

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM  
BROWN COUNTY  
SECTION 05-00064-00-BR  
F.A.S. 1582 (CH 2) OVER  
LITTLE MISSOURI CREEK  
PROJECT NO. BRS-1582(106)  
JOB NUMBER C-96-212-08**

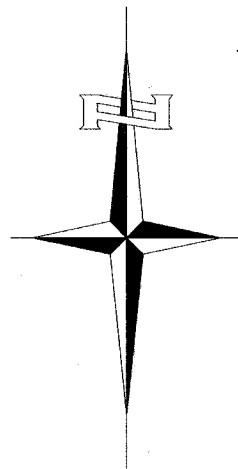
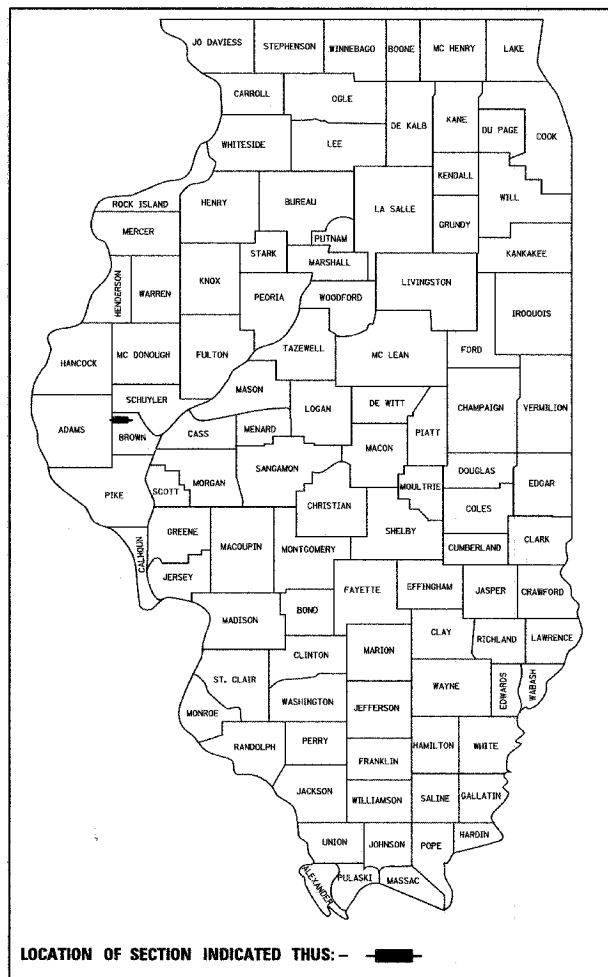
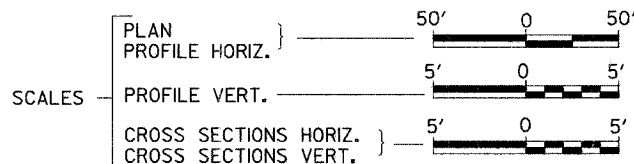
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET
CH 2	*	BROWN	21	1
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1582(106)	
*05-00064-00-BR		CONTRACT * 93469		

**INDEX OF SHEETS**

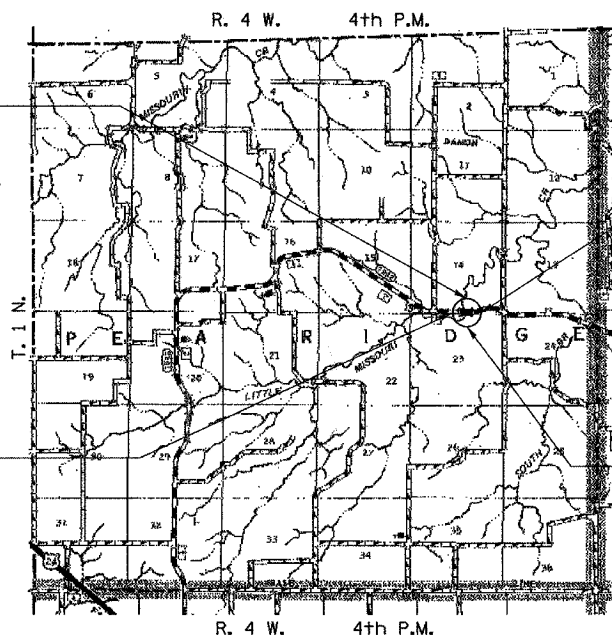
SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	GENERAL NOTES, DETAILS, TYPICAL SECTIONS
3.	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4.	TRAFFIC CONTROL PLAN
5.	EROSION CONTROL PLAN
6.	PLAN AND PROFILE
7.-16.	STRUCTURE PLANS
17.-21.	CROSS SECTIONS

**REQUIRED HIGHWAY STANDARDS**

- 000001-05
- 280001-04
- 515001-02
- 630301-04
- 635006-02
- 701901
- BLR 21-7
- BLR 27



PROPOSED STRUCTURE NO. 005-3003  
THREE SPAN 17" P.P.C. DECK BEAM  
STRUCTURE ON CONC. SPILL THRU  
ABUTMENTS AND CONC. ENCASED PIERS,  
97'-6" BK. TO BK. AND 24'-0" O. TO O.,  
NO SKEW



SECTION 05-00064-00-BR  
ENDS  
STATION 22+00.00

SECTION 05-00064-00-BR  
BEGINS  
STATION 18+50.00

EXISTING STRUCTURE 005-3002  
SINGLE SPAN REINFORCED CONCRETE DECK  
ON STEEL STRINGERS SUPERSTRUCTURE ON  
CONCRETE CLOSED ABUTMENTS  
±62'-6" BK. TO BK., AND ±24'-6" O. TO O.,  
NO SKEW (TO BE REMOVED)

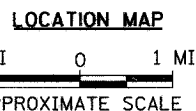
**UTILITY COMPANY**

ABS WATER COOPERATIVE  
CLAYTON, ILLINOIS

AMEREN CIPS  
BEARDSTOWN, ILLINOIS

VERIZON  
JACKSONVILLE, ILLINOIS

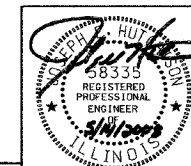
CALL J.U.L.I.E.  
BEFORE YOU DIG  
1-800-892-0123 OR 811



NET LENGTH OF PROJECT = 350.00 FEET = 0.066 MILES  
DESIGN CLASSIFICATION: MAJOR-COLLECTOR (NON-URBAN)  
DESIGN ADT = 200 (2008)  
DESIGN SPEED = 30 MPH

**Hutchison Engineering, Inc.**  
JACKSONVILLE ILLINOIS

2008 JOB#2550



License Expires 11/30/2009  
SIGNATURE

ENGINEERS SEAL

APPROVED 5-14 2008  
*Thomas J. Stinson*  
BROWN COUNTY ENGINEER

PASSED MAY 19 2008  
*Tommy J. Lee*  
DISTRICT SIX ENGINEER OF  
LOCAL ROADS & STREETS

PASSED MAY 20 2008  
*W.R. [Signature]*  
DISTRICT SIX ENGINEER  
OF CONSTRUCTION

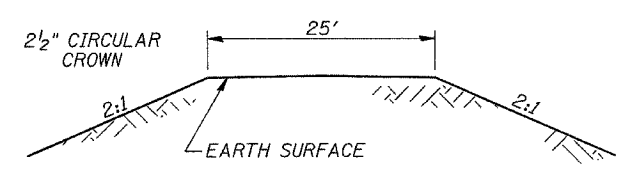
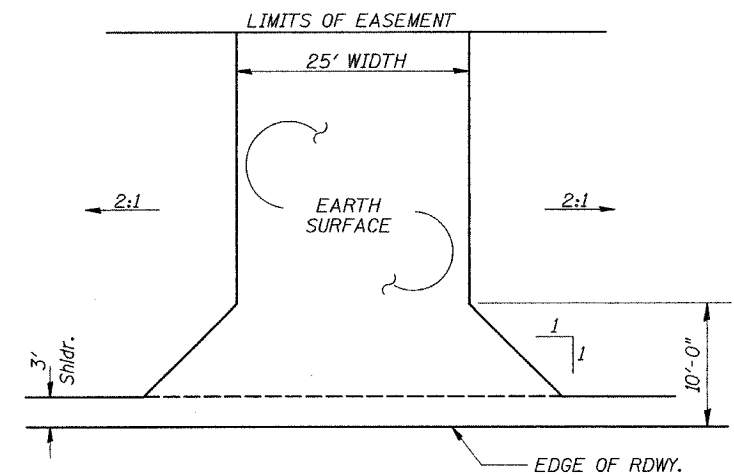
Released For  
Bid Based on  
Limited Review Reg. 2 District 5-21 2008

DEPUTY DIRECTOR OF HIGHWAYS,  
REGION FOUR ENGINEER

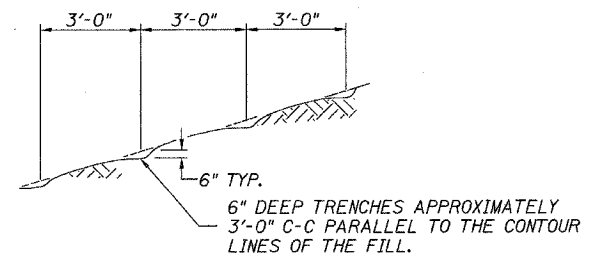
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CONTRACT NO. 93469

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	*	BROWN	21	2
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1582(106)	
*05-00064-00-BR		CONTRACT		93469



**FIELD ENTRANCE**  
STA 19+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**

PLAN QUANTITIES FOR TREE REMOVAL HAVE BEEN BASED ON ALL TREES WITHIN THE EXISTING 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.

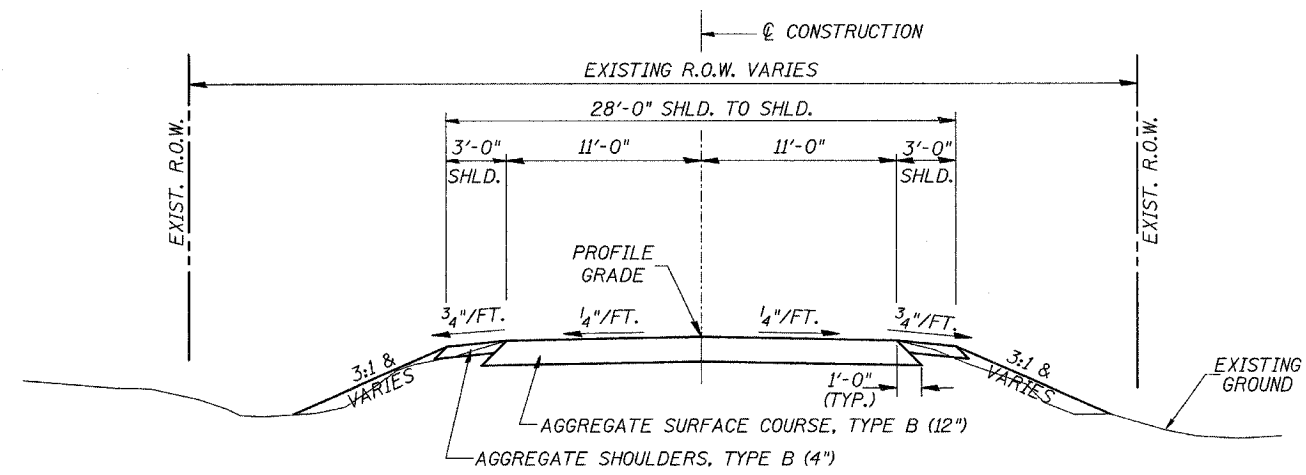
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION

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.

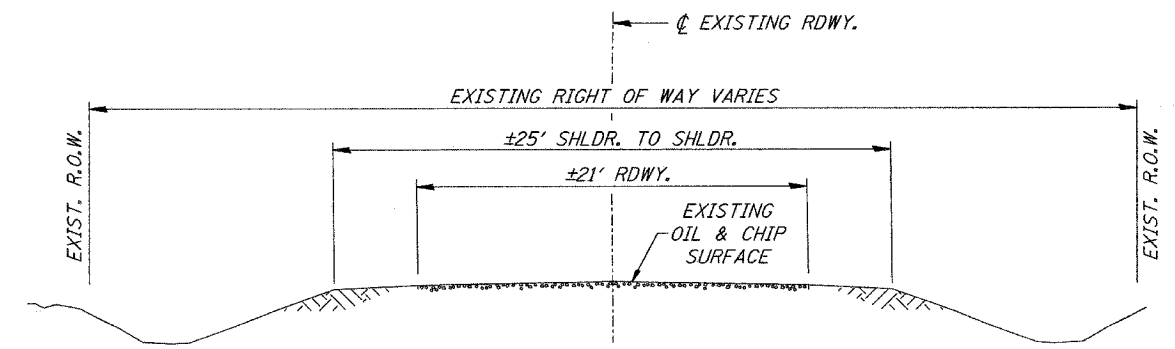


**PROPOSED TYPICAL SECTION**

STA. 18+50.00 TO STA. 19+62.25  
STA. 20+59.75 TO STA. 22+00.00  
EXCEPT TRANSITIONS

BRIDGE OMISSION  
STA. 19+62.25 TO STA. 20+59.75

CONSTRUCT GUARDRAIL  
SHOULDER WIDENING IN  
ACCORDANCE WITH STD 630301



**EXISTING TYPICAL SECTION**

**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	212
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	116
20200100	EARTH EXCAVATION	CU YD	235
20300100	CHANNEL EXCAVATION	CU YD	535
① 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.4
28000400	PERIMETER EROSION BARRIER	FOOT	625
① 28101700	RIPRAP, SPECIAL	TON	345
28200200	FILTER FABRIC	SQ YD	440
① 40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	481
① 48101200	AGGREGATE SHOULDERS, TYPE B	TON	43
① 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	95
50300225	CONCRETE STRUCTURES	CU YD	86.0
50300280	CONCRETE ENCASEMENT	CU YD	11.2
① 50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2,292
① 50800105	REINFORCEMENT BARS	POUND	7,470
* 50900205	STEEL RAILING, TYPE S-1	FOOT	195
51201400	FURNISHING STEEL PILES HP10x42	FOOT	444
51202305	DRIVING PILES	FOOT	132
51203400	TEST PILE STEEL HP10x42	EACH	2
51204650	PILE SHOES	EACH	8
51500100	NAME PLATES	EACH	1
* 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
* 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	2
67100100	MOBILIZATION	L SUM	1
① 70103700	TRAFFIC CONTROL COMPLETE	L SUM	1
* ① 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
① X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION, LOCATION 1	EACH	1
① X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION, LOCATION 2	EACH	1
① Z0065000	SETTING PILES IN ROCK	EACH	12

① SEE SPECIAL PROVISIONS CONSTRUCTION TYPE CODE: X080-2A  
 \* SPECIALTY ITEMS

**TREE REMOVAL**

STATION	OFFSET	SIDE	6 TO 15 UNITS	OVER 15 UNITS
19+06	19'	RIGHT		24
19+45	35'	LEFT		20
20+52	40'	LEFT	6	
20+58	36'	LEFT	6	
20+58	36'	LEFT	8	
20+62	20'	RIGHT		18
20+65	21'	RIGHT		18
20+91	48'	LEFT	6	
20+94	50'	LEFT	6	
21+01	41'	LEFT	10	
21+04	54'	LEFT	10	
21+05	48'	RIGHT	6	
21+09	38'	LEFT	10	
21+11	48'	LEFT	10	
21+12	43'	RIGHT	10	
21+13	47'	RIGHT	8	
21+16	42'	LEFT	15	
21+17	39'	RIGHT	6	
21+21	49'	LEFT		18
21+25	45'	RIGHT	10	
21+39	45'	LEFT	12	
21+58	40'	LEFT	12	
21+60	38'	LEFT	10	
21+60	38'	LEFT	8	
21+60	38'	LEFT	8	
21+66	41'	LEFT	15	
21+78	53'	RIGHT	10	
21+82	45'	LEFT		18
21+97	52'	RIGHT	10	
TOTAL			212	116

**AGGREGATE SHOULDERS, TYPE B**

STATION TO STATION	SIDE	WIDTH	LENGTH	TON
18+50.00 - 19+00.00	LEFT	1.50' AVG.	50.00'	2
18+50.00 - 18+89.00	RIGHT	3.63' AVG.	39.00'	3
18+89.00 - 19+24.00	RIGHT	7.00'	35.00'	6
19+00.00 - 19+47.25	LEFT	3.00'	47.25'	3
19+24.00 - 19+28.00	RIGHT	6.67' AVG.	4.00'	1
19+28.00 - 19+49.00	RIGHT	6.33'	21.00'	3
19+47.25 - 19+62.25	LEFT	2.50' AVG.	15.00'	1
19+49.00 - 19+62.25	RIGHT	4.67' AVG.	13.25'	1
20+59.75 - 20+73.00	LEFT	4.67' AVG.	13.25'	1
20+59.75 - 20+74.75	RIGHT	2.50' AVG.	15.00'	1
20+73.00 - 20+94.00	LEFT	6.33'	21.00'	3
20+74.75 - 21+50.00	RIGHT	3.00'	75.25'	5
20+94.00 - 20+98.00	LEFT	6.67' AVG.	4.00'	1
20+98.00 - 21+33.00	LEFT	7.00'	35.00'	6
21+33.00 - 21+50.00	LEFT	5.59' AVG.	17.00'	2
21+50.00 - 22+00.00	LEFT	2.09' AVG.	50.00'	2
21+50.00 - 22+00.00	RIGHT	1.50' AVG.	50.00'	2
TOTAL				43

**AGGREGATE SURFACE COURSE, TYPE B**

STATION TO STATION	THICKNESS	WIDTH	LENGTH	TON
18+50.00 - 19+00.00	1.00'	22.09' AVG.	50.00'	77
18+50.00 - 19+62.25	1.00'	23.00'	112.25'	181
20+59.75 - 21+50.00	1.00'	23.00'	90.25'	145
21+50.00 - 22+00.00	1.00'	22.37' AVG.	50.00'	78
TOTAL				481

**EARTHWORK SUMMARY**

STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	FILL	WASTE (SHORTAGE)					
	CU YD	CU YD	CU YD	CU YD	CU YD					
RDWY 18+50.00 - 19+62.25	80			88	(28)					
RDWY 20+59.75 - 22+00.00	154			2	114					
CHANNEL		535								
STRUCTURE			95							
TOTAL						234	535	95	90	86
USE						235	535	95	-	85

(@ 25% SHRINKAGE)

**PERIMETER EROSION BARRIER**

STATION TO STATION	SIDE	FOOT
18+50 - 19+60	RIGHT	135
18+50 - 19+60	LEFT	175
20+60 - 22+00	RIGHT	160
20+60 - 22+00	LEFT	155
TOTAL		625

**TRAFFIC BARRIER TERMINAL, TYPE 5A**

SIDE	STATION TO STATION	EACH
RIGHT	19+49.00 - 19+62.25	1
LEFT	20+59.75 - 20+73.00	1
TOTAL		2

**TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)**

SIDE	STATION TO STATION	EACH
RIGHT	18+99.00 - 19+49.00	1
LEFT	20+73.00 - 21+23.00	1
TOTAL		2

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	*	BROWN	21	4
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1582(106)	
*05-00064-00-BR			CONTRACT #	

93469

R 4 W, 4th PM



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

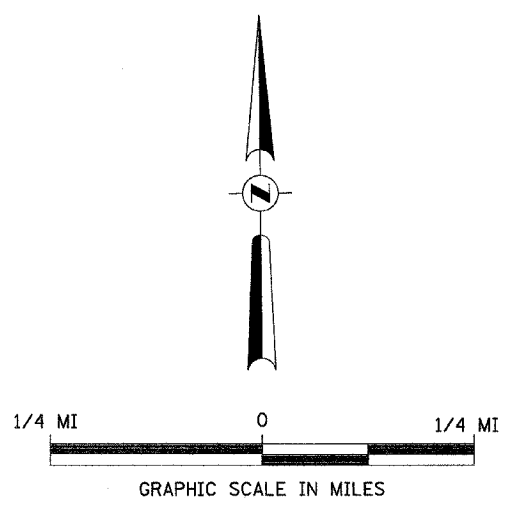
ROAD CLOSED  
1/2 MILES AHEAD  
LOCAL TRAFFIC ONLY
- 2 ROAD CLOSED  
1/3 MILE AHEAD  
LOCAL TRAFFIC ONLY  
R11-3

ROAD CLOSED  
1/3 MILES AHEAD  
LOCAL TRAFFIC ONLY
- 3 ROAD CLOSED  
AHEAD  
W20-3

ROAD CLOSED  
AHEAD
- 4 ROAD CLOSED  
500 FT  
W20-3

ROAD CLOSED  
500 FT
- 5 TYPE III BARRICADES

SEE STANDARD BLR 21  
AND SPECIAL PROVISIONS



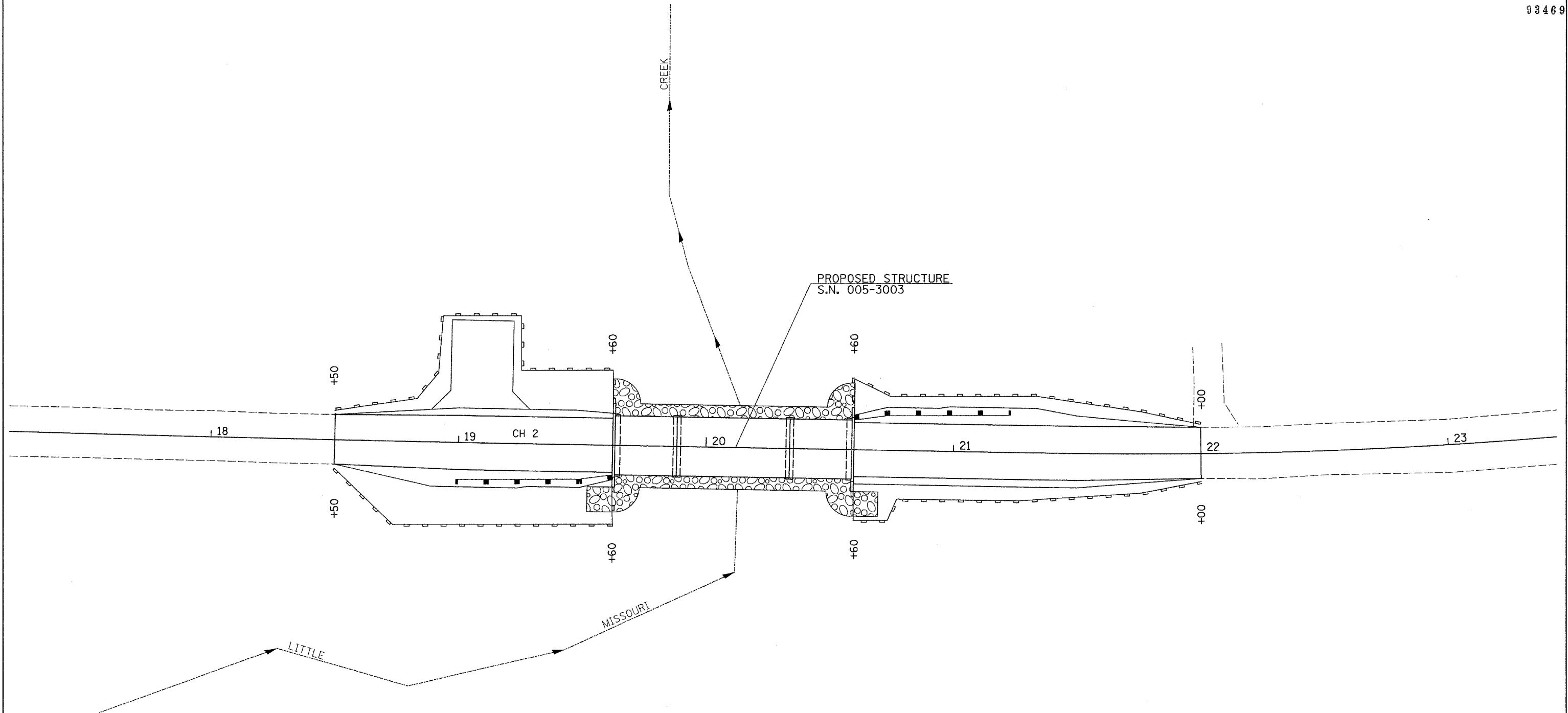
TRAFFIC CONTROL PLAN  
COUNTY HIGHWAY 2 OVER  
LITTLE MISSOURI CREEK  
SECTION 05-00064-00-BR  
BROWN COUNTY  
STATION 20+11.00

R 4 W, 4th PM



T 1 N, R 4 W, 4th PM  
SECTION 14

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	*	BROWN	21	5
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1582(106)	
#05-00064-00-BR		CONTRACT #		

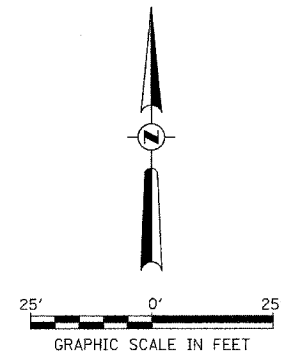
93469



LEGEND

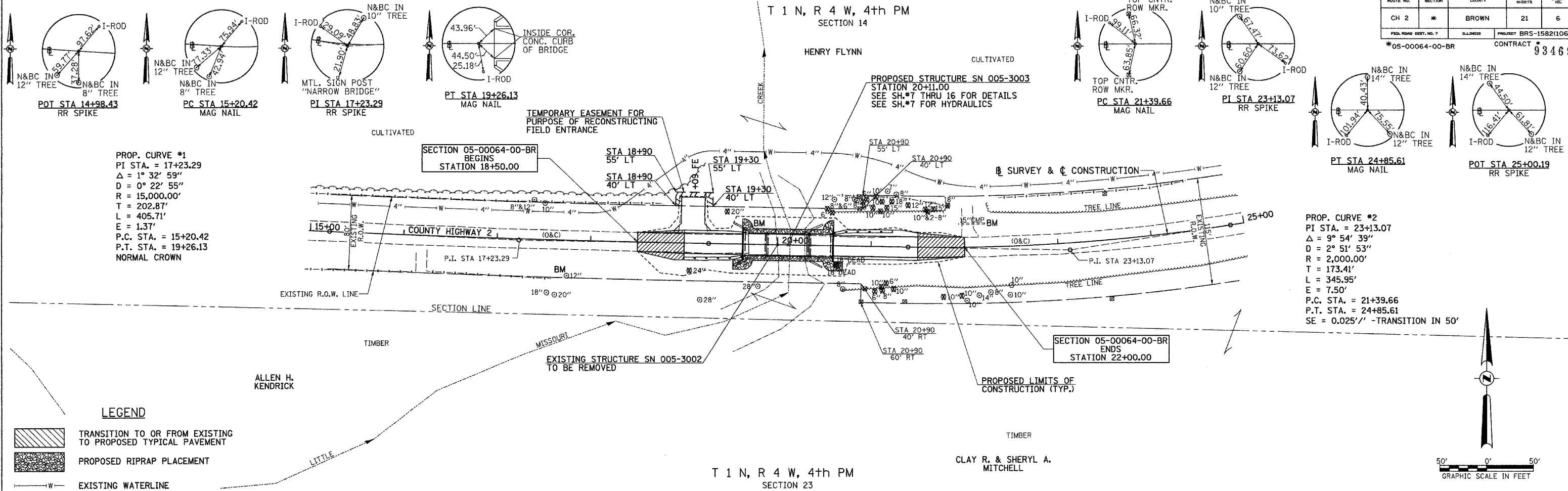
-  PERIMETER EROSION BARRIER
-  PROPOSED RIPRAP PLACEMENT

T 1 N, R 4 W, 4th PM  
SECTION 23



EROSION CONTROL PLAN  
 COUNTY HIGHWAY 2 OVER  
 LITTLE MISSOURI CREEK  
 SECTION 05-00064-00-BR  
 BROWN COUNTY  
 STATION 20+11.00

ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL SHEETS
CH 2	*	BROWN	21	6
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1582(106)	CONTRACT # 93469
*05-00064-00-BR				



PROP. CURVE #1  
 PI STA. = 17+23.29  
 $\Delta = 1^\circ 32' 59''$   
 $D = 0^\circ 22' 55''$   
 $R = 15,000.00'$   
 $T = 202.87'$   
 $L = 405.71'$   
 $E = 1.37'$   
 P.C. STA. = 15+20.42  
 P.T. STA. = 19+26.13  
 NORMAL CROWN

PROP. CURVE #2  
 PI STA. = 23+13.07  
 $\Delta = 9^\circ 54' 39''$   
 $D = 2^\circ 51' 53''$   
 $R = 2,000.00'$   
 $T = 173.41'$   
 $L = 345.95'$   
 $E = 7.50'$   
 P.C. STA. = 21+39.66  
 P.T. STA. = 24+85.61  
 SE = 0.025'/1' -TRANSITION IN 50'

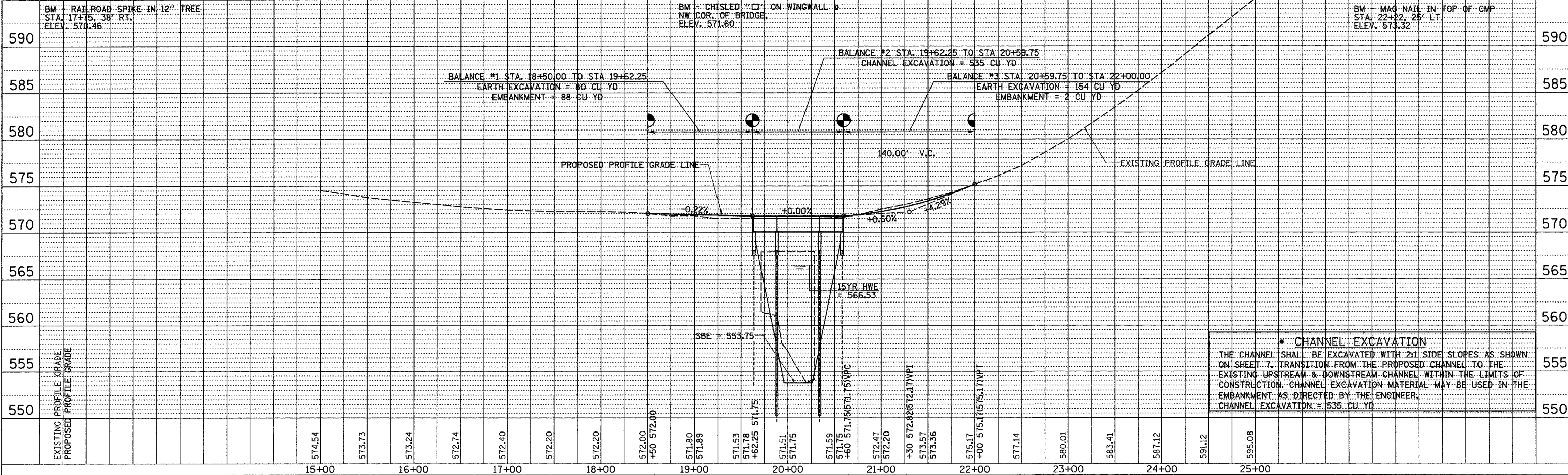
**LEGEND**

- TRANSITION TO OR FROM EXISTING TO PROPOSED TYPICAL PAVEMENT
- PROPOSED RIPRAP PLACEMENT
- EXISTING WATERLINE

DATE	BY

DATE	BY

PLOT DATE = 5/13/2008  
 FILE NAME = V:\highway\2550-Brown\2550p100.dgn  
 PLOT SCALE = 500000.00 / 1 IN.  
 USER NAME = jhudson



B.M.: RR Spike in 12" Tree,  
Sta. 17+75, 38' Rt.  
Elev. 570.46

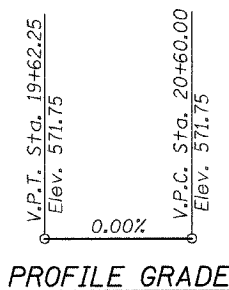
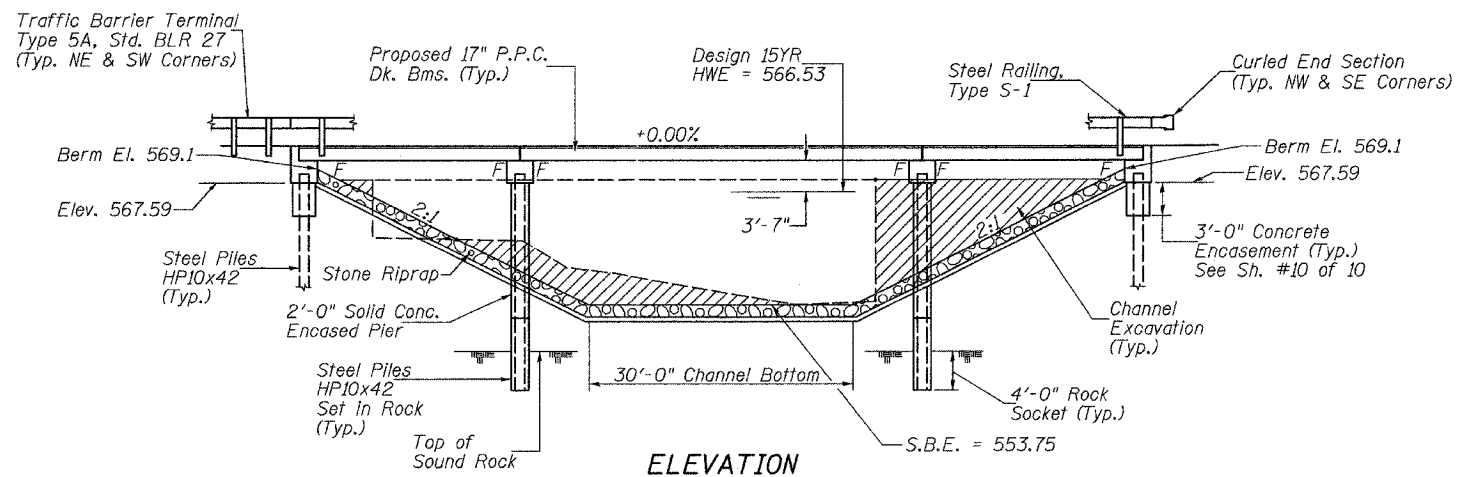
Mag Nail in Top of CMP  
Sta. 22+22, 25' Lt.  
Elev. 573.32

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	*	BROWN	21	7
PROJECT BRS-1582(106)				
CONTRACT # 93469				

**Existing Structure:**  
Single span reinforced concrete deck on steel stringers superstructure supported on concrete closed abutments. The structure is ±62.5' back to back of abutments, ±24.5' out to out of deck and is not skewed.  
Str. No. 005-3002

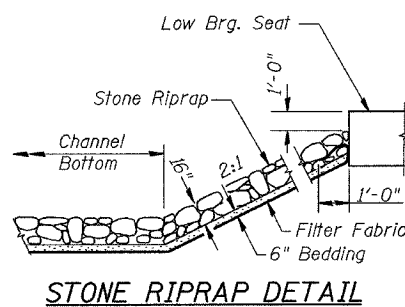
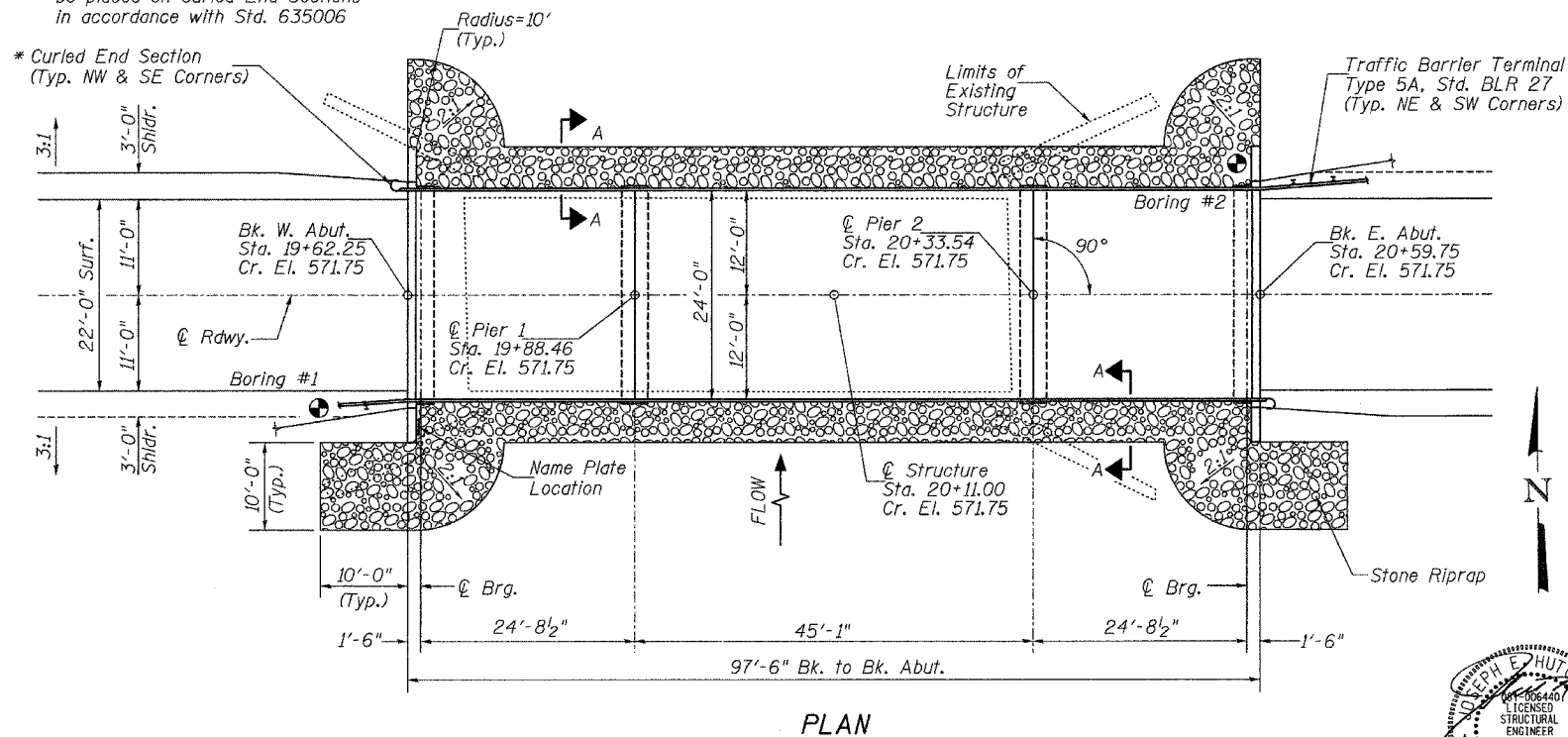
**Salvage:** Structural Steel, Bridge Rail

Road to be closed to traffic during construction.

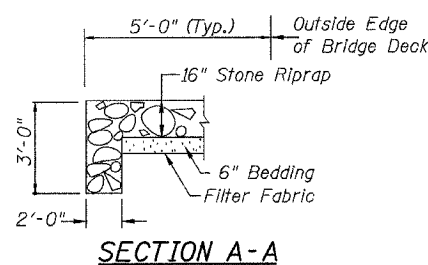


\* Terminal Marker-Direct Applied to be placed on Curled End Sections in accordance with Std. 635006

\* Curled End Section (Typ. NW & SE Corners)



STONE RIPRAP DETAIL



SECTION A-A

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	---	535	535
① Riprap, Special	TON	---	345	345
Filter Fabric	SQ YD	---	440	440
① Removal of Existing Structures	EACH	---	---	1
Structure Excavation	CU YD	---	95	95
Concrete Structures	CU YD	---	86.0	86.0
① Precast Prestressed Concrete Deck Beams (17" Depth)	SQ FT	2,292	---	2,292
① Reinforcement Bars	POUND	---	7,470	7,470
Steel Railing, Type S1	FOOT	195	---	195
Furnishing Steel Piles HP10x42	FOOT	---	444	444
Driving Piles	FOOT	---	132	132
Test Pile Steel HP10x42	EACH	---	2	2
Pile Shoes	EACH	---	8	8
① Setting Piles in Rock	EACH	---	12	12
Concrete Encasement	CU YD	---	11.2	11.2
Name Plates	EACH	---	---	1
① Underwater Structure Excavation Protection-Location 1 (Pier #1)	EACH	---	1	1
① Underwater Structure Excavation Protection-Location 2 (Pier #2)	EACH	---	1	1
① See Special Provisions				

**LITTLE MISSOURI CREEK  
BUILT 200\_ BY  
BROWN COUNTY  
SEC. 05-00064-00-BR  
C.H. 2 STATION 20+11.00  
F.A. PROJ. BRS-1582(106)  
STR. NO. 005-3003 LOADING HS20-44**

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

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]* 5/14/2008  
Illinois Structural No. 6440  
Expires 11/30/2008

**DESIGN SPECIFICATIONS**

2002 AASHTO & Interlms

**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. ( $\frac{1}{2}$ " Strands)  
 $f'_{si} = 201,960$  p.s.i. ( $\frac{1}{2}$ " Strands)

**LOADING HS20-44**

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

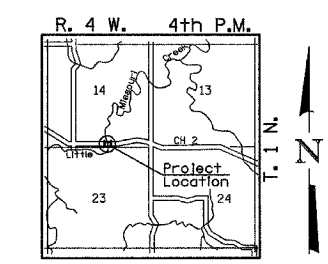
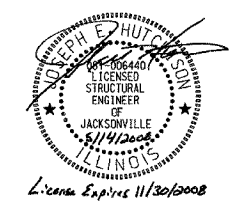
**WATERWAY INFORMATION**

Drainage Area = 13.3 Sq. Mi. Low Grade Elev. = 571.75 @ Sta. 20+11.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	15	3,035	518	675	566.53	0.22	0.00	566.75	566.53	
Base	100	5,196	593	777	567.82	0.93	0.19	568.75	568.01	

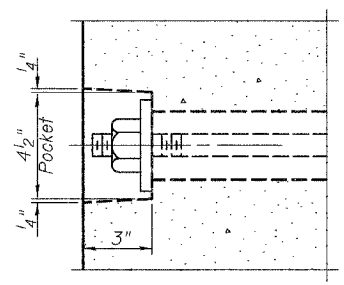
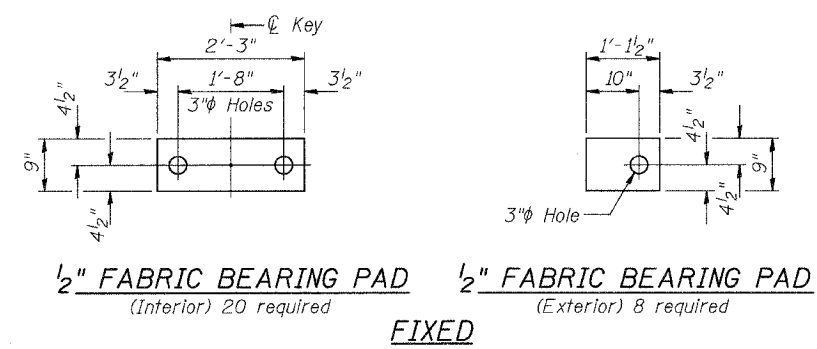
Construction of this project complies with IDNR, Office of Water Resources Statewide Permit No. 2

DESIGNED	J.E.H.
CHECKED	B.A.N.
DRAWN	C.E.T.
CHECKED	J.E.H.

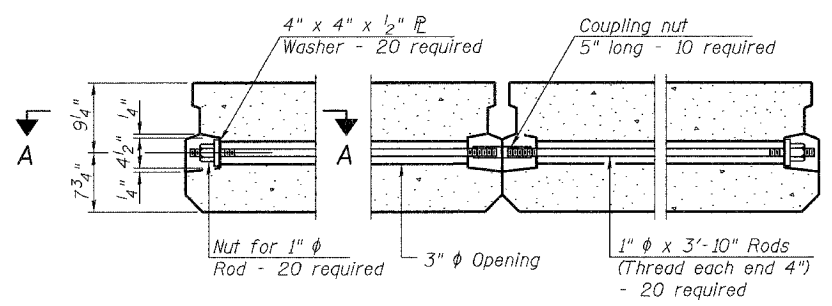


LOCATION SKETCH

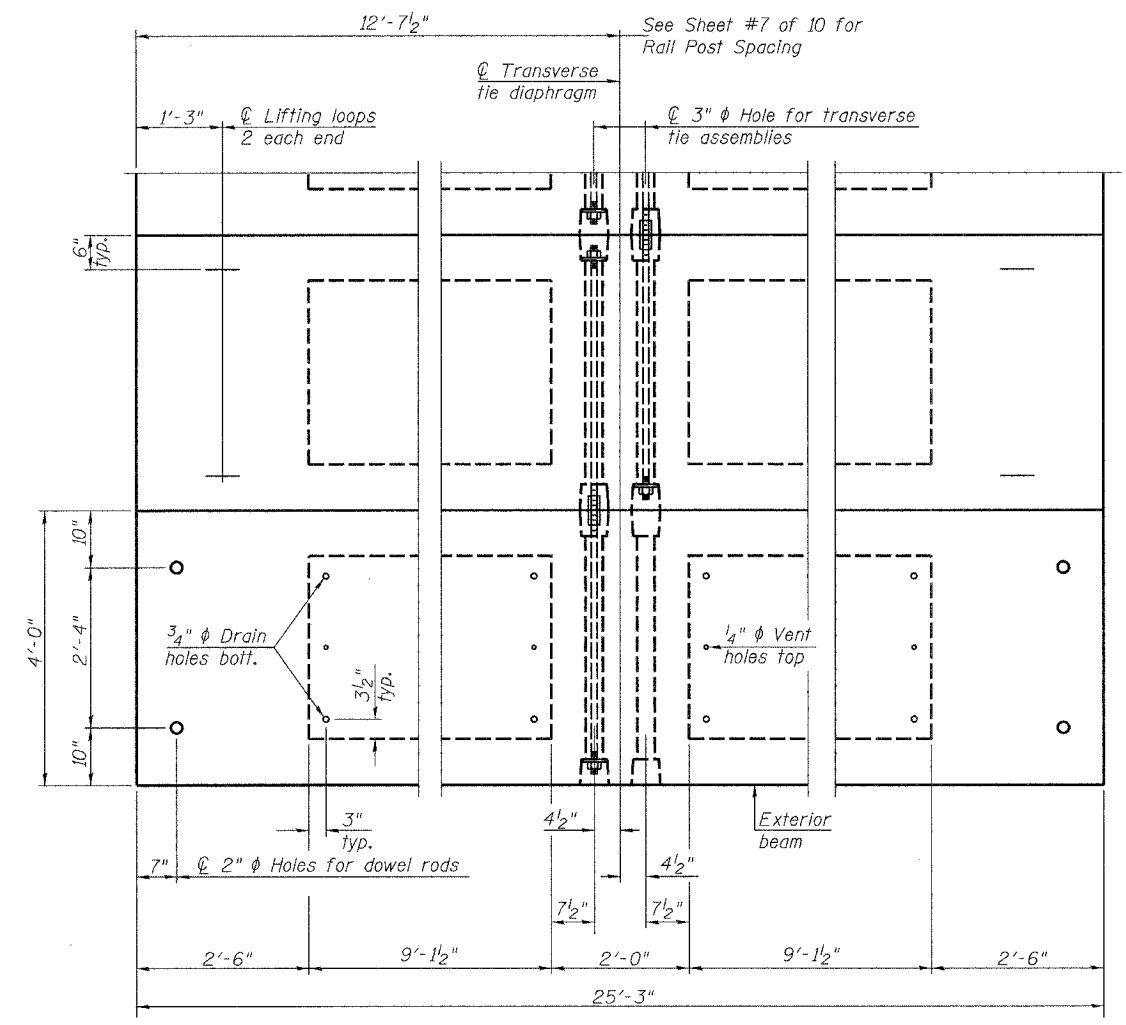
**GENERAL PLAN & ELEVATION  
COUNTY HIGHWAY 2 OVER  
LITTLE MISSOURI CREEK  
SECTION 05-00064-00-BR  
BROWN COUNTY  
STR. NO. 005-3003  
STATION 20+11.00**



SECTION A-A

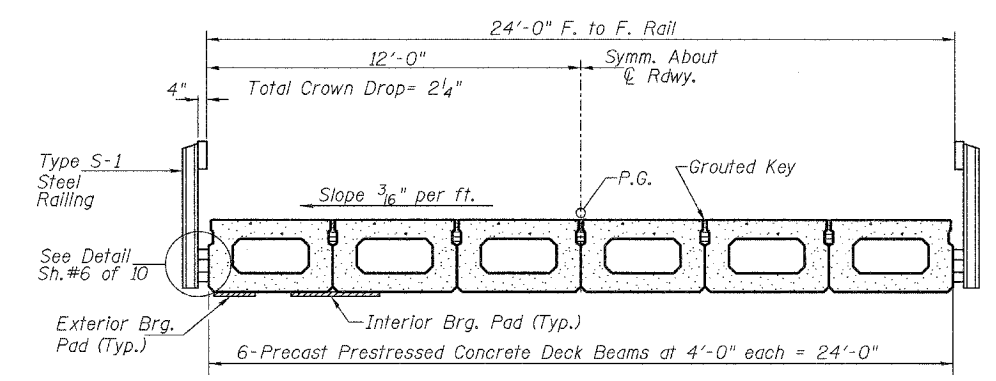


TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW

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



CROSS SECTION

**BILL OF MATERIAL - SPANS 1 & 3**

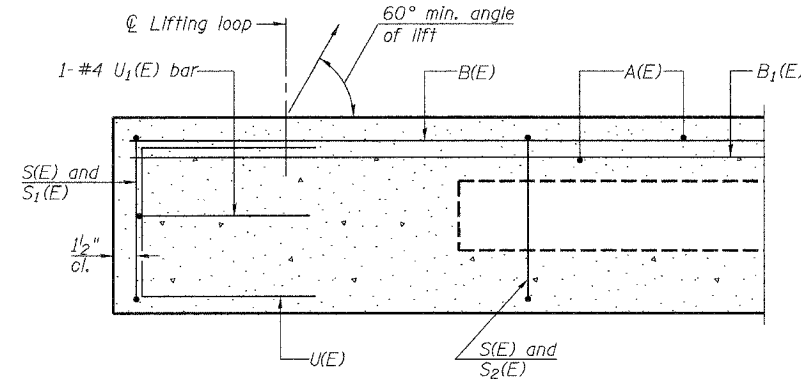
ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (17" Depth)	SQ FT	1,212

**NOTES**

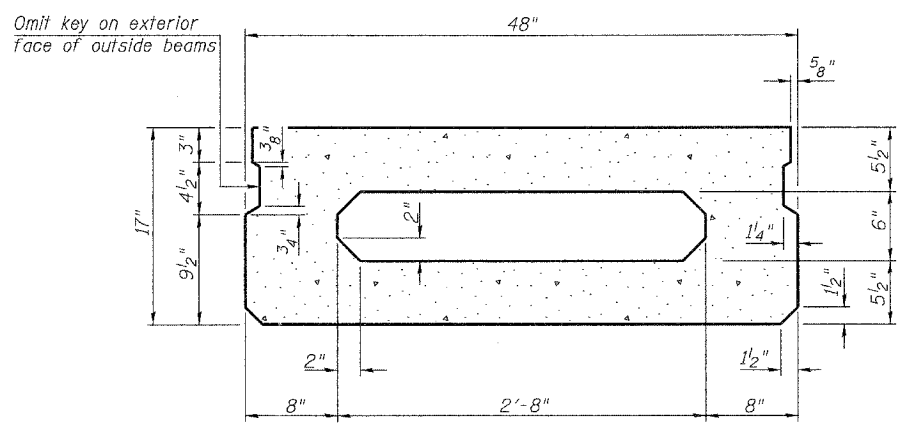
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior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

**SUPERSTRUCTURE - SPANS 1 & 3**  
**COUNTY HIGHWAY 2 OVER**  
**LITTLE MISSOURI CREEK**  
**SEC. 05-00064-00-BR**  
**BROWN COUNTY**  
**STATION 20+11.00**

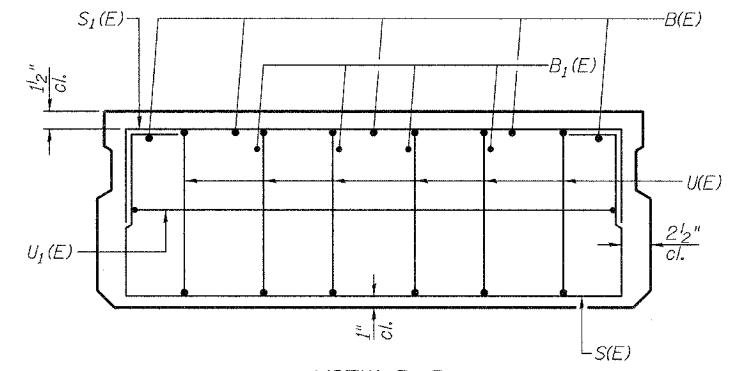




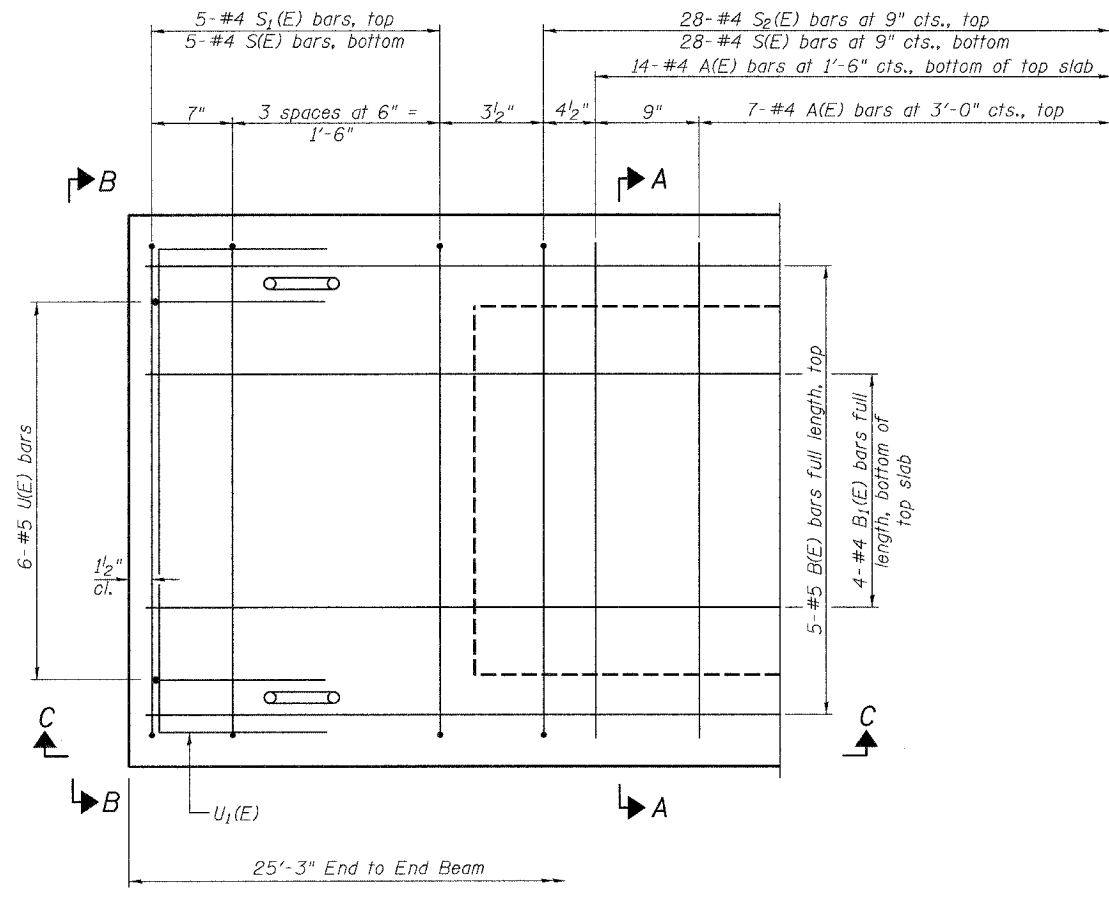
**SECTION C-C**



**SECTION A-A**  
(Showing dimensions)

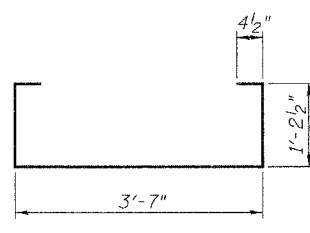


**VIEW B-B**

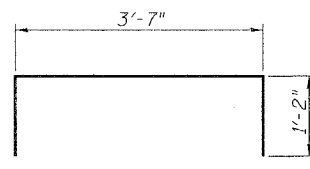


**PLAN VIEW**

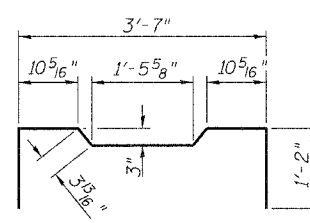
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



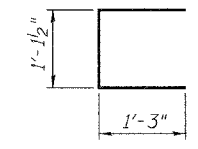
**BAR S(E)**



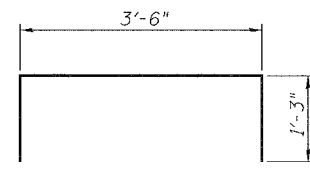
**BAR S1(E)**



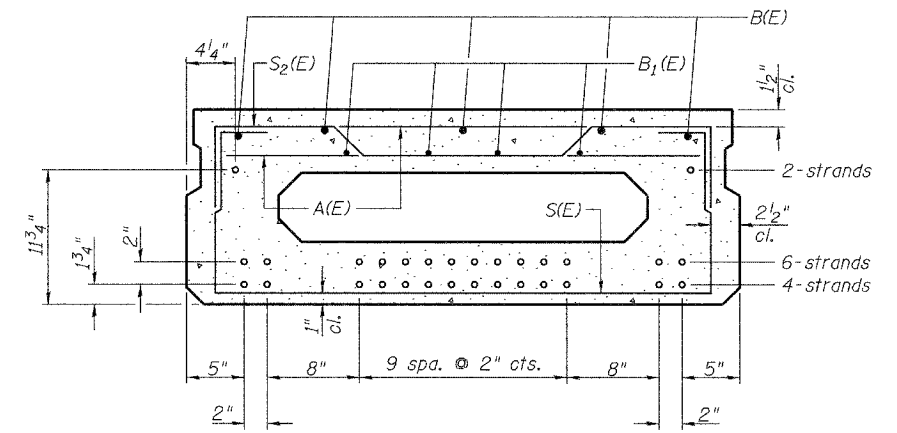
**BAR S2(E)**



**BAR U(E)**



**BAR U1(E)**



**SECTION A-A**  
12-1/2" Strands Each Strand Stressed to 30,900 Lbs.  
4-Strands 1 3/4" up, 6-Strands 3/4" up, 2-Strands 1 1/4" up

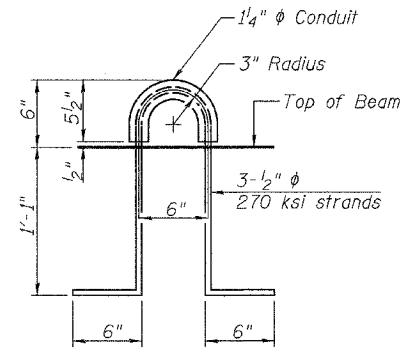
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

**BAR LIST ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	21	#4	3'-7"	—
B(E)	5	#5	*25'-0"	—
B1(E)	4	#4	*25'-0"	—
S(E)	38	#4	6'-9"	□
S1(E)	10	#4	5'-11"	□
S2(E)	28	#4	6'-2"	□
U(E)	12	#5	3'-8"	□
U1(E)	2	#4	6'-0"	□

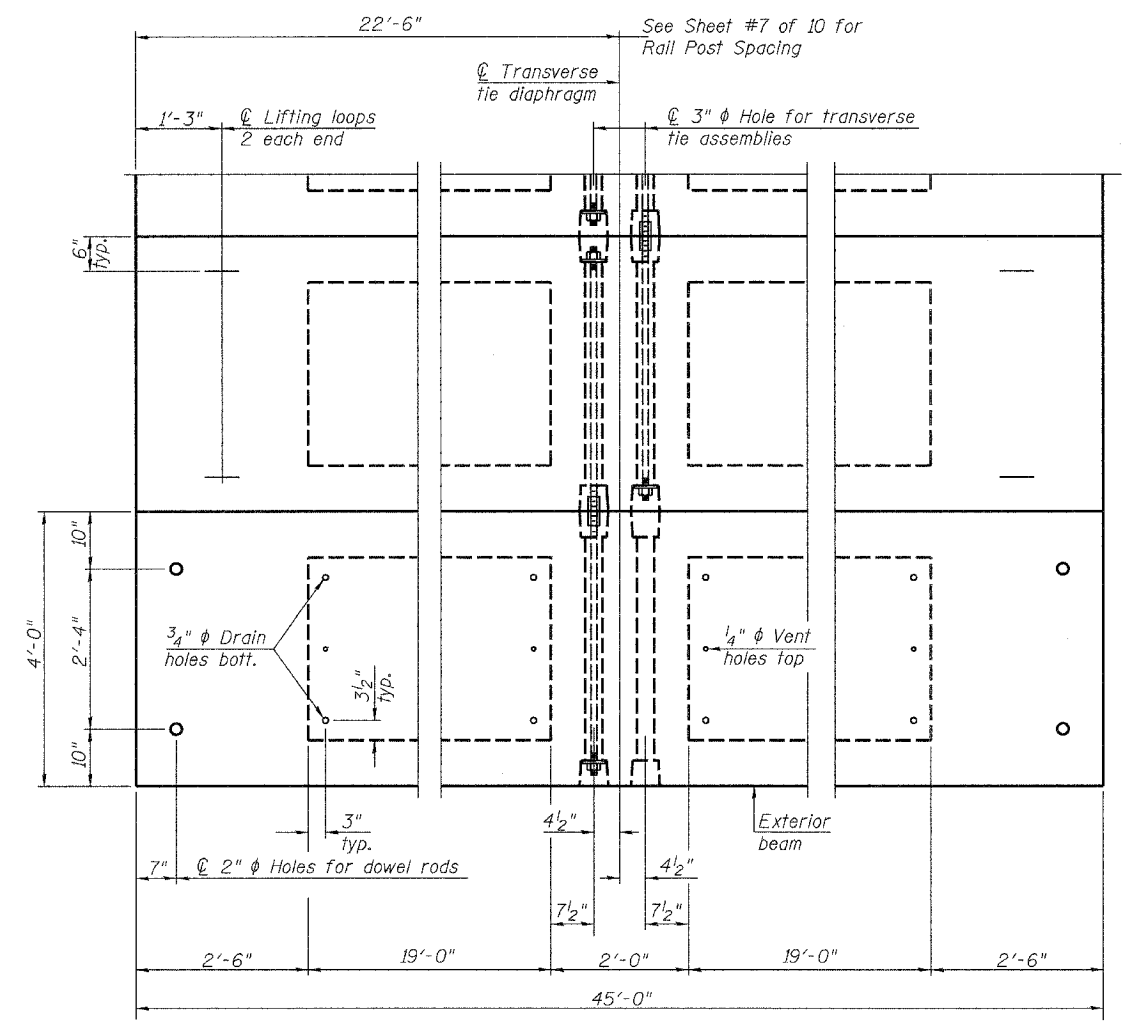
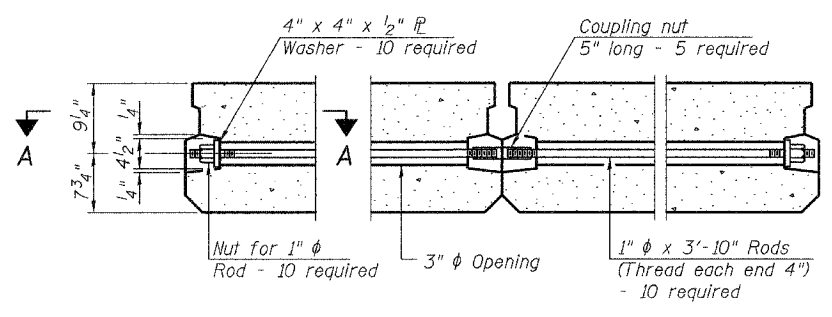
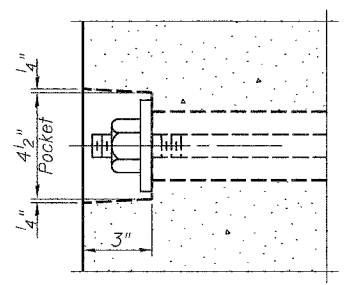
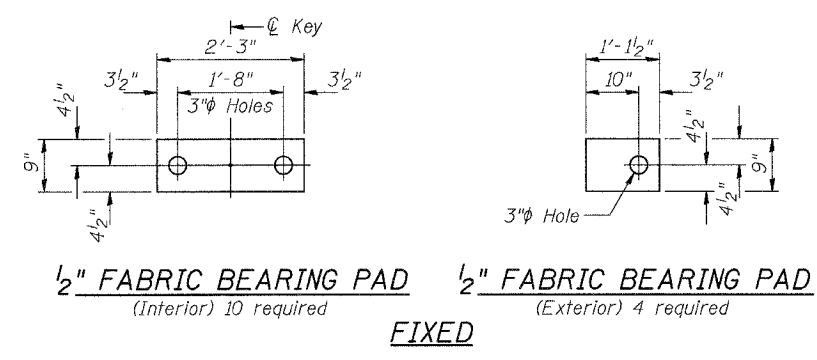
\* Total Length, Lap as necessary

Note: See sheet 2 of 10 for additional details and Bill of Material.

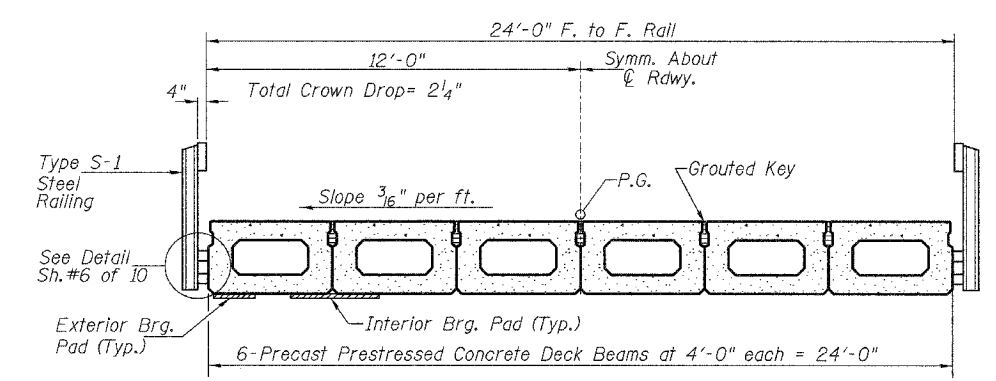


**LIFTING LOOP DETAIL**

**SUPERSTRUCTURE DETAILS**  
**SPANS 1 & 3**  
**COUNTY HIGHWAY 2 OVER**  
**LITTLE MISSOURI CREEK**  
**SEC. 05-00064-00-BR**  
**BROWN COUNTY**  
**STATION 20+11.00**



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



**BILL OF MATERIAL - SPAN 2**

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (17" Depth)	SQ FT	1,080

**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. (See Special Provisions)

Two 1/2" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

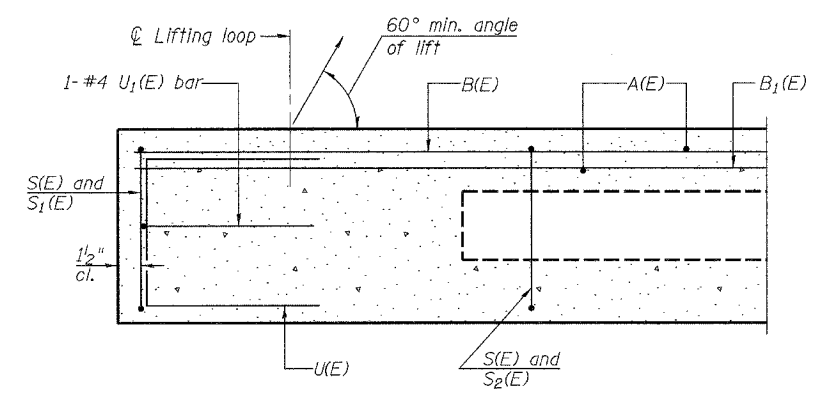
A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

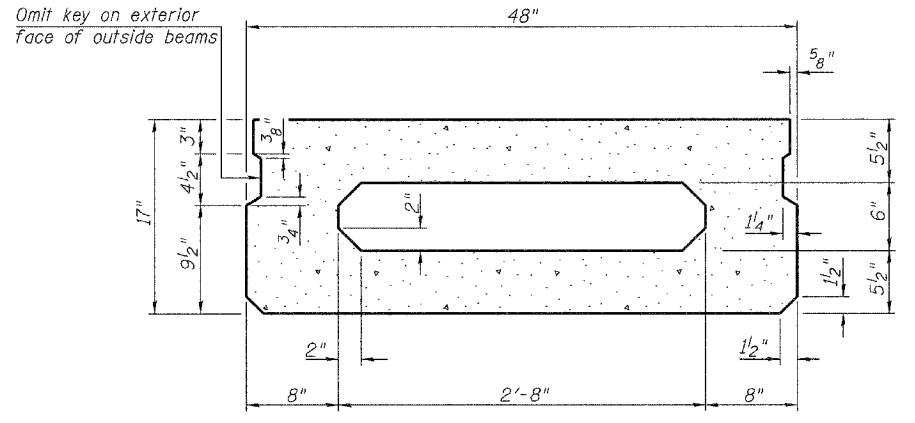
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

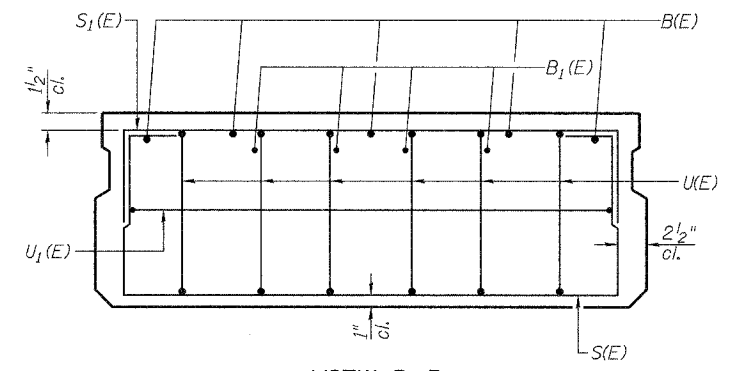
**SUPERSTRUCTURE - SPAN 2**  
**COUNTY HIGHWAY 2 OVER**  
**LITTLE MISSOURI CREEK**  
**SEC. 05-00064-00-BR**  
**BROWN COUNTY**  
**STATION 20+11.00**



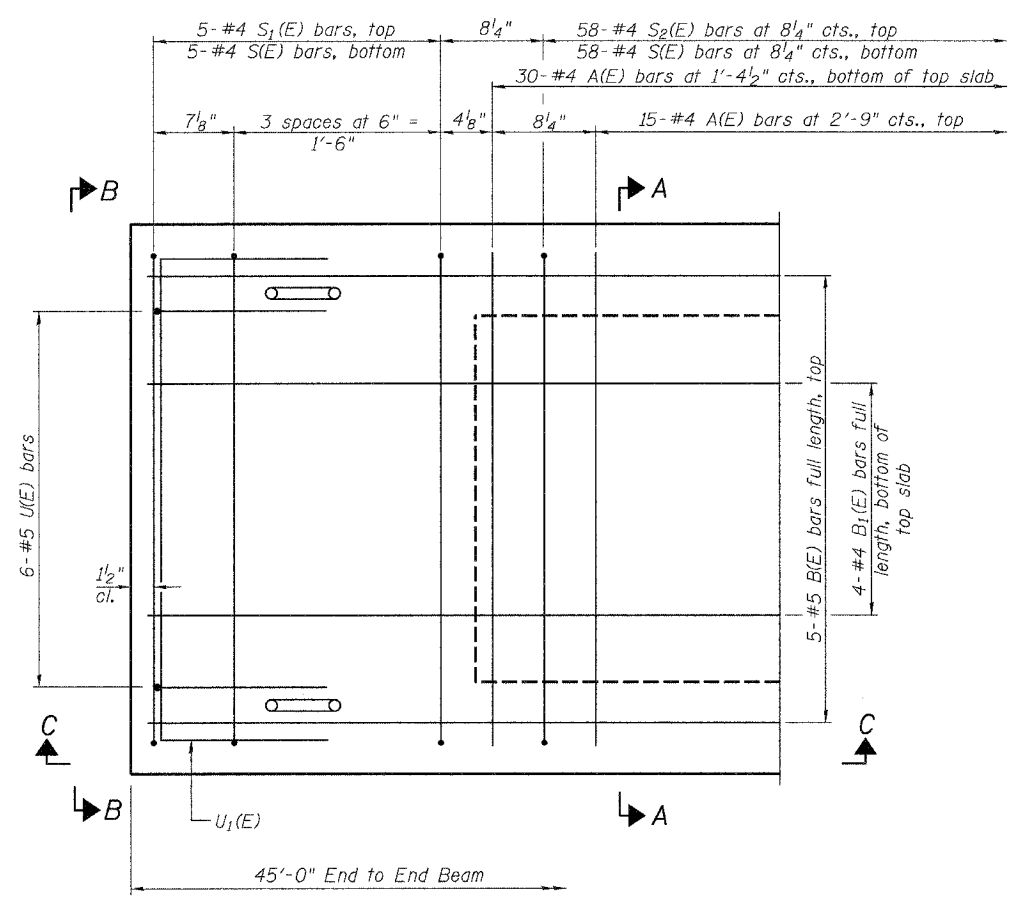
**SECTION C-C**



**SECTION A-A**  
(Showing dimensions)

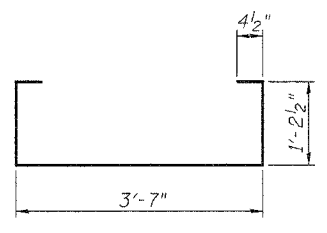


**VIEW B-B**

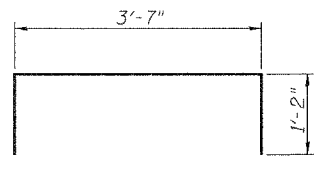


**PLAN VIEW**

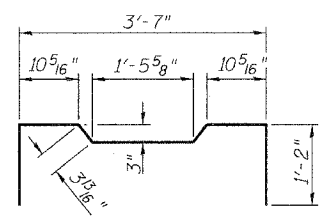
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



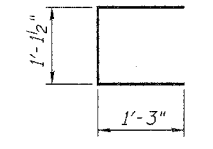
**BAR S(E)**



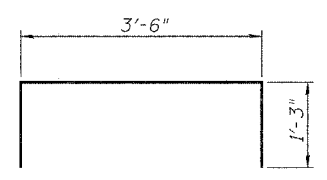
**BAR S1(E)**



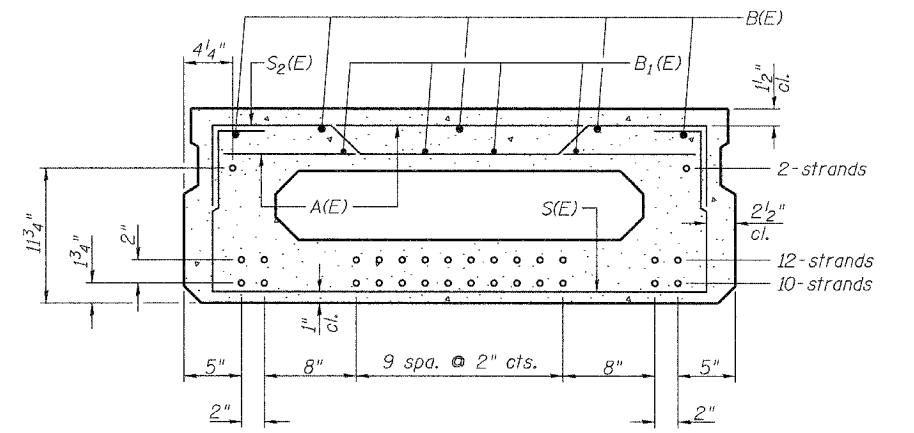
**BAR S2(E)**



**BAR U(E)**



**BAR U1(E)**



**SECTION A-A**  
24-1/2"  $\phi$  Strands Each Strand Stressed to 30,900 Lbs.  
10-Strands 1 3/4" up, 12-Strands 3/4" up, 2-Strands 1 3/4" up

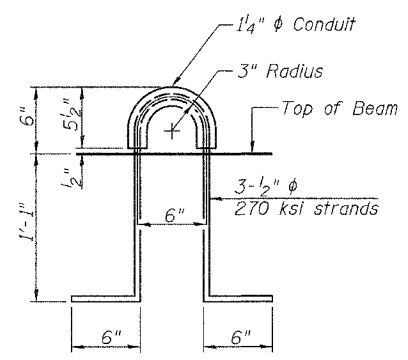
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

**BAR LIST ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	45	#4	3'-7"	—
B(E)	5	#5	*44'-9"	—
B1(E)	4	#4	*44'-9"	—
S(E)	68	#4	6'-9"	U
S1(E)	10	#4	5'-11"	U
S2(E)	58	#4	6'-2"	U
U(E)	12	#5	3'-8"	C
U1(E)	2	#4	6'-0"	U

\* Total Length, Lap as necessary

Note: See sheet 4 of 10 for additional details and Bill of Material.

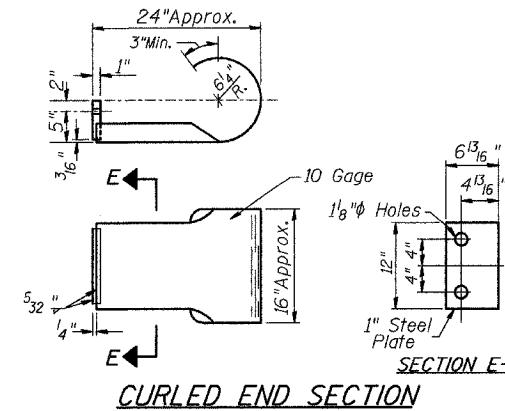
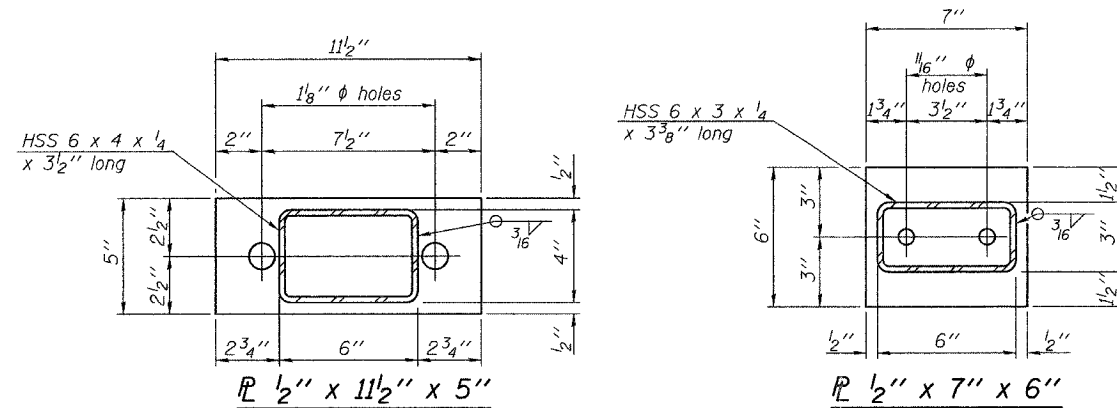
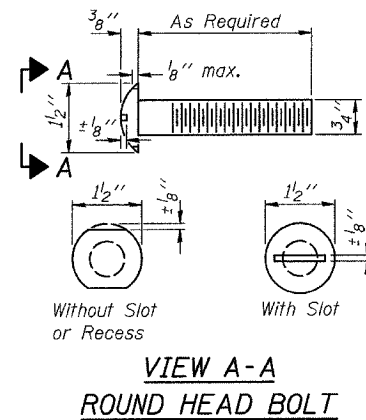


**LIFTING LOOP DETAIL**

**SUPERSTRUCTURE DETAILS - SPAN 2**  
**COUNTY HIGHWAY 2 OVER**  
**LITTLE MISSOURI CREEK**  
**SEC. 05-00064-00-BR**  
**BROWN COUNTY**  
**STATION 20+11.00**

FOR RAIL POST SPACING SEE SH.#7 OF 10

ROUTE NO.	SECTION	COUNTY	DATE	SHEET	SHEET NO. 6 OF 10 SHEETS
CH 2	*	BROWN	21	12	
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1582(106)		CONTRACT # 93469
*05-00064-00-BR					

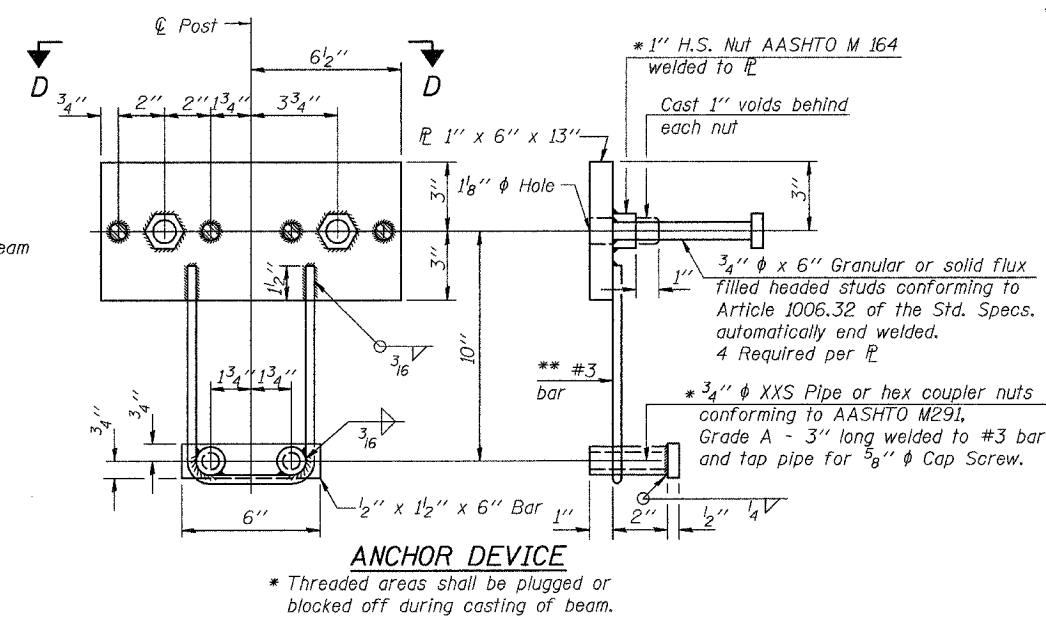
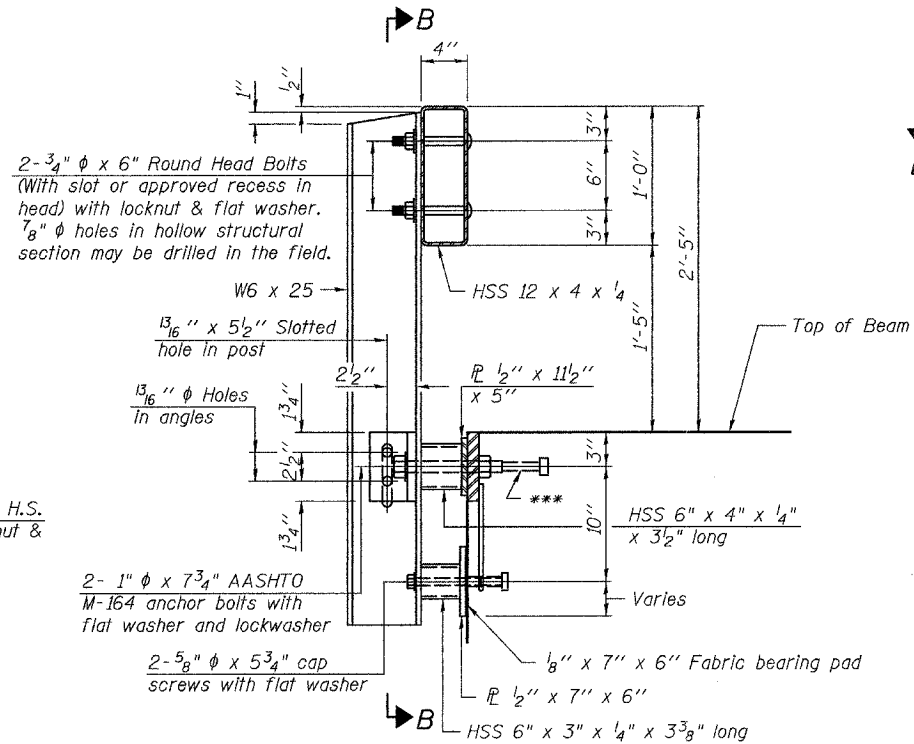
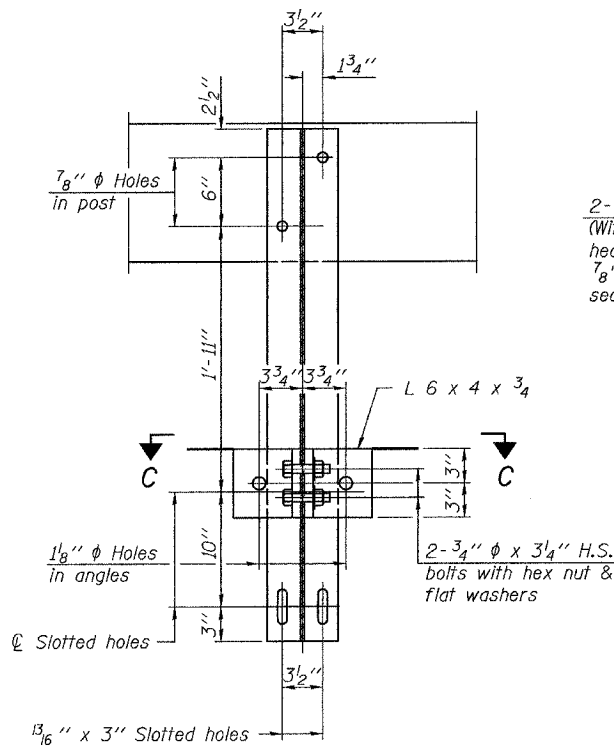


(2 Req'd) Cost Included with Steel Railing, Type S-1. Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (N.W. & S.E. Corners)

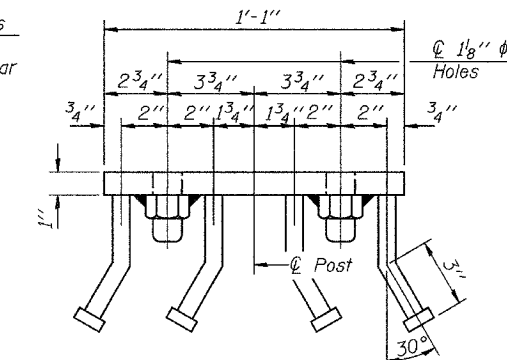
**NOTES**

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 inch 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.



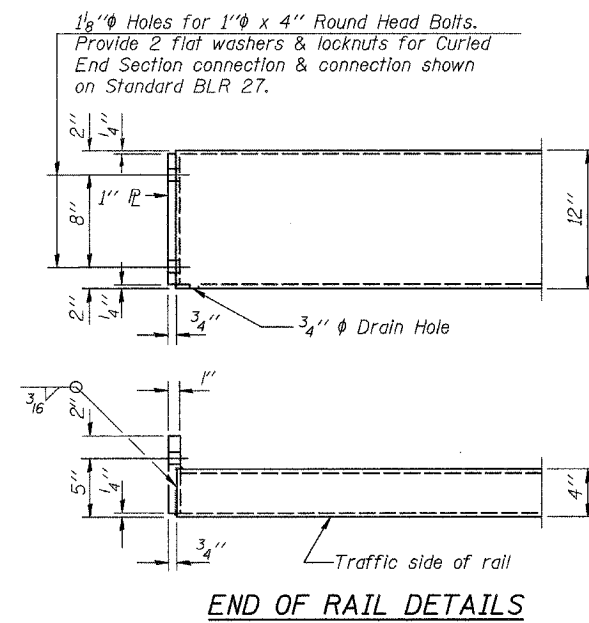
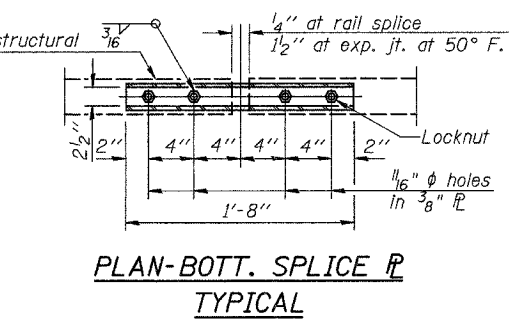
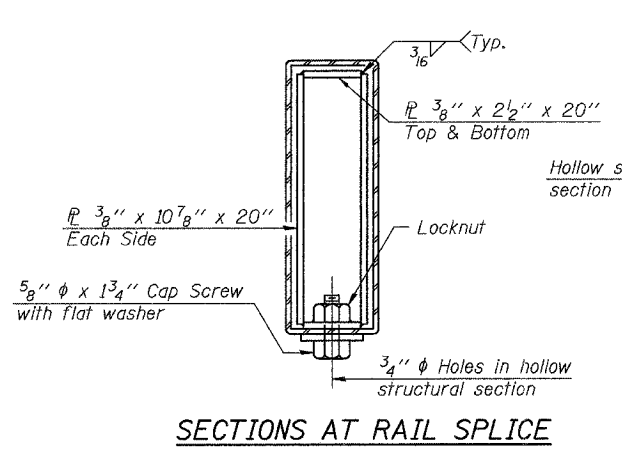
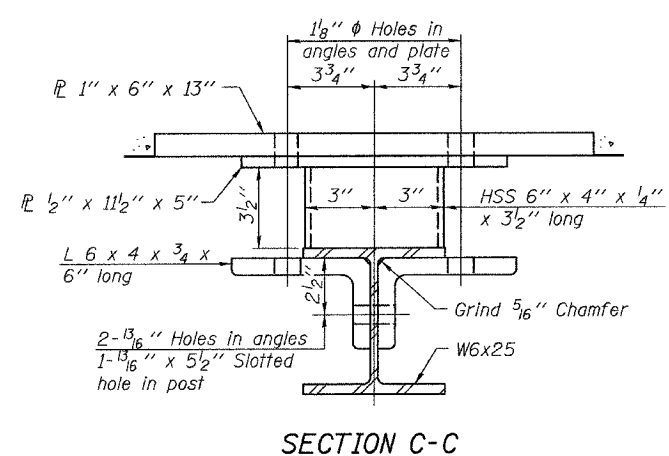
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.

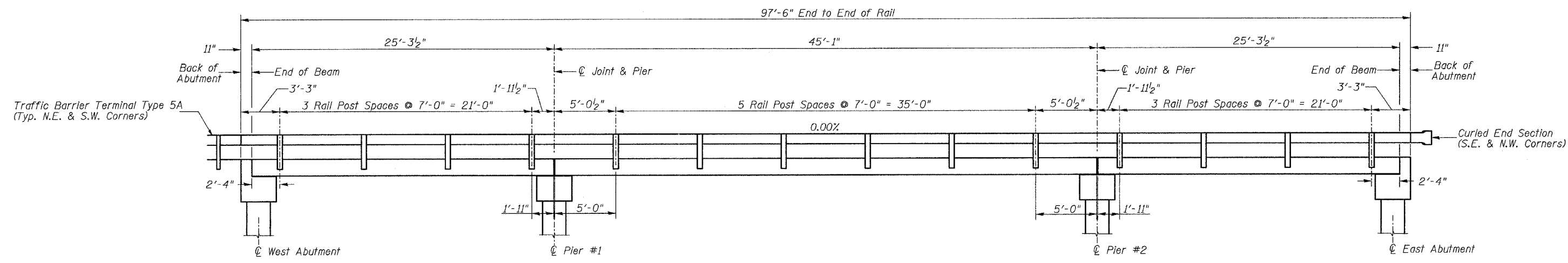


**BILL OF MATERIAL**

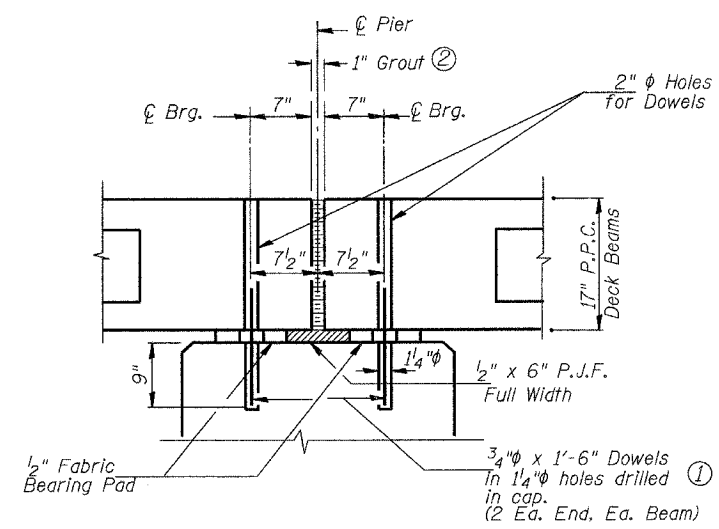
Item	Unit	Quantity
Steel Railing, Type S-1	FOOT	195

**STEEL RAILING, TYPE S-1  
COUNTY HIGHWAY 2 OVER  
LITTLE MISSOURI CREEK  
SECTION 05-00064-00-BR  
BROWN COUNTY  
STATION 20+11.00**

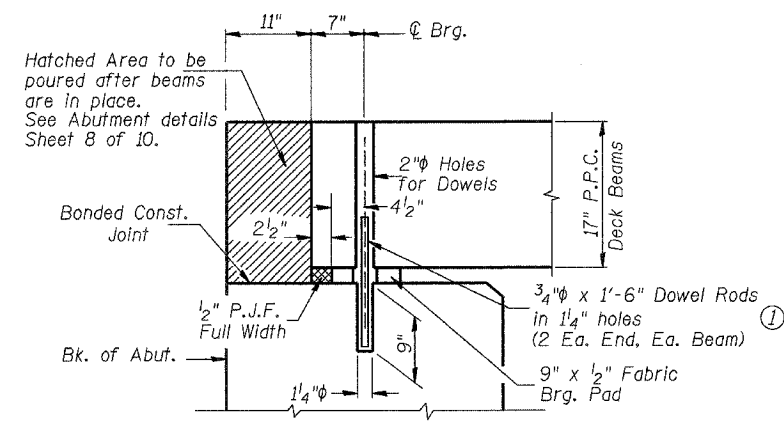




**RAIL POST SPACING**



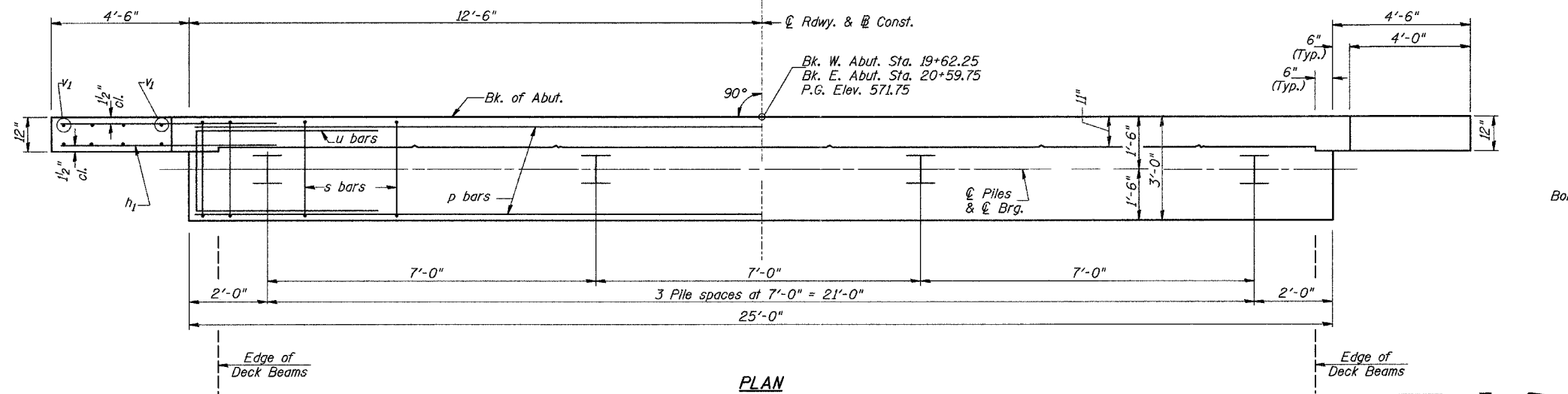
**SECTION THRU PIERS**



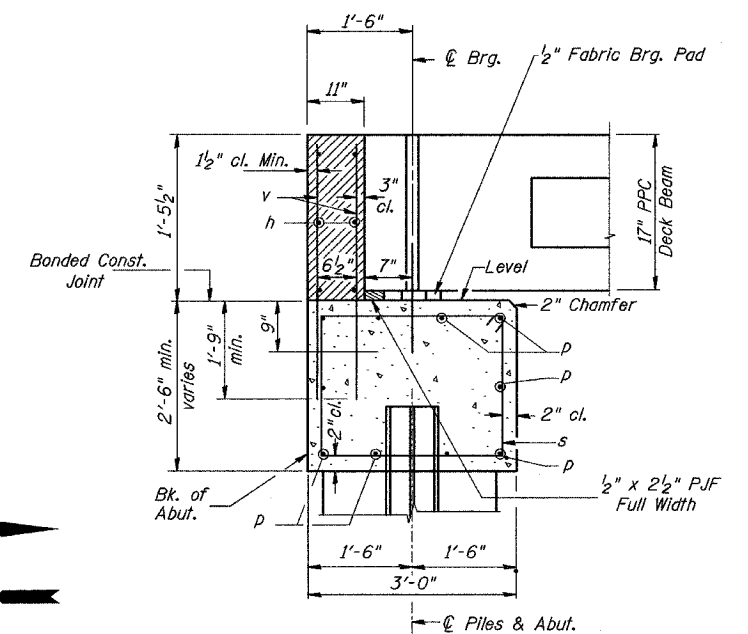
**SECTION THRU ABUTMENTS**

- 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" 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.

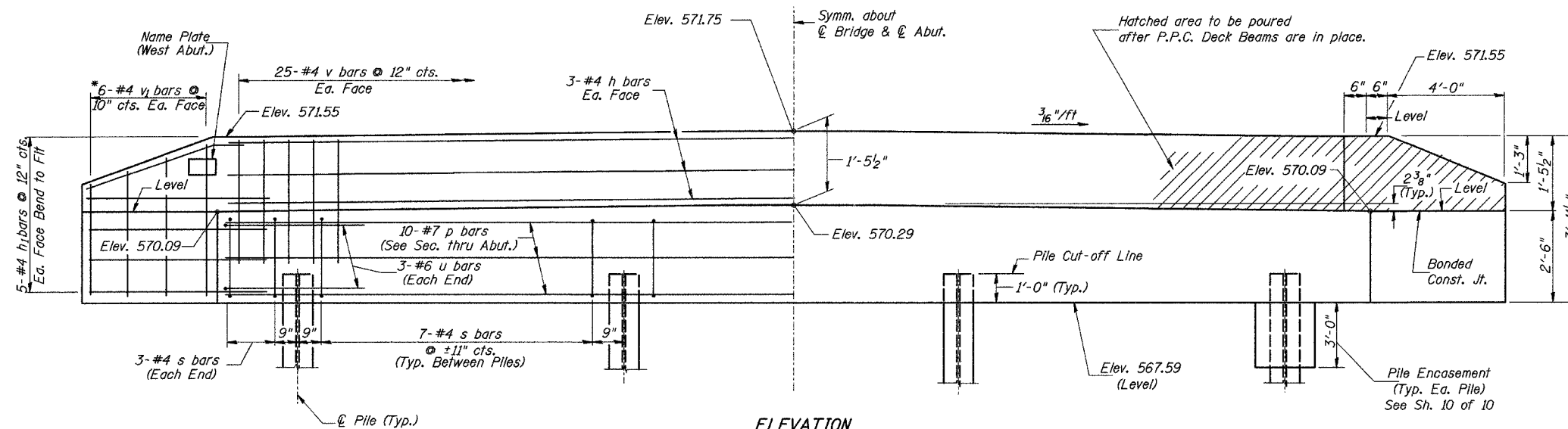
**SUPERSTRUCTURE DETAILS  
AND RAIL POST SPACING  
COUNTY HIGHWAY 2 OVER  
LITTLE MISSOURI CREEK  
SECTION 05-00064-00-BR  
BROWN COUNTY  
STATION 20+11.00**



**PLAN**



**SECTION THRU ABUT.**



**ELEVATION**  
(Front View of Abutment)

**TWO ABUTMENTS  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE	
h	12	#4	24'-9"	—	
h <sub>1</sub>	40	#4	6'-6"	—	
p	20	#7	24'-9"	—	
s	54	#4	10'-5"	□	
u	12	#6	11'-7"	—	
v	100	#4	3'-2"	—	
v <sub>1</sub>	24	#4	6'-1"	—	
Concrete Structures				CU YD	19.2
Reinforcement Bars				POUND	2,280
Structure Excavation				CU YD	55
Name Plates				EACH	1
Furnishing Steel Piles HP10x42				FOOT	132
Driving Piles				FOOT	132
Test Pile Steel HP10x42				EACH	2
Pile Shoes				EACH	8
Concrete Encasement				CU YD	2.8

① See Special Provisions

**DESIGN STRESSES**

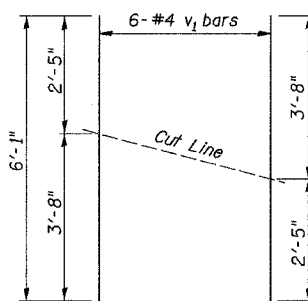
$f'_c = 3,500$  p.s.i.  
 $f_y = 60,000$  p.s.i.

**NOTES**

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to ASTM A706 Grade 60.

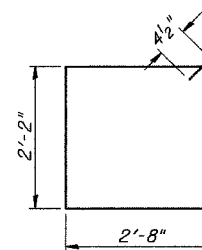
**PILE DATA**

Type & Size: Steel HP10x42 w/ pile shoes  
Nominal Required Bearing: 336 kips  
Allowable Resistance Available: 112 kips  
Est. Length: 24' West Abutment  
20' East Abutment  
No. Req'd.: 8 (Includes 1 Test Pile at Each Abut.)

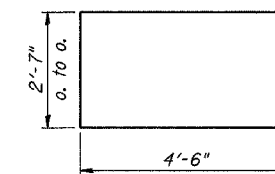


**BAR CUTTING DIAGRAM**

\*Order v<sub>1</sub> bars full length. Cut as shown and use remainder of bars in opposite face.



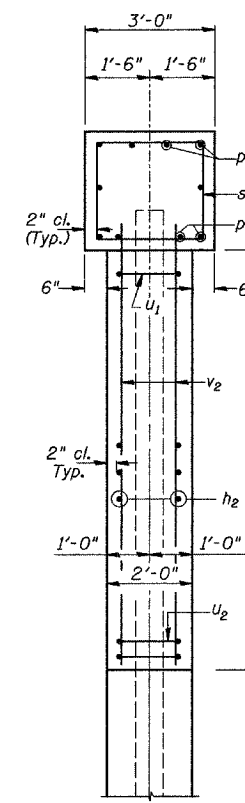
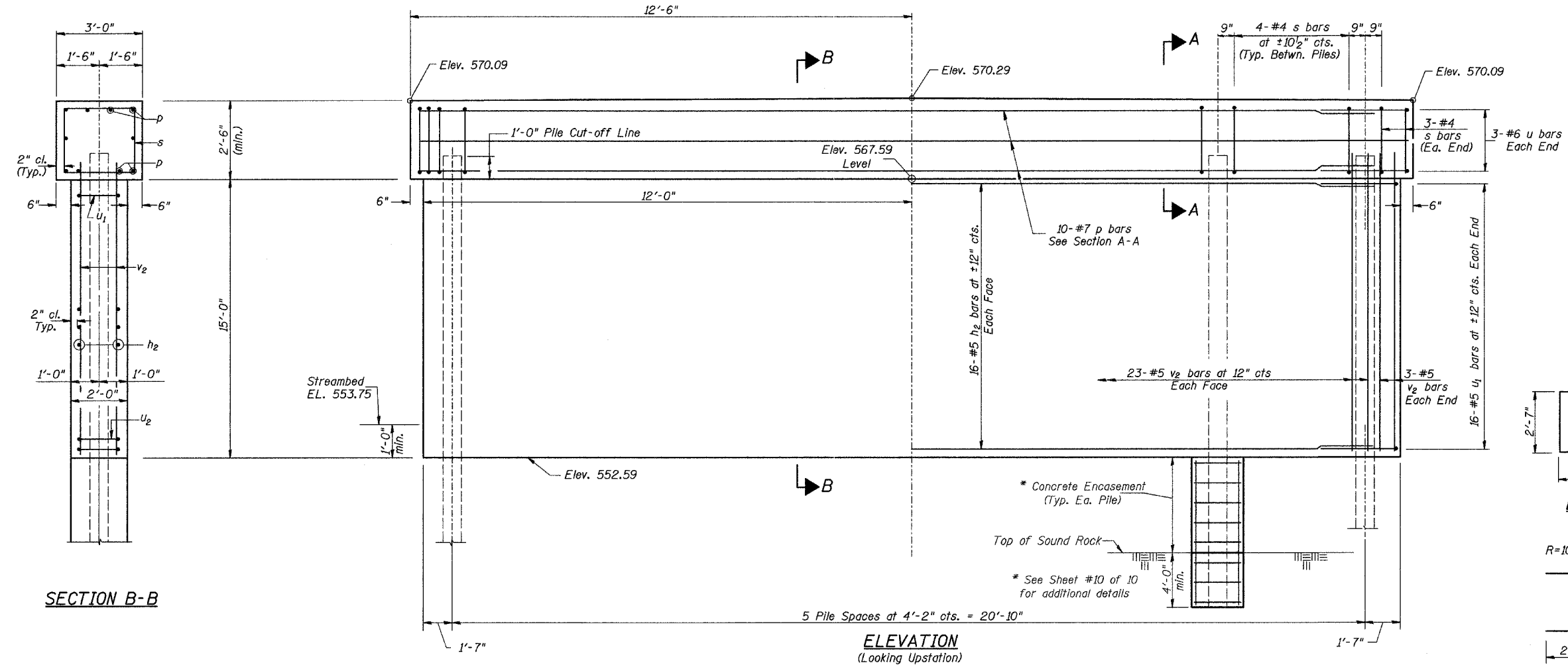
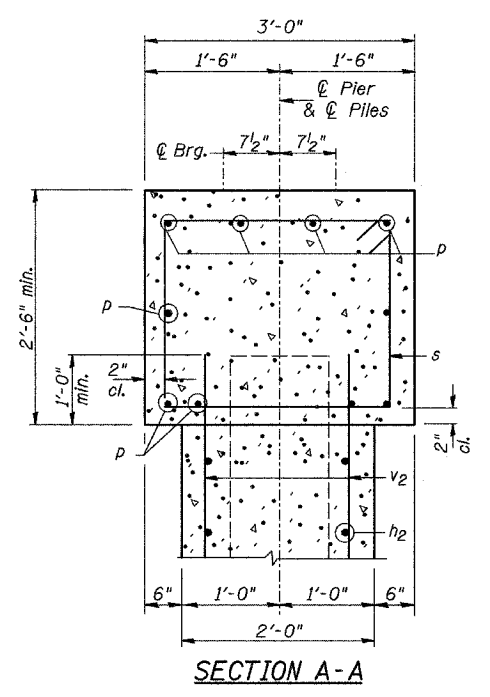
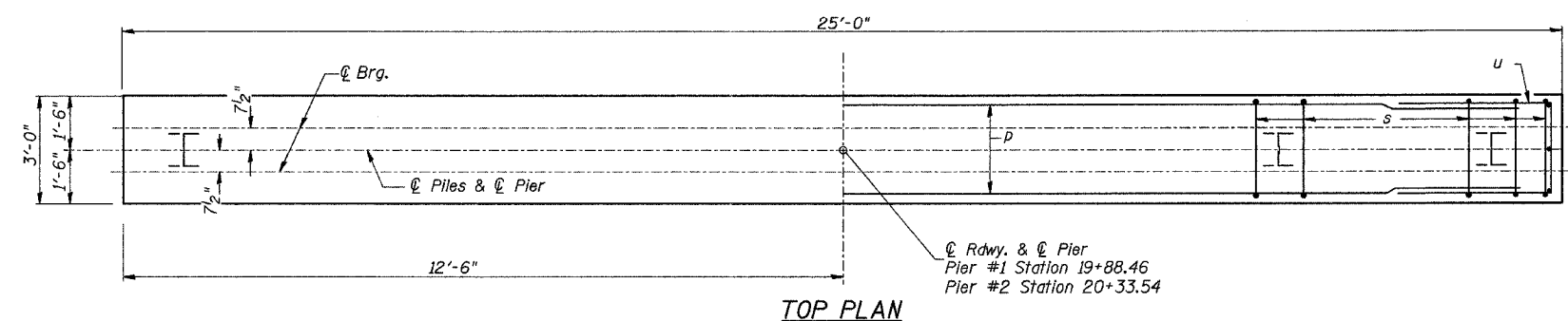
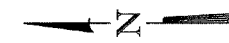
**BAR s**



**BAR u**

**ABUTMENTS  
COUNTY HIGHWAY 2 OVER  
LITTLE MISSOURI CREEK  
SECTION 05-00064-00-BR  
BROWN COUNTY  
STATION 20+11.00**

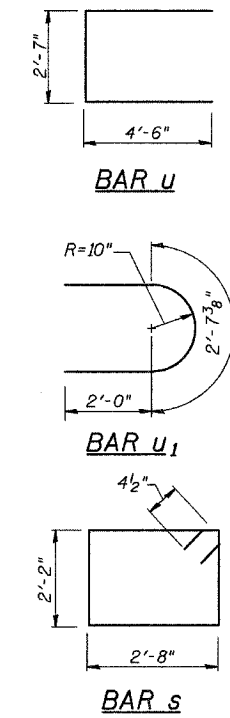
NOTES:  
All edges shall have standard 3/4" chamfer.



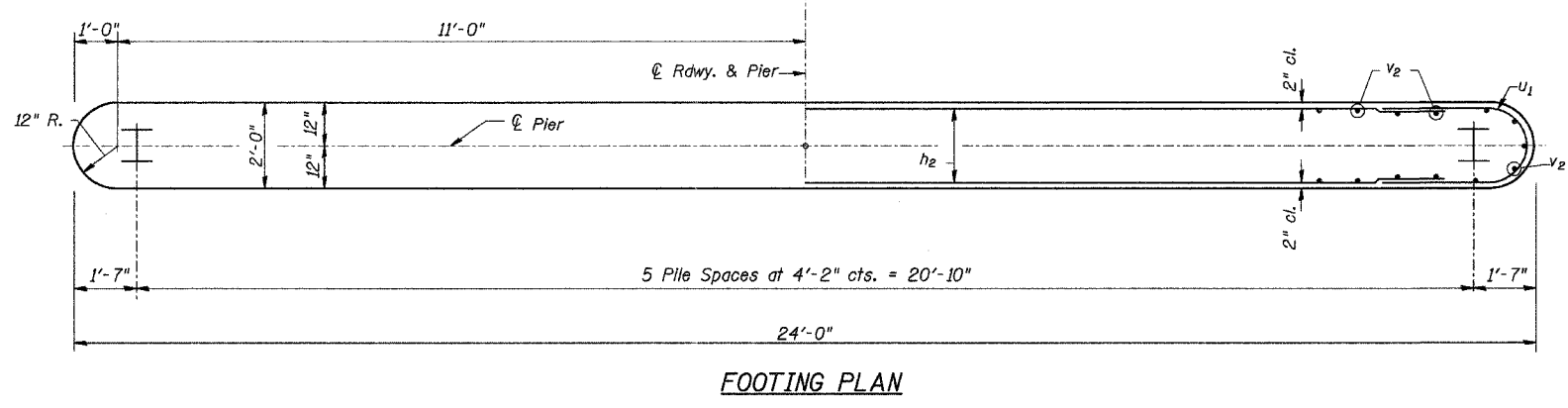
**TWO PIERS  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE	
h <sub>2</sub>	64	#5	21'-8"	—	
p	20	#7	24'-9"	—	
s	52	#4	10'-5"	□	
u	12	#6	11'-7"	□	
u <sub>1</sub>	64	#5	6'-8"	□	
v <sub>2</sub>	104	#5	15'-10"	—	
Concrete Structures				CU YD	66.8
Reinforcement Bars				POUND	5,190
Structure Excavation				CU YD	40
Furnishing Steel Piles HP10x42				FOOT	312
Setting Piles in Rock				EACH	12
Concrete Encasement				CU YD	8.4
Underwater Structure Excavation Protection, Location 1				EACH	1
Underwater Structure Excavation Protection, Location 2				EACH	1

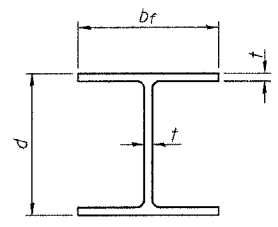
① See Special Provisions



**PILE DATA**  
Type & Size: Steel HP10x42  
Nominal Required Bearing: Set in Rock (336 kips)  
Allowable Resistance Available: Set in Rock (112 kips)  
Est. Length: 28' Pier #1  
24' Pier #2  
No. Req'd.: 12

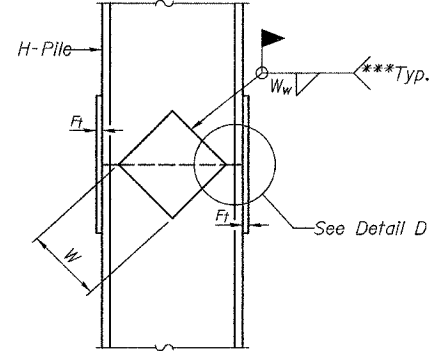


**PIERS  
COUNTY HIGHWAY 2 OVER  
LITTLE MISSOURI CREEK  
SECTION 05-00064-00-BR  
BROWN COUNTY  
STATION 20+11.00**

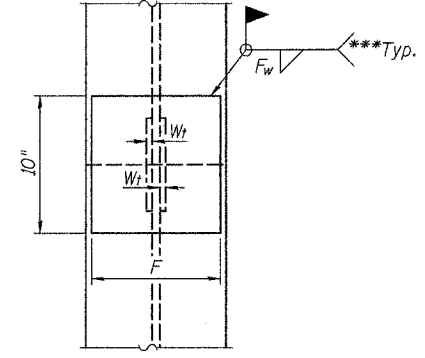


**STEEL PILE TABLE**

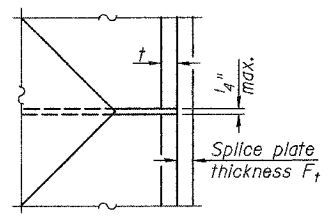
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/6"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/6"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



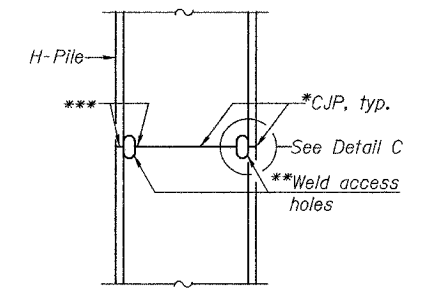
**ELEVATION**



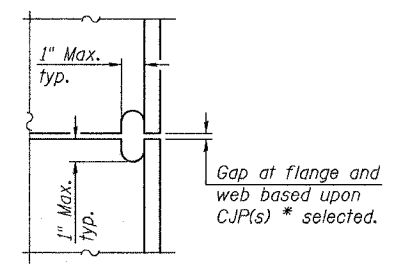
**END VIEW**



**DETAIL D**



**ELEVATION**



**DETAIL C**

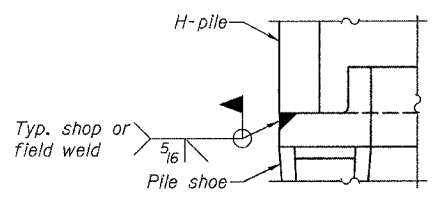
**COMPLETE PENETRATION WELD SPLICE**

\*Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.  
 \*\*Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.  
 \*\*\*Interrupt welds 1/4" from end of each pile.

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"	1/6"	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"	1/6"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/6"	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"

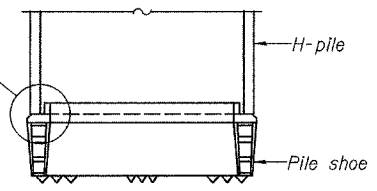
**WELDED PLATE FIELD SPLICE**

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

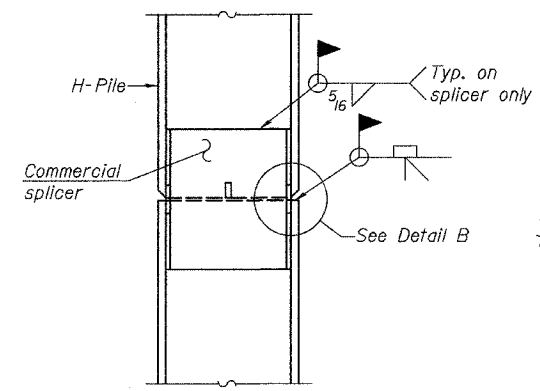


**DETAIL A**

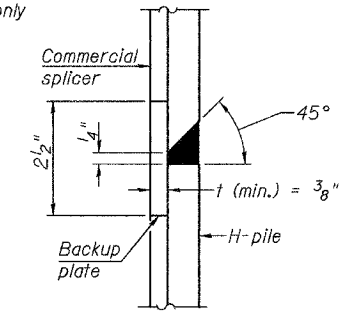
**H-PILE SHOE ATTACHMENT**



**ELEVATION**

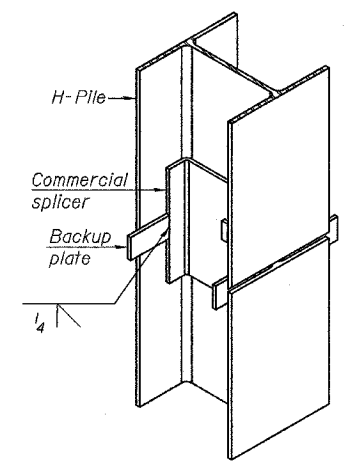


**ELEVATION**

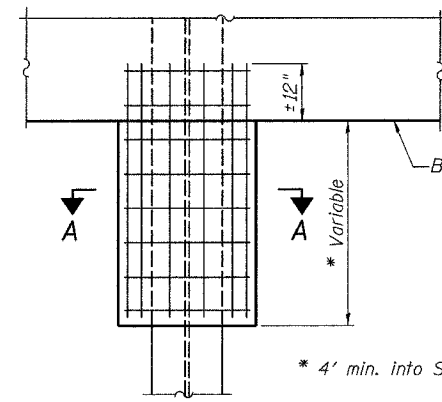


**DETAIL "B"**

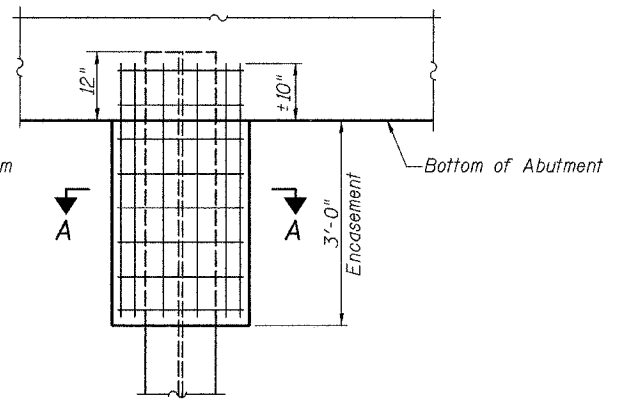
**WELDED COMMERCIAL SPLICE**



**ISOMETRIC VIEW**

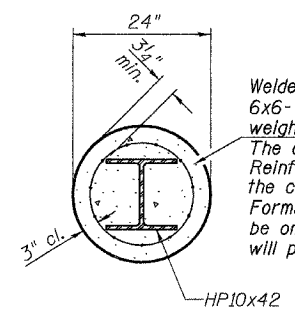


**PIER ELEVATION**



**ABUTMENT ELEVATION**

**PILE ENCASEMENT**



**SECTION A-A**

Welded wire fabric  
6x6-W4.0xW4.0  
weighing 58#/100 sq. ft.  
The cost of Excavation and Reinforcement is included with the cost of Concrete Encasement. Forms for encasement may be omitted when soil conditions will permit.

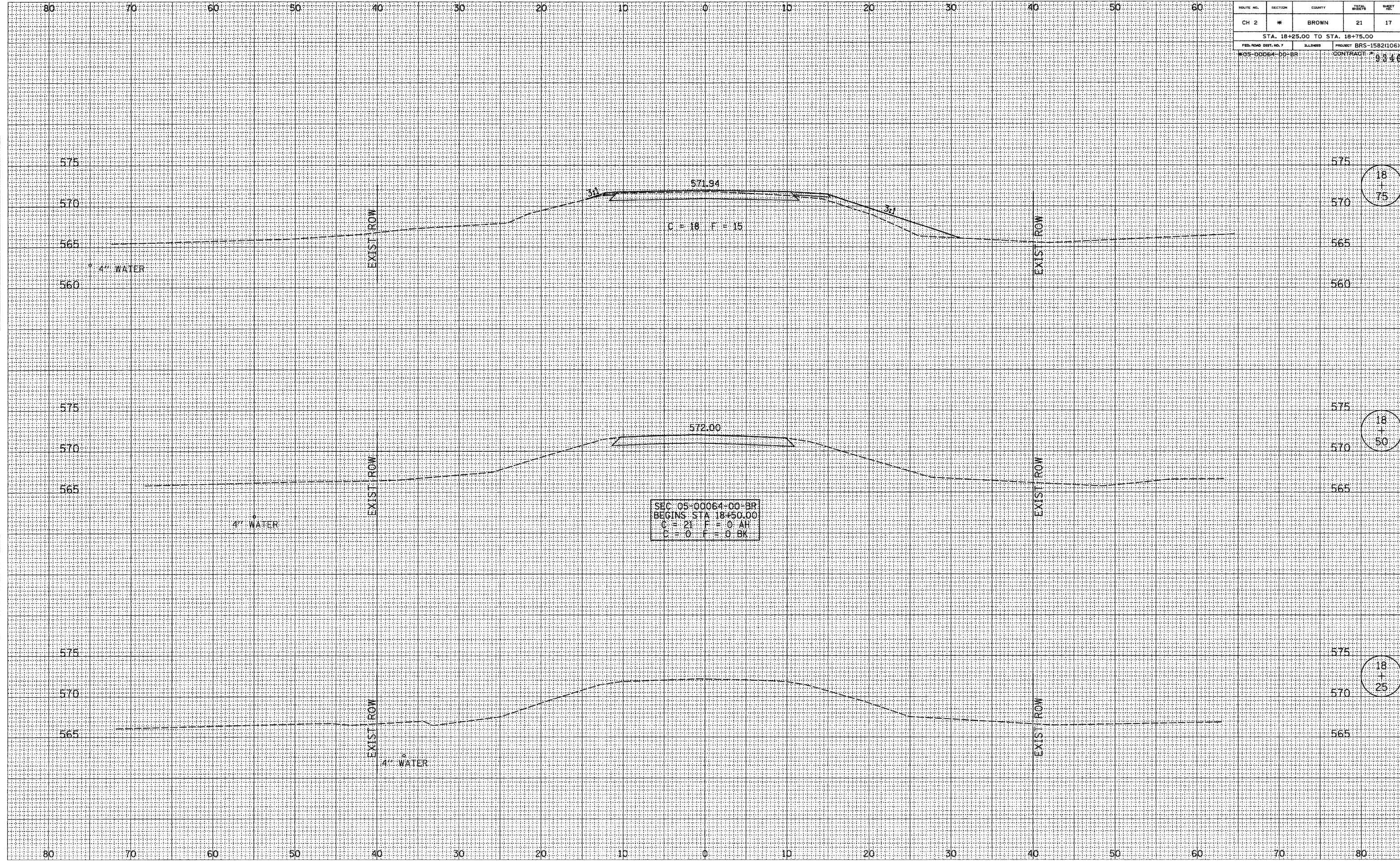
**PILE DETAILS**  
 COUNTY HIGHWAY 2 OVER  
 LITTLE MISSOURI CREEK  
 SECTION 05-0064-00-BR  
 BROWN COUNTY  
 STATION 20+11.00



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	*	BROWN	21	17
STA. 18+25.00 TO STA. 18+75.00				
FED. ROAD DIST. NO. 7			ALIGNMENT	PROJECT BRS-15B2(106)
05-00064-00-BR			CONTRACT NO.	93469

DATE	BY

DATE	BY



18  
+  
75

18  
+  
50

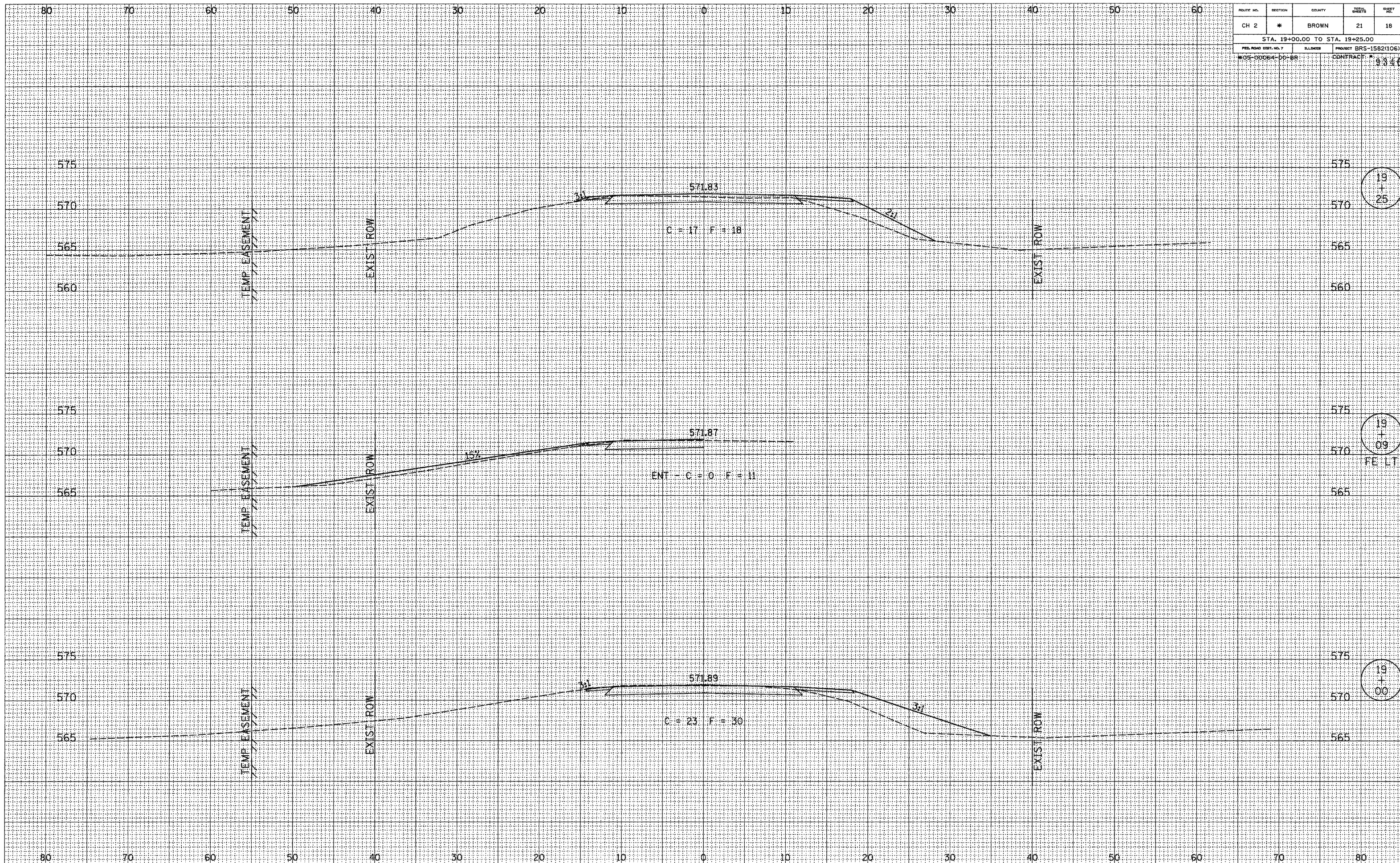
18  
+  
25

SEC 05-00064-00-BR  
 BEGINS STA 18+50.00  
 C = 21 F = 0 AH  
 C = 0 F = 0 BK

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	*	BROWN	21	18
STA. 19+00.00 TO STA. 19+25.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-1582(106)		
WGS-D0064-00-BR		CONTRACT NO.	93469	

DATE	BY
DATE	BY
DATE	BY
DATE	BY
DATE	BY

DATE	BY
DATE	BY
DATE	BY
DATE	BY
DATE	BY



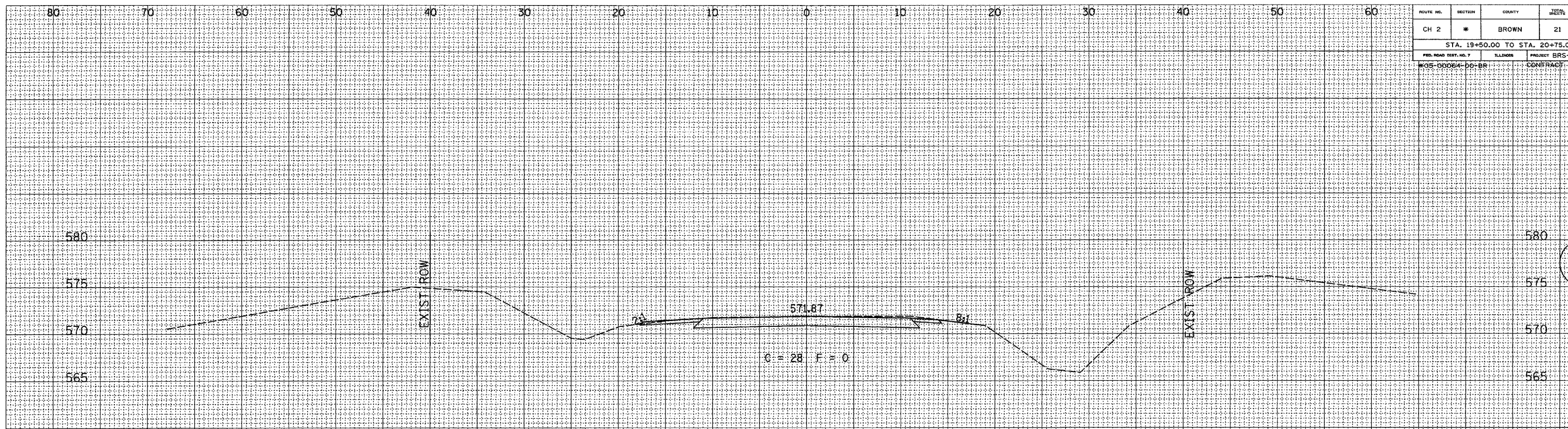
19  
+  
25

19  
+  
09  
FE LT

19  
+  
00

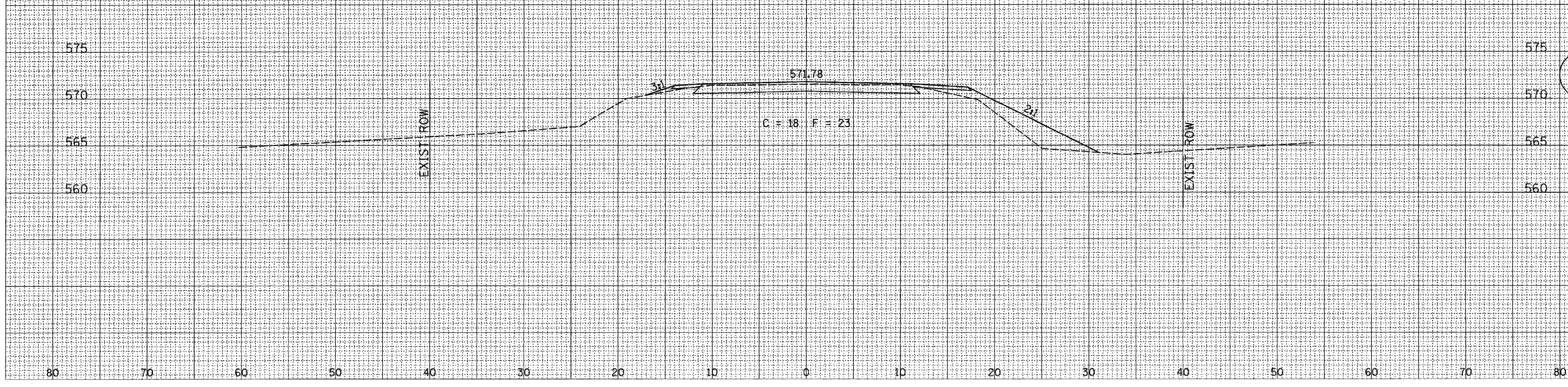
ROUTE NO.	SECTION	COUNTY	SHEET	SHEET
CH 2	*	BROWN	21	19
STA. 19+50.00 TO STA. 20+75.00				
FED. ROAD DIST. NO. 7			PROJECT BRS-1582(106)	
K05-00064-D0-BR			CONTRACT 9346	

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



STA 20+59.75  
 C = 27 F = 1 AH  
 C = 0 F = 0 BK  
 BRIDGE OMISSION  
 STA 19+62.25  
 C = 0 F = 0 AH  
 C = 18 F = 15 BK

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



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	#	BROWN	21	20

STA. 21+00.00 TO STA. 21+50.00

FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-1562(106)
WGS-00064-DD-BR		

CONTRACT NO. 93168

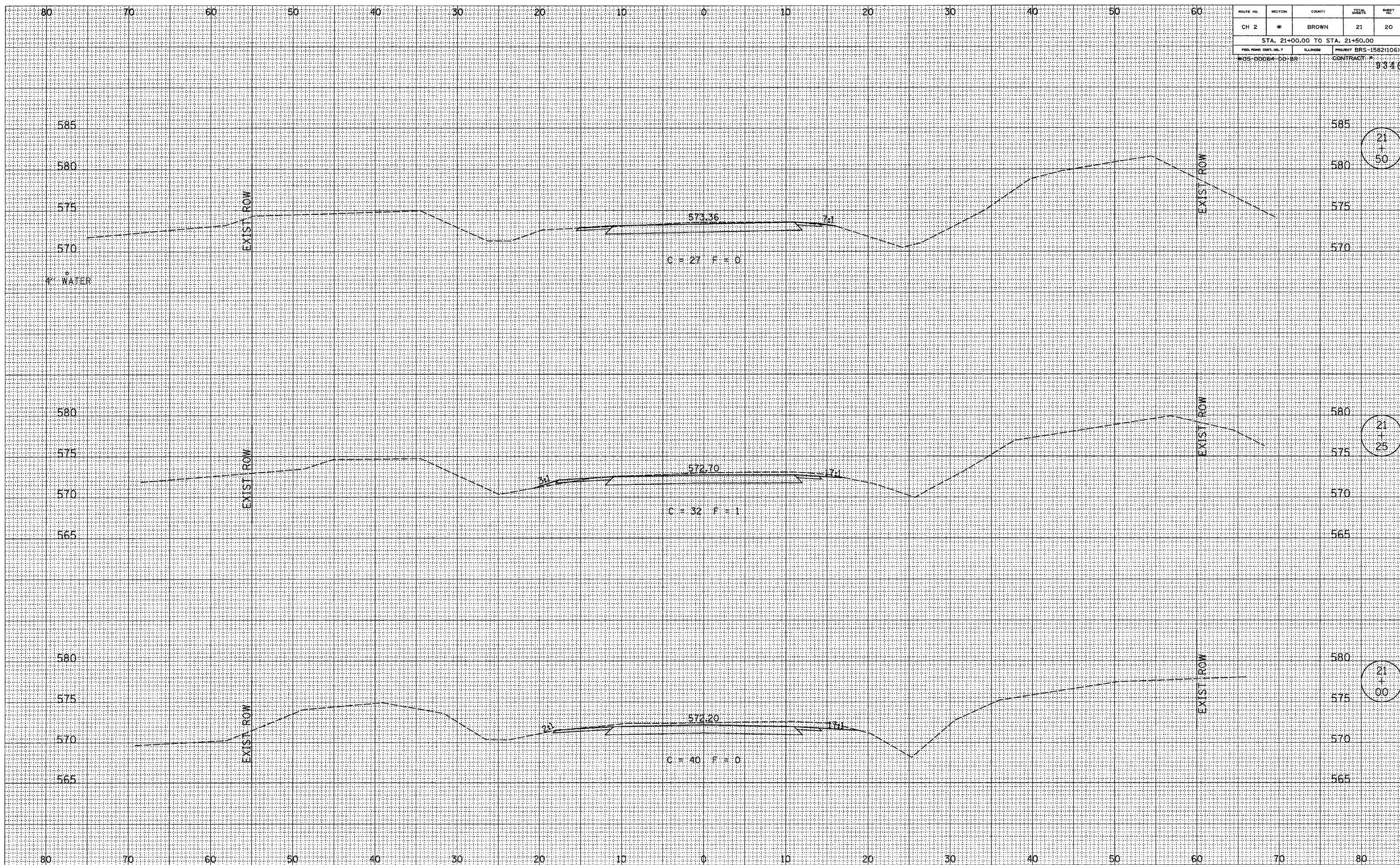
BY	DATE

SURVEYED

FINAL SURVEY

NOTE BOOK

NO.



21  
+  
50

21  
+  
25

21  
+  
00

BY	DATE

SURVEYED

ORIGINAL SURVEY

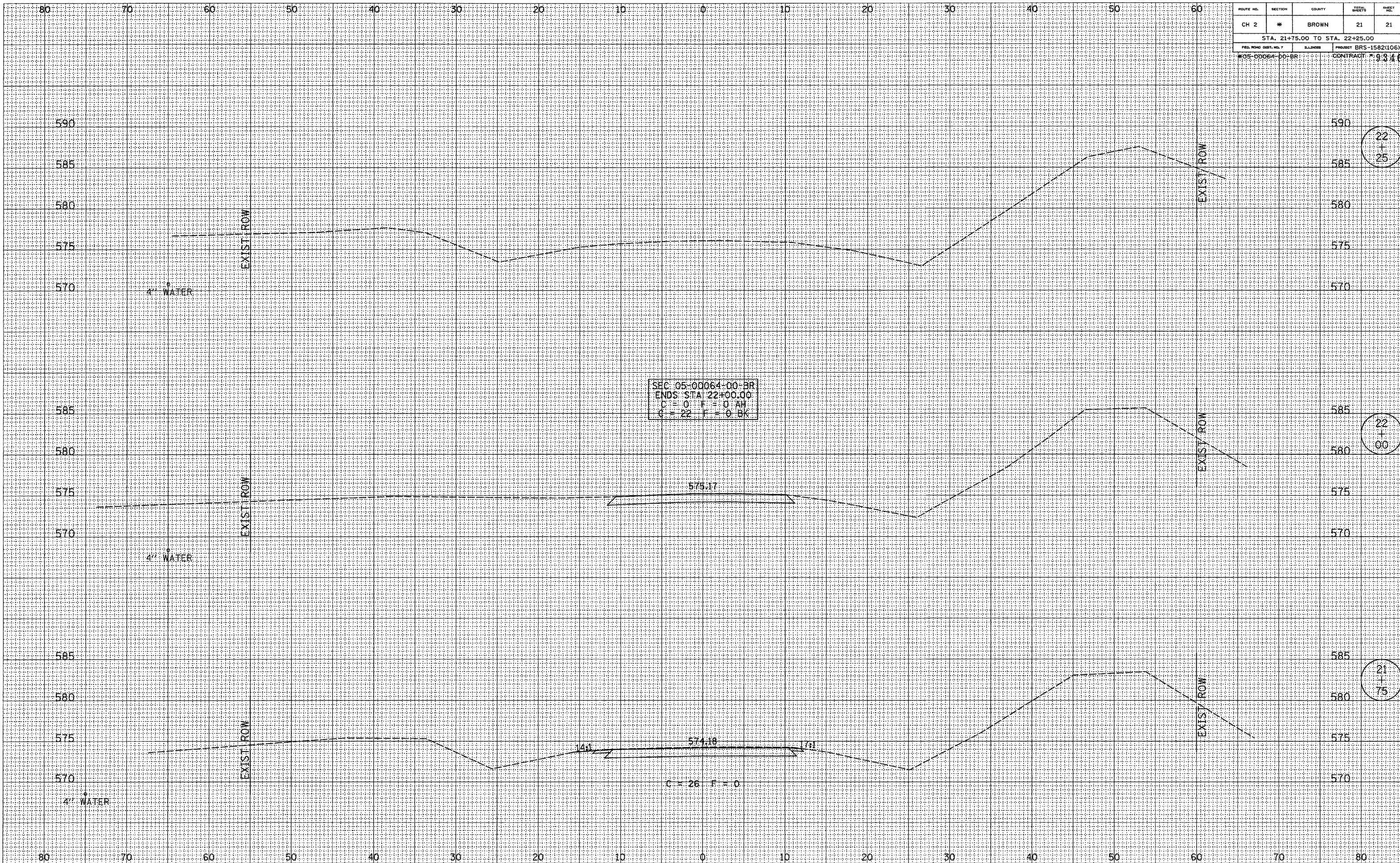
NOTE BOOK

NO.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 2	*	BROWN	21	21
STA. 21+75.00 TO STA. 22+25.00				
FED. ROAD DIST. NO. 7		BALANCE		PROJECT BRS-1582(106)
K05-00064-00-BR		CONTRACT NO. 93468		

DATE	
BY	
SURVEYED	
TEMPLE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
TEMPLE	
NOTE BOOK	
AREAS CHECKED	
NO.	



22  
+  
25

22  
+  
00

21  
+  
75