

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM
MORGAN COUNTY
SECTION 07-00098-00-BR
F.A.S. 1614 (CH 32) OVER
NORTH FORK MAUVAISE TERRE CREEK
PROJECT NO. BRS-1614(103)
JOB NUMBER C-96-217-08**

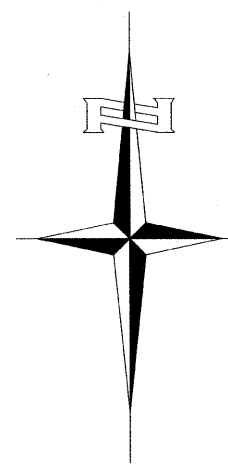
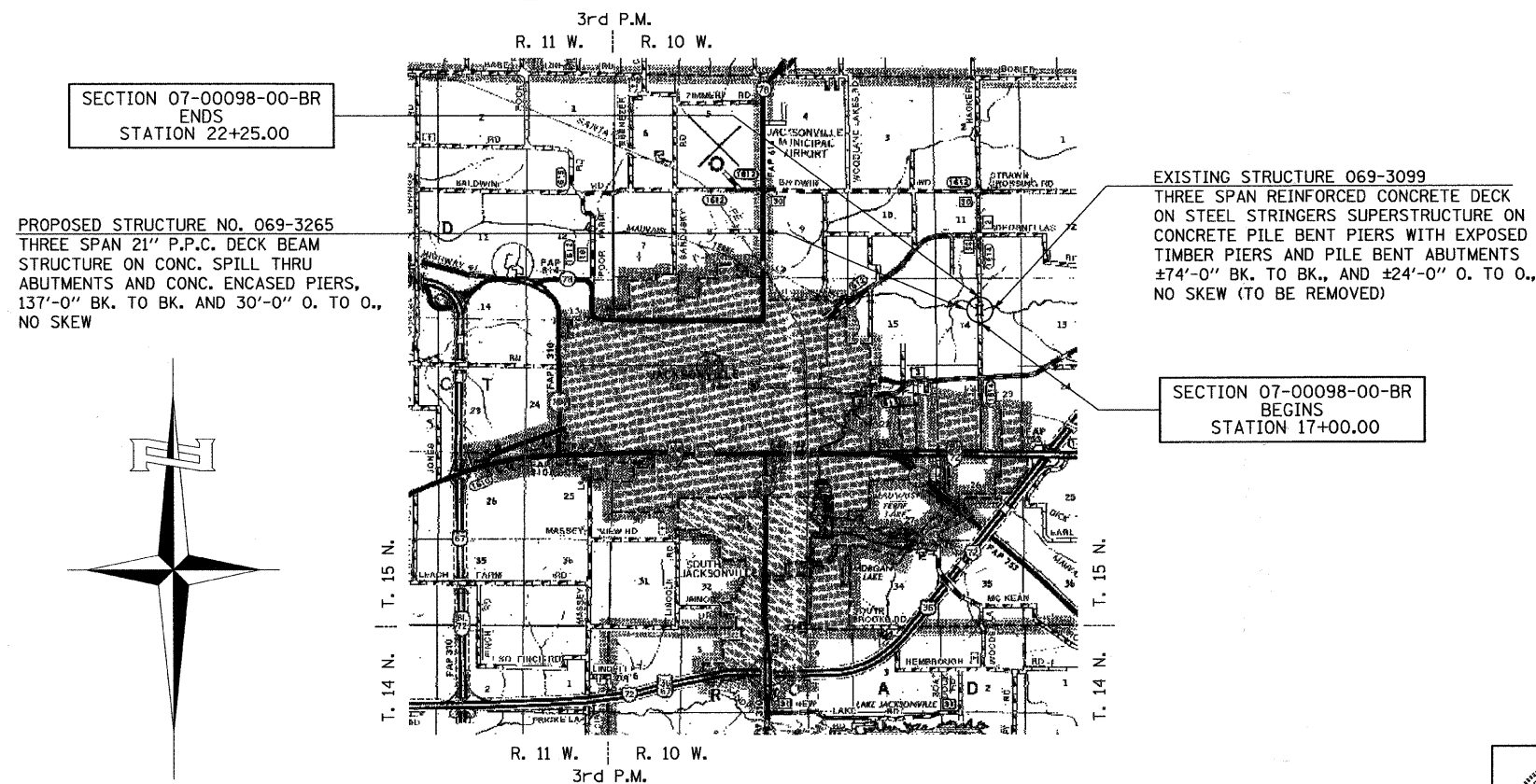
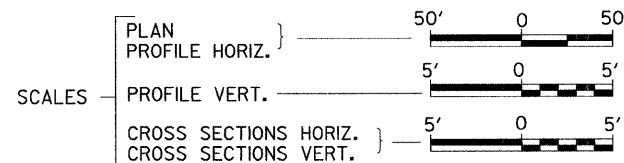
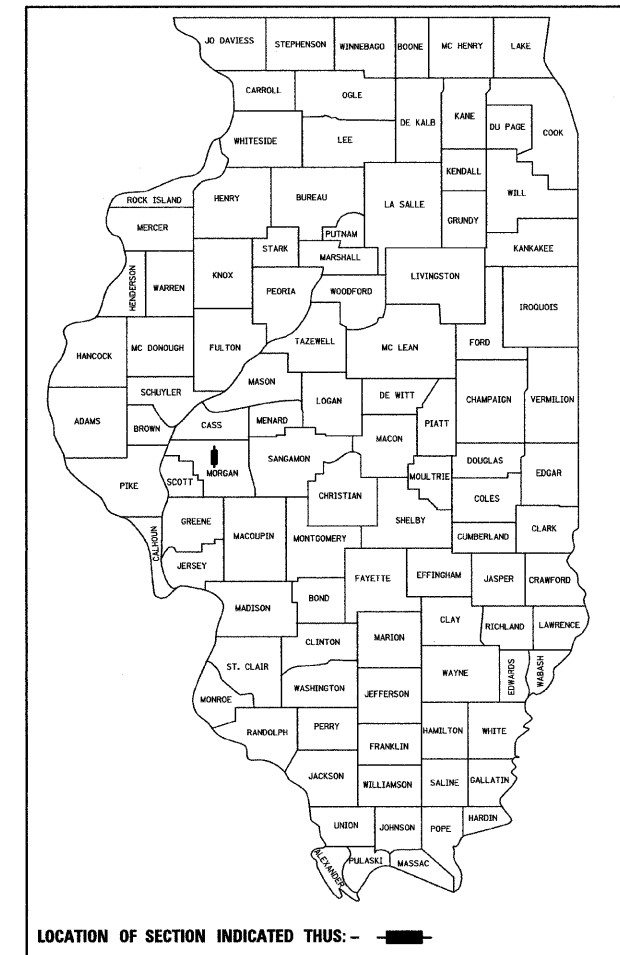
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	1
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1614(103)	
*07-00098-00-BR			CONTRACT # 93451	

INDEX OF SHEETS

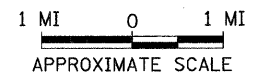
SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	GENERAL NOTES, DETAILS, TYPICAL SECTIONS
3.	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
4.	TRAFFIC CONTROL PLAN
5.	EROSION CONTROL PLAN
6.	PLAN AND PROFILE
7.-13.	STRUCTURE PLANS
14.-19.	CROSS SECTIONS

REQUIRED HIGHWAY STANDARDS

- 000001-05
- 280001-04
- 515001-02
- 630301-04
- 635006-02
- 701901
- 780001-01
- BLR 21-7
- BLR 27



LOCATION MAP



NET LENGTH OF PROJECT = 525.00 FEET = 0.999 MILES
DESIGN CLASSIFICATION: MAJOR-COLLECTOR (NON-URBAN)
DESIGN ADT = 800 (2008)
DESIGN SPEED = 50 MPH

UTILITY COMPANY

- NORTH MORGAN WATER COOP
JACKSONVILLE, ILLINOIS
- AMEREN CIPS
BEARDSTOWN, ILLINOIS
- VERIZON
JACKSONVILLE, ILLINOIS
- MCLEOD USA
FORSYTH, ILLINOIS

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

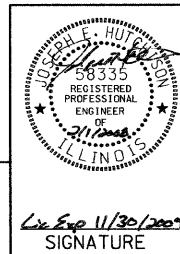
CONTRACT NO. **93451**

Hutchison Engineering, Inc.
JACKSONVILLE ILLINOIS

2008 JOB#2483

PLANS DESIGNED IN ACCORDANCE WITH BUREAU OF LOCAL ROADS AND STREETS MANUAL 3R GUIDELINES FOR TWO LANE RURAL COLLECTORS - RECONSTRUCTION

APPROVED	<u>2-01</u>	2008
	<i>Carl W. Horne</i>	MORGAN COUNTY ENGINEER
PASSED	<u>2-13</u>	2008
	<i>Tommy F. ...</i>	DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS
PASSED	<u>2-14-</u>	2008
	<i>W. R. Freeman</i>	DISTRICT SIX ENGINEER OF CONSTRUCTION
Released For Bid Based on Limited Review	<u>2-13</u>	2008
	<i>Christina M. Reed</i>	DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		



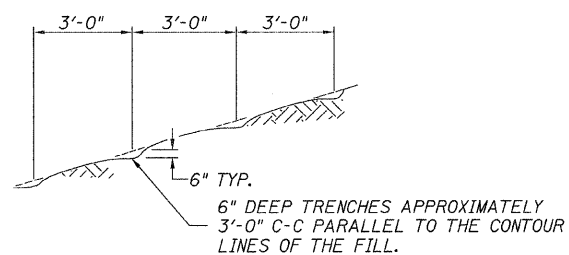
ENGINEERS SEAL

2483E001

MIX DESIGN TABLE

MIXTURE USE	SURFACE (MIX "C"), N50
PG GRADE	PG 64-22
DESIGN AIR VOIDS	4% @ N50
MAX COMPOSITION: (GRADATION MIXTURE)	IL-9.5 or 12.5
FRICTION AGGREGATE	MIXTURE C

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



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

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.

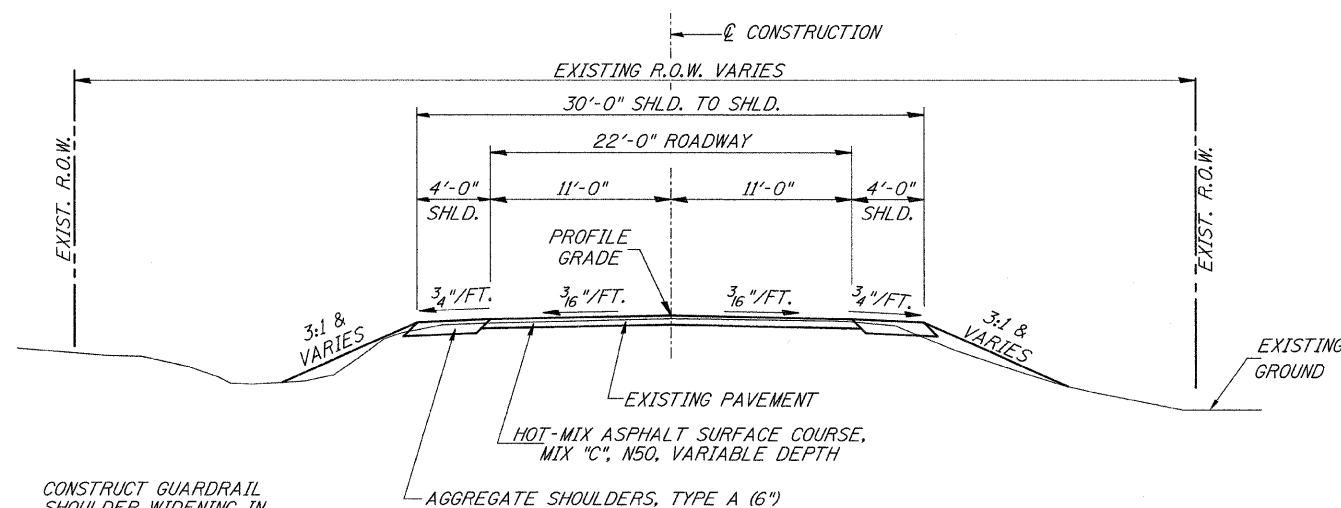
ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION

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.

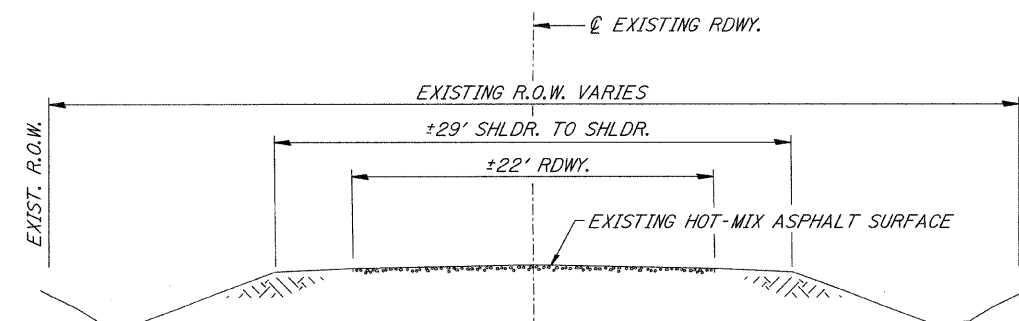


CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

PROPOSED TYPICAL SECTION

STA. 17+00.00 TO STA. 19+31.50
STA. 20+68.50 TO STA. 22+25.00
EXCEPT TRANSITIONS

BRIDGE OMISSION
STA. 19+31.50 TO STA. 20+68.50



EXISTING TYPICAL SECTION

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	25
20300100	CHANNEL EXCAVATION	CU YD	1,400
① 20400800	FURNISHED EXCAVATION	CU YD	145
① 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.6
28000400	PERIMETER EROSION BARRIER	FOOT	880
28100209	STONE RIPRAP, CLASS A5	TON	800
28200200	FILTER FABRIC	SQ YD	770
40300100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	94
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	210
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	430
48100100	AGGREGATE SHOULDERS, TYPE A	TON	128
① 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	95
50300225	CONCRETE STRUCTURES	CU YD	92.3
50300280	CONCRETE ENCASEMENT	CU YD	9.0
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	4,050
① 50800105	REINFORCEMENT BARS	POUND	8,500
50900205	STEEL RAILING, TYPE S-1	FOOT	274
51201005	FURNISHING METAL SHELL PILES 12"	FOOT	1,242
51202305	DRIVING PILES	FOOT	1,242
51203200	TEST PILE METAL SHELLS	EACH	4
51204650	PILE SHOES	EACH	24
51500100	NAME PLATES	EACH	1
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	457
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	300
① 59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	20.3
* 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
* 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	2
63200310	GUARDRAIL REMOVAL	FOOT	292
67100100	MOBILIZATION	L SUM	1
70103700	TRAFFIC CONTROL COMPLETE	L SUM	1
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,180
* 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 SEE SPECIAL PROVISIONS CONSTRUCTION CODE TYPE: X080-2A
 * SPECIALTY ITEMS

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 17+00.00 - 19+31.50	13			106	(96)
RDWY 20+68.50 - 22+25.00	14			61	(51)
CHANNEL		1,400			
STRUCTURE			95		
TOTAL	27	1,400	95	167	(147)
USE	25	1,400	95	-	(145)

(@ 25% SHRINKAGE)

TRAFFIC BARRIER TERMINAL, TYPE 5A

SIDE	STATION TO STATION	EACH
RIGHT	19+18.25 - 19+31.50	1
LEFT	20+68.50 - 20+81.75	1
TOTAL		2

PERIMETER EROSION BARRIER

STATION TO STATION	SIDE	FOOT
17+00 - 19+30	RIGHT	255
17+00 - 19+30	LEFT	255
20+70 - 22+25	RIGHT	190
20+70 - 22+25	LEFT	180
TOTAL		880

TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)

SIDE	STATION TO STATION	EACH
RIGHT	18+68.25 - 19+18.25	1
LEFT	20+81.75 - 21+31.75	1
TOTAL		2

HOT-MIX ASPHALT SCHEDULE

STATION TO STATION	WIDTH	LENGTH	PRIME COAT GALLON 0.10 GAL/SQ YD	HOT-MIX ASPHALT SURFACE CSE TON 112#/SQ YD/IN
17+00.00 - 17+50.00	22.04'	50.00'	12	
17+50.00 - 19+31.50	22.00'	181.50'	44	
20+68.50 - 21+75.00	22.00'	106.50'	26	
21+75.00 - 22+25.00	22.19'	50.00'	12	
17+00.00 - 17+50.00	22.17'	50.00'		20
17+50.00 - 19+31.50	22.13'	181.50'		89
BRIDGE DECK	30.00'	137.00'		46
20+68.50 - 21+75.00	22.13'	106.50'		39
21+75.00 - 22+25.00	22.32'	50.00'		16
TOTAL			94	210

GUARDRAIL REMOVAL

STATION TO STATION	SIDE	FOOT
18+90 - 19+63	RIGHT	73
18+90 - 19+63	LEFT	73
20+37 - 21+10	RIGHT	73
20+37 - 21+10	LEFT	73
TOTAL		292

AGGREGATE SHOULDERS, TYPE A

STATION TO STATION	SIDE	WIDTH	LENGTH	TON
17+00.00 - 17+50.00	LEFT	3.75' AVG.	50.00'	7
17+00.00 - 17+50.00	RIGHT	3.38' AVG.	50.00'	6
17+50.00 - 19+31.50	LEFT	4.00'	181.50'	25
17+50.00 - 18+34.25	RIGHT	4.00'	84.25'	12
18+34.25 - 18+58.25	RIGHT	6.00' AVG.	24.00'	5
18+58.25 - 18+93.25	RIGHT	8.00'	35.00'	10
18+93.25 - 18+97.25	RIGHT	7.67' AVG.	4.00'	1
18+97.25 - 19+31.50	RIGHT	7.33'	34.25'	9
20+68.50 - 21+75.00	RIGHT	4.00'	106.50'	15
20+68.50 - 21+02.75	LEFT	7.33'	34.25'	9
21+02.75 - 21+06.75	LEFT	7.67' AVG.	4.00'	1
21+06.75 - 21+41.75	LEFT	8.00'	35.00'	10
21+41.75 - 21+65.75	LEFT	6.00' AVG.	24.00'	5
21+65.75 - 21+75.00	LEFT	4.00'	9.25'	1
21+75.00 - 22+25.00	LEFT	3.07' AVG.	50.00'	5
21+75.00 - 22+25.00	RIGHT	3.75' AVG.	50.00'	7
TOTAL				128

HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"

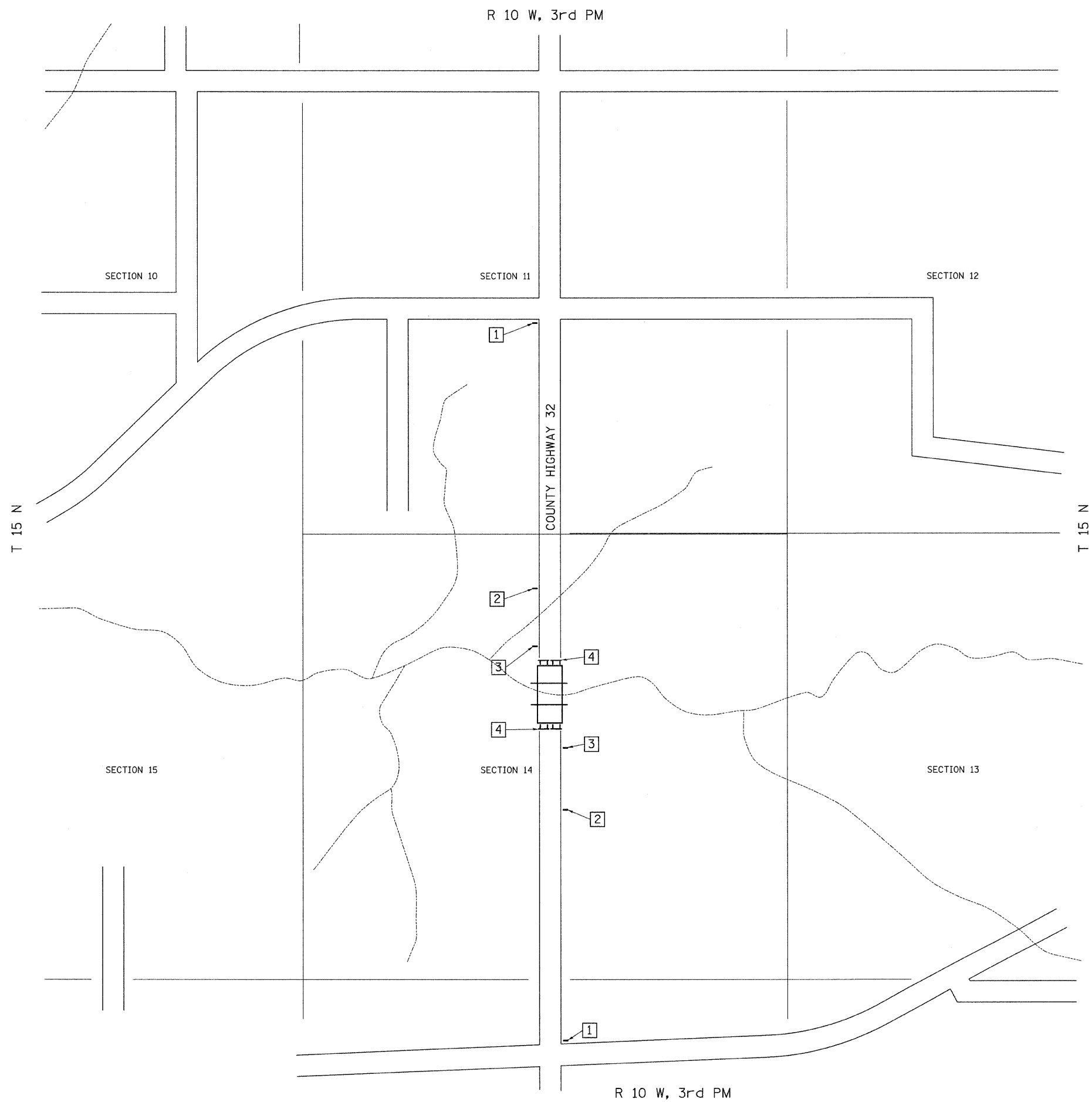
STATION TO STATION	AVG. WIDTH	LENGTH	SQ YD
17+00.00 - 17+50.00	21.96'	50.00'	122
21+00.00 - 22+25.00	22.16'	125.00'	308
TOTAL			430

PAINT PAVEMENT MARKING - LINE 4"

STATION TO STATION	SIDE	DESCRIPTION	FOOT
17+00-00 - 22+25.00	LEFT	WHITE EDGE LINE	525
17+00-00 - 22+25.00	℄	YELLOW SKIP-DASH	130
17+00-00 - 22+25.00	RIGHT	WHITE EDGE LINE	525
TOTAL			1,180

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	4
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1614(103)	
*07-00098-00-BR			CONTRACT #	

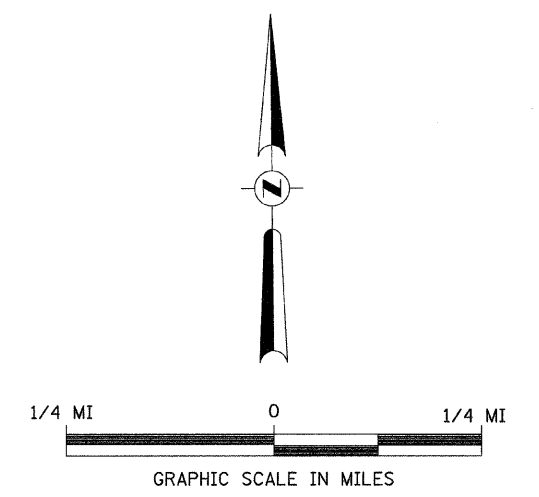
93451



- 1 ROAD CLOSED 3/4 MILE AHEAD LOCAL TRAFFIC ONLY
R11-3
- 2 ROAD CLOSED AHEAD
W20-3
- 3 ROAD CLOSED 500 FT
W20-3
- 4 TYPE III BARRICADES

- ROAD CLOSED 3/4 MILES AHEAD LOCAL TRAFFIC ONLY
- ROAD CLOSED AHEAD
- ROAD CLOSED 500 FT

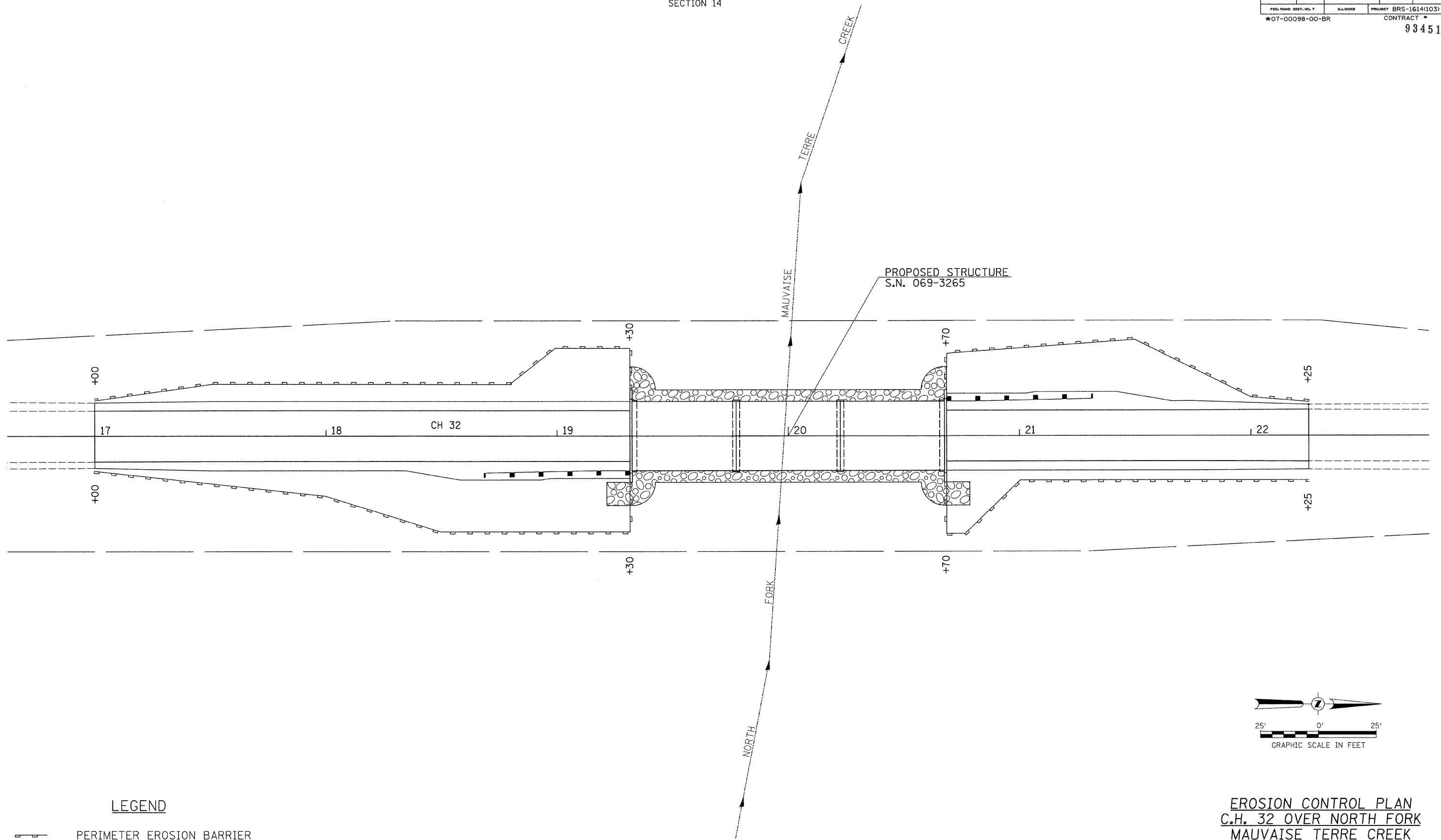
SEE STANDARD BLR 21 AND SPECIAL PROVISIONS




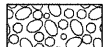
TRAFFIC CONTROL PLAN
 C.H. 32 OVER NORTH FORK
 MAUVAISE TERRE CREEK
 SECTION 07-00098-00-BR
 MORGAN COUNTY
 STATION 20+00.00

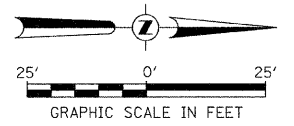
T 15 N, R 10 W, 3rd PM
SECTION 14

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	5
FED. ROAD DIST. NO. 7		ILLINOIS	PROJECT BRS-1614(103)	CONTRACT #
*07-00098-00-BR			93451	



LEGEND

-  PERIMETER EROSION BARRIER
-  PROPOSED RIPRAP PLACEMENT



EROSION CONTROL PLAN
C.H. 32 OVER NORTH FORK
MAUVAISE TERRE CREEK
SECTION 07-00098-00-BR
MORGAN COUNTY
STATION 20+00.00

T 15 N, R 10 W, 3rd PM
SECTION 14

B.M.: RR Spike in Power Pole Sta. 16+24, 38' Lt. Elev. 574.05
 RR Spike in Power Pole Sta. 23+45, 38' Lt. Elev. 577.78

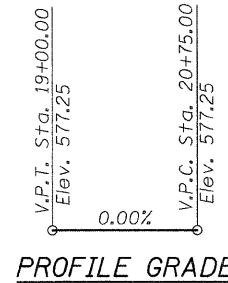
**NORTH FORK MAUVAISE TERRE CREEK
 BUILT 200_ BY
 MORGAN COUNTY
 SEC. 07-00098-00-BR
 CH 32 STATION 20+00.00
 F.A. PROJ. BRS-1614(103)
 STR. NO. 069-3265 LOADING HS20-44**

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 1 OF 7 SHEETS
CH 32	*	MORGAN	19	7	
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-1614(103)		CONTRACT # 98451

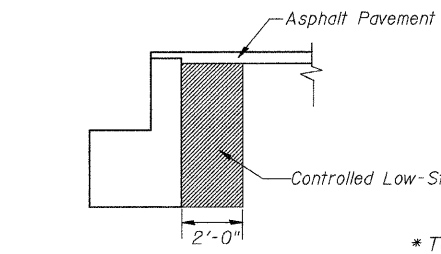
Existing Structure:
 Three span reinforced concrete deck on steel stringers superstructure supported on concrete pile bent piers with exposed timber piles and pile bent abutments. The structure is ±74' back to back of abutments, ±24' out to out of deck and is not skewed. Str. No. 069-3099

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

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



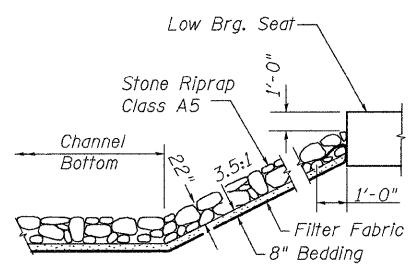
GENERAL NOTES
 The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles.
 For Soil Boring Logs, See Special Provisions.
 A Corrosion Inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(12) of the Standard Specifications.
 Reinforcement Bars shall conform to the requirements of ASTM A706 Grade 60. See Special Provisions.
 Layout of the slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
 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.



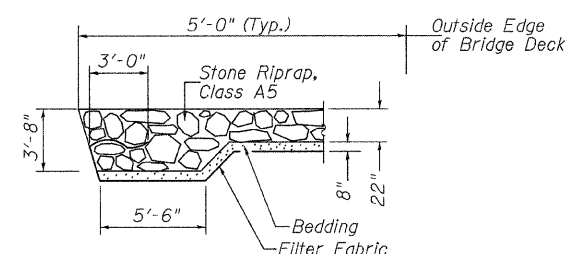
SECTION B-B

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

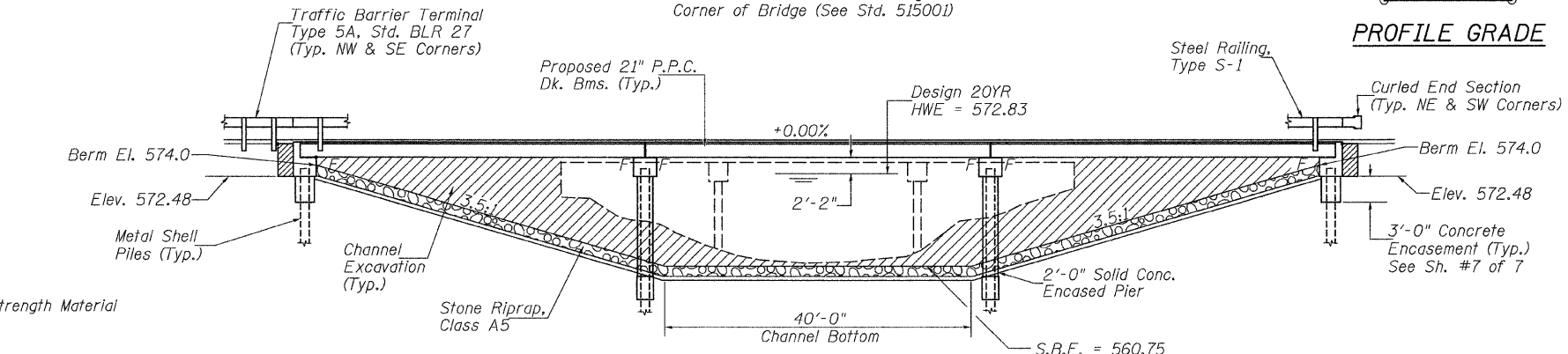
* Curled End Section (Typ. NE & SW Corners)



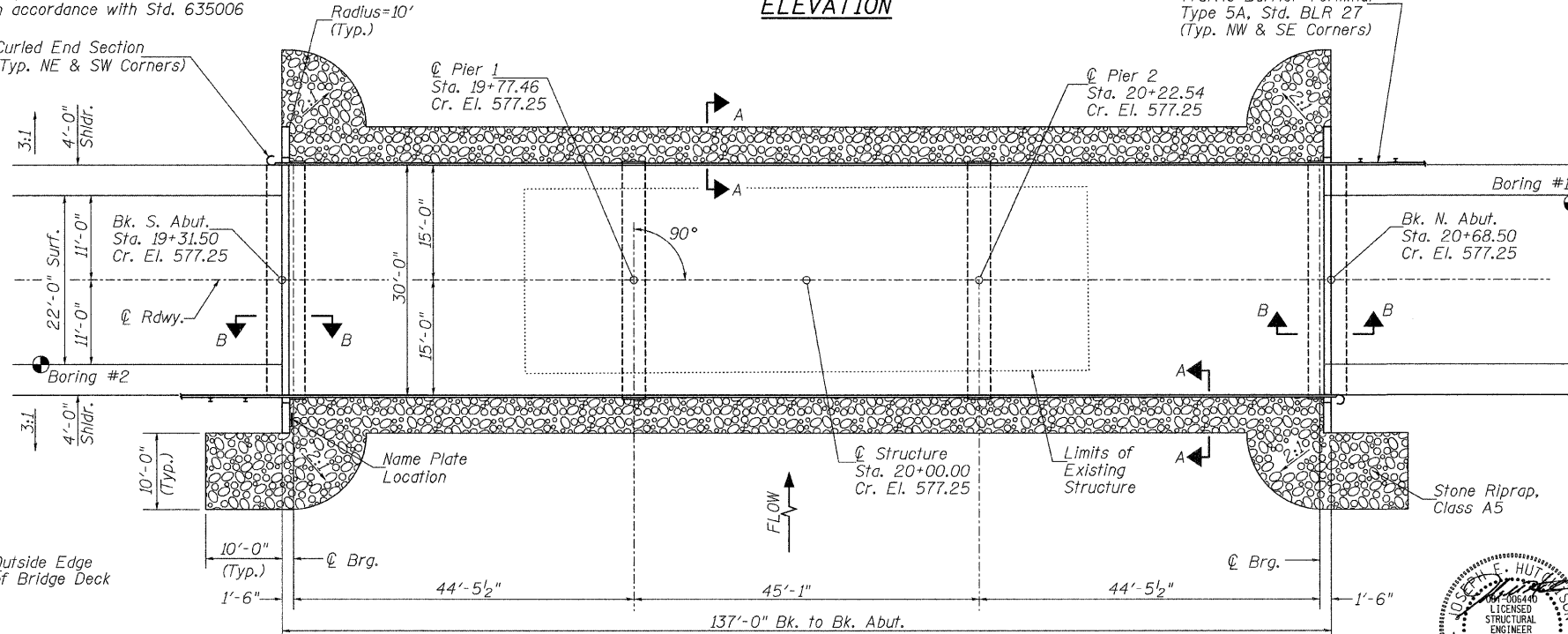
STONE RIPRAP DETAIL



SECTION A-A



ELEVATION



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	---	1,400	1,400
Stone Riprap, Class A5	TON	---	800	800
Filter Fabric	SQ YD	---	770	770
① Removal of Existing Structures	EACH	---	---	1
Structure Excavation	CU YD	---	95	95
Concrete Structures	CU YD	---	92.3	92.3
Precast Prestressed Concrete Deck Beams (21" Depth)	SQ FT	4,050	---	4,050
① Reinforcement Bars	POUND	---	8,500	8,500
Steel Railing, Type S1	FOOT	274	---	274
Furnishing Metal Shell Piles 12"	FOOT	---	1,242	1,242
Driving Piles	FOOT	---	1,242	1,242
Test Pile Metal Shells	EACH	---	4	4
Pile Shoes	EACH	---	24	24
Concrete Encasement	CU YD	---	9.0	9.0
Name Plates	EACH	---	---	1
Waterproofing Membrane System	SQ YD	457	---	457
Portland Cement Mortar Fairing Course	FOOT	300	---	300
① Controlled Low-Strength Material	CU YD	---	20.3	20.3
Hot-Mix Asphalt Surface Course, Mix "C", N50	TON	46	---	46
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

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]
 Illinois Structural No. 6440
 Expires 11/30/2008

DESIGN SPECIFICATIONS

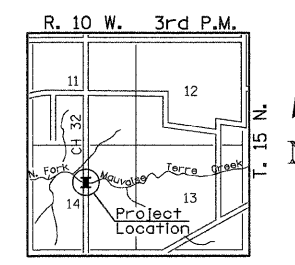
2002 AASHTO & Interims

DESIGN STRESSES

(FIELD UNITS) $f'_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (Rein.)
 (PRECAST PRESTRESSED UNITS) $f'_c = 5,000$ p.s.i.
 $f'_{ci} = 4,000$ 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.



LOCATION SKETCH

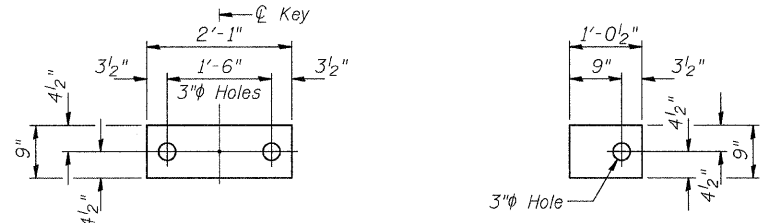
WATERWAY INFORMATION

Drainage Area = 48.7 Sq. Mi. Low Grade Elev. = 577.25 @ Sta. 20+00.00

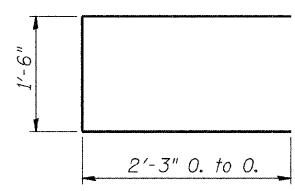
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Nat. H.W.E. Exist.	Prop.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	20	5,147	503	951	572.83	1.64	0.32	574.47	573.15	
Base	100	7,456	548	1,037	573.54	3.92	0.90	577.46	574.44	

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

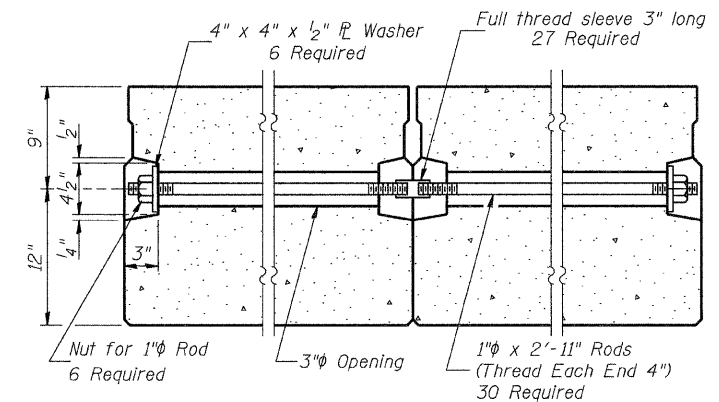
DESIGNED	J.E.H.
CHECKED	B.A.N.
DRAWN	C.E.T.
CHECKED	J.E.H.



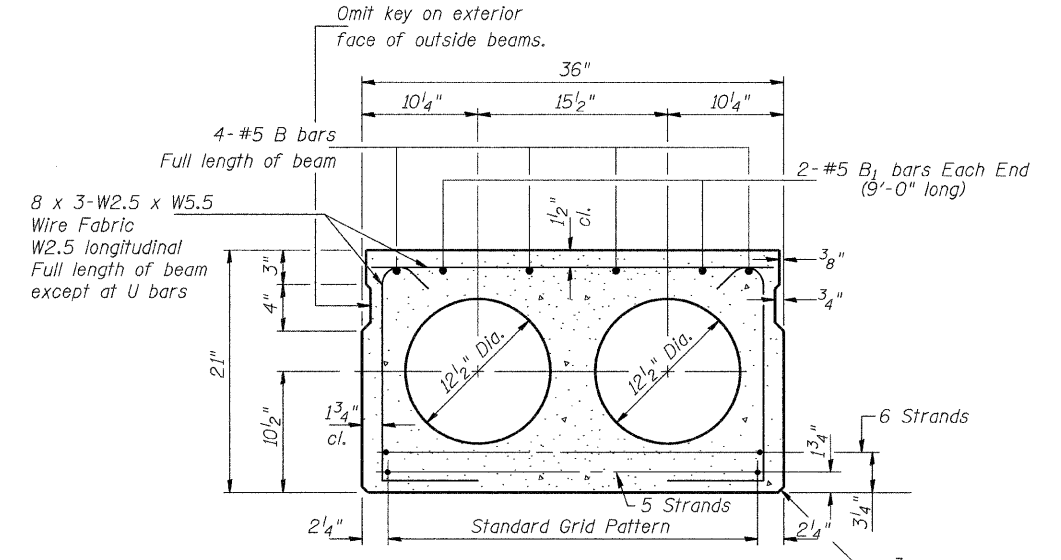
1/2" FABRIC BEARING PAD
(Interior) 54 required
1/2" FABRIC BEARING PAD
(Exterior) 12 required
FIXED



BAR U

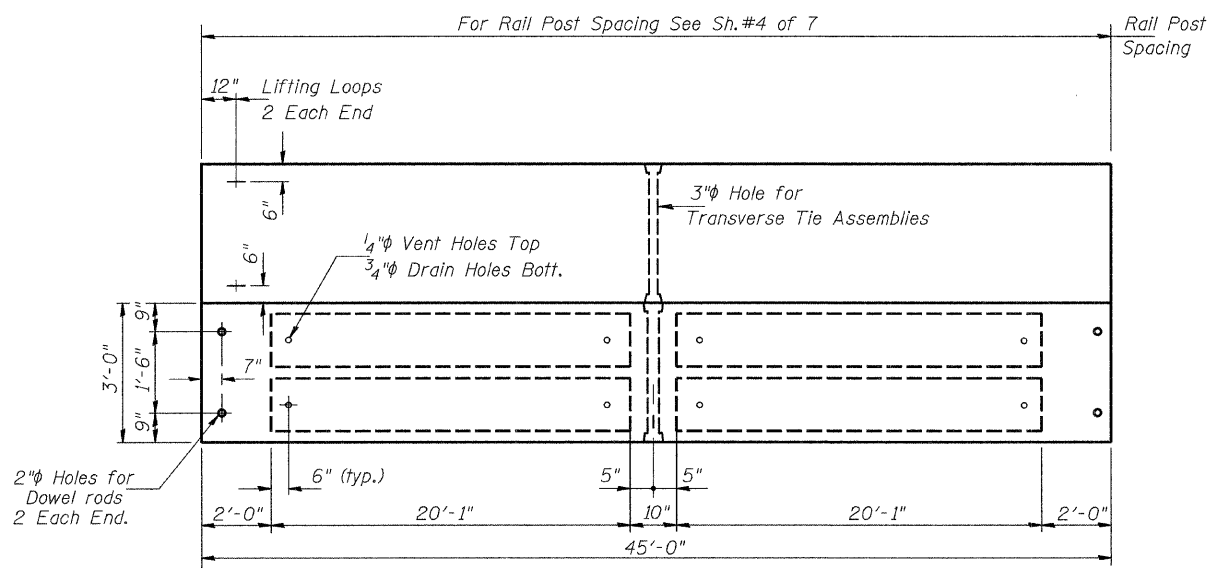


TYPICAL TRANSVERSE TIE ASSEMBLY

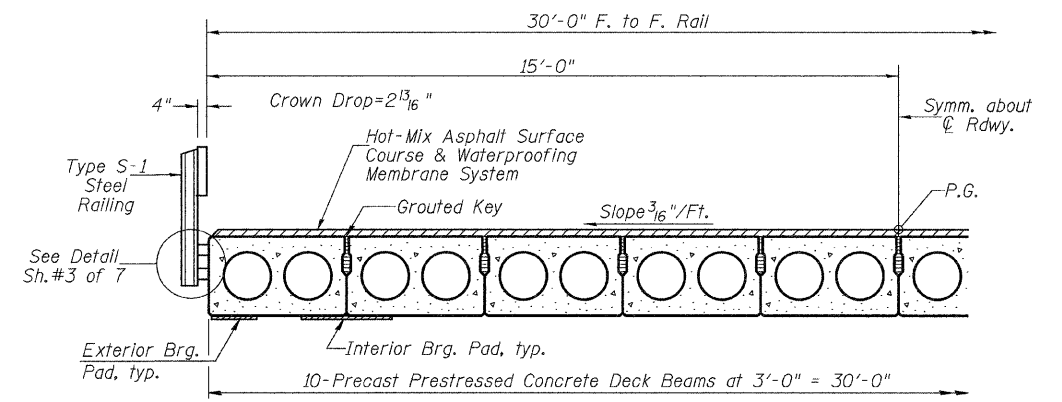


TYPICAL SECTION

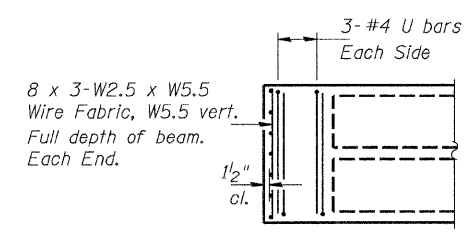
11-1/2" Strands, Each Strand Stressed to 30,900 Lbs.
5 Strands 1 3/4" up, 6 Strands 3/4" up
Note: Place strands symmetrically about center of beam.



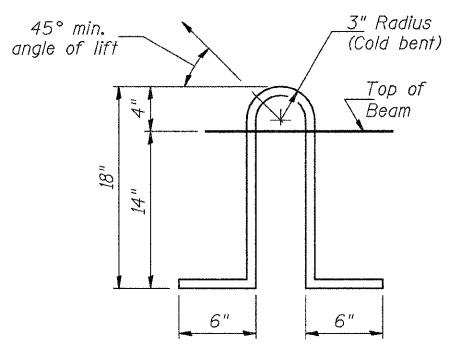
PLAN



HALF CROSS SECTION



END PLAN



LIFTING LOOP DETAIL

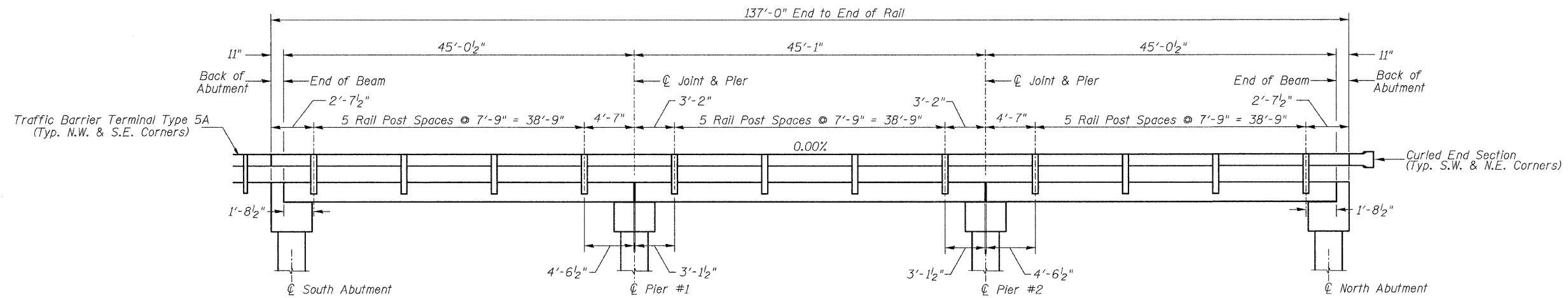
NOTES

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. Lifting loops shall be 2-1/2" 270 ksi strands, as shown.
The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.
Non prestressing steel shall conform to the requirements of ASTM A706, Grade 60.
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.
A Corrosion Inhibitor shall be used in the concrete for precast prestressed concrete deck beams according to Article 1020.05(b)(12).
Required Release Strength, f'cl, shall be 4,000 p.s.i.
Rail post anchor devices shall be cast into outside face of exterior beams. See Sheet #3 of 7 for details and Sheet #4 of 7 for spacing.

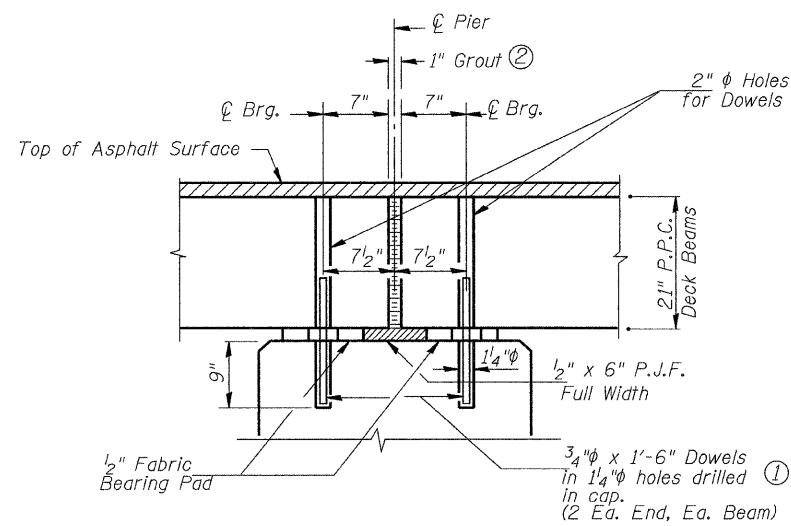
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (21" Depth)	SQ FT	4,050

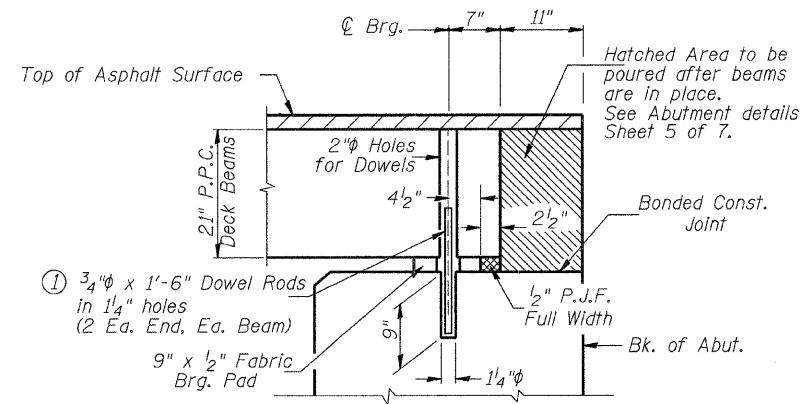
SUPERSTRUCTURE
COUNTY HIGHWAY 32
OVER NORTH FORK
MAUVAISE TERRE CREEK
SECTION 07-00098-00-BR
MORGAN COUNTY
STATION 20+00.00



RAIL POST SPACING

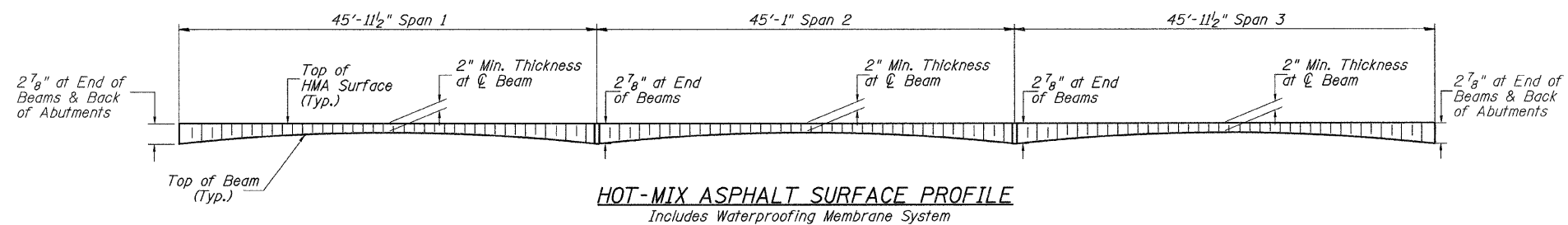


SECTION THRU PIERS



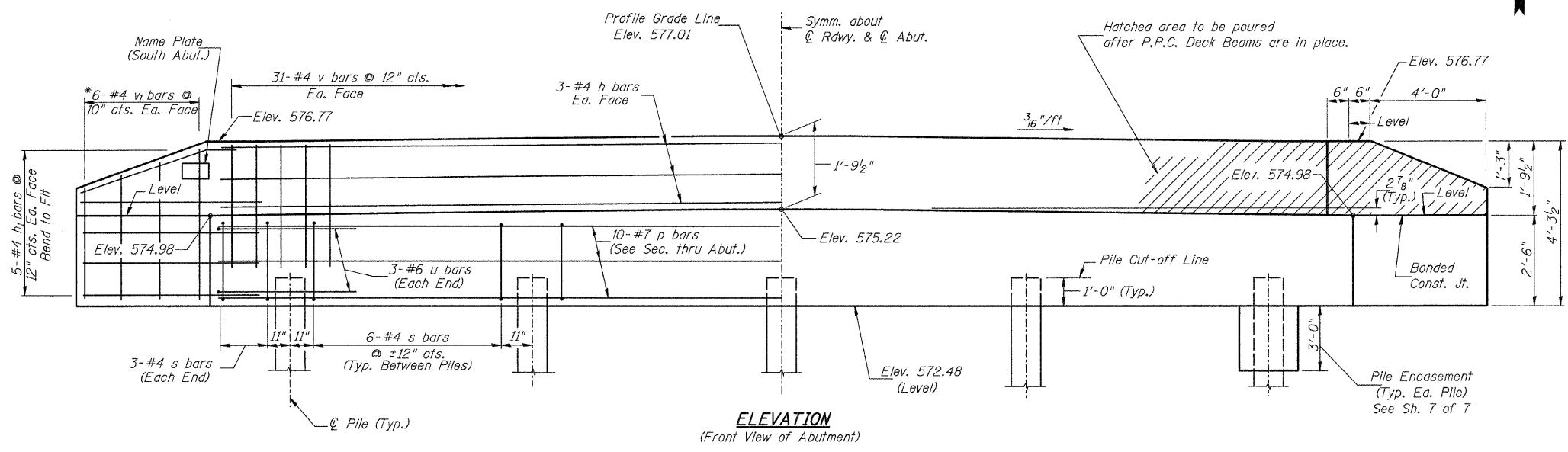
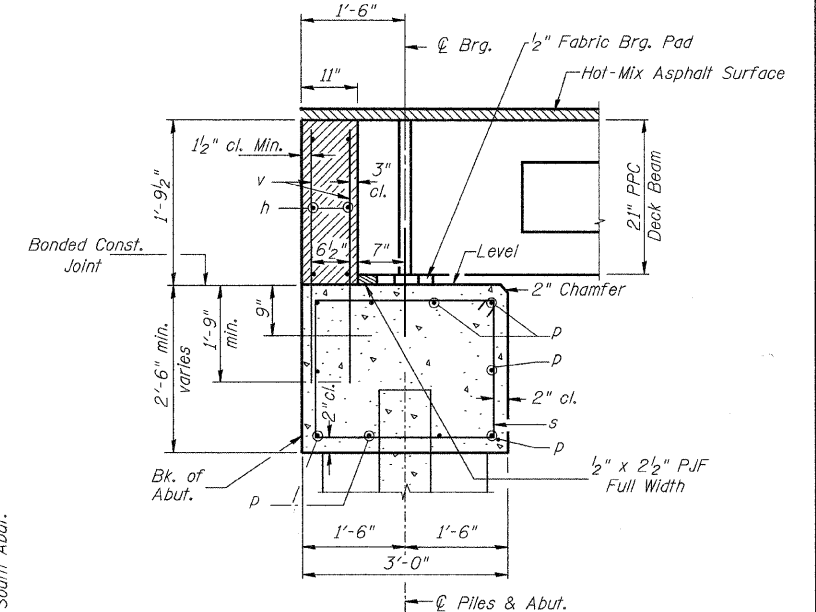
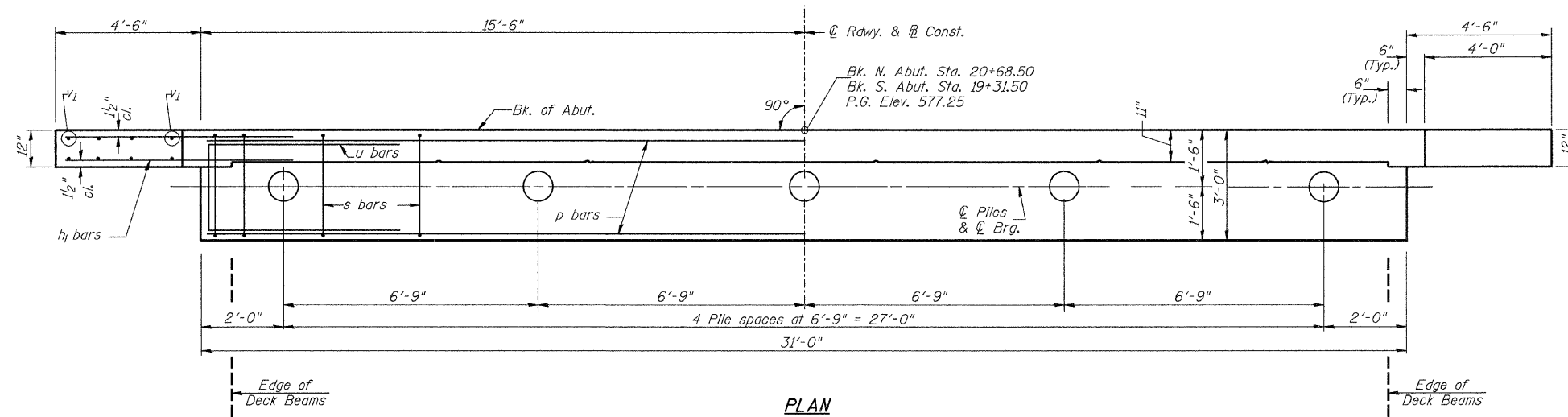
SECTION THRU ABUTMENTS

- 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.



HOT-MIX ASPHALT SURFACE PROFILE
Includes Waterproofing Membrane System

**SUPERSTRUCTURE DETAILS,
HMA SURFACE PROFILE
AND RAIL POST SPACING
COUNTY HIGHWAY 32
OVER NORTH FORK
MAUVAISE TERRE CREEK
SECTION 07-00098-00-BR
MORGAN COUNTY
STATION 20+00.00**



**TWO ABUTMENTS
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
h	12	#4	30'-9"	—
h ₁	40	#4	6'-9"	—
p	20	#7	30'-9"	—
s	60	#4	10'-5"	□
u	12	#6	11'-7"	□
v	124	#4	3'-6"	—
v ₁	24	#4	6'-9"	—
Concrete Structures			CU YD	24.0
Reinforcement Bars			POUND	2,710
Structure Excavation			CU YD	70
Name Plates			EACH	1
Furnishing Metal Shell Piles 12"			FOOT	408
Driving Piles			FOOT	408
Test Pile Metal Shells			EACH	2
Pile Shoes			EACH	10
Concrete Encasement			CU YD	2.6

① See Special Provisions

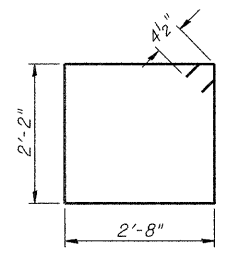
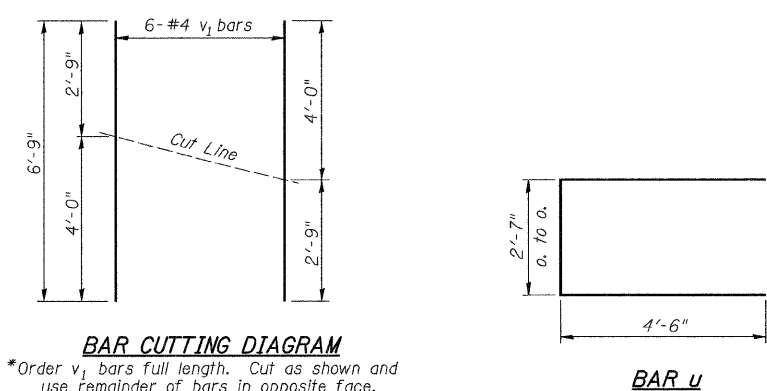
DESIGN STRESSES
 $f'_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i.

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.

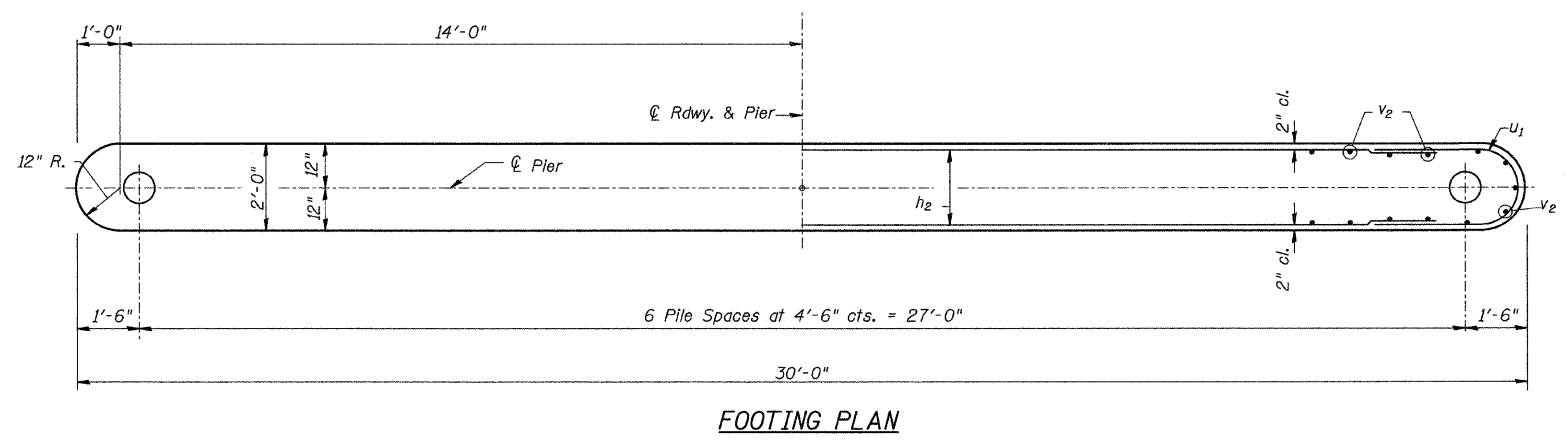
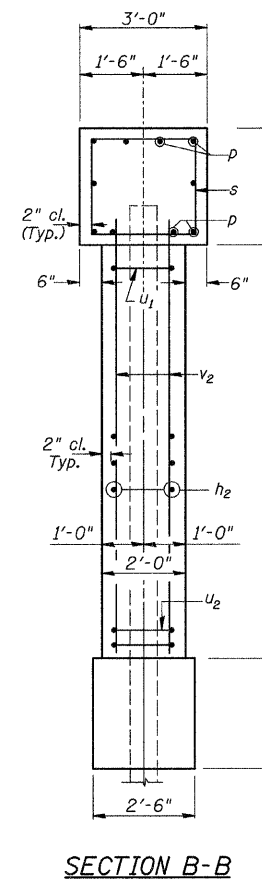
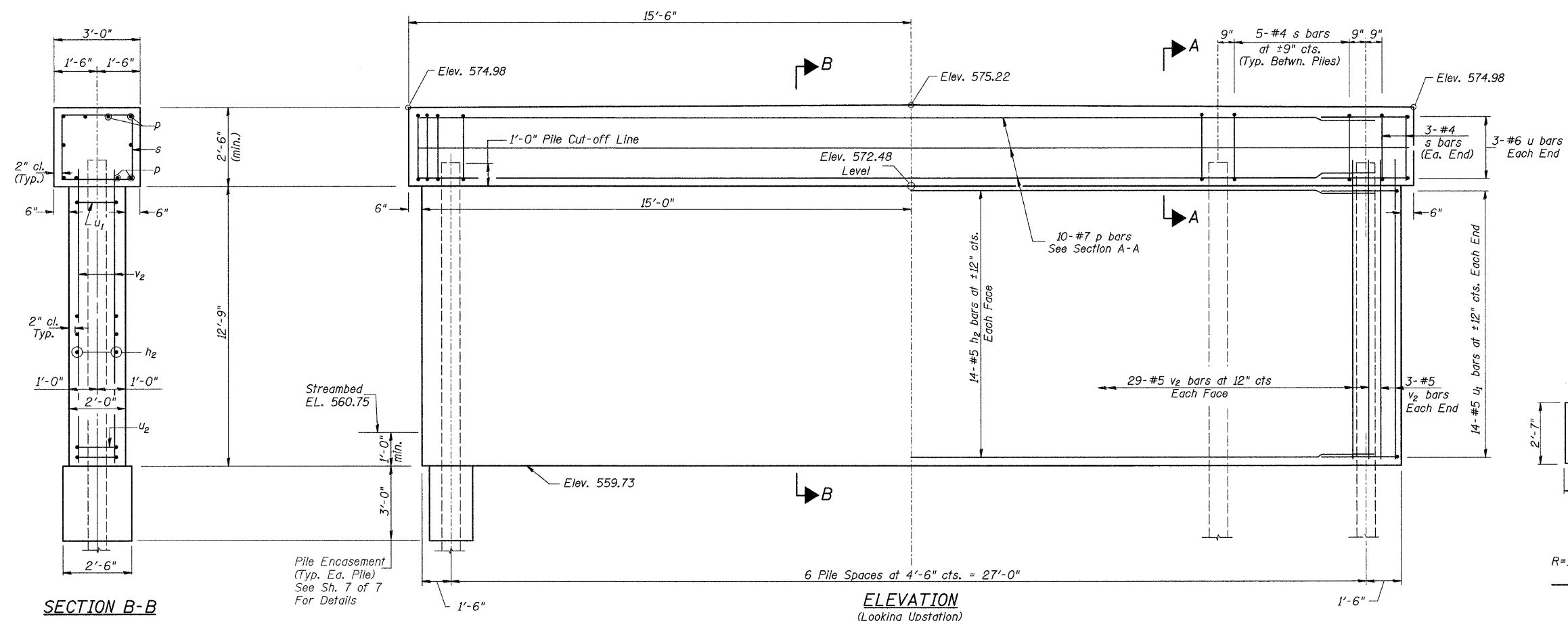
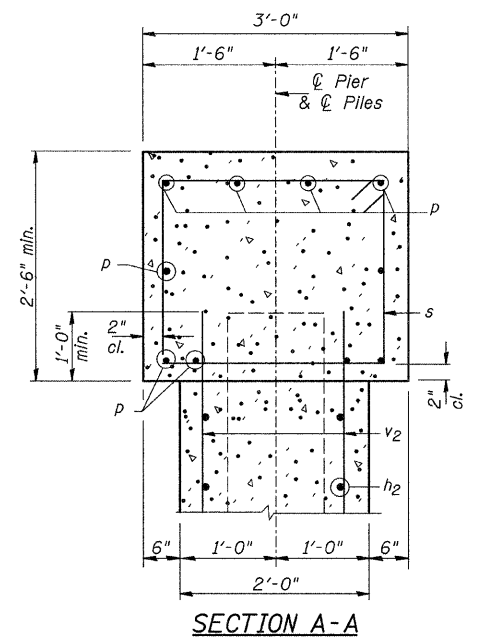
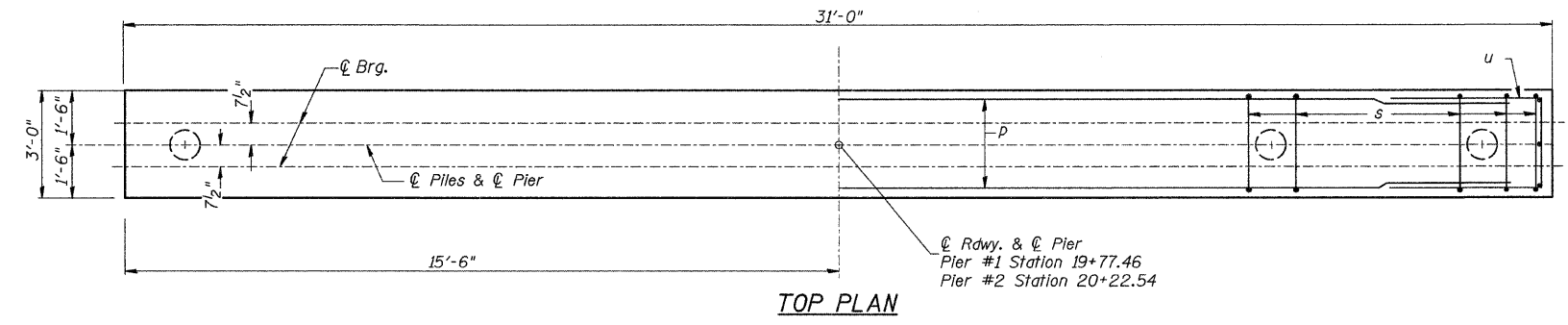
PILE DATA

Type & Size: Metal Shell-12" ϕ x 0.25" walls w/ pile shoes
 Nominal Required Bearing: 210 kips
 Allowable Resistance Available: 70 kips
 Est. Length: 59' South Abutment
 43' North Abutment
 No. Req'd.: 10 (Includes 1 Test Pile at Each Abut.)



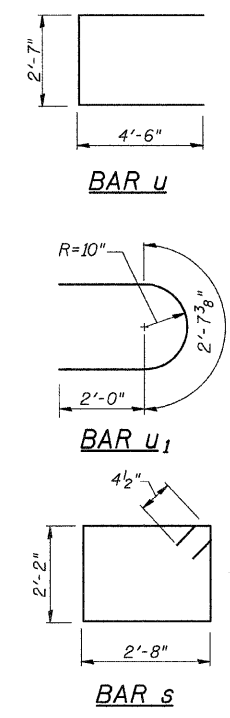
**ABUTMENTS
 COUNTY HIGHWAY 32
 OVER NORTH FORK
 MAUVAISE TERRE CREEK
 SECTION 07-00098-00-BR
 MORGAN COUNTY
 STATION 20+00.00**

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



**TWO PIERS
BILL OF MATERIAL**

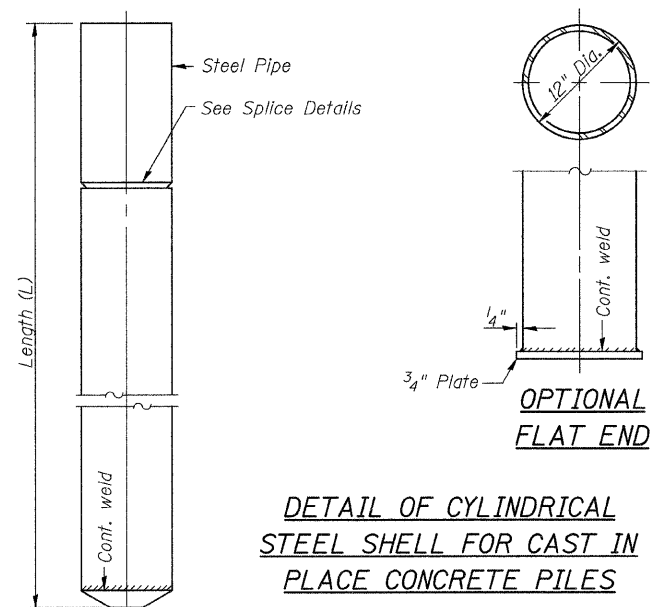
BAR	NO.	SIZE	LENGTH	SHAPE	
h ₂	56	#5	27'-8"	—	
p	20	#7	30'-9"	—	
s	72	#4	10'-5"	□	
u	12	#6	11'-7"	□	
u ₁	56	#5	6'-8"	□	
v ₂	128	#5	13'-7"	—	
Concrete Structures				CU YD	68.3
① Reinforcement Bars				POUND	5,790
Structure Excavation				CU YD	25
Furnishing Metal Shell Piles 12"				FOOT	834
Driving Piles				FOOT	834
Test Pile Metal Shells				EACH	2
Pile Shoes				EACH	14
Concrete Encasement				CU YD	6.4
① Underwater Structure Excavation Protection, Location 1				EACH	1
① Underwater Structure Excavation Protection, Location 2				EACH	1
① See Special Provisions					



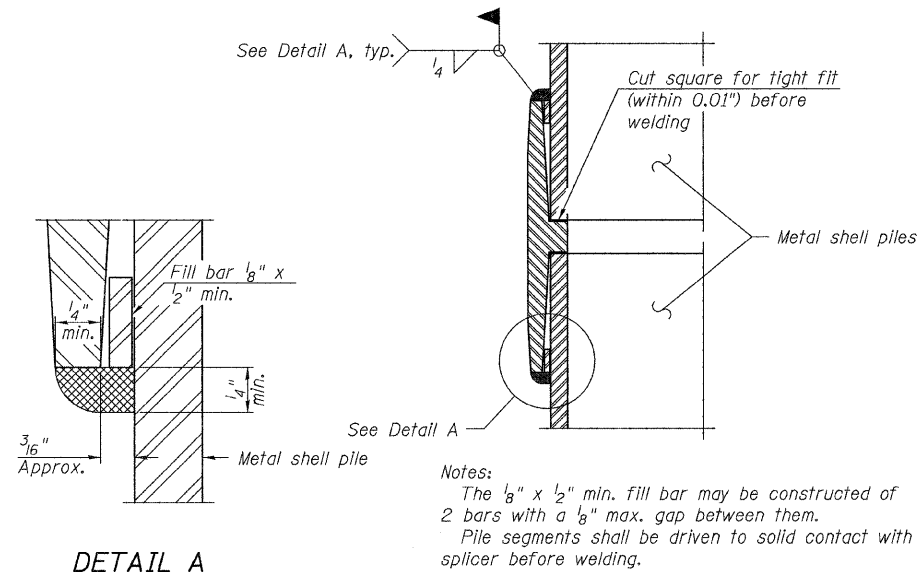
PILE DATA
Type & Size: Metal Shell-12"φ x 0.25" walls w/ pile shoes
Nominal Required Bearing: 315 kips
Allowable Resistance Available: 105 kips
Est. Length: 82' Pier #1
57' Pier #2
No. Req'd.: 14 (Includes 1 Test Pile at Each Pier)

**PIERS
COUNTY HIGHWAY 32
OVER NORTH FORK
MAUVAISE TERRE CREEK
SECTION 07-00098-00-BR
MORGAN COUNTY
STATION 20+00.00**

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.

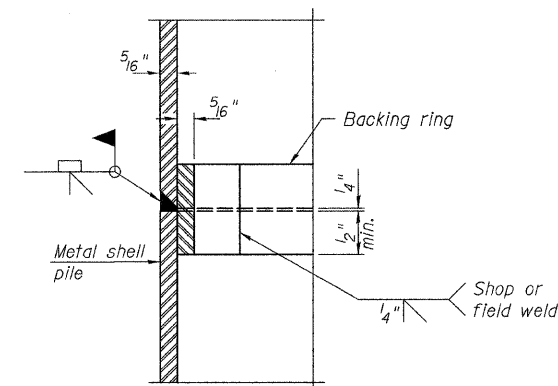


DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



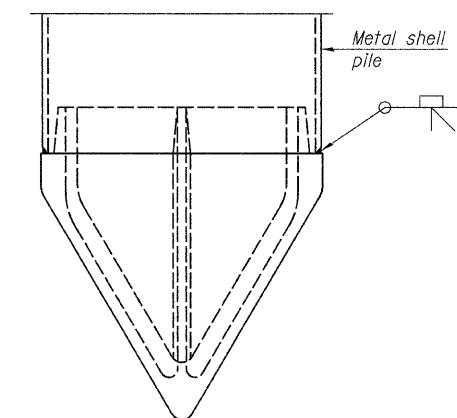
Notes:
The $\frac{1}{8}$ " x $\frac{1}{2}$ " min. fill bar may be constructed of 2 bars with a $\frac{1}{8}$ " max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE

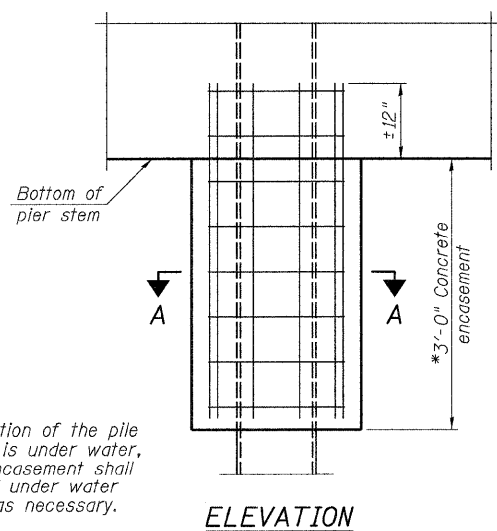


COMPLETE PENETRATION WELD SPLICE

Backing ring made from pile shell. Remove segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



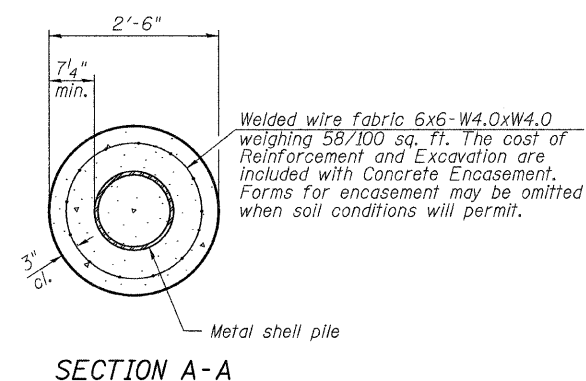
METAL SHELL PILE SHOE ATTACHMENT



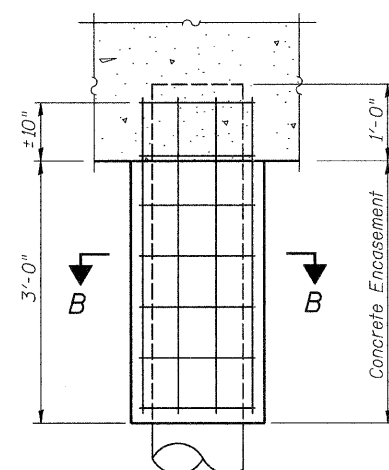
ELEVATION

* If a portion of the pile encasement is under water, Concrete Encasement shall be tremmed under water into forms as necessary.

DETAIL OF PROTECTION FOR METAL SHELLS AT PIERS

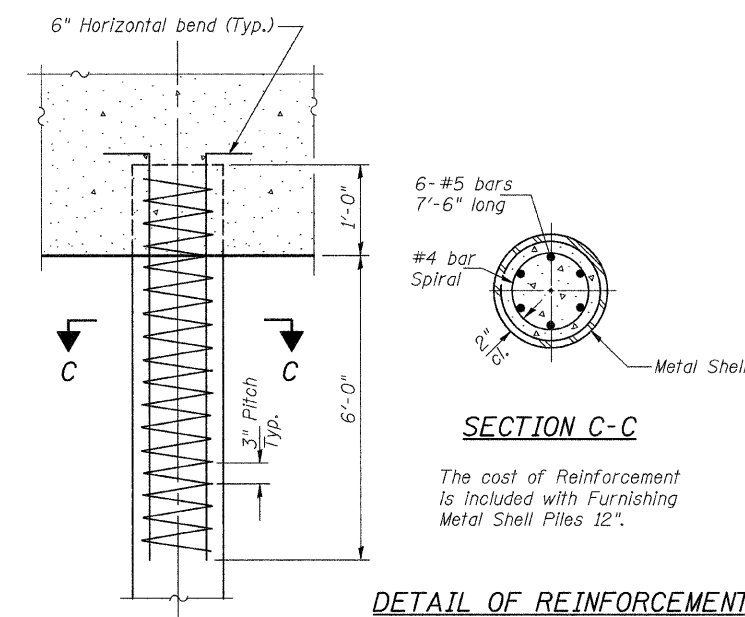


SECTION A-A



SECTION B-B

DETAIL OF METAL SHELL PILE ENCASEMENT AT ABUTMENTS



SECTION C-C

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

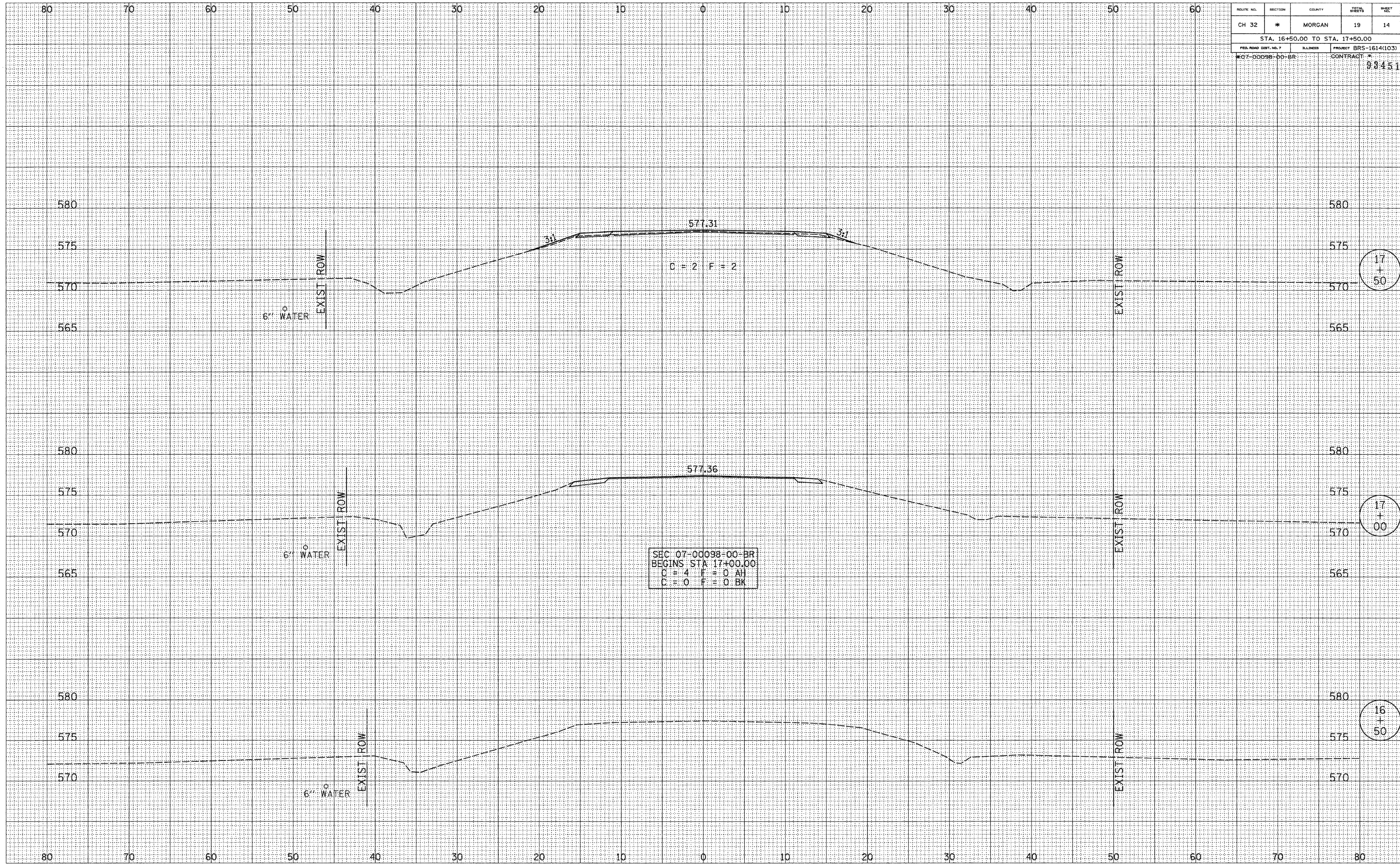
DETAIL OF REINFORCEMENT FOR METAL SHELLS AT ABUTMENTS

**PILE DETAILS
COUNTY HIGHWAY 32
OVER NORTH FORK
MAUVAISE TERRE CREEK
SECTION 07-00098-00-BR
MORGAN COUNTY
STATION 20+00.00**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	14
STA. 16+50.00 TO STA. 17+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-1614(103)	CONTRACT #	
*07-00098-00-BR			99451	

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

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



17
+
50

17
+
00

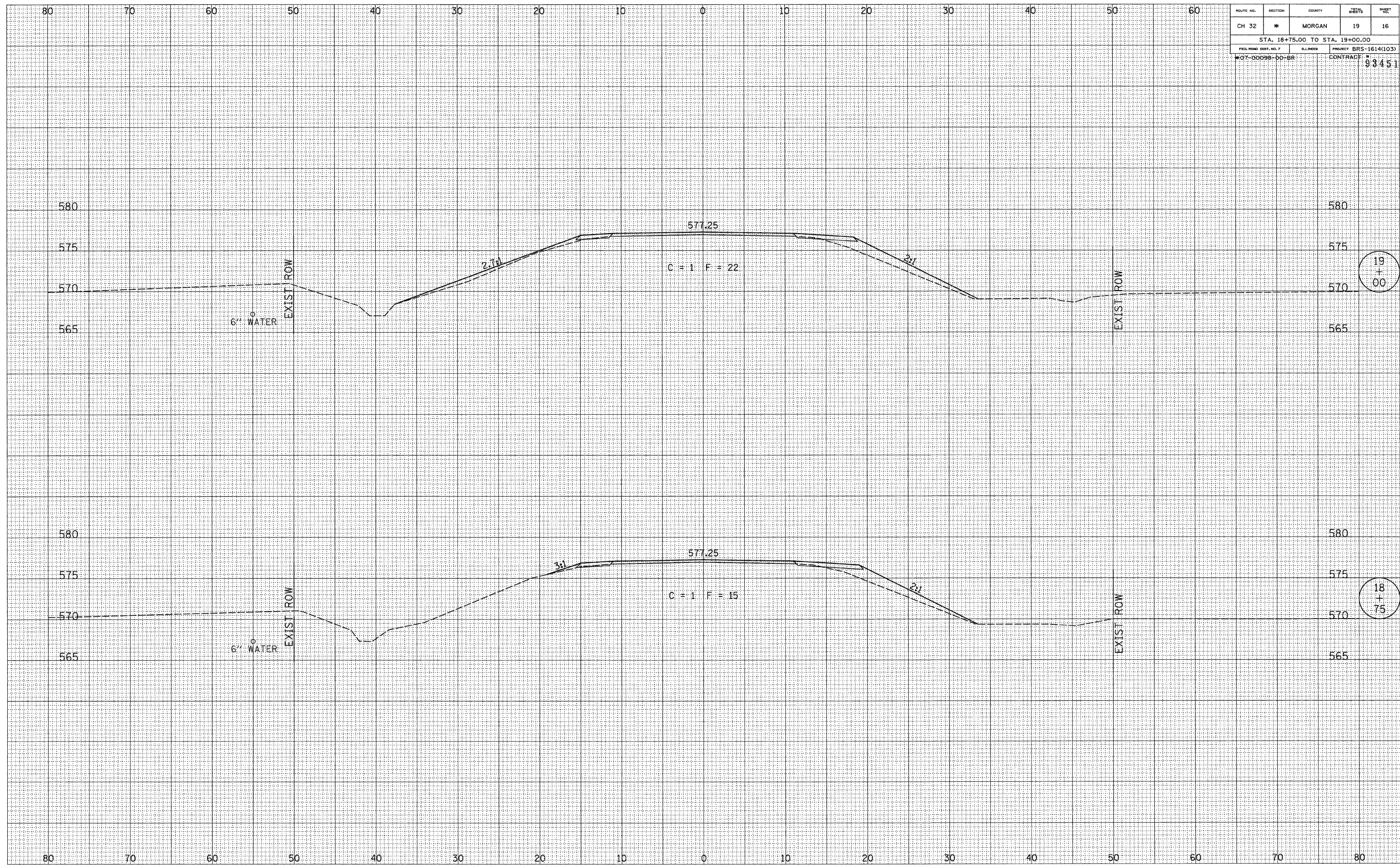
16
+
50

SEC. 07-00098-00-BR
 BEGINS STA. 17+00.00
 C = 4 F = 0 AH
 C = 0 F = 0 BK

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	16
STA. 18+75.00 TO STA. 19+00.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-1614(103)	CONTRACT # 93451	

DATE _____
 BY _____
 SURVEYED _____
 CHECKED _____
 ORIGINAL SURVEY _____
 NOTE BOOK _____
 NO. _____

DATE _____
 BY _____
 SURVEYED _____
 CHECKED _____
 ORIGINAL SURVEY _____
 NOTE BOOK _____
 NO. _____



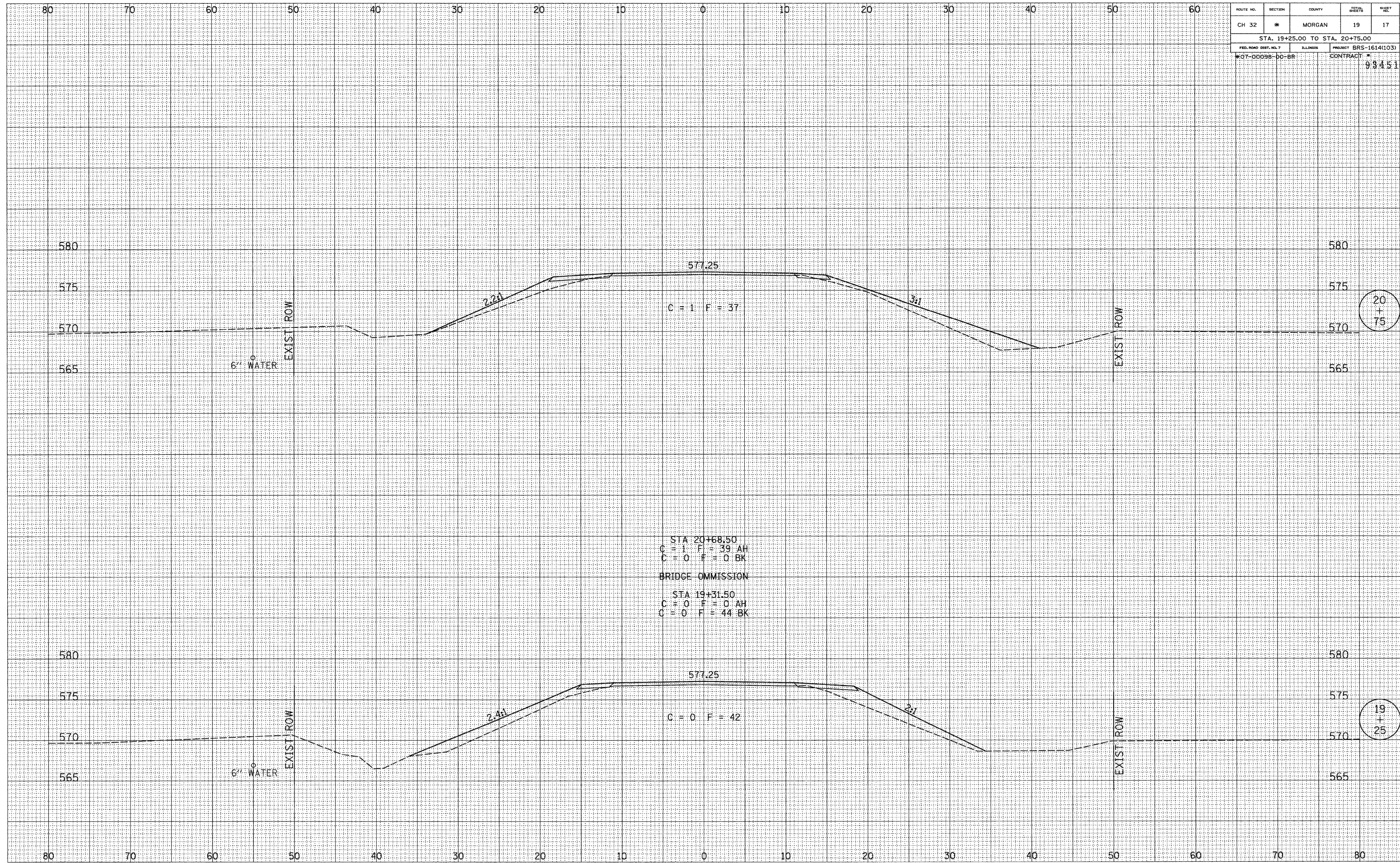
19
+

18
+

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	17
STA. 19+25.00 TO STA. 20+75.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-1614(103)	CONTRACT # 93451	

DATE	BY
SURVEYED	
NOTE BOOK	
TEMP. AREAS	
AREAS CHECKED	

DATE	BY
ORIGINAL SURVEY	
NOTE BOOK	
TEMP. AREAS	
AREAS CHECKED	



20
+
75

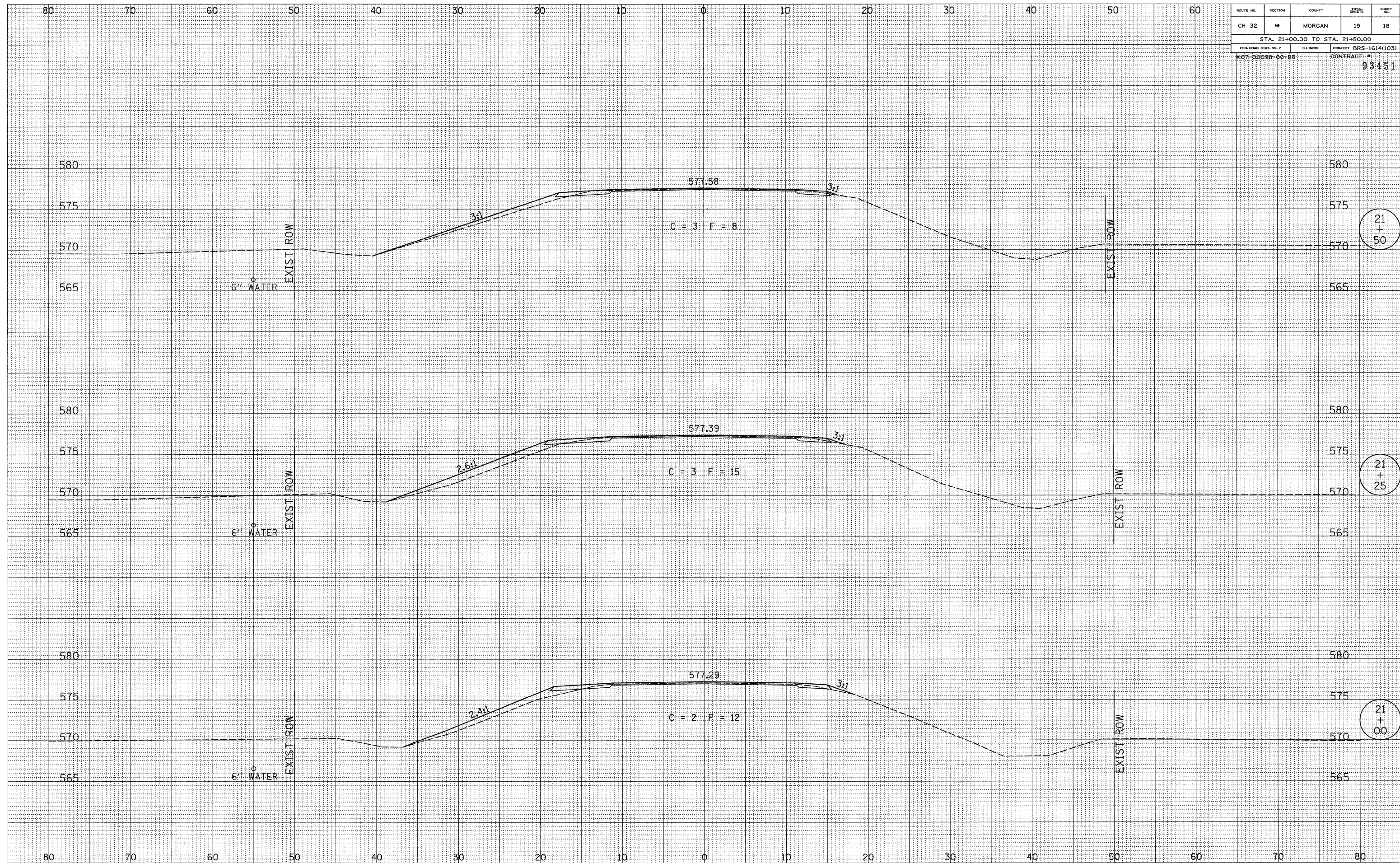
19
+
25

STA 20+68.50
 C = 1 F = 39 AH
 C = 0 F = 0 BK
 BRIDGE OMISSION
 STA 19+31.50
 C = 0 F = 0 AH
 C = 0 F = 44 BK

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	18
STA. 21+00.00 TO STA. 21+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	BRS-1614(103)	
*07-00098-00-BR			CONTRACT #	
			98451	

DATE	BY
SURVEYED	BY
NOTE BOOK	NO.
TEMPLATE	
AREAS CHECKED	

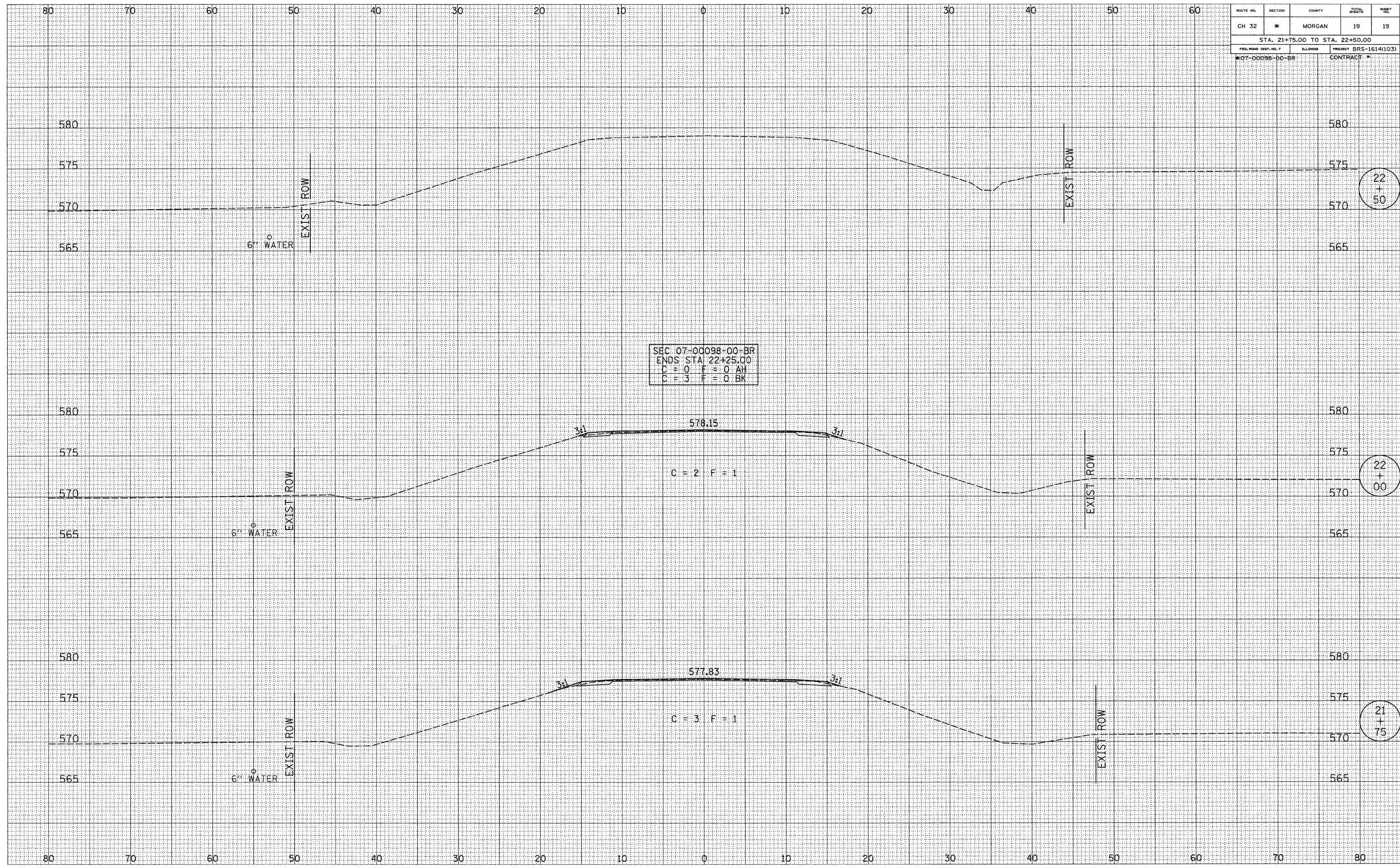
DATE	BY
SURVEYED	BY
NOTE BOOK	NO.
TEMPLATE	
AREAS CHECKED	



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 32	*	MORGAN	19	19
STA. 21+75.00 TO STA. 22+50.00				
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT BRS-1614(103)	CONTRACT #	
*07-00098-00-BR				

DATE _____
 BY _____
 SURVEYED _____
 SURVEY _____
 NOTE BOOK _____
 TEMPLATE _____
 AREAS _____
 AREAS CHECKED _____

DATE _____
 BY _____
 SURVEYED _____
 SURVEY _____
 NOTE BOOK _____
 TEMPLATE _____
 AREAS _____
 AREAS CHECKED _____



22
+
50

22
+
00

21
+
75