

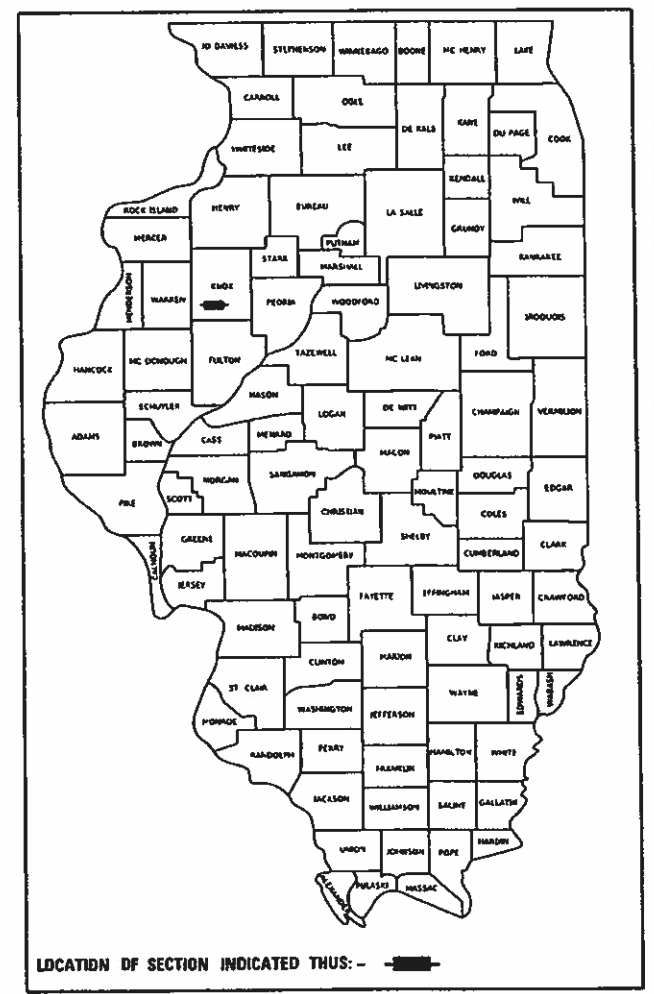
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	1
FED. ROAD DIST. NO. 7 ILLINOIS		CONTRACT NO. 89475		

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES, TYPICAL SECTIONS, PAVEMENT DESIGN INFORMATION, DETAILS
3	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4	TRAFFIC CONTROL PLAN
5	EROSION CONTROL PLAN
6	PLAN AND PROFILE
7-18	STRUCTURE PLANS
19-23	CROSS SECTIONS

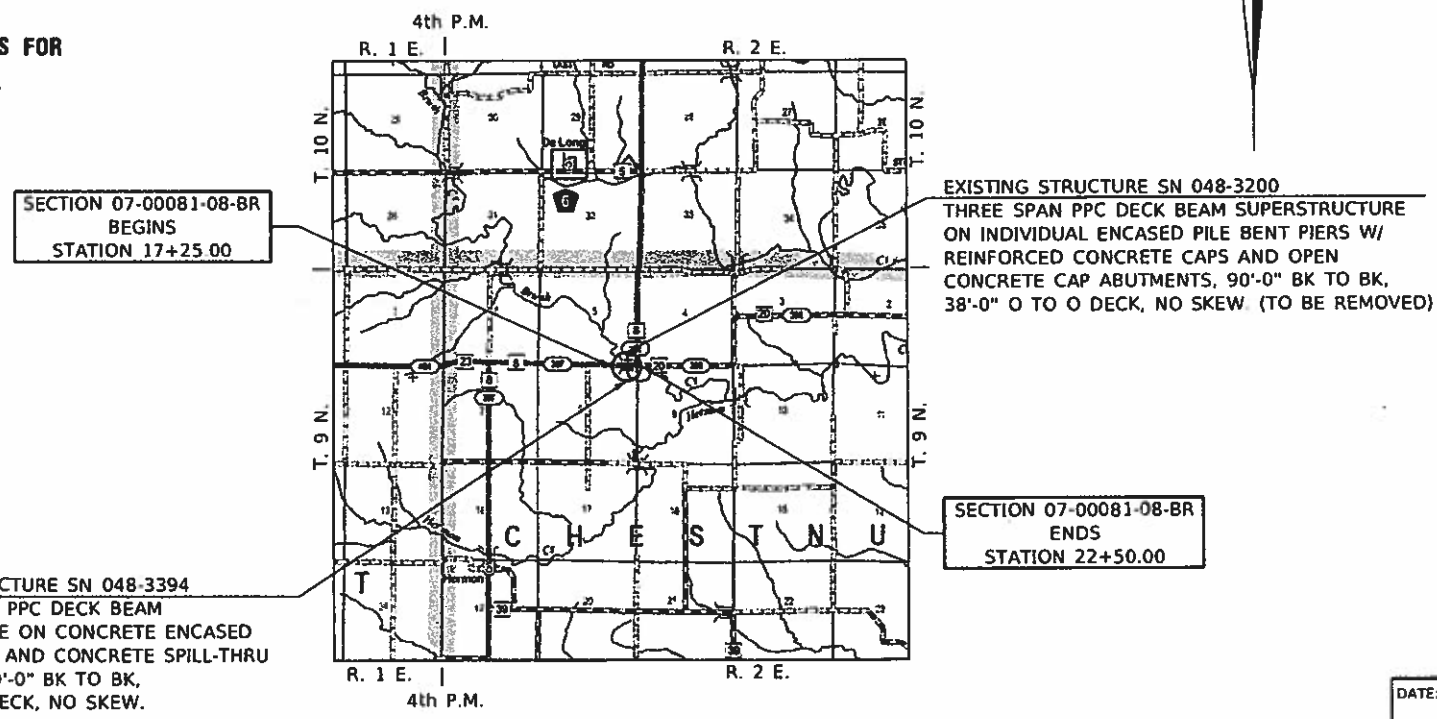
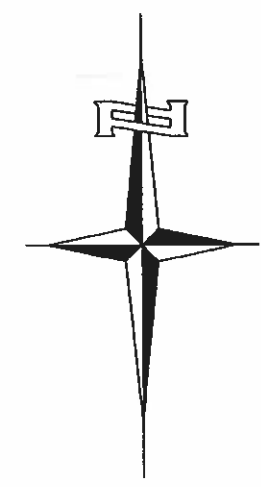
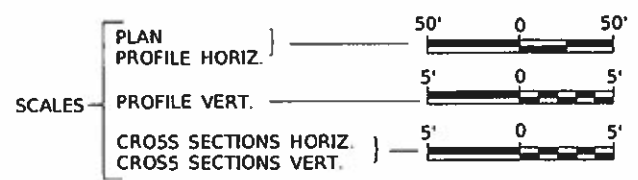
03-05-2021 LETTING ITEM 086

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM-BRIDGE
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (C.H. 8) OVER BRUSH CREEK
PROJECT NO. Y4C7(237)
JOB NUMBER C-94-077-07



HIGHWAY STANDARDS

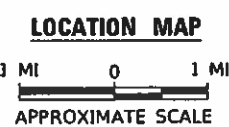
- 00001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 28001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 51501-04 NAME PLATE FOR BRIDGES
- 63031-09 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 631032-09 TRAFFIC BARRIER TERMINAL, TYPE 6A
- 70191-08 TRAFFIC CONTROL DEVICES
- 72501-01 OBJECT AND TERMINAL MARKERS
- 78001-05 TYPICAL PAVEMENT MARKINGS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- BLR 26-3 STEEL PLATE BEAM GUARDRAIL 29" (731mm) HEIGHT



PROPOSED STRUCTURE SN 048-3394
 THREE SPAN 17" PPC DECK BEAM SUPERSTRUCTURE ON CONCRETE ENCASED PILE BENT PIERS AND CONCRETE SPILL-THRU ABUTMENTS, 109'-0" BK TO BK, 36'-0" O TO O DECK, NO SKEW.

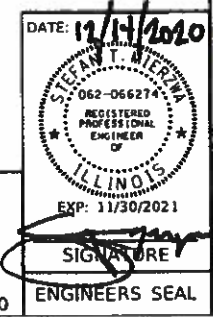
UTILITY COMPANIES
 MID CENTURY COMMUNICATIONS
 FAIRVIEW, ILLINOIS

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



NET LENGTH OF PROJECT = 525.00 FEET = 0.099 MILES
 DESIGN CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN)
 DESIGN AOT = 525 (2041)
 DESIGN SPEED = 50 MPH

Hutchison Engineering, Inc.
 JACKSONVILLE-SHOREWOOD
 PEORIA-QUAD CITIES



APPROVED	<u>12/16</u>	2020
<i>Duane S. Ratterman</i> KNOX COUNTY ENGINEER		
PASSED	<u>Dec 17th</u>	2020
<i>John D. ...</i> DISTRICT FOUR ENGINEER OF LOCAL ROADS & STREETS		
Released For	<u>December 17</u>	2020
Limited Review		
<i>Paul ...</i> REGION THREE ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		

FILE NAME: V:\6600 - CH 8 over Brush Creek (Item)CAD\CADD_Sheets\480-001.dwg

COMMITMENTS

THERE ARE NO COMMITMENTS FOR THIS PROJECT.

GENERAL NOTES

ANY ADDITIONAL REMOVAL OF EXISTING HOT-MIX ASPHALT SURFACE AND GRAVEL OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE NEW BRIDGE SHALL BE REMOVED AS STRUCTURE EXCAVATION AND NO COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENTS ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.

THE PROFILE GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND IN THE STATION CROSS SECTIONS ARE TO THE TOP OF THE FINISHED SURFACE.

ALL EXISTING DRAINAGE STRUCTURES NOT BEING REMOVED BY THE CONTRACTOR THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

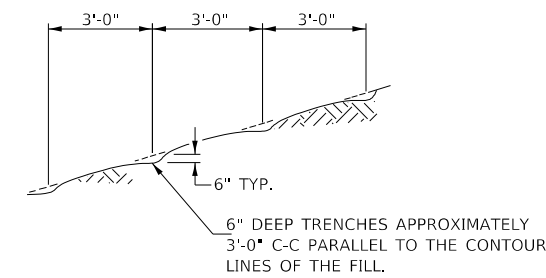
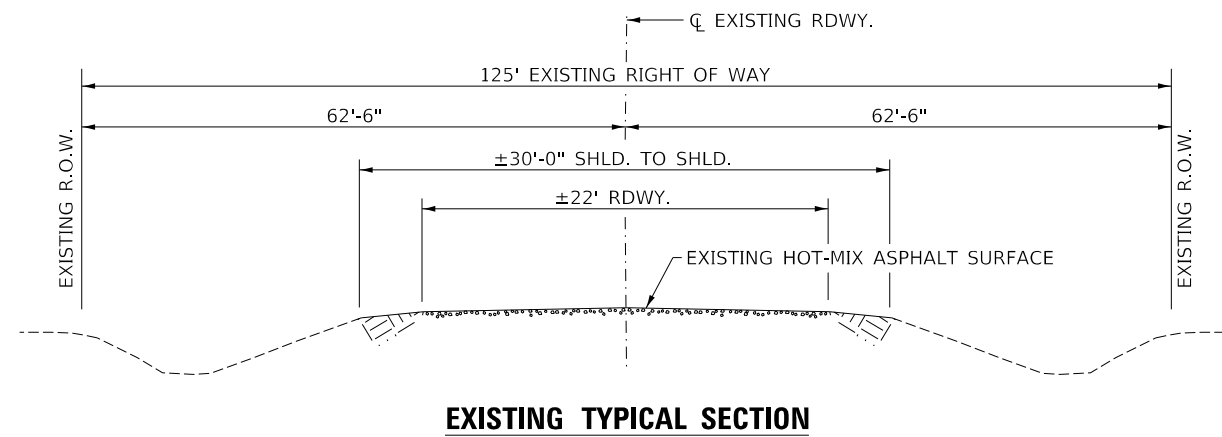
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION.

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING AND TRENCHING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

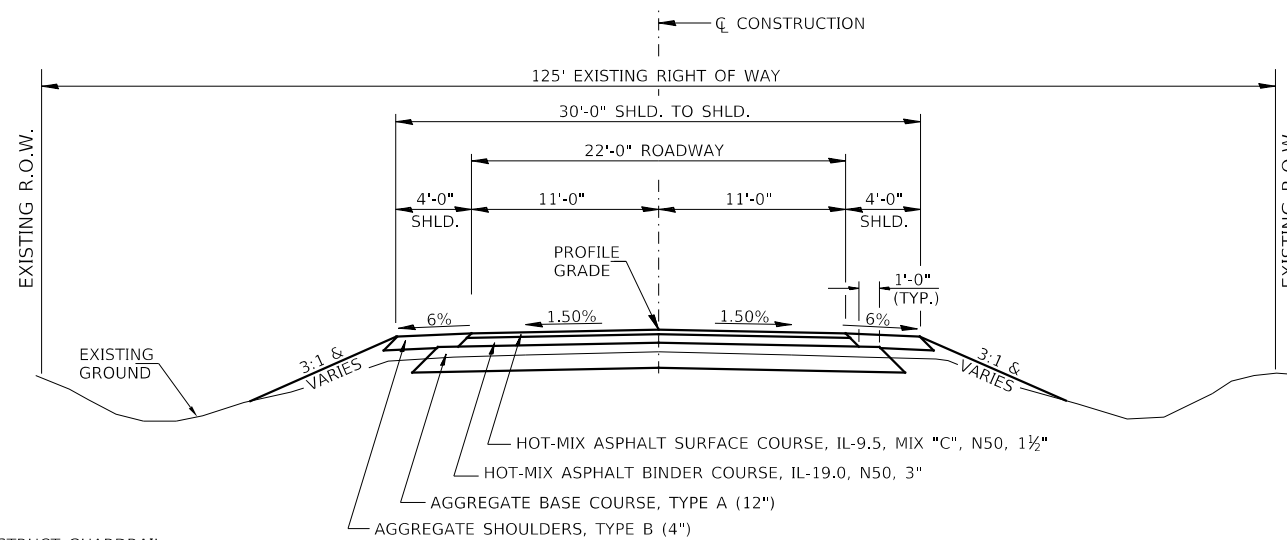
WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

ALL ELEVATIONS SHOWN REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.



NOTE: ALL SLOPES 3:1 OR STEEPER AND GREATER THAN 5' IN HEIGHT SHALL BE CONTOUR PLOWED AS SHOWN IN DETAIL, COST SHALL BE INCLUDED WITH SEEDING, CLASS 2 (SPECIAL).

DETAIL OF CONTOUR PLOWING



CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

PROPOSED TYPICAL SECTION

STA. 17+25.00 TO STA. 19+45.00
STA. 20+54.00 TO STA. 22+50.00

EXCEPT TRANSITIONS

BRIDGE OMISSION
STA. 19+45.00 TO STA. 20+54.00

**STRUCTURAL DESIGN INFORMATION
COUNTY HIGHWAY 8**

ROAD CLASSIFICATION: CLASS III 80,000 lb./20 YEAR DESIGN
STRUCTURAL DESIGN TRAFFIC:
PV = 462 SU = 37 MU = 26
PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:
P = 88% S = 7% M = 5%
MINIMUM SUBGRADE SUPPORT RATING: FAIR
FLEXIBLE PAVEMENT DESIGN: MINIMUM TF = 0.141
ASPHALT PAVEMENT THICKNESS: 4 1/2"
AGGREGATE BASE COURSE, TYPE A: 12"

HOT-MIX ASPHALT MIXTURE REQUIREMENTS

	HMA BINDER	HMA SURFACE
PG GRADE:	PG 64-22	PG 64-22
DESIGN AIR VOIDS:	4% @ N50	4% @ N50
MIXTURE COMPOSITION:	IL-19.0	IL-9.5
FRICTION AGGREGATE:		MIXTURE C
DENSITY TEST METHOD:	CORES	CORES
MIXTURE WEIGHT:	112#/SQ YD/IN	112#/SQ YD/IN
QUALITY MANAGEMENT PROGRAM:	QC/QA	QC/QA
SUBLOT SIZE:	N/A	N/A
LOCATION(S):	ENTIRE PROJECT	ENTIRE PROJECT

If RAP option is selected, the asphalt cement grade may need to be adjusted. This will be determined by the Engineer.

MODEL: ST0001\M001\M001.dgn
FILE NAME: C:\Users\blm\OneDrive\Brush Creek\Knox\ICADD\CADD_Sheets\14660-200.dgn

USER NAME = SMierzwa	DESIGNED - STM	REVISED - _____
PLOT SCALE = 2,000' / in.	DRAWN - MMO	REVISED - _____
PLOT DATE = 11/30/2020	CHECKED - STM	REVISED - _____
	DATE - 10/21/2020	REVISED - _____

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

**GENERAL NOTES, TYPICAL SECTIONS,
PAVEMENT DESIGN INFORMATION, DETAILS**

SCALE: NONE SHEET 1 OF 1 SHEETS STA. 17+25.00 TO STA. 22+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	2
CONTRACT NO. 89475				
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT NO. Y4C7(237)

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	395
20300100	CHANNEL EXCAVATION	CU YD	335
20700220	POROUS GRANULAR EMBANKMENT	CU YD	17.5
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	500
28000400	PERIMETER EROSION BARRIER	FOOT	940
28200200	FILTER FABRIC	SQ YD	500
35100100	AGGREGATE BASE COURSE, TYPE A	TON	749
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	2,573
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	232
40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	174
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	85
48101200	AGGREGATE SHOULDERS, TYPE B	TON	125
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	65
50200300	COFFERDAM EXCAVATION	CU YD	160
50201101	COFFERDAM (TYPE 1) (LOCATION-1)	EACH	1
50201102	COFFERDAM (TYPE 1) (LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	165.7
50300260	BRIDGE DECK GROOVING	SQ YD	405
50300280	CONCRETE ENCASEMENT	CU YD	20.7
50300300	PROTECTIVE COAT	SQ YD	480
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	3,852
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	17,770
51201400	FURNISHING STEEL PILES HP10x42	FOOT	350
51201600	FURNISHING STEEL PILES HP12x53	FOOT	504
51202305	DRIVING PILES	FOOT	350
51203400	TEST PILE STEEL HP10x42	EACH	2
51204650	PILE SHOES	EACH	12
51500100	NAME PLATES	EACH	1
63000005	STEEL PLATE BEAM GUARDRAIL, TYPE B	FOOT	25
63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	2
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
63200310	GUARDRAIL REMOVAL	FOOT	758
67100100	MOBILIZATION	L SUM	1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,180
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.9
X2810210	STONE RIPRAP, CLASS A5 (SPECIAL)	TON	820
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	429
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
Z0013798	CONSTRUCTION LAYOUT	L SUM	1
Z0065002	DRILLING AND SETTING PILES (IN ROCK)	CU FT	220
Z0076600	TRAINEES	HOURL	500
Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOURL	500
XX006199	STEEL BRIDGE RAIL, TYPE SM (SPECIAL)	FOOT	218

① SEE SPECIAL PROVISIONS CONSTRUCTION CODE TYPE: 0010
 Δ SPECIALTY ITEMS
 # 0042

TRAFFIC BARRIER TERMINAL, TYPE 6A			
STATION TO STATION	SIDE	EACH	
19+07.50	19+45.00	RT	1
20+54.00	20+91.50	LT	1
TOTAL			2

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT			
STATION TO STATION	SIDE	EACH	
18+45.00	18+95.00	RT	1
21+04.00	21+54.00	LT	1
TOTAL			2

EARTHWORK SUMMARY						
STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	COFFERDAM EXCAVATION	FILL	WASTE (SHORTAGE)
RDWY 17+25.00 - 19+45.00	213				131	29
RDWY 20+54.00 - 22+50.00	181				148	(12)
CHANNEL		335				
STRUCTURE			65			
COFFERDAM				160		
TOTAL	394	335	65	160	279	17
USE	395	335	65	160	-	17

(@ 25% SHRINKAGE)

PAVEMENT SCHEDULE								
STATION TO STATION	WIDTH	LENGTH	AGGREGATE BASE CSE, TYPE A 140#/CF	BITUMINOUS MATERIALS (PRIME COAT) 0.25LBS/SQ FT	HOT-MIX ASPHALT BINDER CSE 112#/SQ YD/IN	BITUMINOUS MATERIALS (TACK COAT) 0.025LBS/SQ FT	HOT-MIX ASPHALT SURFACE CSE 112#/SQ YD/IN	
			TON	POUND	TON	POUND	TON	
17+25.00	17+75.00	25.62' AVG.	50.00'	90				
17+75.00	19+45.00	25.75'	170.00'	306				
20+54.00	22+00.00	25.75'	146.00'	263				
22+00.00	22+50.00	25.79' AVG.	50.00'	90				
17+25.00	17+75.00	24.62' AVG.	50.00'		308			
17+75.00	19+45.00	24.75'	170.00'		1,052			
20+54.00	22+00.00	24.75'	146.00'		903			
22+00.00	22+50.00	24.79' AVG.	50.00'		310			
17+25.00	17+75.00	22.37' AVG.	50.00'			21		
17+75.00	19+45.00	22.50'	170.00'			71		
20+54.00	22+00.00	22.50'	146.00'			61		
22+00.00	22+50.00	22.54' AVG.	50.00'			21		
17+25.00	17+75.00	22.12' AVG.	50.00'				28	
17+75.00	19+45.00	22.25'	170.00'				95	
20+54.00	22+00.00	22.25'	146.00'				81	
22+00.00	22+50.00	22.29' AVG.	50.00'				28	
17+25.00	17+75.00	22.00' AVG.	50.00'				10	
17+75.00	19+45.00	22.13'	170.00'				35	
20+54.00	22+00.00	22.13'	146.00'				30	
22+00.00	22+50.00	22.17' AVG.	50.00'				10	
TOTAL				749	2,573	174	232	85

AGGREGATE SHOULDERS, TYPE B 140#/CF				
STATION TO STATION	SIDE	WIDTH	LENGTH	TON
17+25.00	17+75.00	LT	4.39' AVG. 50.00'	5
17+25.00	17+75.00	RT	4.10' AVG. 50.00'	5
17+75.00	18+85.00	LT	4.00' 110.00'	10
17+75.00	17+93.00	RT	4.00' 18.00'	2
17+93.00	18+35.00	RT	7.50' AVG. 42.00'	7
18+35.00	18+70.00	RT	11.00' 35.00'	9
18+70.00	19+28.50	RT	10.88' AVG. 58.50'	15
18+85.00	19+45.00	LT	6.00' AVG. 60.00'	8
19+28.50	19+45.00	RT	9.38' AVG. 16.50'	4
20+54.00	20+70.50	LT	9.38' AVG. 16.50'	4
20+54.00	21+14.00	RT	6.00' AVG. 60.00'	8
20+70.50	21+29.00	LT	10.88' AVG. 58.50'	15
21+14.00	22+00.00	RT	4.00' 86.00'	8
21+29.00	21+64.00	LT	11.00' 35.00'	9
21+64.00	22+05.71	LT	7.52' AVG. 41.71'	7
22+00.00	22+50.00	RT	4.02' AVG. 50.00'	5
22+05.71	22+50.00	LT	4.23' AVG. 44.29'	4
TOTAL				125

STEEL PLATE BEAM GUARDRAIL, TYPE B			
STATION TO STATION	SIDE	FOOT	
18+95.00	19+07.50	RT	12.5
20+91.50	21+04.00	LT	12.5
TOTAL			25.0

PAINT PAVEMENT MARKING - LINE 4"				
STATION TO STATION	SIDE	DESCRIPTION	FOOT	
17+25.00	22+50.00	LEFT	WHITE SOLID	525
17+25.00	22+50.00	CENTER	YELLOW SKIP DASH	130
17+25.00	22+50.00	RIGHT	WHITE SOLID	525
TOTAL				1,180

GUARDRAIL REMOVAL			
STATION TO STATION	SIDE	FOOT	
16+03	19+55	RT	351
18+78	19+55	LT	78
20+45	22+97	LT	252
20+45	21+22	RT	77
TOTAL			758

PERIMETER EROSION BARRIER			
STATION TO STATION	SIDE	FOOT	
17+25	19+45	LEFT	255
17+25	19+45	RIGHT	245
20+54	22+50	LEFT	220
20+54	22+50	RIGHT	220
TOTAL			940

MODEL: A:\MODELS\NAME: V:\1468 - Ch 8 over Brush Creek (Knox)\CADD\CADD - Structures\66-001.dwg

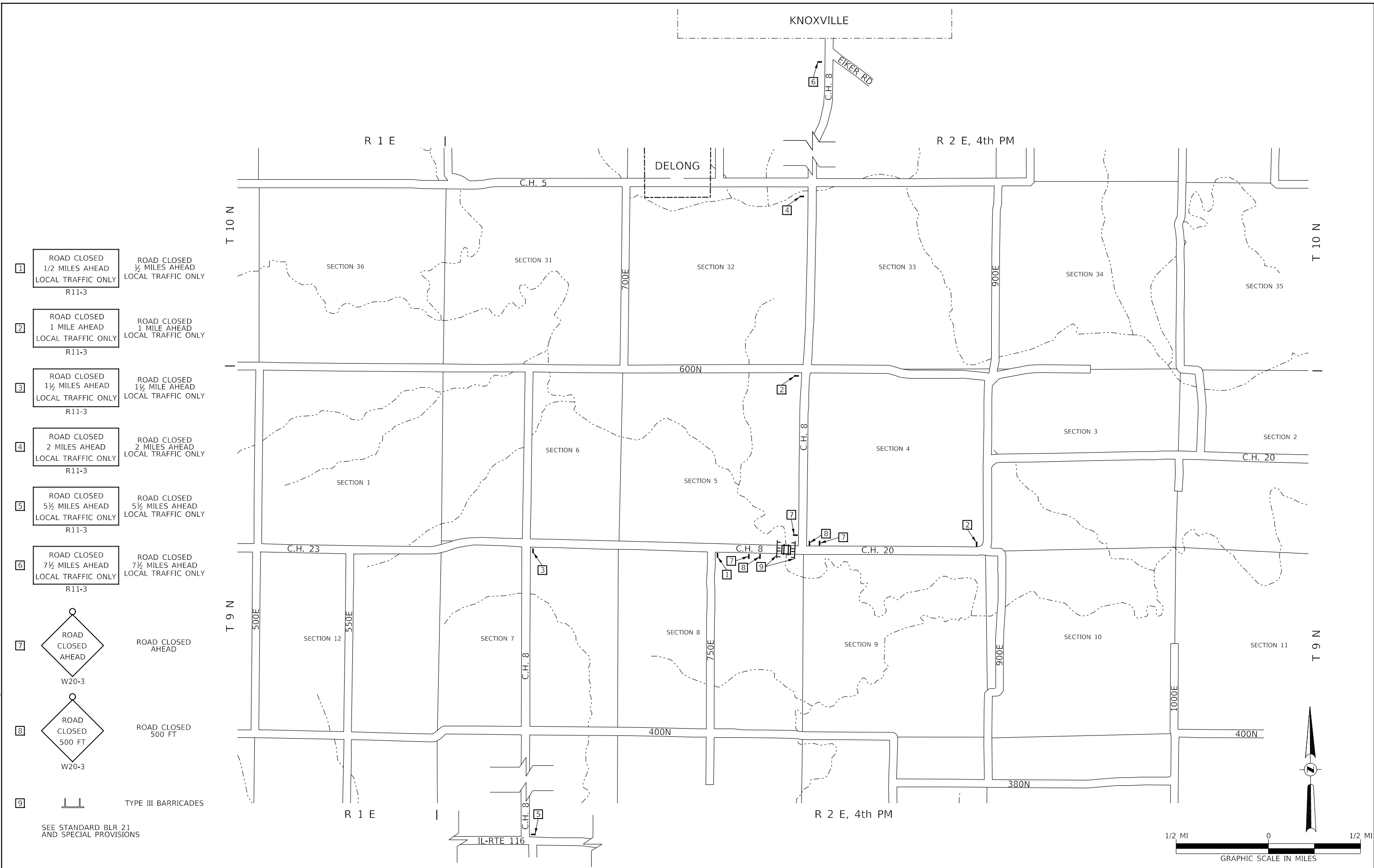
USER NAME = SMierzwa	DESIGNED - STM	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN - MMO	REVISED -
PLOT DATE = 1/18/2021	CHECKED - STM	REVISED -
	DATE - 11/23/2020	REVISED -

**KNOX COUNTY
 COUNTY HIGHWAY 8
 OVER BRUSH CREEK**

**SUMMARY OF QUANTITIES,
 SCHEDULES OF QUANTITIES**

SCALE: NONE SHEET 1 OF 1 SHEETS STA. 17+25.00 TO STA. 22+50.00

F.A.S. RTE. 397	SECTION 07-00081-08-BR	COUNTY KNOX	TOTAL SHEETS 23	SHEET NO. 3
CONTRACT NO. 89475			FED. ROAD DIST. NO. 7 ILLINOIS	
FED. AID PROJECT NO. Y4C7(237)				



- 1 ROAD CLOSED
1/2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 2 ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 3 ROAD CLOSED
1 1/2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 4 ROAD CLOSED
2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 5 ROAD CLOSED
5 1/2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 6 ROAD CLOSED
7 1/2 MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
- 7 ROAD CLOSED
AHEAD
W20-3
- 8 ROAD CLOSED
500 FT
W20-3
- 9 TYPE III BARRICADES

SEE STANDARD BLR 21
AND SPECIAL PROVISIONS

MODEL: STD061NAM1E
 FILE NAME: V:\2020 - CH 8 over Brush Creek (Knox)\CADD\Sheet\4660-3001.dgn

USER NAME = SMierzwa	DESIGNED - STM	REVISED - _____
PLOT SCALE = 2,000' / in.	DRAWN - MMO	REVISED - _____
PLOT DATE = 12/10/2020	CHECKED - STM	REVISED - _____
	DATE - 12/9/2020	REVISED - _____

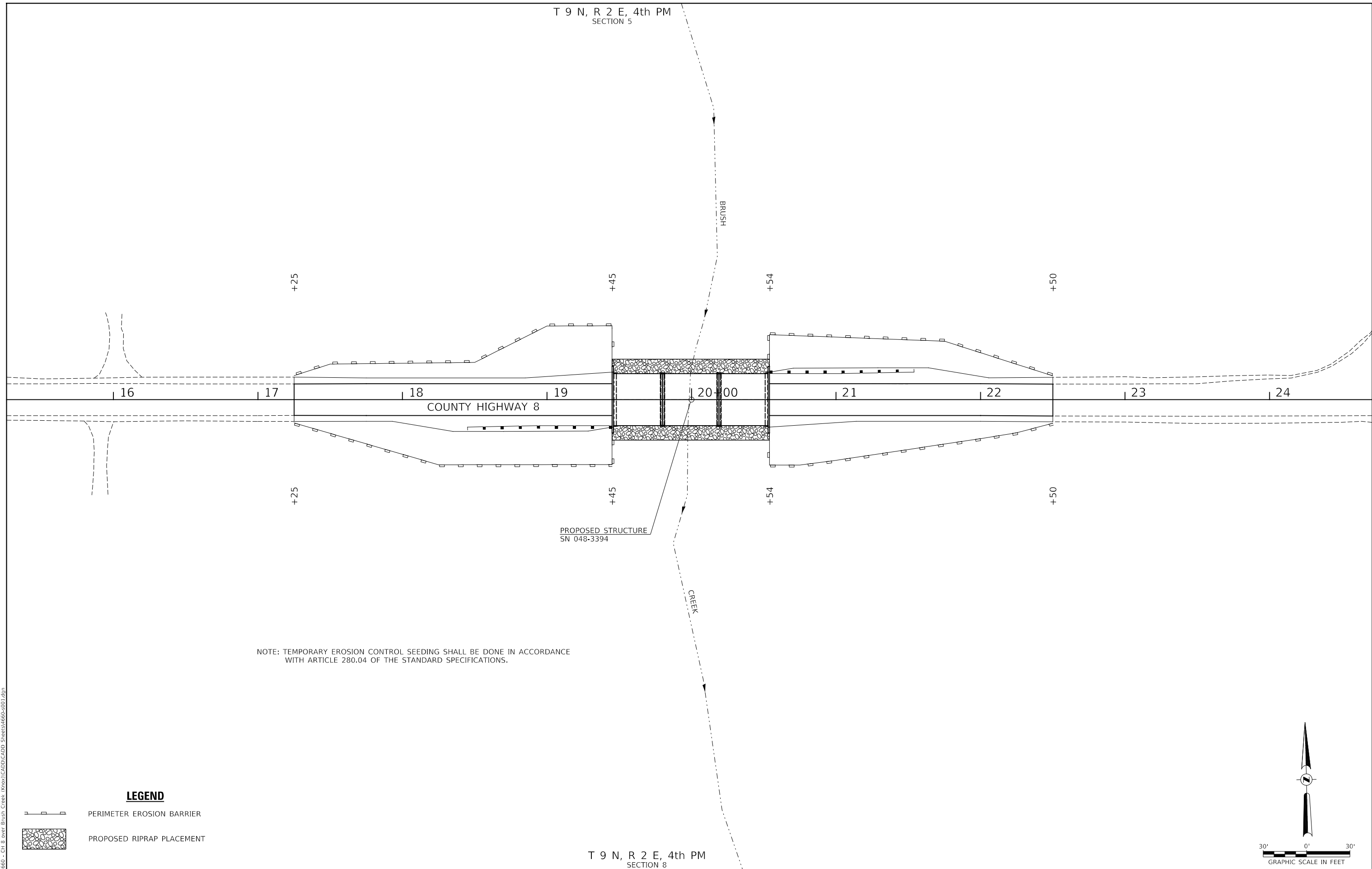
**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

TRAFFIC CONTROL PLAN

SCALE: NONE SHEET 1 OF 1 SHEETS STA. 17+25.00 TO STA. 22+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	4
CONTRACT NO. 89475				
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. Y4C7(237)		

T 9 N, R 2 E, 4th PM
SECTION 5

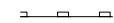
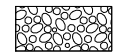


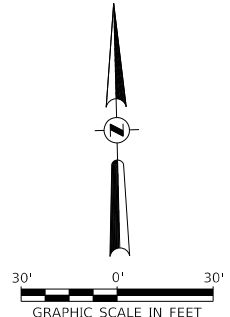
NOTE: TEMPORARY EROSION CONTROL SEEDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 280.04 OF THE STANDARD SPECIFICATIONS.

PROPOSED STRUCTURE
SN 048-3394

T 9 N, R 2 E, 4th PM
SECTION 8

LEGEND

-  PERIMETER EROSION BARRIER
-  PROPOSED RIPRAP PLACEMENT



MODEL: \\MODELS\MAME\FILE NAME: V:\2020 - C1 - 8 over Brush Creek (Knox)\CADD\Sheet\4660-2001.dgn

USER NAME = SMierzwa	DESIGNED - STM	REVISED - _____
	DRAWN - MMO	REVISED - _____
PLOT SCALE = 60,0000 ' / in.	CHECKED - STM	REVISED - _____
PLOT DATE = 11/30/2020	DATE - 10/21/2020	REVISED - _____

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

EROSION CONTROL PLAN

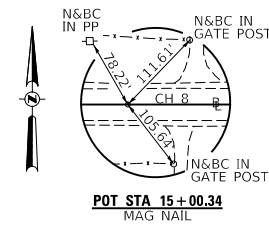
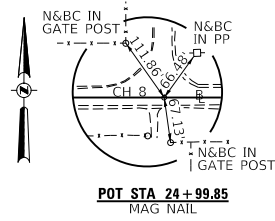
SCALE: 1"=30' SHEET 1 OF 1 SHEETS STA. 17+25.00 TO STA. 22+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	5
CONTRACT NO. 89475				
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT NO. Y4C7(237)

T 9 N, R 2 E, 4th PM
SECTION 5

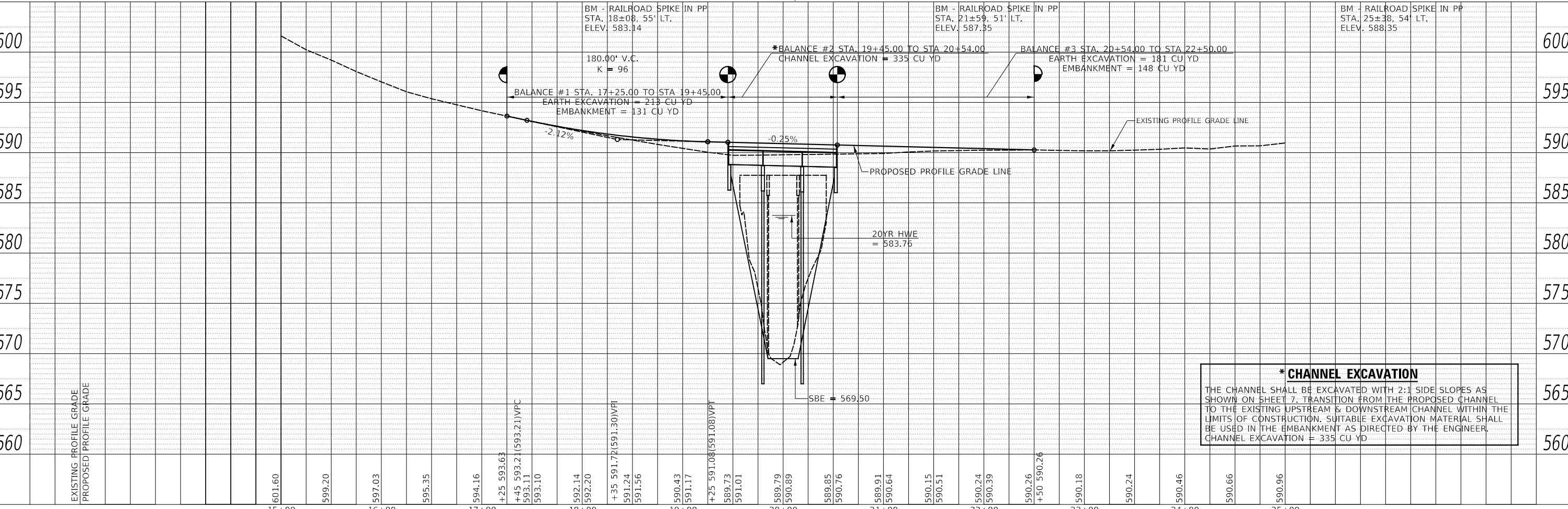
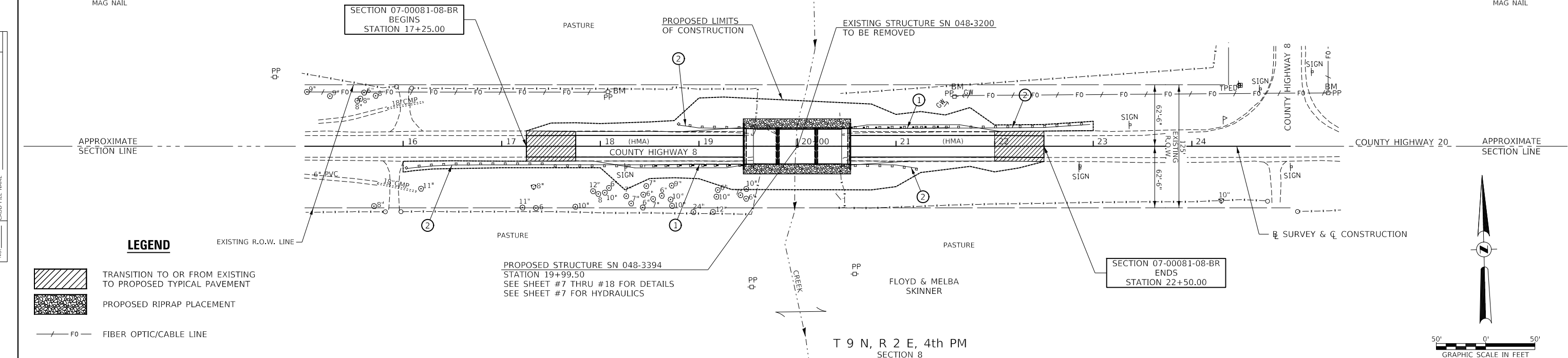
FRANK J.
HOPKINS JR.

- ① PROPOSED TRAFFIC BARRIER TERMINALS, TYPE 6A AND TYPE 1 (SPECIAL) TANGENT, AND STEEL PLATE BEAM GUARDRAIL
- ② EXISTING GUARDRAIL TO BE REMOVED



PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNED	
	CHECKED	
	FILED	
	NO.	
	BY	

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATIONS	
	NO.	
	BY	



*** CHANNEL EXCAVATION**
THE CHANNEL SHALL BE EXCAVATED WITH 2:1 SIDE SLOPES AS SHOWN ON SHEET 7. TRANSITION FROM THE PROPOSED CHANNEL TO THE EXISTING UPSTREAM & DOWNSTREAM CHANNEL WITHIN THE LIMITS OF CONSTRUCTION. SUITABLE EXCAVATION MATERIAL SHALL BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.
CHANNEL EXCAVATION = 335 CU YD

MODEL: SPODELNAMEES
FILE NAME: V:\31660 - Ch 8 over Brush Creek (Knox)\CADD\CADD Sheets\4660-h01.dgn

USER NAME = SMierzwa	DESIGNED - STM	REVISED -
	DRAWN - MMO	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED - STM	REVISED -
PLOT DATE = 11/30/2020	DATE - 10/21/2020	REVISED -

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

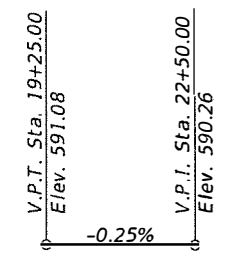
SCALE: 1"=50'		SHEET 1 OF 1 SHEETS	STA. 17+25.00 TO STA. 22+50.00
---------------	--	---------------------	--------------------------------

F.A.S. RTE. 397	SECTION 07-00081-08-BR	COUNTY KNOX	TOTAL SHEETS 23	SHEET NO. 6
CONTRACT NO. 89475			FED. ROAD DIST. NO. 7 ILLINOIS	
FED. AID PROJECT NO. Y4C7(237)				

B.M.: Railroad Spike in PP Sta. 1B+0B, 55' Lt. Elev. 583.14
 Railroad Spike in PP Sta. 21+59, 51' Lt. Elev. 587.35
 Railroad Spike in PP Sta. 25+38, 54' Lt. Elev. 588.35

**BRUSH CREEK
 BUILT 202_8Y
 KNOX COUNTY
 SEC. 07-00081-08-8R
 C.H. 8 STATION 19+99.50
 F.A. PROJ. NO. Y4C7(237)
 STR. NO. 048-3394 LOADING HL-93**

NAME PLATE
 Locate Name Plate at S.W. Wingwall
 Corner of Bridge (See Std. 515001)



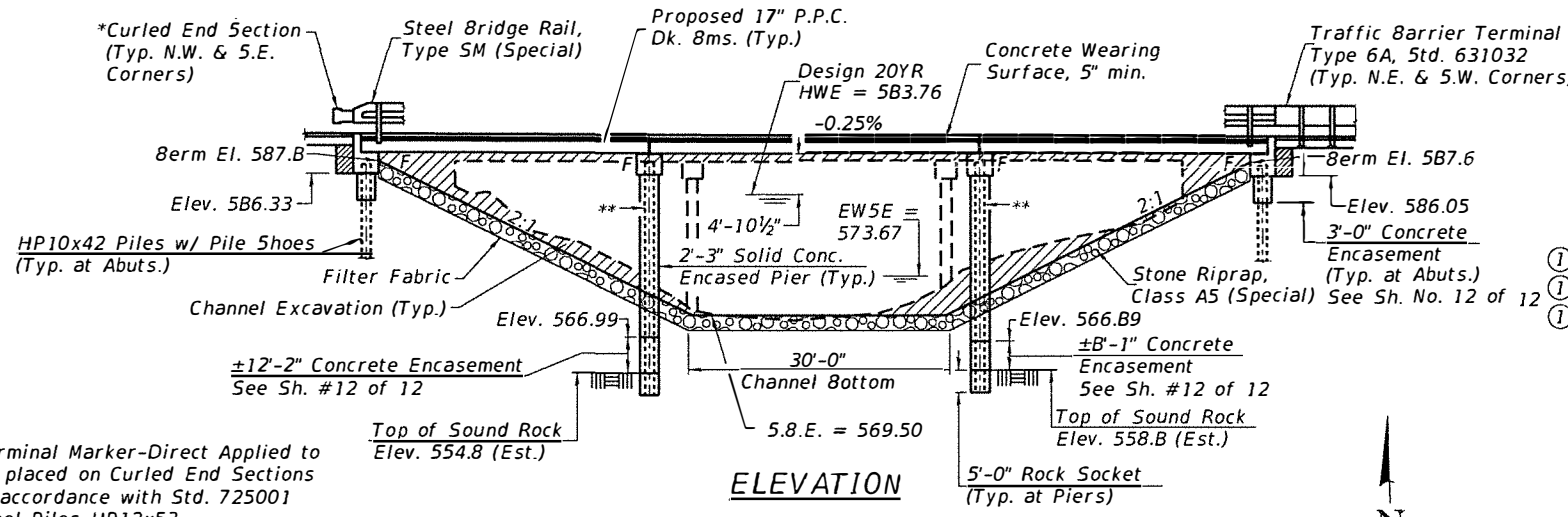
GENERAL NOTES

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.
 For Soil Boring Logs, See Special Provisions.
 A Corrosion Inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(10) of the Standard Specifications.
 Reinforcement Bars designated (E) shall be epoxy coated.
 Layout of the slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
 The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.
 Protective Coat shall be applied to the top and sides of the deck.
 Bridge Deck Grooving is figured 1'-0" from the edge of deck.

Existing Structure:
 Three span PPC deck beam superstructure on individual encased pile bent piers with reinforced concrete caps and open concrete cap abutments. The structure is ±90'-0" back to back of abutments, 38'-0" out to out of deck, and is not skewed. Str. No. 048-3200

Salvage: Existing Name Plate (04B-3200)

Road to be closed to traffic during construction.



TOTAL BILL OF MATERIAL

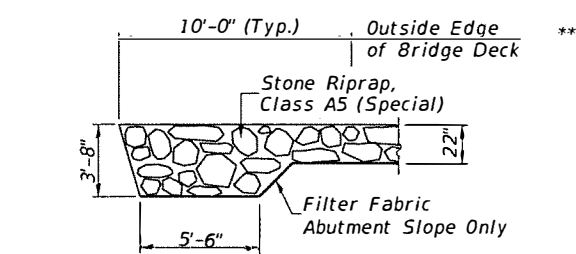
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD		335	335
Porous Granular Embankment	CU YD		17.5	17.5
Filter Fabric	SQ YD		500	500
Removal of Existing Structures	EACH			1
Structure Excavation	CU YD		65	65
Cofferdam Excavation	CU YD		160	160
Cofferdam (Type 1) (Location-1)	EACH		1	1
Cofferdam (Type 1) (Location-2)	EACH		1	1
Concrete Structures	CU YD		165.7	165.7
Bridge Deck Grooving	SO YD	405		405
Concrete Encasement	CU YD		20.7	20.7
Protective Coat	SO YD	480		480
Precast Prestressed Concrete Deck Beams (17" Depth)	SO FT	3,852		3,852
Reinforcement Bars, Epoxy Coated	POUND	5,550	12,220	17,770
Furnishing Steel Piles HP10x42	FOOT		350	350
Furnishing Steel Piles HP12x53	FOOT		504	504
Driving Piles	FOOT		350	350
Test Pile Steel HP10x42	EACH		2	2
Pile Shoes	EACH		12	12
Name Plates	EACH		1	1
Terminal Marker - Direct Applied	EACH	2		2
Stone Riprap, Class A5 (Special)	TON		820	820
Concrete Wearing Surface, 5"	SO YD	429		429
Drilling and Setting Piles (1in Rock)	CU FT		220	220
Steel Bridge Rail, Type SM (Special)	FOOT	21B		21B

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 AASHTO Standard Specification for Highway Bridges. This design complies with all requirements of the current AASHTO Guide Specifications for Seismic Design of highway bridges.

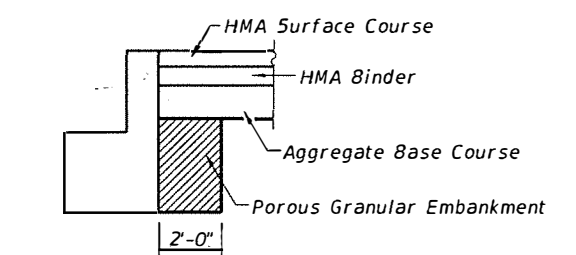
Illinois Structural No. 7999
 Expires 11/30/2022

**GENERAL PLAN & ELEVATION
 KNOX COUNTY
 SECTION 07-00081-08-BR
 F.A.S. 397 (CH 8)
 OVER BRUSH CREEK**

STONE RIPRAP DETAIL



SECTION B-B



DESIGN SCOUR ELEVATION TABLE

Design Scour Elevations (ft.)					Item 113
W. Abut.	Pier #1	Pier #2	E. Abut.		
0100	586.3	562.0	561.5	586.1	5
0200	586.3	560.3	559.8	586.1	
Design	586.3	562.0	561.5	586.1	
Check	586.3	560.3	559.8	586.1	

*Terminal Marker-Direct Applied to be placed on Curled End Sections in accordance with Std. 725001

**Steel Piles HP12x53 Set in Rock (Typ. at Piers)

*Curled End Section (Typ. N.W. & S.E. Corners)

*Curled End Section (Typ. N.W. & S.E. Corners)

Bk. W. Abut. Sta. 19+45.00 Cr. El. 591.03

8k. E. Abut. Sta. 20+54.00 Cr. El. 590.75

Traffic Barrier Terminal Type 6A, Std. 631032 (Typ. N.E. & S.W. Corners)

Name Plate Location

1'-6"

33'-5 1/2"

39'-1"

33'-5 1/2"

109'-0" 8k. to 8k. Abut.

DESIGNED	M.M.O.
CHECKED	S.T.M.
DRAWN	M.M.O.
CHECKED	S.T.M./C.T.M.

WATERWAY INFORMATION

Drainage Area = 34.69 Sq. Mi. Low Grade Elev. = 590.1B @ Sta. 23+00.00

Flood	Freq. Yr.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.		
		Exist.	Prop.		Exist.	Prop.	Exist.	Prop.	
Design	20	4,880	702	7B3	583.76	0.73	0.52	584.49	584.28
Base	100	7,090	770	B54	584.60	1.63	1.16	586.23	585.76

Construction of this project complies with IDNR, Office of Water Resources Statewide Permit No. 2

PLAN

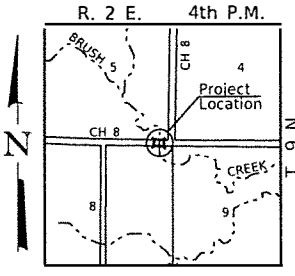
DESIGN SPECIFICATIONS
 2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

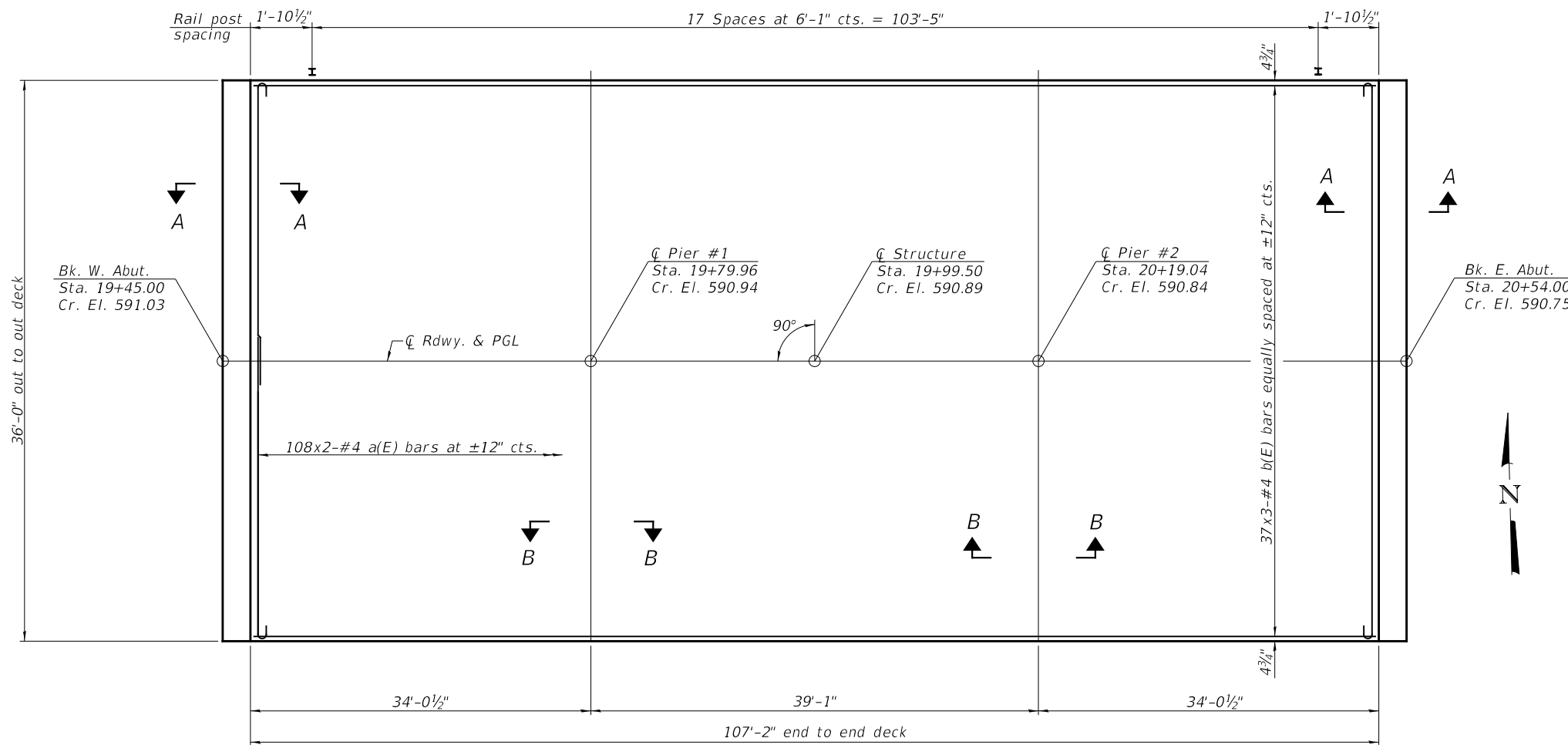
(FIELD UNITS) (PRECAST PRESTRESSED UNITS)
 f'c = 3,500 p.s.i. (Substructure) f'c = 6,000 p.s.i.
 f'c = 5,000 p.s.i. (Superstructure) f'ci = 5,000 p.s.i.
 fy = 60,000 p.s.i. (Rein.) f's = 270,000 p.s.i. (1/2" Strands)
 f'si = 201,960 p.s.i. (1/2" Strands)

LOADING HL-93

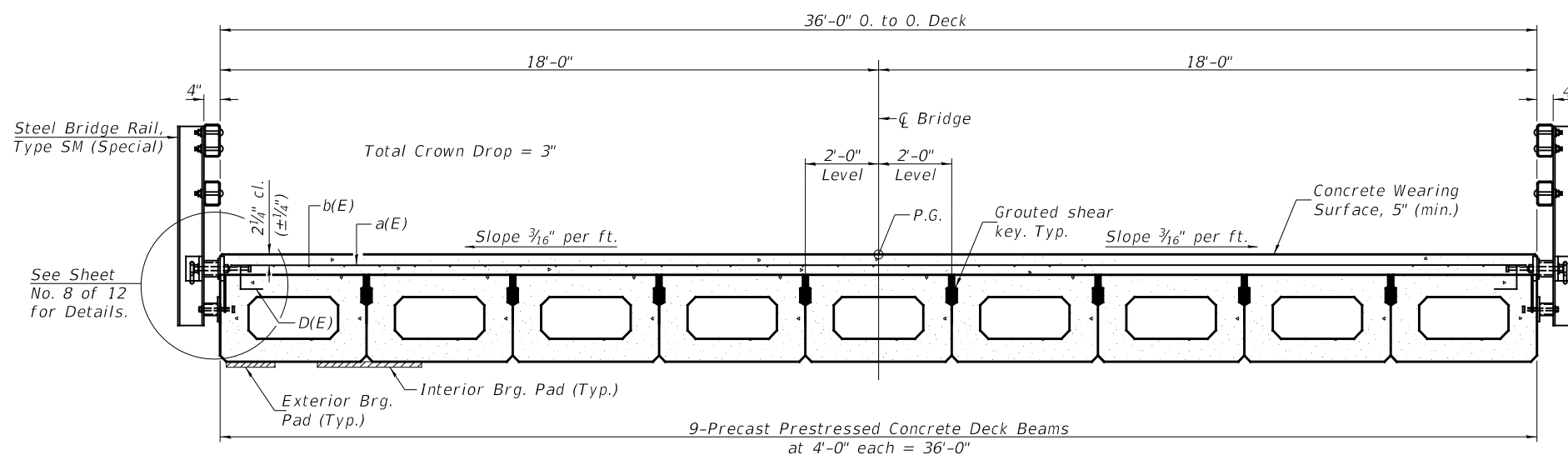
Allow 50#/sq. ft. for future wearing surface.



LOCATION SKETCH

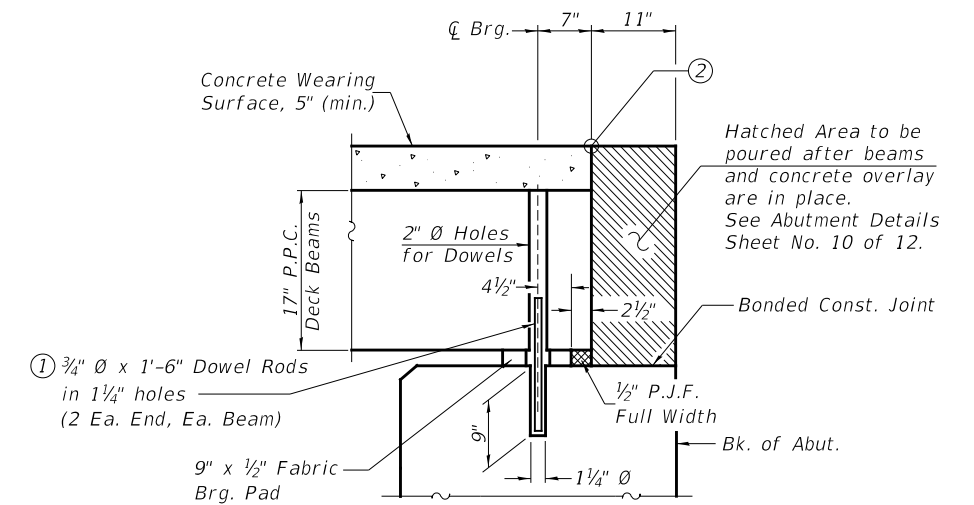


PLAN



PROPOSED CROSS SECTION

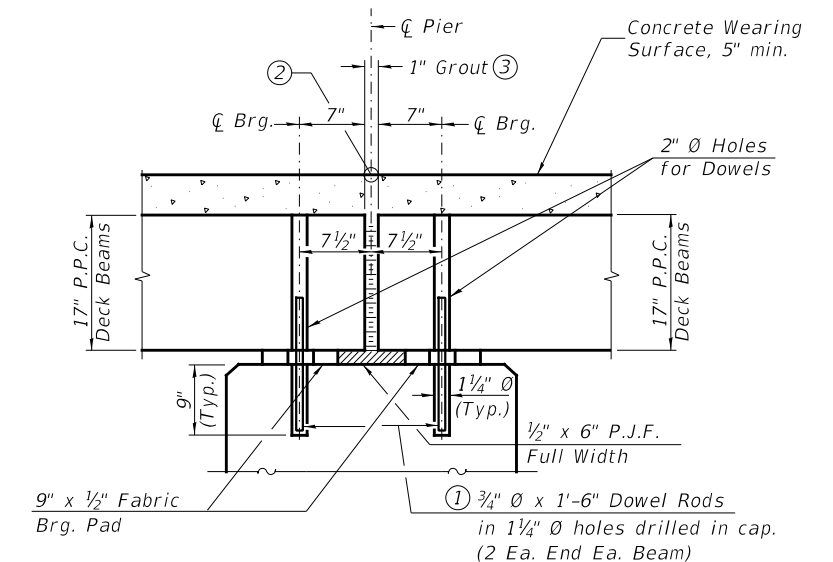
MINIMUM BAR LAP
#4 bar = 2'-2"



SECTION A-A

All concrete wearing surfaces shall be placed prior to casting a backwall.

- ① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.
- ② 1/4" x 3/4" Formed joint with bridge relief joint sealer without the backer rod (full width) Cost Included with Concrete Wearing Surface, 5".
- ③ 1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar. 1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.

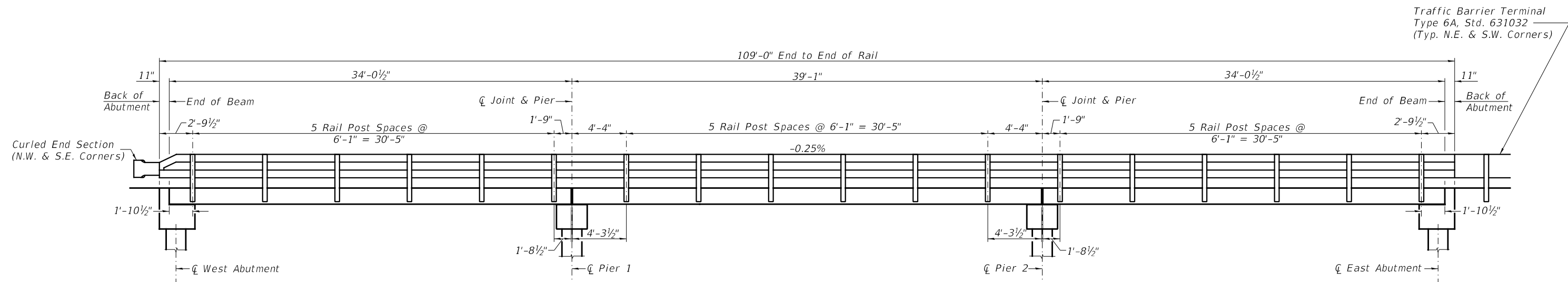


SECTION B-B

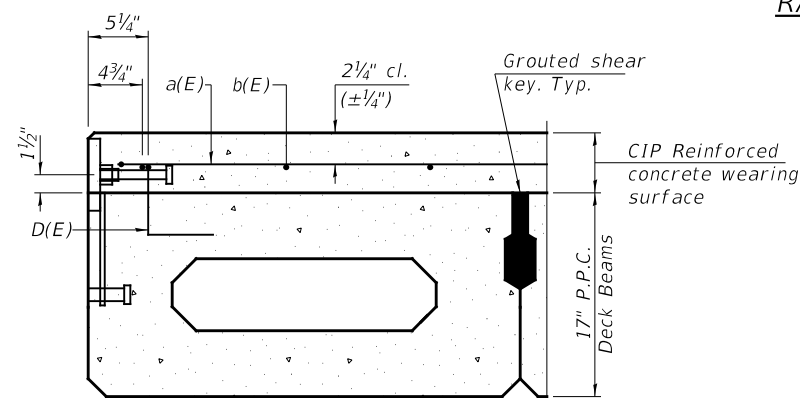
SUPERSTRUCTURE
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (CH 8)
OVER BRUSH CREEK

Notes:
See Sheet No. 3 of 12 for Superstructure Details and Bill of Material.
Bars indicated thus 37 x 3-#4 etc. indicates 37 lines of bars with 3 lengths per line.
See Sheet No. 4 & 6 of 12 for fabric bearing pad details.

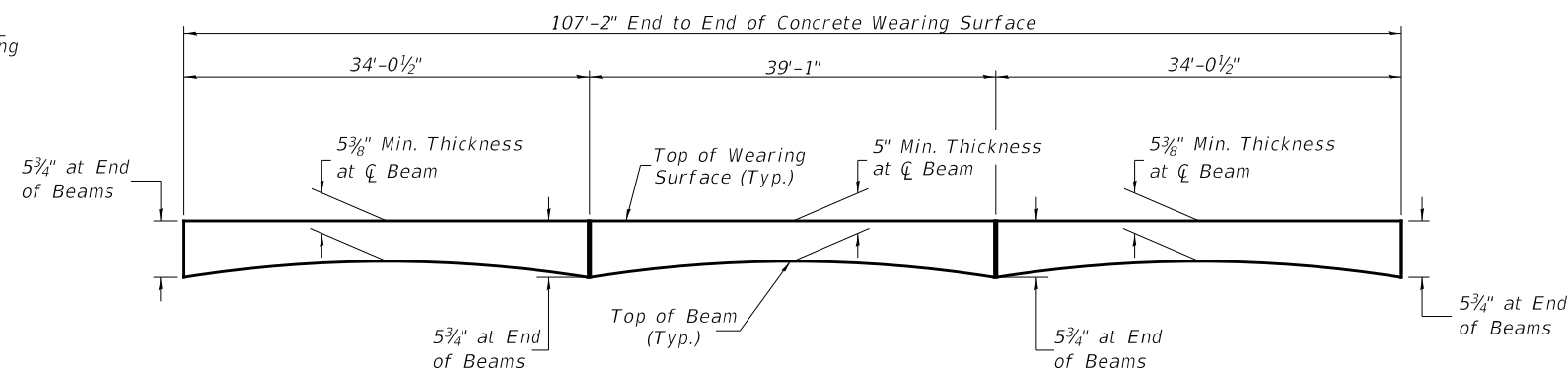
SHEET NO.	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2	397	07-00081-08-BR	KNOX	23	8
12 SHEETS		S.N. 048-3394	CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		



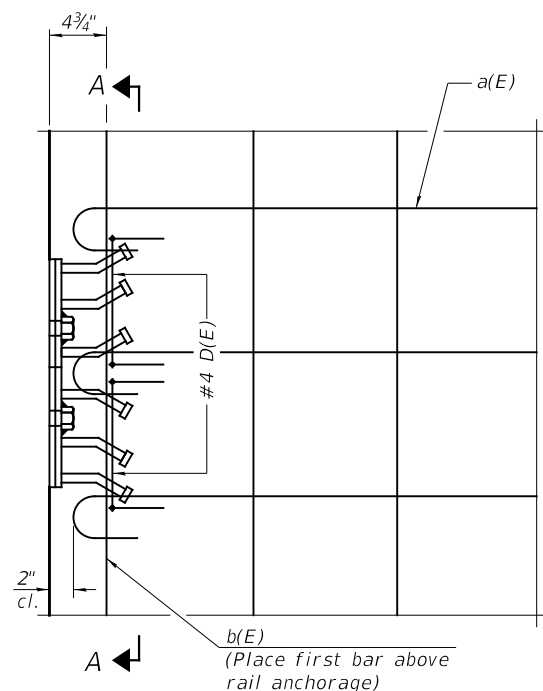
RAIL POST SPACING



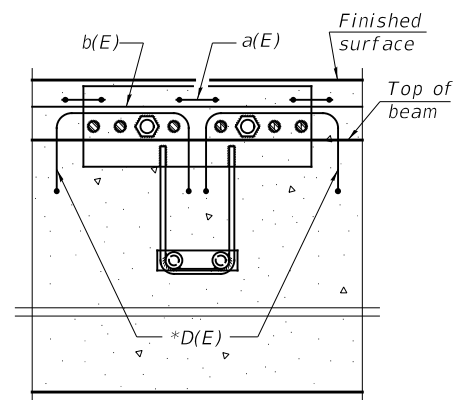
SECTION THRU FASCIA BEAM



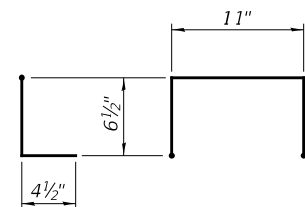
ANTICIPATED CONCRETE WEARING SURFACE PROFILE
(For information only)



PLAN

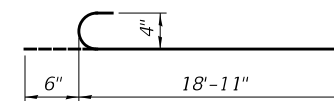


SECTION A-A



BAR D(E)

* Place 2-#4 D(E) bars in beam at each post location as shown. D(E) bar included in cost of beam.



BAR a(E)

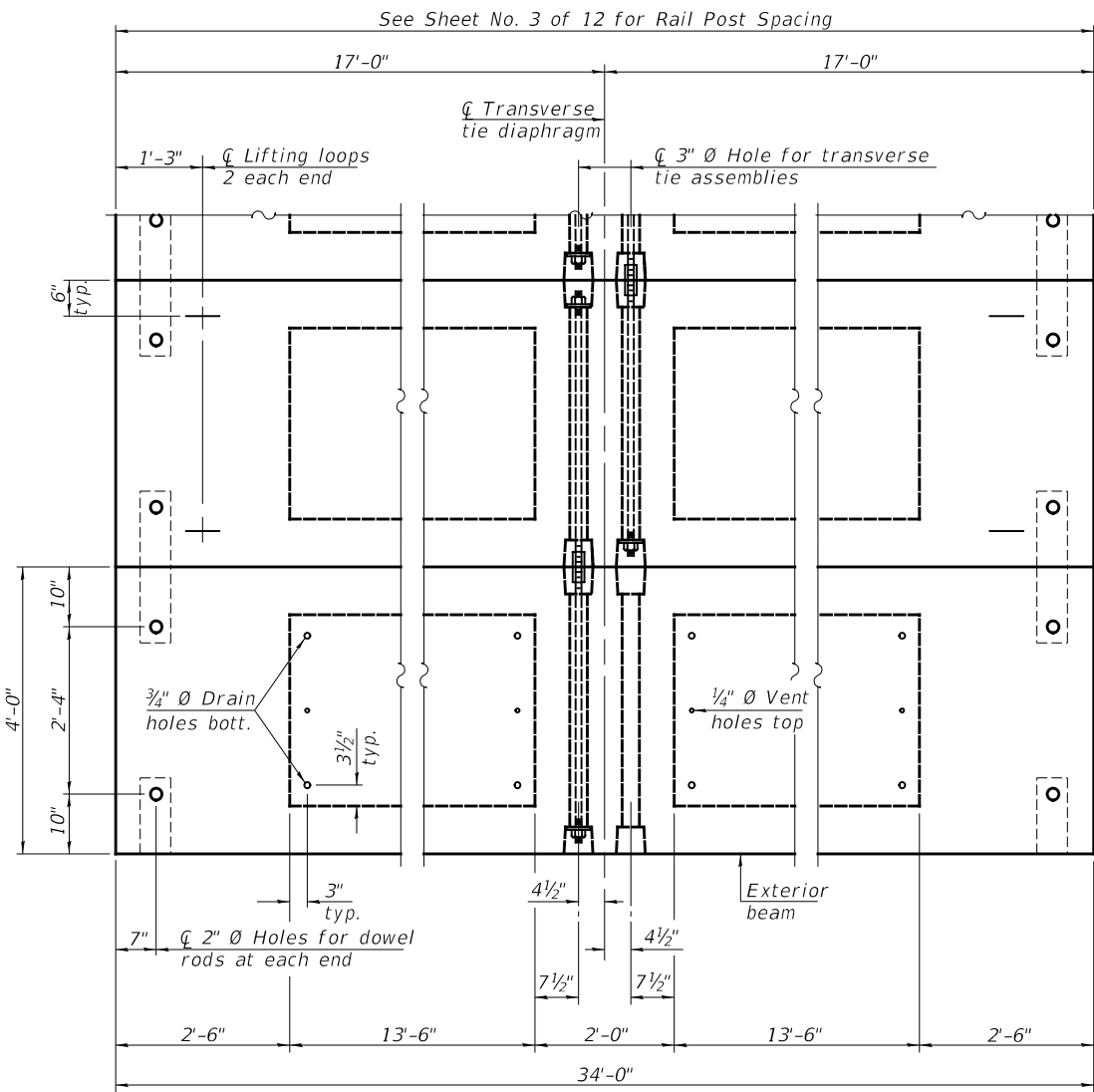
**SUPERSTRUCTURE
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	216	#4	19'-5"	C
b(E)	111	#4	37'-1"	—
Reinforcement Bars, Epoxy Coated			POUND	5,550
Concrete Wearing Surface, 5"			SQ YD	429

**SUPERSTRUCTURE DETAILS
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (CH 8)
OVER BRUSH CREEK**

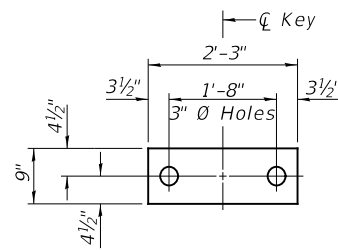
Notes:
Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam.

SHEET NO. 3 12 SHEETS	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	397	07-00081-08-BR	KNOX	23	9
S.N. 048-3394			CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		

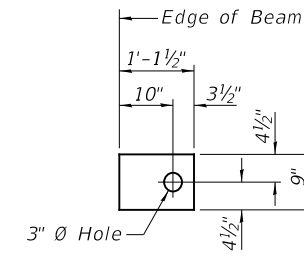


PLAN VIEW

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

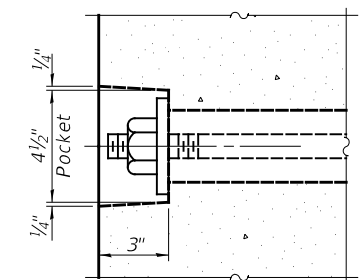


1/2" FABRIC BEARING PAD
(Interior) 32 Required

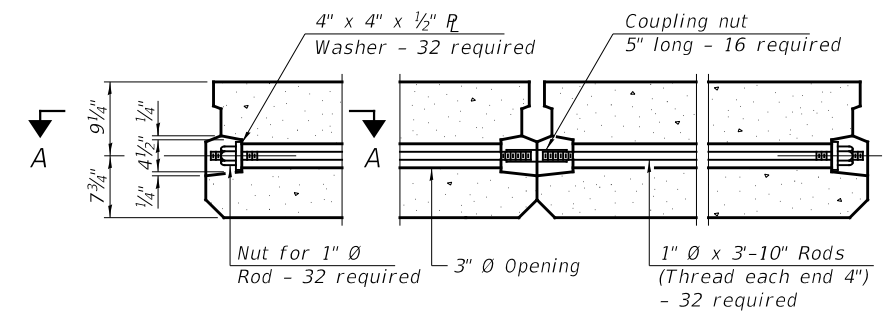


1/2" FABRIC BEARING PAD
(Exterior) 8 Required

FIXED



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

BILL OF MATERIAL

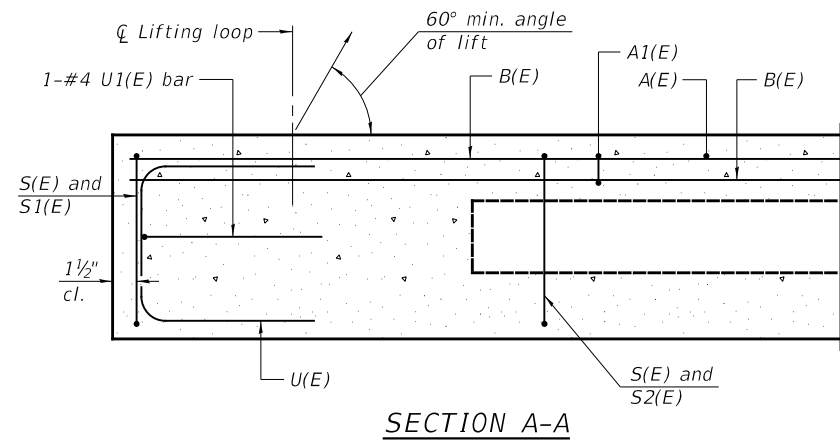
ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (17" Depth)	SQ FT	2,448

NOTES

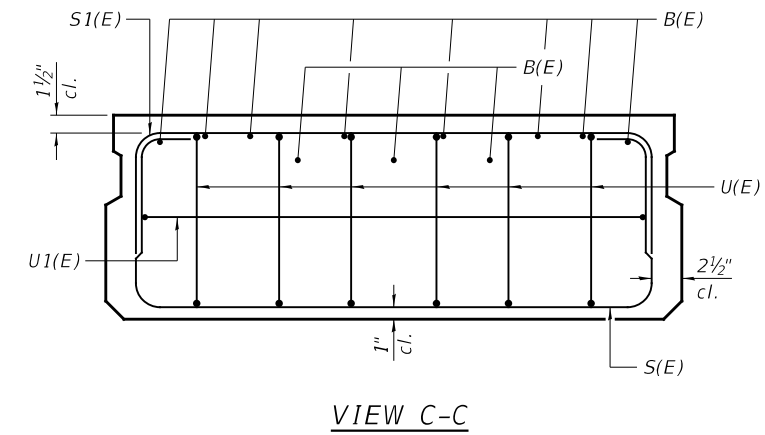
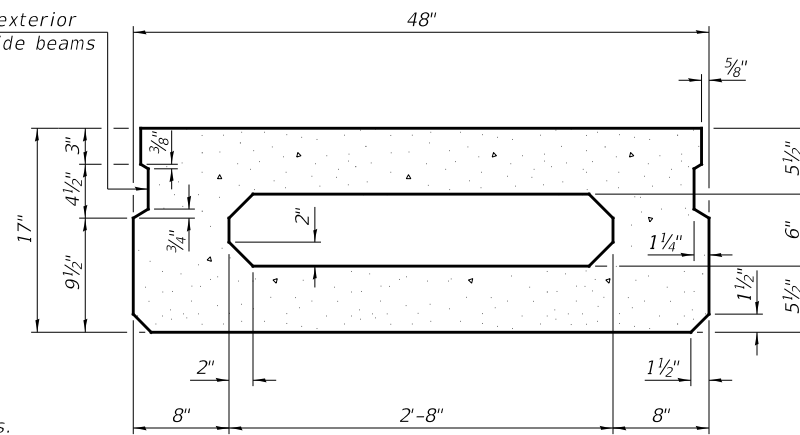
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior 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.

SUPERSTRUCTURE - SPANS 1 & 3
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (CH 8)
OVER BRUSH CREEK

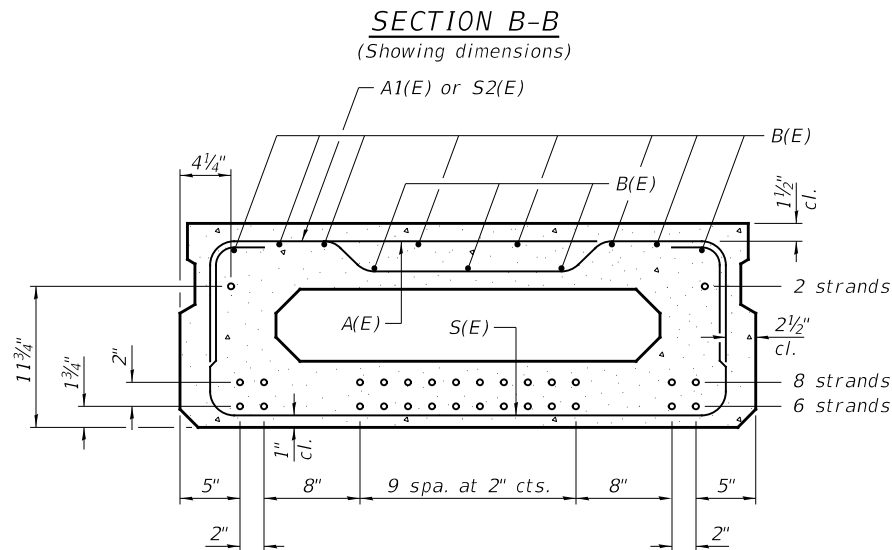
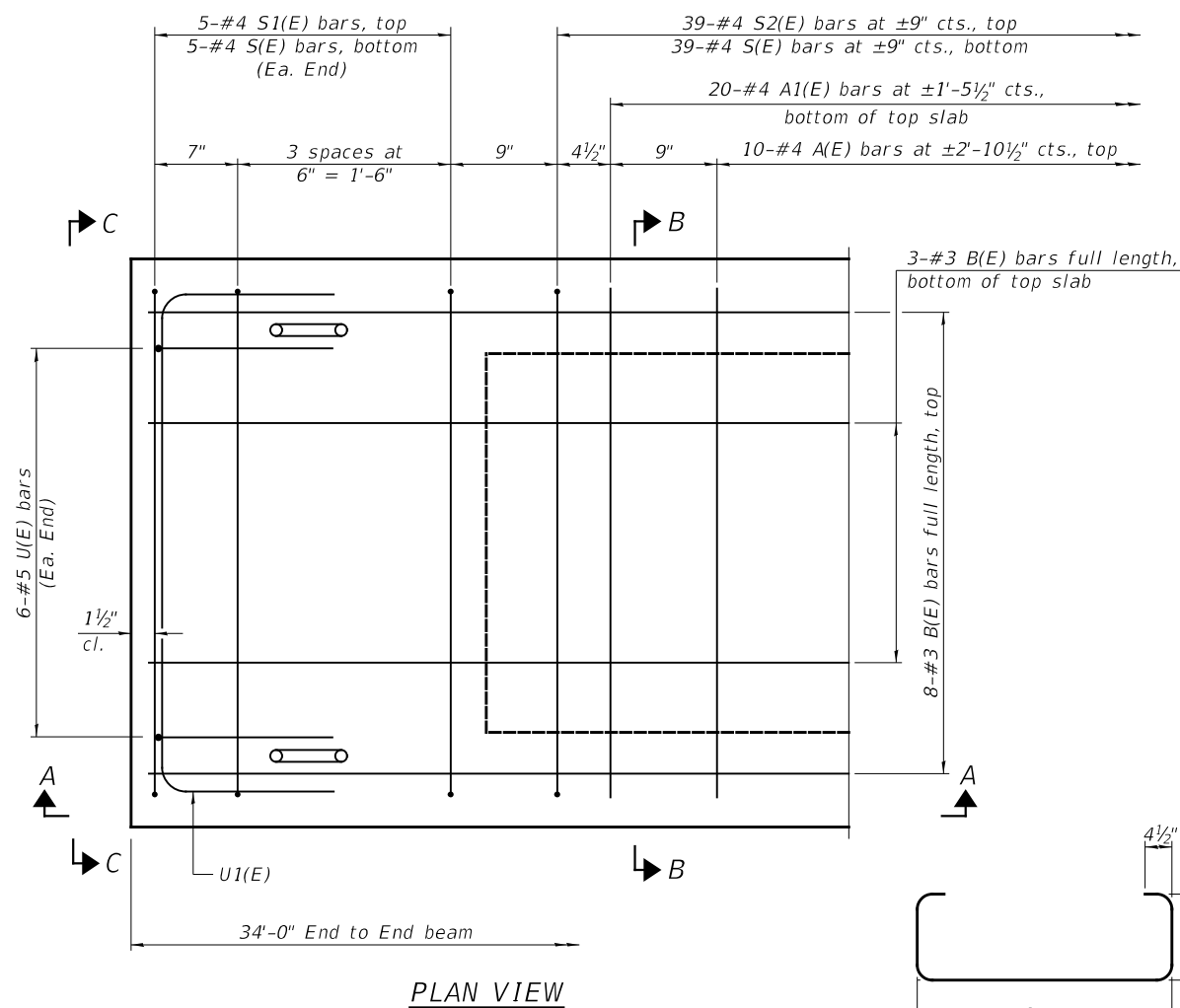
SHEET NO.	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	397	07-00081-08-BR	KNOX	23	10
12 SHEETS	S.N. 048-3394		CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		



*Omit key on exterior face of outside beams



*Rail post anchor devices (Sheet No. 8 of 12) to be cast into exterior face of outside beams.



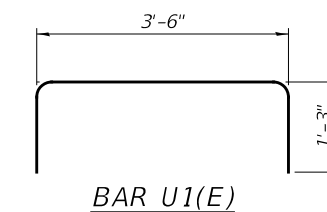
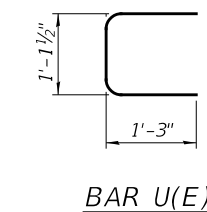
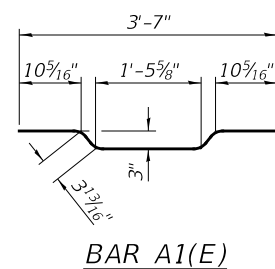
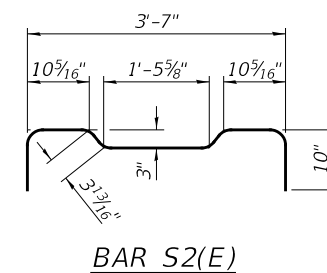
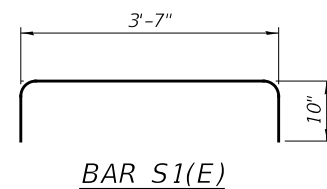
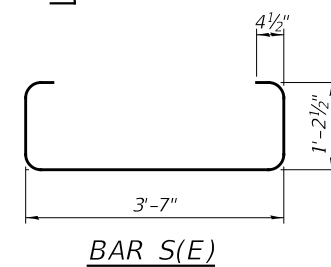
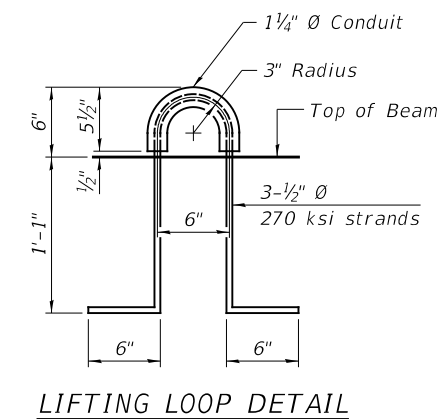
SECTION B-B
 16-1/2" Ø Strands Each Strand Stressed to 30,900 Lbs.
 6-Strands 1 3/4" up, 8-Strands 3 3/4" up, 2-Strands 11 3/4" up.
 Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
 (For information only)

BAR	NO.	SIZE	LENGTH	SHAPE
A(E)	10	#4	3'-7"	—
A1(E)	20	#4	3'-10"	~
B(E)	11	#3	33'-9"	—
**D(E)	48	#4	2'-9"	⌒
S(E)	49	#4	6'-9"	⌒
S1(E)	10	#4	5'-3"	⌒
S2(E)	39	#4	5'-6"	⌒
U(E)	12	#5	3'-8"	⌒
U1(E)	2	#4	6'-0"	⌒

Note:
 See Sheet No. 4 of 12 for additional details and Bill of Material.
 **Exterior beams only at each rail post location. See Sheet No. 3 of 12 for bar details.

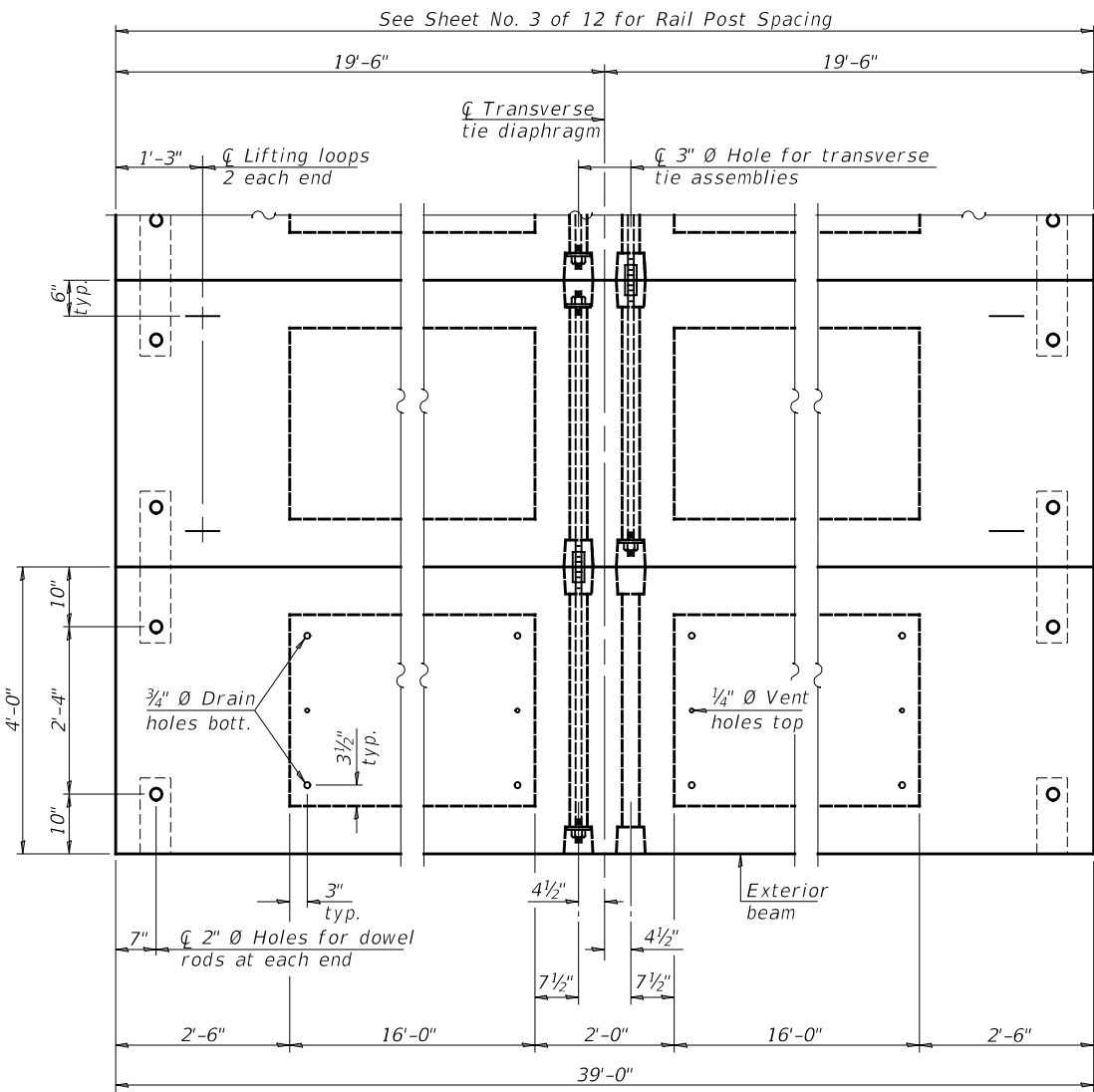
MINIMUM BAR LAP
 #3 bar = 1'-6"



Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

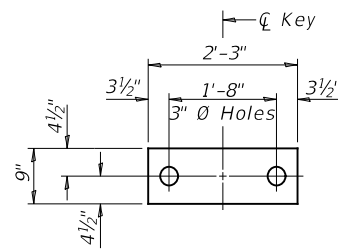
SUPERSTRUCTURE DETAILS - SPANS 1 & 3
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (CH 8)
OVER BRUSH CREEK

SHEET NO. 5 12 SHEETS	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	397	07-00081-08-BR	KNOX	23	11
	S.N. 048-3394		CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		

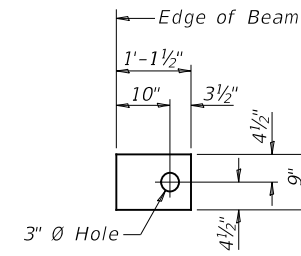


PLAN VIEW

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

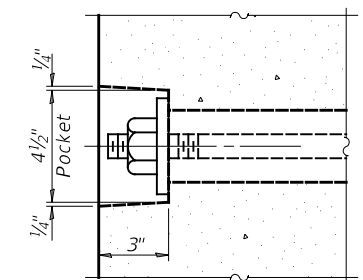


1/2" FABRIC BEARING PAD
(Interior) 16 Required

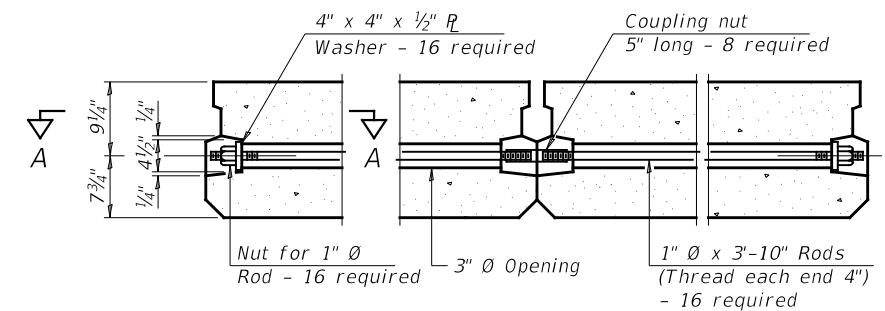


1/2" FABRIC BEARING PAD
(Exterior) 4 Required

FIXED



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

BILL OF MATERIAL

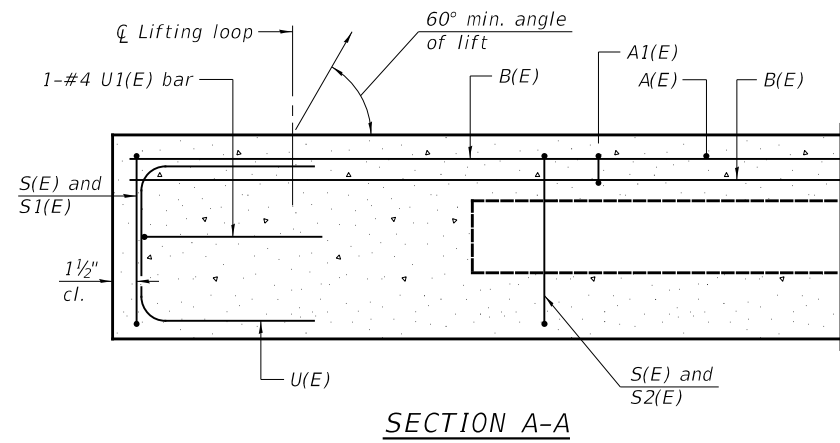
ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (17" Depth)	SQ FT	1,404

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" 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.

SUPERSTRUCTURE - SPAN 2
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (CH 8)
OVER BRUSH CREEK

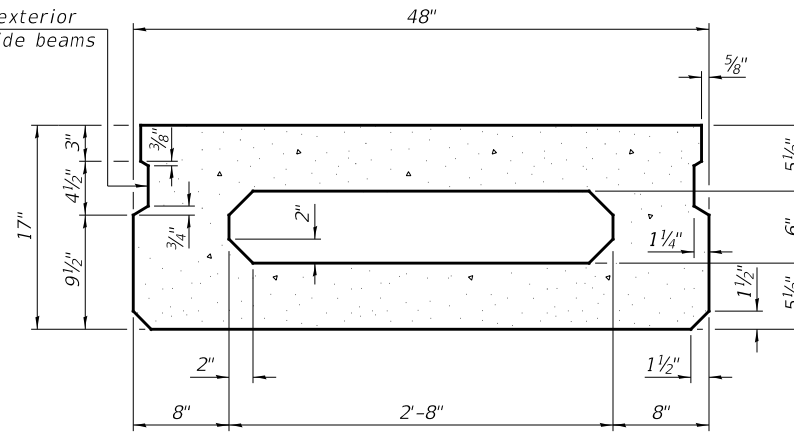
SHEET NO. 6 12 SHEETS	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	397	07-00081-08-BR	KNOX	23	12
S.N. 048-3394			CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		



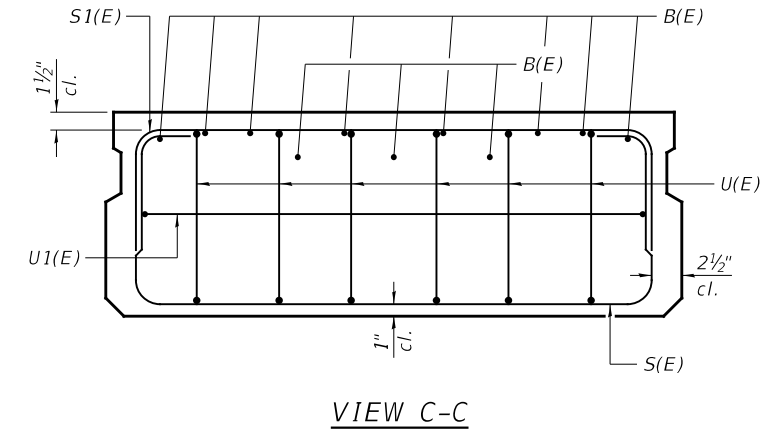
SECTION A-A

* Rail post anchor devices (Sheet No. 8 of 12) to be cast into exterior face of outside beams.

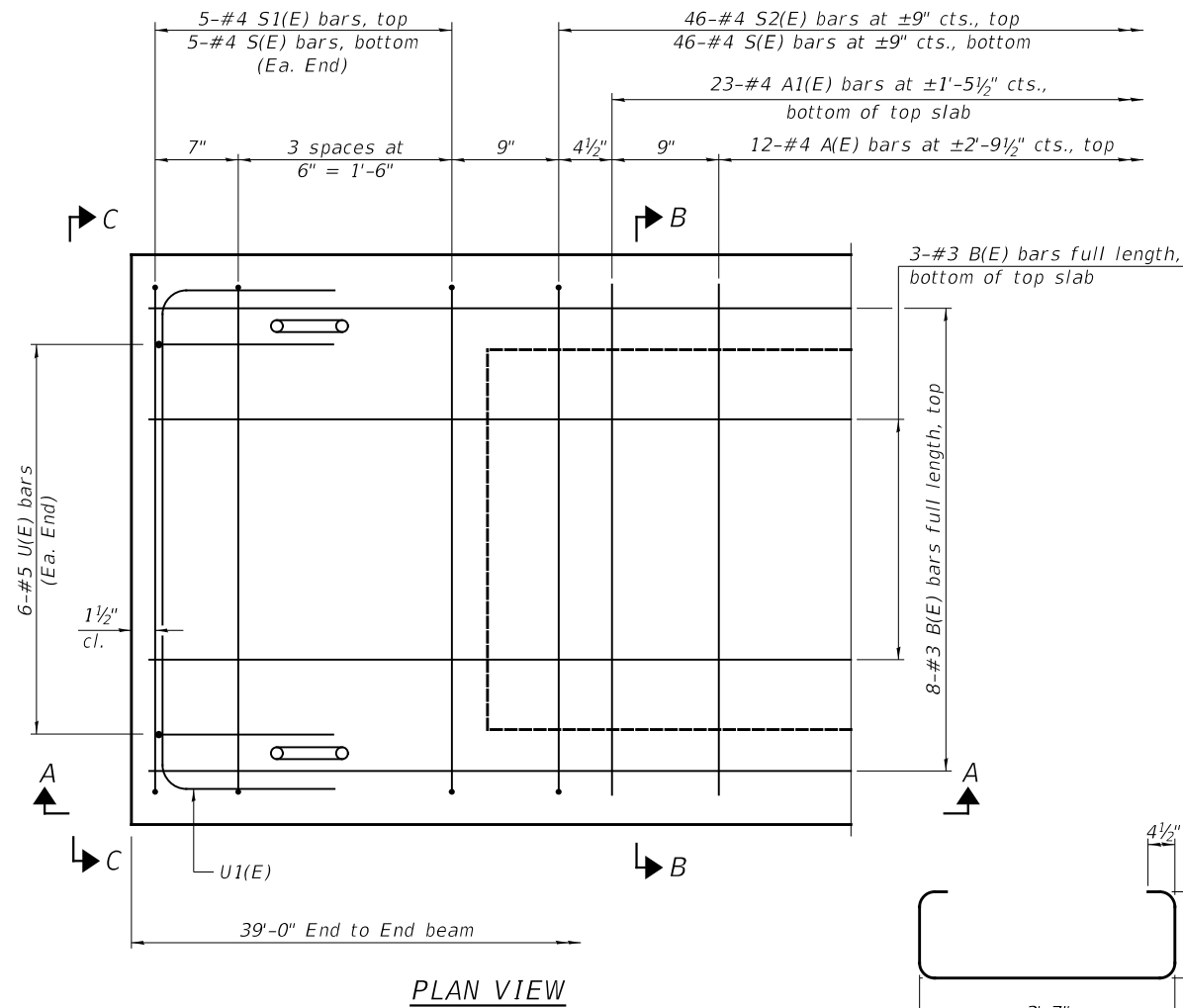
* Omit key on exterior face of outside beams



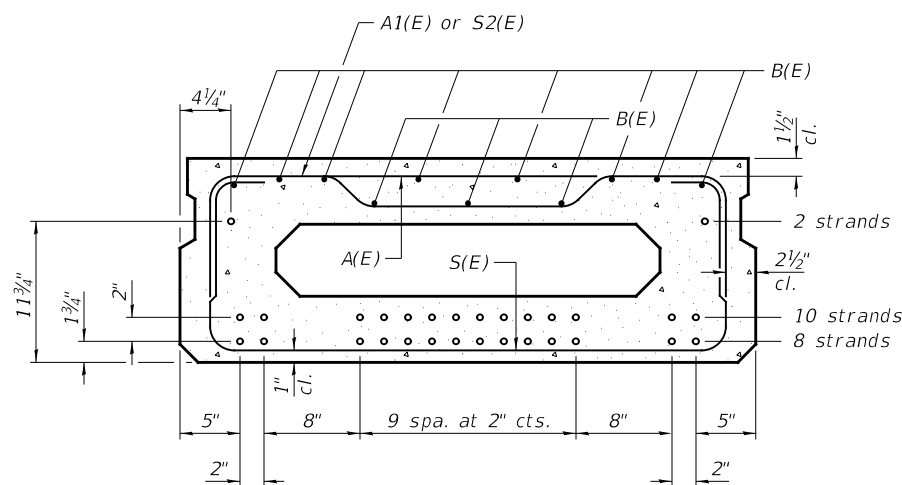
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B

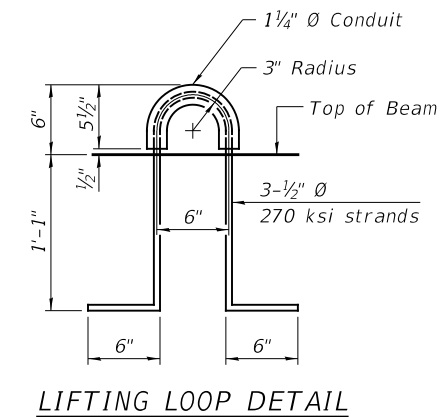
20-1/2" Ø Strands Each Strand Stressed to 30,900 Lbs.
8-Strands 1 3/4" up, 10-Strands 3 3/4" up, 2-Strands 11 3/4" up.
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

BAR	NO.	SIZE	LENGTH	SHAPE
A(E)	12	#4	3'-7"	—
A1(E)	23	#4	3'-10"	—
B(E)	11	#3	38'-9"	—
** D(E)	24	#4	2'-9"	└┘
S(E)	56	#4	6'-9"	┌┐
S1(E)	10	#4	5'-3"	┌┐
S2(E)	46	#4	5'-6"	┌┐
U(E)	12	#5	3'-8"	┌┐
U1(E)	2	#4	6'-0"	┌┐

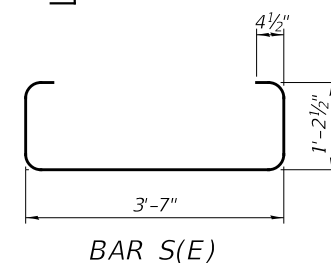
Note:
See Sheet No. 6 of 12 for additional details and Bill of Material.
**Exterior beams only at each rail post location. See Sheet No. 3 of 12 for bar details.

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

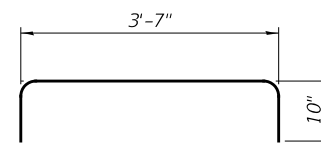


LIFTING LOOP DETAIL

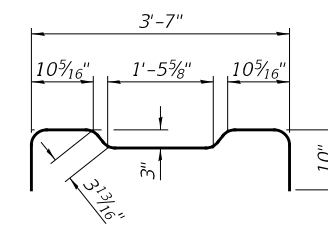
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



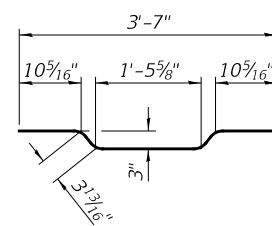
BAR S(E)



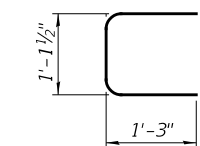
BAR S1(E)



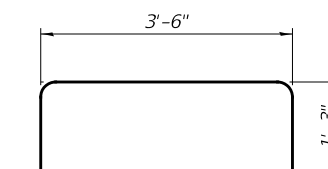
BAR S2(E)



BAR A1(E)



BAR U(E)



BAR U1(E)

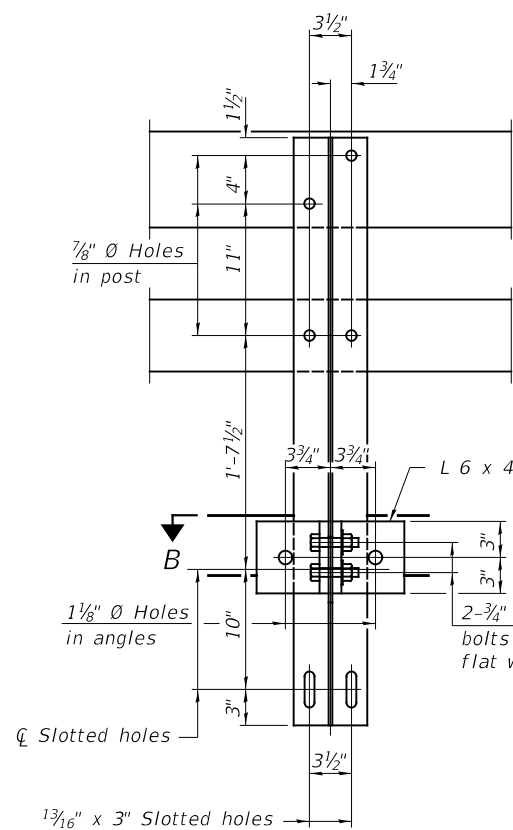
SUPERSTRUCTURE DETAILS - SPAN 2
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (CH 8)
OVER BRUSH CREEK

SHEET NO. 7 12 SHEETS	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	397	07-00081-08-BR	KNOX	23	13
	S.N. 048-3394		CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		

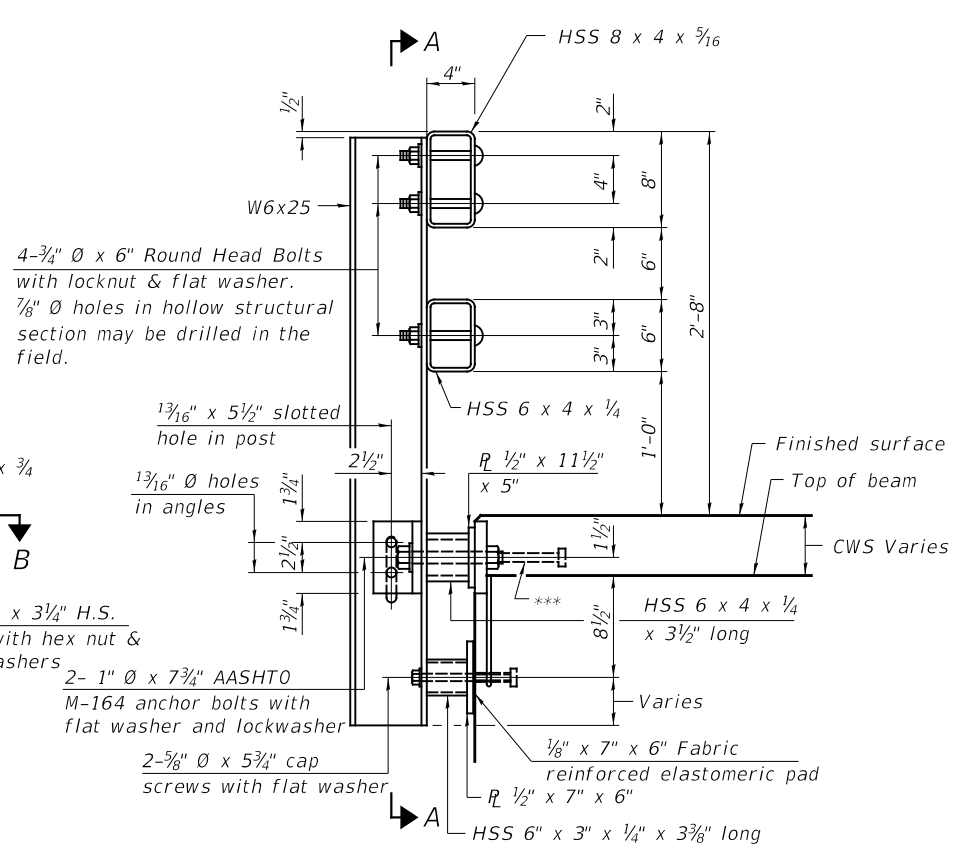
NOTES

All field drilled holes shall be coated with an approved zinc rich paint before erection.
 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 Bridge Rail, Type SM (Special).
 Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

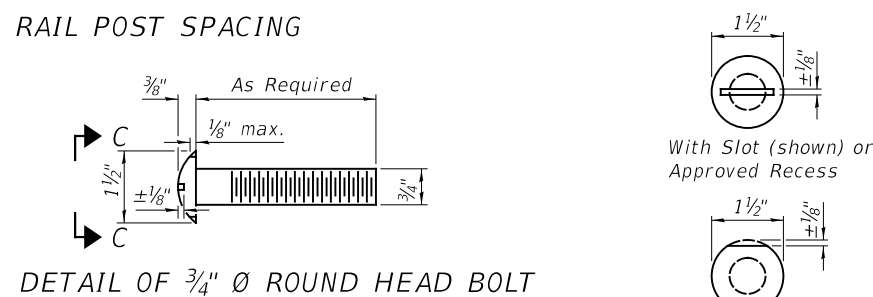
***The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



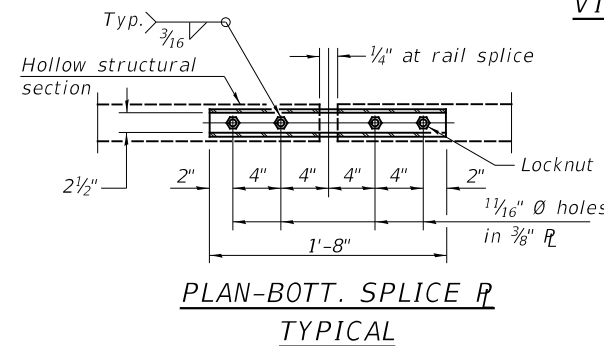
SECTION A-A



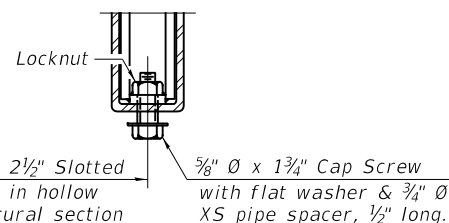
SECTION AT RAIL POST



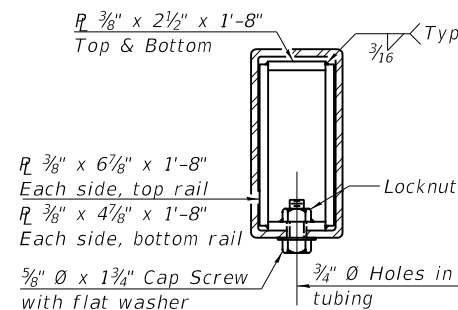
DETAIL OF 3/4" Ø ROUND HEAD BOLT



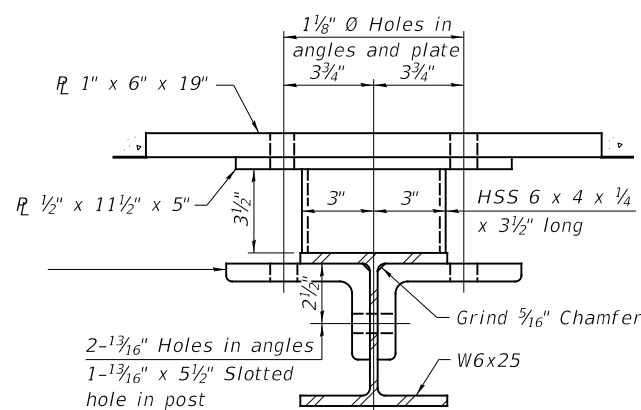
PLAN-BOTT. SPLICE R TYPICAL



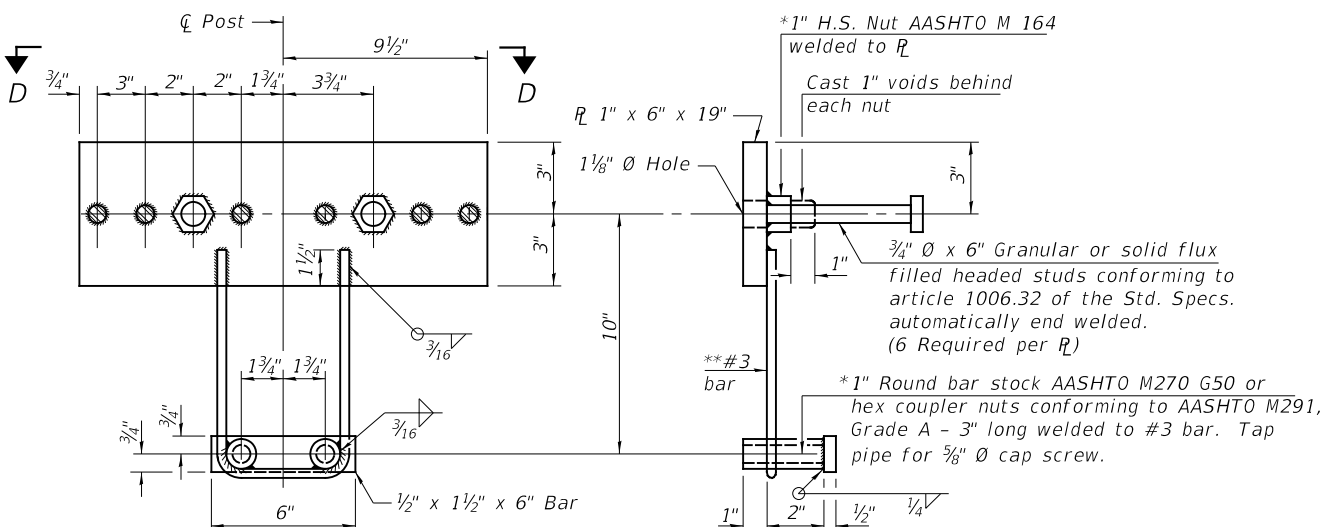
RAIL SPLICE CONNECTION AT EXPANSION JT.



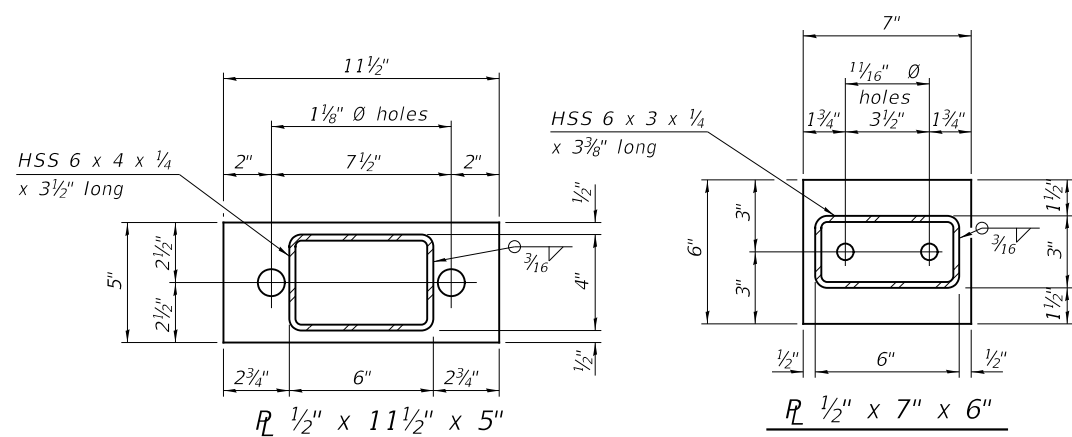
SECTION AT RAIL SPLICE



SECTION B-B

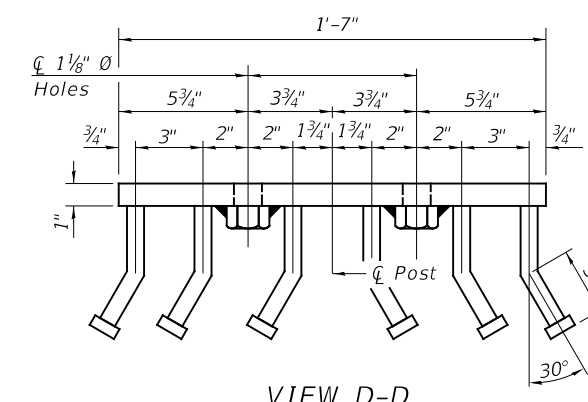


ANCHOR DEVICE



BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Steel Bridge Rail, Type SM (Special)	FOOT	218

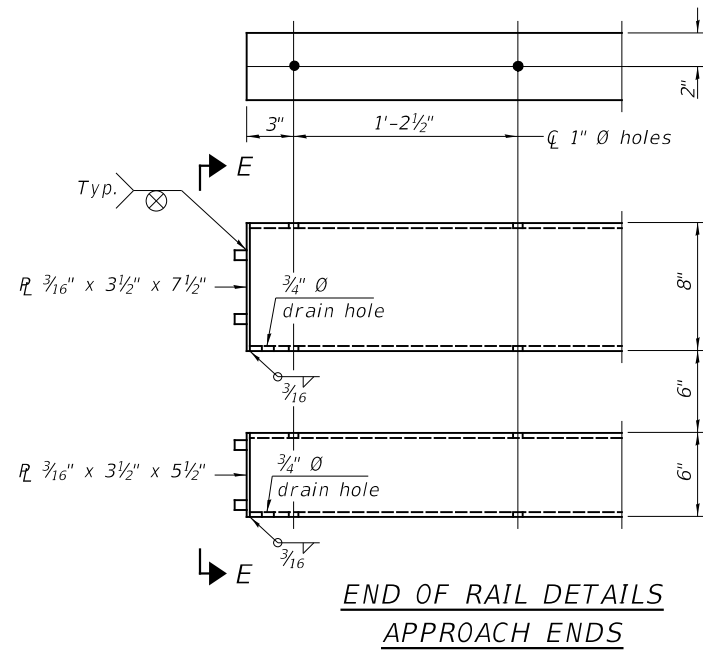


VIEW D-D

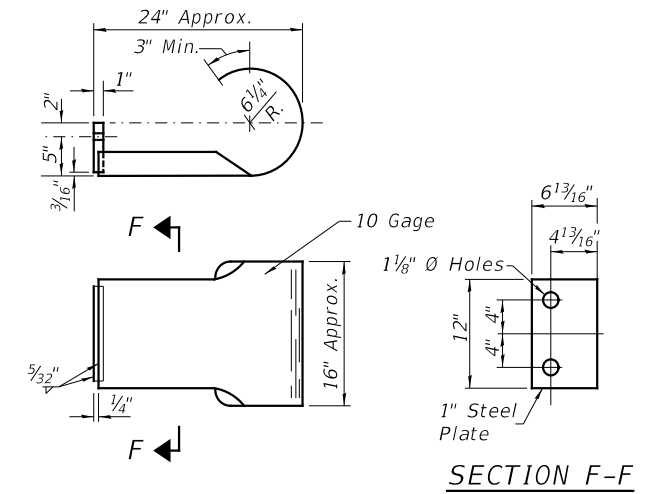
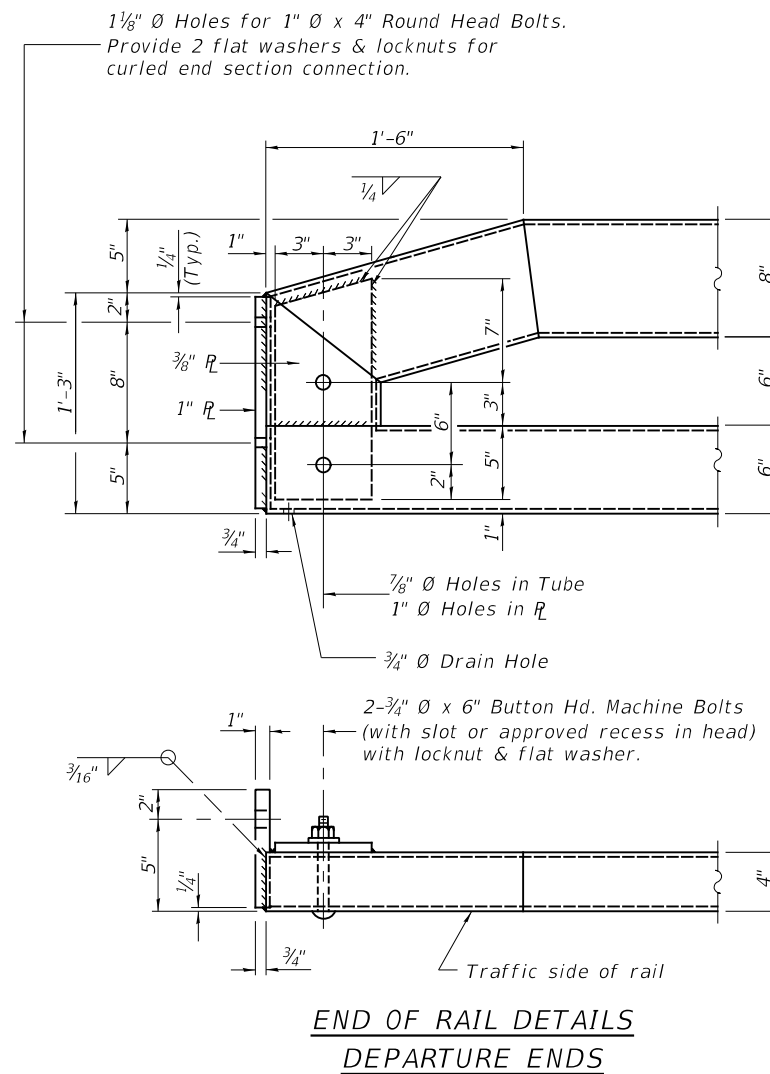
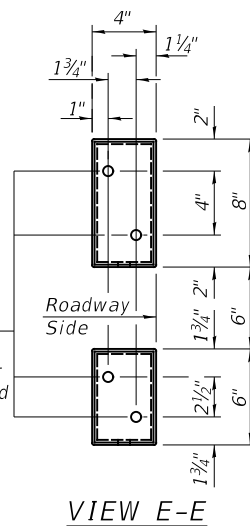
STEEL BRIDGE RAIL, TYPE SM (SPECIAL)
 KNOX COUNTY
 SECTION 07-00081-08-BR
 F.A.S. 397 (CH 8)
 OVER BRUSH CREEK

*Threaded areas shall be plugged or blocked off during casting of beam and CWS. Galvanized after fabrication.
 **Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.

SHEET NO. 8 12 SHEETS	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	397	07-00081-08-BR	KNOX	23	14
S.N. 048-3394		CONTRACT NO. 89475			
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT NO. Y4C7(237)			



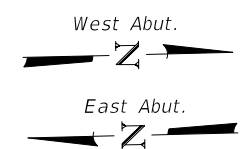
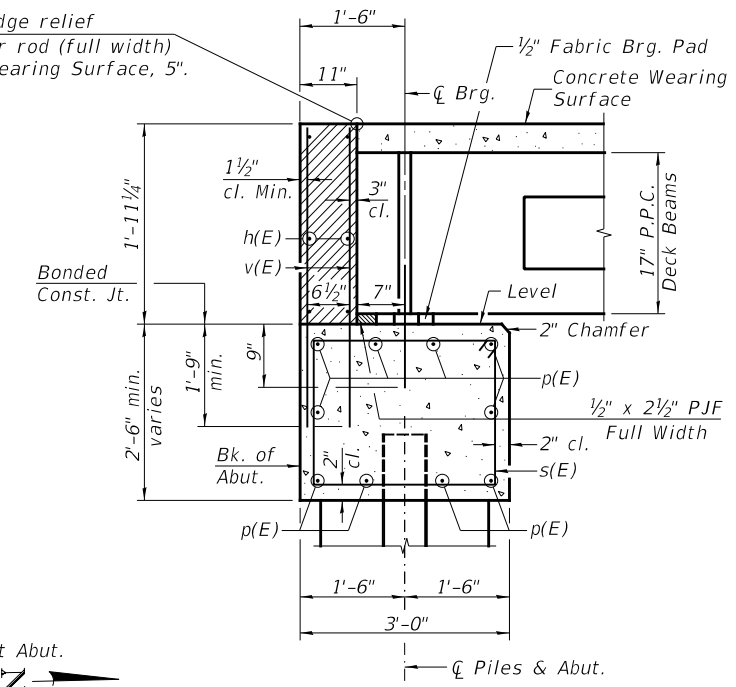
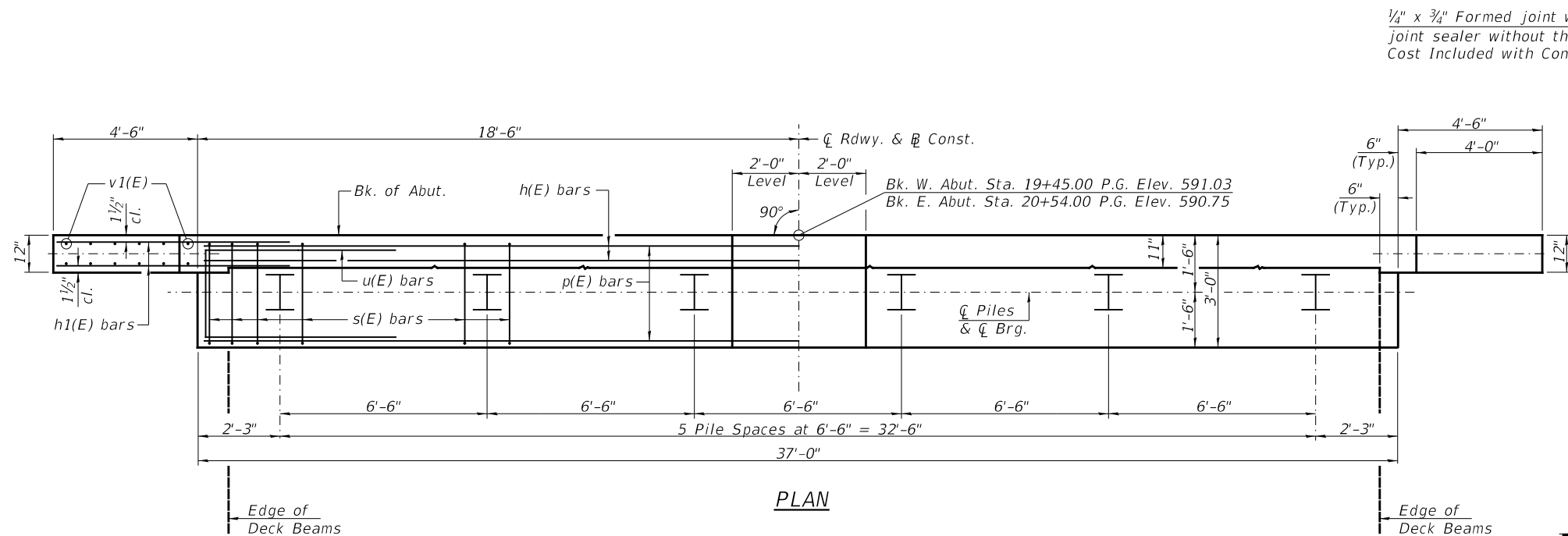
1/8" reduced base welded studs. Provide 4-3/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.



CURLED END SECTION
(2 Req'd) Cost Included with Steel Bridge Rail, Type SM (Special). Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (N.W. & S.E. Corners)

STEEL BRIDGE RAIL, TYPE SM (SPECIAL)
KNOX COUNTY
SECTION 07-00081-08-BR
F.A.S. 397 (CH 8)
OVER BRUSH CREEK

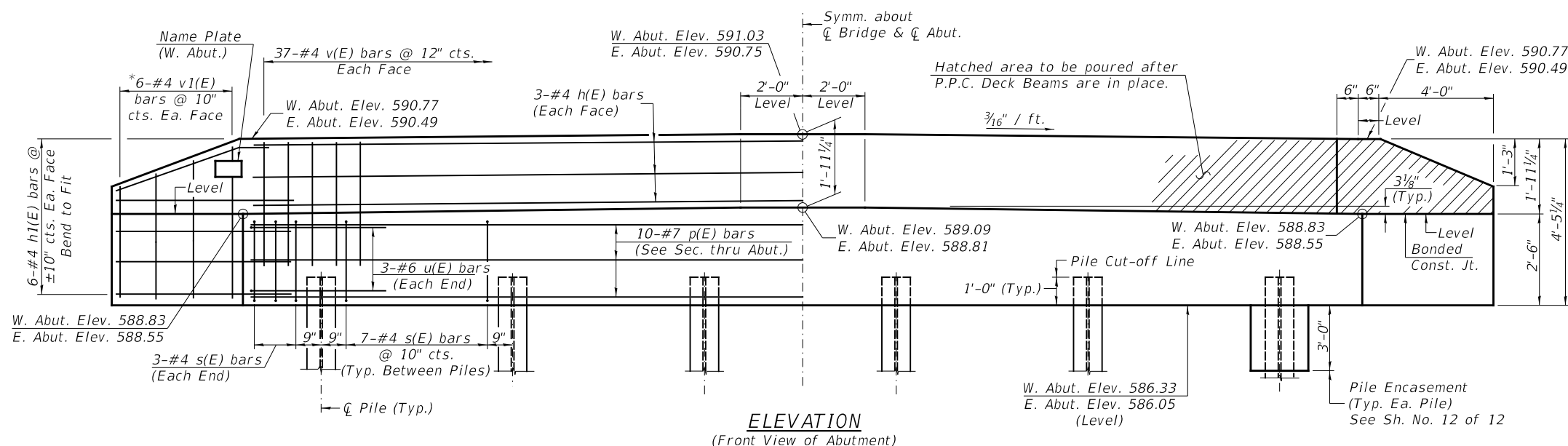
SHEET NO. 9 12 SHEETS	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	397	07-00081-08-BR	KNOX	23	15
	S.N. 048-3394		CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		



SECTION THRU ABUT.

TWO ABUTMENTS
BILL OF MATERIAL

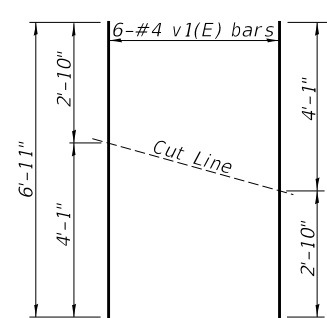
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	12	#4	36'-9"	—
h1(E)	48	#4	6'-6"	—
p(E)	20	#7	36'-9"	—
s(E)	82	#4	10'-5"	□
u(E)	12	#6	11'-7"	□
v(E)	148	#4	3'-8"	—
v1(E)	24	#4	6'-11"	—
Structure Excavation		CU YD	65	
Concrete Structures		CU YD	29.2	
Concrete Encasement		CU YD	4.2	
Reinforcement Bars, Epoxy Coated		POUND	3,260	
Furnishing Steel Piles HP10X42		FOOT	350	
Driving Piles		FOOT	350	
Test Pile Steel HP10x42		EACH	2	
Pile Shoes		EACH	12	
Name Plates		EACH	1	



ELEVATION
(Front View of Abutment)

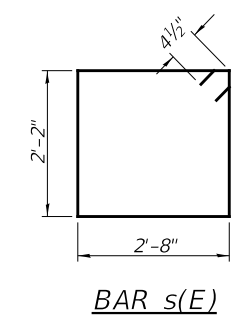
PILE DATA

Type & Size: Steel HP10x42 w/ Pile Shoes
 Nominal Required Bearing: 335 kips
 Factored Resistance Available: 184 kips
 Est. Length: 38' W. Abut.
 32' E. Abut.
 No. Req'd.: 12 (Includes 1 Test Pile at Each Abut.)

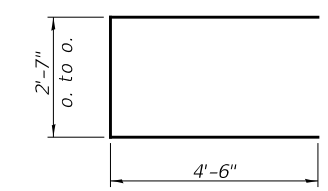


BAR CUTTING DIAGRAM

*Order v1(E) bars full length. Cut as shown and use remainder of bars in opposite face.



BAR s(E)



BAR u(E)

NOTES

- The backwall and the portion of the wingwalls above the bonded construction joint shall be cast against the in-place beam.
- All edges shall have standard 3/4" chamfer.

ABUTMENTS
KNOX COUNTY

SECTION 07-00081-08-BR

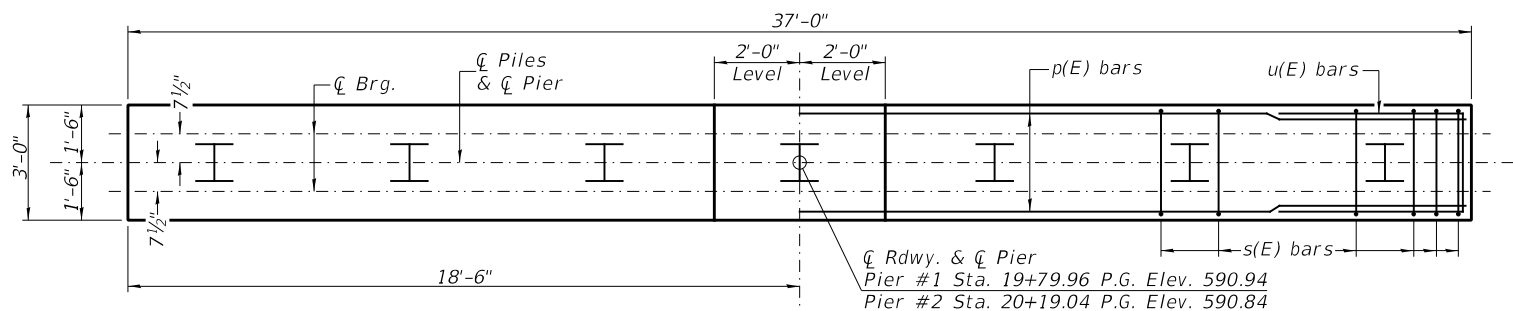
F.A.S. 397 (CH 8)

OVER BRUSH CREEK

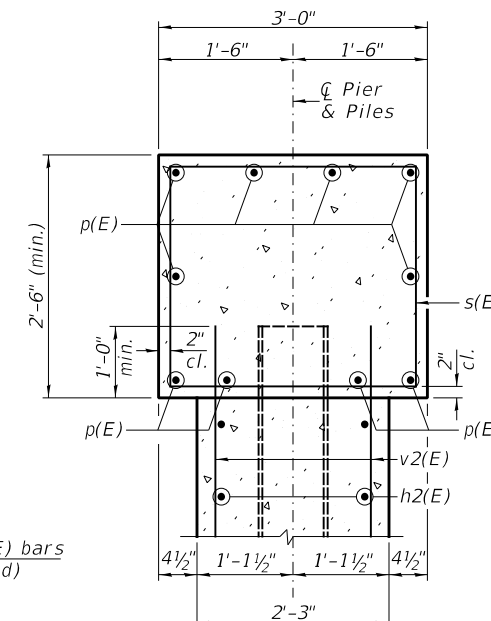
SHEET NO. 10 12 SHEETS	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	397	07-00081-08-BR	KNOX	23	16
	S.N. 048-3394		CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		

NOTES

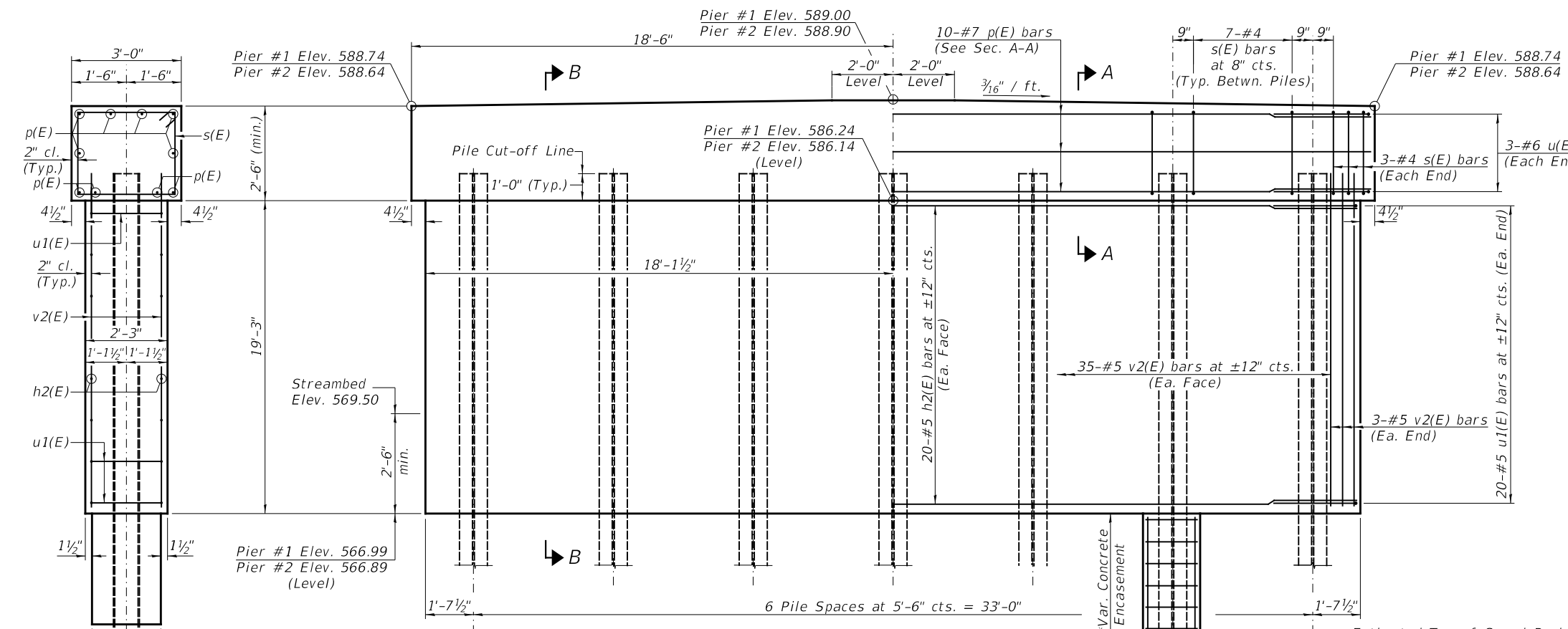
- All edges shall have standard $\frac{3}{4}$ " chamfer.
- If a portion of the pier wall is underwater, concrete shall be tremied under water into forms according to Article 503.08 of the Standard Specifications. Concrete shall be tremied to an Elevation 1'-0" above the water level at the time of construction.
- The Pier Stem shall be constructed in a single continuous concrete pour.
- See Sheet No. 12 of 12 for Pile Details.



TOP PLAN



SECTION A-A

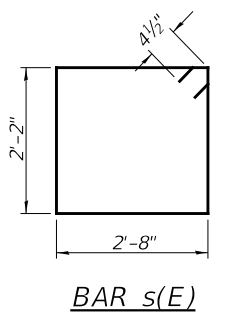


ELEVATION
(Looking Upstation)

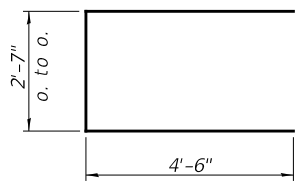
**TWO PIERS
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
h2(E)	80	#5	33'-9"	—
p(E)	20	#7	36'-9"	—
s(E)	96	#4	10'-5"	□
u(E)	12	#6	11'-7"	□
u1(E)	80	#5	7'-0"	□
v2(E)	152	#5	20'-1"	—
Cofferdam Excavation		CU YD	160	
Cofferdam (Type 1) (Location-1)		EACH	1	
Cofferdam (Type 1) (Location-2)		EACH	1	
Concrete Structures		CU YD	136.5	
Concrete Encasement		CU YD	16.5	
Reinforcement Bars, Epoxy Coated		POUND	8,960	
Furnishing Steel Piles HP12x53		FOOT	504	
Drilling and Setting Piles (In Rock)		CU FT	220	

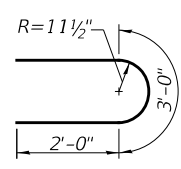
① See Special Provisions



BAR s(E)



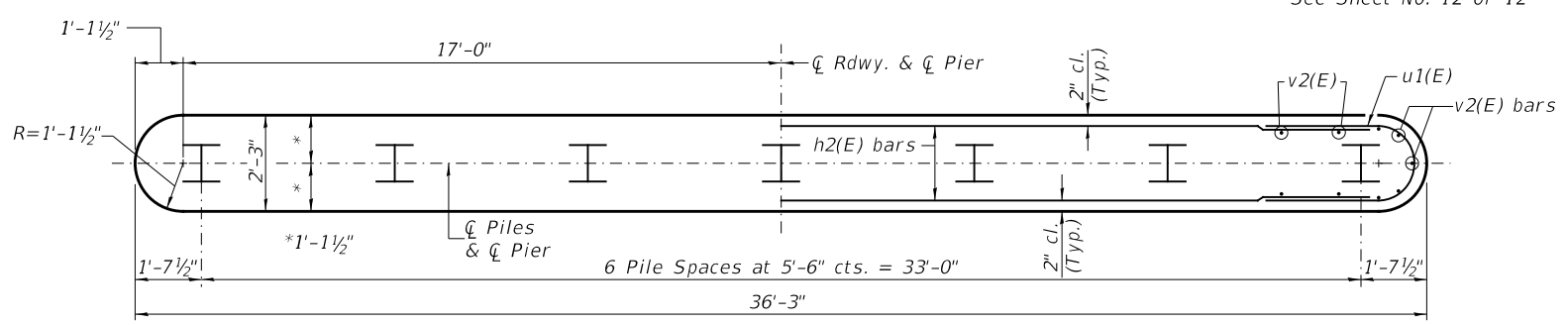
BAR u(E)



BAR u1(E)

PILE DATA

Type & Size: Steel HP12x53
 Nominal Required Bearing: Set in Rock (419 kips)
 Factored Resistance Available: Set in Rock (230 kips)
 Est. Length: 38' Pier #1
 34' Pier #2
 No. Req'd.: 14



FOOTING PLAN

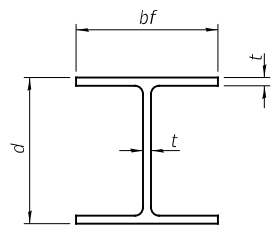
**PIERS
KNOX COUNTY**

SECTION 07-00081-08-BR

F.A.S. 397 (CH 8)

OVER BRUSH CREEK

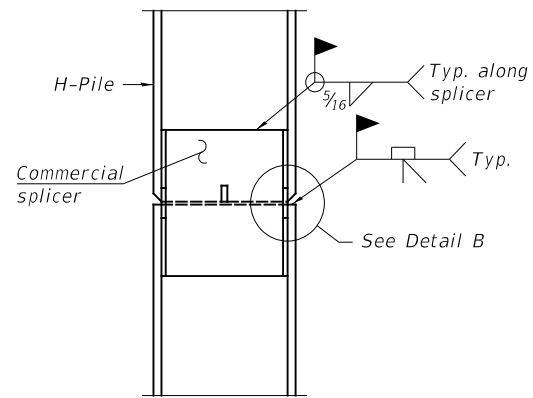
SHEET NO.	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
11	397	07-00081-08-BR	KNOX	23	17
12 SHEETS		S.N. 048-3394	CONTRACT NO. 89475		
	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. Y4C7(237)		



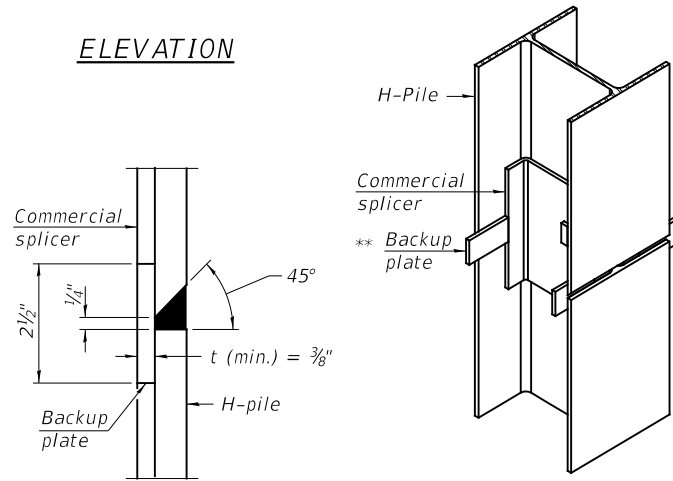
STEEL PILE TABLE

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

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



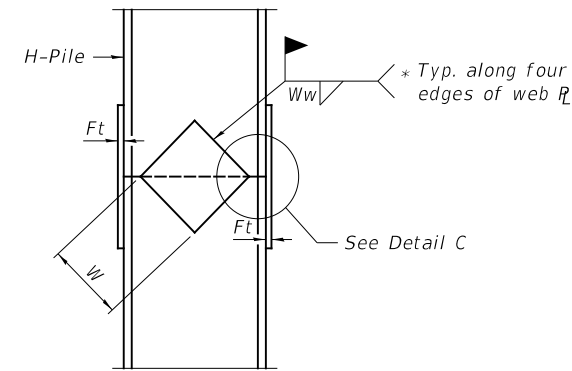
ELEVATION



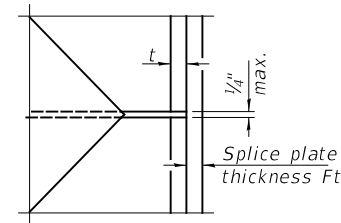
DETAIL "B"

ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

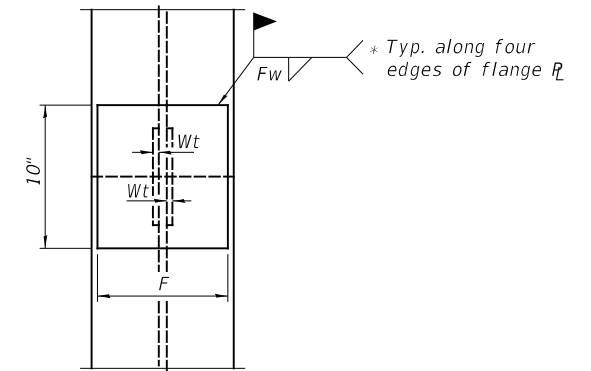


ELEVATION



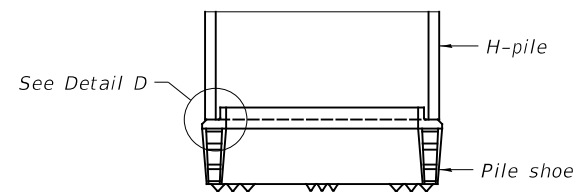
DETAIL C

WELDED PLATE FIELD SPLICE

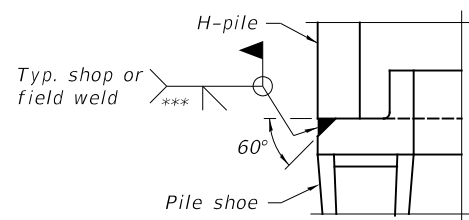


END VIEW

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"

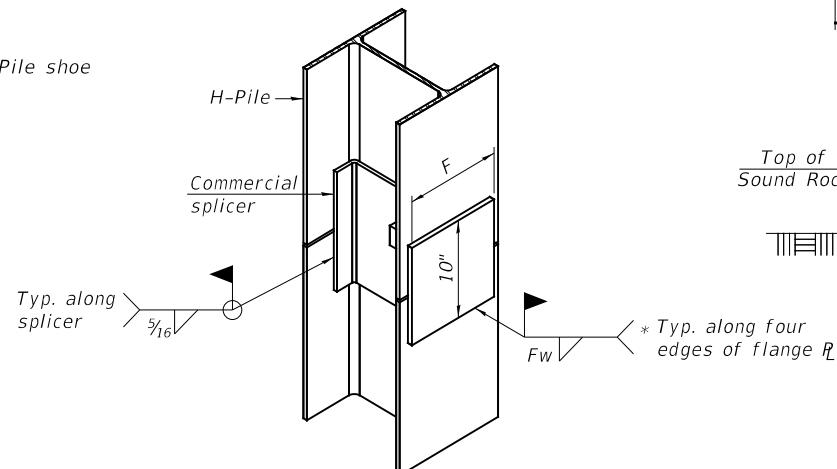


ELEVATION



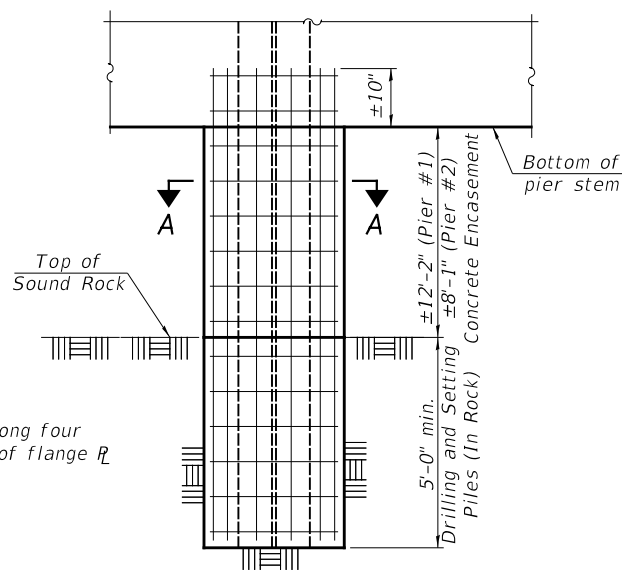
DETAIL D

H-PILE SHOE ATTACHMENT

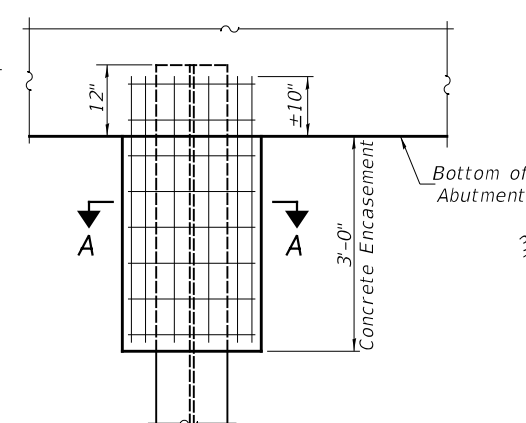


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

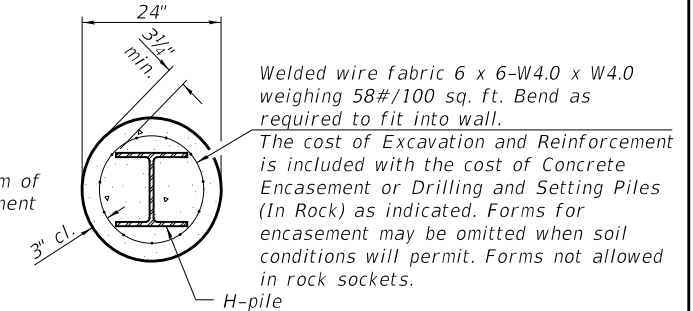


PIER ELEVATION



ABUTMENT ELEVATION

PILE ENCASEMENT



SECTION A-A

HP PILE DETAILS

KNOX COUNTY

SECTION 07-00081-08-BR

F.A.S. 397 (CH 8)

OVER BRUSH CREEK

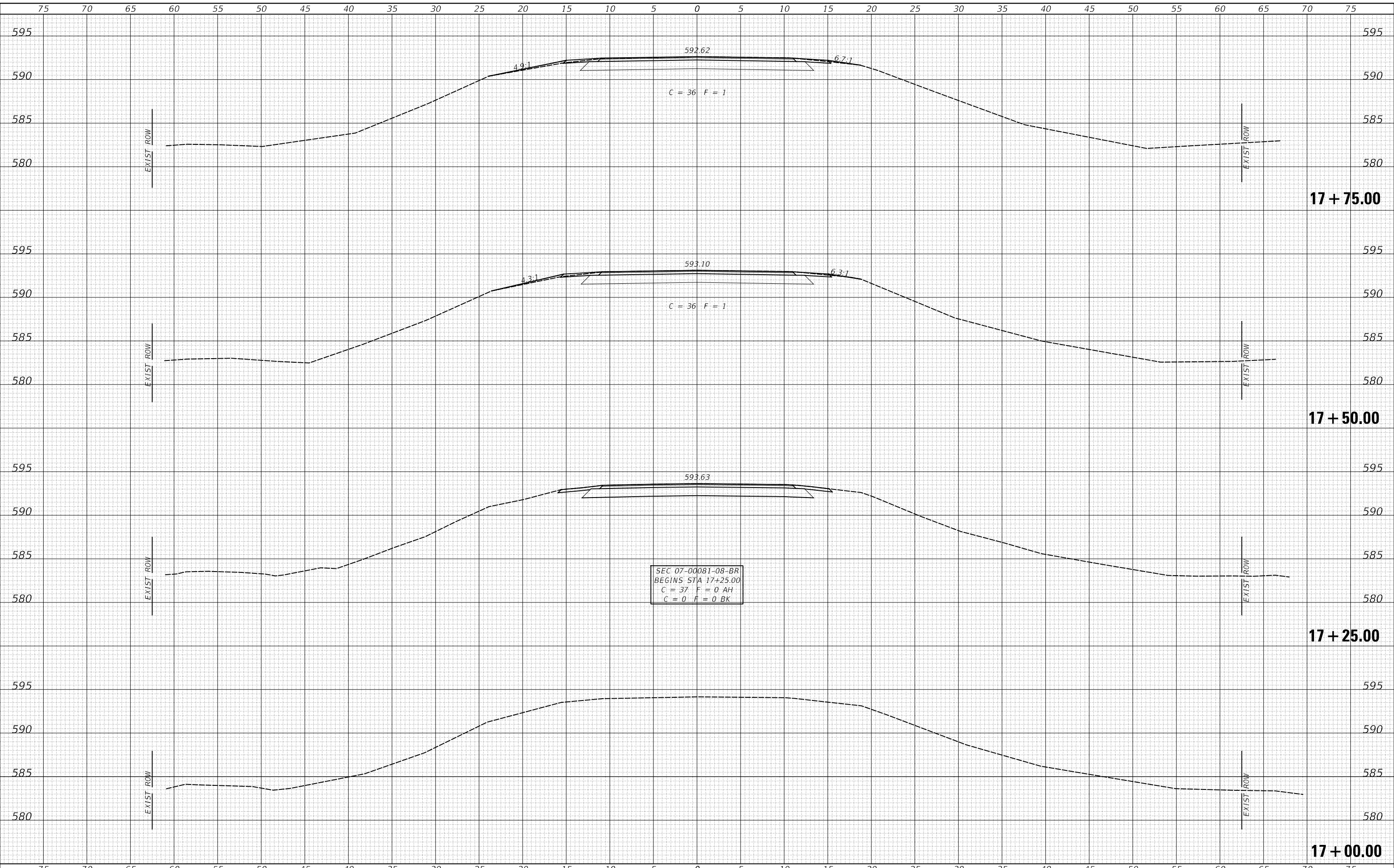
* Interrupt welds 1/4" from end of web and/or each flange.
** Remove portions of backup plates that extend outside the flanges.
*** Weld size per pile shoe manufacturer (5/16" min.).

SHEET NO. 12	F.A.S. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	397	07-00081-08-BR	KNOX	23	18
S.N. 048-3394			CONTRACT NO. 89475		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT NO. Y4C7(237)		

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

MODEL: \$MODELNAME\$
FILE NAME: V:\0660 - CH 8 Over Brush Creek (Knox)\CADD\CADD Streets\0660-08.rsdgn



USER NAME = smierzwa	DESIGNED - STM	REVISED - _____
	DRAWN - MMO	REVISED - _____
PLOT SCALE = 10.0000' / in.	CHECKED - STM	REVISED - _____
PLOT DATE = 11/30/2020	DATE - 10/13/2020	REVISED - _____

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

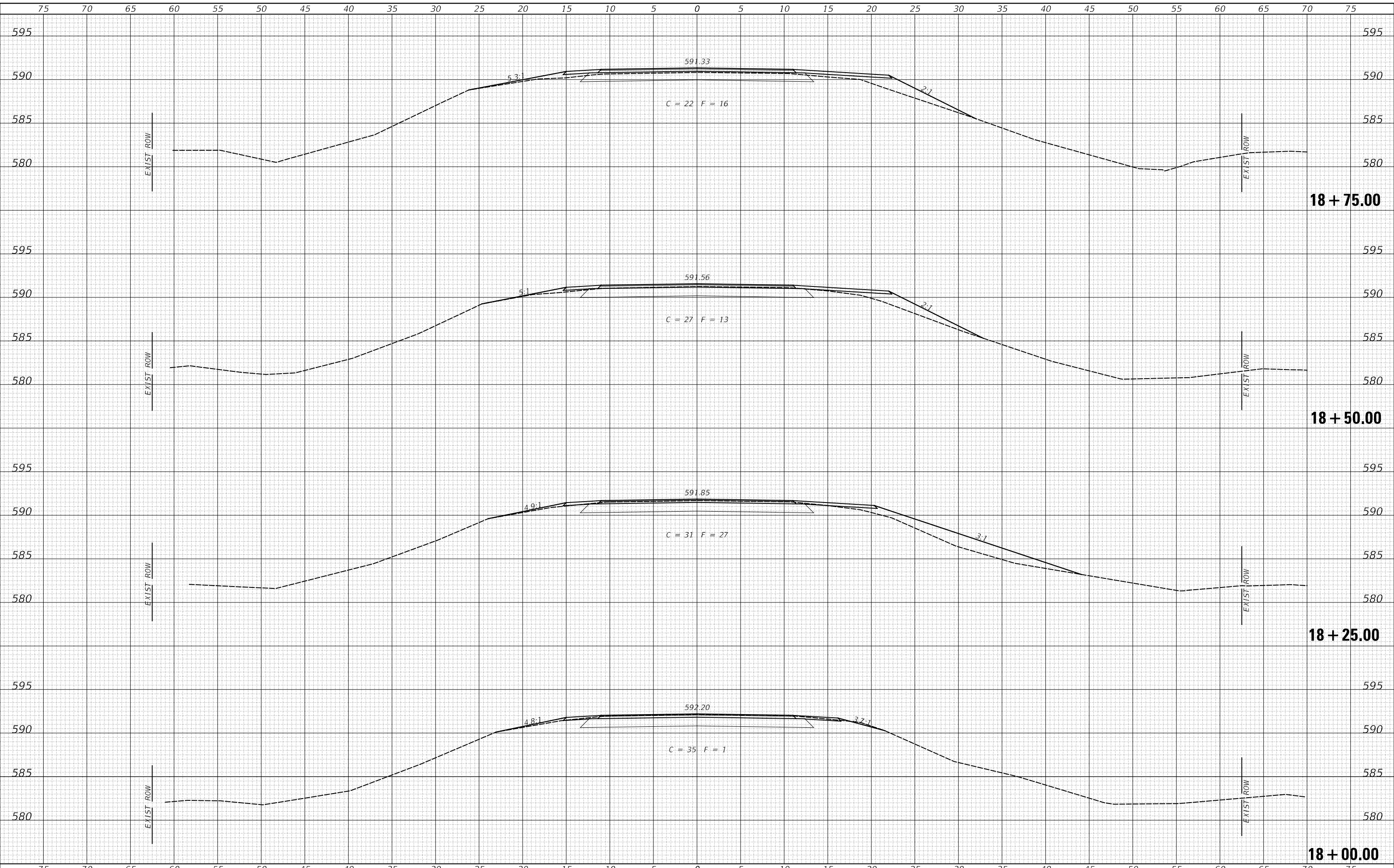
CROSS SECTIONS
SCALE: 1"=5' SHEET 1 OF 5 SHEETS STA. 17+00.00 TO STA. 17+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	19
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 89475	
			FED. AID PROJECT NO. Y4C7(237)	

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

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

MODEL: S:\MODEL\MAMES
FILE NAME: V:\880 - CH 8 Over Brush Creek \Knox\CADD\CADD Streets\880-CH8.dgn



USER NAME = smierzwa	DESIGNED - STM	REVISED - _____
	DRAWN - MMO	REVISED - _____
PLOT SCALE = 10.0000' / in.	CHECKED - STM	REVISED - _____
PLOT DATE = 11/30/2020	DATE - 10/13/2020	REVISED - _____

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

SCALE: 1"=5' SHEET 2 OF 5 SHEETS STA. 18+00.00 TO STA. 18+75.00

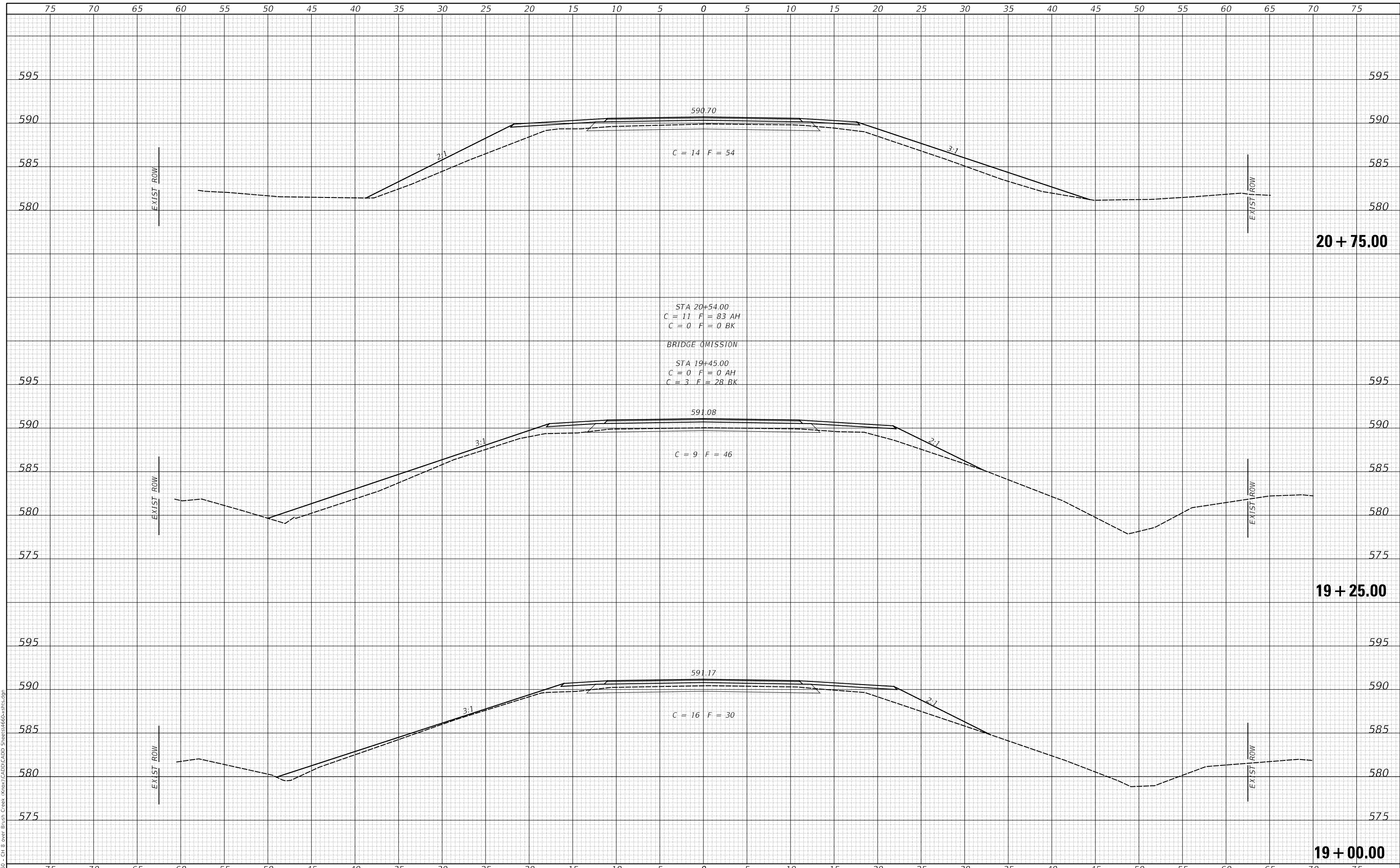
CROSS SECTIONS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	20
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 89475	
			FED. AID PROJECT NO. Y4C7(237)	

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

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

MODEL: S:\MODEL\MAMES
FILE NAME: V:\880 - CH 8 Over Brush Creek (Knox)\CADD\CADD Streets\880-CH8.dgn



USER NAME = smierzwa	DESIGNED - STM	REVISED - _____
	DRAWN - MMO	REVISED - _____
PLOT SCALE = 10.0000' / in.	CHECKED - STM	REVISED - _____
PLOT DATE = 11/30/2020	DATE - 10/13/2020	REVISED - _____

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

CROSS SECTIONS

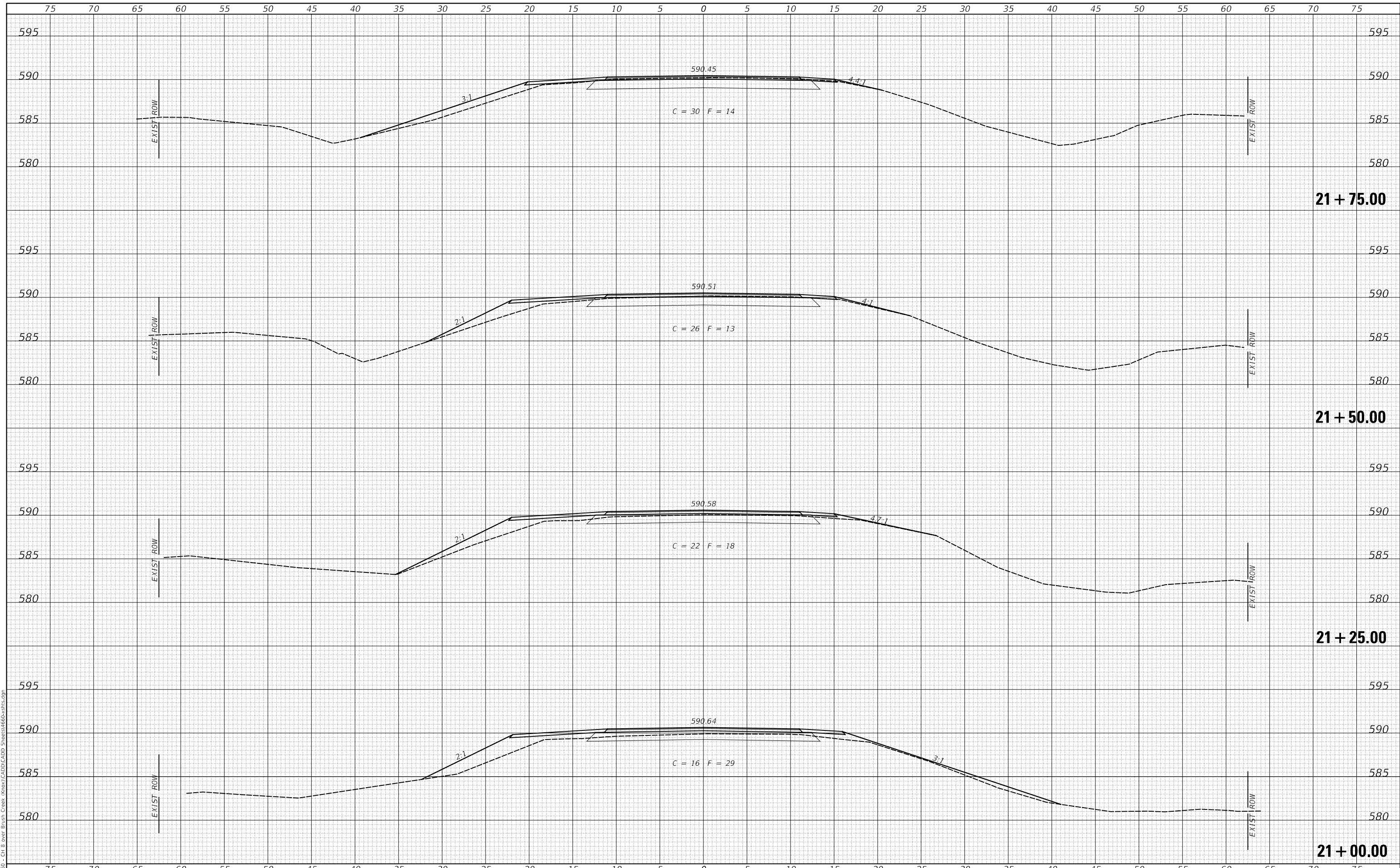
SCALE: 1"=5' SHEET 3 OF 5 SHEETS STA. 19+00.00 TO STA. 20+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	21
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT NO. Y4C7(237)
CONTRACT NO. 89475				

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

MODEL: \$MODELNAME\$
FILE NAME: V:\1660 - CH 8 Over Brush Creek (Knox)\CADD\CADD Streets\1660-CH8.dgn



USER NAME =	SMierzwa	DESIGNED -	STM	REVISED -	_____
		DRAWN -	MMO	REVISED -	_____
PLOT SCALE =	10.0000' / in.	CHECKED -	STM	REVISED -	_____
PLOT DATE =	11/30/2020	DATE -	10/13/2020	REVISED -	_____

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

CROSS SECTIONS

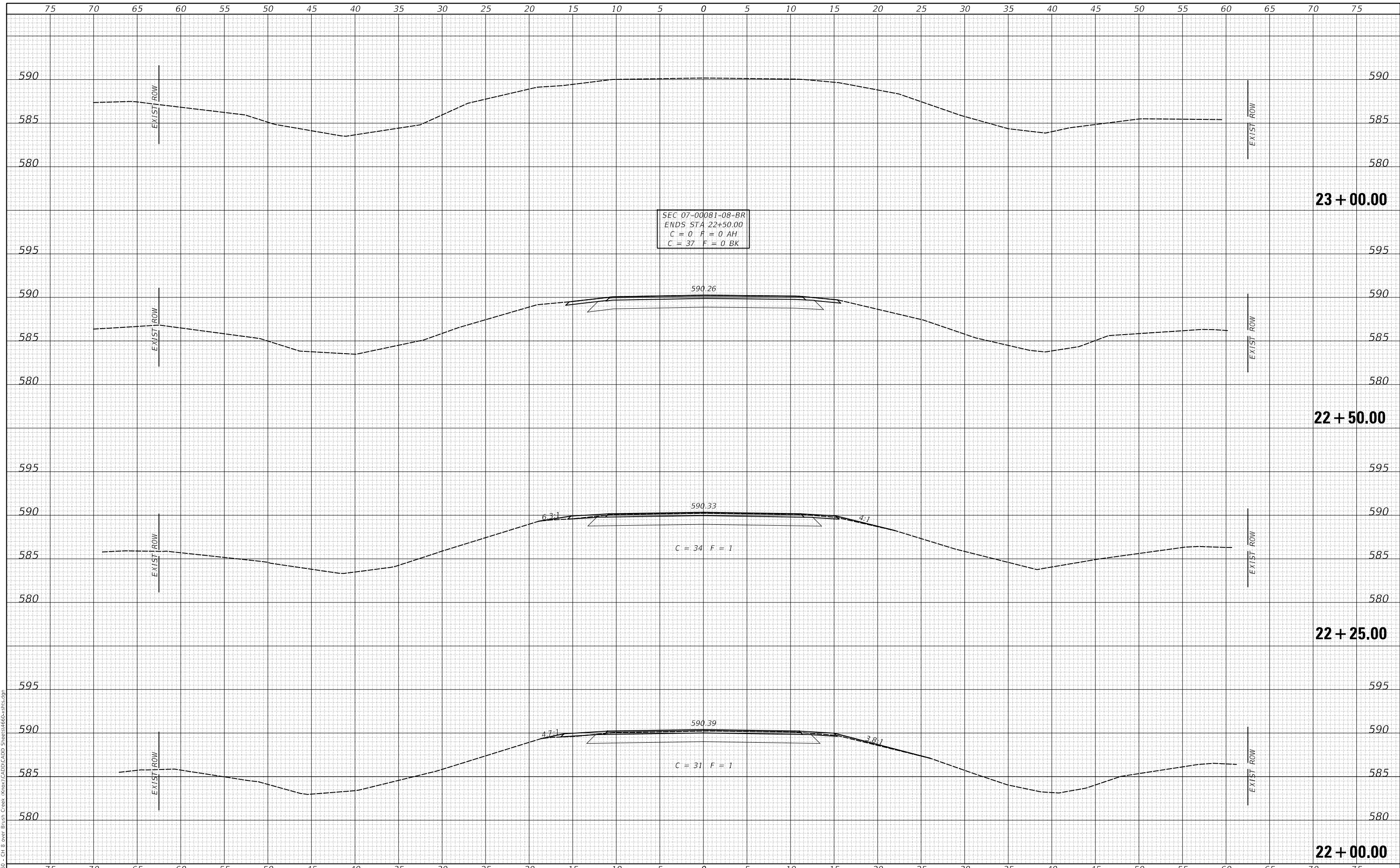
SCALE: 1"=5' SHEET 4 OF 5 SHEETS STA. 21+00.00 TO STA. 21+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	22
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 89475	
FED. AID PROJECT NO. Y4C7(237)				

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

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

MODEL: S:\MODEL\MAMES
FILE NAME: V:\8860 - CH 8 Over Brush Creek \Knox\CADD\CADD Streets\8860-8860.dgn



USER NAME =	SMierzwa	DESIGNED -	STM	REVISED -	_____
		DRAWN -	MMO	REVISED -	_____
PLOT SCALE =	10.0000' / in.	CHECKED -	STM	REVISED -	_____
PLOT DATE =	11/30/2020	DATE -	10/13/2020	REVISED -	_____

**KNOX COUNTY
COUNTY HIGHWAY 8
OVER BRUSH CREEK**

CROSS SECTIONS

SCALE: 1"=5' SHEET 5 OF 5 SHEETS STA. 22+00.00 TO STA. 23+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
397	07-00081-08-BR	KNOX	23	23
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 89475	
			FED. AID PROJECT NO. Y4C7(237)	