

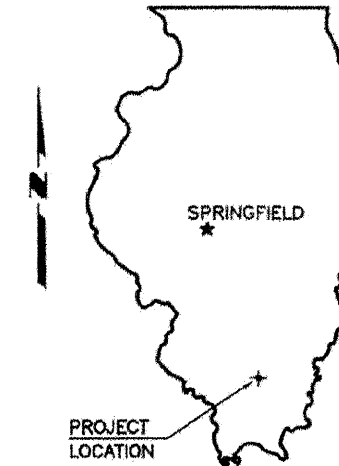
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM

TOWNSHIP ROUTE 320 (FRISCO ROAD)
NORTHERN TOWNSHIP

SECTION 06-10125-00-BR
PROJECT NO. BROS-055(52)
JOB NO. C-99-521-07
TAYLOR BRANCH

FRANKLIN COUNTY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	1
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	

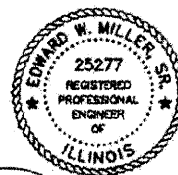


SUMMARY OF QUANTITIES

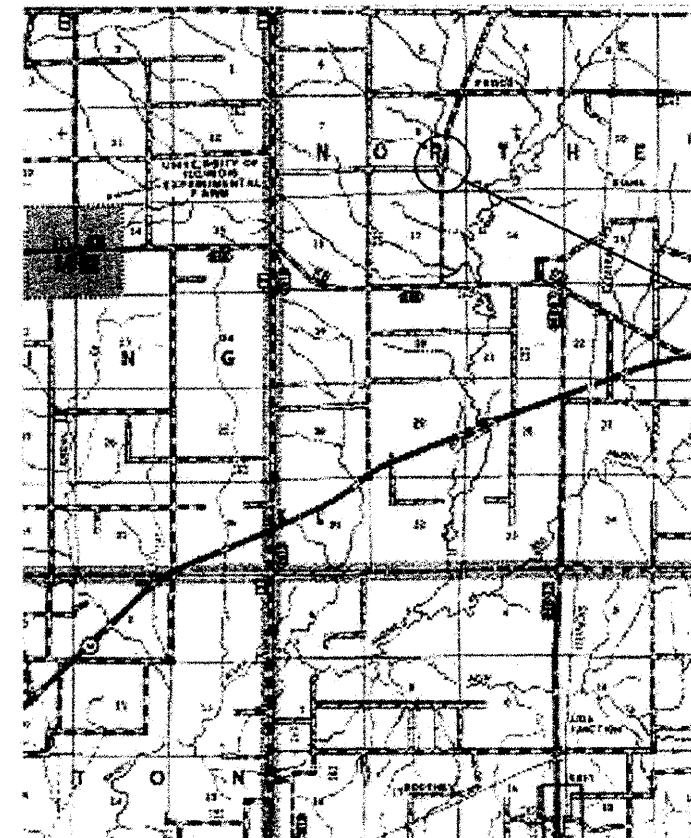
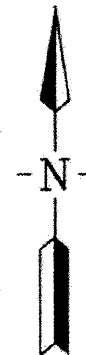
CODE NO.	PAY ITEM	UNIT	TOTAL
20200100	EARTH EXCAVATION	CU YD	1,105
20300100	CHANNEL EXCAVATION	CU YD	429
20400100	BORROW EXCAVATION	CU YD	761
25000200	SEEDING, CLASS 2	ACRE	1.1
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	99
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	99
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	99
25000700	AGRICULTURAL GROUND LIMESTONE	TON	2.2
* 25100120	MULCH, METHOD 2	TON	2.2
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	110
28000305	TEMPORARY DITCH CHECKS	FOOT	80
28000500	INLET AND PIPE PROTECTION	EACH	2
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	475
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	745
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	54
50200100	STRUCTURE EXCAVATION	CU YD	24
50300225	CONCRETE STRUCTURES	CU YD	18.8
50300280	CONCRETE ENCASEMENT	CU YD	2.1
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1,498
50800105	REINFORCEMENT BARS	POUND	2,438
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	125
51201400	FURNISHING STEEL PILES HP10X42	FOOT	182
51202305	DRIVING PILES	FOOT	182
51203400	TEST PILE STEEL HP10X42	EACH	1
51500100	NAME PLATES	EACH	1
54200223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	44
54200229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	38
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	16
Δ 63000002	STEEL PLATE BEAM GUARD RAIL, TYPE A 6.75 FOOT POSTS	FOOT	75
Δ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
*Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, (SPECIAL) TANGENT	EACH	2
67100100	MOBILIZATION	L SUM	1
*Δ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

* SEE SPECIAL PROVISIONS Δ SPECIALITY ITEMS

JOINT UTILITY LOCATION INFORMATION
FOR EXCAVATION
J.U.L.I.E. 1-800-892-0123
CONTACT 48 HOURS BEFORE EXCAVATING



Edward W. Miller
Edward W. Miller
PROFESSIONAL ENGINEER
#062-025277
EXPIRES NOV. 30, 2009



LOCATION MAP

SCALE: 1" = 2 MILES

NET LENGTH OF IMPROVEMENT = 737.00 FT. = 0.1396 MILES

INDEX OF SHEETS

1. COVER SHEET
 2. PLAN AND PROFILE
 3. GENERAL PLAN AND ELEVATION
 4. SUPERSTRUCTURE
 5. 27" x 36" PPC DECK BEAM
 6. 27" x 36" PCC DECK BEAM DETAILS
 7. 27" x 48" PCC DECK BEAM
 8. 27" x 48" PCC DECK BEAM DEATILS
 9. ABUTMENT
 10. STEEL RAILING
 11. NAME PLATES
 12. PILE DETAILS
 - 13.-14. CROSS SECTIONS
- STANDARDS 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-05 TEMPORARY EROSION CONTROL SYSTEMS
- BLR 26-2 STEEL PLATE BEAM GUARD RAIL, 27" x 2"
- 630301-05 SHOULDER WIDENING FOR TYPE1, (SPECIAL) GUARDRAIL TERMINALS
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701901-01 TRAFFIC CONTROL DEVICES
- BLR 21-8 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
- BLR 27-1 TRAFFIC BARRIER TERMINAL TYPE 5A

CLASSIFICATION : LOCAL ROAD
ADT : 175
DESIGN SPEED : 30 MPH

ILLINOIS DEPARTMENT OF TRANSPORTATION

Approved May 20, 2009
Melvin Edwards
Highway Commissioner Northern Township

Approved 5/14/2009
Bill A. Pelt
Franklin County Engineer

Passed May 29, 2009
Richard W. Melcher
District 9 Engineer of Local Roads and Streets

Releasing for Bid
Based on Limited
Review May 29, 2009
Mary C. Lamine
Deputy Director of Highways, Region 5 Engineer

E. MILLER ENGINEERING, INC.
CONSULTING ENGINEERS
HARRISBURG, ILLINOIS

CONTRACT NO. 99308

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	2
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	

B.M. - Double nail Power Pole
 34' Left of Station 13+31
 Elev. 437.00 (Assumed)

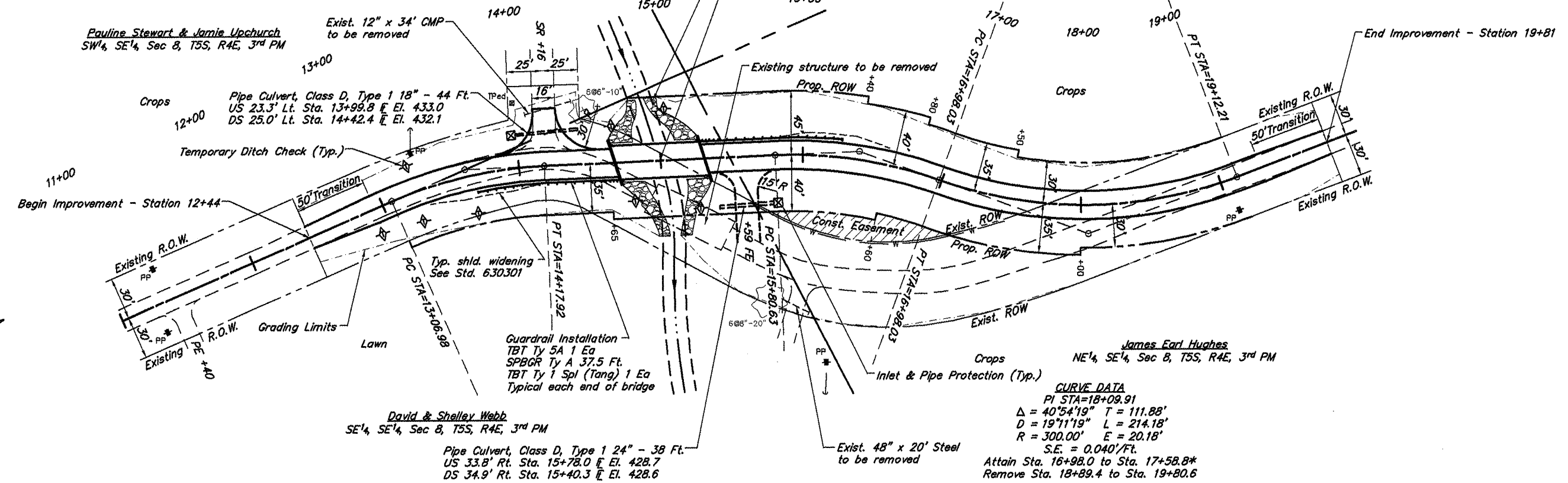
Existing Structure - Two span concrete deck with continuous steel stringers on one open and one closed timber pile bent abutments and one timber pile bent pier. 22.2' W x 60.2' L

CURVE DATA
 PI STA=13+63.09
 $\Delta = 21^{\circ}11'19''$ T = 56.11'
 $D = 19^{\circ}11'17''$ L = 110.94'
 R = 300.00' E = 5.20'
 S.E. = 0.040'/Ft.
 Attain Sta. 12+38.4 to Sta. 13+29.6
 Remove Sta. 13+76.2 to Sta. 14+67.4

Station 14+99.3 - Single span peccast prestressed concrete deck beam bridge, 64.09' bk-bk abutments, Skewed 15° Forward Rt.

Place Riprap from toe of slope to top of bank along full length of Channel
 Excavation - 285 Tons

CURVE DATA * SE reversed from Sta. 16+37.2 to Sta. 17+58.8
 PI STA=16+40.09
 $\Delta = 22^{\circ}25'17''$ T = 59.46'
 $D = 19^{\circ}11'17''$ L = 117.40'
 R = 300.00' E = 5.84'
 S.E. = 0.040'/Ft.
 Attain Sta. 15+31.4 to Sta. 16+22.6
 Remove Sta. 16+37.2 to Sta. 16+98.0*

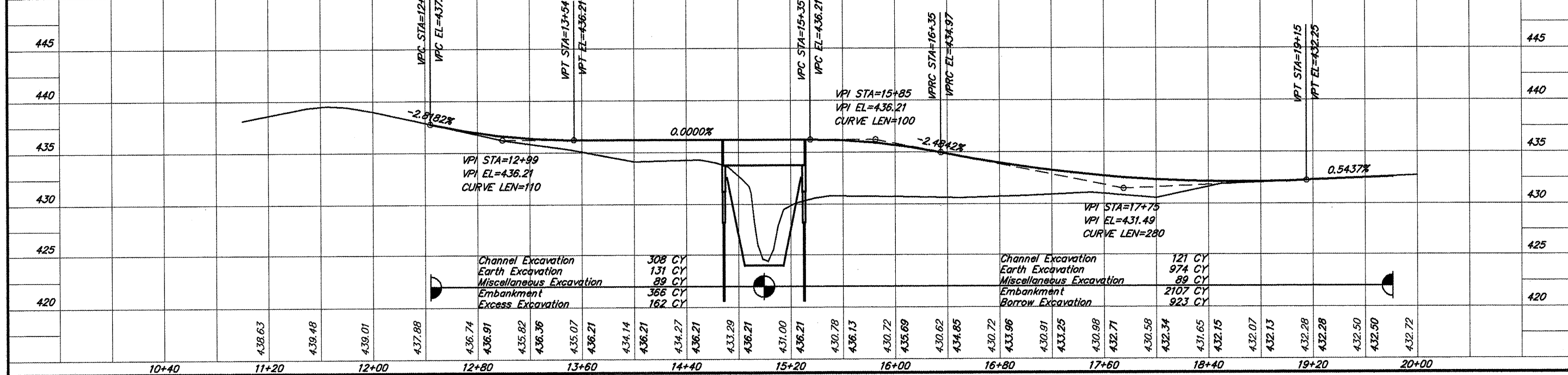
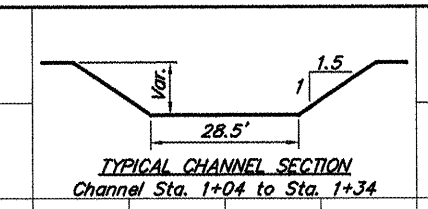
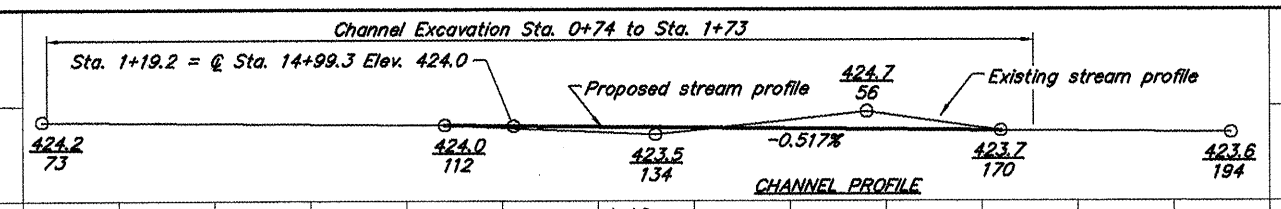
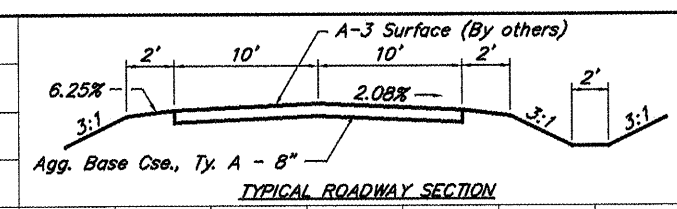


Pauline Stewart & Jamie Upchurch
 SW 1/4, SE 1/4, Sec 8, T5S, R4E, 3rd PM

James Earl Hughes
 NE 1/4, SE 1/4, Sec 8, T5S, R4E, 3rd PM

David & Shelley Webb
 SE 1/4, SE 1/4, Sec 8, T5S, R4E, 3rd PM

SCALES:
 1" = 80' HOR
 1" = 10' VER

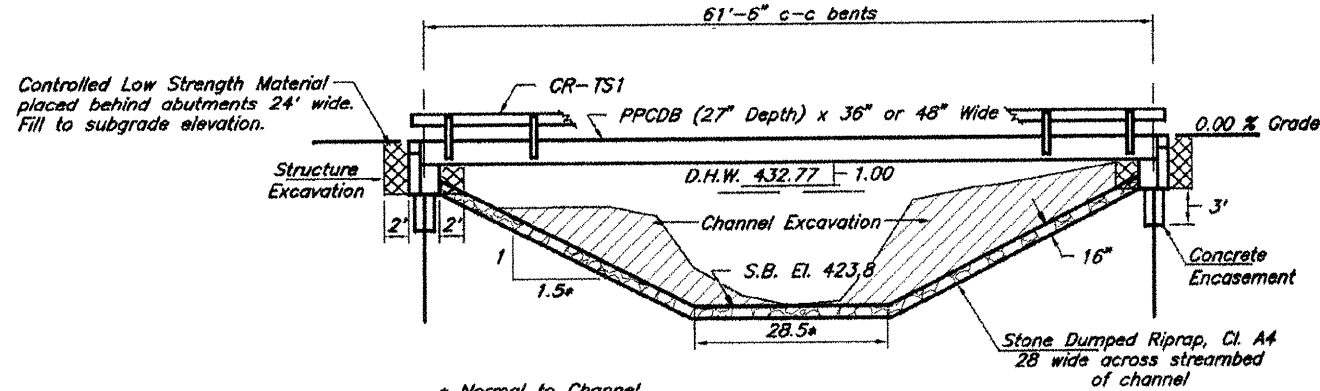


Channel Excavation 308 CY
 Earth Excavation 131 CY
 Miscellaneous Excavation 89 CY
 Embankment 366 CY
 Excess Excavation 162 CY

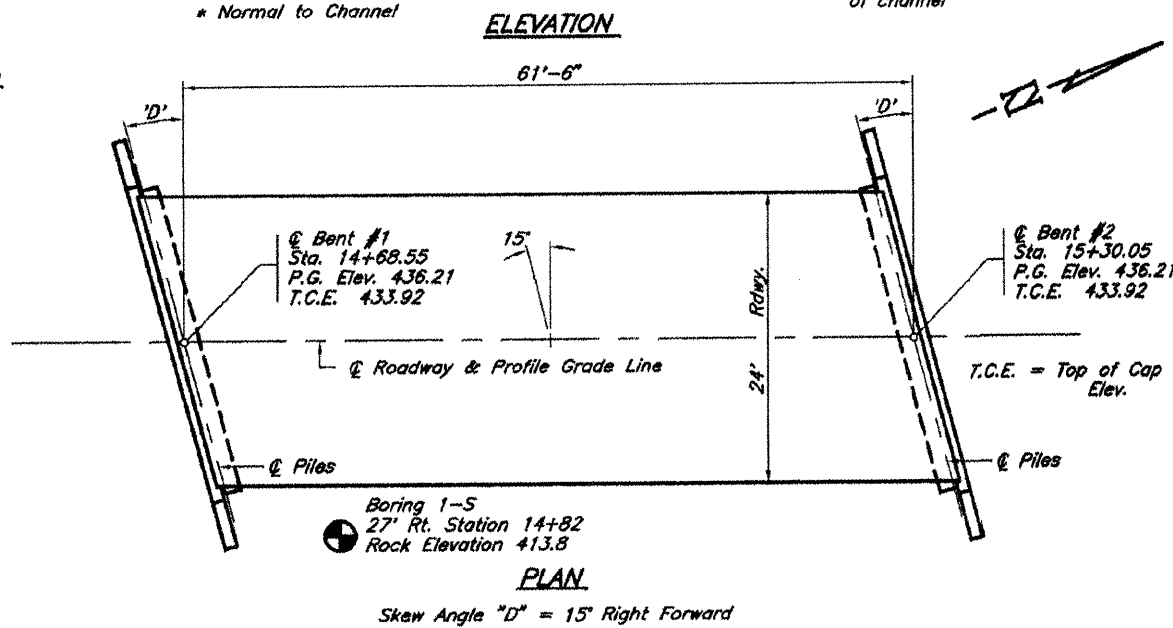
Channel Excavation 121 CY
 Earth Excavation 974 CY
 Miscellaneous Excavation 89 CY
 Embankment 2107 CY
 Borrow Excavation 923 CY

B.M. - Double nail in Power Pole
 34' Left of Station 13+31
 Elevation 437.00 (Assumed)

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	3
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	



Existing Structure - Two span concrete deck with continuous steel stringers on one span and one closed timber pile bent abutments and one timber pile bent pier. 22.2' W x 60.2' L



GENERAL NOTES

- Steel H piles shall meet AASHTO M270 Grade 50 specifications.
- Test Piles shall be driven to 110% of the Nominal Required Bearing indicated in the pile data.
- The Contractor shall drive one test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See special provisions for boring logs.
- A Corrosion inhibitor, as covered in the Standard Specifications, shall be used in the precast prestressed concrete deck beams.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Concrete Structures	Cu. Yds.			18.8	18.8
Concrete Encasement	Cu. Yds.			2.1	2.1
P.P. Conc. Dk. Bm. 27" Dp.	Sq. Ft.	1,498			1,498
Steel Railing, Type S1	Foot	125			125
Reinforcement Bars	Pound			2,438	2,438
Furnishing Steel Piles HP10X42	Foot			182	182
Driving Piles	Foot			182	182
Test Pile Steel HP10X42	Each			1	1
Name Plates	Each			1	1
Structure Excavation	Cu. Yds.			24	24
Channel Excavation	Cu. Yds.			429	429
Stone Dumped Riprap, Class A4	Tons			190	190
Controlled Low Strength Material	Cu. Yds.			16	16

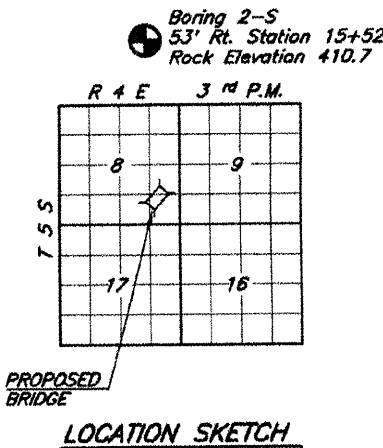
PILE DATA (2-ABUTS.)

Type & Size : HP10X42
 Nominal Required Bearing : 335 kips
 Factored Resistance Available : 167 kips
 Estimated Length : 26 Feet
 Number Required : 8 (Includes 1 Test Pile located in Bent #2)

TAYLOR BRANCH
 SEC. 06-10125-00-BR BUILT 20
 NORTHERN TOWNSHIP
 FRANKLIN COUNTY
 LOADING HL-93
 STR. NO. 028-3403

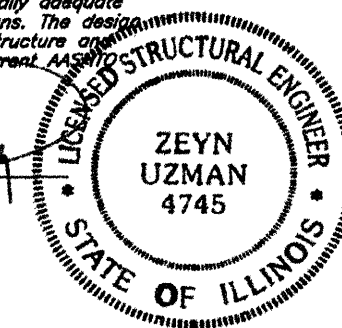
LETTERING FOR NAME PLATE

Locate Name Plate at southeast Corner of Bridge (See Std. CN)



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 type of structure and comply with the requirements of the current AASHTO LRFD Specifications.

(Signature)
 Zejn B. Uzman
 S.E. #81-4745
 Expires Nov. 30, 2010



DESIGN SPECIFICATIONS
 2007 AASHTO LRFD Bridge Design Specifications and all applicable interims.

LOADING HL-93
 Allow 50#/sq. ft. for future wearing surface

SEISMIC DATA
 Seismic Performance Category (SPC) = B
 Bedrock Acceleration Coefficient (A) = 10.0%
 Site Coefficient (S) = 1.0

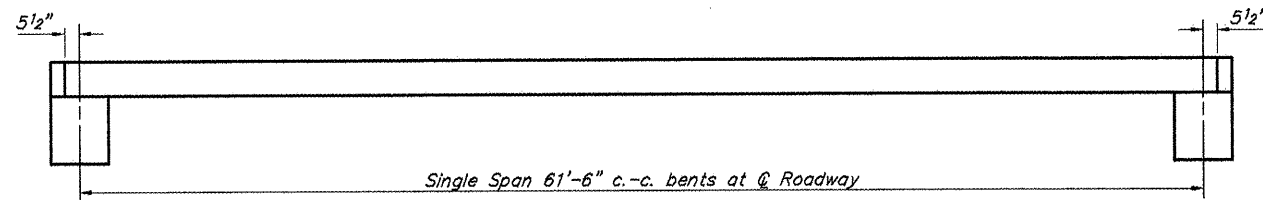
WATERWAY INFORMATION

Flood		Q		Opening Sq. Ft.		Natural Head-Ft.		Headwater El.	
Freq. Yr.	C.F.S.	Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	15	1730	240.5	375.1	432.77	0.09	0.03	432.86	432.80
Base	100	2890	240.5	422.3	433.60	0.00	0.99	433.60	434.59
Overtopping	±349	3746		432.0	434.09		2.12		436.21
Max. Calc.	500								

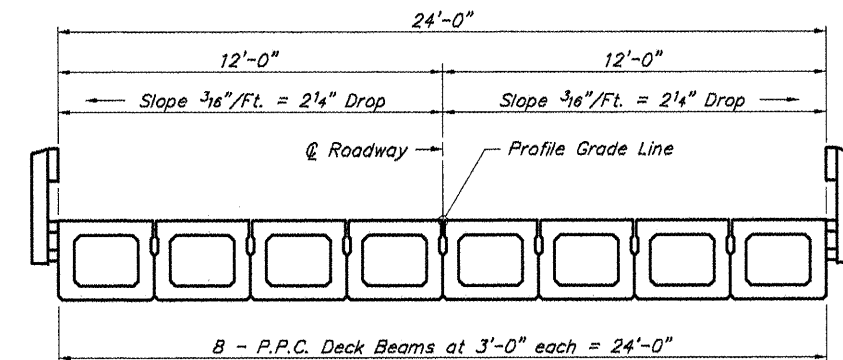
Over Road Flow (Sq Ft): Exist. 316.1 2547.5
 Note: Deck elevation used for overtopping to allow for future raising of the approaches

GENERAL PLAN & ELEVATION
 TOWNSHIP ROUTE 320
 TAYLOR BRANCH
 SECTION 06-10125-00-BR
 FRANKLIN COUNTY
 STATION 14+99.3

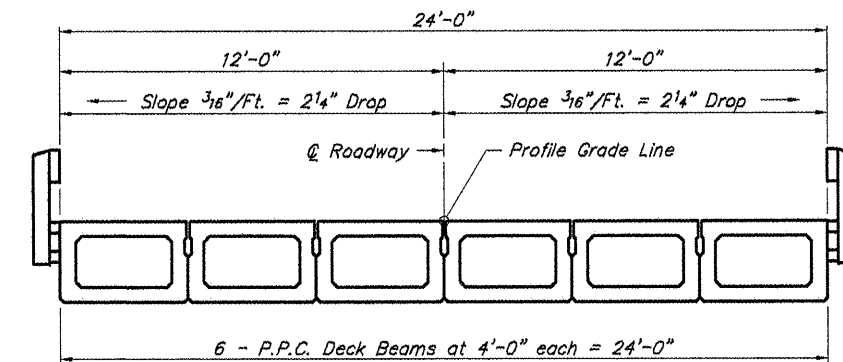
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
TR 320	06-10125-00-BR	FRANKLIN	14	4
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	



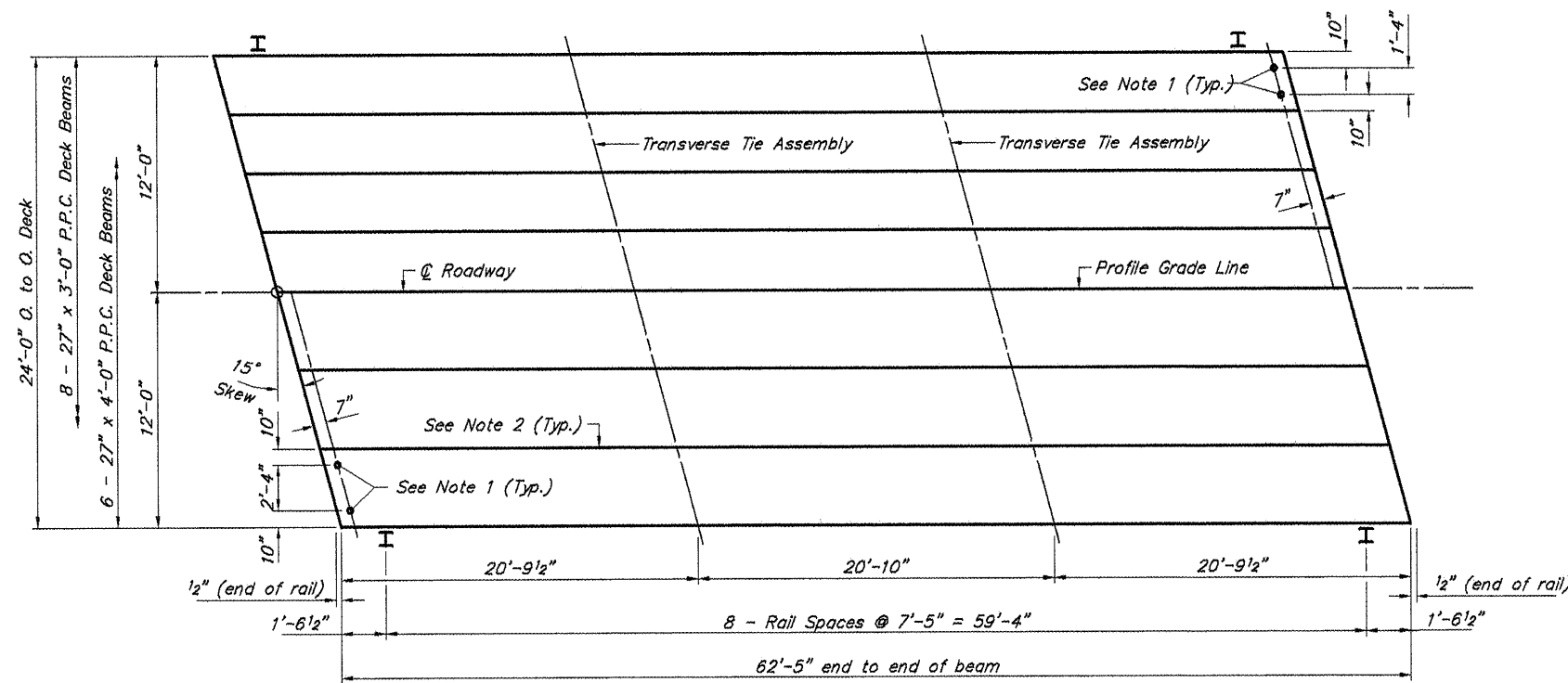
ELEVATION



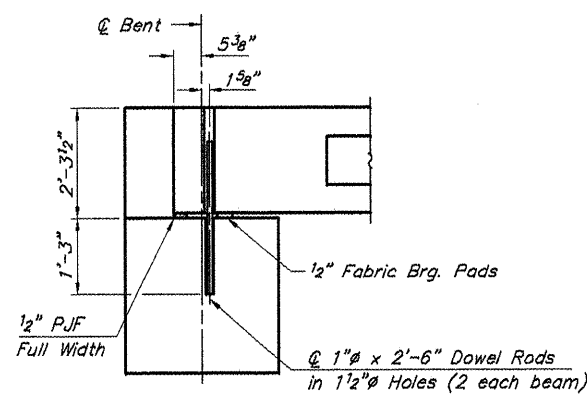
CROSS SECTION



CROSS SECTION



PLAN



SECTION AT ABUTMENTS

(Along \bar{C} Beams)

NOTES

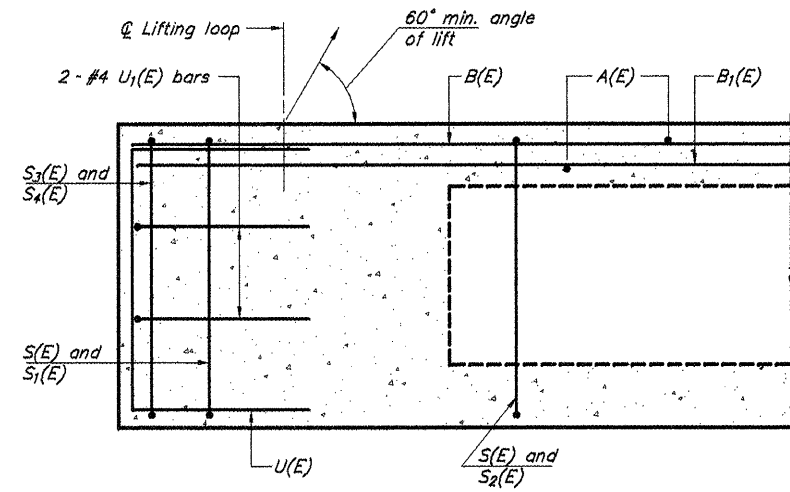
1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Longitudinal keys shall be grouted.

QUANTITIES FOR ONE SPAN

P.P.C. Deck Beams (27" Depth)	1,498 Sq. Ft.
Steel Railing, Type S1	125 Ft.

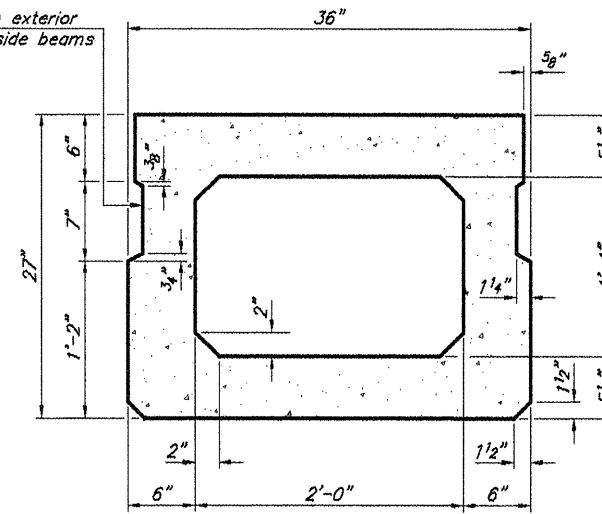
SUPERSTRUCTURE
TOWNSHIP ROUTE 320 (FRISCO ROAD)
TAYLOR BRANCH
SECTION 06-10125-00-BR
FRANKLIN COUNTY
STRUCTURE NO. 028-3403

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	5
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	

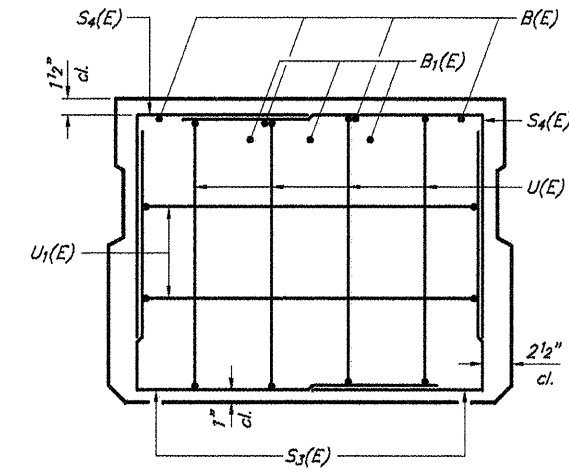


SECTION C-C

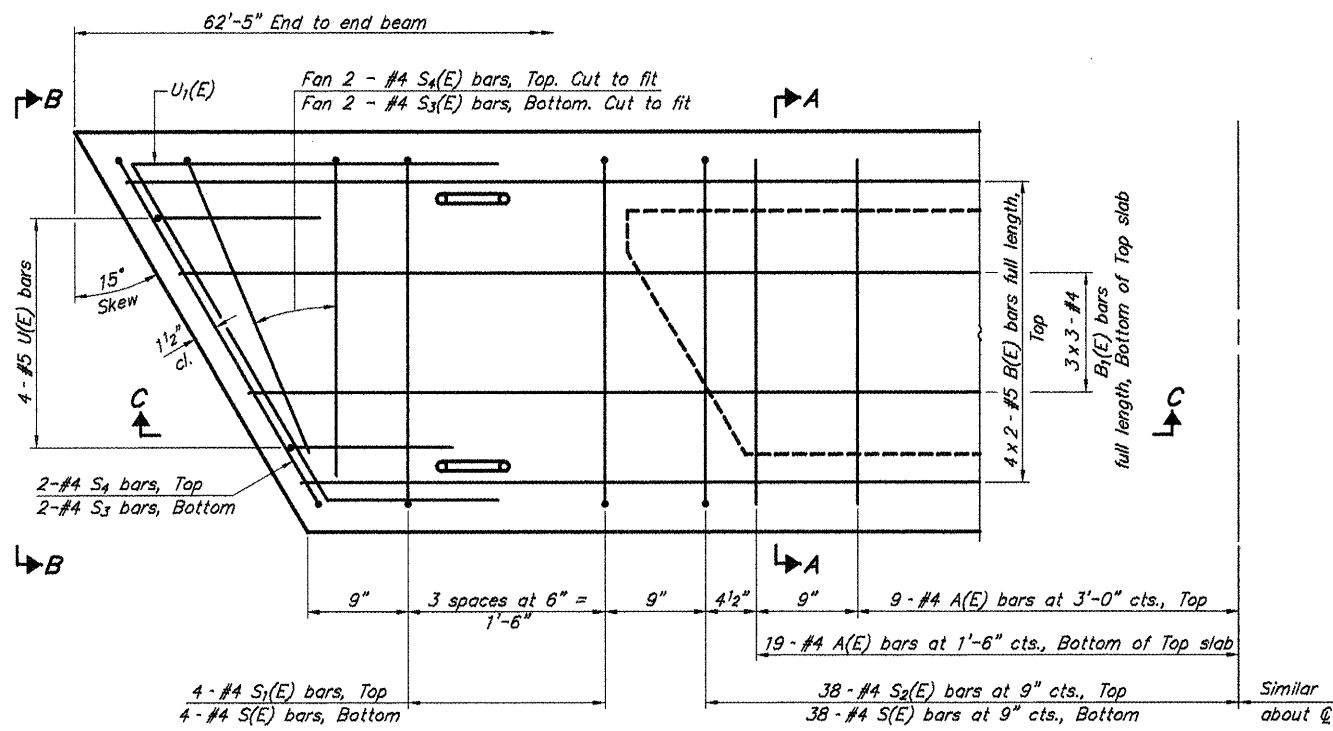
Omit key on exterior face of outside beams



SECTION A-A
(Showing dimensions)

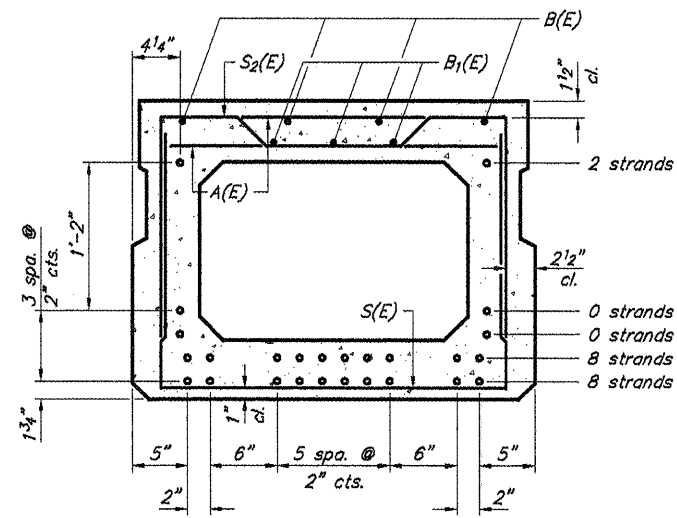


VIEW B-B



PLAN VIEW

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



SECTION A-A
(Showing reinforcement and permissible strand locations)

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

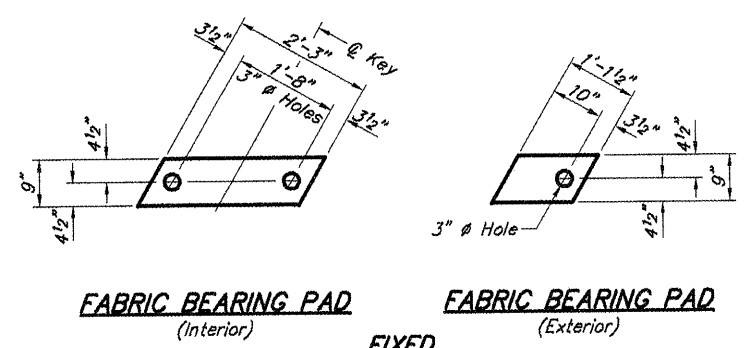
BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	56	#4	2'-7"	—
B(E)	8	#5	32'-1"	—
B1(E)	9	#4	21'-10"	—
S(E)	84	#4	6'-5"	—
S1(E)	8	#4	5'-11"	□
S2(E)	76	#4	6'-2"	□
S3(E)	8	#4	4'-2"	—
S4(E)	8	#4	3'-11"	—
U(E)	8	#5	4'-6"	—
U1(E)	4	#4	5'-9"	—

BAR LAPS
#4 bars = 1'-6"
#5 bars = 2'-2"

27" X 36" PPC DECK BEAM
TOWNSHIP ROUTE 320 (FRISCO ROAD)
TAYLOR BRANCH
SECTION 06-10125-00-BR
FRANKLIN COUNTY
STRUCTURE NO. 028-3403

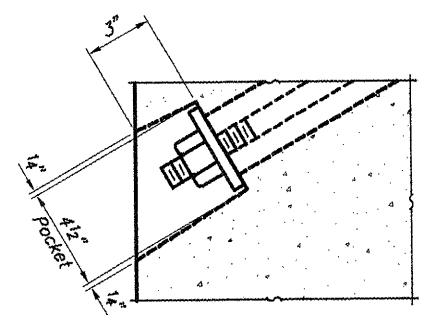
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
TR 320	06-10125-00-BR	FRANKLIN	14	6
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	



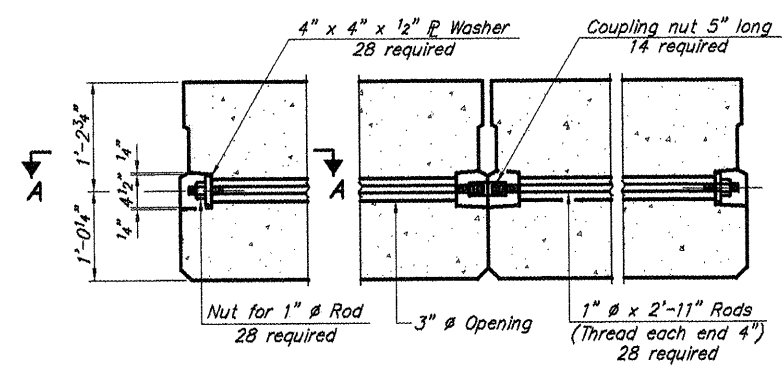
FABRIC BEARING PAD
(Interior) **FABRIC BEARING PAD**
(Exterior)

FIXED

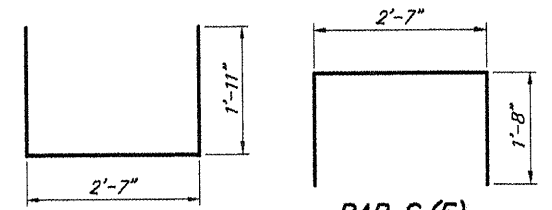
Note: Omit holes when using expansion bearings.



SECTION A-A

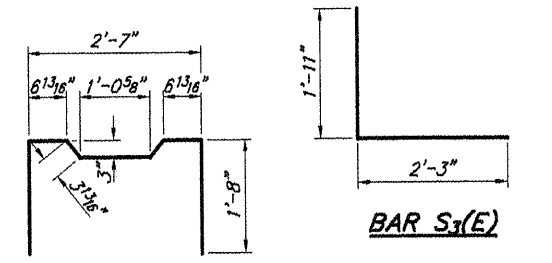


TYPICAL TRANSVERSE TIE ASSEMBLY



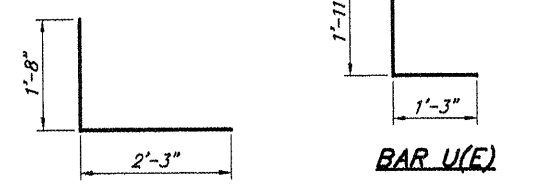
BAR S(E)

BAR S1(E)



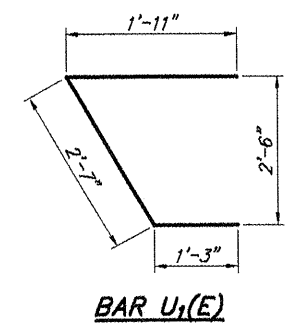
BAR S2(E)

BAR S3(E)

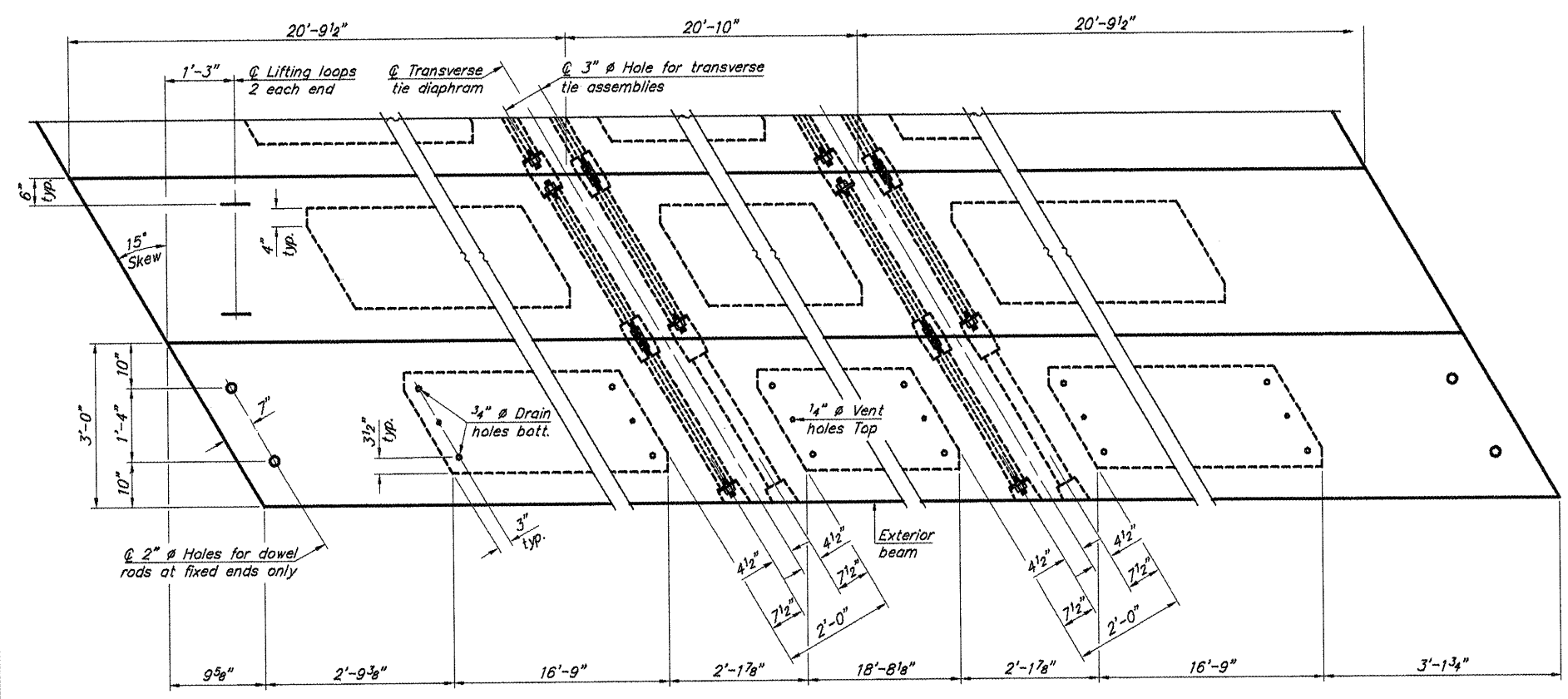


BAR S4(E)

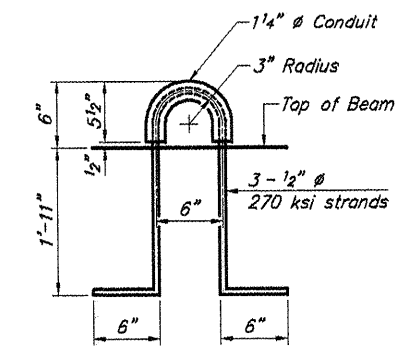
BAR U(E)



BAR U1(E)



PLAN VIEW



LIFTING LOOP DETAIL

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

NOTES

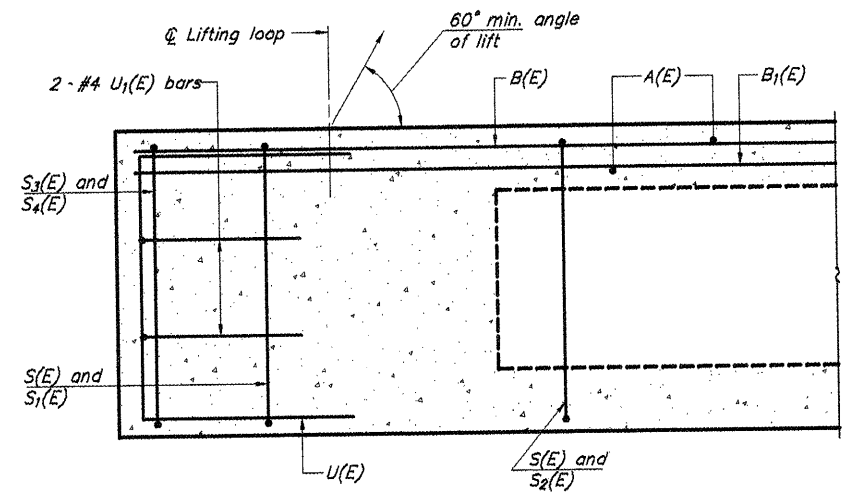
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,498
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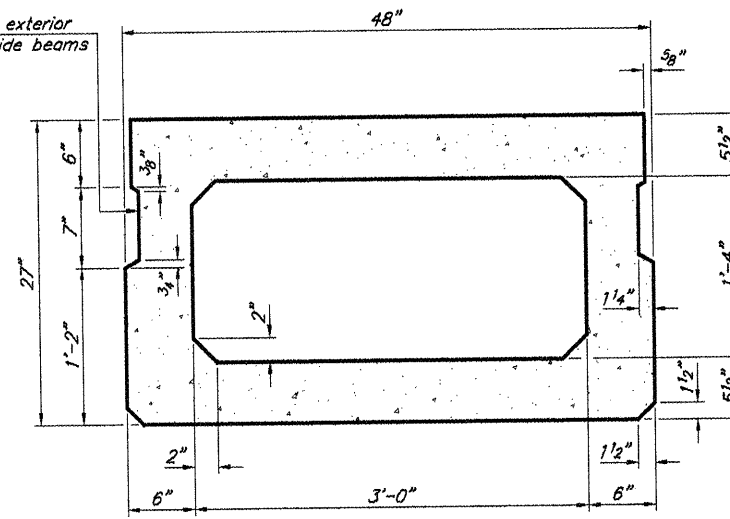
27" X 36" PPC DECK BEAM DETAILS
TOWNSHIP ROUTE 320 (FRISCO ROAD)
TAYLOR BRANCH
SECTION 06-10125-00-BR
FRANKLIN COUNTY
STRUCTURE NO. 028-3403

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
TR 320	06-10125-00-BR	FRANKLIN	14	7
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	

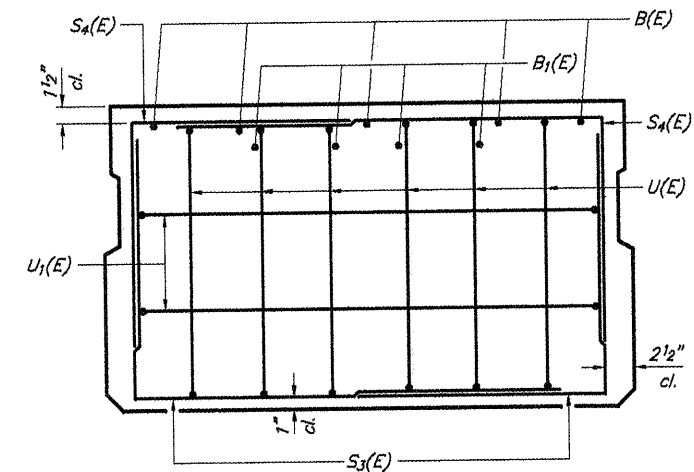


SECTION C-C

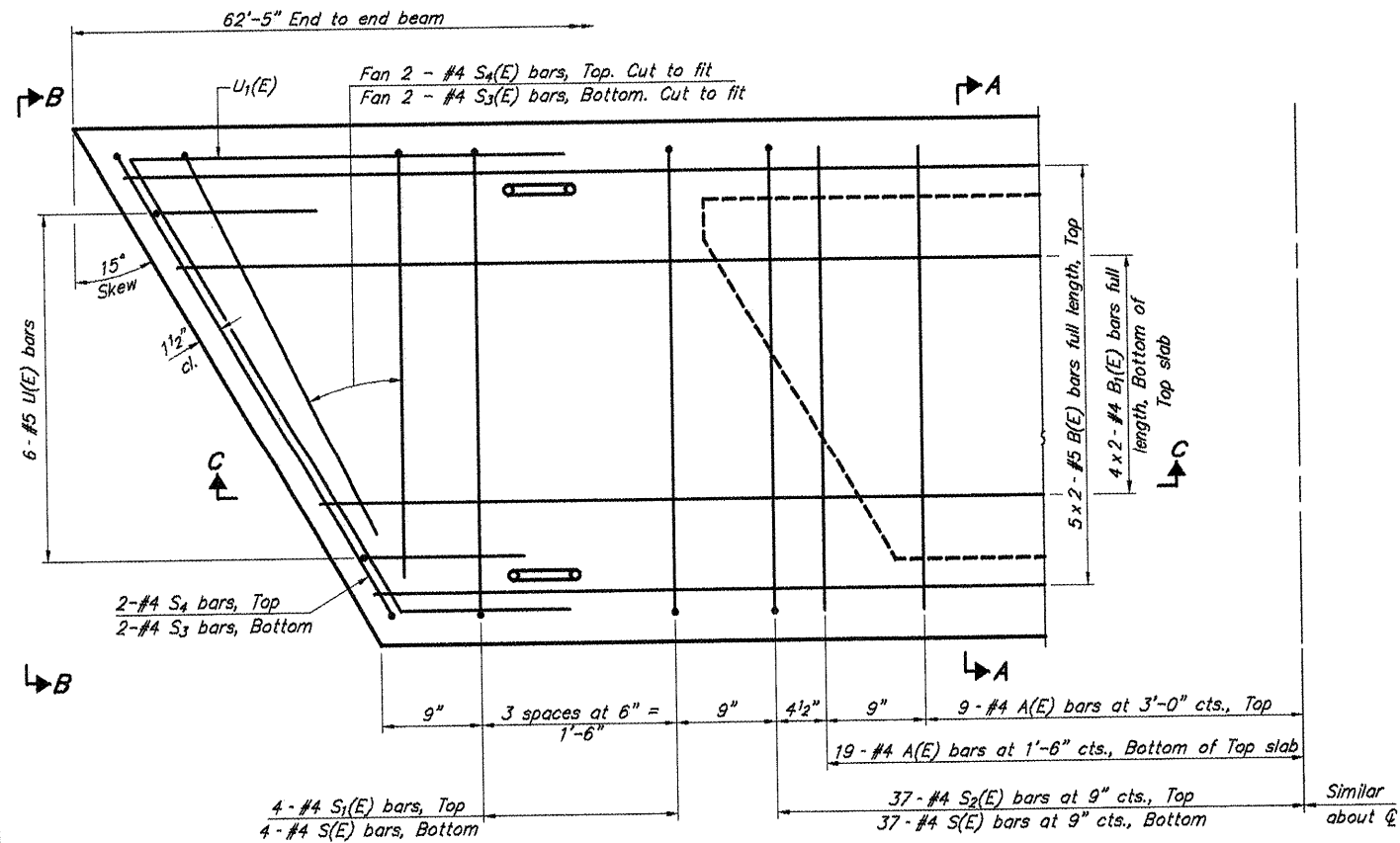
Omit key on exterior face of outside beams



SECTION A-A
(Showing dimensions)

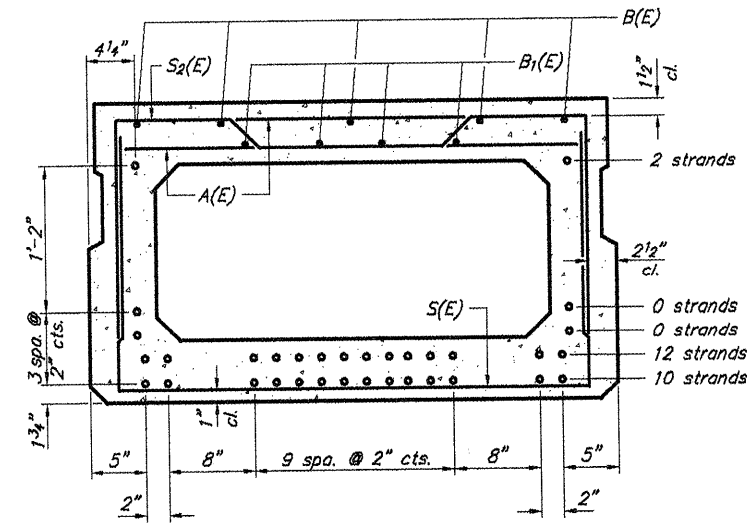


VIEW B-B



PLAN VIEW

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



SECTION A-A
(Showing reinforcement and permissible strand locations)

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

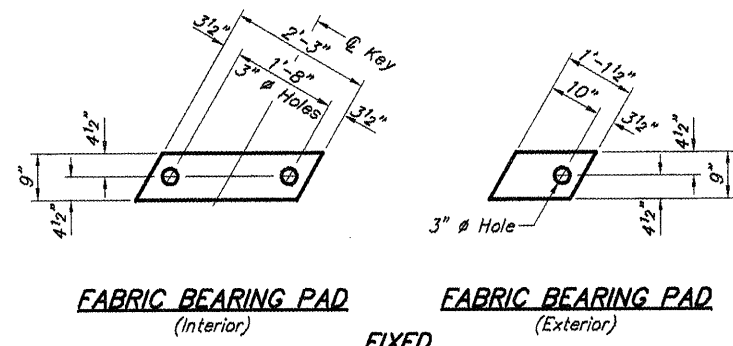
BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	56	#4	3'-7"	—
B(E)	10	#5	32'-7"	—
B1(E)	12	#4	22'-2"	—
S(E)	82	#4	7'-5"	┌
S1(E)	8	#4	6'-11"	┌
S2(E)	74	#4	7'-2"	┌
S3(E)	8	#4	4'-8"	┌
S4(E)	8	#4	4'-5"	┌
U(E)	12	#5	4'-6"	┌
U1(E)	4	#4	7'-1"	┌

BAR LAPS
#4 bars = 1'-8"
#5 bars = 2'-2"

27" X 48" PPC DECK BEAM
TOWNSHIP ROUTE 320 (FRISCO ROAD)
TAYLOR BRANCH
SECTION 06-10125-00-BR
FRANKLIN COUNTY
STRUCTURE NO. 028-3403

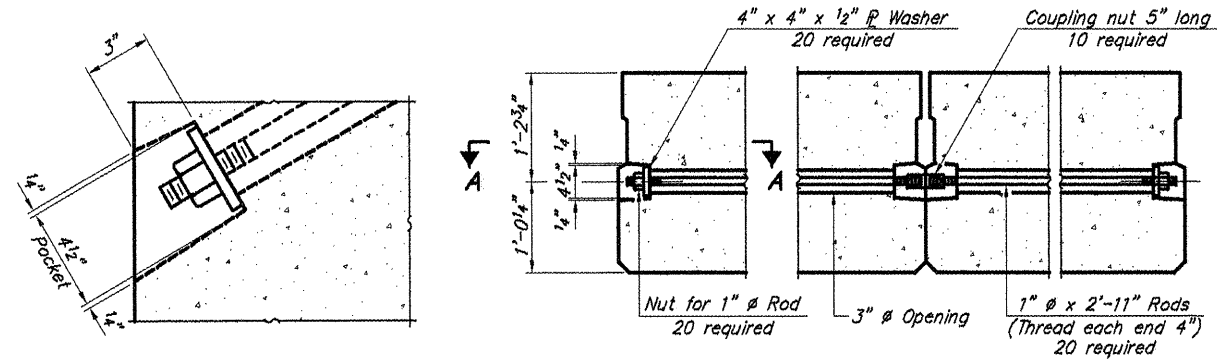
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	8
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	



FABRIC BEARING PAD
(Interior) **FABRIC BEARING PAD**
(Exterior)

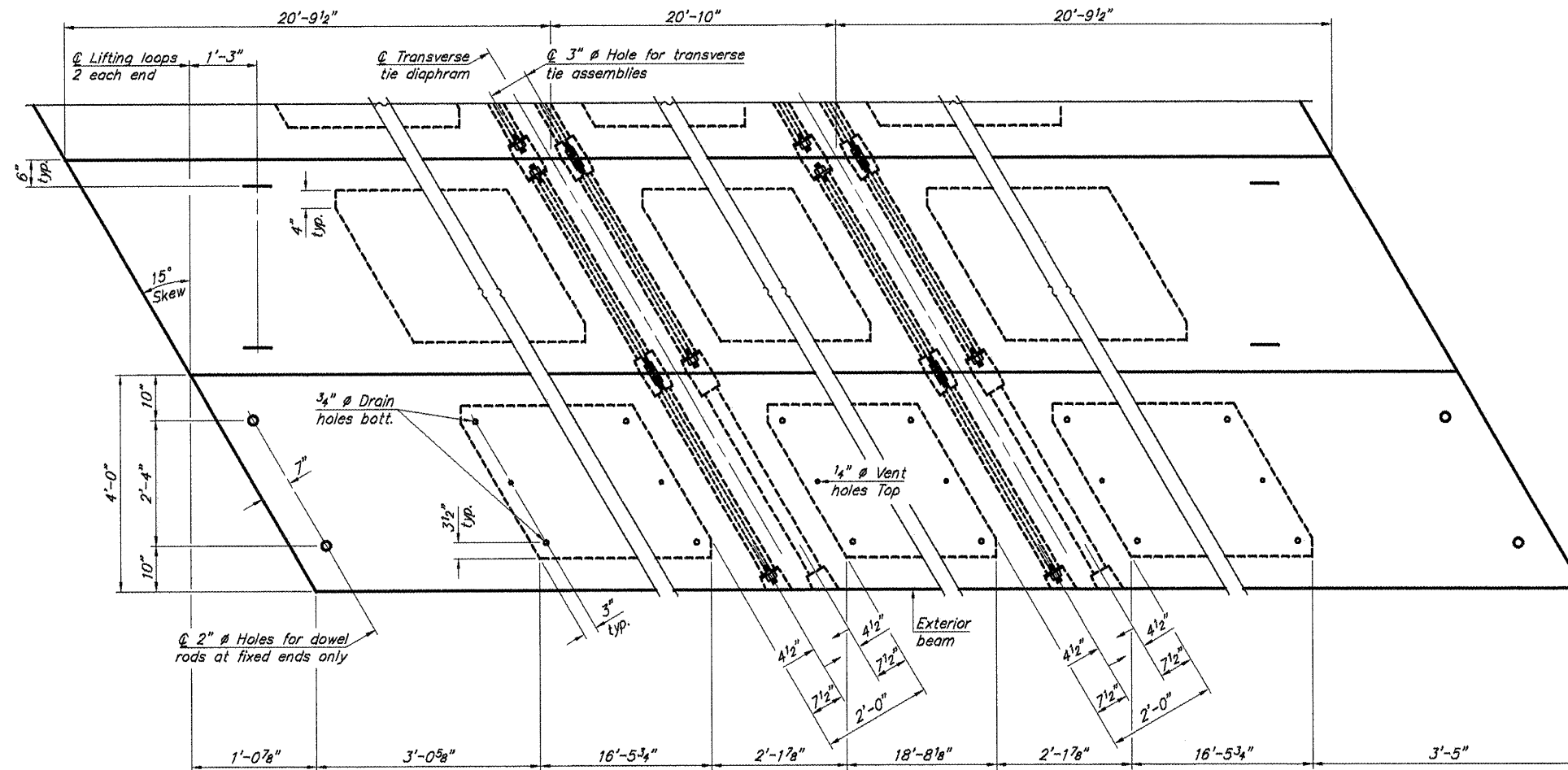
FIXED

Note: Omit holes when using expansion bearings.

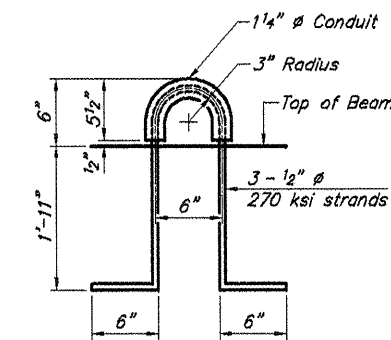


SECTION A-A

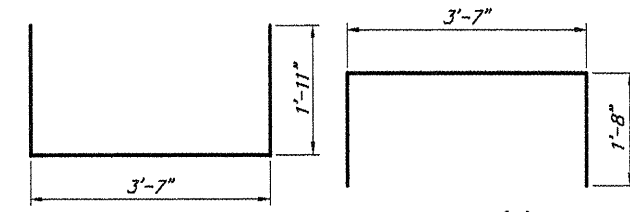
TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW



LIFTING LOOP DETAIL



BAR S(E)

BAR S₁(E)

BAR S₂(E)

BAR S₃(E)

BAR S₄(E)

BAR U(E)

BAR U₁(E)

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

NOTES

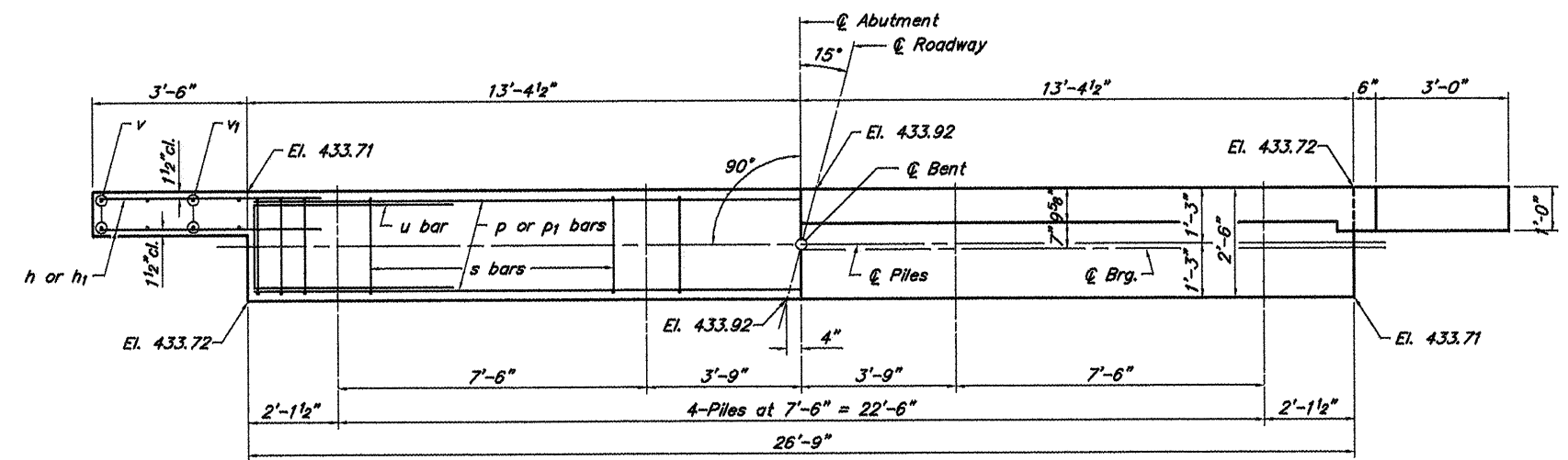
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
- Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.
- Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

BILL OF MATERIAL

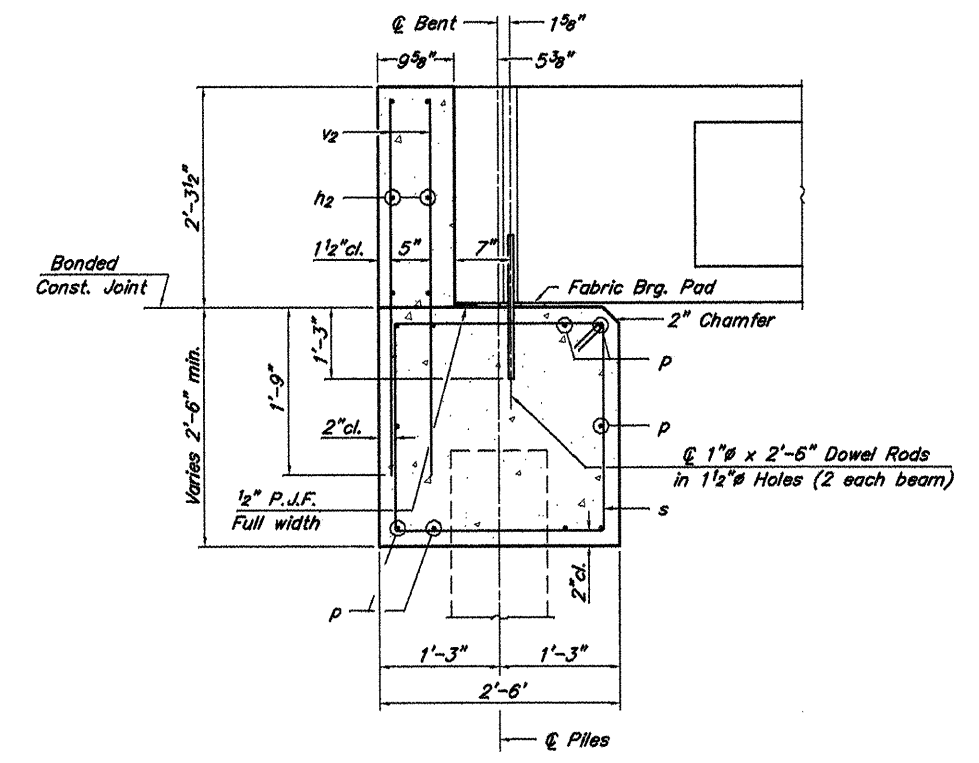
Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,498
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27" X 48" PPC DECK BEAM DETAILS
TOWNSHIP ROUTE 320 (FRISCO ROAD)
TAYLOR BRANCH
SECTION 06-10125-00-BR
FRANKLIN COUNTY
STRUCTURE NO. 028-3403

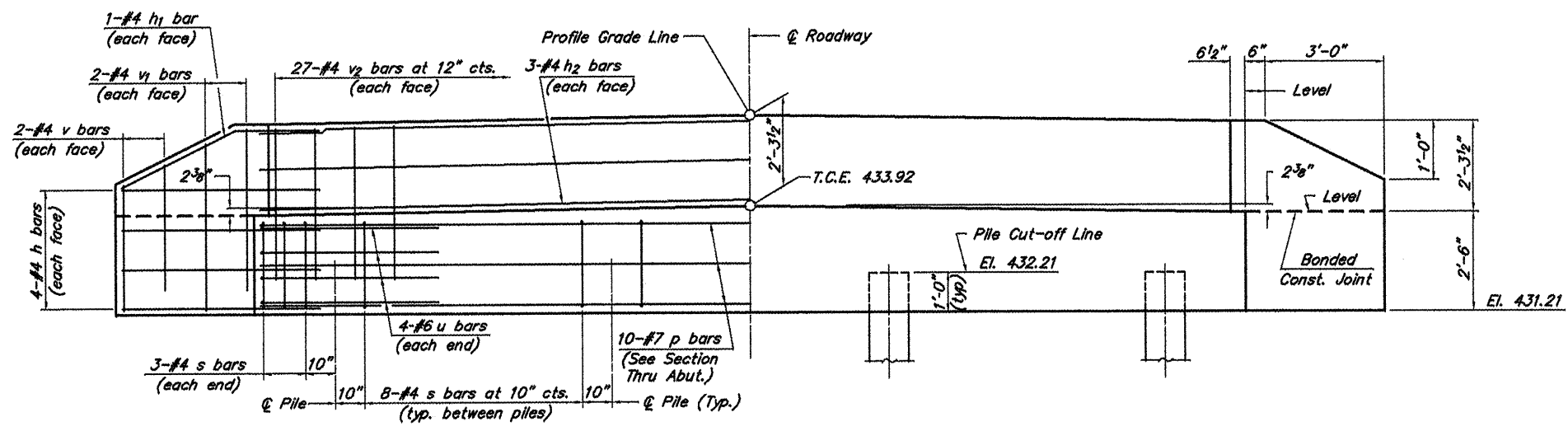
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	9
PROJECT NO. BROS-055(52)			CONTRACT NO. 99308	



PLAN



SECTION THRU ABUT.
(At Right Angles)



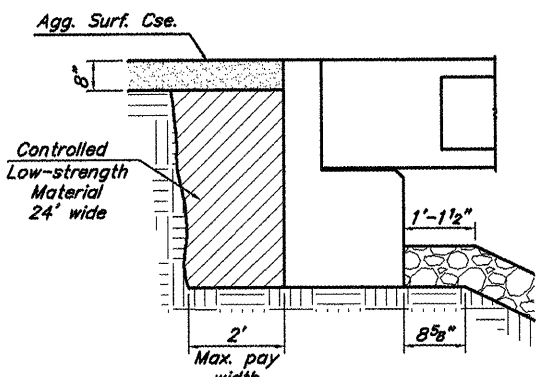
ELEVATION

BAR LIST FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-0"	—
h2	6	#4	26'-5"	—
p	10	#7	26'-5"	—
s	27	#4	9'-5"	□
u	8	#6	11'-1"	—
v	8	#4	3'-8"	—
v1	8	#4	4'-4"	—
v2	54	#4	3'-11"	—

QUANTITIES FOR ONE ABUTMENT

Concrete Structures	9.4	Cu. Yds.
Reinforcement Bars	1,219	Lbs.



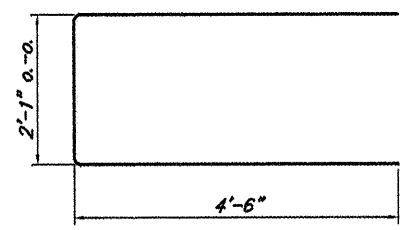
BACKFILL & BERM DETAIL

NOTES

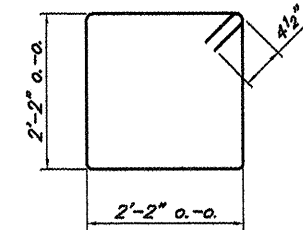
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

DESIGN STRESSES

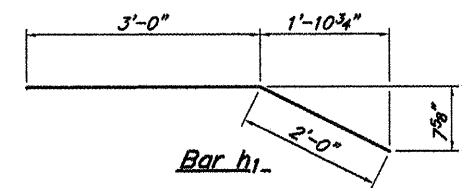
$f_c' = 3,500$ psi
 $f_y = 60,000$ psi



Bar u



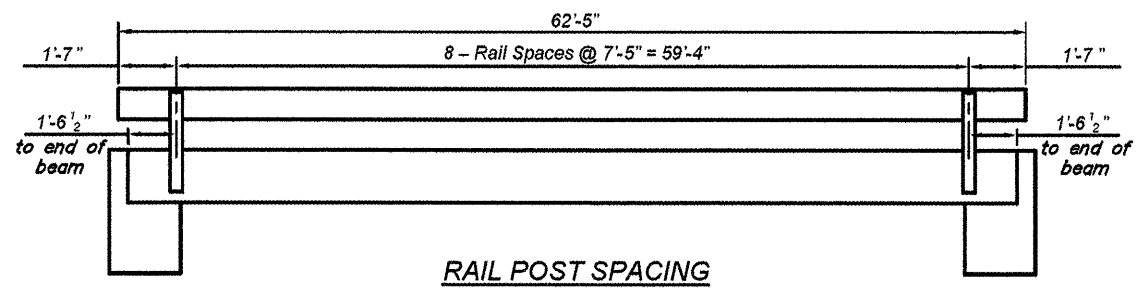
Bar s



Bar h1

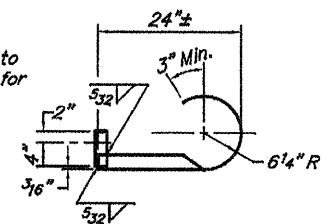
ABUTMENT
TOWNSHIP ROUTE 320 (FRISCO ROAD)
TAYLOR BRANCH
SECTION 06-10125-00-BR
FRANKLIN COUNTY
STRUCTURE NO. 028-3403

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	10
PROJECT NO. BROS-055(52)		CONTRACT NO. 99308		

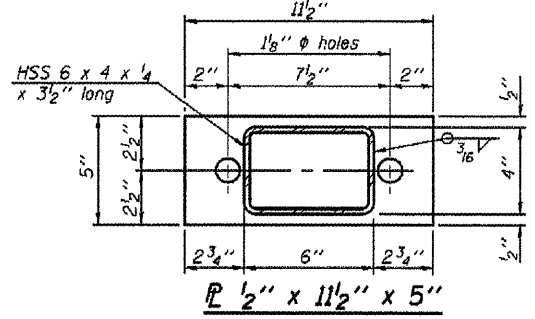


RAIL POST SPACING

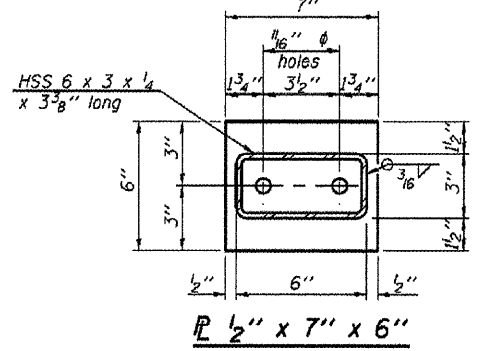
NOTE: Curled End Section to be included in the cost for Steel Railing, Type S1 Two (2) required.



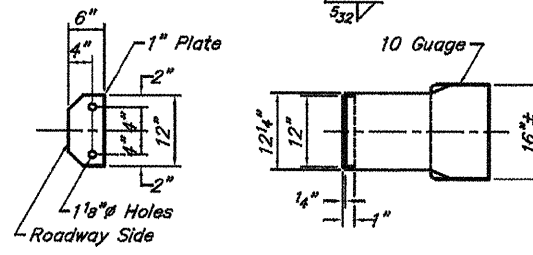
CURLLED END SECTION DETAILS



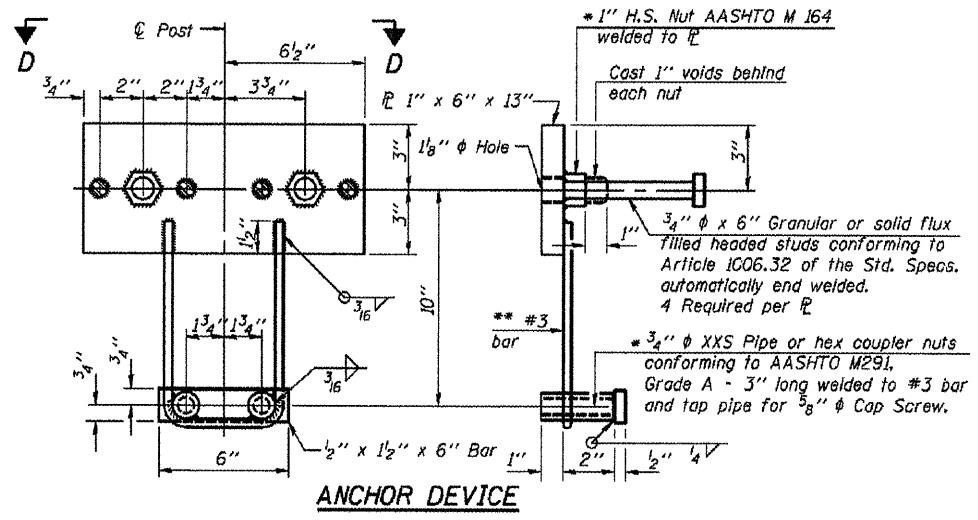
RAIL POST SPACING



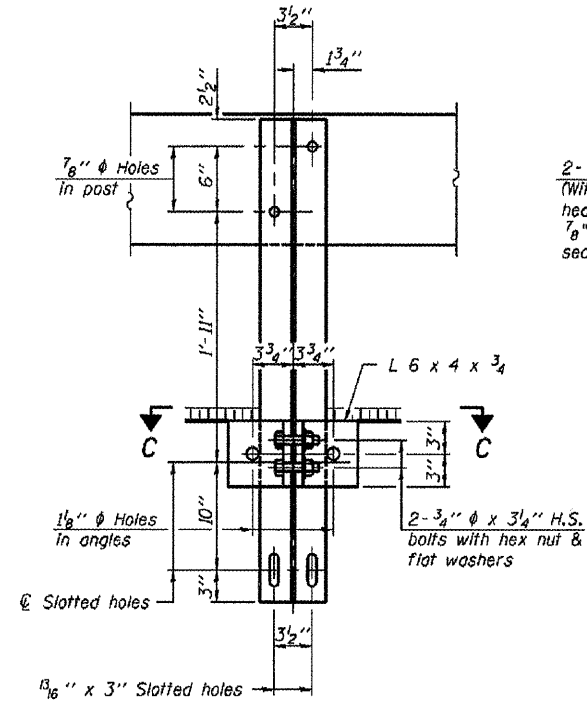
RAIL POST SPACING



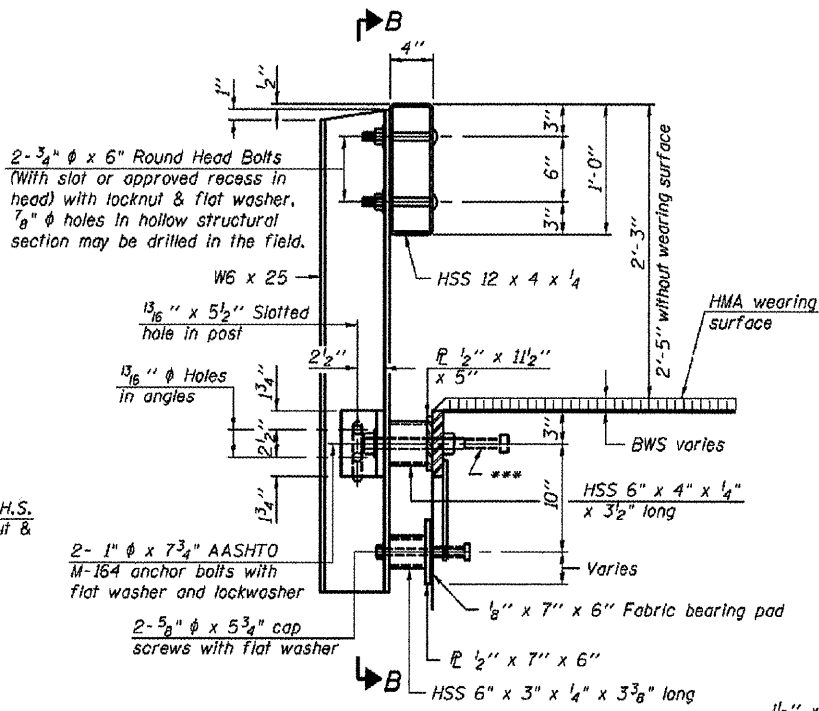
CURLLED END SECTION DETAILS



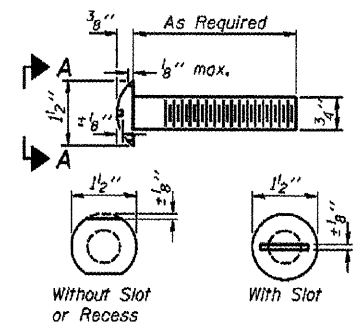
ANCHOR DEVICE



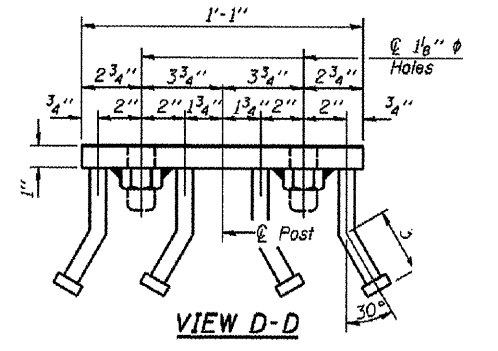
SECTION B-B



SECTION AT RAILING POST



VIEW A-A ROUND HEAD BOLT

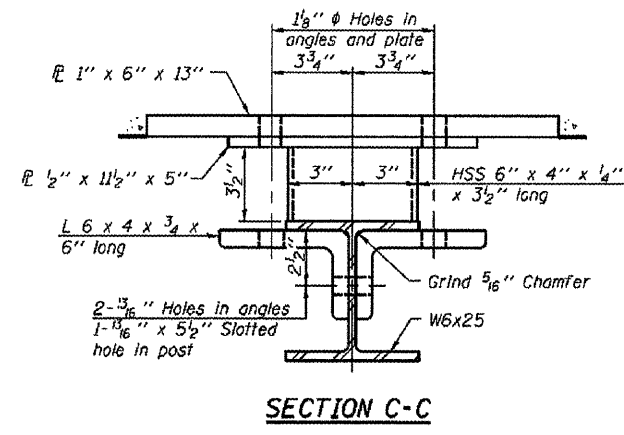


VIEW D-D

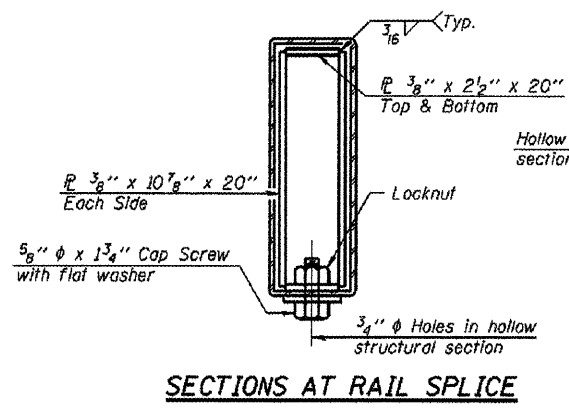
Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
 * Threaded areas shall be plugged or blocked off during casting of beam.
 ** 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".
 *** 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.
 10'-9" Maximum Post Spacing

BILL OF MATERIAL

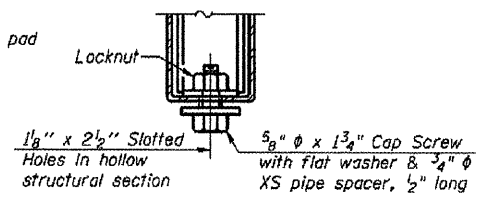
Item	Unit	Quantity
Steel Railing, Type S-1	Foot	118



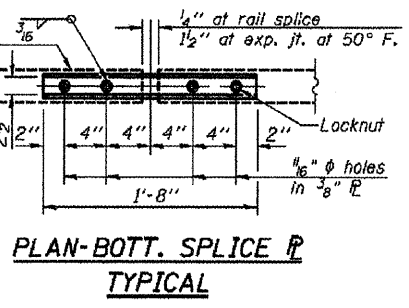
SECTION C-C



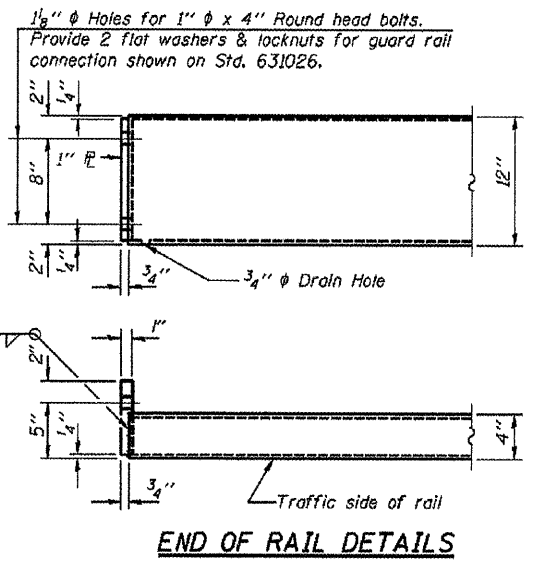
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



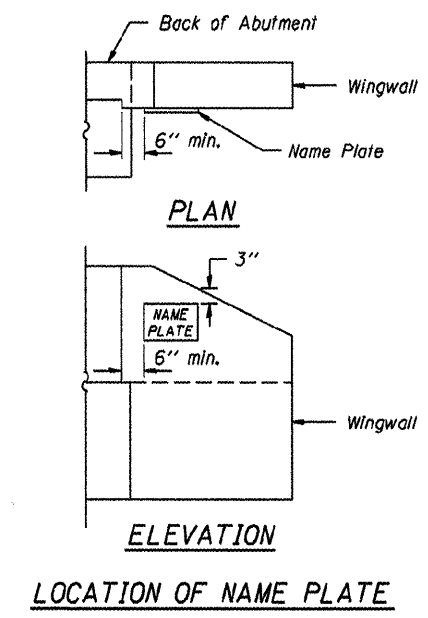
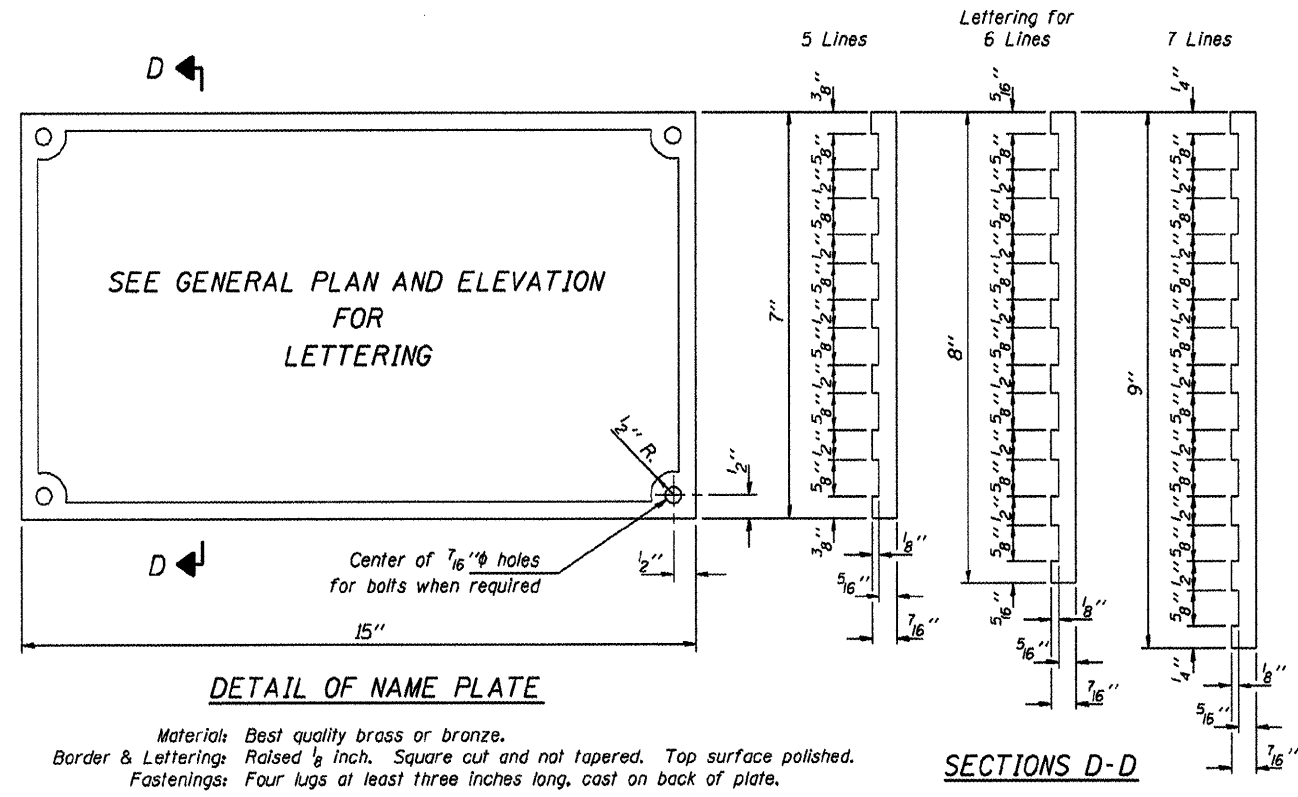
PLAN-BOTT. SPLICE TYPICAL



END OF RAIL DETAILS

STEEL RAILING, TYPE S-1
 TOWNSHIP ROUTE 320 (FRISCO ROAD)
 TAYLOR BRANCH
 SECTION 06-10125-00-BR
 FRANKLIN COUNTY
 STRUCTURE NO. 028-3403

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	11
PROJECT NO. BROS-055(52)		CONTRACT NO. 99308		

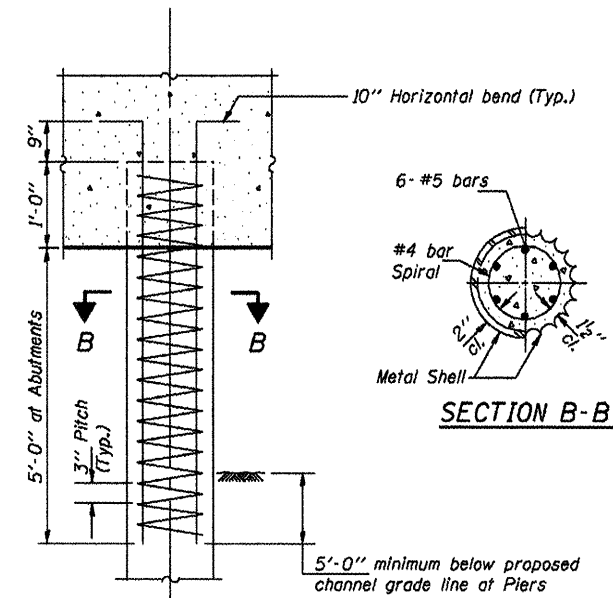


NAME PLATES
TOWNSHIP ROUTE 320 (FRISCO ROAD)
TAYLOR BRANCH
SECTION 06-10125-00-BR
FRANKLIN COUNTY
STRUCTURE NO. 028-3403

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 320	06-10125-00-BR	FRANKLIN	14	12
PROJECT NO. BROS-055(52)		CONTRACT NO. 99308		

Reinforcement cage shall be omitted when Concrete Encasement is provided.

The cost of Reinforcement is included with the Cost of Furnishing Piles.



DETAIL OF REINFORCEMENT FOR METAL SHELLS

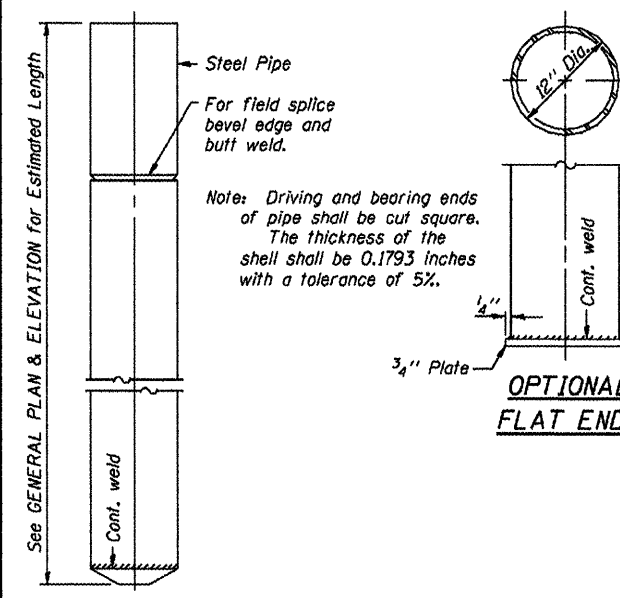
QUANTITIES/FT. OF ENCASEMENT (STEEL PILES)

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

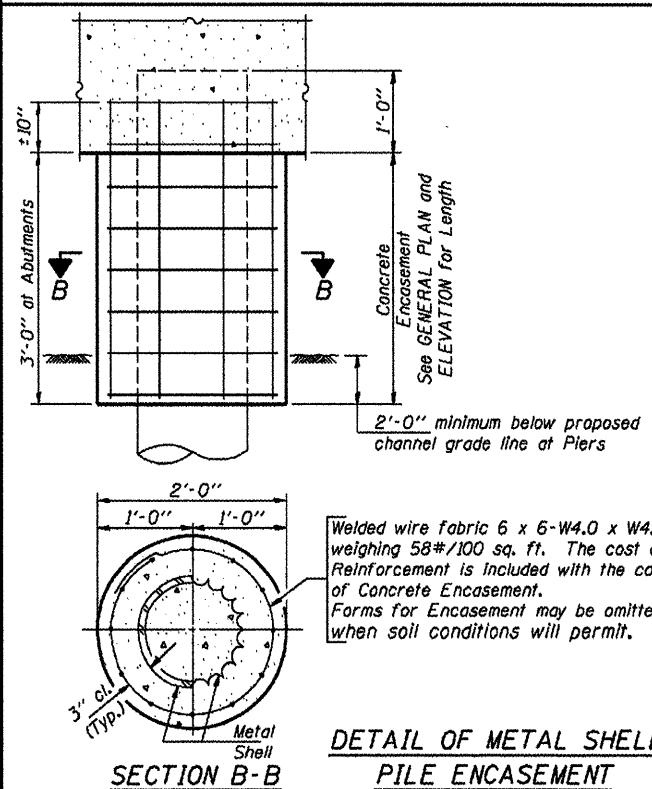
(METAL SHELL PILES)

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

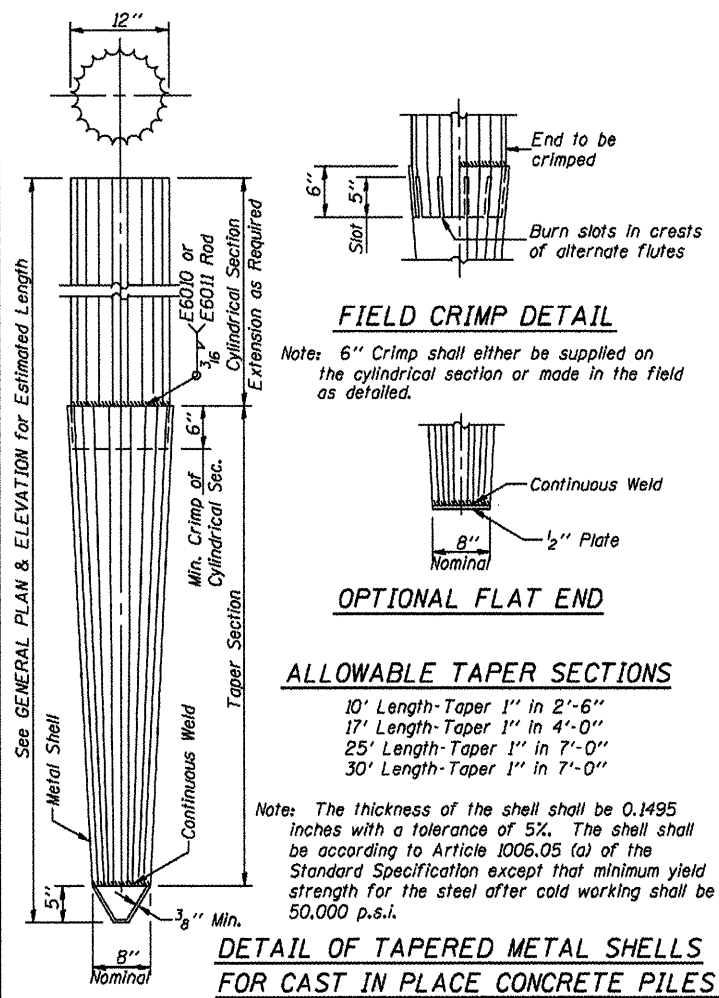
NAME PLATES
 TOWNSHIP ROUTE 320 (FRISCO ROAD)
 TAYLOR BRANCH
 SECTION 06-10125-00-BR
 FRANKLIN COUNTY
 STRUCTURE NO. 028-3403



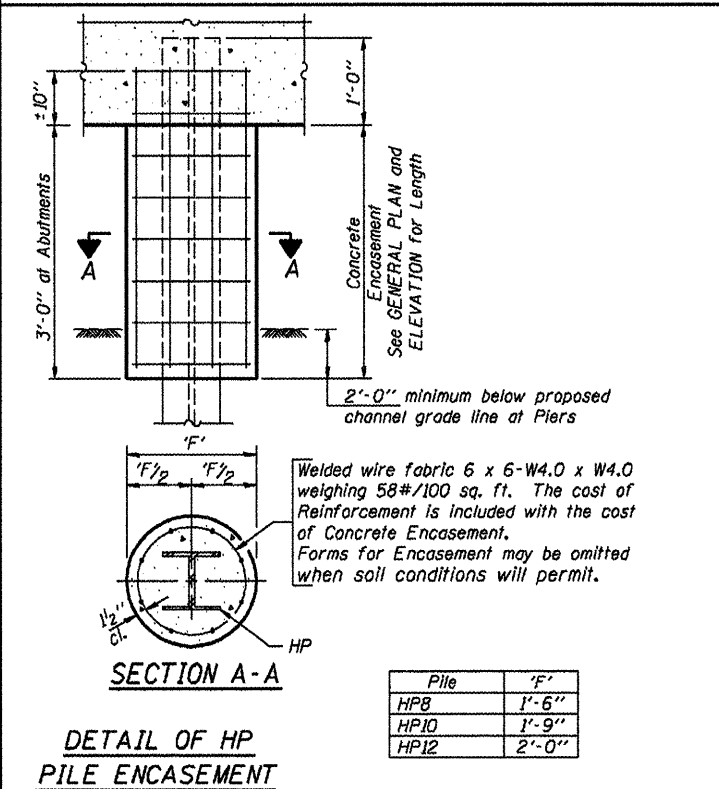
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



DETAIL OF METAL SHELL PILE ENCASEMENT

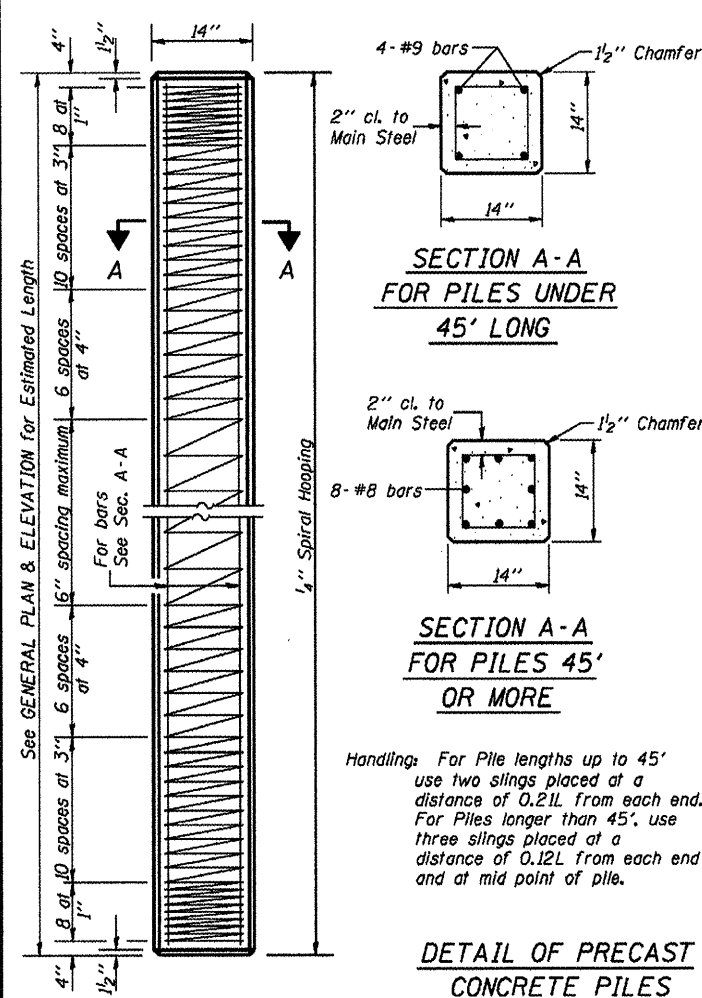


ALLOWABLE TAPER SECTIONS FOR CAST IN PLACE CONCRETE PILES

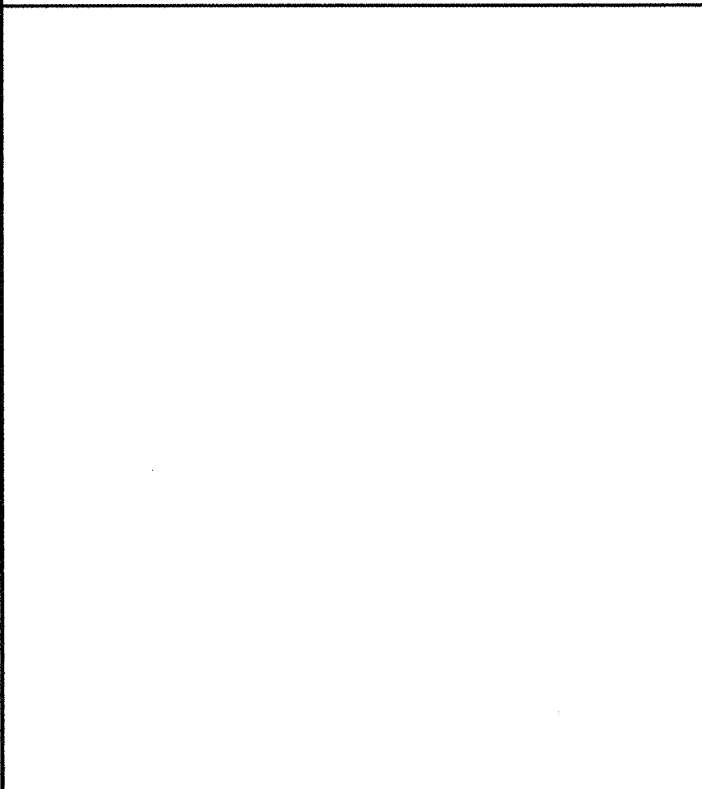


DETAIL OF HP PILE ENCASEMENT

Pile	'F'
HPB	1'-6"
HP10	1'-9"
HP12	2'-0"

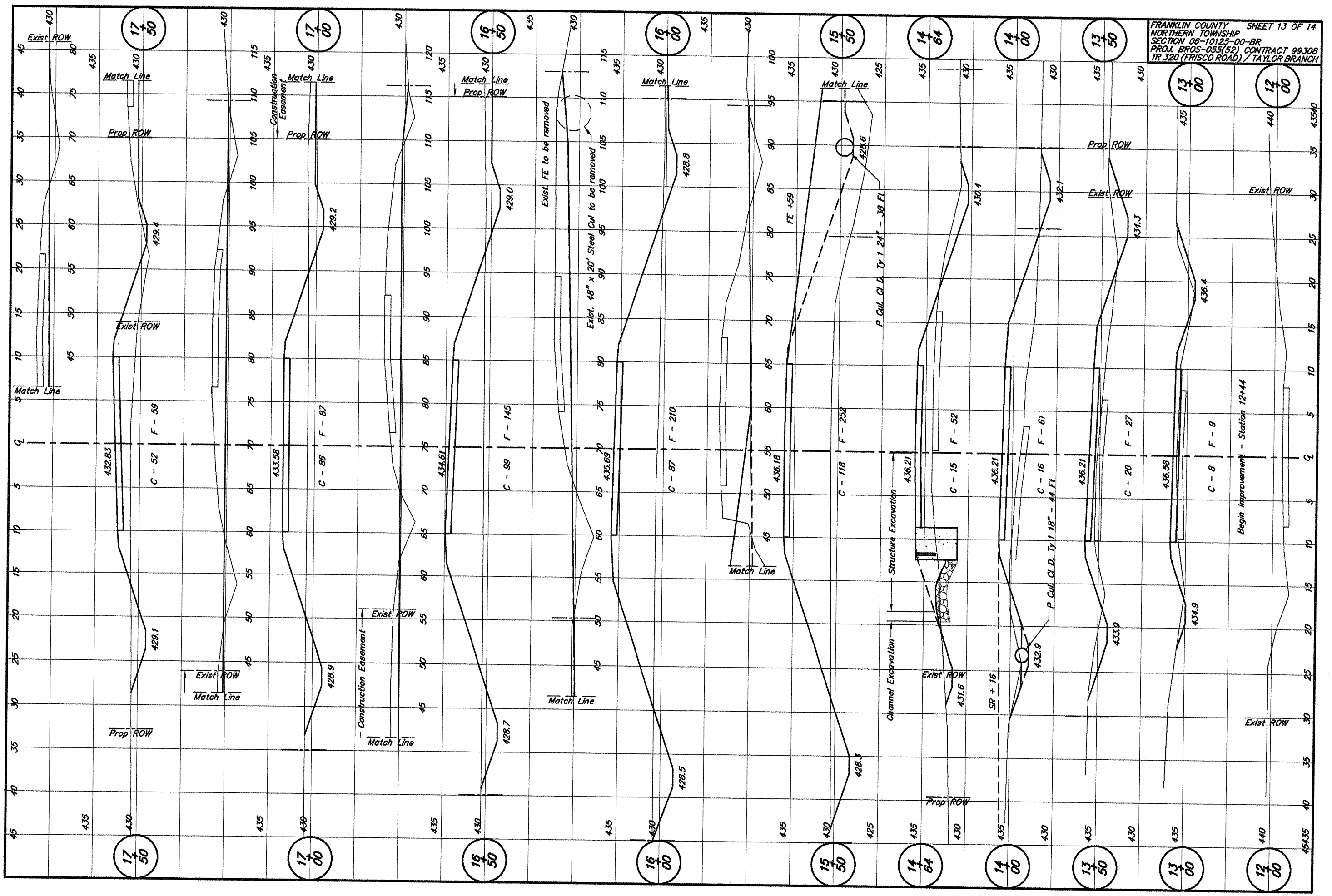


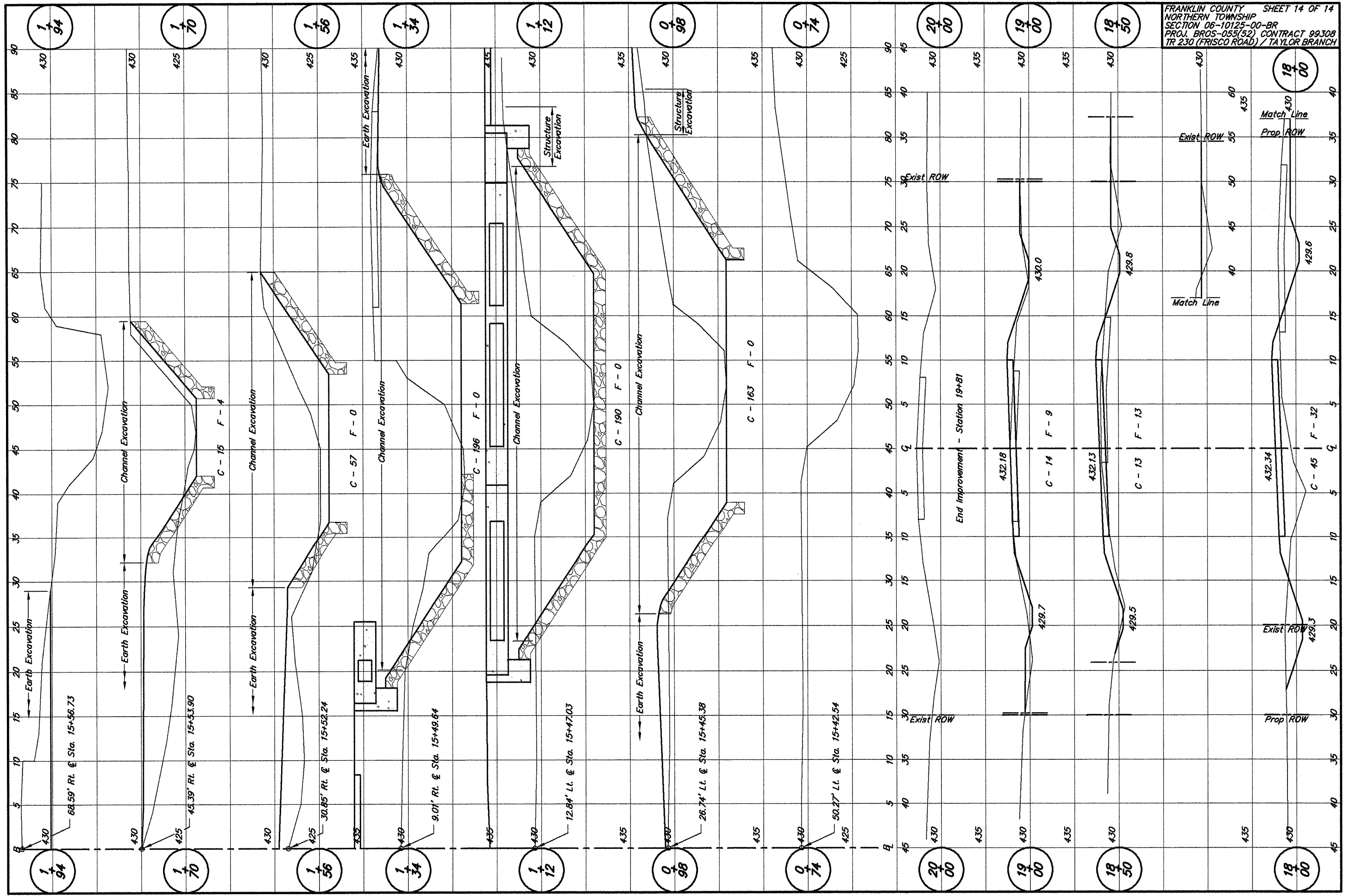
DETAIL OF PRECAST CONCRETE PILES



DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES

Pile	'F'
HPB	1'-6"
HP10	1'-9"
HP12	2'-0"





1+94

1+70

1+56

1+34

1+12

0+98

0+74

20+00

19+00

18+50

18+00

68.59' Rt. @ Sta. 15+56.73

45.39' Rt. @ Sta. 15+53.90

30.85' Rt. @ Sta. 15+52.24

9.01' Rt. @ Sta. 15+49.64

12.84' Lt. @ Sta. 15+47.03

26.74' Lt. @ Sta. 15+45.38

50.27' Lt. @ Sta. 15+42.54

430

430

425

430

430

435

430

425

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435

90

85

80

75

70

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