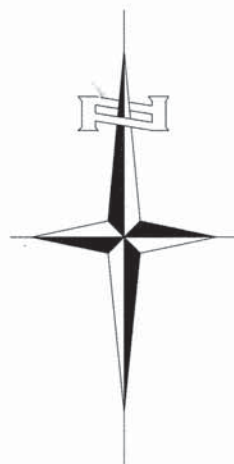


SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	TIE POINTS, GENERAL NOTES, DETAILS, TYPICAL SECTIONS
3.	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4.	TRAFFIC CONTROL PLAN
5.	EROSION CONTROL PLAN
6.	PLAN AND PROFILE
7.-13.	STRUCTURE PLANS
14.-20.	CROSS SECTIONS

REQUIRED HIGHWAY STANDARDS

- 000001-06
- 280001-07
- 515001-03
- 635006-03
- 701901-04
- BLR 21-9



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

VIRGINIA ROAD DISTRICT

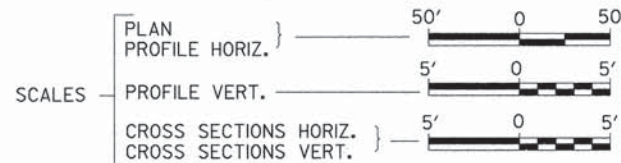
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
SURFACE TRANSPORTATION PROGRAM-BRIDGE  
CASS COUNTY

VIRGINIA ROAD DISTRICT SECTION 12-11114-00-BR  
TOWNSHIP ROAD 163 OVER LITTLE INDIAN CREEK  
PROJECT NO. BROS-0017(222)  
JOB NUMBER C-96-224-12

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-11114-00-BR	CASS	20	1
FED. ROAD DIST. NO. 7		ILLINOIS	CONTRACT NO. 93593	



LOCATION OF SECTION INDICATED THUS: -

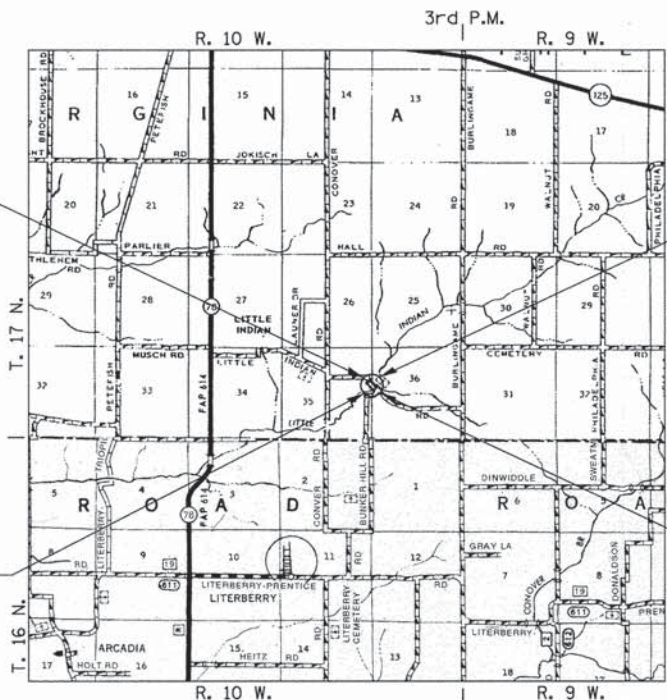


SECTION 12-11114-00-BR  
BEGINS  
STATION 17+25.00

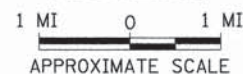
PROPOSED STRUCTURE NO. 009-3509  
SINGLE SPAN 33" P.P.C. DECK BEAM  
STRUCTURE ON CONCRETE SPILL THRU  
PILE BENT ABUTMENTS, 85'-0" BK. TO BK.,  
30'-0" O. TO O., 20° LT. AH. SKEW

EXISTING STRUCTURE NO. 009-3508  
SINGLE SPAN PPC DECK BEAM STRUCTURE  
ON TIMBER CLOSED ABUTMENTS  
±52'-0" BK. TO BK., 21'-0" O. TO O.,  
20° LT. AH. SKEW (TO BE REMOVED)

SECTION 12-11114-00-BR  
ENDS  
STATION 23+00.00



LOCATION MAP



NET LENGTH OF PROJECT = 575.00 FEET = 0.109 MILES

DESIGN CLASSIFICATION: LOCAL ROAD (NON-URBAN)  
DESIGN ADT: 75 (2012)  
DESIGN SPEED: 30 MPH

Hutchison Engineering, Inc.  
JACKSONVILLE-SHOREWOOD-PEORIA

2012

JOB#3130

APPROVED 1-21-15 2015

*Dan M. F...*  
VIRGINIA ROAD DISTRICT HIGHWAY COMMISSIONER

APPROVED 1/21/15 2015

*Timothy J. Dan...*  
CASS COUNTY ENGINEER

PASSED 2-10 2015

*Scott Graham*  
DISTRICT SIX ENGINEER OF  
LOCAL ROADS & STREETS

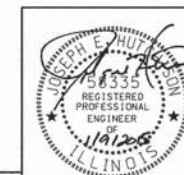
PASSED 2-10 2015

*Ron Duchamb...*  
DISTRICT SIX ENGINEER  
OF CONSTRUCTION

Released For  
Bid Based on  
Limited Review 2/10 2015

*Boyer L. D...*  
DEPUTY DIRECTOR OF HIGHWAYS,  
REGION FOUR ENGINEER

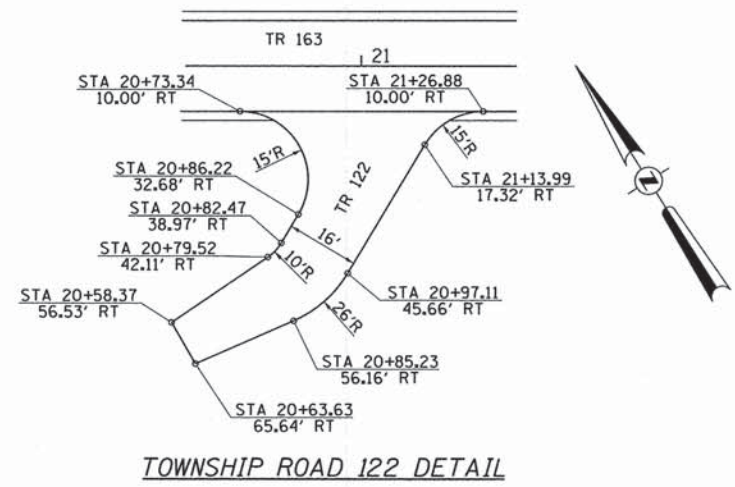
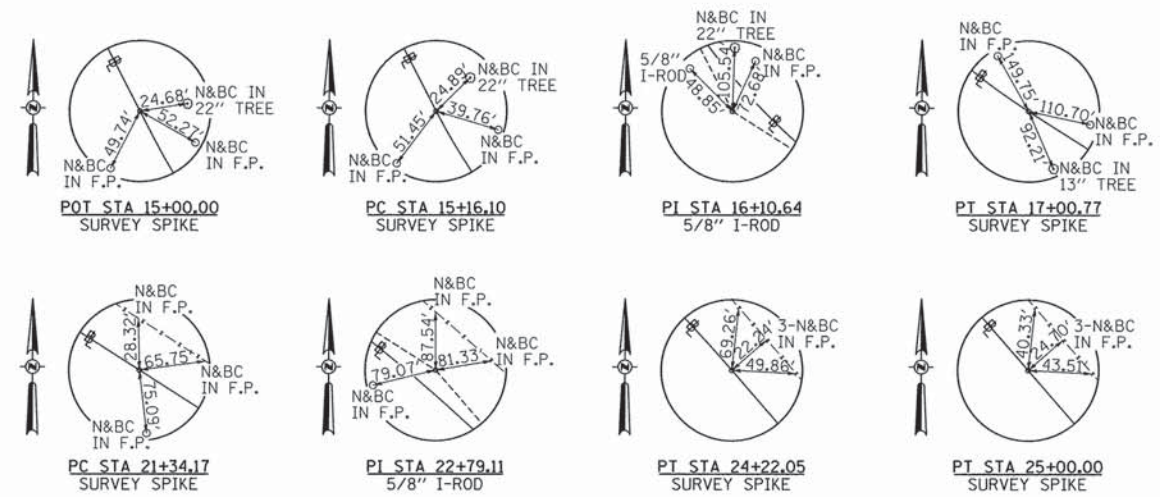
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



1/13/2015  
SIGNATURE

ENGINEERS SEAL

CONTRACT NO. 93593



**GENERAL NOTES**

PLAN QUANTITIES FOR TREE REMOVAL HAVE BEEN BASED ON ALL TREES WITHIN THE PROPOSED RIGHT OF WAY. THIS QUANTITY MAY BE REVISED DURING CONSTRUCTION, AT THE DIRECTION OF THE ENGINEER, BY DELETING FROM THE TREE REMOVAL QUANTITIES, SUCH TREES THAT DO NOT INTERFERE WITH THE PROPOSED CONSTRUCTION.

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.

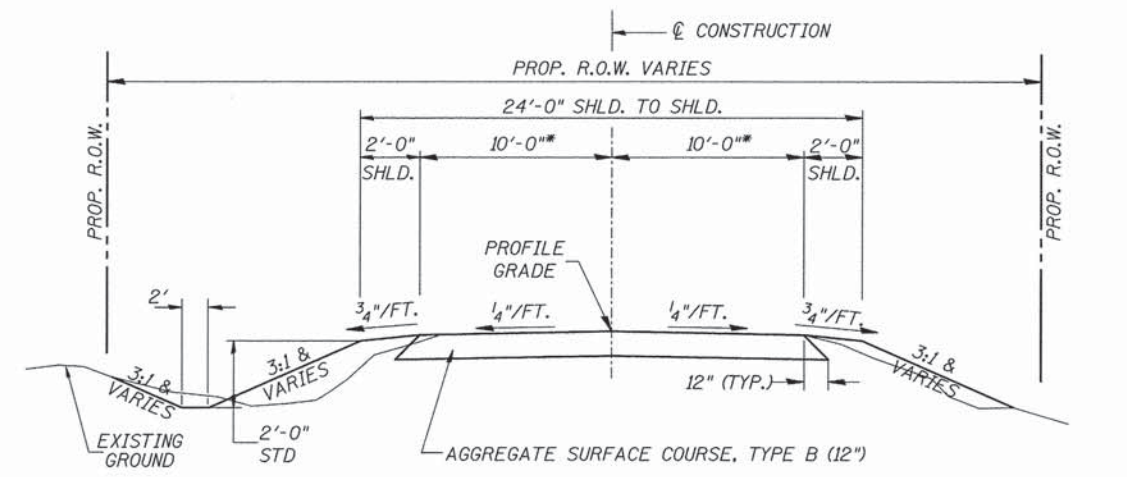
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION

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 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.

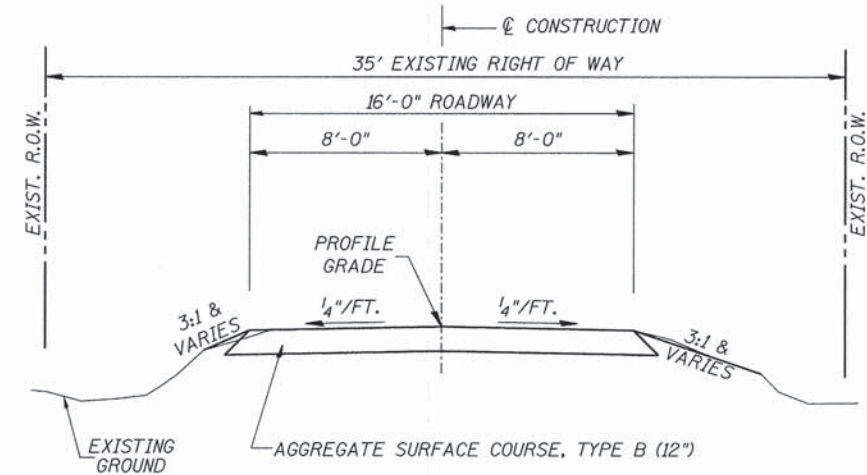
WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

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

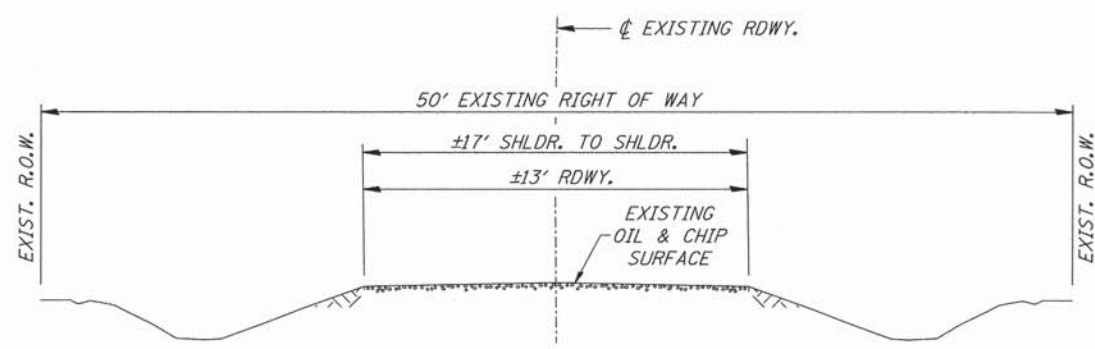


**PROPOSED T.R. 163 TYPICAL SECTION**

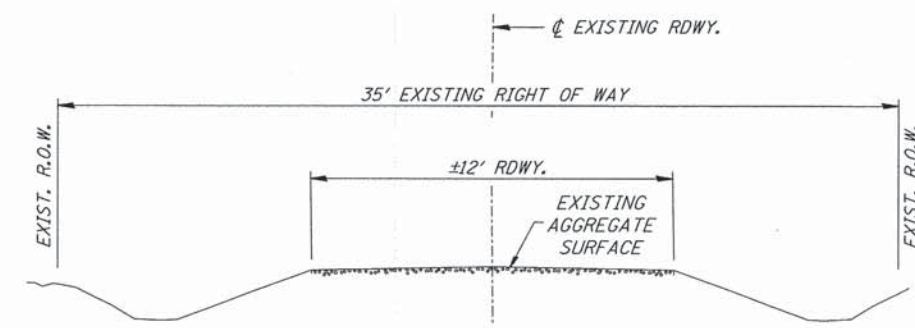
\* EXCEPT FOR WIDENING AT STRUCTURE  
 STA. 17+25.00 TO STA. 19+53.00  
 STA. 20+38.00 TO STA. 23+00.00  
 EXCEPT TRANSITIONS  
 BRIDGE OMISSION  
 STA. 19+53.00 TO STA. 20+38.00



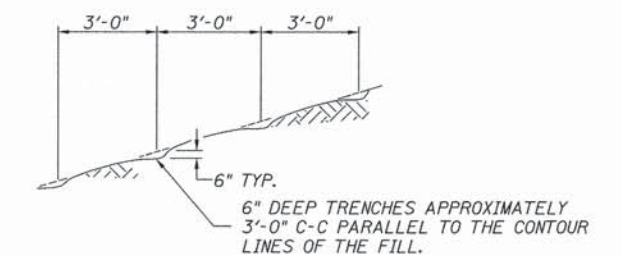
**PROPOSED T.R. 122 TYPICAL SECTION**



**EXISTING T.R. 163 TYPICAL SECTION**



**EXISTING T.R. 122 TYPICAL SECTION**



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**

FILE NAME = V:\Bridge\3130-Cass\3130-001.dgn	USER NAME = othomas	DESIGNED -	REVISED -	<b>CASS COUNTY TOWNSHIP ROAD 163 OVER LITTLE INDIAN CREEK</b>	<b>TIE POINTS, GENERAL NOTES, DETAILS, TYPICAL SECTIONS</b>	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = 1.0000 Ft / in.	DRAWN -	REVISED -			TR 163	12-11114-00-BR	CASS	20	2	
	PLOT DATE = 2/6/2015	CHECKED -	REVISED -			CONTRACT NO. 92573					
		DATE = 3/07/11	REVISED -			SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. 17+25.00 TO STA. 23+00.00	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT BROS 9000

**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	156
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	18
20200100	EARTH EXCAVATION	CU YD	160
20300100	CHANNEL EXCAVATION	CU YD	400
① 20400800	FURNISHED EXCAVATION	CU YD	920
28000305	TEMPORARY DITCH CHECKS	FOOT	96
28000400	PERIMETER EROSION BARRIER	FOOT	635
28000500	INLET AND PIPE PROTECTION	EACH	1
28100209	STONE RIPRAP, CLASS A5	TON	520
28200200	FILTER FABRIC	SQ YD	490
28300400	AGGREGATE DITCH	TON	25
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	795
① 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	27
50200100	STRUCTURE EXCAVATION	CU YD	85
50300225	CONCRETE STRUCTURES	CU YD	28.4
50300280	CONCRETE ENCASMENT	CU YD	2.6
① 50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2,490
① 50800105	REINFORCEMENT BARS	POUND	3,110
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	170
51200957	FURNISHING METAL SHELL PILES 12"x0.250"	FOOT	456
51202305	DRIVING PILES	FOOT	456
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
① 54200223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	32
① 59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	21.6
67100100	MOBILIZATION	L SUM	1
Δ ① 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
① X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
① X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1

① SEE SPECIAL PROVISIONS  
Δ SPECIALTY ITEMS

CONSTRUCTION CODE TYPE: 0011  
BRIDGE CODE TYPE: X080

**AGGREGATE SURFACE COURSE, TYPE B**

STATION TO STATION	THICKNESS	WIDTH	LENGTH	TON
17+25.00 - 18+25.00	1.00'	16.89' AVG.	100.00'	118
18+25.00 - 19+53.00	1.00'	21.00'	128.00'	188
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+38.00 - 22+00.00	1.00'	21.00'	162.00'	238
22+00.00 - 23+00.00	1.00'	17.37' AVG.	100.00'	122
TR 122	1.00'	16' & VAR.	70.50'	93
<b>TOTAL</b>				<b>795</b>

**EARTHWORK SUMMARY**

STATION TO STATION	EARTH EXCAVATION CU YD	CHANNEL EXCAVATION CU YD	STRUCTURE EXCAVATION CU YD	FILL CU YD	WASTE (SHORTAGE) CU YD
RDWY 17+25.00 - 19+53.00	79			431	(372)
RDWY 20+38.00 - 23+00.00	81			611	(550)
CHANNEL		400			
STRUCTURE			85		
<b>TOTAL</b>	<b>160</b>	<b>400</b>	<b>85</b>	<b>1,042</b>	<b>(922)</b>
<b>USE</b>	<b>160</b>	<b>400</b>	<b>85</b>	<b>-</b>	<b>(920)</b>

(@ 25% SHRINKAGE)

**PIPE CULVERTS,  
CLASS D,  
TYPE 1 18"**

STATION	SIDE	FOOT
20+69	RIGHT	32
<b>TOTAL</b>		<b>32</b>

**PIPE CULVERT REMOVAL**

STATION	SIZE	SIDE	FOOT
20+69	8"	RIGHT	27
<b>TOTAL</b>			<b>27</b>

**INLET AND PIPE PROTECTION**

STATION	SIDE	EACH
20+77	RIGHT	1
<b>TOTAL</b>		<b>1</b>

**AGGREGATE DITCH\*\***

STATION TO STATION	SIDE	WIDTH	TON	FILTER FABRIC (SQ YD)
20+05 - 20+75	RIGHT	6'	25	48
<b>TOTAL</b>			<b>25</b>	<b>48</b>

\*\* Aggregate Ditch shall conform to material type B-3 of the Standard Specifications

**TEMPORARY DITCH CHECKS**

STATION	SIDE	FOOT
18+60	LEFT	12
19+50	RIGHT	12
19+75	LEFT	12
20+05	RIGHT	12
20+25	RIGHT	12
20+42	LEFT	12
20+45	RIGHT	12
20+60	RIGHT	12
<b>TOTAL</b>		<b>96</b>

**TREE REMOVAL**

STATION	OFFSET	SIDE	6 TO 15 UNITS	OVER 15 UNITS
18+81	30'	RIGHT	6	
18+81	29'	RIGHT	10	
18+81	29'	RIGHT	10	
19+17	30'	RIGHT	6	
19+36	26'	RIGHT		18
19+40	24'	RIGHT	6	
19+40	24'	RIGHT	6	
19+40	24'	RIGHT	6	
19+45	27'	RIGHT	6	
19+72	25'	RIGHT	6	
20+17	22'	RIGHT	10	
20+29	35'	RIGHT	8	
20+33	41'	RIGHT	8	
20+43	29'	RIGHT	10	
20+43	29'	RIGHT	10	
20+43	29'	RIGHT	10	
20+55	39'	RIGHT	8	
20+56	38'	RIGHT	10	
20+67	39'	RIGHT	8	
20+71	27'	RIGHT	12	
<b>TOTAL</b>			<b>156</b>	<b>18</b>

**PERIMETER EROSION BARRIER**

STATION TO STATION	SIDE	FOOT
17+25 - 17+50	LEFT	25
17+25 - 19+00	RIGHT	175
20+55 - 23+00	RIGHT	280
21+50 - 23+00	LEFT	155
<b>TOTAL</b>		<b>635</b>

R 10 W, 3rd PM



- 1

ROAD CLOSED  
1/2 MILE AHEAD  
LOCAL TRAFFIC ONLY  
R11-3

ROAD CLOSED  
1/2 MILE AHEAD  
LOCAL TRAFFIC ONLY
- 2

ROAD CLOSED  
1 MILE AHEAD  
LOCAL TRAFFIC ONLY  
R11-3

ROAD CLOSED  
1 MILE AHEAD  
LOCAL TRAFFIC ONLY
- 3

ROAD CLOSED  
2 MILES AHEAD  
LOCAL TRAFFIC ONLY  
R11-3

ROAD CLOSED  
2 MILES AHEAD  
LOCAL TRAFFIC ONLY
- 4

ROAD CLOSED  
AHEAD  
W20-3

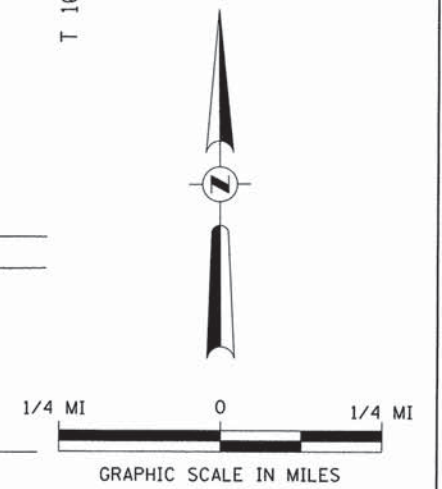
ROAD CLOSED  
AHEAD
- 5

ROAD CLOSED  
500 FT  
W20-3

ROAD CLOSED  
500 FT
- 6

TYPE III BARRICADES

SEE STANDARD BLR 21  
AND SPECIAL PROVISIONS



R 10 W, 3rd PM

**CASS COUNTY  
TOWNSHIP ROAD 163 OVER  
LITTLE INDIAN CREEK**

**TRAFFIC CONTROL PLAN**

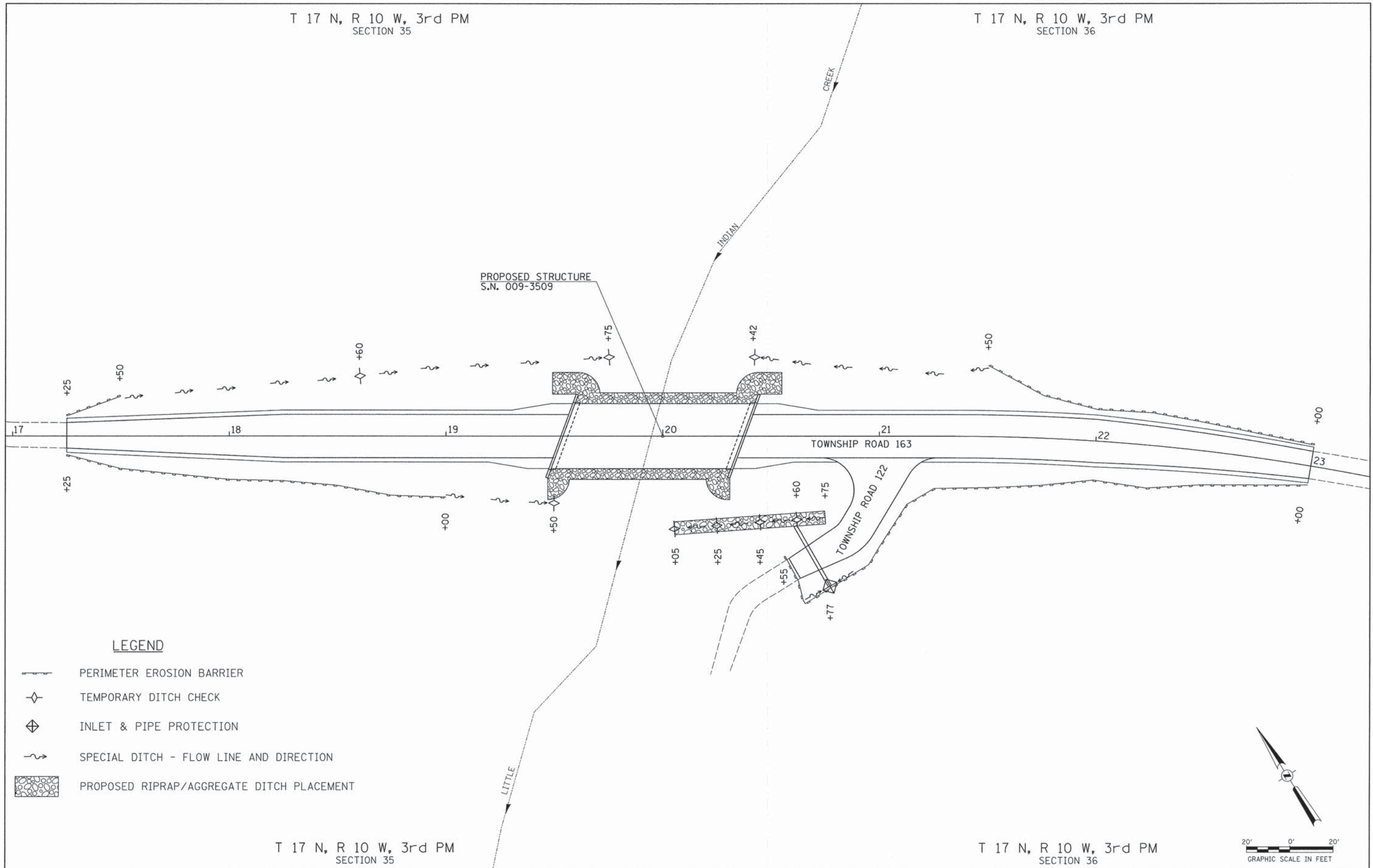
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	PLOT DATE = 2/6/2015	DATE = 04/18/11	REVISED -

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. 17+25.00 TO STA. 23+00.00






RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-11114-00-BR	CASS	20	4
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93593	
FED. AID PROJECT BR05-0017221				

T 17 N, R 10 W, 3rd PM  
SECTION 35

T 17 N, R 10 W, 3rd PM  
SECTION 36

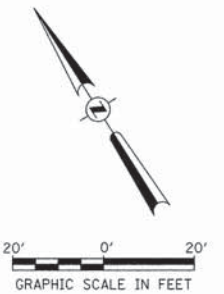


**LEGEND**

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

T 17 N, R 10 W, 3rd PM  
SECTION 35

T 17 N, R 10 W, 3rd PM  
SECTION 36



FILE NAME = V:\Bridge\3130-Cass\31385001.dgn	USER NAME = cthomas	DESIGNED -	REVISED -
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	PLOT DATE = 2/6/2015	DATE -	REVISED -

**CASS COUNTY  
TOWNSHIP ROAD 163 OVER  
LITTLE INDIAN CREEK**

**EROSION CONTROL PLAN**

SCALE: 1" = 20' SHEET NO. 1 OF 1 SHEETS STA. 17+25.00 TO STA. 23+00.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-11114-00-BR	CASS	20	5
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93593	
FED. AID PROJECT BROS-0017021				



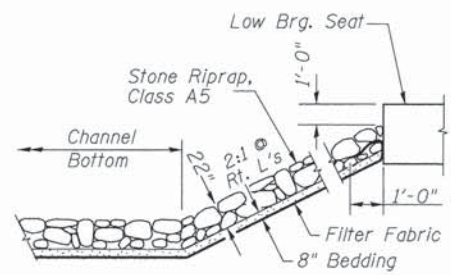
B.M.: RR Spike in Corrugated Pipe  
Sta. 15+44, 70' Rt.  
Elev. 561.36

RR Spike in 36" Tree  
Sta. 23+55, 77' Rt.  
Elev. 563.32

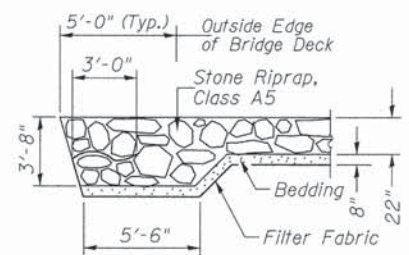
Existing Structure:  
Single span PPC deck beam superstructure on timber closed abutments. The structure is ±52' back to back of abutments, 21'-0" out to out deck, and is skewed ±20° left ahead. Str. No. 009-3508

Salvage: None

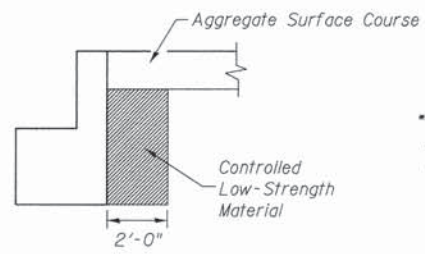
Road to be closed to traffic during construction.



STONE RIPRAP DETAIL



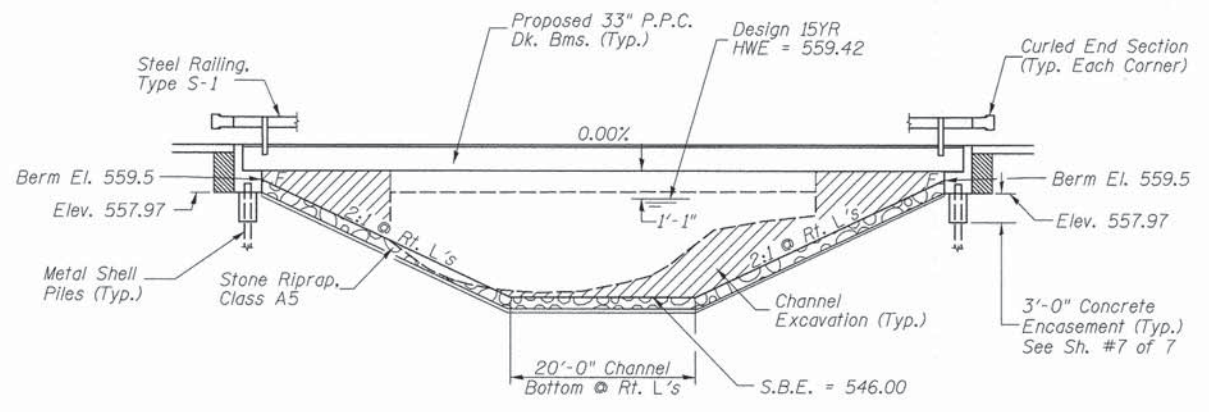
SECTION A-A



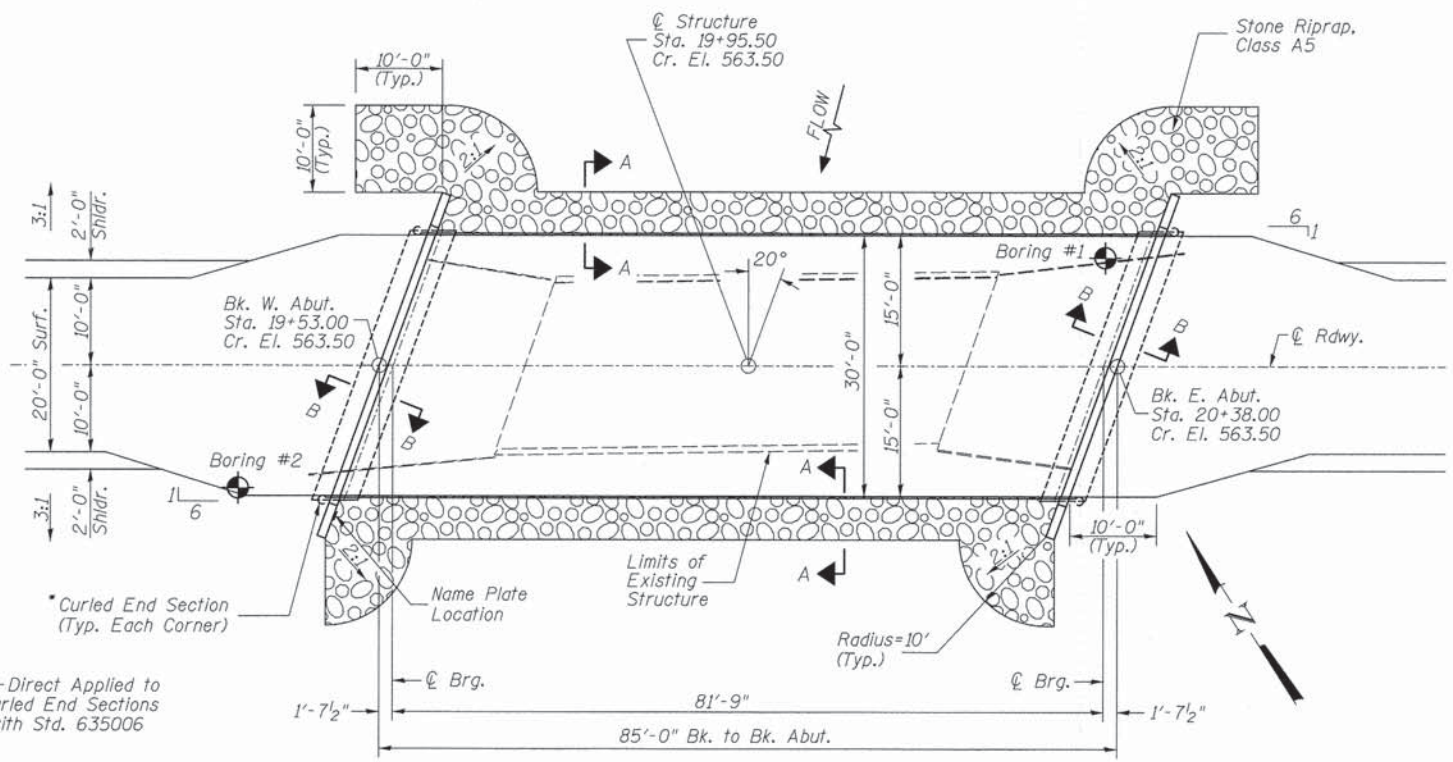
SECTION B-B



PROFILE GRADE



ELEVATION



PLAN

DESIGN SCOUR TABLE

Location	W. Abut. E.	E. Abut. E.
Design Scour Elevation	557.97	557.97

WATERWAY INFORMATION

Drainage Area = 17.49 Sq. Mi.		Low Grade Elev. = 560.10 @ Sta. 17+31.35		Nat. Head - Ft.		Headwater El.			
Flood Yr.	Q C.F.S.	Opening Exist.	Sq. Ft. Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.		
Design	15	2,819	381	628	559.42	0.58	0.12	560.00	559.54
Base	100	4,540	381	702	560.41	1.58	0.36	561.99	560.77

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

OVER-THE-ROAD AREA

Freq. Yr.	Existing	Proposed
15	0	0
100	77	26

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications

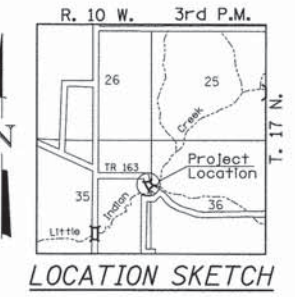
DESIGN STRESSES

(FIELD UNITS)  
f'c = 3,500 p.s.i.  
fy = 60,000 p.s.i. (Rein.)

(PRECAST PRESTRESSED UNITS)  
f'c = 6,000 p.s.i.  
f'cl = 5,000 p.s.i.  
f's = 270,000 p.s.i. (1/2" Strands)  
f'sl = 201,960 p.s.i. (1/2" Strands)

LOADING HL-93

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



LOCATION SKETCH

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)(12) of the Standard Specifications.  
Reinforcement Bars shall conform to the requirements of ASTM A706 Grade 60. 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 top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

LITTLE INDIAN CREEK  
BUILT 2011 BY  
VIRGINIA ROAD DISTRICT  
CASS COUNTY  
SEC. 12-11114-00-BR  
T.R. 163 STATION 19+95.50  
F.A. PROJ. BROS-0017(218)  
STR. NO. 009-3509 LOADING HL-93

NAME PLATE

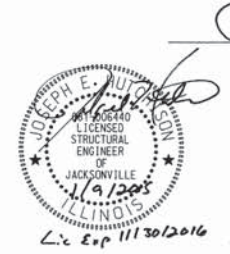
Locate Name Plate at S.W. Wingwall  
Corner of Bridge (See Std. 515001)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	—	400	400
Stone Riprap, Class A5	TON	—	520	520
Filter Fabric	SQ YD	—	440	440
① Removal of Existing Structures	EACH	—	—	1
Structure Excavation	CU YD	—	85	85
Concrete Structures	CU YD	—	28.4	28.4
① Precast Prestressed Concrete Deck Beams (33" Depth)	SQ FT	2,490	—	2,490
① Reinforcement Bars	POUND	—	3,110	3,110
Steel Railing, Type S1	FOOT	170	—	170
Furnishing Metal Shell Piles 12"x0.250"	FOOT	—	456	456
Driving Piles	FOOT	—	456	456
Test Pile Metal Shells	EACH	—	2	2
Concrete Encasement	CU YD	—	2.6	2.6
Name Plates	EACH	—	1	1
① Controlled Low-Strength Material	CU YD	—	21.6	21.6
① 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.

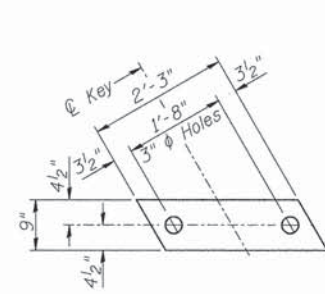


*Joseph E. Au*  
1/9/2015  
Illinois Structural No. 6440  
Expires 11/30/2016

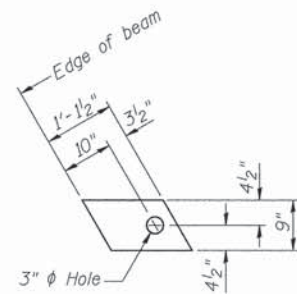
GENERAL PLAN & ELEVATION

CASS COUNTY  
SECTION 12-11114-00-BR  
T.R. 163 OVER LITTLE INDIAN CREEK

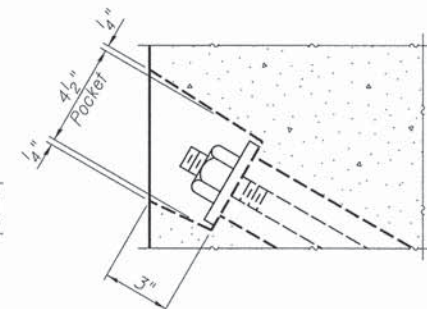
SHEET NO. 1	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7 SHEETS	TR 163	12-11114-00-BR	CASS	20	7
S.N. 009-3509			CONTRACT NO. 93593		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT BROS-0017(222)		



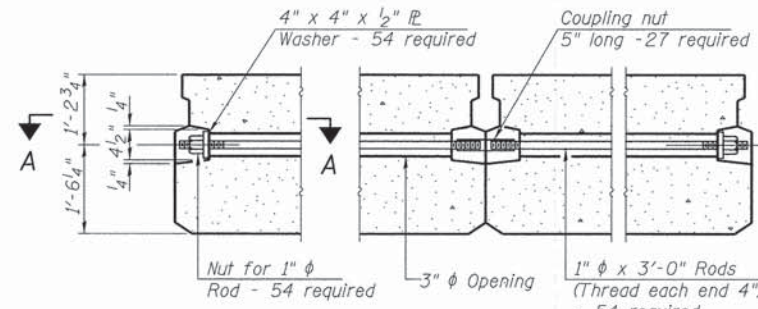
**1/2" FABRIC BEARING PAD**  
(Interior) 18 Required



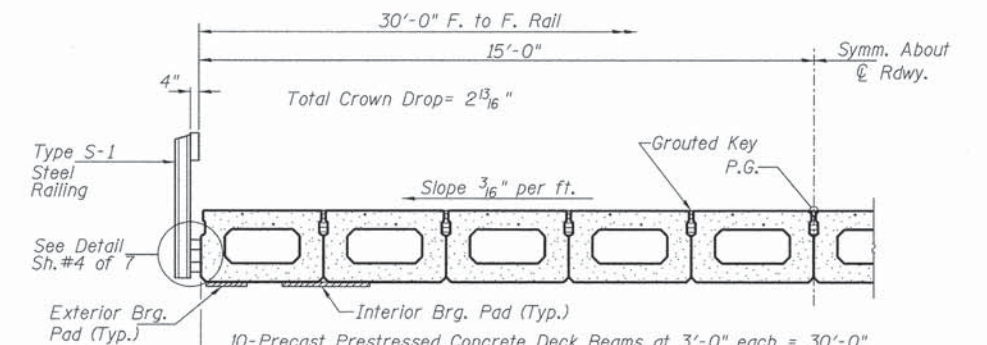
**1/2" FABRIC BEARING PAD**  
(Exterior) 4 Required  
**FIXED**



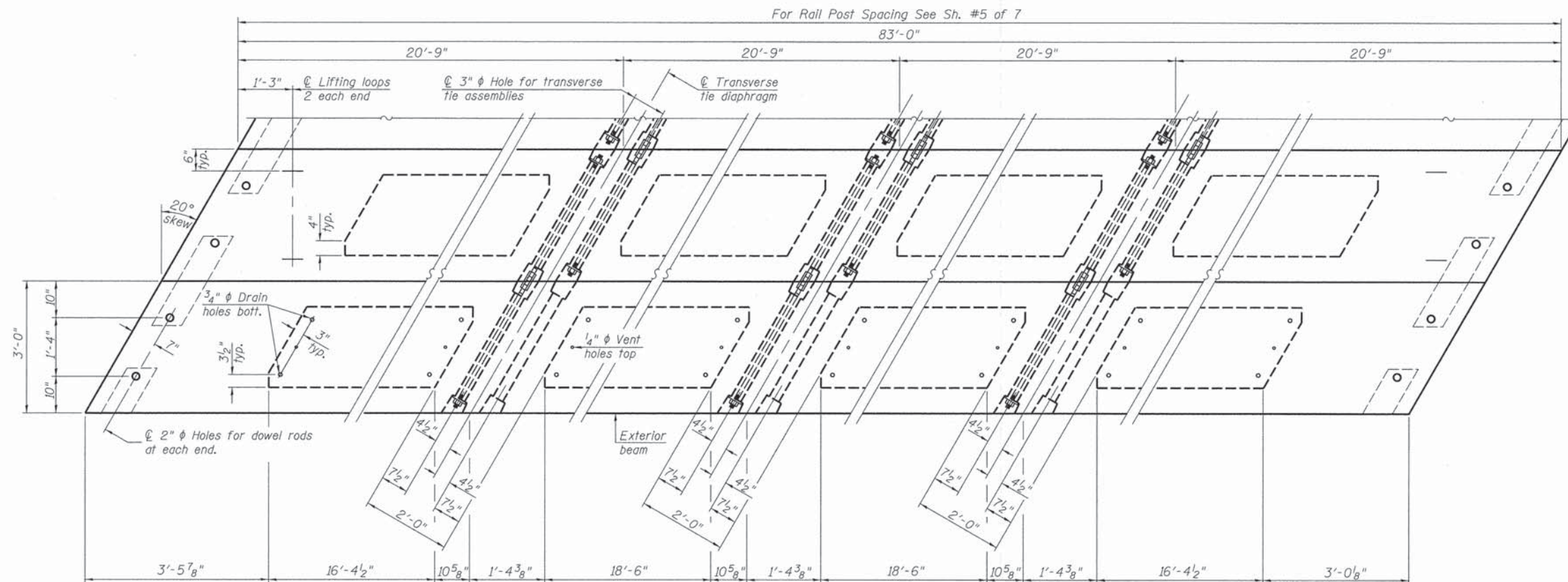
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**



**HALF CROSS SECTION**



**PLAN VIEW**

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.
- Reinforcement bars shall conform to ASTM A 706, Grade 60.
- 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" lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 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.

**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
① Precast Prestressed Concrete Deck Beams (33" Depth)	SQ FT	2,490

① See Special Provisions

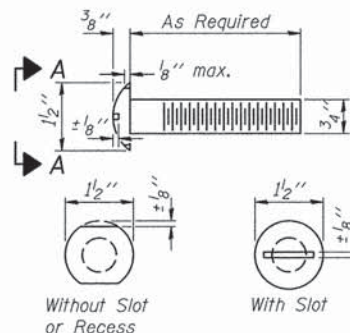
**SUPERSTRUCTURE**  
**CASS COUNTY**  
**SECTION 12-1114-00-BR**  
**T.R. 163 OVER LITTLE INDIAN CREEK**

SHEET NO. 2	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7 SHEETS	TR 163	12-1114-00-BR	CASS	20	8
S.N. 009-3509			CONTRACT NO. 93593		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT BROS-001722		

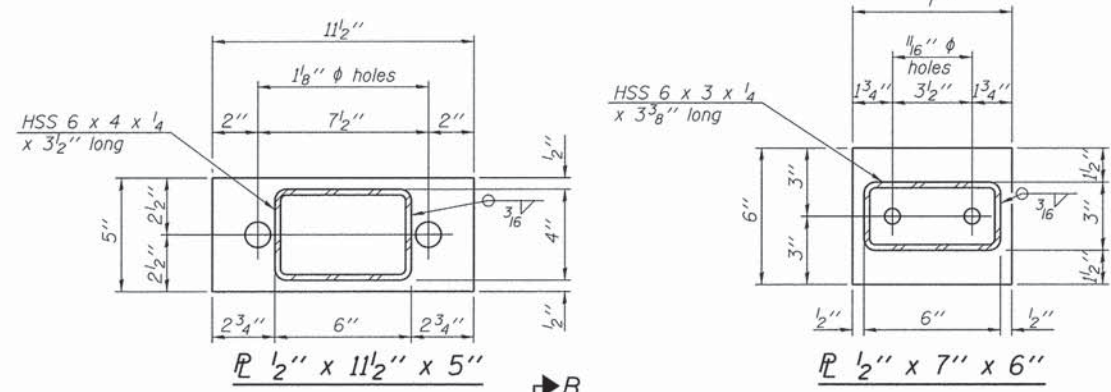




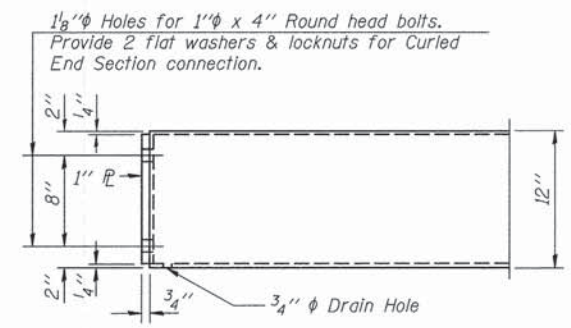
FOR RAIL POST SPACING SEE SH.#5 OF 7



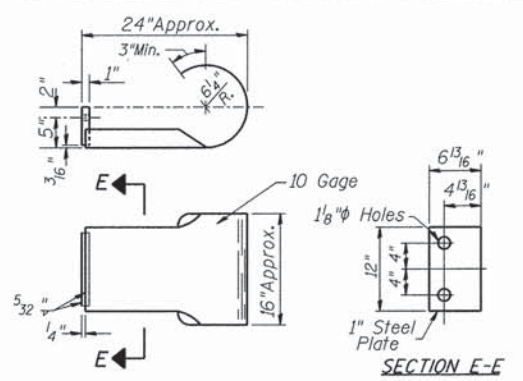
VIEW A-A  
ROUND HEAD BOLT



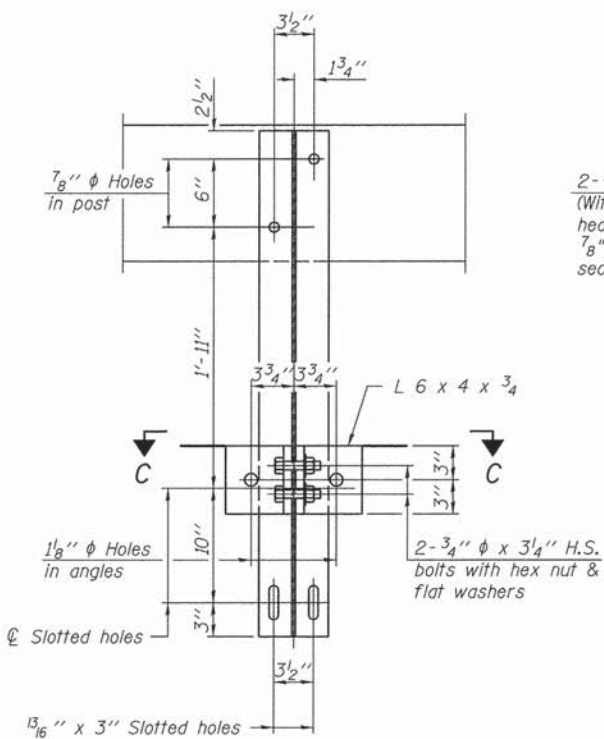
PLAN 1/2" x 11 1/2" x 5"  
PLAN 1/2" x 7" x 6"



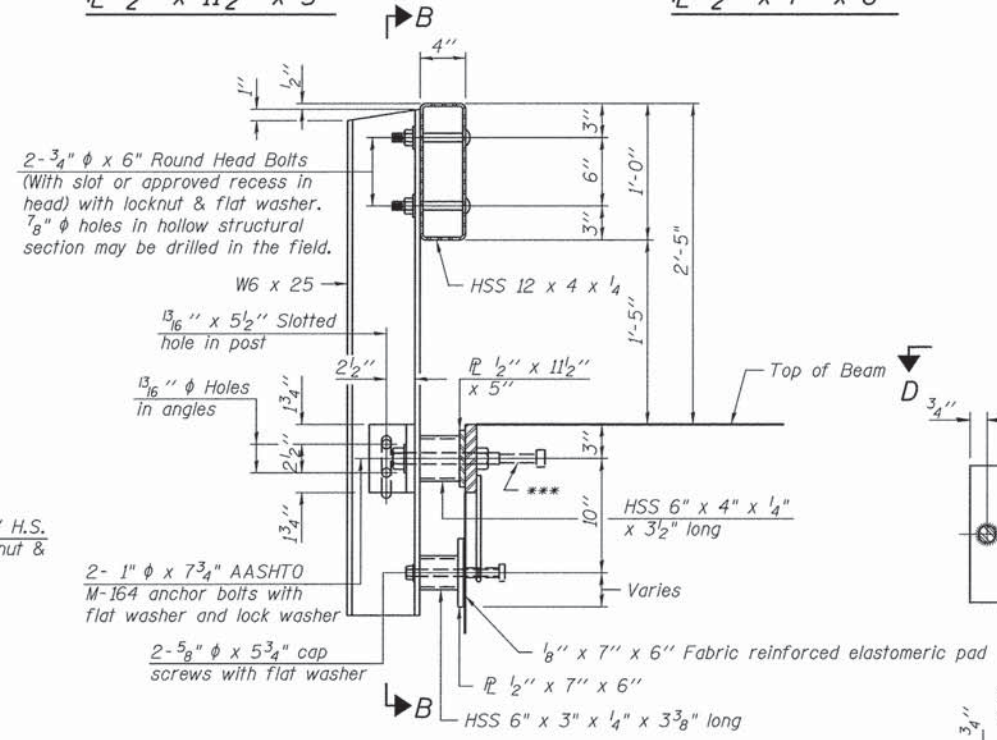
END OF RAIL DETAILS



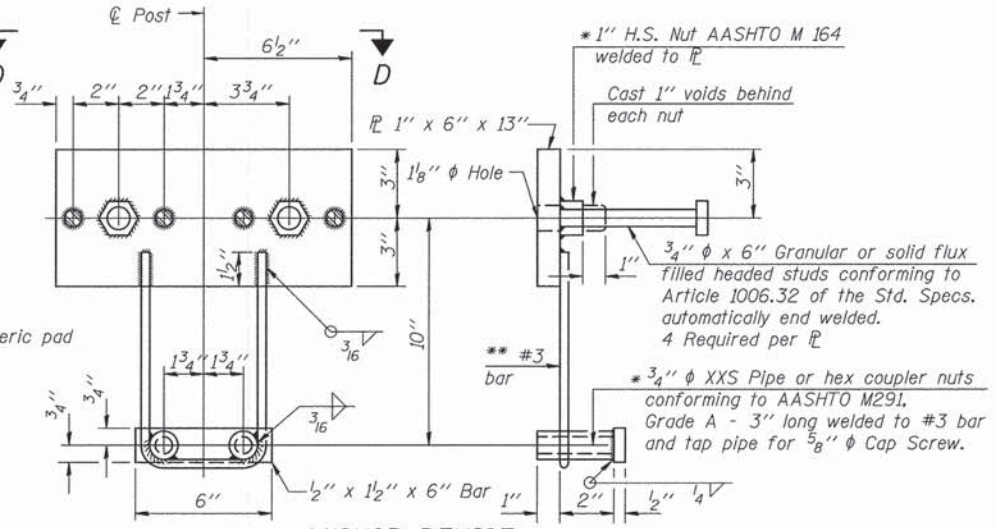
SECTION E-E  
CURLED END SECTION  
(4 Req'd) Cast Included with Steel Railing, Type S-1. Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (Each Corner)



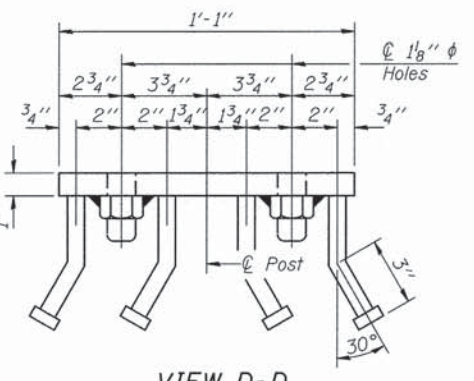
SECTION B-B



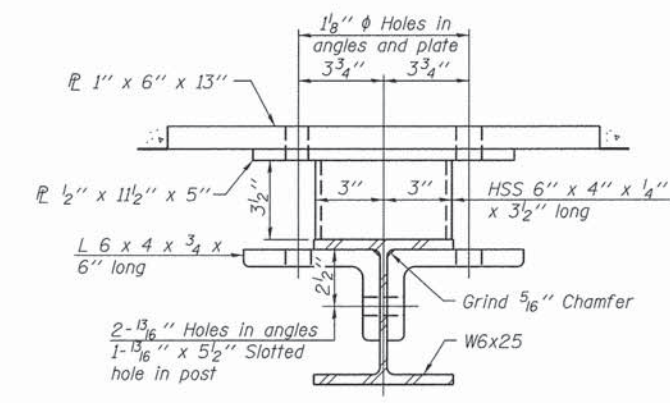
SECTION AT RAILING POST



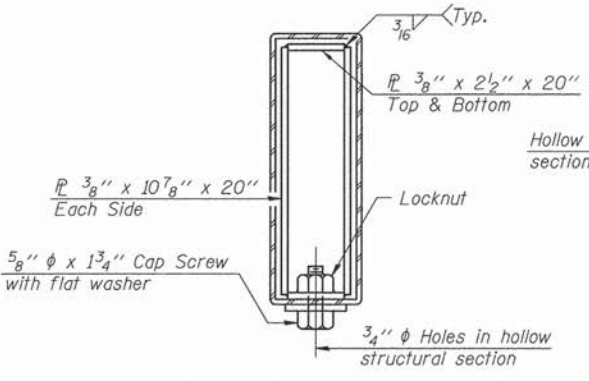
ANCHOR DEVICE



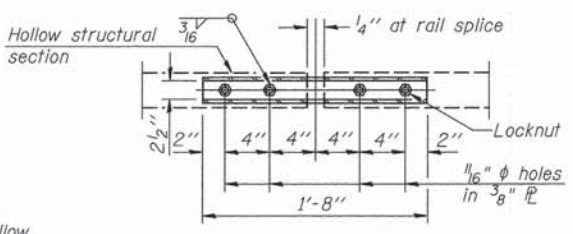
VIEW D-D



SECTION C-C



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE TYPICAL

\*\* 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.

NOTES

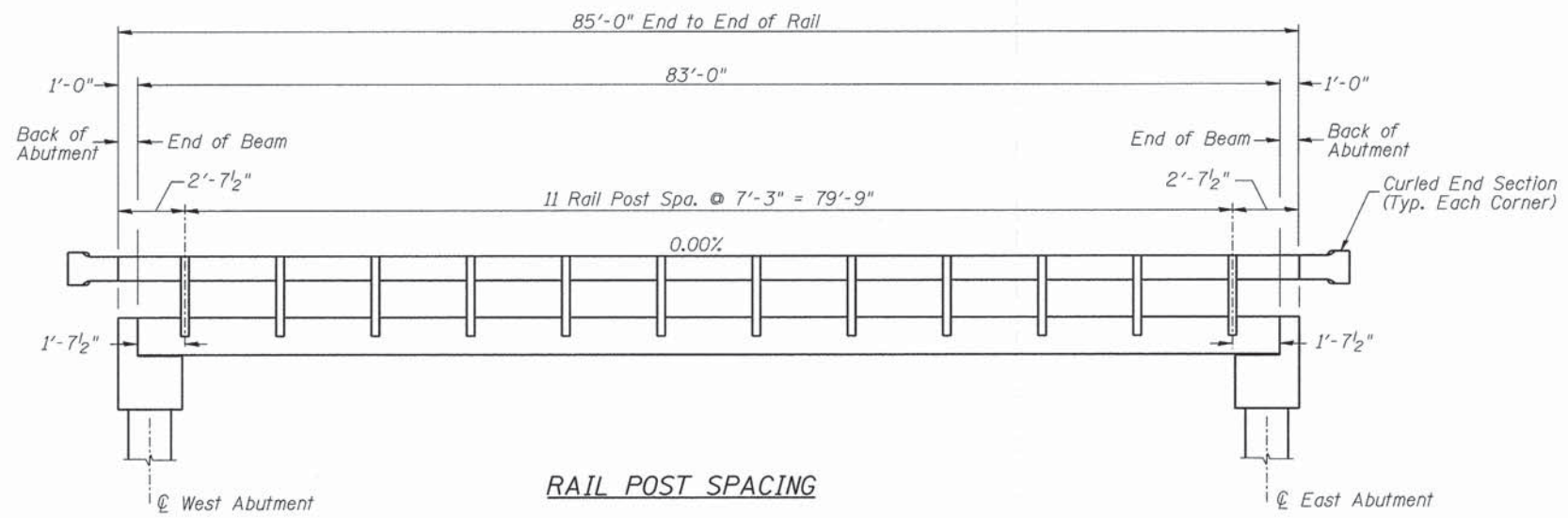
All field drilled holes shall be coated with an approved zinc rich paint before erection. For multi-span bridges, sufficient 1/4 inch x 6 inch x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1. All steel rail elements shall 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.

BILL OF MATERIAL

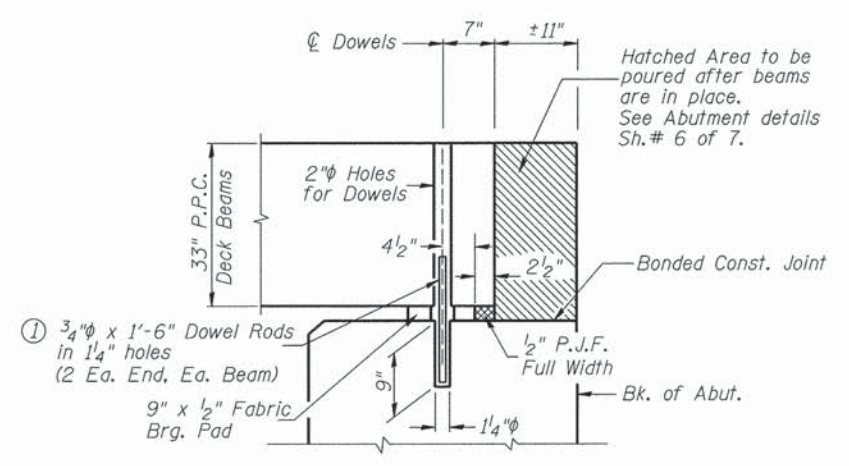
Item	Unit	Quantity
Steel Railing, Type S-1	FOOT	170

STEEL RAILING, TYPE S-1  
CASS COUNTY  
SECTION 12-1114-00-BR  
T.R. 163 OVER LITTLE INDIAN CREEK

SHEET NO. 4 7 SHEETS	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 163	12-1114-00-BR	CASS	20	10
S.N. 009-3509			CONTRACT NO. 93593		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT BR05-0017(222)		



**RAIL POST SPACING**



**SECTION THRU ABUTMENTS**  
(At Right Angles)

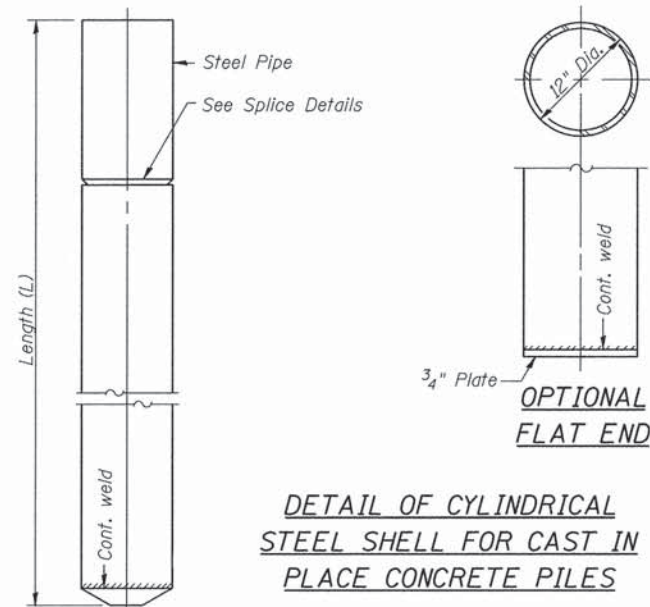
① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.

**RAIL POST SPACING AND  
SUPERSTRUCTURE DETAILS  
CASS COUNTY  
SECTION 12-11114-00-BR  
T.R. 163 OVER LITTLE INDIAN CREEK**

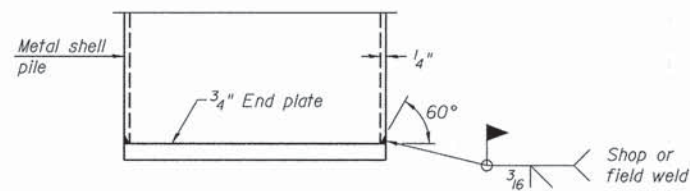
SHEET NO. 5 7 SHEETS	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TR 163	12-11114-00-BR	CASS	20	11
S.N. 009-3509			CONTRACT NO. 93593		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT BROS-0017(222)		



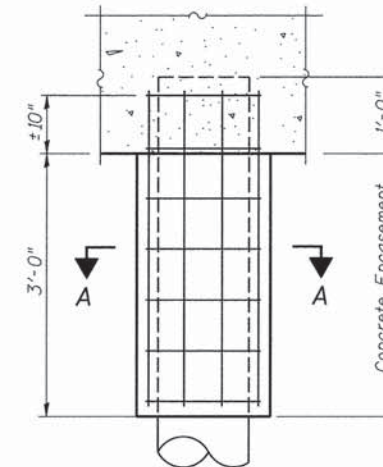
Notes: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.25 inches with a tolerance of 5%. The shell shall be according to Article 1006.05(a) of the Standard Specifications, and shall be ASTM A252 Grade 3.



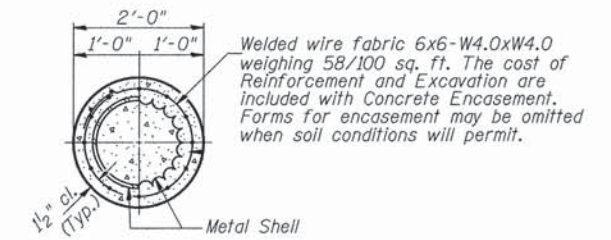
**DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES**



**END PLATE ATTACHMENT**

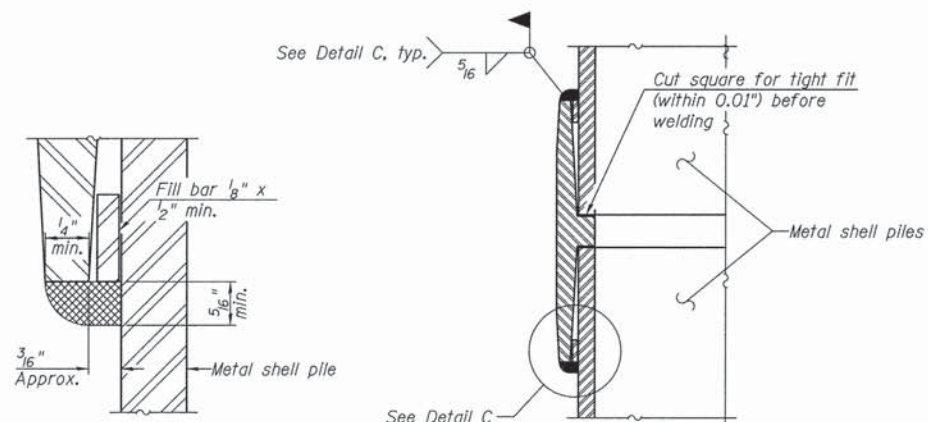


**ELEVATION**



**SECTION A-A**

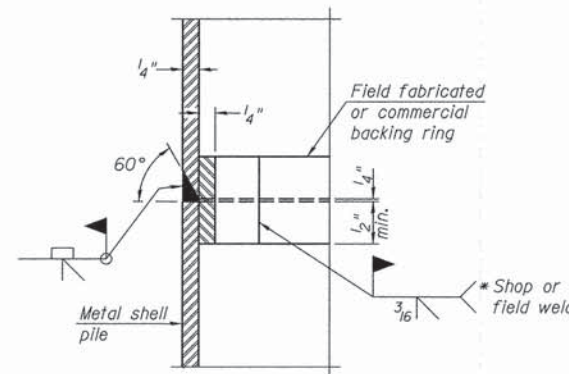
**DETAIL OF METAL SHELL PILE ENCASEMENT AT ABUTMENTS**



**DETAIL C**

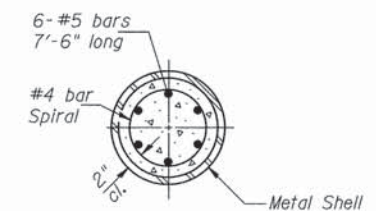
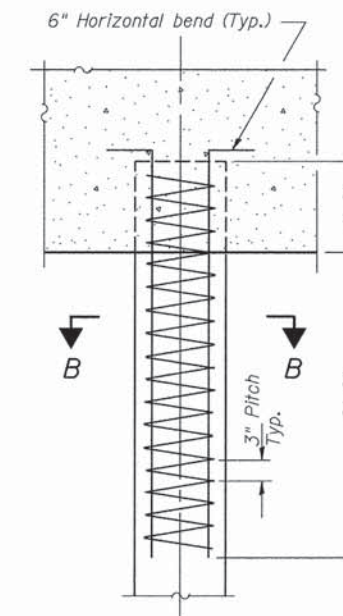
**WELDED COMMERCIAL SPLICE**

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.



**SECTION B-B**

**DETAIL OF REINFORCEMENT FOR METAL SHELLS AT ABUTMENTS**

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

**METAL SHELL PILE DETAILS**

CASS COUNTY

SECTION 12-1114-00-BR

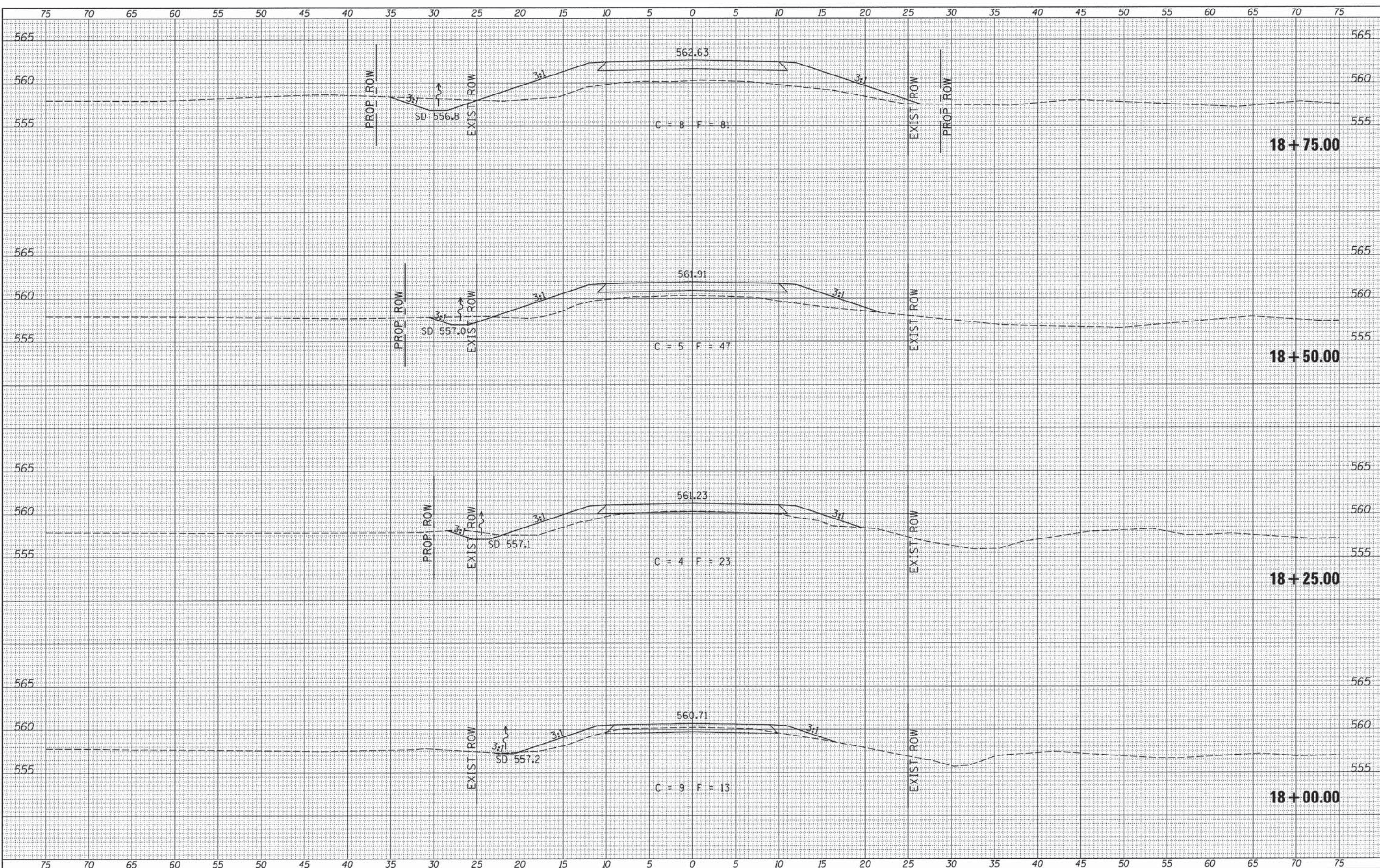
T.R. 163 OVER LITTLE INDIAN CREEK

SHEET NO. 7	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7 SHEETS	TR 163	12-1114-00-BR	CASS	20	13
S.N. 009-3509			CONTRACT NO. 93593		
FED. ROAD DIST. 7		ILLINOIS	FED. AID PROJECT BR05-001722		



DATE	
BY	
FINAL SURVEY	
NOTE BOOK	
NO.	
AREAS CHECKED	

DATE	
BY	
ORIGINAL SURVEY	
NOTE BOOK	
NO.	
AREAS CHECKED	



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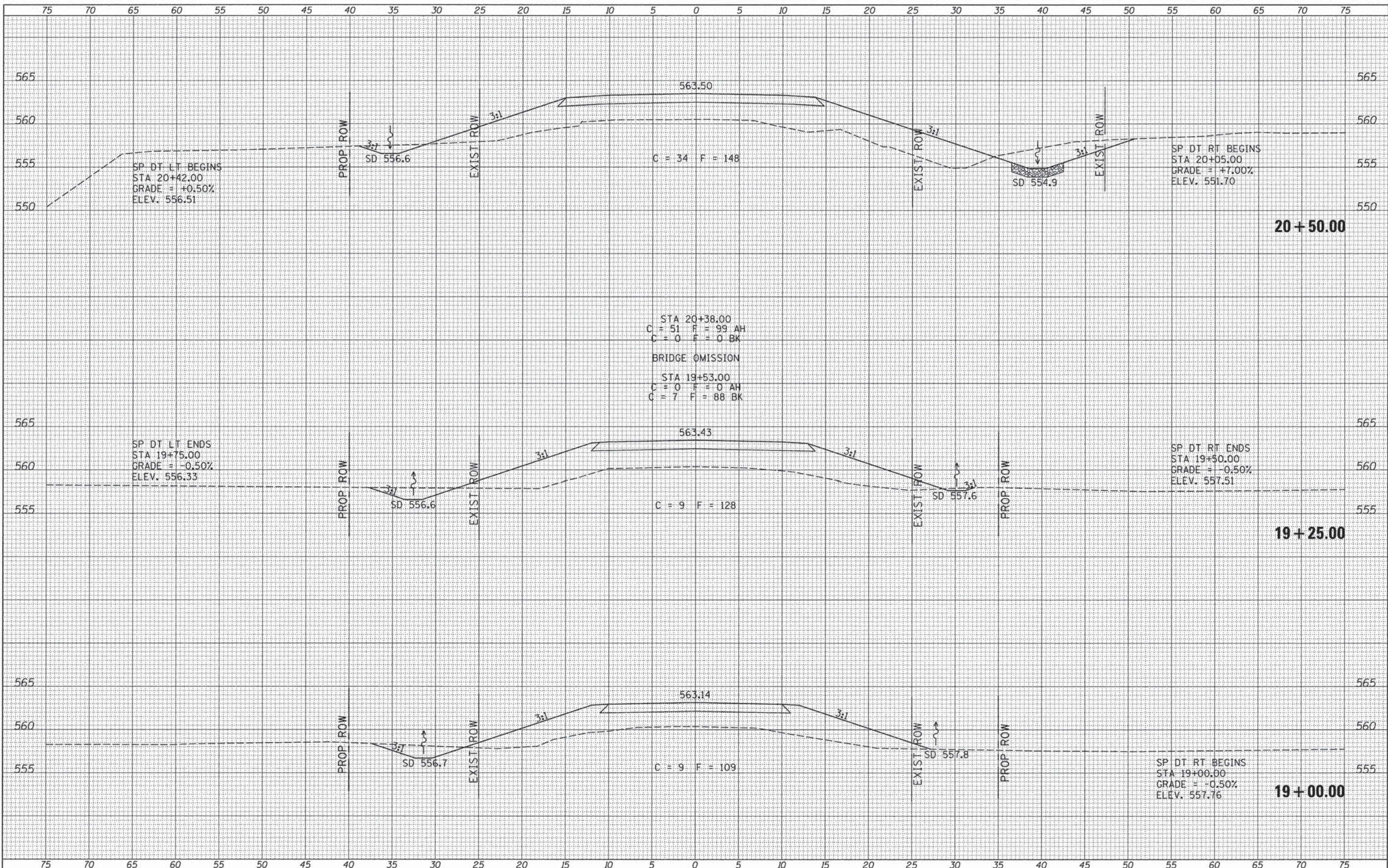
**CASS COUNTY  
 TOWNSHIP ROAD 163 OVER  
 LITTLE INDIAN CREEK**

**CROSS SECTIONS**  
 SCALE: 1"=5'  
 SHEET 2 OF 7 SHEETS  
 STA. 18+00.00 TO STA. 18+75.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-11114-00-BR	CASS	20	15
CONTRACT NO. 93593				
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BR05-0017227	

DATE	
BY	
REVIEWED	
PLOTTED	
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DATE -	REVISED -

**CASS COUNTY  
 TOWNSHIP ROAD 163 OVER  
 LITTLE INDIAN CREEK**

SCALE: 1"=5'  
 SHEET 3 OF 7 SHEETS  
 STA. 19+00.00 TO STA. 20+50.00

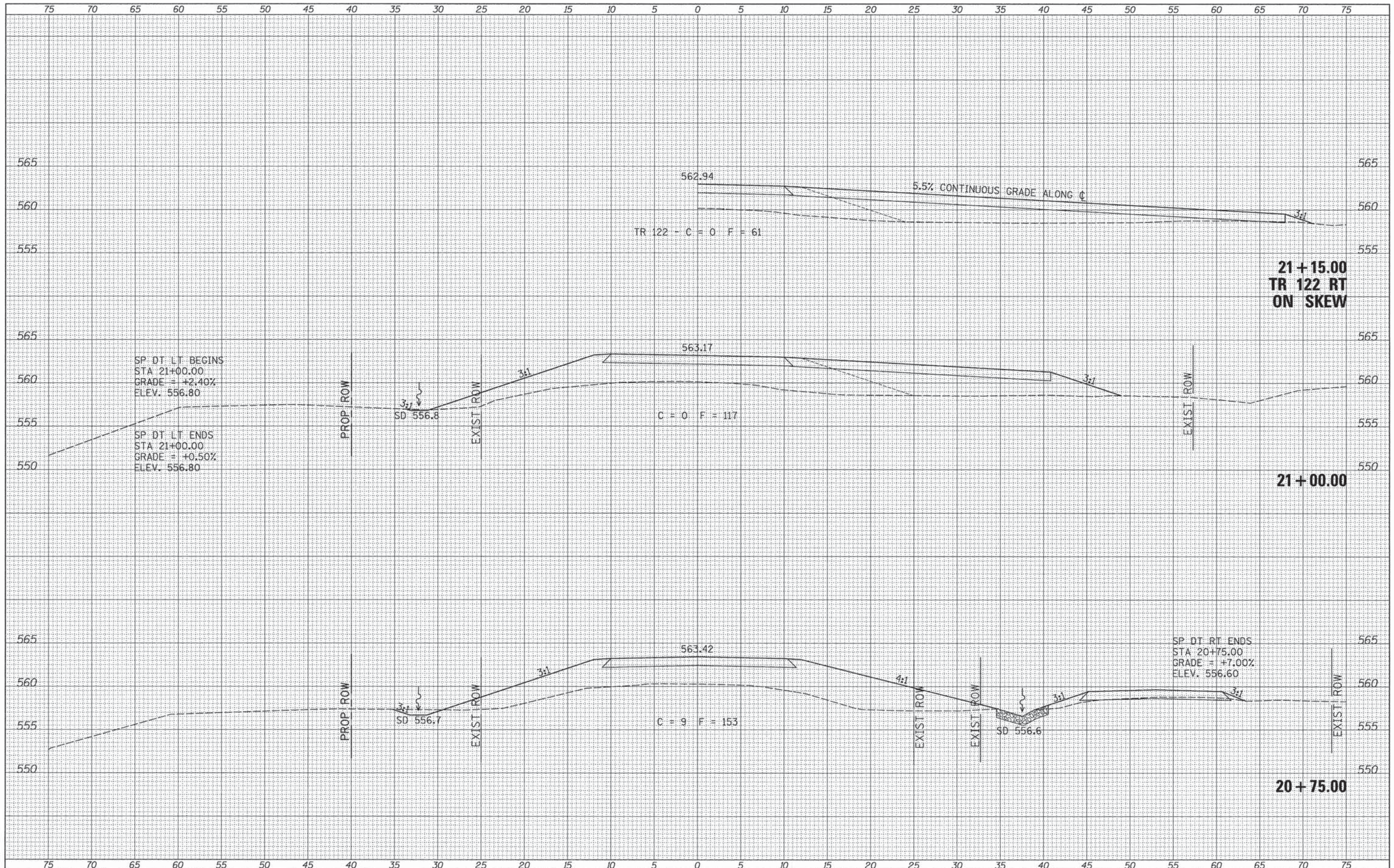
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RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-11114-00-BR	CASS	20	16
FED. ROAD DIST. NO. 7 (ILLINOIS)			CONTRACT NO. 93593	



DATE	
BY	
SUBMITTED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
FINAL SURVEY	
NOTE BOOK	
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DATE	
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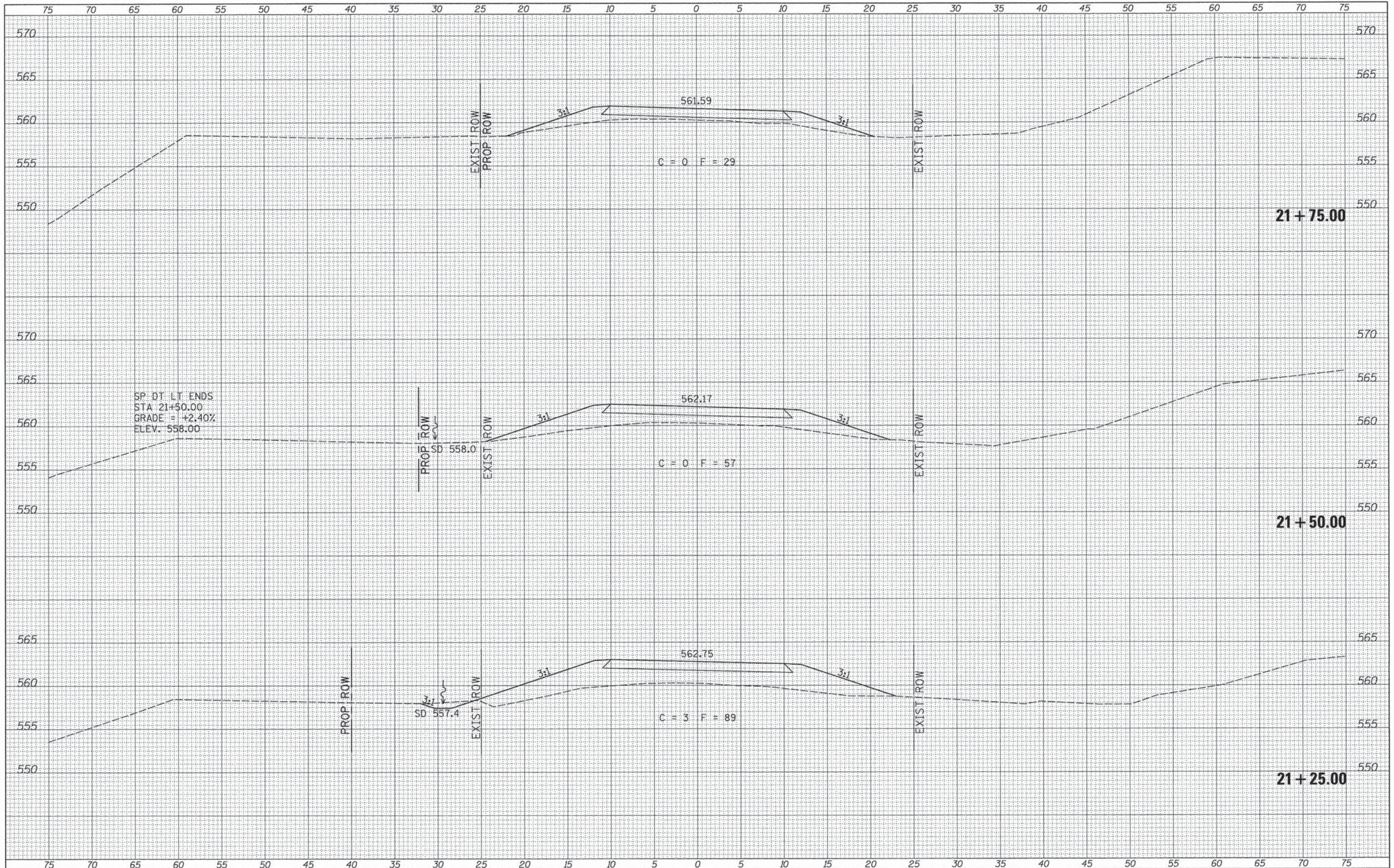
**CASS COUNTY  
 TOWNSHIP ROAD 163 OVER  
 LITTLE INDIAN CREEK**

**CROSS SECTIONS**  
 SCALE: 1"=5'  
 SHEET 4 OF 7 SHEETS  
 STA. 20+75.00 TO STA. 21+15.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-1114-00-BR	CASS	20	17
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93593	
FED. AID PROJECT BROS-0017222				

DATE	
BY	
EXEMPTED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
NO.	

DATE	
BY	
EXEMPTED	
PLOTTED	
TEMPLATE	
AREAS CHECKED	
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DATE	-	REVISED	-

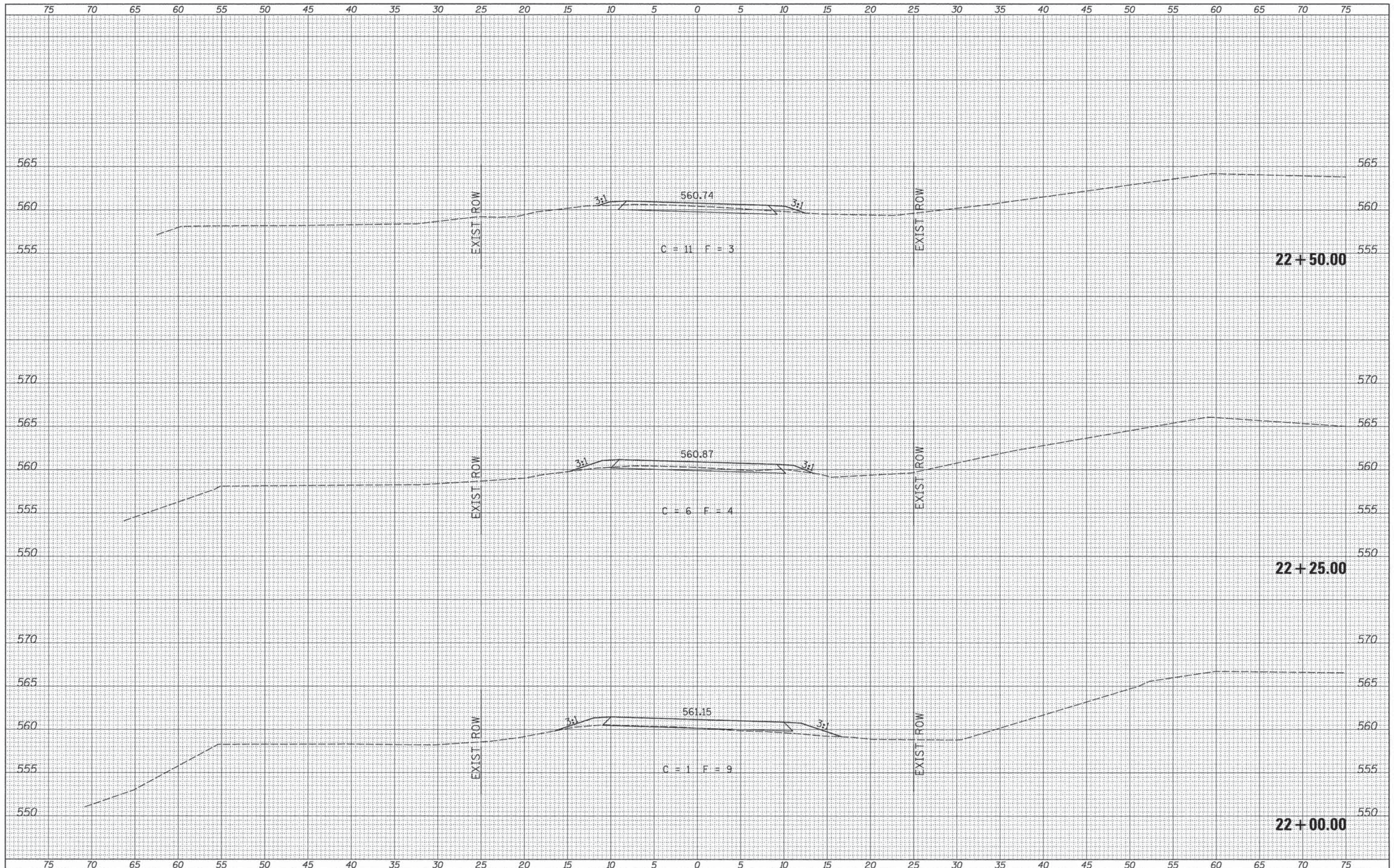
**CASS COUNTY  
 TOWNSHIP ROAD 163 OVER  
 LITTLE INDIAN CREEK**

**CROSS SECTIONS**  
 SCALE: 1"=5'  
 SHEET 5 OF 7 SHEETS STA. 21+25.00 TO STA. 21+75.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-11114-00-BR	CASS	20	18
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93593	
FED. AID PROJECT BR05-001720				

DATE	
BY	
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NOTE BOOK	
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DRAWN -  
CHECKED -  
DATE -

REVISED -  
REVISED -  
REVISED -  
REVISED -

**CASS COUNTY  
TOWNSHIP ROAD 163 OVER  
LITTLE INDIAN CREEK**

**CROSS SECTIONS**

SCALE: 1"=5' SHEET 6 OF 7 SHEETS STA. 22+00.00 TO STA. 22+50.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 163	12-11114-00-BR	CASS	20	19
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93593	
FED. AID PROJECT BROS-001722				

