

01-19-2024 LETTING ITEM 067

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

# PLANS FOR PROPOSED SURFACE TRANSPORTATION PROGRAM – BRIDGE

C.H. 20 OVER SUGAR CREEK

SECTION 19-00088-01-BR

PROJECT GNPZ(167)

BRIDGE REHABILITATION

LOGAN COUNTY

C-96-102-21

C.D. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
21	19-00088-01-BR	LOGAN	30	1
		ILLINOIS	CONTRACT NO. 93813	

### INDEX OF SHEETS

- 1 - TITLE SHEET
- 2-4 - SUMMARY OF QUANTITIES
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- 12-21 - STRUCTURE PLANS
- 22-25 - EXISTING STRUCTURE PLANS
- 26-30 - CROSS SECTIONS

### STANDARDS

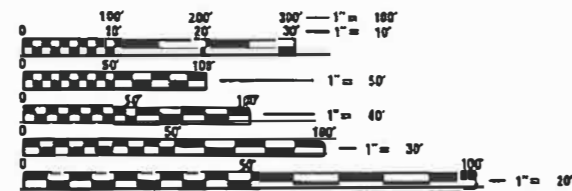
- STANDARD 515001-04
- STANDARD 630001-13
- STANDARD 630301-09
- STANDARD 701901-09
- STANDARD BLR 21-9

### LIST OF UTILITIES

FRONTIER COMMUNICATIONS  
117 W. JEFFERSON ST.  
MT. PULASKI, IL 62548  
217-792-5732  
217-851-0036

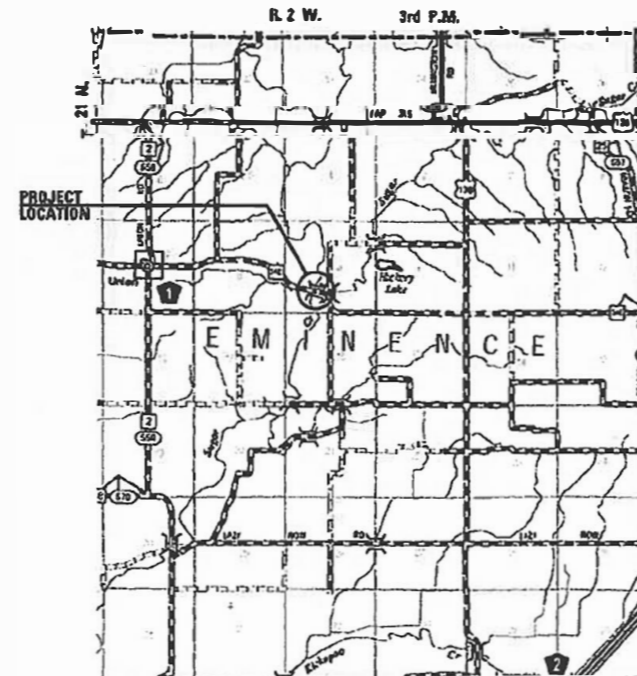
AMEREN ELECTRIC  
BRAD MEURER  
BMEURER@AMEREN.COM

LAND SECTION - 9  
LAND QUARTER SECTION - SOUTHWEST  
FUNCTIONAL CLASSIFICATION: MINOR COLLECTOR  
A.D.T. - 100 (2015)  
A.D.T. - 75 (2032)  
40 M.P.H. DESIGN SPEED



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

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



LOCATION PLAN

GROSS LENGTH = 525.00 FT. = 0.099 MILE



LOCATION OF SECTION INDICATED THIS: - [Symbol]

EXISTING STRUCTURE: CENTERLINE STA. 10+16.94. FOUR SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM STRUCTURE, 225'-8 1/2" BACK TO BACK ABUTMENTS ON PILE BENT PIERS AND OPEN ABUTMENTS, 24'-0" WIDTH. EXISTING STRUCTURE NO. 054-3050.

PROPOSED STRUCTURE: FOUR SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM (27') SUPERSTRUCTURE REPLACEMENT ON EXISTING OPEN ABUTMENTS AND PILE BENT PIERS, 225'-8 1/2" BACK TO BACK ABUTMENTS, 24'-0" WIDTH, STEEL RAILING TYPE S1, NO SKEW. PROPOSED STRUCTURE NUMBER 054-3050.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED 9/18/23, 2023  
*[Signature]*  
COUNTY ENGINEER

PASSED 10/4/23, 2023  
*[Signature]*  
DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS

Subscribing For Bid Based on Unified Review  
10/4/23, 2023  
*[Signature]*  
REGION FOUR ENGINEER



*Christopher P. Kohlmeier* 9/18/23  
EXPIRATION DATE 11/30/2023

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 93813



CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				ROADWAY	BRIDGE
				0005	0013
				S.N.	054-3050
20200100	EARTH EXCAVATION	CU YD	250	250	
20300100	CHANNEL EXCAVATION	CU YD	541	541	
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	563	563	
28200200	FILTER FABRIC	SQ YD	732	732	
35100100	AGGREGATE BASE COURSE, TYPE A	TON	15	15	
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	436	436	
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	269	269	
40604000	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, MIX "C", N50	TON	190	190	
48101500	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	134	134	
50101700	REMOVAL OF EXISTING SUPERSTRUCTURES NO. 1	EACH	1		1
50200100	STRUCTURE EXCAVATION	CU YD	13		13
50300225	CONCRETE STRUCTURES	CU YD	3.2		3.2
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	5376		5376
50800105	REINFORCEMENT BARS	POUND	280		280

^ SPECIALTY ITEMS

USER NAME =	DESIGNED -	REVISED -		<b>VEENSTRA &amp; KIMM INC.</b> Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	<b>SUMMARY OF QUANTITIES</b>			C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE =	CHECKED -	REVISED -						20	19-00088-01-BR	LOGAN	30	2
PLOT DATE =	DRAWN -	REVISED -			SCALE:	SHEET NO. 1 OF 3 SHEETS	STA.	TO STA.	<b>CONTRACT NO. 93813</b>			
	CHECKED -	REVISED -								ILLINOIS FED. AID PROJECT		

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				ROADWAY	BRIDGE
				0005	0013
				S.N.	054-3050
^ 50900205	STEEL RAILING, TYPE S1	FOOT	452		452
51500100	NAME PLATES	EACH	1		1
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	602		602
59000200	EPOXY CRACK INJECTION	FOOT	13		13
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	11.6	11.6	
^ 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	87.5	87.5	
^ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4	4	
^ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4	
63200310	GUARDRAIL REMOVAL	FOOT	256	256	
67100100	MOBILIZATION	L SUM	1	1	
^ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4	
X2010400	STUMP REMOVAL ONLY	UNIT	198	198	
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.75	0.75	
X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1	1	

^ SPECIALTY ITEMS

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				ROADWAY	BRIDGE
				0005	0013
				S.N.	054-3050
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	32		32
Z0010400	CLEANING BRIDGE SEATS	SQ FT	325		325
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	73		73
Z0049790	RELOCATING NAME PLATES	EACH	1		1

^ SPECIALTY ITEMS

GUARDRAIL SCHEDULE					
LOCATION	63100167	63000001	63100075	72501000	63200310
	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	STEEL PLATE BEAM GUARDRAIL, TYPE A 6 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 5A	TERMINAL MARKER DIRECT APPLIED	GUARDRAIL REMOVAL
	EACH	FOOT	EACH	EACH	FOOT
STA. 8+28.3 TO STA. 8+78.3 LT.	1			1	
STA. 8+78.3 TO STA. 8+90.8 LT.		12.5			
STA. 8+90.8 TO STA. 9+04.1 LT.			1		
STA. 7+90.8 TO STA. 8+40.8 RT.	1			1	
STA. 8+40.8 TO STA. 8+90.8 RT.		50			
STA. 8+90.8 TO STA. 9+04.1 RT.			1		
STA. 11+29.8 TO STA. 11+43.1 LT.			1		
STA. 11+43.1 TO STA. 11+55.6 LT.		12.5			
STA. 11+55.6 TO STA. 12+05.6 LT.	1			1	
STA. 11+29.8 TO STA. 11+43.1 RT.			1		
STA. 11+43.1 TO STA. 11+55.6 RT.		12.5			
STA. 11+55.6 TO STA. 12+05.6 RT.	1			1	
					64
STA. 8+40 TO STA. 9+04 LT.					64
STA. 8+40 TO STA. 9+04 RT.					64
STA. 11+30 TO STA. 11+94 LT.					64
STA. 11+30 TO STA. 11+94 RT.					64
TOTAL	4	87.5	4	4	256

STONE RIPRAP & FILTER FABRIC		
LOCATION	28100807	28200200
	STONE DUMPED RIPRAP, CLASS A4	FILTER FABRIC
	TON	SQ. YD.
STA. 8+00 TO STA. 9+00 RT.	120	187
STA. 9+04.09 TO STA. 11+29.8	443	545
TOTAL	563	732

48101500 AGGREGATE SHOULDERS, TYPE B 6"	
LOCATION	AGGREGATE SHOULDERS, TYPE B, 6"
	SQ. YD.
STA. 7+75 TO STA. 9+04.09 LT. & RT.	58
STA. 11+29.80 TO STA. 13+00 LT. & RT.	76
TOTAL	134

X2501000 SEEDING, CLASS 2 (SPECIAL)	
LOCATION	SEEDING CLASS 2 (SPECIAL)
	ACRE
STA. 7+75 TO STA. 9+50 RT.	0.23
STA. 7+75 TO STA. 9+50 LT.	0.15
STA. 10+50 TO STA. 13+00 RT.	0.18
STA. 10+50 TO STA. 13+00 LT.	0.18
TOTAL	0.74

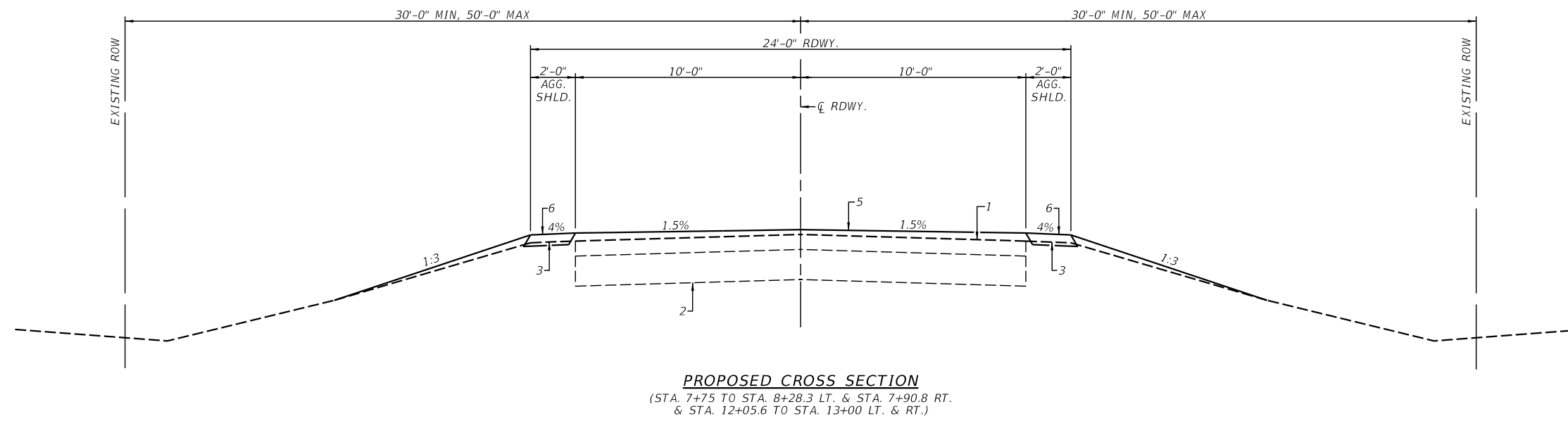
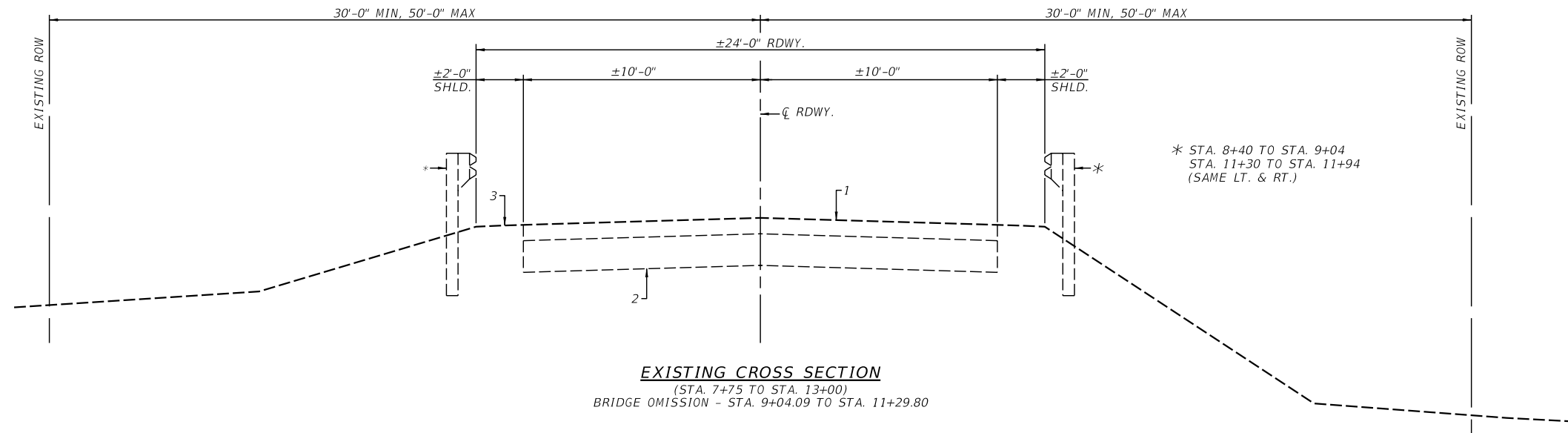
USE 0.75 ACRE PER BDE

EARTHWORK				
LOCATION	20200100	EARTH EXCAVATION	EMBANKMENT	EARTHWORK BALANCE
	EARTH EXCAVATION	ADJUSTED FOR SHRINKAGE		WASTE (+) OR SHORTAGE (-)
	CU. YD.	CU. YD.	CU. YD.	CU. YD.
STA. 7+75 TO STA. 9+04.09	244	183	150	33
BRIDGE OMISSION - STA. 9+04.09 TO STA. 11+29.80				
STA. 11+29.80 TO STA. 13+00	6	4	105	-101
TOTAL*	250	187	255	-68

\*NO FURNISHED EXCAVATION REQUIRED. SUITABLE CHANNEL EXCAVATION WILL BE AVAILABLE ON SITE TO MAKE UP 68 CU. YD. OF FURNISHED EXCAVATION

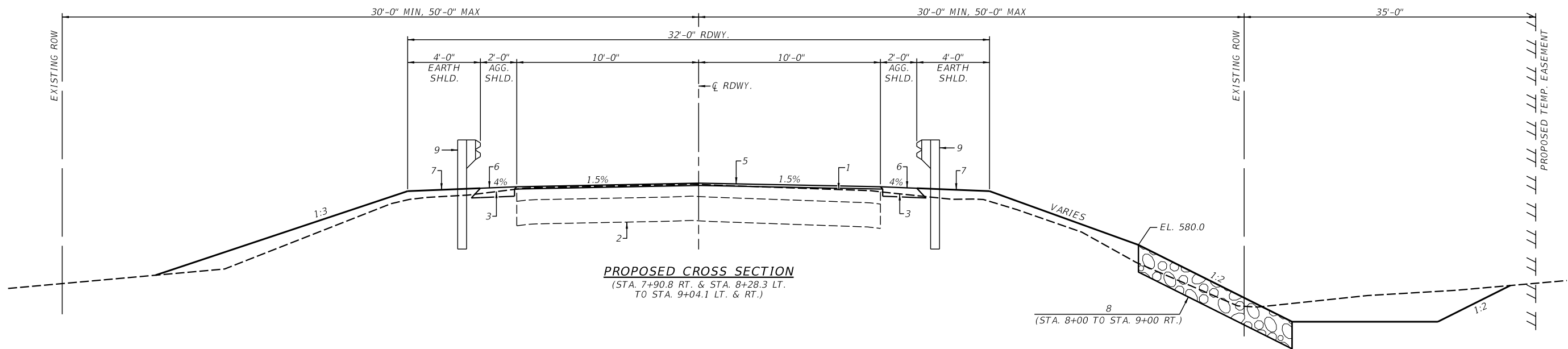
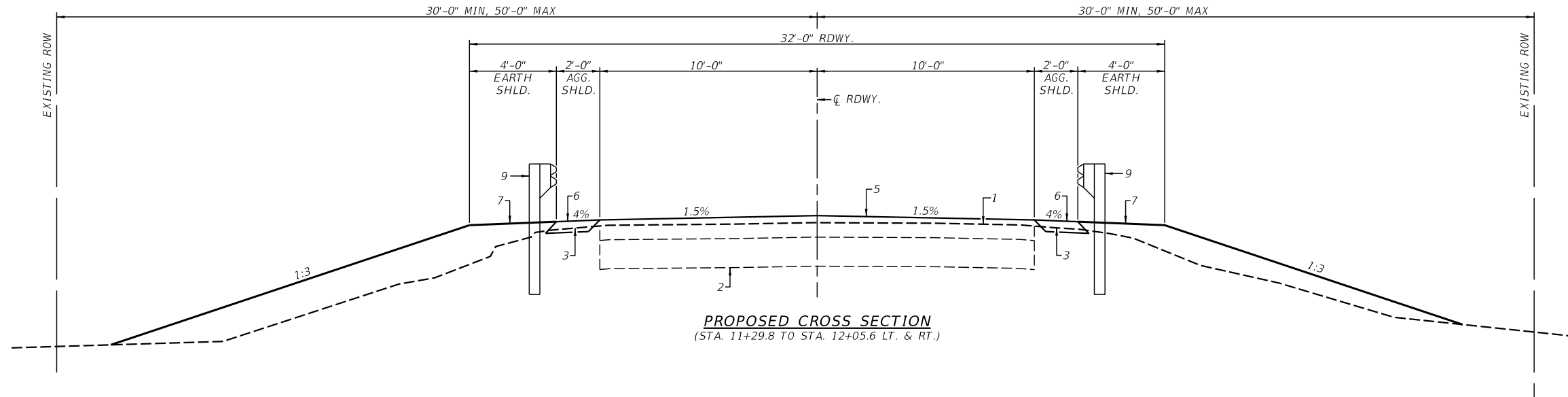
HOT MIX ASPHALT			
LOCATION	40600982	40604000	40600290
	HMA SURFACE REMOVAL BUTT JOINT	HMA SURFACE COURSE IL-9.5 FG, MIX "C" N50	BITUMINOUS MATERIALS (TACK COAT)
	SQ. YD.	TON	POUND
STA. 7+75 TO STA. 8+91	258		
STA. 12+50 TO STA. 13+00	11		
STA. 7+75 TO STA. 9+04.09		28	130
STA. 9+04.09 TO STA. 11+29.80		100	136
STA. 11+29.80 TO STA. 13+00		62	170
TOTAL	269	190	436

X2010400 STUMP REMOVAL ONLY	
STUMP REMOVAL ONLY	UNIT
	STA. 8+13 67' RT.
STA. 8+18 64' RT.	11
STA. 8+26 66' RT.	14
STA. 8+26 39' RT.	9
STA. 8+30 63' RT.	14
STA. 8+32 72' RT.	11
STA. 8+37 63' RT.	16
STA. 8+41 65' RT.	11
STA. 8+26 41' RT.	7
STA. 8+60 53' RT.	10
STA. 8+60 53' RT.	22
STA. 8+84 49' LT.	8
STA. 8+84 49' LT.	6
STA. 8+84 31' LT.	6
STA. 8+70 31' LT.	8
STA. 8+70 31' LT.	9
STA. 8+90 30' LT.	11
STA. 8+96 28' LT.	8
TOTAL	198



- PAVEMENT LEGEND**
- 1 - EX HMA AND OIL & CHIP OVERLAY
  - 2 - EX AGGREGATE BASE COURSE
  - 3 - EX EARTH SHOULDER
  - 4 - EX GUARDRAIL
  - 5 - PR HMA SURFACE COURSE, MIX 'C' IL-9.5FG, MIX 'C', N50, 2" MIN.
  - 6 - PR AGGREGATE SHOULDERS, TYPE B 6"
  - 7 - PR EARTH SHOULDER
  - 8 - PR CLASS A4 STONE RIPRAP (16" THICKNESS)
  - 9 - PR GUARDRAIL

USER NAME =	DESIGNED -	REVISED -	<b>VEENSTRA &amp; KIMM INC.</b> Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	<b>TYPICAL ROADWAY CROSS SECTIONS</b>		C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
PLOT SCALE =	CHECKED -	REVISED -		SCALE: _____	SHEET NO. 1 OF 2 SHEETS	STA. _____ TO STA. _____	20	19-00088-01-BR	LOGAN	30	6
PLOT DATE =	DRAWN -	REVISED -					<b>CONTRACT NO. 93813</b>				
	CHECKED -	REVISED -					ILLINOIS FED. AID PROJECT				



**PAVEMENT LEGEND**

- 1 - EX HMA AND OIL & CHIP OVERLAY
- 2 - EX AGGREGATE BASE COURSE
- 3 - EX EARTH SHOULDER
- 4 - EX GUARDRAIL
- 5 - PR HMA SURFACE COURSE, MIX 'C' IL-9.5FG, MIX"C", N50, 2" MIN.
- 6 - PR AGGREGATE SHOULDERS, TYPE B 6"
- 7 - PR EARTH SHOULDER
- 8 - PR CLASS A4 STONE RIPRAP (16" THICKNESS)
- 9 - PR GUARDRAIL

USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -

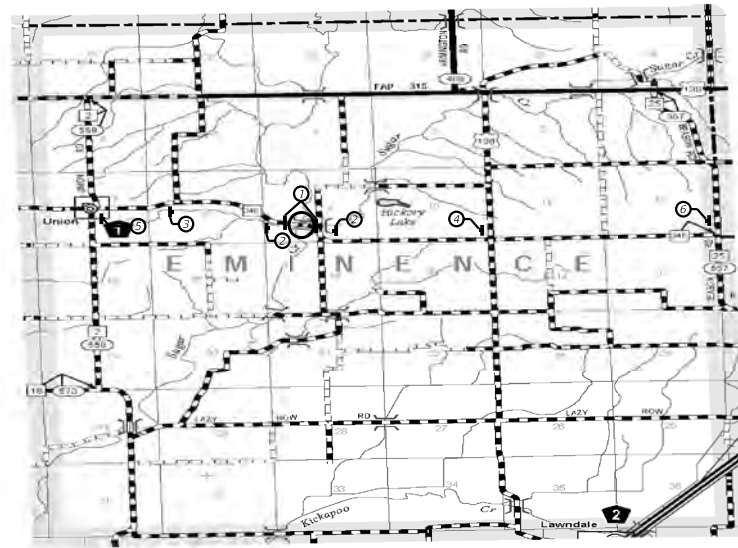


**VEENSTRA & KIMM INC.**  
Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

**TYPICAL ROADWAY CROSS SECTIONS**

SCALE: SHEET NO. 2 OF 2 SHEETS STA. TO STA.

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	7
ILLINOIS FED. AID PROJECT			CONTRACT NO. 93813	



**SIGN & BARRICADE LOCATION PLAN**

**LEGEND**

- ① TYPE III BARRICADE WITH "ROAD CLOSED" R11-2-4830
- ② ROAD CLOSED 500 FT
- ③ ROAD CLOSED 1 MILE AHEAD
- ④ ROAD CLOSED 1.5 MILES AHEAD
- ⑤ ROAD CLOSED 2 MILES AHEAD
- ⑥ ROAD CLOSED 3.5 MILES AHEAD

**GENERAL NOTES**

WHERE SECTION OR SUBSECTION STONES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH STONES ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AUTHORIZED SURVEYOR, OR AGENET HAS WITNESSED OR REFERENCED THEIR LOCATION.

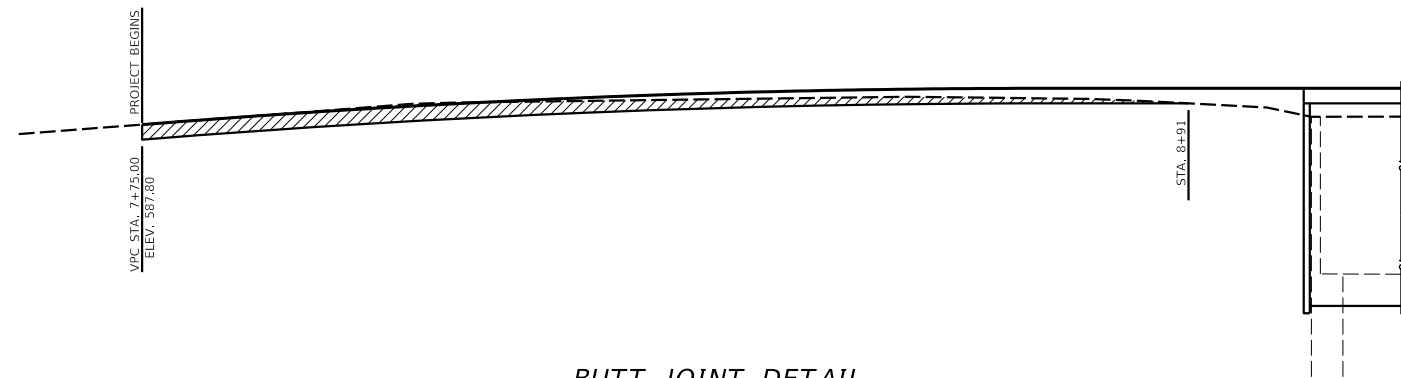
SEEDING: FERTILIZER NUTRIENTS SHALL BE APPLIED AT A RATIO OF 1:1:1 AND AT A RATE OF 90 POUNDS PER ACRE FOR EACH NUTRIENT.

MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE.

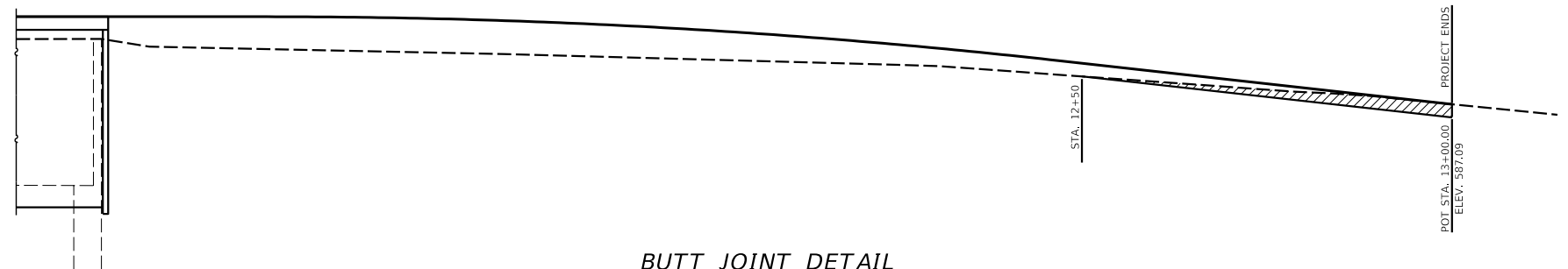
AREAS TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER. ALL DISTURBED EARTH SURFACES BEYOND ROW IS THE RESPONSIBILITY OF AND COST TO THE CONTRACTOR. NO COMMITMENTS.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED TO CALCULATE THE PLAN QUANTITIES.

BITUMINOUS MATERIALS (TACK COAT)	0.05 LB./SQ. FT.
AGGREGATE MATERIAL	1.9 TON/CU. YD.
RIPRAP	1.5 TON/CU. YD.
NITROGEN FERTILIZER NUTRIENT	90 LBS./ACRE
PHOSPHORUS FERTILIZER NUTRIENT	90 LBS./ACRE
POTASSIUM FERTILIZER NUTRIENT	90 LBS./ACRE
HMA BINDER & SURFACE	0.056 TON/SQ. YD./IN.



**BUTT JOINT DETAIL**



**BUTT JOINT DETAIL**

LOCATIONS	HMA SURFACE COURSE
MIXTURE USES:	HMA SURFACE COURSE, IL-9.5FG, MIX "C", N50
AB/PG	PG64-22
DESIGN AIR VOIDS	4.0% @ N50
MIXTURE COMPOSITION	IL-9.5MM
FRICTION AGGREGATE	C SURFACE
MIXTURE WEIGHT	112 LBS./SQ. YD./INCH
QUALITY MANAGEMENT PROGRAM	QCQA
SUBLOT SIZE	NA
LOCATION(S)	ENTIRE PROJECT

USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



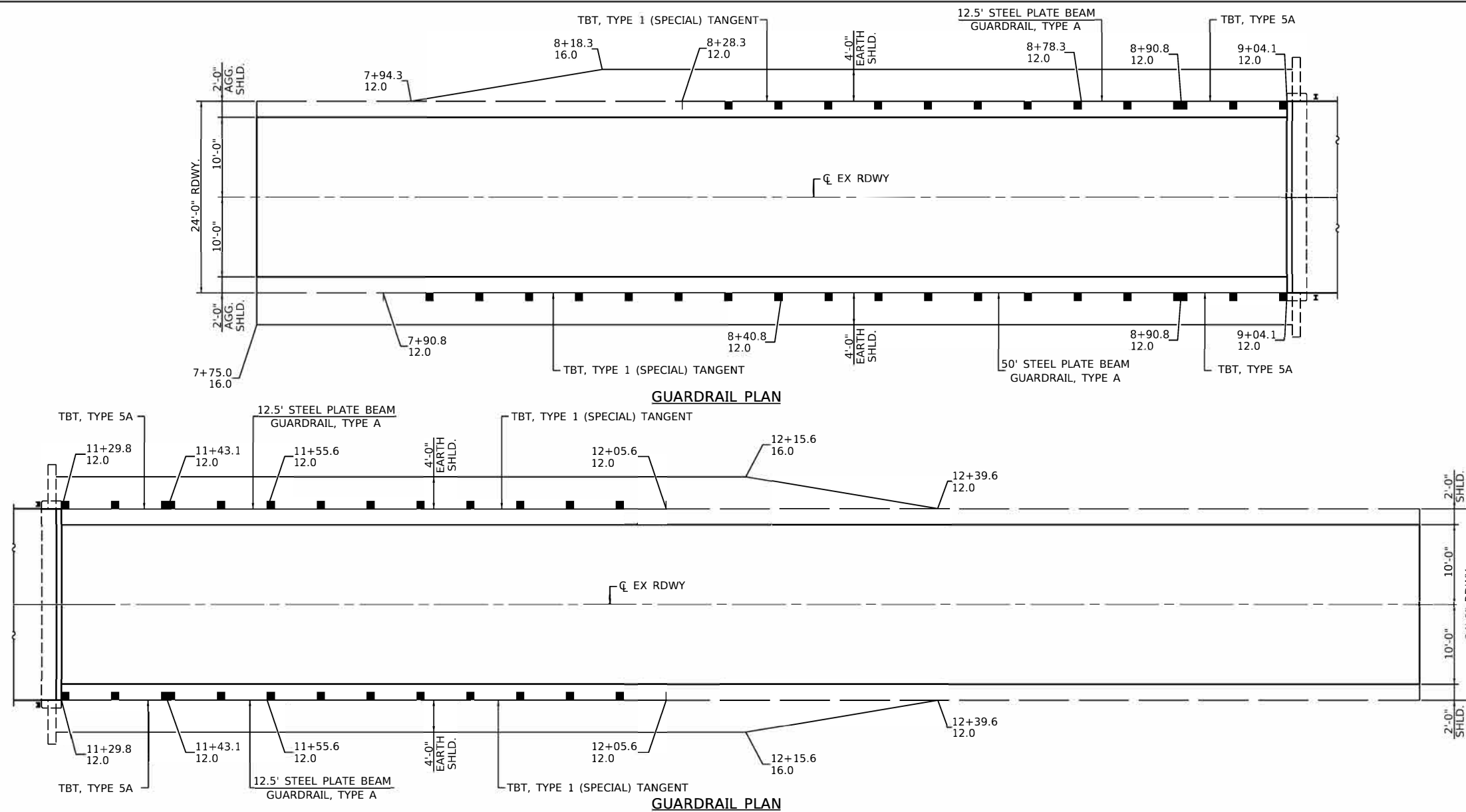
**VEENSTRA & KIMM INC.**  
Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

**GENERAL NOTES AND DETAILS**

SCALE: \_\_\_\_\_ SHEET NO. 1 OF 1 SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	8
<b>CONTRACT NO. 93813</b>				
ILLINOIS FED. AID PROJECT				





USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



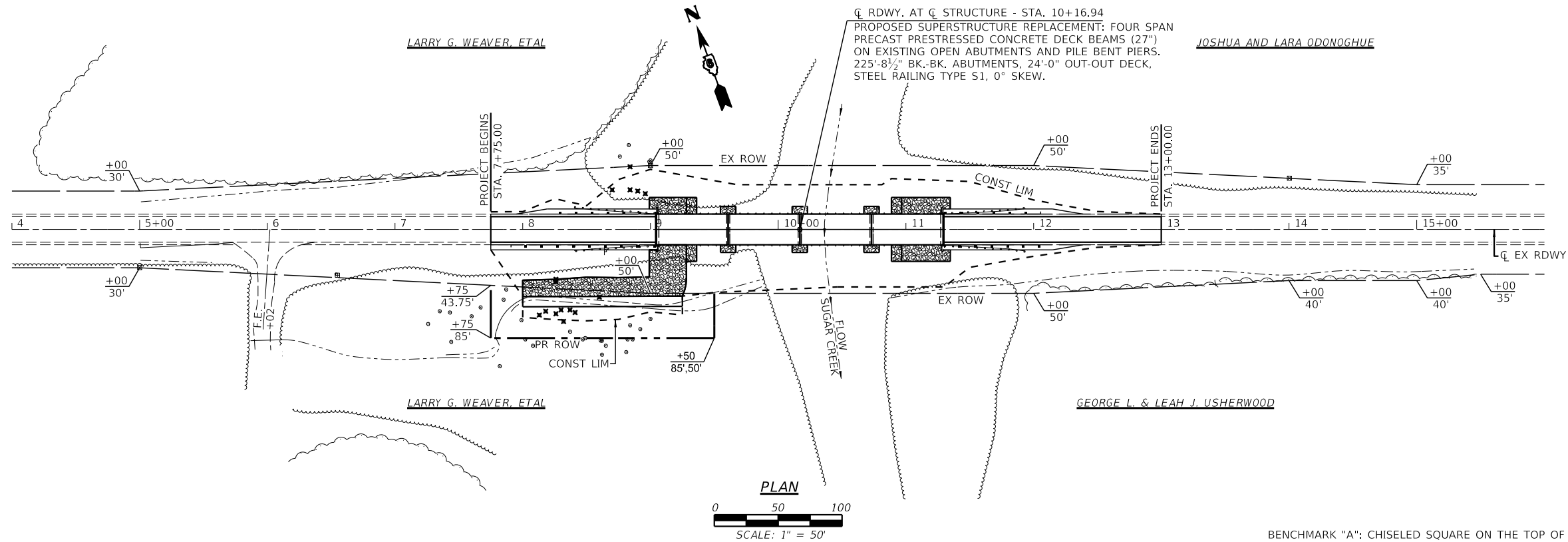
**VEENSTRA & KIMM INC.**  
 Springfield, IL. Phone: (217)544-8033  
 IL. Design Firm No. 184-001939

**GUARDRAIL PLAN**

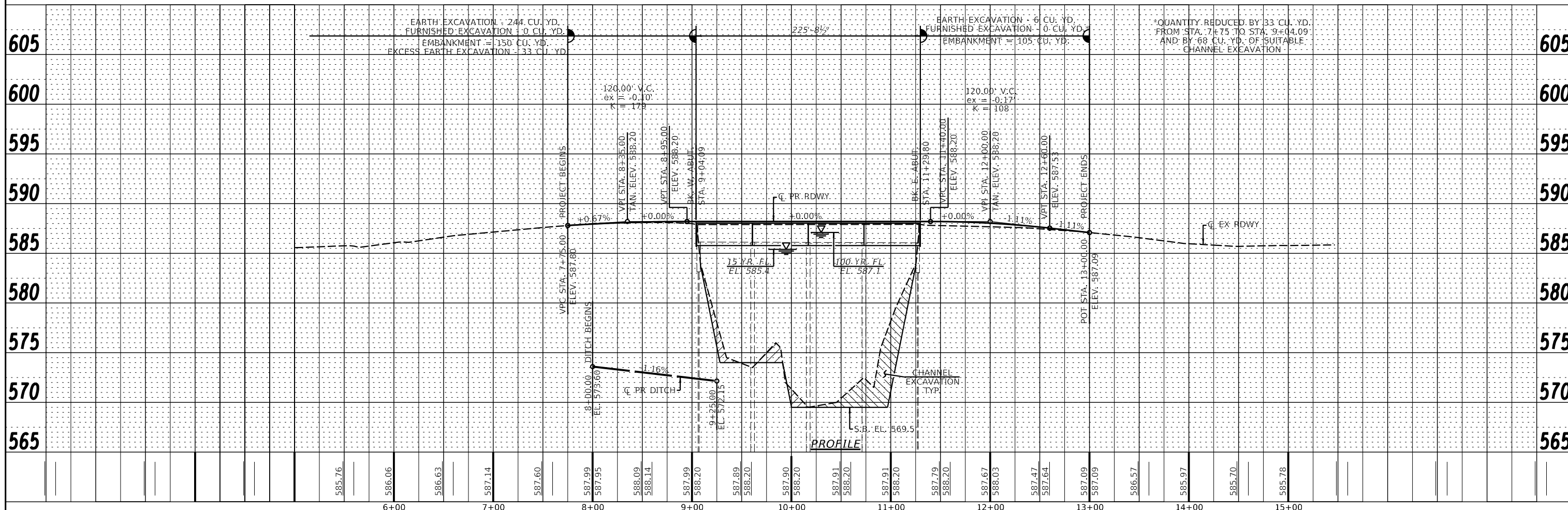
SCALE: \_\_\_\_\_ SHEET NO. 1 OF 1 SHEETS STA. \_\_\_\_\_ TO STA. \_\_\_\_\_

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	9
ILLINOIS FED. AID PROJECT			<b>CONTRACT NO. 93813</b>	

SECTION 9, T. 21 N., R. 2 W., 3rd P.M.



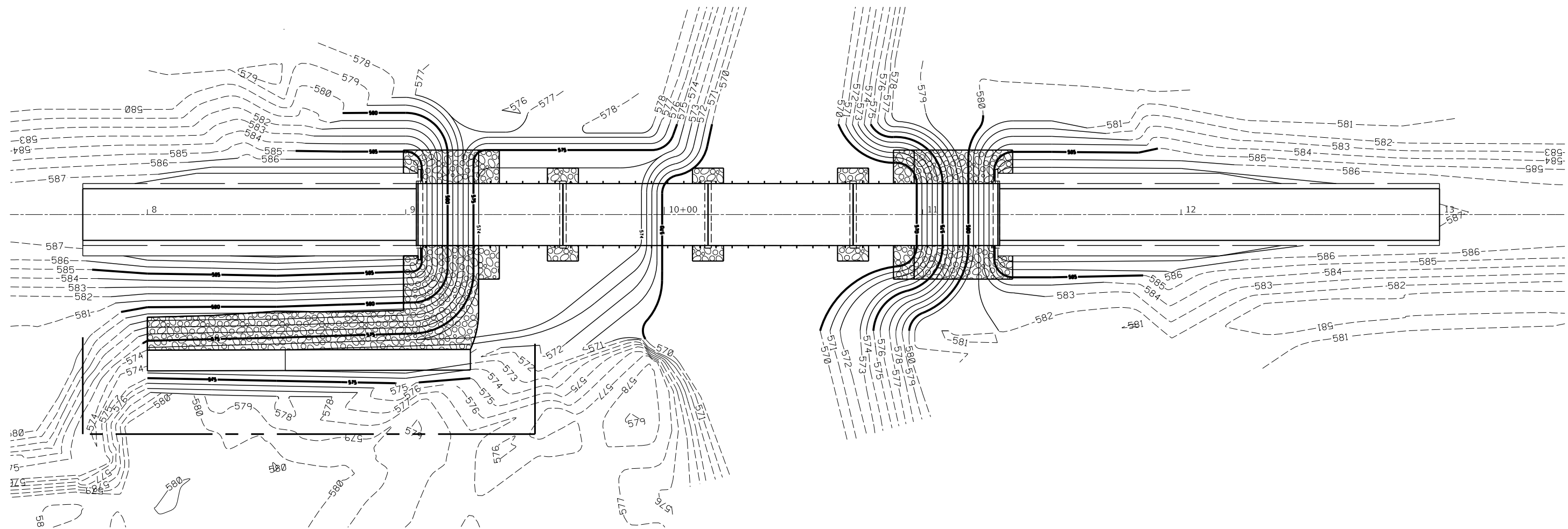
BENCHMARK "A": CHISELED SQUARE ON THE TOP OF SOUTHWEST WINGWALL EL. 587.74



PLAN	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	BY	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	BY	
	NO.	

FILE NAME =	USER NAME = *USER*	DESIGNED -	REVISD -	<b>VEENSTRA &amp; KIMM INC.</b> Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	<b>PLAN &amp; PROFILE</b> <b>COUNTY HIGHWAY 20 OVER SUGAR CREEK</b>		C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
*FILEL*		CHECKED -	REVISD -		20	19-00088-01-BR	LOGAN	30	10		
PLOT SCALE = *SCALE*		DRAWN -	REVISD -		SCALE: 1" = 50'		SHEET NO. 1 OF 1 SHEETS		STA. 5+00.00 TO STA. 15+00.00	CONTRACT NO. 93813	
PLOT DATE = *DATE*		CHECKED -	REVISD -		FED. ROAD DIST. NO. _		ILLINOIS		FED. AID PROJECT		



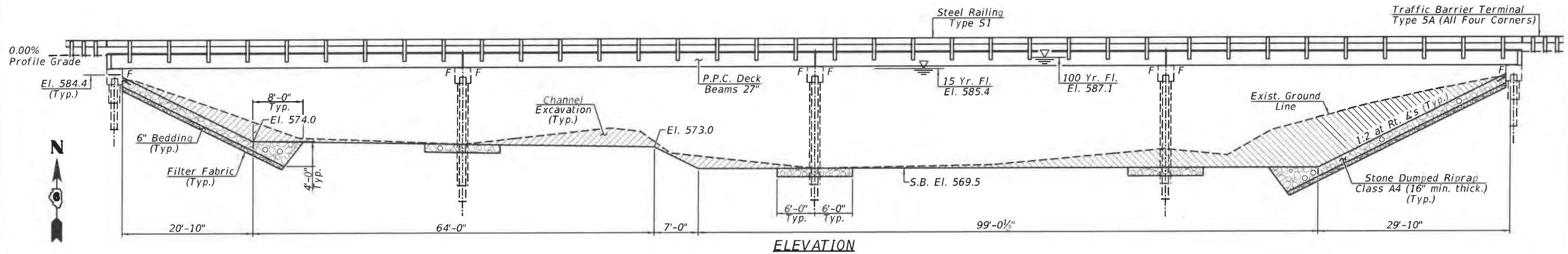
PLAN

USER NAME =	DESIGNED -	REVISED -	 <b>VEENSTRA &amp; KIMM INC.</b> Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	<b>GRADING PLAN</b>		C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE =	CHECKED -	REVISED -				20	19-00088-01-BR	LOGAN	30	11
PLOT DATE =	DRAWN -	REVISED -		SCALE: 1" = 20'		SHEET NO. 1 OF 1 SHEETS	STA. _____ TO STA. _____	ILLINOIS FED. AID PROJECT <b>CONTRACT NO. 93813</b>		
	CHECKED -	REVISED -								

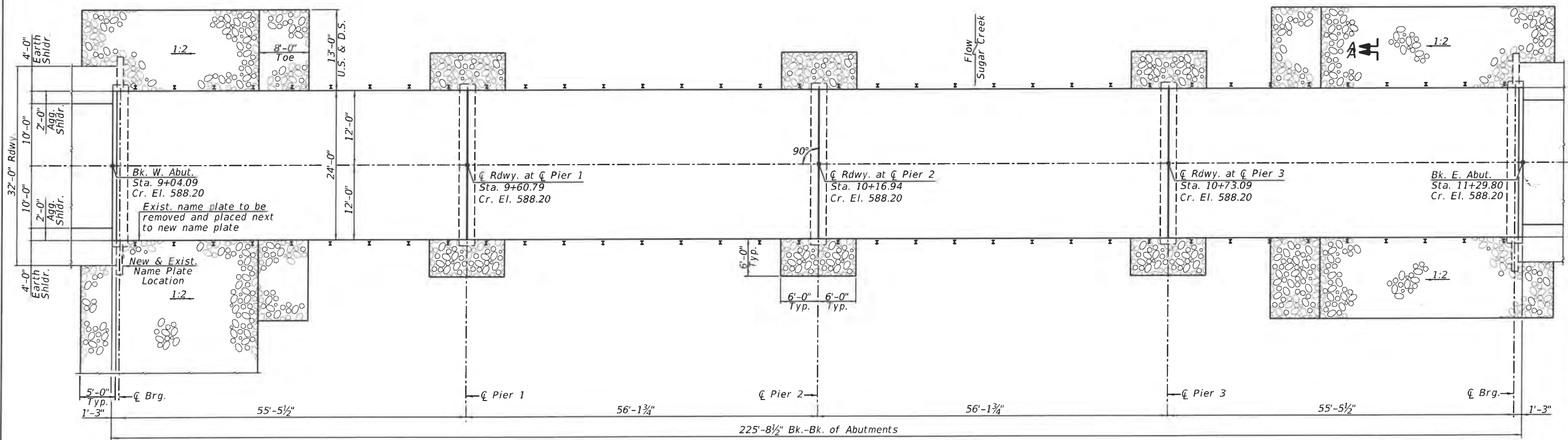
Benchmark: BM "A" - Chiseled "I" on top of SW Wingwall  
Elev. 587.74

Existing Structure: 4 Span Prestressed Concrete Deck Beam Structure on Pile Bent Abutments and  
Piers, 225'-8½" Back to Back of Abutments, 24'-0" Clear Deck width, 0° Skew.  
Existing SN 054-3050, built in 1977 under Section 75-00088-00-BR.

No Salvage.



ELEVATION

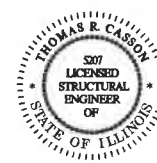


PLAN

**INDEX OF SHEETS**

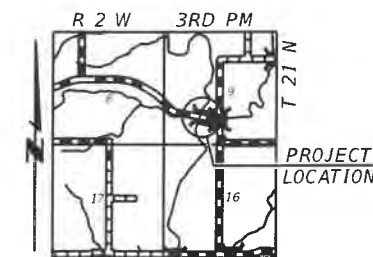
- 1. General Plan & Elevation
- 2. General Data
- 3. 27" x 36" PPC Deck Beam
- 4. 27" x 36" PPC Deck Beam Details
- 5. Steel Railing, Type S1
- 6. West Abutment
- 7. East Abutment
- 8. Pier 1 - Repair
- 9. Pier 2 - Repair
- 10. Pier 3 - Repair
- 11-14. Existing Plans

See Sheet 2 for Sections A-A and C-C.



I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "A.A.S.H.T.O. LRFD Bridge Design Specifications.

*Thomas R. Casson* 9-26-2023  
Expiration Date 11/30/2024



LOCATION SKETCH

**GENERAL PLAN & ELEVATION**  
COUNTY HIGHWAY 20 OVER  
SUGAR CREEK  
SECTION 19-00088-01-BR  
LOGAN COUNTY  
STA. 10+16.94  
STRUCTURE NO. 054-3050

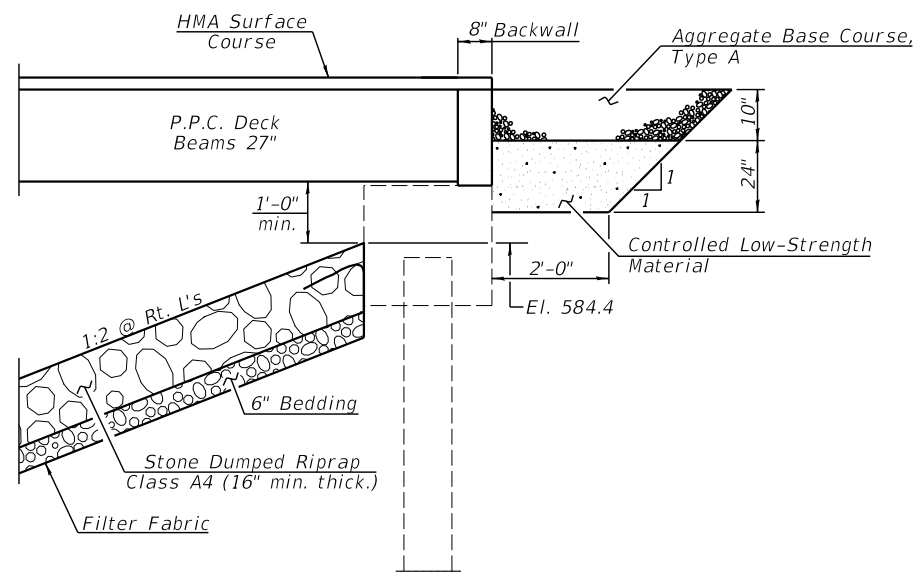
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PLOT SCALE * _____	CHECKED - TRC	REVISIONS - _____
PLOT DATE * _____	DRAWN - JRP	REVISIONS - _____
	CHECKED - TRC	REVISIONS - _____



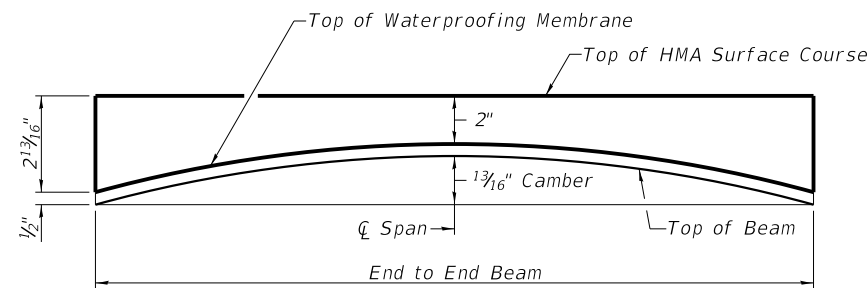
**VEENSTRA & KIMM INC.**  
Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

**GENERAL PLAN & ELEVATION**  
**STRUCTURE NO. 054-3050**  
SHEET NO. 1 OF 14 SHEETS

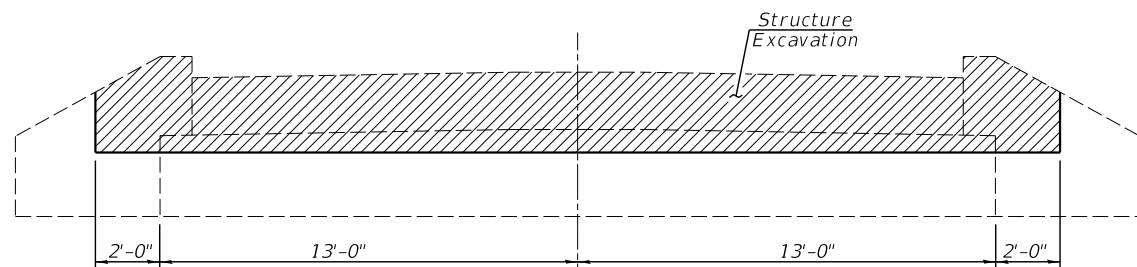
C.H.	SECTION	COUNTY	TOTAL SHEETS NO.
20	19-00088-01-BR	LOGAN	30
			CONTRACT NO. 93813
ILLINOIS FED. AID PROJECT			



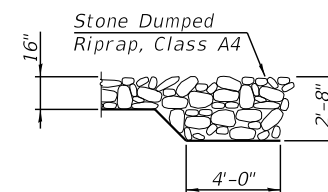
**SECTION THRU ABUTMENT**



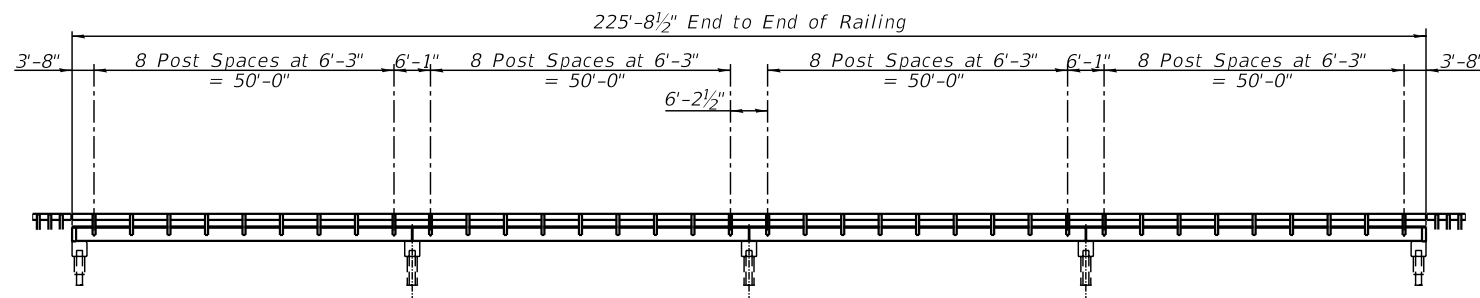
**HMA SURFACE COURSE PROFILE & ANTICIPATED CAMBER DIAGRAM SPANS 1-4**



**ABUTMENT ELEVATION**



**SECTION A-A (Upstream Side Only)**



**STEEL RAILING, TYPE S1 POST SPACING (Showing Outside Face of Railing)**

<b>TOTAL BILL OF MATERIAL</b>				
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		541	541
Stone Dumped Riprap, Class A4	Ton		443	443
Filter Fabric	Sq. Yd.		545	545
Aggregate Base Course, Type A	Ton	15		15
Bituminous Materials (Tack Coat)	Pound	136		136
Hot-Mix Asphalt Surface Course, IL-9.5FG, Mix "C", N50	Ton	100		100
Removal of Existing Superstructures	Each	1		1
Structure Excavation	Cu. Yd.	13		13
Concrete Structures	Cu. Yd.	3.2		3.2
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	5376		5376
Reinforcement Bars	Pound	280		280
Steel Railing, Type S1	Foot	452		452
Name Plates	Each	1		1
Waterproofing Membrane System	Sq. Yd.	602		602
Epoxy Crack Injection	Foot		13	13
Controlled Low-Strength Material	Cu. Yd.		11.6	11.6
Asbestos Bearing Pad Removal	Each	32		32
Cleaning Bridge Seats	Sq. Ft.		325	325
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.		73	73
Relocating Name Plates	Each	1		1

**GENERAL NOTES**

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

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

Contractor shall be responsible for the protection and prevention of any longitudinal movement of all substructure units during the removal and replacement of the precast, prestressed concrete deck beams during construction. Cost of prevention and protection will be included in the unit cost of Removal of Existing Superstructures.

Contractor is responsible for the removal and disposal of any excess channel excavation not incorporated back into the project. The disposal of any excess material shall be in accordance with Article 202.03. Cost to dispose of excess excavation will be included in the unit cost of Channel Excavation.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.094 g  
 Design Spectral Acceleration at 0.2 sec. (S<sub>D5</sub>) = 0.168 g  
 Soil Site Class = C

**LOADING HL-93 NEW CONSTRUCTION**

Allow 50#/Sq. Ft. for future wearing surface.

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition.

**DESIGN STRESSES**

**FIELD UNITS (NEW CONSTRUCTION)**

f'c = 3,500 psi (Substructure)  
 fy = 60,000 psi (Reinforcement)

**FIELD UNITS (EXISTING CONSTRUCTION)**

f'c = 3,500 psi (Substructure)  
 fy = 40,000 psi (Reinforcement)

**PRECAST PRESTRESSED UNITS**

f'c = 6,000 psi  
 f'ci = 5,000 psi  
 fpu = 270,000 psi (1/2"Ø low lax strands)  
 fpbt = 201,960 psi (1/2"Ø low lax strands)

SUGAR CREEK  
 RE-BUILT 20 BY  
 LOGAN COUNTY  
 SECTION 19-00088-01-BR  
 CH-20 STA. 10+16.94  
 LOADING HL-93  
 STR. NO. 054-3050

**NAME PLATE**

(Standard 515001)

Existing Name Plate to be relocated near new Name Plate as directed by the Engineer.

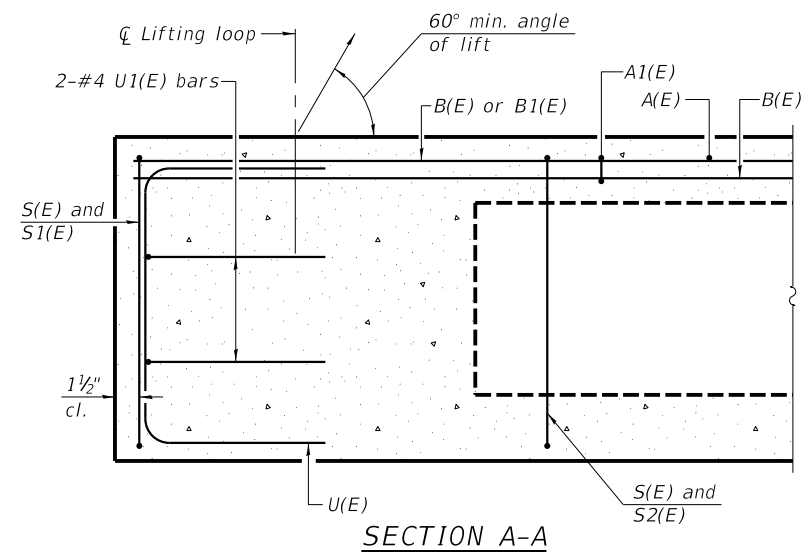
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	CHECKED - TRC	REVISED -
PLOT SCALE =	DRAWN - JRP	REVISED -
PLOT DATE =	CHECKED - TRC	REVISED -



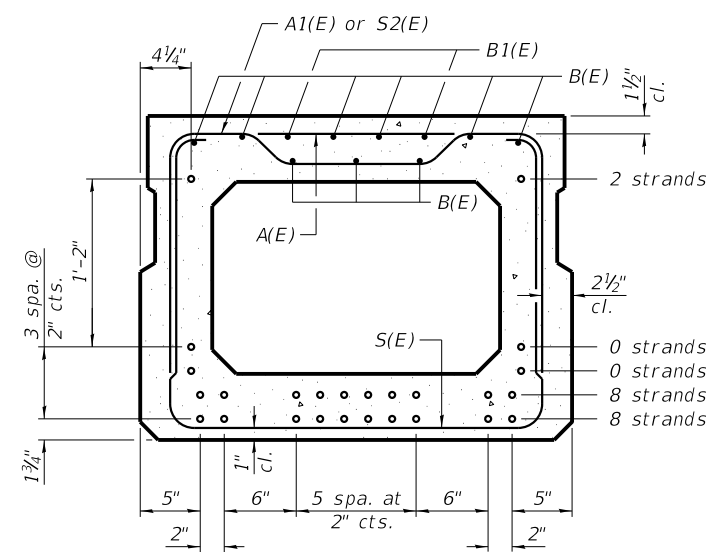
**VEENSTRA & KIMM INC.**  
 Springfield, IL. Phone: (217)544-8033  
 IL. Design Firm No. 184-001939

**GENERAL DATA**  
**STRUCTURE NO. 054-3050**  
 SHEET NO. 2 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	13
<b>CONTRACT NO. 93813</b>				
ILLINOIS FED. AID PROJECT				

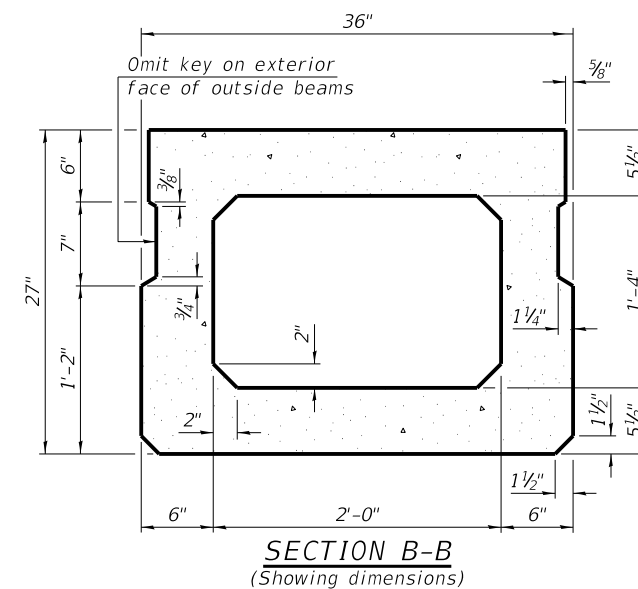


SECTION A-A

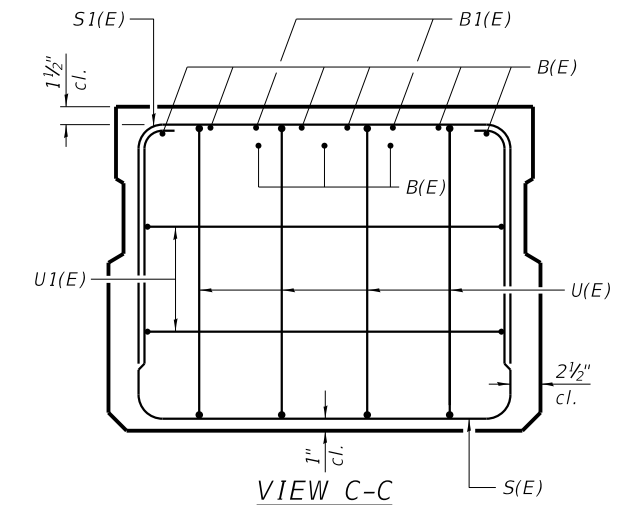


SECTION B-B

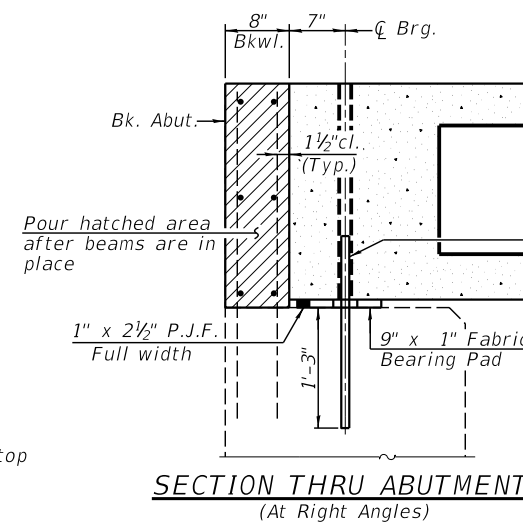
(Showing reinforcement and permissible strand locations)  
 Note:  
 Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



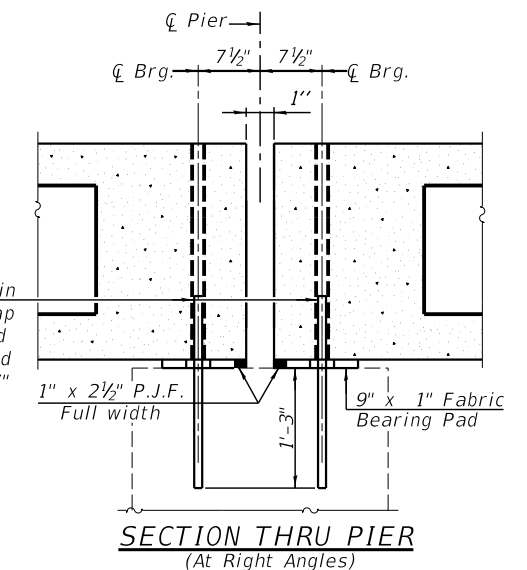
SECTION B-B (Showing dimensions)



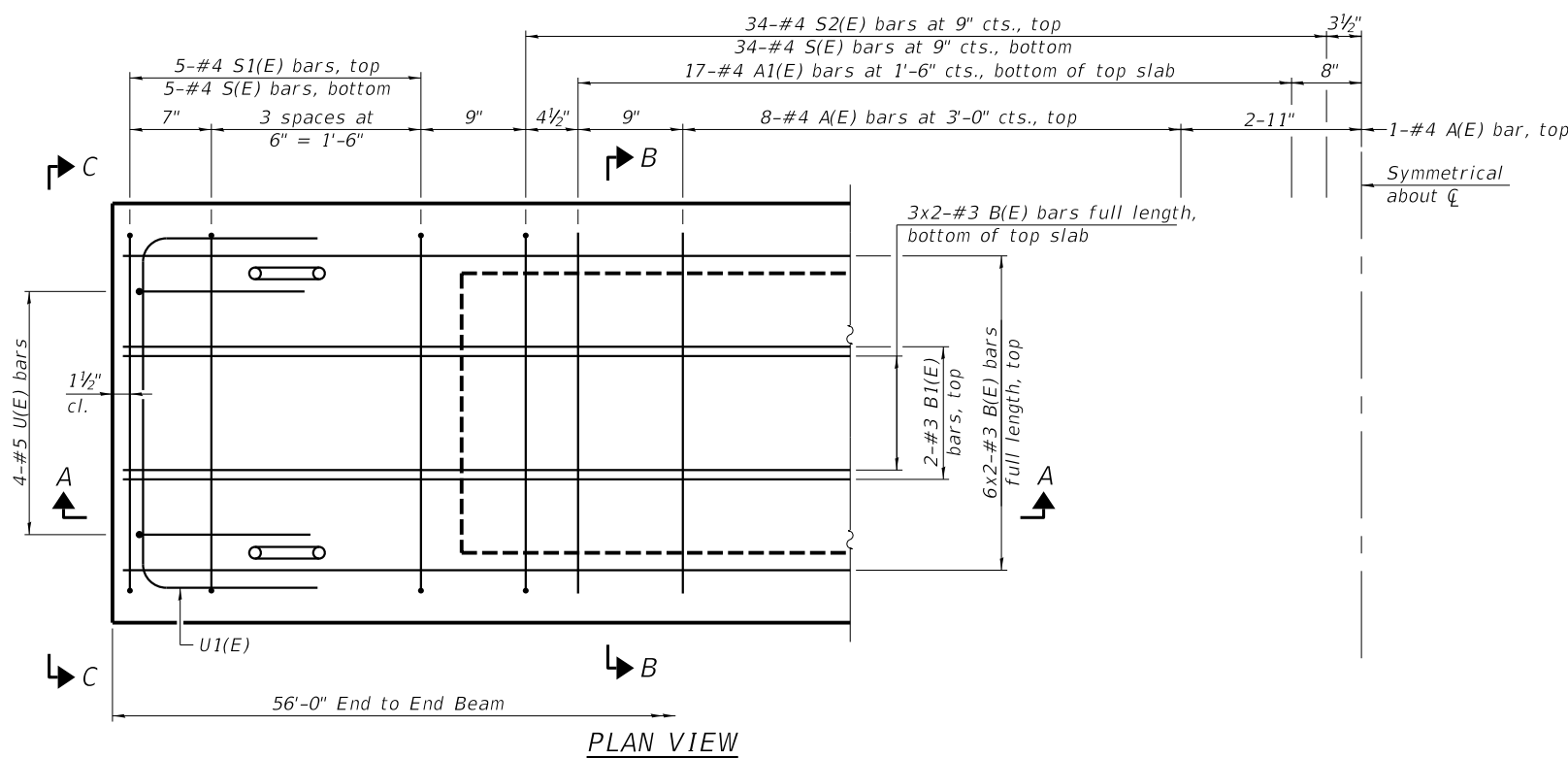
VIEW C-C



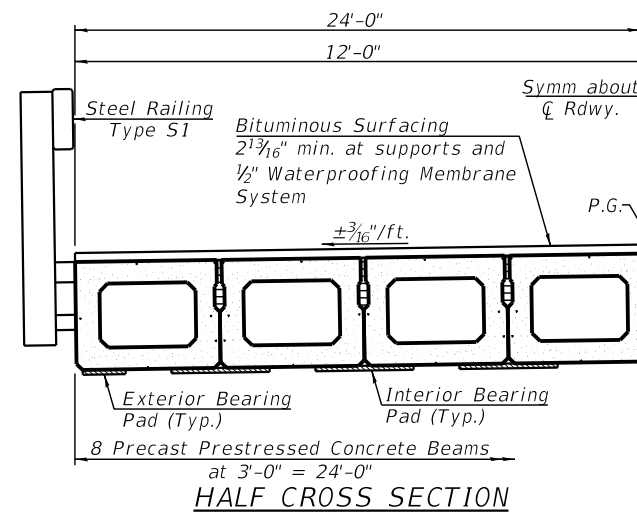
SECTION THRU ABUTMENT (At Right Angles)



SECTION THRU PIER (At Right Angles)



PLAN VIEW



HALF CROSS SECTION

BAR LIST ONE BEAM ONLY (For information only)

Bar	No.	Size	Length	Shape
A(E)	17	#4	2'-7"	—
A1(E)	34	#4	2'-10"	~
B(E)	18	#3	28'-8"	—
B1(E)	4	#3	10'-0"	—
S(E)	78	#4	7'-5"	U
S1(E)	10	#4	5'-11"	U
S2(E)	68	#4	6'-2"	U
U(E)	8	#5	4'-6"	C
U1(E)	4	#4	5'-0"	C

Note:  
 See sheet 4 of 14 for additional details and Bill of Material.

MINIMUM BAR LAP  
 #3 bar = 1'-6"

PD-2736-0

1-1-2020

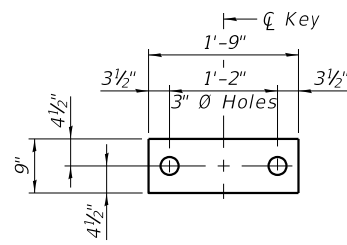
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PLOT DATE =	DRAWN - JRP	REVISED -
	CHECKED - TRC	REVISED -



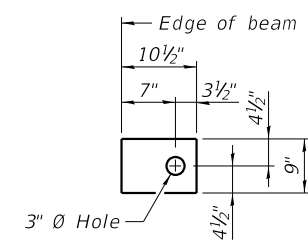
**VEENSTRA & KIMM INC.**  
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 IL. Design Firm No. 184-001939

**27" x 36" PPC DECK BEAM**  
**STRUCTURE NO. 054-3050**  
 SHEET NO. 3 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	14
CONTRACT NO. 93813				
ILLINOIS FED. AID PROJECT				



FABRIC BEARING PAD  
(Interior)

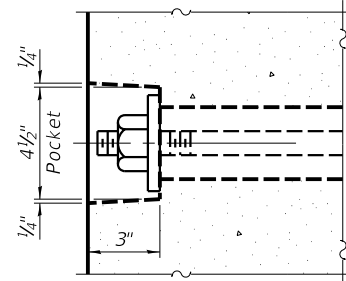


FABRIC BEARING PAD  
(Exterior)

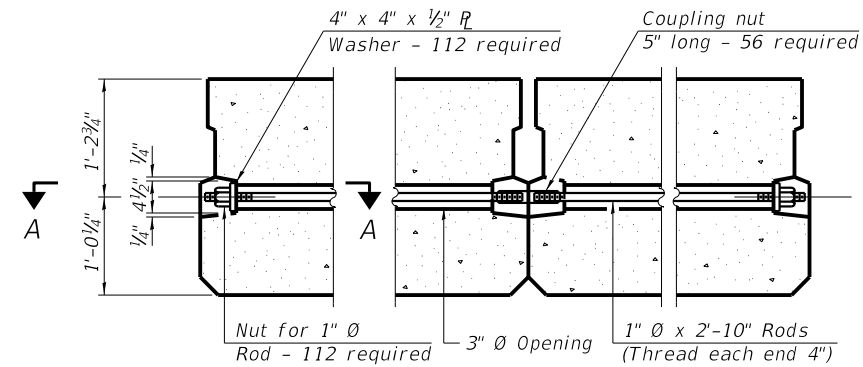
**FIXED**

Notes:

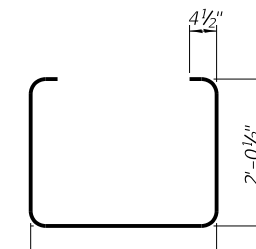
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pads shall be bonded to the substructure.



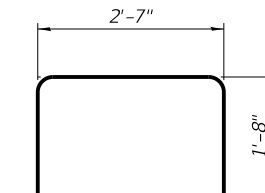
SECTION A-A



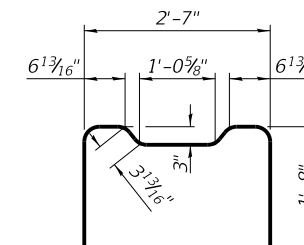
TYPICAL TRANSVERSE TIE ASSEMBLY



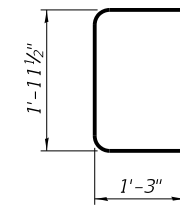
BAR S(E)



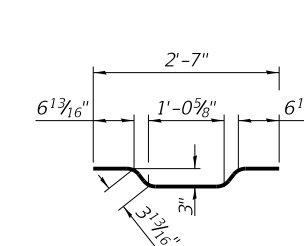
BAR S1(E)



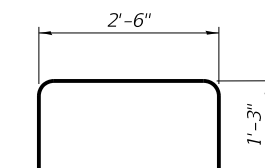
BAR S2(E)



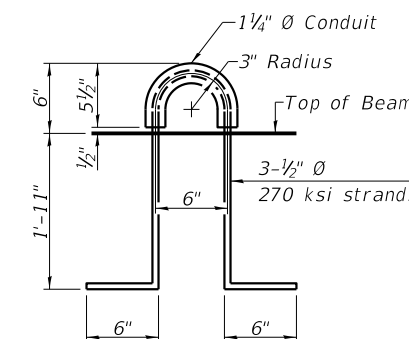
BAR U(E)



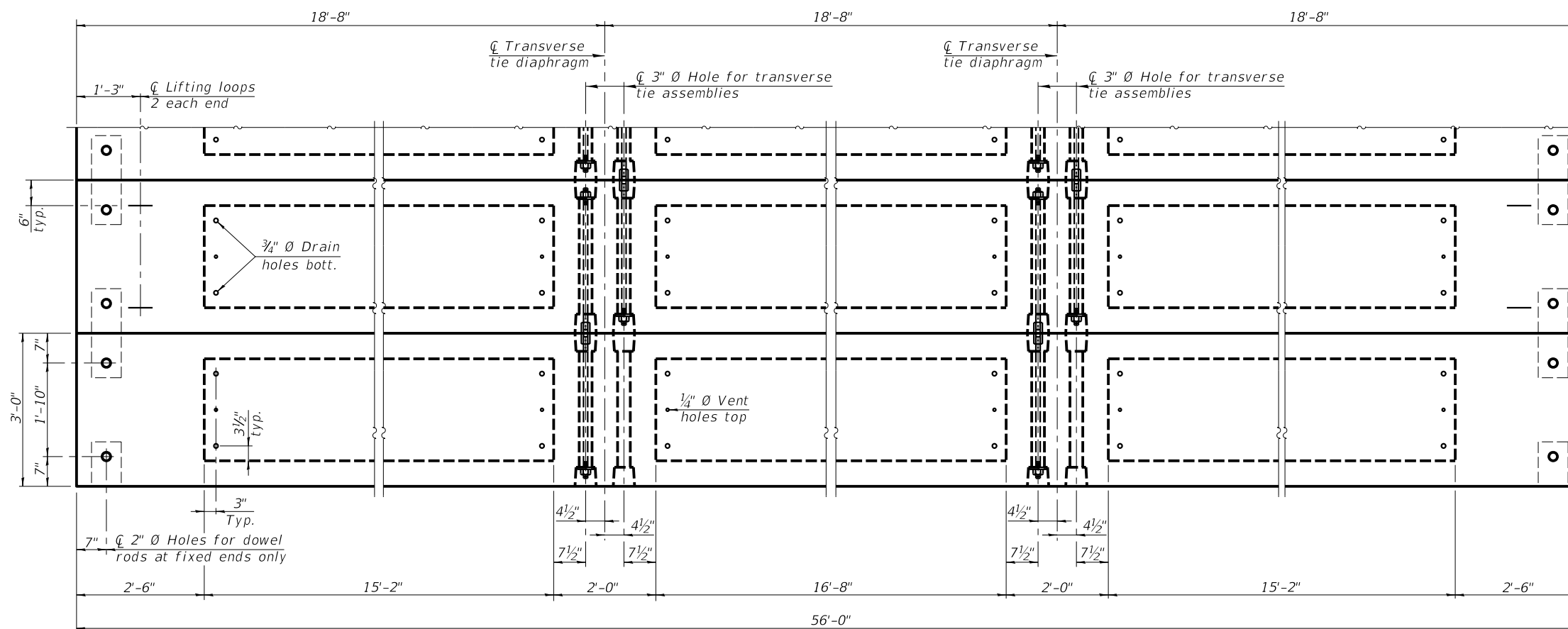
BAR A1(E)



BAR U1(E)



LIFTING LOOP DETAIL



PLAN VIEW

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.  
The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.  
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.  
Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.  
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.  
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Note:  
Connect beams in pairs with the transverse tie configuration shown.

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	5376
---	---------	------

PDD-2736-0

1-1-2020

USER NAME =	DESIGNED - KES	REVISED -
	CHECKED - TRC	REVISED -
PLOT SCALE =	DRAWN - JRP	REVISED -
PLOT DATE =	CHECKED - TRC	REVISED -



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IL. Design Firm No. 184-001939

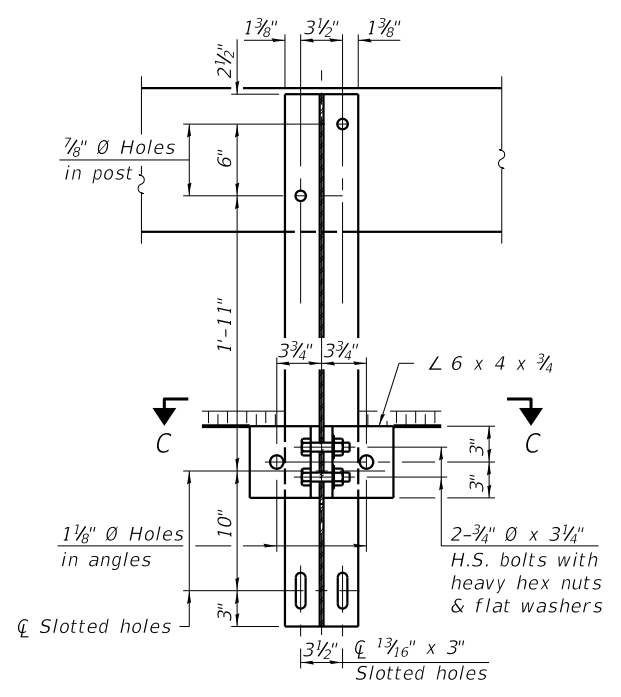
**27" x 36" PPC DECK BEAM DETAILS**  
**STRUCTURE NO. 054-3050**

SHEET NO. 4 OF 14 SHEETS

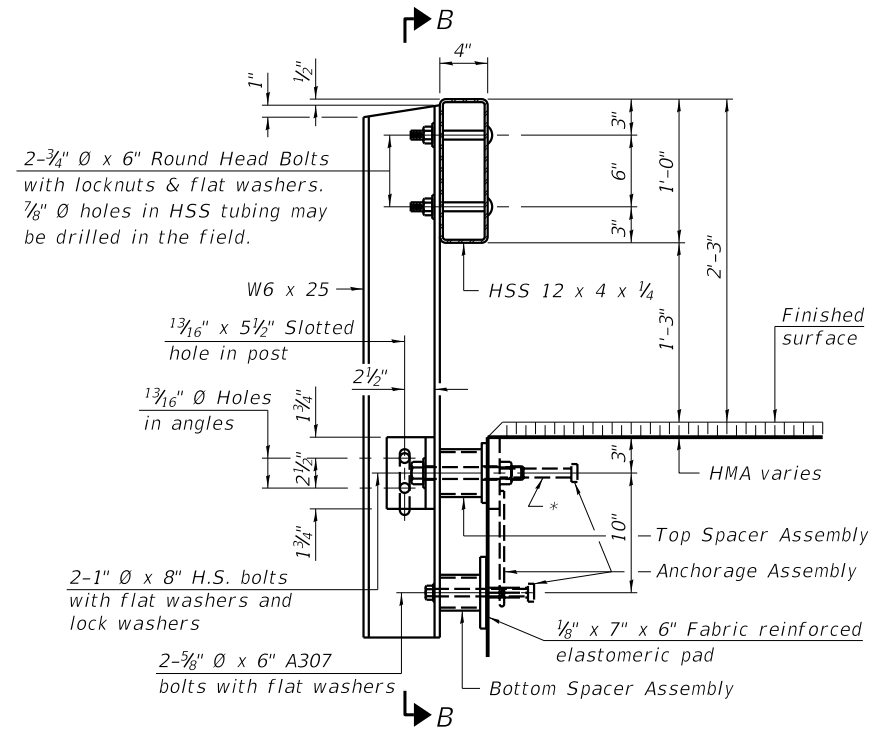
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	15
<b>CONTRACT NO. 93813</b>				

ILLINOIS FED. AID PROJECT

Notes:  
 A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S-1.  
 All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.  
 All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.  
 Rail splice inserts may be built out of 2 - 3/8" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.  
 All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.

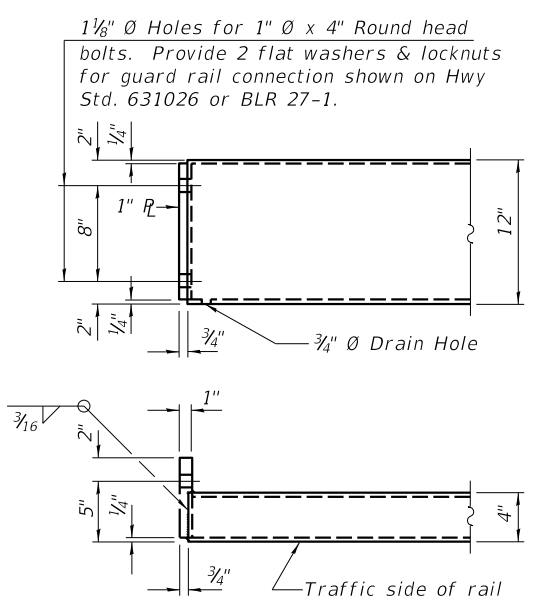


SECTION B-B

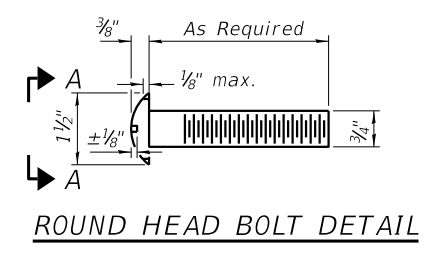


SECTION AT RAILING POST

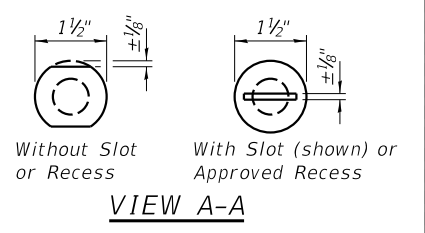
\* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



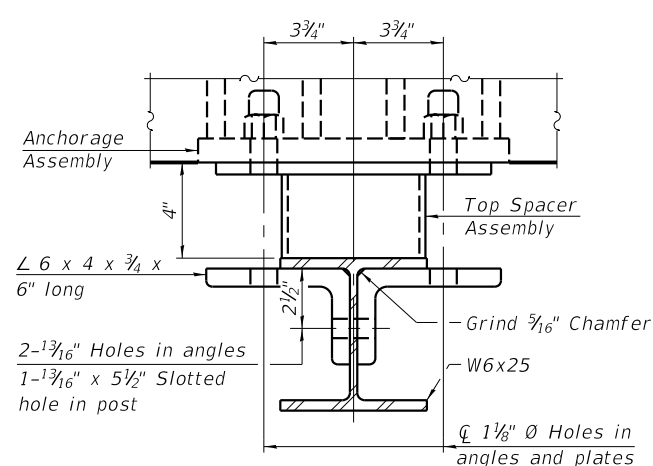
END OF RAIL DETAILS



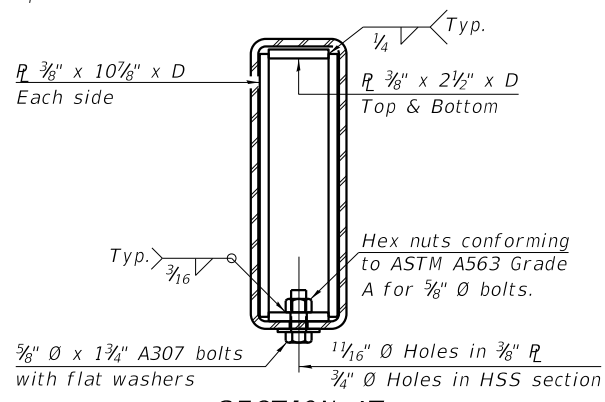
ROUND HEAD BOLT DETAIL



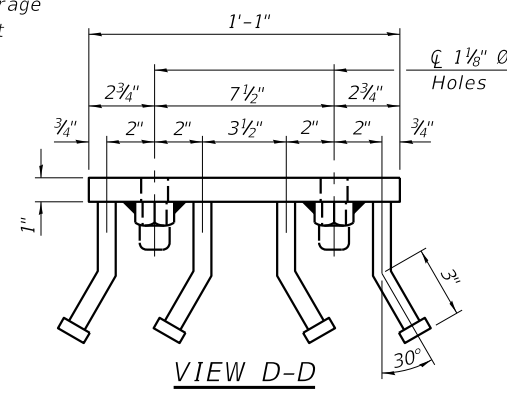
VIEW A-A



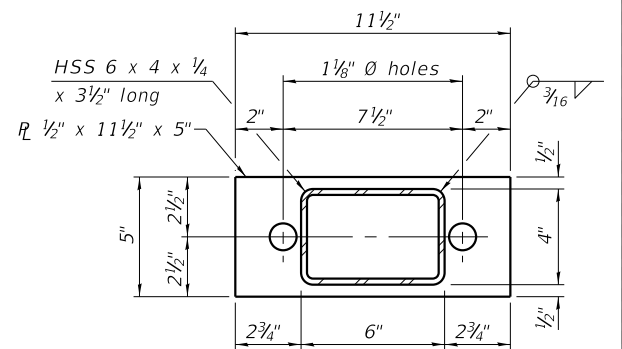
SECTION C-C



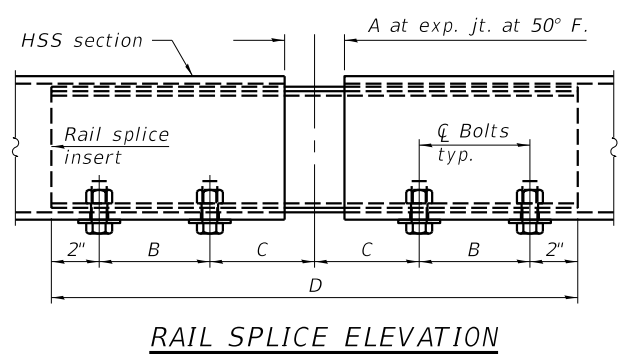
SECTION AT RAIL SPLICE



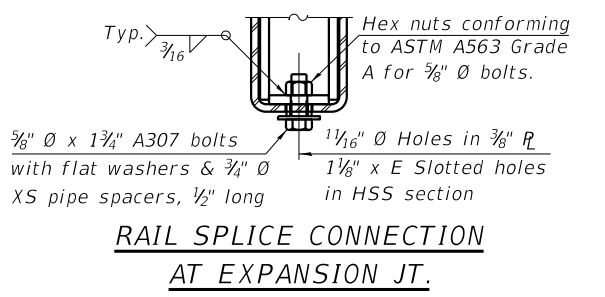
VIEW D-D



TOP SPACER ASSEMBLY



RAIL SPLICE ELEVATION

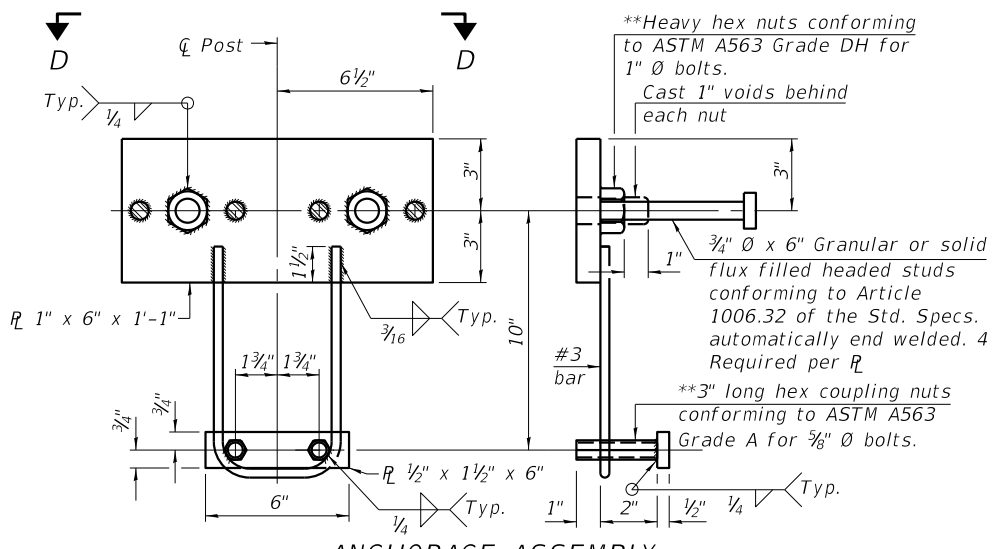


RAIL SPLICE CONNECTION AT EXPANSION JT.

SPLICE DIMENSIONS

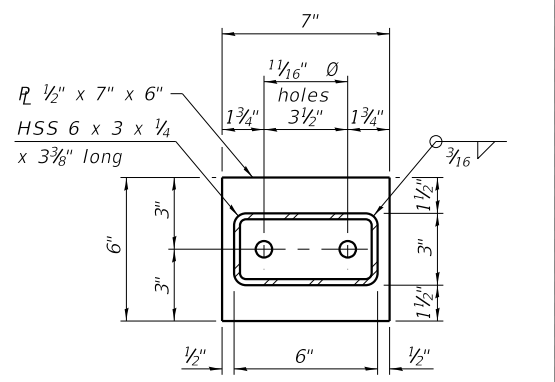
Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2 1/2"	4 3/8"	4 3/8"	1'-10"	3 1/2 6"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 1 3/16"
Over Finger or Modular Jt.	≤15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 3/16"

T = total movement along centerline of roadway at expansion joint.



ANCHORAGE ASSEMBLY

\*\* Threaded areas shall be plugged or blocked off during casting of concrete.



BOTTOM SPACER ASSEMBLY

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	452

RAILING CRITERIA

NCHRP 350 Test Level	2
Railing Weight (plf)	50
Max Post Spacing	10'-9"
HMA thickness range (in)	1 1/4 - 3 1/8

R-23A 10-12-2021

USER NAME =	DESIGNED - KES
CHECKED - TRC	REVISOR -
PLOT SCALE =	DRAWN - JRP
PLOT DATE =	CHECKED - TRC

DESIGNED - KES	REVISOR -
CHECKED - TRC	REVISOR -
DRAWN - JRP	REVISOR -
CHECKED - TRC	REVISOR -

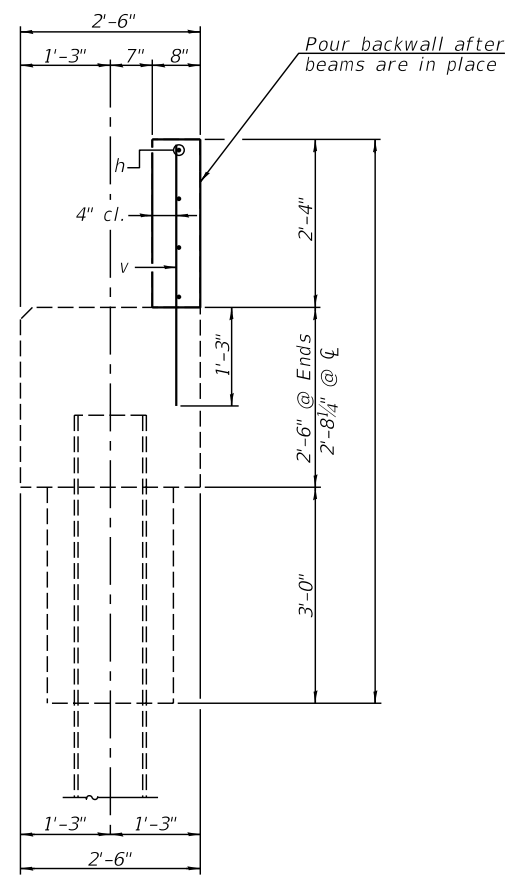
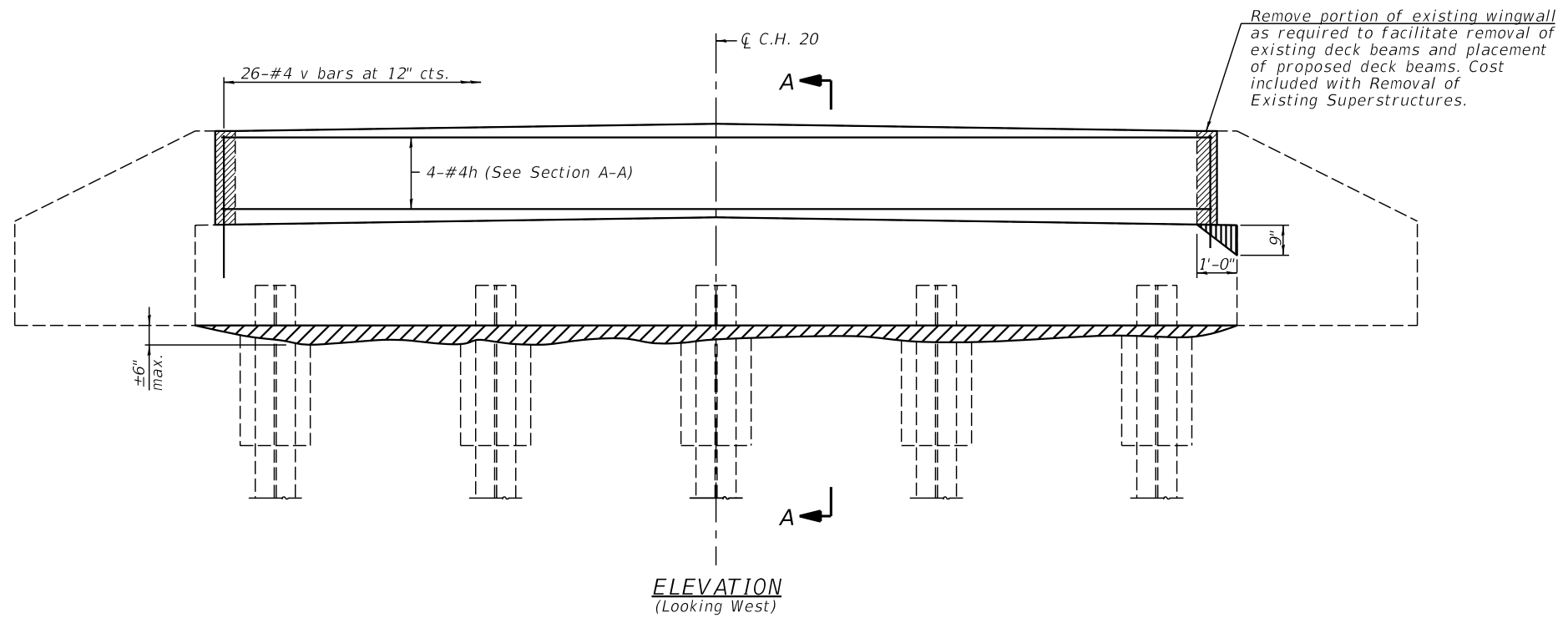


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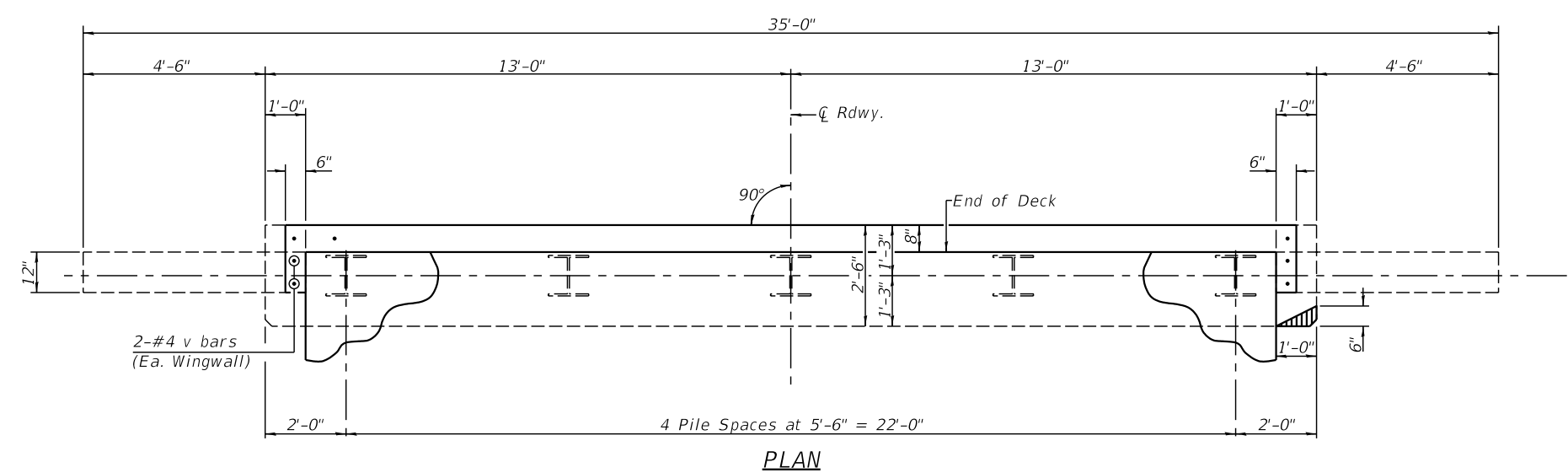
**STEEL RAILING, TYPE S1**  
**STRUCTURE NO. 054-3050**  
 SHEET NO. 5 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	16
CONTRACT NO. 93813				
ILLINOIS FED. AID PROJECT				





SECTION A-A

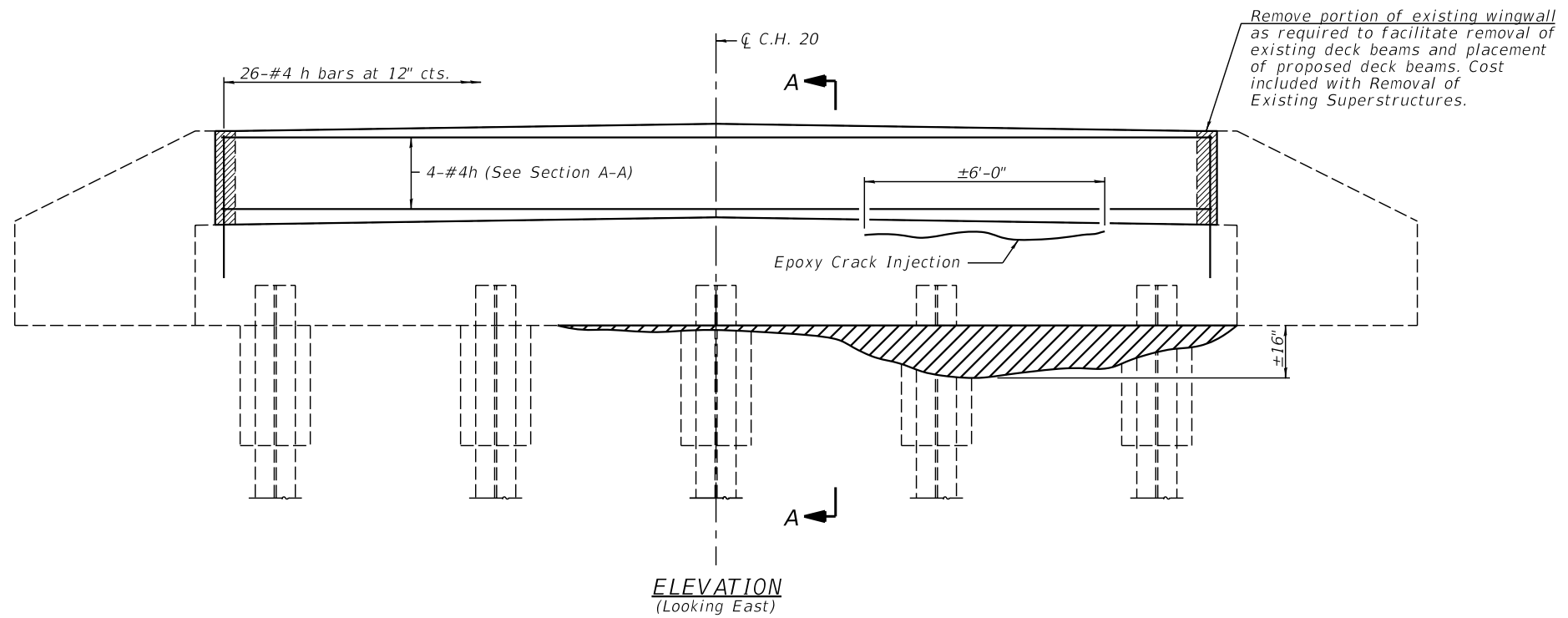


PLAN

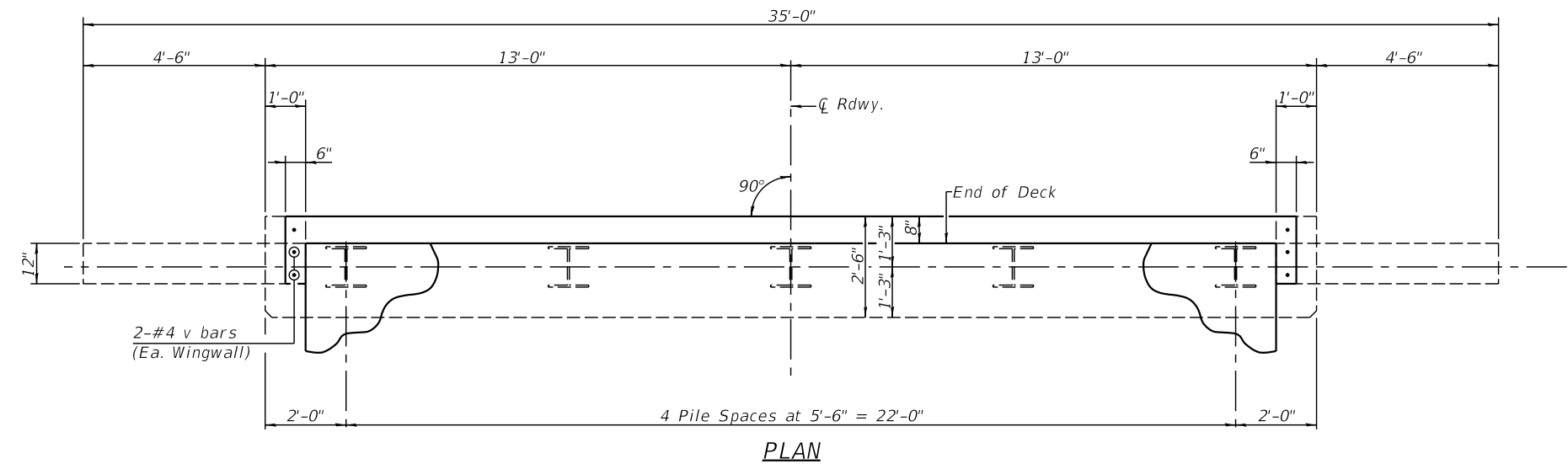
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h	4	#4	24'-9"	—
v	30	#4	3'-5"	—
Structure Excavation			Cu. Yd.	7.5
Concrete Structures			Cu. Yd.	1.6
Reinforcement Bars			Pound	140
Structural Repair of Concrete ≤ 5 inches			Sq. Ft.	1.0
Controlled Low-Strength Material			Cu. Yd.	2.9

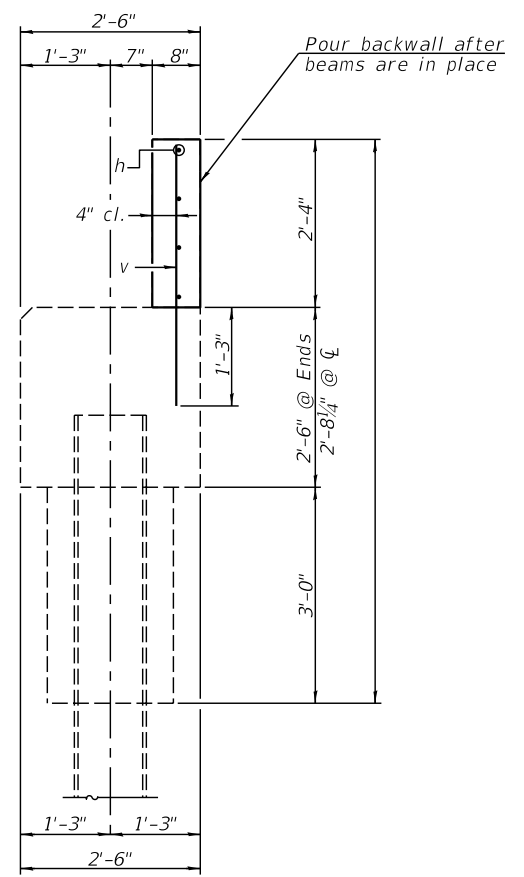
- Structural Repair of Concrete ≤ 5 inches
- Hatched area shall be filled in using excess earth excavation to the satisfaction of the Engineer. Cost shall be included in the contract unit price for Channel Excavation.



**ELEVATION**  
(Looking East)



**PLAN**



**SECTION A-A**

- Epoxy Crack Injection
- Hatched area shall be filled in using excess earth excavation to the satisfaction of the Engineer. Cost shall be included in the contract unit price for Channel Excavation.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h	4	#4	24'-9"	—
v	30	#4	3'-5"	—
Structure Excavation			Cu. Yd.	7.5
Concrete Structures			Cu. Yd.	1.6
Reinforcement Bars			Pound	140
Controlled Low-Strength Material			Cu. Yd.	2.9
Epoxy Crack Injection			Foot	6.0

USER NAME =	DESIGNED - KES	REVISED -
	CHECKED - TRC	REVISED -
PLOT SCALE =	DRAWN - JRP	REVISED -
PLOT DATE =	CHECKED - TRC	REVISED -



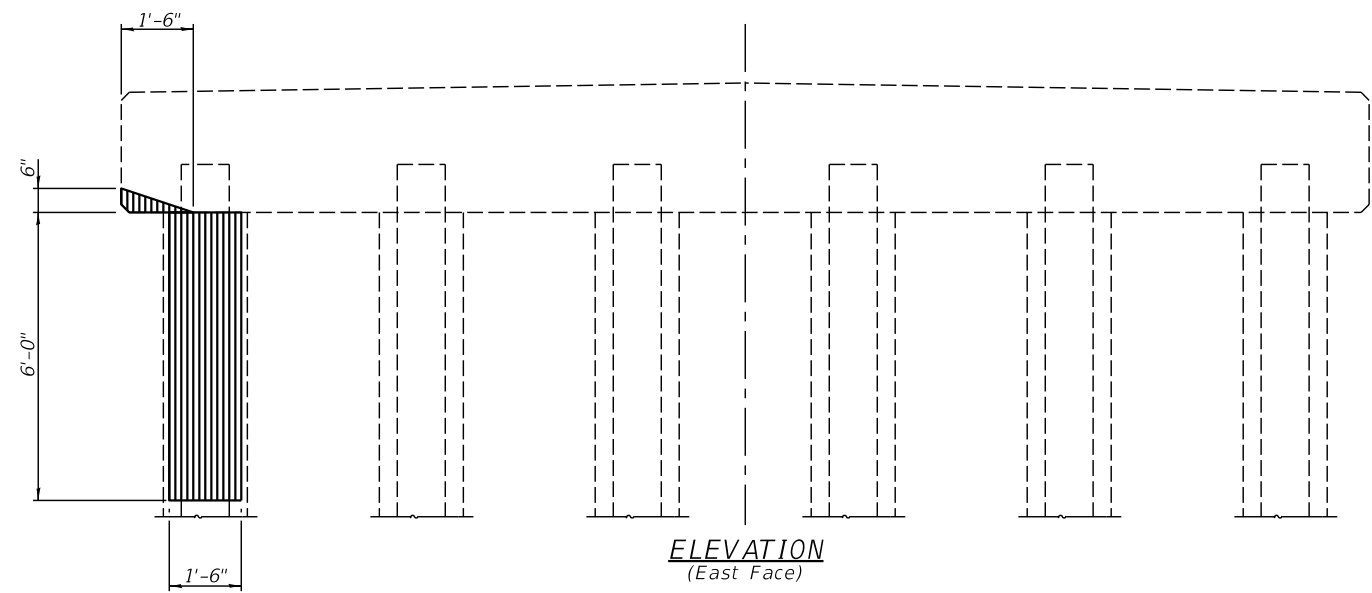
**VEENSTRA & KIMM INC.**  
Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

**EAST ABUTMENT**  
**STRUCTURE NO. 054-3050**

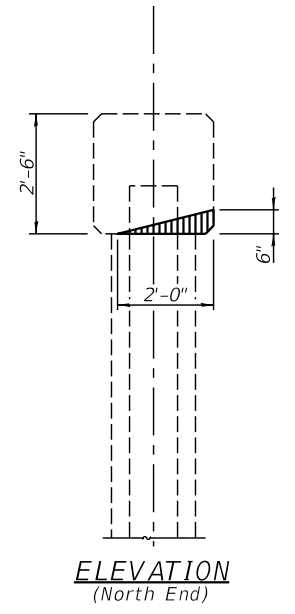
SHEET NO. 7 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	18
<b>CONTRACT NO. 93813</b>				

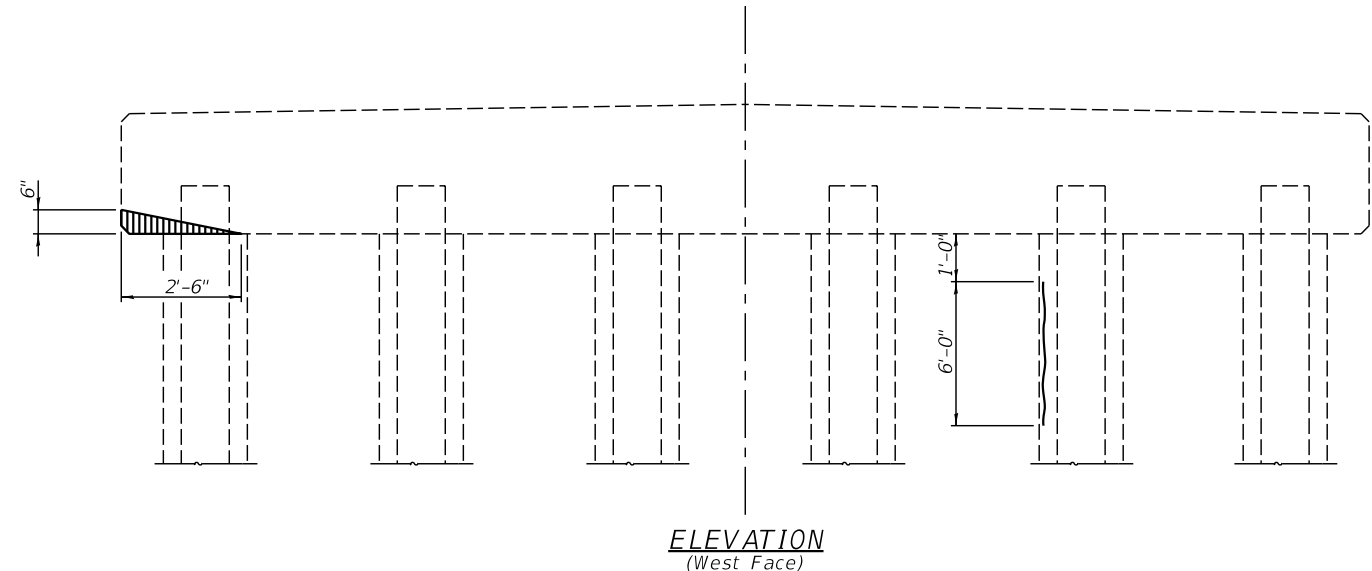
ILLINOIS FED. AID PROJECT



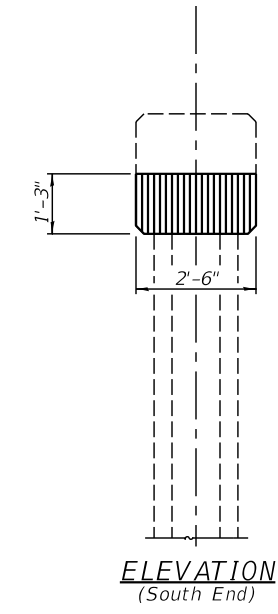
ELEVATION  
(East Face)



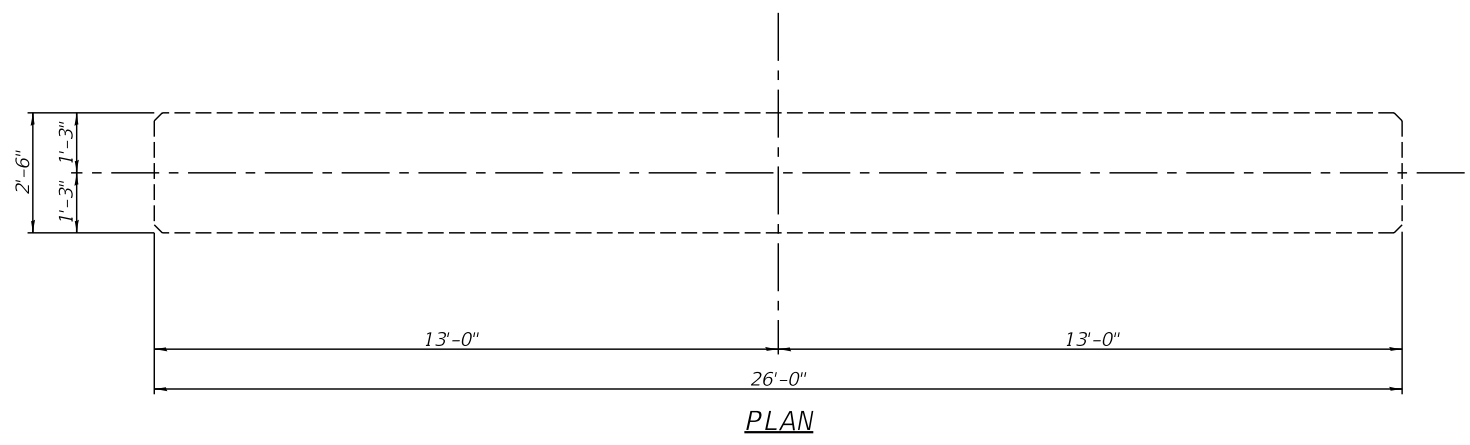
ELEVATION  
(North End)





ELEVATION  
(West Face)



ELEVATION  
(South End)



PLAN

 - Structural Repair of Concrete  $\leq$  5 inches  
 - Epoxy Crack Injection

**BILL OF MATERIAL**

Item	Unit	Quantity
Structural Repair of Concrete $\leq$ 5 inches	Sq. Ft.	14.0
Epoxy Crack Injection	Foot	6.0

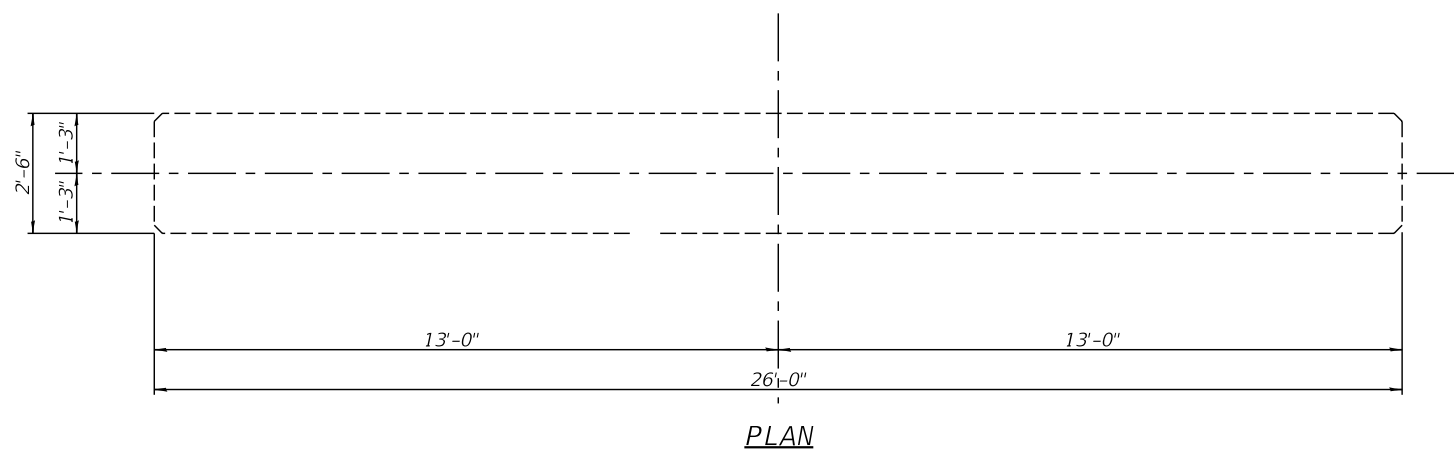
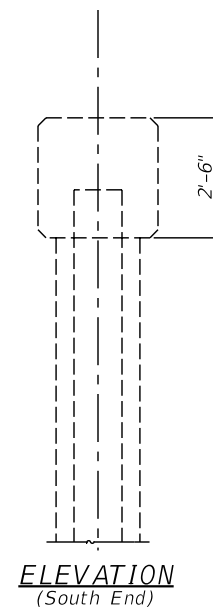
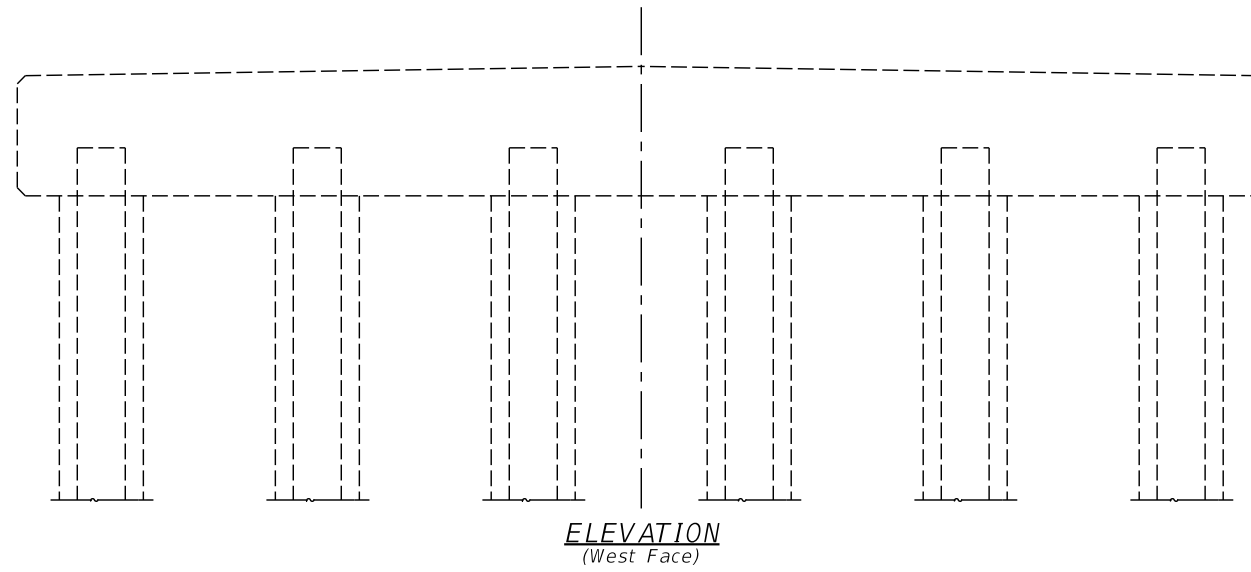
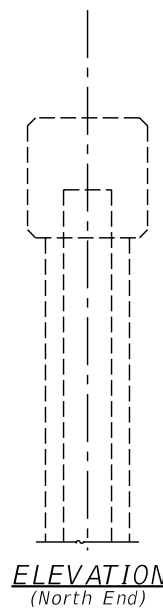
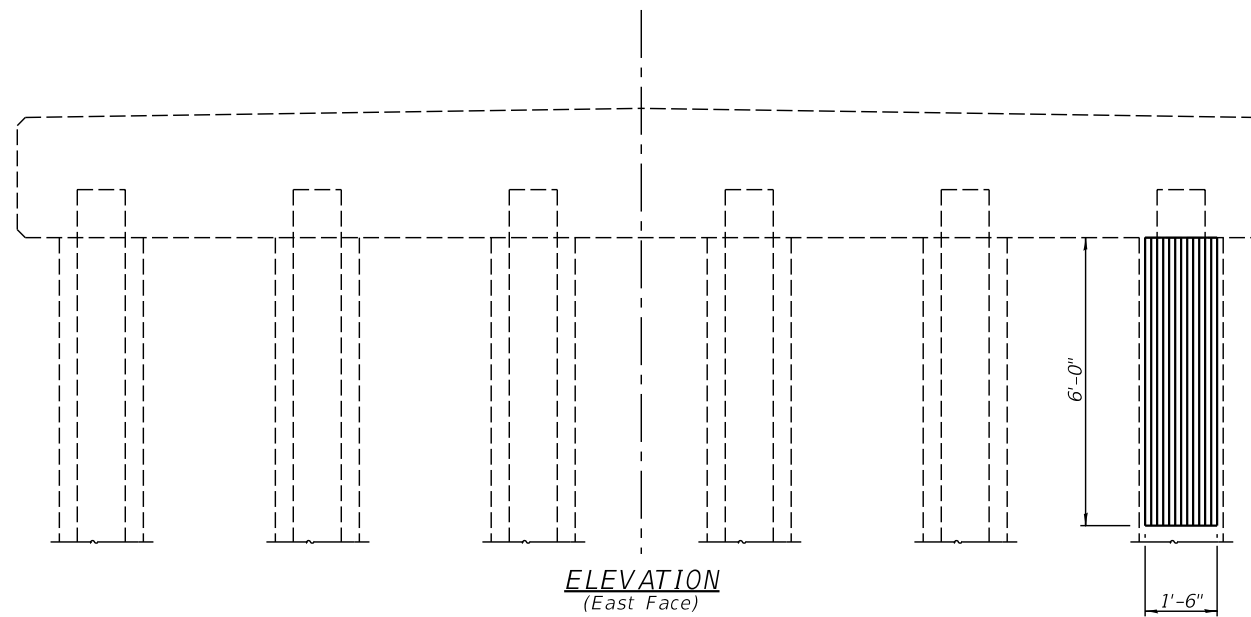
USER NAME =	DESIGNED - KES	REVISED -
	CHECKED - TRC	REVISED -
PLOT SCALE =	DRAWN - JRP	REVISED -
PLOT DATE =	CHECKED - TRC	REVISED -



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Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

**PIER 1 - REPAIR**  
**STRUCTURE NO. 054-3050**  
SHEET NO. 8 OF 14 SHEETS

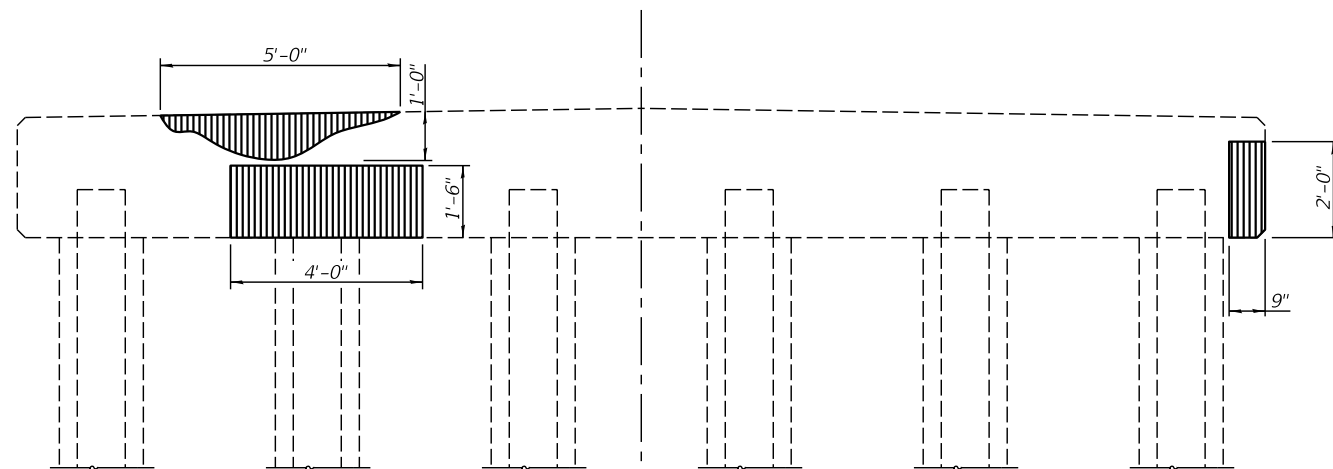
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	19
<b>CONTRACT NO. 93813</b>				
ILLINOIS FED. AID PROJECT				



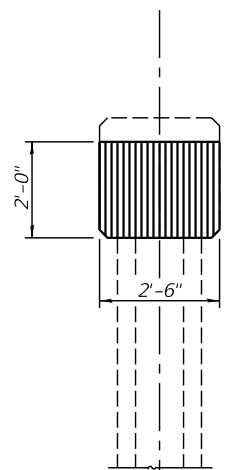
▨ - Structural Repair of Concrete ≤ 5 inches

**BILL OF MATERIAL**

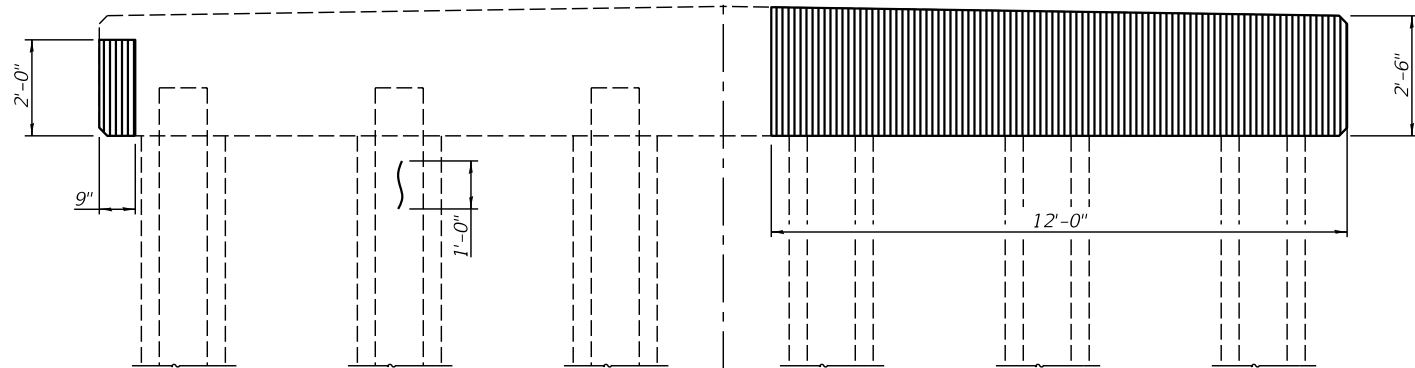
Structural Repair of Concrete ≤ 5 inches	Sq. Ft.	9.0
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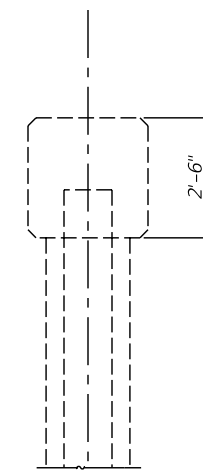
ELEVATION  
(East Face)



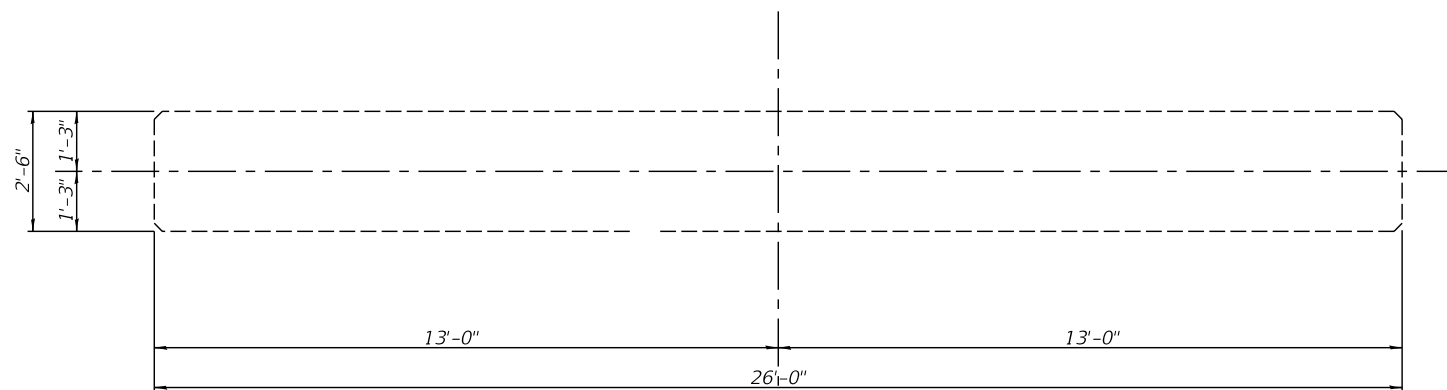
ELEVATION  
(North End)





ELEVATION  
(West Face)



ELEVATION  
(South End)



PLAN

 - Structural Repair of Concrete  $\leq$  5 inches  
 - Epoxy Crack Injection

**BILL OF MATERIAL**

Structural Repair of Concrete $\leq$ 5 inches	Sq. Ft.	49.0
Epoxy Crack Injection	Foot	1.0

USER NAME =	DESIGNED - KES	REVISED -
	CHECKED - TRC	REVISED -
PLOT SCALE =	DRAWN - JRP	REVISED -
PLOT DATE =	CHECKED - TRC	REVISED -



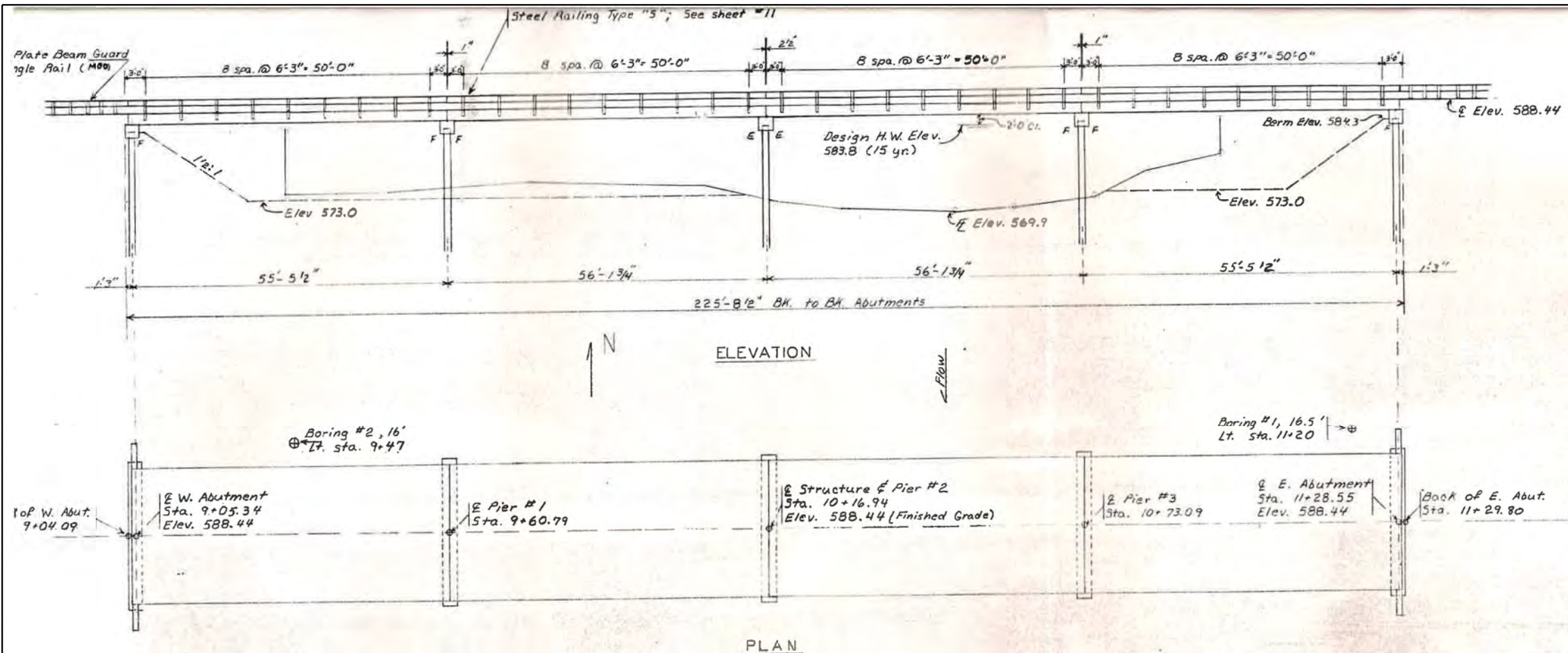
**VEENSTRA & KIMM INC.**  
Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

**PIER 3 - REPAIR**  
**STRUCTURE NO. 054-3050**

SHEET NO. 10 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	21
			<b>CONTRACT NO. 93813</b>	

ILLINOIS FED. AID PROJECT



**WATERWAY DATA**

Drainage Area	311 Sq. Mi.
Design Discharge (15 yr.)	10,400 cfs
Existing Opening	1730 Sq. Ft.
Required Opening (15 yr.)	2240 Sq. Ft.
Proposed Opening (15 yr.)	2240 Sq. Ft.
Created Head (15 yr.)	0.32 Ft.
100 Year Discharge	16,400 cfs
Created Head (100 yr.)	0.87 Ft.

**NAME PLATE**

STRUCTURE NO. 054-3050  
 BUILT 197\_ LOGAN COUNTY  
 SECTION 75-00088-00-BR  
 PROJECT 05-107(1)  
 LOADING H5 20

(See Std. 2113-1) Mount on steel Railing Type 5 @ S.W. Corner Bridge.

**NOTES**

The "State of Illinois Standard Specifications for Road and Bridge Construction" adopted July 1, 1976 shall apply.

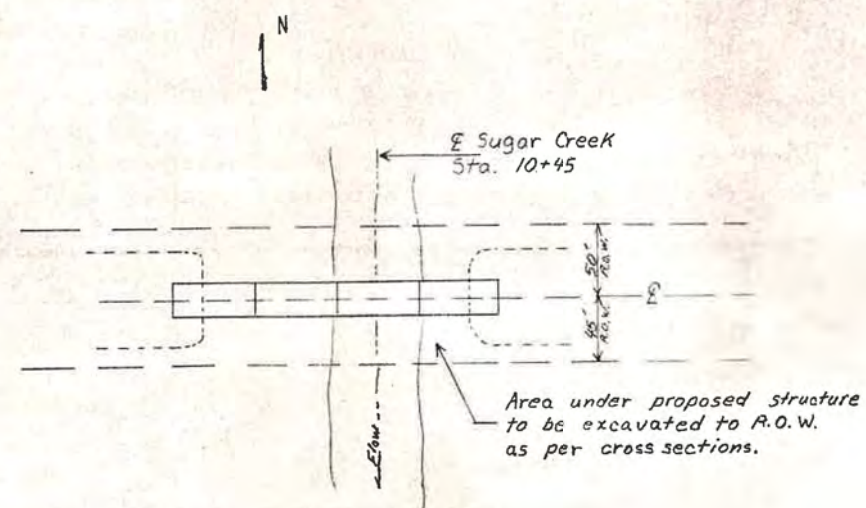
The existing structure, a 19' x 170' through truss with wood deck, shall be removed in accordance with Section 501 of the Standard Specifications. All materials are considered non-salvageable under this contract and shall be disposed of to the satisfaction of the Engineer.

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

The contractor shall drive two test piles in permanent locations at Piers 1 & 3 as directed by the Engineer before ordering the remainder of the piling.

**TOTAL BRIDGE QUANTITIES**

Precast Prestressed Deck Beams, (27" Depth)	Sq. Ft.	5376
Class X Concrete	Cu. Yd.	33.9
Class X Concrete Encasement	Cu. Yd.	25.9
Reinforcement Bars	Pound	3756
Steel Railing, Type 5	Lin. Ft.	448
Furnishing Steel Piles, HP10 x 42	Lin. Ft.	760
Driving Steel Piles	Lin. Ft.	760
Test Piles Steel HP10 x 42	Each	2
Name Plates	Each	1
Leveling Binder (Machine Method)	Ton	33
Bit. Concrete Surface Course, Mixture D, Class I	Ton	33
Waterproofing Membrane System	Sq. Yd.	597
P. C. Mortar Fairing Course	Lin. Ft.	310
Neoprene Expansion Joints, 2'2"	Lin. Ft.	24
Treated Timber	FBM	390
Removal of Existing Structure	Each	1



APPROVED AND SEALED FOR STRUCTURAL ARCHITECTURAL STUDY  
 Carl E. Thumman Jr.  
 Engineer of Professional Engineers

These plans were prepared by me or by a full time member of my staff working under my personal supervision.

County Superintendent of Highways

SHEET 7 OF 18

LOGAN COUNTY	
PROJECT 05-107(1)	SCALE
SECTION 75-00088-00-BR	
DATE	APPROVED BY
DRAWING NUMBER	

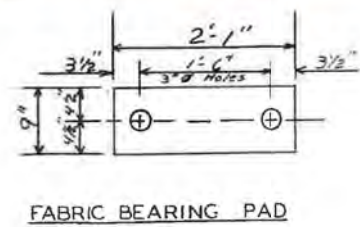
USER NAME =	DESIGNED - KES	REVISED -
	CHECKED - TRC	REVISED -
PLOT SCALE =	DRAWN - JRP	REVISED -
PLOT DATE =	CHECKED - TRC	REVISED -



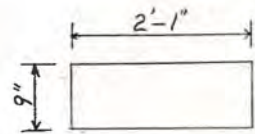
**VEENSTRA & KIMM INC.**  
 Springfield, IL. Phone: (217)544-8033  
 IL. Design Firm No. 184-001939

**EXISTING PLANS**  
**STRUCTURE NO. 054-3050**  
 SHEET NO. 11 OF 14 SHEETS

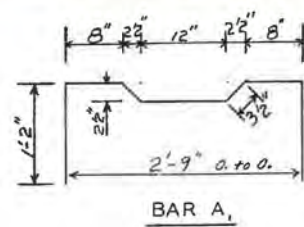
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	22
CONTRACT NO. 93813				
ILLINOIS FED. AID PROJECT				



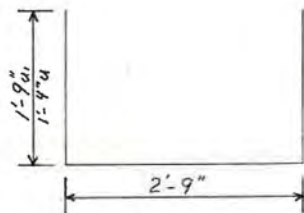
FABRIC BEARING PAD



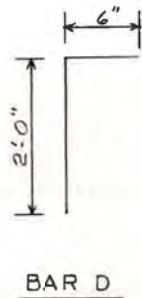
GRAPHITED ASBESTOS BEARING PAD



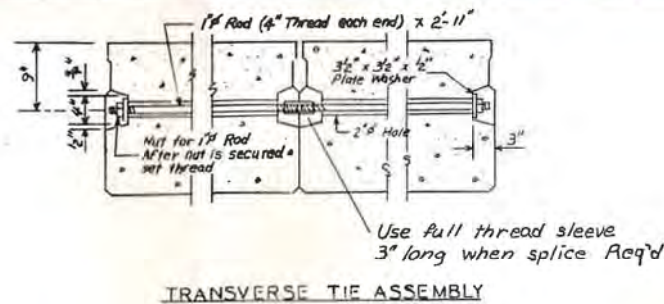
BAR A<sub>1</sub>



BARS U+U

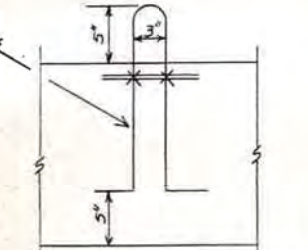


BAR D

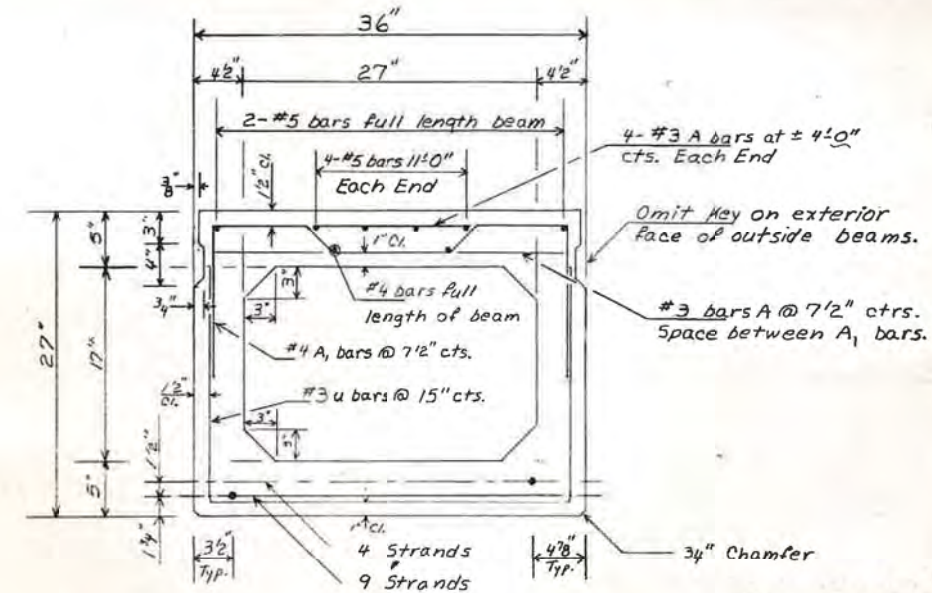


TRANSVERSE TIE ASSEMBLY

2-7/16" strands/loop, 2 ea. end, ea. beam, loops shall be burned off after beams are set.

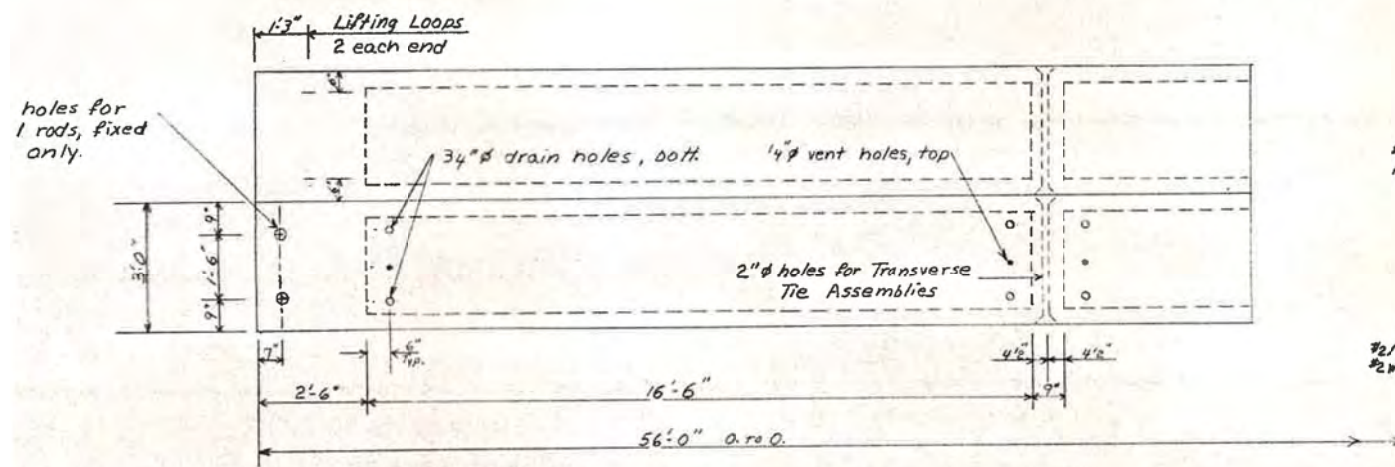


LIFTING LOOP DETAILS

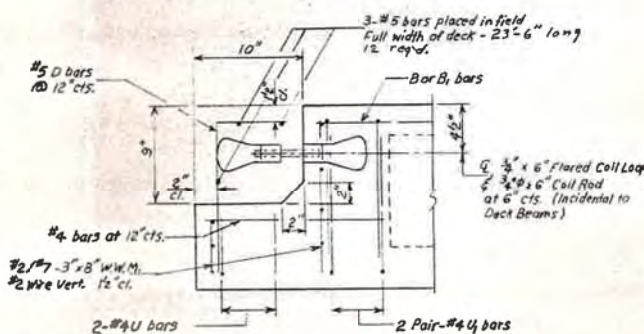


TYPICAL SECTION THRU BEAM

13- 7 wire 12" # strands stressed to 29,300 # per strand. Strands shall be non-galvanized extra high strength stress relieved. Place strands symmetrically about  $\bar{c}$  beam.



PLAN



END OF BEAM (EXP. END)

NOTES

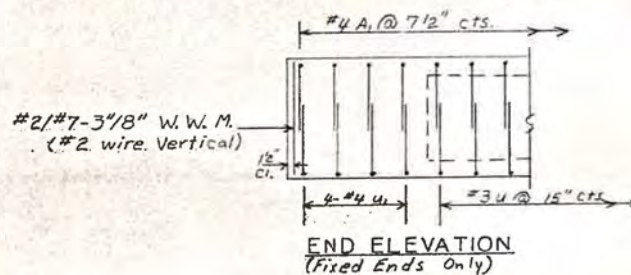
Pockets that receive the transverse tie bars on the outside beams shall be filled with grout after transverse tie assembly is in place.  
 After beams are in place, the contractor shall drill 2"  $\phi$  holes into bridge seat at both piers and grout dowels into beam and cap.  
 Longitudinal shear keys shall be dry packed with 2:1 sand and P.C. mortar.  
 Cost of reinforcement, accessories precast into beams, of bearing pads, of furnishing and assembling transverse ties, of furnishing, drilling and grouting dowel holes, and of grouting longitudinal shear keys is included in the contract unit price for precast prestressed concrete deck beams.  
 Dowel rods shall be AASHTO M-227 or AASHTO M31. Transverse tie rods shall be AASHTO M-227, Grade 70-80.  
 Rail post anchor devices are to be cast in curb beams.

DESIGN STRESSES

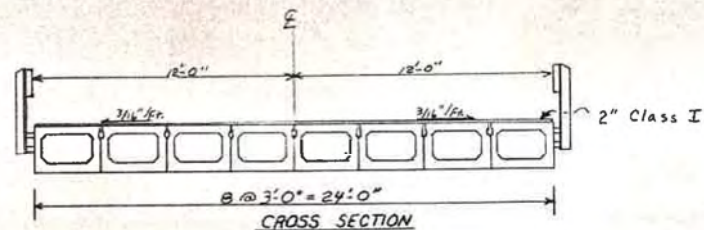
$f_c = 1,400$  psi (Class X Concrete)  
 $f_b = 5,000$  psi (Prestressed Beams)  
 $f_{bt} = 4,000$  psi (Prestressed Beams)  
 $f_s = 20,000$  psi (Reinforcement Bars)  
 $f_{ps} = 270,000$  psi (Prestressed strands)  
 $f'_{si} = 188,700$  psi (Prestressed strands)  
 $n = 10$  (Class X Concrete)  
 LOADING HS 20-44

QUANTITIES THIS SHEET

Item	Unit	Quantity
Precast Prestressed Concrete Deck Beams, 27"	Sq. Ft.	5376
Wt per beam (32 req'd)	Lbs	31,670
P. C. Mortar Fairing Course	Lin Ft.	310
Neoprene Expansion Joint (2'2")	Lin. Ft.	24
Reinforcement Bars	Pound	147



END ELEVATION (Fixed Ends Only)



CROSS SECTION

SHEET 8 OF 18

LOGAN COUNTY			
PROJECT OS-107(1)	SCALE	DRAWN BY	
SECTION 75-00088-00-BR		REVISED	
DATE	APPROVED BY	DRAWING NUMBER	

USER NAME =	DESIGNED - KES	REVISED -
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PLOT DATE =	DRAWN - JRP	REVISED -
	CHECKED - TRC	REVISED -

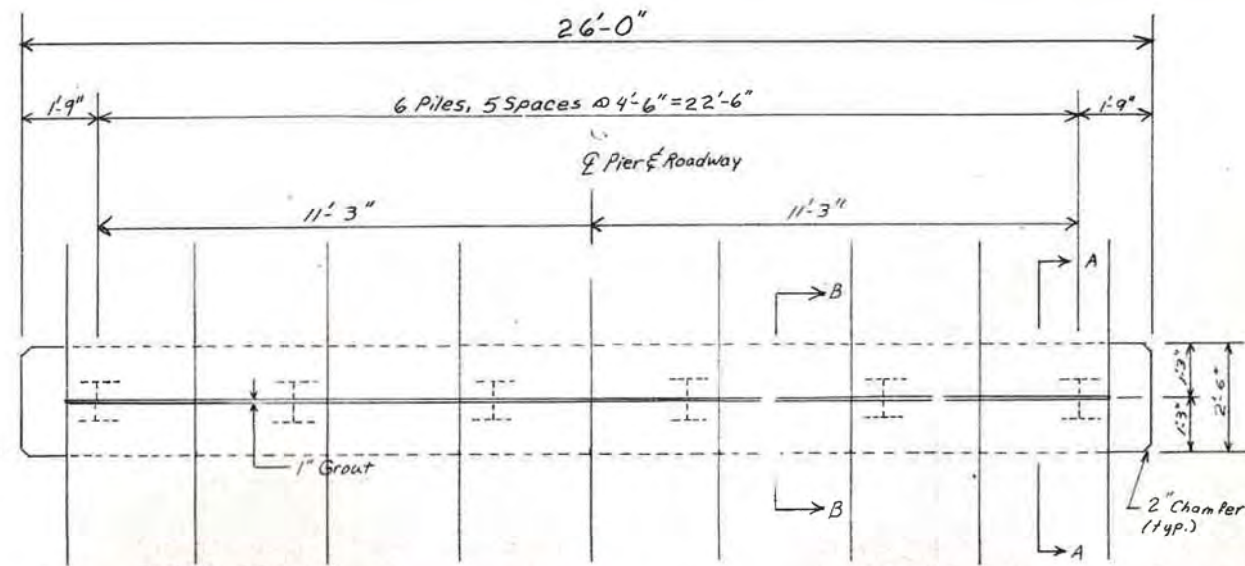


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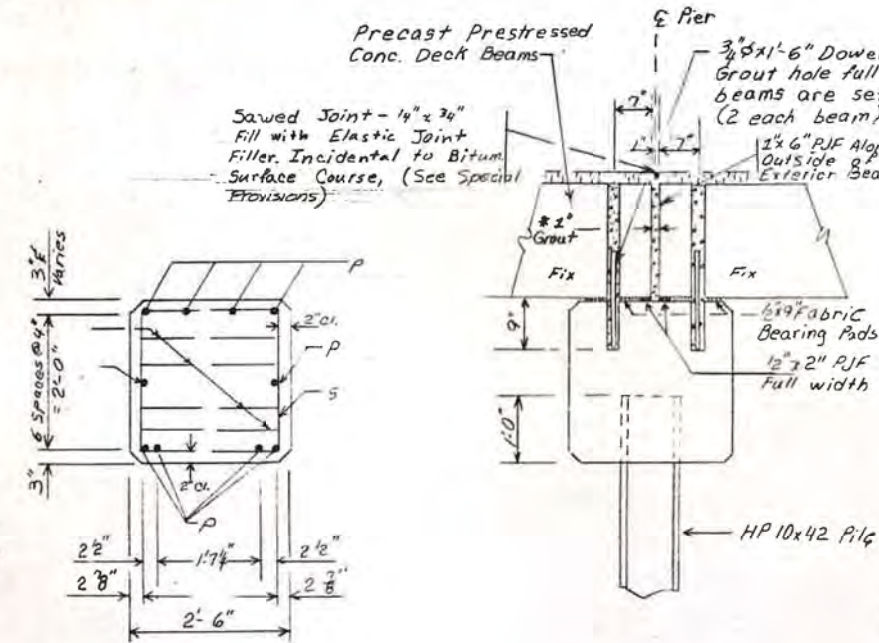
**EXISTING PLANS**  
**STRUCTURE NO. 054-3050**

SHEET NO. 12 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	23
CONTRACT NO. 93813				
ILLINOIS FED. AID PROJECT				



PLAN OF PIER CAP



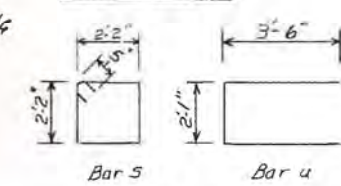
SECTION A-A

SECTION B-B

BILL OF REINFORCEMENT  
- 3 PIERS

Mark	Shape	Size	No	Length
P	—	#6	30	25'-6"
S	□	#4	78	9'-6"
U	—	#6	24	9'-1"

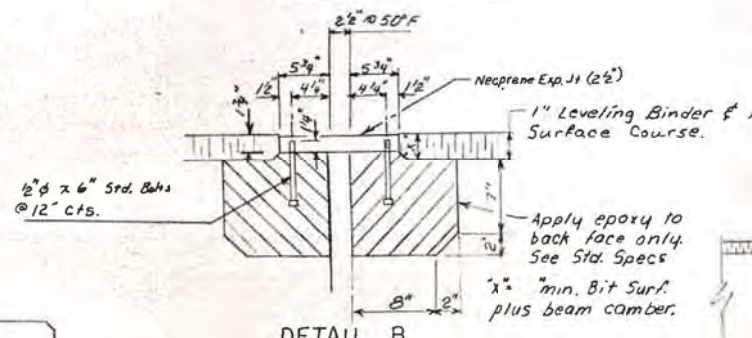
BAR BENDS



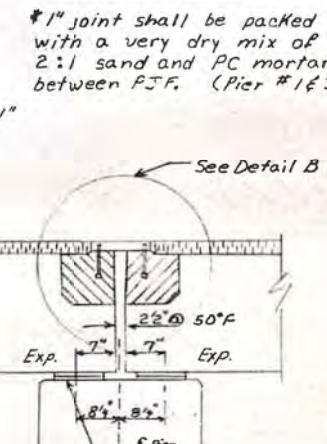
Bar S

Bar U

(All dimensions are out to out)



DETAIL B



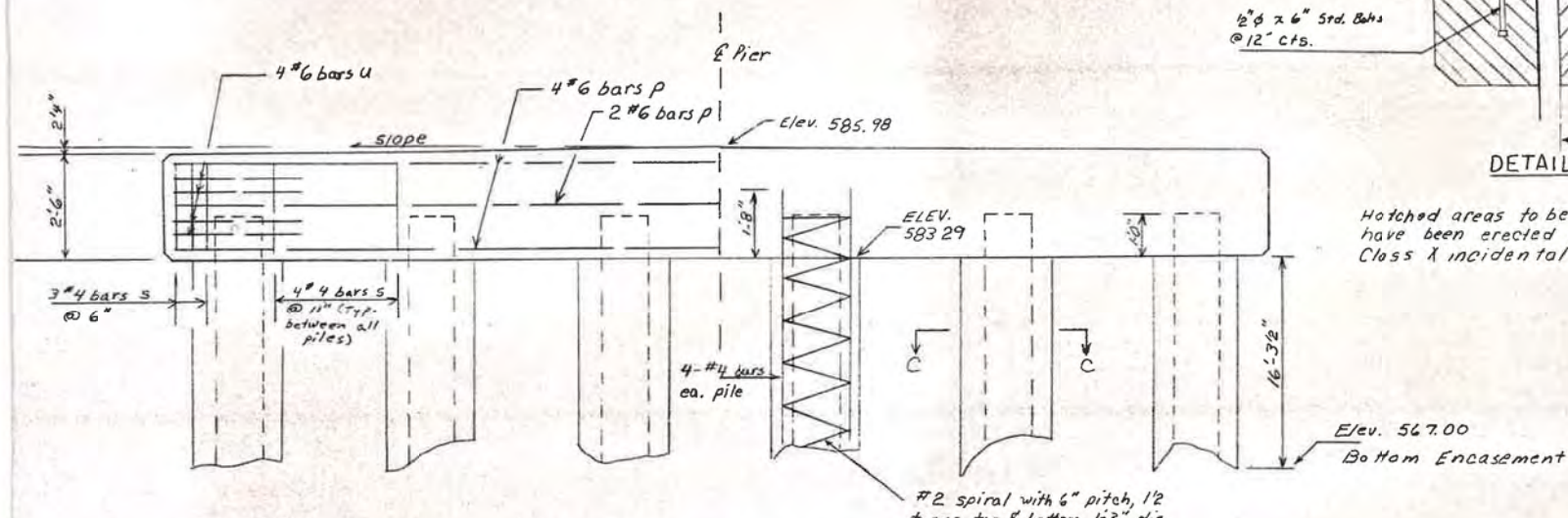
Expansion Pier # 2

PILE DATA

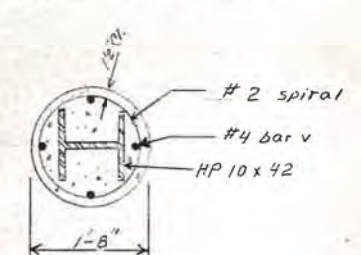
Type	Steel HF 10x42
No. Req'd	16 + 2 test pile
Min. Capacity	Drive to 45 ton Capacity
Est. Length	30 Ft./Pile Pier #1
	30 Ft./Pile Pier #2
	28 Ft./Pile Pier #3

TOTAL BILL OF MATERIALS  
3 PIERS

ITEM	UNIT	QUANTITY
Class X Concrete	Cu. Yds.	18.7
Class X Conc. Encas.	Cu. Yds.	23.5
Furn. Steel Piles HP10x42	Lin Ft.	470
Driving Steel Piles	Lin Ft.	470
Test Piles	Each	2
Reinforcement Bars	Lbs.	1971



ELEVATION OF PIER CAP



SECTION C-C

Reinforcement spiral and #4 v bars shall be incidental to item Class X Concrete Encasement. Splices in spirals shall be made by lap of 1/2 turns.

LOGAN COUNTY			
PROJECT OS-107(1)	SCALE	DRAWN BY	
SECTION 75-00088-00-BR			
DATE	APPROVED BY	DRAWING NUMBER	

USER NAME =	DESIGNED - KES	REVISED -
	CHECKED - TRC	REVISED -
PLOT SCALE =	DRAWN - JRP	REVISED -
PLOT DATE =	CHECKED - TRC	REVISED -



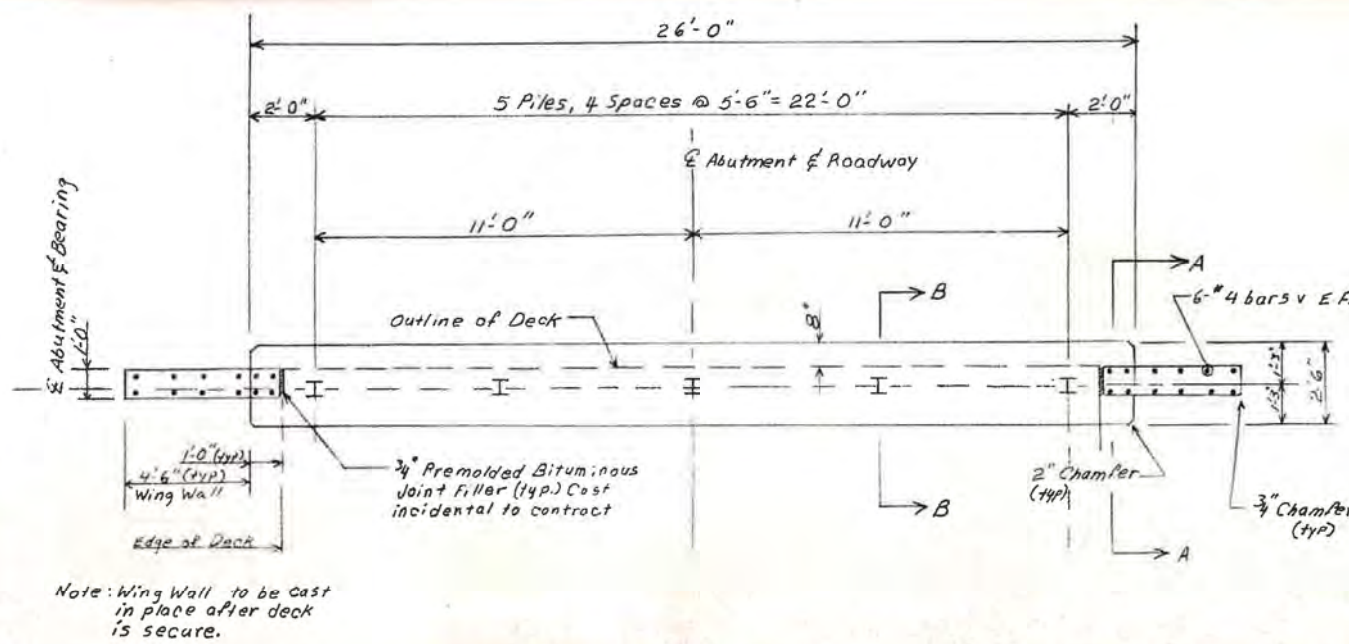
**VEENSTRA & KIMM INC.**  
Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

**EXISTING PLANS**  
**STRUCTURE NO. 054-3050**

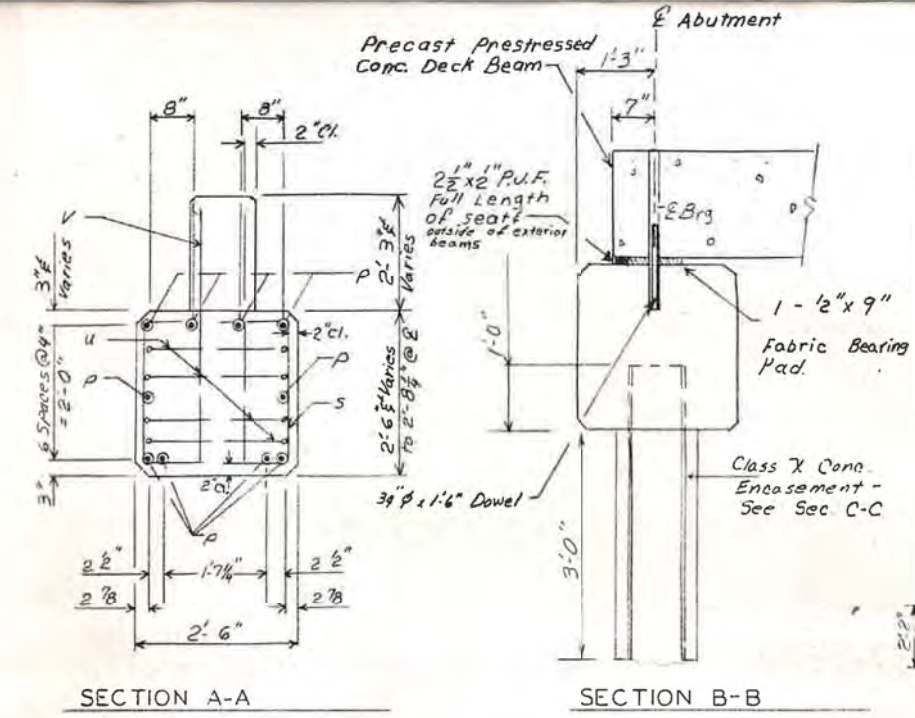
SHEET NO. 13 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	24
CONTRACT NO. 93813				
ILLINOIS FED. AID PROJECT				





PLAN OF ABUTMENT



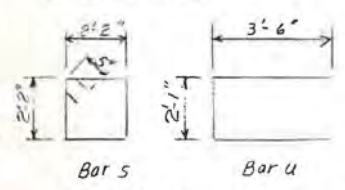
SECTION A-A

SECTION B-B

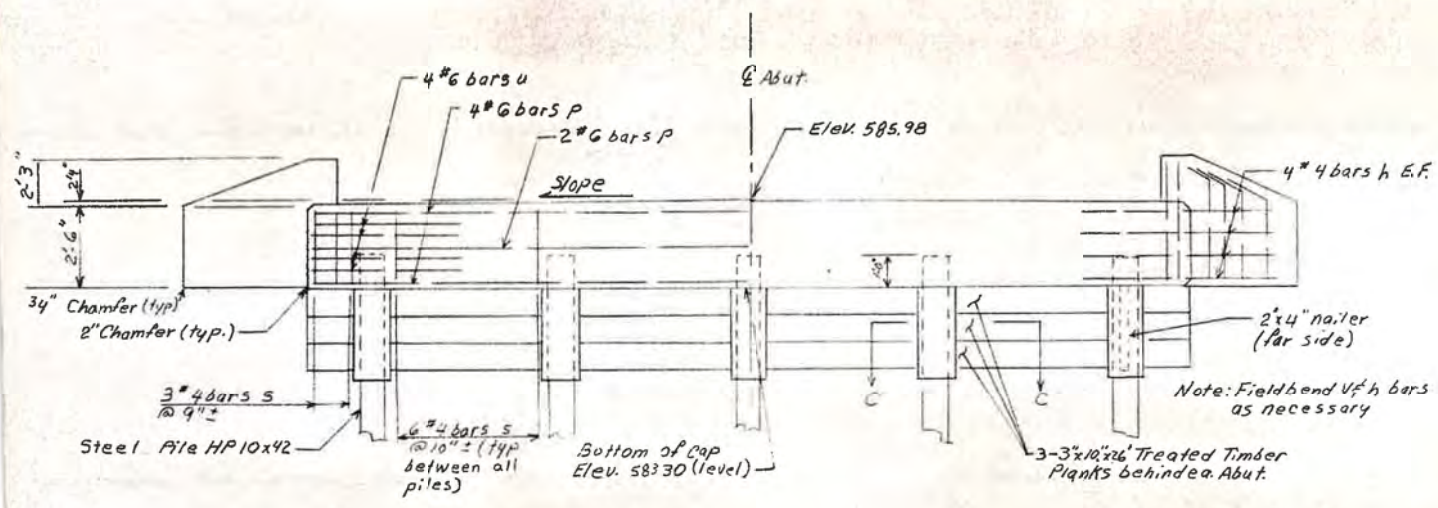
BILL OF REINFORCEMENT  
2-ABUTMENTS

Mark	Shape	Size	No.	Length
P	—	#6	20	25'-6"
S	□	#4	60	9'-6"
u	—	#6	16	9'-1"
V	—	#4	48	4'-6"
h	—	#4	32	6'-0"

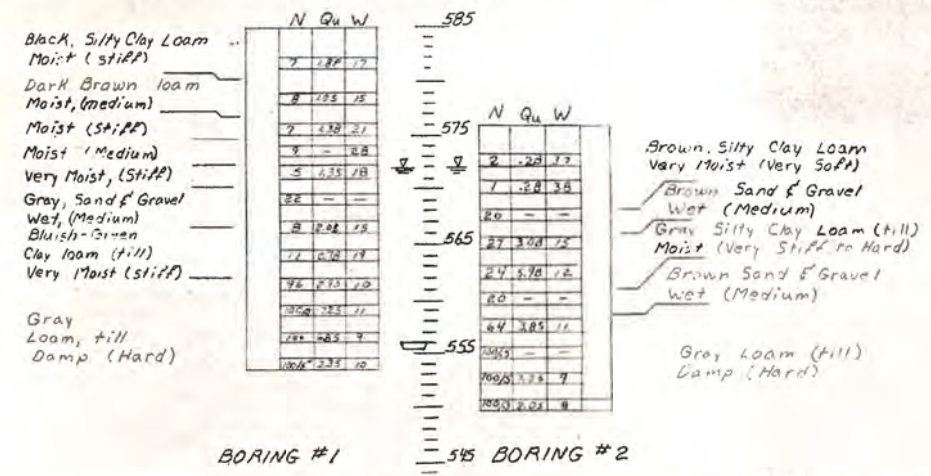
BAR BENDS



(All dimensions are out to out)



ELEVATION OF ABUTMENT



SOIL BORINGS

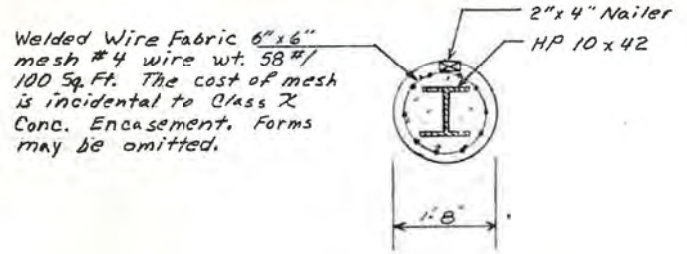
N = Standard Penetration Test - Blows per foot to Drive 2" O.D. Split Spoon Sampler 12" with 140 lb. hammer falling 30"  
 Qu = Unconfined Compressive Strength  
 Tons per Square Foot  
 W = Water Content - in percent of dry weight - %  
 Δ = Water level at completion of boring  
 ⊕ = Est. Pile Tip  
 Note: Soil Boring Samples & Test Data by Dist #6, I.D.O.T. May 18, 1976

PILE DATA

Type	HP 10 x 42
No. Required	10
Min Capacity	Drive to 45 Ton Capacity
Est. Length	30 FT/Pile W. Abut. 28 FT/Pile E. Abut.

TOTAL BILL OF MATERIAL  
-2 ABUT.

ITEM	UNIT	QUANTITY
Class X Concrete	Cu. Yds.	15.2
Class X Conc. Encasement	Cu. Yds.	2.4
Reinforcement Bars	Lbs.	1638
Furn. Steel Piles 10x42	Lin. Ft.	290
Driving Steel Piles	Lin. Ft.	290
Treated Timber	F.B.M.	390



SHEET 10 OF 18

LOGAN COUNTY			
PROJECT OS-107(1)	SCALE	DRAWN BY	
SECTION 75-00088-00-BR	REVISION		
DATE	APPROVED BY	DRAWING NUMBER	

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PLOT SCALE =	CHECKED - TRC	REVISED -
PLOT DATE =	DRAWN - JRP	REVISED -
	CHECKED - TRC	REVISED -



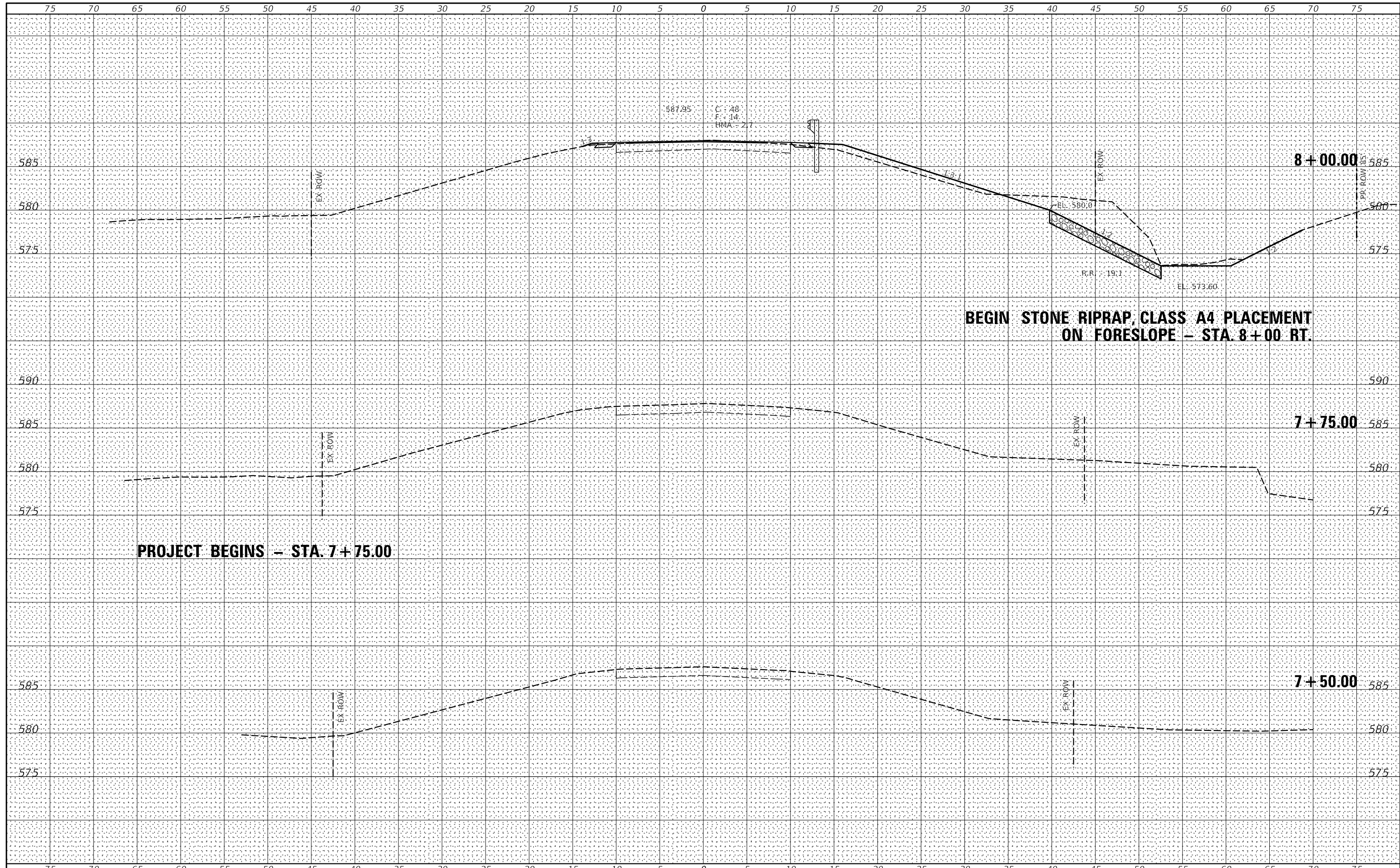
**VEENSTRA & KIMM INC.**  
 Springfield, IL. Phone: (217)544-8033  
 IL. Design Firm No. 184-001939

**EXISTING PLANS**  
**STRUCTURE NO. 054-3050**  
 SHEET NO. 14 OF 14 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	25
CONTRACT NO. 93813				
ILLINOIS FED. AID PROJECT				

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

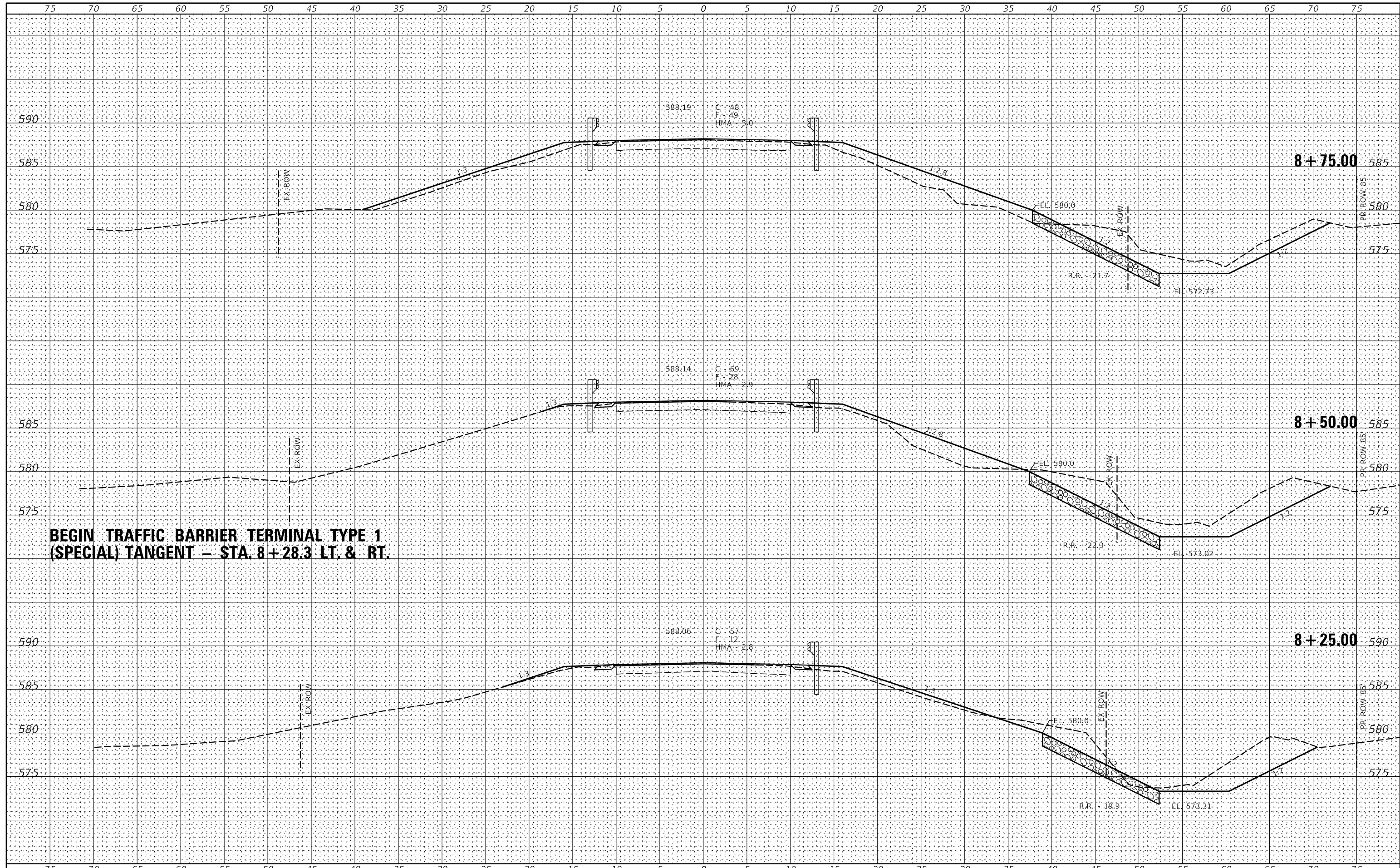
DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK NO.	PLOTTED
	TEMPLATE
	AREAS CHECKED



USER NAME : *\$USER*	DESIGNED -	REVISSED -	<b>VEENSTRA &amp; KIMM INC.</b> Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	<b>CROSS SECTIONS</b> SCALE: 1" = 5' SHEET NO. 1 OF 5 SHEETS STA. 7+50.00 TO STA. 8+00.00	C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE : *\$SCALE*	DRAWN -	REVISSED -			20	19-00088-01-BR	LOGAN	30	26
PLOT DATE : *\$DATE*	CHECKED -	REVISSED -			<b>CONTRACT NO. 93813</b> ILLINOIS FED. AID PROJECT				
	DATE -	REVISSED -							

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

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



**BEGIN TRAFFIC BARRIER TERMINAL TYPE 1  
(SPECIAL) TANGENT - STA. 8+28.3 LT. & RT.**

USER NAME : *USER*	DESIGNED -	REVISED -
PLOT SCALE : *SCALE*	DRAWN -	REVISED -
PLOT DATE : *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



**VEENSTRA & KIMM INC.**  
Springfield, IL. Phone: (217)544-8033  
IL. Design Firm No. 184-001939

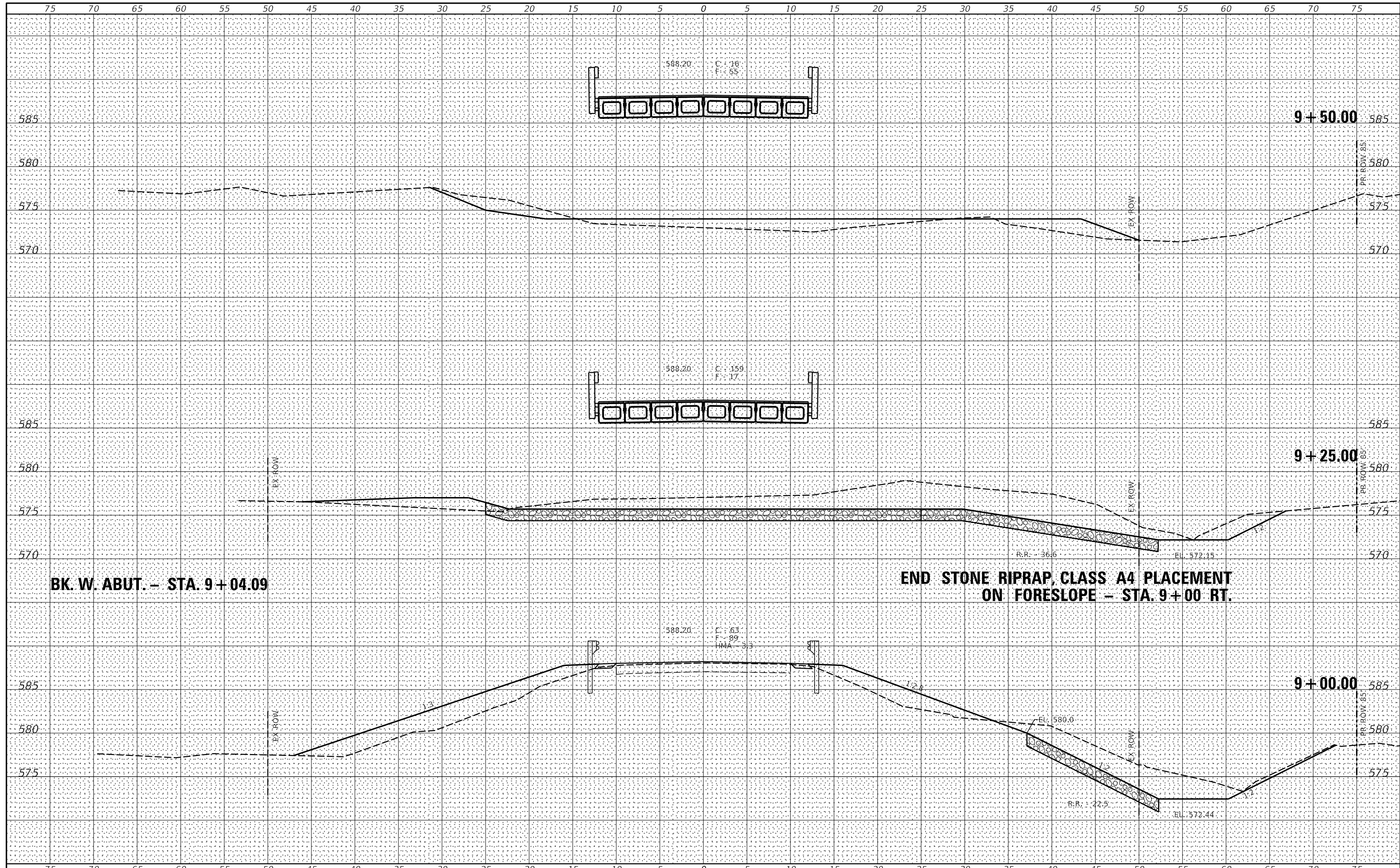
**CROSS SECTIONS**

SCALE: 1" = 5'      SHEET NO. 2 OF 5 SHEETS      STA. 8+25.00 TO STA. 8+75.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	27
<b>CONTRACT NO. 93813</b>				
FED. ROAD DIST. NO. _ [ILLINOIS] FED. AID PROJECT				

DATE	
BY	
FINAL SURVEY NO.	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY NO.	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	



BK. W. ABUT. - STA. 9+04.09

**END STONE RIPRAP, CLASS A4 PLACEMENT ON FORESLOPE - STA. 9+00 RT.**

USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	DRAWN -	REVISED -
PLOT DATE = *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



**VEENSTRA & KIMM INC.**  
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 IL. Design Firm No. 184-001939

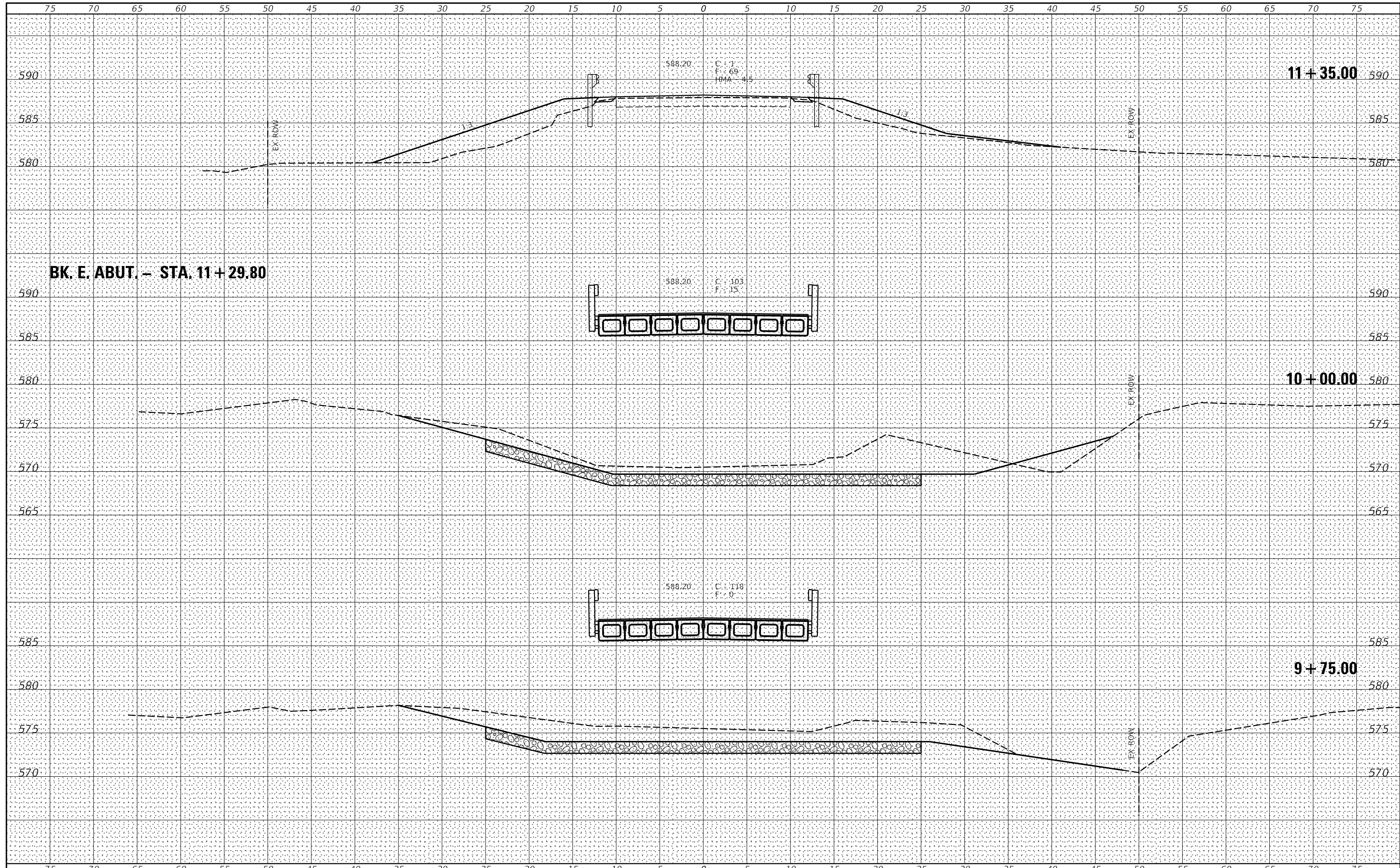
**CROSS SECTIONS**

SCALE: 1" = 5'      SHEET NO. 3 OF 5 SHEETS      STA. 9+00.00 TO STA. 9+50.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	28
<b>CONTRACT NO. 93813</b>				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				

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

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



BK. E. ABUT. - STA. 11 + 29.80

USER NAME : *USER*	DESIGNED -	REVISED -
PLOT SCALE : *SCALE*	DRAWN -	REVISED -
PLOT DATE : *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



**VEENSTRA & KIMM INC.**  
 Springfield, IL. Phone: (217)544-8033  
 IL. Design Firm No. 184-001939

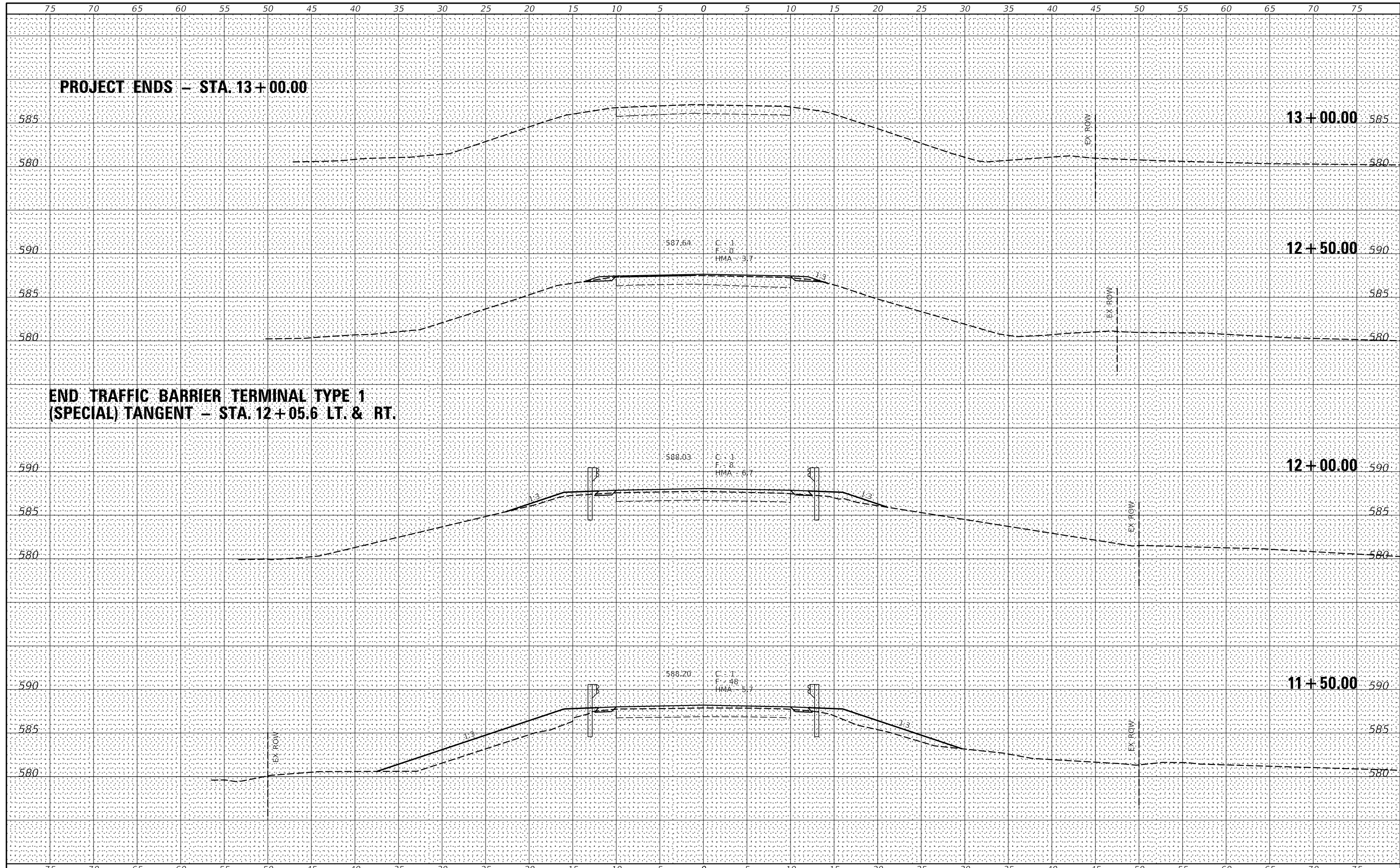
**CROSS SECTIONS**

SCALE: 1" = 5'      SHEET NO. 4 OF 5 SHEETS      STA. 9+75.00 TO STA. 11+35.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	29
FED. ROAD DIST. NO. 1			ILLINOIS FED. AID PROJECT	
<b>CONTRACT NO. 93813</b>				

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

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



USER NAME = *USER*	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = *SCALE*	CHECKED -	REVISED -
PLOT DATE = *DATE*	DATE -	REVISED -



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 Springfield, IL. Phone: (217)544-8033  
 IL. Design Firm No. 184-001939

**CROSS SECTIONS**

SCALE: 1" = 5'      SHEET NO. 5 OF 5 SHEETS      STA. 11+50.00 TO STA. 13+00.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	19-00088-01-BR	LOGAN	30	30
CONTRACT NO. 93813				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				