1400$ psi, $f_s = 20,000$ psi (reinf.), $V_c = 75$ psi (footing), $n = 10$
PRECAST PRESTR. UNITS: $f_c = 5000$ psi, $f_{ci} = 4000$ psi, $f_s = 248,000$ psi, $f_{sj} = 173,600$ psi



SECTION A-A

Bituminous Concrete Surface Course



DETAIL OF DECK SURFACING

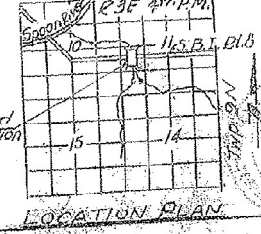
GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.
An alternate strand pattern using Extra High Strength Prestressing strand (270 ksi) is permitted.
Expansion bolts shall consist of self drilling expansion anchors and 3/8" hooked bolts. Hooked bolts shall extend a minimum of 12" into new concrete, unless otherwise shown.
Shoulder transition to wingwall shall be shaped with broken concrete.
Cost incidental.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Channel Excavation	Cu. Yds			300
Portland Cement Concrete Pavement (10")	Sq. Yds		53	53
Pavement Fabric	Sq. Yds		33	33
Concrete Removal	Cu. Yds		9	9
Expansion Bolts (3/8")	Each	52	84	136
Class X Concrete	Cu. Yds	16	180	196
Precast Concrete Bridge Slab	Sq. Ft.	299		299
Precast Prestressed Concrete Deck Beams (21)	Sq. Ft.	1737		1737
Steel Reinforcing, Type W	Lbs.	177		1750
Reinforcement Bars	Lbs.			8
Pavement Removal & P.C.C. Replacement, Type 2 (10")	Sq. Yds			1
Removal of Existing Superstructure	Each			19.5
Coal Tar Interlayer Protective Coat	Sq. Yds			22
Bit. Concrete Surf. Course Class I	Tons			

GENERAL PLAN & ELEVATION



LOCATION PLAN

S.B.I. RT. 8 OVER HICKORY CREEK
S.B.I. RT. 8 SEC. 44-B
KNOX COUNTY
STA. 1911+60.80

6-1 Complete Re-Decking

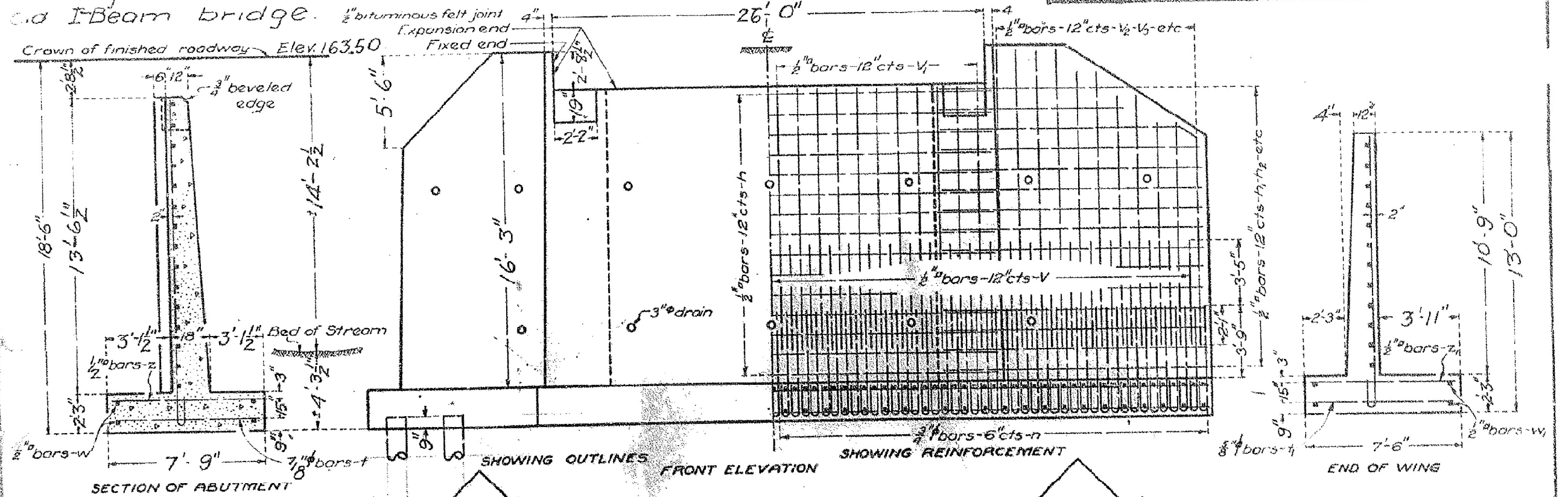
FOR INFORMATION ONLY

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44B-1	KNOX	60	54
CONTRACT NO. 68755				

DIVISION OF HIGHWAYS
R.C. ABUTMENTS FOR GIRDER BRIDGE
 HEIGHT OVER ALL 18 FT. 6 IN.

BOND ISSUE ROUTE NO.	COUNTY	SEC.	TOTAL SHEETS	SHEET NO.
8	KNOX	44 ^B 44 ^C	9	4

M. #134A N. & W. in T.P.
 Sta. 1908+50 Elev. 157.00.
 Bridge contractor shall remove old I-Beam bridge. $\frac{1}{2}$ " bituminous felt joint



Class A concrete shall be used throughout. Proportions 1:2 $\frac{1}{2}$:4.
 All reinforcing steel shall be securely wired in place before concrete is poured.
 All piles are untreated.
 Structure contractor shall construct channel between abutments within limits of R.O.W. to Elev. 149.3.

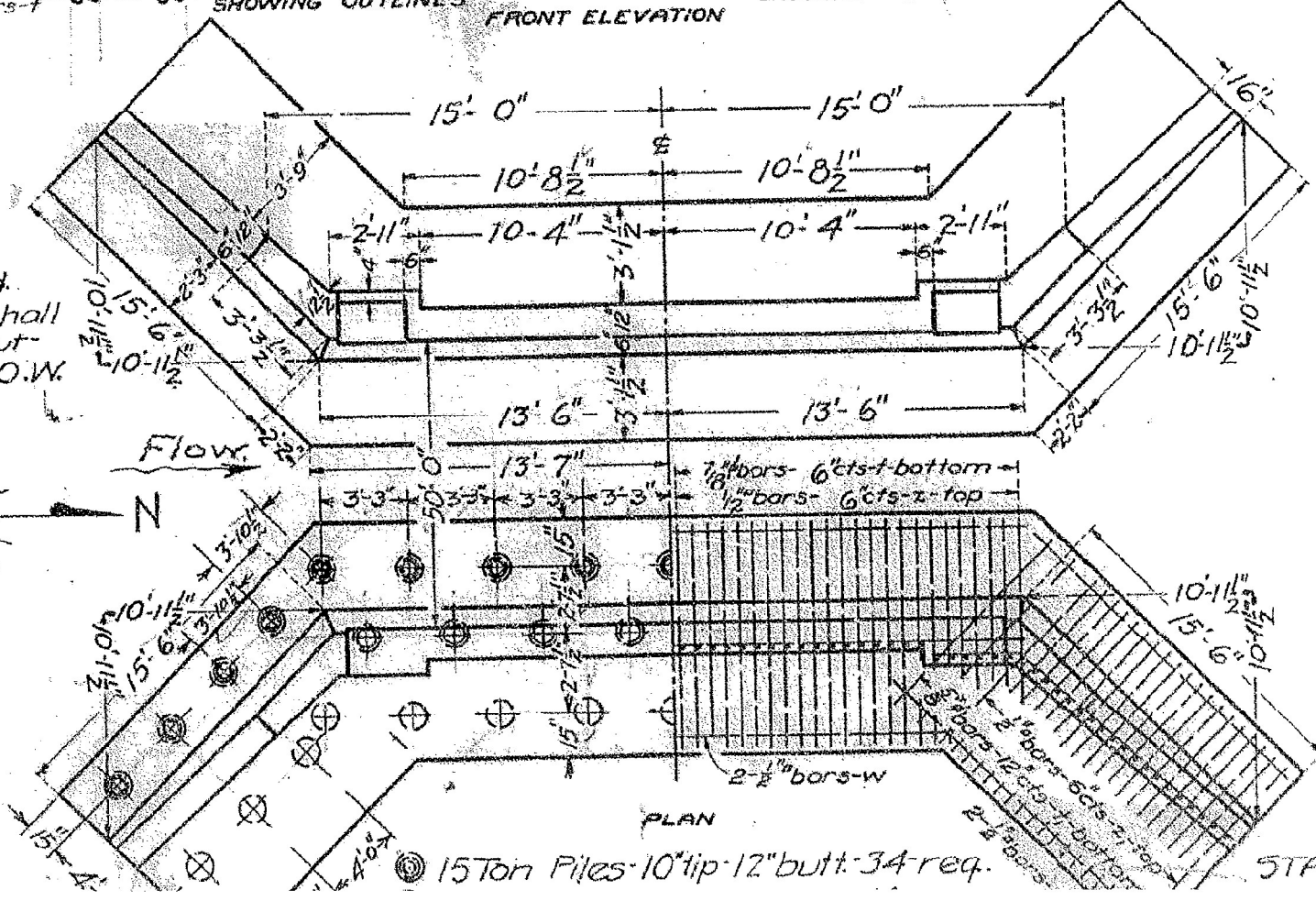
BILL OF MATERIAL

Bars	No.	Size	Length
v	110	1/2" #4	3'-6"
v	50	1/2" #4	12'-0"
v ₂	12	1/2" #4	14'-6"
v ₃	16	1/2" #4	13'-0"
v ₄	8	1/2" #4	10'-0"
v ₅	12	1/2" #4	10'-6"
v ₆	12	1/2" #4	9'-0"
h	36	1/2" #4	14'-6"
h ₂	40	1/2" #4	16'-6"
h ₃	8	1/2" #4	14'-0"
h ₄	8	1/2" #4	10'-6"
n	220	3/8" #3	6'-9"
t	108	3/8" #3	7'-6"
z	68	3/8" #3	7'-3"
z	106	1/2" #4	7'-6"
z ₁	112	1/2" #4	7'-3"
w	16	1/2" #4	14'-0"
w ₁	16	1/2" #4	16'-6"

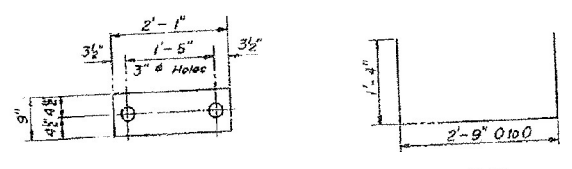
Reinforcing Steel-Lb. 8750
 Concrete-Class A-Ci.Yd. 145.2

COMPUTED	- C.H. Brewer
CHECKED	- E. Floyd Bell
DRAWN	- C.H.B.
CHECKED	- H.W. Bush
ASSEMBLED	- P. Palm
CHECKED	- E.L. Smith, R.C.E.

EXAMINED *[Signature]* 1925
 PASSED *[Signature]*

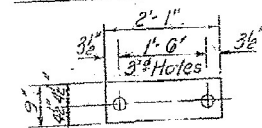


STA. 1911+85
 STATE BOND ISSUE RT. 8.

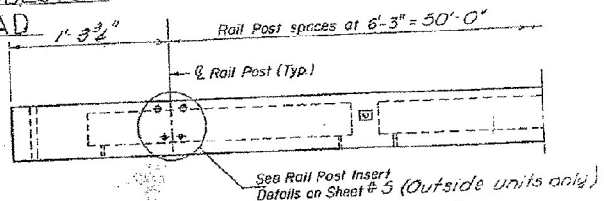


FABRIC BEARING PAD AT EAST ABUT.(FIX)

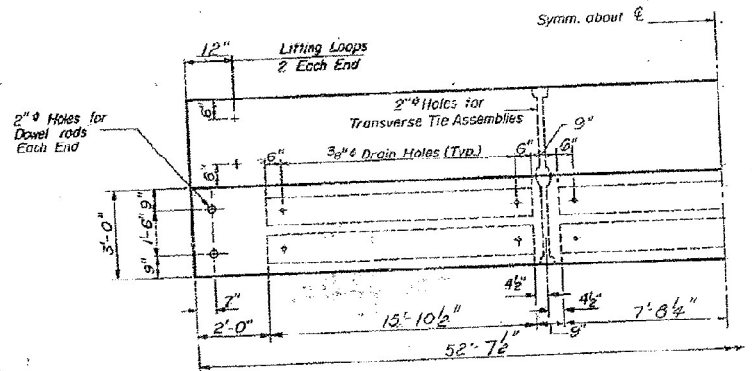
U BAR



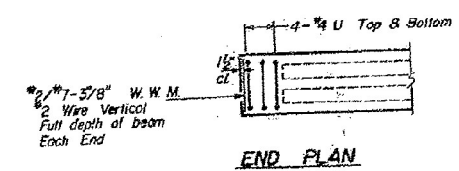
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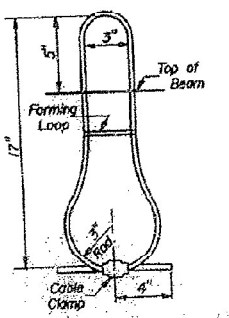
ELEVATION



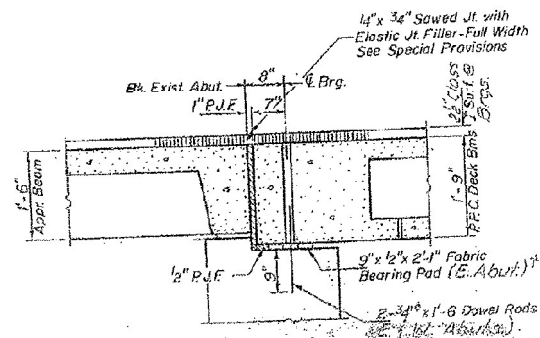
PARTIAL PLAN



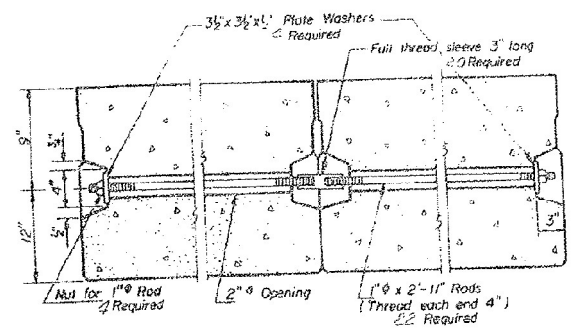
END PLAN



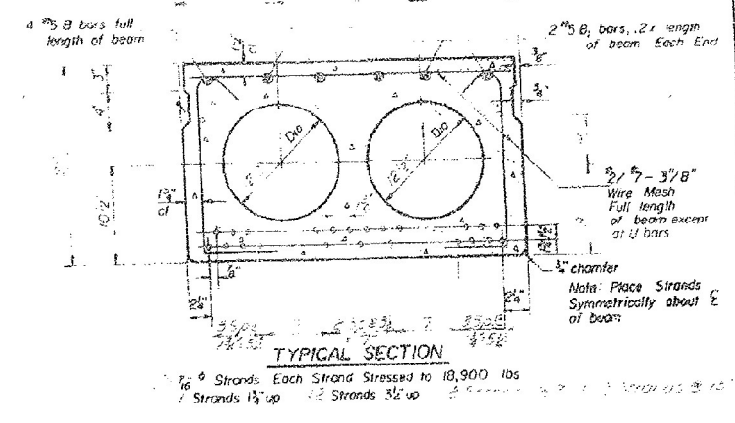
LIFTING LOOP DETAIL



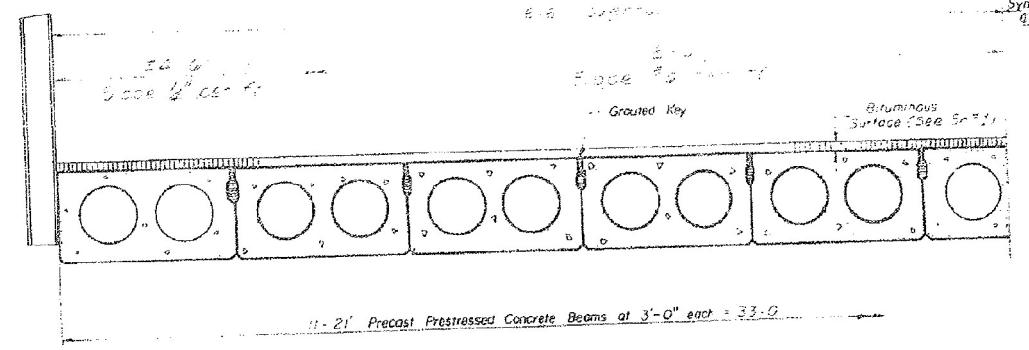
SECTION THRU ABUT. AT OUTSIDE BEAM



TYPICAL TRANSVERSE TIE ASSEMBLY



TYPICAL SECTION



HALF CROSS SECTION

GENERAL NOTES

Pressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand. The nominal diameter shall be 7/8" and the nominal cross-sectional area shall be 0.109 sq. in. Lifting loops shall be 3/8" diameter, 5x19 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 29,000 lbs. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside beam shall be filled with grout after transverse tie assembly is in place. Longitudinal shear keys shall be packed with a very dry mix of 2-1 sand and P.C. mortar. After beams have been erected, holes for dowel anchors shall be drilled into sub-structure & fill holes in beam with P.C. mortar. At expansion and grout dowels into sub-structure & fill holes in beam with P.C. mortar. Steel for dowel rods shall be A.S.T.M. A-306 Grade 70-80. The rods shall be A.S.T.M. A-306 Grade 70-80. After fabrication the transverse tie assemblies (tie rods, nuts, washers and sleeves) shall be hot-dipped galvanized in accordance with A.S.T.M. Designation A-153. Cost of reinforcement and accessories cast into the beam of bearing pads, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams."

BILL OF MATERIAL

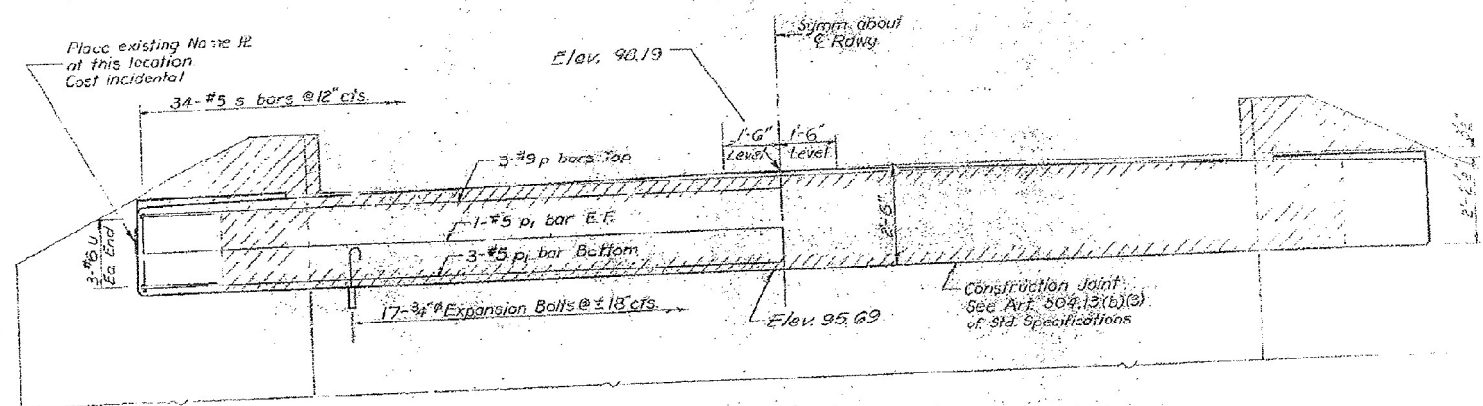
Item	Unit	Quantity
Precast Prestressed Concrete Deck Beams (21')	Sq. Ft.	1737
Removal of Existing Superstructure	Each	1

SUPERSTRUCTURE DETAILS

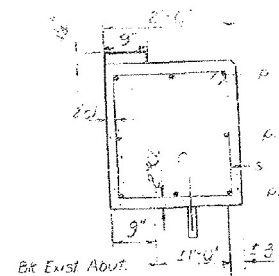
S.B.I. RT. 8 SEC. 44 BR
KNOX COUNTY
STA. 1911+60.80

DESIGNED: F. Mercado
CHECKED: G. Miller
DRAWN: J. L. Armstrong
CHECKED: G. Miller
EXAMINED: Nov. 6, 1970
PASSED: [Signature]
APPROVED: [Signature]

PD-1-S 11-10-65 Rev. 5-20-68
SR-2 21' P.P.C. Dk. Bms.



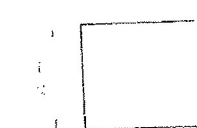
ELEVATION



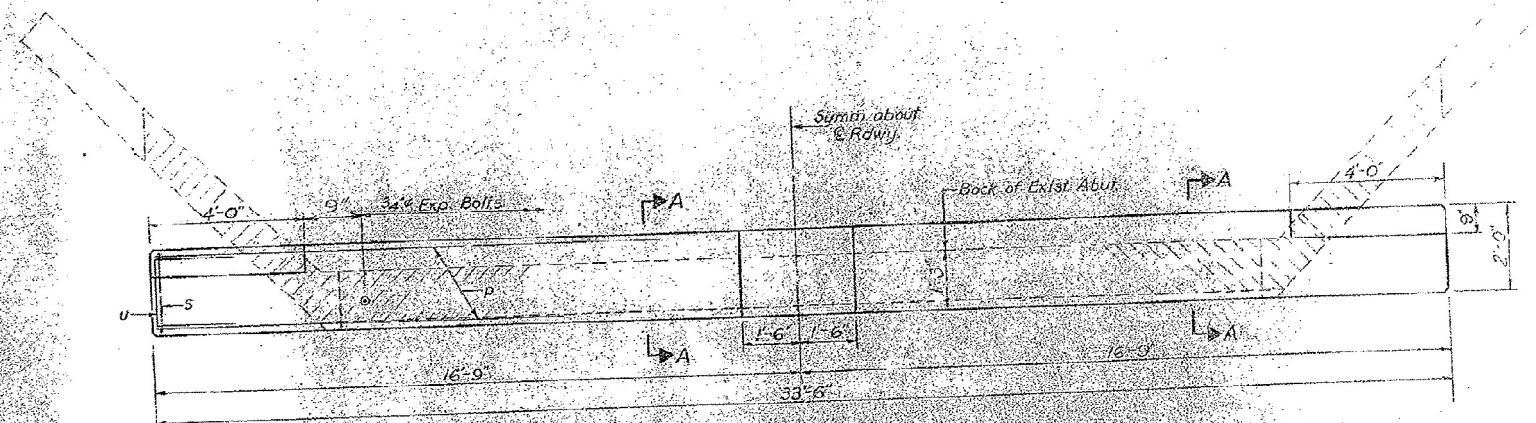
SECTION A-A



BAR S



BAR U



PLAN

TWO ABUTS.
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p	6	#9	33'-3"	—
pl	10	#5	33'-3"	—
s	63	#5	7'-0"	□
u	12	#6	5'-3"	□
Class X Concrete			Cu. Yds.	12.0
Reinforcement Bars			Lbs.	1750
Expansion Bolts 3/4"			Each	34
Concrete Removal			Cu. Yds.	9

DESIGNED *F. Mercado*
 CHECKED *GB Miller*
 DRAWN *J.L. Armstrong*
 CHECKED *BEM*

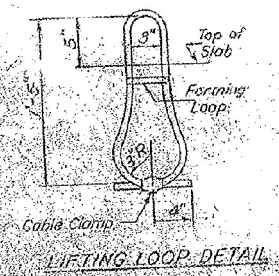
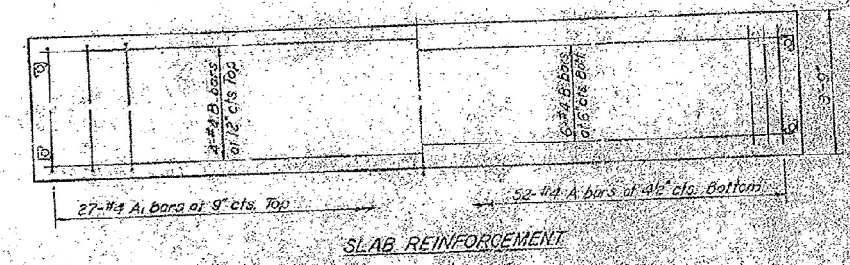
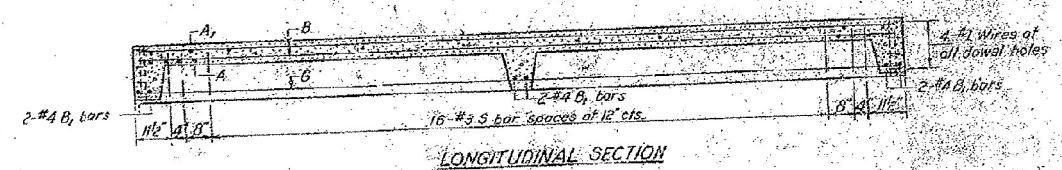
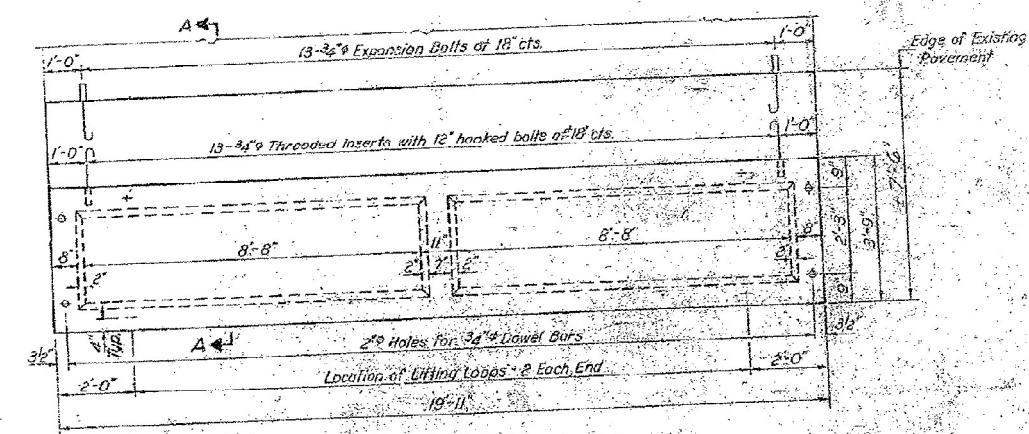
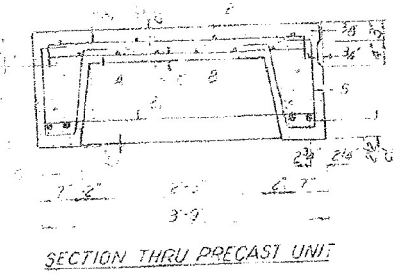
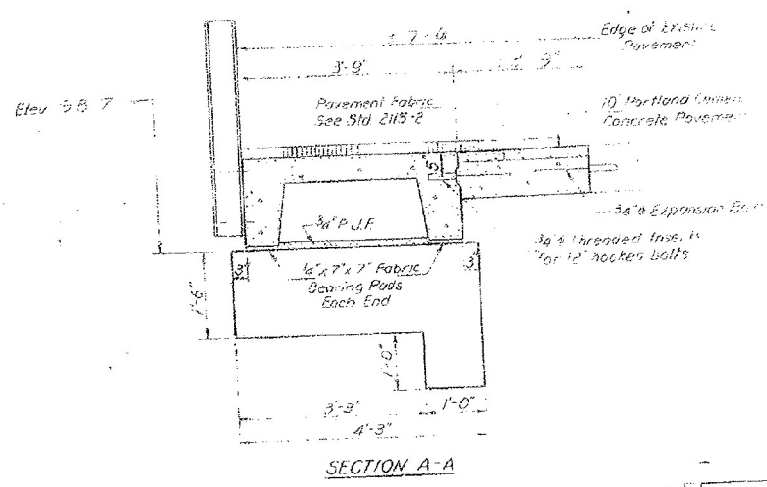
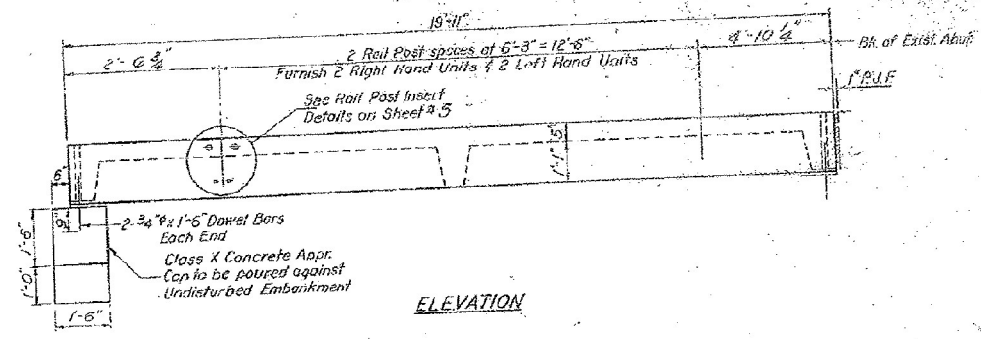
EXAMINER *[Signature]*
 PASSED
 APPROVED

NOTE
 Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
 Expansion bolts shall be anchored in sound concrete.
 All edges shall have standard 45° chamfers except as noted.

ABUTMENTS
 S.B.I. DT. 8 SEC. 44 BR
 KNOX COUNTY
 STA. 1911+85

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

PROJECT NO.	SECTION	DATE	BY	CHECKED	SCALE
11-8	44BR	Knox	5		



BAR LIST - ONE UNIT
Reinforcement to be cast into

BAR	NO.	SIZE	LENGTH	QTY
A	27	#4	3'-3"	1
A1	27	#4	4'-0"	1
B	10	#4	19'-6"	1
B	5	#4	3'-6"	1
S	4	#3	19'-6"	1
S	42	#3	3'-4"	1

NOTES
Unless otherwise approved by the Engineer, lifting loops shall be 1/2" 6x19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be cut off after slab has been erected. Holes shall be drilled and anchor towels grouted in place. Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4" hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab". The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the interior Deck Beams after Deck Beams are in final position.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	299
Portland Cement Concrete Pavement (10')	Sq. Yds.	33
Pavement Fabric	Sq. Yds.	3.8
Expansion Bolts 3/4"	Each	52
Class X Concrete	Cu. Yds.	1.6

STRESSES
F_c = 4,500 psi.
F_s = 18,000 psi.
F_s = 20,000 psi.
n = 8

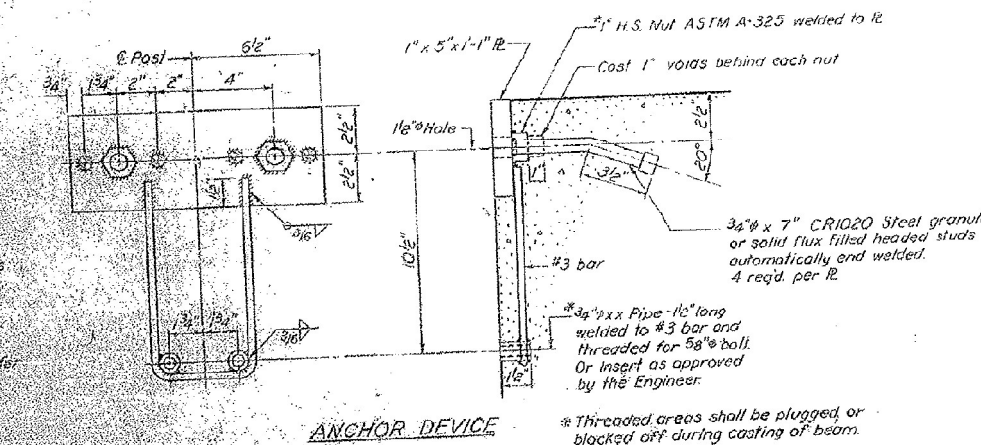
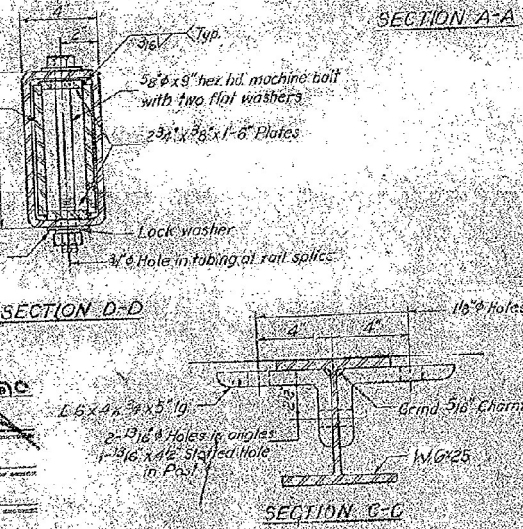
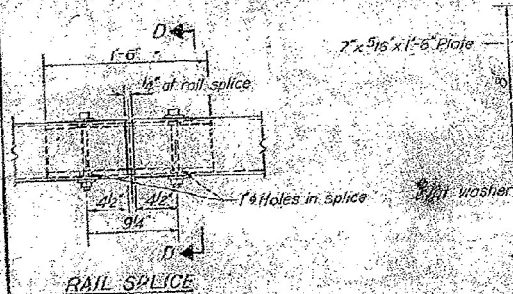
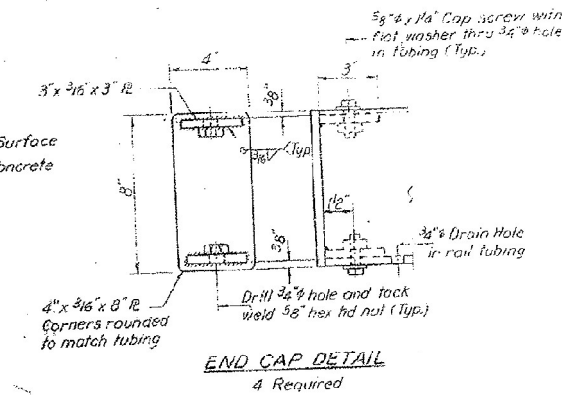
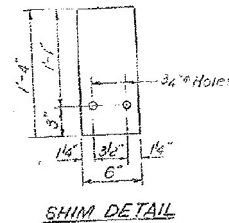
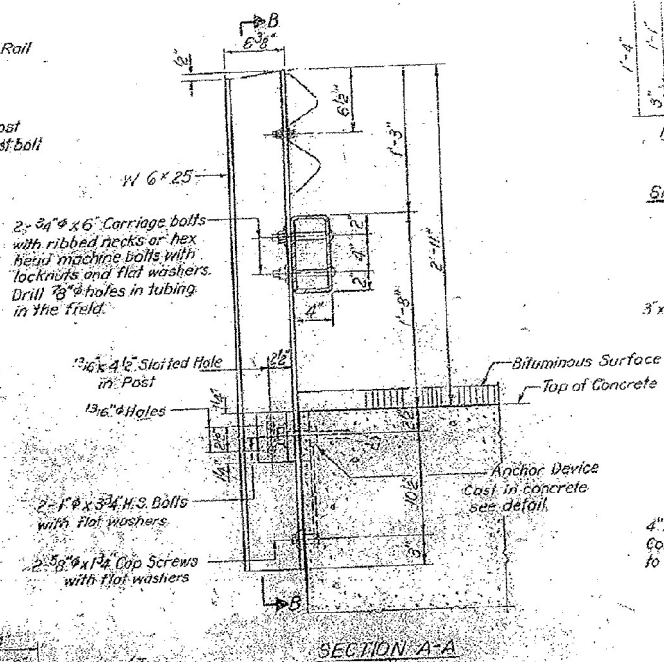
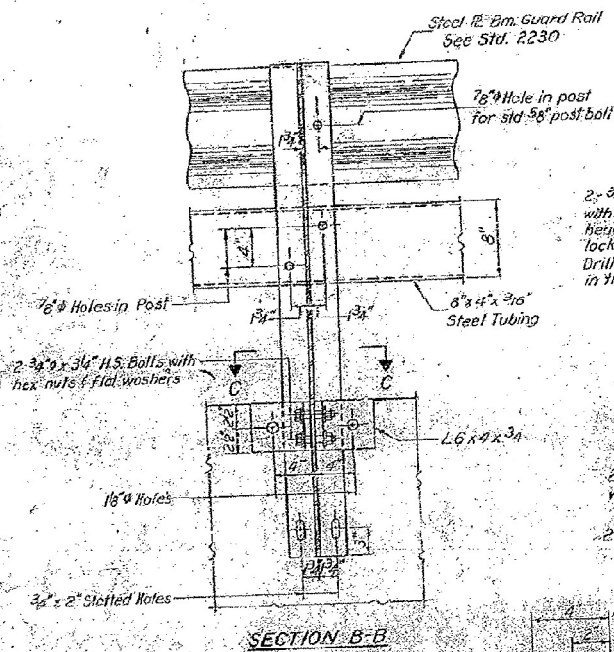
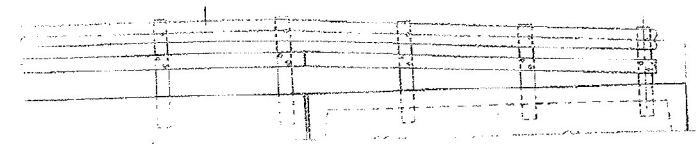
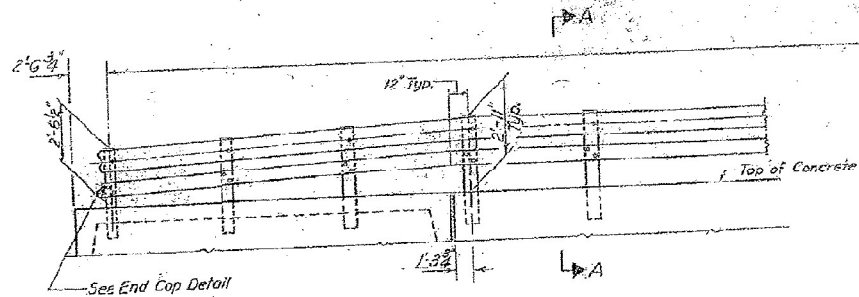
APPROACH DETAILS
S.B.I. RT. 8 SEC. 4.4 BR.
KNOX COUNTY
STA. 1911+60.80

DESIGNED: E. Merlino
CHECKED: G.P. Miller
DRAWN: J.L. Armstrong
CHECKED: G.P.M.

EXAMINED: [Signature]
DATE: 11/16/19
APPROVED: [Signature]

AP-1 20' Precast Appr Unit (RT L)

17' Post Spacing of 6'-3" = 87'-6"



NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A 501 "Hot Formed Welded and Seamless Carbon Steel Structural Tubing."

All other steel shapes and plates shall conform to the requirements of ASTM designation A-481 or A-36.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to ASTM designation A-325.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with ASTM designation A-153.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with ASTM designation A-123 and A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE W.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt point conforming to Section 714.08 Type B or place 1/2" fabric bearing pad between the post and concrete.

The 3/4" high strength bolts used to connect the 6 x 4 x 3/8 angles to the post shall be tightened in accordance with Article 710.11 of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete beam shall be tightened to a snug fit and given an additional 1/8 turn.

For multi-span bridges, sufficient 1/2" x 6" x 1'-4" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

BILL OF MATERIAL

Item	Unit	Quantity
STEEL RAILING, TYPE W	Lin. Ft.	177

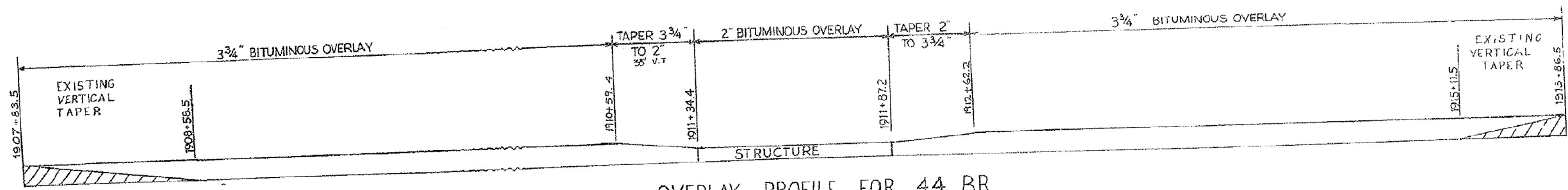
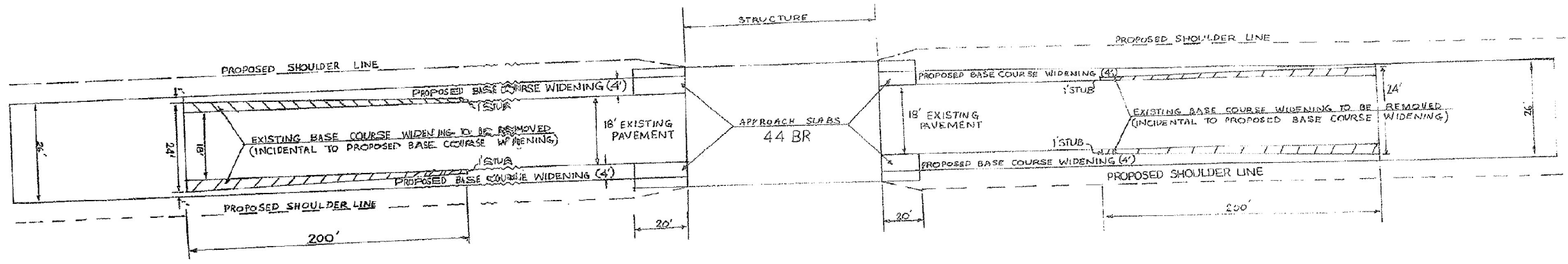
**TYPE W
STEEL RAILING**

S.B.I. RT-8 SEC. 4.4 BR
KNOX COUNTY
STA. 1911+60.80

DESIGNED: F. Mercado
CHECKED: G. Miller
DRAWN: J. L. Armstrong
CHECKED: G. Miller

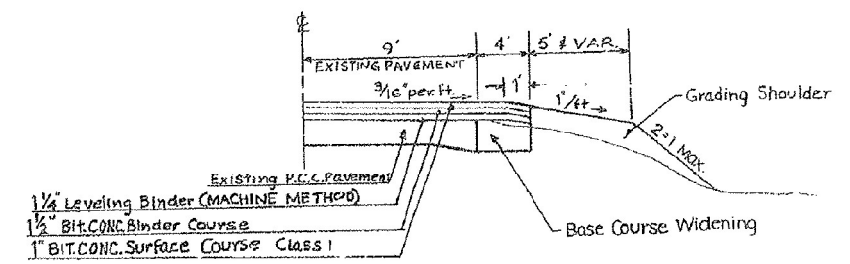
EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]

OVERLAY STRUCTURE 44 BR, 45 BR



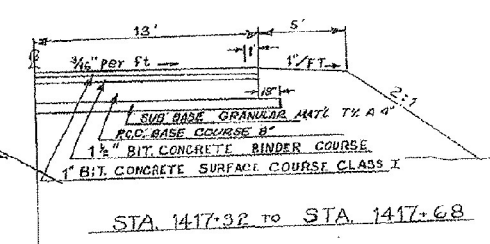
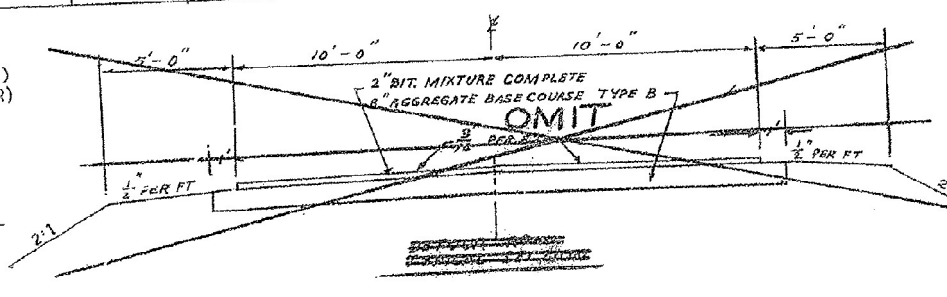
OVERLAY PROFILE FOR 44 BR

	44 BR	45 BR	TOTAL
LEVELING BINDER (MACHINE METHOD)	129	118	247
BITUMINOUS CONCRETE BINDER COURSE	157	189	352
BITUMINOUS CONCRETE SURFACE COURSE CLASS 1	1402	22	248



TYPICAL SECTION FOR PAVEMENT WIDENING

9" BASE COURSE WIDENING: 498 SQ YDS (44 BR)
 520 SQ YDS (45 BR)
 TOTAL 1018 SQ YDS
 9" P.C.C. BASE COURSE: (45 BR)
 1714+32 - 1714+68 104 SQ YDS
 P.C.C. PAVEMENT REMOVAL: (45 BR)
 1714+32 - 1714+40.9 148 SQ YDS
 1714+62.1 - 1714+68 128 SQ YDS
 TOTAL 276 SQ YDS
 SUB. BASE GRANULAR MATERIAL TYPE 2 4"
 (45 BR)
 1714.32 - 1714.68 27 TONS



STA. 1417.32 TO STA. 1417.68

FOR INFORMATION ONLY

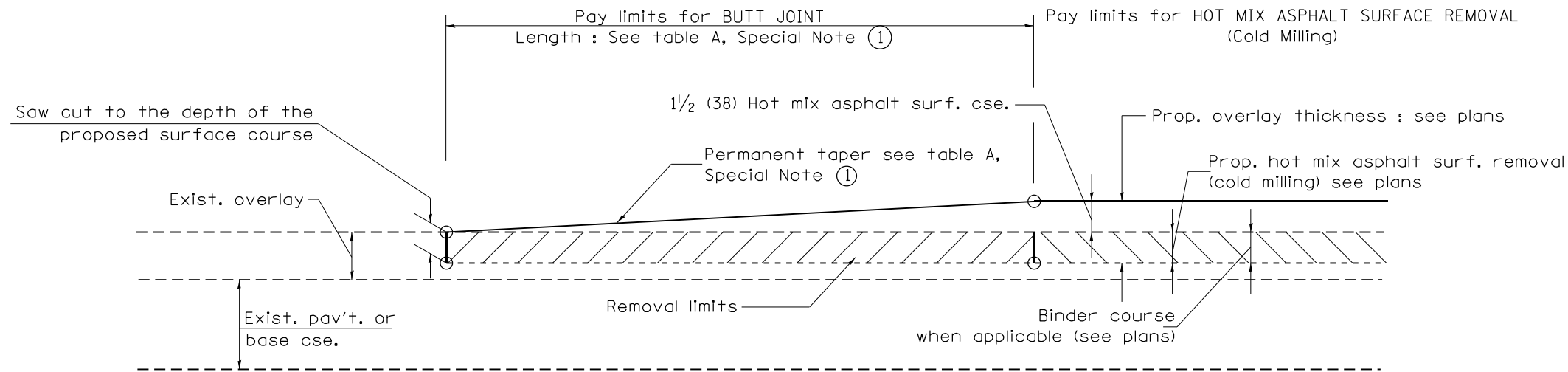
USER NAME = jbuening	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 8/30/2019	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS
 IL 8

SCALE: SHEET 7 OF 7 SHEETS STA. TO STA.

F.A.S. RTE. 380	SECTION 44BR-1	COUNTY KNOX	TOTAL SHEETS 60	SHEET NO. 60
CONTRACT NO. 68755				
ILLINOIS FED. AID PROJECT				



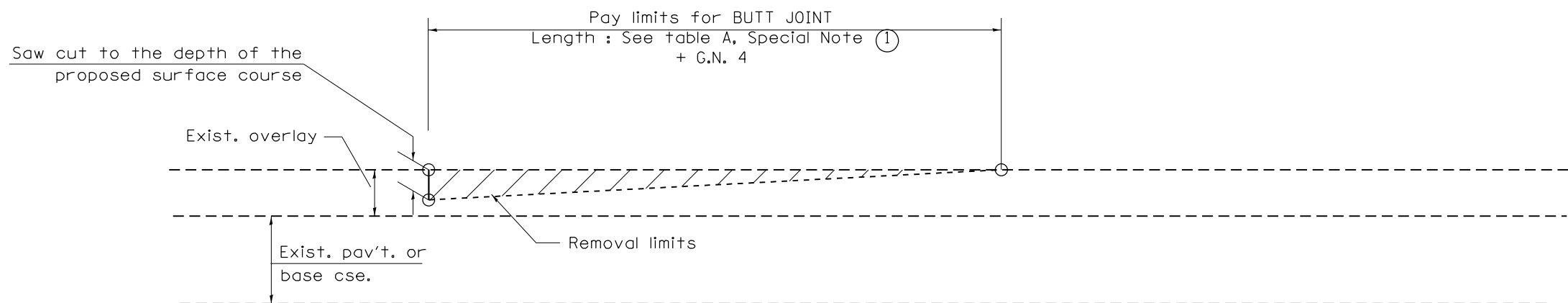
CASE 1 : WITH HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)

**TABLE A
TAPER RATES**

SPECIAL NOTE NUMBER	ELEMENT	MAINLINE INTERSTATES & 4-LANE EXPRESSWAYS	ALL OTHERS
①	BUTT JOINT TAPER RATE	1:480	1:240
②	TEMPORARY RAMP TAPER RATE	1:80	1:40

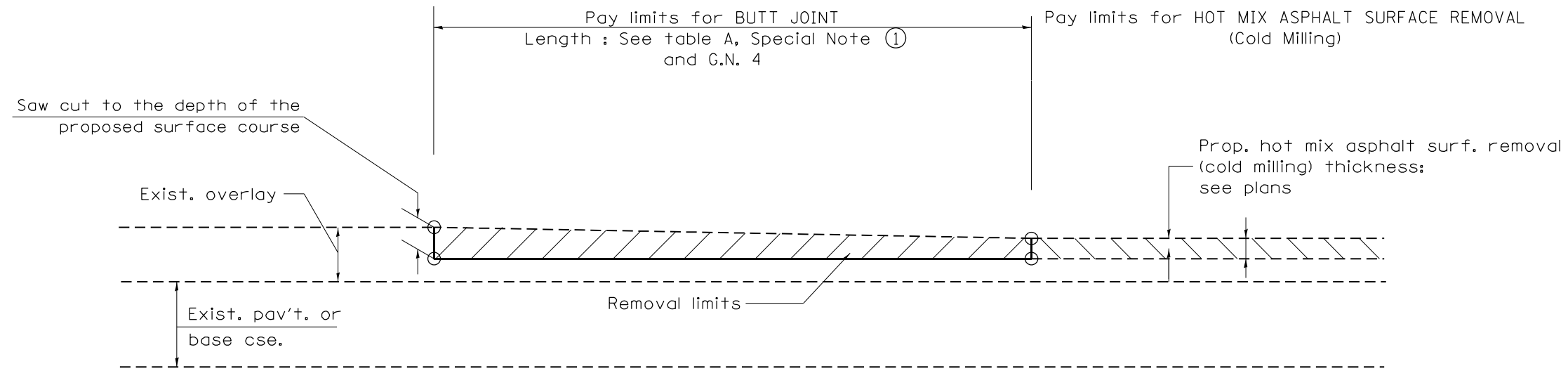
GENERAL NOTES

1. The work shall be done in accordance with Article 406.08 and the Special Provision for Butt Joints.
2. The pavement surface to be removed may be either bituminous or P.C. concrete. The work shall be performed in accordance with Article 440.04 and the Special Provisions for Butt Joints.
3. The saw cut joints shall be primed just prior to the placing of bituminous material. The work will be in accordance with the applicable portions of Article 406.05.
4. The length of butt joint is based on the taper rate times change in cold milling depth within the butt joint pay limits, unless otherwise indicated.
5. Temporary ramps are paid for separately and not included in the cost of the butt joints.

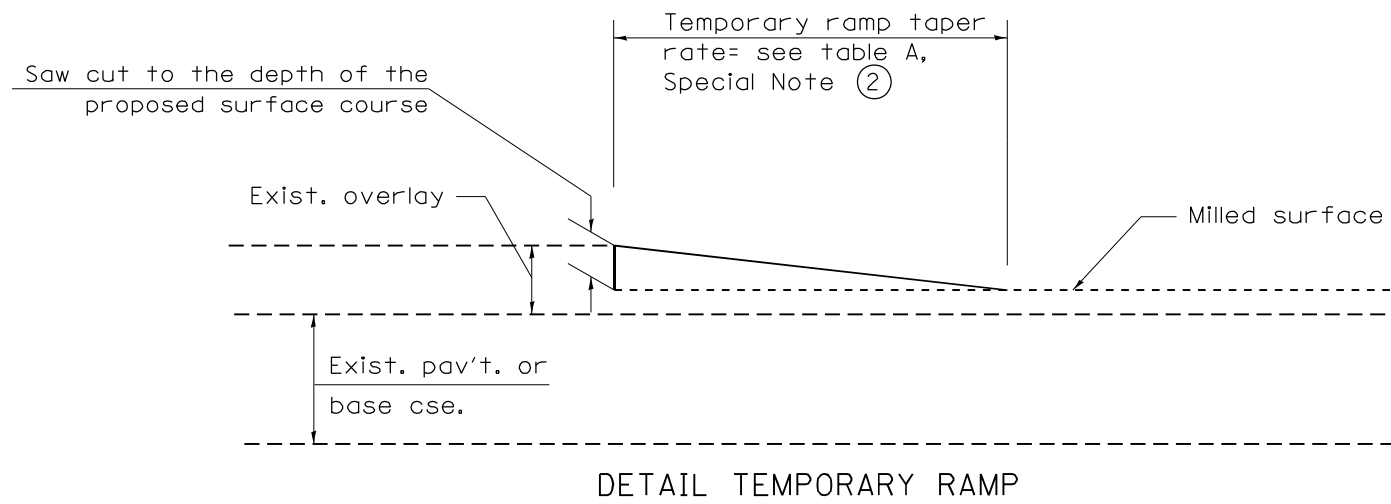


CASE 2 : NO HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)

All dimensions are in inches (millimeters) unless otherwise noted.



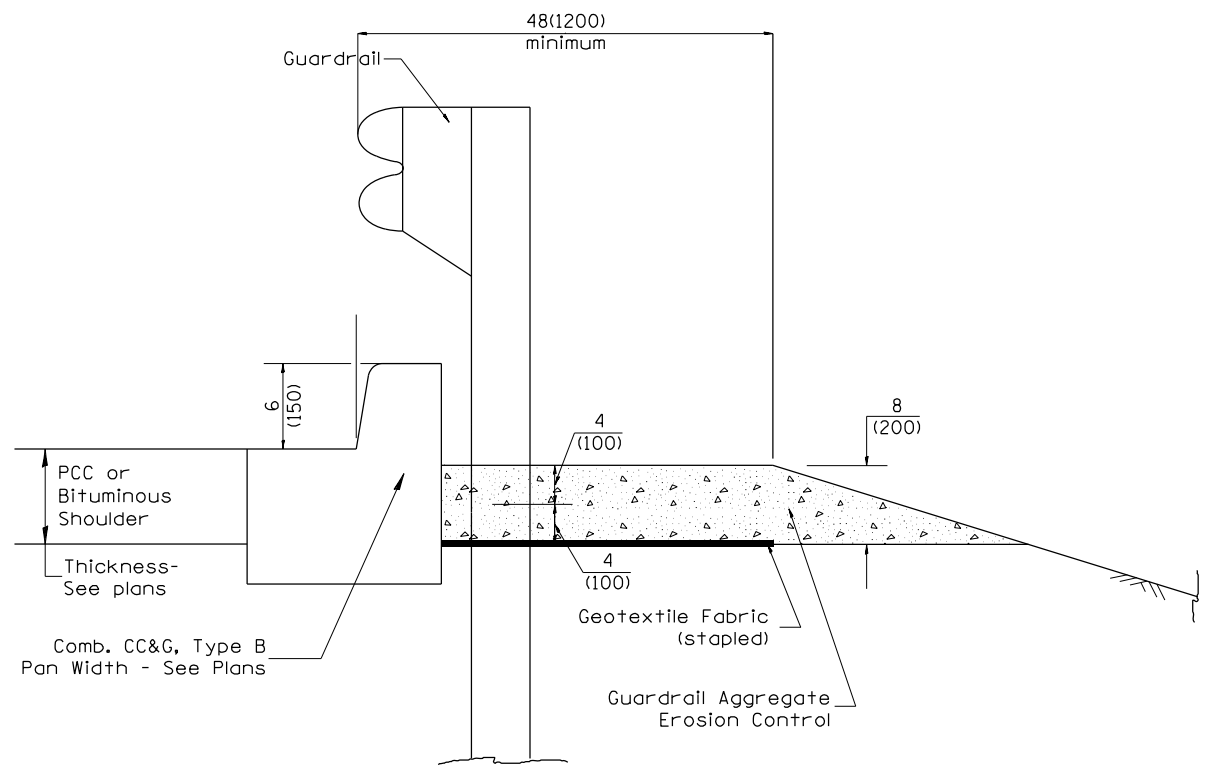
**CASE 3 : HOT MIX ASPHALT SURFACE REMOVAL (COLD MILLING)
TIE-IN TO EXISTING BITUMINOUS TAPER**



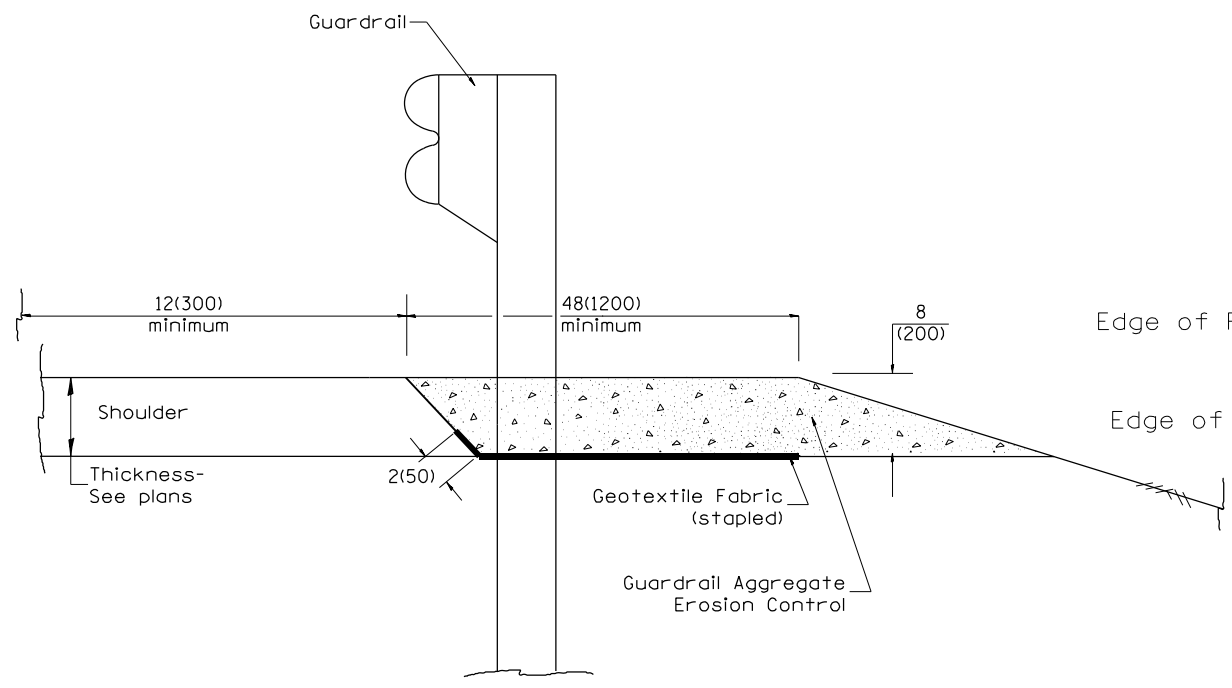
All dimensions are in inches (millimeters) unless otherwise noted.

				STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		BUTT JOINTS		SHT. 2 OF 3 CADD STD. 406101-D4	
				NOT TO SCALE				CONTRACT NO. 68755	
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.					
380	44BR-1	KNOX	60	60B					
FED. ROAD DIST. NO.				ILLINOIS FED. AID PROJECT					

DESIGNER NOTES:
 1. CONSIDER USING A "B" CURB PAY ITEM AT GUARDRAIL INSTALLATIONS WHERE GRADES ARE EQUAL TO OR GREATER THAN 1% AND AT INLETS. (INCLUDE DISTRICT SPECIAL PROVISION
 2. USE "GUARDRAIL AGGREGATE EROSION CONTROL" AT GUARDRAIL INSTALLATIONS WHERE GRADES ARE LESS THAN 1% (INCLUDE DISTRICT SPECIAL PROVISION).
 3. INCLUDE STATE STANDARD 610001, IF APPLICABLE.
 4. INCLUDE THE FOLLOWING DISTRICT CADD STANDARDS AS NEEDED: SLOPE DRAINS FOR EXPOSED PIPES; SLOPE DRAINS FOR BURIED PIPES; SEE PAGE COLLARS FOR BURIED PIPES
 5. SEE PAGE COLLARS FOR EXPOSED PIPES; CONCRETE THRUST BLOCKS AND PIPE ELBOW.
 6. INCLUDE DISTRICT SPECIAL PROVISION - "AGGREGATE QUALITY" FOR PROJECTS LOCATED IN THE WESTERN AREA OF THE DISTRICT - APPROX. DIVIDING LINE IS IL 97.
 7. DELETE DESIGNER NOTES WHEN INSERTING INTO PLAN FILES.
 8. OPERATIONS PREFERS USE OF PIPE OUTLETTING ONTO FORESLOPE WITH RIPRAP. USE NON-METALLIC PIPE WHEN POSSIBLE BECAUSE OF FUTURE CORROSION ISSUES.
 IF NO OTHER SEEDING IS PAID FOR ON THE CONTRACT, USE DISTRICT SPECIAL PROVISION FOR SEEDING, MINOR AREAS



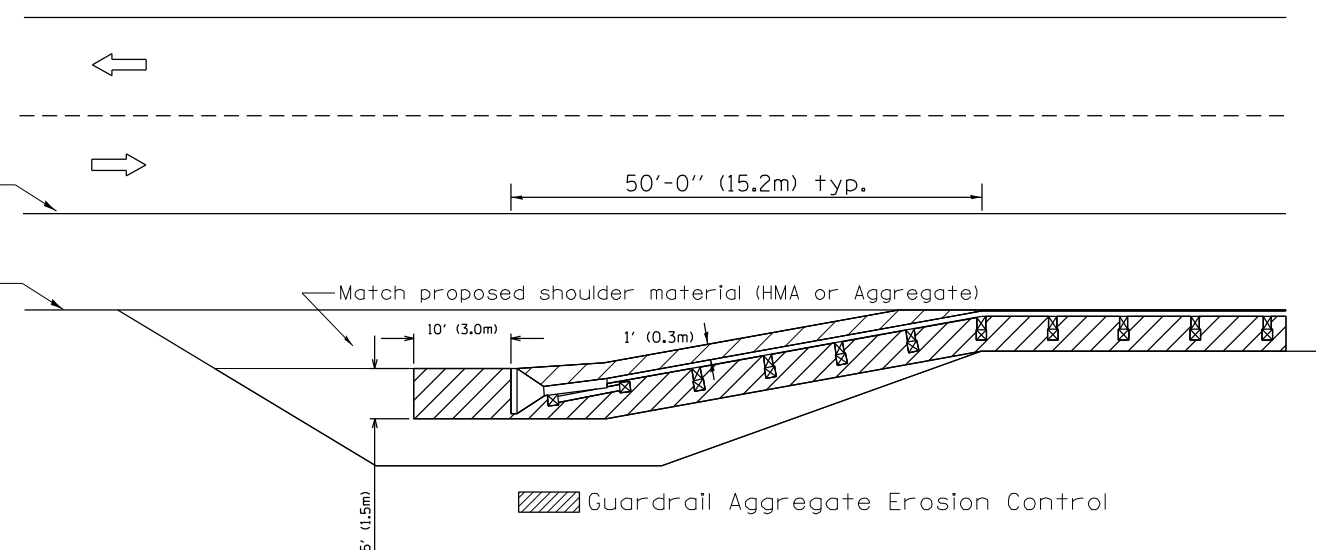
TYPICAL SECTION WITH COMBINATION CONCRETE CURB & GUTTER



TYPICAL SECTION WITHOUT EROSION CONTROL CURB

GENERAL NOTES: GUARDRAIL AGGREGATE EROSION CONTROL

1. This work shall consist of grading as needed, furnishing and installing geotextile fabric and staples, and furnishing, placing and shaping crushed aggregate around and behind Steel Plate Beam Guardrail posts in accordance with Plan Details.
2. Before placing the aggregate and the Geotextile Fabric, weeds and grass shall be removed from the area to be covered.
3. After the area has been prepared, and in a dry condition, the Geotextile fabric shall be placed with a 12(300) minimum overlap. A knife cut for guardrail post installation is necessary.
4. The aggregate shall be deposited, compacted and shaped by either mechanical or hand methods, in a manner reasonably true to line and grade.
5. The Contractor shall have the option of placing the guardrail before or after the Geotextile Fabric and Aggregate are in place. If the guardrail is placed after the Geotextile Fabric and Aggregate, then any voids must be filled and the aggregate returned to line and grade.
6. Materials shall meet the following requirements:
 - A. The crushed aggregate shall be CA1 gradation in accordance with Article 1004.01(c) of the Standard Specifications.
 - B. The Geotextile Fabric shall be nonwoven fabric in accordance with Article 1080.02 of the Standard Specifications.



All dimensions are in inches (millimeters) unless otherwise noted.

03-07-11	ADDED DETAIL SHOWING PLAN VIEW	R.D.	5-30-18	CHANGE B CURB TO CC&G	R.D.
08-10-12	REVISED CURB "B" AND AGGREGATE	R.D.	07-16-19	SPELLING CORRECTIONS	R.D.
07-15-15	ADDRESSED SHOULDER INLET CURB	R.D.			
01-26-17	REVISED	R.D.			

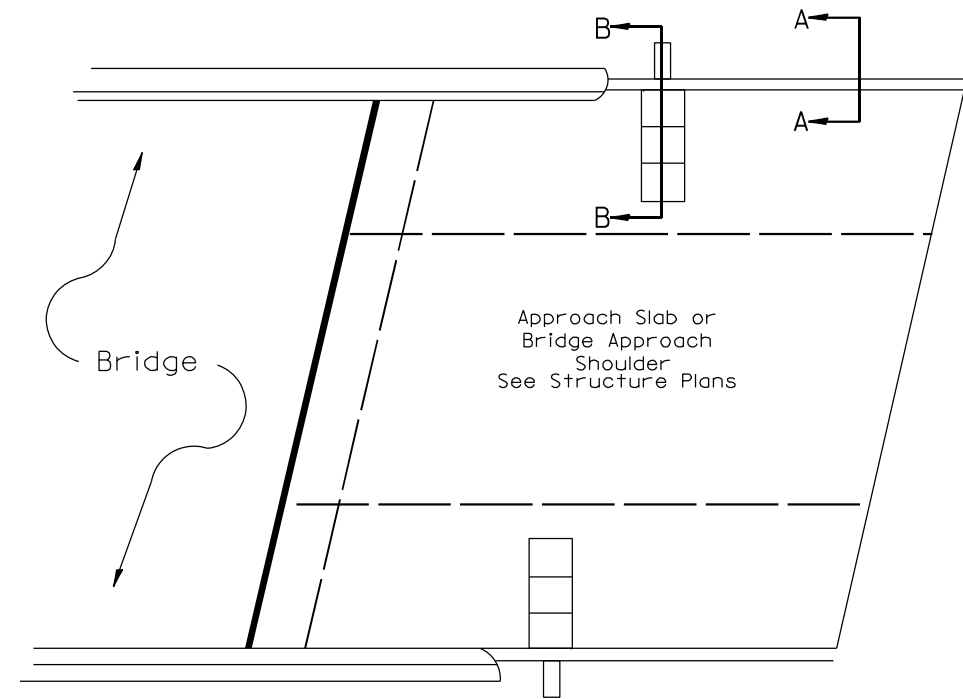
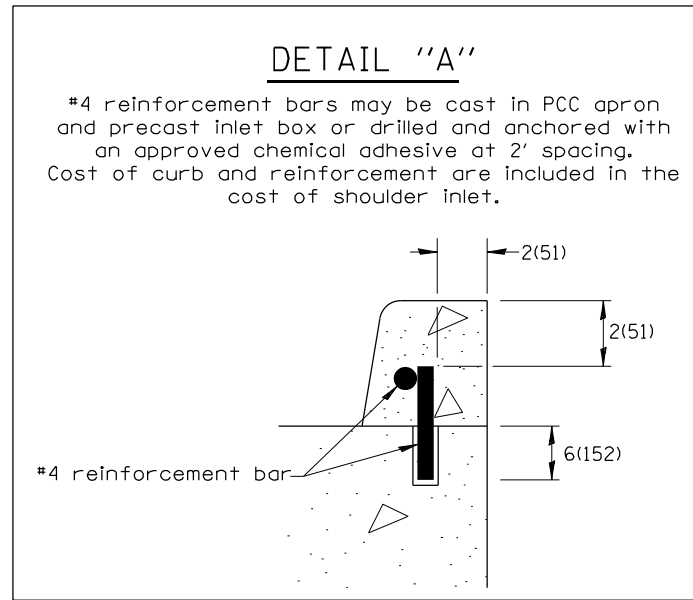
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GUARDRAIL EROSION CONTROL TREATMENTS

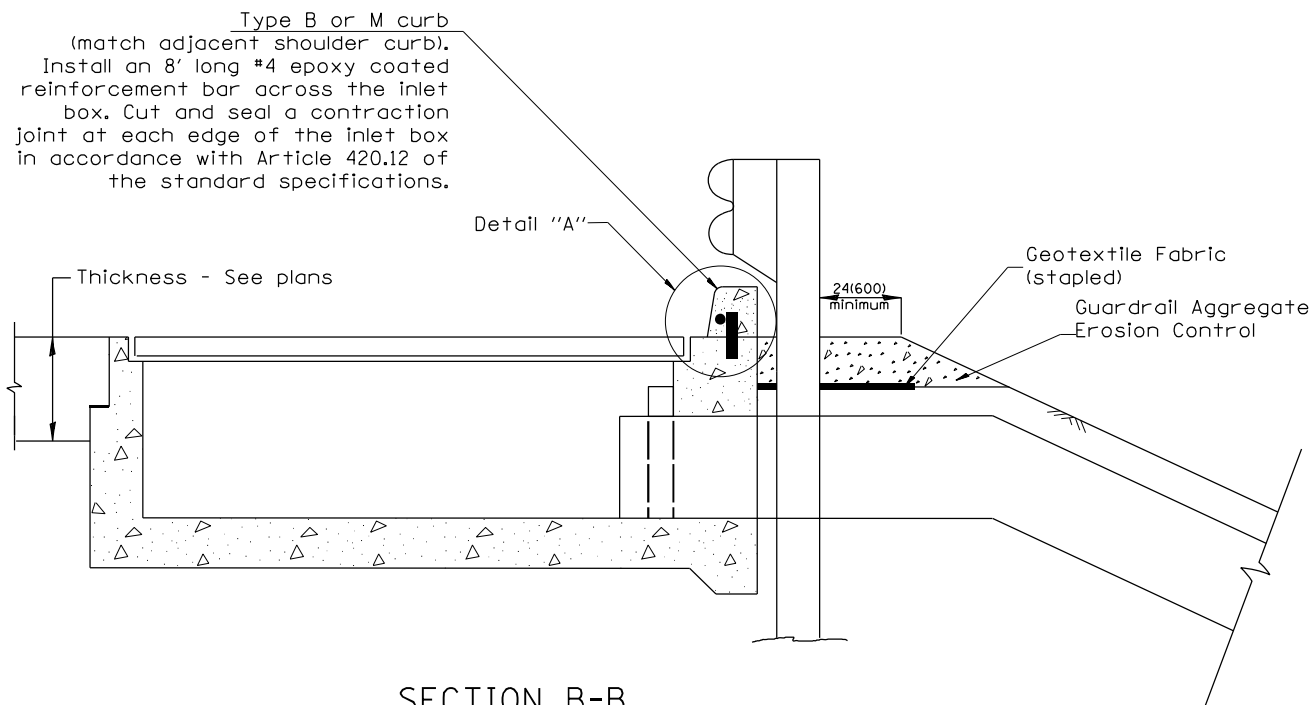
SHT. 1 OF 2
CADD STD. 630101-D4

NOT TO SCALE

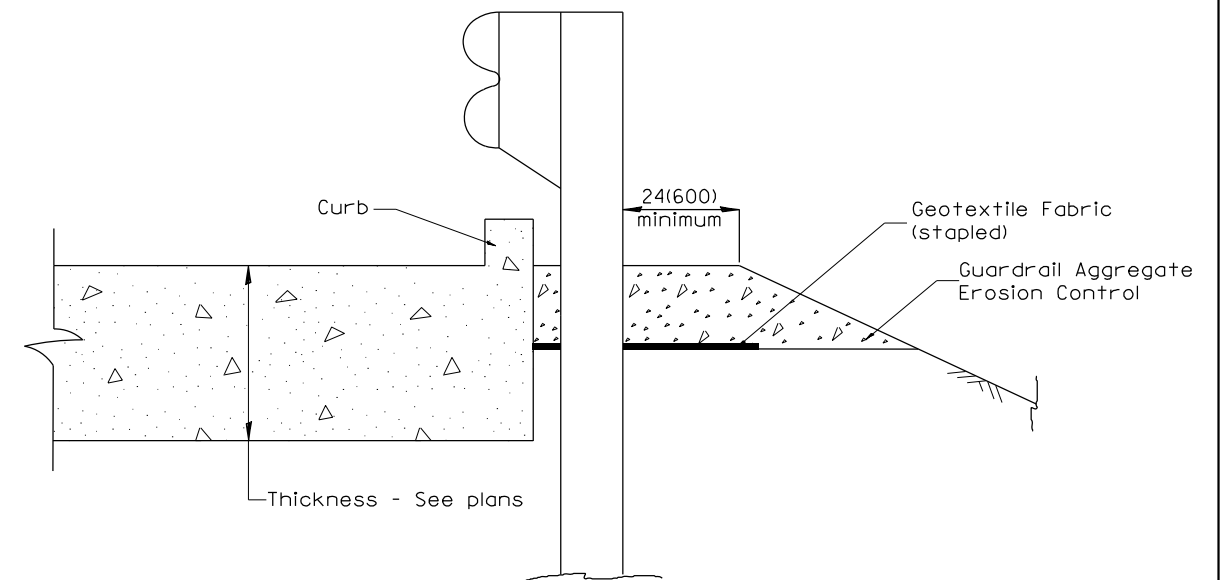
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	60D
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 68755	



PLAN VIEW
APPROACH SLAB OR SHOULDER PLACEMENT



SECTION B-B
TYPICAL SECTION AT INLETS
TYPE E, F & G (HIGHWAY STANDARD 610001)



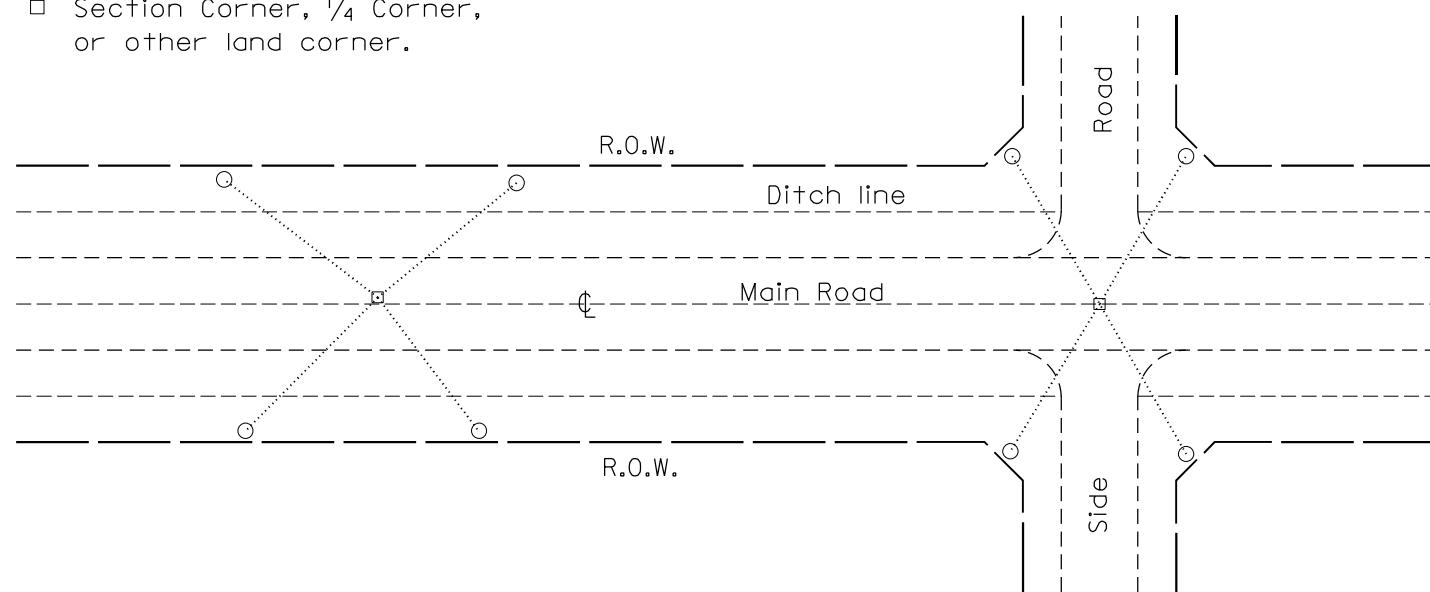
SECTION A-A
TYPICAL SECTION WITH BRIDGE APPROACH CURB

All dimensions are in inches (millimeters) unless otherwise noted.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION				GUARDRAIL EROSION CONTROL TREATMENTS				F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				NOT TO SCALE				380	44BR-1	KNOX	60	60E
				SHT. 2 OF 2 CADD STD. 630101-D4				CONTRACT NO. 68755				
								FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

PERMANENT SURVEY TIES

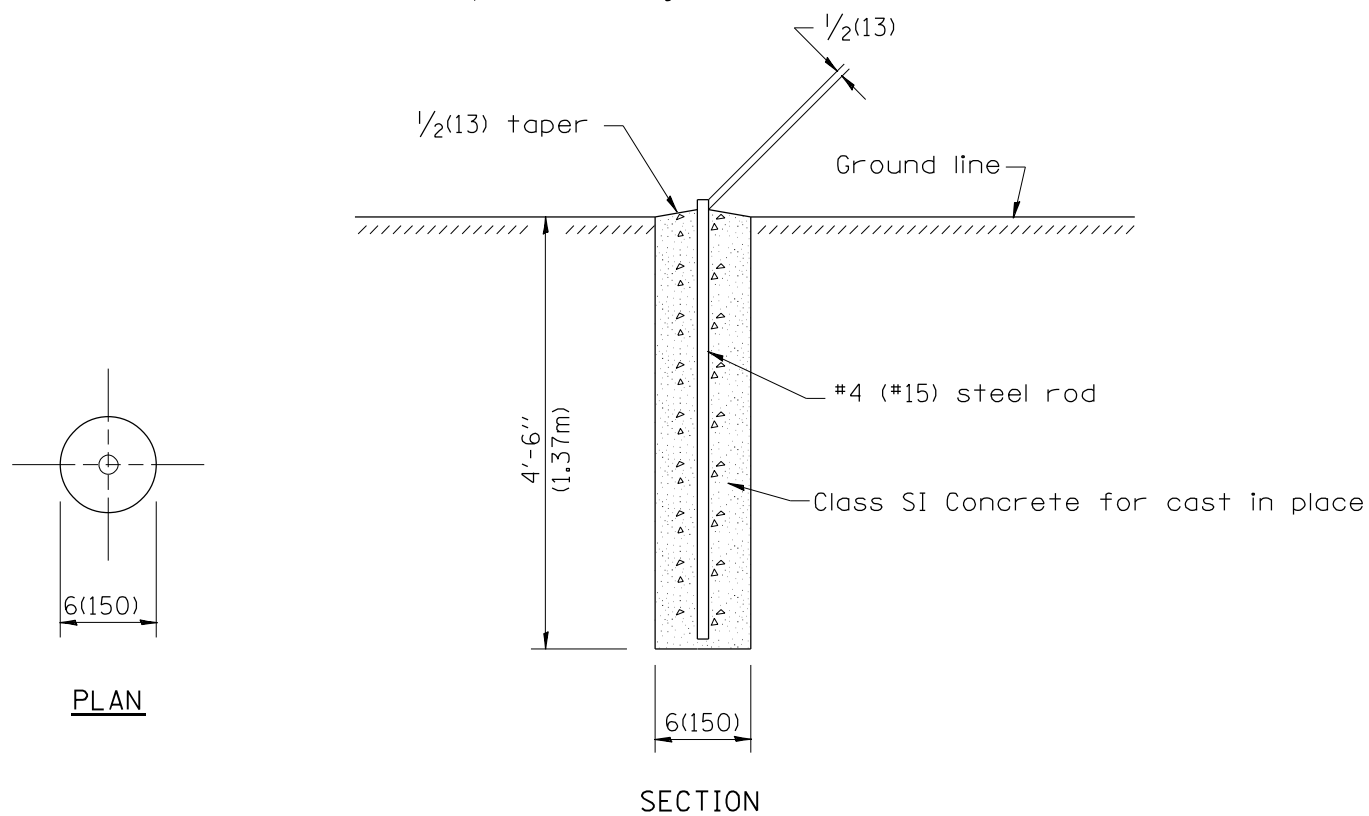
- Permanent Survey Tie
- Section Corner, 1/4 Corner, or other land corner.



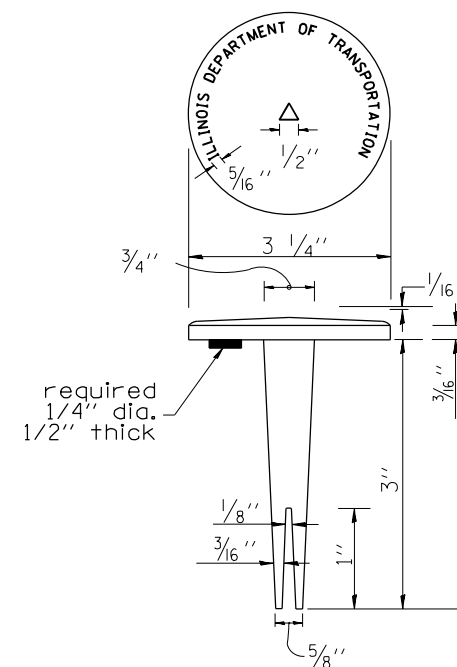
TYPICAL APPLICATION

GENERAL NOTES

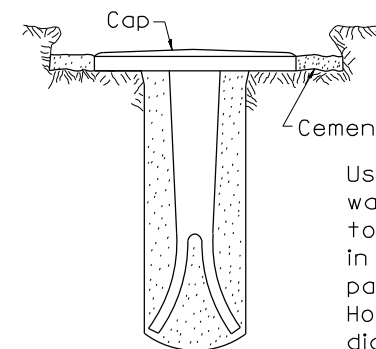
1. The marker shall be cast in place of Class SI Concrete.
2. Tie marker shall be installed after the final seeding has been completed unless otherwise specified by the Engineer.
3. The tie distances to the section corner shall be measured and recorded by the surveyor setting the PSM. All ties shall be turned over to the IDOT Chief of Surveys or Chief of Plats for recordation.
4. All documentation shall be performed by a PLS



PERMANENT SURVEY MARKERS



BRASS TABLET

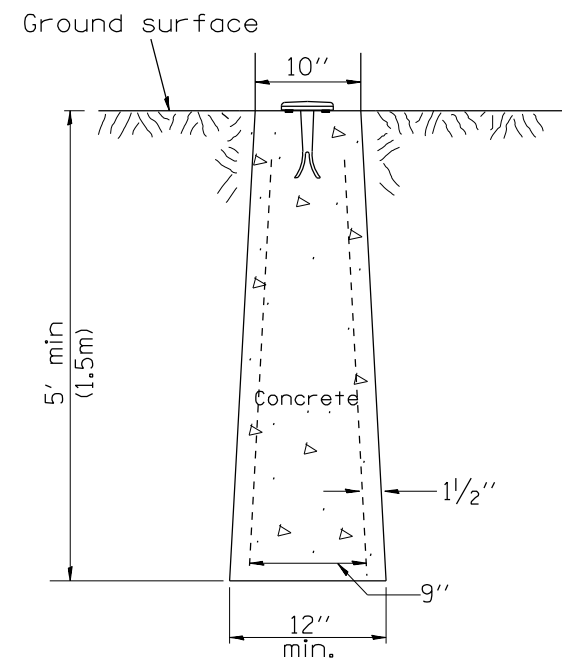


Tablet constructed in rock ledge or concrete.

TYPE I

GENERAL NOTES

1. All type II markers shall be cast in place, and precast markers will not be allowed.
2. Two permanent magnets, each having a diameter of 3/4 (19) and a thickness of 1/4 (6), or equivalent, shall be attached to the underside of the tablet with an approved epoxy bonding agent.
3. The location of the markers shall be in accordance with the plans in general, the markers will be placed at the P.T.'s, P.C.'s, and P.I.'s located within the R.O.W. of horizontal curves and spaces along the tangents in a way that a minimum of two markers are always inter-visible, and not to exceed 1000' (300m).
4. The markers shall be placed under the direction of the Engineer and shall be installed in a workmanlike manner in order that there will be no further settlement or horizontal shifting. The monuments shall be placed in a way that the survey point will fall within the portion of the plaque provided for that purpose.
5. The project designation, the centerline station, the survey point, and the elevation shall be permanently marked by the use of metal dies after marker has been installed.



**TYPE II
CAST-IN-PLACE MARKER**

DESIGNER NOTES:
1. ADD DISTRICT SPECIAL PROVISION IF PLACING A TYPE I MARKER ON A STRUCTURE.
2. MODIFIES STATE STD 667101. DON'T USE STATE STD IF USING CADD STANDARD
3. PERMANENT SURVEY MARKERS SHALL BE PLACED TO PERPETUATE THE SURVEY LINES OF DIVIDED HIGHWAYS AND THE CENTERLINE OF ALL OTHERS WHERE THESE LINES HAVE BEEN ESTABLISHED BY SURVEY.
4. PERMANENT SURVEY MARKERS SHALL BE PLACED AT ALL LAND SECTION CORNERS WITHIN THE STATE R.O.W. WHERE THE MONUMENTS HAVE BEEN FOUND OR RELOCATED BY SURVEY.

01-01-97	RENUM. D-3.01, NEW REVISION BOX, REVISED	T.P.	10-16-06	REVISED TO 2007 SPEC.	M.A.
	TITLE BOX, ADD DESIGNER NOTE		01-04-11	REVISED FOR CORRECTIONS	R.D.
07-07-98	ADD DESIGNER NOTE	J.A.	08-21-13	CHANGED MIN. DIAMETER	R.D.
05-24-06	REMOVED GEN. NOTE UNDER TIES	M.A.	08-25-15	REVISED MATERIAL	R.D.

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

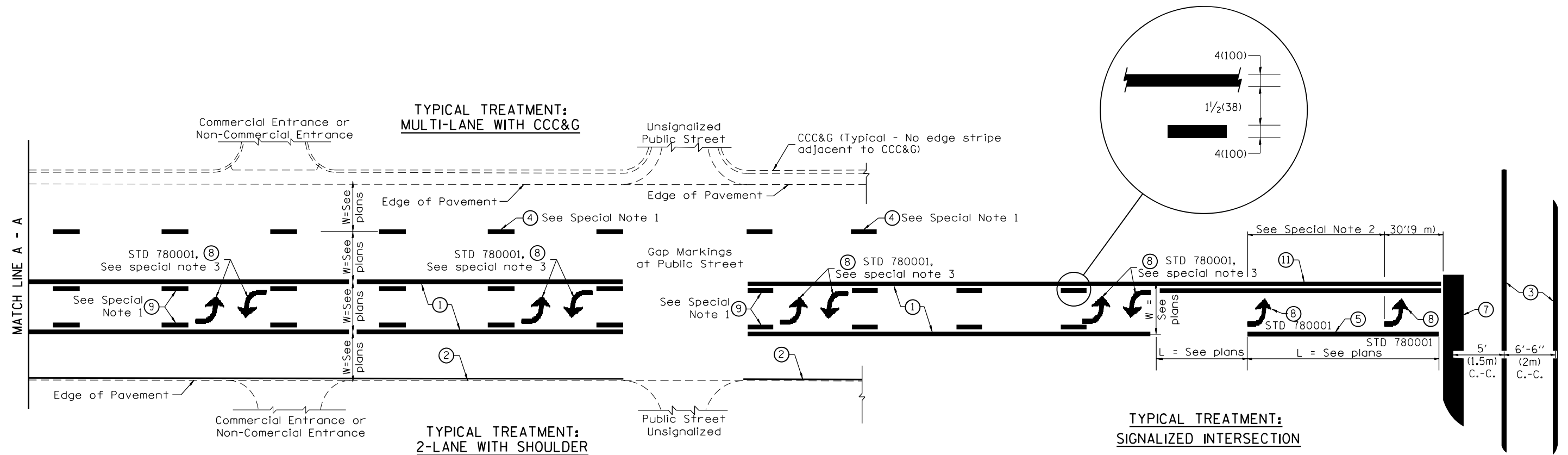
NOT TO SCALE

**PERMANENT SURVEY TIE &
PERMANENT SURVEY MARKERS TY.I - TY.II**

CADD STD. 667101-D4

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	60F
CONTRACT NO. 68755				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DESIGNER NOTES:
1. Include State Standard 780001 (Typical Pavement Markings)



FLUSH PAVED MEDIAN: TWO-WAY LEFT TURN LANE WITH ONE-WAY LEFT TURN LANE AT SIGNALIZED INTERSECTION

TYPICAL PAVEMENT MARKING LEGEND

(Note: This is a District Standard Legend. Some elements may not apply to specific project.)

- ① 4(100) Solid (Yellow)
- ② 4(100) Solid (White)
- ③ 2-6(150) Crosswalk @ 6'-6" (2m)min C.-C. (White)
2-8(200) Crosswalk @ 6'-6" (2m)min C.-C. (White) (When traffic signals are present.)
- ④ 6(150) Skip-Dash (White) (See Special Note 1)
- ⑤ 8(200) Solid (White)
- ⑥ 12(300) Diagonal (White) (Item ⑥ is shown on Std. 780001)
- ⑦ 24(600) Stop Bar (White)
- ⑧ Letters & Arrows (See Std. 780001 and Special Notes 2 & 3)
- ⑨ 4(100) Skip-Dash (Yellow) (See Special Note 1)
- ⑩ 12(300) Diagonal (Yellow) (See Table A) 45°
- ⑪ 4(100) Double Solid (Yellow) 11(280) C.-C. See Table A

SPECIAL NOTES

- Skip-Dash markings will be centered between both ends of city blocks and shall be placed in alignment transversely across the pavement.
- The following shall apply to arrows located in one-way left turn lanes:
 - A minimum of two (2) arrows is required.
 - The maximum spacing between arrows is 80' (24 m).
 - Arrows shall be evenly spaced if three (3) or more are required.
- The following shall apply to arrow pairs located in two-way left turn lanes:
 - A minimum of two (2) arrow pairs is required.
 - The maximum spacing between arrow pairs is 200' (61 m).
 - Arrow pairs shall be evenly spaced if three (3) or more are required.
 - The spacing between Bi Directional Left Turn Arrows is 33' (10 m).

GENERAL NOTES

- Refer to State Standard 780001 for additional Pavement Markings including letters & arrows.
- See Plans for Pavement Markings adjacent to curbed islands and medians, and through lane reductions.
- Refer to Article 780.13 for letter, number and symbol areas (sq. ft.)
- Areas are grooved 1" beyond each edge for the following symbols:
Through Arrow= 14.8 sq. ft.
Large Left or Right Arrow= 21.9 sq. ft.
2 Arrow Combination Left (or Right) and Through= 34.9 sq. ft.
Wrong Way Arrow= 29.5 sq. ft.
Railroad Crossing Symbol= 69.8 sq. ft.
(For further information, refer to BDE Special Provision: Grooving for Recessed Pavement Markings)

01-01-97	RENUM. F-8.03, NEW REVISION BOX	T.P.	10-16-06	REVISED TO 2007 SPEC.	
02-07-97	ADD BI DIRECTIONAL DIMENSION	J.A.	2/29/16	ADDED GROOVING AREAS	R.D.
10-97	CORRECT BI DIRECTIONAL DIMENSION	J.A.	07-16-19	SPELLING CORRECTIONS	R.D.
08-02	ADD CROSSWALK DMNS. WITH T.S.	M.A.			

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

NOT TO SCALE

TYPICAL PAVEMENT MARKINGS

SHT. 1 OF 2
CADD STD. 780001-D4

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
380	44BR-1	KNOX	60	60G
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 68755	

