

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 9 (WRINGE RD)	98-00070-00-BR	CLINTON	6 + 67	1

FEDERAL AID PROJECT BROS-027(36) 12
CONTRACT NO. 97330

HIGHWAY BRIDGE REPLACEMENT & REHABILITATION PROGRAM DETAIL PLANS FOR

PROPOSED BRIDGE

C.H. 9 (WRINGE ROAD) OVER TRIB. TO BEAVER CREEK
SECTION 98-00070-00-BR
CLINTON COUNTY
PROJECT: BROS-027(36)
JOB NO: C-98-316-08

INDEX OF SHEETS

- COVER SHEET
- SUMMARY OF QUANTITIES AND TYPICAL CROSS SECTIONS
- PLAN AND PROFILE OF EXISTING AND PROPOSED ROADWAY
- CROSS SECTIONS EXISTING AND PROPOSED ROADWAY
- GENERAL PLAN AND ELEVATION

HIGHWAY STANDARDS: 280001-04
630301-04
701901
BLR 21-7
BLR 27

BRIDGE STANDARDS: CS-2821-45
CB-2821-48
CA-2821-10
CR-TS1
CN
CX-1

DESIGN CLASSIFICATION

COLLECTOR
CURRENT A.D.T. = 225
DESIGN SPEED = 40 M.P.H.
DESIGN A.D.T. = 325 (2026)

UTILITIES:

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

ELECTRIC:

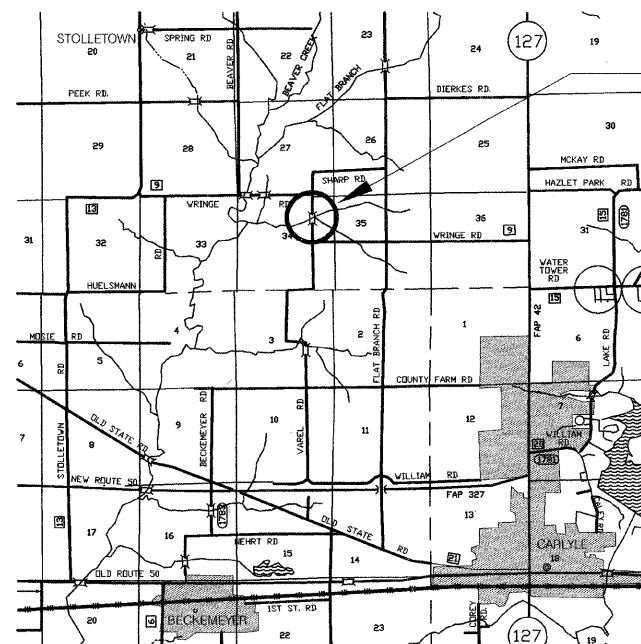
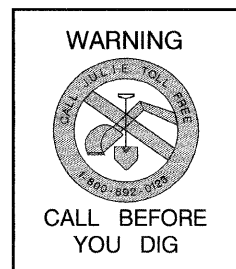
CLINTON COUNTY ELECTRIC COOPERATIVE
475 N. MAIN
BREESE, ILLINOIS
(618) 526-7282

WATER:

CARLYLE NORTH WATER CO., INC.
17217 DIERKES ROAD
CARLYLE, IL 62231
(618) 594-2508

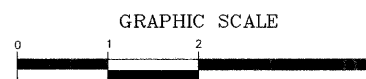
TELEPHONE:

SBC AMERITECH ILLINOIS
203 GOETHE STREET
COLLINSVILLE, IL 62234
(618) 346-6400



LOCATION MAP

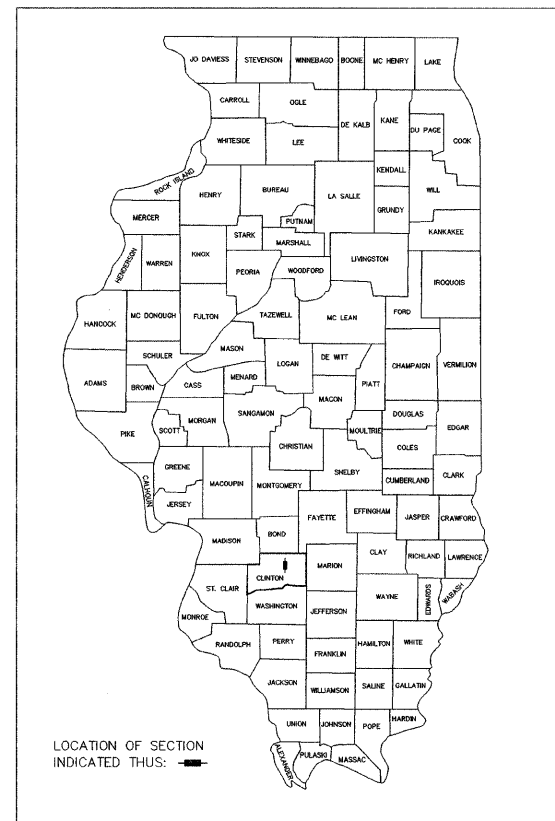
NET LENGTH OF PROJECT = 171.5 FEET OR 0.0324 MILES



1 INCH = 1 MILE

PROJECT LOCATION

PROPOSED STRUCTURE NO. 014-5113 @ STATION 132+75
SINGLE SPAN PRECAST, PRESTRESSED CONCRETE
DECK BEAMS, (21" DEPTH) ON SPILL THRU PILE BENT
ABUTMENTS, MEASURING 46'-6" BK./BK. OF THE
ABUTMENTS WITH A 28'-0" CLEAR ROADWAY WIDTH.



LOCATION OF SECTION
INDICATED THUS: [Symbol]

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED: 1-25 2008
Daniel L. Behrens
CLINTON COUNTY, COUNTY ENGINEER

PASSED: January 28 2008
Richard C. Marchese
DISTRICT 8 ENGINEER OF LOCAL ROADS & STREETS

Releasing for Bid
Based on Limited
Review: January 28 2008
Maury C. Farnie, Jr.
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER

THESE PLANS WERE PREPARED
BY ME OR BY A FULL TIME MEMBER
OF MY STAFF WORKING UNDER MY
PERSONAL SUPERVISION.



Daniel L. Behrens DATE 1-25-08
COUNTY ENGINEER
ILLINOIS P.E. # 62-050860 EXPIRES 11/30/09

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 9 (WRINGE RD)	98-00070-00-BR	CLINTON	6	2

CONTRACT NO. 97330

LOCATION OF WORK	ROAD STA. 131+89.25 TO 133+60.75	BRIDGE STA. 132+75		
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SUMMARY OF QUANTITIES					
CODE NO.	ITEM	UNIT	QUANTITY	I000	X080-2A
20300100	CHANNEL EXCAVATION	CU. YD.	272.0		272.0
28100805	STONE DUMPED RIPRAP CLASS A3	TON	60.0		60.0
40603310	HOT-MIX ASPHALT SURFACE, MIX C, N50	TON	18.6		18.6
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1.0		1.0
50300225	CONCRETE STRUCTURES	CU. YD.	19.8		19.8
50300280	CONCRETE ENCASEMENT	CU. YD.	1.9		1.9
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS, 21" DEPTH	SQ. FT.	1,260.0		1,260.0
50800205	REINFORCEMENT BARS EPOXY COATED	POUND	2,600.0	80.0	2,520.0
50900205	STEEL RAILING TYPE S1	FOOT	90.0		90.0
51201300	FURNISHING STEEL PILES HP 8X36	FOOT	270.0		270.0
51202305	DRIVING PILES	FOOT	270.0		270.0
51203300	TEST PILE STEEL HP 8X36	EACH	1.0		1.0
51500100	NAME PLATES	EACH	1.0		1.0
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ. YD.	140.0		140.0
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU. YD.	14.0	14.0	
*63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2.0	2.0	
*63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	2.0	2.0	
67100100	MOBILIZATION	L. SUM	1.0		
78201000	TERMINAL MARKER DIRECT APPLIED	EACH	2.0	2.0	
XX001717	GROUTING OF STONE DUMPED RIPRAP	CU. YD.	17.0	17.0	

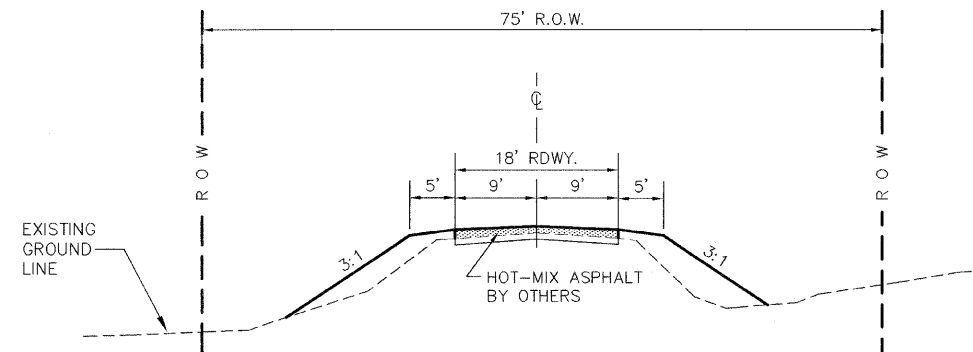
* SPECIALTY ITEMS

LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA. 130+10 TO STA. 136+20	153	115	359	-244
ALLOWANCE FOR CHANNEL EXCAVATION	(75% OF 272)			+204
TOTAL				-40

EARTHWORK TABLE IS INCLUDED FOR INFORMATION ONLY.

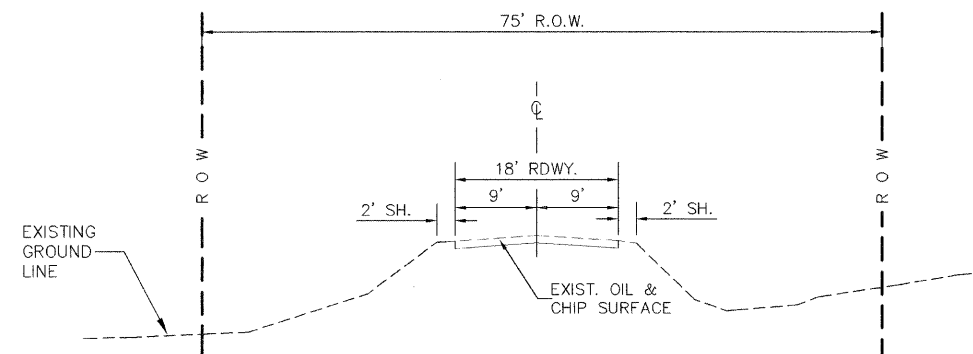
CONTRACTOR SHALL PLACE SUITABLE CHANNEL EXCAVATION MATERIAL ON SLOPES AS DIRECTED BY ENGINEER.

REMAINDER OF EARTHWORK BY OTHERS.



TYPICAL PROPOSED ROADWAY CROSS SECTION

STA. 130+10 to STA 132+51.75 & STA. 132+98.25 to STA. 136+20



TYPICAL EXISTING ROADWAY CROSS SECTION

EXTRA BARS FOR TEST SAMPLES

BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	1	#4	5'-0"	—
p(E)	1	#6	11'-1"	□
p(E)	1	#7	28'-10"	—

* THESE BARS SHALL BE IDENTICAL TO AND DELIVERED WITH THE BARS OF THE SAME MARK LISTED IN THE BRIDGE SHEETS. ONE BAR OF EACH OF THESE MARKS WILL BE SELECTED BY THE ENGINEER TO BE USED AS A TEST SAMPLE.

GENERAL NOTES

- ALL ELEVATION REFER TO U.S.G.S. MEAN SEA LEVEL
- THE CONTRACTOR WILL BE REQUIRED TO CONDUCT HIS OPERATIONS SUCH THAT THE PRIVATE ENTRANCE AT STATION 133+30 WILL REMAIN OPEN TO THE PROPERTY OWNER AT ALL TIMES THROUGHOUT THE CONSTRUCTION.
- UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION AND THEIR TRUE LOCATION IS NOT GUARANTEED TO BE AS SHOWN ON THE PLANS. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND CARRY ON HIS OPERATIONS ACCORDINGLY.
- TEMPORARY AND PERMANENT EROSION CONTROL MEASURES: THIS PROJECT REQUIRES ONLY MINIMAL EXCAVATION AND EMBANKMENT CONSTRUCTION WITH NO STOCKPILING OF TOPSOIL, OR BORROW AND THEREFORE REQUIRES MINIMAL EROSION CONTROL MEASURES WHICH WILL BE PROVIDED, PLACED AND MAINTAINED BY THE COUNTY HIGHWAY DEPARTMENT. ALL EROSION CONTROL METHODS WILL BE TO I.D.O.T. STANDARDS AND EACH CONTROL MEASURE SHALL BE APPROPRIATE TO ADDRESS THE SPECIFIC CONDITIONS INVOLVED AND PROPERLY MAINTAINED TO ENSURE CONTINUED EFFECTIVE OPERATION.

MIXTURE REQUIREMENTS - SUPERPAVE PROJECT

ROUTE	C.H. 9 (WRINGE RD)
SECTION	98-00070-00-BR
COUNTY	CLINTON
CONTRACT	

DESCRIPTION: C.H. 9 OVER TRIB. TO BEAVER CREEK 3 MILES N. & W. OF CARLYLE

MIXTURE USE	SURFACE
AC/PG	PG 64-22
RAP % (MAX)	0%
DESIGN AIR VOIDS	4.0% @ Ndes=50
MIX COMPOSITION (GRADATION MIXTURE)	IL 9.5/IL 12.5
FRICTION AGG.	MIXTURE C

**SUMMARY OF QUANTITIES
TYPICAL ROADWAY CROSS SECTIONS
C.H. 9 (WRINGE ROAD)
OVER TRIB. TO BEAVER CREEK
SECTION 98-00070-00-BR
CLINTON COUNTY**

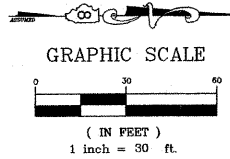
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 9 (WRINGE RD)	98-00070 -00-BR	CLINTON	6	3

CONTRACT NO. 97330

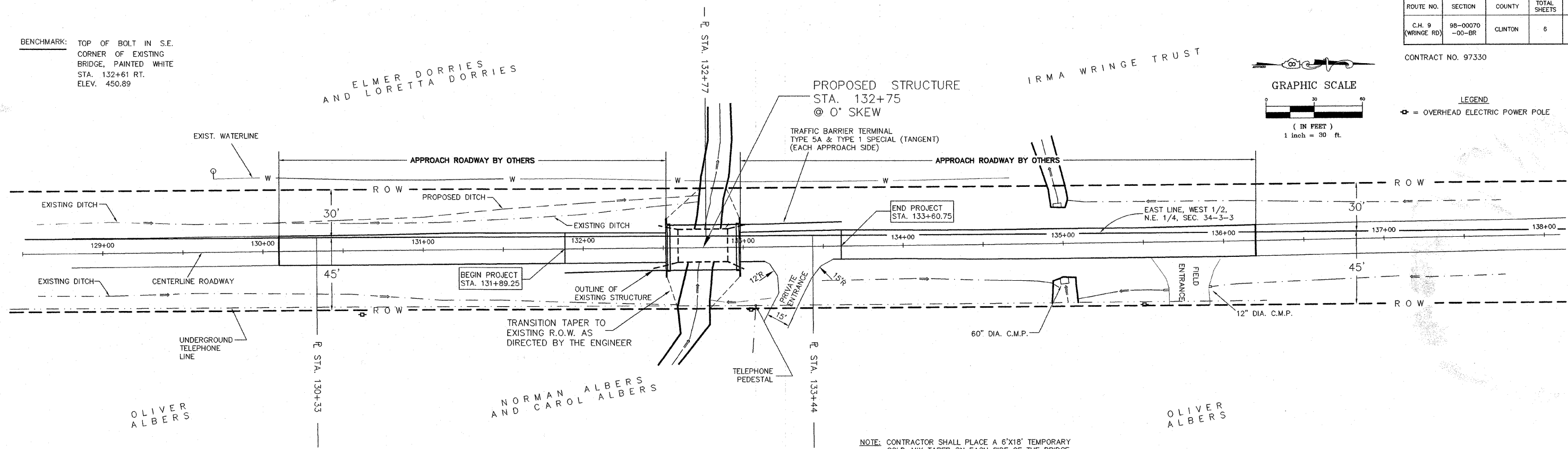
BENCHMARK: TOP OF BOLT IN S.E. CORNER OF EXISTING BRIDGE, PAINTED WHITE STA. 132+61 RT. ELEV. 450.89

ELMER DORRIES AND LORETTA DORRIES

IRMA WRINGE TRUST



LEGEND
⊕ = OVERHEAD ELECTRIC POWER POLE



NOTE: CONTRACTOR SHALL PLACE A 6'X18' TEMPORARY COLD-MIX TAPER ON EACH SIDE OF THE BRIDGE. COST SHALL NOT BE PAID FOR SEPERATLY BUT SHALL BE INCLUDED IN THE COST OF HOT-MIX ASPHALT SURFACE, MIX C. N50

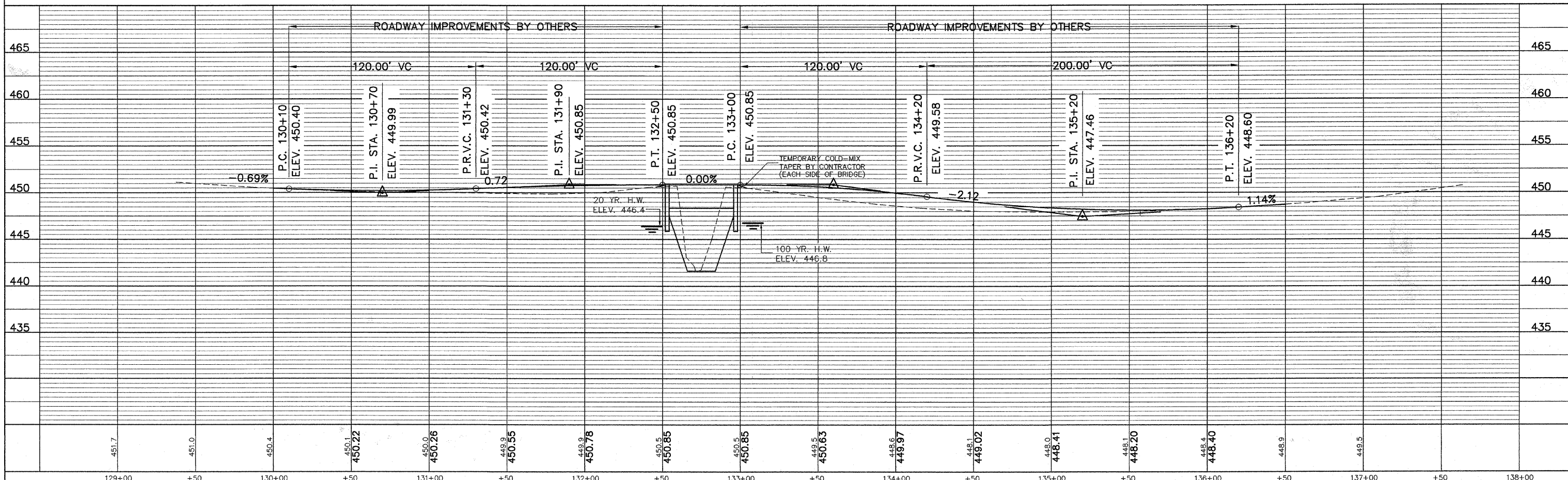
OLIVER ALBERS

NORMAN ALBERS AND CAROL ALBERS

OLIVER ALBERS

PLAN	DATE	BY
REVISION		
NO.		

PROFILE	DATE	BY
REVISION		
NO.		



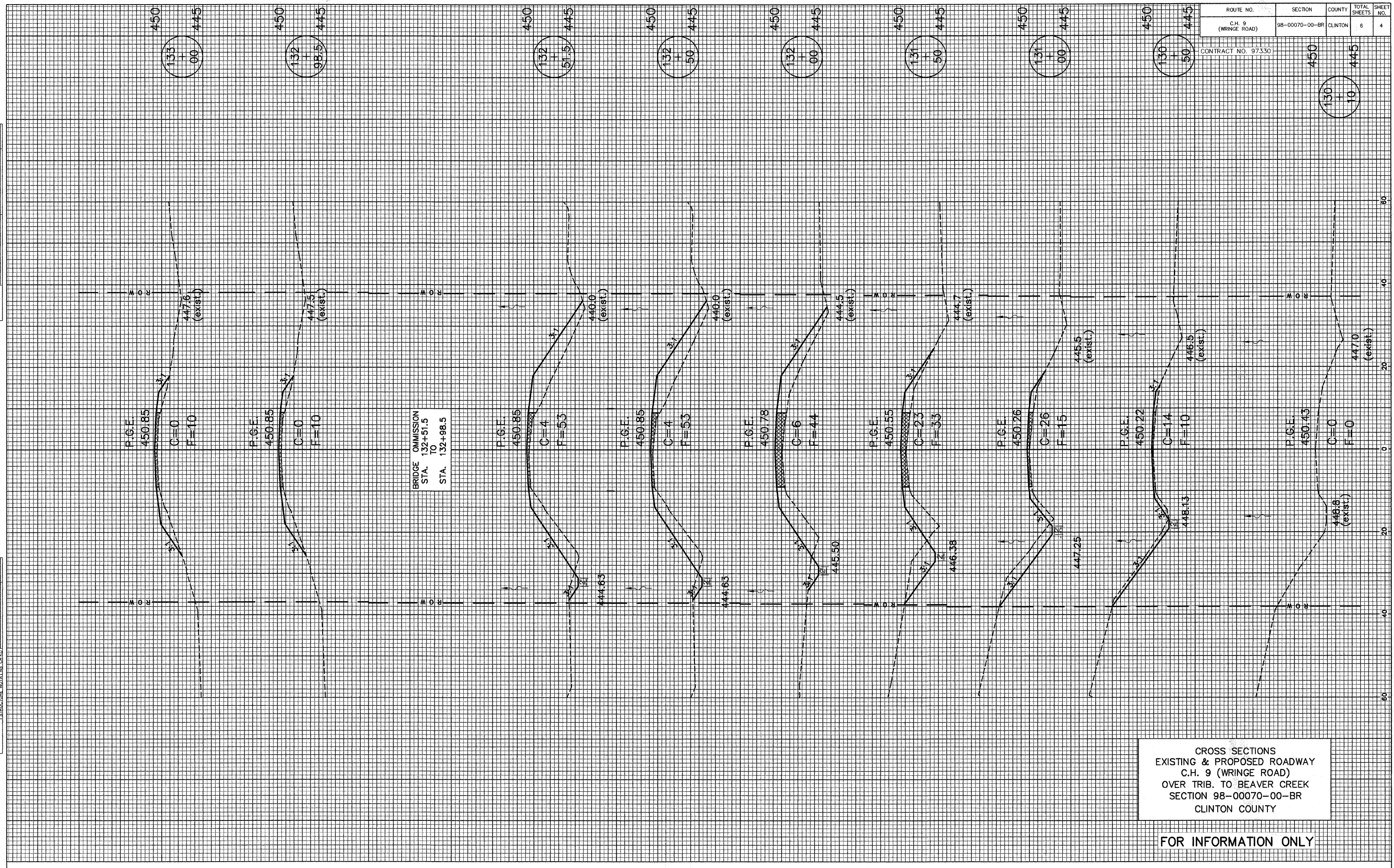
PLAN SURVEYED BY DATE
 PLOTTED BY
 NOTE BOOK NO. _____
 CHECKED BY
 RT. OF WAY CHECKED

PROFILE SURVEYED BY DATE
 PLOTTED BY
 NOTE BOOK NO. _____
 CHECKED BY
 STRUCTURE NOTATIONS SHOWN

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 9 (WRINGE ROAD)	98-00070-00-BR	CLINTON	6	4

CONTRACT NO. 97330

450
 130
 10
 445



CROSS SECTIONS
 EXISTING & PROPOSED ROADWAY
 C.H. 9 (WRINGE ROAD)
 OVER TRIB. TO BEAVER CREEK
 SECTION 98-00070-00-BR
 CLINTON COUNTY

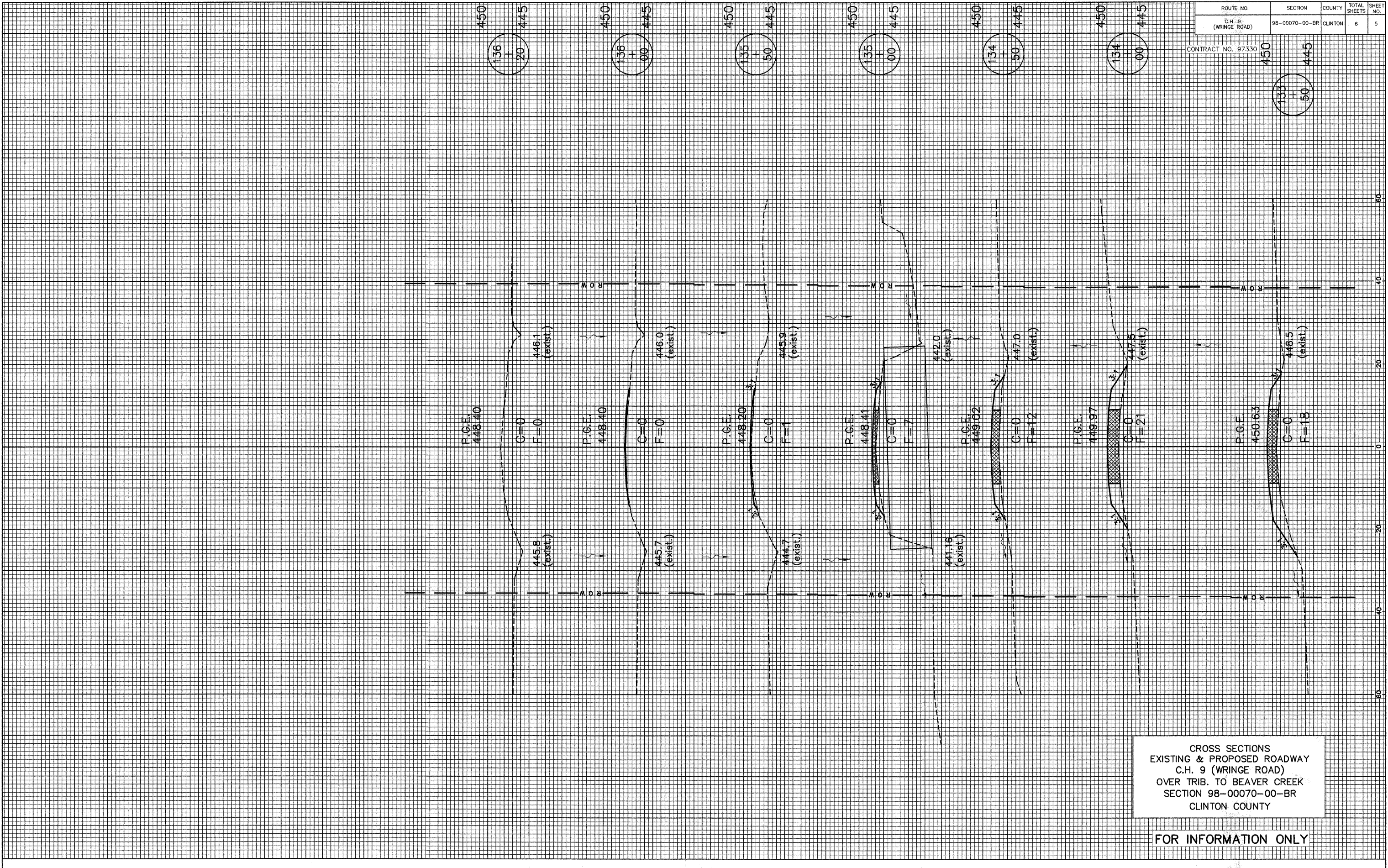
FOR INFORMATION ONLY

PLAN SURVEYED BY DATE
 PLOTTED BY DATE
 CHECKED BY DATE
 NOTE BOOK NO. _____
 AT. OR. MAP. ORDERED

PROFILE SURVEYED BY DATE
 PLOTTED BY DATE
 CHECKED BY DATE
 NOTE BOOK NO. _____
 STRUCTURE NOTATIONS SHOWN

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 9 (WRINGE ROAD)	98-00070-00-BR	CLINTON	6	5

CONTRACT NO. 97330



CROSS SECTIONS
 EXISTING & PROPOSED ROADWAY
 C.H. 9 (WRINGE ROAD)
 OVER TRIB. TO BEAVER CREEK
 SECTION 98-00070-00-BR
 CLINTON COUNTY

FOR INFORMATION ONLY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 9 WRINGE RD	98-00070-00-BR	CLINTON	6	6

CONTRACT NO. 97330

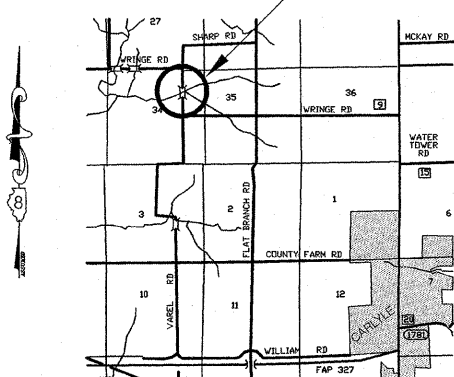
BENCHMARKS: TOP OF BOLT IN S.E. CORNER OF EXISTING BRIDGE, PAINTED WHITE. STA. 132+61 RT., ELEV. 450.89

EXISTING STRUCTURE: S.N. 014-3020

THE EXISTING STRUCTURE IS A SINGLE SPAN STEEL STRINGER BRIDGE WITH PRECAST CONCRETE DECK PLANKS SUPPORTED ON CLOSED TIMBER ABUTMENTS WITH TIMBER PILES. THE EXISTING STRUCTURE MEASURES 32' BACK TO BACK OF ABUTMENTS AND PROVIDES A 20' CLEAR ROADWAY WIDTH.

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING STRUCTURE IN ACCORDANCE WITH SECTION 501 OF THE STANDARD SPECIFICATIONS.

STRUCTURE LOCATION



LOCATION SKETCH

TRIB. TO BEAVER CREEK
BUILT 2008 BY
CLINTON COUNTY
SECTION 98-00070-00-BR
STATION 132+75
STR.NO.014-5113 LOADING HS-20

NAME PLATE

LOCATE NAME PLATE AS SHOWN IN PLAN VIEW. (SEE STD. CN)

PILE DATA

SOUTH ABUTMENT

PILE TYPE: STEEL HP 8X36 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 186 KIPS
ALLOWABLE RESISTANCE AVAILABLE: 62 KIPS
ESTIMATED LENGTH: 30 FT.
NUMBER OF PRODUCTION PILE: 5

NORTH ABUTMENT

PILE TYPE: STEEL HP 8X36 WITH PILE SHOES
NOMINAL REQUIRED BEARING: 186 KIPS
ALLOWABLE RESISTANCE AVAILABLE: 62 KIPS
ESTIMATED LENGTH: 30 FT.
NUMBER OF TEST PILES: 1
NUMBER OF PRODUCTION PILE: 4

DESIGN STRESSES

PRECAST PRESTRESSED UNITS

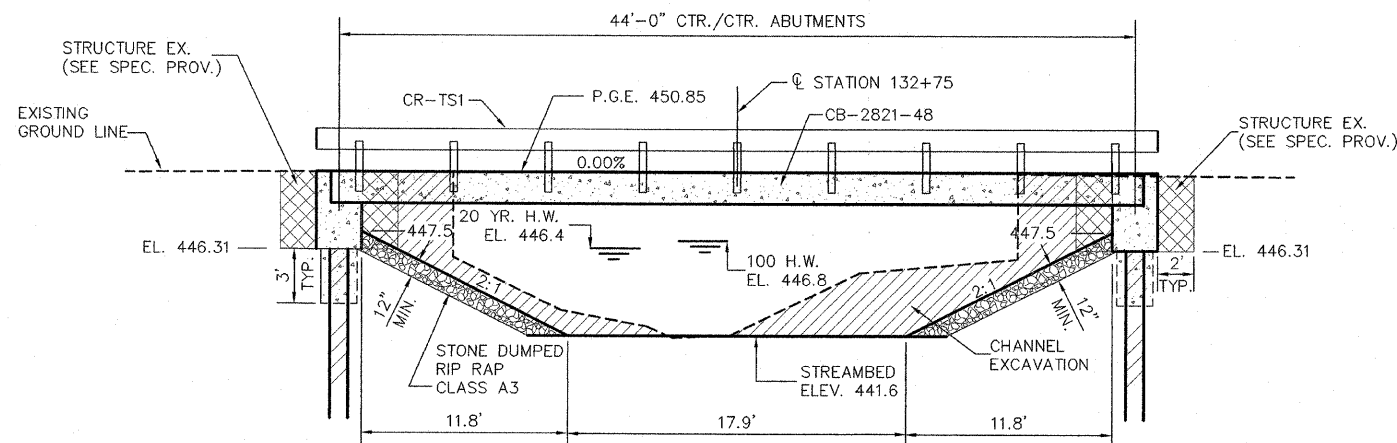
$f'_c = 5,000$ p.s.i.
 $f'_{ci} = 4,000$ p.s.i.
 $f'_s = 270,000$ p.s.i. (1/2" Ø STRAND)
 $f'_{si} = 201,960$ p.s.i. (1/2" Ø STRAND)
 $f_y = 60,000$ p.s.i.

CAST IN PLACE CONCRETE

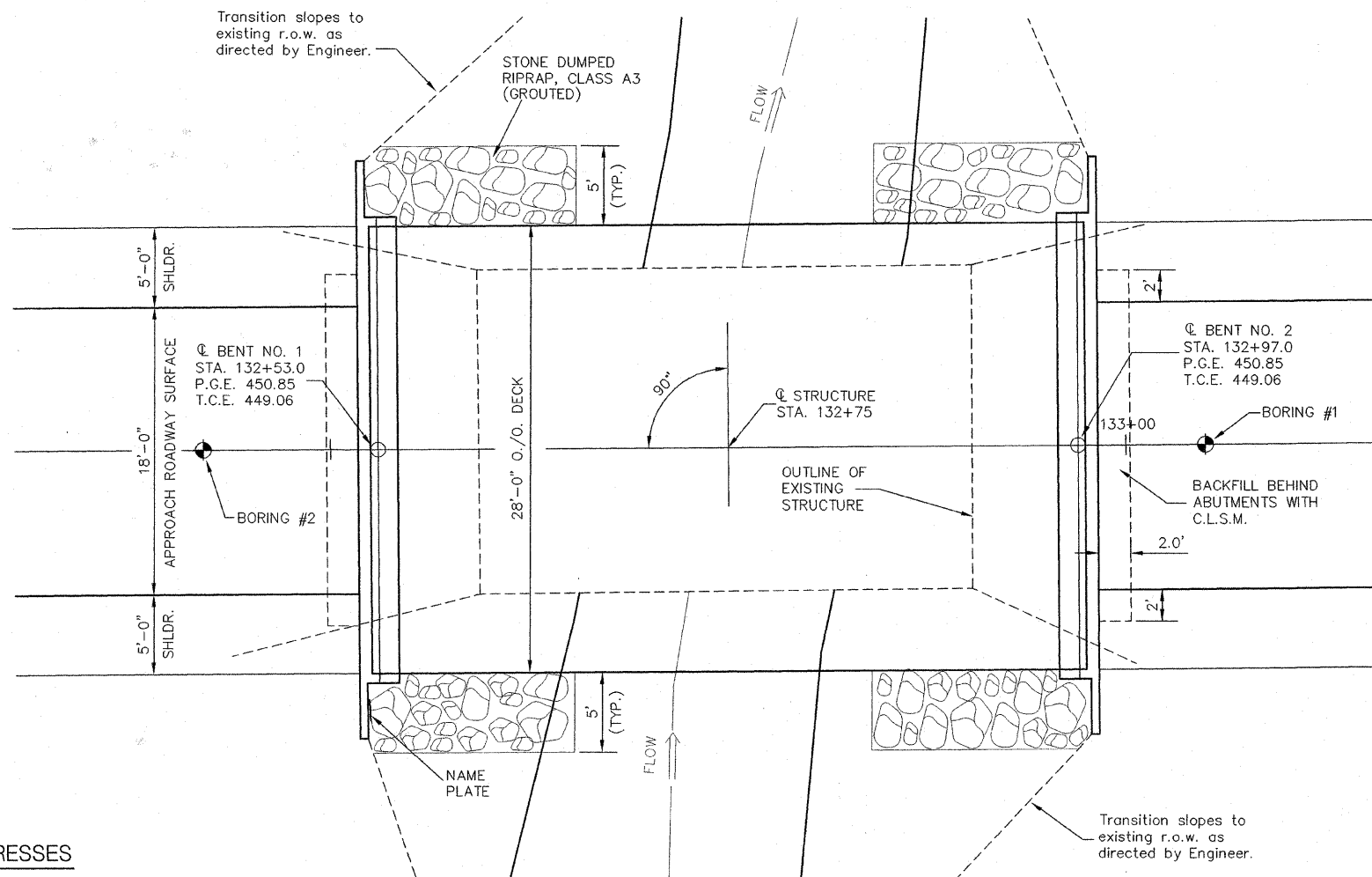
$f'_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (REINF.)

LOADING HS 20-44 LOAD FACTOR DESIGN

ALLOW 25 P.S.F. FOR FUTURE WEARING SURFACE
A.A.S.H.T.O. SEISMIC HORIZ. ACCELERATION COEFFICIENT: 9.5% OF GRAVITY
DESIGN SPECIFICATION: 2002 A.A.S.H.T.O.
S.P.C. = B, SOIL PROFILE COEFF. S = 1.0



ELEVATION



PLAN

GENERAL NOTES

- THE CONTRACTOR SHALL DRIVE ONE (1) STEEL HP 18X36 TEST PILE, AT BENT #2, IN A PERMANENT LOCATION AS DIRECTED BY THE ENGINEER BEFORE ORDERING REMAINING PILES.
- IN ADDITION TO ALL OTHER REQUIREMENTS OF SECTION 512 OF THE STANDARD SPECIFICATION, SPLICES FOR STEEL HP 8X36 PILES SHALL DEVELOP THE FULL CAPACITY OF THE STEEL'S CROSS SECTIONAL AREA OF THE PILE FOR TENSION, SHEAR AND BENDING FORCES. ONE APPROVED METHOD OF ACHIEVING THIS REQUIREMENT IS FULL PENETRATION BUTT WELDING OF THE ENTIRE CROSS SECTION. OTHER TYPES OF SPLICES MEETING THE FULL CAPACITY REQUIREMENT MAY BE ALLOWED SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY PROPOSAL BY THE CONTRACTOR TO USE AN ALTERNATIVE SPLICE METHOD MUST INCLUDE ADEQUATE DOCUMENTATION DEMONSTRATING THAT THE FULL TENSION, SHEAR AND BENDING CAPACITIES WILL BE MET. APPROPRIATE WELDER QUALIFICATIONS WILL BE REQUIRED FOR THE POSITIONS AND PROCESSES USED IN SPLICING ALL PILES. NONDESTRUCTIVE TESTING OF COMPLETED WELDS WILL BE LIMITED TO VISUAL INSPECTION.
- KEYWAY SURFACES SHALL BE CLEANED TO REMOVE FORM OIL OR OTHER BOND BREAKING MATERIALS PRIOR TO SHIPMENT OF BEAMS. CLEANING SHALL BE DONE BY SANDBLASTING THE KEYWAY AREAS BETWEEN THE TOP OF THE BEAM AND THE BOTTOM EDGE OF THE KEY.
- CLASS SI CONCRETE SHALL BE USED THROUGHOUT EXCEPT IN THE DECK BEAMS.
- A CALCIUM NITRATE CORROSION INHIBITOR, PER ARTICLE 1020.05(b)(12) OF THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, SHALL BE USED IN THE CONCRETE FOR PRECAST PRESTRESSED CONCRETE DECK BEAMS.
- SEE SPECIAL PROVISIONS FOR BORING LOGS.

WATERWAY INFORMATION TABLE

Flood	Freq. Yr.	Q CFS	Opening Sq. ft.		Head - Ft.		Headwater Elevation		
			Exist.	Prop	Exist.	Prop	Exist.	Prop	
			Low Grade Elev.= 447.9		© STA 135+00				
Design	20	556	82	123	446.4	0.7	0.1	447.1	446.5
Base	100	881	134*	135	446.8	1.6***	0.6	448.40	447.4
Overtopping	±400	1,072	134*	144	447.2	1.4***	0.8	448.6	448.0
Max Calc.	N/A								

* AREA BELOW LOW BEAM OF BRIDGE
** COMPARED AT PROPOSED STRUCTURES APPROACH SECTION
*** INCLUDES OVER-THE-ROAD FLOW

TOTAL BILL OF MATERIALS

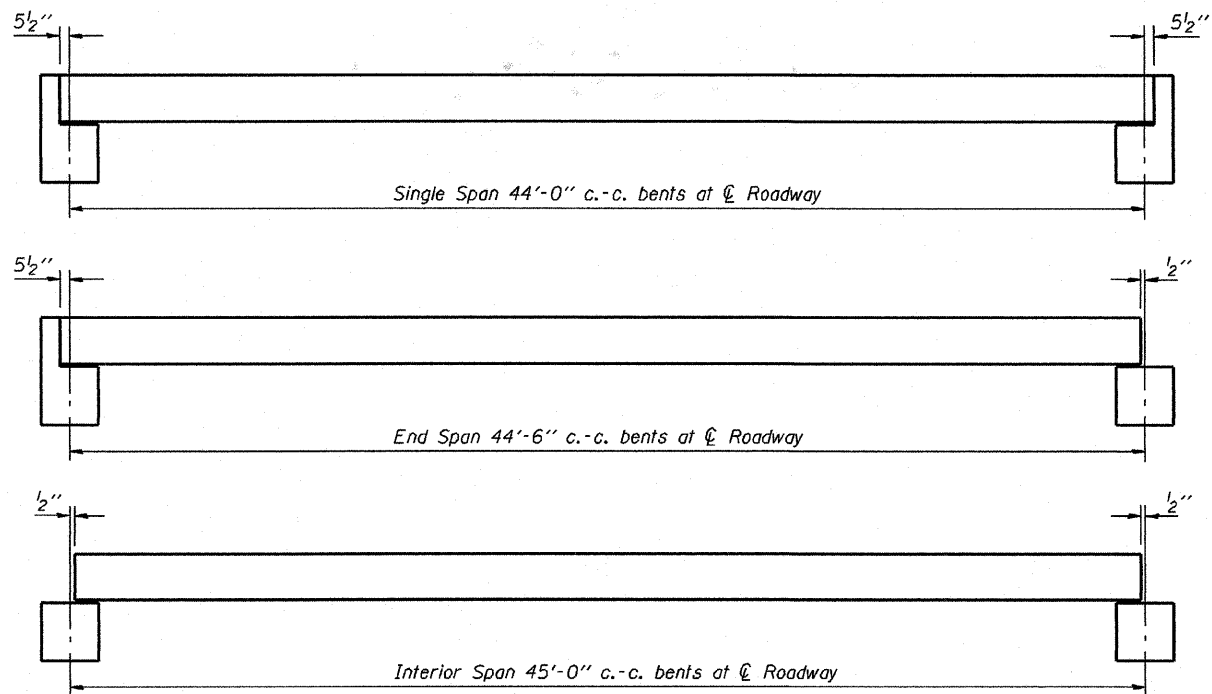
ITEM	UNIT	SUPER	SUB.	Total
Removal of Existing Structures	EACH	---	---	1
Concrete Structure	Cu. Yd.	---	19.8	19.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,260	---	1,260
Steel Railing, Type S-1	Foot	90	---	90
Reinforcement Bars, Epoxy Coated	Pound	---	2,520	2,520
Furnishing Steel Piles HP 8X36	Foot	---	270	270
Driving Steel Piles	Foot	---	270	270
Test Piles, Steel HP 8X36	Each	---	1	1
Name Plates	Each	---	1	1
Concrete Encasement	Cu. Yd.	---	1.9	1.9
Channel Excavation	Cu. Yd.	---	---	272
Stone Dumped Riprap, Class A3	Ton	---	---	60
Grouting, Stone Riprap	CU. YD.	---	17.0	17.0

INDEX OF BRIDGE SHEETS

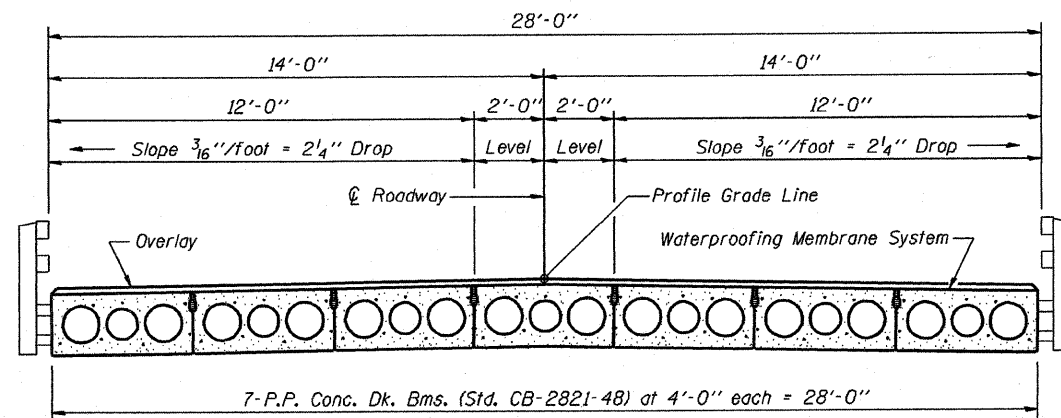
- GENERAL PLAN AND ELEVATION
- BRIDGE STANDARD CS-2821-45
- BRIDGE STANDARD CB-2821-48
- BRIDGE STANDARD CA-2821-10
- BRIDGE STANDARD CR-TS1
- BRIDGE STANDARD CN
- BRIDGE STANDARD CX-1

GENERAL PLAN & ELEVATION

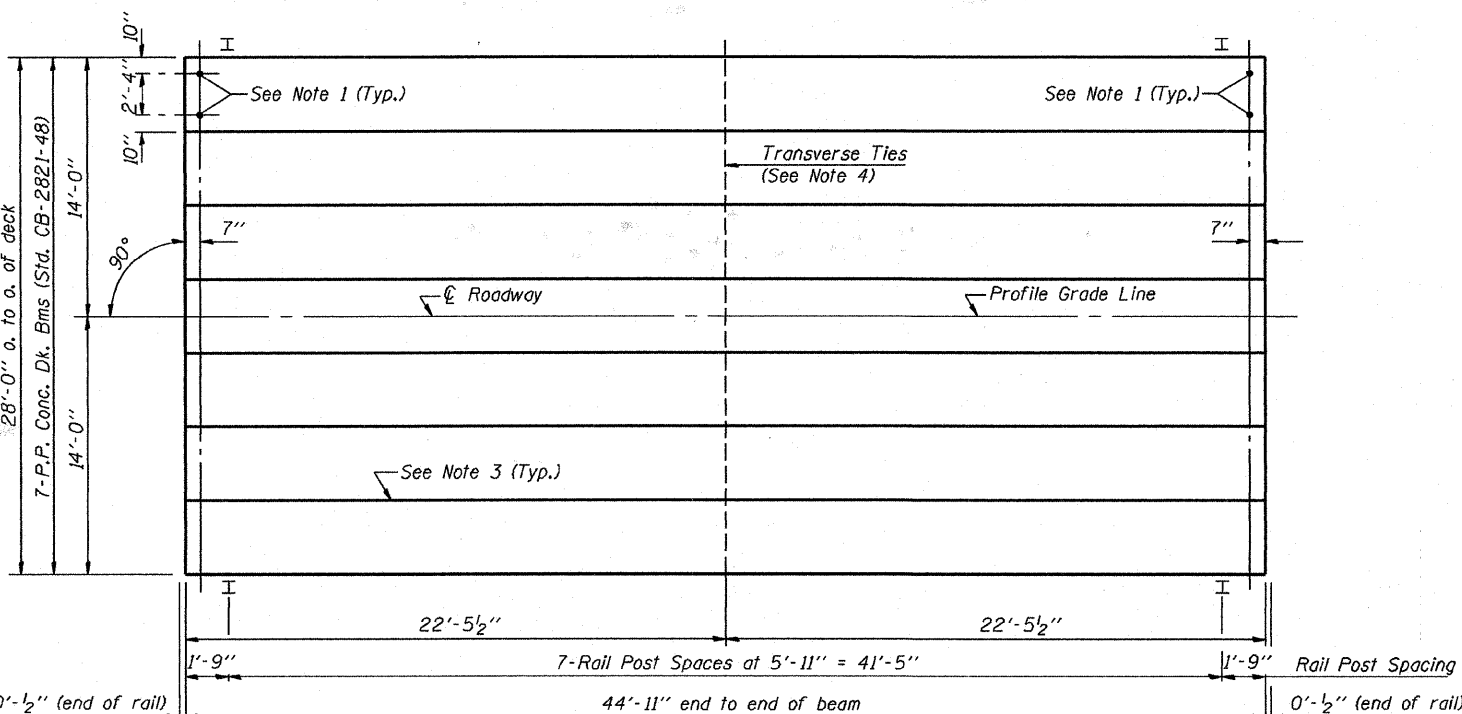
C.H. 9 (WRINGE ROAD)
OVER TRIB. TO BEAVER CREEK
SECTION 98-00070-00-BR
CLINTON COUNTY
STATION 132+75
STRUCTURE NO. 014-5113



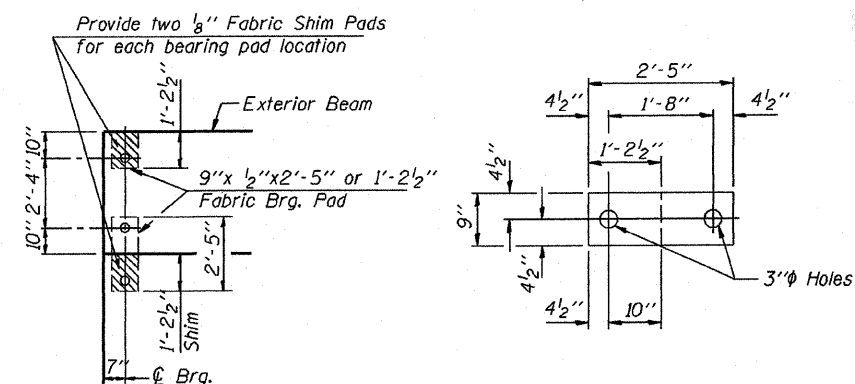
TYPICAL ELEVATIONS



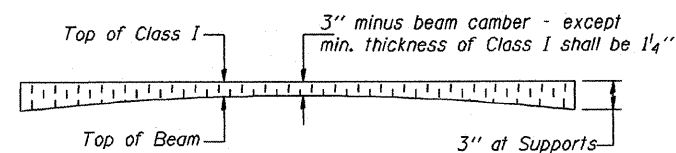
CROSS SECTION



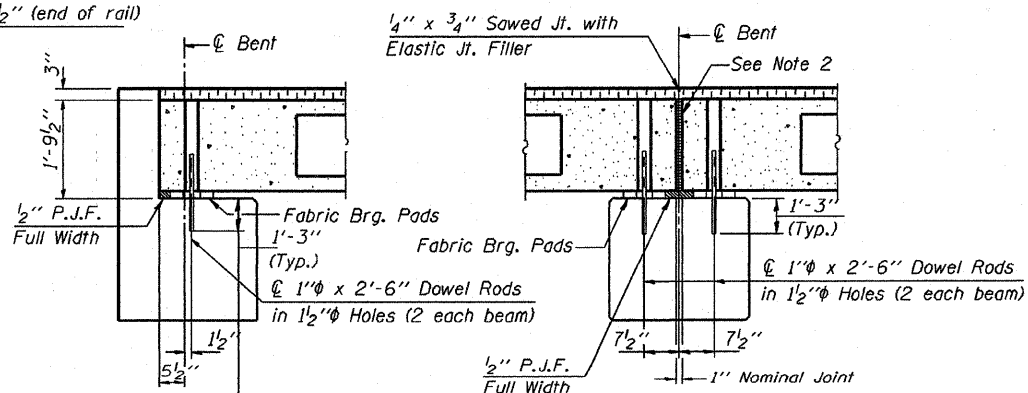
PLAN



1/2" FABRIC BRG. PAD DETAILS



PROFILE OF OVERLAY



SECTION AT ABUTS.
(Along centerline Beams)

SECTION AT PIERS
(Along centerline Beams)

NOTES

- After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
- Nominal 1" joint at centerline Pier shall be filled with non-shrink grout.
- Longitudinal keys shall be grouted.
- The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.

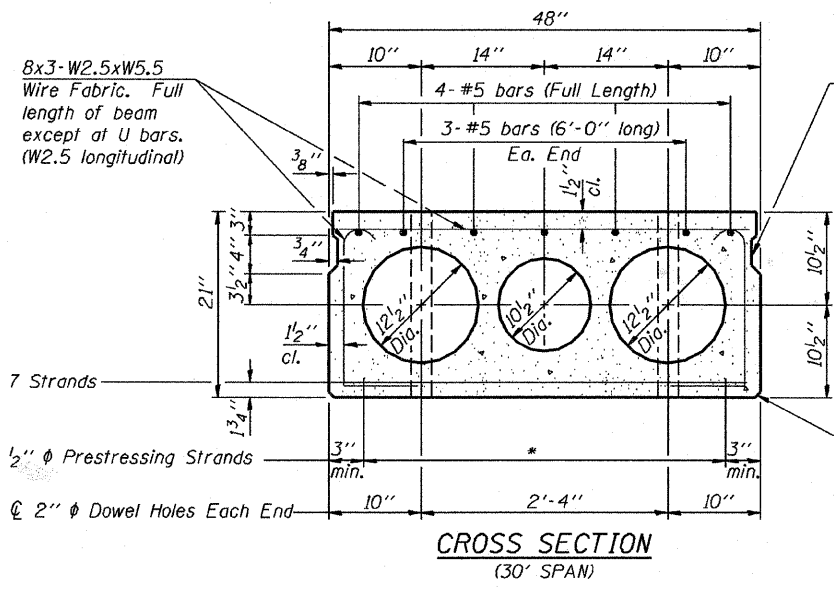
QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 17" Dp.	1260 Sq. Ft.
Steel Railing	90 Ft.
Waterproofing Membrane System	140.0 Sq. Yds.
Portland Cement Mortar	270 Ft.
Fairing Course	

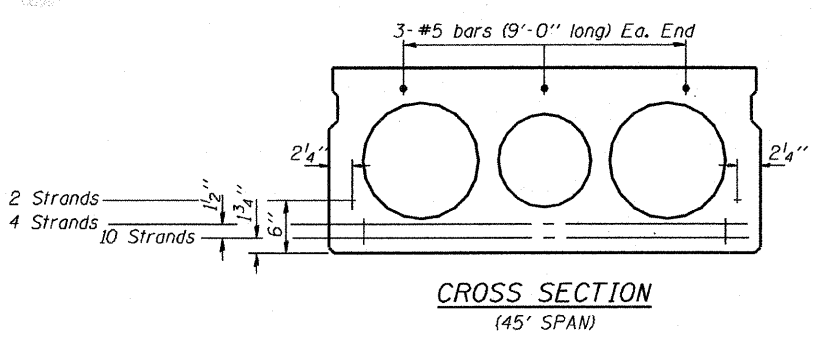
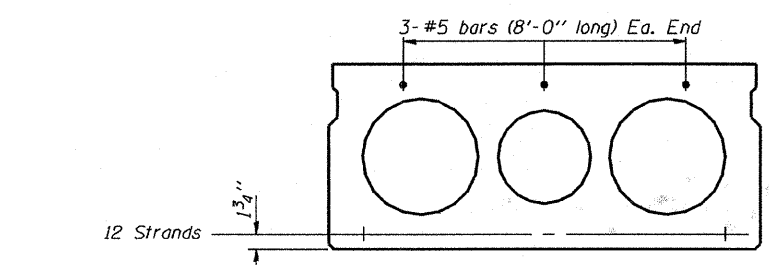
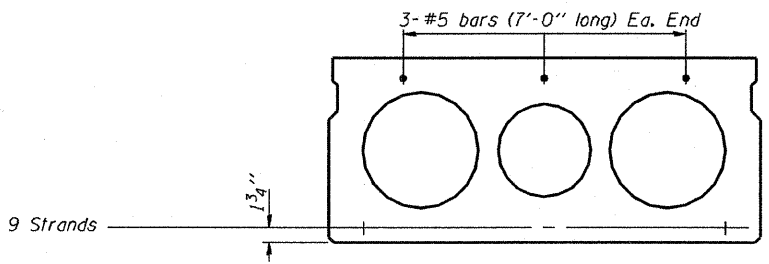
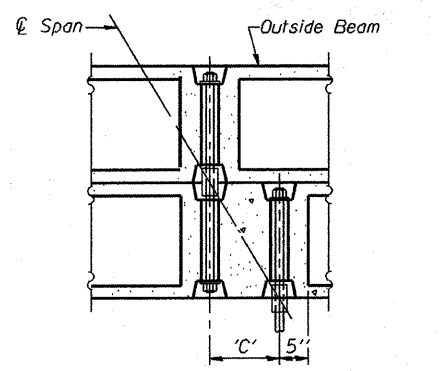
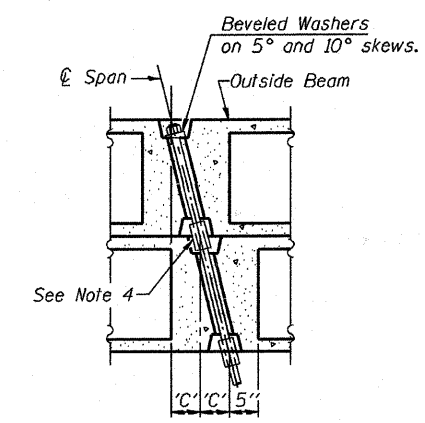
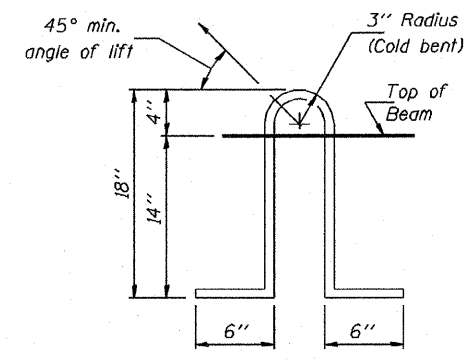
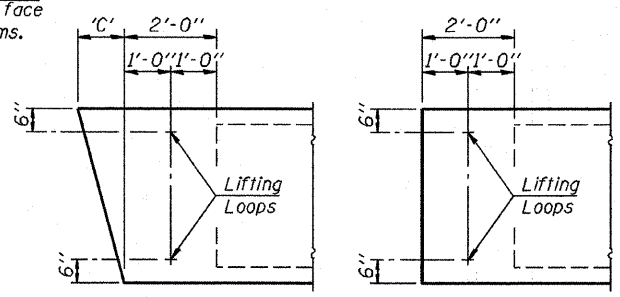
Note: Quantity of overlay for one span = 18.6 Tons

P.P.C. DECK BEAM SUPERSTRUCTURE			
28' RDWY.	21' BMS.	45' SPAN	0° SKEW
STANDARD CS-2821-45			

Illinois Department of Transportation
 PASSED APRIL 4, 2005
 Thomas J. Romagosa
 Engineer of Bridge Design
 APPROVED APRIL 4, 2005
 Ralph E. Anderson
 Engineer of Bridges and Structures

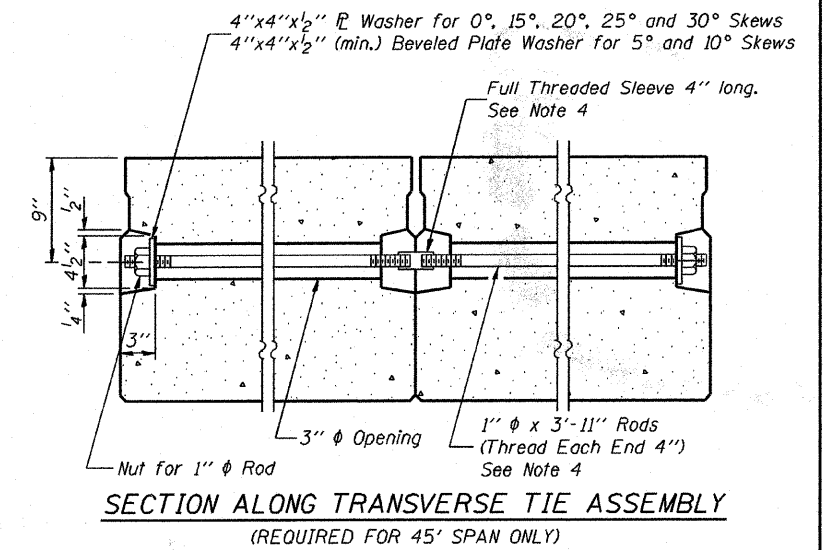
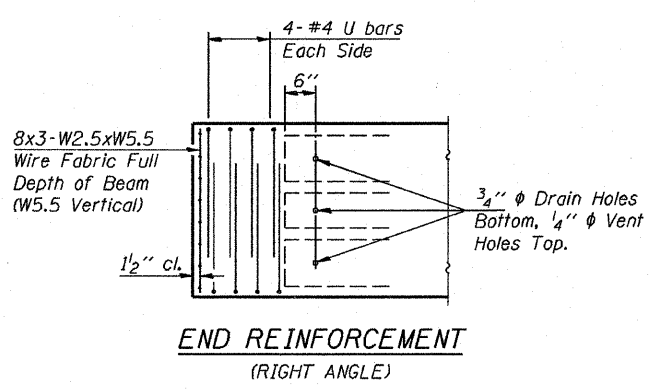
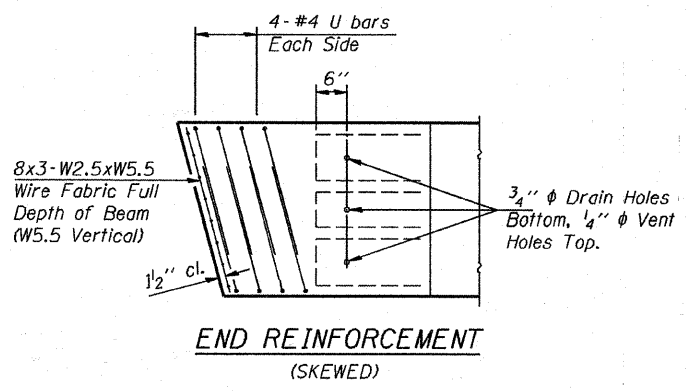


Do not form longitud. key on outside face of outside beams.



DIMENSION 'C'

Skew Angle 'D'	0°	5°	10°	15°	20°	25°	30°
Dimension 'C' (Inches)	0	4 1/4	8 1/2	12 1/8	17 1/2	22 3/8	27 3/4



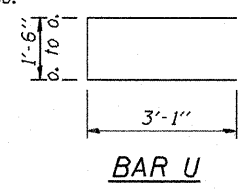
*** TRANSVERSE STRAND PLACEMENT GUIDELINES**

1. Place strands symmetrically about centerline of beam.
2. The minimum distance from center to center of strands in all directions shall be 2".
3. The minimum clearance from strand to dowel hole shall be 1/2".
4. The minimum clearance from strand to void shall be 1/2".

Vertical placement of strands shall not be adjusted to satisfy the above guidelines.

MIN. BAR LAP

#5 bars = 1'-8"



DESIGN STRESSES

- $f'_c = 5,000$ p.s.i.
- $f'_t = 4,000$ p.s.i.
- $f_s = 270,000$ p.s.i. (1/2" ϕ Strand)
- $f_{st} = 201,960$ p.s.i. (1/2" ϕ Strand)
- $f_y = 60,000$ p.s.i.

NOTES

1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 square inches.
3. Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-322, Grade 60.
4. On 0°, 5° and 10° skewers, alternate approved transverse tie rods of increased segmental length are acceptable.
5. Rail Post anchor devices shall be cast into outside beam as elsewhere specified.
6. When a Waterproofing Membrane System is specified, the top surface of the beams shall be screeded with a straightedge and finished with a hand float. The finished surface shall be free of depressions or high spots with sharp corners and the top edge of keys shall be rounded or chamfered a minimum of 1/4".
7. 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 the top of the beam and the bottom edge of the key.

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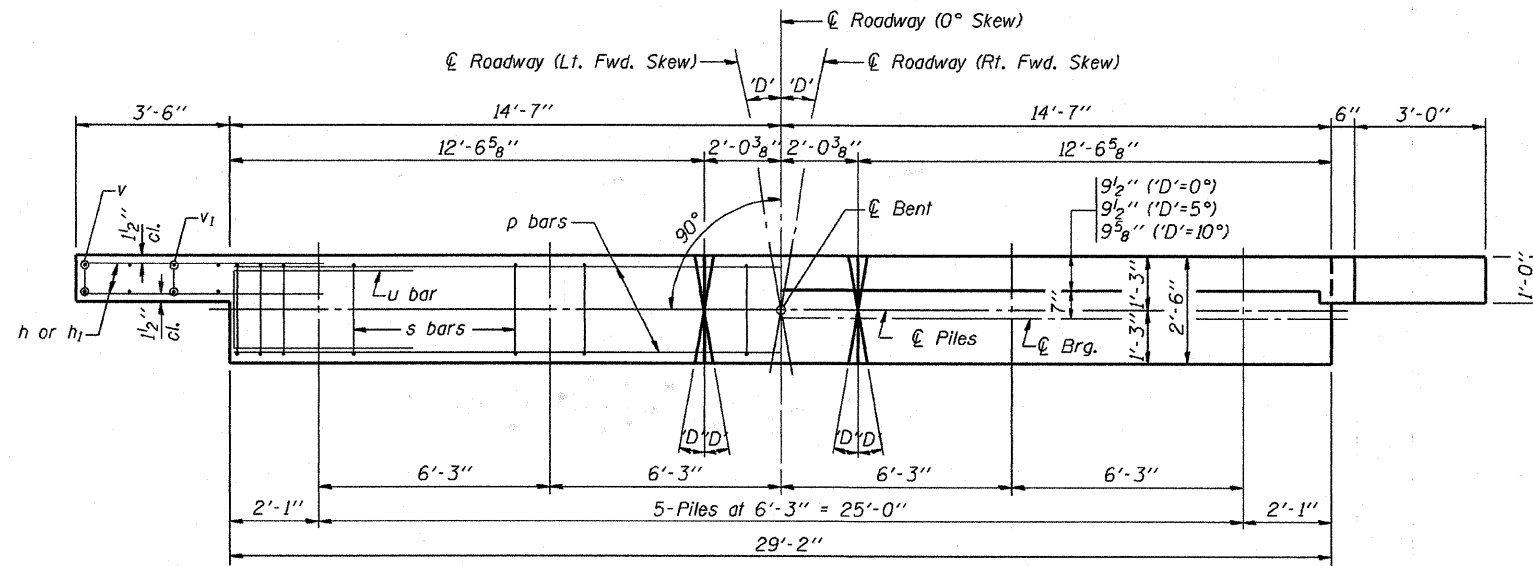
APPROVED APRIL 4, 2005

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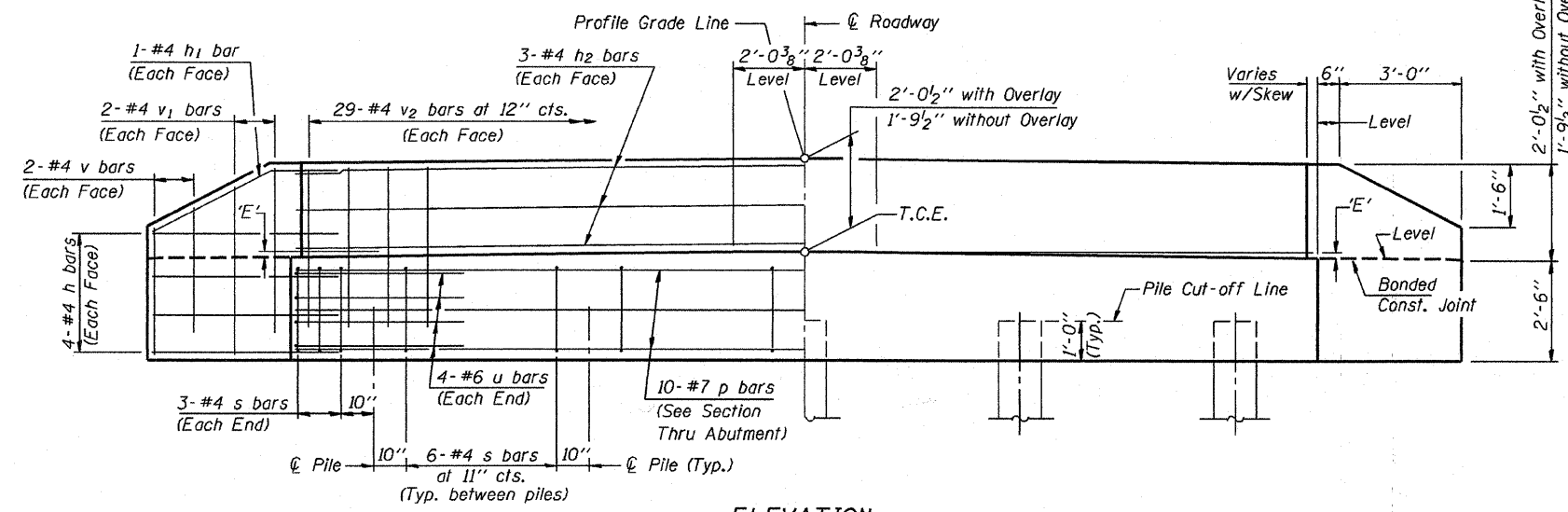
NOTE
The std. reinf. and dimensions shown on the 30' span cross section is typical for all spans, except as shown.

P.P.C. DECK BEAM DETAILS

28' ROADWAY	21" x 48" BEAMS
STANDARD CB-2821-48	



PLAN
(D=Designated Skew Angle)



ELEVATION

DIMENSION 'E'

GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 3/8"	2 3/8"	2 1/4"	2 3/8"	2 1/8"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/8"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"	1 5/8"	3"
Over 3% to 4%	2 3/8"	2 3/8"	1 7/8"	2 3/4"	1 3/8"	3 1/4"

NOTES

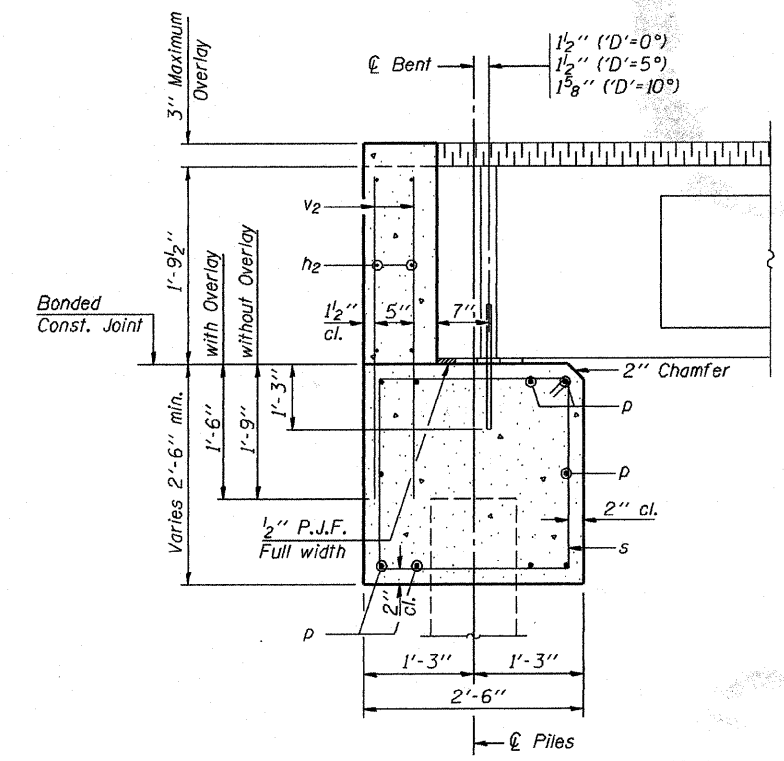
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

MAXIMUM PILE LOADS

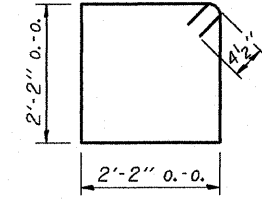
SPAN	TONS
30'	25
35'	27
40'	29
45'	31

DESIGN STRESSES

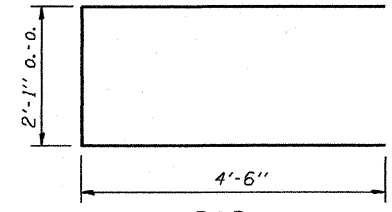
f'c = 3,500 psi
fy = 60,000 psi



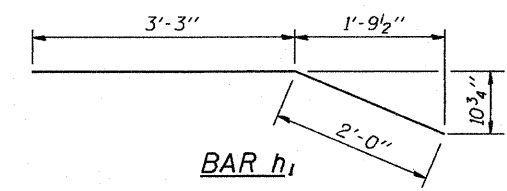
SECTION THRU ABUTMENT
(At Right Angles)



BAR s



BAR u



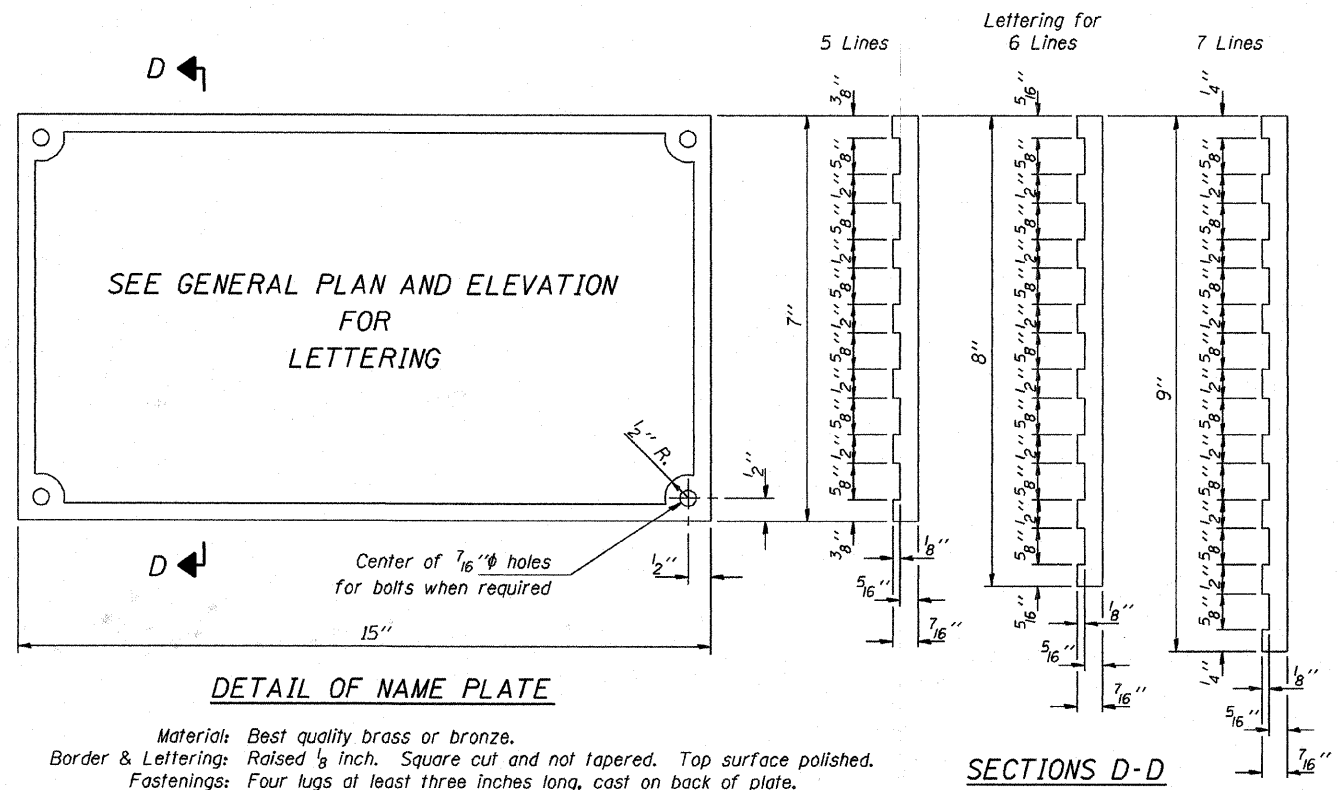
BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

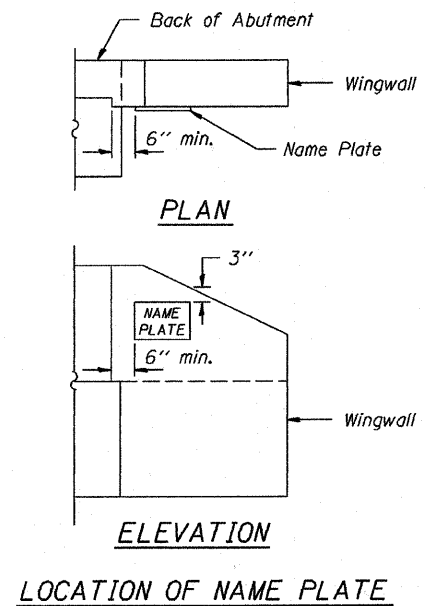
Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	28'-10"	—
p	10	#7	28'-10"	—
s	30	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	2'-8"	—
v1	8	#4	3'-8"	—
v2	58	#4	3'-5"	—
Concrete Structures			9.9 Cu. Yds.	
Reinforcement Bars			1260 Lb.	

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 PASSED APRIL 4, 2005
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P.P.C. DECK BEAMS
 PILE BENT ABUTMENT
 28' RDWY. 21' BMS. 'D'=0°, 5° OR 10°
 STANDARD CA-2821-10



Material: Best quality brass or bronze.
 Border & Lettering: Raised $\frac{1}{8}$ inch. Square cut and not tapered. Top surface polished.
 Fastenings: Four lugs at least three inches long, cast on back of plate.



Illinois Department of Transportation

PASSED APRIL 4, 2005

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 Engineer of Bridge Design

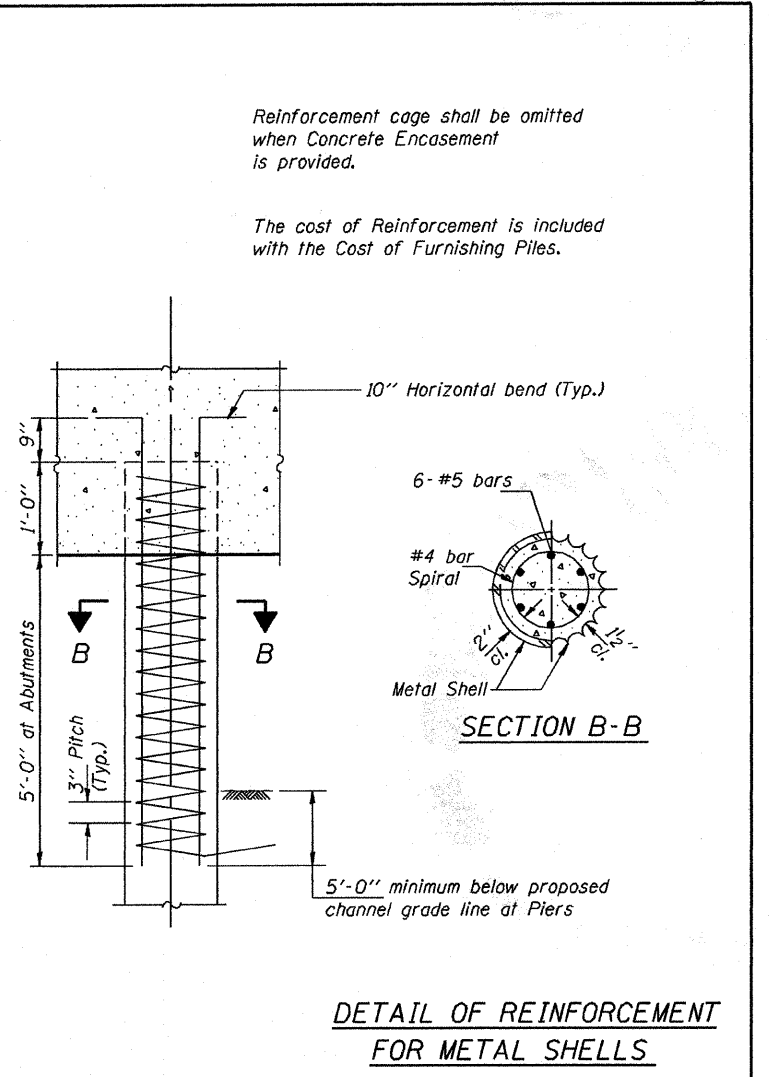
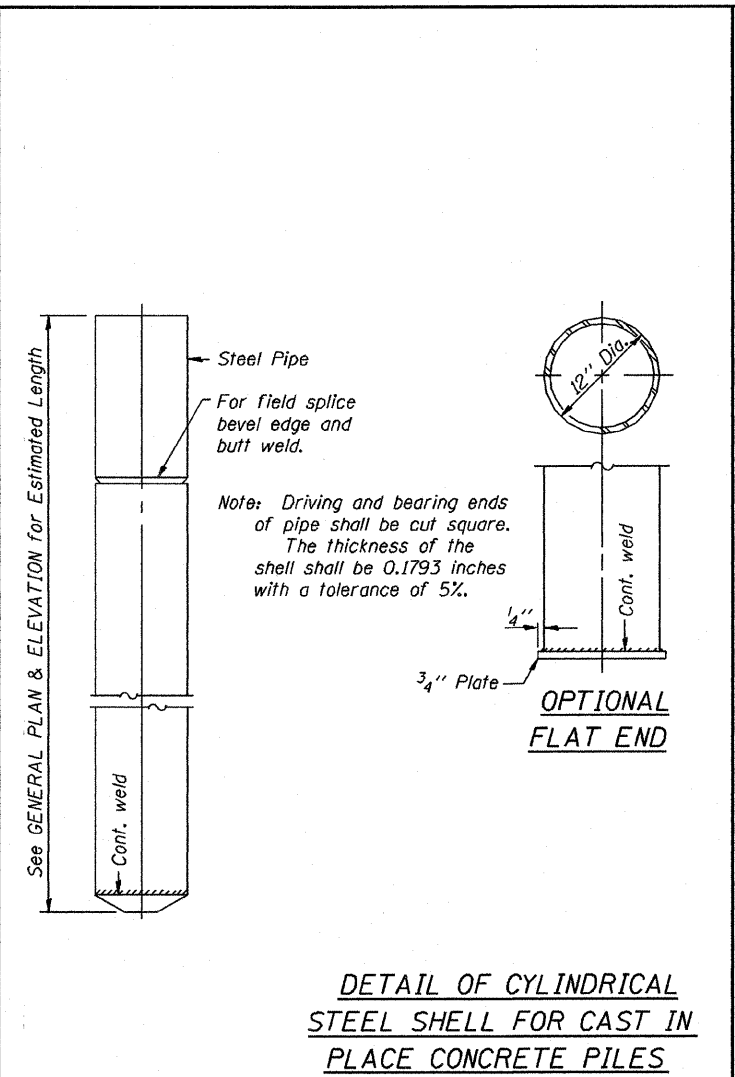
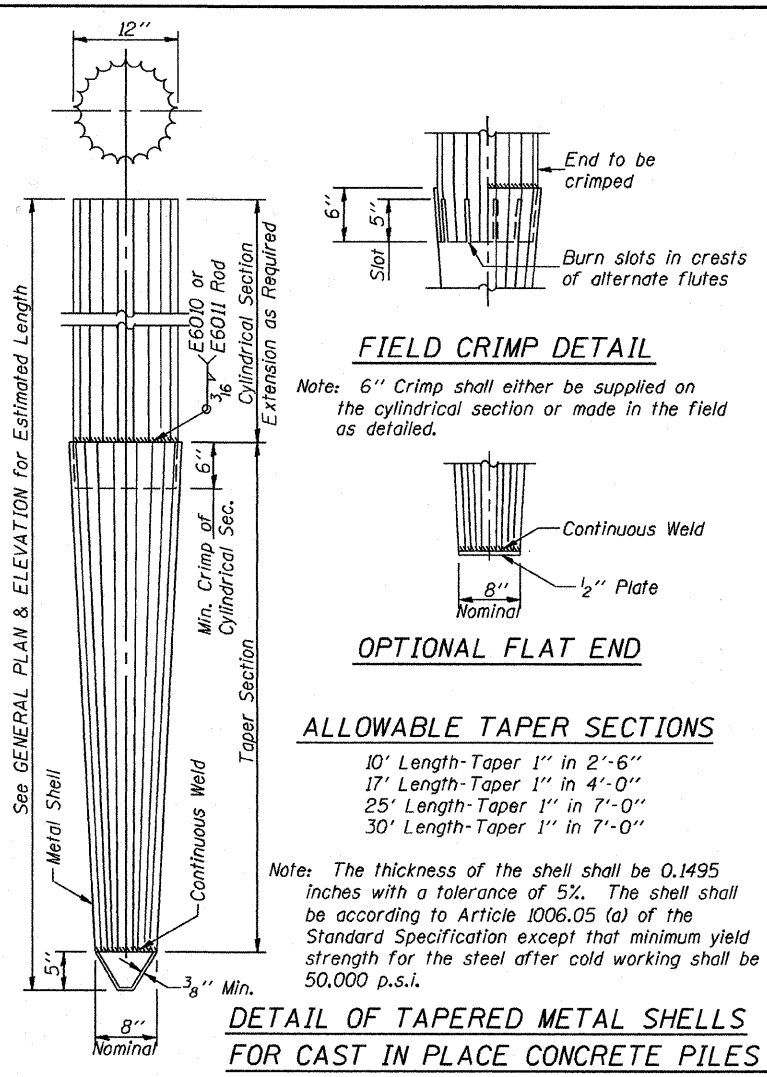
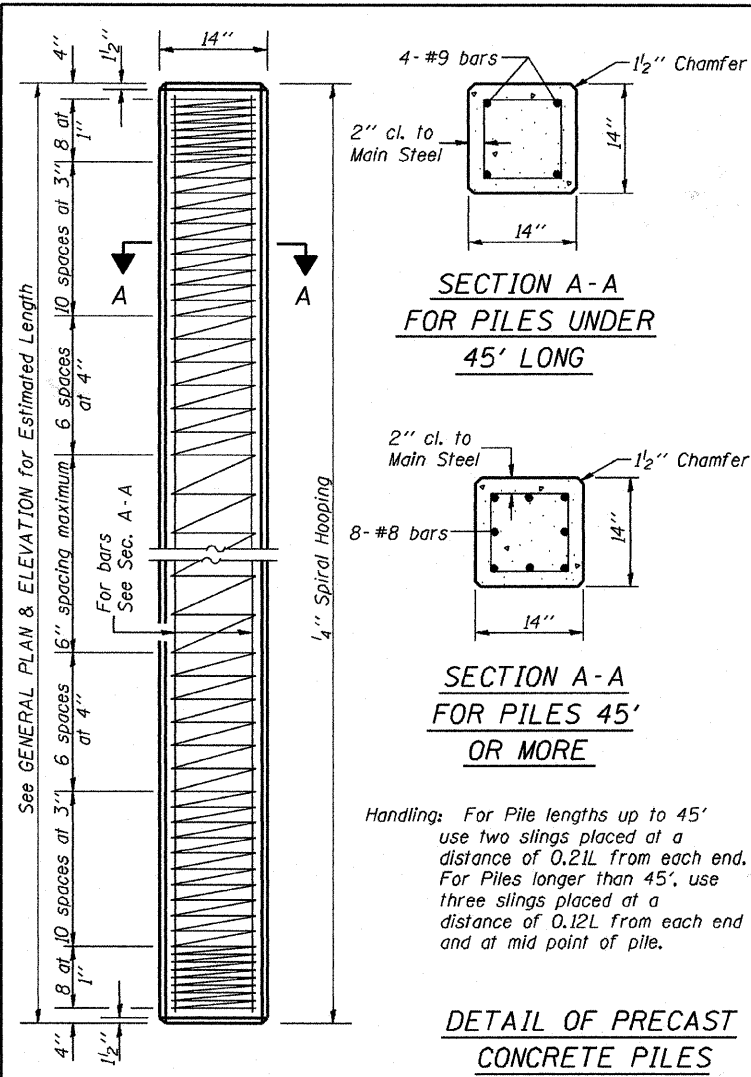
APPROVED APRIL 4, 2005

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 Engineer of Bridges and Structures

ISSUED
 586-1-7

NAME PLATE

STANDARD CN

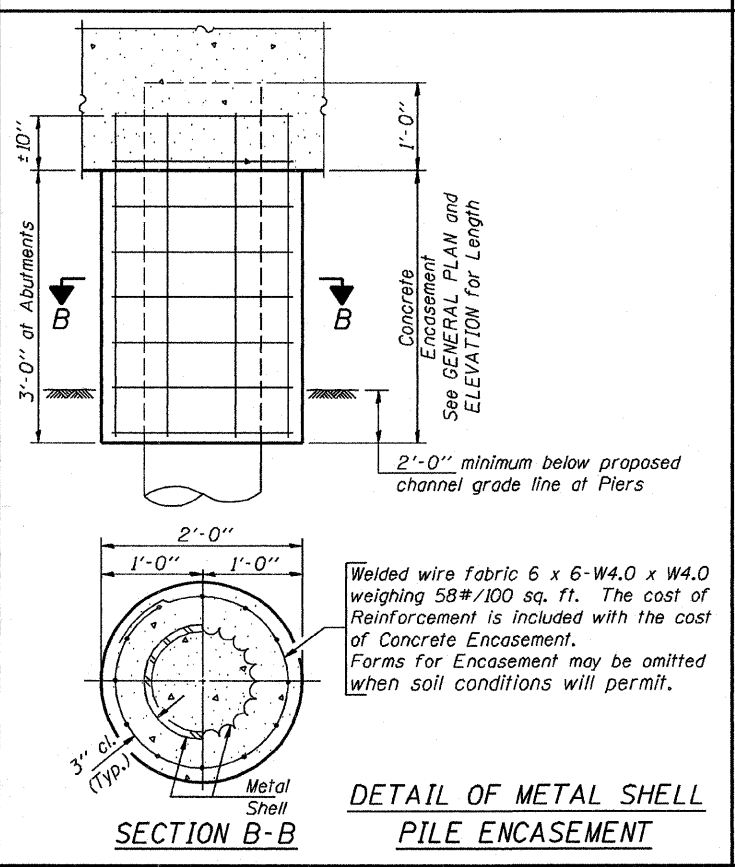
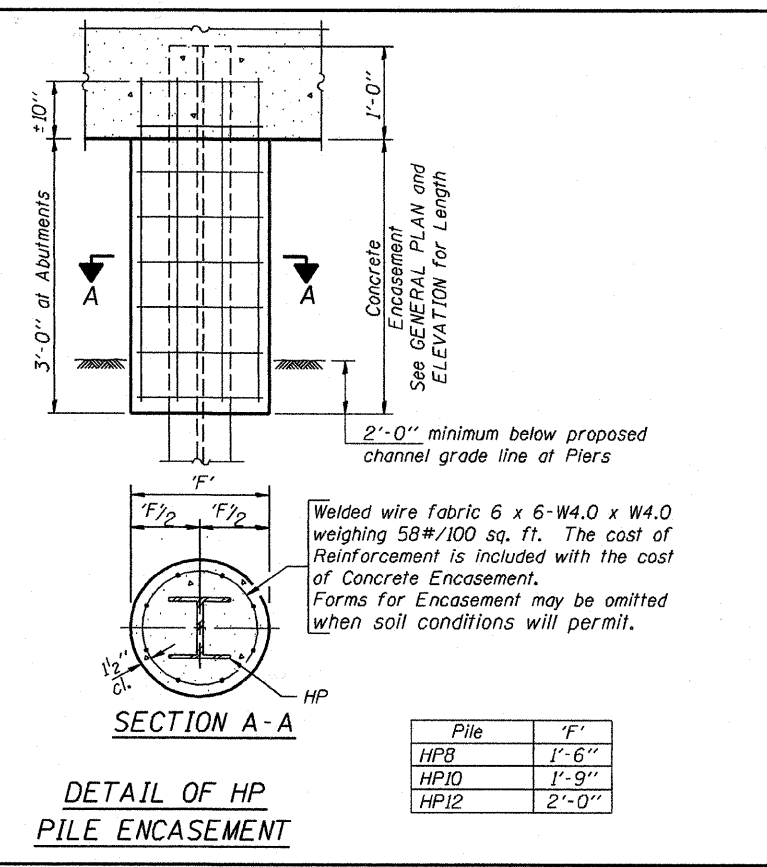


Illinois Department of Transportation

PASSED FEBRUARY 1, 2000
Thomas J. Romaszko
 Engineer of Bridge Design

APPROVED FEBRUARY 1, 2000
Ralph E. Anderson
 Engineer of Bridges and Structures

188-H-1 GENISS



QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)

Pile Size	Item	Quantity
HP8	Concrete Encasement	0.063 C.Y.
HP10	Concrete Encasement	0.086 C.Y.
HP12	Concrete Encasement	0.112 C.Y.

(METAL SHELL PILES)

Pile Size	Item	Quantity
12" Dia.	Concrete Encasement	0.087 C.Y.

PILE DETAILS

STANDARD CX-1