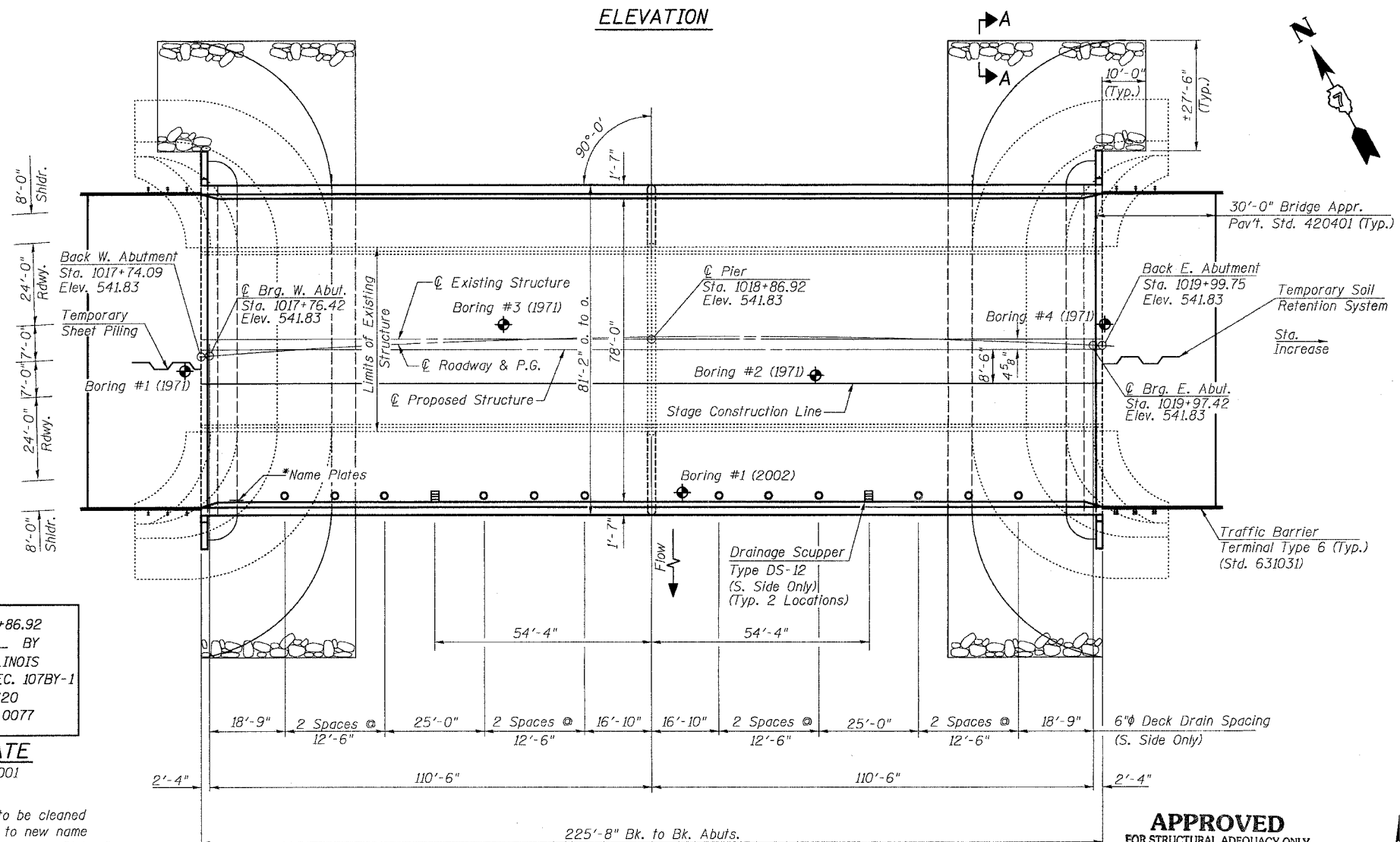
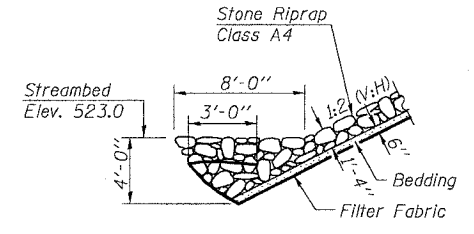
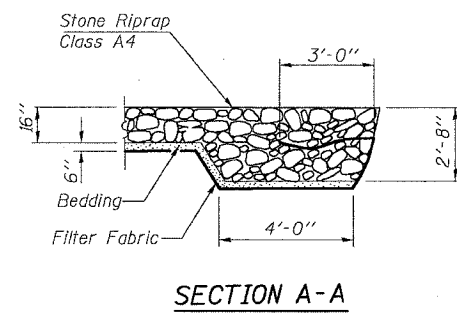
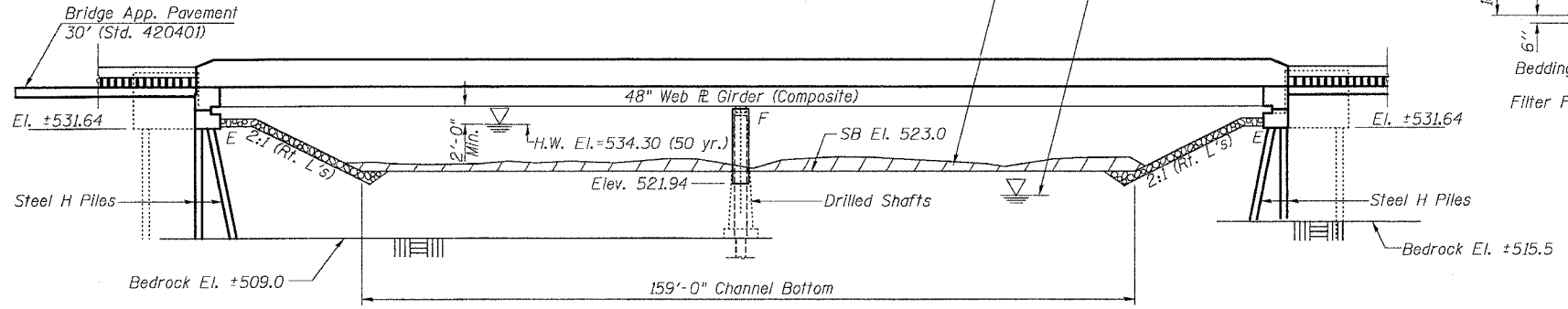


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
F.A.P. RTE. 774	107BY-1	EFFINGHAM	273	201	26 SHEETS
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

CONTRACT NO. 94827
@ Rdwy. Curve Data
 P.I. = Sta. 1014+09.68
 $\Delta = 25^{\circ}19'45''$ (RT)
 $D = 0^{\circ}30'00''$
 $R = 11,456.75'$
 $L = 5,064.76'$
 $T = 2,574.44'$
 $E = 285.69'$
 $S.E. = 1.56\%$
 P.C. = Sta. 988+35.24
 P.T. = Sta. 1039+00.00
 SE Attained Sta. 985+68.57 to Sta. 989+68.57
 SE Removed Sta. 1037+66.67 to Sta. 1041+66.67

Bench Mark: Chiseled "□" above bridge name plate Elev. = 543.66
 Existing Structure: SN 025-0077 built in 1971 as Ill Rte. 32/33 (FAP 774) Sec. 107(BR, BR-1)
 The superstructure consists of RC deck 225'-8" long by 46'-0" wide out to out supported on a two span R girder.
 Traffic shall be maintained during the rehabilitation of the structure by Staged Construction.



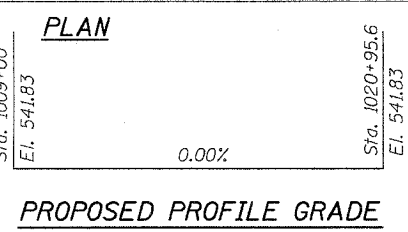
STATION 1018+86.92
 REBUILT 20__ BY
 STATE OF ILLINOIS
 F.A.P. RTE. 774 SEC. 107BY-1
 LOADING HS20
 STR. NO. 025-0077

NAME PLATE
 See Std. 515001

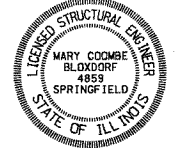
*Exist. name plate is to be cleaned and relocated adjacent to new name plate. Cost included with "Name Plates."

WATERWAY INFORMATION

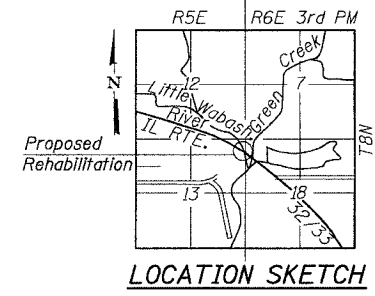
Drainage Area = 220 Sq. Miles		Low Grade Elev. = 541.3 @ Sta. 1010+00 Max. Rec. H.W.E. = Unk.							
Flood	Freq. Yr.	Q _{total} C.F.S.	Q _{bridge} C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head-Ft. Exist.	Head-Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	19,000	7728	1559	1559	534.3	0.5	534.8	534.9
Base	100	21,700	9010	1724	1724	535.0	0.5	535.5	535.5
Max. Calc.	500	28,000	11829	2087	1997	536.7	0.6	537.3	537.4



APPROVED
 FOR STRUCTURAL ADEQUACY ONLY
Robert E. Anderson
 ENGINEER OF BRIDGES AND STRUCTURES



Mary Coombe Bloxdorf
 Illinois Structural No. 4859
 Expires 11-30-2004
 Date: 12/23/03



LOADING HS20-44
 Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
 AASHTO 1996 and Interims 1997 Thru 2002 and 1995 Seismic Retrofitting Manual for Highway Bridges FHWA-RD-94-052.

DESIGN STRESSES

NEW CONSTRUCTION	EXISTING CONSTRUCTION
$f'_c = 3,500$ psi	$f_y = 36,000$ psi St. Steel
$f_y = 60,000$ psi (reinf.)	
$f_y = 36,000$ psi (M270 Grade 36)	

SEISMIC DATA
 Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = 0.07g
 Site Coefficient (S) = 1.0

SHEET TITLE GENERAL PLAN AND ELEVATION		PROJECT NO. 02017
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077		SCALE DATE DRAWN BY TFC CHECKED BY KPS/CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		1 OF 26 SHITS

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts $\frac{7}{8}$ " ϕ , open holes $\frac{15}{16}$ " ϕ , unless otherwise noted.

Calculated weight of structural steel = 253,730 lbs (M270 Grade 36)

Reinforcement Bars shall conform to the requirements of AASHTO M31, or M322 Grade 60.

Prior to pouring the new concrete deck, all loose rust, loose mill scale and other loose potentially detrimental foreign material shall be removed from the surfaces of the girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

All existing construction accessories welded to the top flange over the pier between the quarter points of the girders shall be removed. The remaining weld shall be ground smooth and inspected for cracks using magnetic particle testing. Any cracks that can not be removed by grinding approximately $\frac{1}{4}$ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of this work will be paid for according to Article 109.04.

Field welding of construction accessories will not be permitted to girders.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ ". Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{8}$ " adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, two $\frac{1}{8}$ " adjusting shims shall be provided for each bearing and placed as detailed.

The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

The Inorganic zinc rich primer/Acrylic/Acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces of new girders shall be Grey Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the new fascia girders shall be Blue Munsell No. 10B 3/6. See Special Provision for "Cleaning and Painting New Metal Structures."

The Contractor shall repair any damage to the paint system of the existing girders occurring during construction. The cost of this repair shall be included with "Furnishing and Erecting Structural Steel."

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges, webs and all splice plate material except fill plates.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

The Contractor shall drive one steel HP 10 x 57 test pile in a permanent location at each abutment as directed by the Engineer before ordering the remainder of the piles.

Anchor bolts shall be set before bolting diaphragms over supports.

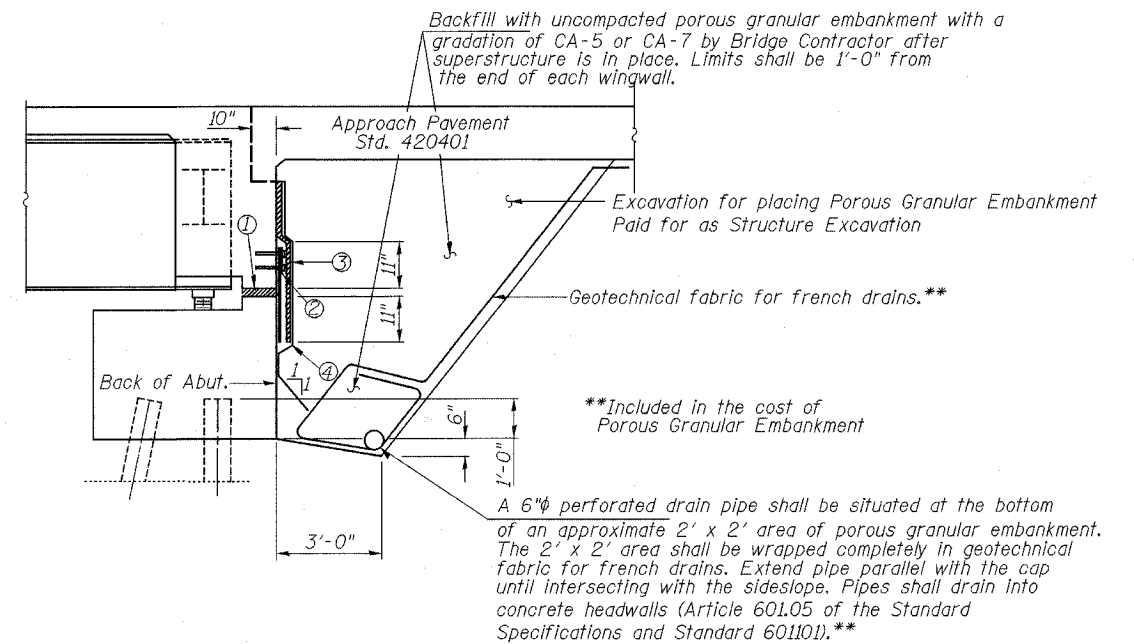
If the Contractor elects to use cantilever forming brackets on the exterior girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06 of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior girder at each of these additional bracket locations.

All construction joints shall be bonded.

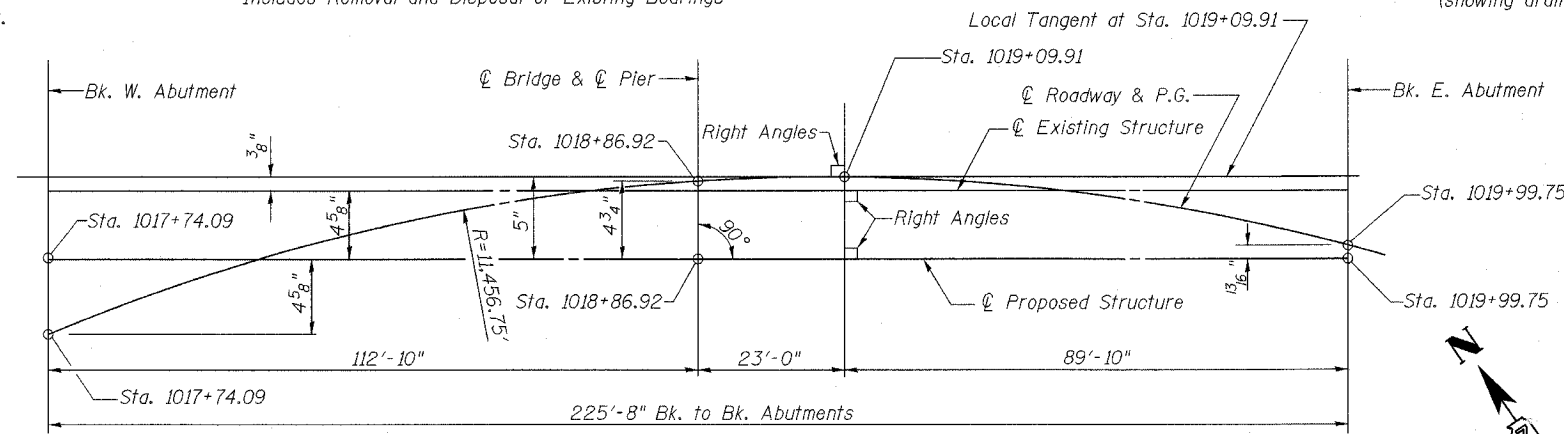
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck No. 1	Each	1		1
Porous Granular Embankment	Cu Yd		509	509
Concrete Removal	Cu Yd		58.9	58.9
Structure Excavation	Cu Yd		310	310
Concrete Superstructure	Cu Yd	573.6		573.6
Concrete Structures	Cu Yd		121.1	121.1
Elastomeric Bearing Assembly, Type I	Each		20	20
Reinforcement Bars, Epoxy Coated	Pound	152,780	12,650	165,430
Reinforcement Bars	Pound		3440	3440
Name Plates	Each	1		1
Furnishing and Erecting Structural Steel	L. Sum	.52		.52
Stud Shear Connectors	Each	1800		1800
Floor Drains	Each	12		12
Drainage Scupper, DS-12	Each	2		2
Bridge Deck Grooving	Sq. Yd.	1892		1892
Bar Splicers	Each	1103	157	1260
Furnishing Steel Piles HP 10x57	Foot		294	294
Driving Steel Piles	Foot		294	294
Test Piles Steel HP 10x57	Each		2	2
Drilled Shaft in Rock 30"	Foot		47	47
Drilled Shaft in Soil 36"	Foot		50	50
Stone Riprap, Class A4	Sq. Yd.		1010	1010
Jacking and Cribbing, Location No. 1	L. Sum	1		1
Temporary Sheet Piling	Sq. Ft.		340	340
Filter Fabric For Use With Riprap	Sq. Yd.		1010	1010
Slope Wall Removal	Sq. Yd.		860	860
Protective Coat	Sq. Yd.		2129	2129
Temporary Soil Retention System	Sq. Ft.		90	90

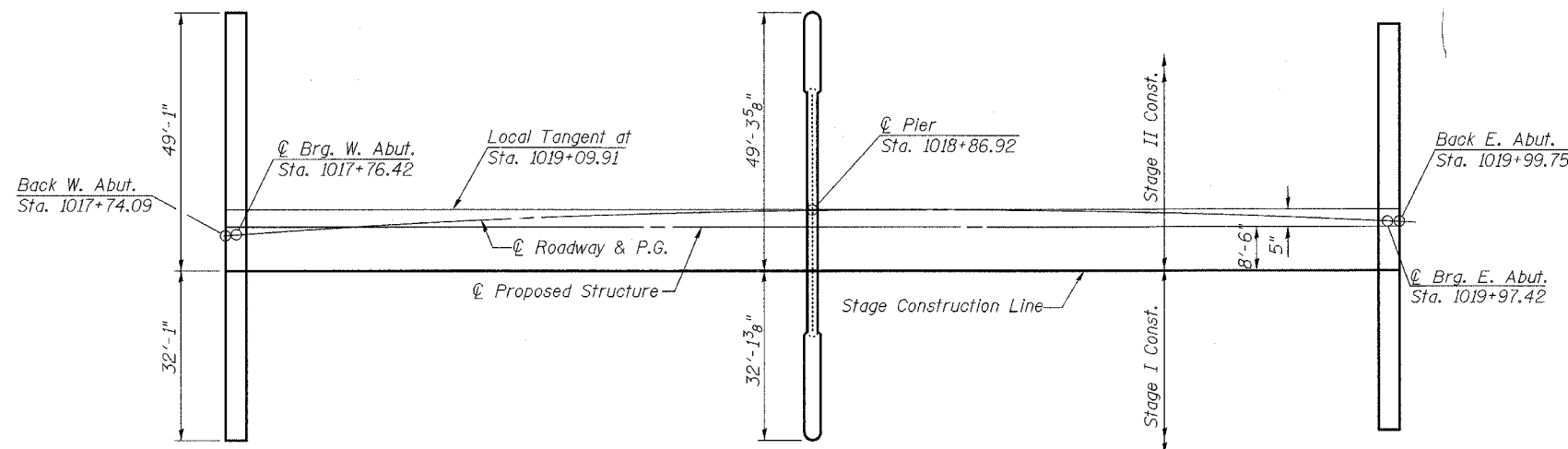
*Includes Removal and Disposal of Existing Bearings



SECTION THRU ABUTMENT
(showing drain details)



OFFSET SKETCH



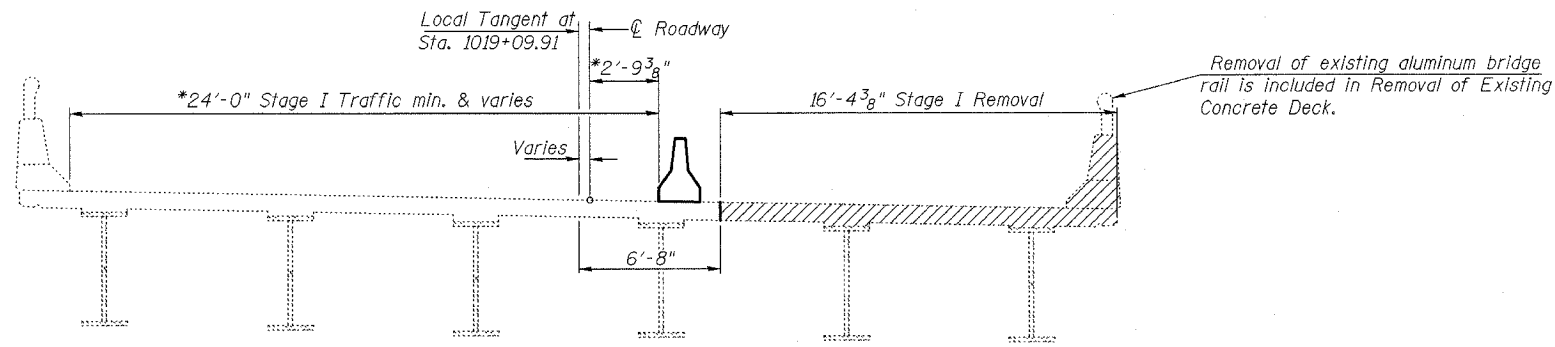
FOOTING LAYOUT

- ① 2" Preformed Joint Filler (Section 1051 of the Standard Specifications bonded to abutment cap with approved adhesive (full width of cap).
 - ② Fabric Reinforced Elastomeric Mat (See Special Provisions) Fabric mat shall be 24" wide and attached full width to the abutment cap with a $\frac{3}{8}$ " x 5" steel plate and $\frac{1}{2}$ " ϕ studs with nuts and washers at 12" cts.
 - ③ 2" Preformed Joint Filler (Section 1051 of the Standard Specifications) bonded to superstructure (full width of cap).
 - ④ Geocomposite Wall Drain (Section 591 of the Standard Specifications)-full width of cap.
- Items ① ② ③ & ④ shall be included in the cost of Concrete Superstructure.

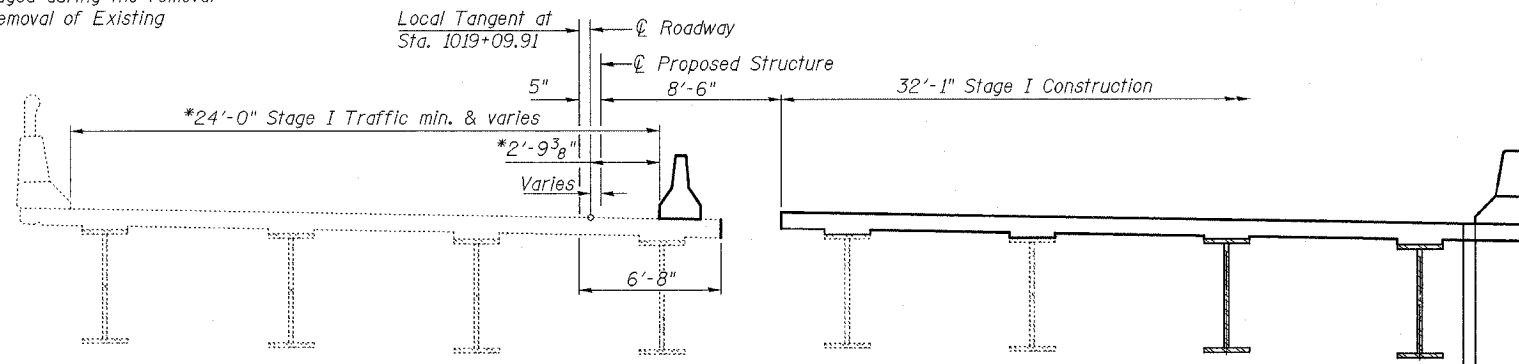
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 2 26 SHEETS
F.A.P. RTE. 774	107BY-1	EFFINGHAM	273	202	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

CONTRACT NO. 94827

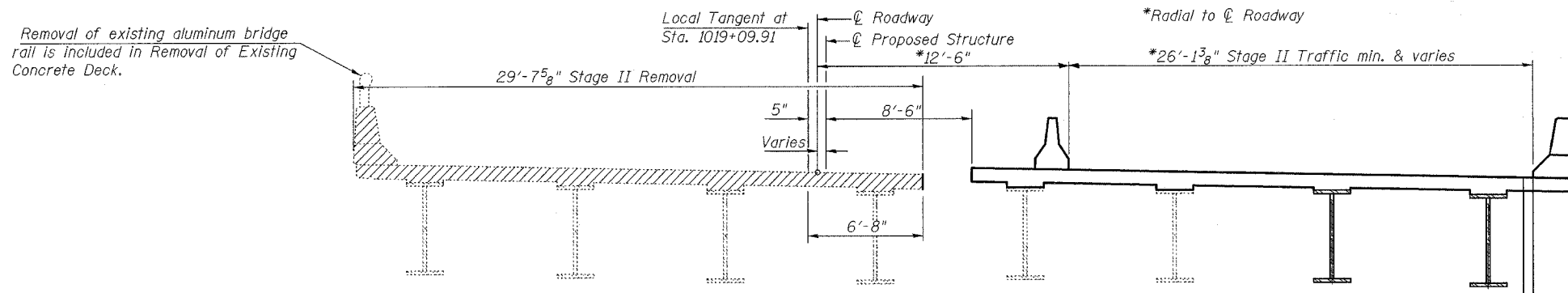
SHEET TITLE GENERAL NOTES AND TOTAL BILL OF MATERIAL		PROJECT NO. 02017
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077		SCALE DATE DRAWN BY TFC CHECKED BY KPS/CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		2 OF 26 SHTS



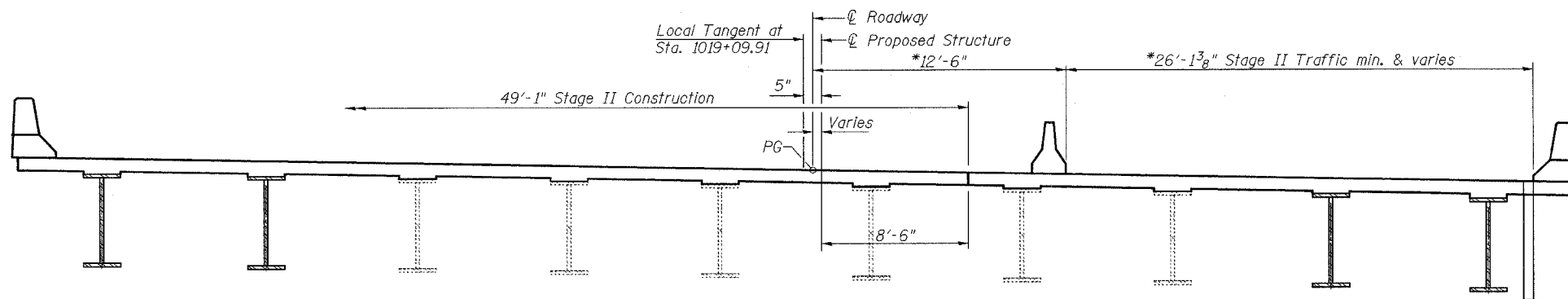
STAGE I REMOVAL
(Looking East)



STAGE I CONSTRUCTION
(Looking East)



STAGE II REMOVAL
(Looking East)

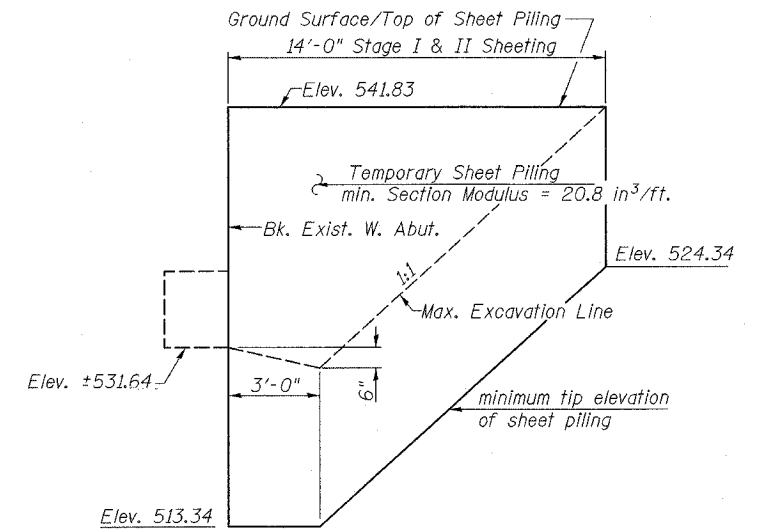


STAGE II CONSTRUCTION
(Looking East)

NOTES

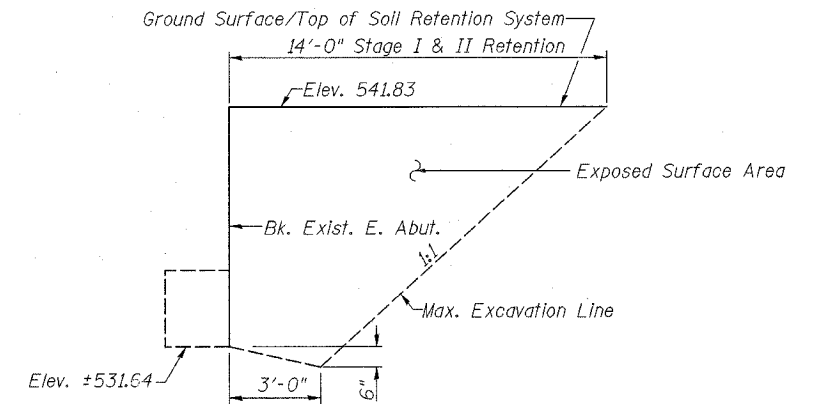
Hatched areas indicate "Removal of Existing Concrete Deck". See Roadway Plans for quantity of Temporary Concrete Barrier. The Shear Studs on existing girders will remain. It is the Contractor's responsibility to replace existing shear studs damaged during the removal of the existing Concrete deck. Cost included in Removal of Existing Concrete Deck.

Removal of existing aluminum bridge rail is included in Removal of Existing Concrete Deck.



TEMPORARY SHEET PILING DETAIL - W. ABUT.

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.



TEMPORARY SOIL RETENTION SYSTEM - E. ABUT.

A cantilevered sheet piling design does not appear feasible at the east abutment and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

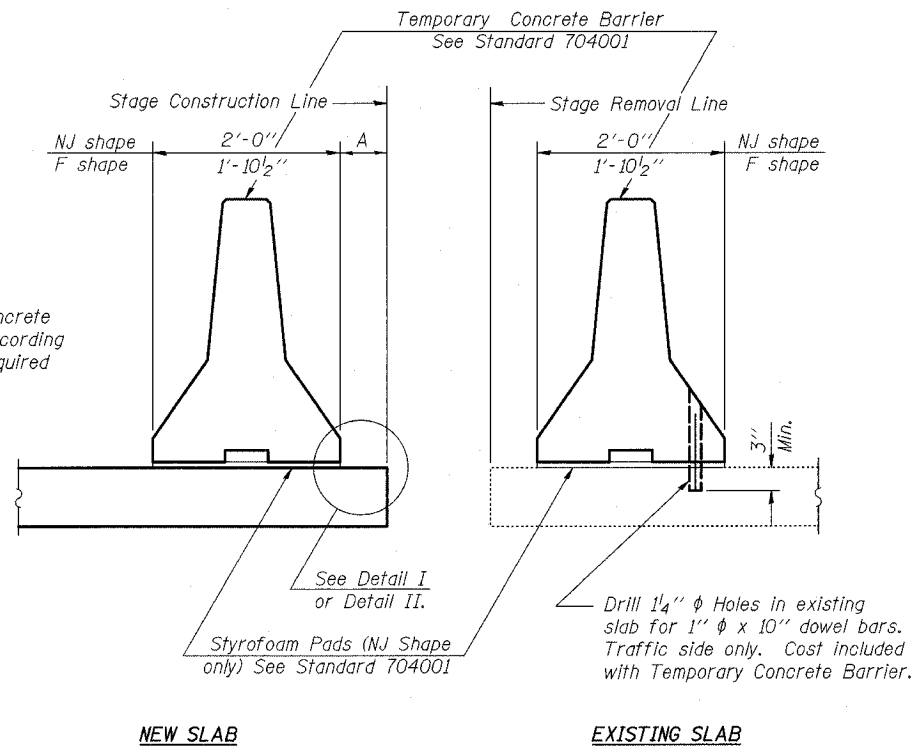
STAGE CONSTRUCTION SEQUENCE

- ① Direct Stage I Traffic as shown.
- ② Drive Temporary Sheet Piling or Install Temporary Retention System located behind each abutment and proceed with Stage I Removal.
- ③ Proceed with Stage I Construction.
- ④ Direct Stage II Traffic as shown.
- ⑤ Relocate Stage I Sheet Piling or Retention System as necessary for Stage II Sheet Piling or Retention System.
- ⑥ Proceed with Stage II Removal and Construction.

SHEET TITLE STAGE CONSTRUCTION DETAILS		PROJECT NO. 02017
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	SCALE
DATE		DRAWN BY TFC
CHECKED BY KPS/CME/MCB		DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		3 OF 26 SHTS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 4 26 SHEETS
F.A.P. RTE. 774	107BY-1	EFFINGHAM	273	204	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

CONTRACT NO. 94827

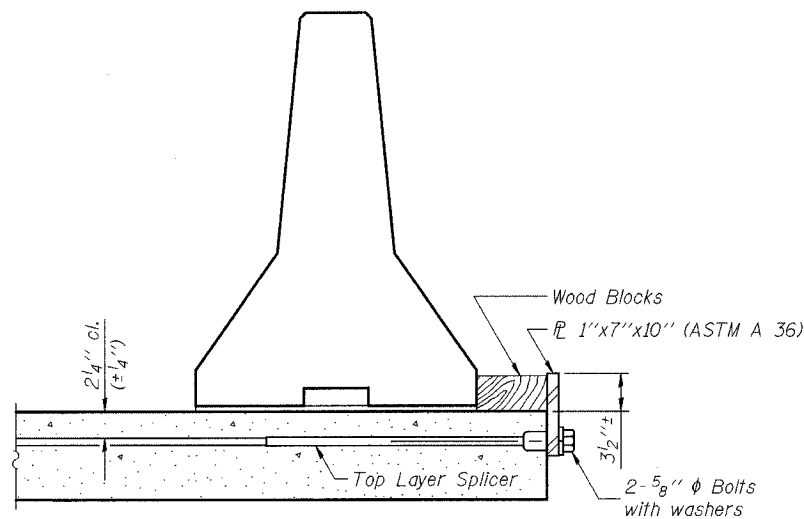


When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

NOTES

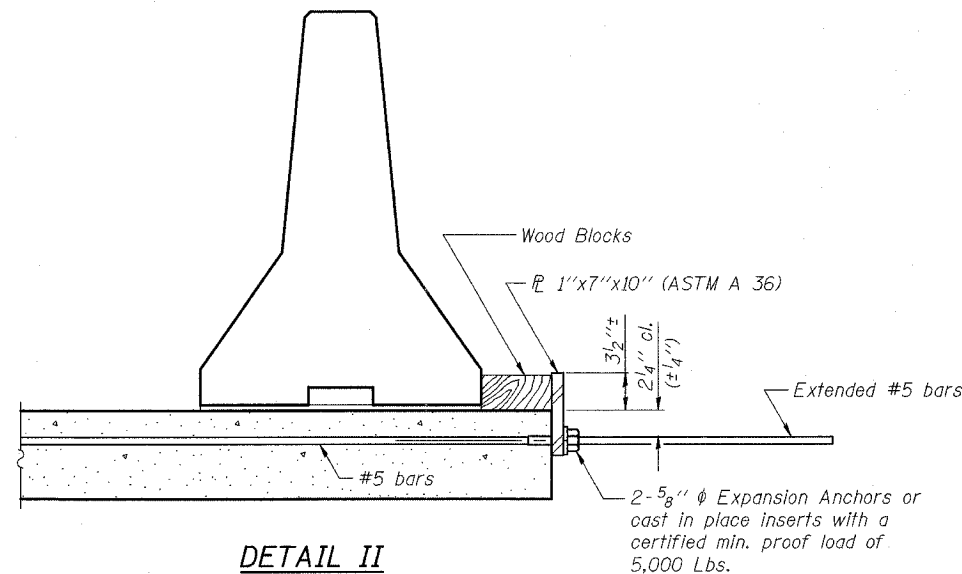
- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{P} to the top layer of couplers with 2- $\frac{5}{8}$ " ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.
- Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{P} to the concrete slab with 2- $\frac{5}{8}$ " ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier.

SECTIONS THRU SLAB



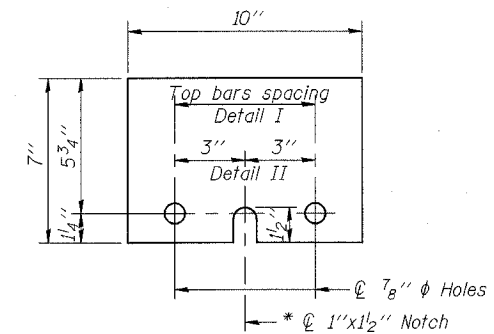
DETAIL I

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



\bar{P} 1"x7"x10"

* Required only with Detail II

SHEET TITLE TEMPORARY CONCRETE BARRIER FOR STAGED CONSTRUCTION		PROJECT NO. 02017
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	SCALE	DATE
DESIGNED BY TFG	CHECKED BY KPS/CME/MCB	DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	4	OF 26 SHTS

GIRDER 1A

GIRDER 2A

**OPTIONAL LONGITUDINAL
BONDED CONSTRUCTION JOINT**

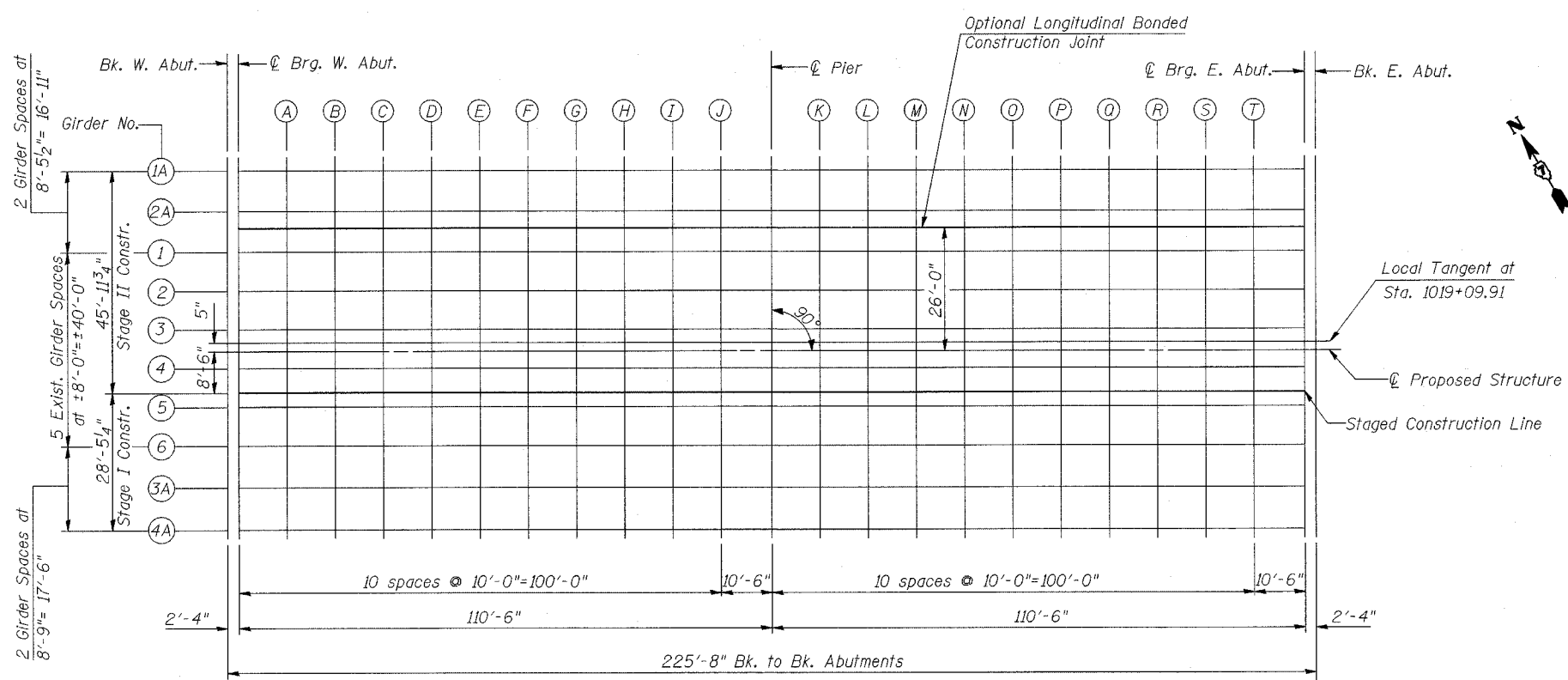
GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.526	-37.688	542.418	542.418
⊕ Brg. W. Abut.	101776.851	-37.660	542.417	542.417
A	101786.818	-37.548	542.416	542.452
B	101796.785	-37.445	542.414	542.481
C	101806.752	-37.351	542.413	542.500
D	101816.719	-37.265	542.411	542.509
E	101826.686	-37.188	542.410	542.508
F	101836.654	-37.120	542.409	542.497
G	101846.621	-37.060	542.408	542.479
H	101856.589	-37.009	542.407	542.456
I	101866.557	-36.967	542.407	542.432
J	101876.525	-36.934	542.406	542.414
⊕ Pier	101886.991	-36.908	542.406	542.406
K	101896.959	-36.892	542.406	542.412
L	101906.927	-36.885	542.405	542.430
M	101916.895	-36.887	542.405	542.453
N	101926.862	-36.898	542.406	542.475
O	101936.830	-36.917	542.406	542.493
P	101946.798	-36.945	542.406	542.504
Q	101956.766	-36.981	542.407	542.505
R	101966.734	-37.026	542.408	542.496
S	101976.701	-37.080	542.408	542.476
T	101986.669	-37.143	542.409	542.448
⊕ Brg. E. Abut.	101997.134	-37.218	542.411	542.411
Bk. E. Abut.	101999.460	-37.236	542.411	542.411

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.427	-29.230	542.286	542.286
⊕ Brg. W. Abut.	101776.753	-29.203	542.286	542.286
A	101786.727	-29.091	542.284	542.320
B	101796.702	-28.988	542.282	542.349
C	101806.676	-28.893	542.281	542.368
D	101816.650	-28.808	542.279	542.377
E	101826.625	-28.730	542.278	542.376
F	101836.600	-28.662	542.277	542.365
G	101846.575	-28.603	542.276	542.347
H	101856.550	-28.552	542.275	542.324
I	101866.525	-28.509	542.275	542.300
J	101876.500	-28.476	542.274	542.282
⊕ Pier	101886.974	-28.450	542.274	542.274
K	101896.949	-28.434	542.274	542.280
L	101906.924	-28.427	542.273	542.298
M	101916.900	-28.429	542.273	542.321
N	101926.875	-28.440	542.274	542.343
O	101936.850	-28.459	542.274	542.361
P	101946.825	-28.487	542.274	542.372
Q	101956.800	-28.523	542.275	542.373
R	101966.775	-28.568	542.276	542.364
S	101976.750	-28.622	542.277	542.344
T	101986.725	-28.685	542.277	542.316
⊕ Brg. E. Abut.	101997.199	-28.760	542.279	542.279
Bk. E. Abut.	101999.526	-28.778	542.279	542.279

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.393	-26.386	542.242	542.242
⊕ Brg. W. Abut.	101776.720	-26.359	542.241	542.241
A	101786.697	-26.247	542.239	542.276
B	101796.674	-26.144	542.238	542.304
C	101806.650	-26.049	542.236	542.324
D	101816.627	-25.964	542.235	542.333
E	101826.605	-25.887	542.234	542.332
F	101836.582	-25.818	542.233	542.321
G	101846.559	-25.759	542.232	542.302
H	101856.537	-25.708	542.231	542.279
I	101866.514	-25.665	542.230	542.256
J	101876.492	-25.632	542.230	542.237
⊕ Pier	101886.968	-25.606	542.229	542.229
K	101896.946	-25.590	542.229	542.236
L	101906.924	-25.583	542.229	542.254
M	101916.901	-25.585	542.229	542.276
N	101926.879	-25.596	542.229	542.299
O	101936.857	-25.615	542.230	542.317
P	101946.834	-25.643	542.230	542.328
Q	101956.812	-25.679	542.231	542.329
R	101966.790	-25.724	542.231	542.319
S	101976.767	-25.778	542.232	542.300
T	101986.744	-25.841	542.233	542.271
⊕ Brg. E. Abut.	101997.220	-25.916	542.234	542.234
Bk. E. Abut.	101999.548	-25.934	542.235	542.235

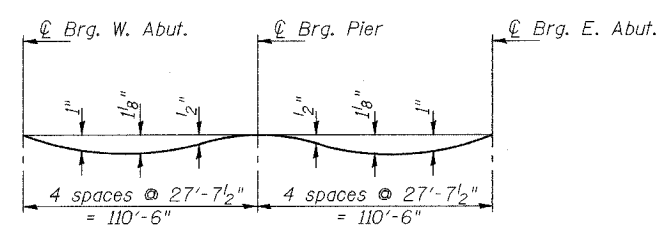
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.327	-20.773	542.154	542.154
⊕ Brg. W. Abut.	101776.655	-20.745	542.154	542.154
A	101786.637	-20.633	542.152	542.189
B	101796.618	-20.530	542.150	542.217
C	101806.600	-20.436	542.149	542.236
D	101816.582	-20.350	542.147	542.245
E	101826.564	-20.273	542.146	542.244
F	101836.546	-20.204	542.145	542.233
G	101846.528	-20.145	542.144	542.215
H	101856.510	-20.094	542.143	542.192
I	101866.493	-20.051	542.143	542.168
J	101876.475	-20.018	542.142	542.150
⊕ Pier	101886.957	-19.992	542.142	542.142
K	101896.940	-19.976	542.142	542.148
L	101906.922	-19.969	542.142	542.166
M	101916.905	-19.971	542.142	542.189
N	101926.887	-19.982	542.142	542.211
O	101936.870	-20.001	542.142	542.229
P	101946.852	-20.029	542.142	542.240
Q	101956.835	-20.065	542.143	542.241
R	101966.817	-20.111	542.144	542.232
S	101976.800	-20.165	542.145	542.212
T	101986.782	-20.227	542.146	542.184
⊕ Brg. E. Abut.	101997.263	-20.303	542.147	542.147
Bk. E. Abut.	101999.592	-20.321	542.147	542.147



PLAN

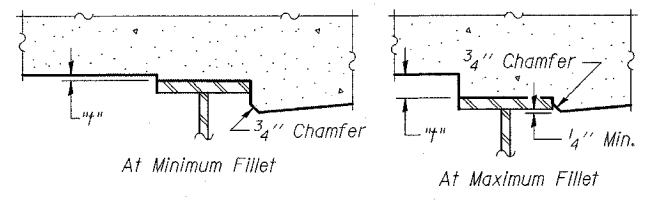
Work this sheet with Sheets 6 and 7 of 26.

SHEET TITLE TOP OF SLAB ELEVATIONS		PROJECT NO. 02017
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	SCALE	DATE
DESIGNED BY KPS/CME/MCB	DRAWN BY TFG	CHECKED BY KPS/CME/MCB
DRAWING NO. COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		5
		OF 26 SHTS



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only.)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below and on Sheets 5 and 7 of 26.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "t" above top flange of girders.

FILLET HEIGHTS

GIRDER 2

GIRDER 3

LOCAL TANGENT

PROPOSED STRUCTURE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.232	-12.773	542.029	542.029
⊙ Brg. W. Abut.	101776.562	-12.746	542.029	542.029
A	101786.551	-12.634	542.027	542.064
B	101796.539	-12.531	542.025	542.092
C	101806.528	-12.436	542.024	542.111
D	101816.517	-12.350	542.023	542.121
E	101826.506	-12.273	542.021	542.119
F	101836.495	-12.204	542.020	542.108
G	101846.484	-12.145	542.019	542.090
H	101856.473	-12.094	542.019	542.067
I	101866.463	-12.051	542.018	542.044
J	101876.452	-12.018	542.017	542.025
⊙ Pier	101886.941	-11.992	542.017	542.017
K	101896.931	-11.976	542.017	542.024
L	101906.920	-11.969	542.017	542.041
M	101916.910	-11.971	542.017	542.064
N	101926.899	-11.982	542.017	542.086
O	101936.889	-12.001	542.017	542.105
P	101946.878	-12.029	542.018	542.115
Q	101956.868	-12.065	542.018	542.116
R	101966.857	-12.111	542.019	542.107
S	101976.846	-12.165	542.020	542.088
T	101986.835	-12.228	542.021	542.059
⊙ Brg. E. Abut.	101997.324	-12.303	542.022	542.022
Bk. E. Abut.	101999.654	-12.321	542.022	542.022

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.137	-4.774	541.904	541.904
⊙ Brg. W. Abut.	101776.469	-4.746	541.904	541.904
A	101786.465	-4.634	541.902	541.939
B	101796.460	-4.531	541.901	541.967
C	101806.456	-4.436	541.899	541.987
D	101816.451	-4.350	541.898	541.996
E	101826.447	-4.273	541.897	541.994
F	101836.443	-4.205	541.896	541.984
G	101846.440	-4.145	541.895	541.965
H	101856.436	-4.094	541.894	541.942
I	101866.432	-4.052	541.893	541.919
J	101876.429	-4.018	541.893	541.900
⊙ Pier	101886.925	-3.992	541.892	541.892
K	101896.922	-3.976	541.892	541.899
L	101906.918	-3.969	541.892	541.916
M	101916.915	-3.971	541.892	541.939
N	101926.911	-3.982	541.892	541.962
O	101936.908	-4.001	541.892	541.980
P	101946.904	-4.029	541.893	541.990
Q	101956.900	-4.065	541.893	541.992
R	101966.897	-4.111	541.894	541.982
S	101976.893	-4.165	541.895	541.963
T	101986.889	-4.228	541.896	541.934
⊙ Brg. E. Abut.	101997.385	-4.303	541.897	541.897
Bk. E. Abut.	101999.717	-4.321	541.897	541.897

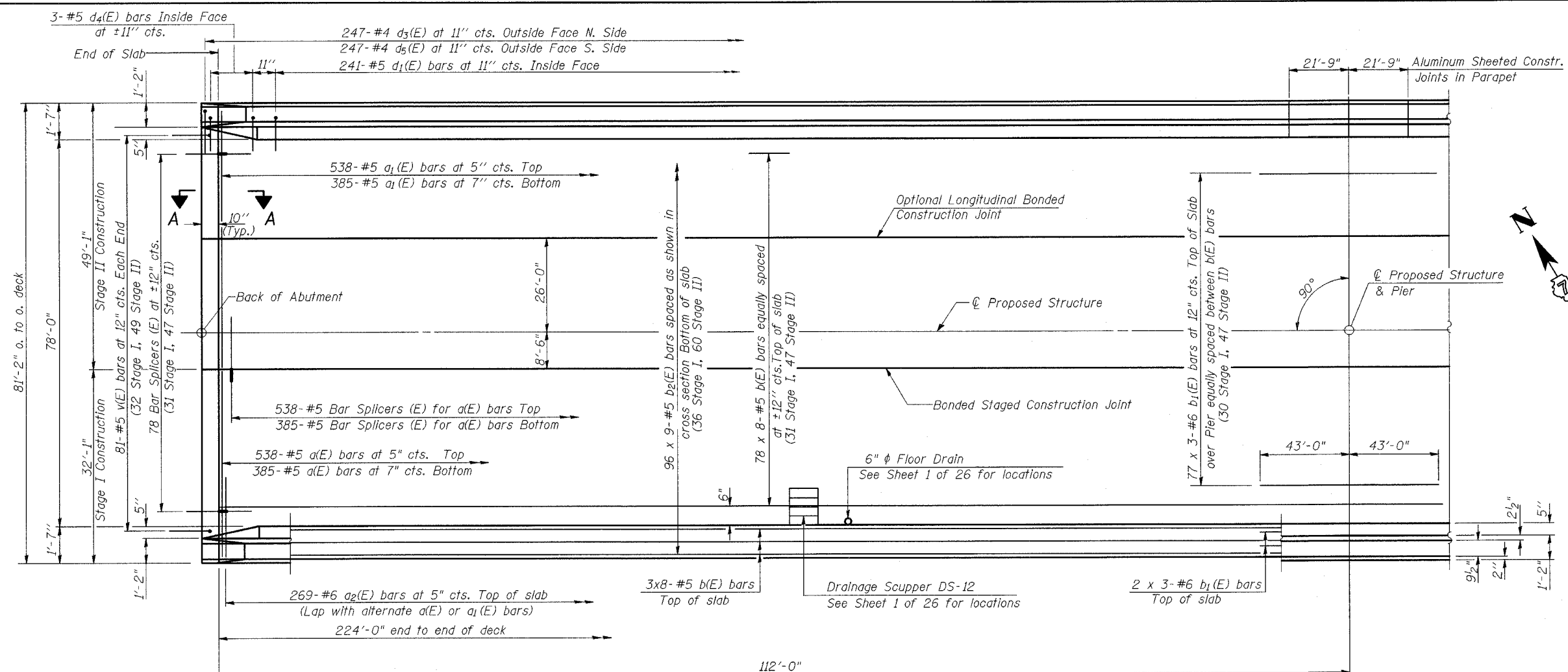
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.090	-0.805	541.843	541.843
⊙ Brg. W. Abut.	101776.423	-0.778	541.842	541.842
A	101786.422	-0.666	541.840	541.877
B	101796.421	-0.562	541.839	541.905
C	101806.420	-0.467	541.837	541.925
D	101816.419	-0.381	541.836	541.934
E	101826.418	-0.304	541.835	541.933
F	101836.418	-0.236	541.834	541.922
G	101846.418	-0.176	541.833	541.903
H	101856.417	-0.125	541.832	541.880
I	101866.417	-0.083	541.831	541.857
J	101876.417	-0.049	541.831	541.838
⊙ Pier	101886.917	-0.023	541.830	541.830
K	101896.917	-0.007	541.830	541.837
L	101906.917	0.000	541.830	541.855
M	101916.917	-0.002	541.830	541.877
N	101926.917	-0.013	541.830	541.900
O	101936.917	-0.032	541.830	541.918
P	101946.917	-0.060	541.831	541.928
Q	101956.917	-0.096	541.832	541.930
R	101966.917	-0.142	541.832	541.920
S	101976.916	-0.196	541.833	541.901
T	101986.916	-0.259	541.834	541.872
⊙ Brg. E. Abut.	101997.415	-0.334	541.835	541.835
Bk. E. Abut.	101999.748	-0.352	541.835	541.835

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	101774.085	-0.383	541.836	541.836
⊙ Brg. W. Abut.	101776.418	-0.356	541.836	541.836
A	101786.417	-0.244	541.834	541.870
B	101796.417	-0.140	541.832	541.899
C	101806.416	-0.045	541.831	541.918
D	101816.416	0.040	541.829	541.927
E	101826.415	0.118	541.828	541.926
F	101836.415	0.186	541.827	541.915
G	101846.415	0.246	541.826	541.897
H	101856.415	0.297	541.825	541.874
I	101866.416	0.339	541.825	541.850
J	101876.416	0.373	541.824	541.832
⊙ Pier	101886.916	0.399	541.824	541.824
K	101896.917	0.415	541.824	541.830
L	101906.917	0.422	541.823	541.848
M	101916.917	0.420	541.823	541.871
N	101926.918	0.409	541.824	541.893
O	101936.918	0.390	541.824	541.911
P	101946.918	0.362	541.824	541.922
Q	101956.918	0.326	541.825	541.923
R	101966.919	0.280	541.826	541.914
S	101976.919	0.226	541.826	541.894
T	101986.919	0.163	541.827	541.866
⊙ Brg. E. Abut.	101997.419	0.088	541.829	541.829
Bk. E. Abut.	101999.751	0.070	541.829	541.829

Work this sheet with Sheets 5 and 7 of 26.

SHEET TITLE		TOP OF SLAB ELEVATIONS	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFG	CHECKED BY	KPS/CME/MCB
CHECKED BY		DRAWING NO.	6
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		OF 26 SHTS	

DRAWN BY TFG



HALF PLAN

Local Tangent at Sta. 1019+09.913
81'-2" o. to o. deck

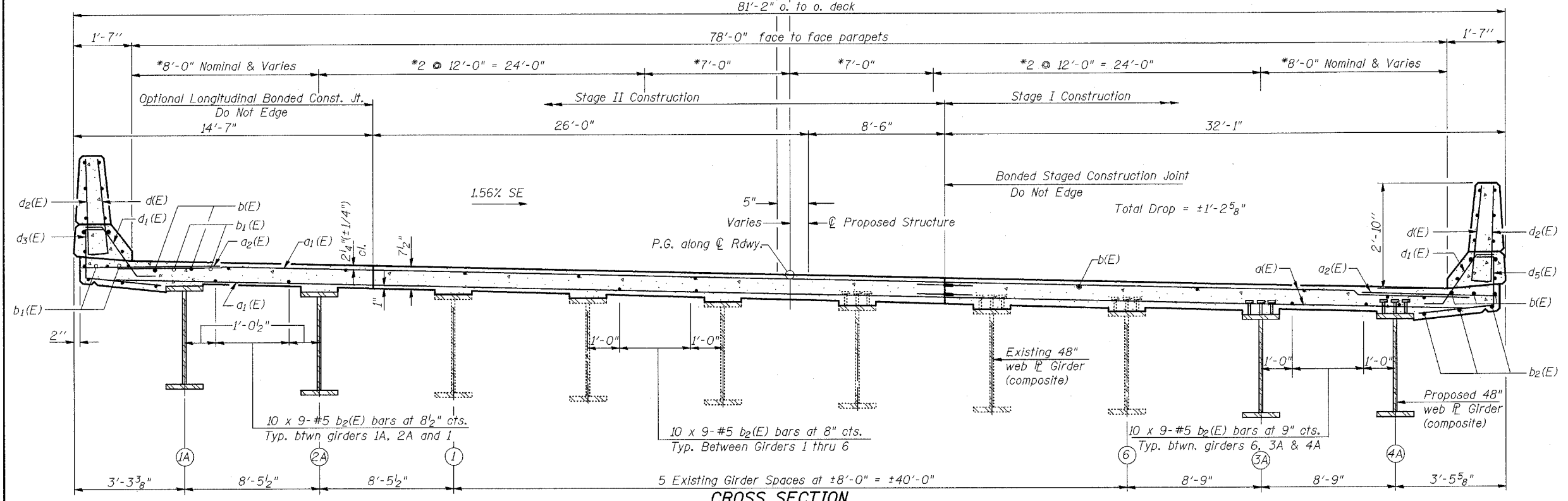
*Radial to ϕ Roadway

NOTES

See Sheet 9 of 26 for superstructure details, parapet reinforcement and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 10 of 26 for abutment diaphragm details, Section A-A and deck details at drainage Scuppers.
Cut longitudinal reinforcement bars to clear drainage Scuppers.
See Sheet 11 of 26 for Drainage Scuppers details.
See Sheet 24 of 26 for Bar Splicer detail.

Min. Bar Laps in Slab

#5 = 1'-8"
#6 = 2'-0"



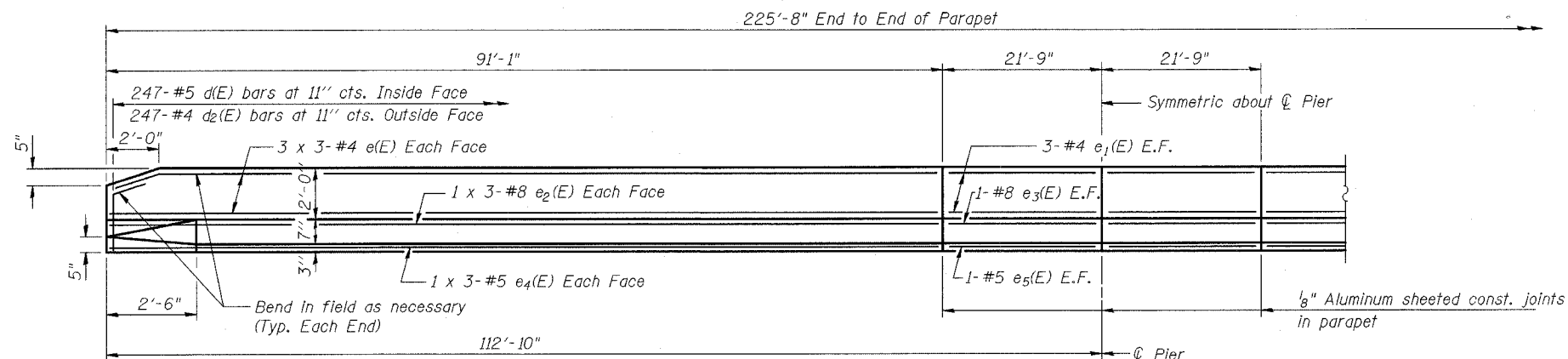
CROSS SECTION

NEAR PIER

Looking East

NEAR MIDSPAN

SHEET TITLE		SUPERSTRUCTURE	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFG	CHECKED BY	KPS/CME/MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703			8 OF 26 SHTS



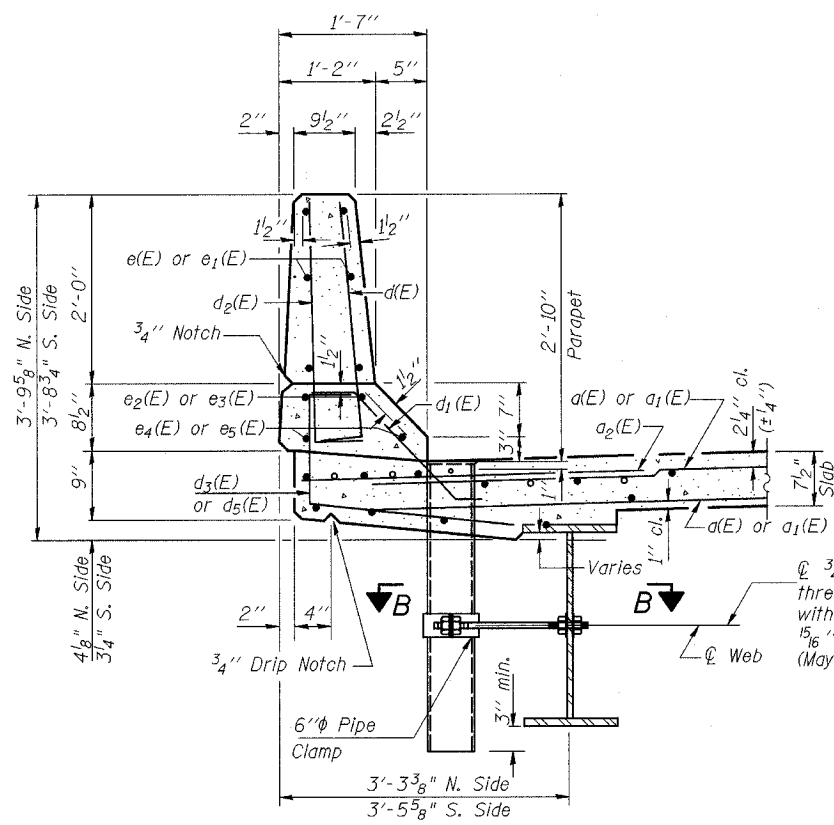
INSIDE ELEVATION OF PARAPET

MIN. BAR LAPS IN PARAPET

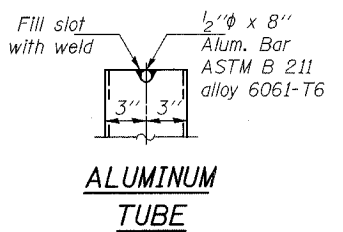
- #4 = 1'-8"
- #5 = 2'-2"
- #8 = 4'-6"

SUPERSTRUCTURE BILL OF MATERIAL

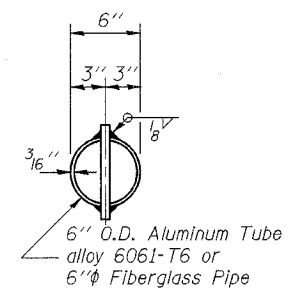
Bar	No.	Size	Length	Shape
a(E)	923	#5	30'-11"	—
a1(E)	923	#5	47'-11"	—
a2(E)	538	#6	4'-6"	—
a3(E)	16	#5	2'-0"	—
b(E)	672	#5	29'-6"	—
b1(E)	243	#6	30'-0"	—
b2(E)	864	#5	26'-5"	—
d(E)	494	#5	3'-0"	—
d1(E)	482	#5	2'-5"	—
d2(E)	494	#4	3'-0"	—
d3(E)	247	#4	3'-9"	—
d4(E)	12	#5	2'-2"	—
d5(E)	247	#4	4'-0"	—
e(E)	72	#4	31'-5"	—
e1(E)	24	#4	21'-6"	—
e2(E)	24	#8	33'-3"	—
e3(E)	8	#8	21'-6"	—
e4(E)	24	#5	31'-7"	—
e5(E)	8	#5	21'-6"	—
m(E)	20	#6	31'-8"	—
m1(E)	20	#6	7'-8"	—
m2(E)	8	#6	8'-5"	—
m3(E)	8	#6	2'-7"	—
m4(E)	8	#6	8'-1"	—
m5(E)	16	#6	10'-0"	—
m6(E)	40	#6	25'-10"	—
m7(E)	24	#6	10'-5"	—
s(E)	174	#5	7'-11"	—
s1(E)	156	#4	12'-2"	—
u(E)	164	#5	2'-9"	—
v(E)	162	#5	3'-4"	—
Reinforcement Bars, Epoxy Coated		Pound	152,780	
Concrete Superstructure		Cu. Yds.	573.6	
Bar Splicers		Each	1103	



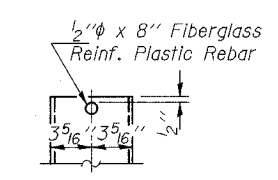
SECTION THRU PARAPET
(Showing 6" phi drain S. Side only)



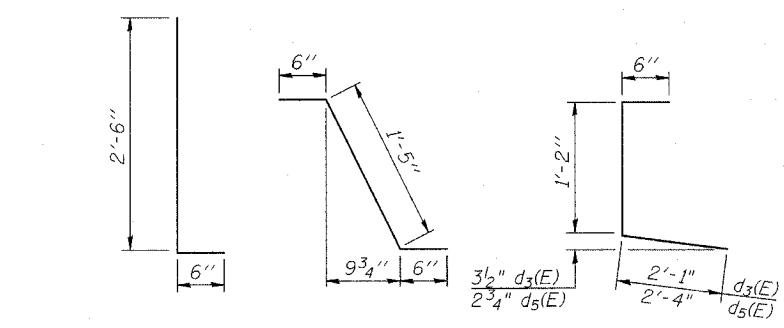
ALUMINUM TUBE



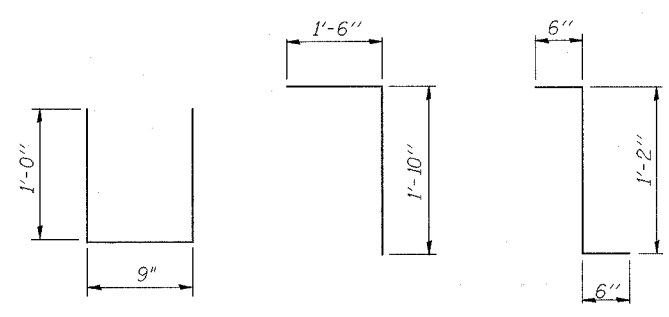
TOP PLAN
(Showing Aluminum Tube)



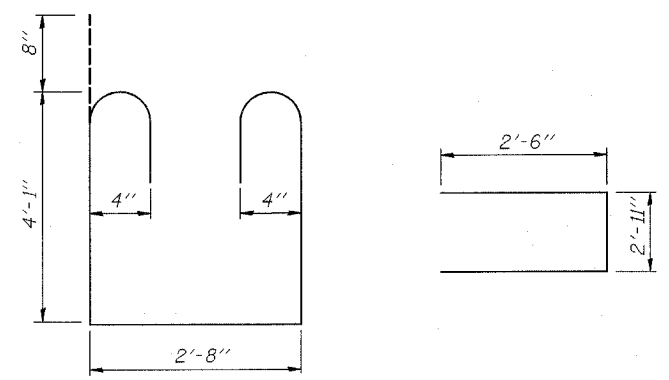
FIBERGLASS PIPE



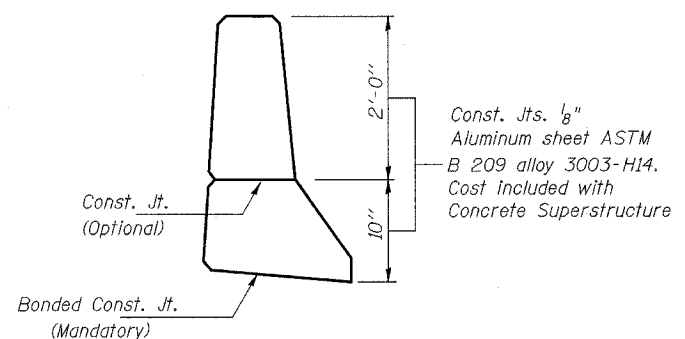
BARS d(E) & d2(E) BAR d1(E) BAR d3(E) & d5(E)



BAR u(E) BAR v(E) BAR d4(E)



BAR s1(E) BAR s(E)



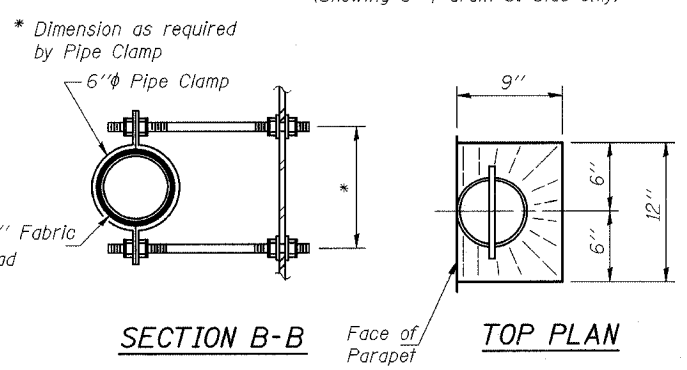
PARAPET JOINT DETAILS

NOTES

The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SP1 prior to painting. Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

NOTES

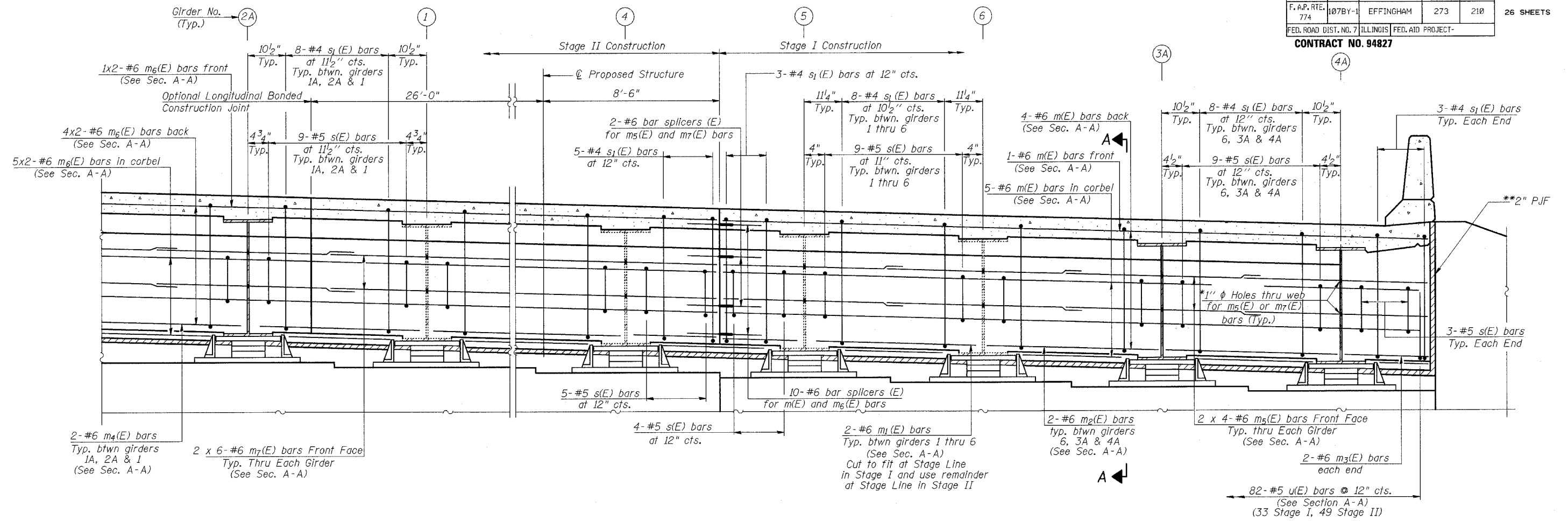
Reinforcement bars designated (E) shall be epoxy coated. Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.



SECTION B-B Face of Parapet **TOP PLAN**

SHEET TITLE SUPERSTRUCTURE DETAILS		
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017	SCALE DATE DRAWN BY TFG CHECKED BY KPS/CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		9 OF 26 SHTS

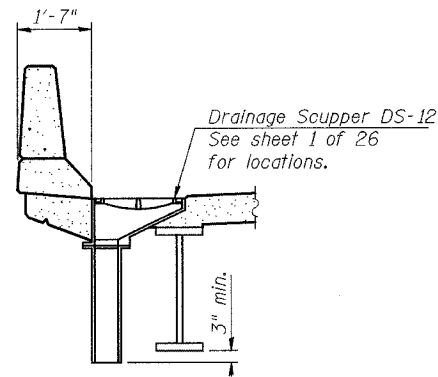
CONTRACT NO. 94827



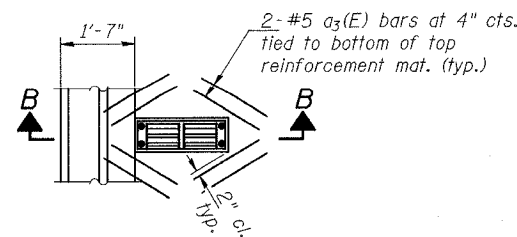
DIAPHRAGM ELEVATION AT E. ABUTMENT

Looking East

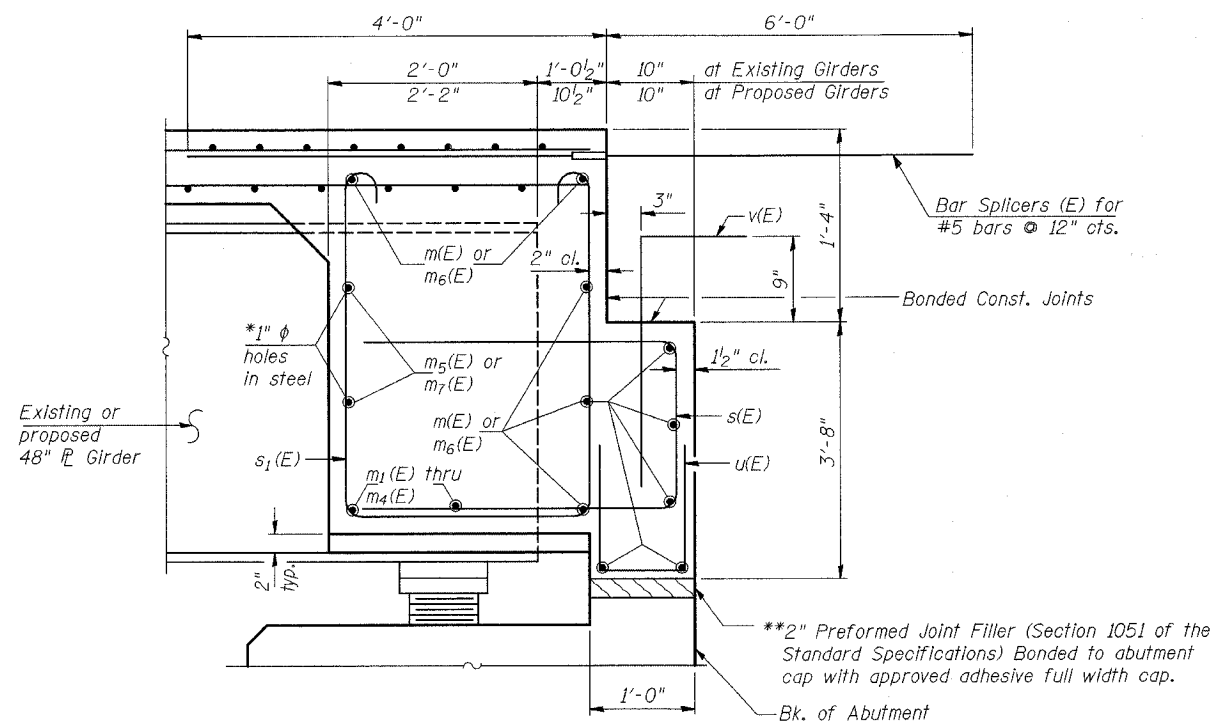
*Field drill 1" ϕ holes for $m_5(E)$ or $m_7(E)$ bars in existing girders. Cost of field drilling included with Concrete Superstructure.



SECTION B-B



PLAN AT SCUPPER



SECTION A-A

(Diaphragms not shown)

** Cost included with Concrete Superstructure.

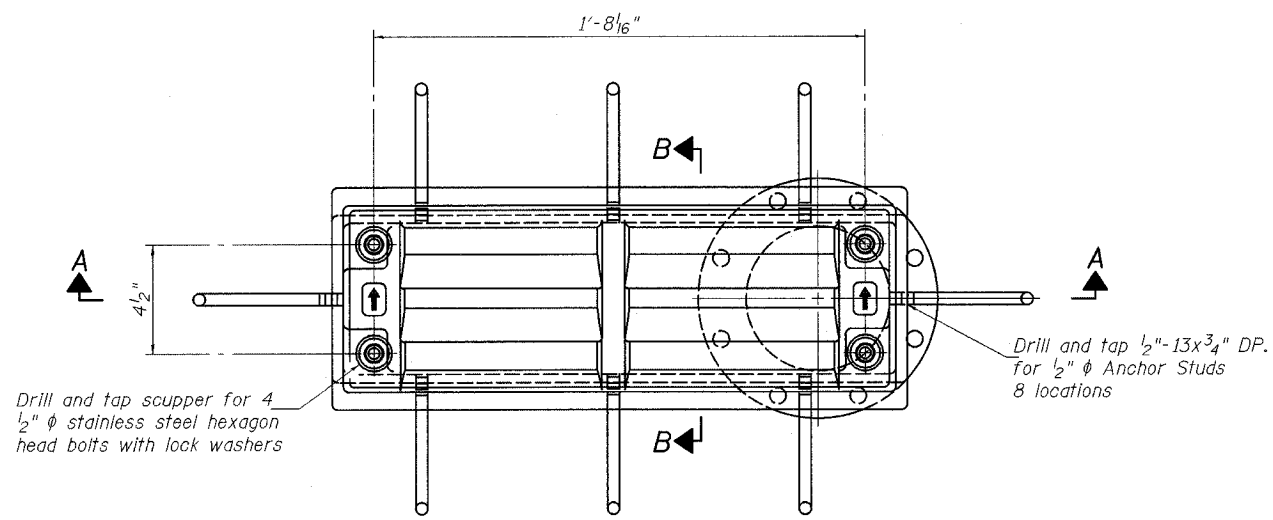
NOTES

- Reinforcement bars in diaphragm and around scuppers are billed with superstructure on sheet 9 of 26.
- Concrete in end diaphragm is included with Concrete Superstructure on sheet 9 of 26.
- For details of bars s(E), s(E) & u(E) see sheet 9 of 26.
- For anchor bolt details see sheet 15 of 26.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bars indicated thus 1 X 2-#5 etc. indicates 1 line of bars with 2 lengths per line.
- See Sheet 24 of 26 for Bar Splicer details.
- See Section thru Abutment on Sheet 2 Of 26 for back of abutment treatment.

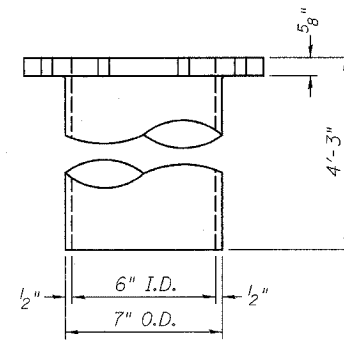
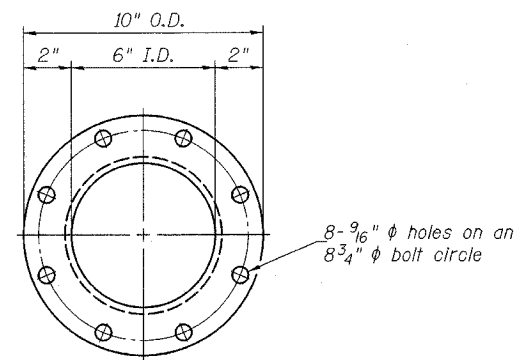
MIN. BAR LAP

#6 bar = 2'-9"

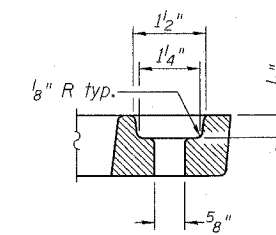
SHEET TITLE		DIAPHRAGM AND DRAINAGE SCUPPER DETAILS	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFC	CHECKED BY	KPS/CME/MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708			10
			OF 26 SHTS



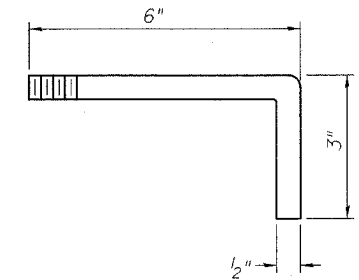
PLAN



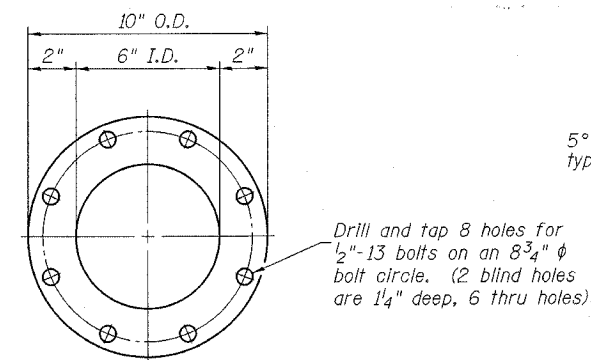
DOWNSPOUT



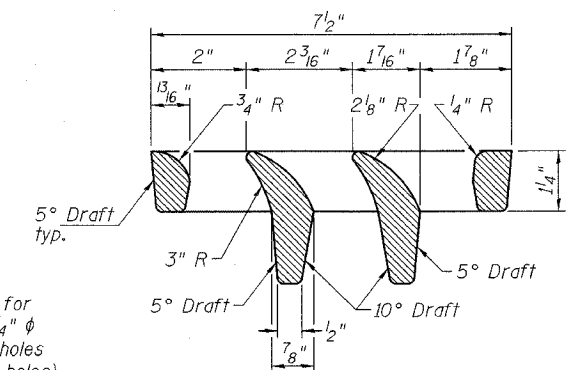
BOLT HOLE DETAIL



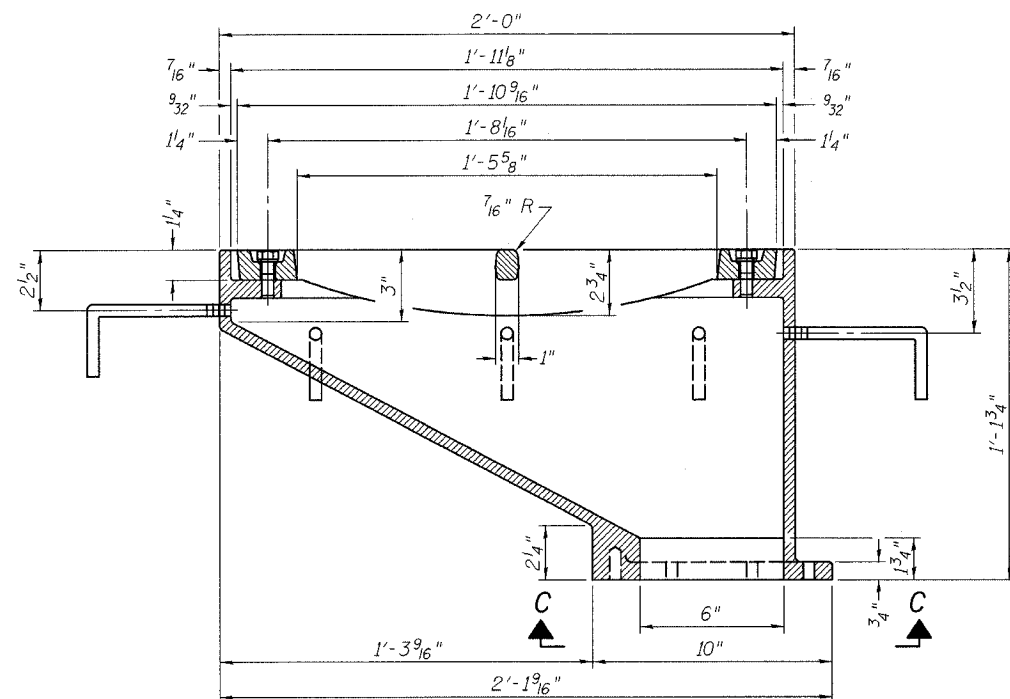
ANCHOR STUD DETAIL



VIEW C-C

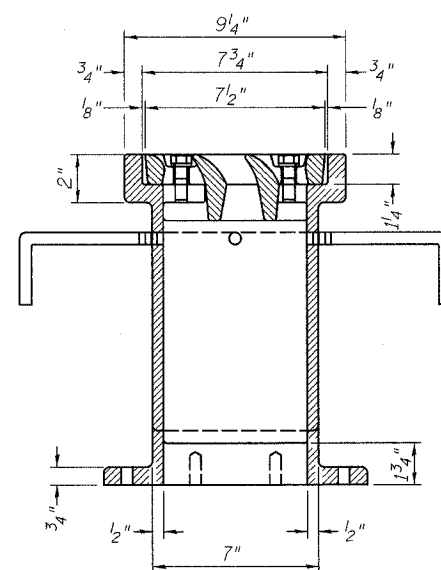


VANE GRATE DETAIL



SECTION A-A

See sheet 10 of 26 for scupper location relative to parapet.



SECTION B-B

NOTES

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

The grate, frame and downspout shall be galvanized according to AASHTO M 111 and ASTM A 385. Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

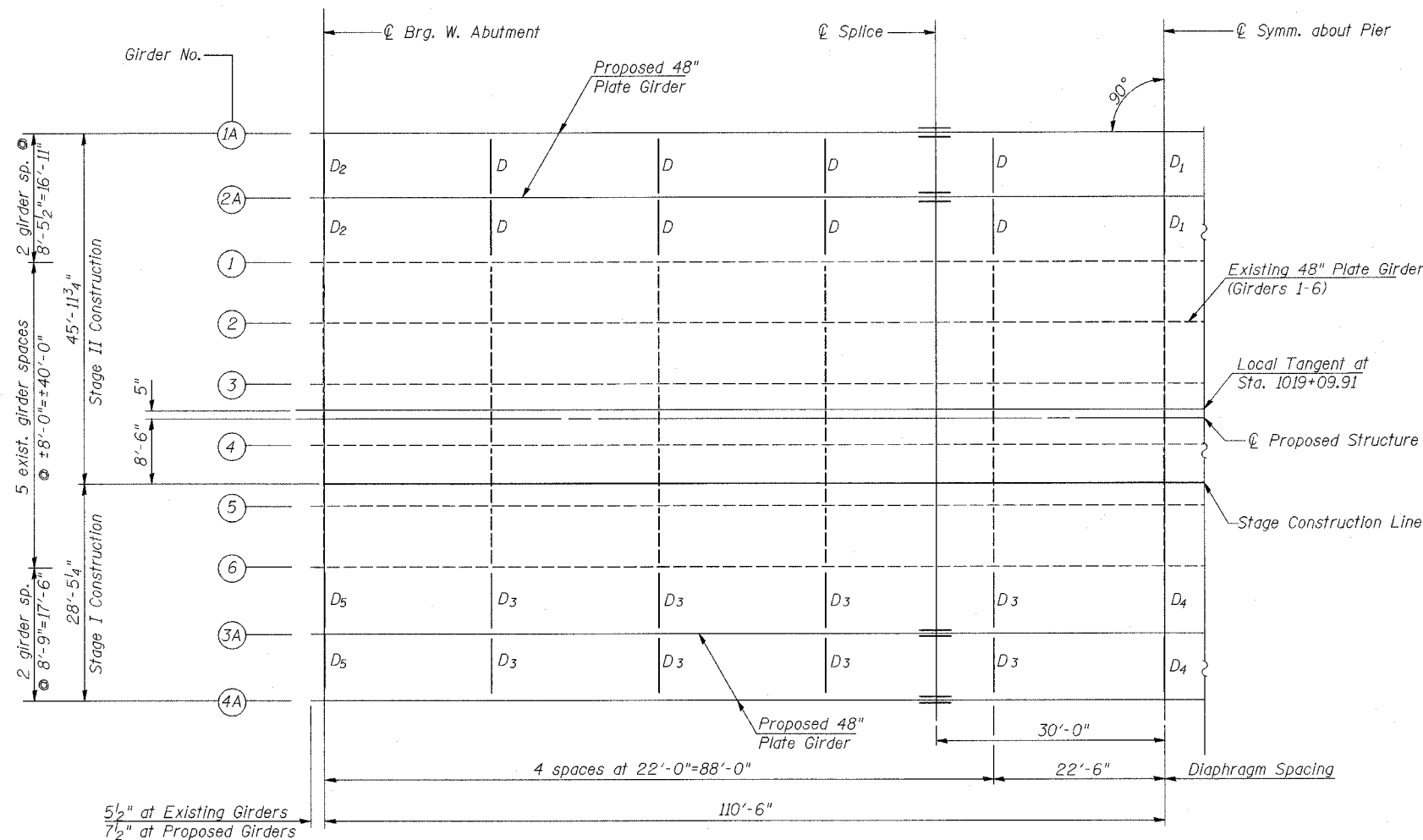
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12	Each	2

SHEET TITLE DRAINAGE SCUPPER, DS-12		
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017	SCALE
	DATE	DRAWN BY TFG
	CHECKED BY KPS/CME/MCB	DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		11 OF 26 SHTS

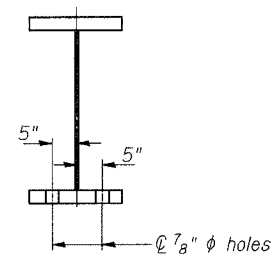
CONTRACT NO. 94827



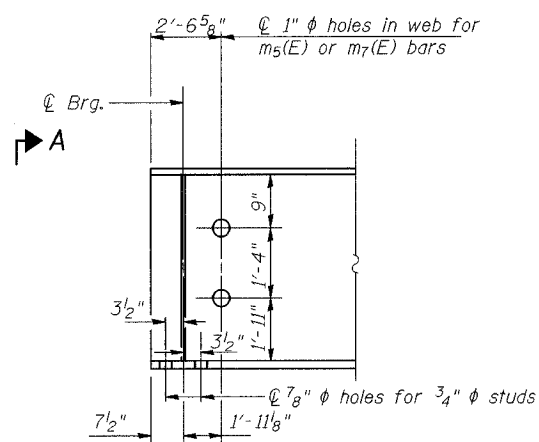
FRAMING PLAN

NOTE

Existing diaphragms along \bar{C} bearing at Abutments shall be cleaned and left in place. Cost of cleaning is included with Concrete Superstructure.

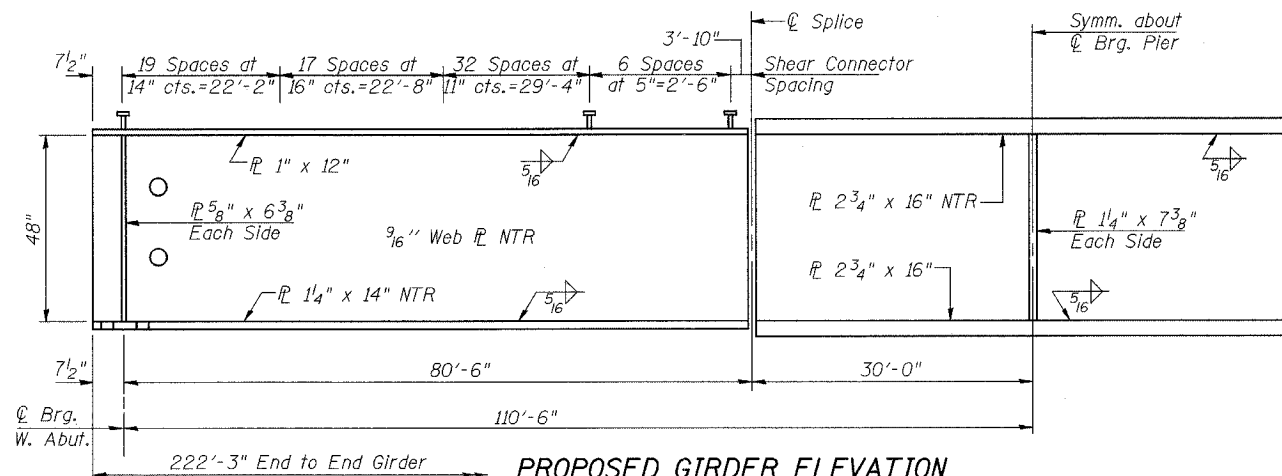


VIEW A-A



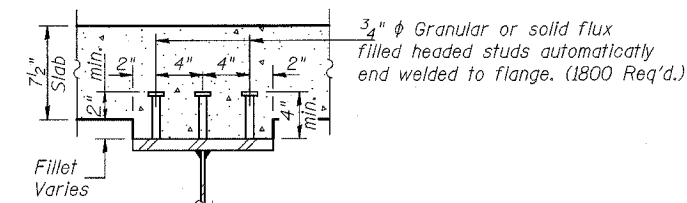
DETAIL AT ABUTMENT

Showing hole locations



PROPOSED GIRDER ELEVATION

"NTR" denotes plates to which notch toughness requirements are applicable.



SHEAR STUD DETAIL

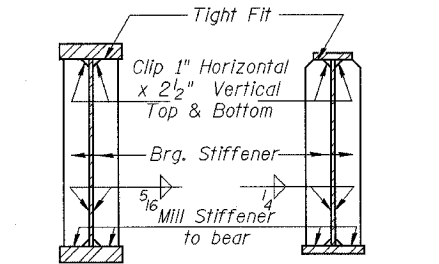
Work this Sheet with Sheet 13 of 26.

SHEET TITLE STRUCTURAL STEEL		
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017	SCALE DATE DRAWN BY TFG CHECKED BY KPS/CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		12 OF 26 SHTS

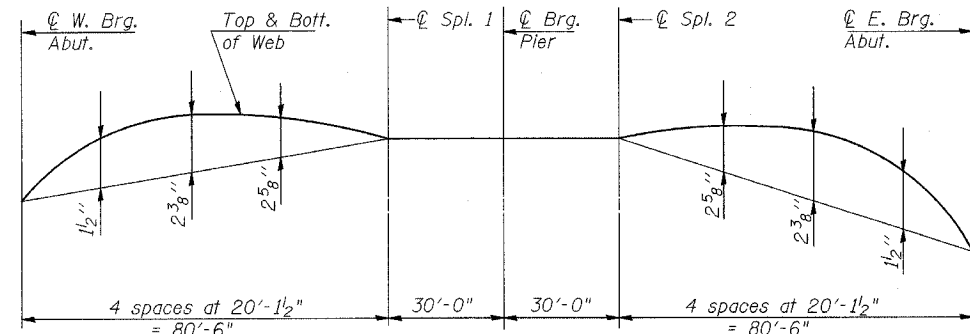
TOP OF WEB ELEVATIONS

	Girder 1A	Girder 2A	Girder 3A	Girder 4A
⊕ Brg. W. Abut.	541.646	541.515	540.622	540.486
⊕ Splice 1	541.488	541.356	540.464	540.328
⊕ Pier	541.488	541.356	540.464	540.328
⊕ Splice 2	541.488	541.356	540.464	540.328
⊕ Brg. E. Abut.	541.640	541.508	540.615	540.479

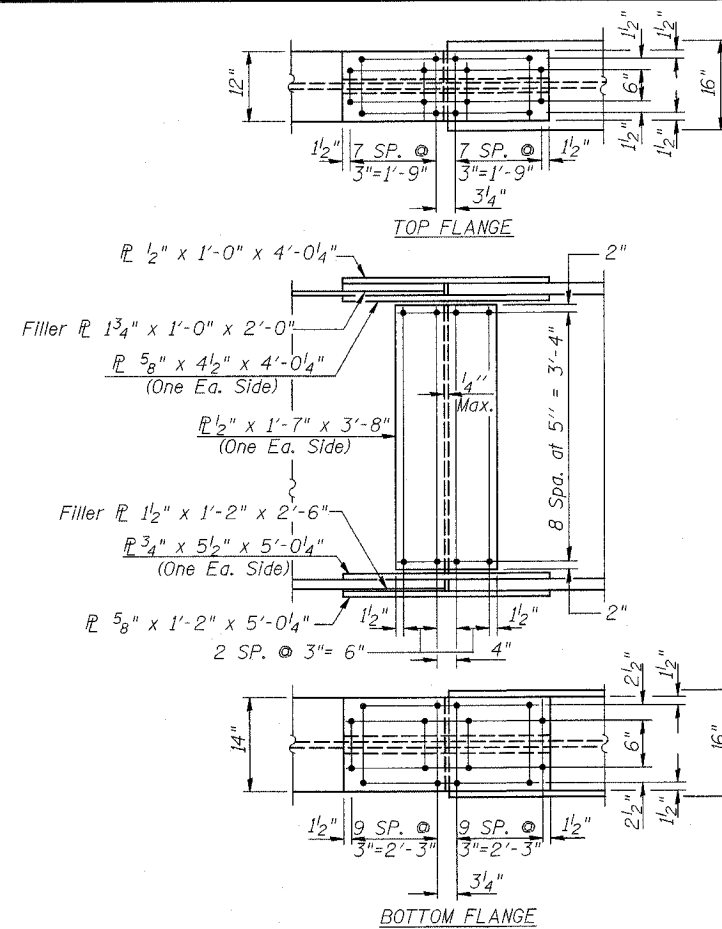
For Fabrication Only



SECTION AT PIER **SECTION AT ABUTMENT**
BEARING STIFFENER DETAILS



CAMBER DIAGRAM



FIELD SPLICE DETAIL

All splice plates excluding filler P's shall be subject to Notch Toughness Requirements

PROP. INTERIOR GIRDER MOMENT TABLE

	0.4 Sp. 1 or 0.6 Sp. 2	Pier
I_s	(in ⁴) 22670	61900
I_c (n)	(in ⁴) 54340	—
I_c (3n)	(in ⁴) 39630	—
S_s	(in ³) 993	2314
S_c (n)	(in ³) 1338	—
S_c (3n)	(in ³) 1224	—
Z	(in ³) —	2557
ϕ	(k/ft.) 1.12	1.73
$M\phi$	(k) 741	3107
$s\phi$	(k/ft.) 0.53	—
$M_s\phi$	(k) 433	—
$M\phi$	(k) 1090	1158
M (Imp)	(k) 229	243
$S_3[M\phi + M(\text{Imp})]$	(k) 2198	2335
M_a	(k) 4384	7075
M_u	(k) 6285	7671
f_s (non-comp) (k.s.i.)	8.9	16.1
$f_s\phi$ (comp) (k.s.i.)	4.2	—
$f_s S_3(\phi + \text{Imp})$ (k.s.i.)	19.7	12.1
f_s (Overload) (k.s.i.)	32.8	28.2
VR	(k) 68.8	—

INTERIOR GIRDER REACTION TABLE

	Abuts.	Pier
R ϕ	(k) 107	238.6
R ϕ	(k) 51.2	91.8
Imp.	(k) 10.8	19.3
R (Total)	(k) 169	349.7

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing $f_s\phi$ (non-comp.) and live load stresses at pier.

I_c and S_c are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

I_c and S_c are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

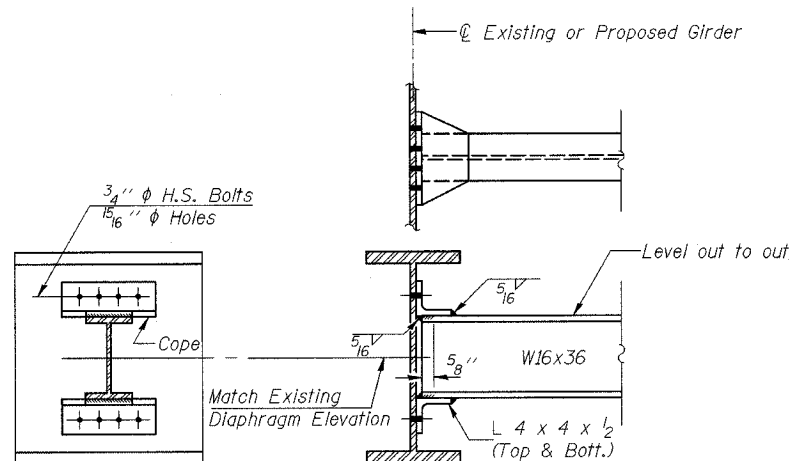
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

M_a (Applied Moment) = $1.3[M\phi + M_s\phi + S_3(M\phi + M(\text{Imp}))]$.

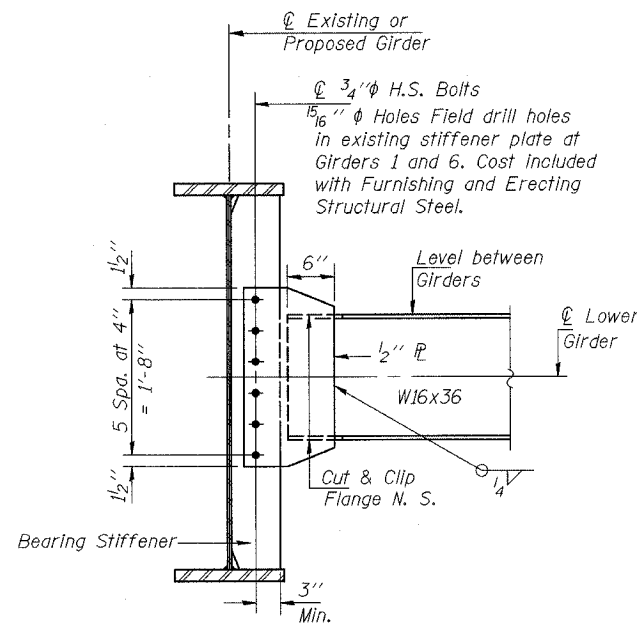
The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.

f_s (Overload) is the sum of the stresses due to $M\phi + M_s\phi + S_3(M\phi + M(\text{Imp}))$.

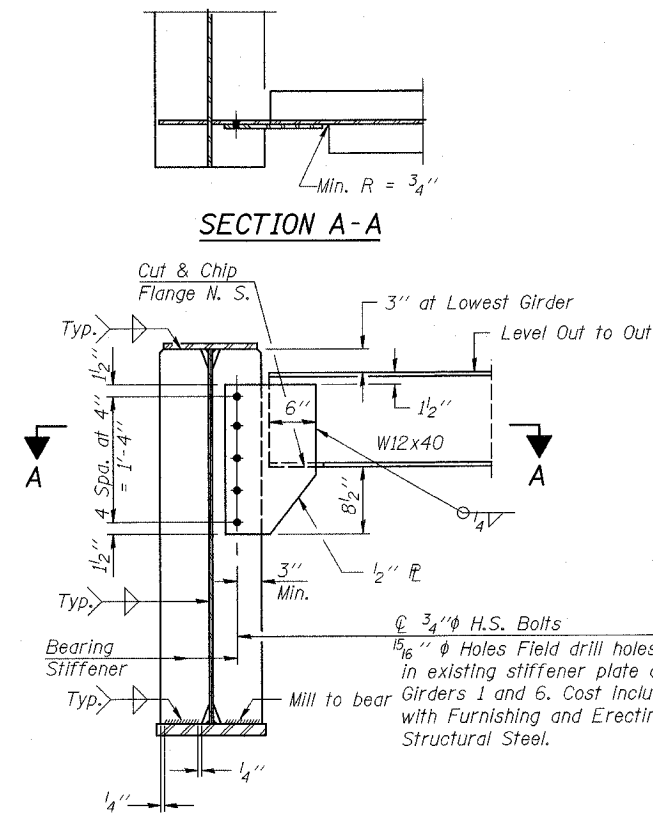
R ϕ includes the weight of the concrete diaphragm and the dead load reaction from the approach pavement.



DIAPHRAGM D & D₃
32 Required



DIAPHRAGM D₁ & D₄
4 Required



DIAPHRAGM D₂ & D₅
8 Required

Note: Two hardened washers shall be required over all oversized holes.

NOTES

Two hardened washers shall be required over all oversized holes for diaphragms.

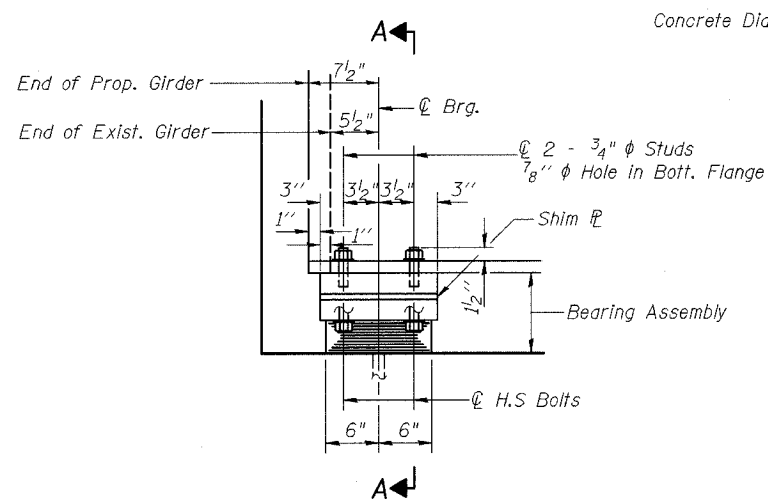
Remove and replace existing bolts at diaphragms connected to existing Girders 1 and 6. Cost included with Furnishing and Erecting Structural Steel.

Work this Sheet with Sheet 12 of 26.

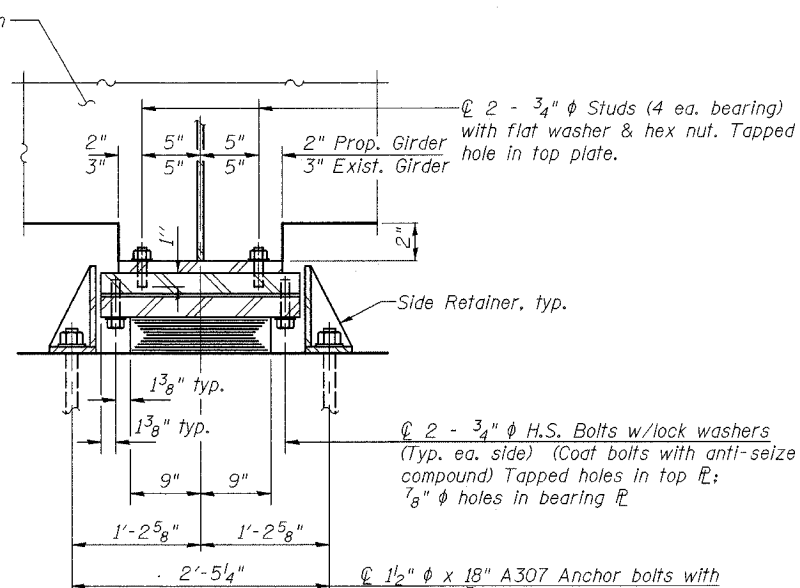
SHEET TITLE		STRUCTURAL STEEL	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFG	CHECKED BY	KPS/CME/MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		13 OF 26 SHTS	

CONTRACT NO. 94827

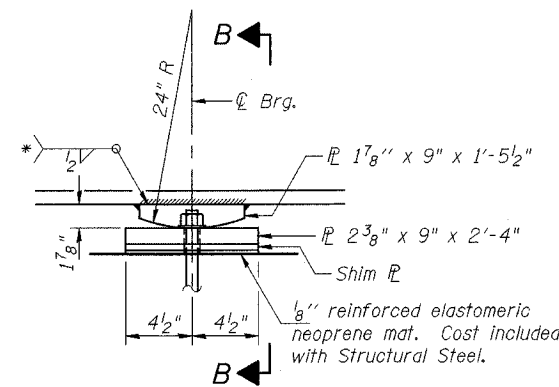
*Field weld at existing girders Cost included with Jacking and Cribbing.



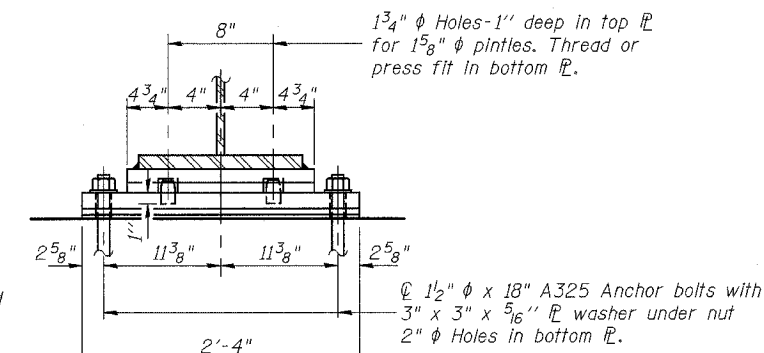
ELEVATION AT ABUT.



SECTION A-A



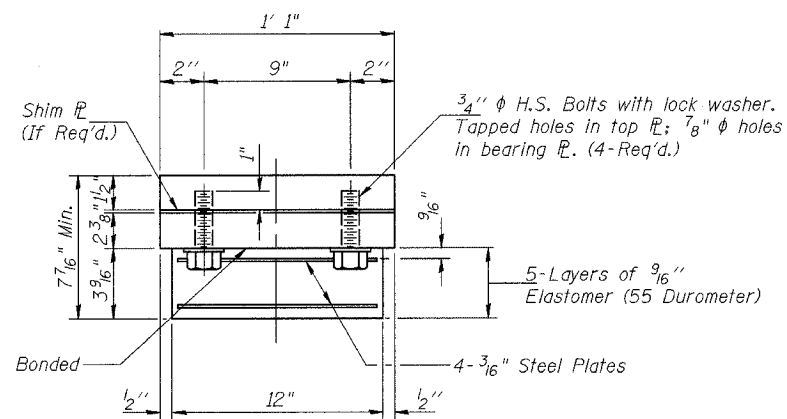
ELEVATION AT PIER



SECTION B-B

FIXED BEARING

TYPE I ELASTOMERIC EXP. BRG.

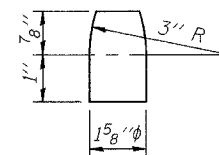


BEARING ASSEMBLY

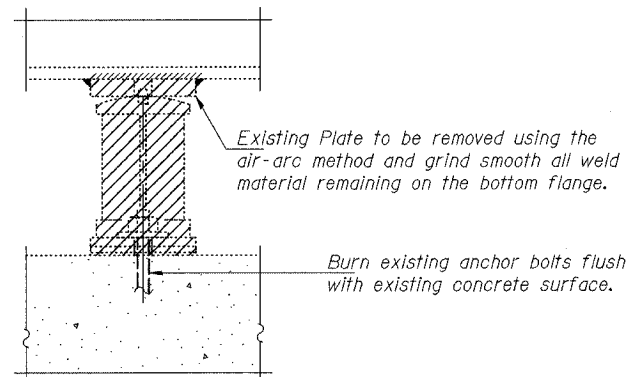
Note: Shim plates shall not be placed under Bearing Assembly.

NOTES

Anchor bolts at fixed bearings for new girders may be built into the masonry. See sheet 15 of 26 for Anchor Bolt installation. 7/8 inch diameter holes in bottom flange for 3/4 inch diameter studs will be drilled in the field for existing girders. Cost included with Jacking and Cribbing. The structural steel bearing plates of the elastomeric bearing assembly shall conform to the requirements of AASHTO M270, Grade 50.



PINTLE



EXISTING BEARING REMOVAL DETAIL

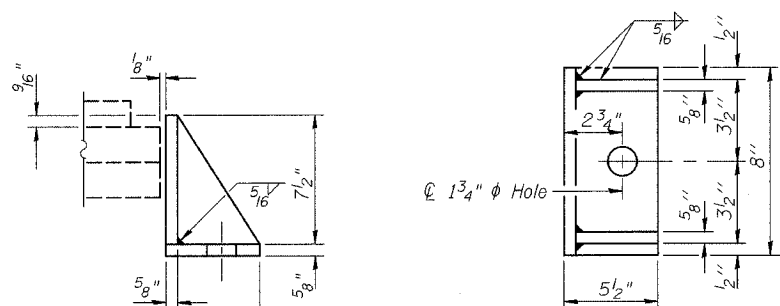
Cost of existing bearing removal and disposal is included with Jacking and Cribbing. Total number to be removed = 18

JACKING AND CRIBBING PROCEDURE

- The Contractor shall submit for approval by the Engineer, plans for jacking and cribbing prior to commencing any work at the bearings. See Special Provision for Jacking and Cribbing. Dead Load = 11 k per girder at each abutment and 42 k per girder at pier. Use 15 ton min jack capacity at abutments and 45 ton min jack capacity at the pier.
- Jacking and Cribbing shall be done after the existing concrete deck is removed.
- The existing structural steel shall be raised according to the Special Provision for Jacking and Cribbing and to a height sufficient to form, pour and cure the concrete bearing seats, remove the existing bearings and install the new bearings.
- Once the new bearings are in place the existing steel can be lowered into place and connected to the bearings.
- After the existing and proposed girders are sitting on and connected to the new bearings and the proposed diaphragms are in place, forming for the new deck pour can begin.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	20
Jacking and Cribbing	L. Sum	1



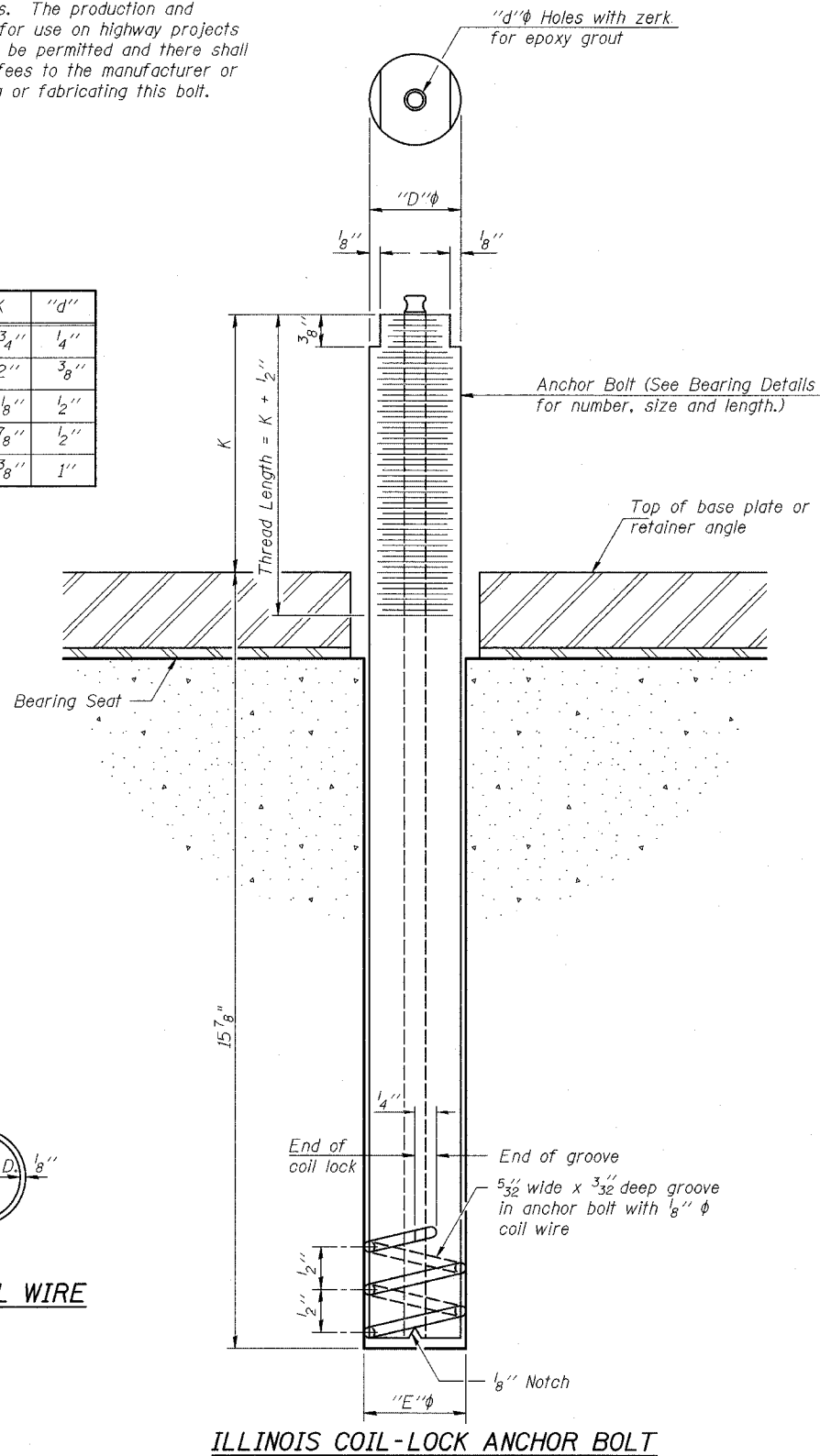
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

SHEET TITLE		PROJECT NO.
BEARING DETAILS		02017
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	SCALE
		DATE
		DRAWN BY
		CHECKED BY
		DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		14
		OF 26 SHTS

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
 2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
W. Abut.	A307
Pier	A325
E. Abut.	A307

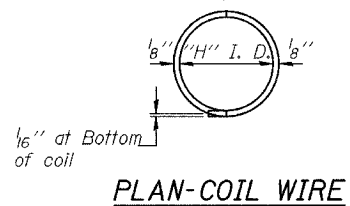
ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

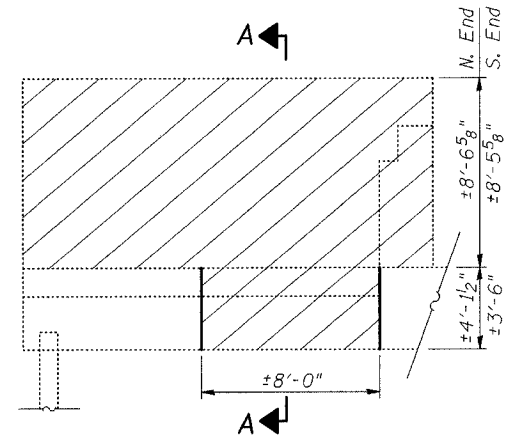
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.



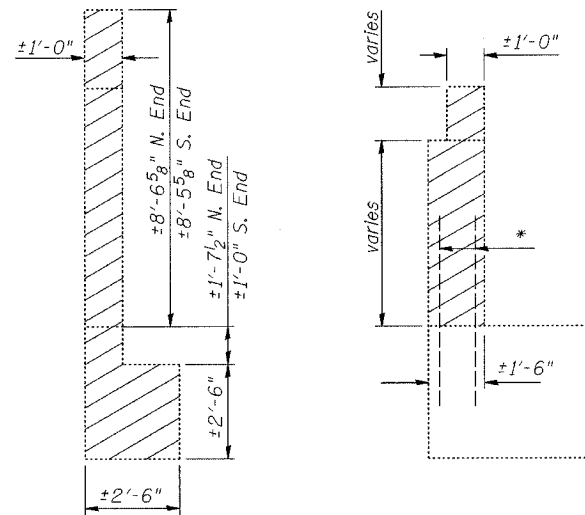
SHEET TITLE		ANCHOR BOLT DETAILS FOR BEARINGS	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFG	CHECKED BY	KPS/CME/MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		15	OF 26 SHTS

CONTRACT NO. 94827



WING WALL ELEVATION

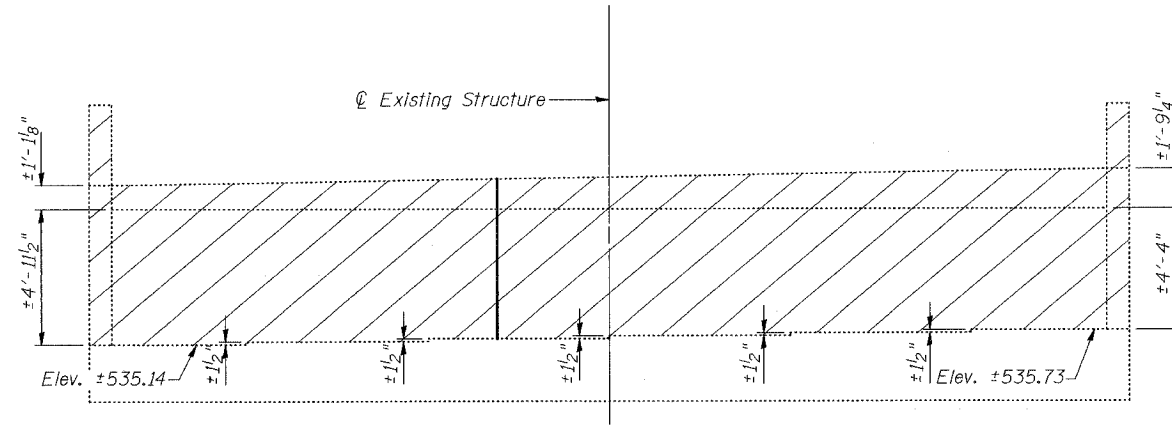
Southwest Wing Wall shown
Northwest Wing Wall Similar.



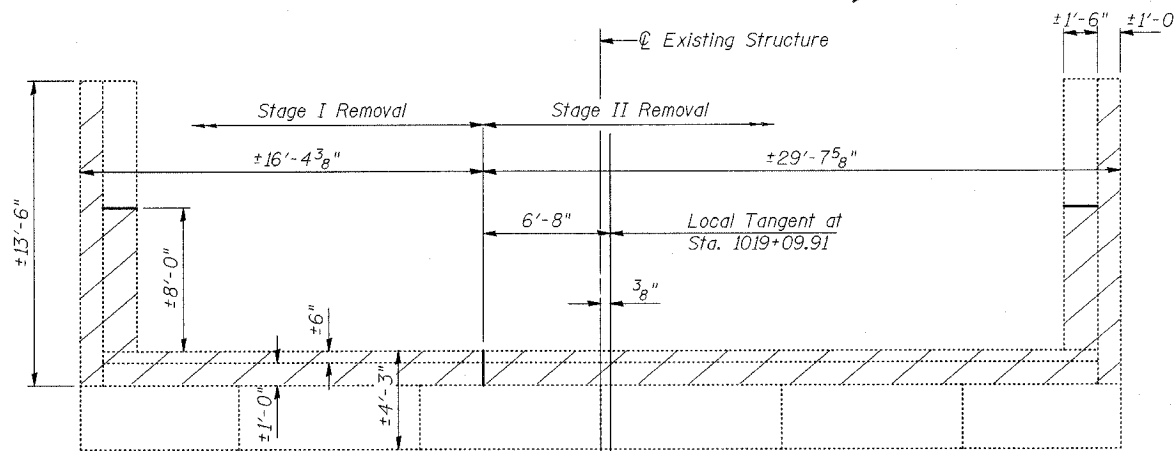
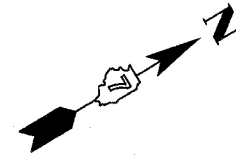
SEC. A-A

SEC. THRU ABUT.

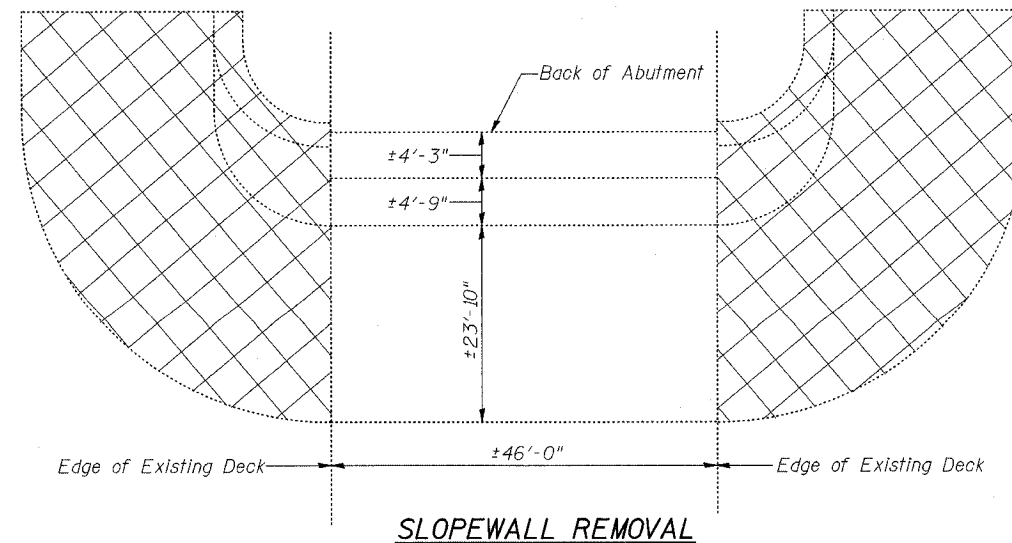
* Existing v bars in abutment backwall shall be cut to fit proposed construction.



ELEVATION
(Looking West)



PLAN



SLOPEWALL REMOVAL

NOTES

Hatched areas indicate Concrete Removal.
Existing reinforcement not extending into areas of new construction shall be cut at the removal line and removed. Exposed portion will be covered with a layer of epoxy. Cost included with Concrete Removal.
Existing reinforcement extending into the removal area construction area to be cleaned, straightened and incorporated into the new construction. All reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
Cross hatched areas indicate Slopewall Removal. Existing slopewall is 6" thick.

BILL OF MATERIAL

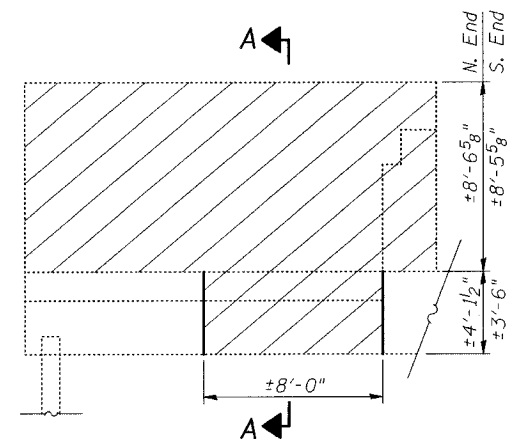
Item	Unit	Quantity
Concrete Removal	Cu. Yd.	28.2
Slopewall Removal	Sq. Yd.	428

SHEET TITLE WEST ABUTMENT CONCRETE REMOVAL		PROJECT NO. 02017
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	SCALE
		DATE
		DRAWN BY TFG
		CHECKED BY KPS/CME/MCB
		DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		16 OF 26 SHTS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. RTE. 774	107BY-1	EFFINGHAM	273	217
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

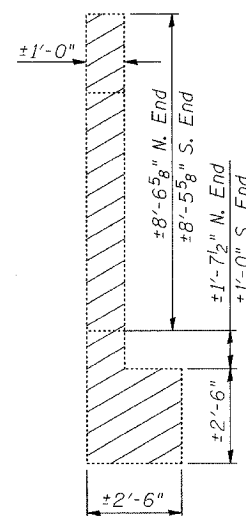
SHEET NO. 17
26 SHEETS

CONTRACT NO. 94827

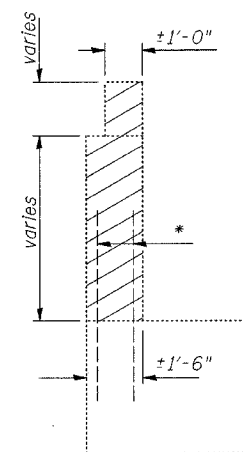


WING WALL ELEVATION

Southwest Wing Wall shown
Northwest Wing Wall Similar.

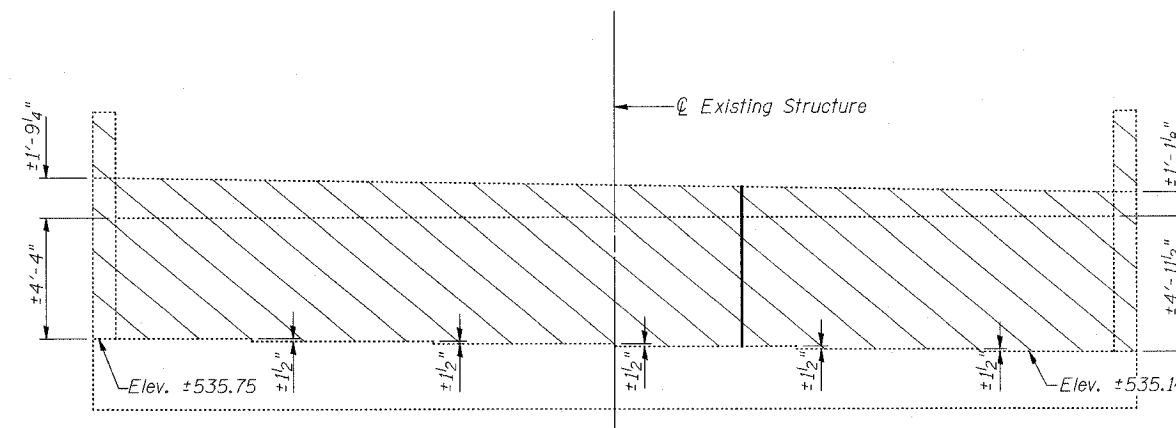


SEC. A-A

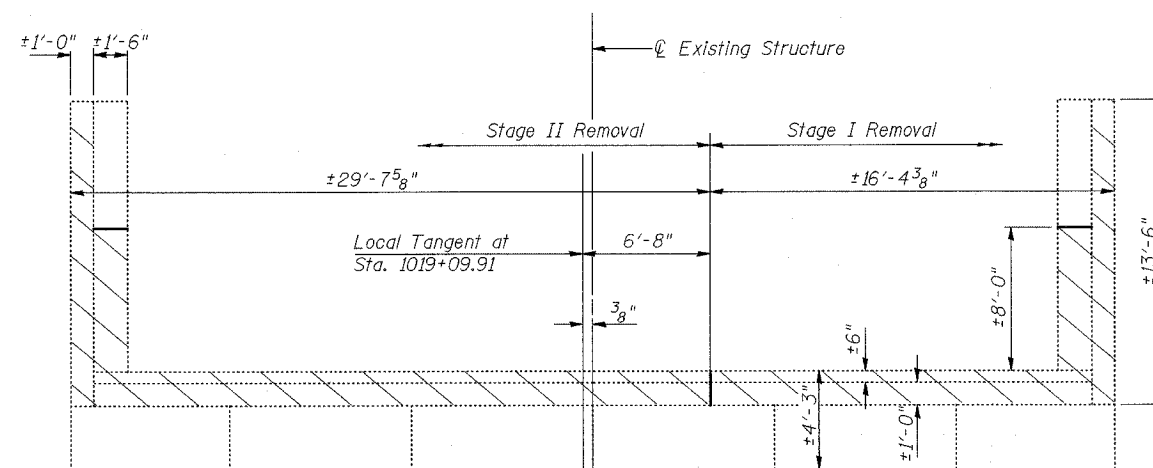
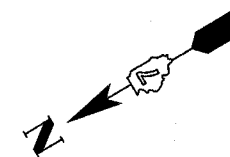


SEC. THRU ABUT.

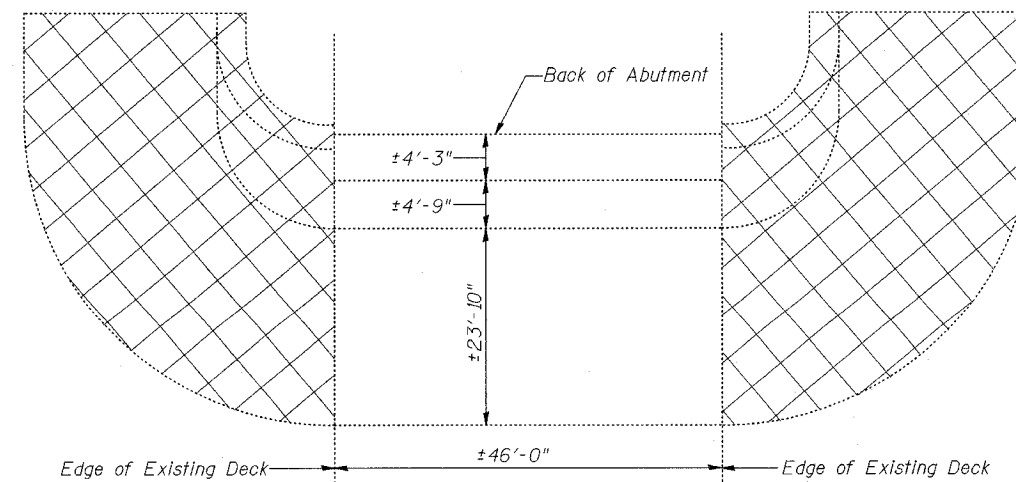
* Existing v bars in abutment backwall shall be cut to fit proposed construction.



ELEVATION
(Looking East)



PLAN



SLOPEWALL REMOVAL

NOTES

Hatched areas indicate Concrete Removal.
Existing reinforcement not extending into areas of new construction shall be cut at the removal line and removed. Exposed portion will be covered with a layer of epoxy. Cost included with Concrete Removal.
Existing reinforcement extending into the removal area construction area to be cleaned, straightened and incorporated into the new construction. All reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
Cross hatched areas indicate Slopewall Removal. Existing slopewall is 6" thick.

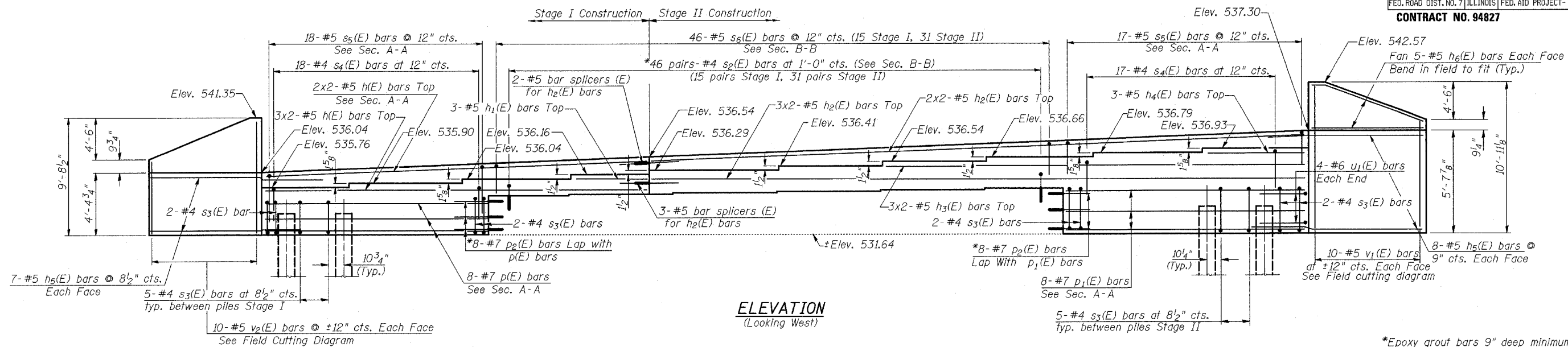
BILL OF MATERIAL

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	28.2
Slopewall Removal	Sq. Yd.	428

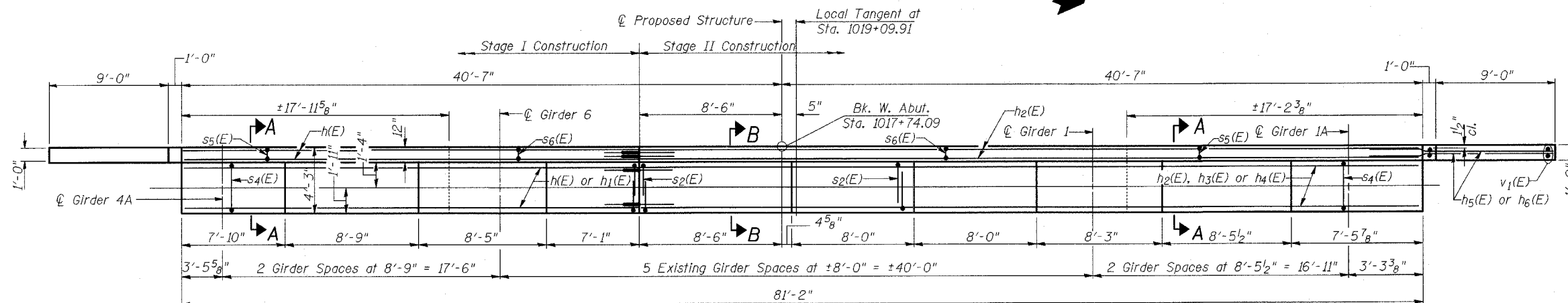
SHEET TITLE		EAST ABUTMENT CONCRETE REMOVAL	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFG	CHECKED BY	KPS/CME/MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		17	OF 26 SHTS

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CONTRACT NO. 94827

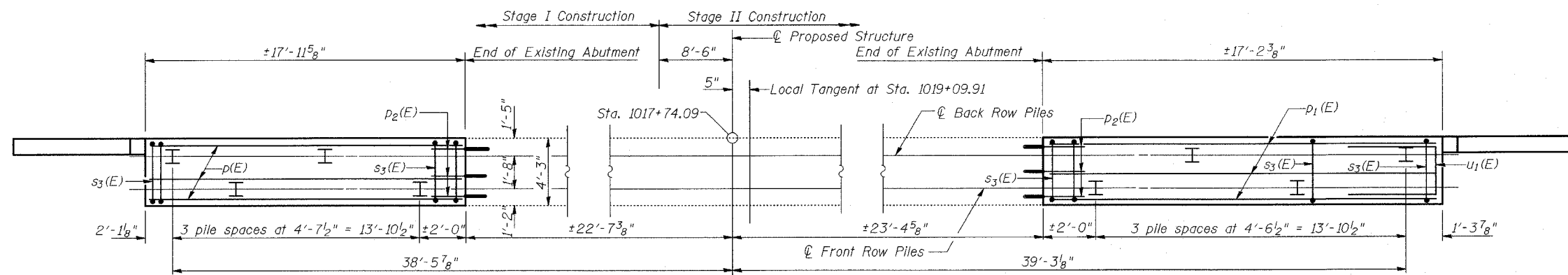


*Epoxy grout bars 9" deep minimum drilled holes according to Section 584 of the Standard Specifications. The grout and method of application shall be approved by the Engineer. Space p₂(E) bars to miss existing reinforcement.



PILE DATA
Type : HP10 x 57
Capacity : Driven to Refusal
Length : 24'
No Req'd. : 7 + 1 test pile

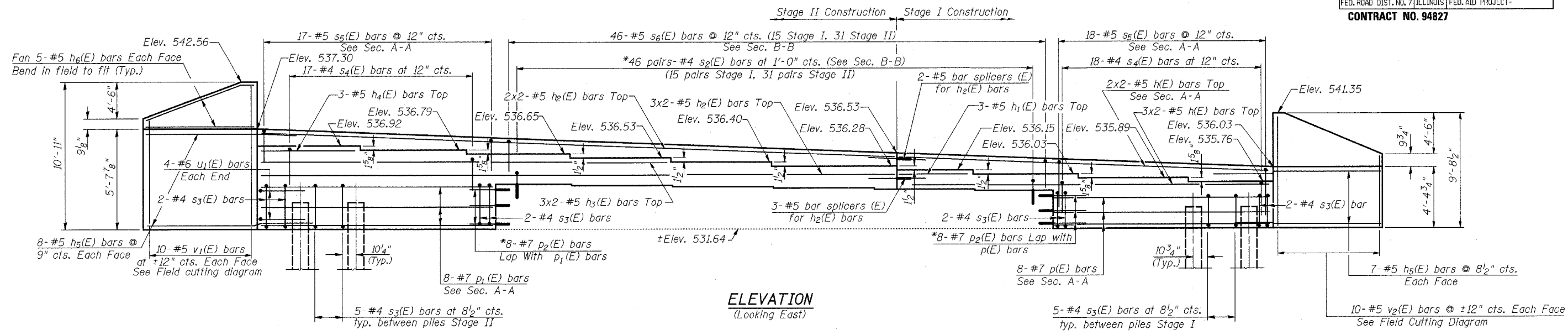
Min. Bar Lap
#5 bars = 1'-8"



Work this sheet with sheet 20 of 26.

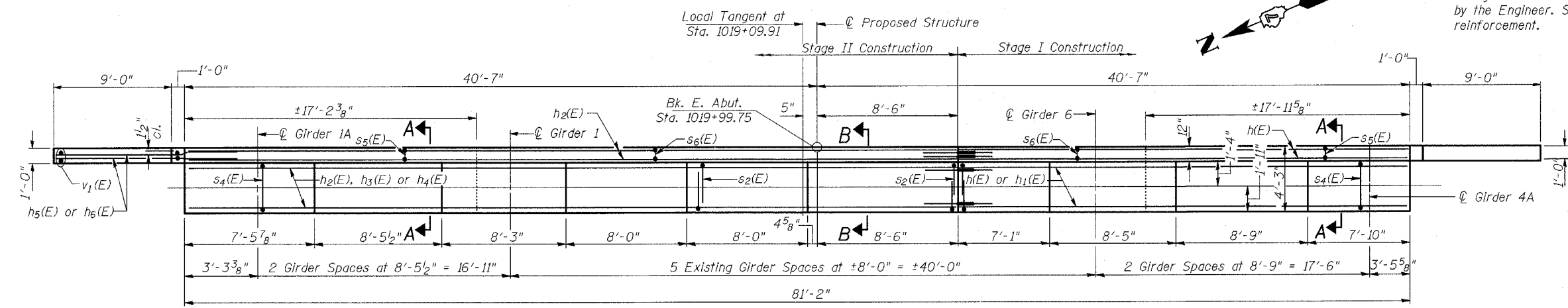
SHEET TITLE WEST ABUTMENT		
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017	SCALE DATE DRAWN BY TFG
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		CHECKED BY KPS/CME/MCB DRAWING NO. 18 OF 26 SHTS

CONTRACT NO. 94827



ELEVATION
(Looking East)

*Epoxy grout bars 9" deep minimum drilled holes according to Section 584 of the Standard Specifications. The grout and method of application shall be approved by the Engineer. Space p₂(E) bars to miss existing reinforcement.



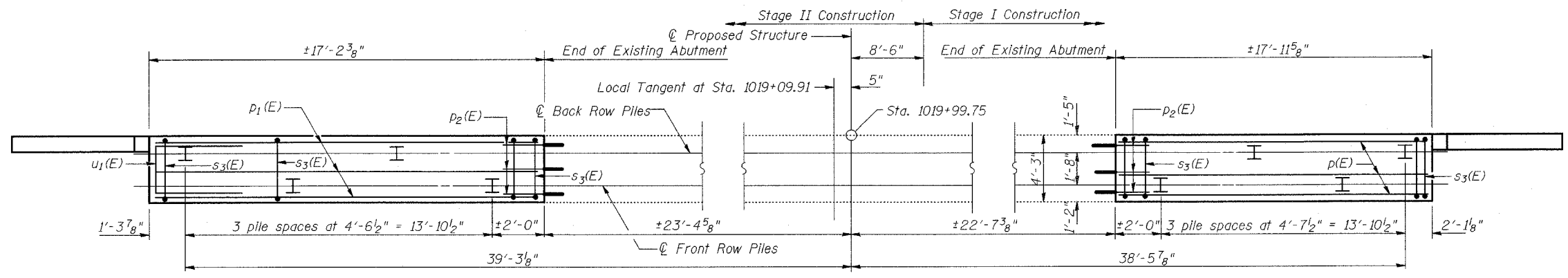
PLAN

PILE DATA

Type : HP10 x 57
Capacity : Driven to Refusal
Length : 18'
No Req'd. : 7 + 1 test pile

Min. Bar Lap

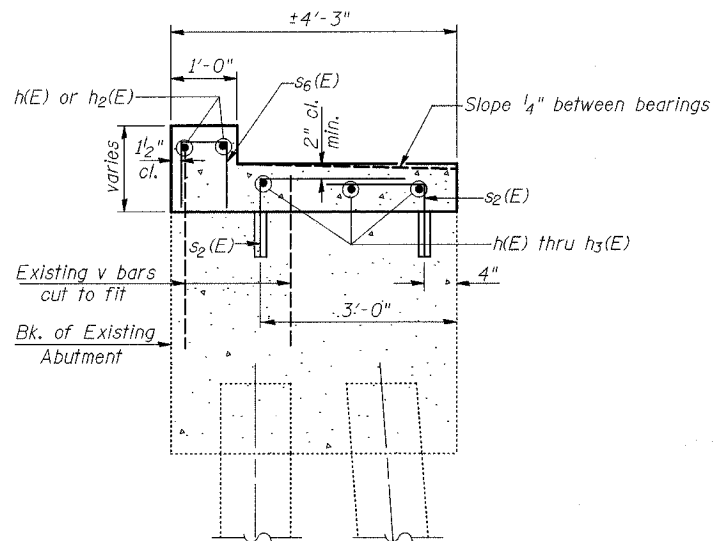
#5 bars = 1'-8"



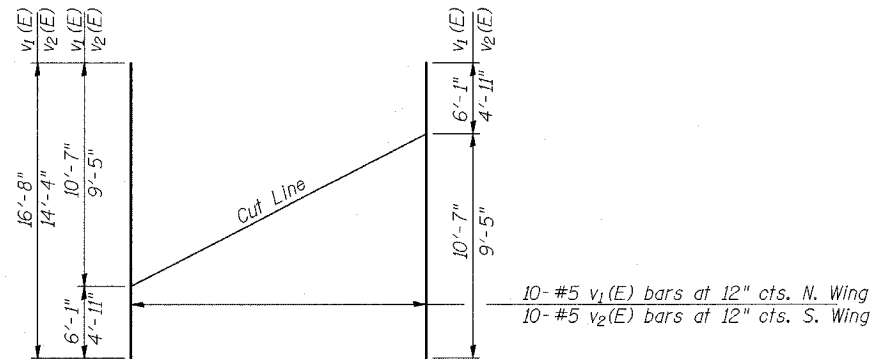
PLAN PILE CAP
Existing piles not shown

Work this sheet with sheet 20 of 26.

SHEET TITLE EAST ABUTMENT		
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017	SCALE DATE DRAWN BY TFC CHECKED BY KPS/CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		19 OF 26 SHTS

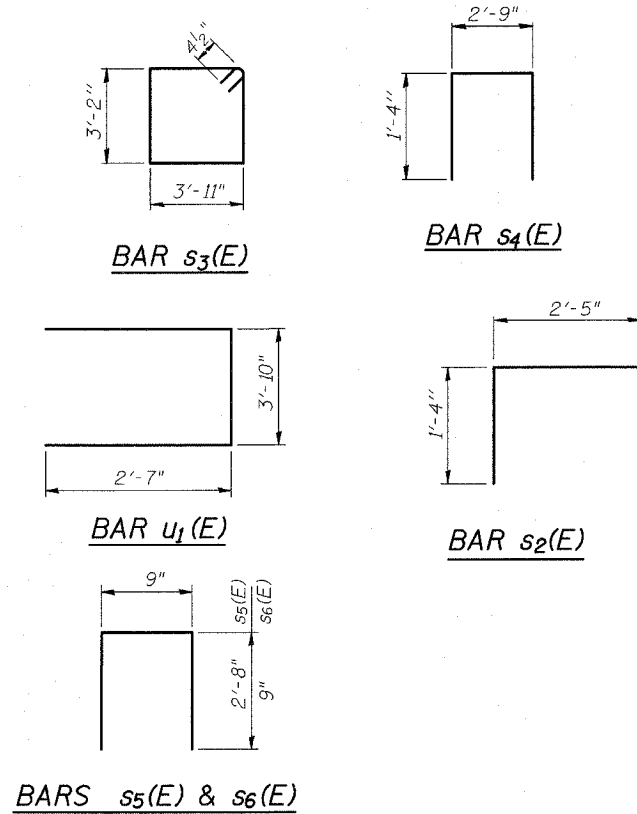


SECTION B-B



FIELD CUTTING DIAGRAM

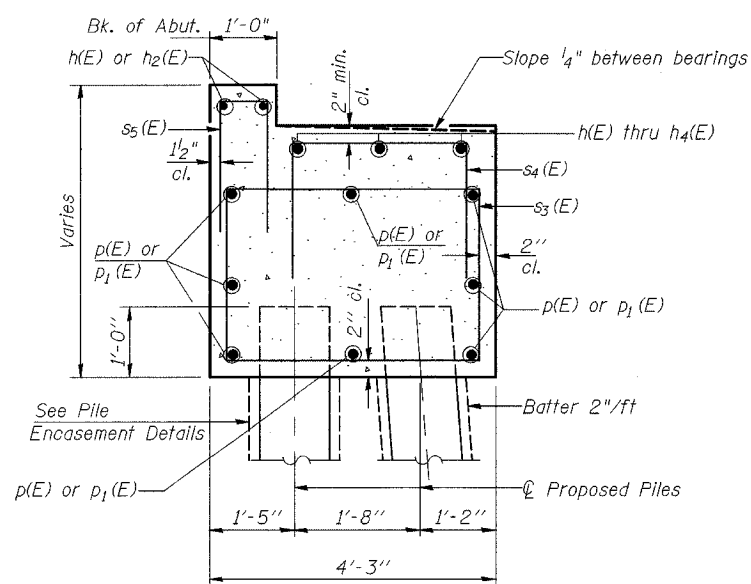
Order $v_1(E)$ and $v_2(E)$ bars full length.
Cut as shown and use remainder of bars
in opposite face.



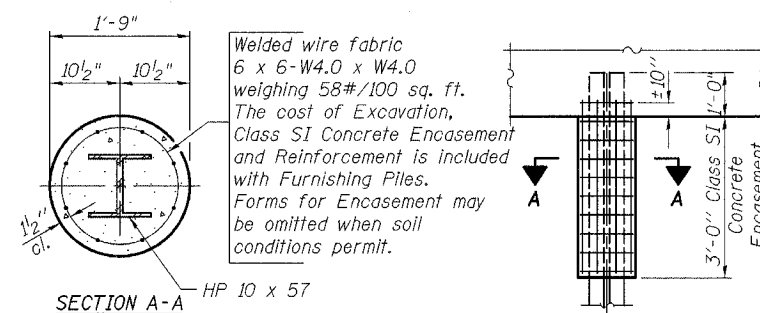
BILL OF MATERIAL 2-ABUTS.

Bar	No.	Size	Length	Shape
$h(E)$	20	#5	16'-9"	—
$h_1(E)$	6	#5	6'-9"	—
$h_2(E)$	20	#5	25'-3"	—
$h_3(E)$	12	#5	16'-9"	—
$h_4(E)$	6	#5	7'-1"	—
$h_5(E)$	60	#5	12'-2"	—
$h_6(E)$	40	#5	9'-8"	—
$p(E)$	16	#7	17'-7"	—
$p_1(E)$	16	#7	16'-10"	—
$p_2(E)$	32	#7	5'-9"	—
$s_2(E)$	184	#4	3'-9"	□
$s_3(E)$	76	#4	14'-11"	□
$s_4(E)$	70	#4	5'-5"	□
$s_5(E)$	70	#5	6'-1"	□
$s_6(E)$	92	#5	2'-3"	□
$u_1(E)$	16	#6	9'-0"	□
$v_1(E)$	20	#5	16'-8"	—
$v_2(E)$	20	#5	14'-4"	—
* Structure Excavation				Cu. Yd. 310
Concrete Structures				Cu. Yd. 79.9
Reinforcement Bars Epoxy Coated				Lbs. 6830
Furnishing Steel Piles HP10x57				Ft. 294
Driving Steel Piles				Ft. 294
Test Piles Steel HP10x57				Each 2
Bar Splacers				Each 10

Reinforcement bars designated (E) shall be epoxy coated.
*Structure Excavation = 155 Cu. Yd. per Abutment.



SECTION A-A



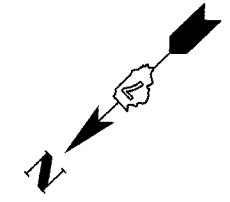
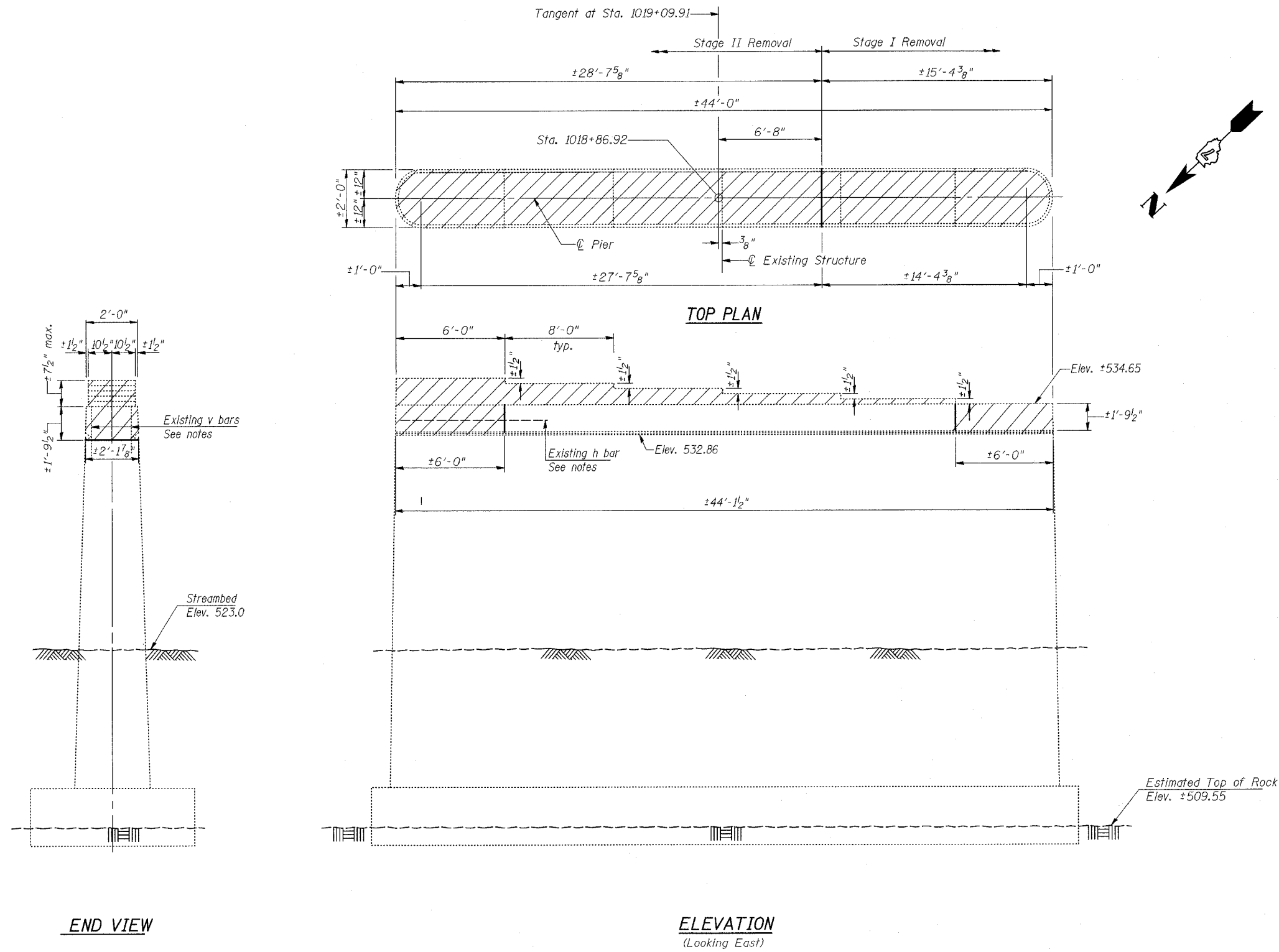
PILE ENCASEMENT DETAIL

Welded wire fabric 6 x 6-W4.0 x W4.0 weighing 58#/100 sq. ft. The cost of Excavation, Class SI Concrete Encasement and Reinforcement is included with Furnishing Piles. Forms for Encasement may be omitted when soil conditions permit.

SECTION A-A HP 10 x 57

Work this sheet with sheets 18 & 19 of 26.

SHEET TITLE		
ABUTMENT DETAILS		
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY KPS/CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		20 OF 26 SHTS



NOTES

Hatched areas indicate Concrete Removal.
Existing v and h bars extending into the new construction shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.

BILL OF MATERIAL

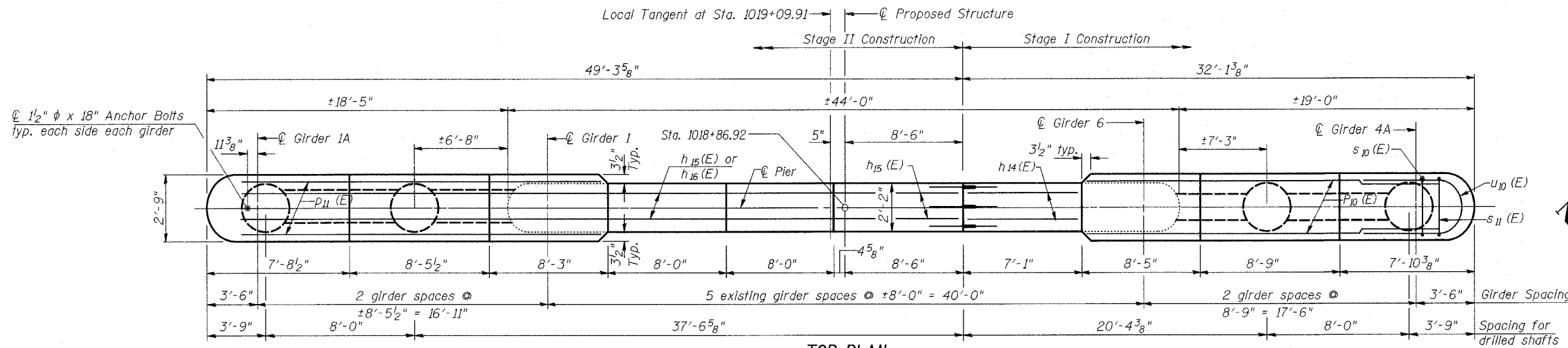
Item	Unit	Quantity
Concrete Removal	Cu. Yd.	2.5

END VIEW

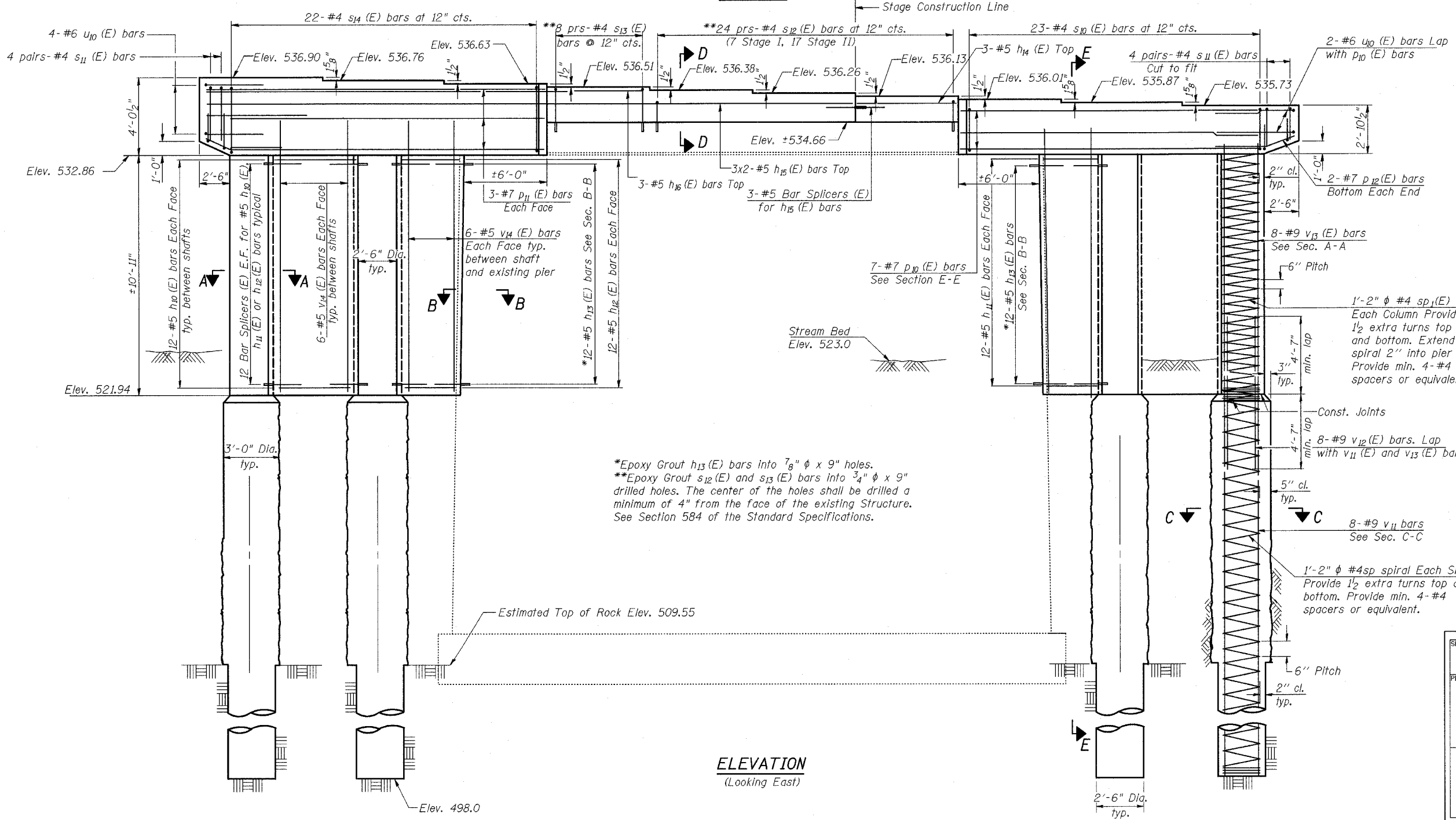
ELEVATION
(Looking East)

SHEET TITLE PIER CONCRETE REMOVAL	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY KPS/CME/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	21 OF 26 SHTS

CONTRACT NO. 94827



TOP PLAN



ELEVATION
(Looking East)

Min. Bar Lap

- #5 bar = 1'-8" web wall
- #5 bar = 3'-0" cap
- #7 bar = 4'-10"

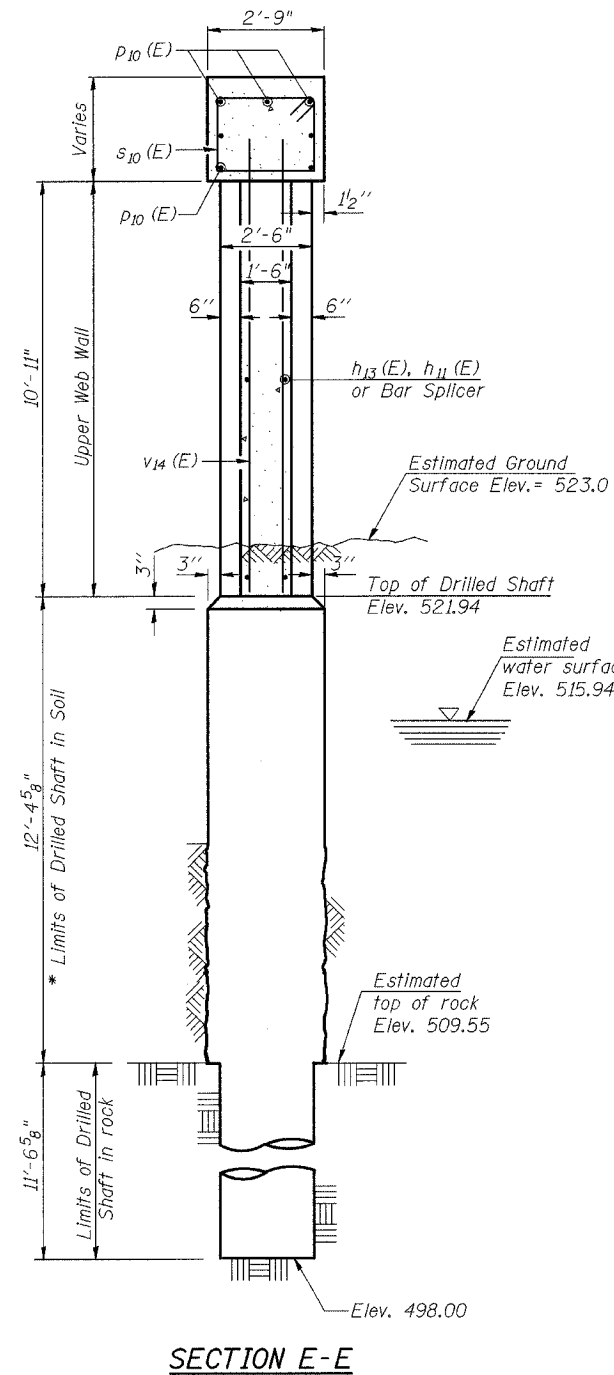
NOTES

- Space reinforcement in cap to miss anchor bolts.
- Four steps monolithically with cap.

*Epoxy Grout h13(E) bars into 7/8" φ x 9" holes.
 **Epoxy Grout s12(E) and s13(E) bars into 3/4" φ x 9" drilled holes. The center of the holes shall be drilled a minimum of 4" from the face of the existing Structure. See Section 584 of the Standard Specifications.

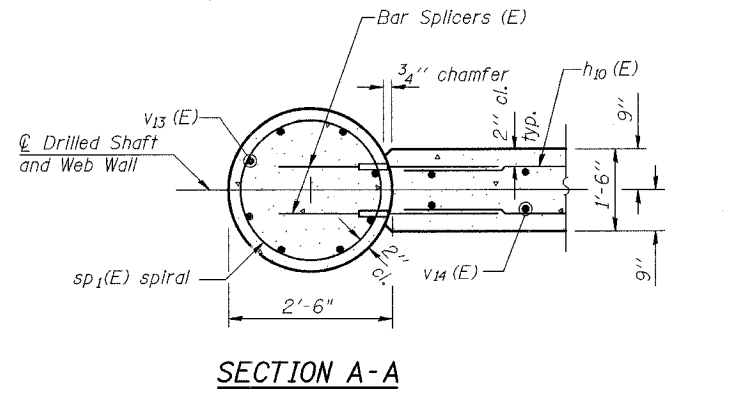
Work this Sheet with Sheet 23 of 26.

SHEET TITLE		PIER	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFG	CHECKED BY	KPS/CME/MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		22	OF 26 SHTS

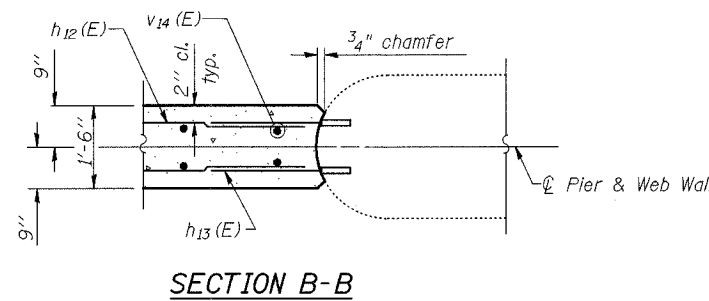


SECTION E-E

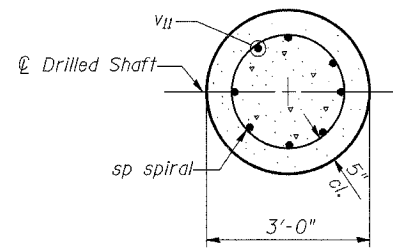
* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.



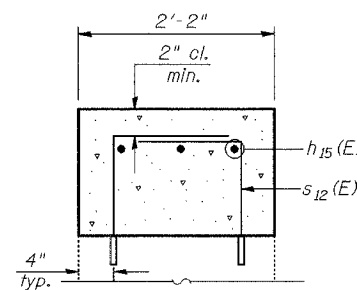
SECTION A-A



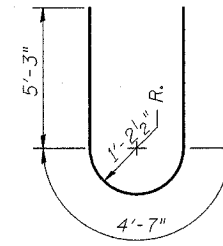
SECTION B-B



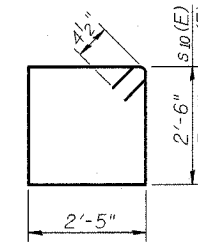
SECTION C-C



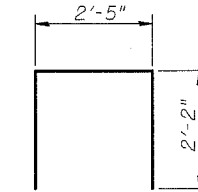
SECTION D-D



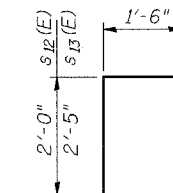
BAR u10 (E)



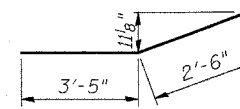
BAR s10 (E) & s14 (E)



BAR s11 (E)



BARS s12 (E) & s13 (E)



BAR p12 (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h10 (E)	48	#5	4'-11"	—
h11 (E)	24	#5	5'-3"	—
h12 (E)	24	#5	4'-7"	—
h13 (E)	48	#5	3'-7"	—
h14 (E)	3	#5	6'-9"	—
h15 (E)	6	#5	24'-7"	—
h16 (E)	3	#5	29'-10"	—
p10 (E)	7	#7	22'-6"	—
p11 (E)	6	#7	21'-10"	—
p12 (E)	4	#7	5'-11"	—
s10 (E)	23	#4	10'-7"	□
s11 (E)	16	#4	6'-9"	□
s12 (E)	48	#4	3'-6"	□
s13 (E)	16	#4	3'-11"	□
s14 (E)	22	#4	12'-3"	□
sp	4	#4	23'-9"	⋈
sp1 (E)	4	#4	11'-2"	⋈
u10 (E)	6	#6	15'-1"	U
v11	32	#9	23'-9"	—
v12 (E)	32	#9	9'-2"	—
v13 (E)	32	#9	13'-6"	—
v14 (E)	48	#5	13'-4"	—
Drilled Shaft in Soil	36'	Foot	50	
Drilled Shaft in Rock	30'	Foot	47	
Concrete Structures		Cu. Yd.	41.2	
Reinforcement Bars, Epoxy Coated		Pound	5820	
Reinforcement Bars		Pound	3440	
Bar Splicers		Each	147	

NOTES

Reinforcement Bars designated (E) shall be epoxy coated. Cast steps monolithically with cap. Space cap reinforcement to miss anchor bolts. Minimum lap for spirals = 1 1/2 turns. **Length is height of spiral. Bars indicated thus 3x2-#7 etc. indicates 3 lines of bars with 2 lengths per line.

Work this sheet with sheet 22 of 26.

SHEET TITLE		PROJECT NO.	
PIER DETAILS		02017	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	SCALE	DATE
			TFG
		CHECKED BY	KPS/CME/MCB
		DRAWING NO.	23
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		OF 26 SHTS	

CONTRACT NO. 94827

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
 Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

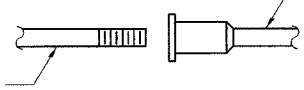
- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
- ② Minimum *Pull-out Strength = $1.25 \times f_{s_{allow}} \times A_t$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_{s_{allow}}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

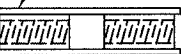
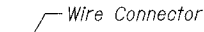
The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



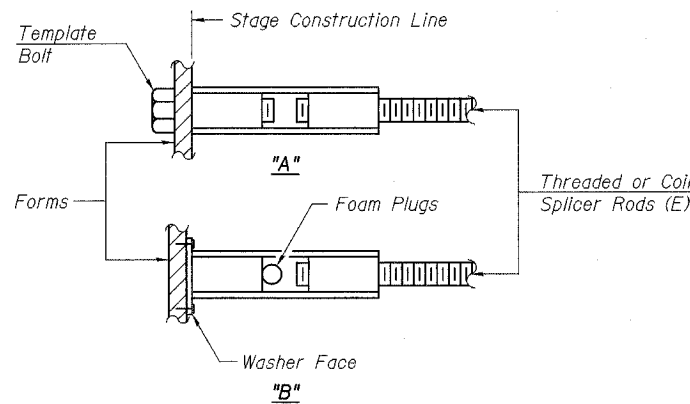
** ONE PIECE



WELDED SECTIONS

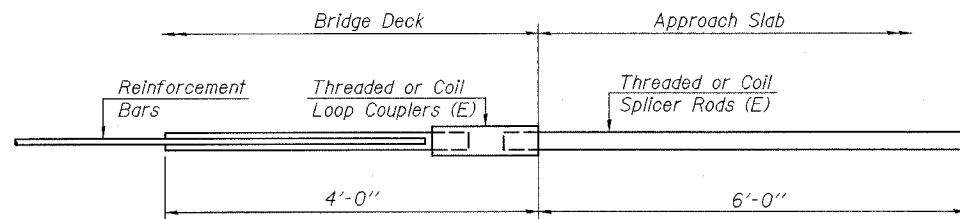
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



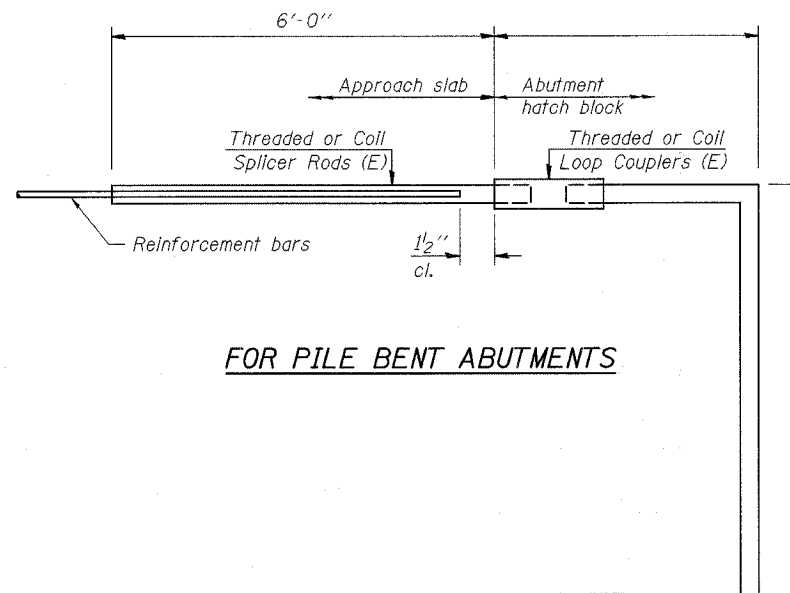
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



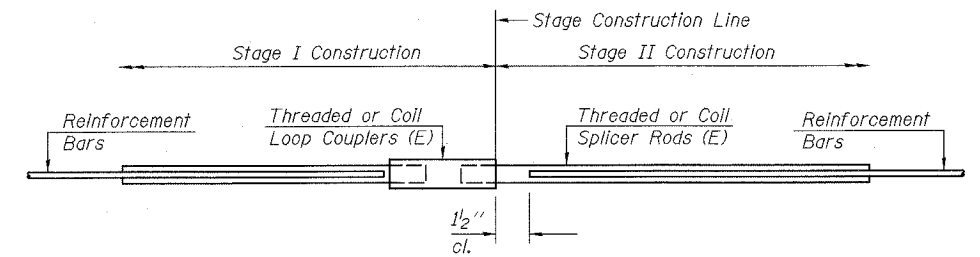
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 156



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#5	923	Deck
#6	24	Diaphragms
#5	5	W. Abut.
#5	5	E. Abut.
#5	147	Pier

SHEET TITLE BAR SPLICER ASSEMBLY DETAILS		
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017	SCALE DATE
ENGINEER COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	DRAWN BY TFG	DRAWING NO. 24
	CHECKED BY KPS/CME/MCB	OF 26 SHTS

Boring #1 (2002)



Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation - District 7

SOIL BORING LOG

Page 1 of 3

Date 6/18/02

ROUTE FAP 774 (IL 33) DESCRIPTION Little Wabash River Overflow LOGGED BY E. Sandschafer
SECTION 107WRS-1 LOCATION NW 1/4, SEC. 18, TWP. 8 N. RNG. 6 E. 3 PM
COUNTY Effingham DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Automatic

STRUCT. NO.	STATION	DEPTH (ft)	SOIL TYPE	MOISTURE (%)	UNIFORMITY (%)	REMARKS
025-0077	1018+84.5		Surface Water Elev. 523.20 ft Stream Bed Elev. 521.90 ft			
1 of 1 (Pier #1)	1018+95		Groundwater Elev. 514.5 ft First Encounter Upon Completion 516.5 ft After Hrs. N/A ft			
		38.00 ft	Ground Surface Elev. 526.45 ft			
		0	Brown, CLAY w/ sand and few pebbles.			
		2	Very stiff, damp, brown, CLAY w/ sand and few pebbles.	2.6	15	
		4	Very soft, very damp, brown w/ gray layers, SANDY LOAM.	0.2	20	
		10	Very soft, wet, gray, SILTY LOAM.	0.1	29	
		25	Very loose, very wet, dark gray, fine, SAND. 20% passing #200 sieve.			
		22	33% passing #200 sieve.			
		16	Very dense, very moist, gray, SANDSTONE. Borehole continued with rock coring.			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)
BBS, from 137 (Rev. 8-95)



Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation - District 7

ROCK CORE LOG

Page 2 of 3

Date 6/18/02

ROUTE FAP 774 (IL 33) DESCRIPTION Little Wabash River Overflow LOGGED BY E. Sandschafer
SECTION 107WRS-1 LOCATION NW 1/4, SEC. 18, TWP. 8 N. RNG. 6 E. 3 PM
COUNTY Effingham CORING METHOD Rotary, Surface set diamond bit

STRUCT. NO.	STATION	DEPTH (ft)	ROCK TYPE	REMARKS
025-0077	1018+84.5		Core Diameter 2.06 in Top of Rock Elev. 509.55 ft Begin Core Elev. 509.55 ft	
1 of 1 (Pier #1)	1018+95		Core Diameter 2.06 in Top of Rock Elev. 509.55 ft Begin Core Elev. 509.55 ft	
		38.00 ft	Ground Surface Elev. 526.45 ft	
		100	Gray w/ thin black layers, SANDSTONE.	47
		507.55	Weathered, gray, SANDY CLAY SHALE.	
		100	Gray, SANDSTONE.	64
		502.65	Gray, SANDSTONE.	
		509.55	Gray w/ thin black layers, SANDY CLAY SHALE.	
		100	Gray, SANDSTONE.	66
		495.75	Gray, SANDSTONE.	
		495.25	Gray w/ thin black layers, SANDY CLAY SHALE.	
		100	Gray w/ thin black layers, SANDY CLAY SHALE.	44
		491.05	Gray w/ thin black layers, SANDSTONE.	
		490.45	Gray w/ thin black layers, SANDY CLAY SHALE.	

Color pictures of the cores _____
Cores will be stored for examination until _____
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)



Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation - District 7

ROCK CORE LOG

Page 3 of 3

Date 6/18/02

ROUTE FAP 774 (IL 33) DESCRIPTION Little Wabash River Overflow LOGGED BY E. Sandschafer
SECTION 107WRS-1 LOCATION NW 1/4, SEC. 18, TWP. 8 N. RNG. 6 E. 3 PM
COUNTY Effingham CORING METHOD Rotary, Surface set diamond bit

STRUCT. NO.	STATION	DEPTH (ft)	ROCK TYPE	REMARKS
025-0077	1018+84.5		Core Diameter 2.06 in Top of Rock Elev. 509.55 ft Begin Core Elev. 509.55 ft	
1 of 1 (Pier #1)	1018+95		Core Diameter 2.06 in Top of Rock Elev. 509.55 ft Begin Core Elev. 509.55 ft	
		38.00 ft	Ground Surface Elev. 526.45 ft	
		100	Gray w/ thin black layers, SANDY CLAY SHALE. (continued)	60
		494.55	Extent of exploration.	
		495.75	Benchmark = 543.75' Chiseled square, East abut, SW wingwall of structure number 025-0077	
		495.25	Provided by Program Development, design survey.	

Color pictures of the cores _____
Cores will be stored for examination until _____
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

SHEET TITLE		BORING LOGS	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	CFC	CHECKED BY	KPS/CME/MB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO.	25
		OF 26 SHTS.	

Boring #1 (1971)

Boring No.	Station	Offset	Elevation	N	Qu (t/c.f.)	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	N	Qu (t/c.f.)	w (%)
1 N. ABUT.	1017+70	7' ST. E	519.00				517.5	516.7					
Ground Surface 519.00													
EXISTING PAVEMENT, SUB-BASE AND STIFF DAMP, BROWN CLAY SUBGRADE													
WATER ENCOUNTERED AT ELEVATION 516.5													
516.0													
STIFF, DAMP, MOTTLED BROWN & GREY, CLAY TILL WITH TRACES OF SAND LENSES AND FRAGMENTS OF WEATHERED SANDSTONE													
15 1.3 S 13													
514.0													
15 1.1 S 14													
511.0													
16 1.6 S 16													
509.0 -30													
MIXTURE OF VERY MOIST VERY FINE SAND AND FRAGMENTS OF WEATHERED SANDSTONE													
529.0 -10													
MEDIUM, VERY DAMP, BROWN-GREY, CLAY LOAM TO CLAY (ORGANIC) WITH THIN LENSES OF SAND AND TRACES OF WEATHERED SANDSTONE													
9 0.8 S 16													
11 0.9 S 20													
523.0													
12 1.2 S 18													
521.0													
8 0.6 S&S 28													
518.5													
5 0.5 S 26													
514.5													
SOFT, VERY DAMP, GREY, CLAY LOAM WITH 2" THICK LENSES OF WET SAND & VERY THIN LENSES OF SILTY LOAM													
-45													

Boring #2 (1971)

Boring No.	Station	Offset	Elevation	N	Qu (t/c.f.)	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	N	Qu (t/c.f.)	w (%)
2 PIER 2	1019+28	6' ST. E	520.30				522+						
Ground Surface 520.30													
SOFT, WET, BROWN, LOAM TO CLAY LOAM WITH THIN LENSES OF WET SAND													
3 0.5 S 27													
514.8													
VERY LOOSE, WATER BEARING, BROWN - ORANGE, FINE SAND													
3 24													
512.3													
VERY LOOSE, WET, BROWN-GREY, SANDY LOAM													
2 22													
509.8													
-10													
509.8													
VERY DENSE, MOIST, LIGHT GREY SANDSTONE													
508.8													
VERY DENSE, DRY, GREY, SHALE WITH THIN LENSES OF HARD SANDSTONE													
**													
502.5													
EXTENT OF EXPLORATION													
* 24" PENETRATION FOR 100 BLOWS													
** 1" PENETRATION FOR 100 BLOWS													
*** 2" PENETRATION FOR 100 BLOWS													
503.6													
EXTENT OF EXPLORATION													
* 14" PENETRATION FOR 100 BLOWS													
** 24" PENETRATION FOR 100 BLOWS													
*** 3" PENETRATION FOR 100 BLOWS													
502.0													
EXTENT OF EXPLORATION													
-20													

Boring #3 (1971)

Boring No.	Station	Offset	Elevation	N	Qu (t/c.f.)	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	N	Qu (t/c.f.)	w (%)
3 PIER 1	1018+41	6' ST. E	521.80				522+						
Ground Surface 521.80													
SOFT TO VERY SOFT, WET, BROWN MOTTLED GREY, CLAY													
2 0.3 S 35													
515.6													
SOFT, WET, CLAY LOAM TO CLAY WITH THIN LENSES OF SAND													
3 0.3 S 28													
512.3													
VERY LOOSE, WATER BEARING, BROWN-GREY, SAND													
4 22													
520.2													
7A 11													
VERY DENSE, DRY, GREY, SHALE WITH THIN LENSES OF HARD SANDSTONE													
* 1" PENETRATION FOR 100 BLOWS													
** 24" PENETRATION FOR 100 BLOWS													
502.0													
EXTENT OF EXPLORATION													
-20													

Boring #4 (1971)

Boring No.	Station	Offset	Elevation	N	Qu (t/c.f.)	w (%)	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	N	Qu (t/c.f.)	w (%)
S. ABUT.	1019+89	6' ST. E	525.00				525+0						
Ground Surface 525.00													
MEDIUM, VERY DAMP, BROWN MARBLED GREY, SILTY CLAY TO CLAY WITH THIN LENSES OF SAND													
8 1.0 S 26													
523.0													
MEDIUM, VERY DAMP, CLAY LOAM TO SANDY CLAY LOAM WITH LENSES OF SAND & PIECES OF WEATHERED SANDSTONE													
8 0.6 S 21													
510.0													
SOFT, VERY DAMP, GREY, CLAY LOAM TO CLAY WITH NUMEROUS PIECES OF WEATHERED SANDSTONE													
3 0.25 S 17													
517.0													
LOOSE, VERY DAMP, GREY, SLIGHTLY ORGANIC, SAND WITH LENSES OF CLAY													
12 17													
515.3													
VERY DENSE, MOIST, LIGHT GREY, WEATHERED SANDSTONE													
* 4" PENETRATION FOR 100 BLOWS													
513.0													
VERY DENSE, MOIST, GREY, SHALE WITH THIN LENSES OF HARD SANDSTONE													
** 5" PENETRATION FOR 100 BLOWS													
160 6													
508.5													
EXTENT OF EXPLORATION													
-20													

N - Standard Penetration Test - Blows per Foot (60°)

O.D. Split Spoon Sampler 12" with 140# hammer falling 30"

Qu - Unclassified Compressive Strength - t/c.f.

w - Water Content - percentage of oven dry weight - %

Type failure:
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetration

SHEET TITLE BORING LOGS		
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER OVERFLOW F.A.P. RTE. 774 SECTION 107BY-1 EFFINGHAM COUNTY STATION 1018+86.92 STRUCTURE NO. 025-0077	PROJECT NO. 02017	DATE CFC
DRAWN BY KPS/CME/MCB		DRAWING NO. 26
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		
OF 26 SHTS		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. RTE. 774	107BY	EFFINGHAM	273	227
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

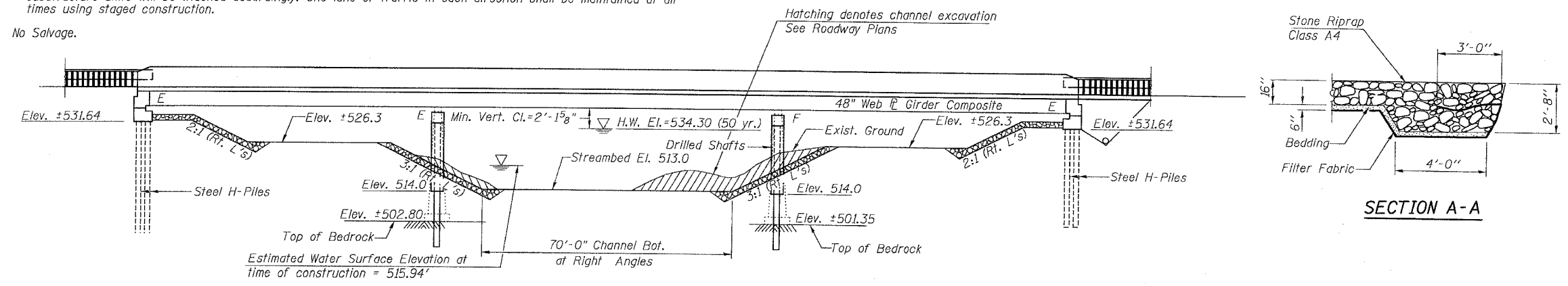
CONTRACT NO. 94827

Curve Data

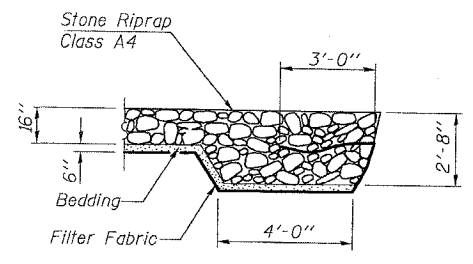
P.I. = Sta. 1014+09.68
 $\Delta = 25^{\circ}19'45''$ (RT)
 $D = 0^{\circ}30'00''$
 $R = 11,456.75'$
 $L = 5,064.76'$
 $T = 2,574.44'$
 $E = 285.69'$
 $S.E. = 1.56\%$
P.C. = Sta. 988+35.24
P.T. = Sta. 1039+00.00
S.E. Attained Sta. 985+68.57 to Sta. 989+68.57
S.E. Removed Sta. 1037+66.67 to Sta. 1041+66.67

Bench Mark: Chiseled "□" above bridge name plate El. = 543.53
Existing Structure: SN 025-0078 built in 1971 as FA Route 74 at Sta. 1011+47.8. Existing structure is 264'-0" back to back of abutments and 46'-0" out to out of deck. The existing superstructure is supported by 48" Plate Girders. The existing substructure consists of pile bent abutments and solid wall piers on footings. The existing deck is to be removed and replaced with a wider deck to accommodate additional lanes. The existing substructure units will be widened accordingly. One lane of traffic in each direction shall be maintained at all times using staged construction.

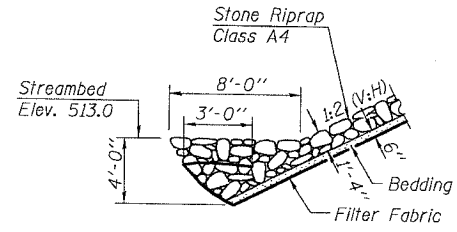
No Salvage.



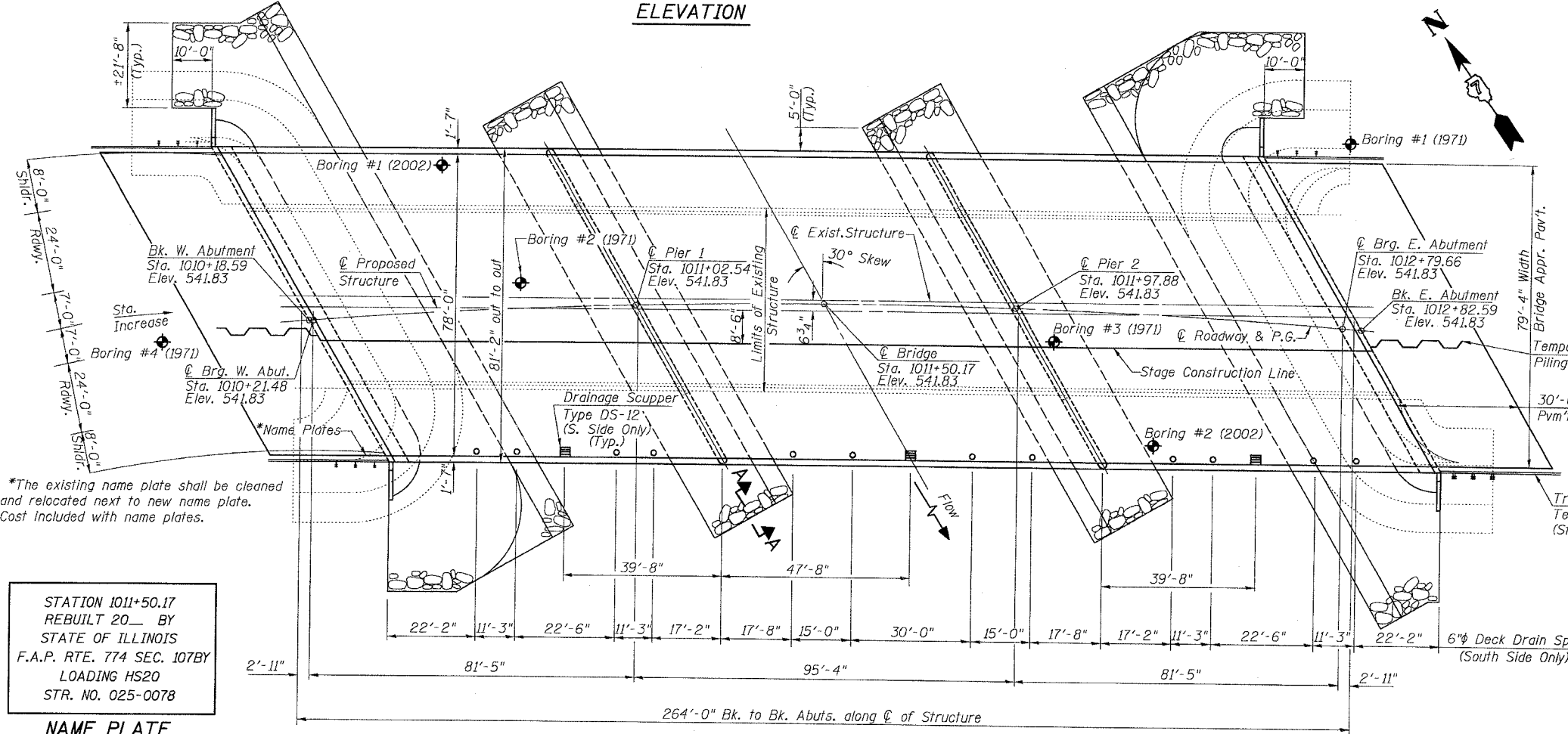
ELEVATION



SECTION A-A



STONE RIPRAP ANCHOR DETAIL



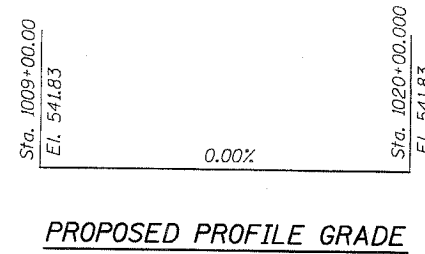
PLAN

STATION 1011+50.17
REBUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE. 774 SEC. 107BY
LOADING HS20
STR. NO. 025-0078

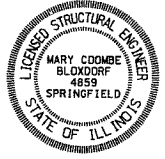
NAME PLATE
See Std. 515001

WATERWAY INFORMATION

Drainage Area=220 Sq. Miles		Low Grade Elev.=541.3 @ Sta. 1010+00		Max. Rec. H.W.E.=Unk.		
Flood Yr.	Freq. C.F.S.	Q _{bridge} C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head-Ft.	Headwater El.
Design	50	19,000	11272	2521	534.3	0.5
Base	100	21,700	12690	2687	535.0	0.5
Max. Calc.	500	28,000	16171	3037	536.7	0.6

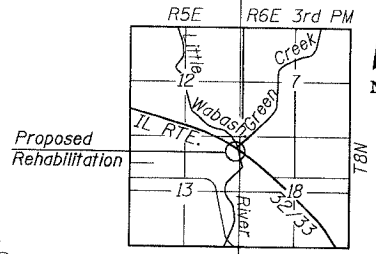


PROPOSED PROFILE GRADE



APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Robert E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

Mary Coombe Bloxdorf
Illinois Structural No. 4859
Expires 11-30-2004
Date: 12/23/03



LOCATION SKETCH

LOADING HS20-44

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

DESIGN SPECIFICATIONS

AASHTO 1996 and Interims 1997 Thru 2002 and 1995 Seismic Retrofitting Manual for Highway Bridges FHWA-RD-94-052.

DESIGN STRESSES

NEW CONSTRUCTION	EXISTING CONSTRUCTION
$f'_c = 3,500$ psi	$f_y = 36,000$ psi St. Steel
$f_y = 60,000$ psi (reinf.)	
$f_y = 36,000$ psi (M270 Grade 36)	

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.07g
Site Coefficient (S) = 1.0

SHEET TITLE GENERAL PLAN AND ELEVATION	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO. 02017
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
DRAWN BY TFG	CHECKED BY GJB/MCB
1	
OF 29 SHTS	

GENERAL NOTES

Fasteners shall be high strength bolts. Bolts $\frac{7}{8}$ " ϕ , open holes $\frac{15}{16}$ " ϕ , unless otherwise noted.

Calculated weight of structural steel = 236,660 lbs (M270 Grade 36)

Reinforcement Bars shall conform to the requirements of AASHTO M31 or M322 Grade 60.

Prior to pouring the new concrete deck, all loose rust, loose mill scale and other loose potentially detrimental foreign material shall be removed from the surfaces of the girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04.

All existing construction accessories welded to the top flange over the piers between the quarter points of the girders shall be removed. The remaining weld shall be ground smooth and inspected for cracks using magnetic particle testing. Any cracks that can not be removed by grinding approximately $\frac{1}{4}$ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of this work will be paid for according to Article 109.04.

Field welding of construction accessories will not be permitted to girders.

The Structural Steel Bearing Plates of the Elastomeric Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ ". Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{8}$ " adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For Type I Elastomeric Bearings, two $\frac{1}{8}$ " adjusting shims shall be provided for each bearing and placed as detailed.

The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

The Inorganic zinc rich primer/Acrylic/Acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be Gray Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia girders shall be Blue, Munsell No. 10B 3/6. See Special Provision for "Cleaning and Painting New Metal Structures."

The Contractor shall repair any damage to the paint system of the existing girders occurring during construction. The cost of this repair shall be included with "Furnishing and Erecting Structural Steel."

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges, webs and all splice plate material except fill plates.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

The Contractor shall drive one steel HP 10 x 42 test pile in a permanent location at each abutment as directed by the Engineer before ordering the remainder of the piles.

Anchor bolts shall be set before bolting diaphragms over supports.

If the Contractor elects to use cantilever forming brackets on the exterior girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06 of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior girder at each of these additional bracket locations.

All construction joints shall be bonded.

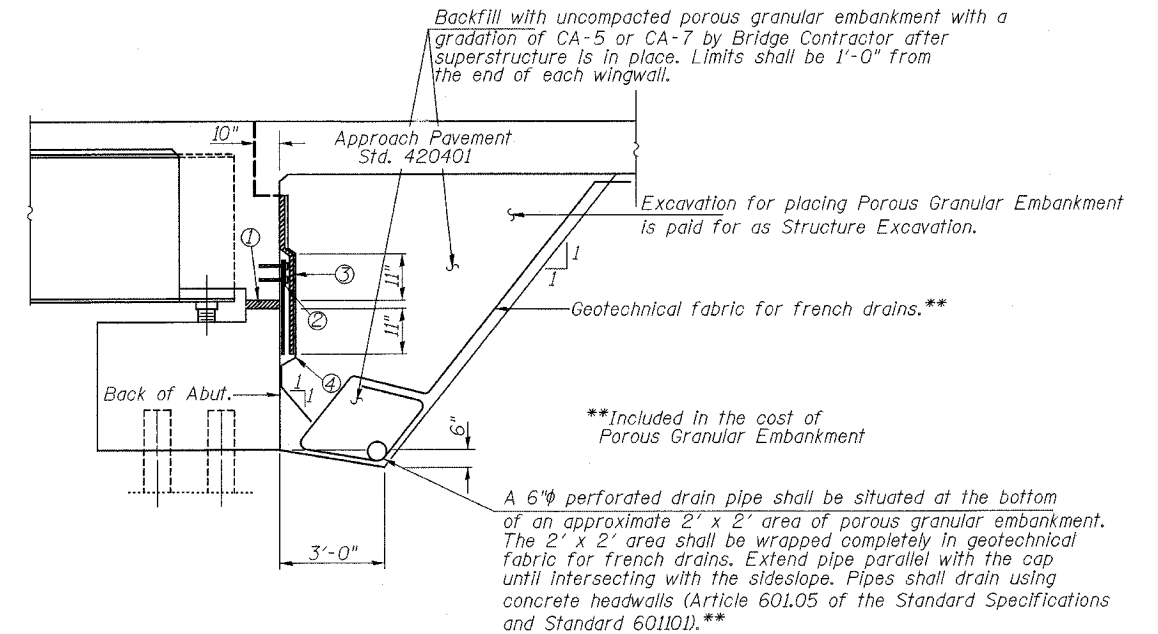
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck No. 2	Each	1		1
Porous Granular Embankment	Cu Yd		568	568
Concrete Removal	Cu Yd		77.0	77.0
Structure Excavation	Cu Yd		366	366
Concrete Superstructure	Cu Yd	676.2		676.2
Concrete Structures	Cu Yd		236.3	236.3
Elastomeric Bearing Assembly, Type I	Each			20
Elastomeric Bearing Assembly, Type II	Each			10
Reinforcement Bars, Epoxy Coated	Pound	179,860	25,740	205,600
Reinforcement Bars	Pound		7160	7160
Name Plates	Each	1		1
Furnishing and Erecting Structural Steel	L. Sum	.48		.48
Stud Shear Connectors	Each	2460		2460
Floor Drains	Each	12		12
Drainage Scupper, DS-12	Each	3		3
Bridge Deck Grooving	Sq. Yd.	2213		2213
Bar Splicers	Each	1255	388	1643
Furnishing Steel Piles HP 10x42	Foot		448	448
Driving Steel Piles	Foot		448	448
Test Piles Steel HP 10x42	Each		2	2
Drilled Shaft in Rock 30"	Foot		81	81
Drilled Shaft in Soil 36"	Foot		119	119
Underwater Structure Excavation, Location 3	Each		1	1
Underwater Structure Excavation, Location 4	Each		1	1
Stone RipRap, Class A4	Sq. Yd.			2295
Jacking and Cribbing, Location No. 2	L. Sum	1		1
Temporary Sheet Piling	Sq. Ft.			900
Filter Fabric For Use With RipRap	Sq. Yd.			2295
Slope Wall Removal	Sq. Yd.			642
Protective Coat	Sq. Yd.	2491		2491

*Includes Removal and disposal of Existing Bearings.

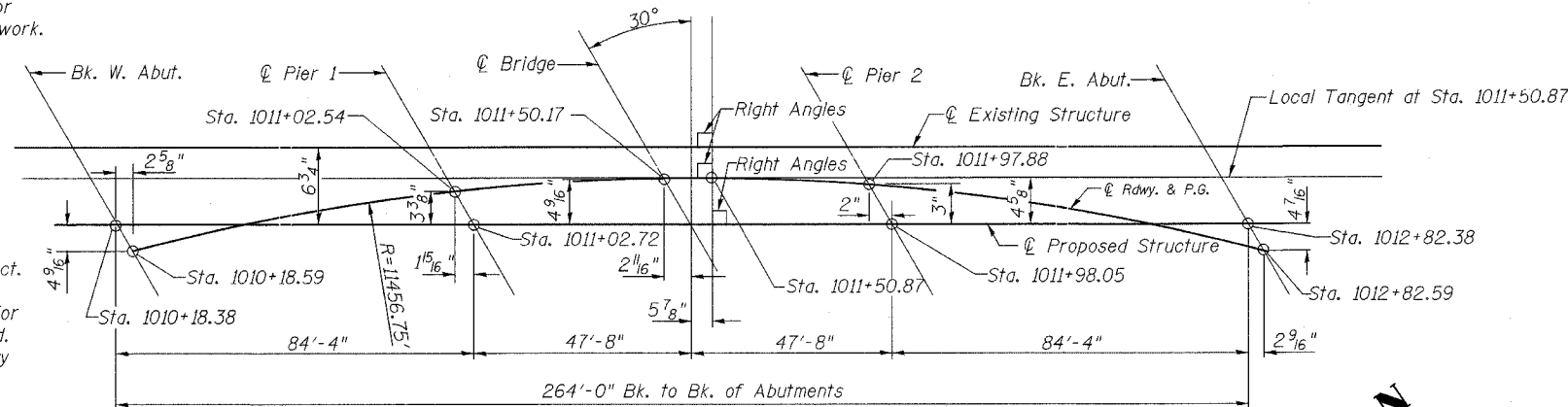
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 2
F.A.P. RTE. 774	107BY	EFFINGHAM	273	228	29 SHEETS
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT-		

CONTRACT NO. 94827

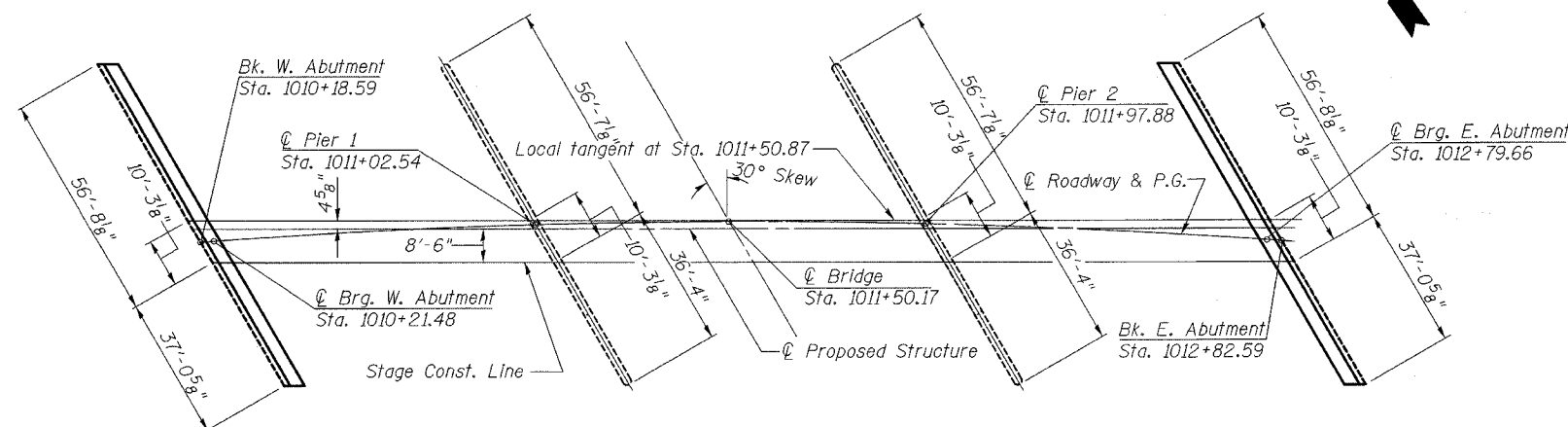


SECTION THRU SEMI INTEGRAL ABUTMENTS
(dimension at right Angles) (showing drain details)

- ① 2" Preformed Joint Filler (Section 1051 of the Standard Specifications) bonded to abutment cap with approved adhesive (full width of cap).
 - ② Fabric Reinforced Elastomeric Mat (See Special Provisions) Fabric mat shall be 24" wide and attached full width to the abutment cap with a $\frac{3}{8}$ " x 5" steel plate and $\frac{1}{2}$ " ϕ studs with nuts and washers at 12" cts.
 - ③ 2" Preformed Joint Filler (Section 1051 of the Standard Specifications) bonded to superstructure (full width of cap).
 - ④ Geocomposite Wall Drain (Section 591 of the Standard Specifications - full width of cap).
- Items ① ② ③ & ④ shall be included in the cost of Concrete Superstructure.



OFFSET SKETCH

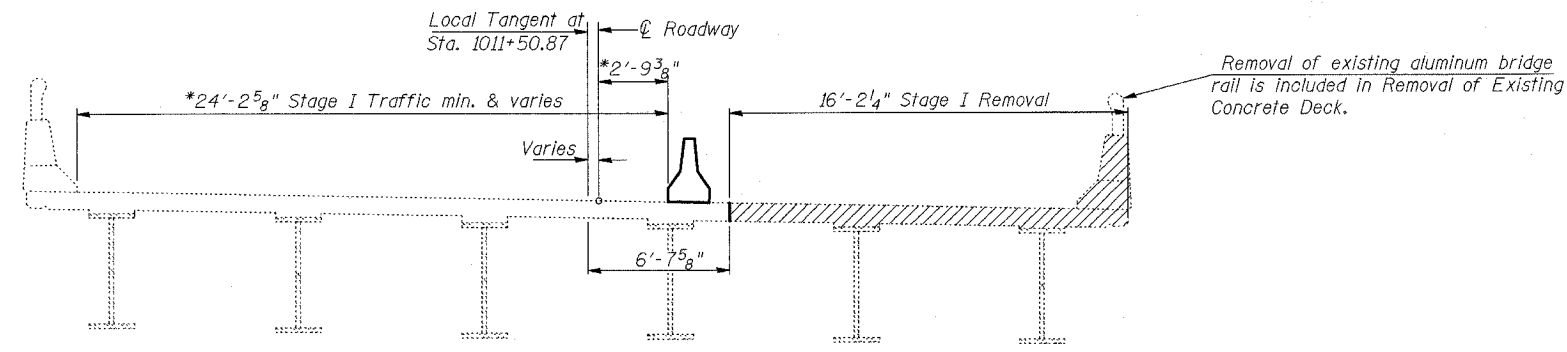


FOOTING LAYOUT

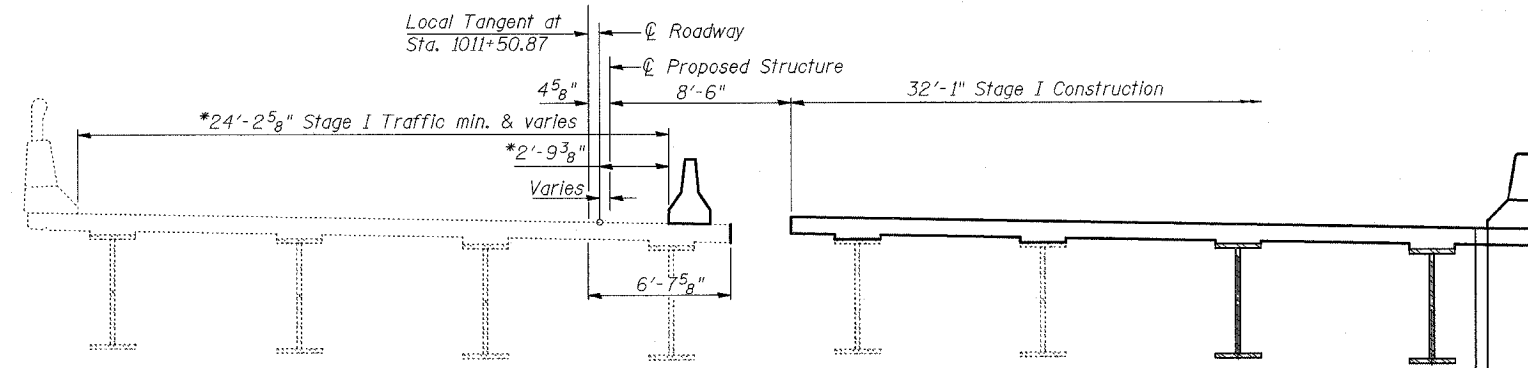
SHEET TITLE		PROJECT NO.	
GENERAL NOTES AND TOTAL BILL OF MATERIALS		02017	
PROJECT		SCALE	
IL RTE. 32/33 OVER LITTLE WABASH RIVER			
F.A.P. RTE. 774 SECTION 107BY		DATE	
EFFINGHAM COUNTY		DRAWN BY	
STATION 1011+50.17		TFG	
STRUCTURE NO. 025-0078		CHECKED BY	
		GJB/MCB	
DRAWING NO.			
COOMBE-BLOXDORF P.C.		2	
Engineers/Land Surveyors		OF 29 SHTS	
Springfield, Illinois			
Design Firm License No. 184-002703			

FILE:BB074

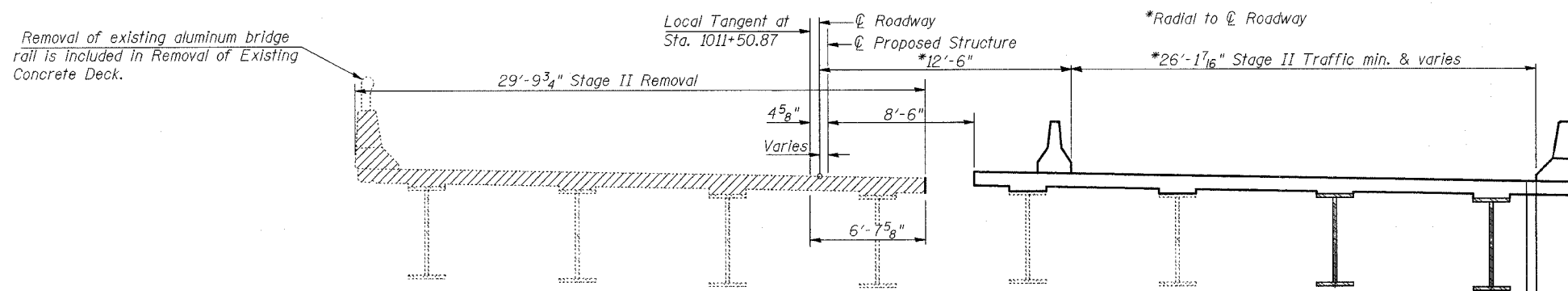
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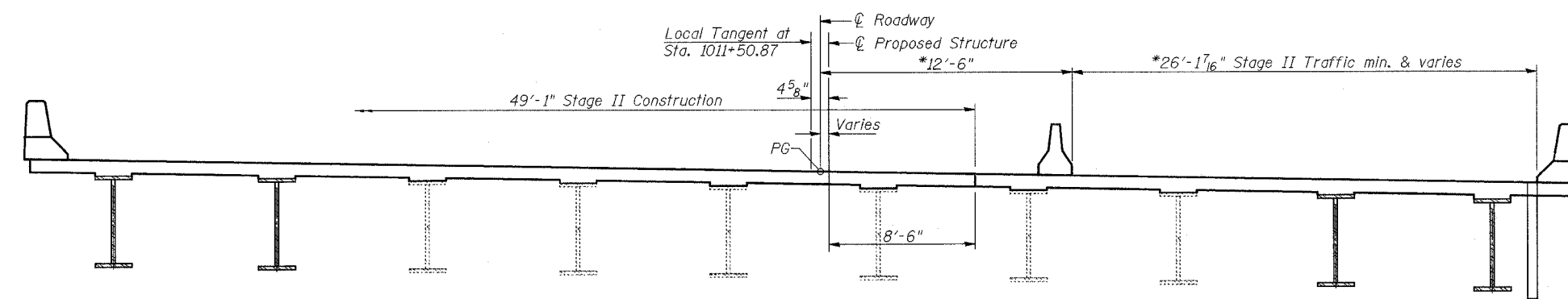
STAGE I REMOVAL
(Looking East) (Dim. at right angles except as noted)



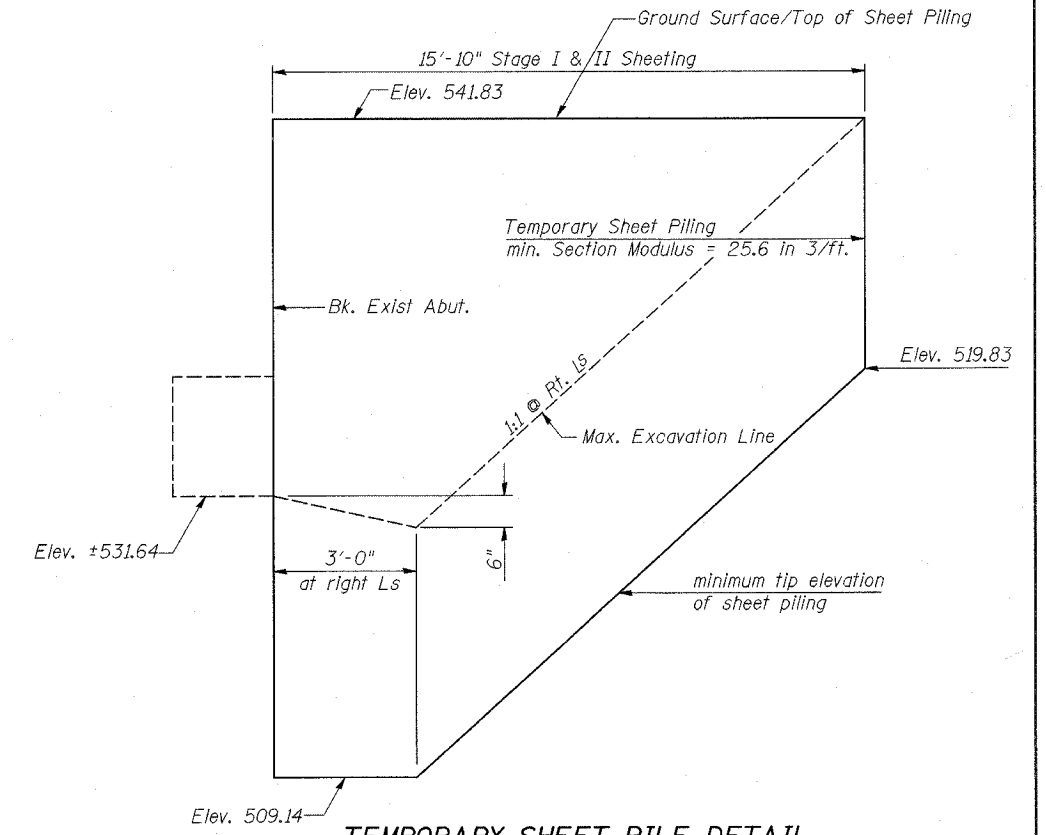
STAGE I CONSTRUCTION
(Looking East) (Dim. at right angles except as noted)



STAGE II REMOVAL
(Looking East) (Dim. at right angles except as noted)



STAGE II CONSTRUCTION
(Looking East) (Dim. at right angles except as noted)



TEMPORARY SHEET PILE DETAIL

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

STAGE CONSTRUCTION SEQUENCE

- ① Direct Stage I Traffic as shown.
- ② Drive Temporary Sheet Piling located behind each abutment and proceed with Stage I Removal.
- ③ Proceed with Stage I Construction.
- ④ Direct Stage II Traffic as shown.
- ⑤ Relocate Stage I Sheet Piling as necessary for Stage II Sheet Piling.
- ⑥ Proceed with Stage II Removal and Construction.

NOTES

Hatched areas indicate "Removal of Existing Concrete Deck". See Roadway Plans for quantity of Temporary Concrete Barrier.
The Shear Studs on existing girders will remain. It is the Contractor's responsibility to replace existing shear studs damaged during the removal of the existing Concrete deck. Cost included with Removal of Existing Concrete Deck.

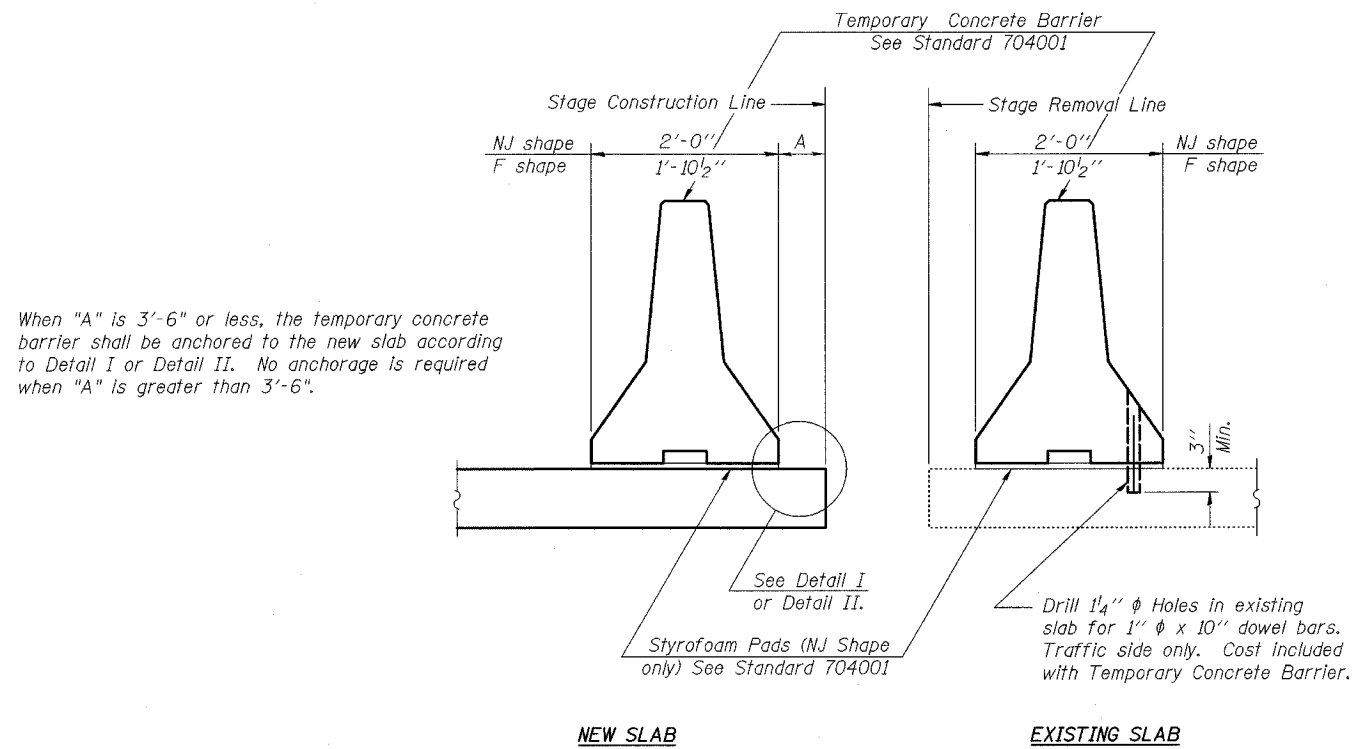
SHEET TITLE		PROJECT NO.	
STAGED CONSTRUCTION DETAILS		02017	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER	SCALE	
	F.A.P. RTE. 774 SECTION 107BY	DATE	
	EFFINGHAM COUNTY	DRAWN BY	TFG
	STATION 1011+50.17	CHECKED BY	GJB/MCB
	STRUCTURE NO. 025-0078	DRAWING NO.	
COOMBE-BLOXDORF P.C.		3	
Engineers / Land Surveyors Springfield, Illinois			
Design Firm License No. 184-002703		OF 29 SHTS	

#FILE#00000000

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 4 29 SHEETS
F.A.P. RTE. 774	107BY	EFFINGHAM	273	230	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

CONTRACT NO. 94827



When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

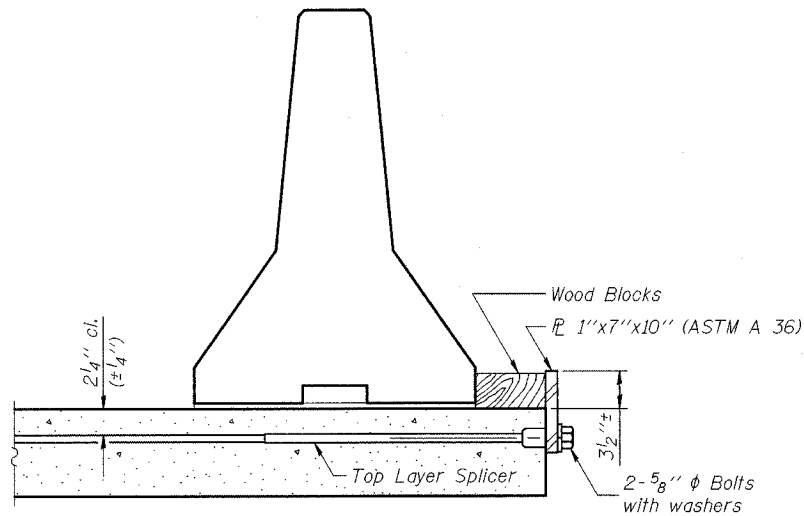
NEW SLAB

EXISTING SLAB

SECTIONS THRU SLAB

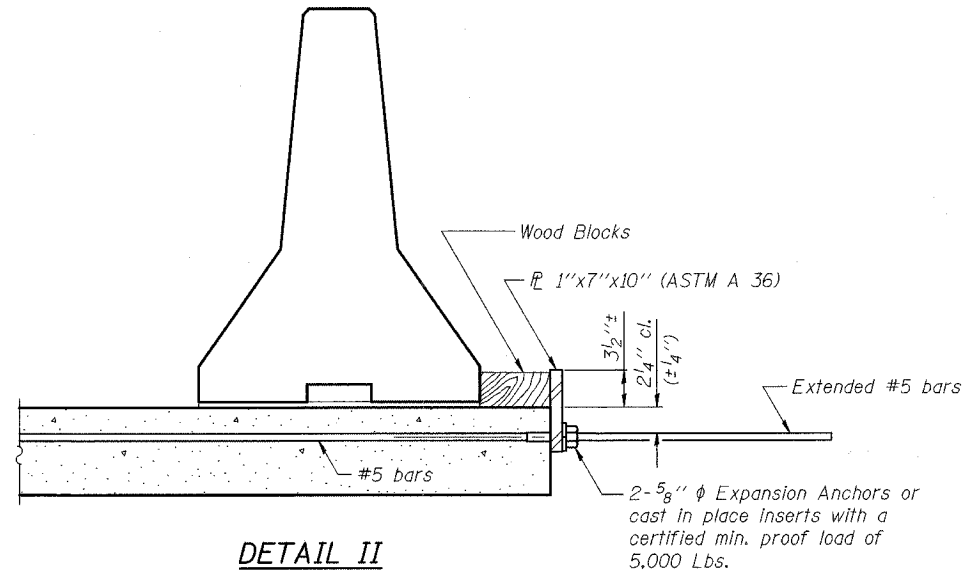
NOTES

- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel PL to the top layer of couplers with 2-5/8" φ bolts screwed to coupler at approximate C of each barrier panel.
- Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel PL to the concrete slab with 2-5/8" φ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate C of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier.



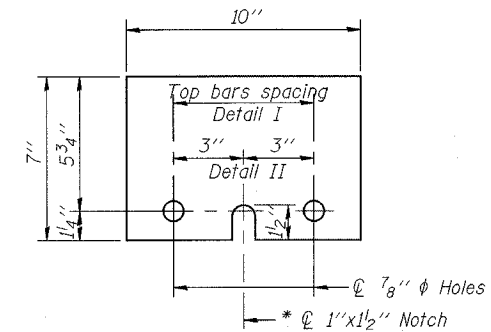
DETAIL I

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



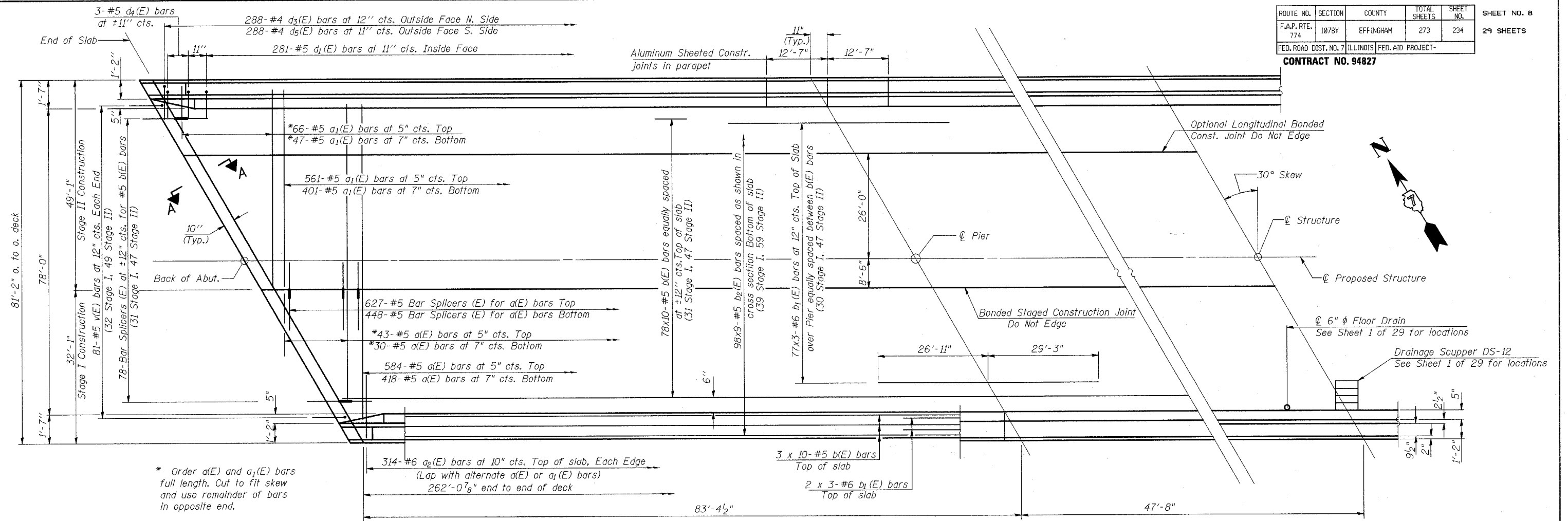
1"x7"x10"

* Required only with Detail II

SHEET TITLE TEMPORARY CONCRETE BARRIER FOR STAGED CONSTRUCTION		PROJECT NO. 02017
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	SCALE	DATE
ENGINEERS/LAND SURVEYORS Springfield, Illinois Design Firm License No. 184-002703	DRAWN BY GJB/MCB	CHECKED BY TFG
		DRAWING NO. 4
		OF 29 SHTS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 8 29 SHEETS
F.A.P. RTE. 774	107BY	EFFINGHAM	273	234	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

CONTRACT NO. 94827



HALF PLAN

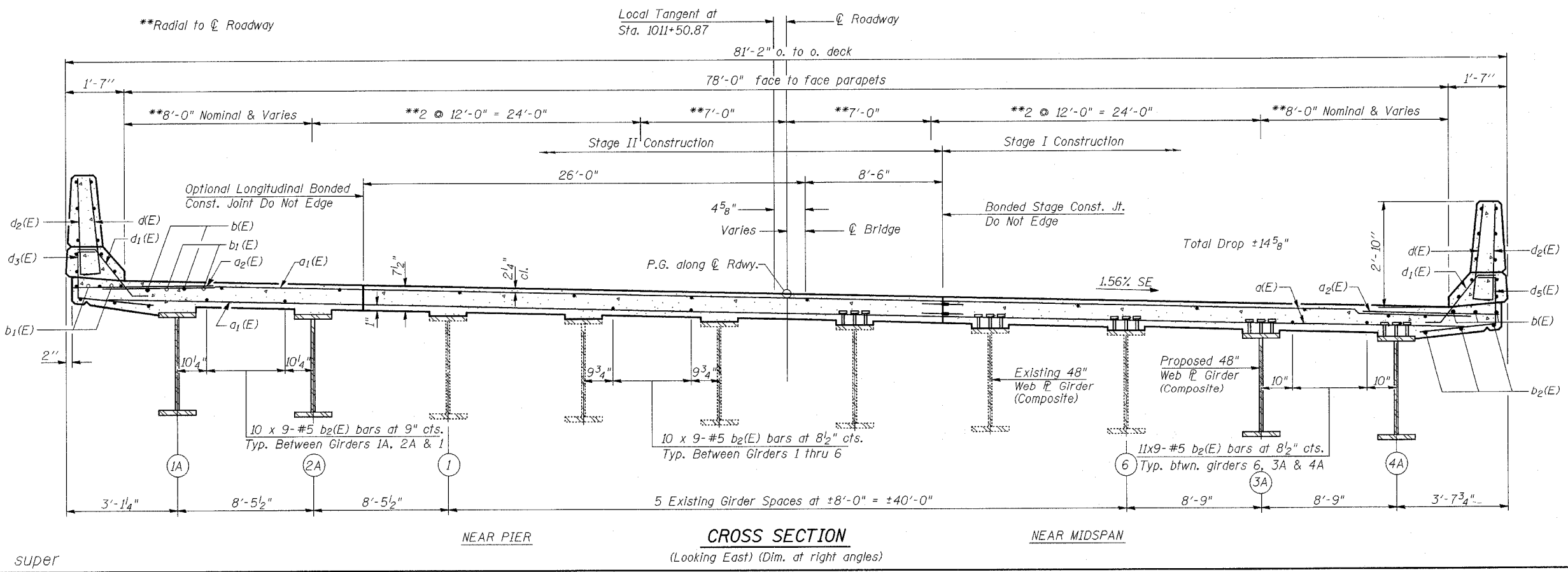
* Order a(E) and a1(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

NOTES

See Sheet 9 of 29 for superstructure details, parapet reinforcement and Bill of Material.
 Reinforcement bars designated (E) shall be epoxy coated.
 Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
 See Sheet 10 of 29 for abutment diaphragm details, Section A-A and deck details at drainage scuppers.
 Cut longitudinal reinforcement bars to clear drainage scuppers.
 See sheet 11 of 29 for details of Drainage Scupper DS-12.
 See sheet 26 of 29 for bar splicer details.

Min. Bar Lap

#5 bars = 1'-8"
 #6 bars = 2'-0"



CROSS SECTION
(Looking East) (Dim. at right angles)

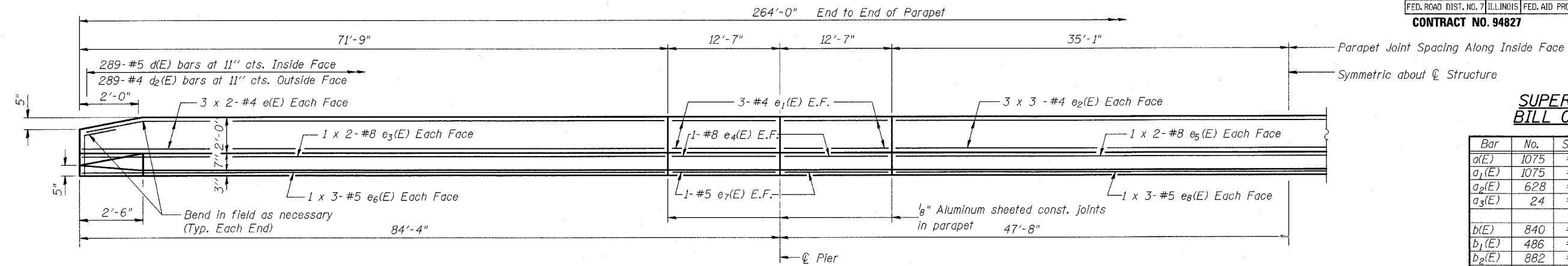
SHEET TITLE		SUPERSTRUCTURE	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER	PROJECT NO.	02017
	F.A.P. RTE. 774 SECTION 107BY	SCALE	
	EFFINGHAM COUNTY	DATE	
	STATION 1011+50.17	DRAWN BY	TFG
	STRUCTURE NO. 025-0078	CHECKED BY	GJB/MCB
COOMBE-BLOXDORF P.C.		DRAWING NO.	8
Engineers / Land Surveyors			
Springfield, Illinois			
Design Firm License No. 184-002703			

super

CONTRACT NO. 94827

**SUPERSTRUCTURE
BILL OF MATERIAL**

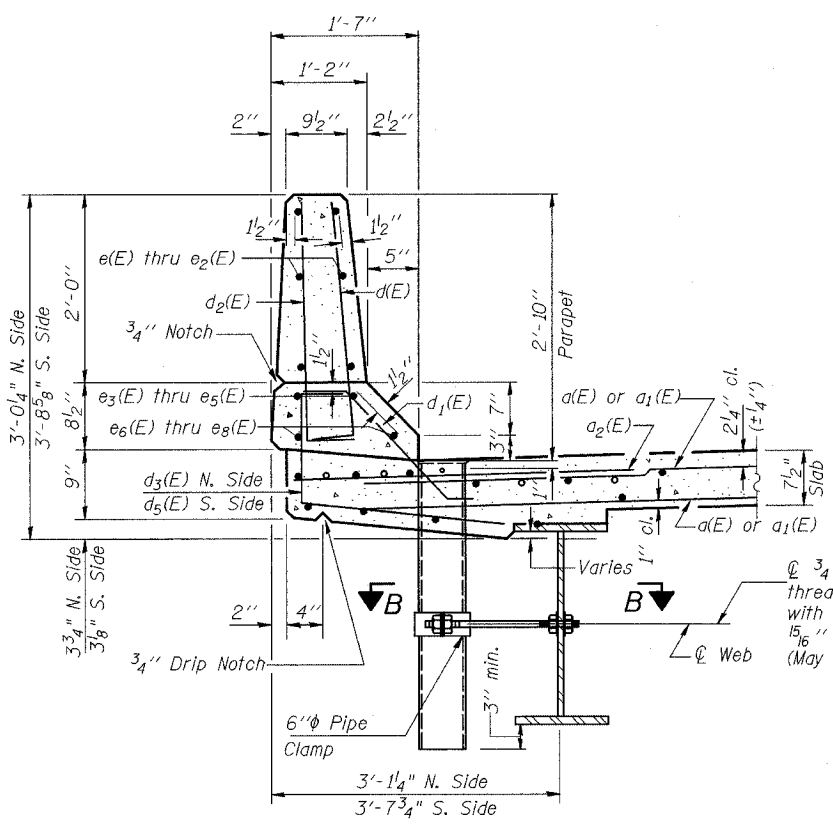
Bar	No.	Size	Length	Shape
a(E)	1075	#5	30'-11"	—
a ₁ (E)	1075	#5	47'-11"	—
a ₂ (E)	628	#6	4'-6"	—
a ₃ (E)	24	#5	2'-0"	—
b(E)	840	#5	27'-9"	—
b ₁ (E)	486	#6	20'-1"	—
b ₂ (E)	882	#5	30'-7"	—
d(E)	578	#5	3'-0"	—
d ₁ (E)	574	#5	2'-5"	—
d ₂ (E)	578	#4	3'-0"	—
d ₃ (E)	288	#4	3'-9"	—
d ₄ (E)	12	#5	2'-2"	—
d ₅ (E)	288	#4	4'-3"	—
e(E)	48	#4	36'-7"	—
e ₁ (E)	48	#4	12'-3"	—
e ₂ (E)	36	#4	24'-5"	—
e ₃ (E)	16	#8	38'-0"	—
e ₄ (E)	16	#8	12'-3"	—
e ₅ (E)	8	#8	37'-3"	—
e ₆ (E)	24	#5	25'-3"	—
e ₇ (E)	16	#5	12'-3"	—
e ₈ (E)	12	#5	24'-9"	—
m(E)	20	#6	36'-6"	—
m ₁ (E)	20	#6	9'-0"	—
m ₂ (E)	8	#6	9'-9"	—
m ₃ (E)	8	#6	3'-6"	—
m ₄ (E)	8	#6	9'-4"	—
m ₅ (E)	16	#6	11'-4"	—
m ₆ (E)	40	#6	29'-6"	—
m ₇ (E)	24	#6	11'-9"	—
s(E)	174	#5	7'-11"	—
s ₁ (E)	156	#4	11'-11"	—
u(E)	164	#5	2'-11"	—
v(E)	162	#5	3'-4"	—
Reinforcement Bars, Epoxy Coated		Pound	179,860	
Concrete Superstructure		Cu. Yds.	676.2	
Bar Splicers		Each	1255	



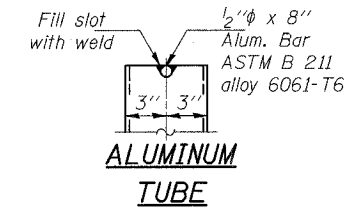
INSIDE ELEVATION OF PARAPET

MIN BAR LAP IN PARAPET

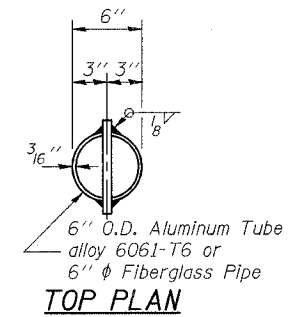
- #4 = 1'-8"
- #5 = 2'-2"
- #8 = 4'-6"



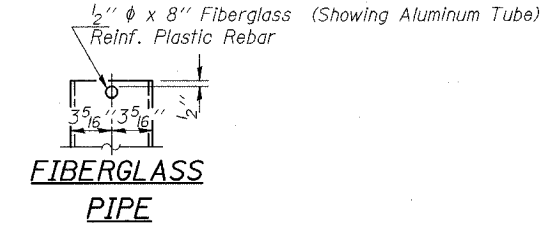
SECTION THRU PARAPET
(Showing 6" φ drain S. Side only)



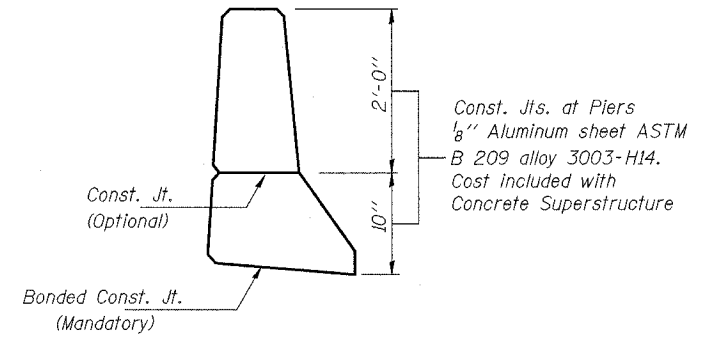
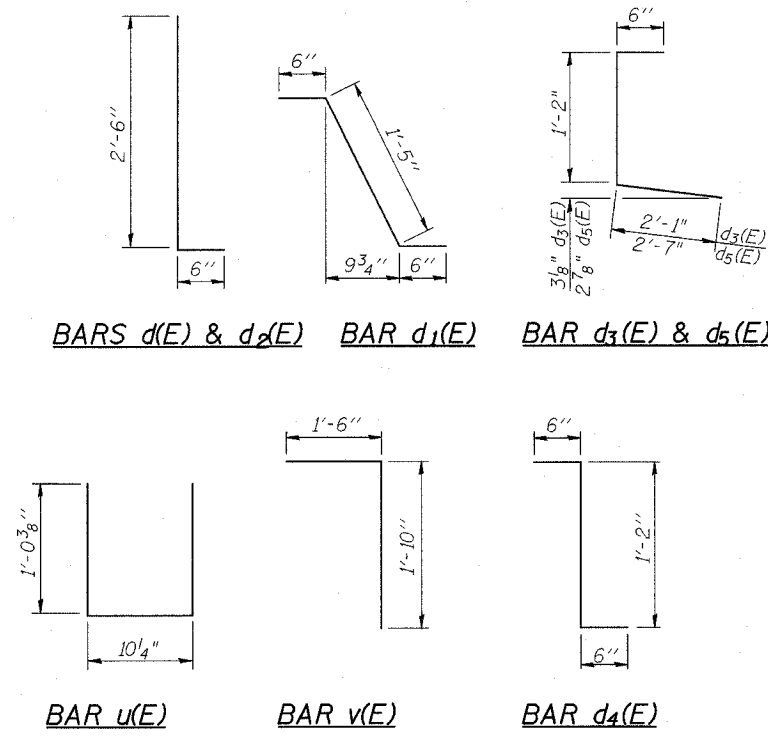
ALUMINUM TUBE



TOP PLAN
(Showing Aluminum Tube)



FIBERGLASS PIPE



PARAPET JOINT DETAILS

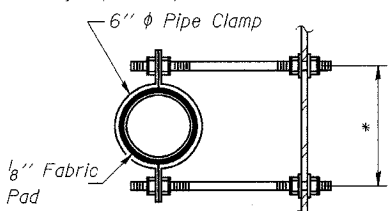
NOTES

The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to Steel Structures Painting Council's Spec. SSPC-SPI prior to painting. Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

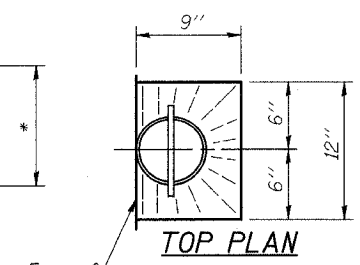
NOTES

Reinforcement bars designated (E) shall be epoxy coated. Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.

* Dimension as required by Pipe Clamp



SECTION B-B



TOP PLAN

Face of Parapet

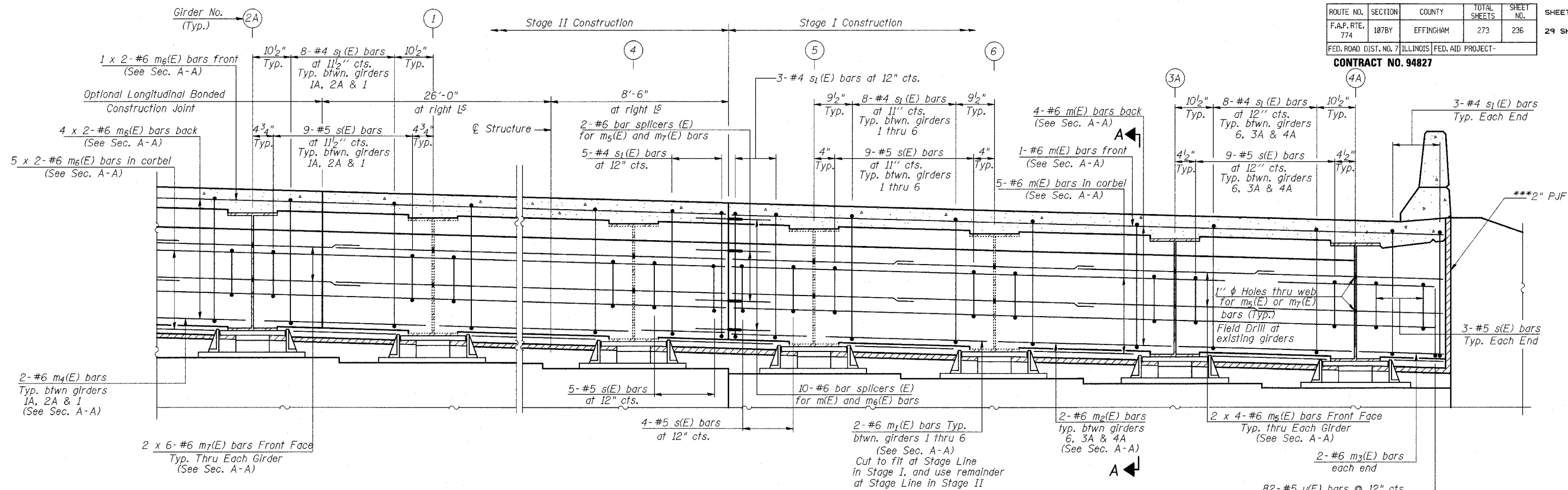
SHEET TITLE SUPERSTRUCTURE DETAILS	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY GJB/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002708	
9 OF 29 SHTS	

#FILE ABBREV#

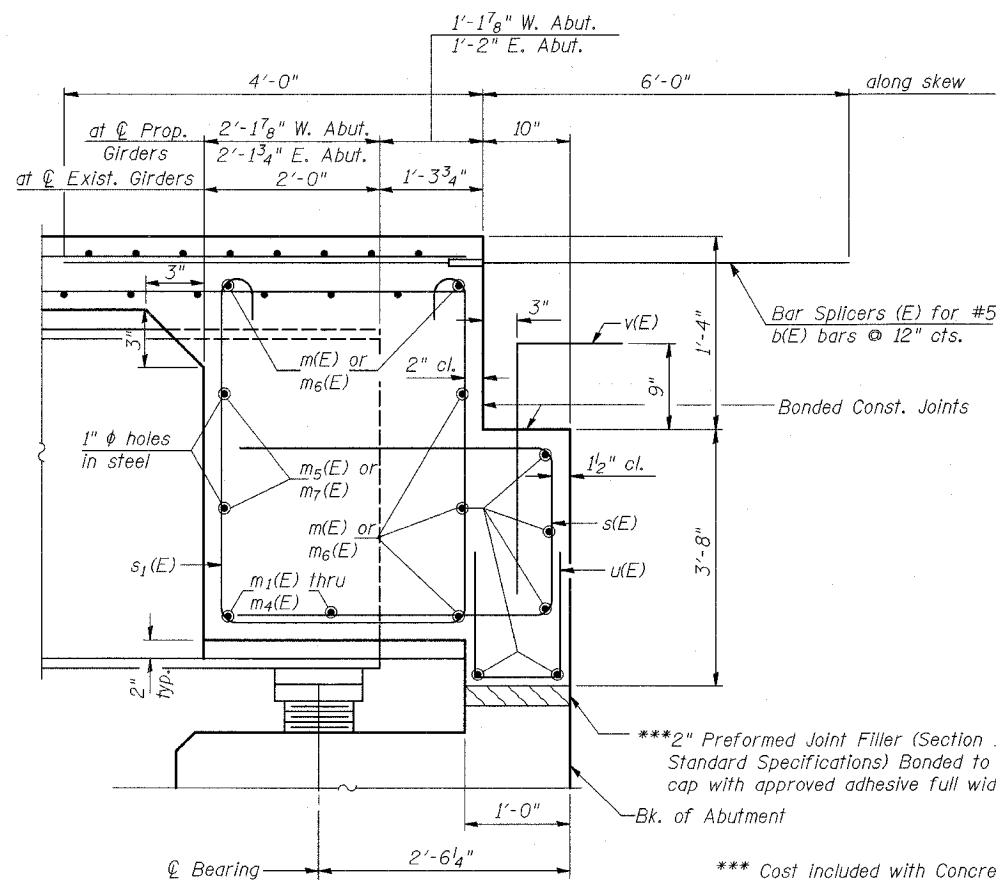
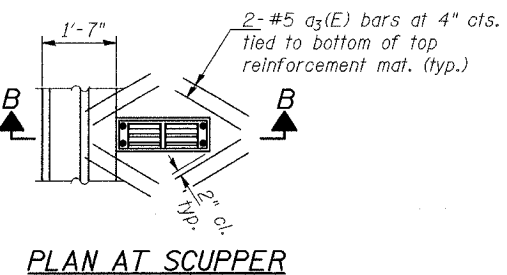
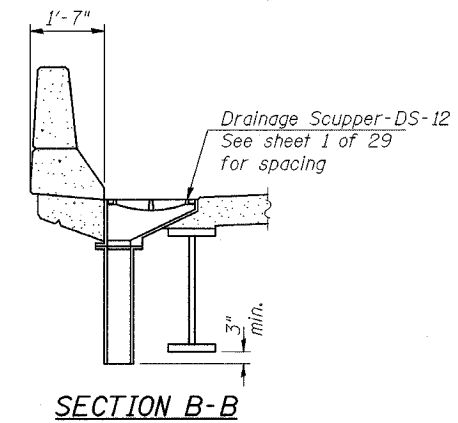
super-details

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. RTE. 774	107BY	EFFINGHAM	273	236
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-				

CONTRACT NO. 94827



DIAPHRAGM ELEVATION AT ABUTMENT
(Looking East)



SECTION A-A
Dimensions at right angles to abutment, except as shown.
(Diaphragms not shown)

NOTES

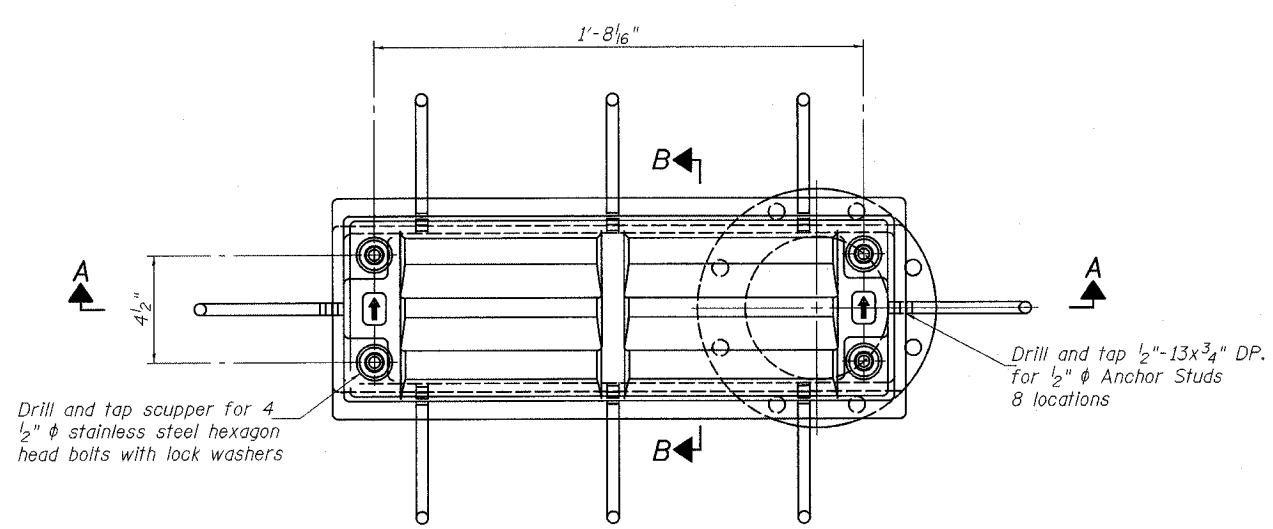
- Cost for Field drilling of 1" ϕ holes for m₅(E) or m₇(E) bars shall be included with Concrete Superstructure.
- Reinforcement bars in diaphragm and around scuppers are billed with superstructure on sheet 9 of 29.
- Concrete in end diaphragms is included with Concrete Superstructure on sheet 9 of 29.
- For details of bars s(E), s₁(E) & u(E) see sheet 9 of 29.
- The s(E), s₁(E) & u(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
- For anchor bolt details see sheet 16 of 29.
- Reinforcement bars designated (E) shall be epoxy coated.
- Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.
- See sheet 26 of 29 for bar splicer details.
- See Section thru abutment on sheet 2 of 29 for back of abutment treatment.

MIN. BAR LAP

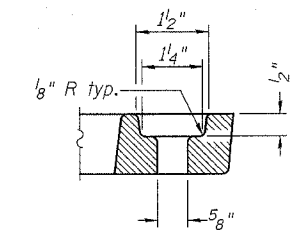
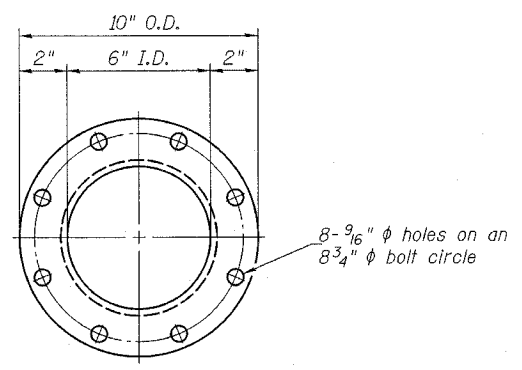
#6 bar = 2'-9"

SHEET TITLE	
DIAPHRAGM AND DRAINAGE SCUPPER DETAILS	
PROJECT	PROJECT NO.
IL RTE. 32/33 OVER LITTLE WABASH RIVER	02017
F.A.P. RTE. 774 SECTION 107BY	SCALE
EFFINGHAM COUNTY	DATE
STATION 1011+50.17	DRAWN BY
STRUCTURE NO. 025-0078	CHECKED BY
	GJB/MCB
	DRAWING NO.
COOMBE-BLOXDORF P.C.	
Engineers / Land Surveyors	10
Springfield, Illinois	
Design Firm License No. 184-002703	OF 29 SHTS

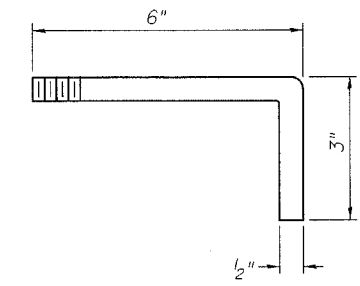
CONTRACT NO. 94827



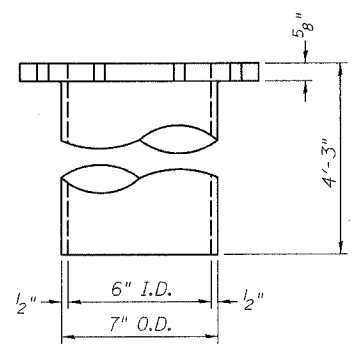
PLAN



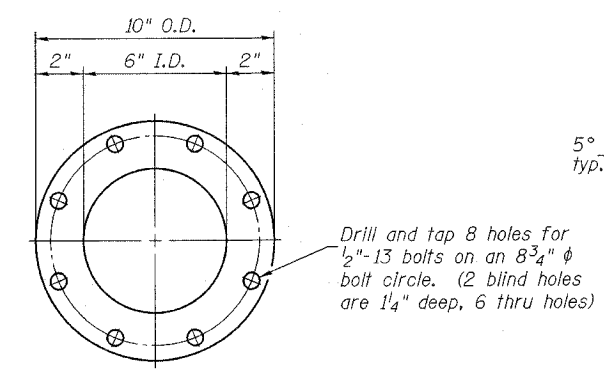
BOLT HOLE DETAIL



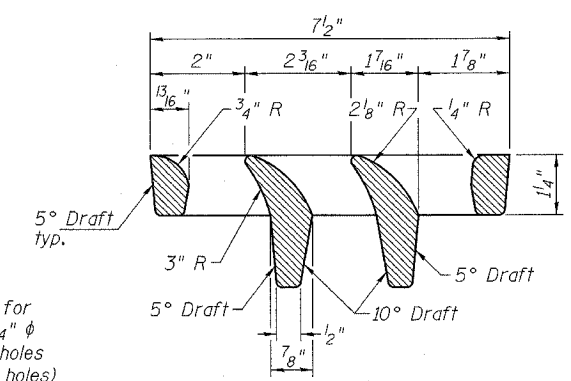
ANCHOR STUD DETAIL



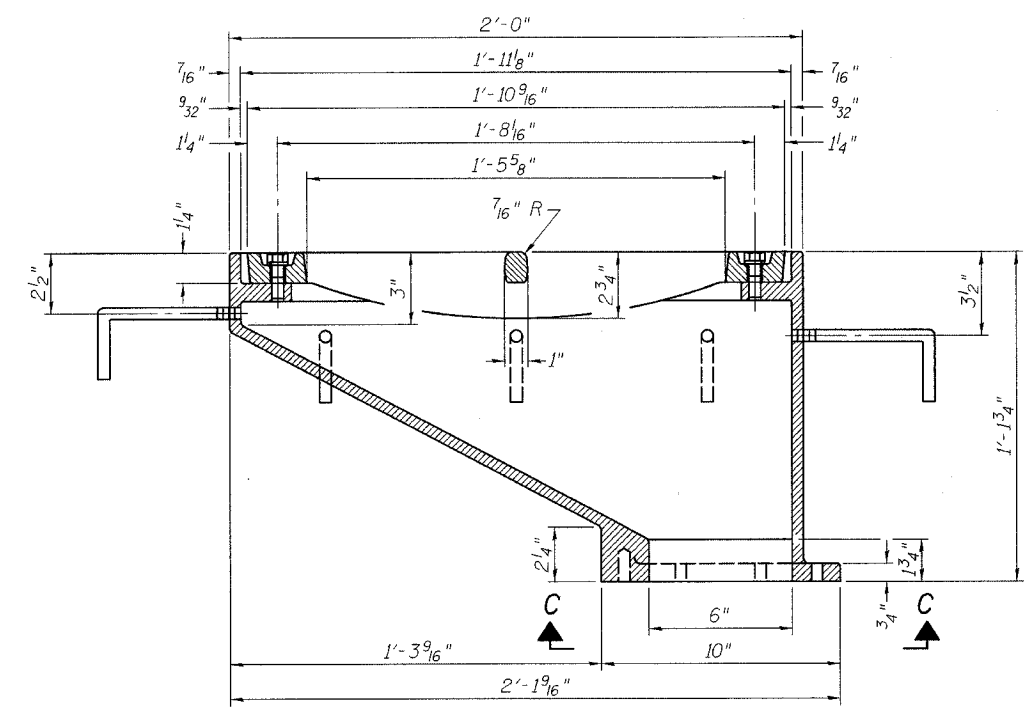
DOWNSPOUT



VIEW C-C

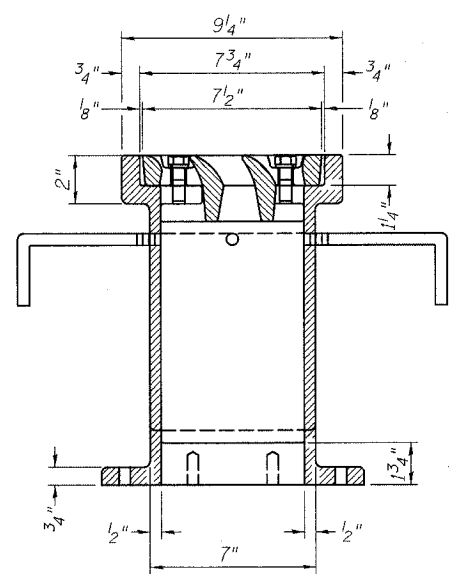


VANE GRATE DETAIL



SECTION A-A

See sheet 10 of 29 for scupper location relative to parapet.



SECTION B-B

NOTES

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

The grate, frame and downspout shall be galvanized according to AASHTO M 111 and ASTM A 385. Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-12.

BILL OF MATERIAL

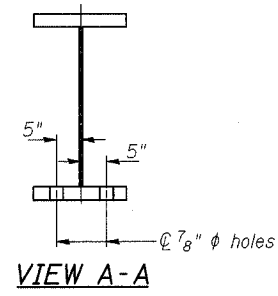
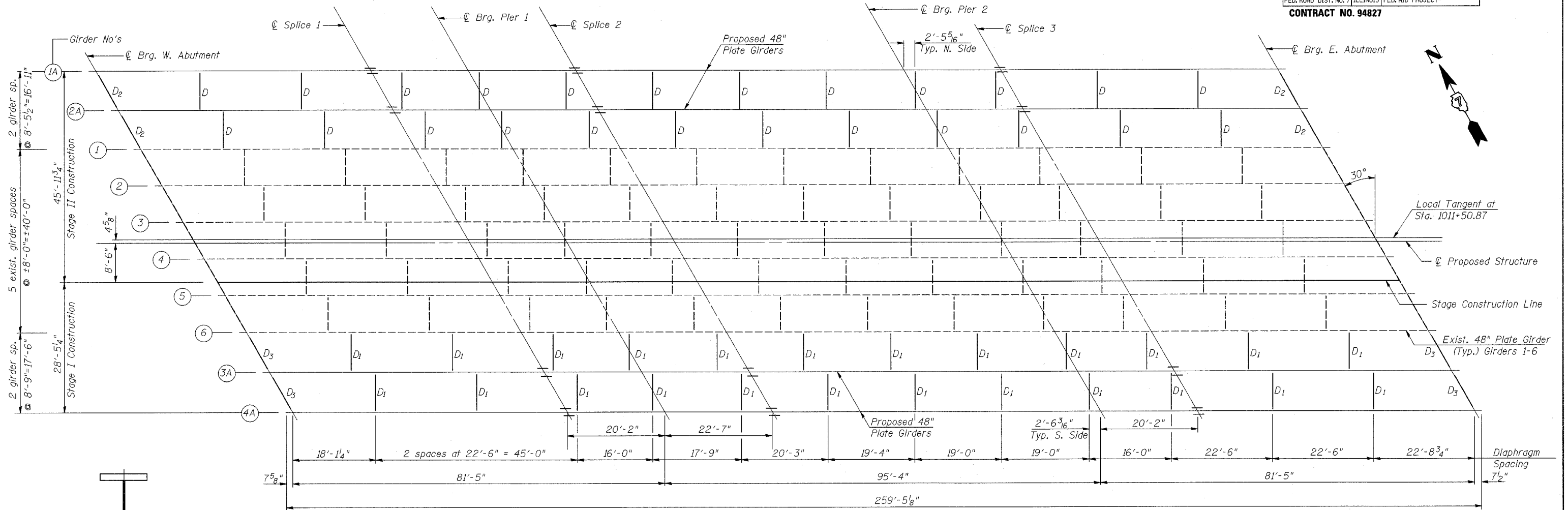
ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12	Each	3

SHEET TITLE DRAINAGE SCUPPER, DS-12	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY GJB/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
11 OF 29 SHTS	

#FILE#REV#

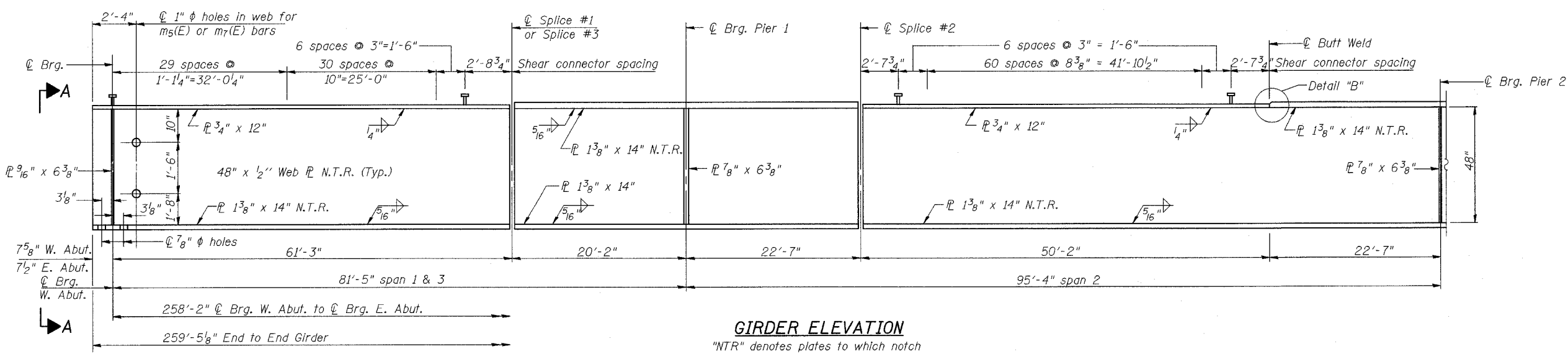
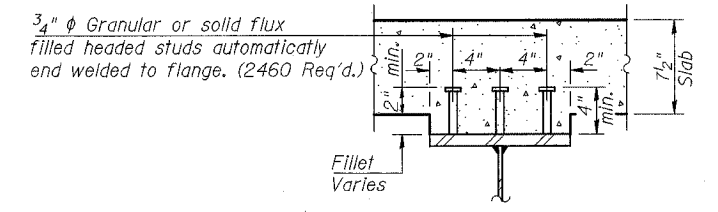
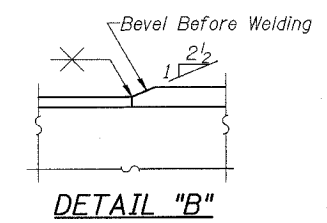
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 12 29 SHEETS
F.A.P. RTE. 774	107BY	EFFINGHAM	273	238	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

CONTRACT NO. 94827



FRAMING PLAN

The existing steel diaphragms at the abutments shall be cleaned and left in place.
Cost of cleaning is included with Concrete Superstructure.



GIRDER ELEVATION

"NTR" denotes plates to which notch toughness requirements are applicable.

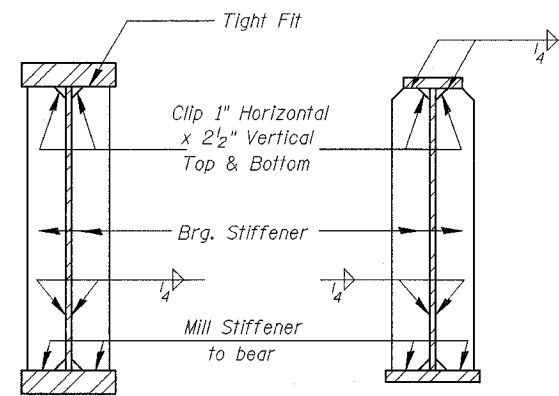
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PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078		SCALE DATE DRAWN BY TFC
DRAWING NO. COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708		CHECKED BY GJB/MCB
12		OF 29 SHTS

CONTRACT NO. 94827

TOP OF WEB ELEVATIONS

	Girder 1A	Girder 2A	Girder 3A	Girder 4A
⊘ Brg. W. Abut.	541.674	541.541	540.643	540.506
⊘ Splice 1	541.598	541.467	540.570	540.434
⊘ Pier 1	541.590	541.459	540.564	540.428
⊘ Splice 2	541.582	541.450	540.557	540.421
⊘ Pier 2	541.591	541.459	540.569	540.433
⊘ Splice 3	541.593	541.462	540.573	540.437
⊘ Brg. E. Abut.	541.666	541.535	540.649	540.513

For Fabrication Only

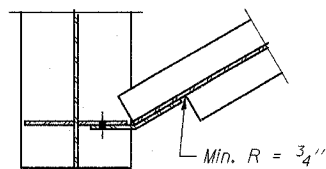


SECTION AT PIER

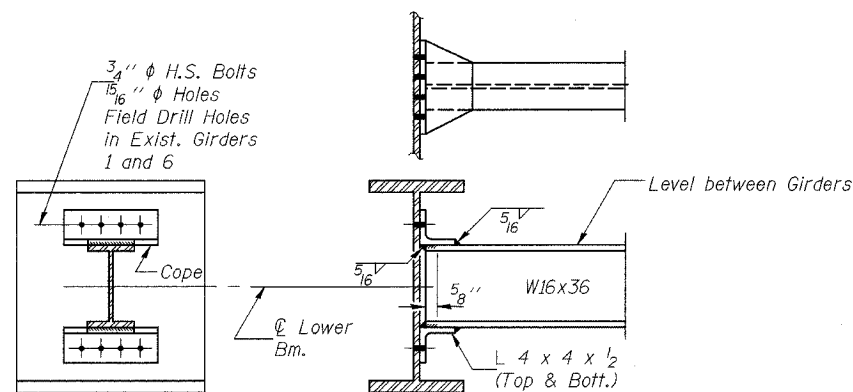
SECTION AT ABUTMENT

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 & 0.6 Sp. 3	Piers 1 & 2	0.5 Sp. 2
I_s	(in ⁴)	20,438	28,079	20,438
I_c (n)	(in ⁴)	55,138		55,138
I_c (3n)	(in ⁴)	39,415		39,415
S_s	(in ³)	998	1107	998
S_c (n)	(in ³)	1373		1373
S_c (3n)	(in ³)	1260		1260
Z	(in ³)		1238	
ϕ	(k/ft.)	1.073	1.62	1.084
$M\phi$	(k)	494	1242	333
$s\phi$	(k/ft.)	0.520		0.520
$M_s\phi$	(k)	276		247
$M\phi$	(k)	804	557	795
M (Imp)	(k)	194	131	180
$5/3[M\phi + M(Imp)]$	(k)	1663	1147	1625
M_a	(k)	3163	3106	2867
M_u	(k)	5230	3715	5230
$f_s\phi$ non-comp (k.s.i.)		5.9	13.5	4.0
$f_s\phi$ (comp) (k.s.i.)		2.6		2.4
$f_s 5/3(\phi + Imp)$ (k.s.i.)		14.5	12.4	14.2
f_s (Overload) (k.s.i.)		23.0	25.9	20.6
VR	(k)	53.4		54.6

INTERIOR GIRDER REACTION TABLE			
	Abuts.	Piers 1 & 2	
$R\phi$	(k)	86.8	156.6
$R\phi$	(k)	49.6	72.3
Imp.	(k)	12.0	17.0
R (Total)	(k)	148.4	245.9

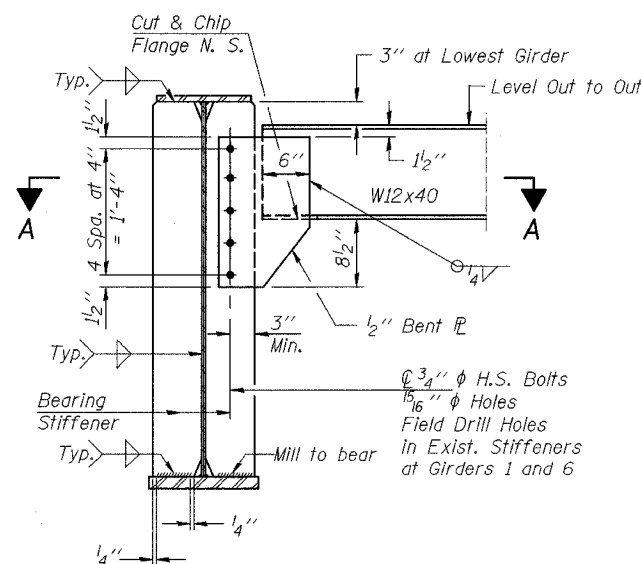


SECTION A-A

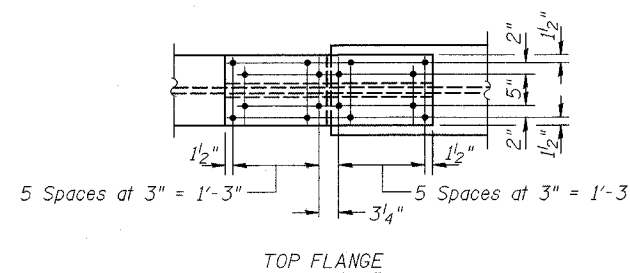


DIAPHRAGM D & D₁
Required 24 D & 24 D₁

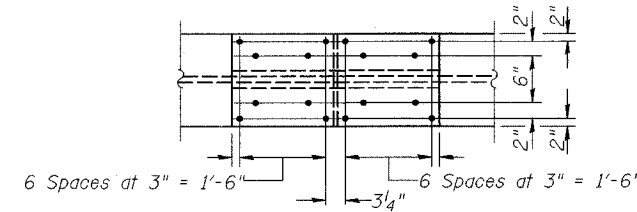
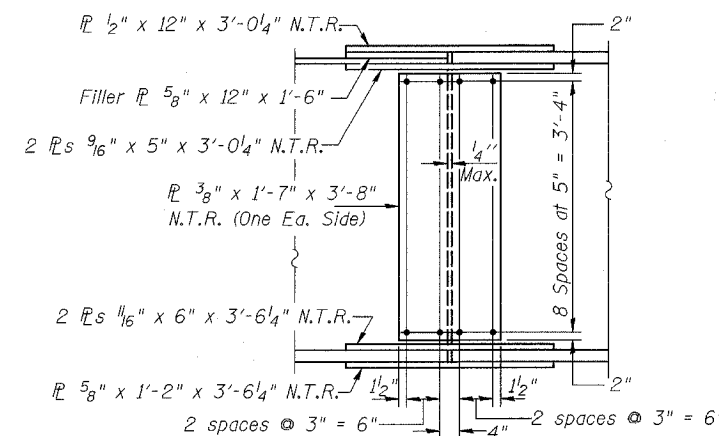
Note:
Two hardened washers shall be required over all oversize holes for diaphragms.



DIAPHRAGM D₂ & D₃
Required 4 D₂ & 4 D₃



TOP FLANGE



BOTTOM FLANGE

SPLICES
(12 Required)

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (overload).
 $I_{c(n)}$ and $S_{c(n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

$I_{c(3n)}$ and $S_{c(3n)}$ are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.

M_a (Applied Moment) = $1.3[M\phi + Ms\phi + 5/3(M\phi + M(Imp))]$.

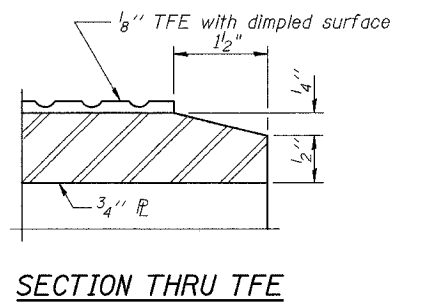
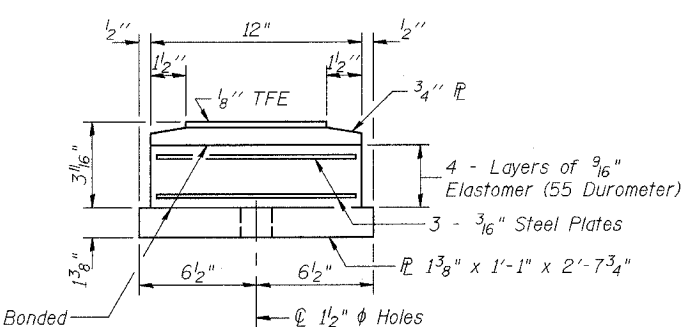
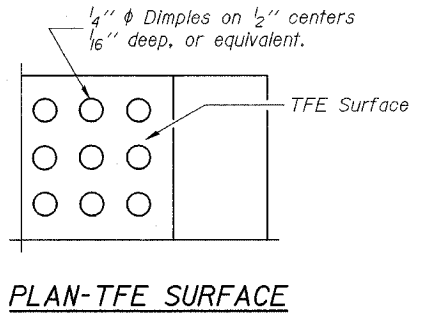
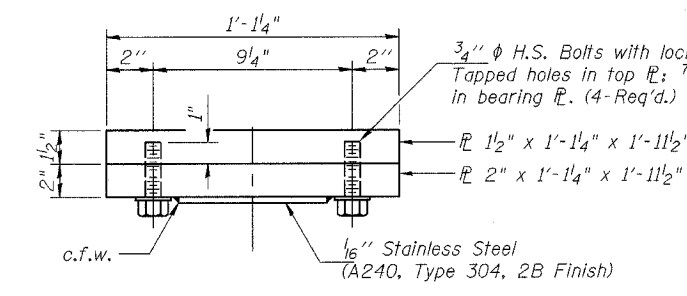
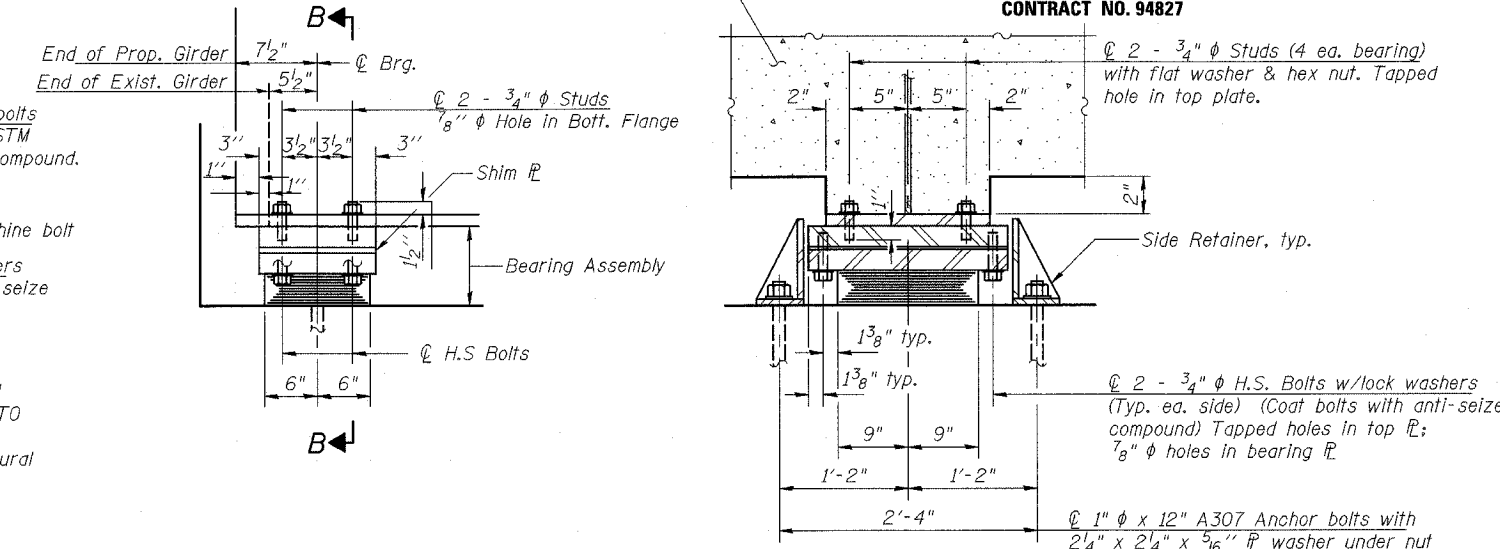
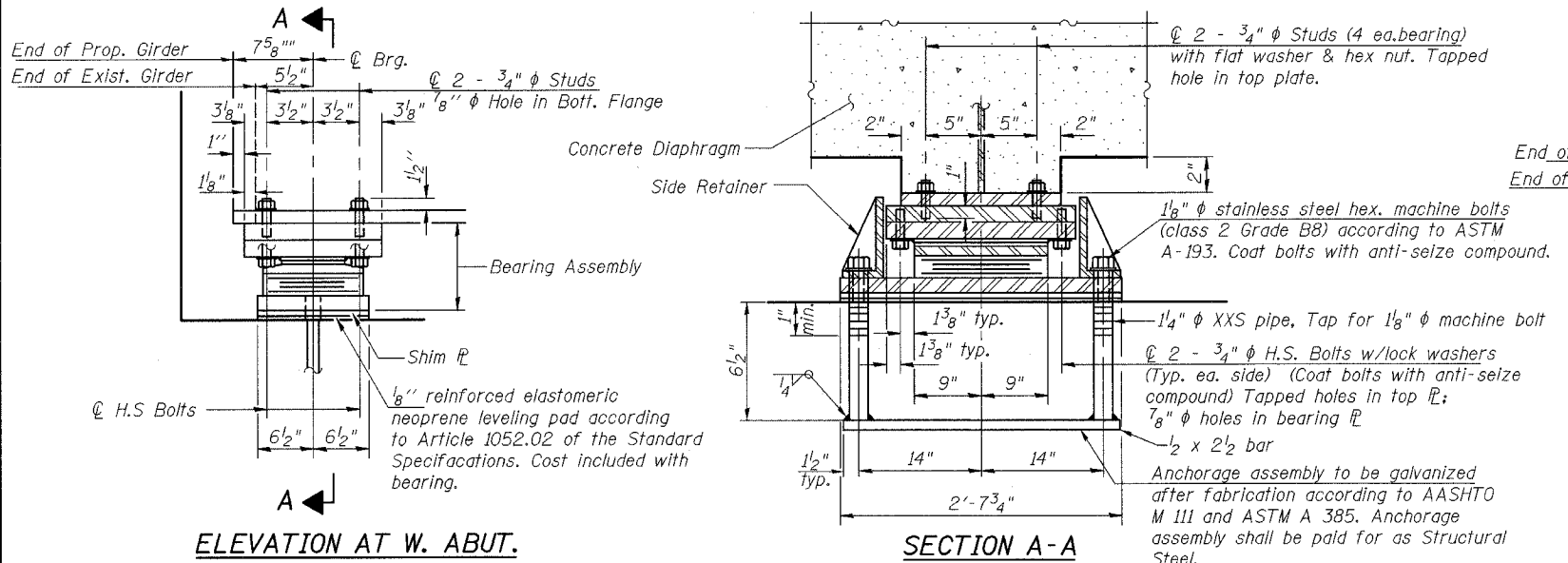
The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.

f_s (Overload) is the sum of the stresses due to $M\phi + Ms\phi + 5/3(M\phi + M(Imp))$.

$R\phi$ includes the weight of the Concrete diaphragm and the dead load reaction from the approach pavement.

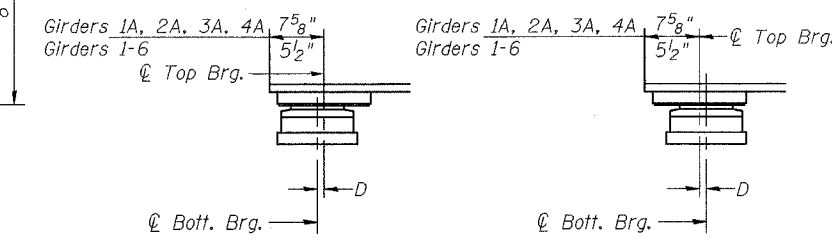
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PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER	PROJECT NO.	02017
SCALE	F.A.P. RTE. 774 SECTION 107BY	DATE	
CHECKED BY	EFFINGHAM COUNTY	DRAWN BY	TFG
DRAWING NO.	STATION 1011+50.17	CHECKED BY	GJB/MCB
	STRUCTURE NO. 025-0078		
COOMBE-BLOXDORF P.C.		13	
Engineers/Land Surveyors		OF 29 SHTS	
Springfield, Illinois			
Design Firm License No. 184-002708			

CONTRACT NO. 94827

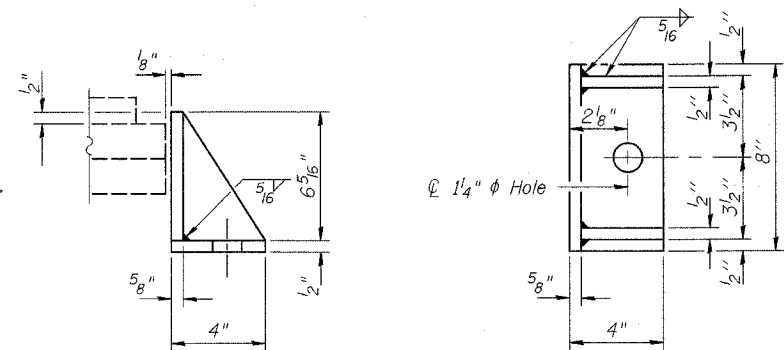


Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



Note: Shim plates shall not be placed under Bearing Assembly.



NOTES

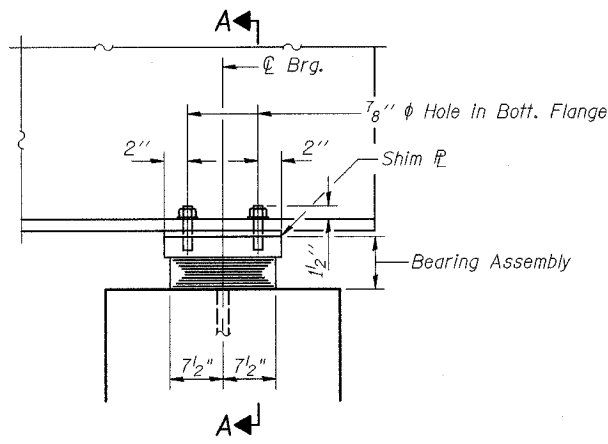
See sheet 16 of 29 for Anchor Bolt Installation. 7/8" ϕ Holes for 3/4" ϕ studs will be drilled in the field for existing girders. Cost included with Jacking and Cribbing.

The Structural Steel bearing plates of the elastomeric bearing assembly shall conform to the requirements of AASHTO M270, Grade 50.

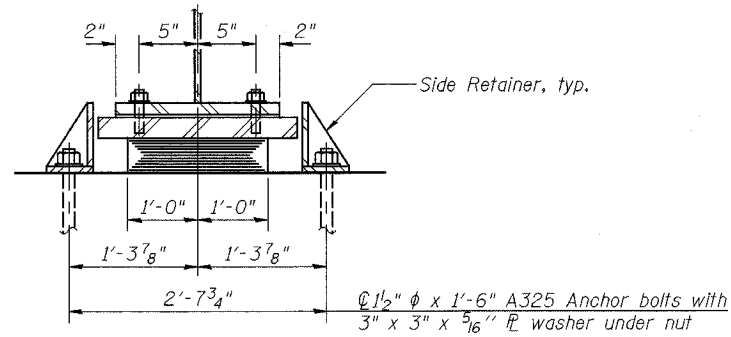
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	10
Elastomeric Bearing Assembly Type II	Each	10

SHEET TITLE	
BEARING DETAILS	
PROJECT	PROJECT NO.
IL RTE. 32/33 OVER LITTLE WABASH RIVER	02017
F.A.P. RTE. 774 SECTION 107BY	SCALE
EFFINGHAM COUNTY	DATE
STATION 1011+50.17	DRAWN BY
STRUCTURE NO. 025-0078	CFC/TFG
	CHECKED BY
	GJB/MCB
	DRAWING NO.
COOMBE-BLOXDORF P.C.	
Engineers/Land Surveyors	
Springfield, Illinois	
Design Firm License No. 184-002703	
	14
	OF 29 SHTS

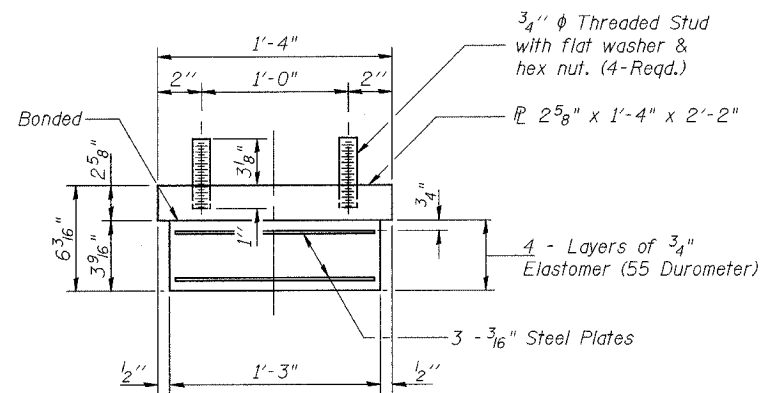


ELEVATION AT PIER 1



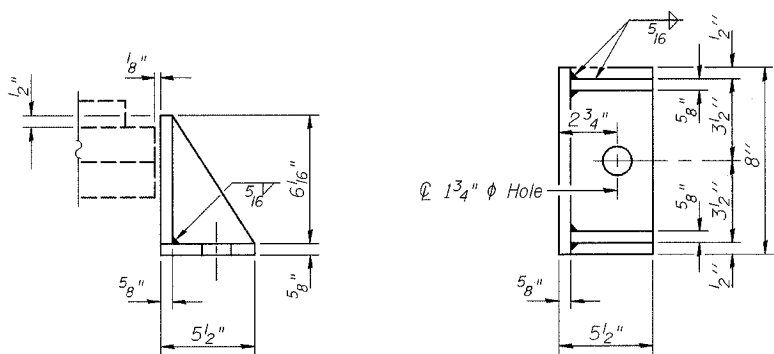
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG. PIER 1



BEARING ASSEMBLY

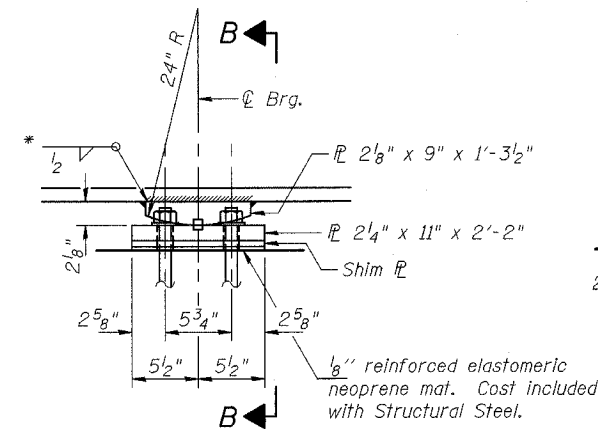
Note: Shim plates shall not be placed under Bearing Assembly.



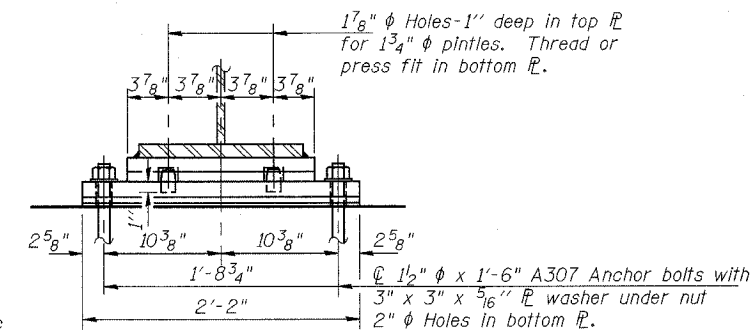
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

* Field weld at existing girders. Cost included with Jacking and Cribbing.

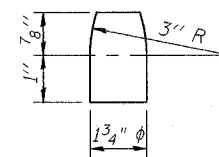


ELEVATION AT PIER 2



SECTION B-B

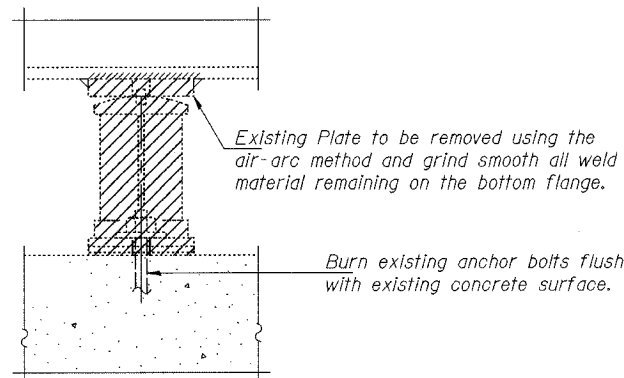
FIXED BEARING PIER 2



PINTLE

NOTES

See sheet 16 of 29 for Anchor Bolt installation. 7/8" holes in bottom flange for 3/4" studs will be drilled in the field for existing girders. Cost included with Jacking and Cribbing. Anchor bolts at fixed bearings may be built into the masonry at proposed girders. The Structural Steel bearing plates of the elastomeric bearing assembly shall conform to the requirements of AASHTO M270, Grade 50.



EXISTING BEARING REMOVAL DETAIL

Cost of existing bearing removal and disposal is included with Jacking and Cribbing. Total number to be removed = 24

JACKING AND CRIBBING PROCEDURE

- The Contractor shall submit for approval by the Engineer, plans for jacking and cribbing prior to commencing any work at the bearings. See Special Provision for Jacking and Cribbing. Dead Load = 7 k per girder at each abutment and 23 k per girder at each pier. Use 10 ton min jack capacity at abutments and 25 ton min jack capacity at the piers.
- Jacking and Cribbing shall be done after the existing concrete deck is removed.
- The existing structural steel shall be raised according to the Special Provision for Jacking and Cribbing and to a height sufficient to form, pour and cure the concrete bearing seats, remove the existing bearings and install the new bearings.
- Once the new bearings are in place the existing steel can be lowered into place and connected to the bearings.
- After the existing and proposed girders are sitting on and connected to the new bearings and the proposed diaphragms are in place, forming for the new deck pour can begin.

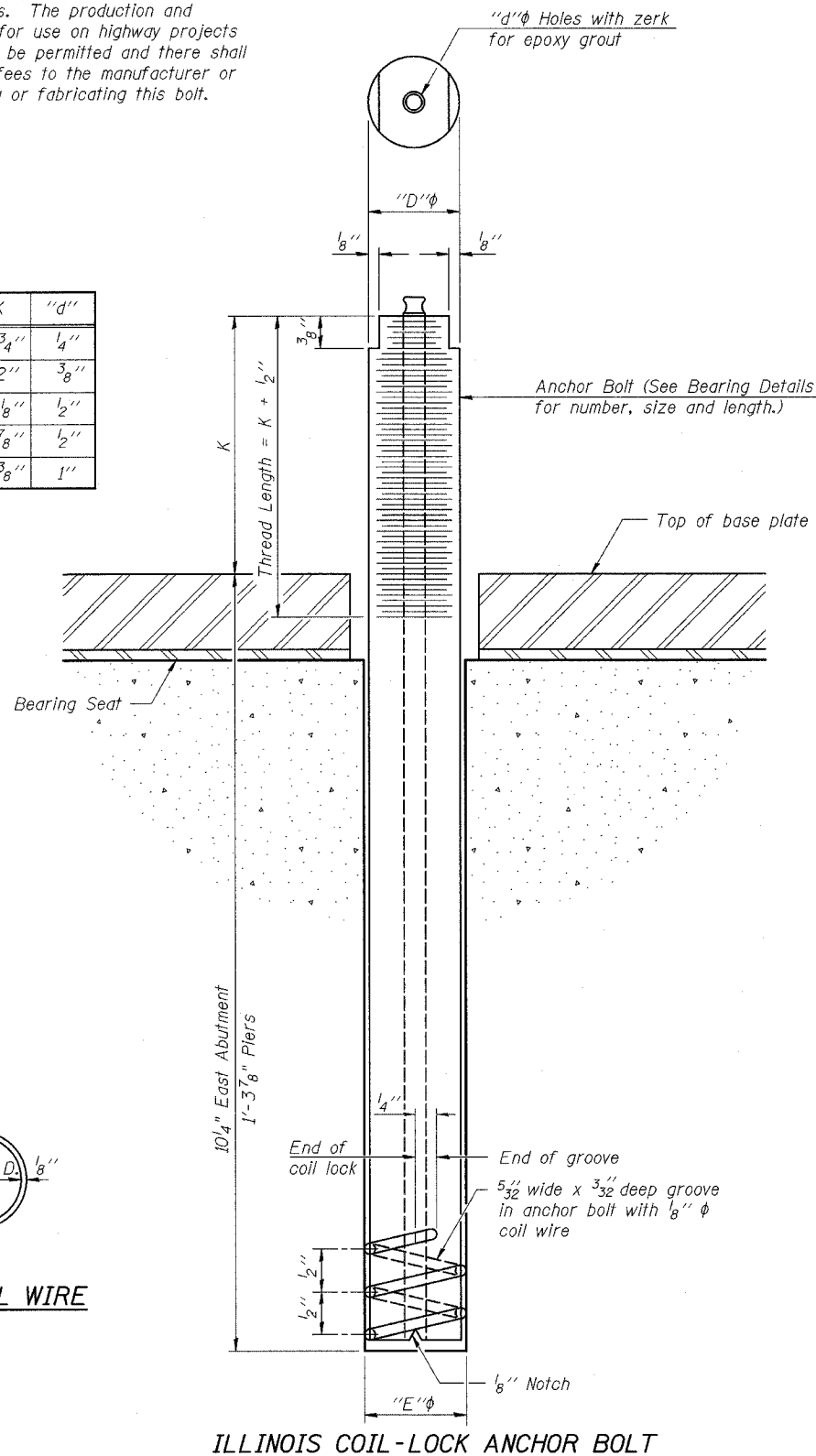
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	10
Jacking and Cribbing	L. Sum	1

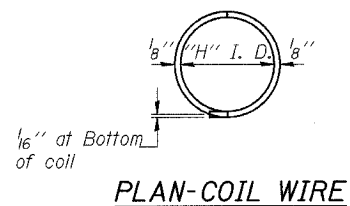
SHEET TITLE		BEARING DETAILS	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER	PROJECT NO.	02017
	F.A.P. RTE. 774 SECTION 107BY	SCALE	
	EFFINGHAM COUNTY	DATE	
	STATION 1011+50.17	DRAWN BY	TFG/CFC
	STRUCTURE NO. 025-0078	CHECKED BY	GJB/MCB
COOMBE-BLOXDORF P.C.		DRAWING NO.	
Engineers/Lead Surveyors		15	
Springfield, Illinois		OF 29 SHTS	
Design Firm License No. 184-002708			

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



ILLINOIS COIL-LOCK ANCHOR BOLT



PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.
 The coil wire shall be made of any suitable soft steel wire.
 The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
 The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.
 The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
 1. A threaded rod stud with nut and washer of the type specified.
 2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
Pier 1	A325
Pier 2	A307
E. Abut.	A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 16
F.A.P. RTE. 774	107BY	EFFINGHAM	273	242	29 SHEETS
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

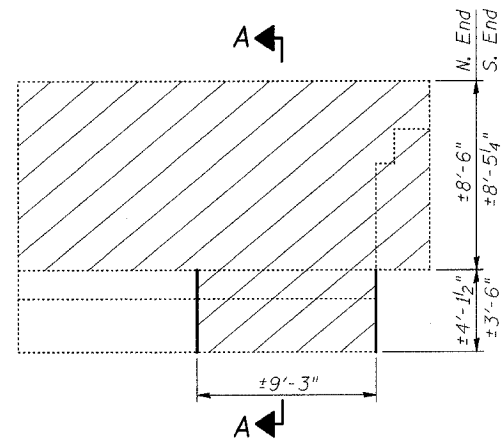
CONTRACT NO. 94827

GENERAL NOTES

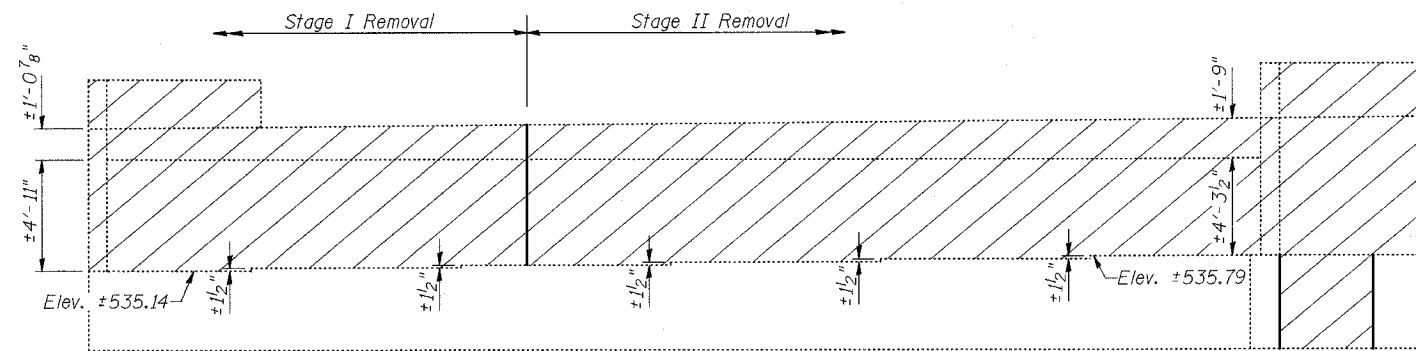
Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.
 Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
 The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Furnishing and Erecting Structural Steel.

SHEET TITLE		PROJECT NO.	
ANCHOR BOLT DETAILS FOR BEARINGS		02017	
PROJECT		SCALE	
IL RTE. 32/33 OVER LITTLE WABASH RIVER			
F.A.P. RTE. 774 SECTION 107BY		DATE	
EFFINGHAM COUNTY		DRAWN BY	
STATION 1011+50.17		TFC	
STRUCTURE NO. 025-0078		CHECKED BY	
		GJB/MCB	
DRAWING NO.			
COOMBE-BLOXDORF P.C.		16	
Engineers/Land Surveyors			
Springfield, Illinois			
Design Firm License No. 184-002703		OF 29 SHTS	

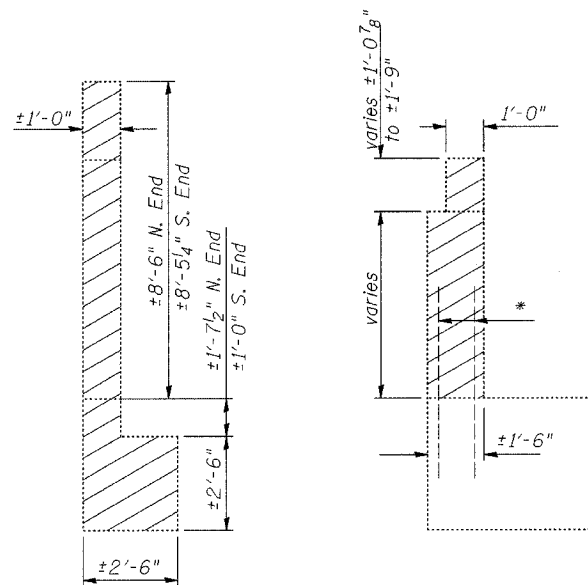
CONTRACT NO. 94827



WING WALL ELEVATION
(South Wingwall Shown)



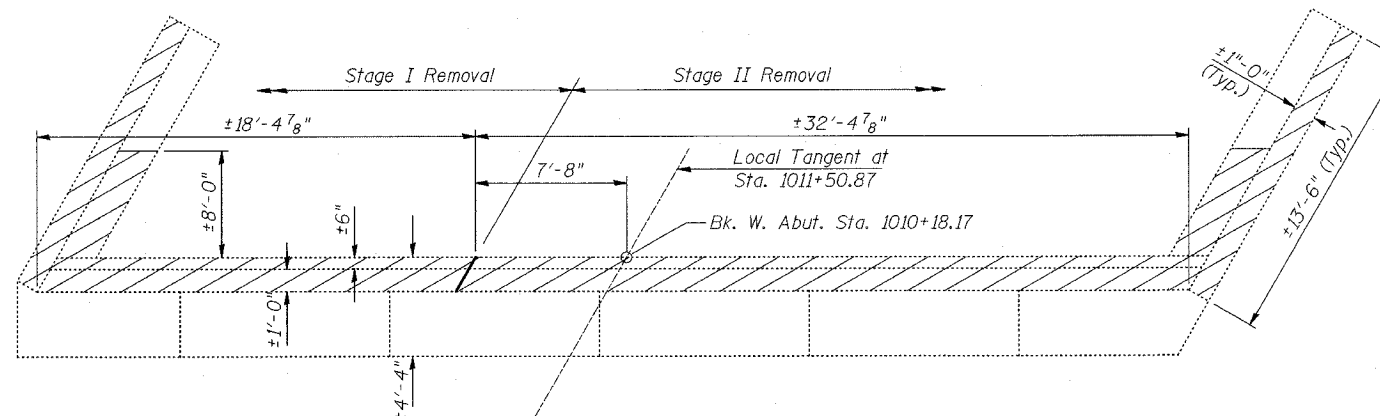
ELEVATION
(Looking West)



SEC. A-A

SEC. THRU ABUT.

* Existing v bars in abutment backwall shall be cut to fit proposed construction.



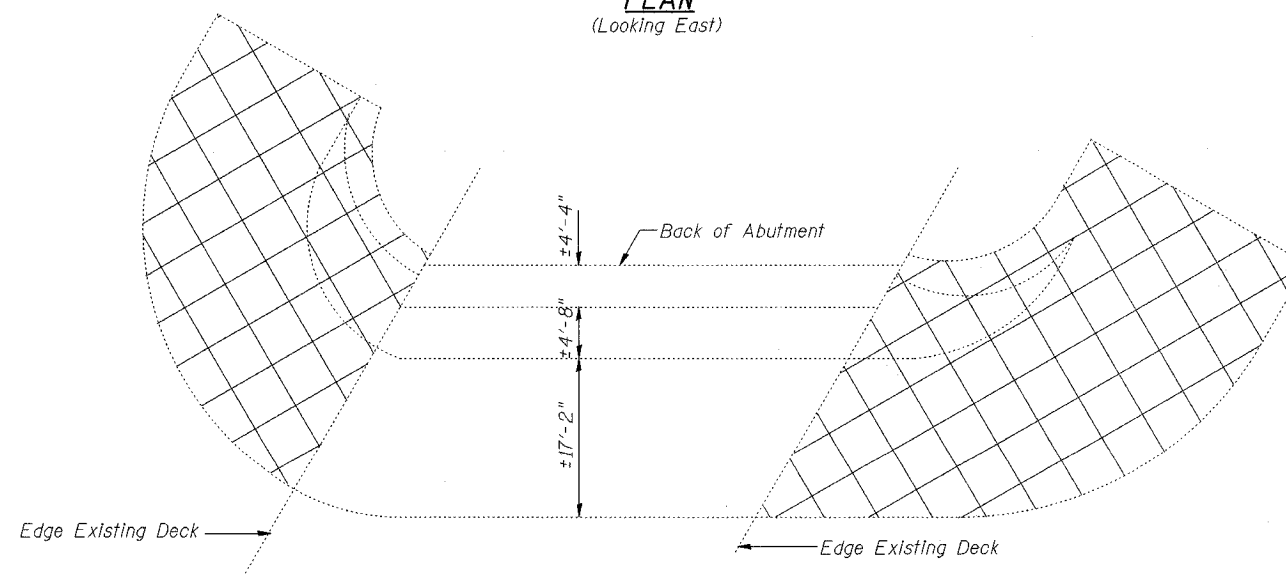
PLAN
(Looking East)

NOTES

Hatched areas indicate Concrete Removal.
Existing reinforcement not extending into areas of new construction shall be cut at the removal line and removed. Exposed portion will be covered with a layer of epoxy. Cost included with Concrete Removal.
Existing reinforcement extending into the removal area are to be cleaned, straightened and incorporated into the new construction. All reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
Cross hatched areas indicate Slopewall Removal.

BILL OF MATERIAL

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	29.3
Slopewall Removal	Sq. Yd.	321

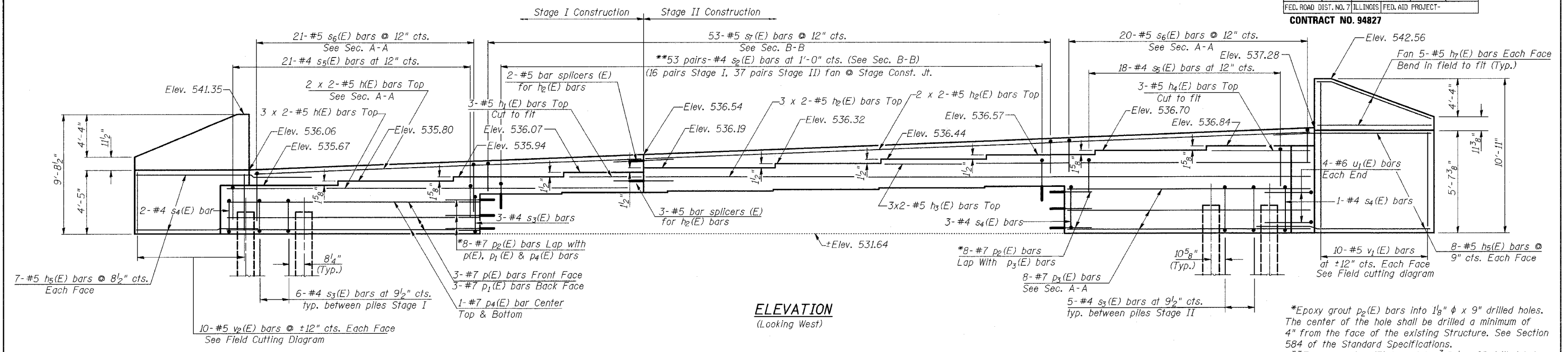


SLOPEWALL REMOVAL

SHEET TITLE WEST ABUTMENT CONCRETE REMOVAL	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY GJB/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	17 OF 29 SHTS

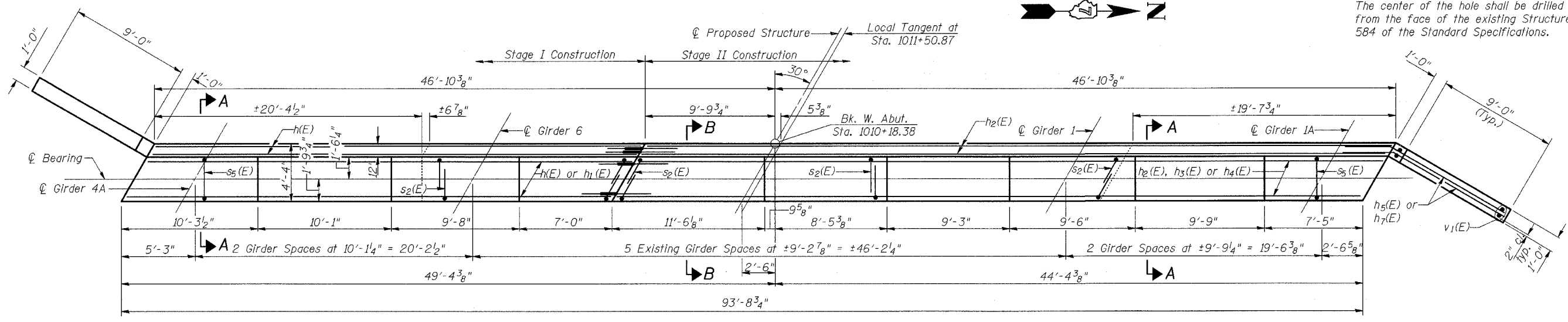
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 18 29 SHEETS
F.A.P. RTE. 774	107BY	EFFINGHAM	273	244	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

CONTRACT NO. 94827



ELEVATION
(Looking West)

*Epoxy grout p₂(E) bars into 1 1/8" φ x 9" drilled holes. The center of the hole shall be drilled a minimum of 4" from the face of the existing structure. See Section 584 of the Standard Specifications.
**Epoxy grout s₂(E) bars into 3/4" φ x 9" drilled holes. The center of the hole shall be drilled a minimum of 4" from the face of the existing structure. See Section 584 of the Standard Specifications.

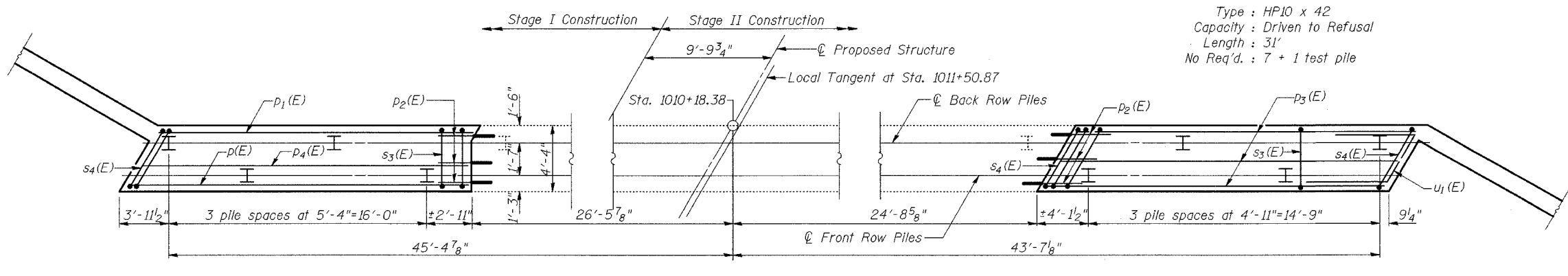


PLAN

PILE DATA

Type : HP10 x 42
Capacity : Driven to Refusal
Length : 31'
No Req'd. : 7 + 1 test pile

Min. Bar Lap
#5 bars = 1'-8"



PLAN PILE CAP

Work this sheet with sheet 19 of 29.

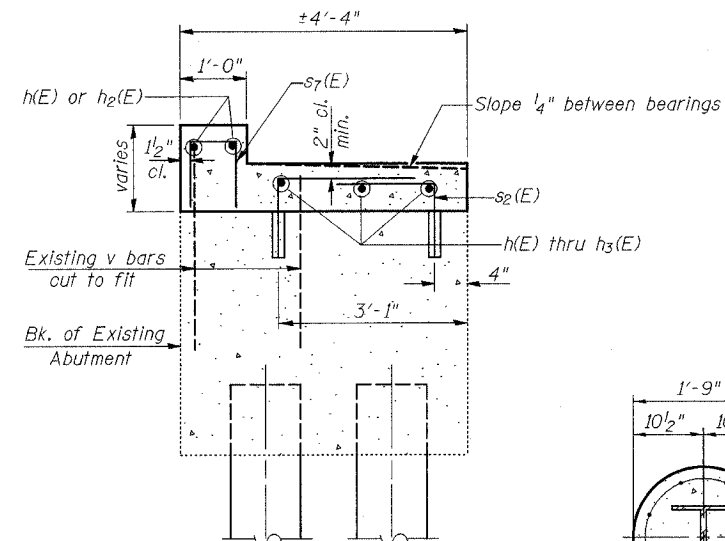
SHEET TITLE		WEST ABUTMENT	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	TFC	CHECKED BY	GJB/MCB
DRAWING NO.			
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		18 OF 29 SHTS	

CONTRACT NO. 94827

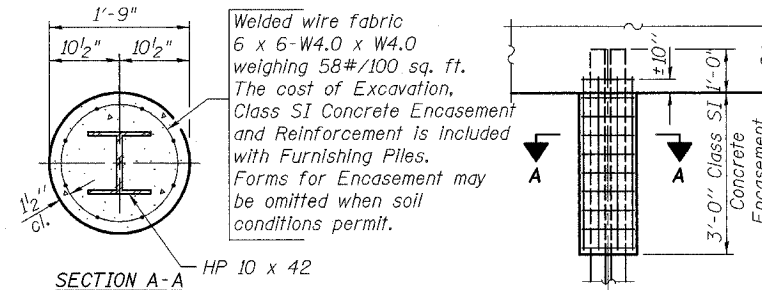
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	10	#5	19'-3"	
h ₁ (E)	3	#5	8'-4"	
h ₂ (E)	10	#5	29'-0"	
h ₃ (E)	6	#5	19'-7"	
h ₄ (E)	3	#5	8'-10"	
h ₅ (E)	30	#5	12'-2"	
h ₇ (E)	20	#5	9'-8"	
p(E)	3	#7	22'-6"	
p ₁ (E)	3	#7	20'-0"	
p ₂ (E)	16	#7	5'-9"	
p ₃ (E)	8	#7	19'-4"	
p ₄ (E)	2	#7	21'-3"	
s ₂ (E)	106	#4	3'-9"	
s ₃ (E)	36	#4	15'-1"	
s ₄ (E)	6	#4	16'-4"	
s ₅ (E)	39	#4	5'-8"	
s ₆ (E)	41	#5	6'-1"	
s ₇ (E)	53	#5	2'-5"	
u ₁ (E)	8	#6	9'-8"	
v ₁ (E)	10	#5	16'-10"	
v ₂ (E)	10	#5	14'-4"	
Structure Excavation		Cu. Yd.	183	
Concrete Structures		Cu. Yd.	44.7	
Reinforcement Bars Epoxy Coated		Lbs.	3790	
Furnishing Steel Piles HP10x42		Ft.	217	
Driving Steel Piles		Ft.	217	
Test Piles Steel HP10x42		Each	1	
Bar Splicers		Each	5	

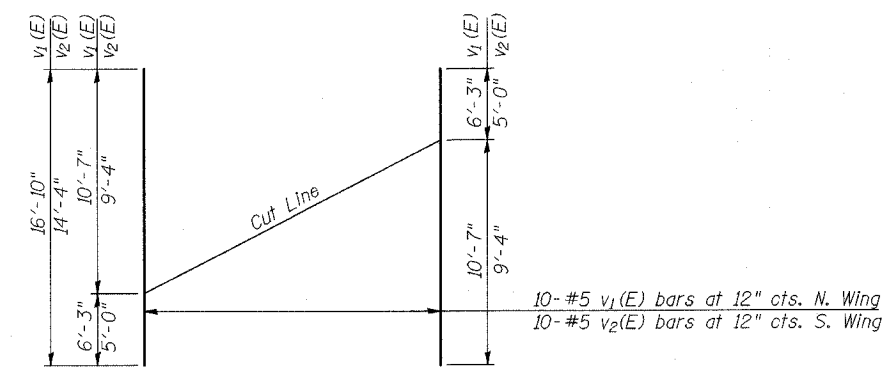
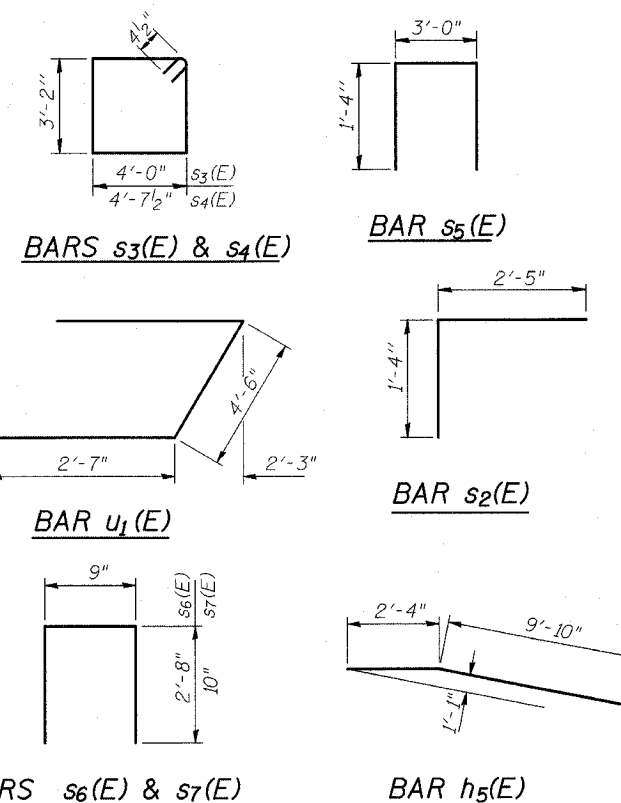
Reinforcement bars designated (E) shall be epoxy coated.



SECTION B-B

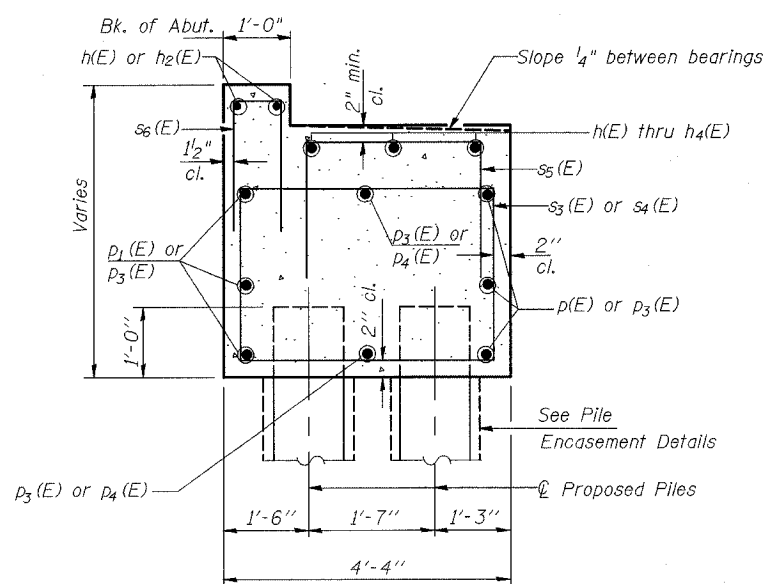


PILE ENCASEMENT DETAIL



FIELD CUTTING DIAGRAM

Order v₁(E) and v₂(E) bars full length. Cut as shown and use remainder of bars in opposite face.

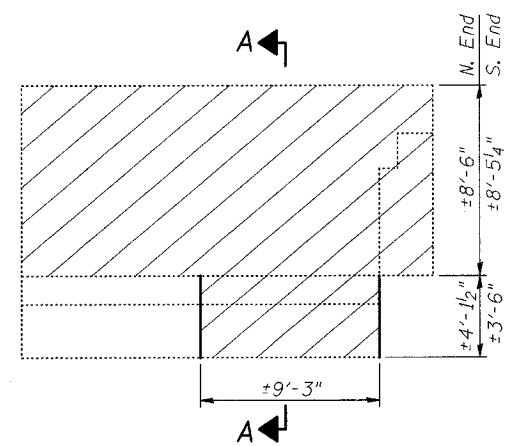


SECTION A-A

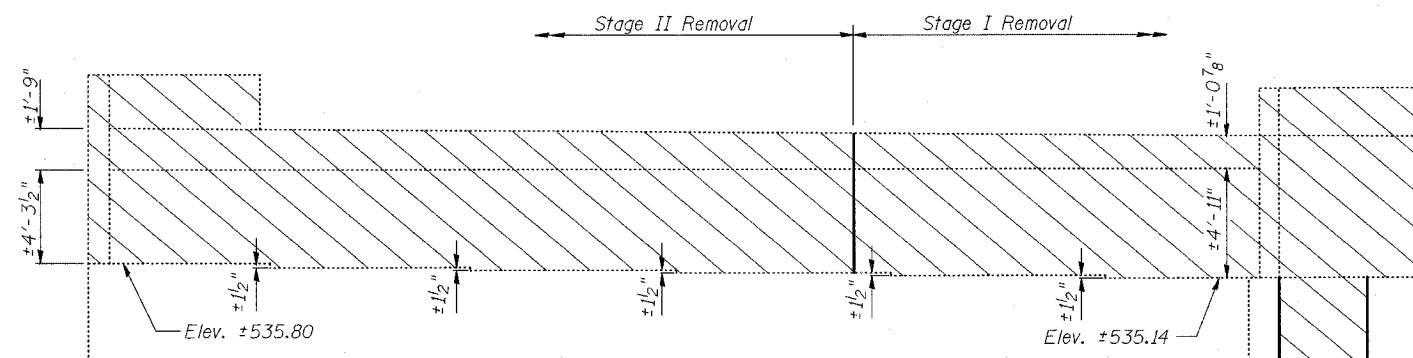
Work this sheet with sheet 18 of 29.

SHEET TITLE		PROJECT NO.	
WEST ABUTMENT DETAILS		02017	
PROJECT		SCALE	
IL RTE. 32/33 OVER LITTLE WABASH RIVER			
F.A.P. RTE. 774 SECTION 107BY		DATE	
EFFINGHAM COUNTY		DRAWN BY	
STATION 1011+50.17		TFG	
STRUCTURE NO. 025-0078		CHECKED BY	
		GJB/MCB	
DRAWING NO.			
COOMBE-BLOXDORF P.C.		19	
Engineers/Land Surveyors		OF 29 SHTS	
Springfield, Illinois			
Design Firm License No. 184-002703			

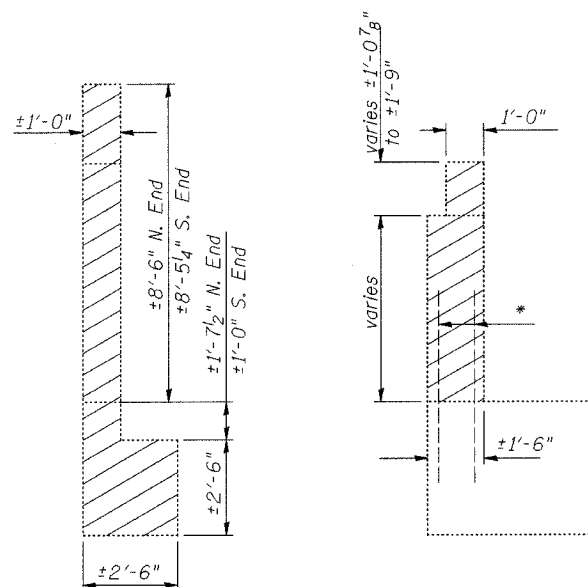
CONTRACT NO. 94827



WING WALL ELEVATION
(North Wingwall Shown)

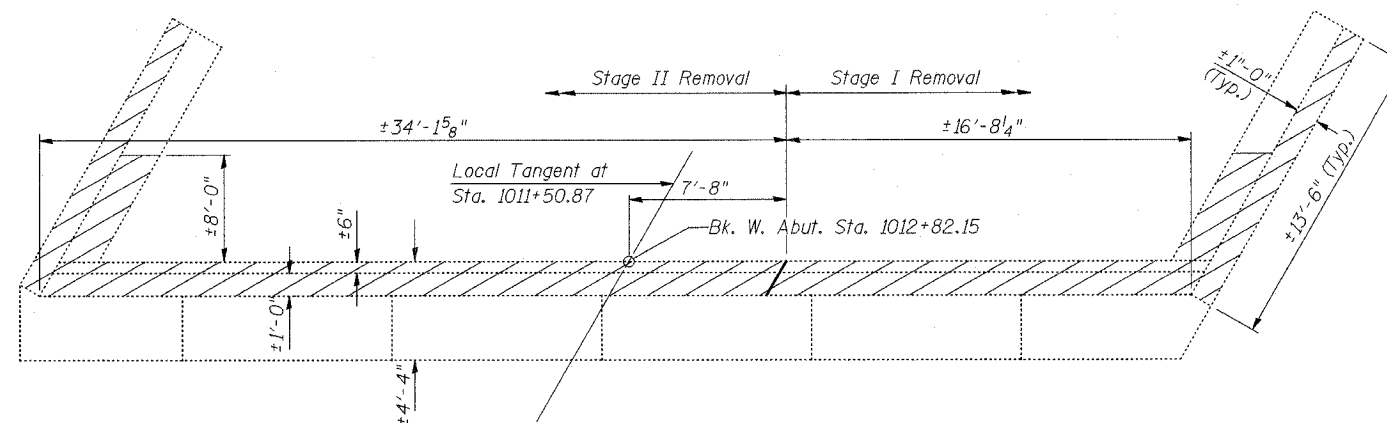


ELEVATION
(Looking East)

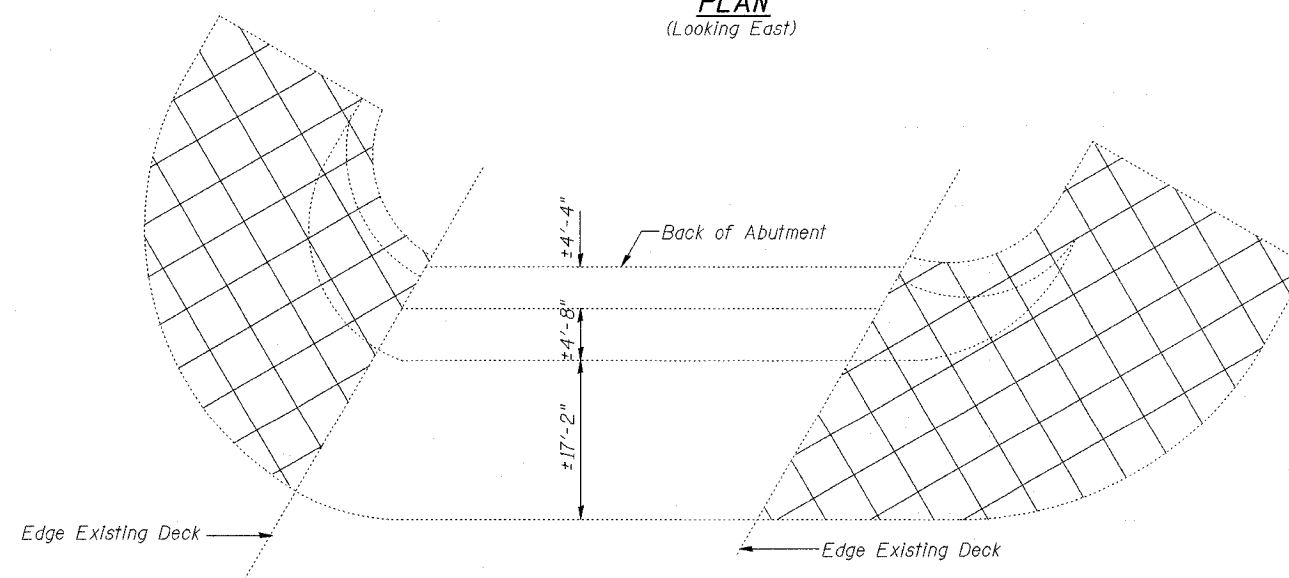


SEC. A-A

SEC. THRU ABUT.



PLAN
(Looking East)



SLOPEWALL REMOVAL

NOTES

Hatched areas indicate Concrete Removal.
Existing reinforcement not extending into areas of new construction shall be cut at the removal line and removed. Exposed portion will be covered with a layer of epoxy. Cost included with Concrete Removal.
Existing reinforcement extending into the removal area are to be cleaned, straightened and incorporated into the new construction. All reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
Cross hatched areas indicate Slopewall Removal.

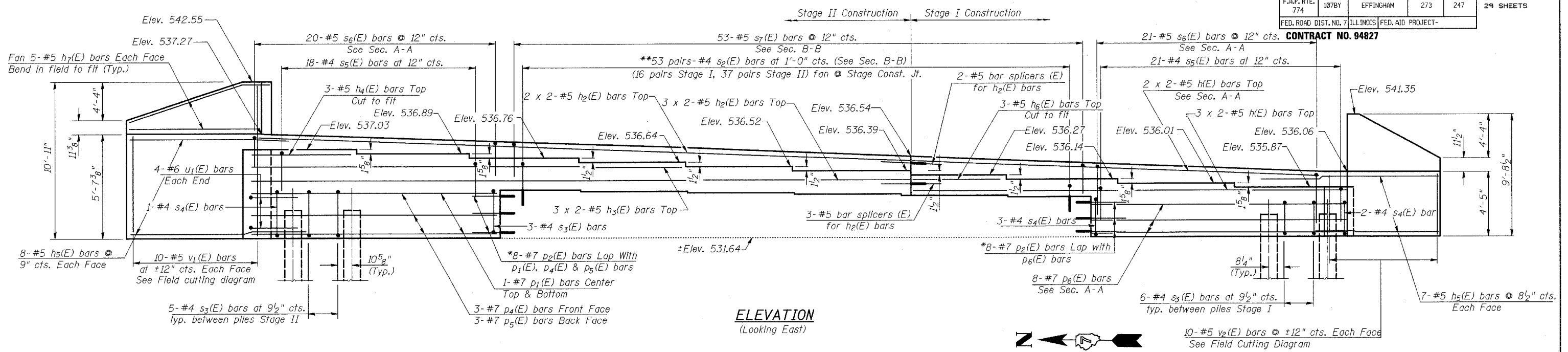
BILL OF MATERIAL

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	29.3
Slopewall Removal	Sq. Yd.	321

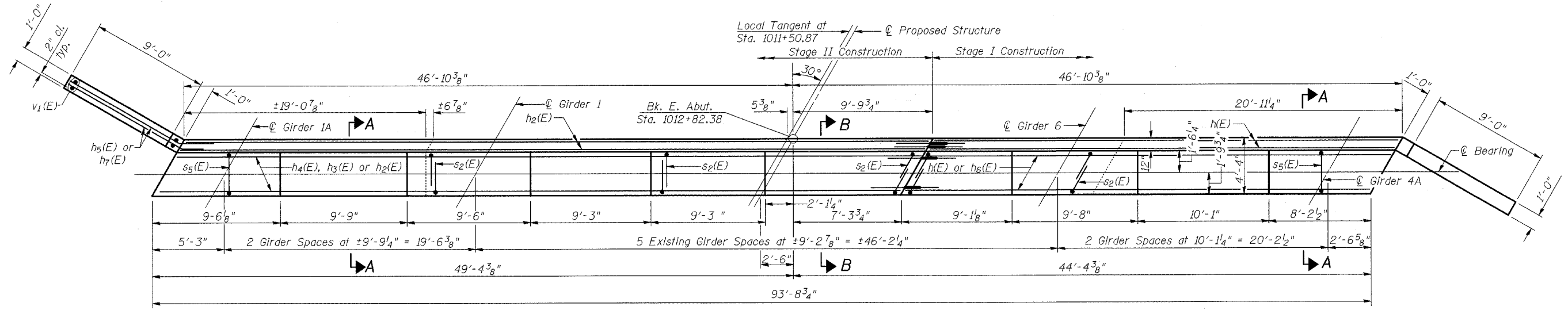
* Existing v bars in abutment backwall shall be cut to fit proposed construction.

SHEET TITLE EAST ABUTMENT CONCRETE REMOVAL	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY GJB/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
20 OF 29 SHTS	

CONTRACT NO. 94827



ELEVATION
(Looking East)

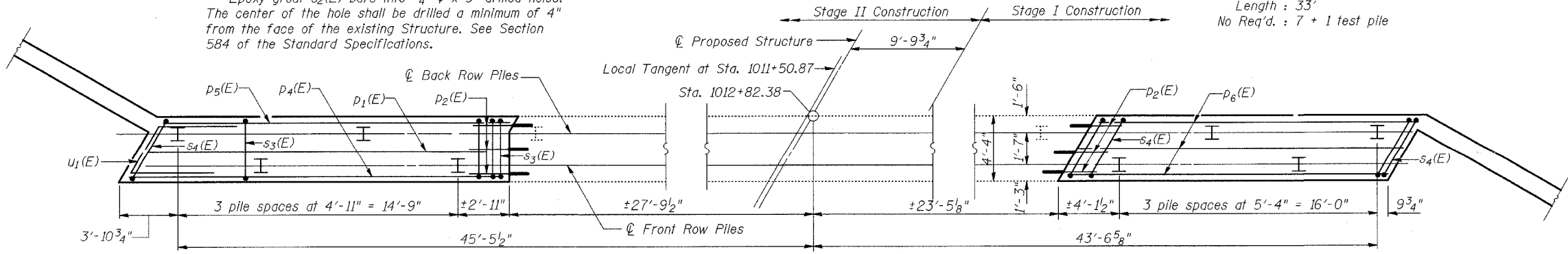


PLAN

*Epoxy grout p₂(E) bars into 1 1/8" φ x 9" drilled holes. The center of the hole shall be drilled a minimum of 4" from the face of the existing Structure. See Section 584 of the Standard Specifications.
 **Epoxy grout s₂(E) bars into 3/4" φ x 9" drilled holes. The center of the hole shall be drilled a minimum of 4" from the face of the existing Structure. See Section 584 of the Standard Specifications.

PILE DATA
 Type : HP10 x 42
 Capacity : Driven to Refusal
 Length : 33'
 No Req'd. : 7 + 1 test pile

Min. Bar Lap
 #5 bars = 1'-8"



PLAN PILE CAP

Work this sheet with sheet 22 of 29.

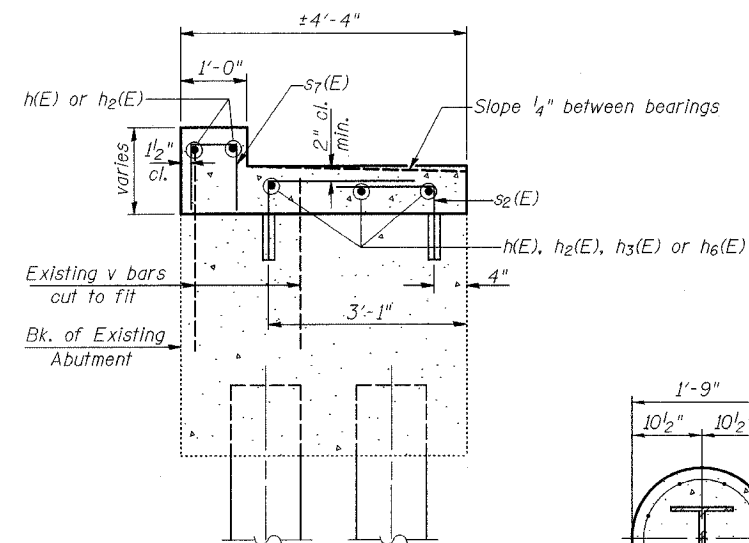
SHEET TITLE		EAST ABUTMENT	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER	PROJECT NO.	02017
	F.A.P. RTE. 774 SECTION 107BY	SCALE	
	EFFINGHAM COUNTY	DATE	
	STATION 1011+50.17	DRAWN BY	TFG
	STRUCTURE NO. 025-0078	CHECKED BY	GJB/MCB
COOMBE-BLOXDORF P.C.		DRAWING NO.	
Engineers / Land Surveyors			21
Springfield, Illinois			OF 29 SHTS
Design Firm License No. 184-002703			

CONTRACT NO. 94827

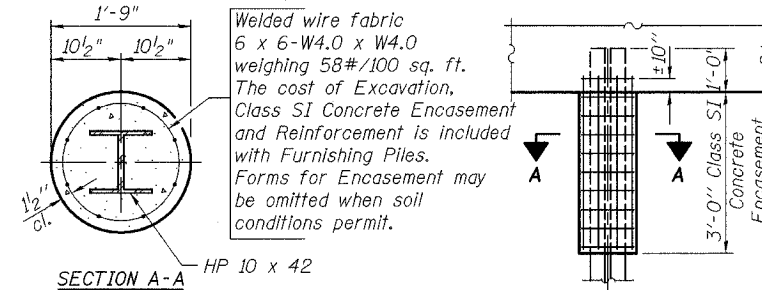
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	10	#5	19'-3"	
h ₂ (E)	10	#5	29'-0"	
h ₃ (E)	6	#5	19'-7"	
h ₄ (E)	3	#5	8'-10"	
h ₅ (E)	30	#5	12'-2"	
h ₆ (E)	3	#5	8'-9"	
h ₇ (E)	20	#5	9'-8"	
p ₁ (E)	2	#7	20'-0"	
p ₂ (E)	16	#7	5'-9"	
p ₄ (E)	3	#7	21'-3"	
p ₅ (E)	3	#7	18'-11"	
p ₆ (E)	8	#7	20'-7"	
s ₂ (E)	106	#4	3'-9"	
s ₃ (E)	36	#4	15'-1"	
s ₄ (E)	6	#4	16'-4"	
s ₅ (E)	39	#4	5'-8"	
s ₆ (E)	41	#5	6'-1"	
s ₇ (E)	53	#5	2'-5"	
u ₁ (E)	8	#6	9'-8"	
v ₁ (E)	10	#5	16'-10"	
v ₂ (E)	10	#5	14'-4"	
Structure Excavation	Cu. Yd.		183	
Concrete Structures	Cu. Yd.		46.9	
Reinforcement Bars Epoxy Coated	Lbs.		3790	
Furnishing Steel Piles HP10x42	Ft.		231	
Driving Steel Piles	Ft.		231	
Test Piles Steel HP10x42	Each		1	
Bar Splicers	Each		5	

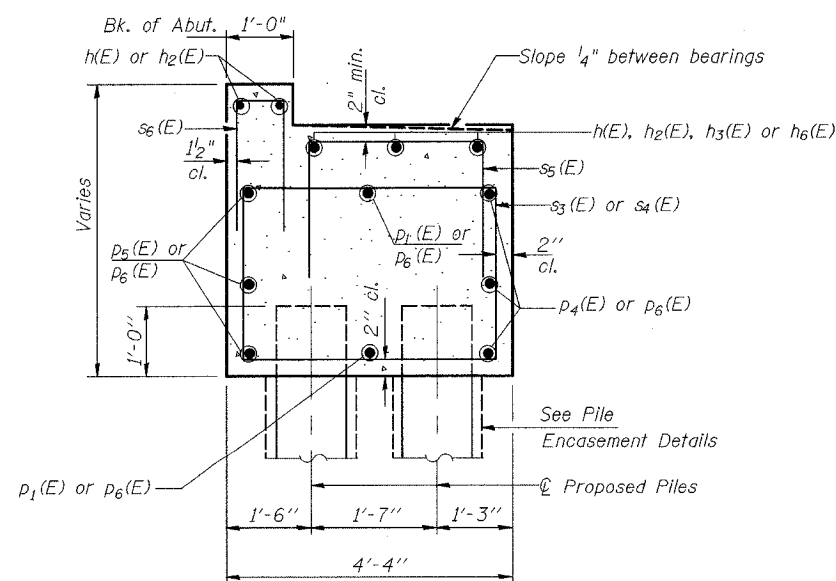
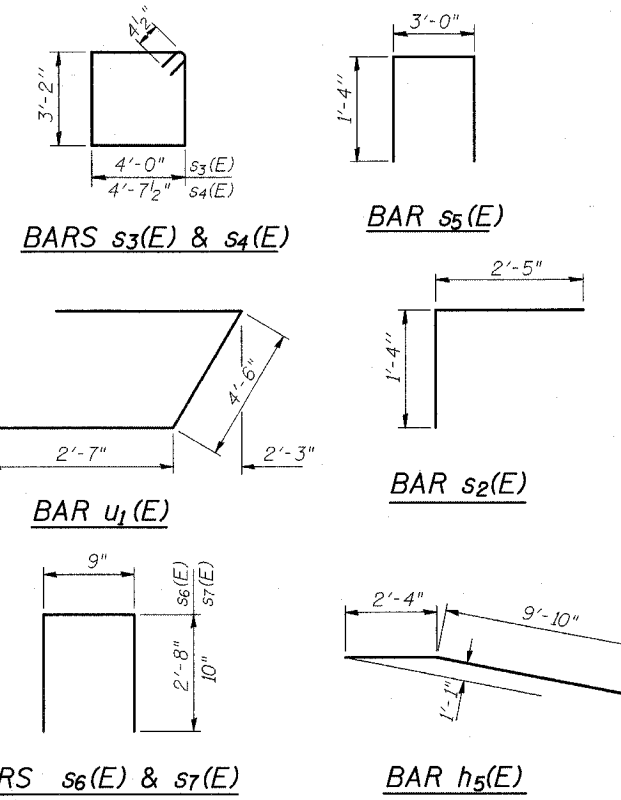
Reinforcement bars designated (E) shall be epoxy coated.



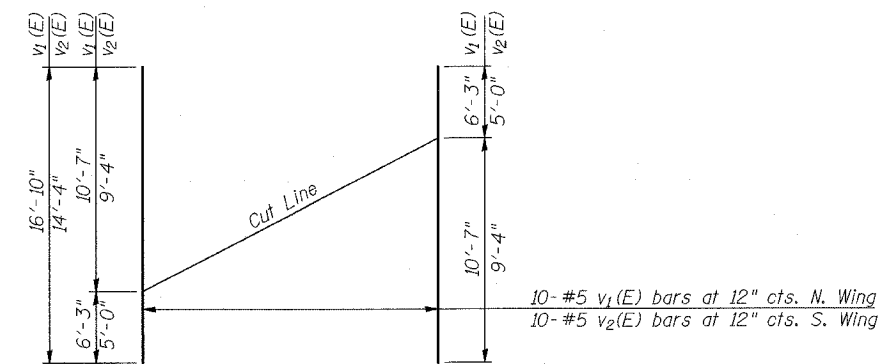
SECTION B-B



PILE ENCASEMENT DETAIL



SECTION A-A



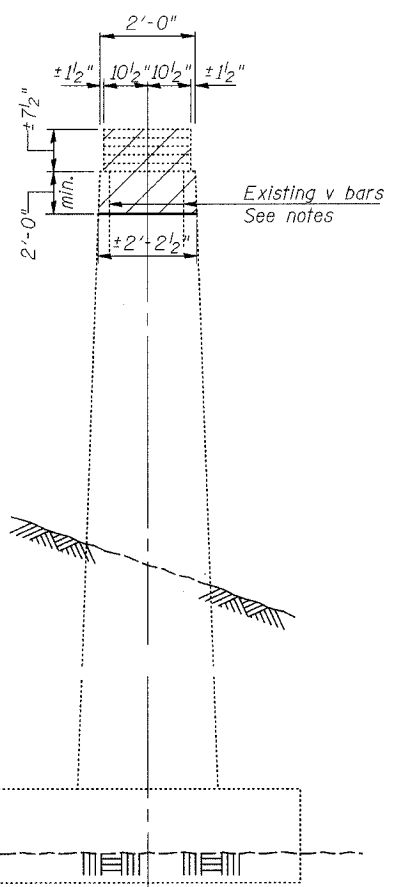
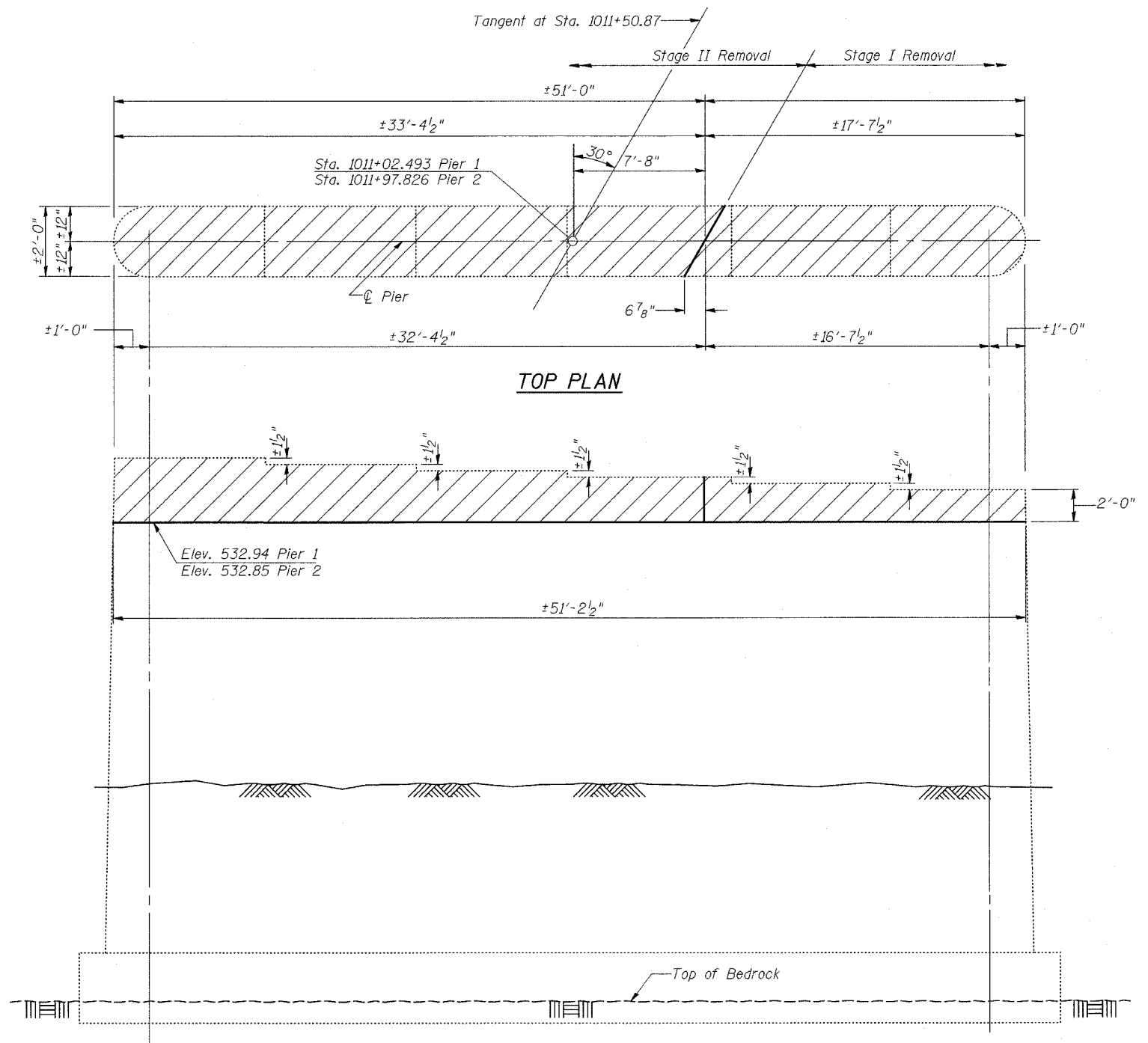
FIELD CUTTING DIAGRAM

Order v₁(E) and v₂(E) bars full length. Cut as shown and use remainder of bars in opposite face.

Work this sheet with sheet 21 of 29.

SHEET TITLE		PROJECT NO.	
EAST ABUTMENT DETAILS		02017	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER	SCALE	
	F.A.P. RTE. 774 SECTION 107BY	DATE	
	EFFINGHAM COUNTY	DRAWN BY	TFG
	STATION 1011+50.17	CHECKED BY	GJB/MCB
	STRUCTURE NO. 025-0078	DRAWING NO.	
COOMBE-BLOXDORF P.C.		22	
Engineers/Land Surveyors Springfield, Illinois		OF 29 SHTS	
Design Firm License No. 184-002703			

CONTRACT NO. 94827



NOTES

Hatched areas indicate Concrete Removal.
Existing v bars extending into the new construction shall be cleaned, straightened and incorporated into the new construction. Cost included with Concrete Removal.

BILL OF MATERIAL (2-PIERS)

Item	Unit	Quantity
Concrete Removal	Cu. Yd.	18.4

SHEET TITLE PIERS 1 & 2 CONCRETE REMOVAL	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY GJB/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002708	23 OF 29 SHTS

#FILE:94827/4

Pier-conc-removal

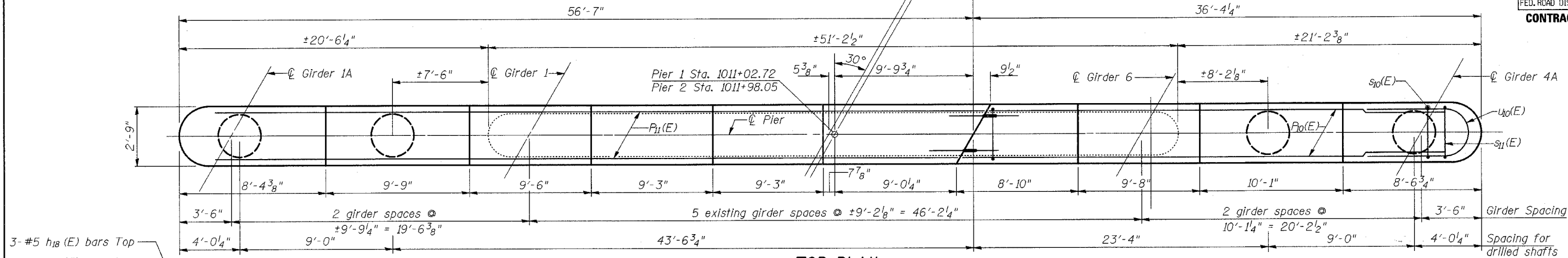
Notes: Space reinforcement in cap to miss anchor bolts.
Four steps monolithically with cap.

Local Tangent at Sta. 1011+50.87

Stage II Construction Stage I Construction

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 24 29 SHEETS
F.A.P. RTE. 774	107BY	EFFINGHAM	273	250	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT-					

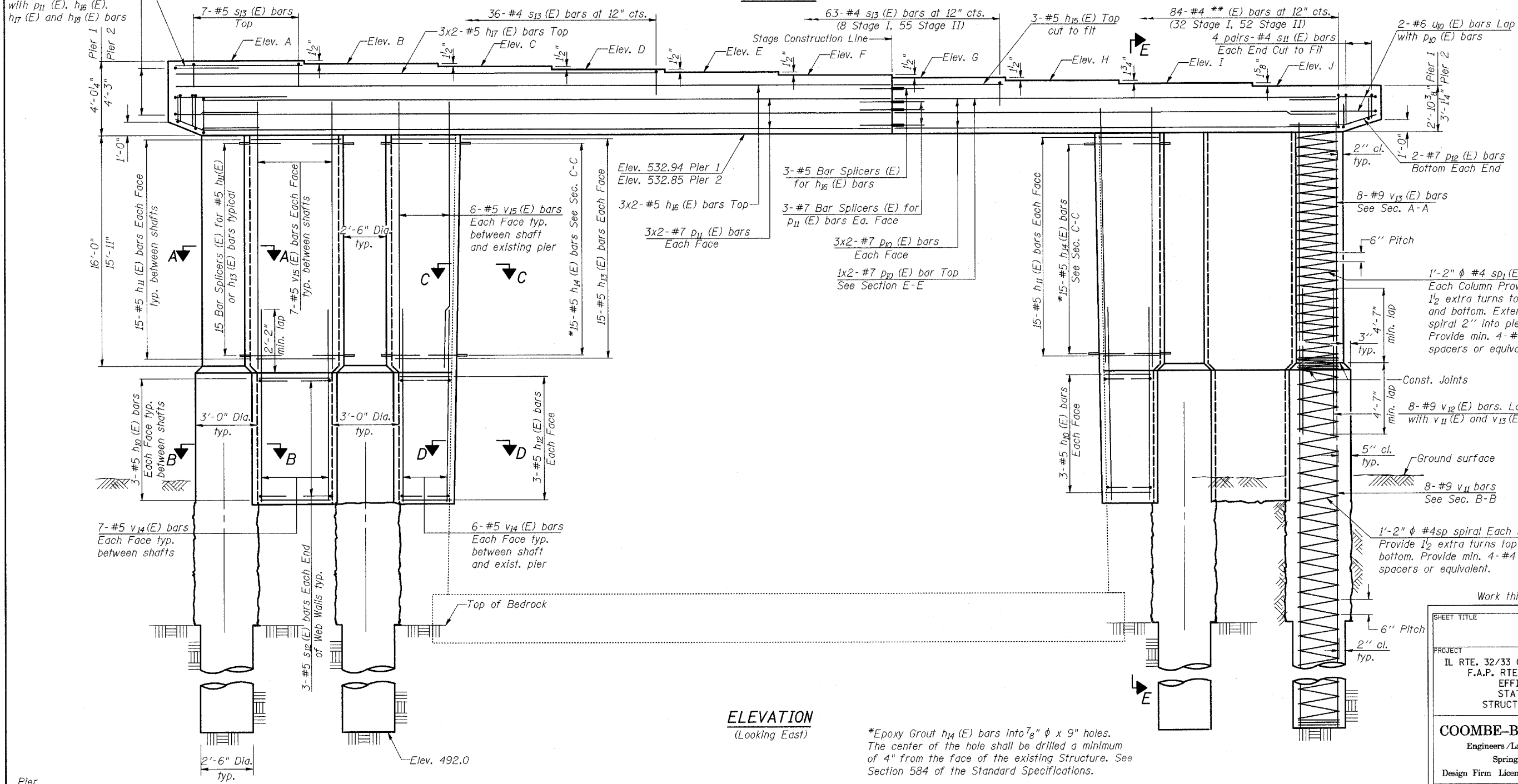
CONTRACT NO. 94827



TOP PLAN

TABLE of ELEVATIONS

Elev.	Pier 1	Pier 2
A	536.96	537.10
B	536.83	536.97
C	536.71	536.85
D	536.58	536.73
E	536.46	536.60
F	536.34	536.48
G	536.21	536.36
H	536.09	536.23
I	535.93	536.08
J	535.80	535.95



ELEVATION
(Looking East)

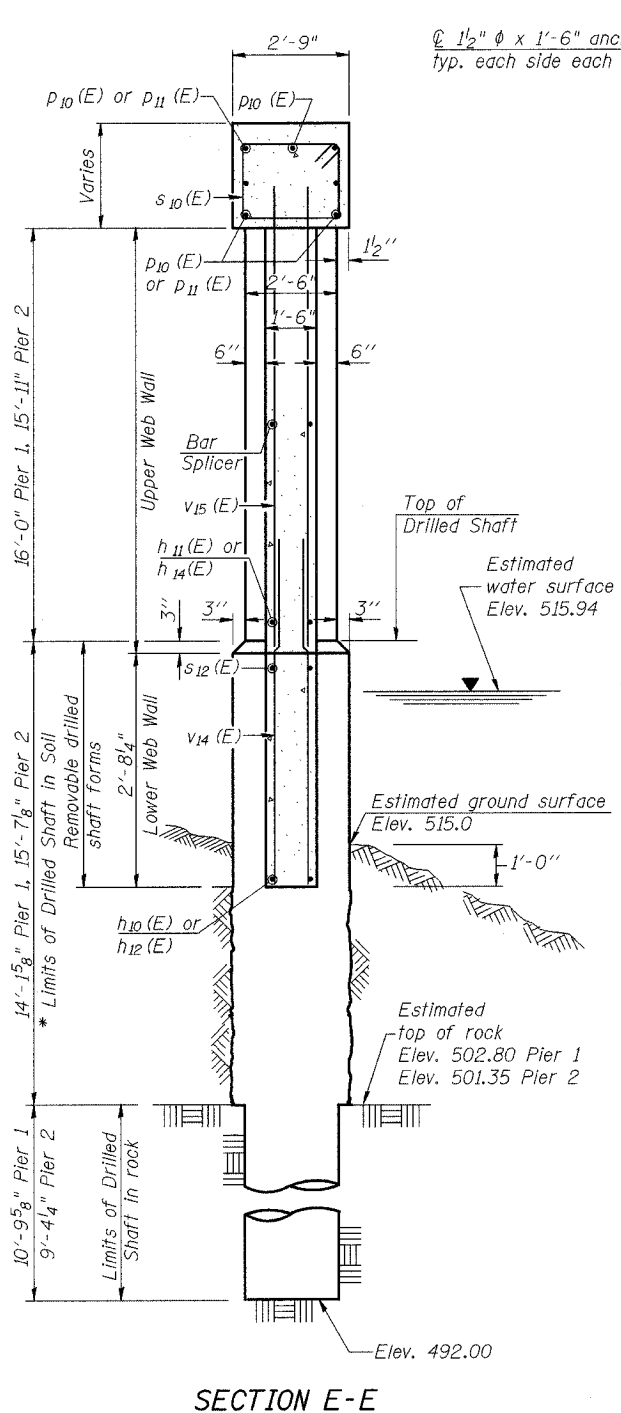
Min. Bar Lap

- #5 bar = 1'-8" web wall
- #5 bar = 3'-0" cap
- #7 bar = 4'-10"

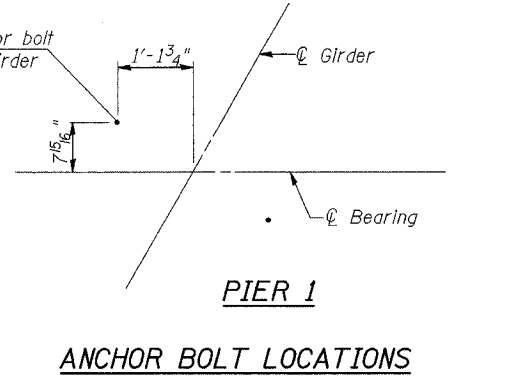
Work this Sheet with Sheet 25 of 29.

SHEET TITLE PIERS		PROJECT NO. 02017
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	DATE	DRAWN BY TFG
DESIGNED BY GJB/MCB	CHECKED BY GJB/MCB	DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers/Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		24 OF 29 SHTS

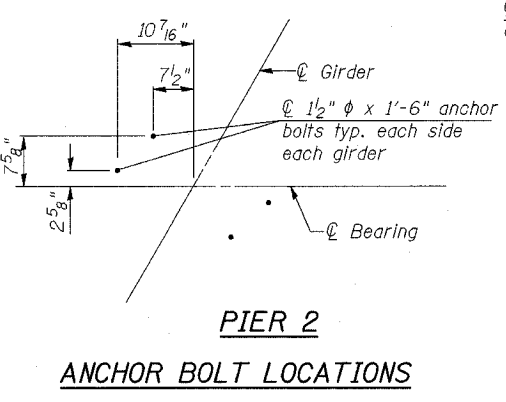
*Epoxy Grout h14 (E) bars into 7/8" φ x 9" holes. The center of the hole shall be drilled a minimum of 4" from the face of the existing Structure. See Section 584 of the Standard Specifications.



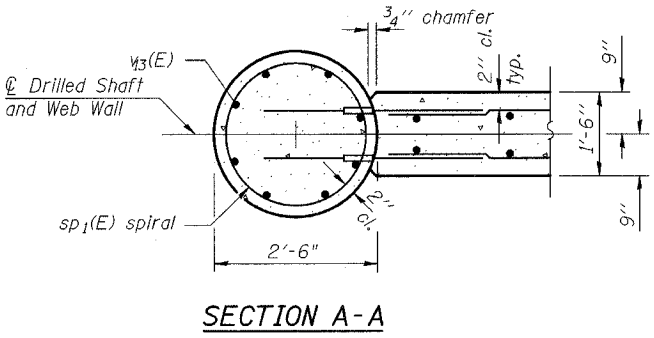
SECTION E-E



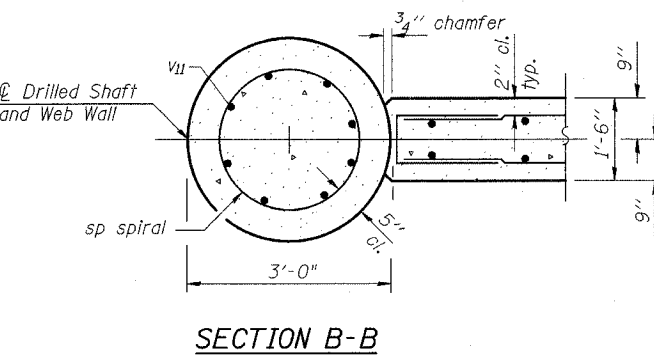
PIER 1 ANCHOR BOLT LOCATIONS



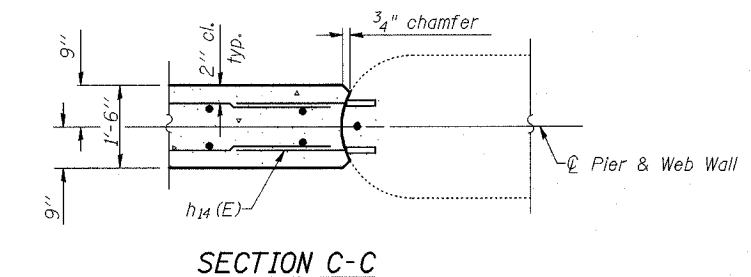
PIER 2 ANCHOR BOLT LOCATIONS



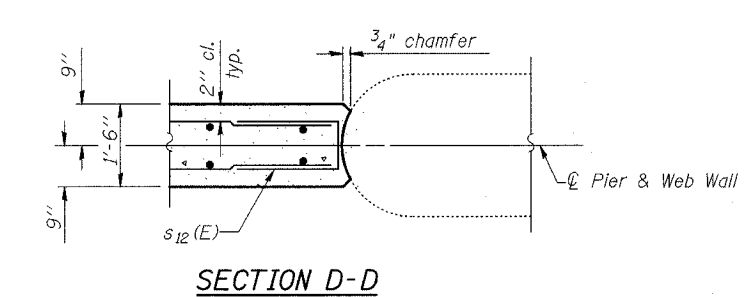
SECTION A-A



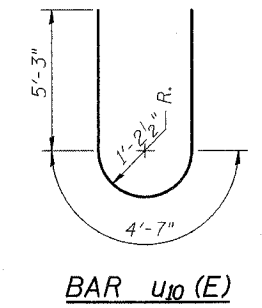
SECTION B-B



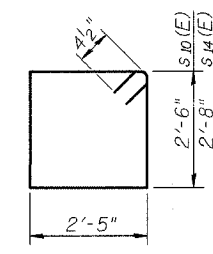
SECTION C-C



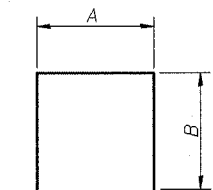
SECTION D-D



BAR u10(E)



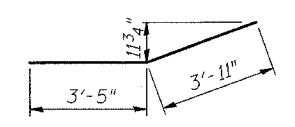
BAR s10(E) & s14(E)



BARS s11(E), s12(E) & s13(E)

A & B DIMENSIONS

BAR	A	B
s11(E)	2'-5"	2'-6"
s12(E)	1'-2"	2'-6"
s13(E)	2'-5"	2'-2"



BAR p12(E)

BILL OF MATERIAL-2 PIERS

Bar	No.	Size	Length	Shape
h10(E)	36	#5	5'-8"	—
h11(E)	180	#5	6'-2"	—
h12(E)	12	#5	4'-11"	—
h13(E)	60	#5	5'-3"	—
h14(E)	120	#5	3'-7"	—
h15(E)	6	#5	8'-5"	—
h16(E)	12	#5	29'-6"	—
h17(E)	12	#5	19'-1"	—
h18(E)	6	#5	6'-9"	—
D10(E)	28	#7	19'-0"	—
D11(E)	24	#7	29'-2"	—
D12(E)	8	#7	7'-4"	—
s10(E)	84	#4	10'-7"	□
s11(E)	32	#4	7'-5"	□
s12(E)	48	#5	6'-2"	□
s13(E)	212	#4	6'-9"	□
s14(E)	84	#4	10'-11"	□
** SP	8	#4	24'-8"	≡
** SP1(E)	8	#4	16'-2"	≡
u10(E)	14	#6	15'-1"	U
v11	64	#9	24'-8"	—
v12(E)	64	#9	9'-2"	—
v13(E)	64	#9	18'-4"	—
v14(E)	104	#5	4'-11"	—
v15(E)	104	#5	18'-2"	—
Underwater Structure Excavation Protection Locations 3 & 4	Each	2		
Drilled Shaft in Soil 36"	Foot	119		
Drilled Shaft in Rock 30"	Foot	81		
Concrete Structures	Cu. Yd.	144.7		
Reinforcement Bars, Epoxy Coated	Pound	18,160		
Reinforcement Bars	Pound	7,160		
Bar Splicers	Each	378		

Reinforcement Bars designated (E) shall be epoxy coated. Cast steps monolithically with cap. Space cap reinforcement to miss anchor bolts. Minimum lap for spirals = 1 1/2 turns. *Length is height of spiral. Bars indicated thus 3 x 2-#7 etc. indicates 3 lines of bars with 2 lengths per line.

Construction Sequence for Web Wall

- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
- Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
- If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
- Construct Columns.
- Construct upper web walls.

Work this sheet with sheet 24 of 29.

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

SHEET TITLE		PIER DETAILS	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER	PROJECT NO.	02017
	F.A.P. RTE. 774 SECTION 107BY	SCALE	
	EFFINGHAM COUNTY	DATE	
	STATION 1011+50.17	DRAWN BY	TFG
	STRUCTURE NO. 025-0078	CHECKED BY	GJB/MCB
COOMBE-BLOXDORF P.C.		DRAWING NO.	
Engineers/Land Surveyors		25	
Springfield, Illinois		OF 29 SHTS	
Design Firm License No. 184-002708			

#FILE/ABREV#

CONTRACT NO. 94827
NOTES

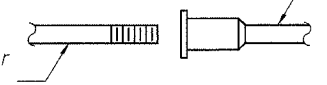
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
 - ② Minimum *Pull-out Strength = $1.25 \times f_{s_{allow}} \times A_t$
(Tension in kips)
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_{s_{allow}}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

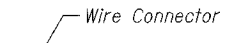
The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



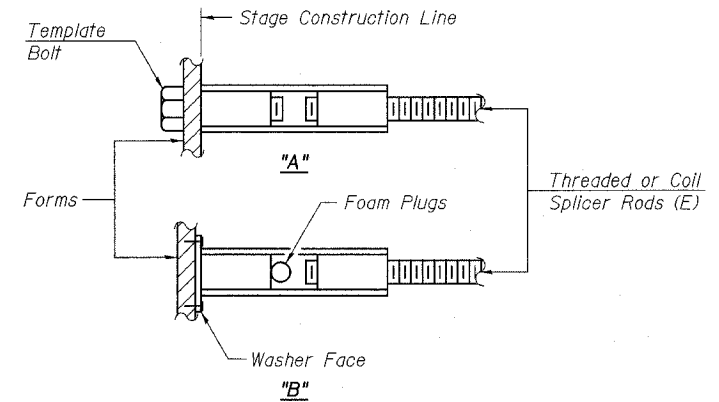
**** ONE PIECE**



WELDED SECTIONS

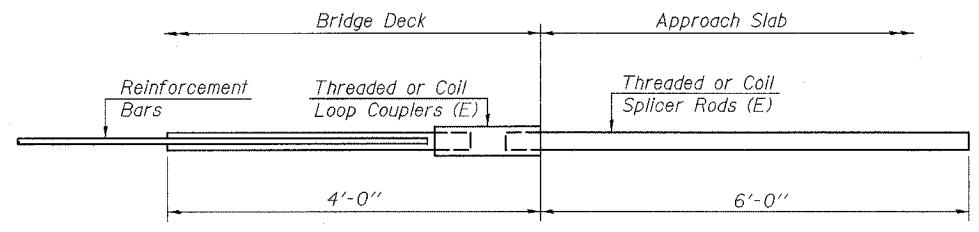
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



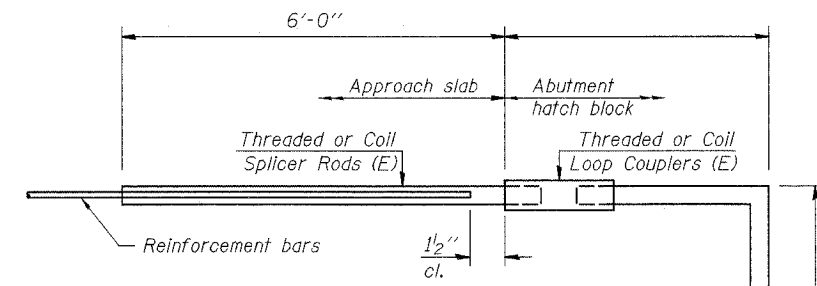
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



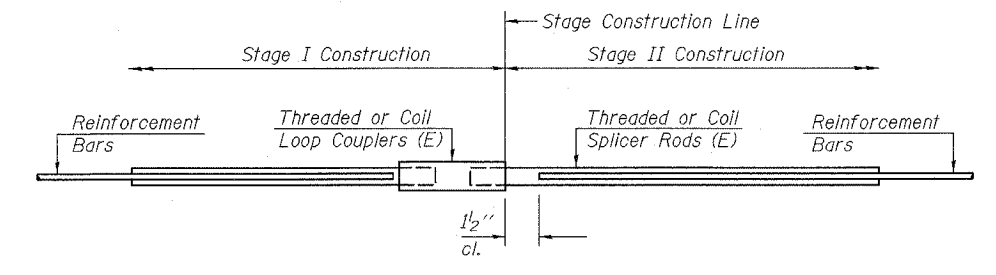
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 156



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location
#5	1075	Slab
#6	24	Diaphragms
#5	5	W. Abut.
#5	5	E. Abut.
#5	3	Pier 1 Cap
#7	6	Pier 1 Cap
#5	180	Pier 1 Shafts
#5	3	Pier 2 Cap
#7	6	Pier 2 Cap
#5	180	Pier 2 Shafts

SHEET TITLE BAR SPLICER ASSEMBLY DETAILS	
PROJECT IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO. 02017 SCALE DATE DRAWN BY TFG CHECKED BY GJB/MCB DRAWING NO.
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703	
26	
OF 29 SHTS	

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation - District 7
SOIL BORING LOG
Page 1 of 3
Date 8/17/02

ROUTE FAP 774 (IL 33) DESCRIPTION Little Wabash River LOGGED BY E. Sandschafer

SECTION 107WRS-1 LOCATION NE 1/4, SEC. 13, TWP. 8 N, RNG. 5 E, 3 PM

COUNTY Effingham DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE Automatic

STRUCT. NO. 025-0078 Station 1011+47.58

BORING NO. 1 of 2 (Pier #1) Station 1010+51 Offset 39.00R L1 Ground Surface Elev. 527.70 ft

DEPTH (ft)	(ft)	(in)	(%)	DESCRIPTION	DL	BL	UC	MO	Surface Water Elev. (ft)	Stream Bed Elev. (ft)	DL	BL	UC	MO
1	1			15% passing #200 sieve.					531.99					
2	2													
3	3			Very stiff, very moist, brown, SANDY LOAM w/ few roots and pebbles.		3.0	12		505.20					
7	7			Medium, wet, gray, medium grained, SAND. 9% passing #200 sieve.					503.70					
12	12			Very dense, moist, gray, SANDY CLAY SHALE.					501.17					
16	16			Borehole continued with rock coring.					500.5					
20	20													
25	25			Soft, very damp, brown marbled gray, LOAM. Sample swelled.		0.3	25		515.99					
28	28			Very soft, very damp, gray, SILT w/ few roots and organics. Sample swelled.		0.1	28		516.20					
29	29								515.20					
30	30			Brown, fine, SAND. 16% passing #200 sieve.		0.1	20		514.70					
31	31			Very soft, very damp, gray, SILT w/ few roots and organics. Sample swelled.					513.20					
35	35			Loose, wet, brown w/ gray layers, fine, SAND. 17% passing #200 sieve.					510.70					
37	37			Very loose, wet, gray, fine, SAND. 27% passing #200 sieve.										

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T20)
BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation - District 7
ROCK CORE LOG
Page 2 of 3
Date 8/17/02

ROUTE FAP 774 (IL 33) DESCRIPTION Little Wabash River LOGGED BY E. Sandschafer

SECTION 107WRS-1 LOCATION NE 1/4, SEC. 13, TWP. 8 N, RNG. 5 E, 3 PM

COUNTY Effingham CORING METHOD Rotary diamond surf set bit

STRUCT. NO. 025-0078 Station 1011+47.58

BORING NO. 1 of 2 (Pier #1) Station 1010+51 Offset 39.00R L1 Ground Surface Elev. 527.70 ft

CORING BARREL TYPE & SIZE NW, corr dbl bbl, split inner

Core Diameter 2.06 in
Top of Rock Elev. 502.80 ft
Begin Core Elev. 502.80 ft

DEPTH (ft)	(ft)	(in)	(%)	(min/ft)	(tsf)	RECORDED	CORE	STR
88	88			20				
100	100			95				
100	100			87				
100	100			88				
487.60	487.60			45				
486.60	486.60							
484.60	484.60							
482.80	482.80							

Color pictures of the cores
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation - District 7
ROCK CORE LOG
Page 3 of 3
Date 8/17/02

ROUTE FAP 774 (IL 33) DESCRIPTION Little Wabash River LOGGED BY E. Sandschafer

SECTION 107WRS-1 LOCATION NE 1/4, SEC. 13, TWP. 8 N, RNG. 5 E, 3 PM

COUNTY Effingham CORING METHOD Rotary diamond surf set bit

STRUCT. NO. 025-0078 Station 1011+47.58

BORING NO. 1 of 2 (Pier #1) Station 1010+51 Offset 39.00R L1 Ground Surface Elev. 527.70 ft

CORING BARREL TYPE & SIZE NW, corr dbl bbl, split inner

Core Diameter 2.06 in
Top of Rock Elev. 502.80 ft
Begin Core Elev. 502.80 ft

DEPTH (ft)	(ft)	(in)	(%)	(min/ft)	(tsf)	RECORDED	CORE	STR
100	100			63				
477.60	477.60			30				
543.64	543.64							
55	55							
60	60							

Extent of exploration.

Benchmark = 543.64' Chiseled square, West abut, NW wingwall of structure number 025-0078
Provided by Program Development, design survey.

Color pictures of the cores
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

12/22/02
JVS/mjg

SHEET TITLE		
BORING LOGS		
PROJECT	PROJECT NO.	DATE
IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 774 SECTION 107BY EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	02017	
DRAWN BY	CHECKED BY	DRAWING NO.
GJB/MCB	CFC	
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		27 OF 29 SHTS

BORING #1 (1971)

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	H	Ch / A.L.	v (%)	Notes
1	1011+75	40' LT. C				528.9 0				Ground Surface
						526.4	5	0.3 S	11	SOFT, VERY DAMP, BROWN, SILTY CLAY LOAM TO SILTY CLAY
						502.9	5	0.3 S	17	SOFT, VERY DAMP, BROWN, LOAM TO CLAY LOAM WITH THIN LENSES OF FINE SAND
						501.9	5	0.3 S	17	DENSE, MIXTURE COARSE SAND AND GRAVEL PARTICLES
						498.4	5	6.0B	10	HARD, MOIST, GREY, LIMY SHALE *24" PENETRATION FOR 100 BLOWS
						498.4				EXTENT OF EXPLORATION
						517.9	5			LOOSE, WET, BROWN, SAND
						517.9	5			LOOSE, WET, BROWN, SAND

BORING #2 (1971)

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	H	Ch / A.L.	v (%)	Notes
2	1012+77	6' LT. C				524.3 0				Ground Surface
						520.3	10	0.2 B	30	VERY DENSE, DRY, GREY, SHALE WITH THIN LENSES OF HARD LIMY SANDSTONE
						516.3	5			LOOSE, VERY DAMP, BROWN-GREY, FINE SAND
						513.3	5	0.3 S	26	VERY LOOSE, WET, BROWN-GREY, FINE SAND WITH THIN LENSES OF SOFT WET CLAY TO CLAY LOAM
						511.3	4			SOFT, WET, BROWN, CLAY TO CLAY LOAM WITH THIN LENSES OF SAND
						508.3	4			VERY LOOSE, WATER BEARING, BROWN-GREY, SAND WATER ENCOUNTERED AT ELEVATION 511.3
						504.3	3			LOOSE, WET, BROWN-GREY, SAND WITH GRAVEL PARTICLES AND A FEW THIN WET LENSES OF CLAY LOAM
						504.3	3			VERY DENSE, MOIST, GREY, SHALE WITH VERY THIN LENSES OF HARD LIMY SANDSTONE

BORING #3 (1971)

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	H	Ch / A.L.	v (%)	Notes
3	1017+07	6' WT. C				526.3 0				Ground Surface
						523.3	5	0.2 S	11	SOFT, WET, BROWN, SILTY CLAY LOAM TO CLAY LOAM WITH VERY THIN LENSES OF SAND
						520.8	2			VERY LOOSE, WET, BROWN CHANGING TO DARK GREY WITH DEPTH, SAND TO SANDY LOAM
						503.8	1			VERY STIFF, WEATHERED, SANDY SHALE
						502.8	1			VERY DENSE, DRY, GREY, SHALE WITH THIN LENSES OF LIMY SANDSTONE
						503.8	1			*24" PENETRATION FOR 100 BLOWS
						503.8	1			** 14" PENETRATION FOR 100 BLOWS
						503.8	1			WOOD PARTICLES PRESENT INTERMITTENTLY.
						503.8	1			WATER ENCOUNTERED AT ELEVATION 515.8

BORING #4 (1971)

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After Hours	Elevation	H	Ch / A.L.	v (%)	Notes
4	1009+80	6.5' RT. E				538.9 0				Ground Surface
						535.9	12	2.4 S	9	EXISTING PAVEMENT, SUB-BASE AND STIFF, DAMP, BROWN, CLAY SUBGRADE
						512.4	3	0.5 BS	31	VERY STIFF, VERY MOIST TO DAMP, BROWN-GREY, CLAY SILL (EXISTING EMBANKMENT)
						510.9	11	2.2 S	15	LOOSE, WATER BEARING, DARK GREY, SAND WITH SMALL GRAVEL PARTICLES
						507.9	18	4.0 S	9	MEDIUM, VERY DAMP, DARK GREY, SLIGHTLY ORGANIC, CLAY
						505.9	8	0.6 B	35	VERY STIFF, MOIST, DARK GREY, SANDY CLAY LOAM WITH 24" THICK LENSES OF SOFT CLAY
						502.4	9			LOOSE, DAMP, DARK GREY, SILTY LOAM WITH THIN LENSES OF CLAY
						523.4	7	0.7 S	26	MEDIUM, DAMP, DARK GREY, CLAY LOAM WITH LENSES OF VERY DAMP SANDY LOAM TO SAND
						520.9	5	0.3 S	24	LOOSE (SOFT) VERY DAMP, DARK GREY, SANDY LOAM WITH VERY THIN LENSES OF CLAY
						517.4	5			VERY LOOSE, WET, BROWN FINE SAND

H - Standard Penetration Test - Blows per foot to drive 2" (3" in Split Spoon Sampler if used) 100% hammer falling 10".

Cu - Unconfined Compressive Strength - 1/d
w - Water Content - percentage of oven dry weight - %

Type failure:
B - Bridge Failure
S - Shear Failure
E - Estimated Value
P - Piezometer

SHEET TITLE		BORING LOGS	
PROJECT	IL RTE. 32/33 OVER LITTLE WABASH RIVER F.A.P. RTE. 77A SECTION 1078Y EFFINGHAM COUNTY STATION 1011+50.17 STRUCTURE NO. 025-0078	PROJECT NO.	02017
SCALE		DATE	
DRAWN BY	CFC	CHECKED BY	CJB/MCB
COOMBE-BLOXDORF P.C. Engineers / Land Surveyors Springfield, Illinois Design Firm License No. 184-002703		DRAWING NO.	29
		OF 29 SHTS	

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS RIGHT OF WAY PLANS FOR PROPOSED FEDERAL AID HIGHWAY

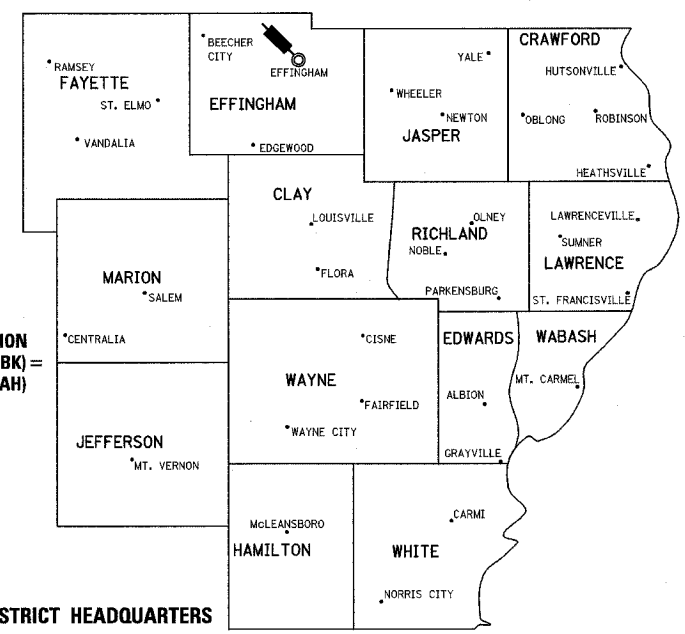
**F.A.P. ROUTE 774 (ILLINOIS ROUTE 32/33)
SECTION 107WRS-1, 107BY, 107BY-1, 107B-2
JOB NO R-97-007-00
EFFINGHAM COUNTY
CONTRACT NO 94827**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774	*	EFFINGHAM	273	264
STA. _____ TO STA. _____		FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT		
		* 107WRS-1, 107BY, 107BY-1, 107B-2		
CONTRACT NO. 94827				

SHEET NO. 1
10 SHEETS

10/07/02
\\0349903\ROW\COVERSHEET.DGN
1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18
19 20 21 22 23 24 25 26 27
28 29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45
46 47 48 49 50 51 52 53 54
55 56 57 58 59 60 61 62 63

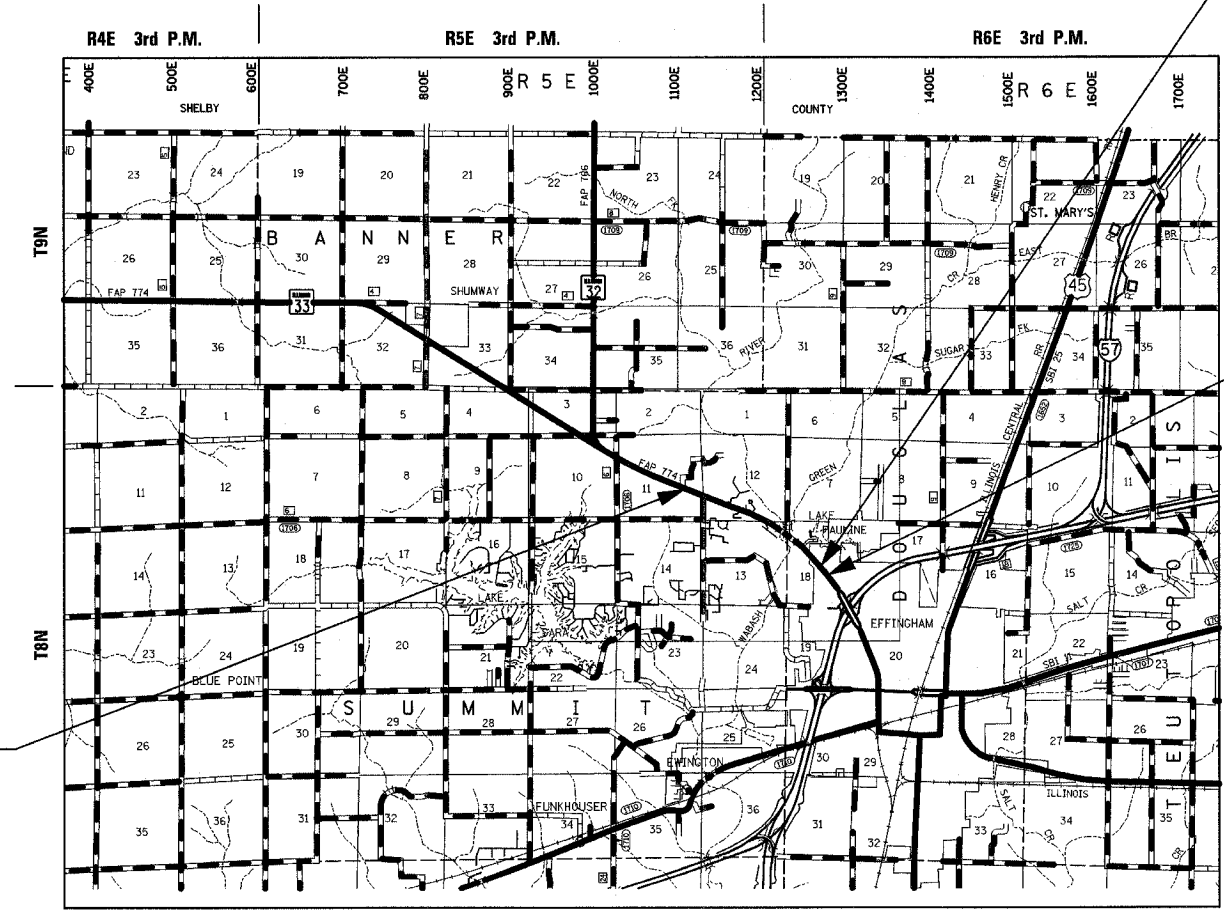
DISTRICT 7



STATION EQUATION
STA. 1039 + 00.00 (BK) =
STA. 39 + 00.00 (AH)

FAP ROUTE 774 (IL ROUTE 32/33)
SECTION 107WRS-1, 107BY,
107BY-1, 107B-2
EFFINGHAM COUNTY
ENDS
STA. 43 + 85.53

FAP ROUTE 774 (IL ROUTE 32/33)
SECTION 107WRS-1, 107BY,
107BY-1, 107B-2
EFFINGHAM COUNTY
BEGINS
STA. 940 + 36.37



STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
SUBMITTED _____	20 _____
EXAMINED _____	20 _____
PASSED _____	20 _____
REVIEWED _____	20 _____
APPROVED _____	20 _____

GROSS LENGTH OF PROJECT = 10349 LIN. FT. = 1.96 MILES

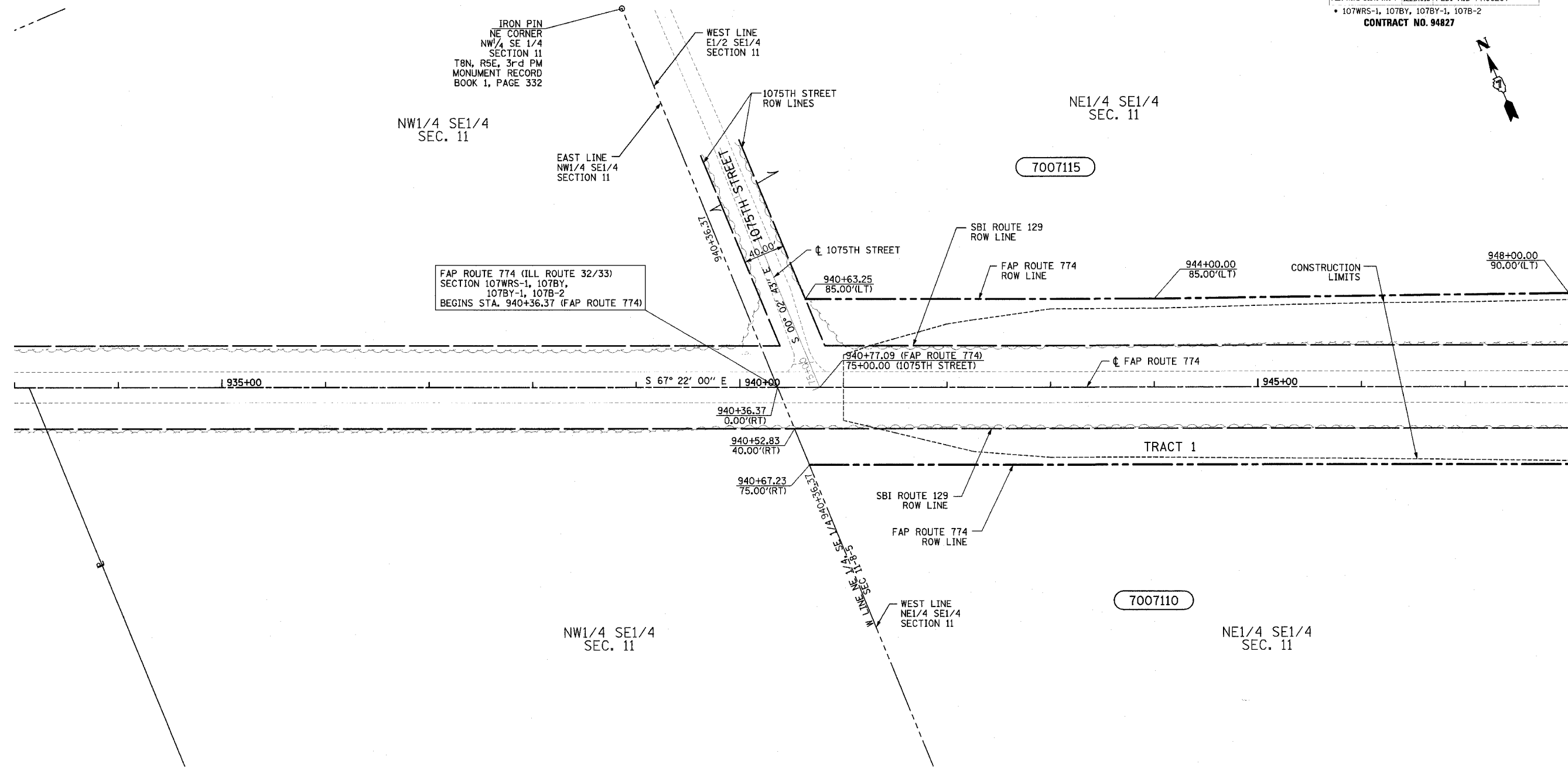
\\0349903\ROW\COVERSHEET.DGN
10/07/02

T 8 N-R 5 E 3rd P.M. SUMMIT TWP

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774	*	EFFINGHAM	273	265
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
* 107WRS-1, 107BY, 107BY-1, 107B-2				
CONTRACT NO. 94827				

SHEET NO. 2
10 SHEETS

10/7/02
 \0349903\ROW\ROWPLANS5-6.DGN
 1 2 3 4 5 6 7 8 9
 10 11 12 13 14 15 16 17 18
 19 20 21 22 23 24 25 26 27
 28 29 30 31 32 33 34 35 36
 37 38 39 40 41 42 43 44 45
 46 47 48 49 50 51 52 53 54
 55 56 57 58 59 60 61 62 63



UTILITIES:

TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
VERIZON NORTH INC.

GAS- AMEREN CIPS

ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
AMEREN CIPS

WATER- E J WATER CORPORATION
LAKE SARA AREA WATER COOPERATIVE, INC.
CITY OF EFFINGHAM

SEWER- CITY OF EFFINGHAM

T.V. CABLE- AT & T MEDIA SERVICE

CONTRACT NO. 94827
 FIELD BOOK NO 449, 450, 451,
 452 & 452B
 (R) RECORDED DISTANCE

NOTE: ALL AREAS ARE IN SQUARE FEET
UNLESS OTHERWISE NOTED.

NOTE:
BEARINGS ARE REFERENCED TO THE
ILLINOIS STATE PLANE COORDINATE
SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS FAP ROUTE 774			
PROJECT	SECTION	107WRS-1 107BY, 107BY-1 107B-2	
STATION	940+36.37	TO	
STATION	948+00.00		
COUNTY	EFFINGHAM		
SCALE	1"=50'	SHEET 2 OF 10	

PARCEL	OWNER	ADD AREA TAKEN	EXIST. AREA TAKEN	EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA	SOLD EXCESS
7007110	PAUL FRANKLIN WEBB	63,968	5,175	997	3,755,316							
	TRACT 1	54,524	5,175		2,247,646							
	TRACT 2	9,444			1,507,670							
7007115	PAUL WEBB	53,551	1,951		1,005,226							

JOB NO. R-97-007-00

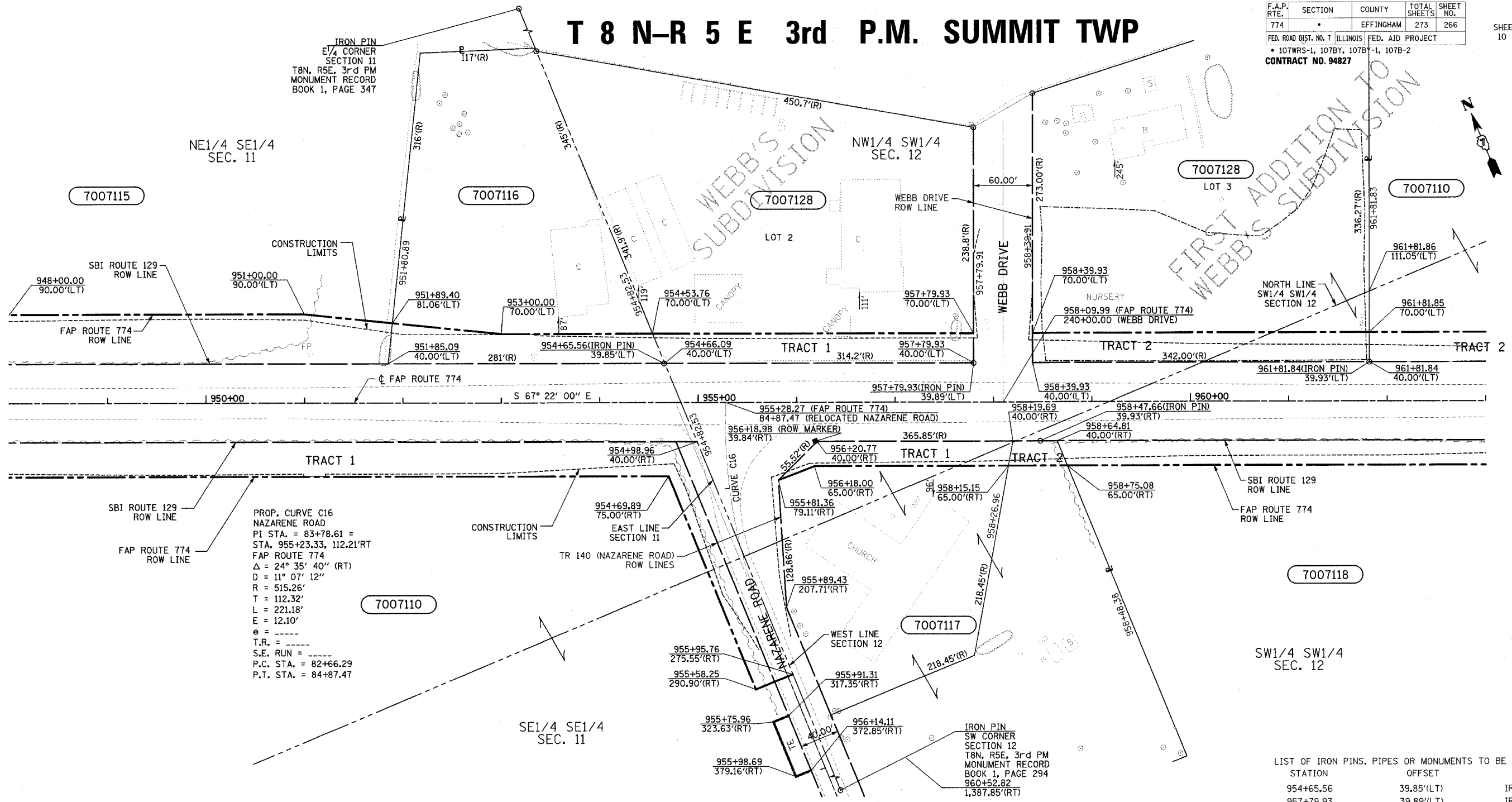
10/7/02
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T 8 N-R 5 E 3rd P.M. SUMMIT TWP

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774	*	EFFINGHAM	273	266
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT		
* 107WRS-1, 107BY, 107B-1, 107B-2		CONTRACT NO. 94827		

SHEET NO. 3
10 SHEETS



PROP. CURVE C16
NAZARENE ROAD
PI STA. = 83+78.61 =
STA. 955+23.33, 112.21'RT
FAP ROUTE 774
 $\Delta = 24^\circ 35' 40''$ (RT)
 $D = 11^\circ 07' 12''$
 $R = 515.26'$
 $T = 112.32'$
 $L = 221.18'$
 $E = 12.10'$
 $\theta = \text{---}$
T.R. = ----
S.E. RUN = ----
P.C. STA. = 82+66.29
P.T. STA. = 84+87.47

LIST OF IRON PINS, PIPES OR MONUMENTS TO BE PROTECTED

STATION	OFFSET	LABEL
954+65.56	39.85'(LT)	IRON PIN
957+79.93	39.89'(LT)	IRON PIN
958+47.66	39.93'(RT)	IRON PIN
961+81.84	39.93'(LT)	IRON PIN

UTILITIES:

TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
VERIZON NORTH INC.

GAS- AMEREN CIPS

ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
AMEREN CIPS

WATER- E J WATER CORPORATION
LAKE SARA AREA WATER COOPERATIVE, INC.
CITY OF EFFINGHAM

SEWER- CITY OF EFFINGHAM

T.V. CABLE- AT & T MEDIA SERVICE

TRACT	OWNER	ADD AREA TAKEN	EXIST. AREA TAKEN	EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA EXCESS	SOLD
7007110	PAUL FRANKLIN WEBB	63,968	5,175	997	3,755,316							
	TRACT 1	54,524	5,175		2,247,646							
	TRACT 2	9,444			1,507,670							
7007115	PAUL WEBB	53,551	1,951		1,005,226							
7007116	BERT L. ELLIS	8,816			54,308							
7007117	EFFINGHAM CHURCH OF THE NAZARENE	6,702			124,039							
	TRACT 1	5,389			44,928							
	TRACT 2	1,313			79,111							
7007118	PAUL WEBB ET AL	20,879			1,340,626							
7007128	LAURYN, INC.	19,858			191,273							
	TRACT 1	9,600			92,985							
	TRACT 2	10,258			98,359							

CONTRACT NO. 94827
FIELD BOOK NO 449, 450, 451, 452 & 452B
(R) RECORDED DISTANCE

○ - IRON PIN
■ - ROW MARKER

NOTE: TEMPORARY EASEMENTS ARE NEEDED AS A WORK AREA.

NOTE: ALL AREAS ARE IN SQUARE FEET UNLESS OTHERWISE NOTED.

NOTE: BEARINGS ARE REFERENCED TO THE ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS
FAP ROUTE 774

PROJECT SECTION 107WRS-1, 107BY, 107BY-1, 107B-2

STATION 948+00.00 TO

STATION 963+00.00

COUNTY EFFINGHAM

SCALE 1"=50'

SHEET 3 OF 10

JOB NO. R-97-007-00

10/7/02
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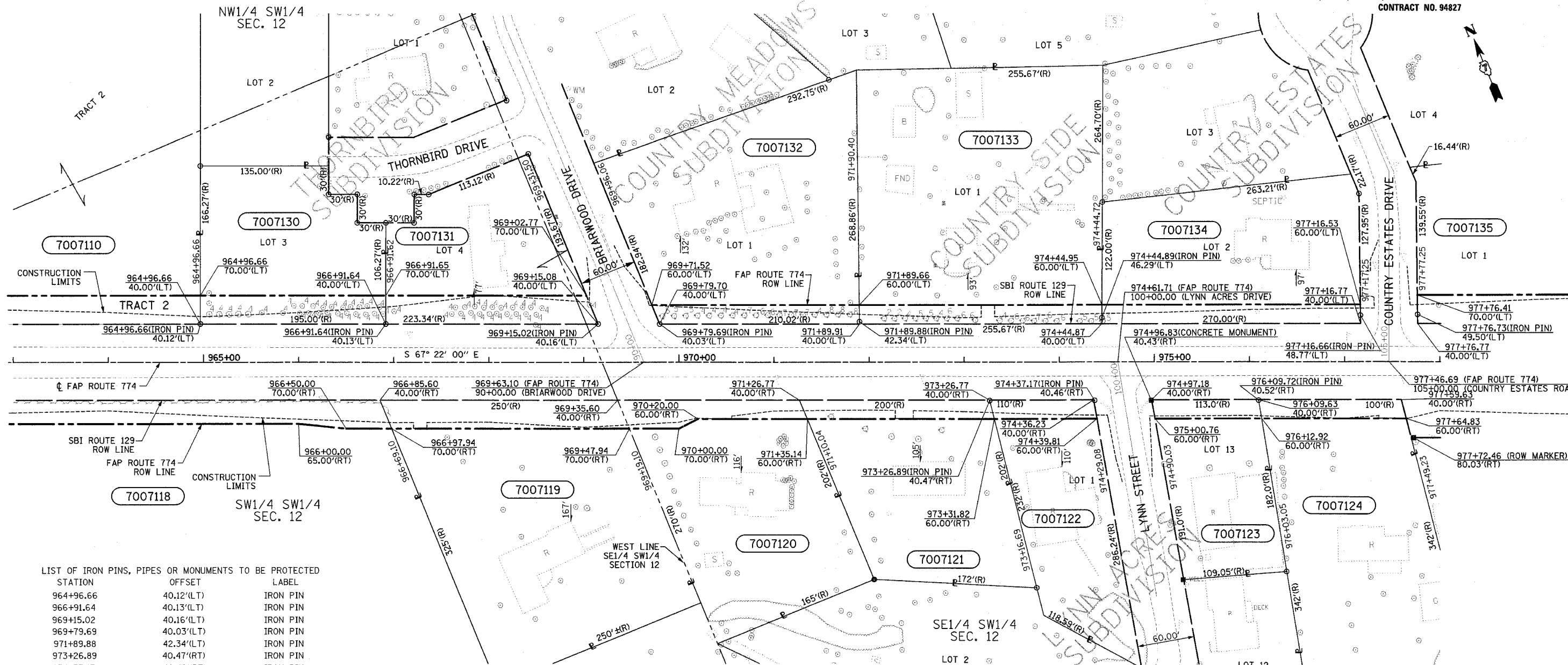
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T 8 N-R 5 E 3rd P.M. SUMMIT TWP

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774	*	EFFINGHAM	273	267
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
* 107WRS-1, 107BY, 107BY-1, 107B-2				

SHEET NO. 4
 10 SHEETS

CONTRACT NO. 94827



LIST OF IRON PINS, PIPES OR MONUMENTS TO BE PROTECTED

STATION	OFFSET	LABEL
964+96.66	40.12'(LT)	IRON PIN
966+91.64	40.13'(LT)	IRON PIN
969+15.02	40.16'(LT)	IRON PIN
969+79.69	40.03'(LT)	IRON PIN
971+89.88	42.34'(LT)	IRON PIN
973+26.89	40.47'(RT)	IRON PIN
974+37.17	40.46'(RT)	IRON PIN
974+44.89	46.29'(RT)	IRON PIN
974+96.83	40.43'(RT)	CONC. MONUMENT
976+09.72	40.52'(RT)	IRON PIN
977+16.66	48.77'(LT)	IRON PIN
977+76.73	49.50'(LT)	IRON PIN

UTILITIES:

TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
 VERIZON NORTH INC.

GAS- AMEREN CIPS

ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
 AMEREN CIPS

WATER- E J WATER CORPORATION
 LAKE SARA AREA WATER COOPERATIVE, INC.
 CITY OF EFFINGHAM

SEWER- CITY OF EFFINGHAM

T.V. CABLE- AT & T MEDIA SERVICE

PARCEL	OWNER	ADD. AREA TAKEN	EXIST. AREA TAKEN	EASEMENT	REM. AREA	INST	MICRO FILM NO. RECORDED	DATE	BOOK	PAGE	AREA EXCESS	SOLD
7007110	PAUL FRANKLIN WEBB	63,968	5,175	997	3,755,316							
	TRACT 1	54,524	5,175		2,247,646							
	TRACT 2	9,444			1,507,670							
7007118	PAUL WEBB ET AL	20,879			1,340,626							
7007119	ELWOOD WEBB	7,500			56,655							
7007120	THOMAS L. CLOUGH	4,466			38,090							
7007121	LERoy ZIEGLER AS TRUSTEE OF THE LEROY ZIEGLER TRUST	3,967			31,410							
7007122	CARL J. SIEPKER	2,175			23,276							
7007123	JOHN D. STORM	2,246			18,221							
7007124	DAVID LEE HEUERMAN	3,019			52,451							
7007130	RODNEY L. LOVELLETTE	5,850			23,885							
7007131	BILLIE GENE DOWLING	6,518			21,844							
7007132	WILMER L. WOELFER	4,284			50,466							
7007133	JERRY R. JANSEN	5,102			63,985							
7007134	ORVILLE E. LAUE	5,435			33,174							
7007135	FREDERICK C. SCHAEFER	8,473			34,896							

CONTRACT NO. 94827
 FIELD BOOK NO 449, 450, 451,
 452 & 452B
 (R) RECORDED DISTANCE

○ - IRON PIPE
 ● - IRON PIN
 ■ - ROW MARKER
 ■ - CONCRETE MONUMENT

NOTE: ALL AREAS ARE IN SQUARE FEET UNLESS OTHERWISE NOTED.

NOTE: BEARINGS ARE REFERENCED TO THE ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS
 FAP ROUTE 774

PROJECT	SECTION	107WRS-1 107BY, 107BY-1 107B-2
STATION	963+00.00	TO
STATION	978+00.00	
COUNTY	EFFINGHAM	
SCALE	1"=50'	SHEET 4 OF 10

JOB NO. R-97-007-00

BLANK, WESSELINK, COOK & ASSOCIATES

ENGINEERS - CONSULTANTS DECATUR, ILLINOIS

F.A.P. 774 (IL RTE 32/33) SEC 107WRS-1, 107BY, 107BY-1 & 107B-2

EFFINGHAM COUNTY

10/7/02 10:30 AM 10/7/02 10:30 AM

10/7/02
 \0349903\ROW\ROWPLANS9-13.DGN

NUV
 TLS
 BKB
 RMD

T 8 N-R 5 E 3rd P.M. SUMMIT TWP

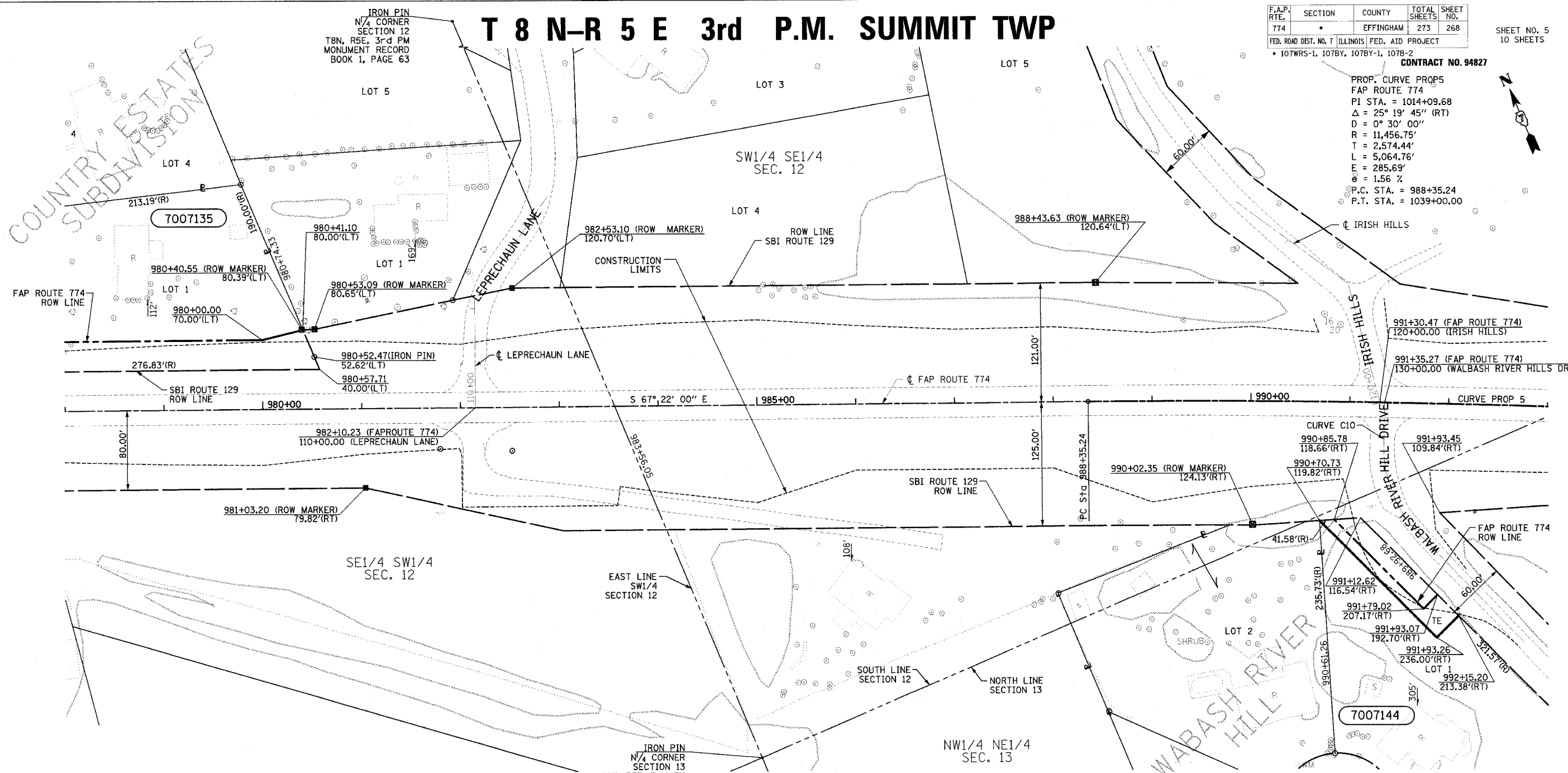
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774		EFFINGHAM	273	268

FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT
 • 107WRS-1, 107BY, 107BY-1, 107B-2

SHEET NO. 5
 10 SHEETS

CONTRACT NO. 94827

PROP. CURVE PROP5
 FAP ROUTE 774
 PI STA. = 1014+09.68
 $\Delta = 25^\circ 19' 45''$ (RT)
 $D = 0^\circ 30' 00''$
 $R = 11,456.75'$
 $T = 2,574.44'$
 $L = 5,064.76'$
 $E = 285.69'$
 $\theta = 1.56\%$
 P.C. STA. = 988+35.24
 P.T. STA. = 1039+00.00



UTILITIES:

TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
 VERIZON NORTH INC.

GAS- AMEREN CIPS

ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
 AMEREN CIPS

WATER- E J WATER CORPORATION
 LAKE SARA AREA WATER COOPERATIVE, INC.
 CITY OF EFFINGHAM

SEWER- CITY OF EFFINGHAM

T.V. CABLE- AT & T MEDIA SERVICE

EXIST. CURVE C10
 PI STA. = 129+10.44
 $\Delta = 45^\circ 09' 21''$ (RT)
 $D = 45^\circ 50' 12''$
 $R = 125.00'$
 $T = 51.98'$
 $L = 98.52'$
 $E = 10.38'$
 $\theta = N/C$
 P.C. STA. = 128+58.46
 P.T. STA. = 129+56.98

CONTRACT NO. 94827
 FIELD BOOK NO 449, 450, 451,
 452 & 452B
 (R) RECORDED DISTANCE

○ - IRON PIN
 ■ - ROW MARKER
 ⊙ - STEEL "T" POST

NOTE: TEMPORARY EASEMENTS ARE NEEDED AS A WORK AREA.

NOTE: ALL AREAS ARE IN SQUARE FEET UNLESS OTHERWISE NOTED.

NOTE: BEARINGS ARE REFERENCED TO THE ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS
FAP ROUTE 774

PROJECT	SECTION	107WRS-1
		107BY, 107BY-1
		107B-2
STATION	978+00.00	TO
STATION	993+00.00	
COUNTY	EFFINGHAM	
SCALE	1"=50'	SHEET 5 OF 10

7007135	FREDERICK C. SCHAEFER	8,473			34,896						
7007144	SAMUEL G. WILLIAMS	2,376	2,422	52,013							
PARCEL	OWNER	ADD AREA TAKEN	EXIST. EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA EXCESS	SOLD

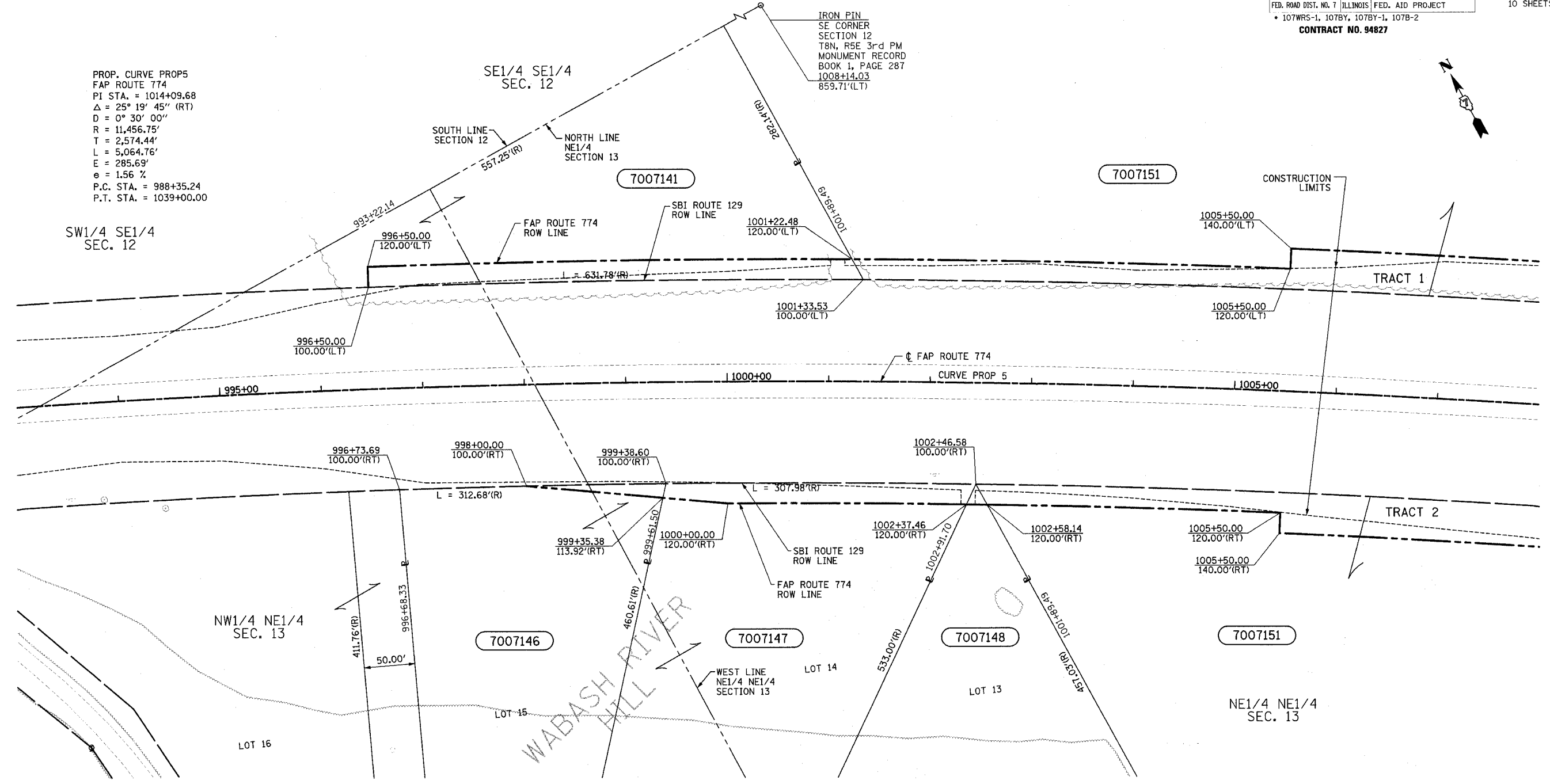
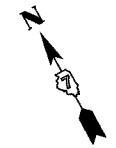
JOB NO. R-97-007-00

T 8 N-R 5 E 3rd P.M. SUMMIT TWP

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774	*	EFFINGHAM	273	269
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				
* 107WRS-1, 107BY, 107BY-1, 107B-2				
CONTRACT NO. 94827				

SHEET NO. 6
10 SHEETS

PROP. CURVE PROPS
FAP ROUTE 774
PI STA. = 1014+09.68
 $\Delta = 25^\circ 19' 45''$ (RT)
D = $0^\circ 30' 00''$
R = 11,456.75'
T = 2,574.44'
L = 5,064.76'
E = 285.69'
e = 1.56 %
P.C. STA. = 988+35.24
P.T. STA. = 1039+00.00



10/7/02
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 1 2 3 4 5 6 7 8 9
 10 11 12 13 14 15 16 17 18
 19 20 21 22 23 24 25 26 27
 28 29 30 31 32 33 34 35 36
 37 38 39 40 41 42 43 44 45
 46 47 48 49 50 51 52 53 54
 55 56 57 58 59 60 61 62 63

UTILITIES:
 TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
 VERIZON NORTH INC.
 GAS- AMEREN CIPS
 ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
 AMEREN CIPS
 WATER- E J WATER CORPORATION
 LAKE SARA AREA WATER COOPERATIVE, INC.
 CITY OF EFFINGHAM
 SEWER- CITY OF EFFINGHAM
 T.V. CABLE- AT & T MEDIA SERVICE

7007141	FRANCIS BLOEMER	9,652			65,776							
7007146	HAROLD C. HAMILTON	974			84,274							
7007147	TERRY HOEKSTRA	5,774			108,850							
7007148	DAVID L. BRUMLEVE	205			106,786							
7007151	MICHAEL WENTE	70,849	1,400		1,003,377							
	TRACT 1	46,456			544,130							
	TRACT 2	24,393			459,247							
PARCEL	OWNER	ADD AREA TAKEN	EXIST. AREA TAKEN	EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA EXCESS	SOLD

CONTRACT NO. 94827
 FIELD BOOK NO 449, 450, 451,
 452 & 452B
 (R) RECORDED DISTANCE

NOTE: ALL AREAS ARE IN SQUARE FEET
 UNLESS OTHERWISE NOTED.

NOTE:
 BEARINGS ARE REFERENCED TO THE
 ILLINOIS STATE PLANE COORDINATE
 SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS
FAP ROUTE 774
 PROJECT SECTION 107WRS-1
 107BY, 107BY-1
 107B-2
 STATION 993+00.00 TO
 STATION 1008+00.00
 COUNTY EFFINGHAM
 SCALE 1"=50' SHEET 6 OF 10

JOB NO. R-97-007-00

**T 8 N-R 5 E 3rd P.M.
SUMMIT TWP**

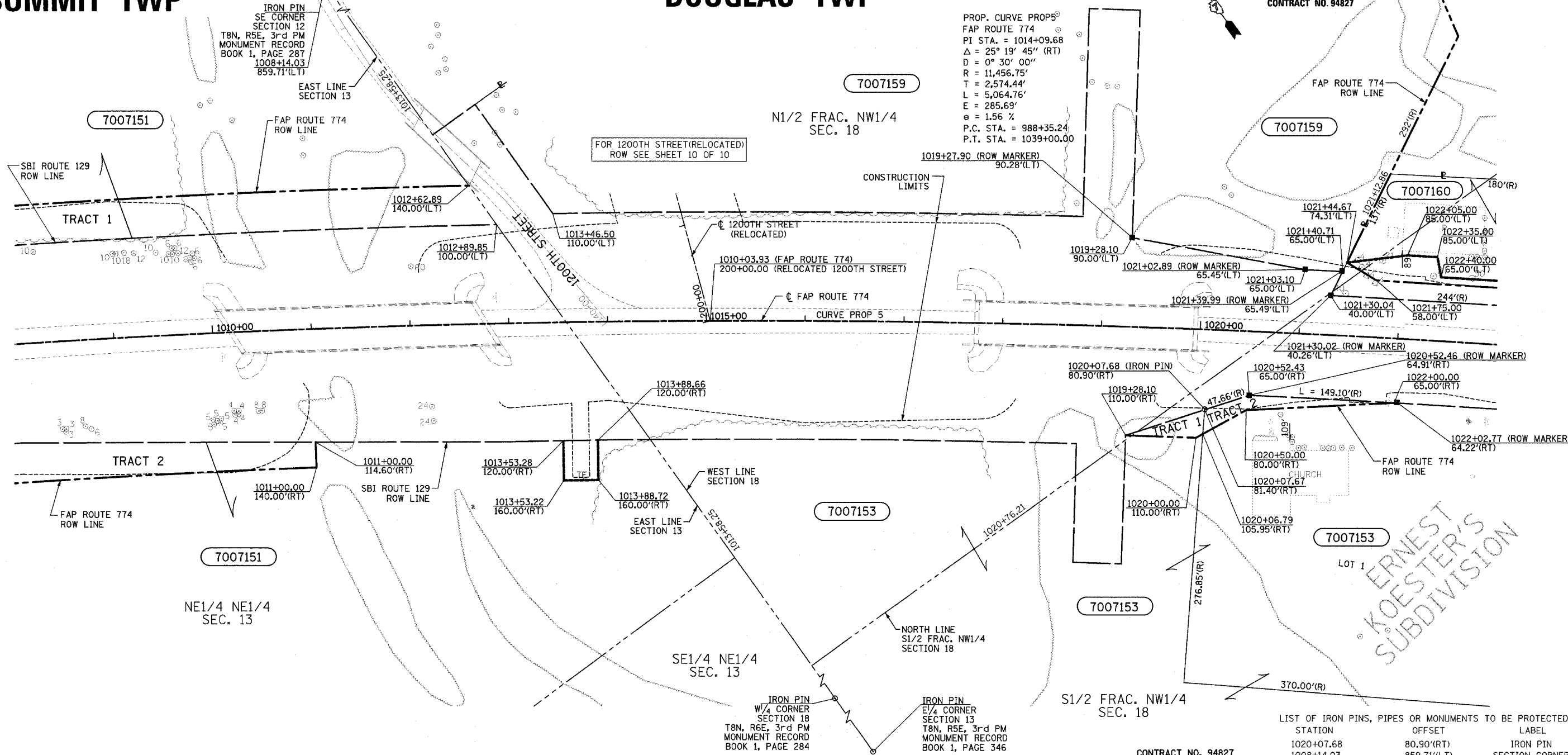
**T 8 N-R 6 E 3rd P.M.
DOUGLAS TWP**

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774		EFFINGHAM	273	270

SHEET NO. 7
10 SHEETS

ILLINOIS FED. AID PROJECT
107WRS-1, 107BY, 107BY-1, 107B-2
CONTRACT NO. 94827

10/17/02
 \0349903\ROW\ROWPLANS9-13.DGN
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63



UTILITIES:

TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
VERIZON NORTH INC.

GAS- AMEREN CIPS

ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
AMEREN CIPS

WATER- E J WATER CORPORATION
LAKE SARA AREA WATER COOPERATIVE, INC.
CITY OF EFFINGHAM

SEWER- CITY OF EFFINGHAM

T.V. CABLE- AT & T MEDIA SERVICE

TRACT	OWNER	ADD AREA TAKEN	EXIST. AREA	EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA EXCESS	SOLD
7007151	MICHAEL WENTE TRACT 1 TRACT 2	70,849 46,456 24,393		1,400	1,003,377 544,130 459,247							
7007153	CROSSROADS FREE WILL BAPTIST CHURCH TRACT 1 TRACT 2	3,051 1,097 1,954			1,192,491 1,041,900 150,591							
7007159	STEPHEN KOESTER, AS SUCCESSOR TRUSTEE	380,222			0							
7007160	BRUCE L. WEIR	6,570		2,736	20,329							

LIST OF IRON PINS, PIPES OR MONUMENTS TO BE PROTECTED

STATION	OFFSET	LABEL
1020+07.68	80.90'(RT)	IRON PIN
1008+14.03	859.71'(LT)	SECTION CORNER

CONTRACT NO. 94827
FIELD BOOK NO 449, 450, 451, 452 & 452B
(R) RECORDED DISTANCE

■ - ROW MARKER
○ - IRON PIN

NOTE: TEMPORARY EASEMENTS ARE NEEDED AS A WORK AREA.

NOTE: ALL AREAS ARE IN SQUARE FEET UNLESS OTHERWISE NOTED.

NOTE: BEARINGS ARE REFERENCED TO THE ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE DATUM OF 1983

**RIGHT OF WAY PLANS
FAP ROUTE 774**

PROJECT	SECTION	107WRS-1 107BY, 107BY-1 107B-2
STATION	1008+00.00	TO
STATION	1023+00.00	
COUNTY	EFFINGHAM	
SCALE	1"=50'	SHEET 7 OF 10

JOB NO. R-97-007-00

T 8 N-R 6 E 3rd P.M. DOUGLAS TWP

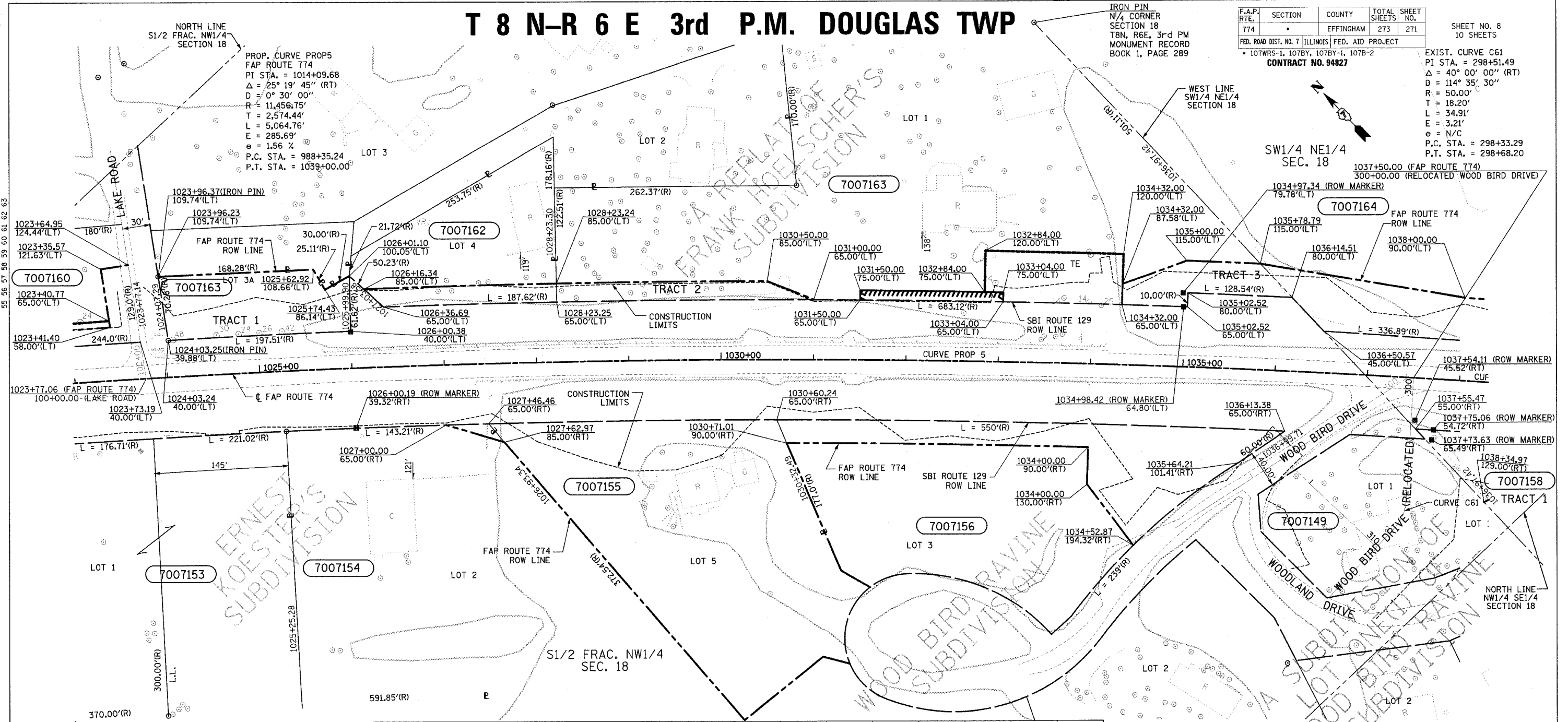
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774	*	EFFINGHAM	273	271
FED. ROAD DIST. NO. 7 [ILLINOIS] FED. AID PROJECT				
* 107WRS-1, 107BY, 107BY-1, 107B-2				
CONTRACT NO. 94827				

10/17/02
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PROP. CURVE PROP5
FAP ROUTE 774
PI STA. = 1014+09.68
Δ = 25° 19' 45" (RT)
D = 0° 30' 00"
R = 11,456.75'
T = 2,574.44'
L = 5,064.76'
E = 285.69'
e = 1.56 %
P.C. STA. = 988+35.24
P.T. STA. = 1039+00.00'

EXIST. CURVE C61
PI STA. = 298+51.49
Δ = 40° 00' 00" (RT)
D = 114° 35' 30"
R = 50.00'
T = 18.20'
L = 34.91'
E = 3.21'
e = N/C
P.C. STA. = 298+33.29
P.T. STA. = 298+68.20



UTILITIES:

TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
VERIZON NORTH INC.

GAS- AMEREN CIPS

ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
AMEREN CIPS

WATER- E J WATER CORPORATION
LAKE SARA AREA WATER COOPERATIVE, INC.
CITY OF EFFINGHAM

SEWER- CITY OF EFFINGHAM

T.V. CABLE- AT & T MEDIA SERVICE

PARCEL	OWNER	ADD AREA TAKEN	EXIST. EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA EXCESS	SOLD
7007149	WILFORD MILLER ET AL	33,443		0							
7007153	CROSSROADS FREE WILL BAPTIST CHURCH	3,051		1,192,491							
	TRACT 1	1,097		1,041,900							
	TRACT 2	1,954		150,591							
7007154	THOMAS L. NEASE	464		98,441							
7007155	TODD A. GARTNER	70,218		0							
7007156	DORRIS E. GARTNER	23,060		49,248							
7007160	BRUCE L. WEIR	6,570	2,736	20,329							
7007162	RICHARD J. HOELSCHER	3,961		21,449							
7007163	FRANK HOELSCHER	24,487	9,530	150,419							
	TRACT 1	13,440		0							
	TRACT 2	5,119		150,419							
	TRACT 3	5,928									
7007164	CENTRAL ILLINOIS PUBLIC SERVICE COMPANY	20,397		920,546							

CONTRACT NO. 94827

FIELD BOOK NO 449, 450, 451, 452 & 452B

(R) RECORDED DISTANCE

STATION	OFFSET	IRON PIN LABEL
1024+03.25	39.88'(LT)	IRON PIN
1023+96.37	109.74'(LT)	IRON PIN

NOTE: TEMPORARY EASEMENTS ARE NEEDED AS A WORK AREA.

NOTE: ALL AREAS ARE IN SQUARE FEET UNLESS OTHERWISE NOTED.

NOTE: BEARINGS ARE REFERENCED TO THE ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS
FAP ROUTE 774

PROJECT	SECTION	107WRS-1	107BY, 107BY-1	107B-2
STATION	1023+00.00	TO		
STATION	1038+00.00			
COUNTY	EFFINGHAM			
SCALE	1"=50'			
				SHEET 8 OF 10

JOB NO. R-97-007-00

BLANK, WESSELINK, COOK & ASSOCIATES

ENGINEERS - CONSULTANTS DECATUR, ILLINOIS

F.A.P. 774 (IL RTE 32/33) SEC 107WRS-1, 107BY, 107BY-1 & 107B-2

EFFINGHAM COUNTY

DRAWN BY: NUV, WRITTEN BY: TLS, CHECKED BY: BKB, INSPECTED BY: RMD

T 8 N-R 6 E 3rd P.M. DOUGLAS TWP

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774		EFFINGHAM	273	272

FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT
 CONTRACT NO. 94827

SHEET NO. 9
10 SHEETS

EXIST. CURVE C13
 P.I. STA. = 187+56.58
 $\Delta = 41^\circ 14' 58''$ (RT)
 $D = 19^\circ 05' 55''$
 $R = 300.00'$
 $T = 112.91'$
 $L = 210.58'$
 $E = 20.54'$
 $e = N/C$
 P.C. STA. = 186+43.67
 P.T. STA. = 188+59.66

IRON PIN
 W/4 CORNER
 SECTION 17
 T8N, R6E, 3rd PM
 MONUMENT RECORDED
 BOOK 1, PAGE 10

PROP. CURVE PROP5
 FAP ROUTE 774
 PI STA. = 1014+09.68
 $\Delta = 25^\circ 19' 45''$ (RT)
 $D = 0^\circ 30' 00''$
 $R = 11,456.75'$
 $T = 2,574.44'$
 $L = 5,064.76'$
 $E = 285.69'$
 $e = 1.56\%$
 P.C. STA. = 988+35.24
 P.T. STA. = 1039+00.00

PROP. CURVE PROP4-2
 FAP ROUTE 774
 PI STA. = 45+21.11
 $\Delta = 4^\circ 27' 29''$ (RT)
 $D = 0^\circ 33' 30''$
 $R = 10,263.16'$
 $T = 399.48'$
 $L = 798.55'$
 $E = 7.77'$
 $e = N/C$
 P.C. STA. = 41+21.63
 P.T. STA. = 49+20.18

FAP ROUTE 774 (ILL ROUTE 32/33)
 SECTION 107WRS-1, 107BY,
 107BY-1, 107B-2
 ENDS
 STA 43+85.53 (FAP ROUTE 774)

PROP CURVE CR8C2
 PI STA. = 181+73.46
 $\Delta = 105^\circ 00' 00''$ (RT)
 $D = 119^\circ 21' 58''$
 $R = 48.00'$
 $T = 62.55'$
 $L = 87.96'$
 $E = 30.85'$
 $e = N/C$
 P.C.C. STA. = 181+10.90
 P.T. STA. = 181+98.87

PROP CURVE CR8C1
 PI STA. = 180+82.52
 $\Delta = 111^\circ 55' 28''$ (RT)
 $D = 95^\circ 29' 35''$
 $R = 60.00'$
 $T = 88.83'$
 $L = 117.21'$
 $E = 47.19'$
 $e = N/C$
 P.C.C. STA. = 179+93.69
 P.T. STA. = 181+10.90

CONTRACT NO. 94827
 FIELD BOOK NO 449, 450, 451,
 452 & 452B
 (R) RECORDED DISTANCE

NOTE: ALL AREAS ARE IN SQUARE FEET
 UNLESS OTHERWISE NOTED.
 NOTE: BEARINGS ARE REFERENCED TO THE
 ILLINOIS STATE PLANE COORDINATE
 SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS FAP ROUTE 774			
PROJECT	SECTION	107WRS-1 107BY, 107BY-1 107B-2	
STATION	1038+00.00	TO	
STATION	43+85.53		
COUNTY	EFFINGHAM		
SCALE	1"=50'	SHEET	9 OF 10

PARCEL	OWNER	ADD AREA TAKEN	EXIST. AREA	EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA	SOLD EXCESS
7007158	JAMES J. HECHT TRACT 1 TRACT 2	24,668 10,795 13,873			607,428							
7007164	CENTRAL ILLINOIS PUBLIC SERVICE COMPANY	20,397			920,546							

UTILITIES:
 TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
 VERIZON NORTH INC.
 GAS- AMEREN CIPS
 ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
 AMEREN CIPS
 WATER- E J WATER CORPORATION
 LAKE SARA AREA WATER COOPERATIVE, INC.
 CITY OF EFFINGHAM
 SEWER- CITY OF EFFINGHAM
 T.V. CABLE- AT & T MEDIA SERVICE

JOB NO. R-97-007-00

10/7/02
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 10 11 12 13 14 15 16 17 18
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 37 38 39 40 41 42 43 44 45
 46 47 48 49 50 51 52 53 54
 55 56 57 58 59 60 61 62 63

DRAWN BY: NJV
 WRITTEN BY: TJS
 CHECKED BY: BKB
 INSPECTED BY: RMD

T 8 N-R 6 E 3rd P.M. DOUGLAS TWP

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
774		EFFINGHAM	273	273
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	
* 107WRS-1, 107BY, 107BY-1, 107B-2 CONTRACT NO. 94827				

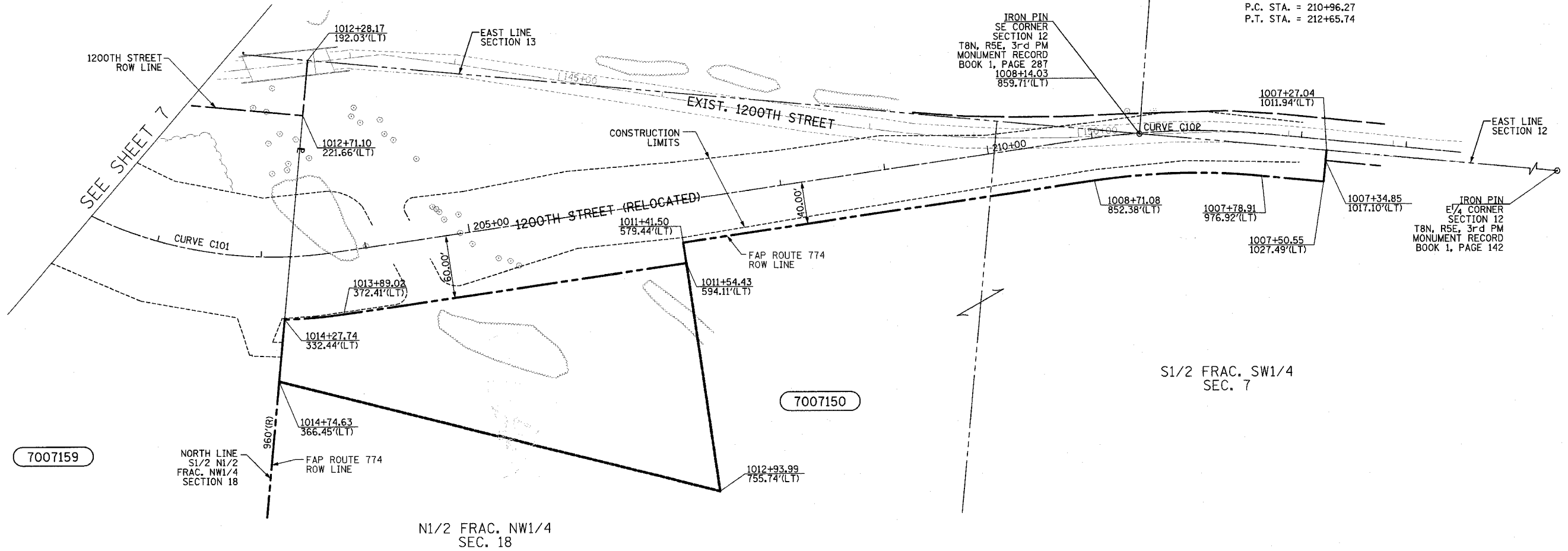
SHEET NO. 10
10 SHEETS

PROP. CURVE C101
RELOCATED 1200TH STREET
PI STA. = 202+54.90 =
STA. 1014+39.51, 246.44'(LT)
FAP ROUTE 774
Δ = 34° 00' 01" (LT)
D = 14° 19' 26"
R = 400.00'
T = 122.29'
L = 237.37'
E = 18.28'
e = N/C
P.C. STA. = 201+32.60
P.T. STA. = 203+69.97

PROP. CURVE C102
RELOCATED 1200TH STREET
PI STA. = 211+81.42 =
STA. 1007+88.51, 888.39'(LT)
FAP ROUTE 774
Δ = 13° 52' 16" (RT)
D = 8° 11' 06"
R = 700.00'
T = 85.10'
L = 169.47'
E = 5.16'
e = N/C
P.C. STA. = 210+96.27
P.T. STA. = 212+65.74



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7007159

7007150

S1/2 FRAC. SW1/4
SEC. 7

N1/2 FRAC. NW1/4
SEC. 18

LIST OF IRON PINS, PIPES OR MONUMENTS TO BE PROTECTED

STATION	OFFSET	LABEL
1008+14.03	859.71'(LT)	IRON PIN

FIELD BOOK NO 449, 450, 451,
452 & 452B
(R) RECORDED DISTANCE

⊙ - IRON PIN

NOTE: ALL AREAS ARE IN SQUARE FEET
UNLESS OTHERWISE NOTED.

NOTE:
BEARINGS ARE REFERENCED TO THE
ILLINOIS STATE PLANE COORDINATE
SYSTEM EAST ZONE DATUM OF 1983

RIGHT OF WAY PLANS
FAP ROUTE 774

PROJECT	SECTION	107WRS-1 107BY, 107BY-1 107B-2
STATION	1007+27.04	
STATION	1010+27.37	
COUNTY	EFFINGHAM	
SCALE	1"=50'	
		SHEET 10 OF 10

UTILITIES:

TELEPHONE- ILLINOIS CONSOLIDATED TELEPHONE COMPANY
VERIZON NORTH INC.

GAS- AMEREN CIPS

ELECTRICITY- NORRIS ELECTRIC COOPERATIVE
AMEREN CIPS

WATER- E J WATER COORORATION
LAKE SARA AREA WATER COOPERATIVE, INC.
CITY OF EFFINGHAM

SEWER- CITY OF EFFINGHAM

T.V. CABLE- AT & T MEDIA SERVICE

PARCEL	OWNER	ADD AREA TAKEN	EXIST. AREA TAKEN	EASEMENT	REM. AREA	INST	MICRO FILM NO RECORDED	DATE	BOOK	PAGE	AREA EXCESS	SOLD
7007159	STEPHEN KOESTER, AS SUCCESSOR TRUSTEE	380,222			0							
7007150	IOLENE KOESTER	101,062	19,495	54,273	2,309,438							

JOB NO. R-97-007-00

DRAWN BY: NJV
WRITTEN BY: TLS
CHECKED BY: BKB
INSPECTED BY: RMD