

INDEX OF SHEETS

08-02-2024 LETTING ITEM 071

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES, DETAILS, TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4	TRAFFIC CONTROL PLAN
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
LOCAL BRIDGE FORMULA PROGRAM
CASS COUNTY

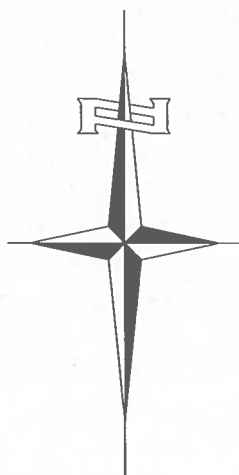
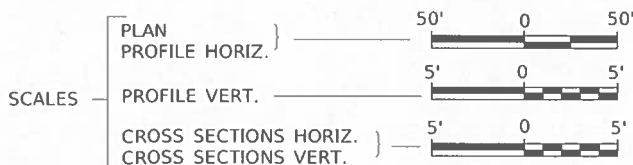
PHILADELPHIA ROAD DISTRICT SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER LITTLE INDIAN CREEK
PROJECT NO. DP3K(687)
JOB NUMBER C-96-008-20

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	1
FED. ROAD DIST. NO. 7	ILLINOIS	CONTRACT NO. 93592		



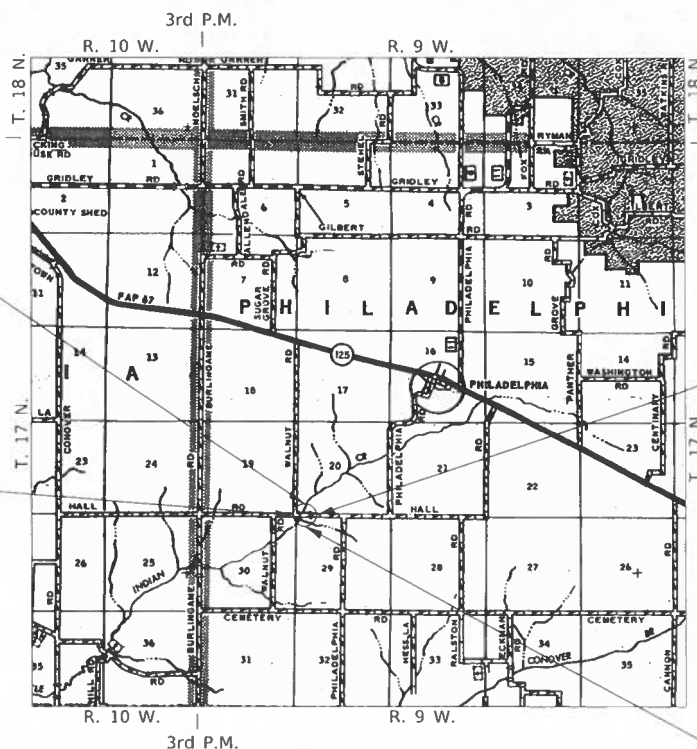
HIGHWAY STANDARDS

- 000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-04 NAME PLATE FOR BRIDGES
- 701901-09 TRAFFIC CONTROL DEVICES
- 725001-01 OBJECT AND TERMINAL MARKERS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL ROADS

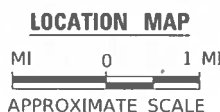


EXISTING STRUCTURE NO. 009-3555
THREE SPAN STEEL STRINGER WITH CONCRETE DECK SUPERSTRUCTURE ON TIMBER PILE BENT PIERS AND TIMBER CLOSED ABUTMENTS ±54'-0" BK. TO BK., ±20'-0" O. TO O., NO SKEW. (TO BE REMOVED)

SECTION 12-09115-00-BR BEGINS STATION 17+50.00



SECTION 12-09115-00-BR ENDS STATION 23+00.00



PROPOSED STRUCTURE NO. 009-3575
SINGLE SPAN 33" P.P.C. DECK BEAM STRUCTURE ON CONCRETE SPILL THRU PILE BENT ABUTMENTS, 79'-6" BK. TO BK. AND 30'-0" O. TO O., 20° LT. AH. SKEW.

UTILITY COMPANIES

CASS TELEPHONE COMPANY
VIRGINIA, ILLINOIS

MENARD ELECTRIC COOPERATIVE
PETERSBURG, ILLINOIS

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

PHILADELPHIA ROAD DISTRICT

CONTRACT NO. 93592

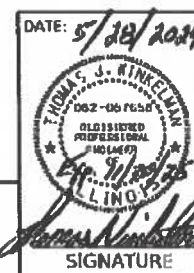
NET LENGTH OF PROJECT = 550.00 FEET = 0.104 MILES

DESIGN CLASSIFICATION: LOCAL ROAD (NON-URBAN)
DESIGN ADT: 50 (2021)
DESIGN SPEED: 30 MPH

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

2024

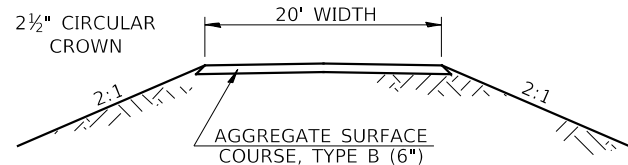
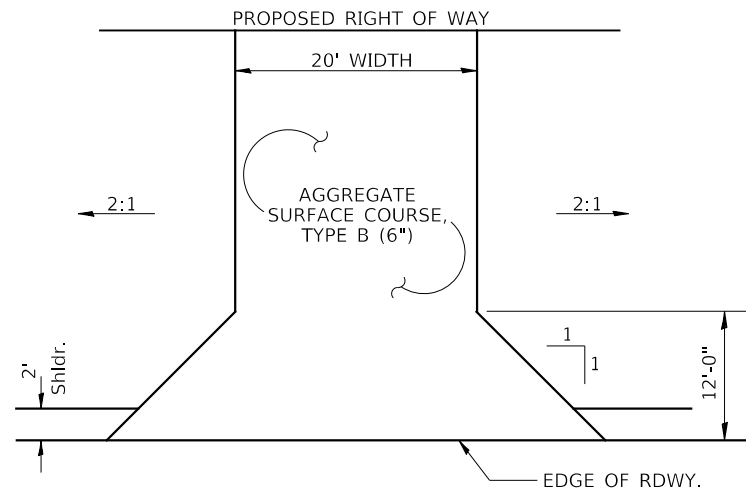
HEI JOB#3129



SIGNATURE

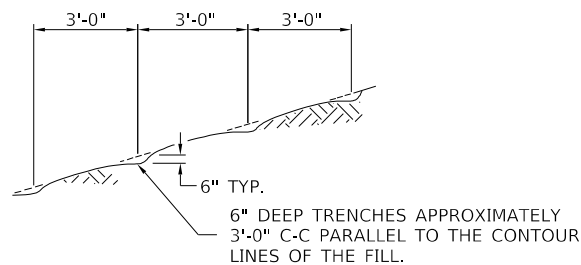
ENGINEERS SEAL

APPROVED	<i>J.M.L.</i>	2024
PHILADELPHIA ROAD DISTRICT HIGHWAY COMMISSIONER		
APPROVED	<i>Timothy Senogle</i>	2024
CASS COUNTY ENGINEER		
PASSED	<i>May 30, 2024</i>	2024
DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS		
Released For Bid Based on Limited Review	<i>May 30, 2024</i>	2024
REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		



FIELD ENTRANCE

STA 22+09 LT



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

GENERAL NOTES

THE REMOVAL OF EXISTING OIL & CHIP SURFACE AND GRAVEL OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE NEW BRIDGE SHALL BE REMOVED AS EARTH 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.

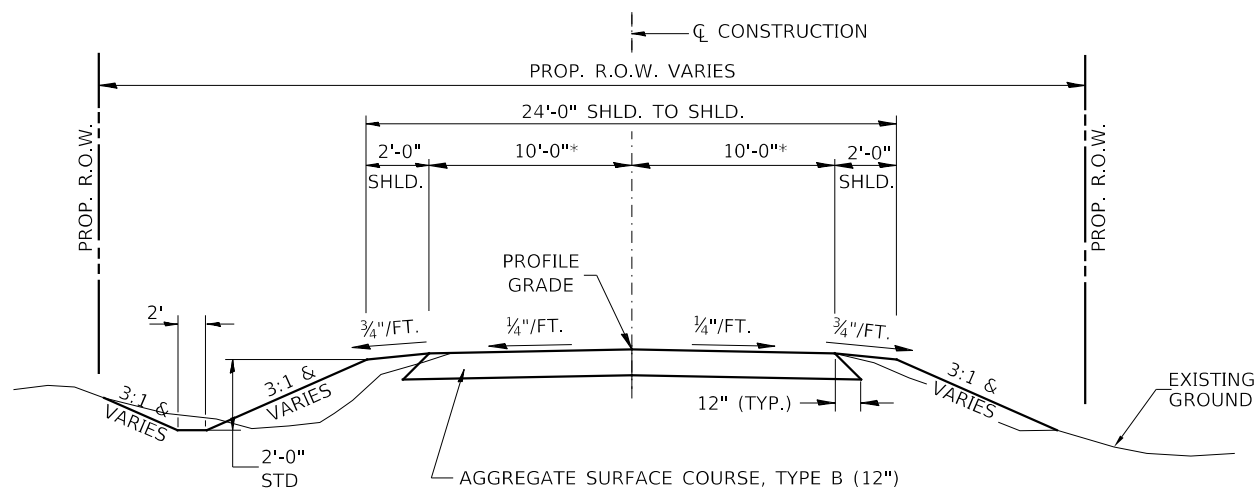
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION.

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 CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME 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 AN U.S.G.S. MEAN SEA LEVEL DATUM.



PROPOSED TYPICAL SECTION

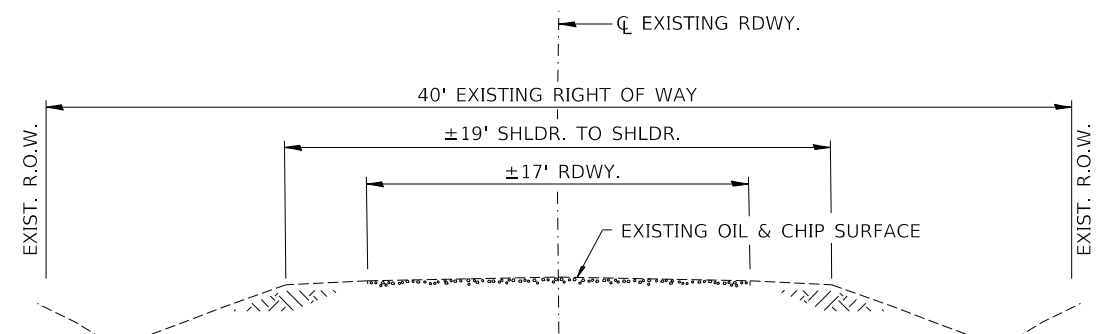
STA. 17+50.00 TO STA. 19+60.25
STA. 20+39.75 TO STA. 23+00.00

EXCEPT TRANSITIONS

BRIDGE OMISSION

STA. 19+60.25 TO STA. 20+39.75

* EXCEPT FOR WIDENING AT STRUCTURE



EXISTING TYPICAL SECTION

FILE NAME =	USER NAME = SMierzwa	DESIGNED - CET	REVISED -
V:\Bridge\3129-Cass\3129R001.dgn		DRAWN - CET	REVISED -
		CHECKED - STM	REVISED -
		DATE - 3/17/2021	REVISED -

**CASS COUNTY
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK**

GENERAL NOTES, DETAILS, TYPICAL SECTIONS

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. 17+50.00 TO STA. 23+00.00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	2
CONTRACT NO. 93592				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. DP3K(687)		

SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	220
20300100	CHANNEL EXCAVATION	CU YD	390
20400800	FURNISHED EXCAVATION	CU YD	850
25100630	EROSION CONTROL BLANKET	SQ YD	60
28000305	TEMPORARY DITCH CHECKS	FOOT	180
28000400	PERIMETER EROSION BARRIER	FOOT	545
28000500	INLET AND PIPE PROTECTION	EACH	1
28100209	STONE RIPRAP, CLASS A5	TON	490
28200200	FILTER FABRIC	SQ YD	630
28300400	AGGREGATE DITCH	TON	102
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	740
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	25
50200100	STRUCTURE EXCAVATION	CU YD	85
50300225	CONCRETE STRUCTURES	CU YD	28.4
50300280	CONCRETE ENCASEMENT	CU YD	2.6
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2,325
50800105	REINFORCEMENT BARS	POUND	3,110
* 50900205	STEEL RAILING, TYPE S1	FOOT	159
51200957	FURNISHING METAL SHELL PILES 12"x0.250"	FOOT	416
51202305	DRIVING PILES	FOOT	416
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	40
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	21.6
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1

* SPECIALTY ITEMS

CONSTRUCTION TYPE: 0010
CODE

EARTHWORK SUMMARY					
STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	FILL	WASTE (SHORTAGE)
RDWY 17+50.00 - 19+60.25	54			490	(450)
RDWY 20+39.75 - 23+00.00	167			524	(399)
CHANNEL		390			
STRUCTURE			85		
TOTAL	221	390	85	1,014	(849)
USE	220	390	85	-	(850)

(@ 25% SHRINKAGE)

TEMPORARY DITCH CHECKS		
STATION	SIDE	FOOT
17+89	RIGHT	12
18+01	RIGHT	12
18+13	RIGHT	12
18+25	RIGHT	12
20+15	RIGHT	12
20+50	LEFT	12
20+95	RIGHT	12
21+10	LEFT	12
21+45	RIGHT	12
21+50	LEFT	12
21+70	LEFT	12
21+75	RIGHT	12
22+46	LEFT	12
22+64	LEFT	12
22+82	LEFT	12
TOTAL		180

PIPE CULVERTS, CLASS D, TYPE 1 15"		
STATION	SIDE	FOOT
22+09	LEFT	40
TOTAL		40

PIPE CULVERT REMOVAL			
STATION	SIZE	SIDE	FOOT
22+09	15"	LEFT	25
TOTAL			25

EROSION CONTROL BLANKET				
STATION TO STATION	SIDE	WIDTH	LENGTH	SQ YD
20+50 21+40	LEFT	6'	90'	60
TOTAL				60

PERIMETER EROSION BARRIER			
STATION TO STATION	SIDE	FOOT	
17+50 19+67	LEFT	235	
17+50 17+75	RIGHT	25	
18+25 19+53	RIGHT	145	
21+89 22+29	LEFT	40	
22+00 23+00	RIGHT	100	
TOTAL		545	

INLET AND PIPE PROTECTION		
STATION	SIDE	EACH
22+29	LEFT	1
TOTAL		1

AGGREGATE DITCH*					
STATION TO STATION	SIDE	WIDTH	TON	FILTER FABRIC (SQ YD)	
17+50 18+35	RIGHT	6'	30	60	
21+15 22+00	RIGHT	6'	30	60	
21+40 21+89	LEFT	6'	17	35	
22+29 23+00	LEFT	6'	25	50	
TOTAL			102	205	

*AGGREGATE DITCH SHALL CONFORM TO MATERIAL TYPE B-3 OF THE STANDARD SPECIFICATIONS

AGGREGATE SURFACE COURSE, TYPE B					
STATION TO STATION	THICKNESS	WIDTH	LENGTH	TON	
17+50.00 18+00.00	1.00'	19.18' AVG	50.00'	67	
18+00.00 19+60.25	1.00'	21.00'	160.25'	236	
WIDENING TAPER RIGHT	1.00'	2.50' AVG.	30.00'	5	
WIDENING TAPER LEFT	1.00'	2.50' AVG.	30.00'	5	
FULL WIDENING RIGHT	1.00'	5.00'	10.00'	4	
FULL WIDENING LEFT	1.00'	5.00'	10.00'	4	
FULL WIDENING RIGHT	1.00'	5.00'	10.00'	4	
FULL WIDENING LEFT	1.00'	5.00'	10.00'	4	
WIDENING TAPER RIGHT	1.00'	2.50' AVG.	30.00'	5	
WIDENING TAPER LEFT	1.00'	2.50' AVG.	30.00'	5	
20+39.75 22+50.00	1.00'	21.00'	210.25'	309	
22+50.00 23+00.00	1.00'	18.43' AVG	50.00'	65	
ENTRANCE - 22+09 LT	0.50'	20' & VAR.	29.40'	27	
TOTAL				740	



- 1

ROAD CLOSED
2 MILES AHEAD
LOCAL TRAFFIC ONLY

ROAD CLOSED
2 MILES AHEAD
LOCAL TRAFFIC ONLY

R11-3
- 2

ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY

ROAD CLOSED
1 MILE AHEAD
LOCAL TRAFFIC ONLY

R11-3
- 3

ROAD CLOSED
½ MILE AHEAD
LOCAL TRAFFIC ONLY

ROAD CLOSED
½ MILE AHEAD
LOCAL TRAFFIC ONLY

R11-3
- 4

TR 143 (HALL RD) EAST
CLOSED 1 MILE AHEAD

TR 143 (HALL RD) EAST
CLOSED 1 MILE AHEAD

M3-1
- 5

ROAD CLOSED
AHEAD

ROAD CLOSED
AHEAD

W20-3
- 6

ROAD CLOSED
500 FT

ROAD CLOSED
500 FT

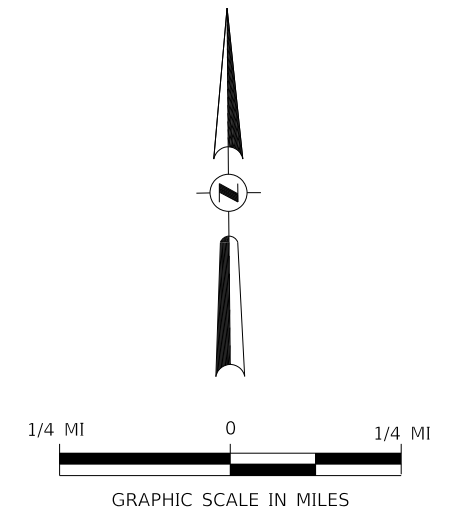
W20-3
- 7

TYPE III BARRICADES
- 8

AS SHOWN

M5-1L(O)

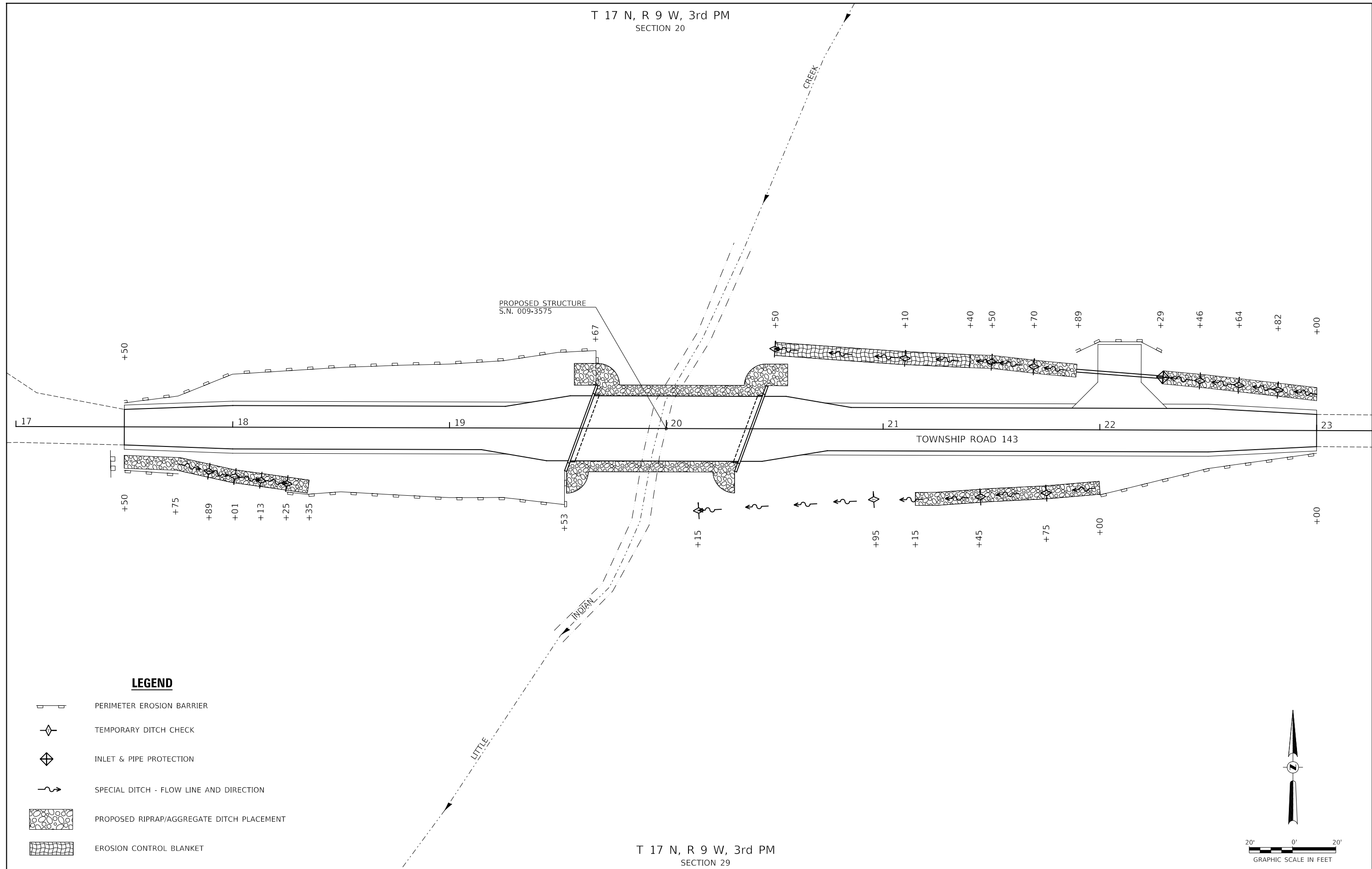
SEE STANDARD BLR 21
AND SPECIAL PROVISIONS









FILE NAME = V:\Bridge\3129-Cass\3129h001.dgn	USER NAME = SMierzwa	DESIGNED - CET	REVISED -	CASS COUNTY TOWNSHIP ROAD 143 OVER LITTLE INDIAN CREEK	TRAFFIC CONTROL PLAN			RTE. TR 143	SECTION 12-09115-00-BR	COUNTY CASS	TOTAL SHEETS 20	SHEET NO. 4
	PLOT SCALE = 2,000' / in.	CHECKED - STM	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. 17+50.00 TO STA. 23+00.00	CONTRACT NO. 93592				
	PLOT DATE = 4/19/2021	DATE - 3/17/2021	REVISED -					FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. DP3K(687)		
SEE STANDARD BLR 21 AND SPECIAL PROVISIONS												

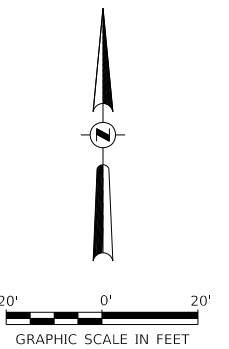
T 17 N, R 9 W, 3rd PM
SECTION 20

T 17 N, R 9 W, 3rd PM
SECTION 29



LEGEND

-  PERIMETER EROSION BARRIER
-  TEMPORARY DITCH CHECK
-  INLET & PIPE PROTECTION
-  SPECIAL DITCH - FLOW LINE AND DIRECTION
-  PROPOSED RIPRAP/AGGREGATE DITCH PLACEMENT
-  EROSION CONTROL BLANKET

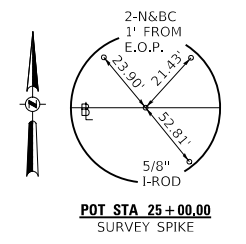
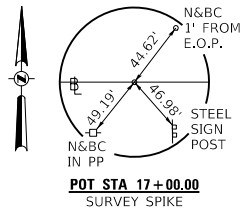


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		DRAWN - CET	REVISED -
		CHECKED - STM	REVISED -
		DATE - 3/17/2021	REVISED -

**CASS COUNTY
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK**

EROSION CONTROL PLAN		
SCALE: 1" = 20'	SHEET NO. 1 OF 1 SHEETS	STA. 17+50.00 TO STA. 23+00.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	5
CONTRACT NO. 93592				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. DP3K(687)		



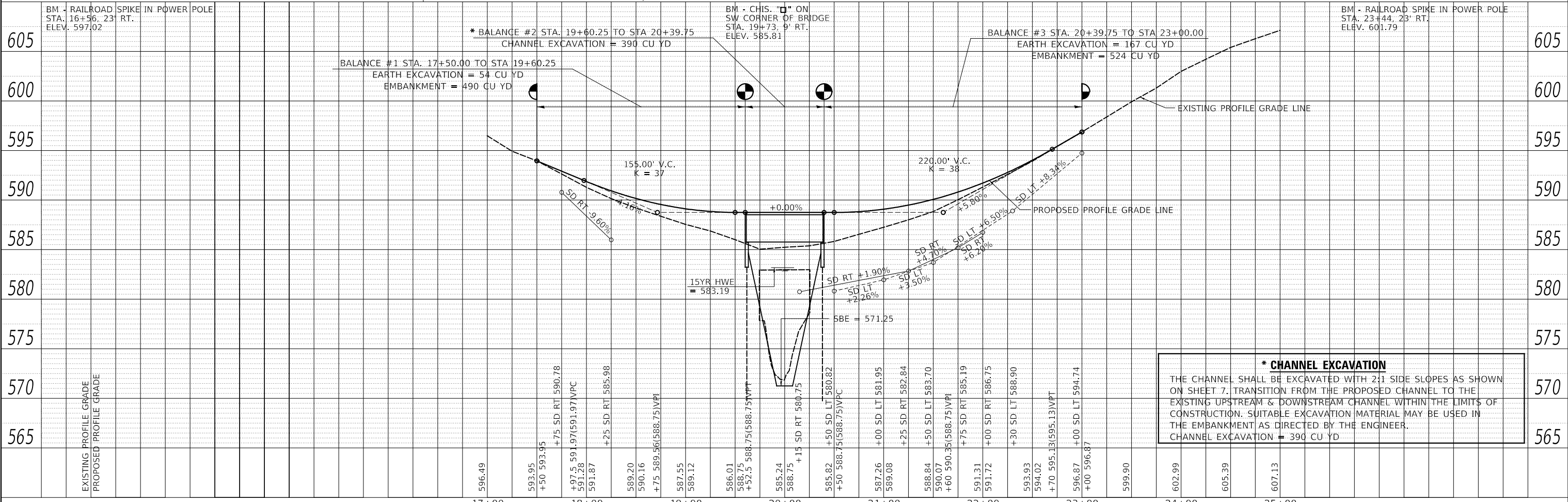
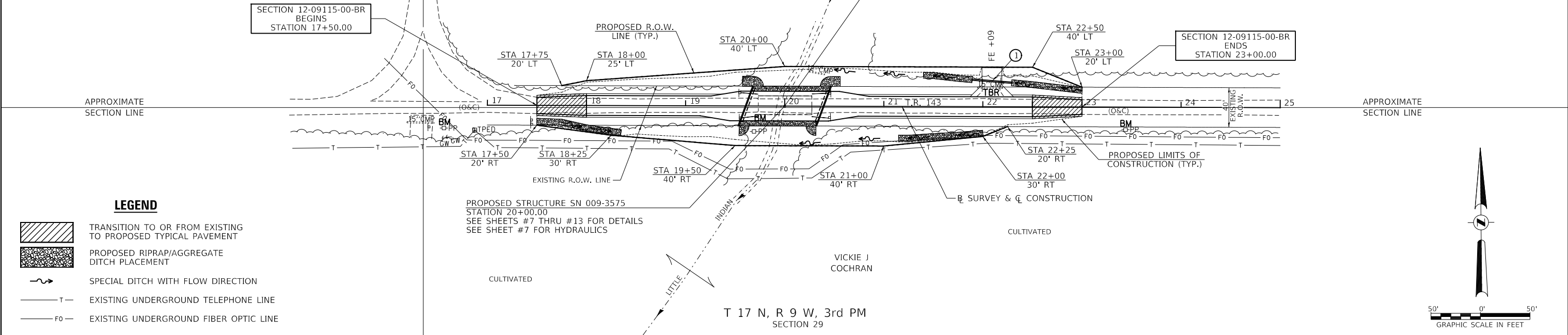
T 17 N, R 9 W, 3rd PM
SECTION 19

T 17 N, R 9 W, 3rd PM
SECTION 20

① PROPOSED PIPE CULVERT
CLASS D, TYPE 1, 15" x 40"
USFL 588.84, STA 22+29.05, 24.4' LT
DSFL 586.25, STA 21+89.16, 27.3' LT

DATE	
BY	
PLAN	
NO.	
NO.	
NO.	
NO.	

DATE	
BY	
PROFILE	
NO.	
NO.	
NO.	
NO.	



*** 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 MAY BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.
CHANNEL EXCAVATION = 390 CU YD

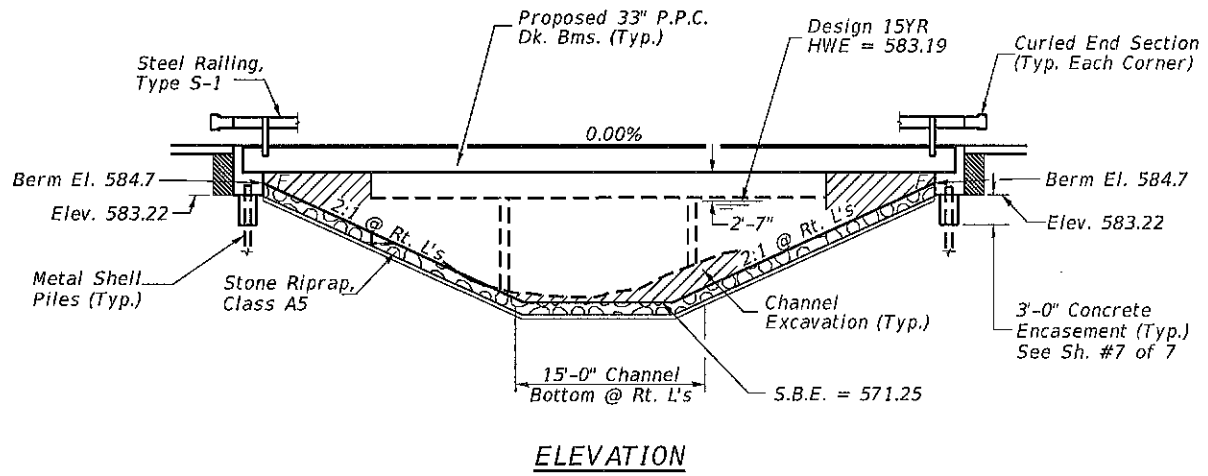
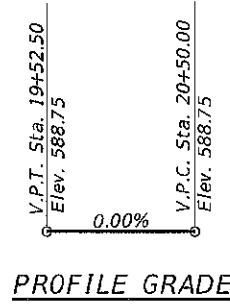
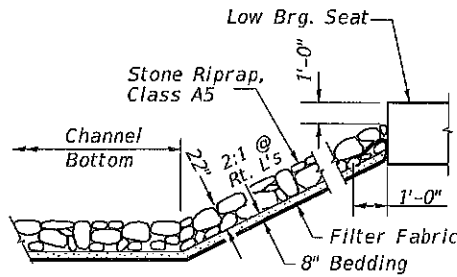
FILE NAME = V:\Bridge\3129-Cass\3129P001.dgn	USER NAME = SMierzwa	DESIGNED - CET	REVISED -	CASS COUNTY TOWNSHIP ROAD 143 OVER LITTLE INDIAN CREEK	PLAN AND PROFILE	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = 100.0000' / in.	DRAWN - CET	REVISED -			TR 143	12-09115-00-BR	CASS	20	6	
	PLOT DATE = 3/23/2021	CHECKED - STM	REVISED -			SCALE: 1"=50' SHEET NO. 1 OF 1 SHEETS STA. 17+50.00 TO STA. 23+00.00					
		DATE - 3/17/2021	REVISED -			FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT NO. DP3K(687)					

B.M.: RR Spike in Power Pole
Sta. 16+56, 23' Rt.
Elev. 597.02

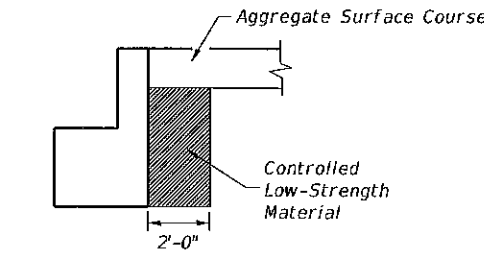
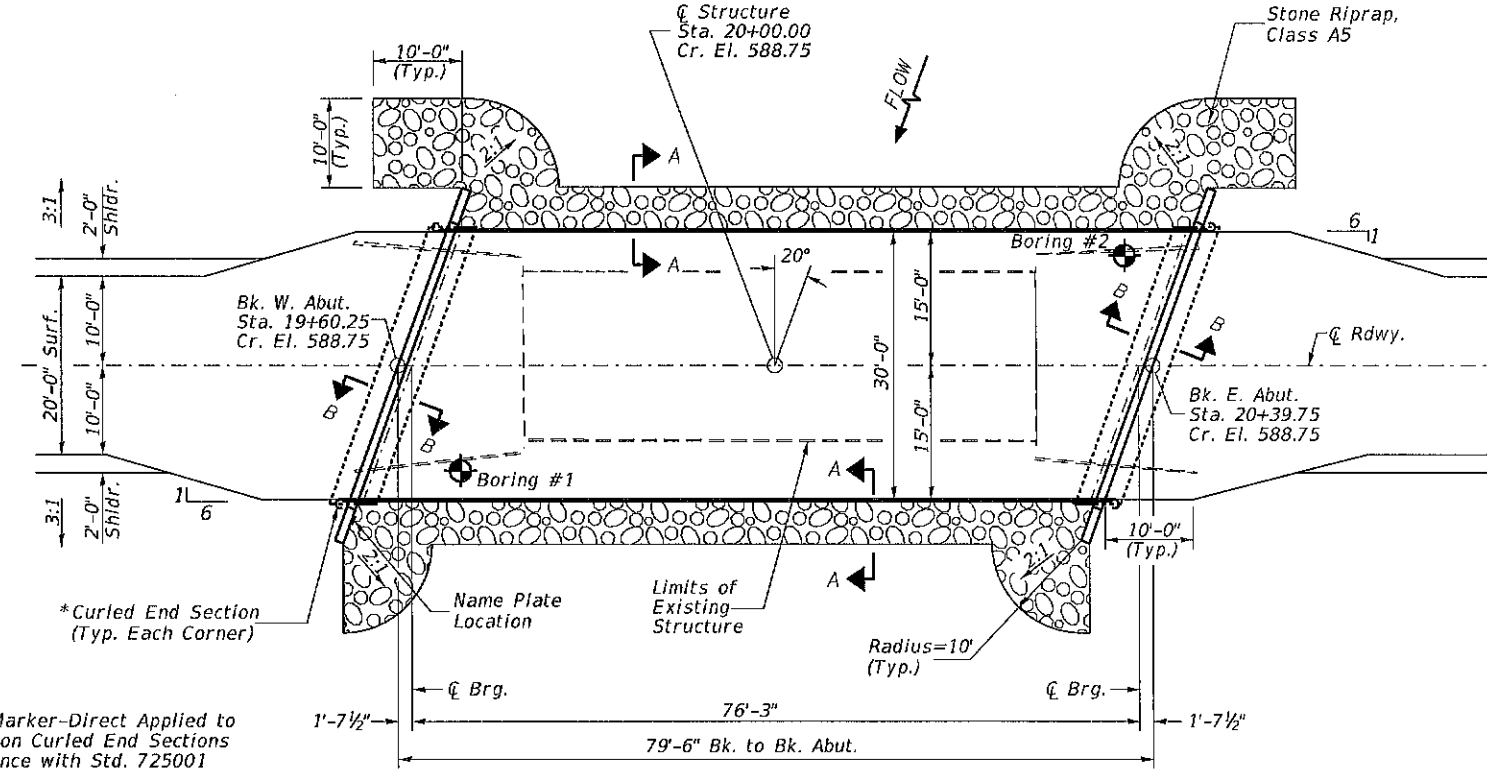
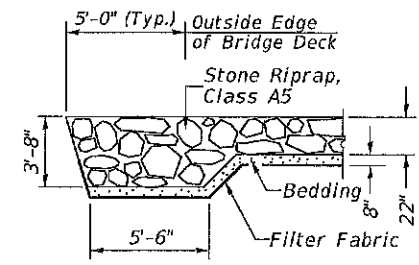
RR Spike in Power Pole
Sta. 23+44, 23' Rt.
Elev. 601.79

Existing Structure:
Three span steel stringer with a concrete deck superstructure on timber pile bent piers and timber closed abutments. The structure is ±54' back to back of abutments, ±20' out to out deck, and is not skewed.
Str. No. 009-3555

Salvage: None
Road to be closed to traffic during construction.



STONE RIPRAP DETAIL



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

DESIGN SCOUR TABLE

Location	W. Abut.	E. Abut.
Design Scour Elevation	583.22	583.22

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	1,840	382	464	583.19	0.11	0.01	583.30	583.20
Base	100	2,980	382	520	584.06	0.60	0.17	584.66	584.23

Drainage Area = 9.29 Sq. Mi. Low Grade Elev. = 588.75 @ Sta. 20+00.00

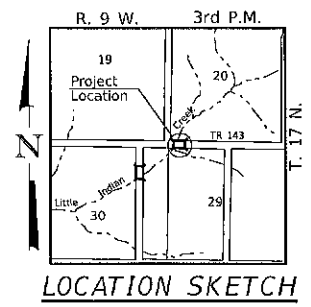
DESIGN SPECIFICATIONS
2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

(FIELD UNITS)
f_c = 3,500 p.s.i.
f_y = 60,000 p.s.i. (Rein.)

(PRECAST PRESTRESSED UNITS)
f_c = 6,000 p.s.i.
f_{ci} = 5,000 p.s.i.
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.



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) and 1021.07 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.
Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.
The existing structural steel coating may contain lead. The contractor should take appropriate precautions to deal with the presence of lead on this project.
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

LITTLE INDIAN CREEK
BUILT 202 BY
PHILADELPHIA ROAD DISTRICT
CASS COUNTY
SEC. 12-09115-00-BR
T.R. 143 STATION 20+00.00
F.A. PROJ. NO. DP3K(687)
STR. NO. 009-3575 LOADING HL-93

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

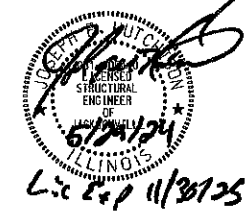
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	—	390	390
Stone Riprap, Class A5	TON	—	490	490
Filter Fabric	SQ YD	—	425	425
Removal of Existing Structures	EACH	—	—	1
Structure Excavation	CU YD	—	85	85
Concrete Structures	CU YD	—	28.4	28.4
Concrete Encasement	CU YD	—	2.6	2.6
Precast Prestressed Concrete Deck Beams (33" Depth)	SQ FT	2,325	—	2,325
Reinforcement Bars	POUND	—	3,110	3,110
Steel Railing, Type S1	FOOT	159	—	159
Furnishing Metal Shell Piles 12"x0.250"	FOOT	—	416	416
Driving Piles	FOOT	—	416	416
Test Pile Metal Shells	EACH	—	2	2
Name Plates	EACH	—	1	1
Controlled Low-Strength Material	CU YD	—	21.6	21.6
Terminal Marker - Direct Applied	EACH	4	—	4

① See Special Provisions

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.

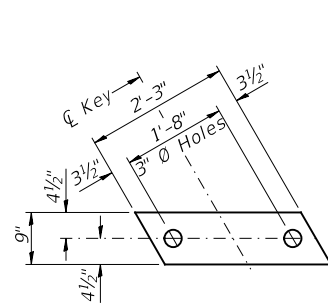
[Signature] 5/29/24
Illinois Structural No. 6440
Expires 11/30/2024



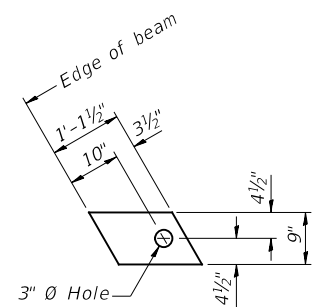
GENERAL PLAN & ELEVATION
CASS COUNTY
SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK

DESIGNED	S.T.M.
CHECKED	C.T.M./J.E.H.
DRAWN	S.T.M.
CHECKED	C.T.M./J.E.H.

SHEET NO. 1	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 143	12-09115-00-BR	CASS	20	7
7 SHEETS	S.N. 009-3575		CONTRACT NO. 93592		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT NO. DP3K(687)		

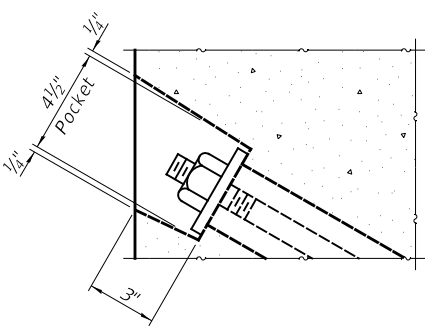


1/2" FABRIC BEARING PAD
(Interior) 18 Required

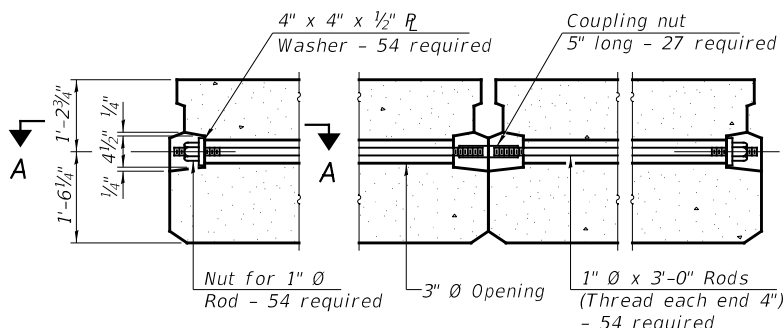


1/2" FABRIC BEARING PAD
(Exterior) 4 Required

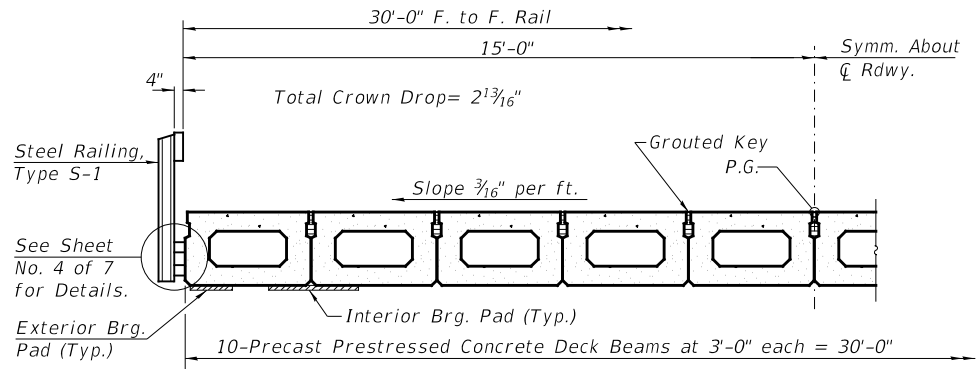
FIXED



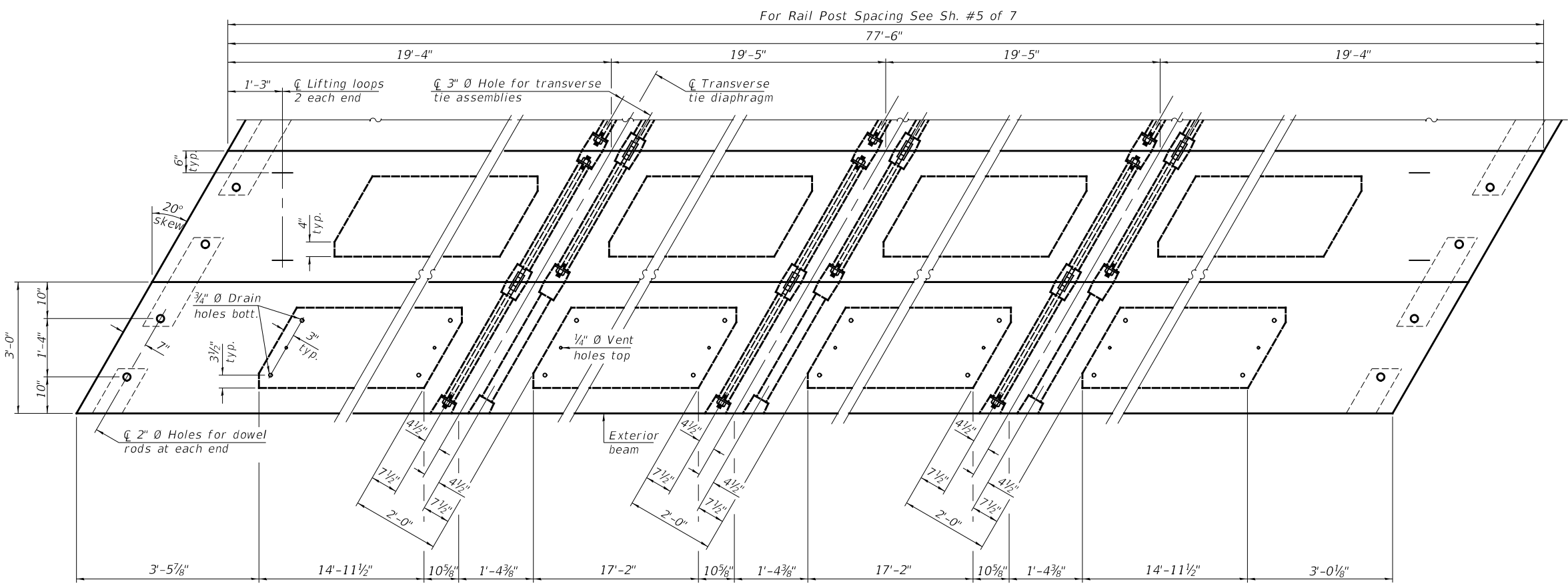
SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY



HALF CROSS SECTION



PLAN VIEW

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (33" Depth)	SQ FT	2,325

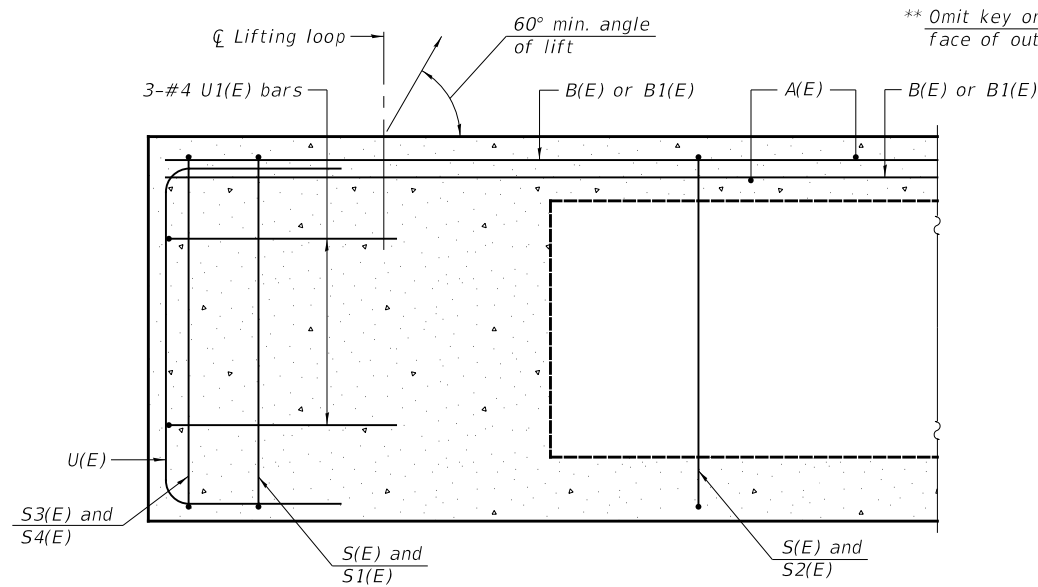
Note: Connect beams in pairs with the transverse tie configuration shown.

NOTES

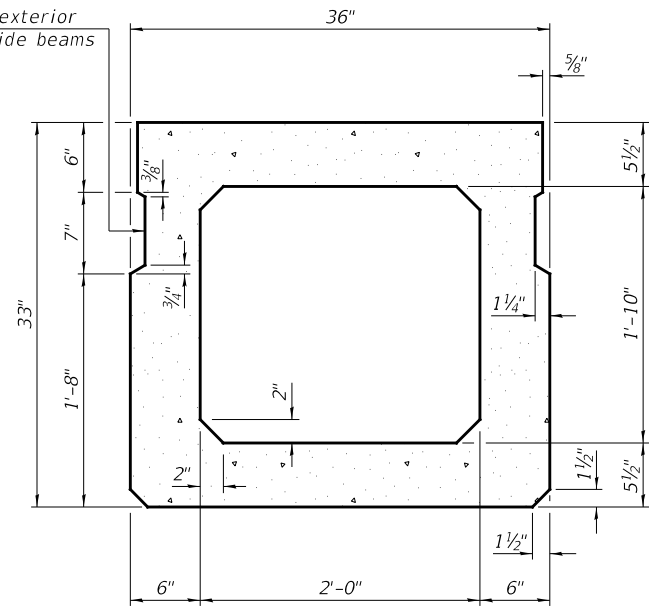
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior 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
CASS COUNTY
SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK

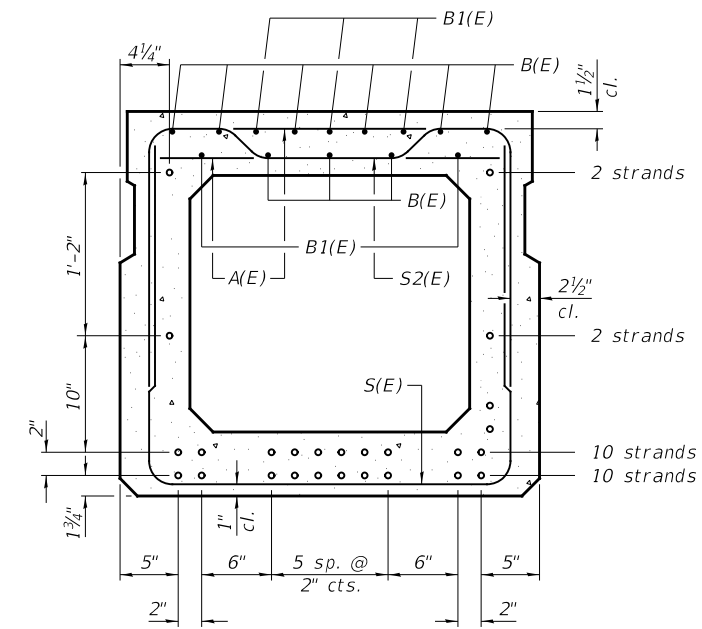
SHEET NO. 2 7 SHEETS	ROUTE NO. TR 143	SECTION 12-09115-00-BR	COUNTY CASS	TOTAL SHEETS 20	SHEET NO. 8
	S.N. 009-3575		CONTRACT NO. 93592		
	FED. ROAD DIST. 7	ILLINOIS	FED. AID PROJECT NO. DP3K(687)		



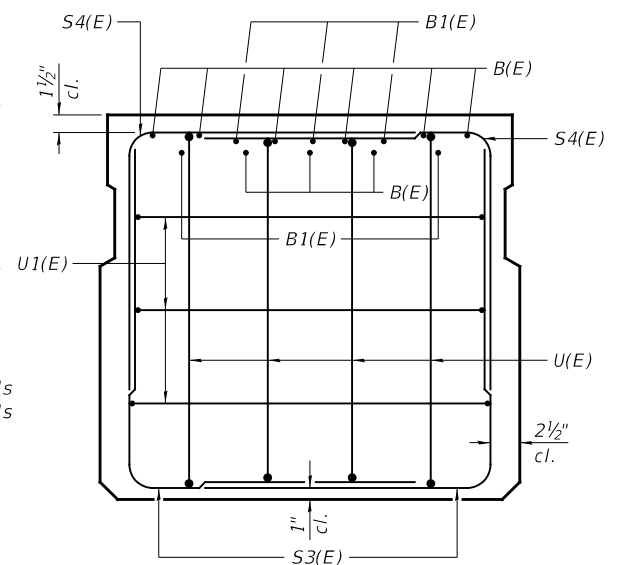
SECTION A-A



SECTION B-B
(Showing dimensions)



SECTION B-B



VIEW C-C

** Rail post anchor devices (Sheet 4 of 7) to be cast into exterior face of outside beams.

24-1/2" Ø Strands Each Strand Stressed to 30,900 Lbs.
10-Strands 1 3/4" up, 10-Strands 3 3/4" up,
2-Strands 13 3/4" up, 2-Strands 27 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.

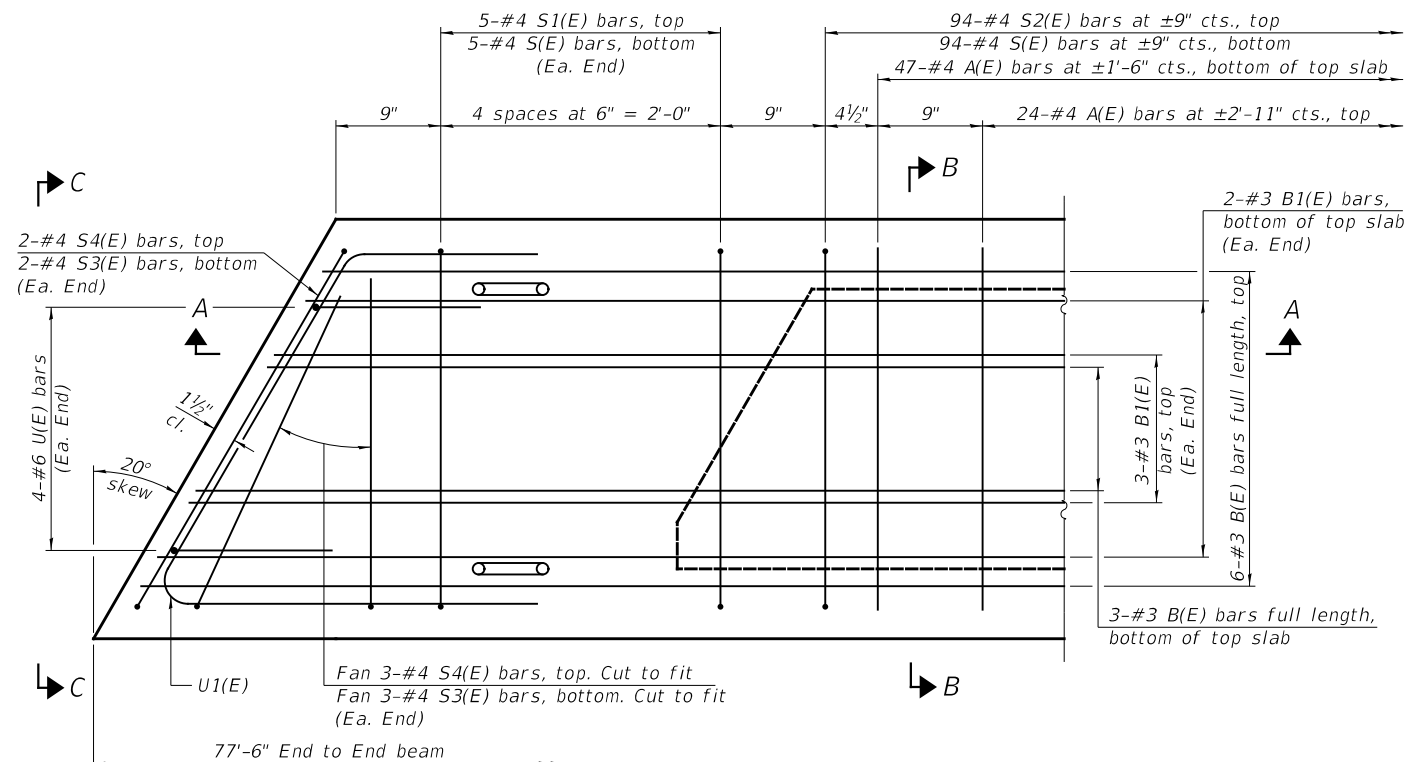
BAR LIST
ONE BEAM ONLY
(For information only)

BAR	NO.	SIZE	LENGTH	SHAPE
A(E)	71	#4	2'-7"	—
B(E)	9	#3	*77'-3"	—
B1(E)	10	#3	10'-0"	—
S(E)	104	#4	7'-8"	┌
S1(E)	10	#4	6'-5"	┌
S2(E)	94	#4	6'-8"	┌
S3(E)	10	#4	5'-4"	┌
S4(E)	10	#4	4'-8"	┌
U(E)	8	#6	5'-0"	┌
U1(E)	6	#4	6'-1"	┌

Note: See Sheet 2 of 7 for additional details and Bill of Material.

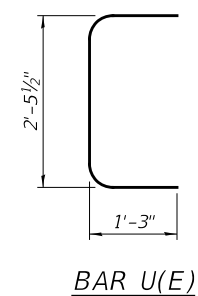
*Total length, lap as necessary.

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

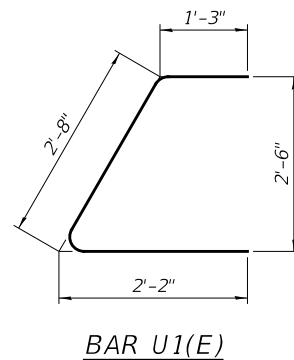


PLAN VIEW

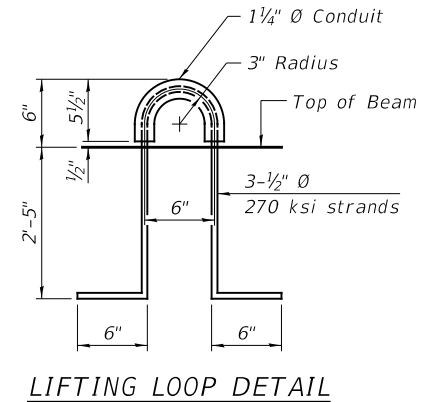
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



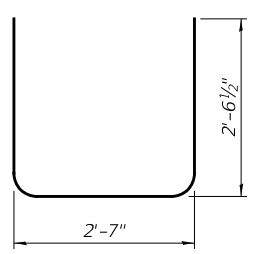
BAR U(E)



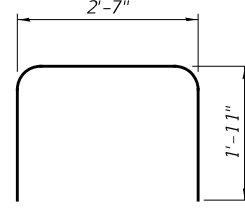
BAR U1(E)



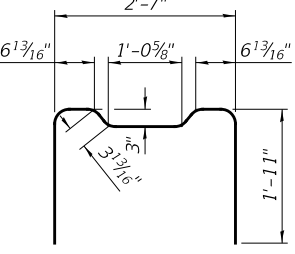
LIFTING LOOP DETAIL



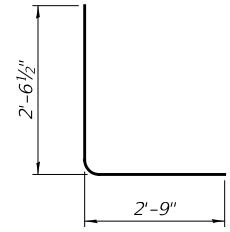
BAR S(E)



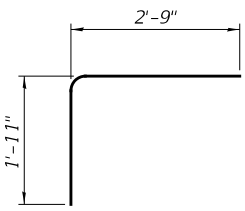
BAR S1(E)



BAR S2(E)



BAR S3(E)

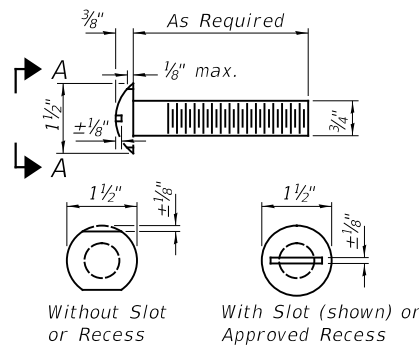


BAR S4(E)

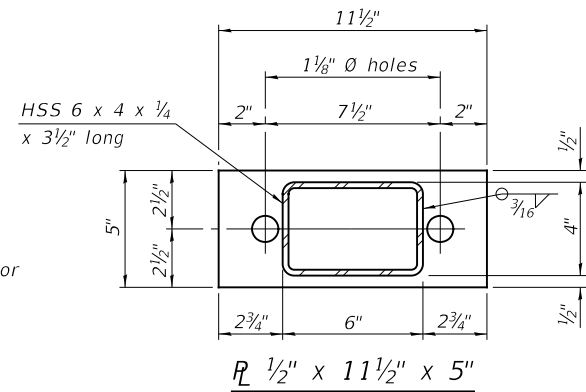
SUPERSTRUCTURE DETAILS
CASS COUNTY
SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK

SHEET NO. 3 7 SHEETS	ROUTE NO. TR 143	SECTION 12-09115-00-BR	COUNTY CASS	TOTAL SHEETS 20	SHEET NO. 9
	S.N. 009-3575		CONTRACT NO. 93592		
	FED. ROAD DIST. 7	ILLINOIS	FED. AID PROJECT NO. DP3K(687)		

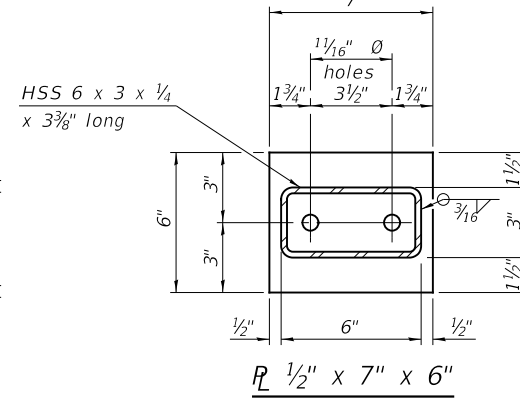
SEE SHEET NO. 5 OF 7 FOR RAIL POST SPACING



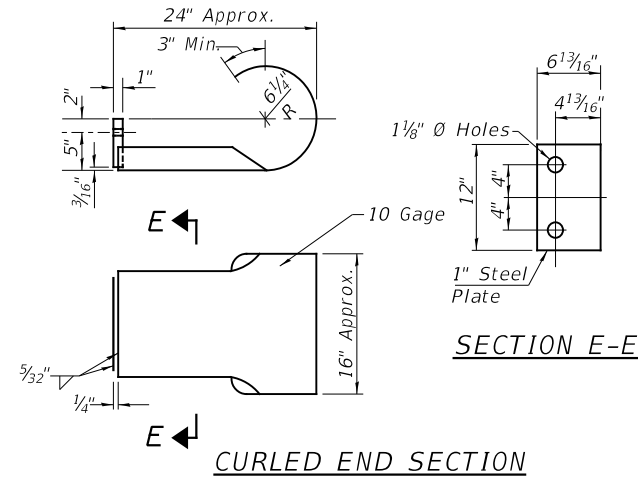
VIEW A-A
ROUND HEAD BOLT



SECTION B-B
R 1/2" x 11 1/2" x 5"

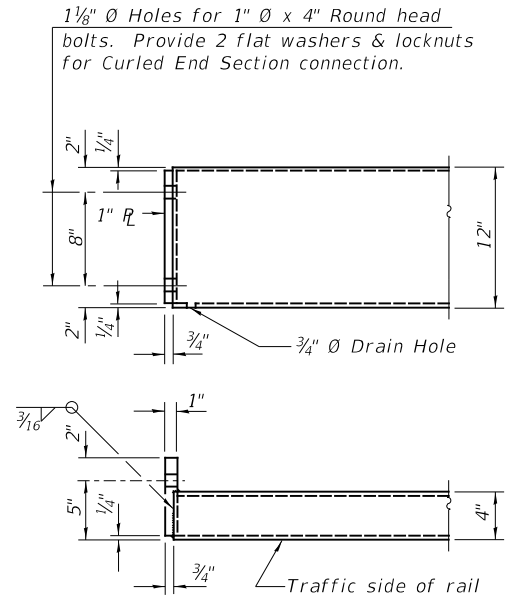


SECTION AT RAILING POST
R 1/2" x 7" x 6"

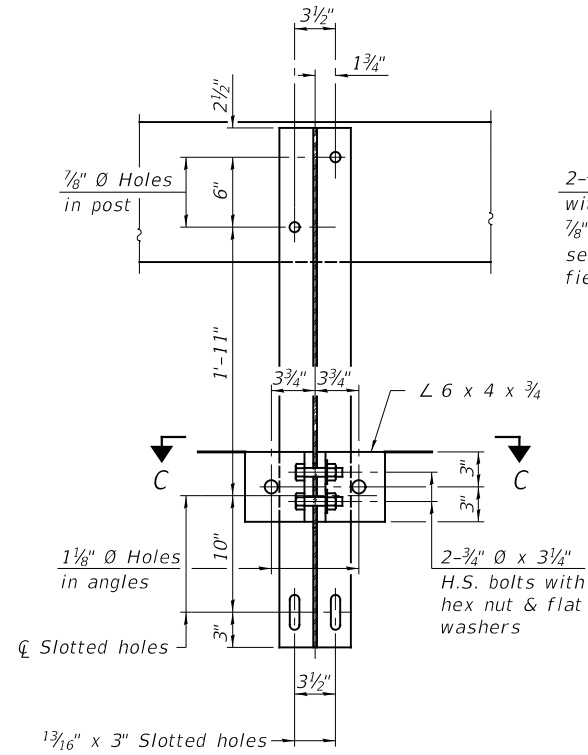


SECTION E-E
CURLLED END SECTION

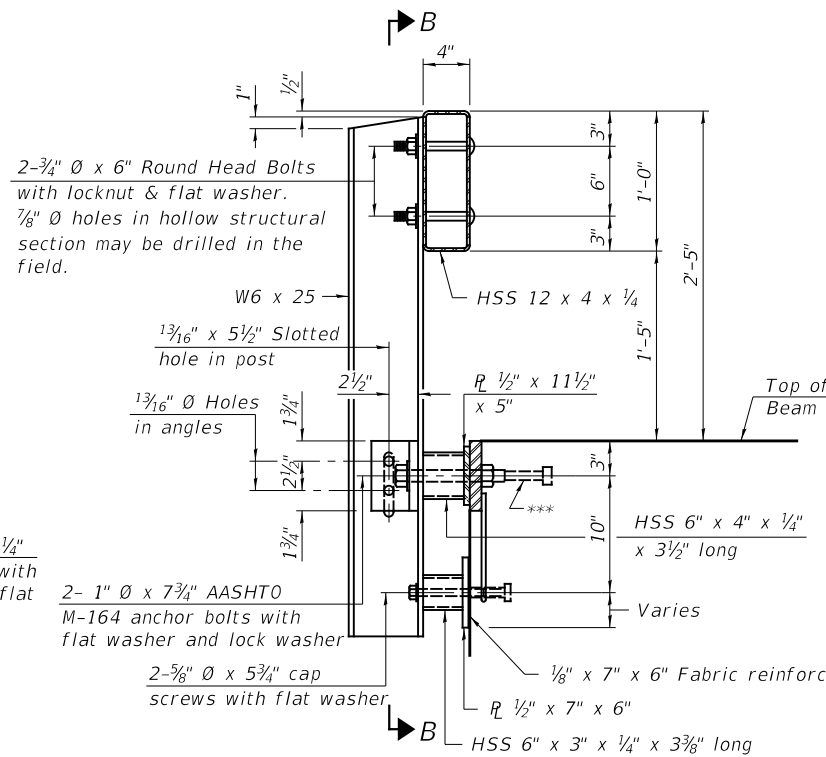
(4 Req'd) Cost Included with Steel Railing, Type S1.
Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (Typ. Each Corner)



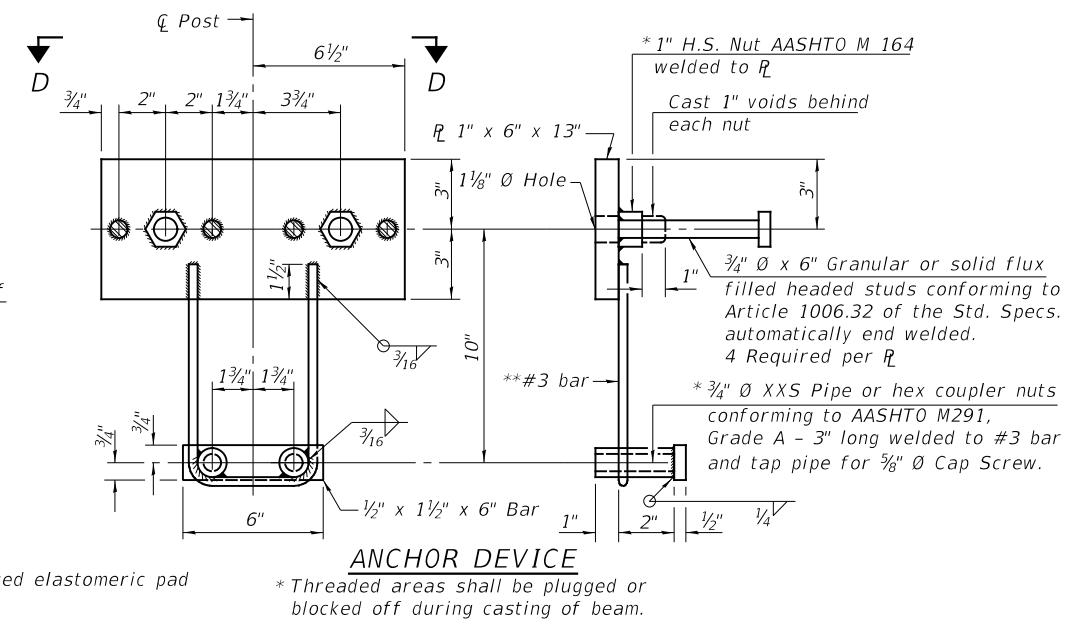
END OF RAIL DETAILS



SECTION B-B



SECTION AT RAILING POST



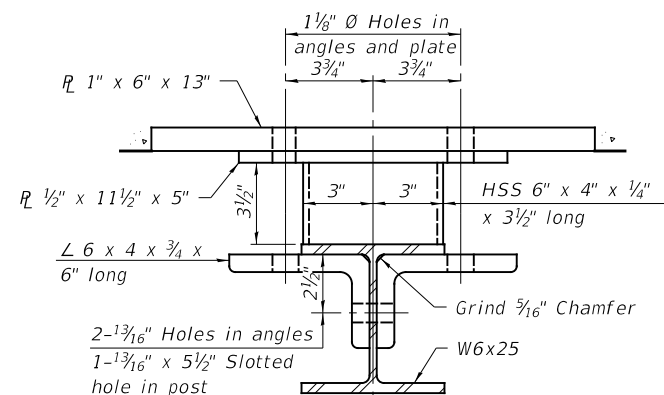
ANCHOR DEVICE

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

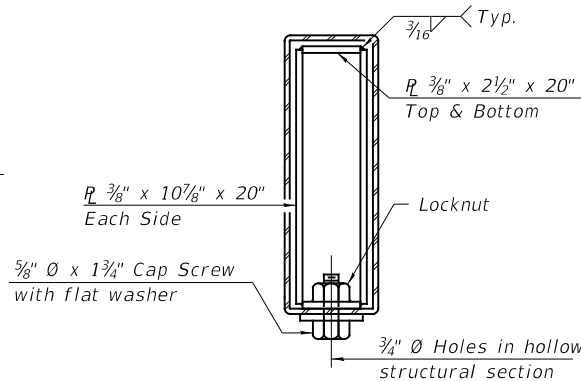
NOTES

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 Railing, Type S1.
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

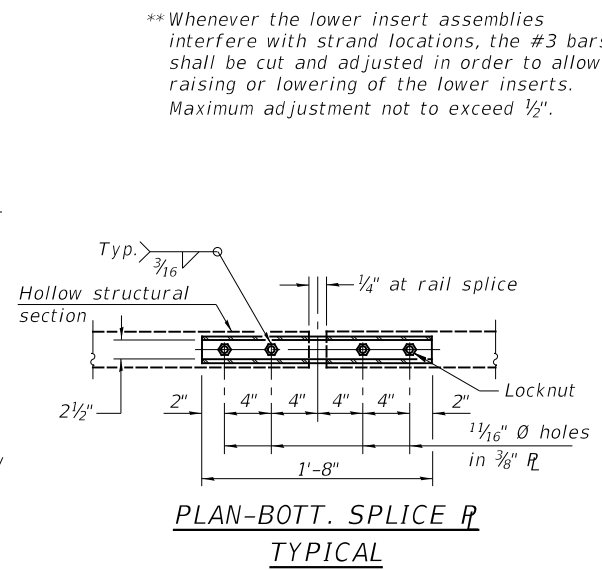
***The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



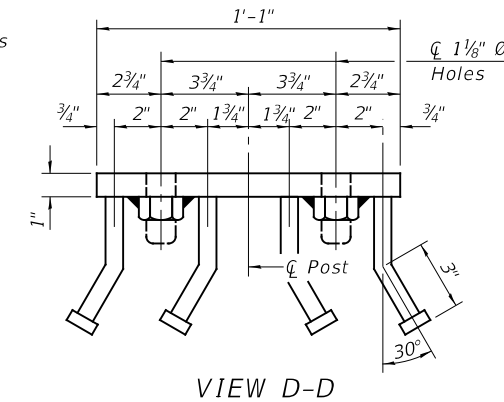
SECTION C-C



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE R
TYPICAL



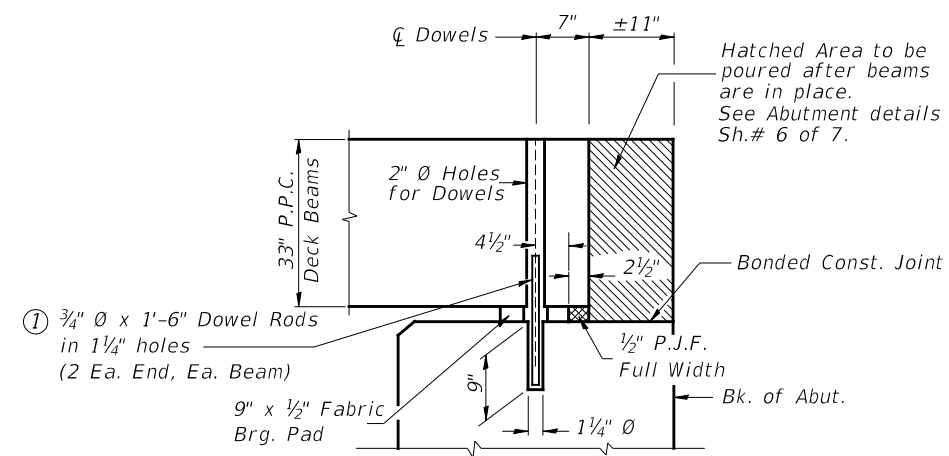
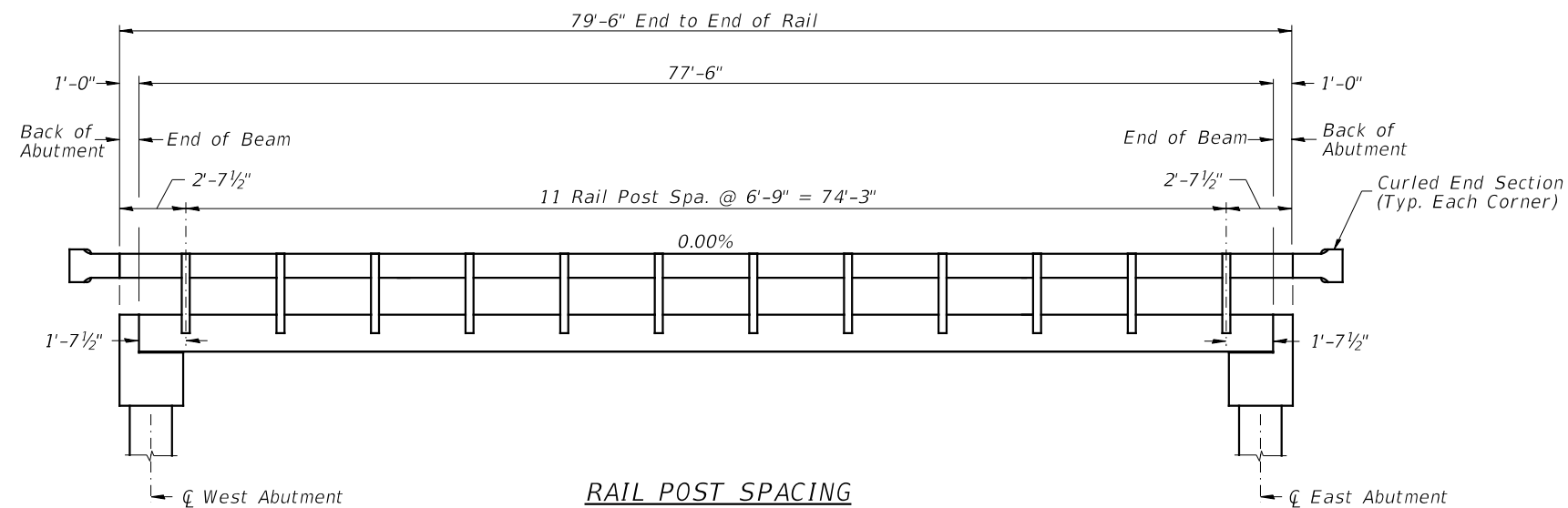
VIEW D-D

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Steel Railing, Type S1	FOOT	159

STEEL RAILING, TYPE S-1
CASS COUNTY
SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK

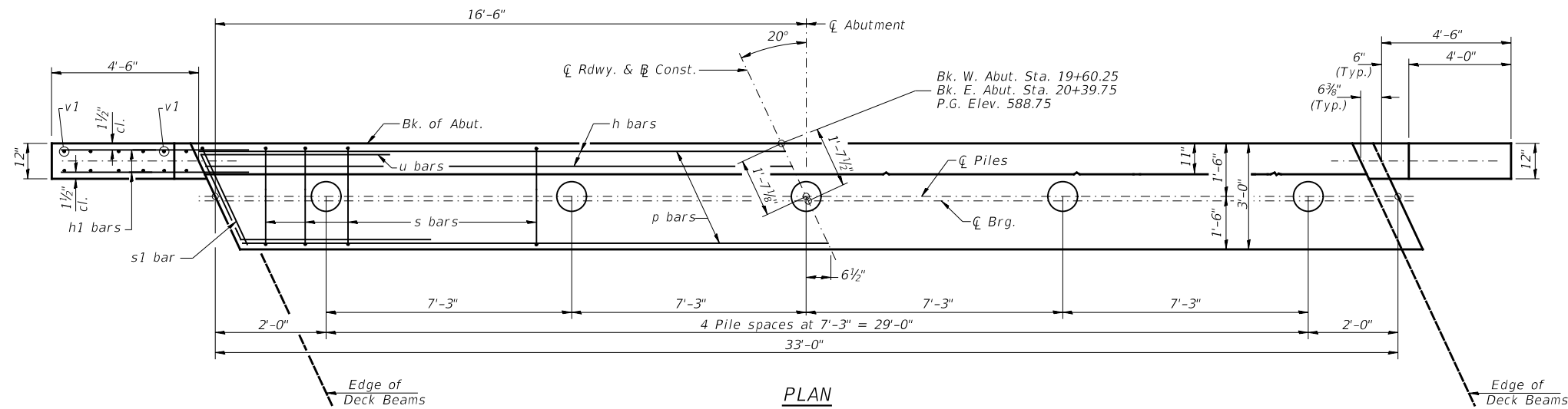
SHEET NO.	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7 SHEETS	TR 143	12-09115-00-BR	CASS	20	10
S.N. 009-3575			CONTRACT NO. 93592		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT NO. DP3K(687)		



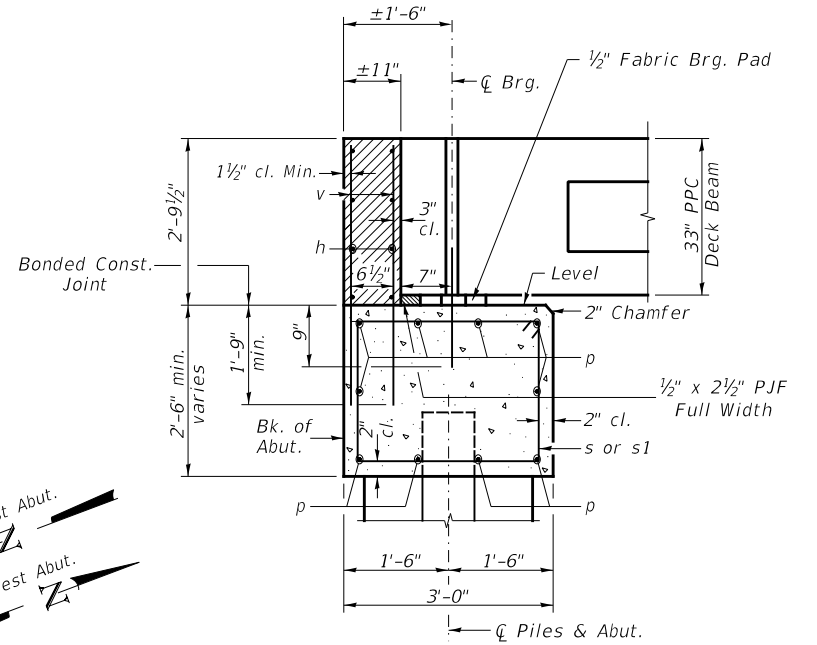
① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.

**RAIL POST SPACING AND
SUPERSTRUCTURE DETAILS
CASS COUNTY
SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK**

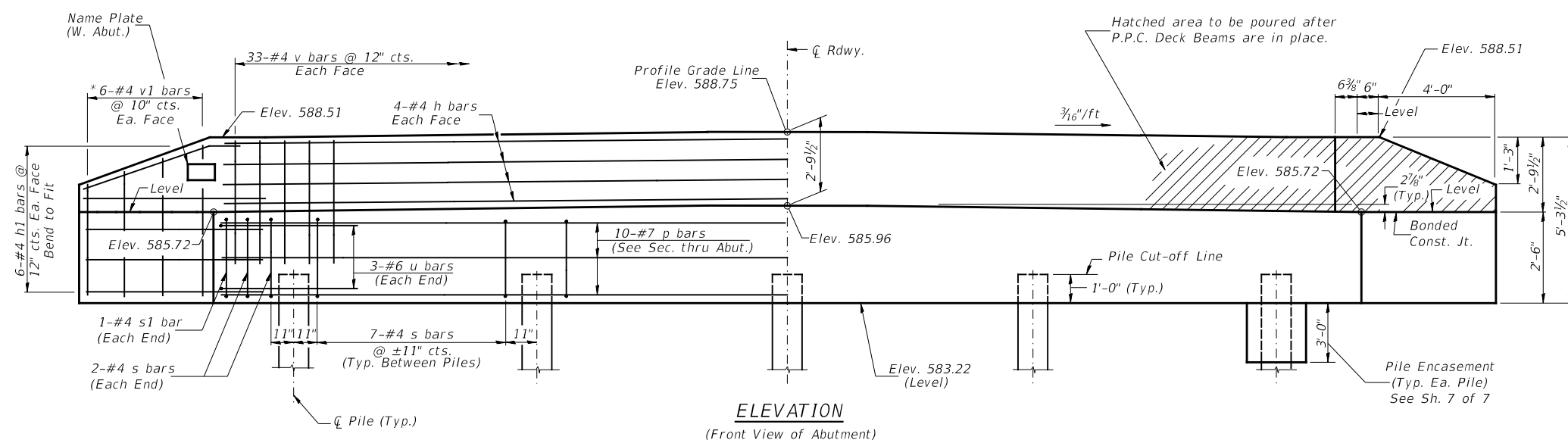
SHEET NO. 5 7 SHEETS	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 143	12-09115-00-BR	CASS	20	11
	S.N. 009-3575		CONTRACT NO. 93592		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT NO. DP3K(687)		



PLAN



SECTION THRU ABUT.
(At Right Angles)



ELEVATION
(Front View of Abutment)

TWO ABUTMENTS
BILL OF MATERIAL

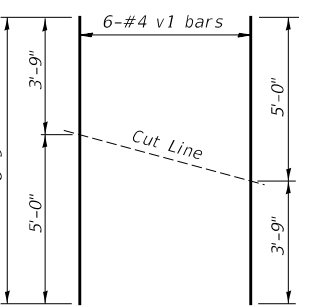
BAR	NO.	SIZE	LENGTH	SHAPE
h	16	#4	32'-9"	—
h1	48	#4	6'-6"	—
p	20	#7	32'-9"	—
s	64	#4	10'-5"	□
s1	4	#4	7'-10"	□
u	12	#6	11'-9"	▤
v	132	#4	4'-6"	—
v1	24	#4	8'-9"	—
Structure Excavation			CU YD	85
Concrete Structures			CU YD	28.4
Concrete Encasement			CU YD	2.6
Reinforcement Bars			POUND	3,110
Furnishing Metal Shell Piles 12"x0.250"			FOOT	416
Driving Piles			FOOT	416
Test Pile Metal Shells			EACH	2
Name Plates			EACH	1

NOTES

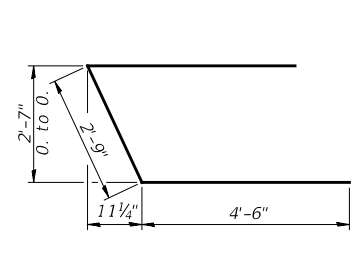
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- All edges shall have standard 3/4" chamfer.

PILE DATA

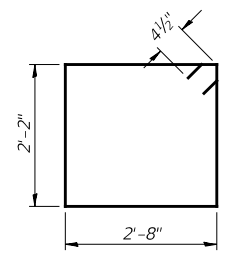
Type & Size: Metal Shell 12"x0.250" walls
 Nominal Required Bearing: 315 kips
 Factored Resistance Available: 175 kips
 Est. Length: 60' West Abutment
 44' East Abutment
 No. Req'd.: 10 (Includes 1 Test Pile at Each Abut.)



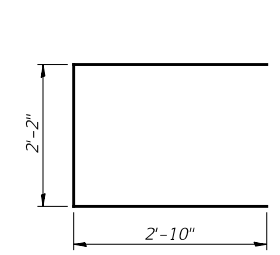
BAR CUTTING DIAGRAM



BAR s



BAR s1



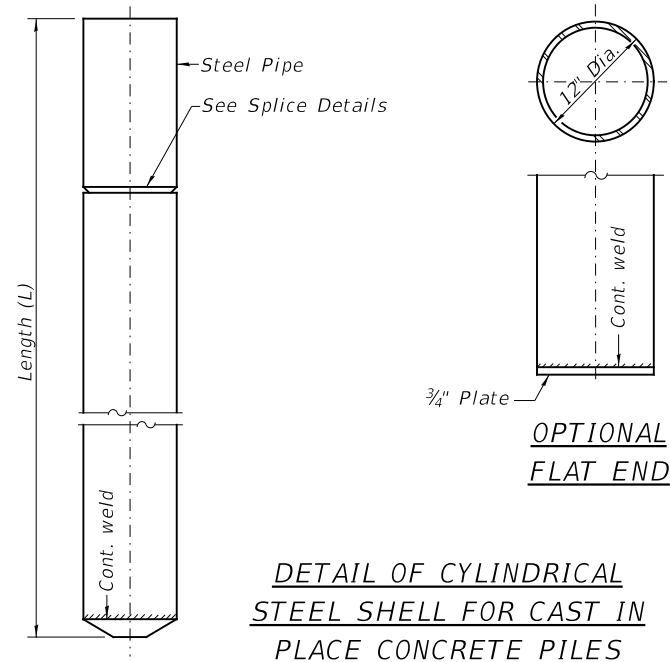
BAR s

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

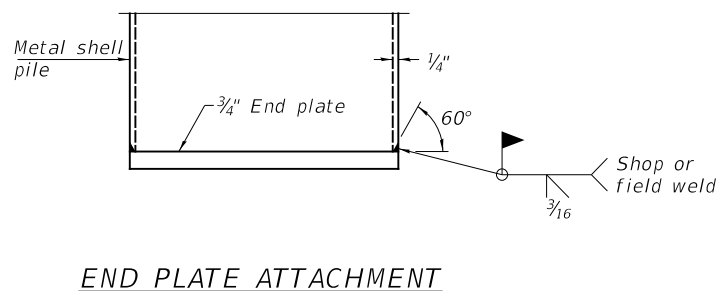
ABUTMENTS
CASS COUNTY
SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK

SHEET NO. 6 7 SHEETS	ROUTE NO. TR 143	SECTION 12-09115-00-BR	COUNTY CASS	TOTAL SHEETS 20	SHEET NO. 12
	S.N. 009-3575		CONTRACT NO. 93592		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT NO. DP3K(687)		

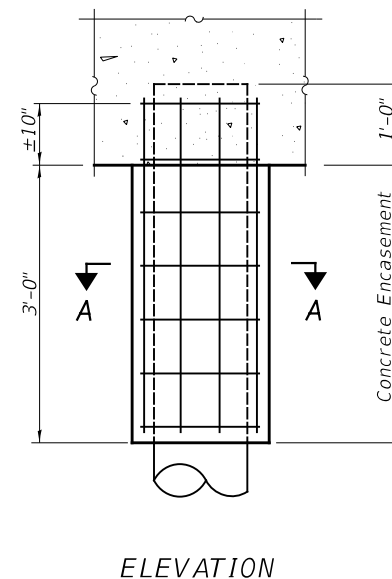
Notes: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.25 inches with a tolerance of 5%. The shell shall be according to Article 1006.05(a) of the Standard Specifications, and shall be ASTM A252 Grade 3.



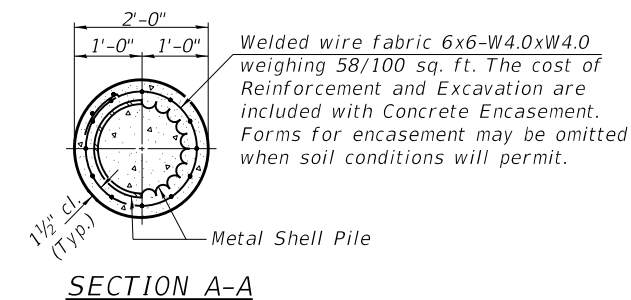
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



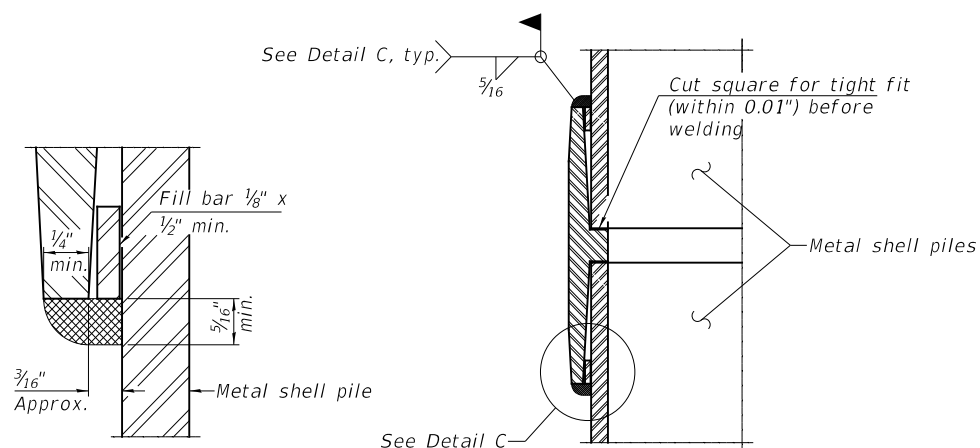
END PLATE ATTACHMENT



ELEVATION



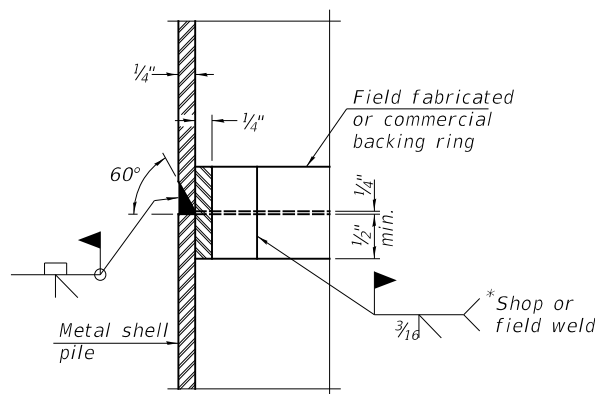
DETAIL OF METAL SHELL PILE ENCASEMENT AT ABUTMENTS



DETAIL C

WELDED COMMERCIAL SPLICE

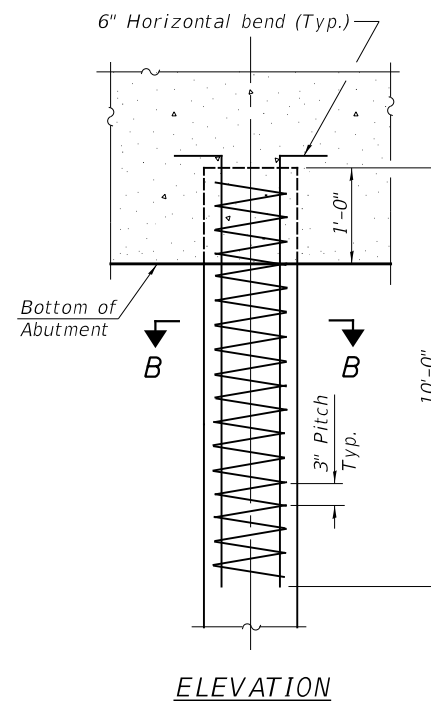
Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.



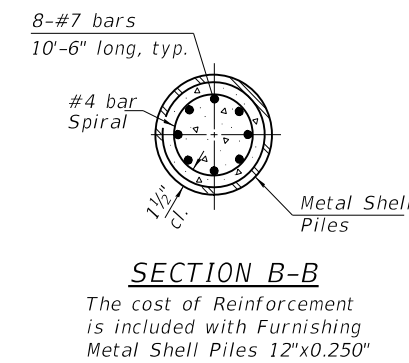
COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.



ELEVATION



SECTION B-B

The cost of Reinforcement is included with Furnishing Metal Shell Piles 12"x0.250"

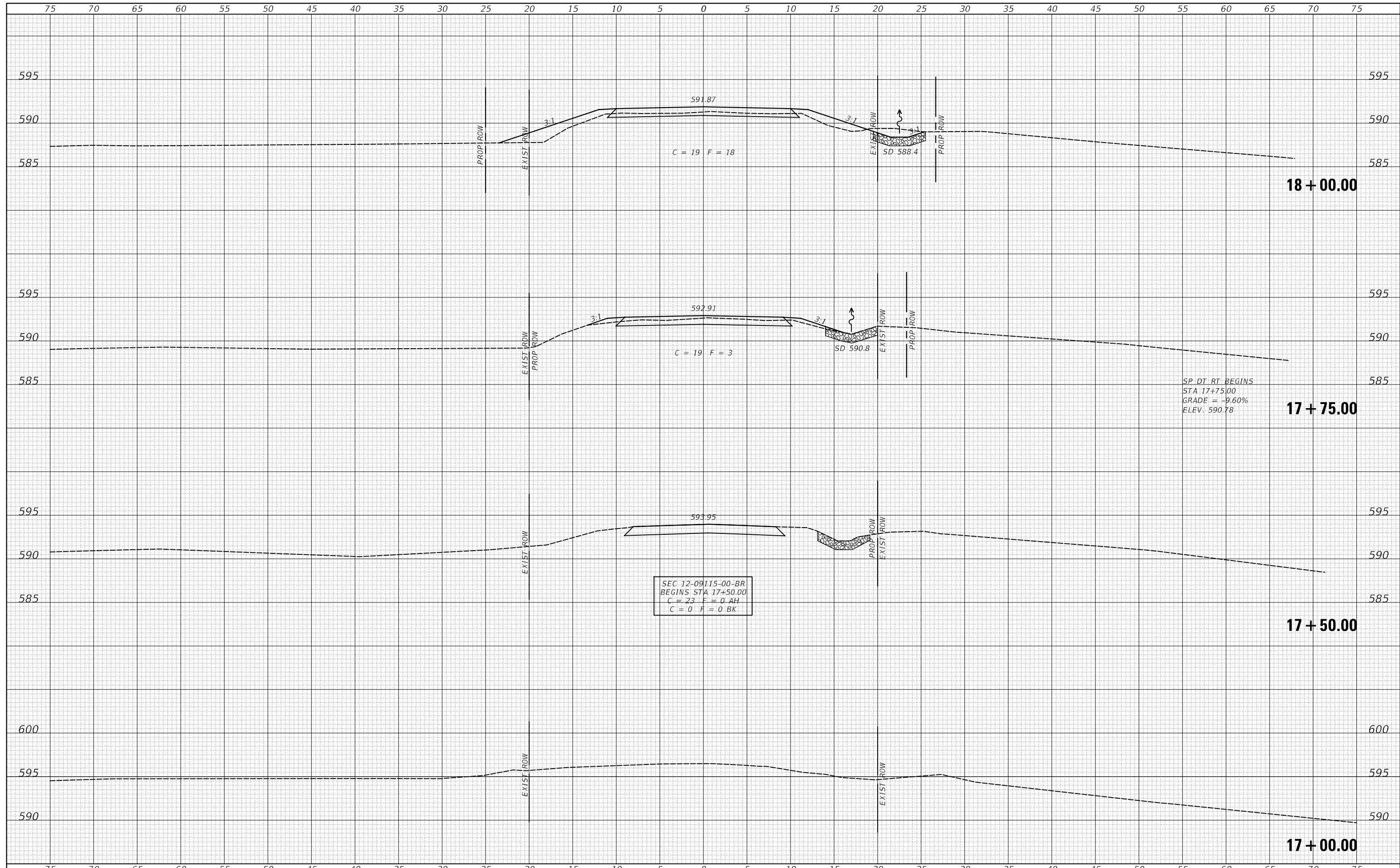
REINFORCEMENT AT ABUTMENTS
(Omit when concrete encasement is specified)

METAL SHELL PILE DETAILS
CASS COUNTY
SECTION 12-09115-00-BR
TOWNSHIP ROAD 143 OVER
LITTLE INDIAN CREEK

SHEET NO. 7 7 SHEETS	ROUTE NO. TR 143	SECTION 12-09115-00-BR	COUNTY CASS	TOTAL SHEETS 20	SHEET NO. 13
	S.N. 009-3575		CONTRACT NO. 93592		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT NO. DP3K(687)		

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

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



FILE NAME = V:\Bridges\3129-Cass\3129xshts.dgn
 USER NAME = smierzwa
 PLOT SCALE = 10.0000' / in.
 PLOT DATE = 3/23/2021

DESIGNED - CET
 DRAWN - CET
 CHECKED - STM
 DATE - 3/18/2021

REVISED -
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**CASS COUNTY
 TOWNSHIP ROAD 143 OVER
 LITTLE INDIAN CREEK**

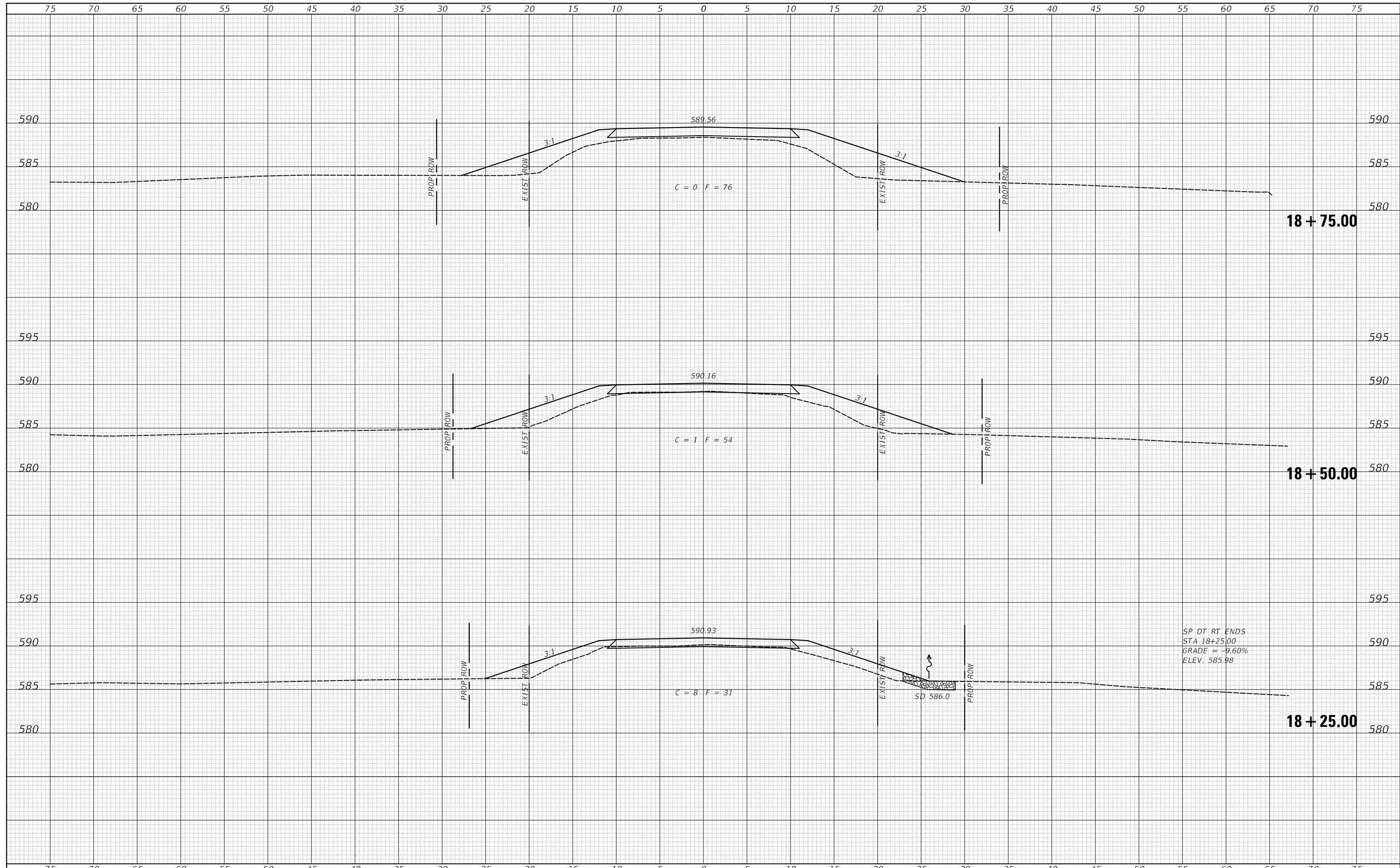
CROSS SECTIONS

SCALE: 1" = 5' SHEET 1 OF 7 SHEETS STA. 17+00.00 TO STA. 18+00.00

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	14
CONTRACT NO. 93592				
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT NO. DP3K(687)

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

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



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 PLOT DATE = 3/23/2021

REVISIED -
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 DATE - 3/18/2021

**CASS COUNTY
 TOWNSHIP ROAD 143 OVER
 LITTLE INDIAN CREEK**

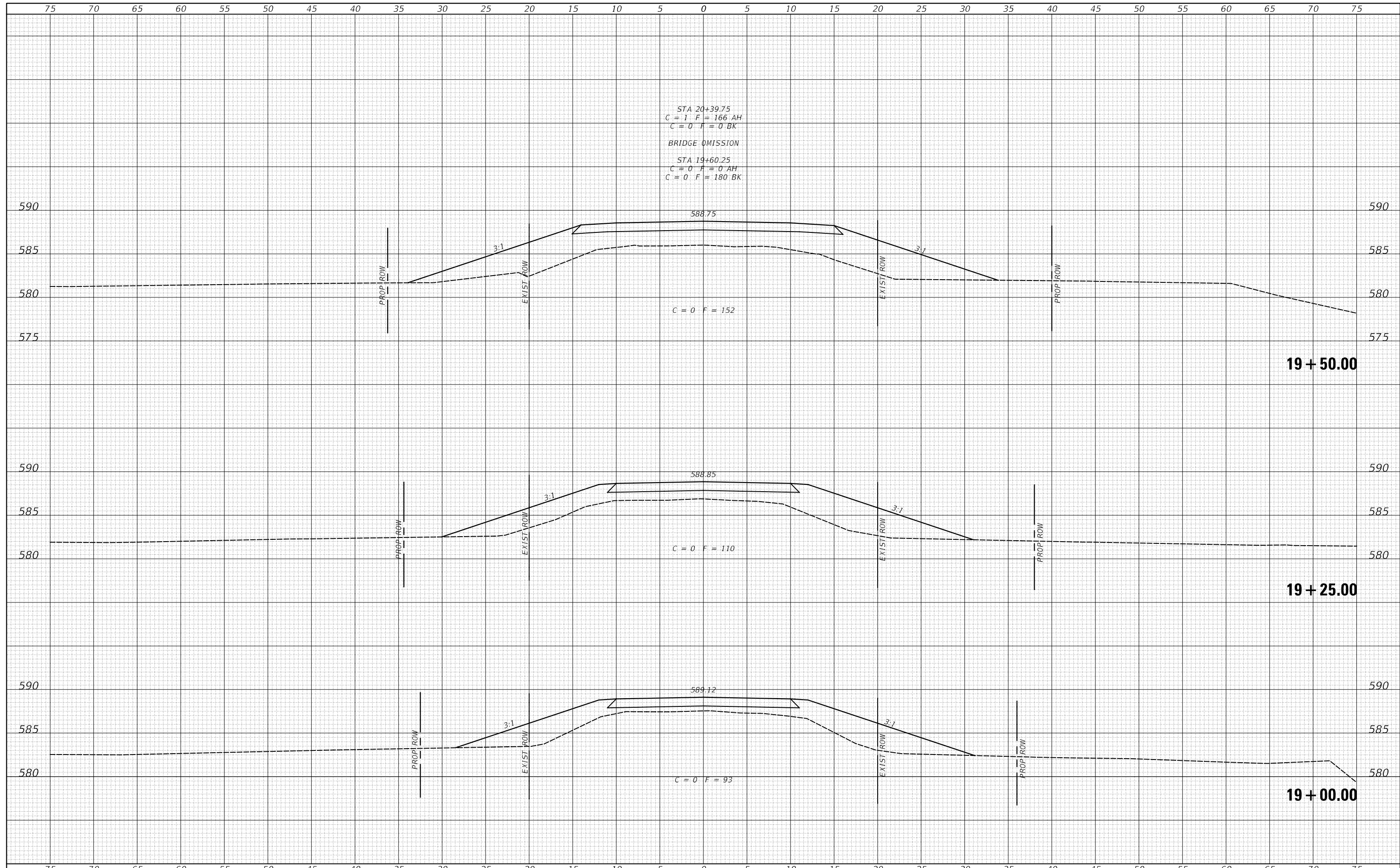
CROSS SECTIONS

SCALE: 1" = 5' SHEET 2 OF 7 SHEETS STA. 18+25.00 TO STA. 18+75.00

RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	15
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93592	
FED. AID PROJECT NO. DP3K(687)				

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
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DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
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 PLOT SCALE = 10.0000 ' / in.
 PLOT DATE = 3/23/2021

REVISIED -
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 REVISIED -
 DATE - 3/18/2021

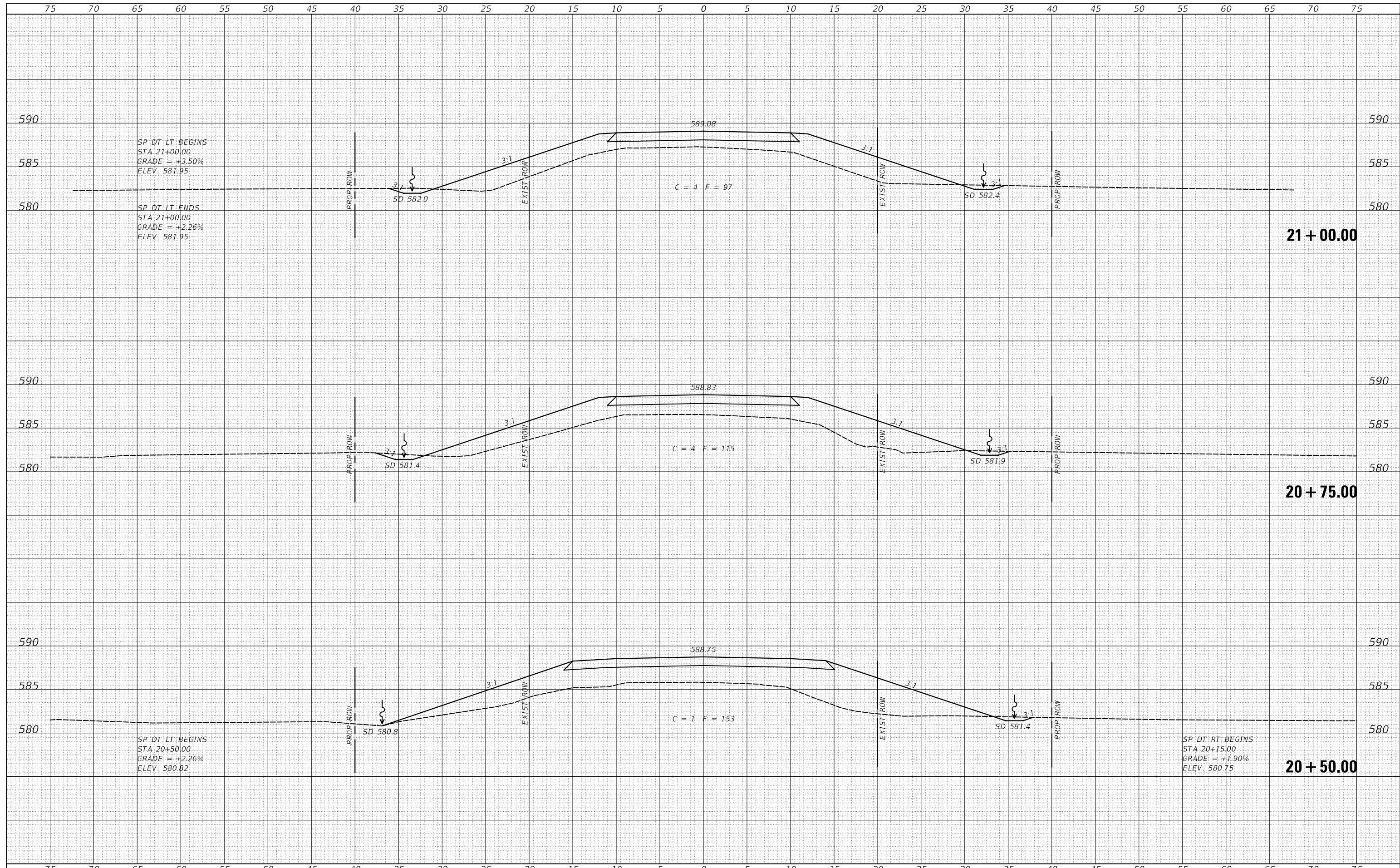
**CASS COUNTY
 TOWNSHIP ROAD 143 OVER
 LITTLE INDIAN CREEK**

CROSS SECTIONS
 SCALE: 1" = 5'
 SHEET 3 OF 7 SHEETS
 STA. 19+00.00 TO STA. 19+50.00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	16
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93592	
FED. AID PROJECT NO. DP3K(687)				

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

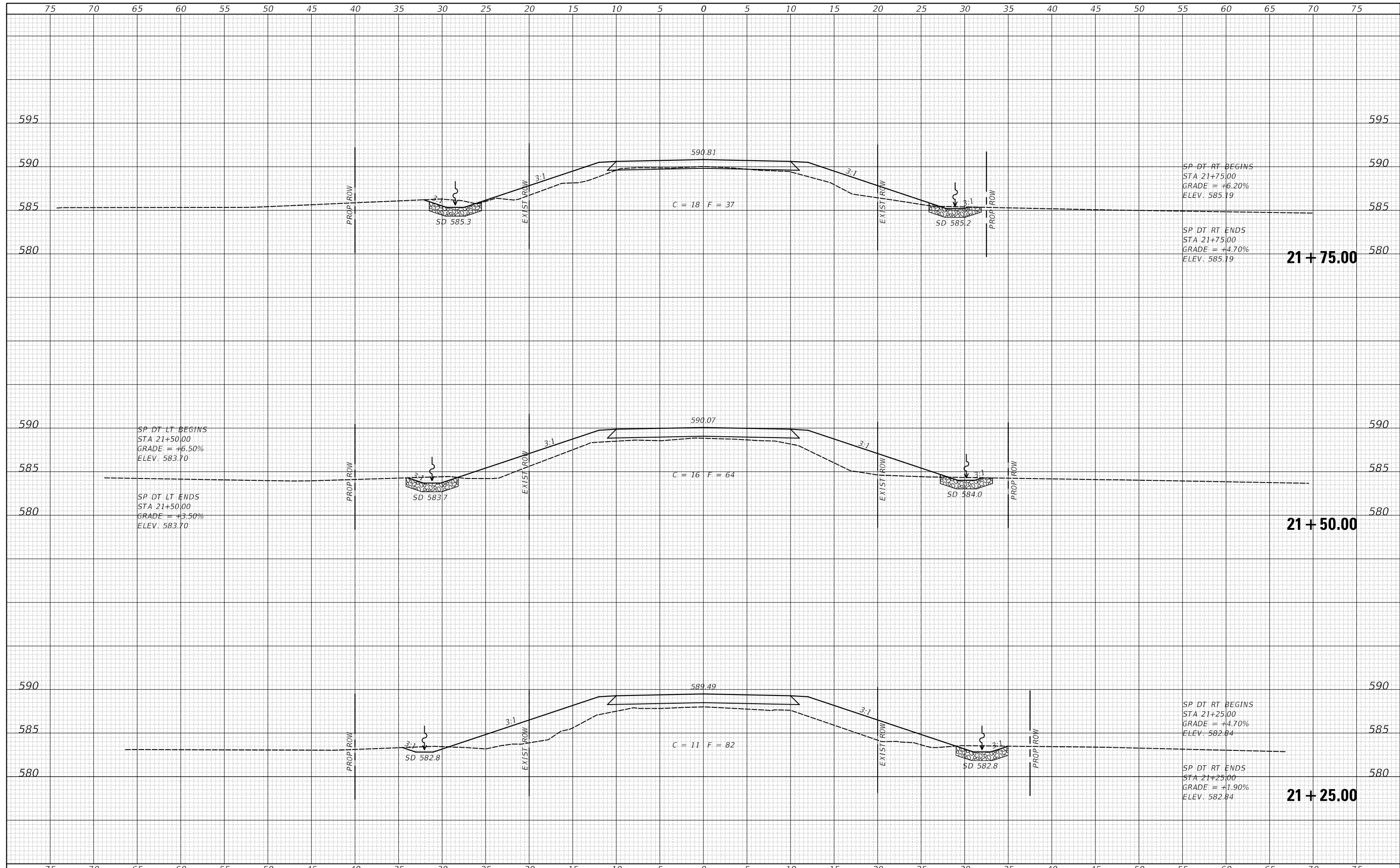
DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED



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Default	PLOT SCALE = 10.0000' / in.	DRAWN - CET	REVISD -		SCALE: 1" = 5'	SHEET 4	OF 7 SHEETS	STA. 20+50.00 TO STA. 21+00.00
	PLOT DATE = 3/23/2021	CHECKED - STM	REVISD -					
		DATE - 3/18/2021	REVISD -					TOTAL SHEETS 20 SHEET NO. 17

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

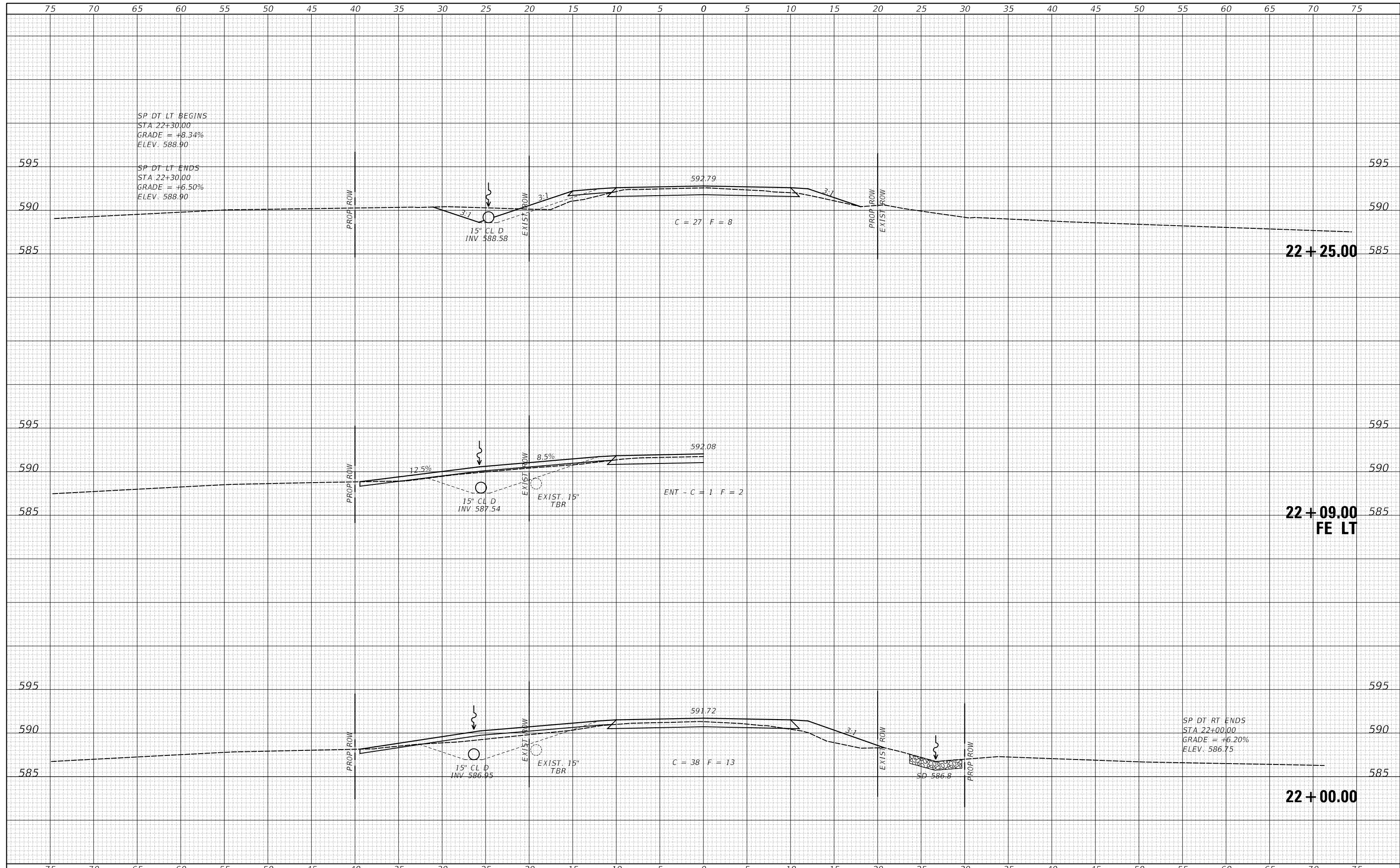
DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS CHECKED
	AREAS CHECKED



FILE NAME = V:\Bridges\3129-Cass\3129xshts.dgn	USER NAME = smierzwa	DESIGNED - CET	REVISED -	CASS COUNTY TOWNSHIP ROAD 143 OVER LITTLE INDIAN CREEK	CROSS SECTIONS		RT. TR 143	SECTION 12-09115-00-BR	COUNTY CASS	TOTAL SHEETS 20	SHEET NO. 18	
Default	PLOT SCALE = 10.0000' / in.	CHECKED - STM	REVISED -		SCALE: 1" = 5'	SHEET 5	OF 7 SHEETS	STA. 21+25.00	TO STA. 21+75.00	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. DP3K(687)
	PLOT DATE = 3/23/2021	DATE - 3/18/2021	REVISED -		CONTRACT NO. 93592							

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

DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
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 PLOT SCALE = 10.0000' / in.
 PLOT DATE = 3/23/2021

REVISIONS
 REVISION NO. | DATE | BY | DESCRIPTION
 1 | 3/18/2021 | STM | CHECKED
 2 | 3/18/2021 | CET | DRAWN
 3 | 3/18/2021 | CET | DESIGNED

**CASS COUNTY
 TOWNSHIP ROAD 143 OVER
 LITTLE INDIAN CREEK**

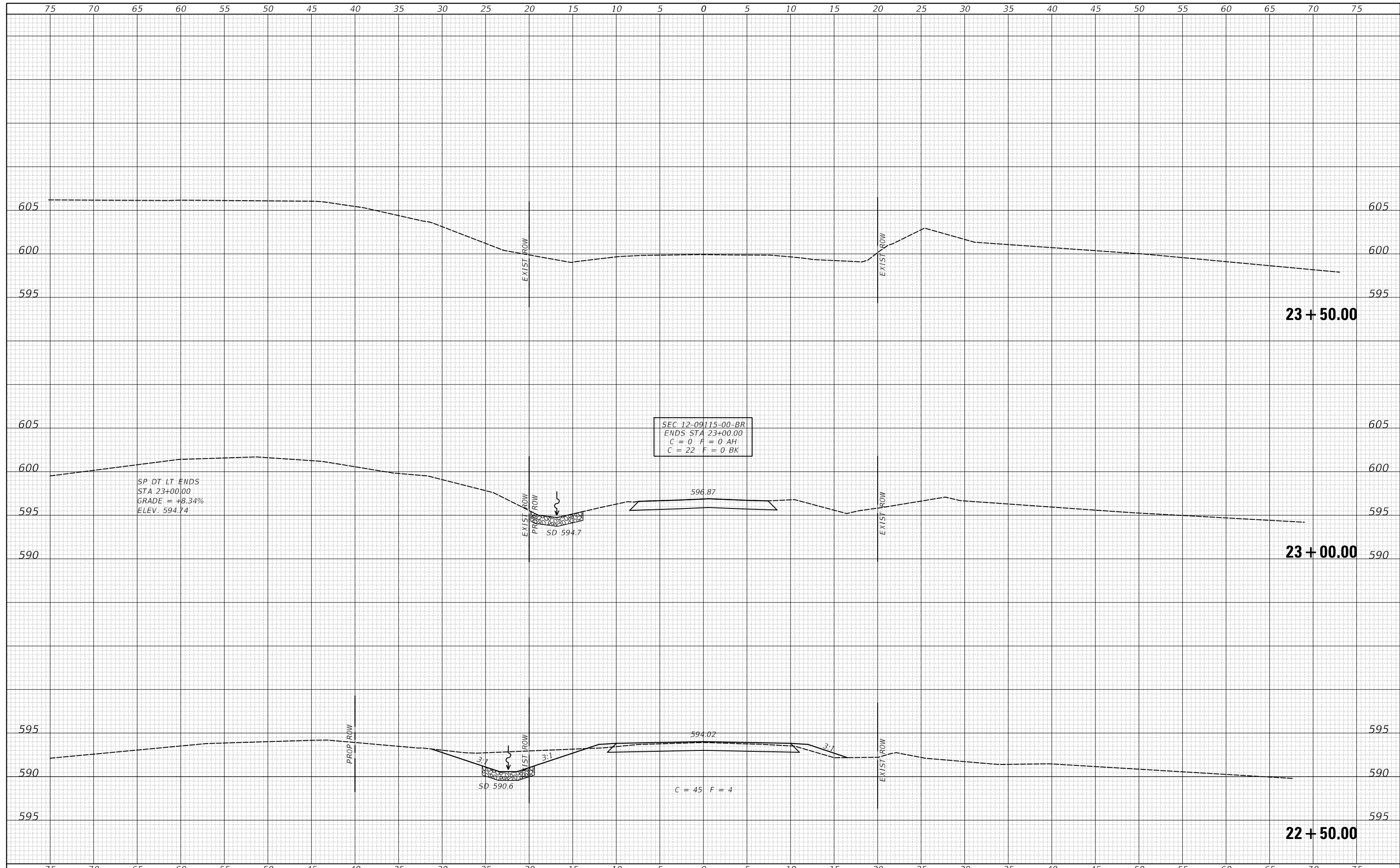
CROSS SECTIONS

SCALE: 1" = 5' SHEET 6 OF 7 SHEETS STA. 22+00.00 TO STA. 22+25.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	19
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93592	
FED. AID PROJECT NO. DP3K(687)				

DATE	
BY	
SURVEYED	
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TEMPLATE	
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CHECKED	
FINAL SURVEY	
NOTE BOOK	
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DATE	
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ORIGINAL SURVEY	
NOTE BOOK	
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	DRAWN - CET	REVISED -
PLOT SCALE = 10.0000' / in.	CHECKED - STM	REVISED -
PLOT DATE = 3/23/2021	DATE - 3/18/2021	REVISED -

**CASS COUNTY
 TOWNSHIP ROAD 143 OVER
 LITTLE INDIAN CREEK**

CROSS SECTIONS

SCALE: 1" = 5' SHEET 7 OF 7 SHEETS STA. 22+50.00 TO STA. 23+50.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 143	12-09115-00-BR	CASS	20	20
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93592	
FED. AID PROJECT NO. DP3K(687)				