

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 7	06-00097-00-BR	UNION	16	1
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99311	

INDEX OF SHEETS

1. COVER SHEET
2. SUMMARY OF QUANTITIES AND TYPICAL SECTIONS
3. PLAN AND PROFILE
- 4.-8. STATION CROSS SECTIONS
- 9.-14. BRIDGE PLANS
- 15.-16. BORINGS

HIGHWAY STANDARDS:

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
- 515001-02 NAME PLATE FOR BRIDGES
- 630301-04 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 635006-02 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701901 TRAFFIC CONTROL DEVICES
- BLR 21-7 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- BLR 26 STEEL PLATE BEAM GUARDRAIL 27.5 INCH HEIGHT
- BLR 27 TRAFFIC BARRIER TERMINAL, TYPE 5A

SCALES	}	PLAN	0' = 50'
		PROFILE HORIZ.	0' = 50'
		PROFILE VERT.	0' = 5'
		CROSS SECTIONS	0' = 5'

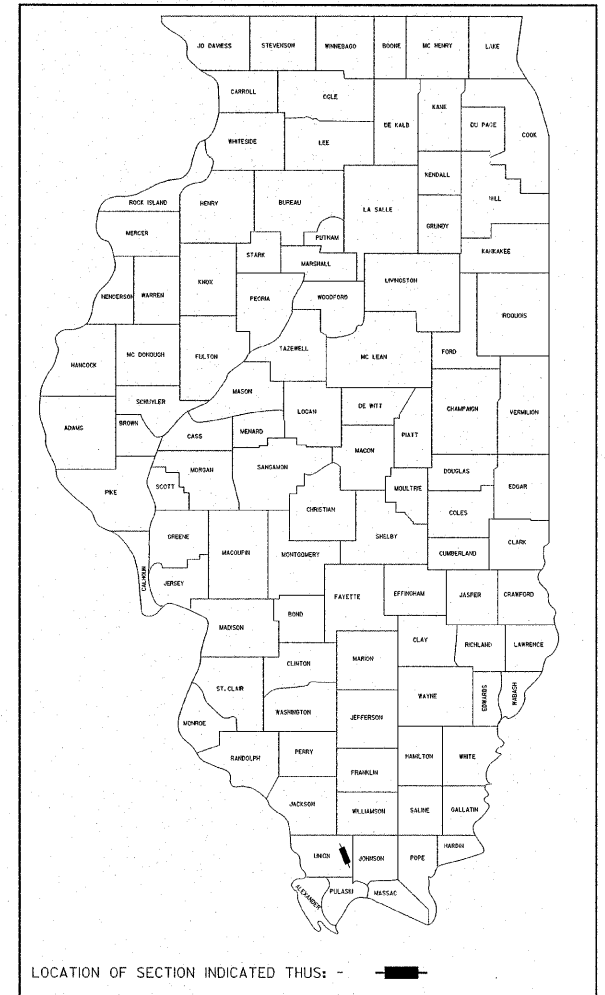
PROJECT BROS-181(31)

SECTION 06-00097-00-BR

C.H. 7 / MT. PLEASANT ROAD

UNION COUNTY

C-99-532-07



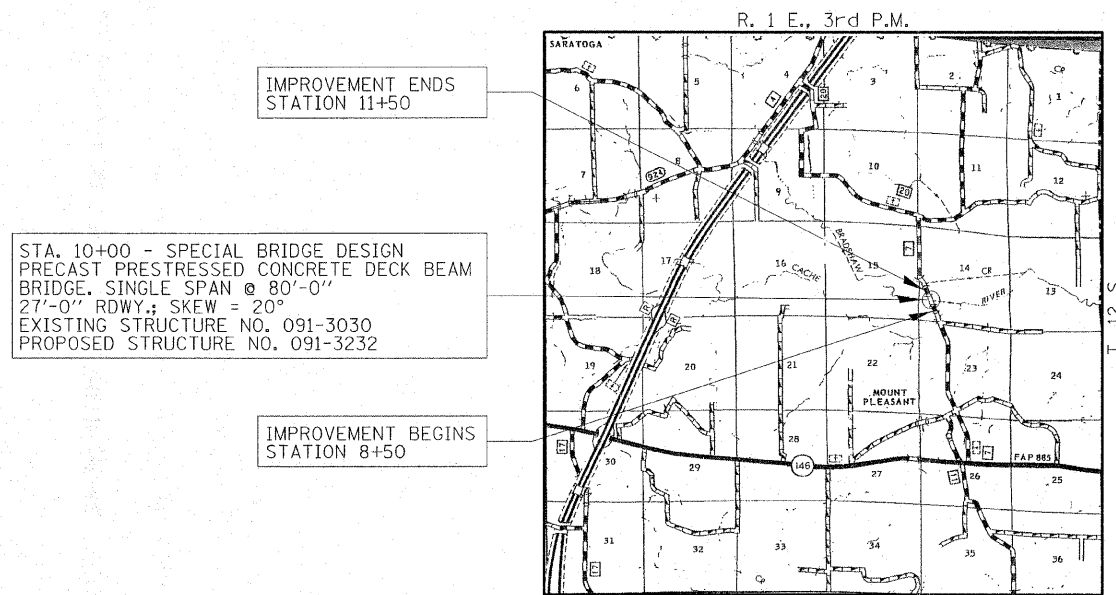
UTILITIES

LICK CREEK PUBLIC WATER DISTRICT
150 BORGSMILLER LANE
MURPHYSBORO, IL 62966
618-687-1670

SOUTHERN ILLINOIS POWER CO-OP
1143 LAKE OF EGYPT ROAD
MARION, IL 62959

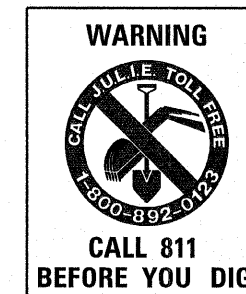
DESIGN FUNCTIONAL CLASSIFICATION:
RURAL COLLECTOR <400 ADT
DESIGN TRAFFIC: 250 ADT
DESIGN SPEED: 40 M.P.H.

CONTRACT NO. 99311



LAYOUT

APPROXIMATE SCALE: 0 = 1 MILE
NET LENGTH OF SECTION = 300 FEET = 0.057 MILES



AGENCY RESPONSIBLE FOR LETTING	
APPROVED	<i>February 26, 2008</i> <i>Bill R. Boyle</i> COUNTY ENGINEER
PASSED	<i>MARCH 25, 2008</i> <i>Dennis W. Hill</i> DISTRICT NINE ENGINEER OF LOCAL ROADS & STREETS
Releasing For Bid Based on Limited Review	<i>3-25</i> <i>Mary C. Kemi</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FIVE ENGINEER
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

DATE: <i>February 7, 2008</i>	HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 ELGIN • SPRINGFIELD
EXPIRES: 11/30/2009	PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 7	06-00097-00-BR	UNION	16	2
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99311		

SUMMARY OF QUANTITIES			
		CONSTRUCTION CODE X081-2A	
CODE NO	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	50
20200100	EARTH EXCAVATION	CU YD	60
20300100	CHANNEL EXCAVATION	CU YD	585
20700110	POROUS GRANULAR EMBANKMENT	TON	140
> 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.5
> 28100807	STONE DUMPED RIPRAP, CLASS A4	TON	430
> 40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	225
> 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	29.6
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2,160
50800105	REINFORCEMENT BARS	POUND	3,390
50900205	STEEL RAILING, TYPE S1	FOOT	168
51201600	FURNISHING STEEL PILES HP12X53	FOOT	455
51202305	DRIVING PILES	FOOT	455
51203600	TEST PILE STEEL HP12X53	EACH	1
51500100	NAME PLATES	EACH	1
542A0229	PIPE CULVERTS, CLASS A, TYPE 1 24"	FOOT	21
542A0235	PIPE CULVERTS, CLASS A, TYPE 1 30"	FOOT	28
* 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	75
> * 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
> * 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)	EACH	2
> 63200310	GUARDRAIL REMOVAL	FOOT	293
> 67100100	MOBILIZATION	L SUM	1
> * 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	2

> SEE SPECIAL PROVISIONS
* SPECIALTY ITEMS

GENERAL NOTES

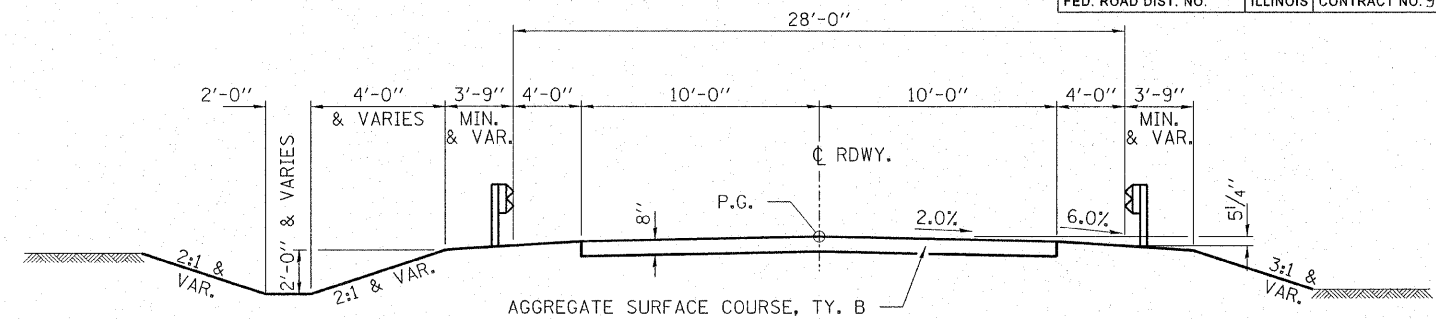
- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 1, 2007," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- ALL CLEARING AND GRUBBING AND REMOVAL OF EXISTING DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. THE REMOVAL OF THE EXISTING BITUMINOUS SURFACE WILL BE PAID FOR AS EARTH EXCAVATION. ALL BITUMINOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN A METHOD APPROVED BY THE ENGINEER. PROPER DISPOSAL OF BITUMINOUS MATERIAL SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- THE LOCATION OF EXISTING GAS MAINS, ELECTRIC POWER LINES, TELEPHONE LINES AND OTHER UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- THE CONTRACTOR SHALL CONSULT THE ENGINEER IN REGARD TO THE EXACT LENGTH OF PIPE CULVERTS BEFORE ORDERING THESE ITEMS.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES.

POROUS GRANULAR BACKFILL	2.00 TON/CU YD
AGGREGATE SURFACE COURSE	2.05 TON/CU YD
STONE DUMPED RIPRAP	1.75 TON/CU YD
- THE AREA TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE R.O.W. AS DIRECTED BY THE ENGINEER. ESTIMATED QUANTITY = SEEDING, CLASS 2 (SPECIAL) = 0.5 ACRES
- TREES WITHIN THE RIGHT-OF-WAY WHICH INTERFERE WITH CONSTRUCTION SHALL BE REMOVED ONLY AT THE DIRECTION OF THE ENGINEER.
- EXISTING ROADWAY SECTION SHALL REMAIN OPEN TO LOCAL TRAFFIC AT ALL TIMES UNTIL THE PROPOSED ROADWAY AND BRIDGE ARE OPEN TO TRAFFIC.

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION (CU YD)	SHRINKAGE FACTOR	PERCENT USED	AVAILABLE* EXCAVATION (CU YD)	EMBANKMENT REQUIRED (CU YD)	EARTHWORK BALANCE (CU YD)
STA. 8+50 TO STA. 9+59.29	29	25%	100%	22	133	-111
STA. 9+59.29 TO STA. 10+40.71		25%	100%			
STA. 10+40.71 TO STA. 11+50	30	25%	100%	22	208	-186
CHANNEL EXCAVATION ENTRANCES	585	25%	70%	439	0	439
TOTAL	59			483	341	-142
USE:	60					-145

* AVAILABLE EXCAVATION = EXC. x (1-SHRINKAGE FACTOR) x % USED (WASTE)



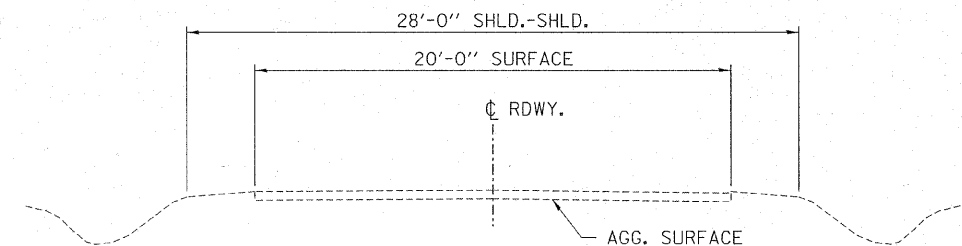
SUGGESTED CUT SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

SUGGESTED FILL SECTION
CONSTRUCT AS SHOWN IN
STATION CROSS SECTIONS

TYPICAL CROSS SECTION

STA. 9+00 TO 11+00

TRANSITION FROM THE PROPOSED ROADWAY TO THE EXISTING ROADWAY IS TO BE CONSTRUCTED FROM STA. 8+50 TO 9+00 AND STA. 11+00 TO 11+50. SEE SHEET 9 FOR TRANSITION AT BRIDGE.



EXISTING CROSS SECTION

GUARDRAIL REMOVAL	
LOCATION	FOOT
RT. STA. 8+90 TO STA. 9+65	75
LT. STA. 8+85 TO STA. 9+65	80
RT. STA. 10+71 TO STA. 11+43	27
LT. STA. 10+84 TO STA. 11+50	66
TOTAL	293

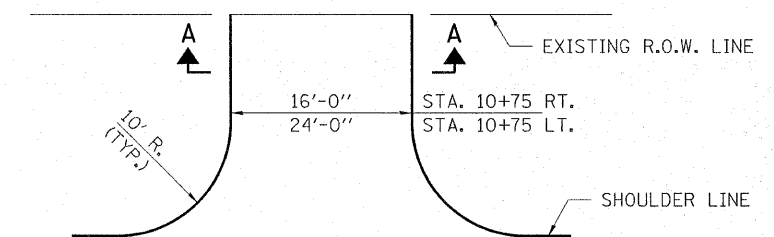
STEEL PLATE BEAM GUARDRAIL, TYPE A	
LOCATION	FOOT
RT. STA. 8+89.8 TO STA. 9+39.8	50
*19.0' RT. STA. 10+48.3 TO 31.2' RT. STA. 10+50.7	12.5
*19.0' LT. STA. 10+58.1 TO 31.2' LT. STA. 10+60.5	12.5
TOTAL	75

*SHOP CURVE WITH A 16' RADIUS

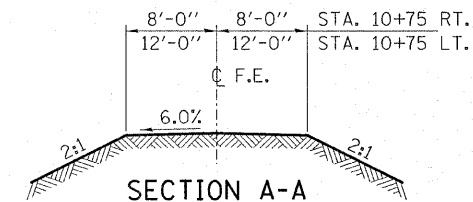
TRAFFIC BARRIER TERMINAL, TYPE 5A	
LOCATION	EACH
RT. STA. 9+39.8 TO STA. 9+53.0	1
LT. STA. 9+49.6 TO STA. 9+62.8	1
*13.5' RT. STA. 10+37.2 TO 31.2' RT. STA. 10+50.7	1
*13.5' LT. STA. 10+47.0 TO 31.2' LT. STA. 10+60.5	1
TOTAL	4

*SHOP CURVE WITH A 16' RADIUS

TRAFFIC BARRIER TERMINAL, TY 1, SPL (TANG)	
LOCATION	EACH
LT. STA. 8+99.6 TO STA. 9+49.6	1
RT. STA. 10+93 TO 11+43(±)	1
TOTAL	2



FIELD ENTRANCE DETAIL



SECTION A-A

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 548-3400

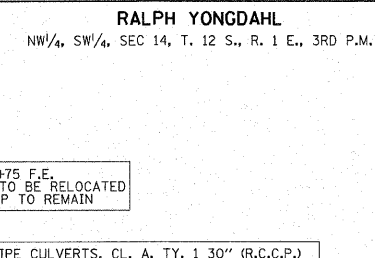
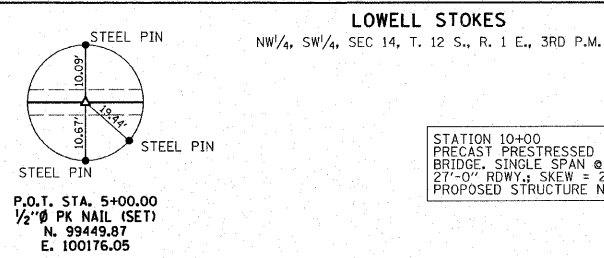
ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
 DESIGNED: J.W.F. CHECKED: S.W.M. DRAWN: D.A.B.

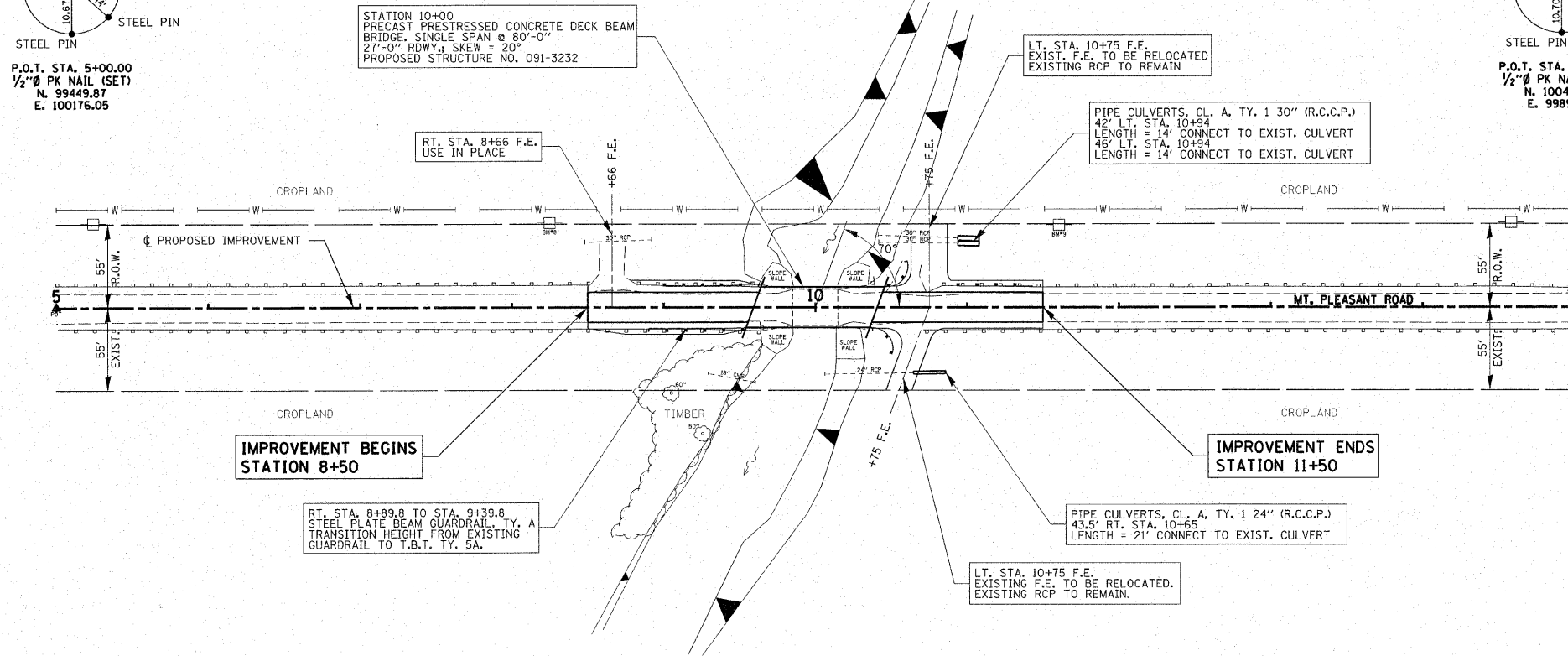
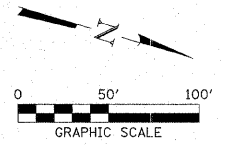
**SUMMARY OF QUANTITIES
AND TYPICAL SECTIONS**
 C.H. 7 / MT. PLEASANT ROAD
 SECTION 06-00097-00-BR
 UNION COUNTY

DATE	
BY	
REVISION	
NO.	
PLAN	
NO.	
DATE	
BY	
REVISION	
NO.	

DATE	
BY	
REVISION	
NO.	
PROFILE	
NO.	
DATE	
BY	
REVISION	
NO.	

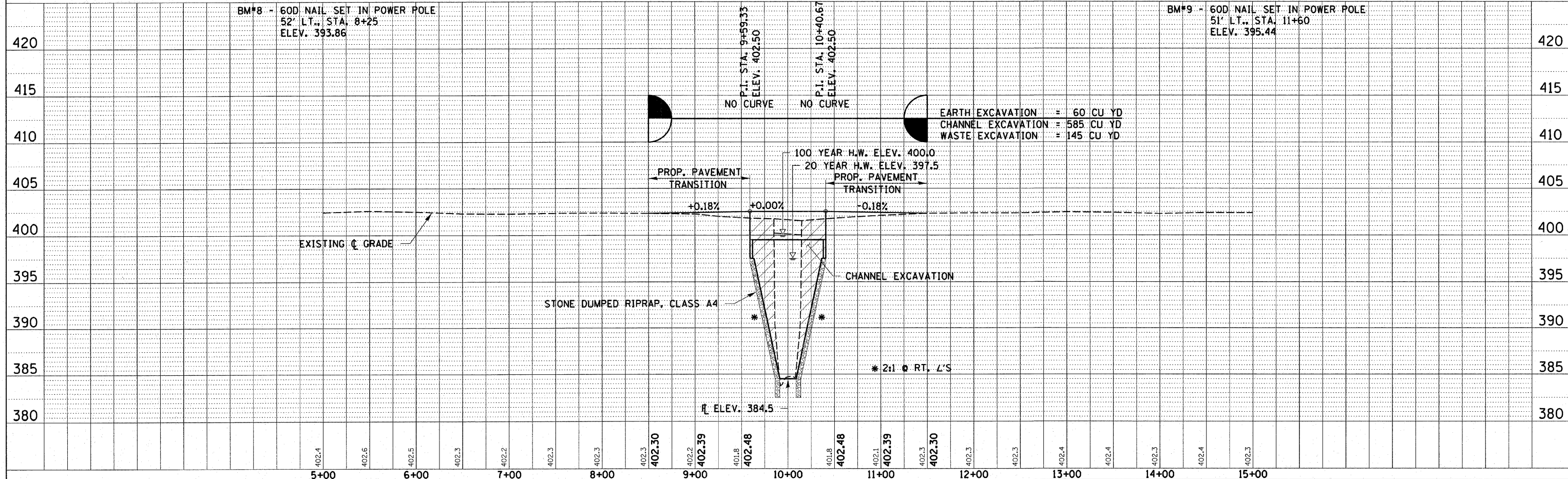
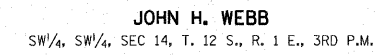
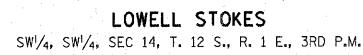


C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	06-00097-00-BF	UNION	16	3
STA. 5+00		TO STA. 15+00		
FED. ROAD DIST. NO.		ILLINOIS CONTRACT NO. 99311		



ENTRANCES TO BE BUILT
LT. STA. 8+66 F.E. - USE IN PLACE
LT. STA. 10+75 F.E. -16.0% EARTH 24' SURF.
RT. STA. 10+75 F.E. -20.0% EARTH 16' SURF.
QUANTITIES INCLUDED IN EARTHWORK TABLE.

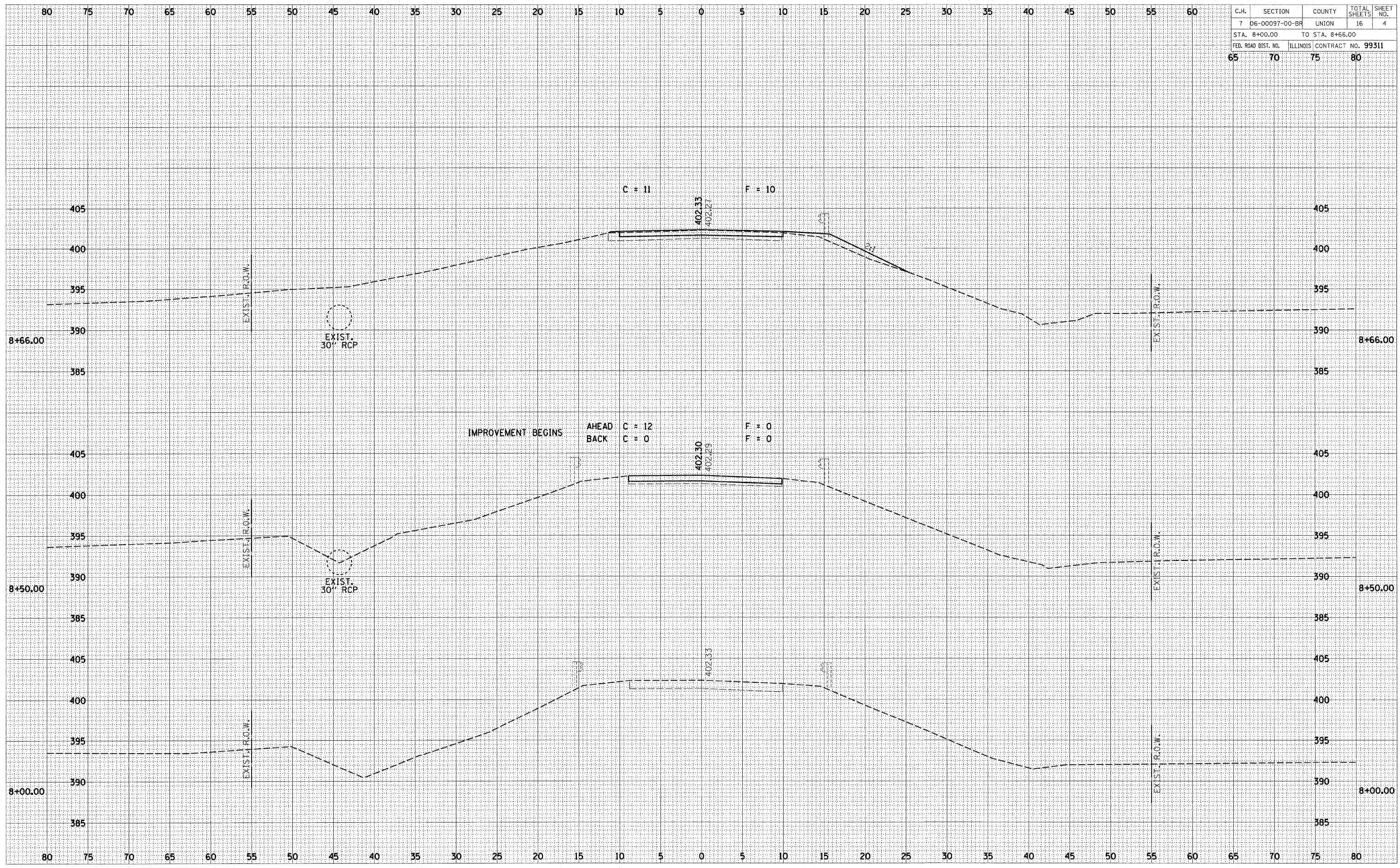
EXISTING STRUCTURE NO. 091-3030
STATION 10+00 - SINGLE SPAN PRECAST CONCRETE SLAB DECK ON CLOSED TIMBER ABUTMENTS WITH CONCRETE CAPS AND TIMBER WINGS, CONC. SLOPEWALL AT WINGS, 26.9' FC-FC. ABUTS; 24.40' o.-o. DECK



C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	06-00097-00-BR	UNION	16	4
STA. 8+00.00 TO STA. 8+66.00				
FED. ROAD DIST. NO. ILLINOIS			CONTRACT NO. 99311	
65	70	75	80	

DATE	BY
NO.	AREAS CHECKED

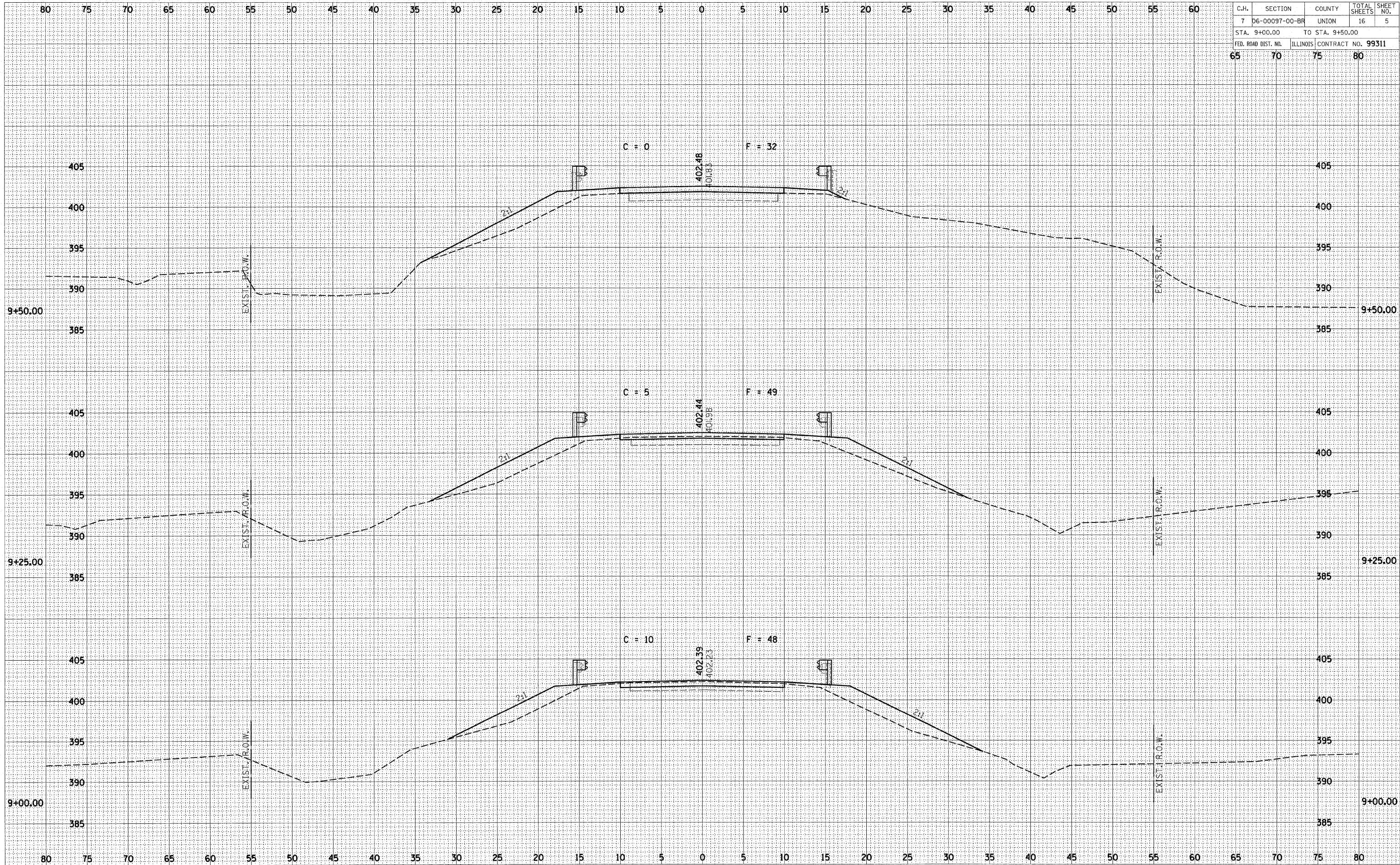
DATE	BY
NO.	AREAS CHECKED



C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	06-00097-00-BR	UNION	16	5
STA. 9+00.00		TO STA. 9+50.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 99311		
65	70	75	80	

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	

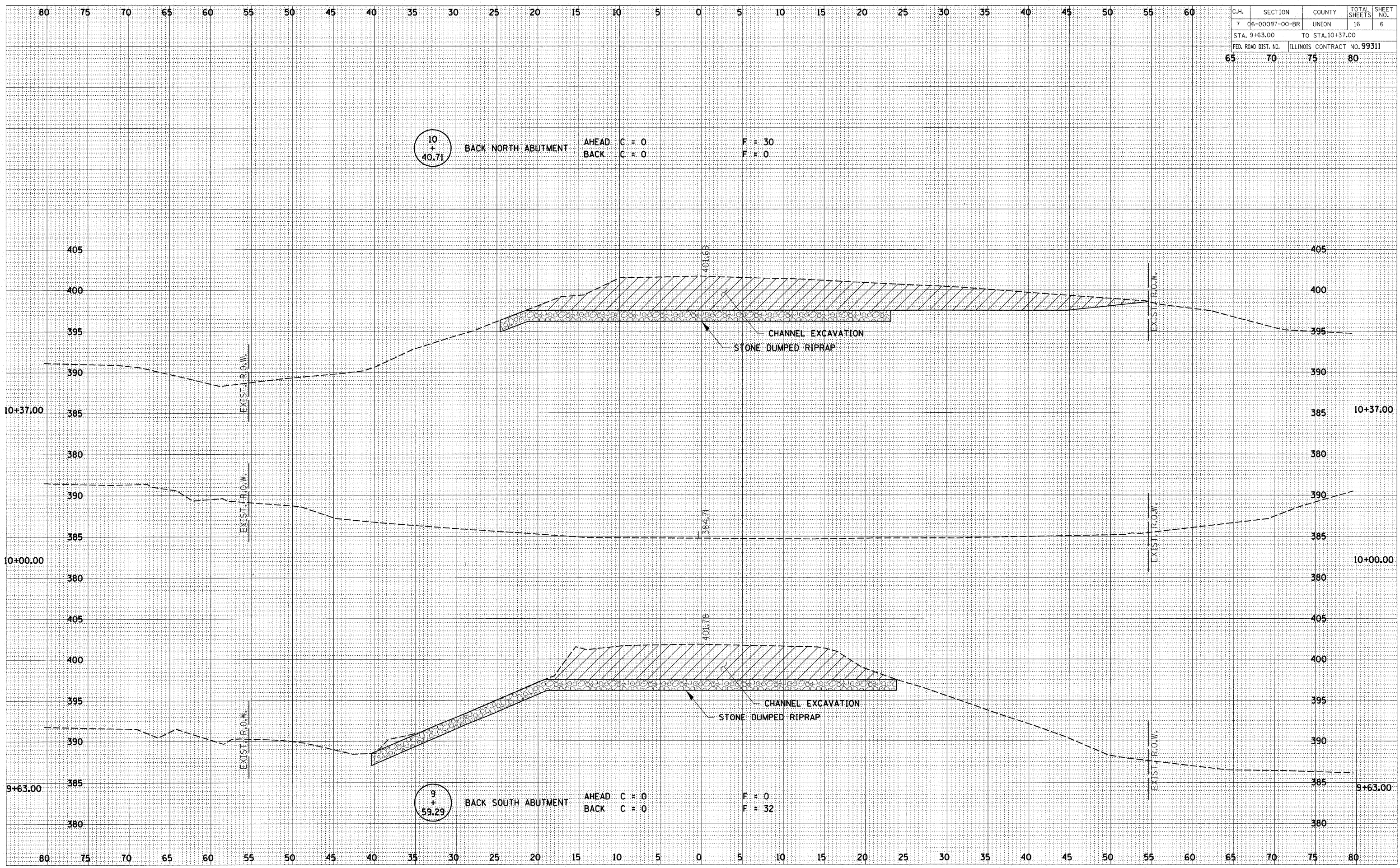
DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	AREAS CHECKED
NO.	



C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	06-00097-00-BR	UNION	16	6
STA. 9+63.00		TO STA. 10+37.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 99311		
65	70	75	80	

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

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



C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	06-00097-00-BR	UNION	16	7
STA. 10+50.00		TO STA. 10+75.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 99311		
65	70	75	80	

DATE _____ BY _____

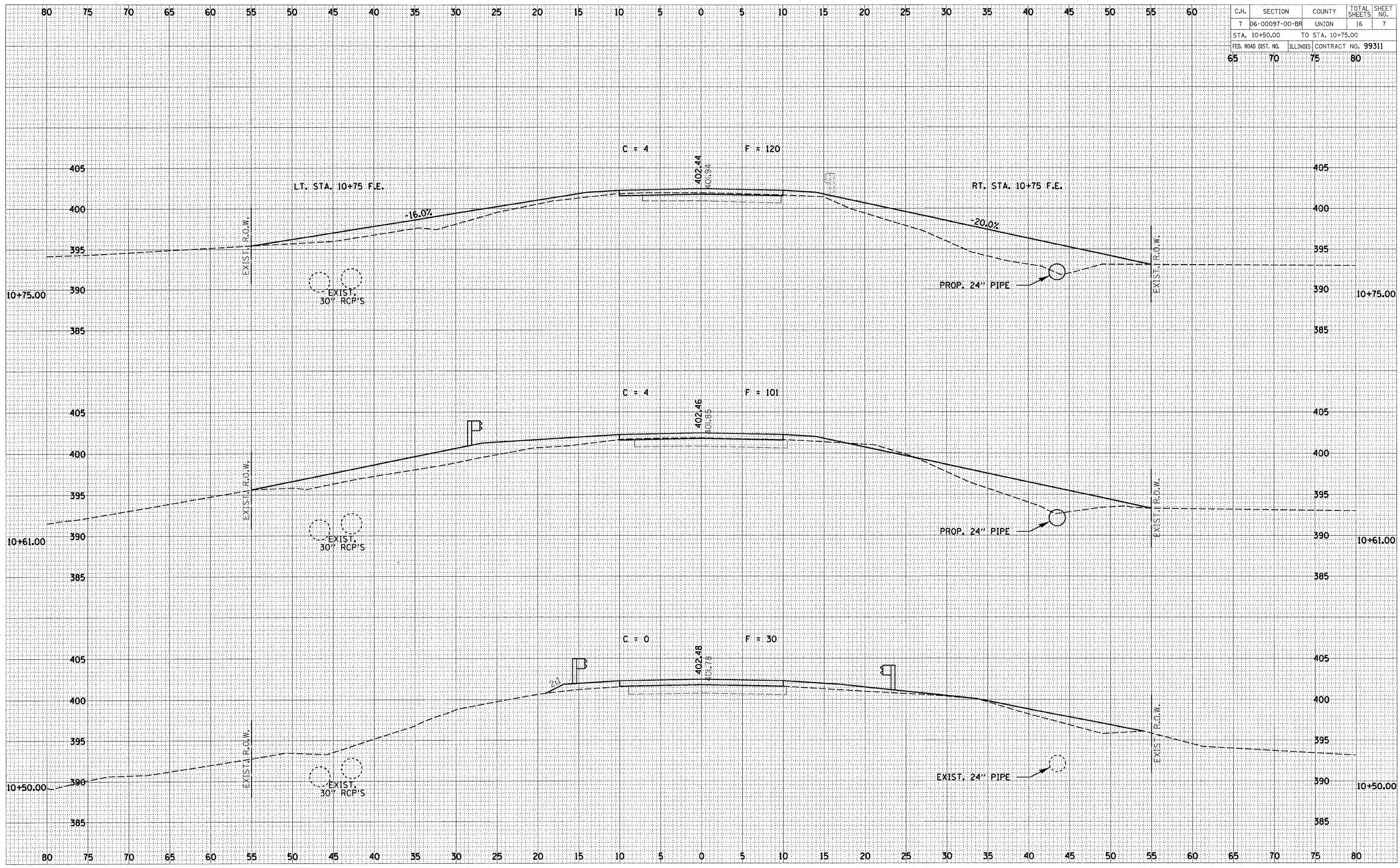
DESIGNED _____
 CHECKED _____
 PLOTTED _____
 TEMPLATE _____
 AREAS CHECKED _____

FINAL SURVEY _____
 NOTE BOOK _____
 NO. _____

DATE _____ BY _____

DESIGNED _____
 CHECKED _____
 PLOTTED _____
 TEMPLATE _____
 AREAS CHECKED _____

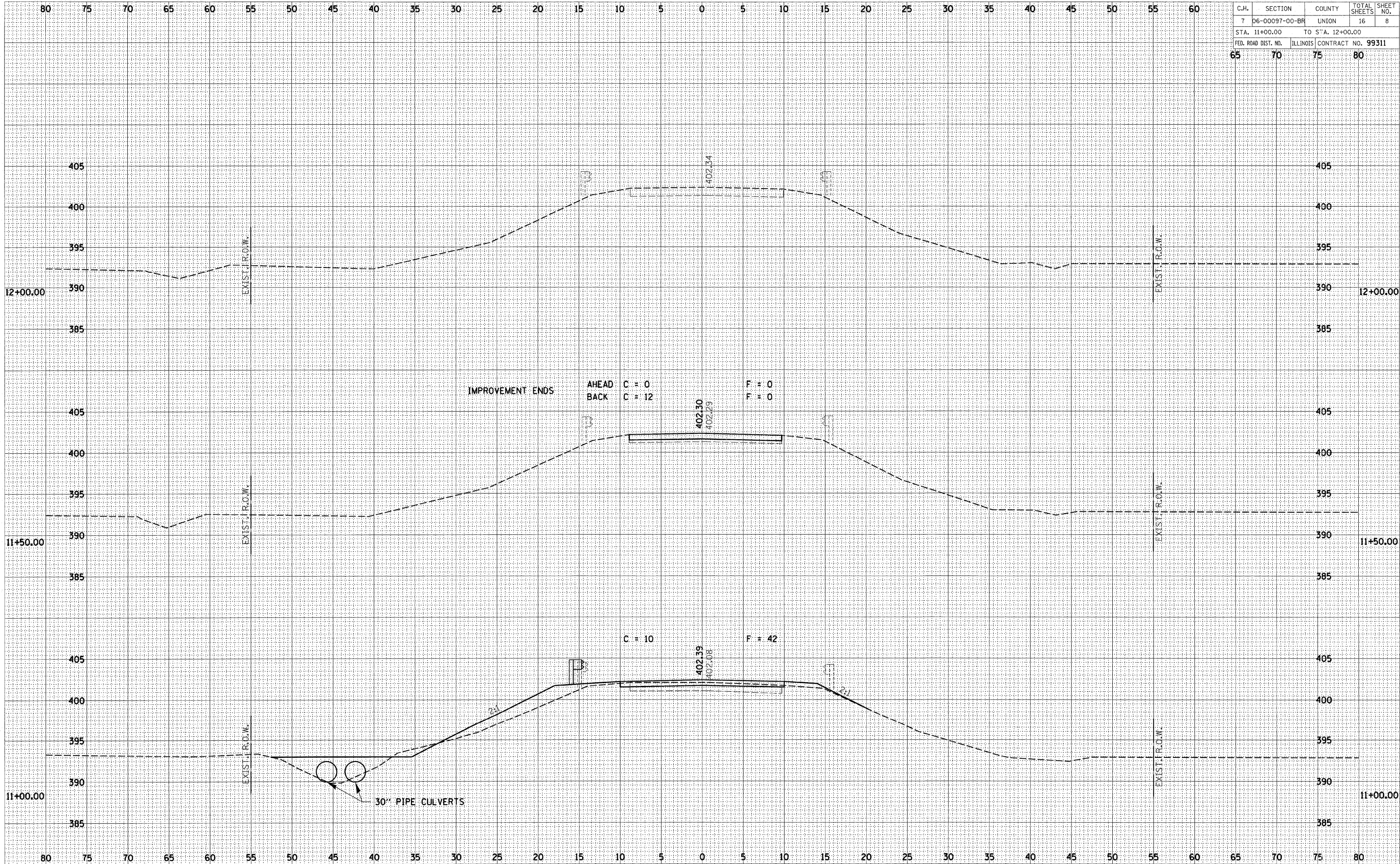
ORIGINAL SURVEY _____
 NOTE BOOK _____
 NO. _____



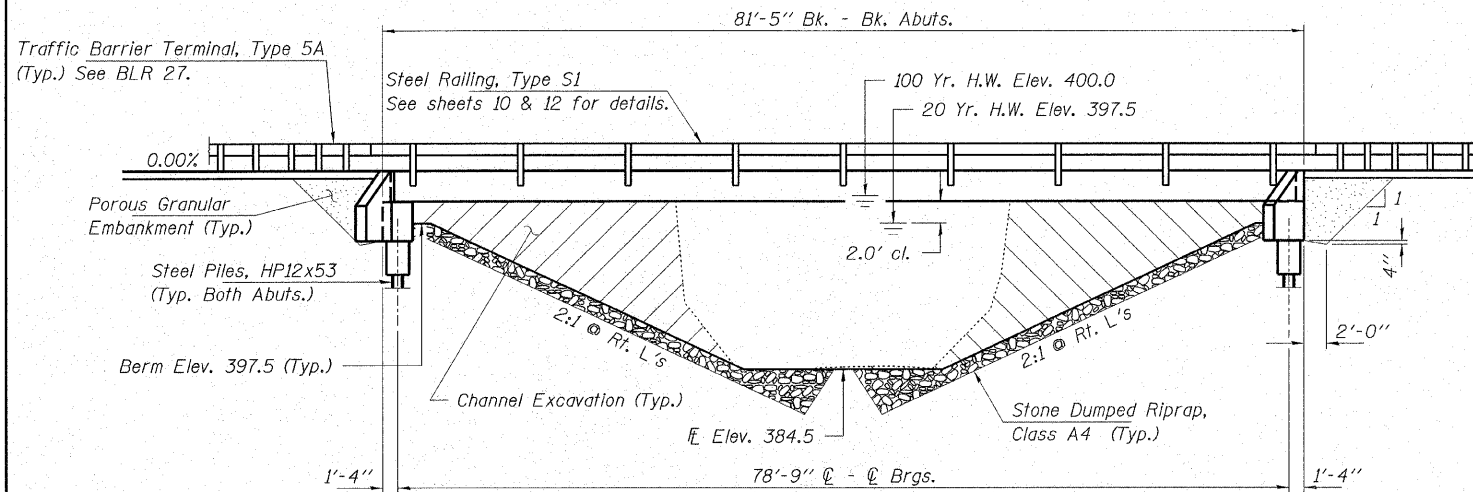
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	06-00097-00-BR	UNION	16	8
STA. 11+00.00		TO STA. 12+00.00		
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 99311		
65	70	75	80	

DATE	BY
REVISIONS	
NO.	DESCRIPTION

DATE	BY
REVISIONS	
NO.	DESCRIPTION



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 7	06-00097-00-BR	UNION	16	9
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99311	



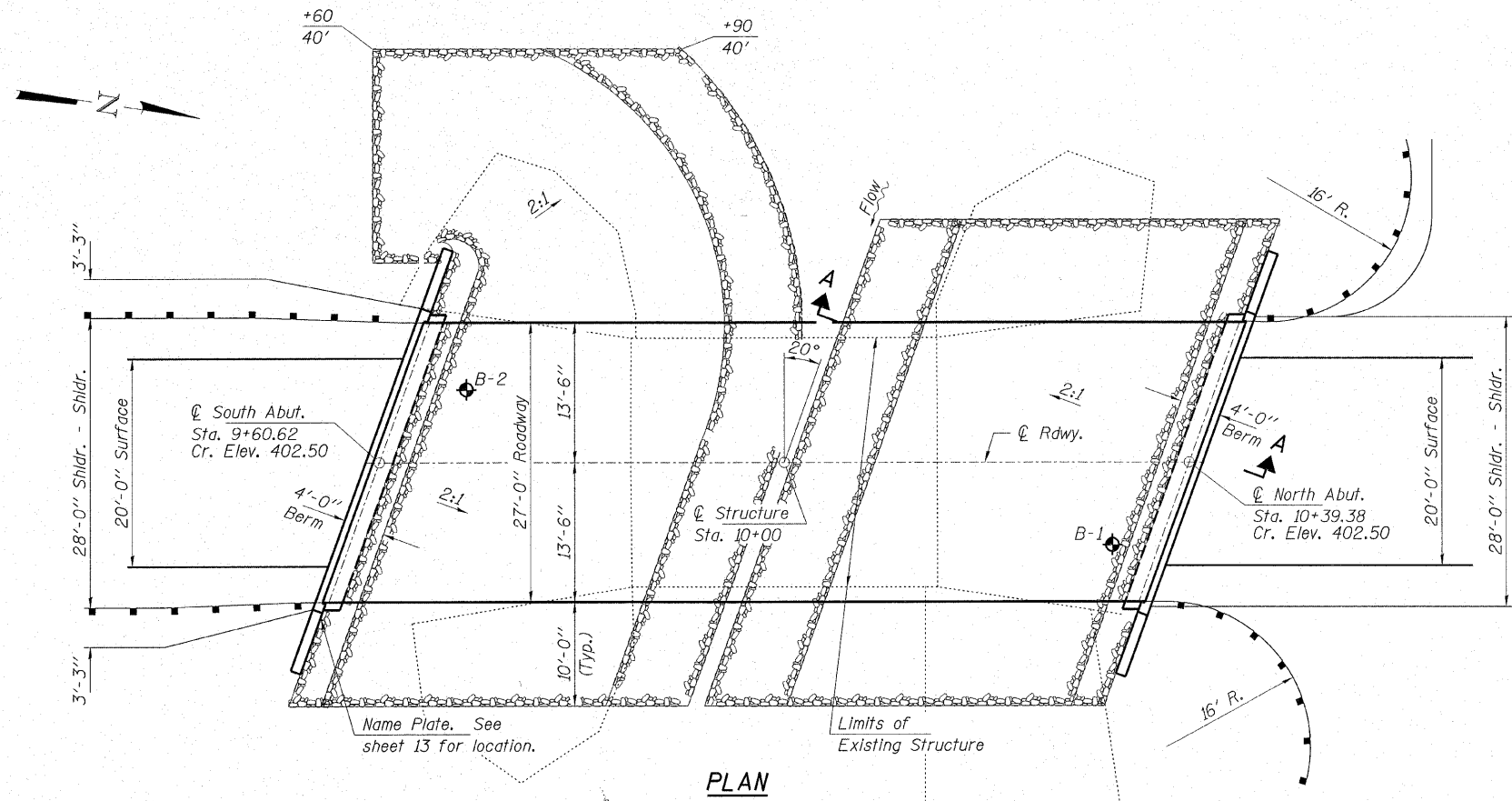
ELEVATION

GENERAL NOTES

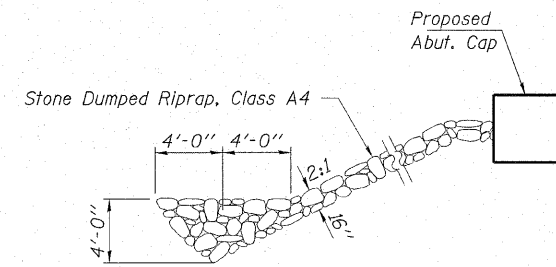
Layout of riprap may be varied in the field to suit ground conditions as directed by the Engineer.
 The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at South Abutment or approved by the Engineer before ordering the remainder of piles.
 Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
 Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.
 All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act.
 The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.
 Removal of Existing Slopewall is included in cost of Removal Existing Structures.
 See Sheets 15 & 16 for Borings.

BUILT 200_ BY
 UNION COUNTY
 SEC. 06-00097-00-BR
 C.H. 7 / MT. PLEASANT ROAD
 STR. NO. 091-3232
 LOADING HS 20

NAME PLATE
 See Std. 515001

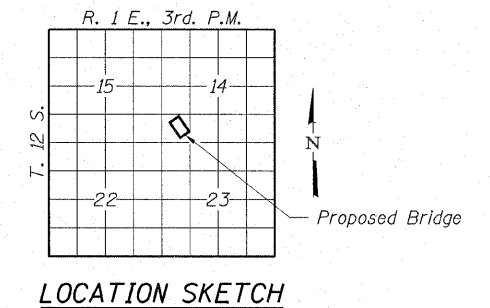


PLAN



SECTION A-A

Note: See Special Provisions for Stone Dumped Riprap, Class A4



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			585
Porous Granular Embankment	Ton			140
Stone Dumped Riprap, Class A4	Ton			430
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		29.6	29.6
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	2,160		2,160
Reinforcement Bars	Pound		3,390	3,390
Steel Railing, Type S1	Foot	168		168
Steel Piles HP12x53	Foot		455	455
Test Pile Steel HP12x53	Each		1	1
Name Plates	Each		1	1

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinf.) — LF Design

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi
 $f'_{ci} = 4,000$ psi
 $f'_s = 270,000$ psi ($1/2"$ low lax. strands)
 $f'_{si} = 201,960$ psi ($1/2"$ low lax. strands)
 $f_y = 60,000$ psi (Reinf.)

Loading HS 20-44
 Design Specifications: 2002 AASHTO & all applicable interims.
 25#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Category (SPC) = B
 Bedrock Acceleration Coefficient (A) = 0.15g
 Site Coefficient (S) = 1.5

WATERWAY INFORMATION

Drainage Area = 0.4 Sq. Mi.		Low Grade Elev. 402.3 @ Sta. 8+50							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Natural H.W.E.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	20	110	330	550	397.5 ^Q	0.0	0.0	397.5	397.5
Base									
Overtopping									
Max. Calc.	100	160	390	700	400.0 ^Q	0.0	0.0	400.0	400.0

^QHigh water level is controlled by backwater from the Cache River.

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 Specifications for Highway Bridges".

Steven W. Mezzanin 2/7/08
 ILLINOIS STRUCTURAL NO. 081-6064



Expires 11-30-08

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

ELGIN • SPRINGFIELD

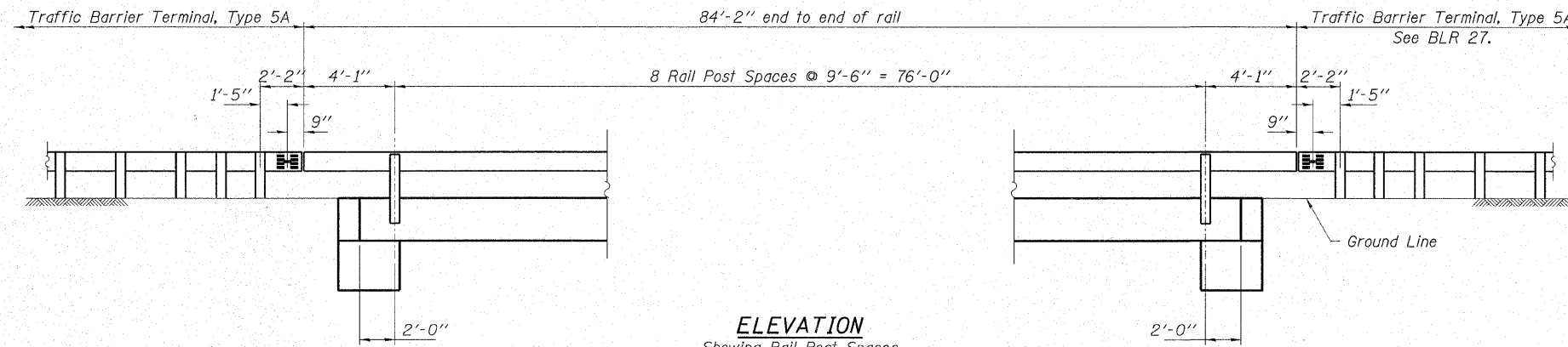
PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.R.

GENERAL PLAN AND ELEVATION

SECTION 06-00097-00-BR
 C.H. 7 / MT. PLEASANT ROAD
 UNION COUNTY

STRUCTURE NO. 091-3232 / STATION 10+00

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 7	06-00097-00-BR	UNION	16	10
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99311	



ELEVATION
 Showing Rail Post Spaces
 See sheet 12 for Railing Details.

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS

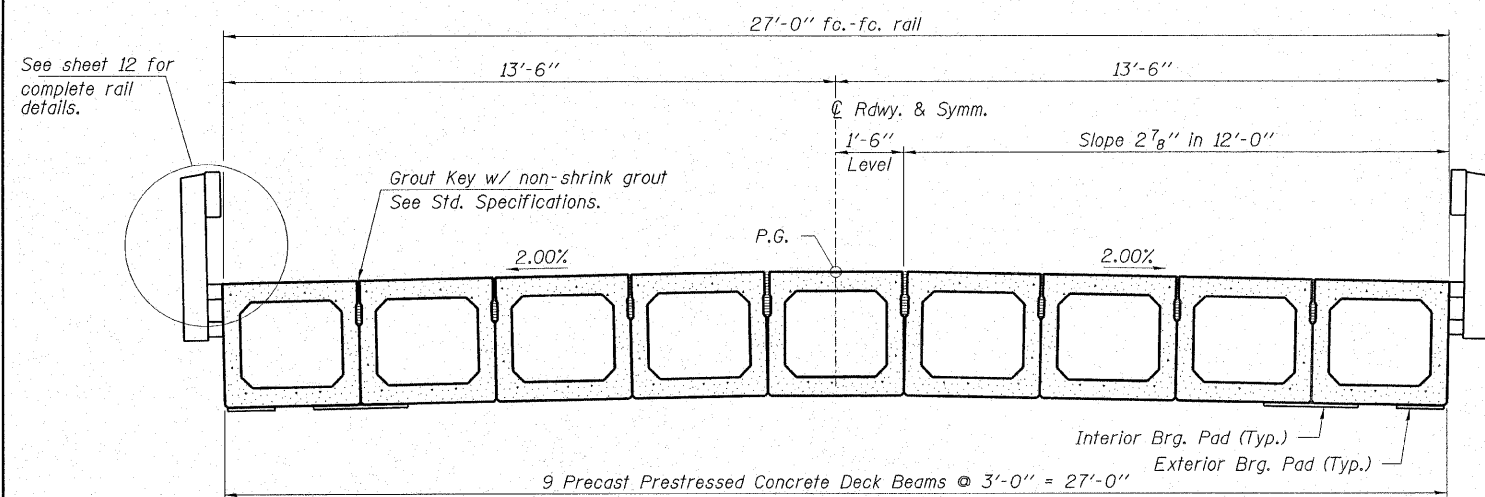
3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

HLR ELGIN • SPRINGFIELD

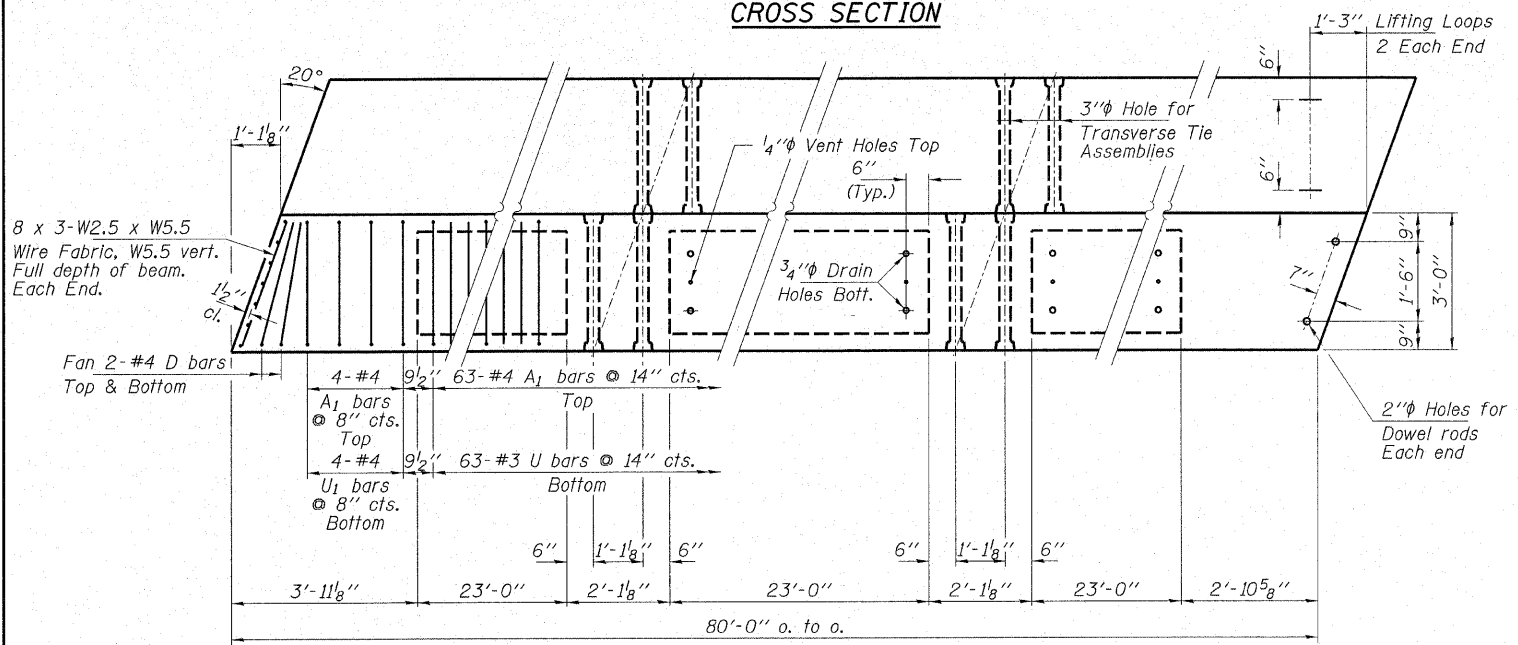
PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.B.

GENERAL DETAILS
SECTION 06-00097-00-BR
C.H. 7 / MT. PLEASANT ROAD
UNION COUNTY
STRUCTURE NO. 091-3232 / STATION 10+00

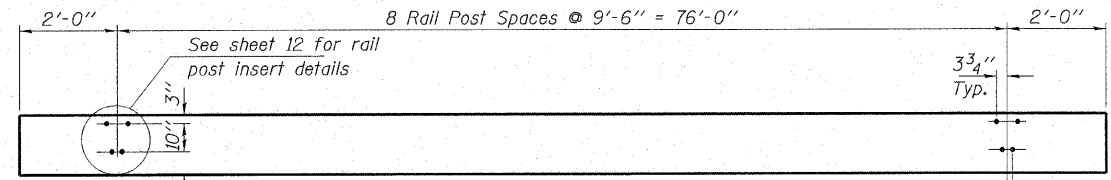
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 7	06-00097-00-BR	UNION	16	11
FED. ROAD DIST. NO.	ILLINOIS CONTRACT NO. 99311			



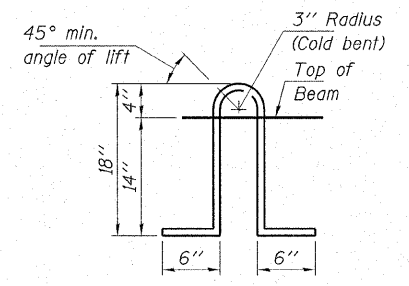
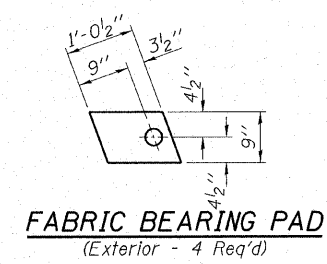
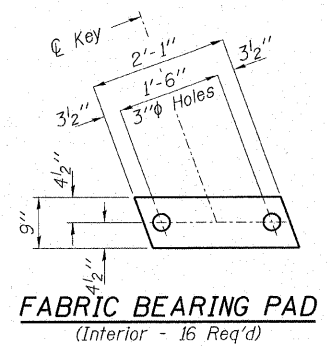
CROSS SECTION



PLAN

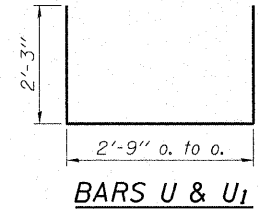


ELEVATION OF OUTSIDE BEAMS
Showing Rail Post Spacing

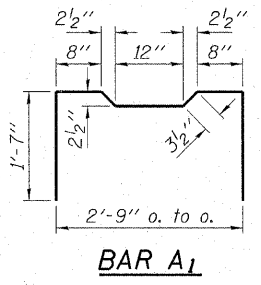


LIFTING LOOP DETAIL
Approved alternate may be substituted for the above.

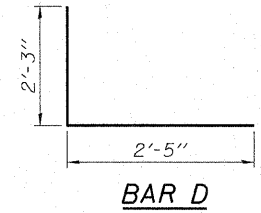
Note: The loop shall be formed in a manner such that all strands are engaged during lifting. Loops shall be cut off after beams have been erected.



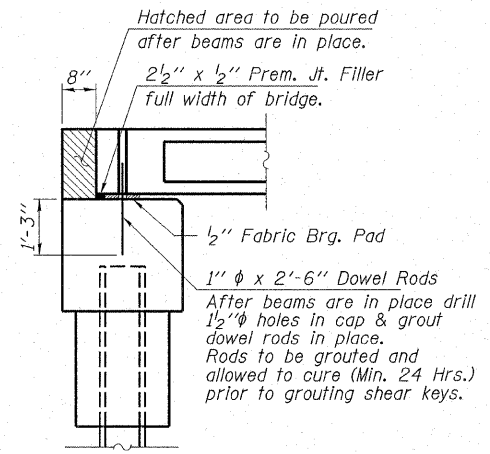
BARS U & U1



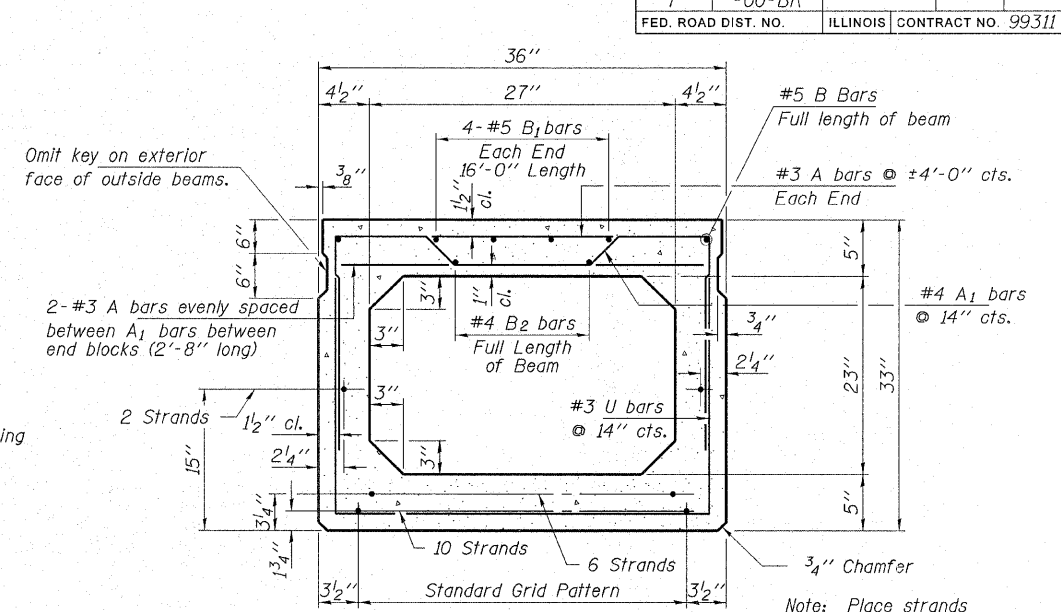
BAR A1



BAR D

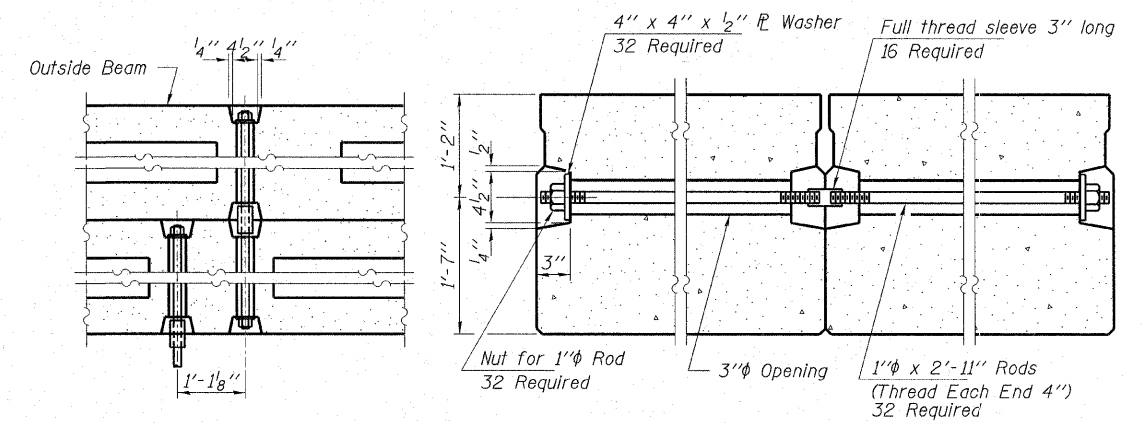


SECTION AT ABUTMENTS



TYPICAL SECTION

18-1/2" Strands Each Strand Stressed to 30,900 Lbs.
10-Strands 1 3/4" up, 6-Strands 3/4" up,
2-Strands 15" up
Expected Camber = 1 1/2"



TYPICAL TRANSVERSE TIE ASSEMBLY

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 3-1/2" 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.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
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.
Required Release Strength, f'cl, shall be 4,000 p.s.i.

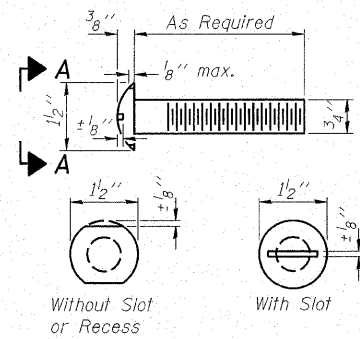
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	2,160

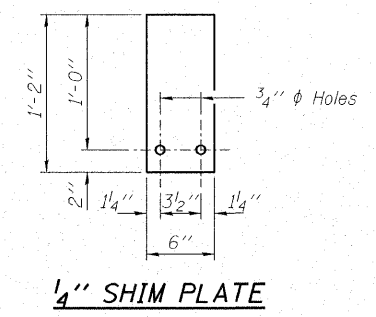
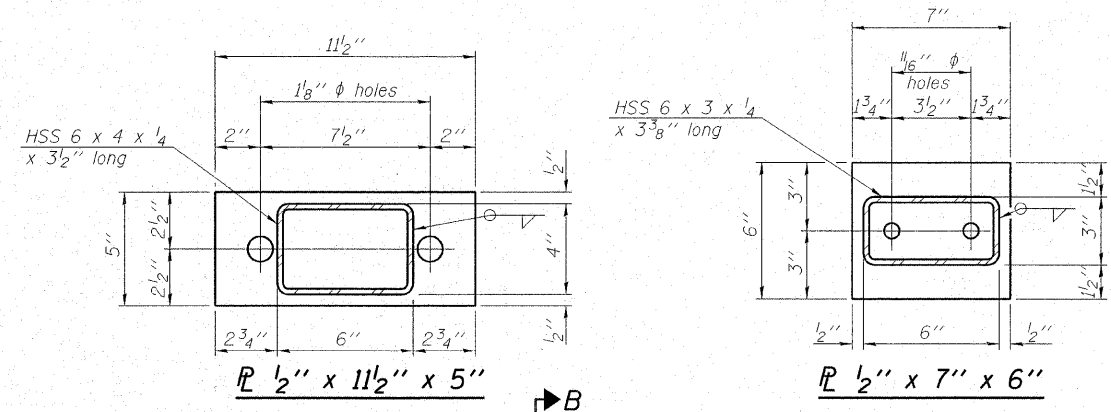
HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD
PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.B.

SUPERSTRUCTURE
SECTION 06-00097-00-BR
C.H. 7 / MT. PLEASANT ROAD
UNION COUNTY
STRUCTURE NO. 091-3232 / STATION 10+00

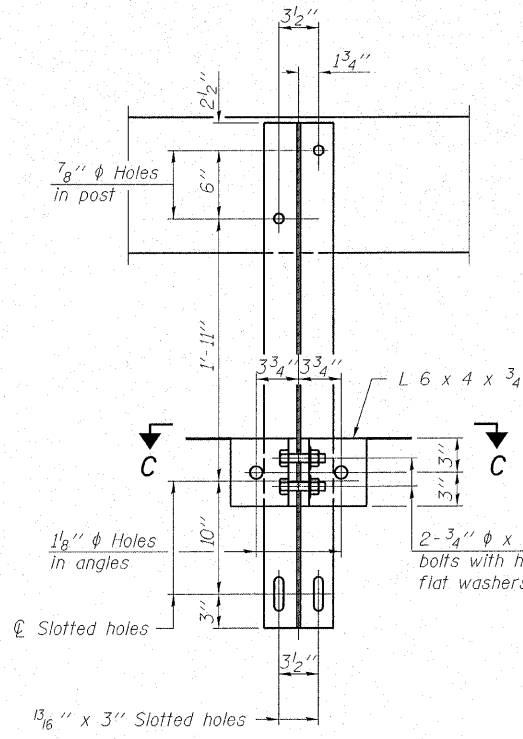
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 7	06-00097-00-BR	UNION	16	12
FED. ROAD DIST. NO.		ILLINOIS	CONTRACT NO. 99311	



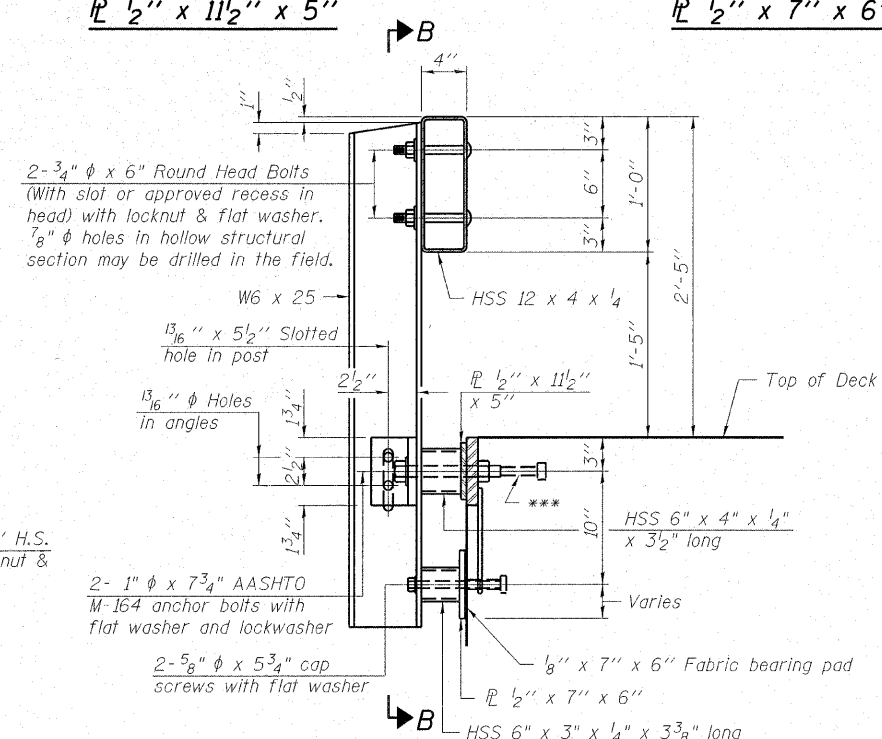
**VIEW A-A
ROUND HEAD BOLT**



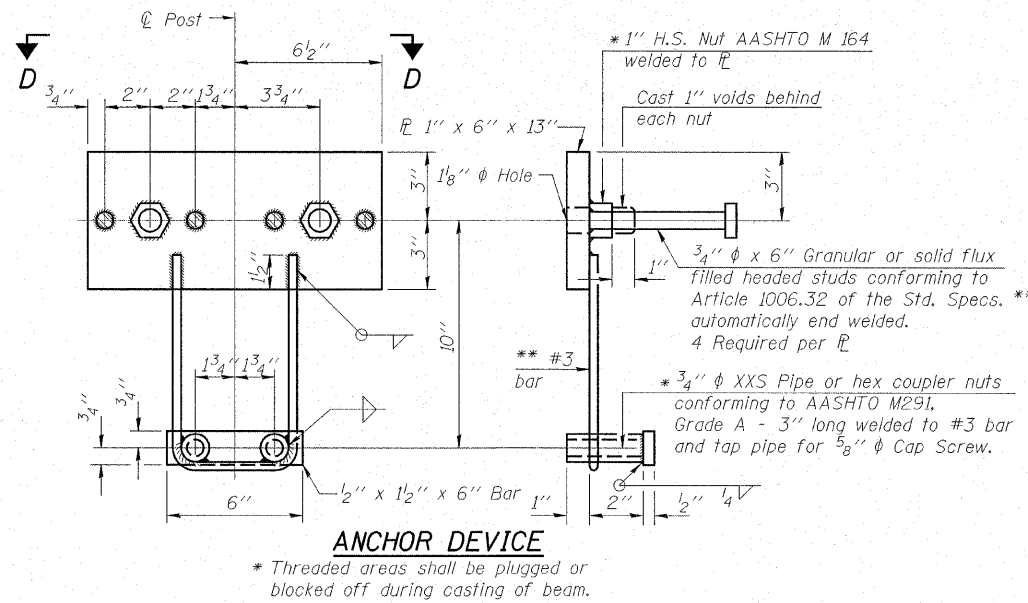
1/4" SHIM PLATE



SECTION B-B

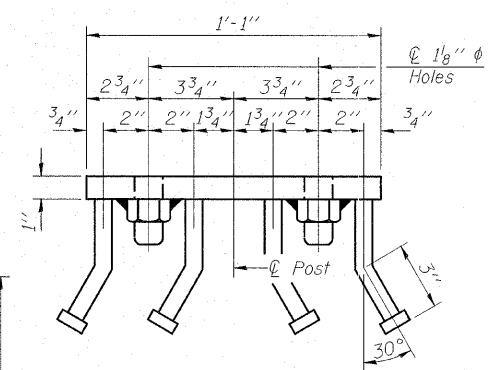


SECTION AT RAILING POST

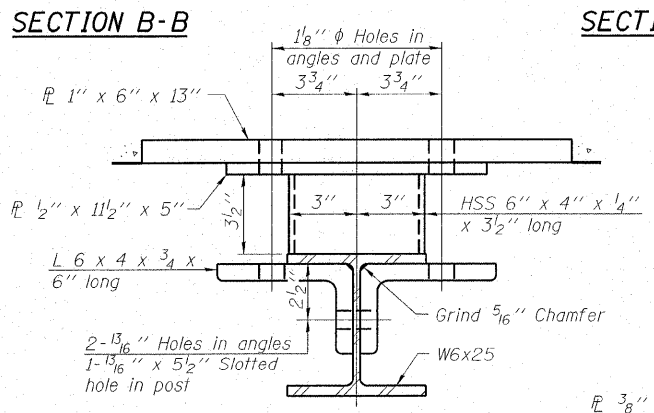


ANCHOR DEVICE

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.

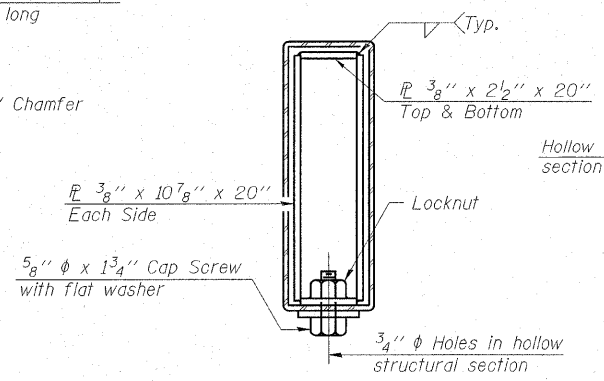


VIEW D-D

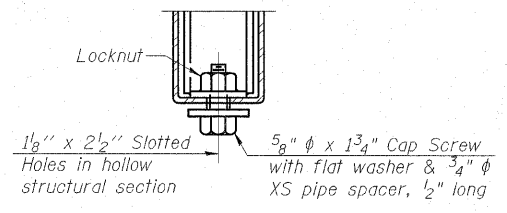


SECTION C-C

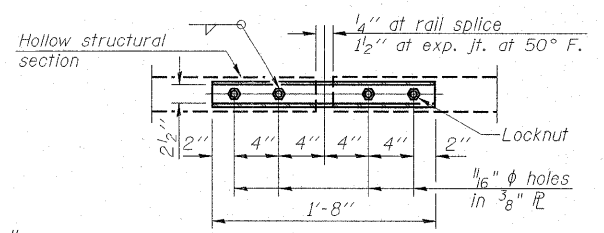
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



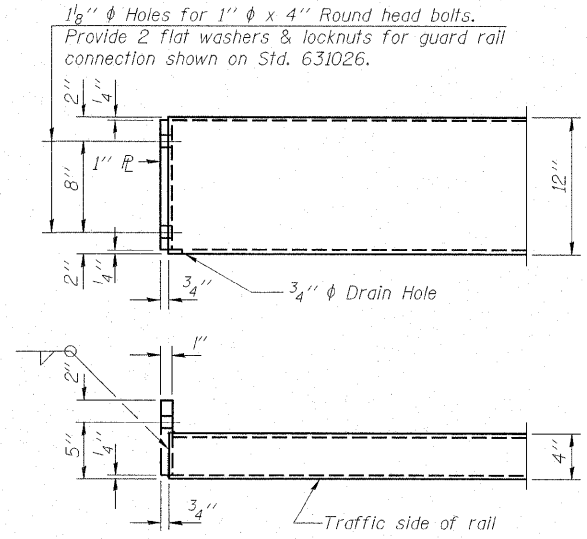
SECTIONS AT RAIL SPLICE



**RAIL SPLICE CONNECTION
AT EXPANSION JT.**



**PLAN-BOTT. SPLICE
TYPICAL**



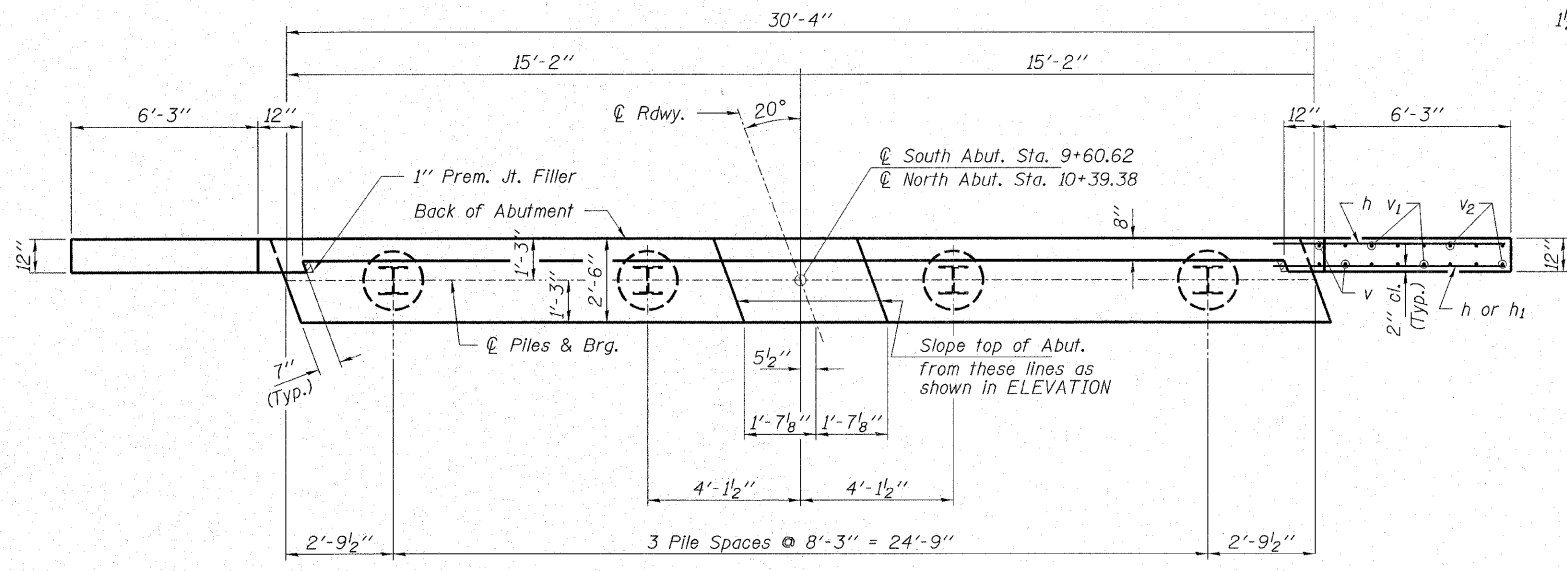
END OF RAIL DETAILS

BILL OF MATERIAL

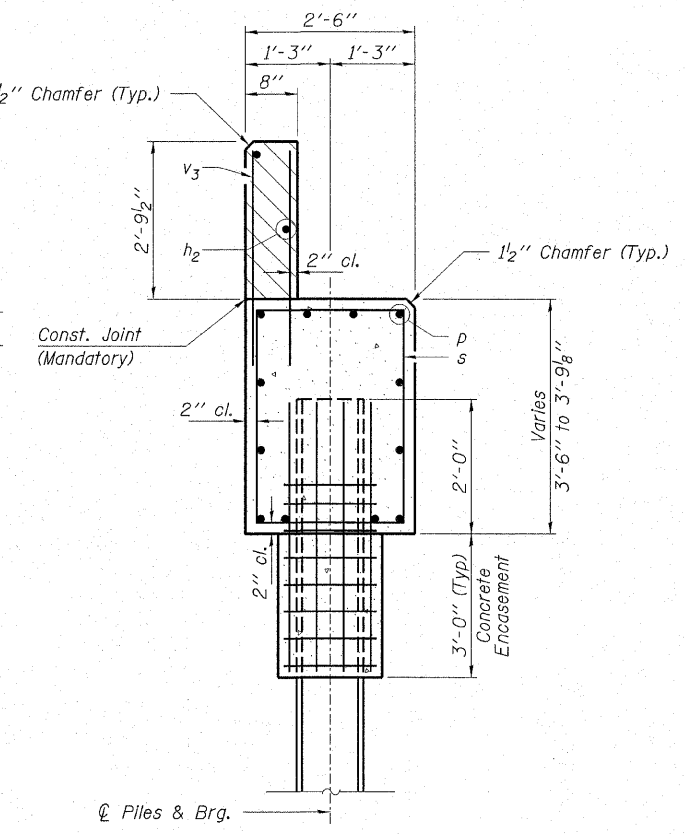
Item	Unit	Quantity
Steel Railing, Type S-1	Foot	100

RAILING DETAILS
 SECTION 06-00097-00-BR
 C.H. 7 / MT. PLEASANT ROAD
 UNION COUNTY
 STRUCTURE NO. 091-3232 / STATION 10+00

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400
 ELGIN • SPRINGFIELD
 PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.B.

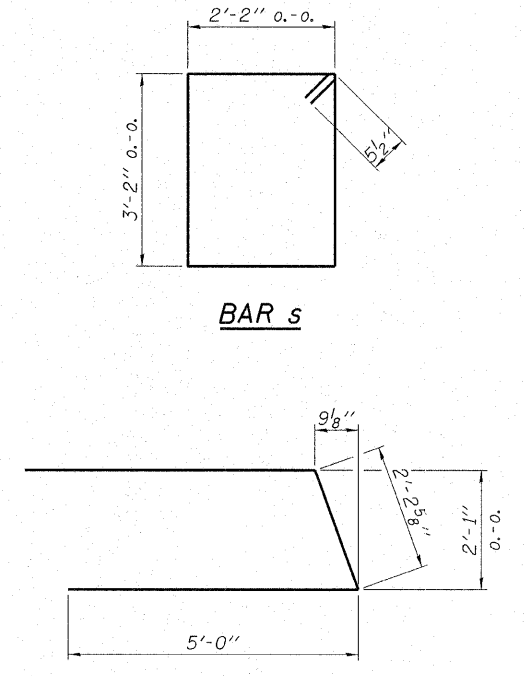


PLAN



SECTION A-A

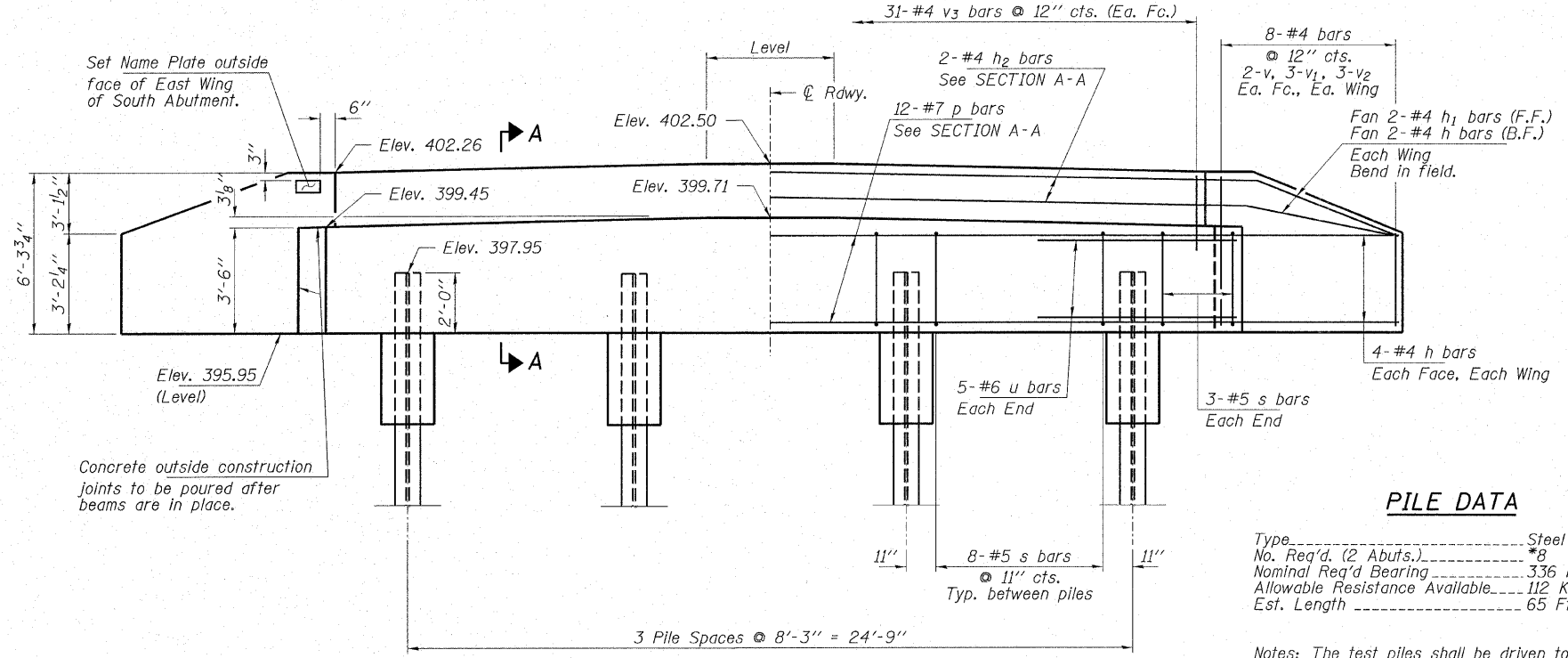
Hatched area to be poured after beams are in place.



BAR s

BAR u

Note: Extend h bars into abut. cap and backwall.



ELEVATION

PILE DATA

Type	Steel HP12x53
No. Req'd. (2 Abut.)	8
Nominal Req'd Bearing	336 Kips/Pile
Allowable Resistance Available	112 Kips/Pile
Est. Length	65 Ft/Pile

Notes: The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

The Steel H-Piles shall be according to AASHTO M270 Grade 50.

* Includes one test pile to be driven in a permanent location at the South Abutment.

See sheet 13 for pile details.

BILL OF MATERIAL - 2 ABUTS.

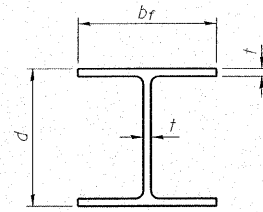
BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	8'-6"	—
h ₁	8	#4	7'-0"	—
h ₂	4	#4	30'-0"	—
p	24	#7	30'-0"	—
s	60	#5	11'-7"	□
u	20	#6	12'-3"	▤
v	16	#4	5'-11"	—
v ₁	24	#4	4'-5"	—
v ₂	24	#4	2'-11"	—
v ₃	124	#4	3'-8"	—
Concrete Structures			Cu. Yd.	29.6
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	3,390
Steel Piles HP12x53			Foot	455
Test Pile Steel HP12x53			Each	1
Name Plates			Each	1

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

ELGIN • SPRINGFIELD

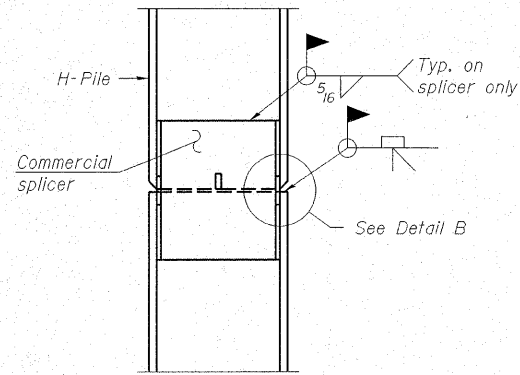
PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.B.

ABUTMENTS
 SECTION 06-00097-00-BR
 C.H. 7 / MT. PLEASANT ROAD
 UNION COUNTY
 STRUCTURE NO. 091-3232 / STATION 10+00

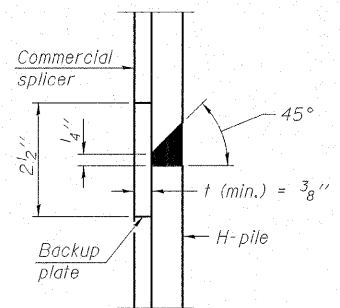


STEEL PILE TABLE

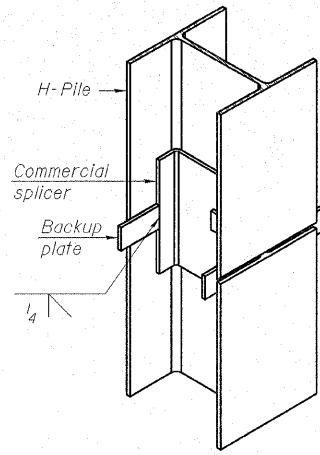
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 $\frac{1}{4}$ "	14 $\frac{7}{8}$ "	$\frac{13}{16}$ "	30"
x102	14"	14 $\frac{3}{4}$ "	$\frac{11}{16}$ "	30"
x89	13 $\frac{7}{8}$ "	14 $\frac{3}{4}$ "	$\frac{5}{8}$ "	30"
x73	13 $\frac{5}{8}$ "	14 $\frac{5}{8}$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



ELEVATION

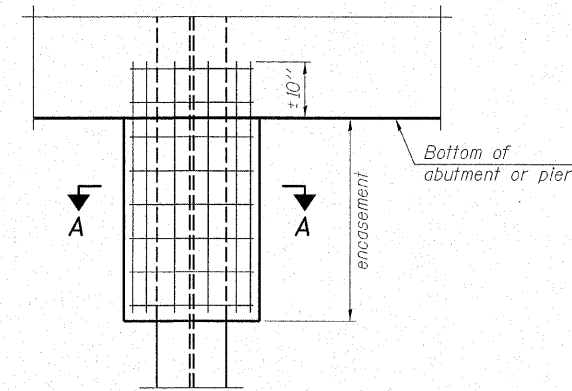


DETAIL "B"

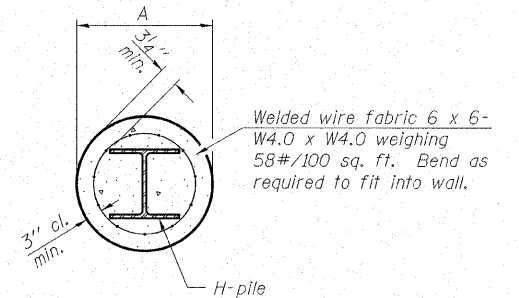


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



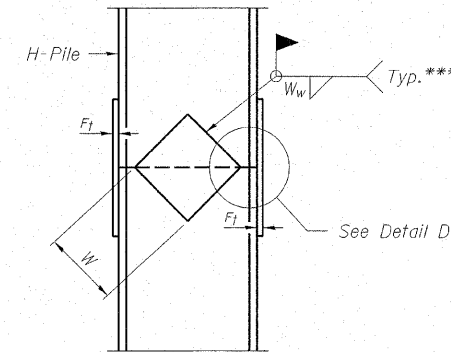
ELEVATION



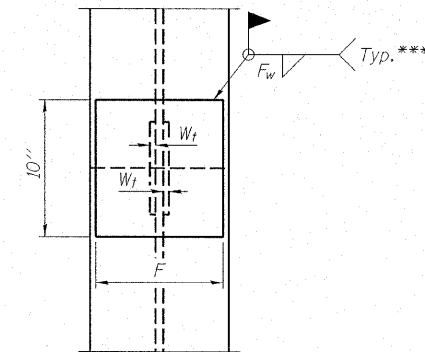
SECTION A-A

Note:
Forms for encasement may be omitted when soil conditions permit.

PILE ENCASEMENT



ELEVATION

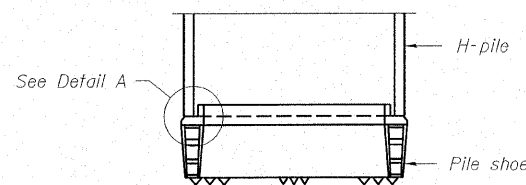


END VIEW

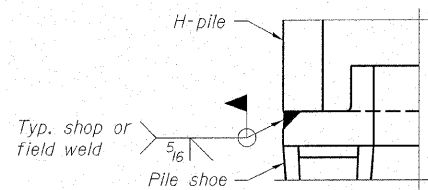
Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 $\frac{1}{2}$ "	1"	$\frac{7}{8}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x102	12 $\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{3}{4}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x89	12 $\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{11}{16}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x73	12 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{9}{16}$ "	7 $\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
HP 12x84	10"	$\frac{7}{8}$ "	$\frac{11}{16}$ "	6 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x74	10"	$\frac{7}{8}$ "	$\frac{11}{16}$ "	6 $\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "
x63	10"	$\frac{5}{8}$ "	$\frac{1}{2}$ "	6 $\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
x53	10"	$\frac{5}{8}$ "	$\frac{1}{2}$ "	6 $\frac{1}{2}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
HP 10x57	8"	$\frac{3}{4}$ "	$\frac{9}{16}$ "	5 $\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
x42	8"	$\frac{5}{8}$ "	$\frac{9}{16}$ "	5 $\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "
HP 8x36	7"	$\frac{5}{8}$ "	$\frac{7}{16}$ "	4 $\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "

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

WELDED PLATE FIELD SPLICE

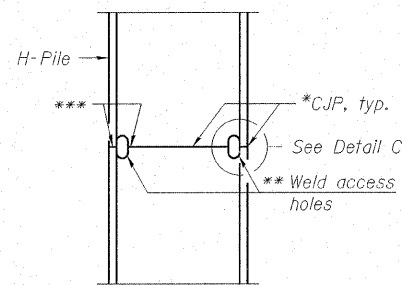


ELEVATION

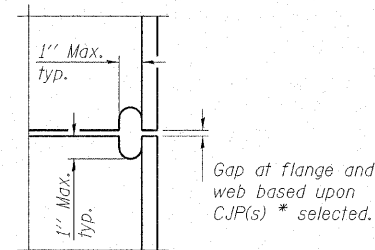


DETAIL A

H-PILE SHOE ATTACHMENT

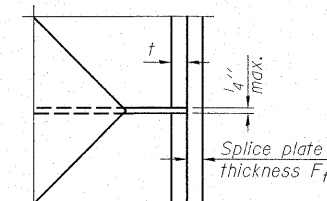


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

WELDED PLATE FIELD 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 $\frac{1}{4}$ " from end of each pile.

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS

HLR

3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
 DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.B.

STEEL H PILES
SECTION 06-00097-00-BR
C.H. 7 / MT. PLEASANT ROAD
UNION COUNTY
STRUCTURE NO. 091-3232 / STATION 10+00

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, Il. 62903 618-457-8991 fax

Page 1 of 2

Bridge Foundation Boring Log

Project: H-06278 Bridge over Cache River Overflow Date: 10/23/06
Section: 06-00097-00-BR Station _____ Bored by: D. Russell
Route: _____ Checked By: T. Holcomb
County: Union

Elevation	N	Qu tsf	w %	B	S	E	P	Surface Water Elev.						
								Ground Water Elev. During Drilling	Upon Completion	During Drilling	Upon Completion			
99.5 (401.2)								76.0						
98.8 (400.5)														
	4	-	-											
	3	1.2B	23											
	3	0.5B	30											
	5	1.4B	28											
	2	1.2B	26											
	5	1.3S	24											
	5	1.7B	26											
	5	1.2B	27											
	4	1.1B	29											

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu - Unconfined Compressive Strength in tons/sq.ft.
w - Water Content - percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, Il. 62903 618-457-8991 fax

Page 2 of 2

Bridge Foundation Boring Log

Project: H-06278 Bridge over Cache River Overflow Date: 10/23/06
Section: 06-00097-00-BR Station _____ Bored by: D. Russell
Route: _____ Checked By: T. Holcomb
County: Union

Elevation	N	Qu tsf	w %	B	S	E	P	Surface Water Elev.						
								Ground Water Elev. During Drilling	Upon Completion	During Drilling	Upon Completion			
45.4		1.1B	33					76.0						
	1	0.7B	29											
	6	1.2B	23											
	4	1.0B	20											
	60	7/5"	5.8S											
	100	7/3"	2.2S											

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu - Unconfined Compressive Strength in tons/sq.ft.
w - Water Content - percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

BORING 1

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400
ELGIN • SPRINGFIELD
PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.B.

BORING 1
SECTION 06-00097-00-BR
C.H. 7 / MT. PLEASANT ROAD
UNION COUNTY
STRUCTURE NO. 091-3232 / STATION 10+00

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, Il. 62903 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-06278 Bridge over Cache River Overflow Date: 10/23/06
Section: 06-00097-00-BR Station _____
Route: _____ Bored by: D. Russell
County: Union Checked By: T. Holcomb

Boring No. 2	Elevation	N	Qu tsf	w %	Surface Water Elev.	Elevation	N	Qu tsf	w %
Station: _____					Ground Water Elev. During Drilling 75.9				
Offset: _____					Upon Completion _____				
Ground Surface 99.9 (401.4) 0					silt (continued)				
2" A-3 Surface over 8" Stone 99.1 (400.8)									
Brown Silty CLAY (A-6)		4	1.4B	26	(375.6) -25	5	1.2B	30	
					73.9				
		4	0.8B	26		3	0.4B	35	
		3	0.6S	29		5	0.8B	30	
(373.1) 91.4									
Gray Silty CLAY (A-6)		7	1.2B	24					
		8				4	1.2B	30	
(378.1) 86.4									
Gray Mottled Brown Silty CLAY (A-6)		12	1.6B	25					
		5	1.3S	25		5	1.2B	29	
(383.1) 81.4									
Gray Mottled Brown SILT (A-4)		5	1.2S	25					
		5	0.9B	29					

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, Il. 62903 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-06278 Bridge over Cache River Overflow Date: 10/23/06
Section: 06-00097-00-BR Station _____
Route: _____ Bored by: D. Russell
County: Union Checked By: T. Holcomb

Boring No. 2	Elevation	N	Qu tsf	w %	Surface Water Elev.	Elevation	N	Qu tsf	w %
Station: _____					Ground Water Elev. During Drilling 75.9				
Offset: _____					Upon Completion _____				
silty clay (continued)		4	0.6B	32					
					(332.6) 30.9				
					End of Boring @ -69.0'				
		2	0.7B	31					
		2	0.5B	31					
(343.1) 41.4									
Gray Clayey SILT (A-4) with trace sand		4	1.0B	24					
(337.1) 35.4									
Gray SHALE		60/8"	2.6S	10					
		100/5"		4					

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

BORING 2

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

HLR

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 12-92-0008-1 DATE: 02/07/08
DESIGNED: R.J.P. CHECKED: S.W.M. DRAWN: D.A.B.

BORING 2
SECTION 06-00097-00-BR
C.H. 7 / MT. PLEASANT ROAD
UNION COUNTY
STRUCTURE NO. 091-3232 / STATION 10+00