

06-14-13 LETTING ITEM 118

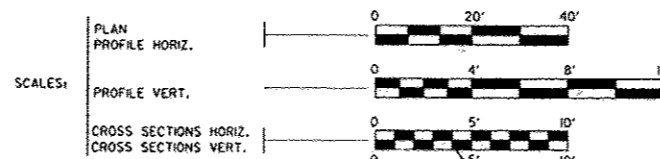
INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
|-----------|---|
| 1 | COVER SHEET |
| 2 | SUMMARY OF QTYS & TYPICAL SECTIONS |
| 3 | SCHEDULE OF QTYS & GENERAL NOTES |
| 4 | PLAN & PROFILE |
| 5 | EROSION CONTROL PLAN |
| 6 - 18 | BRIDGE PLANS |
| 19 - 21 | CROSS SECTIONS |
| 22 - 26 | TRAFFIC BARRIER TERMINAL, TYPE 6A (SPECIAL) |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PLANS FOR PROPOSED
BRIDGE REPLACEMENT**

| ROUTE NO. | SECTION | COUNTY | SHEET NO. | TOTAL SHEETS |
|-----------|---------|--------|-----------|--------------|
| FAS 452 | * | FULTON | 26 | 1 |

*09-00130-05-BR

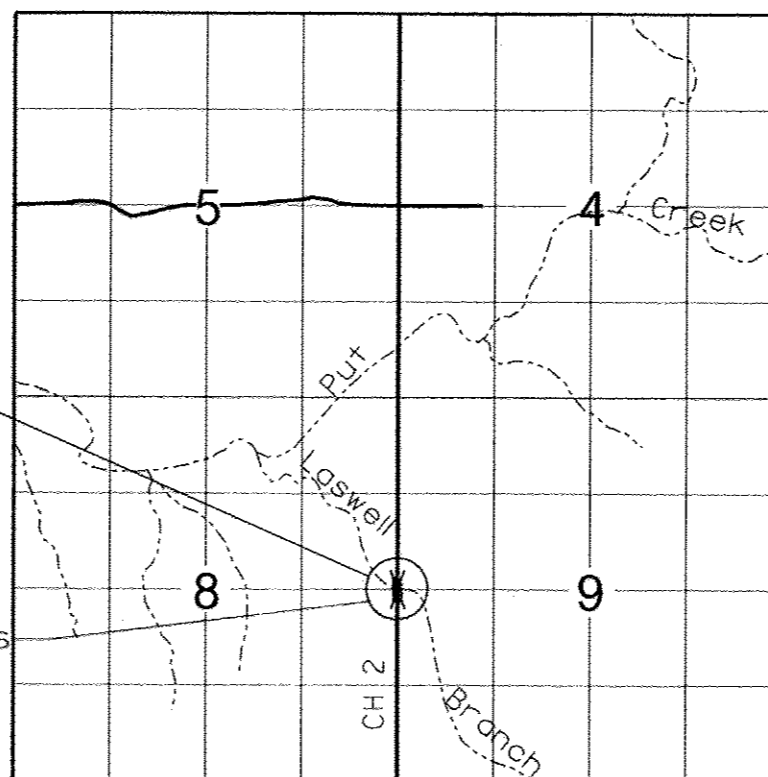
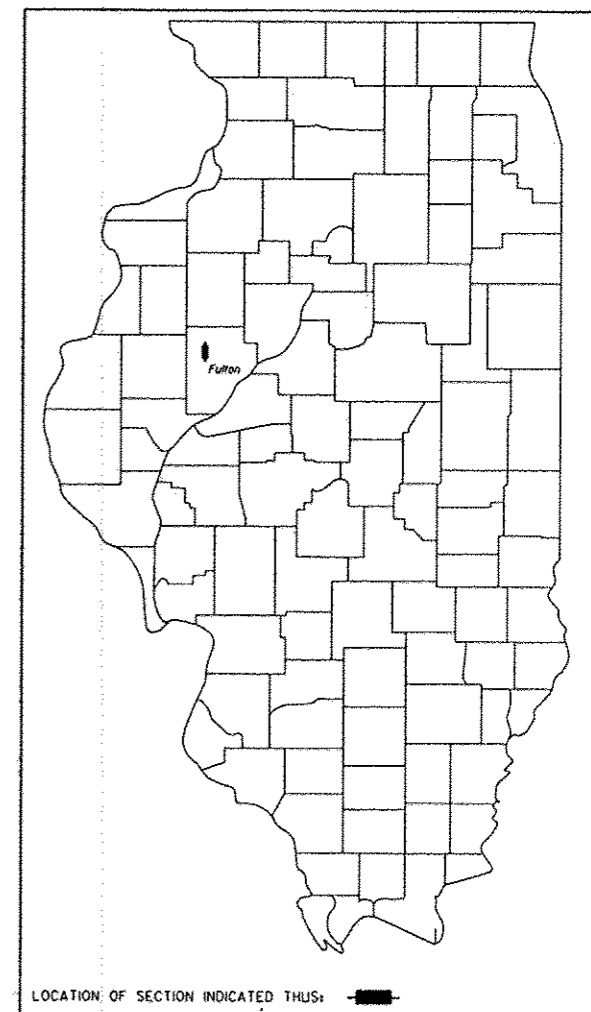


FULTON COUNTY
SECTION 09-00130-05-BR
FAS 452
COUNTY HIGHWAY 2
BRS-0452(121)
HIGHWAY BRIDGE PROGRAM
C-94-052-09

R 2 E, 4th P.M.

LIST OF STANDARD DRAWINGS

| STANDARD NO. | DESCRIPTION |
|--------------|---|
| 000001 - 06 | STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS |
| 280001 - 07 | TEMPORARY EROSION CONTROL SYSTEMS |
| 515001 - 03 | NAME PLATE FOR BRIDGES |
| 630001 - 10 | STEEL PLATE BEAM GUARDRAIL |
| 630301 - 06 | SHOULDER WIDENING FOR GUARDRAIL TERMINALS |
| 631011-09 | TRAFFIC BARRIER TERMINAL TYPE 2 |
| 631032 - 08 | TRAFFIC BARRIER TERMINAL TYPE 6A |
| 701006 - 04 | OFF ROAD OPERATIONS, MULTILANE, 15' TO 24' FROM PAVEMENT EDGE |
| 701901 - 02 | TRAFFIC CONTROL DEVICES |
| 780001 - 03 | TYPICAL PAVEMENT MARKINGS |
| BLR 21 - 9 | TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION OF RURAL LOCAL HIGHWAYS |
| BLR 23 - 4 | TRAFFIC BARRIER TERMINAL TYPE 1 |



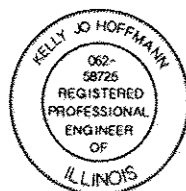
EXISTING & PROPOSED STRUCTURES

Project Begins Sta. 7+00.00
Project Ends Sta. 13+00.00

LOCATION MAP

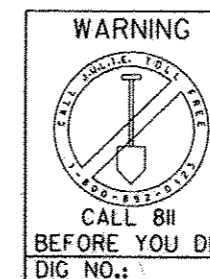
ADT = 550 (CURRENT), 550 (DESIGN)
FUNCTIONAL CLASS = COLLECTOR

NET LENGTH OF SECTION = 600 FEET = 0.114 MILES



Kelly Jo Hoffmann
KELLY JO HOFFMANN
Illinois Licensed Professional Engineer Number 58725
License Expires 11/30/2013

COMMITMENTS - none



APPROVED *March 18* 2013
William Kuhn
WILLIAM KUHN, PE FULTON COUNTY ENGINEER

PASSED *03-21* 2013
[Signature]

Releasing For Bid Based on Limited Review
March 25 2013
[Signature]
DEPUTY DIRECTOR OF HIGHWAYS,
REGION THREE ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FRAUENHOFFER & ASSOCIATES
A division of Engineering Resource Associates, Inc.
Consulting Engineers, Scientists, & Surveyors

3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

| ROUTE NO. | SECTION | COUNTY | DIST. | SHEET NO. |
|-----------------------|---------|----------|-------------------|-----------|
| FAS452 | | FULTON | 26 | 2 |
| FED. ROAD DIST. NO. 1 | | ILLINOIS | FED. ROAD PROJECT | |

09-00130-05-BR

SUMMARY OF QUANTITIES - SEC. 09-00130-05-BR

| CODE | DESCRIPTION | UNIT | QUANTITY |
|---------------|---|---------|----------|
| ** 20200100 | Earth Excavation | Cu. Yd. | 107 |
| 2101615 | Top Soil Furnish & Place, 4' | Sq. Yd. | 1957 |
| ** 25000200 | Seeding, Class 2 | Acre | 0.40 |
| ** 25000400 | Nitrogen Fertilizer Nutrient | Pound | 37 |
| ** 25000500 | Phosphorus Fertilizer Nutrient | Pound | 37 |
| ** 25000600 | Potassium Fertilizer Nutrient | Pound | 37 |
| ** 25100115 | Mulch, Method 2 | Acre | 0.40 |
| ** 28000250 | Temporary Erosion Control Seeding | Pound | 40 |
| ** 28000305 | Temporary Ditch Checks | Foot | 80 |
| ** 28000400 | Perimeter Erosion Barrier | Foot | 1140 |
| 35100100 | Aggregate Base Course, Type A | Ton | 310 |
| 40200800 | Aggregate Surface Course, Type B | Ton | 38 |
| 40600100 | Bituminous Materials (Prime Coat) | Gal | 60 |
| ** 40600300 | Aggregate (Prime Coat) | Ton | 3 |
| ** 40603080 | Hot-Mix Asphalt, Binder Course IL-19.0 N50 | Ton | 172 |
| ** 40603310 | Hot-Mix Asphalt, Surface Course 'C' N50 | Ton | 136 |
| 48100100 | Aggregate Shoulders, Type A | Ton | 154 |
| 50100100 | Removal of Existing Structures | Each | 1 |
| 50200100 | Structure Excavation | Cu. Yd. | 225 |
| 50200300 | Cofferdam Excavation | Cu. Yd. | 265 |
| ** 50201101 | Cofferdam (Type 2) (Location-1) | Each | 1 |
| ** 50201102 | Cofferdam (Type 2) (Location-2) | Each | 1 |
| ** 50300225 | Concrete Structures | Cu. Yd. | 142.2 |
| 50300260 | Bridge Deck Grooving | Sq. Yd. | 365 |
| 50300265 | Seal Coat Concrete | Cu. Yd. | 115 |
| 50300300 | Protective Coat | Sq. Yd. | 432 |
| ** X5030305 | Concrete Wearing Surface, 5' | Sq. Yd. | 365 |
| ** 50400505 | Precast Prestressed Concrete Deck Beams (27" Depth) | Sq. Ft. | 3215 |
| 50800205 | Reinforcement Bars, Epoxy Coated | Pound | 2130 |
| ▲ ** 50901050 | Steel Rolling, Type SM | Foot | 216 |
| ** 51201400 | Furnishing Steel Piles HP10x42 | Foot | 890 |
| 51202305 | Driving Piles | Foot | 890 |
| 51203400 | Test Pile Steel HP10x42 | Each | 4 |
| 51204650 | Pile Shoes | Each | 30 |
| 51500100 | Name Plates | Each | 1 |
| 59300100 | Controlled Low-Strength Material | Cu. Yd. | 105 |
| ▲ 63000001 | Steel Plate Beam Guardrail, Type A | Foot | 414 |
| ▲ 63100045 | Traffic Barrier Terminal, Type 2 | Each | 2 |
| ▲ 63100087 | Traffic Barrier Terminal, Type 6A | Each | 2 |
| ▲ ** X6310088 | Traffic Barrier Terminal, Type 6A (Special) | Each | 2 |
| ▲ 63100167 | Traffic Barrier Terminal, Type 1 (Special) Tangent | Each | 6 |
| 63200310 | Guardrail Removal | Foot | 273 |
| ** 67100100 | Mobilization | L. Sum | 1 |
| ** X7010216 | Traffic Control and Protection (Special) | L. Sum | 1 |
| ▲ 78201000 | Terminal Marker - Direct Applied | Each | 8 |
| ** XX004565 | Grouted Riprap | Sq. Yd. | 430 |
| ** XX004566 | Concrete Cut-Off Wall | Cu. Yd. | 6.9 |
| ** 20013798 | Construction Layout | L. Sum | 1 |

** See Special Provisions.
▲ specialty items

MASS BALANCE - EARTHWORK SCHEDULE

| LOCATION | EARTH EXCAVATION C.Y. | SHRINKAGE FACTOR | % USED | ADJUSTED EXCAVATION C.Y. | EMBANKMENT REQUIRED C.Y. | EARTHWORK BALANCE C.Y. |
|--------------------------------|-----------------------|------------------|--------|--------------------------|--------------------------|------------------------|
| Type I - LT/RT terminal flares | 0 | 25% | 100% | 0 | 33 | -33 |
| STA 7+00 to STA 7+50 | 24 | 25% | 100% | 18 | 2 | -17 |
| STA 7+50 to STA 8+00 | 6 | 25% | 100% | 5 | 4 | -16 |
| STA 8+00 to STA 8+50 | 0 | 25% | 100% | 0 | 14 | -30 |
| Type I - RT terminal flares | 0 | 25% | 100% | 0 | 9 | -39 |
| STA 8+50 to STA 9+00 | 0 | 25% | 100% | 0 | 25 | -55 |
| STA 8+84 RT field entrance | 4 | 25% | 100% | 3 | 2 | -54 |
| STA 9+00 to STA 9+45 | 0 | 25% | 100% | 0 | 25 | -79 |
| BRIDGE REMOVAL ** | 881 | 25% | 50% | 330 | 0 | 251 |
| STA 10+55 to STA 11+00 | 5 | 25% | 100% | 4 | 21 | 234 |
| STA 11+00 RT field entrance | 7 | 25% | 100% | 5 | 5 | 234 |
| Type I - RT terminal flare | 0 | 25% | 100% | 0 | 33 | 201 |
| STA 11+00 to STA 11+50 | 9 | 25% | 100% | 7 | 21 | 187 |
| STA 11+50 to STA 12+00 | 6 | 25% | 100% | 5 | 15 | 177 |
| STA 12+00 to STA 12+50 | 17 | 25% | 100% | 13 | 2 | 188 |
| STA 12+50 to STA 13+00 | 29 | 25% | 100% | 22 | 1 | 209 |
| Type I - LT/RT terminal flare | 0 | 25% | 100% | 0 | 33 | 176 |

No Furnished Excavation necessary.

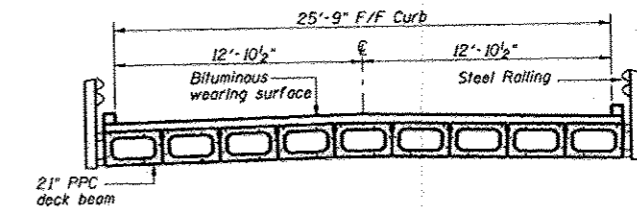
** = Paid for as Removal of Existing Structures, if suitable, soil can be used for Furnished Excavation.

MIXTURE REQUIREMENTS TABLE

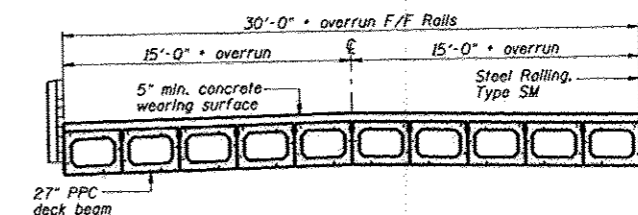
| MIXTURE | SURFACE | BINDER |
|--------------------|------------------|------------------|
| PG | PG 64-22 | PG 64-22 |
| RAP | 15% | 25% |
| Design Voids | 4.0% @ Ndes = 50 | 4.0% @ Ndes = 50 |
| Mix Composition | IL 9.5 | IL 19.0 |
| Friction Aggregate | Mix C | N.A. |

BITUMINOUS MATERIALS (PRIME COAT) RATES

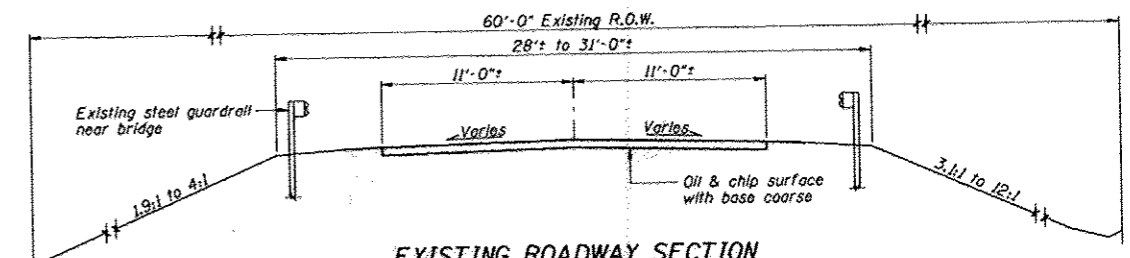
| SURFACE TYPE | ESTIMATED TRUCK APPLICATION RATE | RESIDUAL RATE |
|--------------------------|----------------------------------|---------------|
| Milled (HMA or PCC) | 0.10 gal/sy | 0.05 gal/sy |
| Existing Pavement | 0.05 gal/sy | 0.025 gal/sy |
| Fog Coat (between lifts) | 0.05 gal/sy | 0.025 gal/sy |



EXISTING SUPERSTRUCTURE SECTION

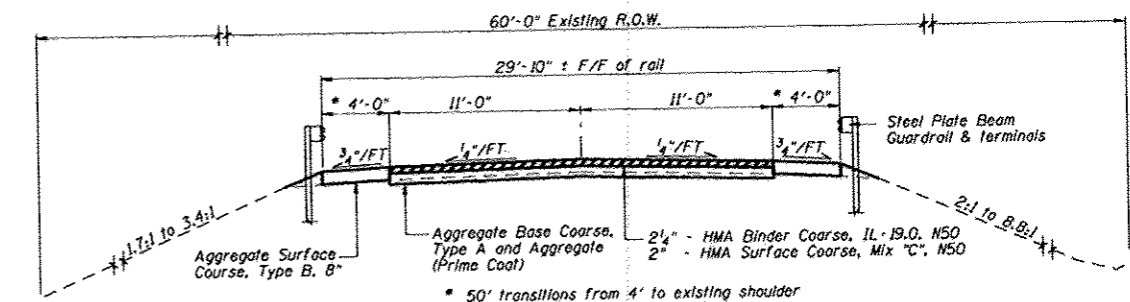


PROPOSED SUPERSTRUCTURE SECTION



EXISTING ROADWAY SECTION

Sta. 7+00 to Sta. 9+45
Sta. 10+55 to Sta. 13+00



PROPOSED ROADWAY SECTION

Sta. 7+00 to Sta. 9+45.27
Sta. 10+54.73 to Sta. 13+00

The Engineer can determine the depth of Aggregate Base Course Type A needed depending on the depth to and the condition of the existing pavement

| | | | | | |
|--------|------------------|-----|------|----------|----|
| DESIGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraunhoffer | NO. | DATE | REVISION | BY |



FRAUENHOFER & ASSOCIATES
A division of Engineering Resource Associates, Inc.
Consulting Engineers, Scientists, & Surveyors

3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

| | | |
|--|--|---------------------|
| SUMMARY OF QUANTITIES & TYPICAL SECTIONS | | SHEET 2 |
| FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK | | DWG NO. 9029500.dgn |
| SEC 08-00130-05-BR | | DATE DEC 2012 |
| FULTON COUNTY | | PROJ NO. 9029 |

| | | | | |
|-----------------------|---------|---------------------|------------------|--------------|
| ROUTE NO. | SECTION | COUNTY | SHEET NO. | TOTAL SHEETS |
| FAS452 | * | FULTON | 26 | 3 |
| FED. ROAD DIST. NO. 1 | | ILL. ROAD PROJ. NO. | FED. AID PROJECT | |

* 09-00130-05-BR

SCHEDULE OF QUANTITIES - SEC. 09-00130-05-BR

35100100

| AGGREGATE BASE COURSE, TYPE A | | | TONS |
|-------------------------------|----|---------------|------|
| LOCATION | | | |
| STA. 6+85.00 | TO | STA. 9+45.27 | 185 |
| STA. 10+54.73 | TO | STA. 13+45.00 | 125 |
| TOTAL | | | 310 |

40603310

| HMA SC *C* N50 | | | TONS |
|----------------|----|---------------|------|
| LOCATION | | | |
| STA. 6+85.00 | TO | STA. 9+45.27 | 68 |
| STA. 10+54.73 | TO | STA. 13+45.00 | 68 |
| TOTAL | | | 136 |

63100167

| TRAFFIC BARRIER TERMINAL, TYPE I (SPECIAL) TANGENT | | | EACH |
|--|----|------------------|------|
| LOCATION | | | |
| STA. 7+23.69 | TO | STA. 7+73.69 LT | 1 |
| STA. 7+23.69 | TO | STA. 7+73.69 RT | 1 |
| STA. 8+11.19 | TO | STA. 8+61.19 RT | 1 |
| STA. 11+18.72 | TO | STA. 11+68.72 RT | 1 |
| STA. 12+56.22 | TO | STA. 13+06.22 RT | 1 |
| STA. 12+56.22 | TO | STA. 13+06.22 LT | 1 |
| TOTAL | | | 6 |

40200800

| AGGREGATE SURFACE COURSE, TYPE B | | | TONS |
|----------------------------------|-----------------|--|------|
| LOCATION | | | |
| STA. 8+84.00 | RT (Field Ent.) | | 19 |
| STA. 11+00.00 | RT (Field Ent.) | | 19 |
| TOTAL | | | 38 |

48100100

| AGGREGATE SHOULDERS, TYPE A | | | TONS |
|-----------------------------|----|---------------------|------|
| LOCATION | | | |
| STA. 6+85.00 | TO | STA. 9+45.27 LT/RT | 77 |
| STA. 10+54.73 | TO | STA. 13+45.00 LT/RT | 77 |
| TOTAL | | | 154 |

63200310

| GUARDRAIL REMOVAL | | | FOOT |
|-------------------|----|------------------|------|
| LOCATION | | | |
| STA. 9+10.00 | TO | STA. 9+82.00 LT | 72 |
| STA. 9+04.00 | TO | STA. 9+66.00 RT | 62 |
| STA. 10+34.00 | TO | STA. 11+12.00 LT | 78 |
| STA. 10+18.00 | TO | STA. 10+79.00 RT | 61 |
| TOTAL | | | 273 |

40600100

| BITUMINOUS MATERIALS (PRIME COAT) | | | GAL. |
|-----------------------------------|----|---------------|------|
| LOCATION | | | |
| STA. 6+85.00 | TO | STA. 9+45.27 | 30 |
| STA. 10+54.73 | TO | STA. 13+45.00 | 30 |
| TOTAL | | | 60 |

63100045

| TRAFFIC BARRIER TERMINAL, TYPE 2 | | | EACH |
|----------------------------------|----|---------------------------|------|
| LOCATION | | | |
| STA. 8+97.78 | TO | RT - at end of 6A special | 1 |
| STA. 10+84.81 | TO | RT - at end of 6A special | 1 |
| TOTAL | | | 2 |

GENERAL NOTES

- The locations of Existing utilities as shown on the plan are for information only, and are not guaranteed. It shall be the Contractor's responsibility to ascertain their exact location from the utility companies and by field inspection.
- All steel posts in guardrails or transitions shall be 9 foot long.
- The thickness of the wood block spacers for the first post behind the abutments at the southeast and northwest approaches shall be altered to avoid conflict between the steel post and the abutment. The cost shall be included in the cost of Traffic Barrier Terminal, Type 6A or Traffic Barrier Terminal, Type 6A (Special).
- The ends of all guardrail terminals, Type 1 or Type 2 shall receive a Terminal Marker.

40600300

| AGGREGATE (PRIME COAT) | | | TONS |
|------------------------|----|---------------|------|
| LOCATION | | | |
| STA. 6+85.00 | TO | STA. 9+45.27 | 1.5 |
| STA. 10+54.73 | TO | STA. 13+45.00 | 1.5 |
| TOTAL | | | 3 |

63000001

| STEEL PLATE BEAM GUARDRAIL, TYPE A | | | FOOT |
|------------------------------------|----|------------------|------|
| LOCATION | | | |
| STA. 7+73.69 | TO | STA. 9+11.19 LT | 138 |
| STA. 7+73.69 | TO | STA. 8+11.19 RT | 38 |
| STA. 11+06.22 | TO | STA. 12+56.22 LT | 150 |
| STA. 11+68.72 | TO | STA. 12+56.22 RT | 88 |
| TOTAL | | | 414 |

40603080

| HMA BC IL-19.0 N50 | | | TONS |
|--------------------|----|---------------|------|
| LOCATION | | | |
| STA. 6+85.00 | TO | STA. 9+45.27 | 86 |
| STA. 10+54.73 | TO | STA. 13+45.00 | 86 |
| TOTAL | | | 172 |

63100087

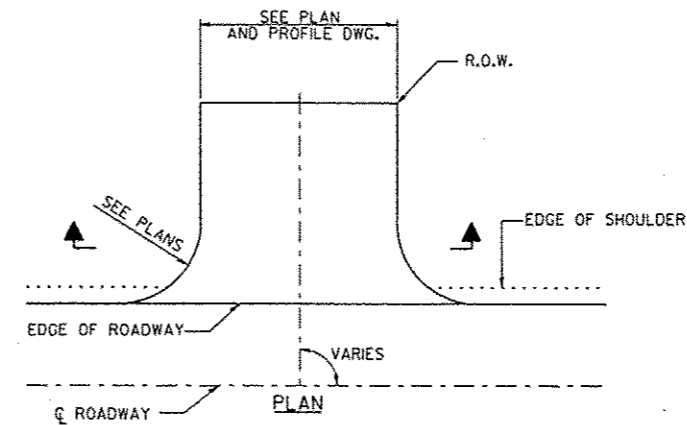
| TRAFFIC BARRIER TERMINAL, TYPE 6A | | | EACH |
|-----------------------------------|----|------------------|------|
| LOCATION | | | |
| STA. 9+11.19 | TO | STA. 9+54.94 LT | 1 |
| STA. 10+62.47 | TO | STA. 11+06.22 LT | 1 |
| TOTAL | | | 2 |

X6310088

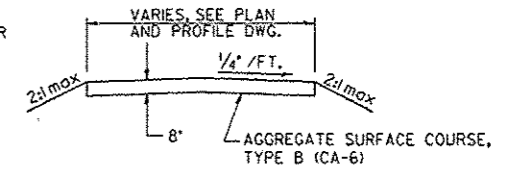
| TRAFFIC BARRIER TERMINAL, TYPE 6A (SPECIAL) | | | EACH |
|---|----|------------------|------|
| LOCATION | | | |
| STA. 8+97.78 | TO | STA. 9+37.53 RT | 1 |
| STA. 10+45.06 | TO | STA. 10+84.81 RT | 1 |
| TOTAL | | | 2 |

UTILITIES

Call J.U.L.I.E. 1-800-892-0123
The Contractor shall coordinate the relocation of any utilities with the utility company where they conflict with the proposed improvements.



ENTRANCE DETAIL
FIELD ENT 1 = STA. 8+84, RT
FIELD ENT 2 = STA. 11+00, RT



ENTRANCE DETAIL
FIELD ENT 1 = STA. 8+84, RT
FIELD ENT 2 = STA. 11+00, RT

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |



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SCHEDULE OF QUANTITIES & GENERAL NOTES
FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
SEC 08-00130-05-BR
FULTON COUNTY

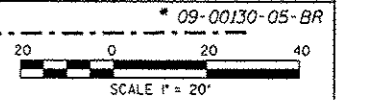
| | |
|----------|-------------|
| SHEET | 3 |
| DWG NO. | 9028SOQ.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

BM #1 - Chiseled "X" in top of curb at South end of East curb, Elev. 100.29
BM #2 - R.R. Spike in power pole at STA 7+25, 30' LT., Elev. 95.61
BM #3 - R.R. Spike in power pole at STA 11+23, 33' LT., Elev. 95.37

Marvin White
303 W. Grove Street
Table Grove, IL 61482-9540

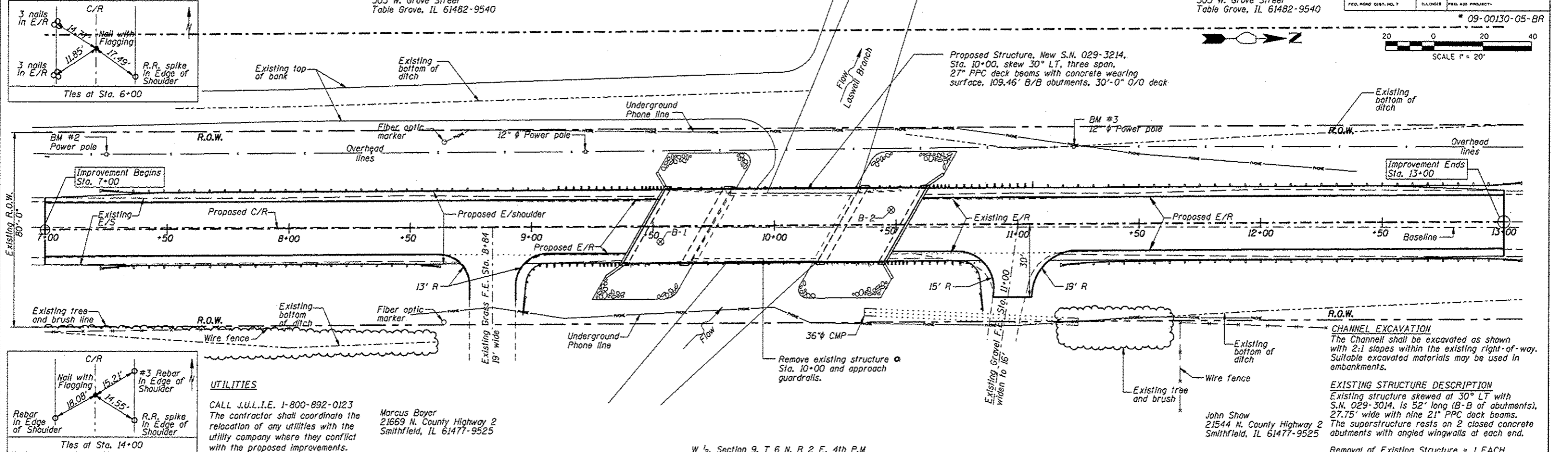
Marvin White
303 W. Grove Street
Table Grove, IL 61482-9540

| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL SHEETS |
|-----------|---------|--------|-------|--------------|
| FAS 452 | | FULTON | 25 | 4 |

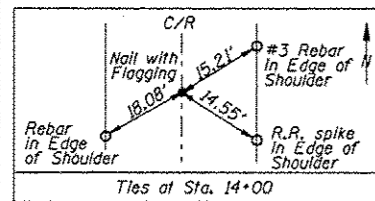


E 1/2, Section 8, T 6 N, R 2 E, 4th P.M.

W 1/2, Section 9, T 6 N, R 2 E, 4th P.M.



| DATE | BY | REVISION |
|------|----|----------|
| | | |



UTILITIES

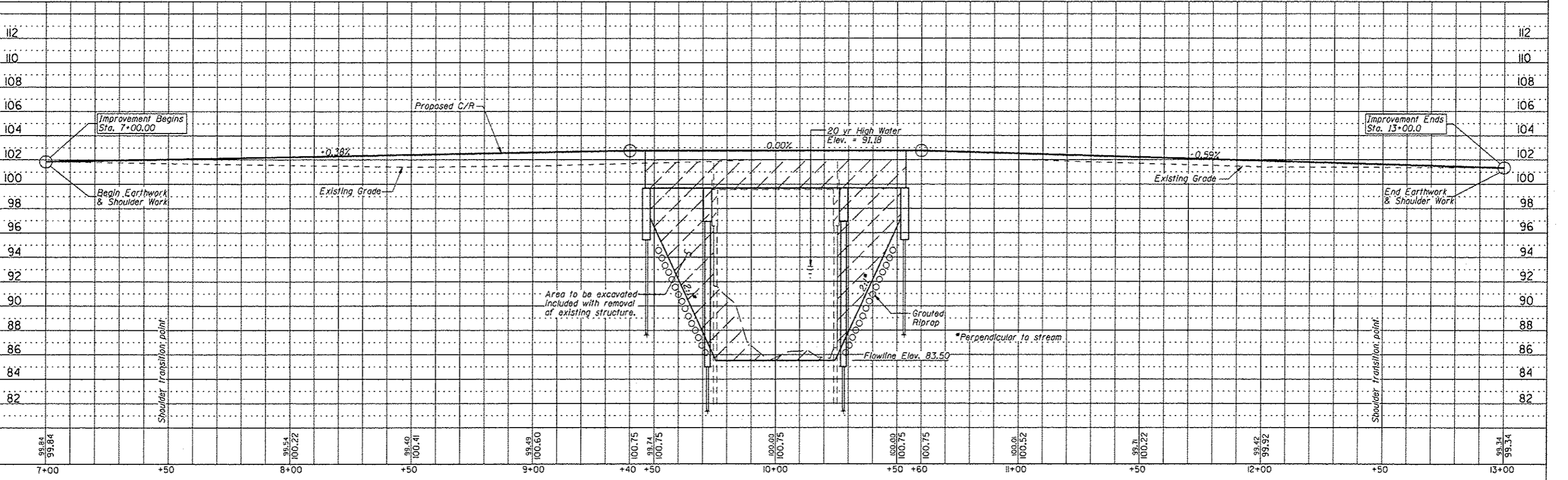
CALL J.U.L.I.E. 1-800-892-0123
The contractor shall coordinate the relocation of any utilities with the utility company where they conflict with the proposed improvements.

Marcus Boyer
21669 N. County Highway 2
Smithfield, IL 61477-9525

CHANNEL EXCAVATION
The Channel shall be excavated as shown with 2:1 slopes within the existing right-of-way. Suitable excavated materials may be used in embankments.

EXISTING STRUCTURE DESCRIPTION
Existing structure skewed at 30° LT with S.N. 029-3014, is 52' long (B-B of abutments), 27.75' wide with nine 21" PPC deck beams. The superstructure rests on 2 closed concrete abutments with angled wingwalls at each end.

Removal of Existing Structure = 1 EACH



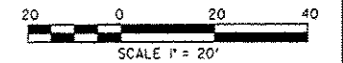
| DATE | BY | REVISION |
|------|----|----------|
| | | |



PLAN & PROFILE STA. 7+00 TO STA. 13+00

| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL |
|---------------------|---------|------------------|-------|-------|
| FAS 452 | * | FULTON | 25 | 5 |
| FED. ROAD DIST. NO. | | FED. AID PROJECT | | |
| | | * 09-00130-05-BR | | |

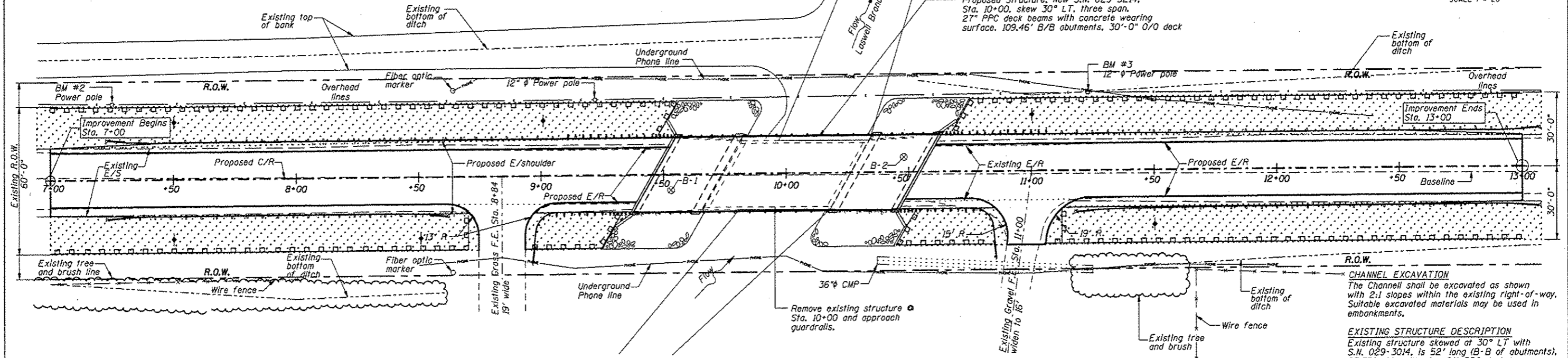
Marvin White
303 W. Grove Street
Table Grove, IL 61482-9540



E 1/2 Section 8, T 6 N, R 2 E, 4th P.M.

Marvin White
303 W. Grove Street
Table Grove, IL 61482-9540

Proposed Structure, New S.N. 029-3214,
Sta. 10+00, skew 30° LT, three span,
27" PPC deck beams with concrete wearing
surface, 109.46' B/B abutments, 30°-0" O/O deck



Marcus Boyer
21669 N. County Highway 2
Smithfield, IL 61477-9525

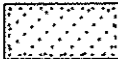

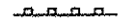
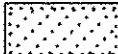
John Shaw
21544 N. County Highway 2
Smithfield, IL 61477-9525

W 1/2 Section 9, T 6 N, R 2 E, 4th P.M.

EROSION CONTROL SEQUENCE

1. Placement of perimeter erosion control barrier prior to commencement of any work. See Standard 280001.
2. Removal of the existing structure
3. Earth excavation & structure excavation.
5. Construction of the substructure.
6. Placement of PPC deck beams and concrete wearing surface.
7. Place grouted riprap.
8. Regrade for pavement widening, base coarse, and HMA placement.
9. Install guardrail and bridge rail.
10. Removal and proper clean up of the temporary erosion controls.
11. Placement of the permanent erosion controls.

PERMANENT EROSION CONTROL

-  Seeding, Cl. 2 with Fertilizer and Mulch
- TEMPORARY EROSION CONTROL**
-  Temporary Ditch Check (10' each location)
-  Perimeter Erosion Barrier
-  Temporary Erosion Control Seeding

| NITROGEN FERTILIZER NUTRIENT PHOSPHORUS FERTILIZER NUTRIENT POTASSIUM FERTILIZER NUTRIENT | | | |
|---|----|--|-------|
| LOCATION | | | POUND |
| STA. 6+85.00 TO STA. 9+45.27 | LT | | 10 |
| STA. 7+00.00 TO STA. 9+45.27 | RT | | 8 |
| STA. 10+54.73 TO STA. 13+45.00 | LT | | 10 |
| STA. 10+54.73 TO STA. 13+45.00 | RT | | 9 |
| TOTAL | | | 37 |

| SEEDING, CLASS 2 MULCH, METHOD 2 | | | |
|-------------------------------------|----|--|------|
| LOCATION | | | ACRE |
| STA. 6+85.00 TO STA. 9+45.27 | LT | | 0.11 |
| STA. 7+00.00 TO STA. 9+45.27 | RT | | 0.08 |
| STA. 10+54.73 TO STA. 13+45.00 | LT | | 0.11 |
| STA. 10+54.73 TO STA. 13+45.00 | RT | | 0.10 |
| TOTAL | | | 0.40 |

| TEMPORARY DITCH CHECKS | | | |
|------------------------|-------|--|------|
| LOCATION | | | FOOT |
| STA. 7+50 | LT/RT | | 20 |
| STA. 8+50 | RT | | 10 |
| STA. 9+00 | LT | | 10 |
| STA. 11+00 | LT | | 10 |
| STA. 11+50 | RT | | 10 |
| STA. 12+50 | LT/RT | | 20 |
| TOTAL | | | 80 |

| PERIMETER EROSION BARRIER | | |
|--------------------------------|----|------|
| LOCATION | | FOOT |
| STA. 6+85.00 TO STA. 9+56.50 | LT | 275 |
| STA. 7+00.00 TO STA. 8+75.00 | RT | 190 |
| STA. 8+94.00 TO STA. 9+36.00 | RT | 55 |
| STA. 10+43.50 TO STA. 10+92.00 | RT | 70 |
| STA. 10+65.30 TO STA. 13+45.00 | LT | 290 |
| STA. 11+04.00 TO STA. 13+45.00 | RT | 260 |
| TOTAL | | 1140 |

| TOP SOIL FURNISH & PLACE, 4' | | |
|--------------------------------|----|-------|
| LOCATION | | SQ YD |
| STA. 6+85.00 TO STA. 9+45.27 | LT | 525 |
| STA. 7+00.00 TO STA. 9+45.27 | RT | 405 |
| STA. 10+54.73 TO STA. 13+45.00 | LT | 519 |
| STA. 10+54.73 TO STA. 13+45.00 | RT | 508 |
| TOTAL | | 1957 |

| TEMPORARY EROSION CONTROL SEEDING | | |
|-----------------------------------|----|-------|
| LOCATION | | POUND |
| STA. 6+85.00 TO STA. 9+45.27 | LT | 11 |
| STA. 7+00.00 TO STA. 9+45.27 | RT | 8 |
| STA. 10+54.73 TO STA. 13+45.00 | LT | 11 |
| STA. 10+54.73 TO STA. 13+45.00 | RT | 10 |
| TOTAL | | 40 |

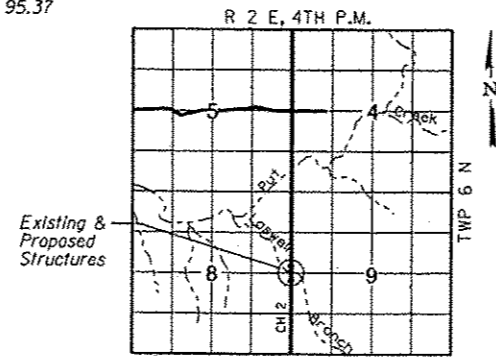
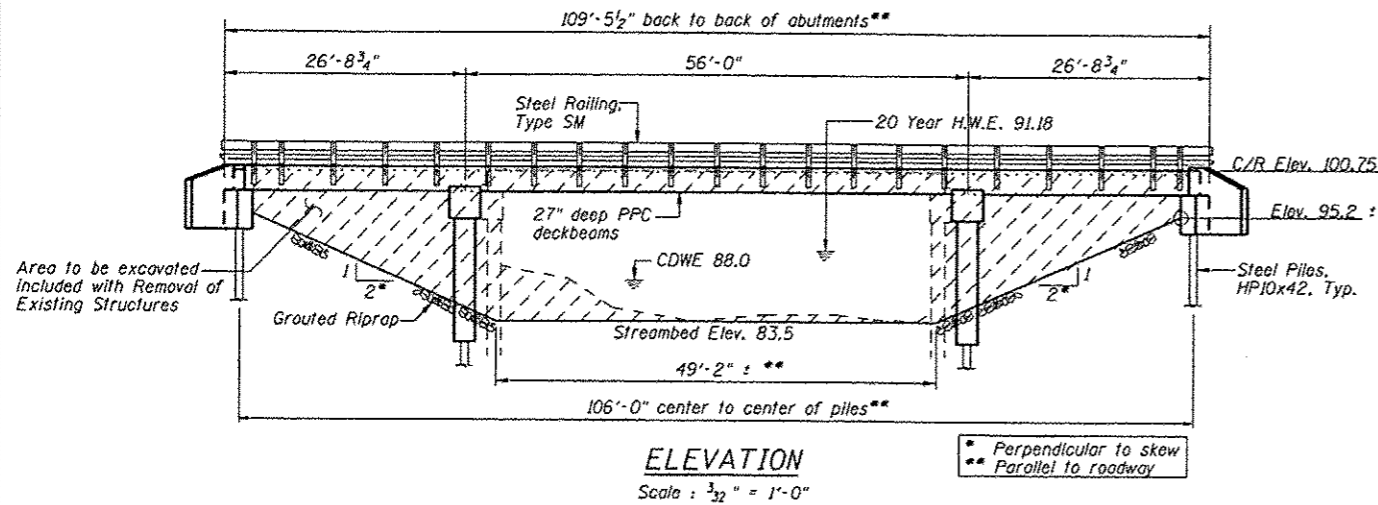
| BILL OF MATERIAL - EROSION CONTROL | | |
|------------------------------------|---------|----------|
| ITEM | UNIT | QUANTITY |
| Top Soil Furnish & Place, 4' | SQ. YD. | 1957 |
| Seeding, Class 2 | ACRE | 0.40 |
| Nitrogen Fertilizer Nutrient | POUND | 37 |
| Phosphorus Fertilizer Nutrient | POUND | 37 |
| Potassium Fertilizer Nutrient | POUND | 37 |
| Mulch, Method 2 | ACRE | 0.40 |
| Temporary Erosion Control Seeding | POUND | 40 |
| Temporary Ditch Checks | FOOT | 80 |
| Perimeter Erosion Barrier | FOOT | 1140 |

| ROUTE NO. | SECTION | COUNTY | SHEET NO. | TOTAL SHEETS |
|-----------|---------|--------|-----------|--------------|
| FAS452 | * | FULTON | 26 | 6 |

* 09-00130-05-BR

Existing Structure: Existing Structure is a single span bridge with 21" concrete deck beams. The substructure is closed concrete abutments with nearly straight back timber wingwalls.

BM #1 - Chiseled "X" in T/Curb at south end of east bridge curb, Elev. 100.29
 BM #2 - RR spike in power pole at Sta. 7+25, 30' RT., Elev. 95.61
 BM #3 - RR spike in power pole at Sta. 11+23, 33' RT., Elev. 95.37

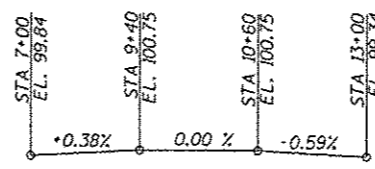


LOCATION SKETCH

STRUCTURE NO. 029-3214
 SEC. 09-00130-05-BR BUILT 20...
 FAS 492/CH2
 FULTON COUNTY
 LOADING HL-93

NAME PLATE

See Standard 515001



PROFILE GRADE

DESIGN SPECIFICATIONS

AASHTO (2007) and applicable Interims

DESIGN LOADING

HL-93
 50 P.S.F Future Wearing Surface

DESIGN STRESSES

- $f'_c = 3,500$ psi (Cast in Place Concrete)
- $f'_c = 5,000$ psi (P.P.C. Units)
- $f'_{ci} = 4,000$ psi (P.P.C. Units)
- $f_y = 60,000$ psi (Reinforcement)
- $f'_s = 270,000$ psi (1/2" ϕ Strands)
- $f'_{si} = 201,960$ psi (1/2" ϕ Strands)

WATERWAY DATA

| | |
|------------------------------|---------------|
| Drainage Area | 7.59 Sq. Mi. |
| Existing Opening | 254.4 Sq. Ft. |
| Required Opening (20 Yr.) | 470 Sq. Ft. |
| Proposed Opening (20 Yr.) | 502 Sq. Ft. |
| Design Discharge (20 Yr.) | 2180 C.F.S. |
| Computed Discharge (100 Yr.) | 3340 C.F.S. |
| 20 Yr. Head | 0.19 Ft. |
| 100 Yr. Head | 0.93 Ft. |

BORING DATA

N - Standard Penetration Test - Blows per foot to drive 2" O.D. split spoon sampler 12" with 140 lb. hammer falling 30".
 Qu - Unconfined Compressive Strength - Tons/Sq. Ft.
 W - Water Content - Percentage of oven dry weight - %

BORING B-1

Location: STA 9+53 (±), 6 ft. RT of ϕ Road

| Depth (ft) | N | Qu | W | Notes |
|------------|---------|--------|------|--|
| 0 | | | | Elev. 99.4 |
| 0-7 | | | | 7" Oil/Chip |
| 0-13 | | | | 13" Sand & Gravel |
| 13-17 | 8 | - | 13.1 | Brown Silty CLAY w/ Gravel, Some Sand |
| 17-22 | 5 | 1.05B | 18.4 | |
| 22-24 | 2 | 1.28B | 18.4 | |
| 24-26 | 2 | 0.98B | 18.9 | Damp Gray Silty CLAY, Small Pebbles, Soft |
| 26-28 | 2 | 0.60B | 15.9 | |
| 28-30 | 4 | 2.48S | 18.4 | Seeping Water @ 17' Gray Silty CLAY w/ Sand |
| 30-32 | 2 | 0.64BS | 24.3 | |
| 32-34 | 3 | 0.32V | 21.7 | Gray Silty FINE SAND, Wet, Soft |
| 34-35 | 5 | - | 18.0 | |
| 35-37 | 3 | - | 18.3 | |
| 37-38 | 73 | - | 15.0 | Coarse Sandy Gravel |
| 38-39 | 101/1.5 | - | 13.1 | Broken Rock @ 29' |
| 39-40 | 102/2" | - | - | Broken Limestone @ 31.5' Auger Refusal @ 33' End of Boring @ 33' |

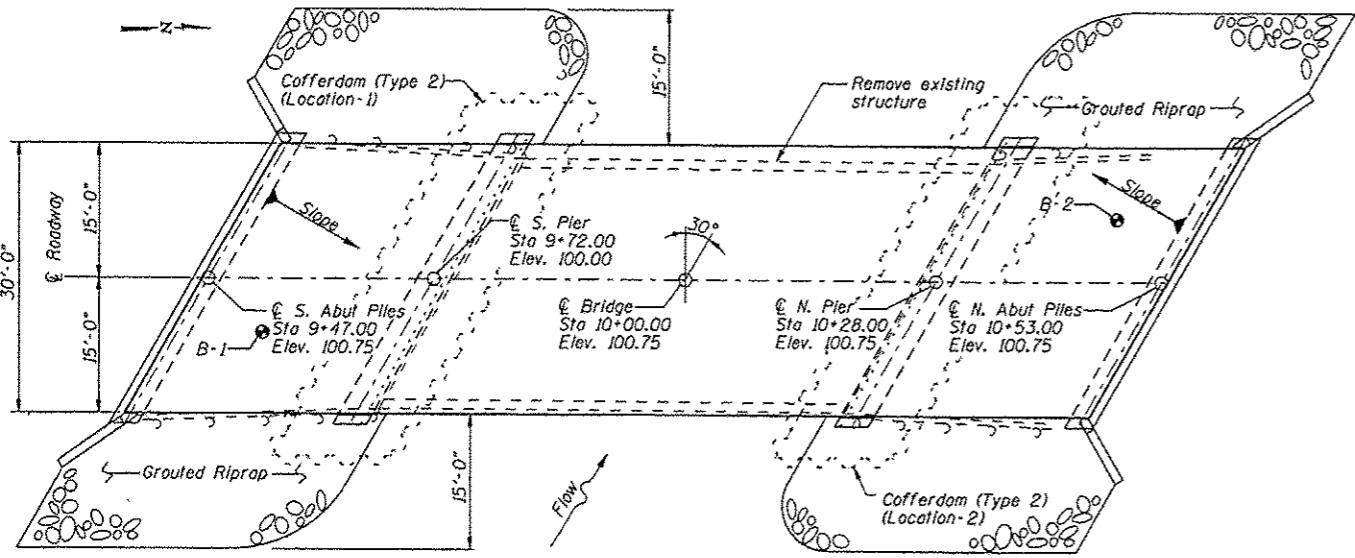
BORING B-2

Location: STA 10+48 (±), 7 ft. LT of ϕ Road

| Depth (ft) | N | Qu | W | Notes |
|------------|--------|--------|------|---|
| 0 | | | | Elev. 99.5 |
| 0-6 | | | | 6" Oil/Chip |
| 6-13 | | | | 13" Sand & Gravel |
| 13-18 | 7 | 2.32BS | 13.3 | |
| 18-24 | 6 | - | 28.0 | Brown Gray Silty CLAY w/ Some Sand, Small Pebbles, Organics |
| 24-26 | 9 | - | 18.4 | |
| 26-27 | 1 | 0.98B | 19.8 | |
| 27-28 | 1 | 0.62B | 17.4 | Tan Silty CLAY, Damp, Very Soft |
| 28-29 | 5 | - | 14.9 | |
| 29-30 | 1 | 0.75B | 24.1 | Gray Silty CLAY, Soft |
| 30-31 | 3 | - | 20.5 | |
| 31-32 | 5 | - | 20.5 | Brown Coarse SAND w/ Gravel, Wet |
| 32-33 | 7 | - | 21.6 | |
| 33-34 | 12 | - | 19.2 | Gray Coarse SAND w/ Pebbles and Broken Rocks, Wet |
| 34-35 | 83 | 2.56V | 11.7 | Very Hard Gray Clayey SHALE |
| 35-36 | 102/1" | - | 15.5 | Auger Refusal @ 33' End of Boring @ 33' |

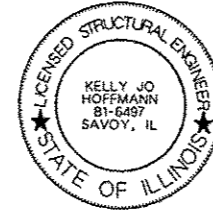
TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---------|-------|-------|-------|
| Removal of Existing Structures | Each | 1 | - | 1 |
| Structure Excavation | Cu. Yd. | - | 225 | 225 |
| Cofferdam Excavation | Cu. Yd. | - | 265 | 265 |
| Cofferdam (Type 2) (Location-1) | Each | - | 1 | 1 |
| Cofferdam (Type 2) (Location-2) | Each | - | 1 | 1 |
| Concrete Wearing Surface, 5" | Sq. Yd. | 365 | - | 365 |
| Concrete Structures | Cu. Yd. | - | 142.2 | 142.2 |
| Bridge Deck Grooving | Sq. Yd. | 365 | - | 365 |
| Seal Coat Concrete | Cu. Yd. | - | 115 | 115 |
| Protective Coat | Sq. Yd. | 432 | - | 432 |
| Precast Prestressed Concrete Deck Beams (27" Depth) | Sq. Ft. | 3215 | - | 3215 |
| Reinforcement Bars, Epoxy Coated | Pound | 9780 | 11530 | 21310 |
| Steel Railing, Type SM | Foot | 216 | - | 216 |
| Furnishing Steel Piles HP10x42 | Foot | - | 890 | 890 |
| Driving Piles | Foot | - | 890 | 890 |
| Test Pile Steel HP10x42 | Each | - | 4 | 4 |
| Pile Shoes | Each | - | 30 | 30 |
| Name Plates | Each | - | 1 | 1 |
| Controlled Low-Strength Material | Cu. Yd. | - | 105 | 105 |
| Grouted Riprap | Sq. Yd. | - | 430 | 430 |
| Concrete Cut-Off Wall | Cu. Yd. | - | 6.9 | 6.9 |



GENERAL NOTES

- The Contractor shall drive test piles to 110% of the Nominal Required Bearing specified in production locations of the substructures specified or approved by the Engineer before ordering the remainder of the piles.
- Boring Data is shown only as a guide to bidders in estimating soil conditions which may be encountered during construction.
- Class S1 or MS Concrete shall be used in the abutments.
- Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60 (IL Modified). See Special Provisions.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.



I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current "AASHTO LRFD Bridge Design Specifications."

Kelly Jo Hoffmann
 Kelly Jo Hoffmann
 Illinois Licensed Structural Engineer Number 6497
 License Expires 11/30/14

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | K.J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |

FRAUENHOFER & ASSOCIATES
 A Division of Engineering Resource Associates, Inc.
 Consulting Engineers, Scientists, & Surveyors

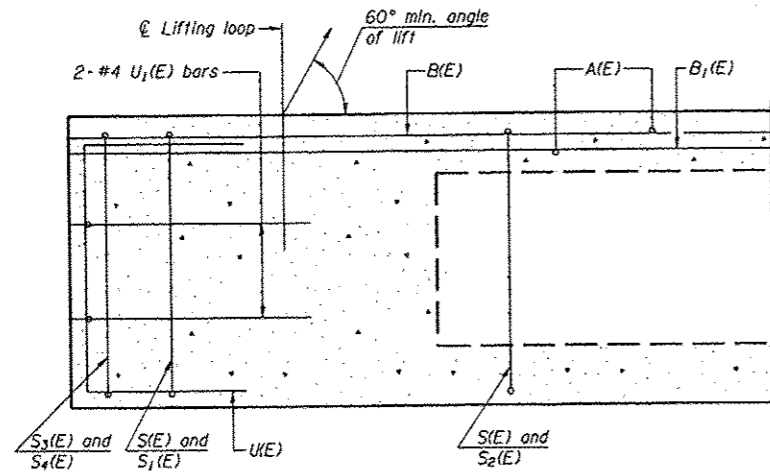
3002 CROSSING COURT
 CHAMPAIGN, IL 61822
 PHONE (217) 351-6268
 FAX (217) 355-1902

GENERAL PLAN AND ELEVATION
 FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
 SEC 09-00130-05-BR
 FULTON COUNTY

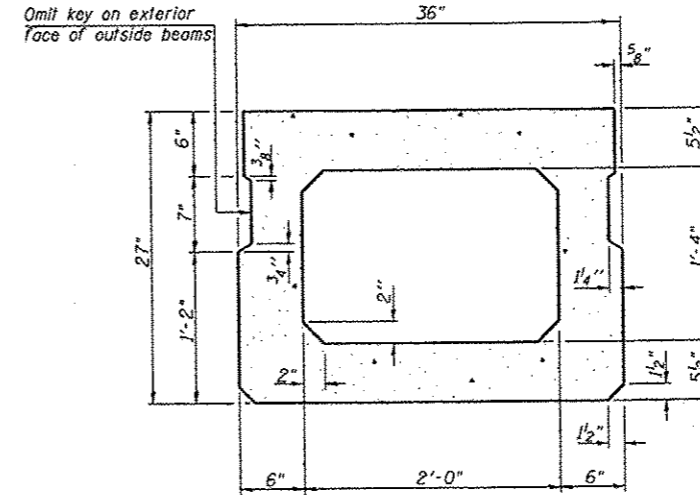
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| SHEET | 6 |
| DWG. NO. | 9029GPE.dgn |
| DATE | DEC 2012 |
| PROJ. NO. | 9029 |

| | | | | |
|-----------------------|---------|---------------------------|-------|--------------|
| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL SHEETS |
| FAS452 | # | FULTON | 26 | 7 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS FED. AID PROJECT | | |

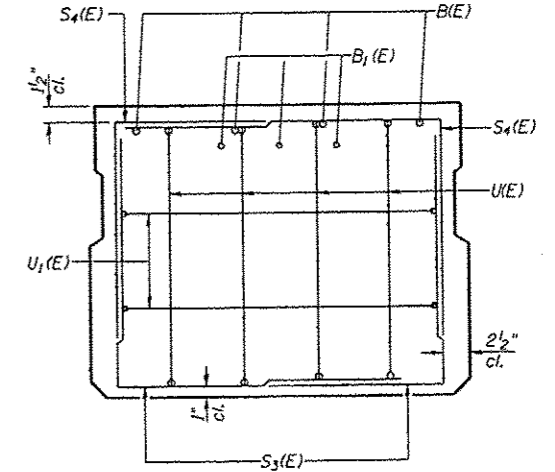
09-00130-05-BR



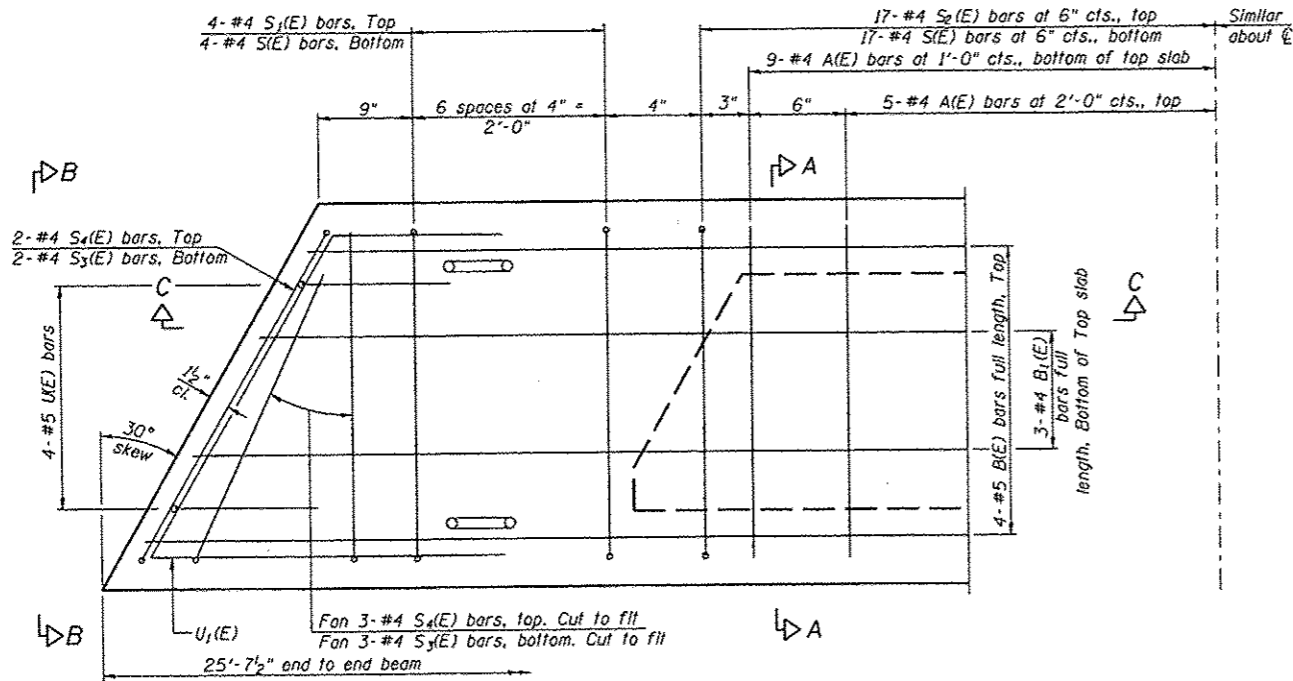
SECTION C-C



SECTION A-A
(Showing dimensions)

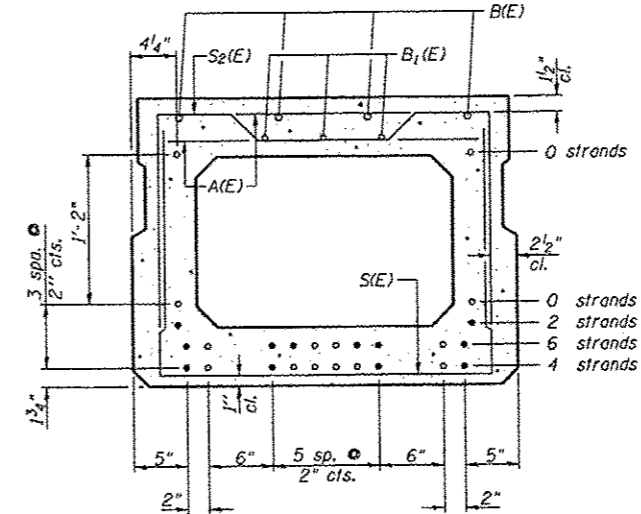


VIEW B-B



PLAN VIEW

Note: Spacing of S1(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A
(Showing reinforcement and permissible strand locations)
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

| Bar | No. | Size | Length | Shape |
|-------|-----|------|--------|-------|
| A(E) | 28 | #4 | 2'-7" | — |
| B(E) | 8 | #5 | 14'-6" | — |
| B1(E) | 6 | #4 | 14'-6" | — |
| S(E) | 42 | #4 | 6'-5" | ┌ |
| S1(E) | 8 | #4 | 5'-11" | ┌ |
| S2(E) | 34 | #4 | 6'-2" | ┌ |
| S3(E) | 10 | #4 | 4'-6" | ┌ |
| S4(E) | 10 | #4 | 4'-3" | ┌ |
| U(E) | 8 | #5 | 4'-6" | ┌ |
| U1(E) | 4 | #4 | 6'-8" | ┌ |

Note: See sheet 2 of 4 for additional details and Bill of Material.

See "CONCRETE WEARING SURFACE" sheet for details on the pairs of D(E) bars at each embed anchor for SM railing. The cost shall be included with the cost of the deck beams.

27" x 36" PPC DECK BEAM
STRUCTURE NO. 092-3457
SPANS 1 AND 3

| | | | | | |
|------|-----------------|-----|------|----------|----|
| DSGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraunhofer | NO. | DATE | REVISION | BY |



FRAUENHOFER & ASSOCIATES
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Consulting Engineers, Scientists, & Surveyors

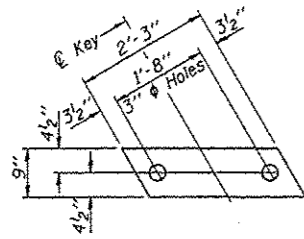
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PHONE (217) 351-6258
FAX (217) 355-1902

SUPERSTRUCTURE DETAILS (SHEET 1 OF 4)

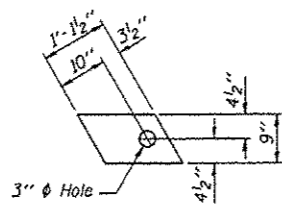
FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
SEC 08-00130-05-BR
FULTON COUNTY

| | |
|----------|-------------|
| SHEET | 7 |
| DWG NO. | 9029SUP.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL |
|-----------------------|---------|----------|-------|------------------|
| FAS452 | | FULTON | 26 | 8 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | | FED. AID PROJECT |
| # 09-00130-05-BR | | | | |



FABRIC BEARING PAD
(Interior)

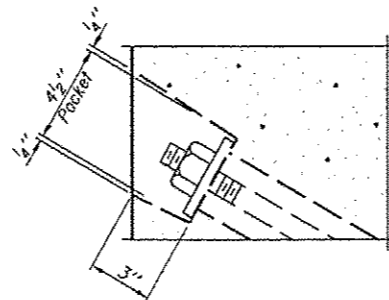


FABRIC BEARING PAD
(Exterior)

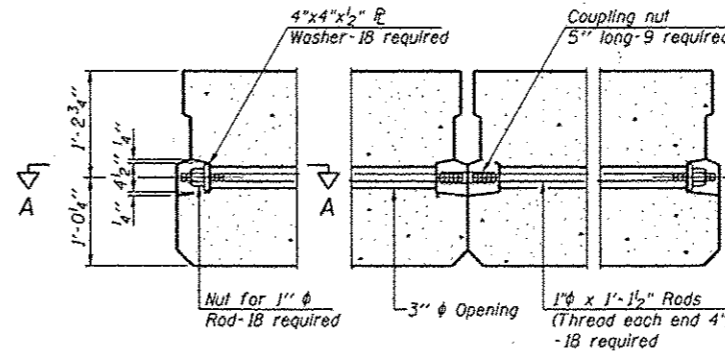
FIXED

NOTES:

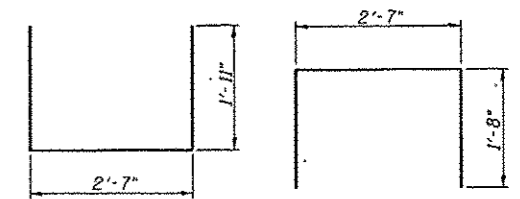
All bearing pads shall be 1" thick
Omit holes when using expansion bearings
Expansion bearing shall be banded to the substructure.



SECTION A-A

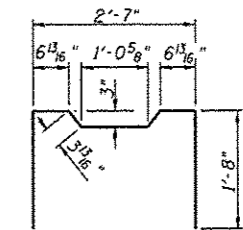


TYPICAL TRANSVERSE TIE ASSEMBLY - PER SPAN

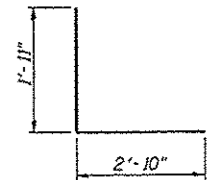


BAR S(E)

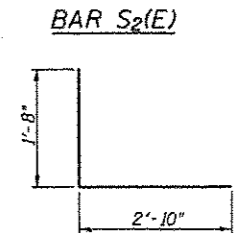
BAR S1(E)



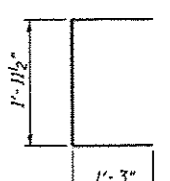
BAR S2(E)



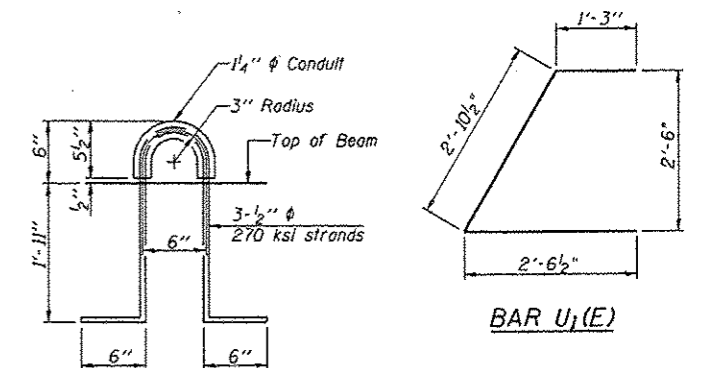
BAR S3(E)



BAR S4(E)

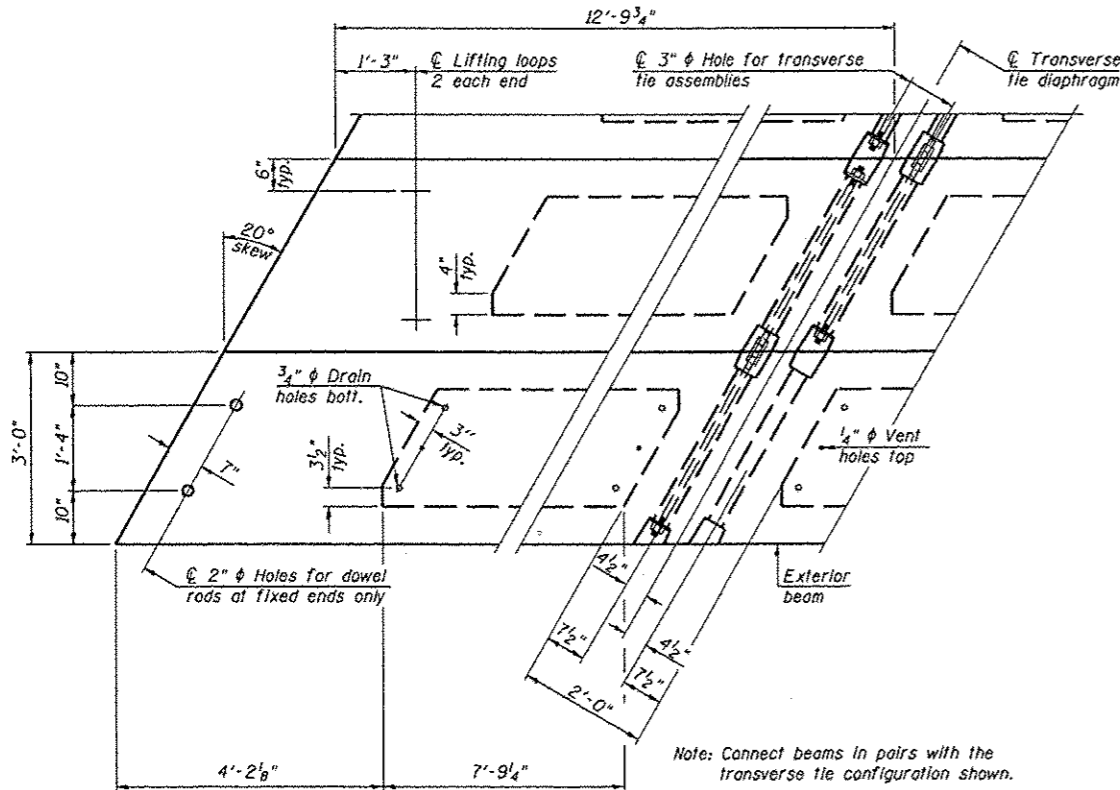


BAR U(E)



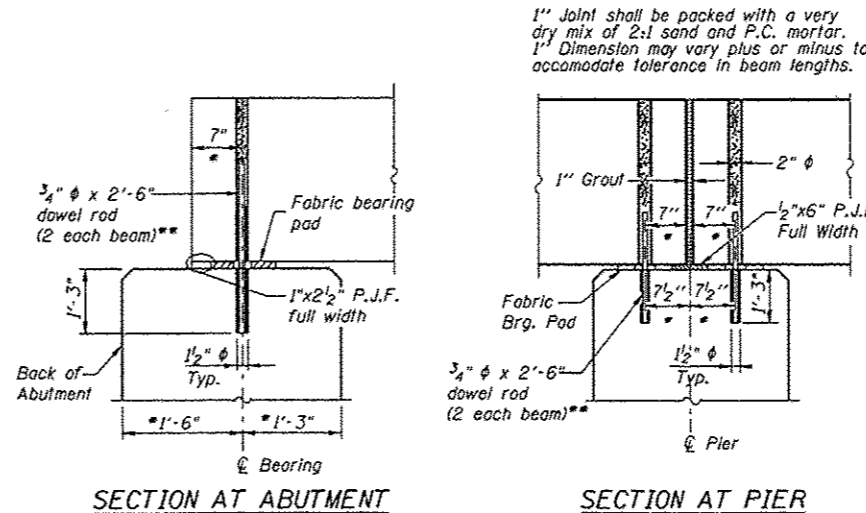
LIFTING LOOP DETAIL

BAR U1(E)



PLAN VIEW

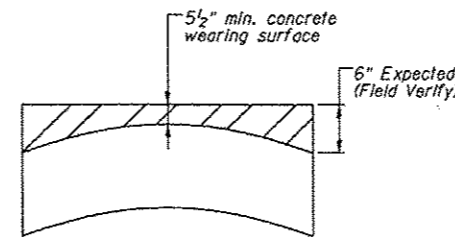
Note: Connect beams in pairs with the transverse tie configuration shown.



SECTION AT ABUTMENT

SECTION AT PIER

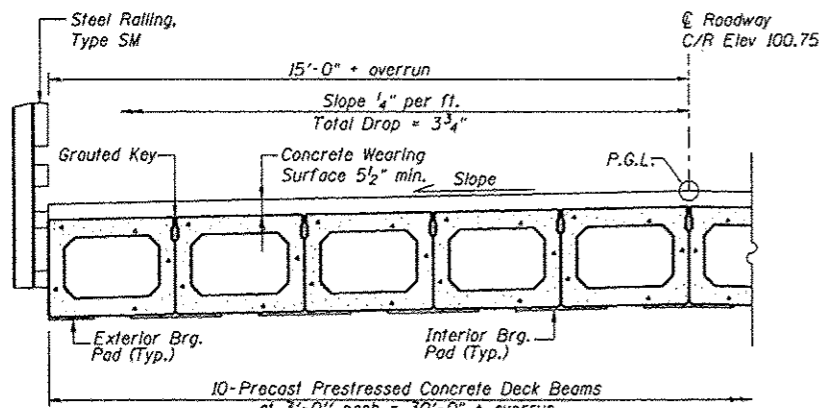
* Perpendicular to centerline of abutment or pier
** Dowel rods to be grouted after beams are in place and prior to grouting the shear keys



CAMBER DIAGRAM
Along Center of Beam

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 5/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling. Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



HALF CROSS SECTION

BILL OF MATERIAL
SPANS 1 AND 3

| | | |
|---|---------|------|
| Precast Prestressed Conc. Deck Bms. (27" depth) | Sq. Ft. | 1538 |
|---|---------|------|

27" x 36" PPC DECK BEAM
STRUCTURE NO. 092-3457
SPANS 1 AND 3

| | | | | | |
|------|-------------------|-----|------|----------|----|
| DSGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Frauenhoffer | NO. | DATE | REVISION | BY |

FRAUENHOFFER & ASSOCIATES
A division of Engineering Resource Associates, Inc.
Consulting Engineers, Scientists, & Surveyors

3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

SUPERSTRUCTURE DETAILS (SHEET 2 OF 4)

FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
SEC 08-00130-05-BR
FULTON COUNTY

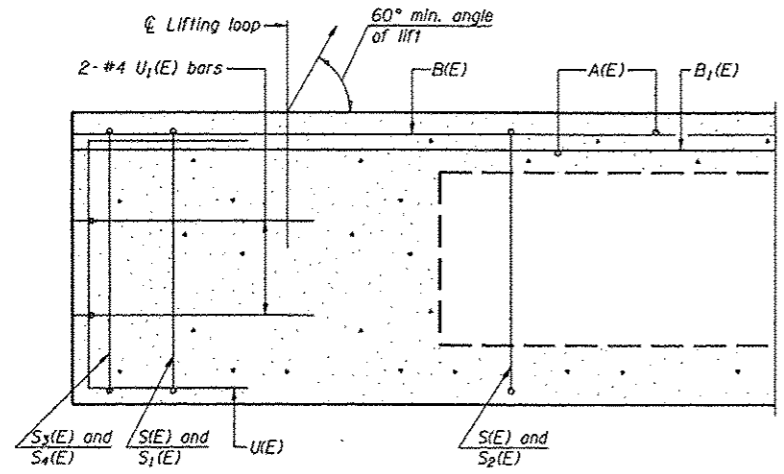
| | |
|----------|-------------|
| SHEET | 8 |
| DWG NO. | 9028SUP.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

PD-2736-LD

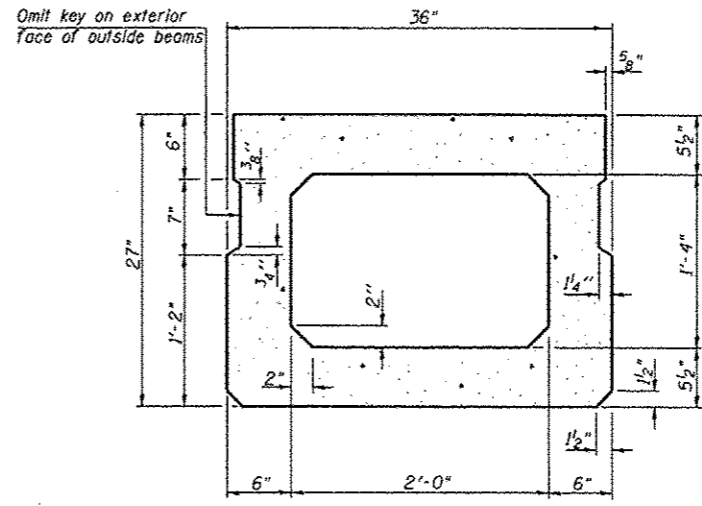
11-1-09

| | | | | |
|-----------------------|---------|----------|------------------|--------------|
| ROUTE NO. | SECTION | COUNTY | SHEET NO. | TOTAL SHEETS |
| FAS452 | * | FULTON | 26 | 9 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | FED. AID PROJECT | |

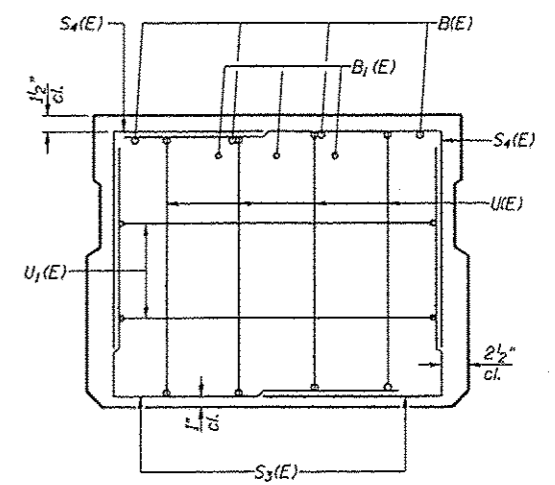
* 09-00130-05-BR



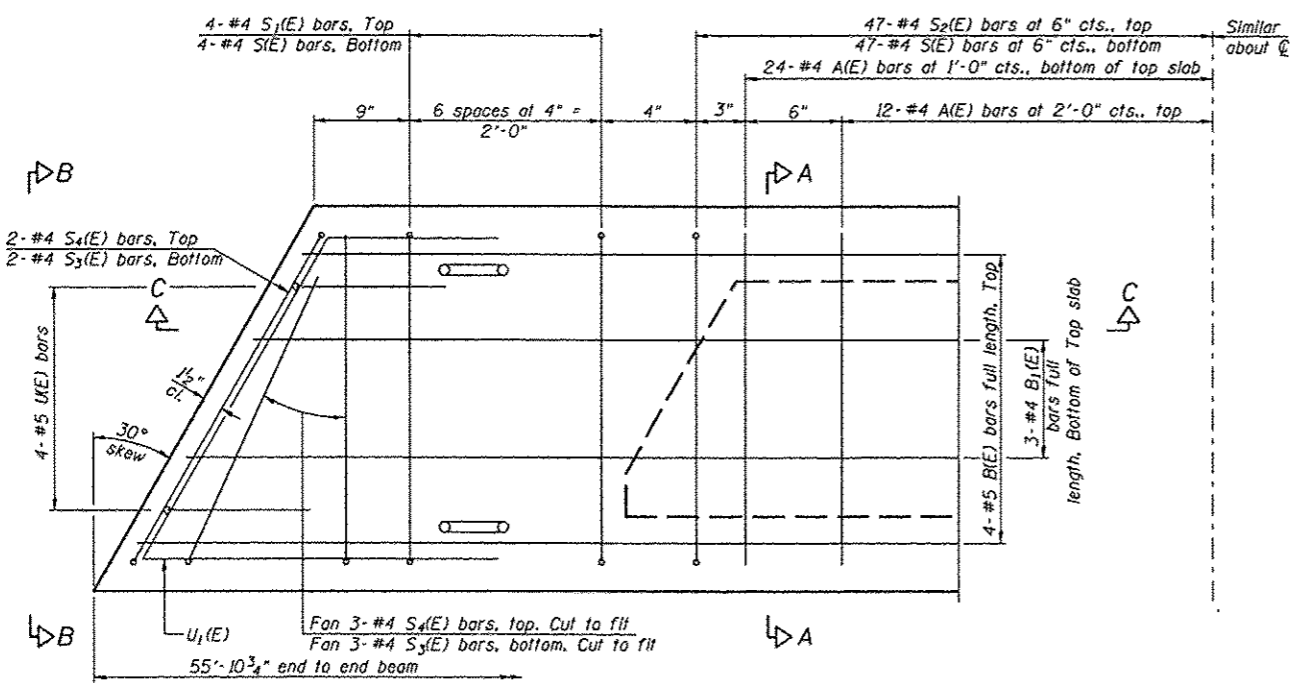
SECTION C-C



SECTION A-A
(Showing dimensions)

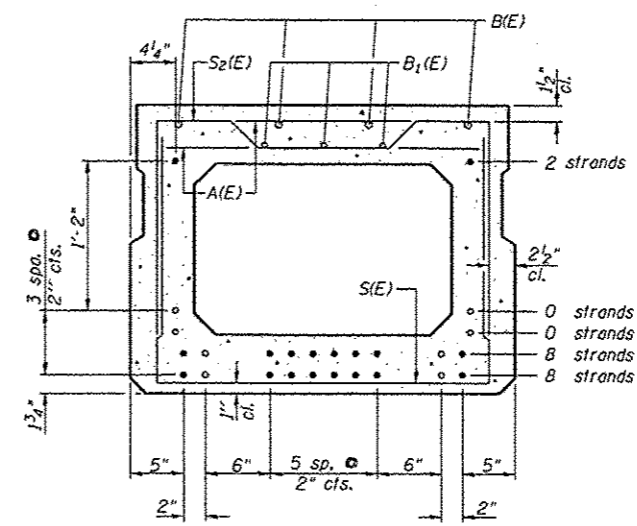


VIEW B-B



PLAN VIEW

Note: Spacing of S1(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A
(Showing reinforcement and permissible strand locations)
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

| Bar | No. | Size | Length | Shape |
|-------|-----|------|--------|-------|
| A(E) | 72 | #4 | 2'-7" | — |
| B(E) | 16 | #5 | 16'-0" | — |
| B1(E) | 12 | #4 | 16'-0" | — |
| S1(E) | 104 | #4 | 6'-5" | — |
| S2(E) | 8 | #4 | 5'-11" | — |
| S3(E) | 96 | #4 | 6'-2" | — |
| S4(E) | 10 | #4 | 4'-6" | — |
| S4(E) | 10 | #4 | 4'-3" | — |
| U1(E) | 8 | #5 | 4'-6" | — |
| U1(E) | 4 | #4 | 6'-8" | — |

Note: See sheet 4 of 4 for additional details and Bill of Material.

See "CONCRETE WEARING SURFACE" sheet for details on the pairs of (D/E) bars at each embed anchor for SM rolling. The cost shall be included with the cost of the deck beams.

27" x 36" PPC DECK BEAM
STRUCTURE NO. 092-3457
SPAN 2

PD-2736-L 11/1/09

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | K.J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |



FRAUENHOFFER & ASSOCIATES
A division of Engineering Resource Associates, Inc.
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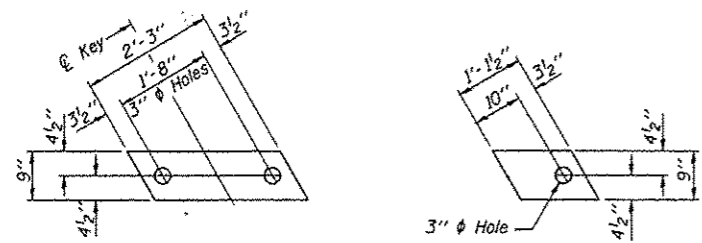
3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

SUPERSTRUCTURE DETAILS (SHEET 3 OF 4)
FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
SEC 08-00130-05-BR
FULTON COUNTY

| | |
|----------|-------------|
| SHEET | 9 |
| DWG NO. | 9029SUP.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

| ROUTE NO. | SECTION | COUNT | NO. SHEETS | SHEET |
|---------------------|---------|----------------|------------|-------|
| FAS452 | # | FULTON | 26 | 10 |
| FED. ROAD DIST. NO. | | FULTON PROJECT | | |

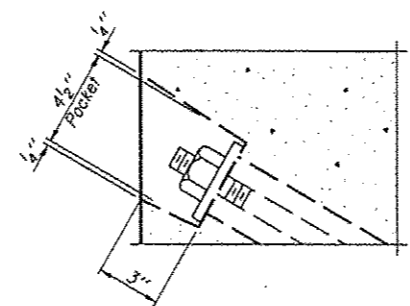
* 09-00130-05-BR



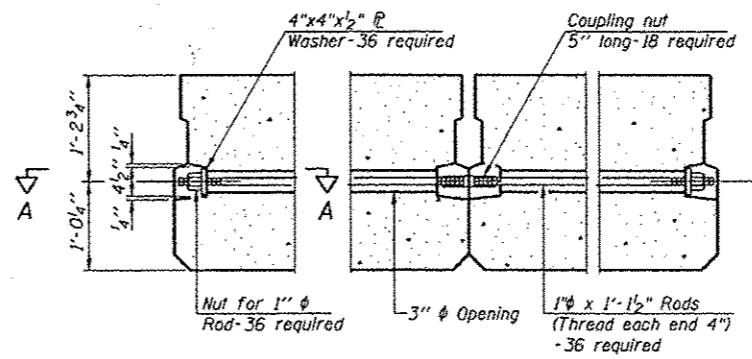
FABRIC BEARING PAD
(Interior) **FABRIC BEARING PAD**
(Exterior)

FIXED

NOTES:
All bearing pads shall be 1" thick
Omit holes when using expansion bearings
Expansion bearing shall be bonded to the substructure.

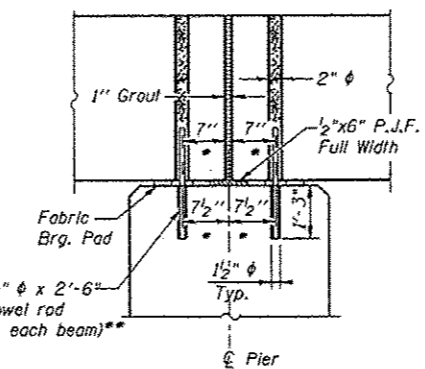


SECTION A-A



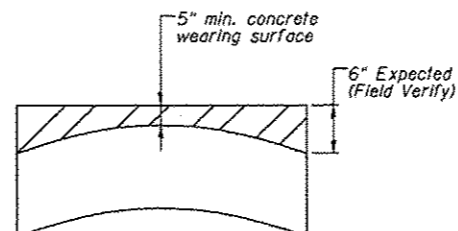
TYPICAL TRANSVERSE TIE ASSEMBLY

1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar.
1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.



SECTION AT PIER

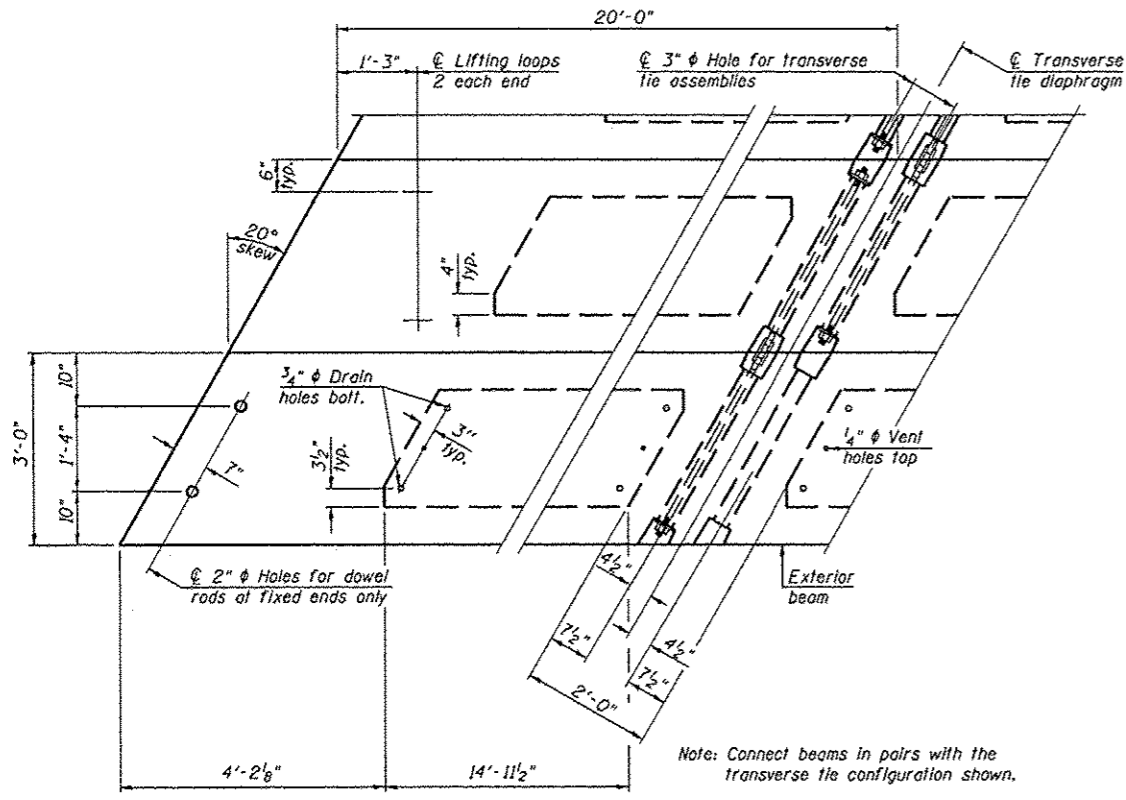
* Perpendicular to C of abutment or pier
** Dowel rods to be grouted after beams are in place and prior to grouting the shear keys



CAMBER DIAGRAM
Along Center of Beam

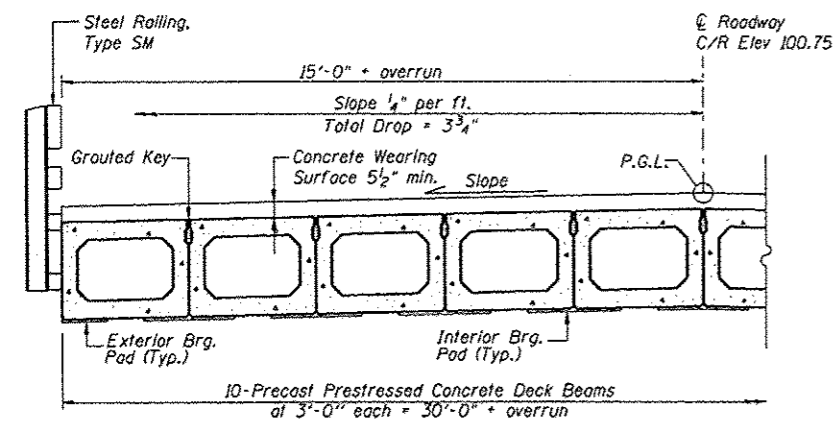
NOTES

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

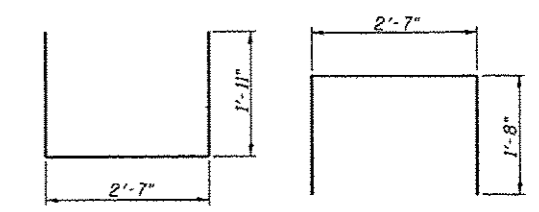


PLAN VIEW

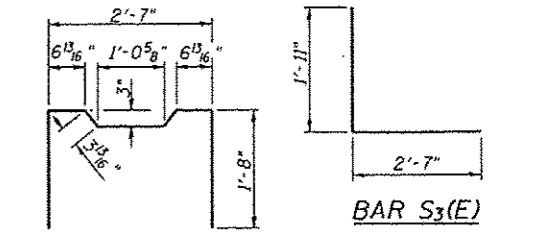
Note: Connect beams in pairs with the transverse tie configuration shown.



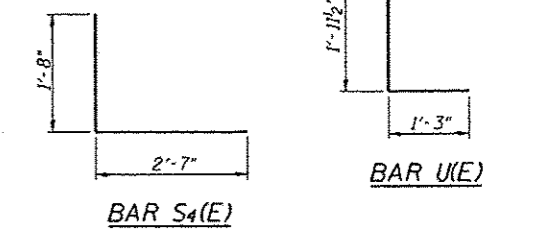
HALF CROSS SECTION



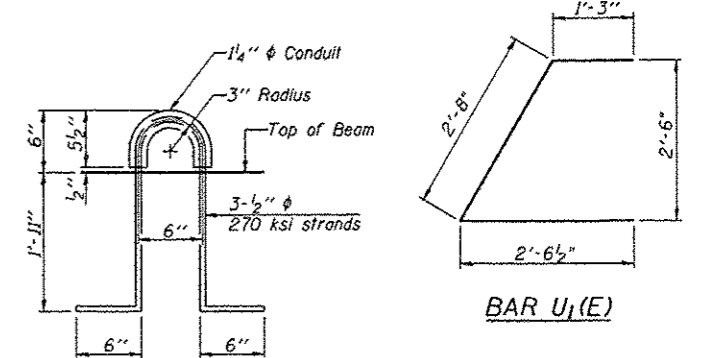
BAR S1(E) **BAR S2(E)**



BAR S3(E) **BAR S4(E)**



BAR U1(E) **BAR U2(E)**



LIFTING LOOP DETAIL

BILL OF MATERIAL
SPANS 1 AND 3

| | | |
|---|---------|------|
| Precast Prestressed Conc. Deck Bms. (27" depth) | Sq. Ft. | 1677 |
|---|---------|------|

27" x 36" PPC DECK BEAM
STRUCTURE NO. 092-3457
SPAN 2

PD-2736-LD 11/1/09

| | | | | | |
|------|-----------------|-----|------|----------|----|
| DSGN | K.J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | A. Frauenhoffer | NO. | DATE | REVISION | BY |

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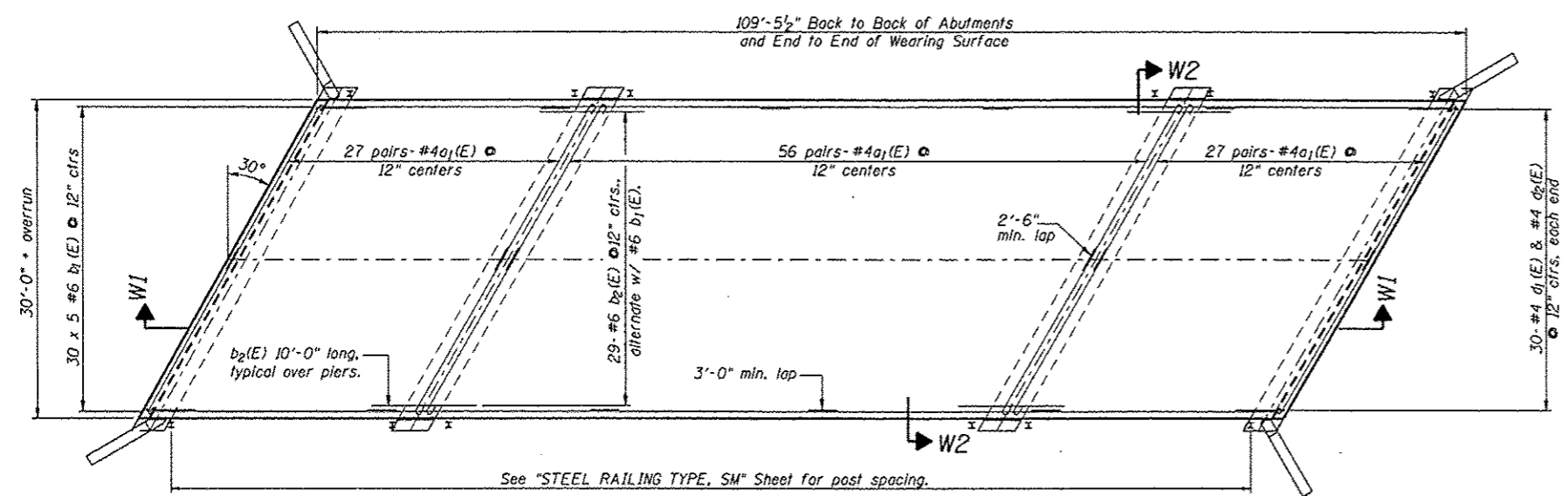
3002 CROSSING COURT
CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

SUPERSTRUCTURE DETAILS (SHEET 4 OF 4)
FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
SEC 08-00130-05-BR
FULTON COUNTY

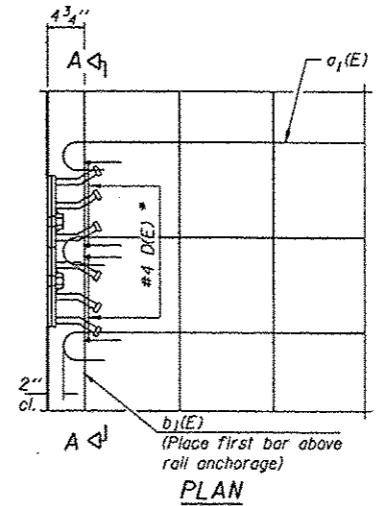
| | |
|----------|-------------|
| SHEET | 10 |
| DWG NO. | 9029SUP.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

| | | | | |
|-----------------------|---------|----------|--------|------------------|
| ROUTE NO. | SECTION | COUNTY | SHEETS | NO. |
| FAS452 | # | FULTON | 26 | 11 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | | FED. AID PROJECT |

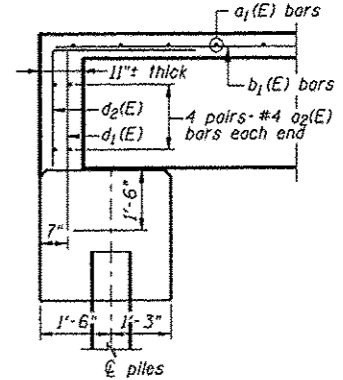
08-00130-05-BR



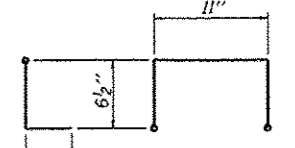
PLAN VIEW



Notes:
Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam.

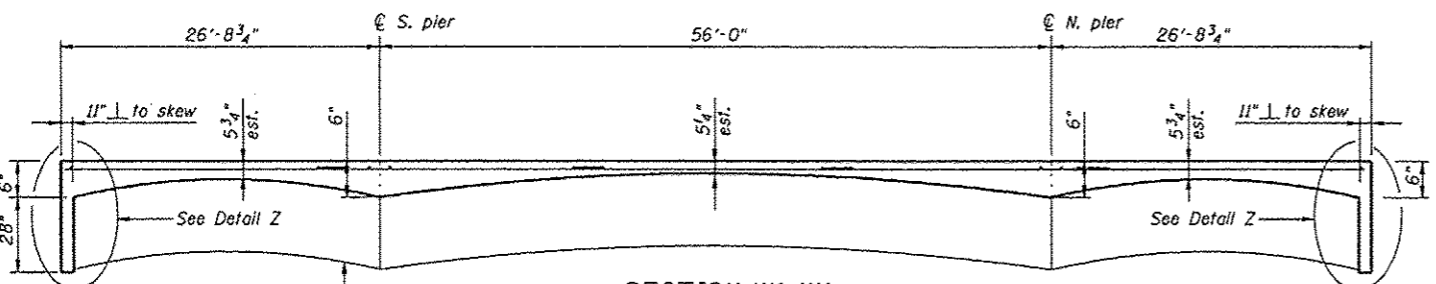


DETAIL Z
Cut perpendicular to skew.

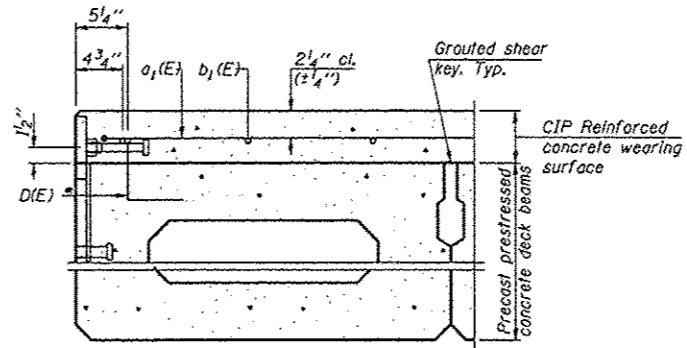


BAR DIE

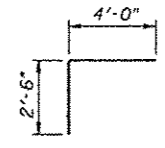
* Place 2-#4 DIE bars in beam at each post location as shown. DIE bar included in cost of beam, but not broken out in the PPC Deck Beam(s) Bill of Materials.



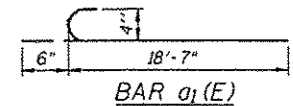
SECTION W1-W1
(Exaggerated Vertical Scale)



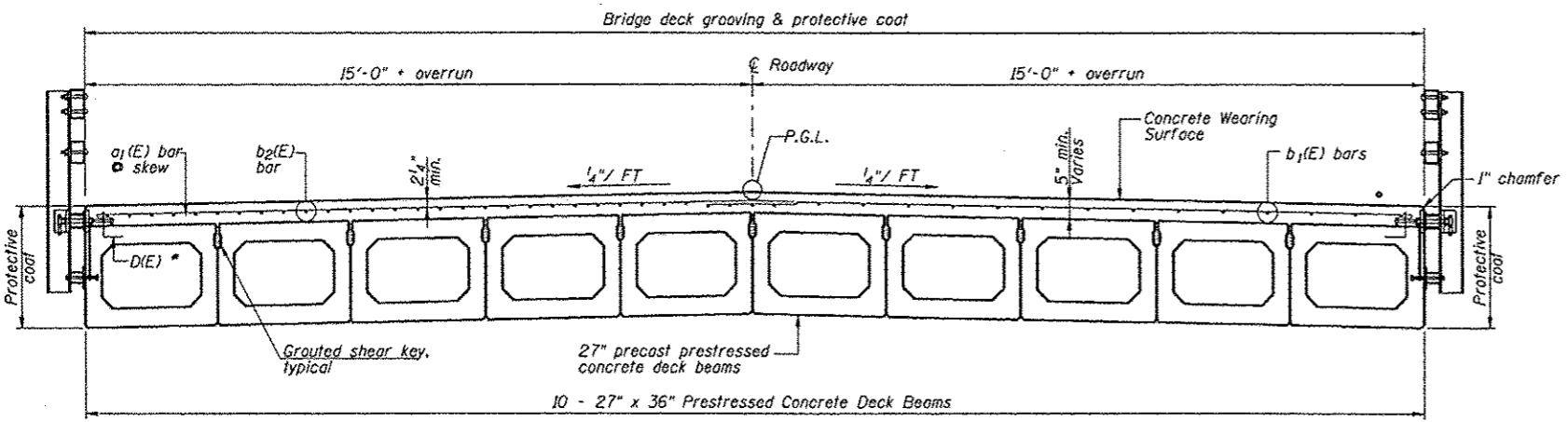
SECTION THRU FASCIA BEAM



BAR d2(E)

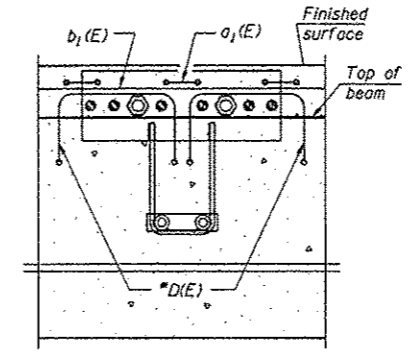


BAR a1(E)



SECTION W2-W2

Section through beams and wearing surface.



SECTION A-A

| BILL OF MATERIAL | | | | |
|---------------------------------|-----|------|----------|-------|
| Bar | No. | Size | Length | Shape |
| a1(E) | 220 | # 4 | 19'-1" | — |
| a2(E) | 16 | # 4 | 18'-7" | — |
| b1(E) | 150 | # 6 | 24'-4" | — |
| b2(E) | 58 | # 6 | 10'-0" | — |
| d1(E) | 60 | # 4 | 4'-0" | — |
| d2(E) | 60 | # 4 | 6'-6" | — |
| Concrete Wearing Surface, 5" | | | Sq. Yds. | 365 |
| Bridge Deck Grooving | | | Sq. Yds. | 365 |
| Protective Coat | | | Sq. Yds. | 432 |
| Reinforcement Bars Epoxy Coated | | | Lbs. | 9780 |

Notes : Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus "30 x 5 -#6 b etc..." indicates 30 lines of bars with 5 lengths per line.
Concrete shall be Class BS.
Prior to the placement of the concrete, the top surface of the beams shall be clean and free of foreign material. See GBSP 34.

| | | | | | |
|------|-------------------|-----|------|----------|----|
| DSGN | K.J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Frauenhoffer | NO. | DATE | REVISION | BY |

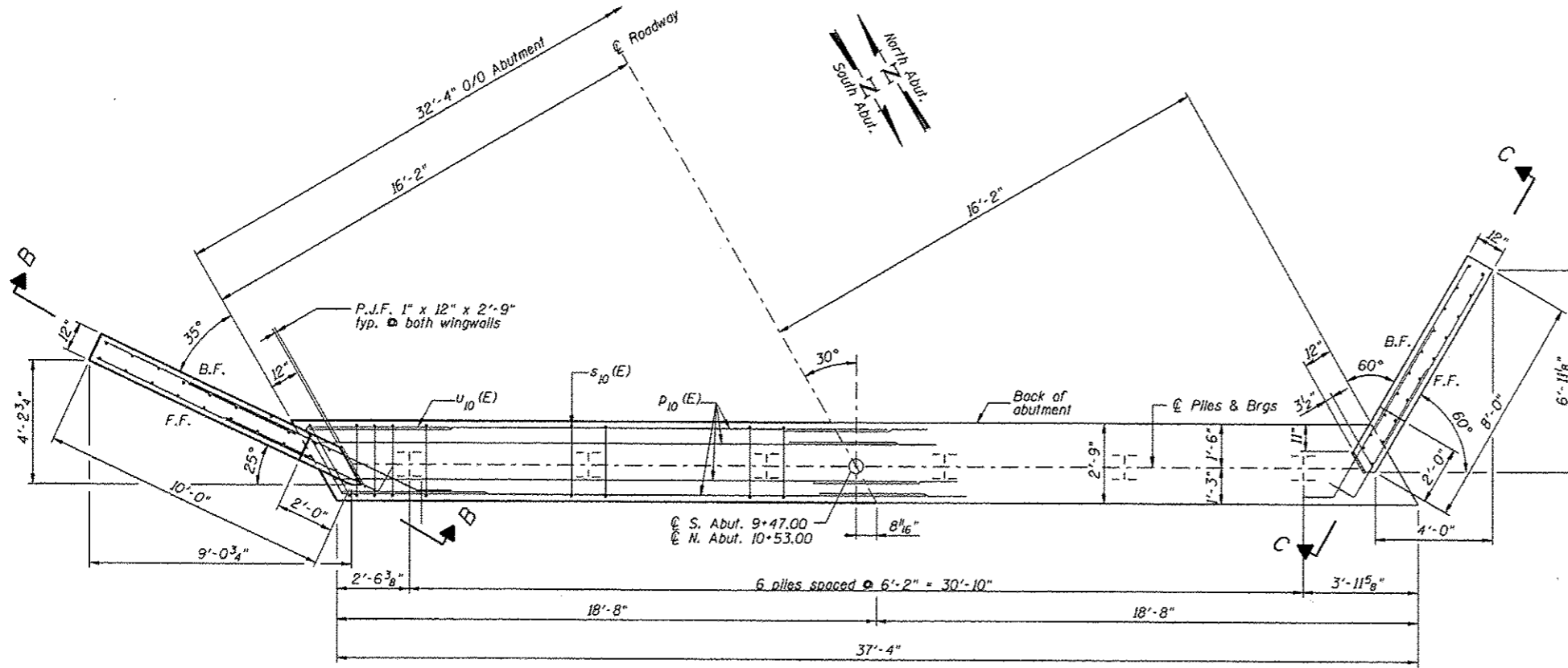
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PHONE (217) 351-6268
FAX (217) 355-1902

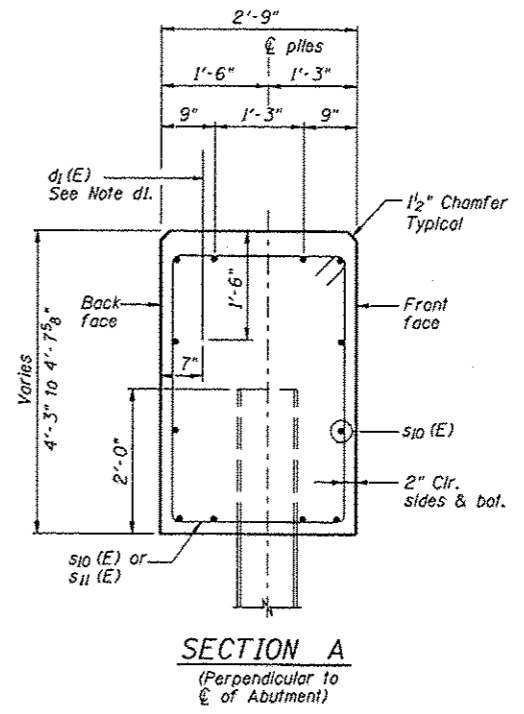
| | | |
|--|--|---------------------|
| CONCRETE WEARING SURFACE | | SHEET 11 |
| FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK | | DWG NO. 9029WRG.dgn |
| SEC 08-00130-05-BR | | DATE DEC 2012 |
| FULTON COUNTY | | PROJ NO. 9029 |

| ROUTE NO. | SECTION | EDDITY | DATE | SHEET |
|-----------------------|---------|---------------------------|------|-------|
| FAS452 | * | FULTON | 26 | 12 |
| FED. ROAD DIST. NO. 1 | | ILLINOIS FED. AID PROJECT | | |

* 09-00130-05-BR



PLAN
(Symmetrical about \bar{C} Abutment)

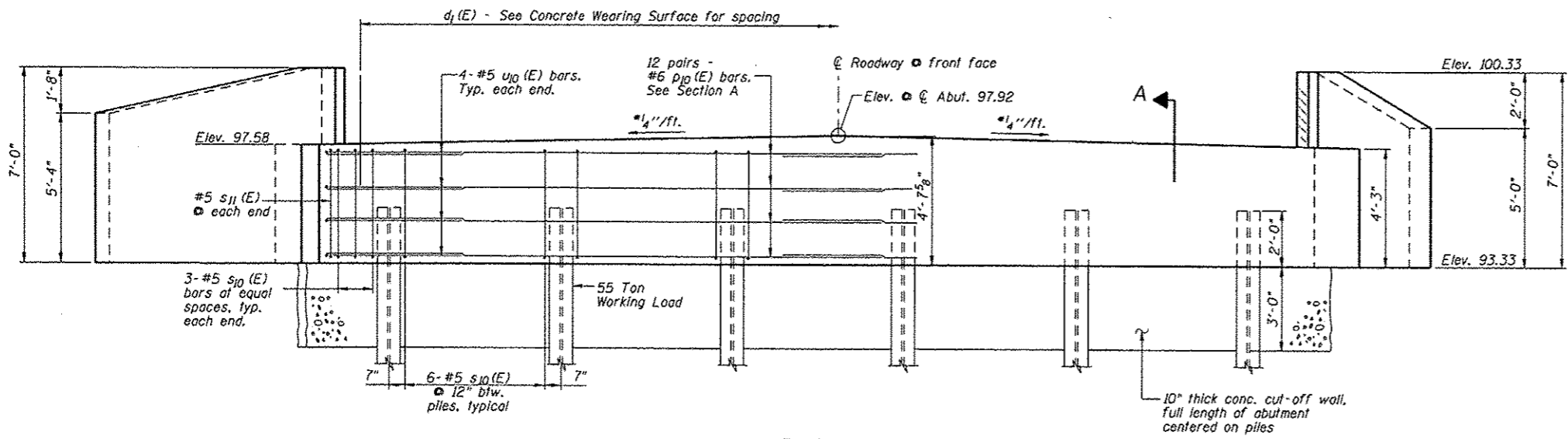


SECTION A
(Perpendicular to \bar{C} of Abutment)

Note d1: Bar d (E) is included in the Concrete Wearing Surface. Full height of bar is not shown.

BILL OF MATERIAL - 2 ABUTS.

| Bar | No. | Size | Length | Shape |
|----------------------------------|-----|----------|--------|-------|
| h11 (E) | 10 | # 6 | 7'-0" | — |
| h12 (E) | 10 | # 5 | 8'-0" | — |
| h13 (E) | 10 | # 7 | 10'-1" | — |
| h14 (E) | 10 | # 5 | 7'-4" | — |
| h15 (E) | 2 | # 5 | 9'-8" | — |
| h16 (E) | 2 | # 5 | 8'-9" | — |
| h17 (E) | 2 | # 5 | 6'-2" | — |
| h18 (E) | 2 | # 5 | 5'-3" | — |
| h19 (E) | 2 | # 5 | 9'-9" | — |
| h20 (E) | 2 | # 5 | 8'-10" | — |
| h21 (E) | 10 | # 6 | 6'-3" | — |
| h22 (E) | 10 | # 5 | 6'-9" | — |
| h23 (E) | 10 | # 7 | 8'-0" | — |
| h24 (E) | 10 | # 5 | 6'-6" | — |
| h25 (E) | 2 | # 5 | 7'-4" | — |
| h26 (E) | 2 | # 5 | 7'-1" | — |
| h27 (E) | 2 | # 5 | 4'-7" | — |
| h28 (E) | 2 | # 5 | 4'-4" | — |
| h29 (E) | 2 | # 5 | 7'-11" | — |
| h30 (E) | 2 | # 5 | 7'-8" | — |
| d10 (E) | 48 | # 6 | 20'-6" | — |
| s10 (E) | 72 | # 5 | 13'-5" | — |
| s11 (E) | 4 | # 5 | 14'-2" | — |
| u10 (E) | 16 | # 5 | 12'-7" | — |
| v1 (E) | 20 | # 4 | 6'-9" | — |
| v2 (E) | 4 | # 4 | 6'-7" | — |
| v3 (E) | 4 | # 4 | 6'-4" | — |
| v4 (E) | 4 | # 4 | 6'-2" | — |
| v5 (E) | 4 | # 4 | 5'-11" | — |
| v6 (E) | 4 | # 4 | 5'-9" | — |
| v7 (E) | 4 | # 4 | 5'-6" | — |
| v8 (E) | 4 | # 4 | 5'-4" | — |
| v9 (E) | 4 | # 4 | 5'-1" | — |
| v10 (E) | 4 | # 4 | 6'-6" | — |
| v11 (E) | 4 | # 4 | 6'-3" | — |
| v12 (E) | 4 | # 4 | 5'-11" | — |
| v13 (E) | 4 | # 4 | 5'-8" | — |
| v14 (E) | 4 | # 4 | 5'-4" | — |
| v15 (E) | 4 | # 4 | 5'-1" | — |
| v16 (E) | 4 | # 4 | 4'-10" | — |
| Concrete Structures | | Cu. Yds. | 41.6 | |
| Reinforcement Bars, Epoxy Coated | | Lbs. | 4130 | |
| Test Pile, Steel HPIx42 | | Each | 2 | |
| Furnish Steel Piles HPIx42 | | Foot | 330 | |
| Driving Piles | | Foot | 330 | |
| Pile Shoes | | Each | 12 | |
| Name Plate | | Each | 1 | |
| Concrete Cut-off Wall | | Cu. Yds. | 6.9 | |
| Structure Excavation | | Cu. Yds. | 225 | |
| Controlled Low-Strength Material | | Cu. Yds. | 105 | |



ELEVATION
Front Projection
(Symmetrical about \bar{C} Roadway)
* Perpendicular to Roadway

| | | | | | |
|-----------------------|-----|------|----------|----|------|
| DSGNK. J. Hoffmann | | | | | |
| DR K. J. Hoffmann | | | | | |
| CHK J.R. Wolf | | | | | |
| APVD J.A. Fraenhoffer | NO. | DATE | REVISION | BY | APVD |

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3002 CROSSING COURT
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PHONE (217) 351-6268
FAX (217) 355-1902

| | | |
|--|--|---------------------|
| ABUTMENT DETAILS (SHEET 1 OF 2) | | SHEET 12 |
| FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK | | DWG NO. 9029ABT.dgn |
| SEC 08-00130-05-BR | | DATE DEC 2012 |
| FULTON COUNTY | | PROJ NO. 9029 |

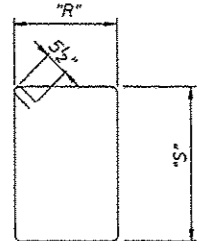
| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL SHEETS |
|-----------------------|---------|----------------|-------|--------------|
| FAS452 | | FULTON | 26 | 13 |
| FED. ROAD DIST. NO. 7 | | FULTON PROJECT | | |

09-00130-05-BR

PILE DATA

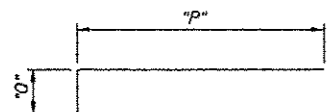
Type: Steel HP 10 x 42
 Nominal Required Bearing: 335 kips
 Factored Resistance Available: 184.5 kips
 Estimated Length: 33 ft.
 No. Required: 5 @ North Abutment
 5 @ South Abutment
 Test Piles: 1 @ North Abutment
 1 @ South Abutment

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



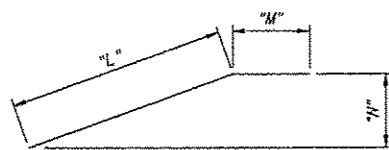
S₁₀ (E) & S₁₁ (E) BARS

| Bar | "R" | "S" |
|---------------------|-----------|--------|
| S ₁₀ (E) | 2'-5" | 3'-10" |
| S ₁₁ (E) | 2'-9 1/2" | 3'-10" |



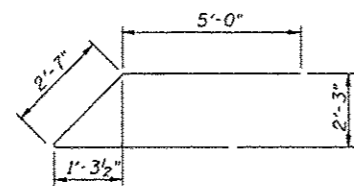
h₁₁ (E) & h₂₁ (E) BARS

| Bar | "P" | "O" |
|---------------------|-------|-----|
| h ₁₁ (E) | 6'-0" | 12" |
| h ₂₁ (E) | 5'-3" | 12" |

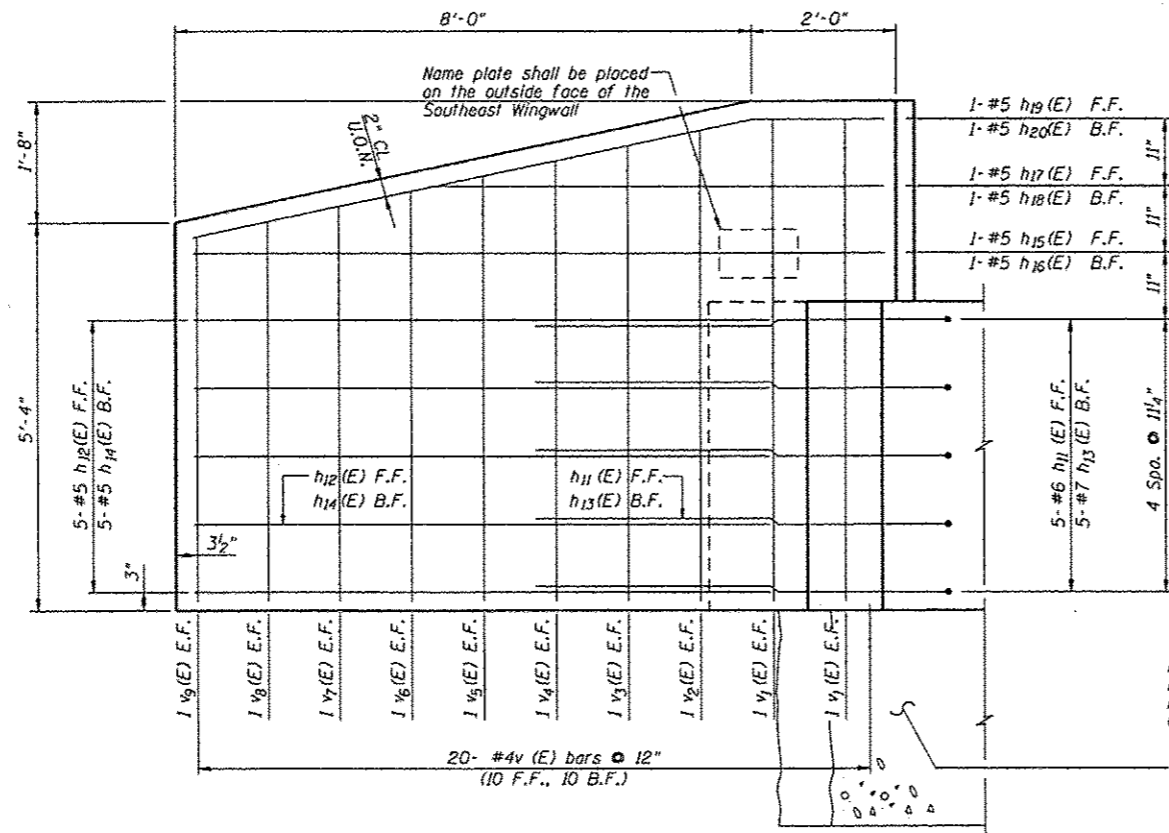


h₁₃ (E), h₁₉ (E), h₂₀ (E), h₂₃ (E), h₂₉ (E), & h₃₀ (E) BARS

| Bar | "L" | "M" | "N" |
|---------------------|--------|--------|------------|
| h ₁₃ (E) | 8'-11" | 1'-2" | 3'-9" |
| h ₁₉ (E) | 7'-11" | 1'-10" | 1'-7 1/2" |
| h ₂₀ (E) | 7'-11" | 11" | 1'-7 1/2" |
| h ₂₃ (E) | 6'-10" | 1'-2" | 3'-5" |
| h ₂₉ (E) | 6'-1" | 1'-10" | 1'-11 1/4" |
| h ₃₀ (E) | 6'-1" | 1'-7" | 1'-11 1/4" |

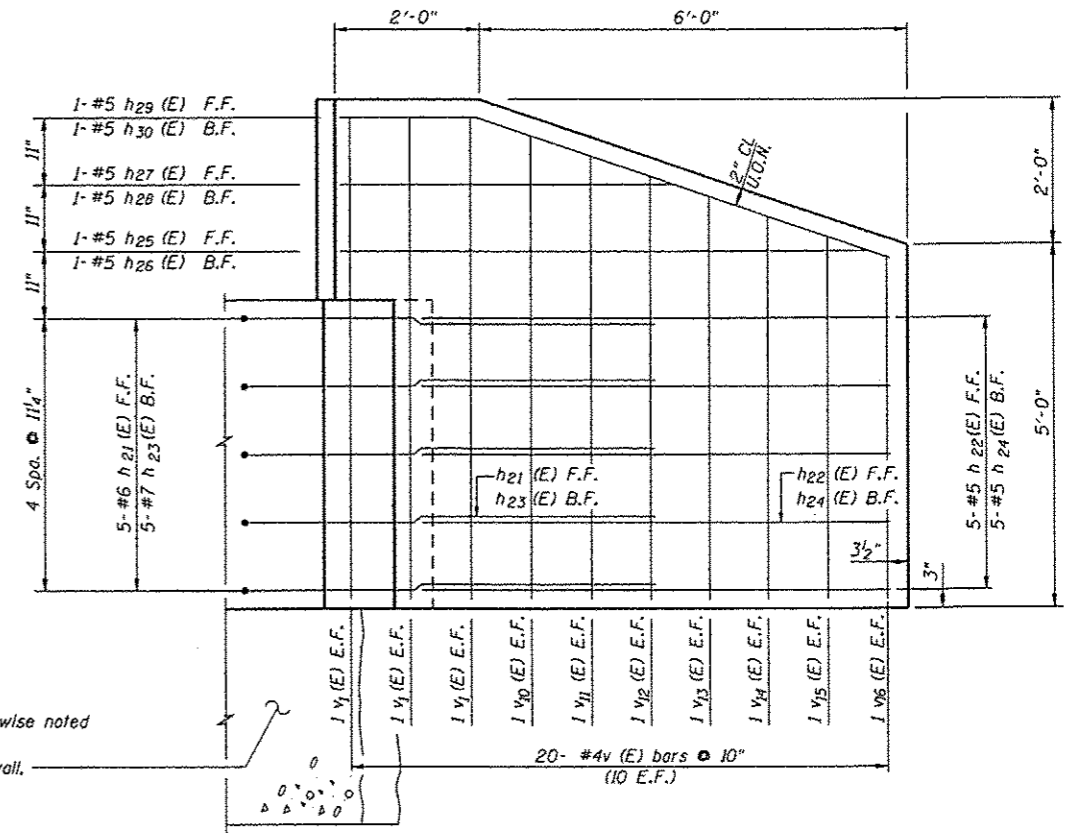


BAR U₁₀ (E)



ELEV. B-B

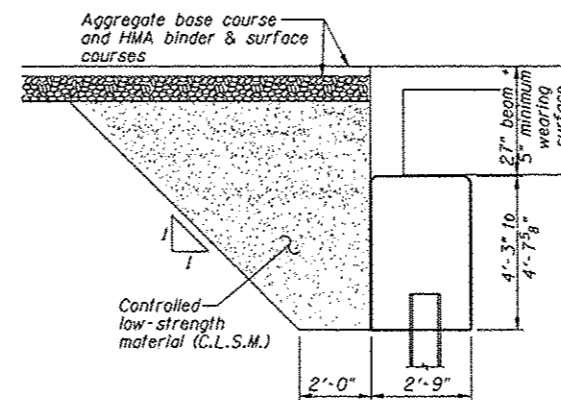
Wingwalls shall be poured after beams are in place.



ELEV. C-C

Wingwalls shall be poured after beams are in place.

F.F. - Front Face
 B.F. - Back Face
 E.F. - Each Face
 U.O.N. - Unless otherwise noted



DETAIL BEHIND ABUTMENT

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | K.J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |

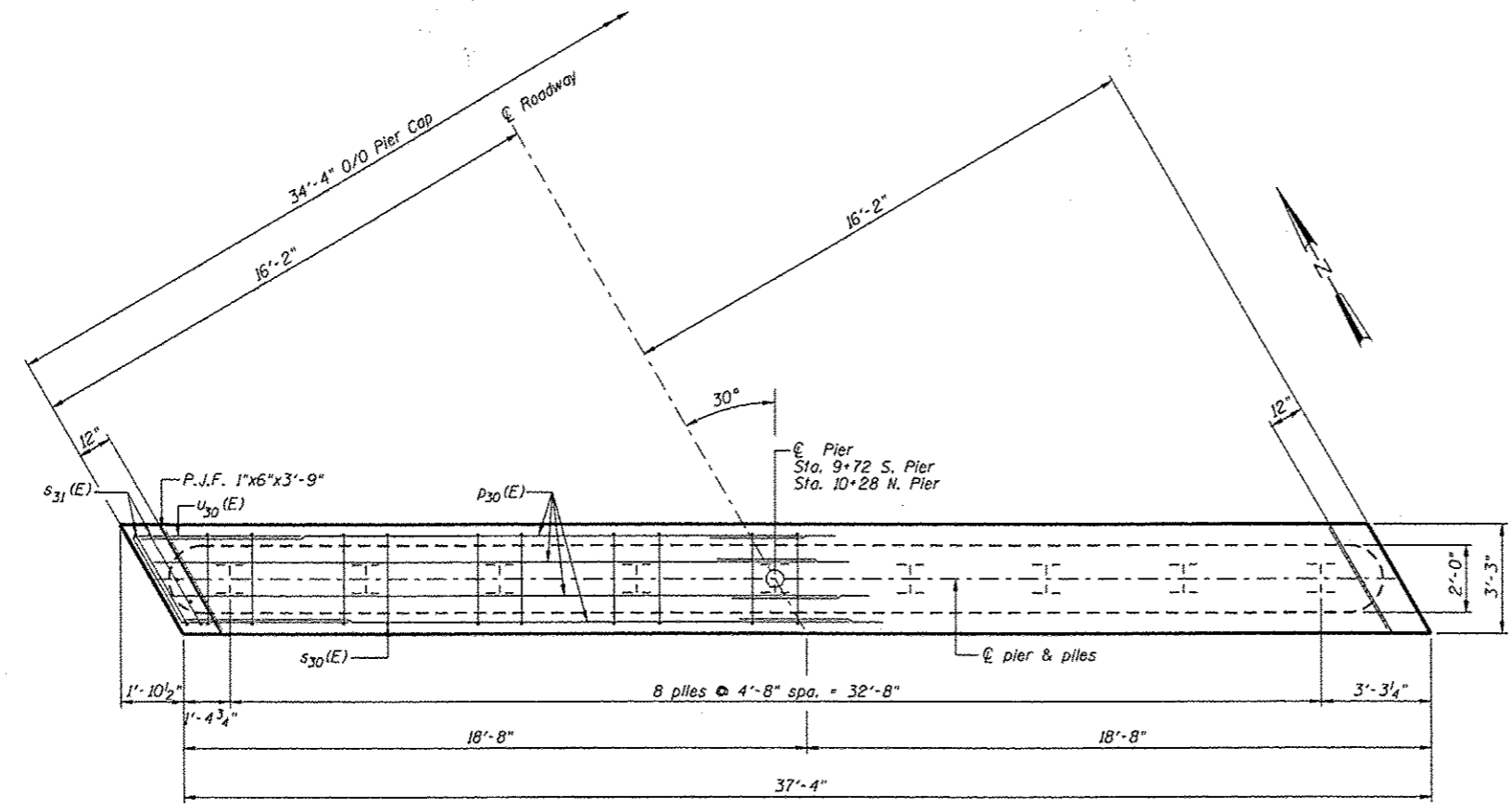
FRAUENHOFER & ASSOCIATES
 A division of Engineering Resource Associates, Inc.
 Consulting Engineers, Scientists, & Surveyors

3002 CROSSING COURT
 CHAMPAIGN, IL 61822
 PHONE (217) 351-5258
 FAX (217) 355-1902

| | | |
|--|--|---------------------|
| ABUTMENT DETAILS (SHEET 2 OF 2) | | SHEET 13 |
| FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK | | DWG NO. 9029ABT.dgn |
| SEC 08-00130-05-BR | | DATE DEC 2012 |
| FULTON COUNTY | | PROJ NO. 9029 |

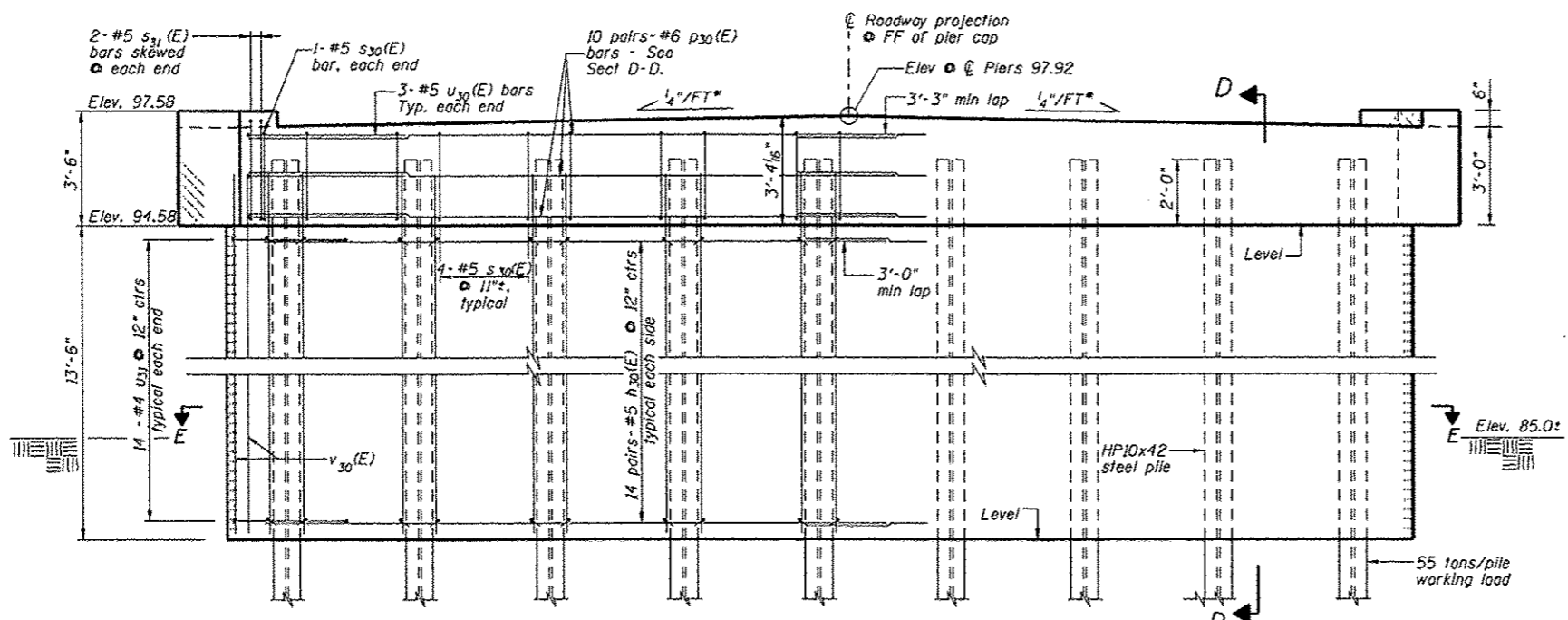
| ROUTE NO. | SECTION | COUNTY | SHEET NO. | TOTAL SHEETS |
|-----------------------|---------|----------|-----------|------------------|
| FAS452 | | FULTON | 26 | 14 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | | FED. AID PROJECT |

* 09-00130-05-BR



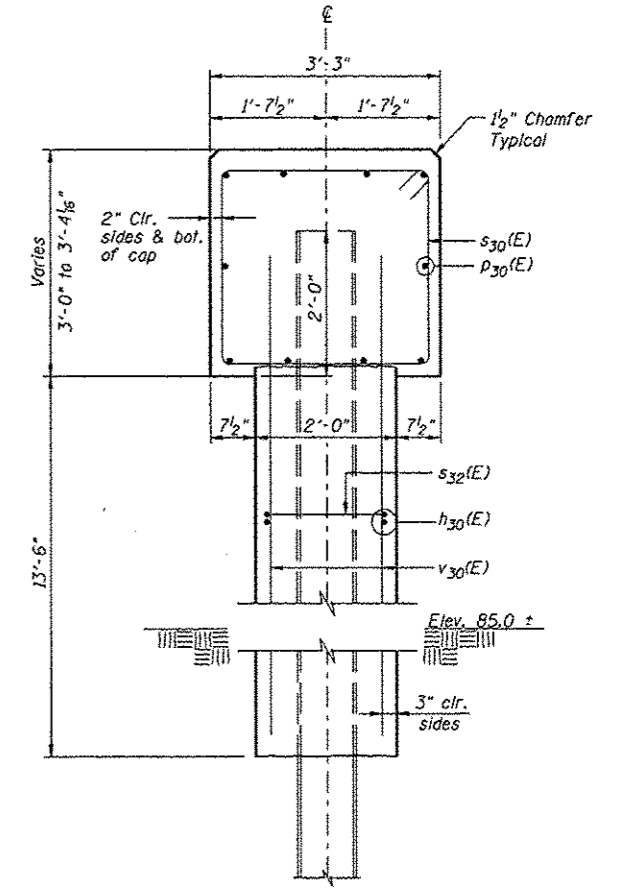
PLAN
(Symmetrical about \bar{C} Pier)

NOTE: All edges shall have standard $\frac{1}{4}$ " chamfer, except as noted.



ELEVATION

Front Projection
(Symmetrical about \bar{C} Roadway)
* Perpendicular to Roadway



SECTION D-D
(Perpendicular to \bar{C} of Pier)

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraunhoffer | NO. | DATE | REVISION | BY |

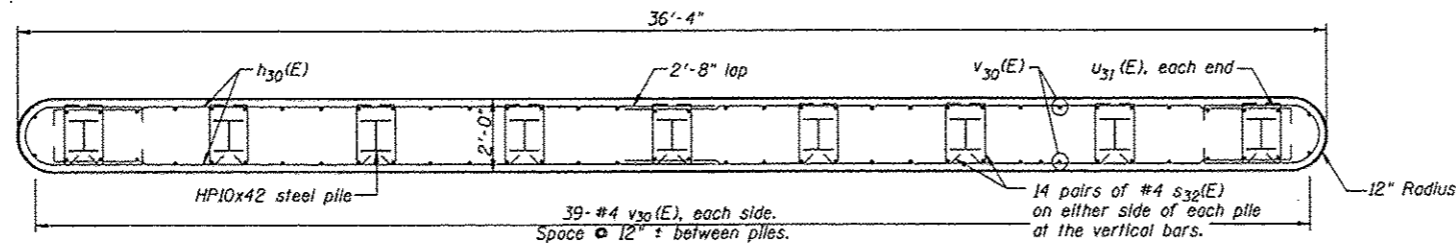
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CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

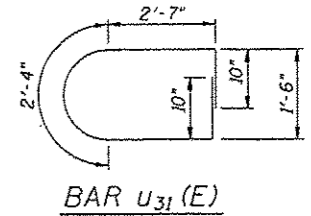
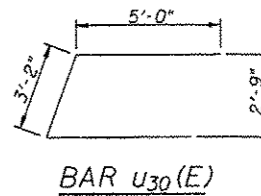
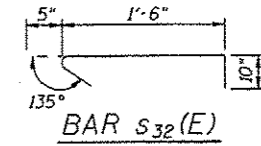
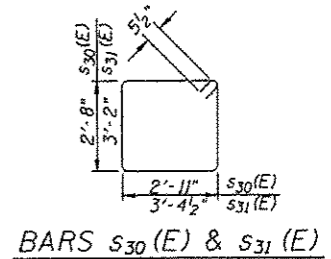
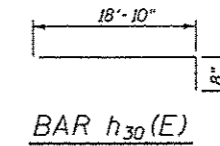
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| PIER DETAILS (SHEET 1 OF 2) | | SHEET 14 |
| FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK SEC 08-00130-05-BR FULTON COUNTY | | DWG NO. 9029PIER.dgn |
| | | DATE DEC 2012 |
| | | PROJ NO. 9029 |

| | | | | |
|-----------------------|-----------|------------------|-------|--------------|
| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL SHEETS |
| FAS452 | * | FULTON | 26 | 15 |
| FED. ROAD DIST. NO. 7 | FULLSCALE | FED. AID PROJECT | | |

* 09-00130-05-BR



SECTION E-E



BILL OF MATERIAL - 2 PIERS

| Bar | No. | Size | Length | Shape |
|---|-----|------|-----------------|--------------|
| h30(E) | 112 | # 5 | 19'-6" | — |
| v30(E) | 40 | # 6 | 20'-6" | — |
| s30(E) | 68 | # 5 | 12'-1" | □ |
| s31(E) | 8 | # 5 | 14'-0" | □ |
| s32(E) | 504 | # 4 | 2'-9" | ┌ |
| u30(E) | 12 | # 5 | 13'-2" | ┌ |
| u31(E) | 56 | # 4 | 9'-2" | ┌ |
| v30(E) | 148 | # 4 | 15'-0" | — |
| Concrete Structures | | | Cu. Yds. | 100.6 |
| Reinforcement Bars, Epoxy Coated | | | Lbs. | 7400 |
| Test Pile, HP10x42 | | | Each | 2 |
| Furnishing Steel Piles HP10x42 | | | Foot | 560 |
| Driving Piles | | | Foot | 560 |
| Pile Shoes | | | Each | 18 |
| Seal Coat Concrete | | | Cu. Yds. | 115 |
| Cofferdam Excavation | | | Cu. Yds. | 265 |
| Cofferdam (Type 2) (Location-1) | | | Each | 1 |
| Cofferdam (Type 2) (Location-2) | | | Each | 1 |

Reinforcement bars designated (E) shall be epoxy coated.

PILE DATA

Location: Piers
 Pile Type and Size: Steel HP 10x42
 Nominal Required Bearing: 335 kips
 Factored Resistance Available: 184.5 kips
 Estimated Pile Length: 35 ft.
 No. of Production Piles: 8 • North Pier
 8 • South Pier
 No. of Test Piles: 1 • North Pier
 1 • South Pier

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

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |

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 CHAMPAIGN, IL 61822
 PHONE (217) 351-6268
 FAX (217) 355-1902

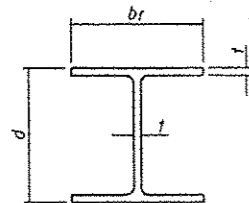
PIER DETAILS (SHEET 2 OF 2)

FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
 SEC 08-00130-05-BR
 FULTON COUNTY

| | |
|----------|--------------|
| SHEET | 15 |
| DWG NO. | 9029PIER.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

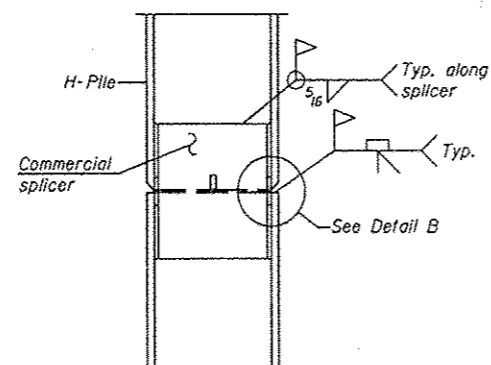
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|-----------------------|---------|---------------------------|--------------|-------|
| FAS452 | # | FULTON | 26 | 16 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS FED. AID PROJECT | | |

* 09-00130-05-BR

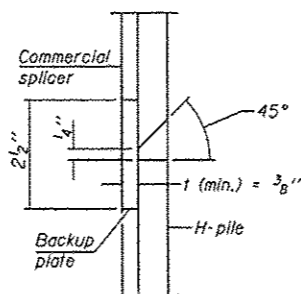


STEEL PILE TABLE

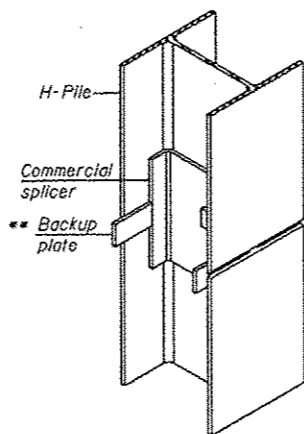
| Designation | Depth d | Flange width br | Web and Flange thickness t | Encasement diameter A |
|-------------|---------|-----------------|----------------------------|-----------------------|
| HP 14x117 | 14 1/4" | 14 7/8" | 13/16" | 30" |
| x102 | 14" | 14 3/4" | 1/16" | 30" |
| x89 | 13 7/8" | 14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



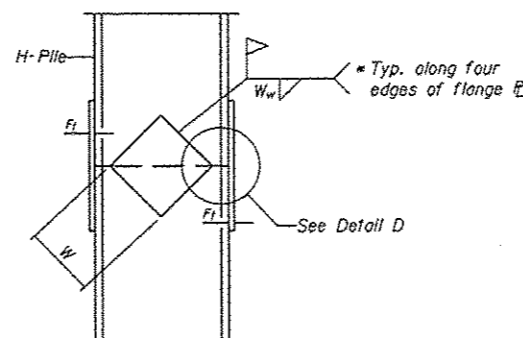
ELEVATION



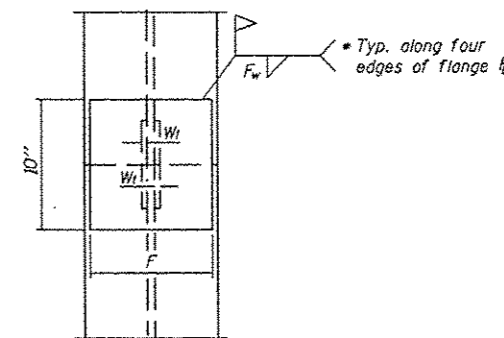
DETAIL "B"



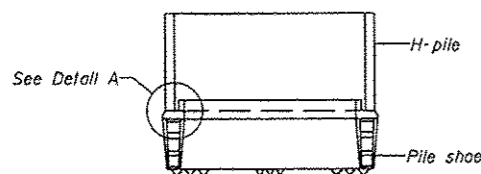
ISOMETRIC VIEW



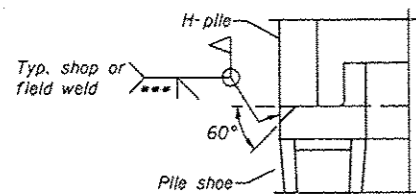
ELEVATION



END VIEW

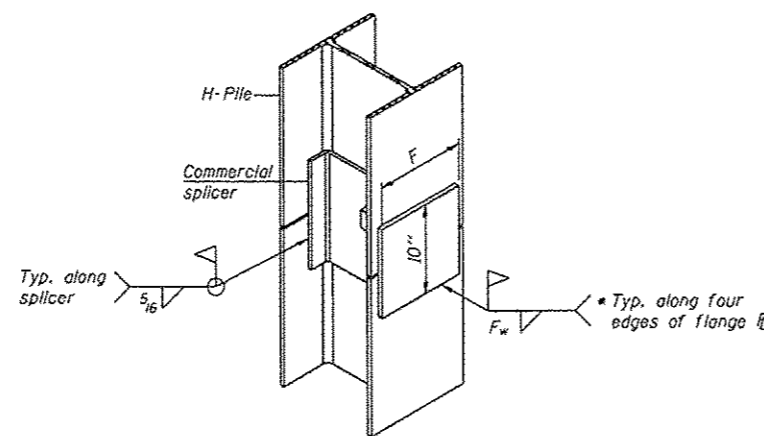


ELEVATION



DETAIL A

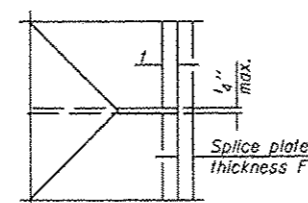
H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).



DETAIL D

WELDED PLATE FIELD SPLICE

| Designation | F | F1 | Fw | W | W1 | Ww |
|-------------|---------|------|-------|--------|--------|--------|
| HP 14x117 | 12 1/2" | 1" | 7/8" | 7 3/4" | 5 1/2" | 1 1/2" |
| x102 | 12 1/2" | 7/8" | 3/4" | 7 3/4" | 5 1/2" | 1 1/2" |
| x89 | 12 1/2" | 3/4" | 1/16" | 7 3/4" | 5 1/2" | 1 1/2" |
| x73 | 12 1/2" | 5/8" | 9/16" | 7 3/4" | 5 1/2" | 1 1/2" |
| HP 12x84 | 10" | 7/8" | 1/16" | 6 1/2" | 5 1/2" | 1 1/2" |
| x74 | 10" | 7/8" | 1/16" | 6 1/2" | 5 1/2" | 1 1/2" |
| x63 | 10" | 5/8" | 1/2" | 6 1/2" | 1 1/2" | 3/8" |
| x53 | 10" | 5/8" | 1/2" | 6 1/2" | 1 1/2" | 3/8" |
| HP 10x57 | 8" | 3/4" | 9/16" | 5 1/4" | 1 1/2" | 3/8" |
| x42 | 8" | 5/8" | 9/16" | 5 1/4" | 1 1/2" | 3/8" |
| HP 8x36 | 7" | 5/8" | 7/16" | 4 1/4" | 1 1/2" | 3/8" |

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

F-HP 7-1-10

STRUCTURE NO. 029-3214

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |

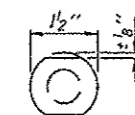
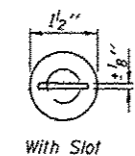
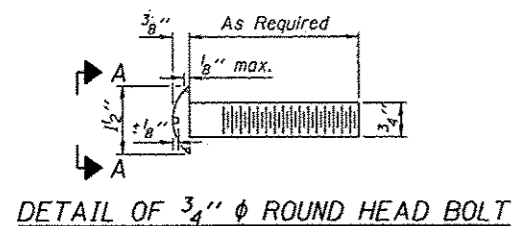
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Consulting Engineers, Scientists, & Surveyors

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CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

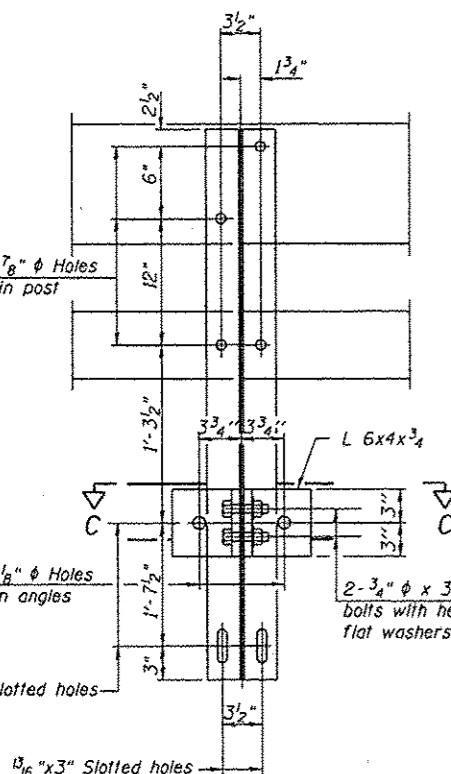
HP PILE DETAILS
FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
SEC 08-00130-05-BR
FULTON COUNTY

| | |
|----------|--------------|
| SHEET | 16 |
| DWG NO. | 9029PIER.dgn |
| DATE | AUG 2012 |
| PROJ NO. | 9029 |

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------------------|---------|----------|--------------|------------------|
| FAS452 | * | FULTON | 26 | 17 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | | FED. AID PROJECT |

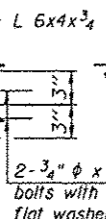


Without Slot or Recess
VIEW A-A



SECTION B-B

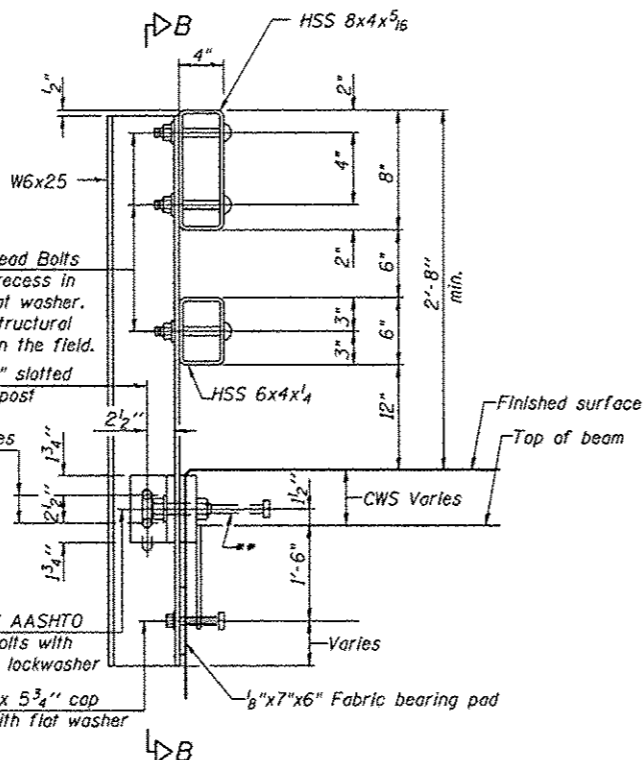
4 - 3/4" ϕ x 6" Round Head Bolts
(With slot or approved recess in head) with locknut & flat washer.
7/8" ϕ holes in hollow structural section may be drilled in the field.



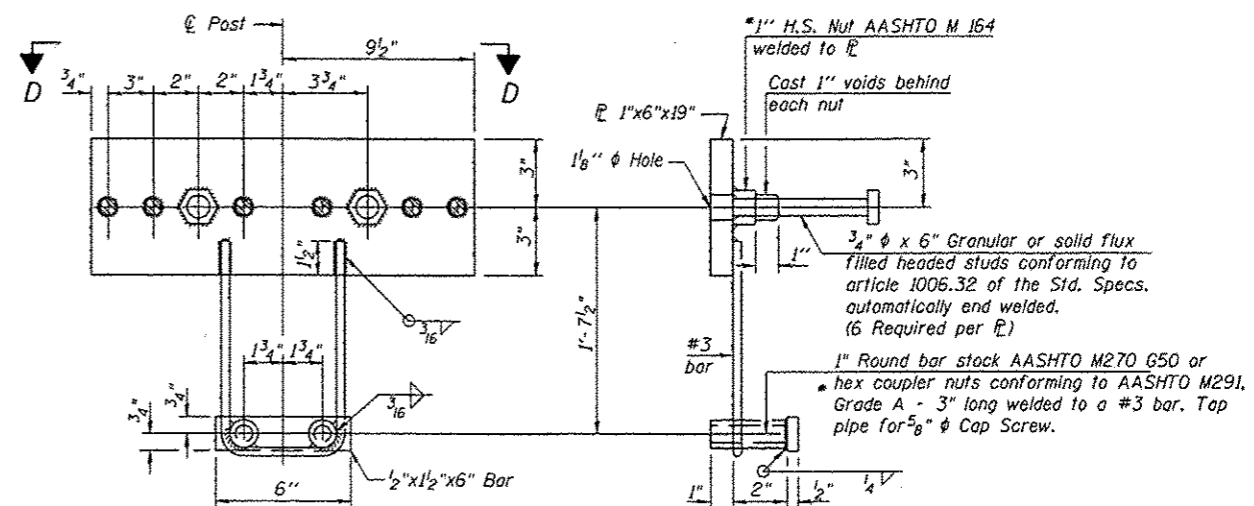
2 - 3/4" ϕ x 3/4" H.S. bolts with hex nut & flat washers

2 - 1" ϕ x 7 3/4" AASHTO M-164 anchor bolts with flat washer and lockwasher

2 - 5/8" ϕ x 5 3/4" cap screws with flat washer

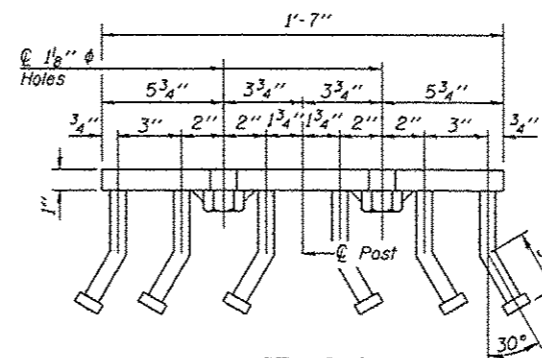


SECTION AT RAIL POST

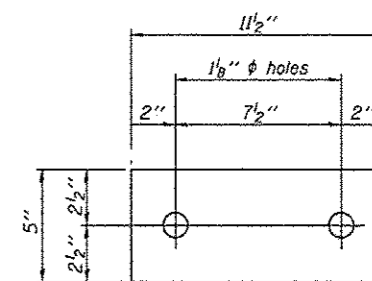


ANCHOR DEVICE

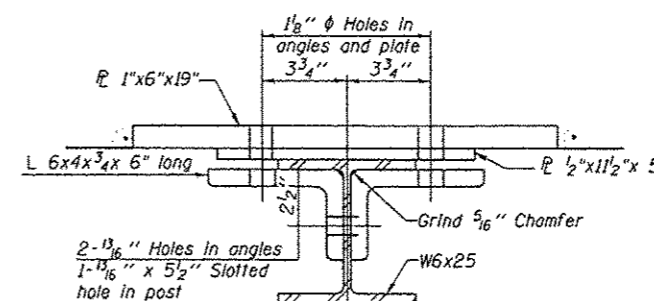
*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.



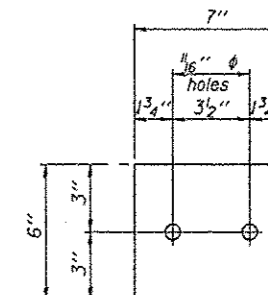
VIEW D-D



PL 1/2" x 11 1/2" x 5"



SECTION C-C



PL 1/2" x 7" x 6"

See "CONCRETE WEARING SURFACE" sheet for details on the pairs of D(E) bars at each embedded anchor in PPC deck beams.

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | K.J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |



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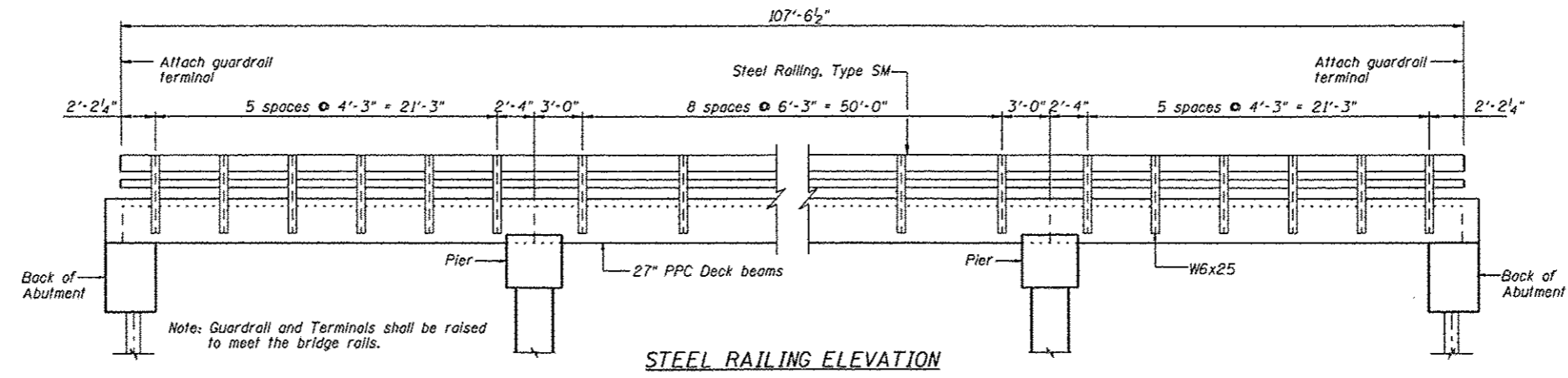
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CHAMPAIGN, IL 61822
PHONE (217) 351-6268
FAX (217) 355-1902

STEEL RAILING, TYPE SM (SHEET 1 OF 2)
FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
SEC 08-00130-05-BR
FULTON COUNTY

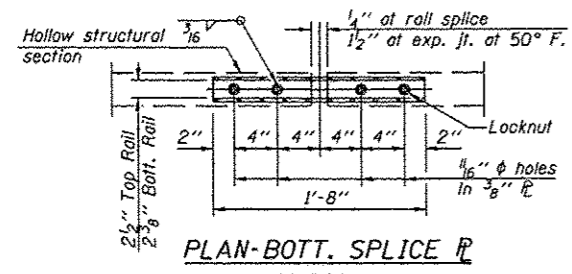
| | |
|----------|------------|
| SHEET | 17 |
| DWG NO. | 8028SM.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

| | | | | |
|-----------------------|---------|-----------------------------|-------|-----|
| ROUTE NO. | SECTION | COUNTY | SHEET | NO. |
| FAS452 | # | FULTON | 26 | 18 |
| FED. ROAD DIST. NO. 7 | | ILL. HIGH. FED. AID PROJECT | | |

09-00130-05-BR



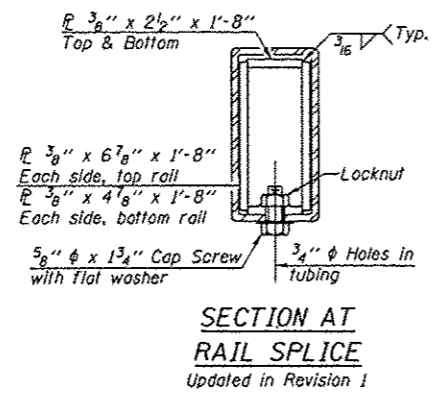
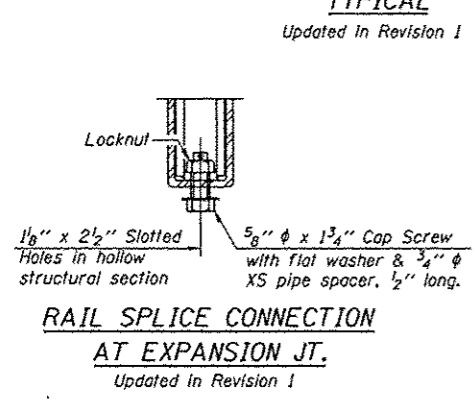
STEEL RAILING ELEVATION



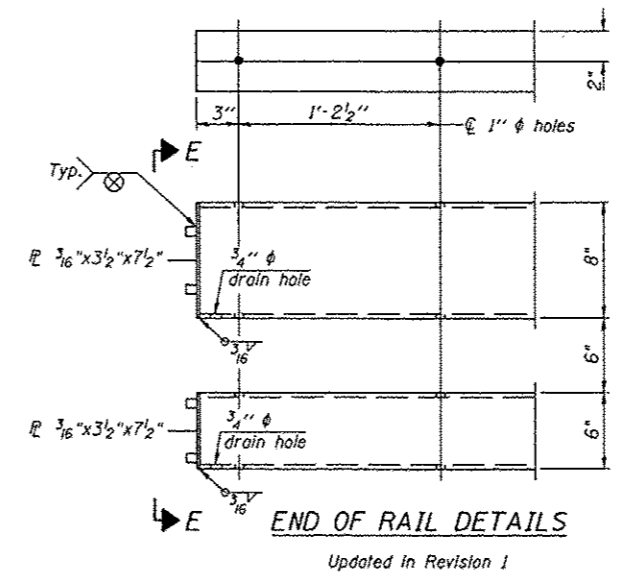
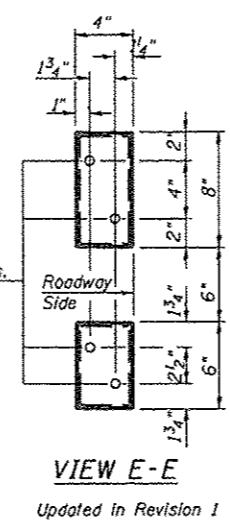
PLAN-BOTT. SPLICE R
TYPICAL
Updated in Revision 1

BILL OF MATERIAL

| Item | Unit | Quantity |
|------------------------|------|----------|
| Steel Railing, Type SM | Foot | 216 |



4 - 5/8" reduced base welded studs.
Provide 4 - 3/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



NOTES

- All field drilled holes shall be coated with an approved zinc rich paint before erection.
- For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.
- Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
- Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.
- ** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail past anchor device.

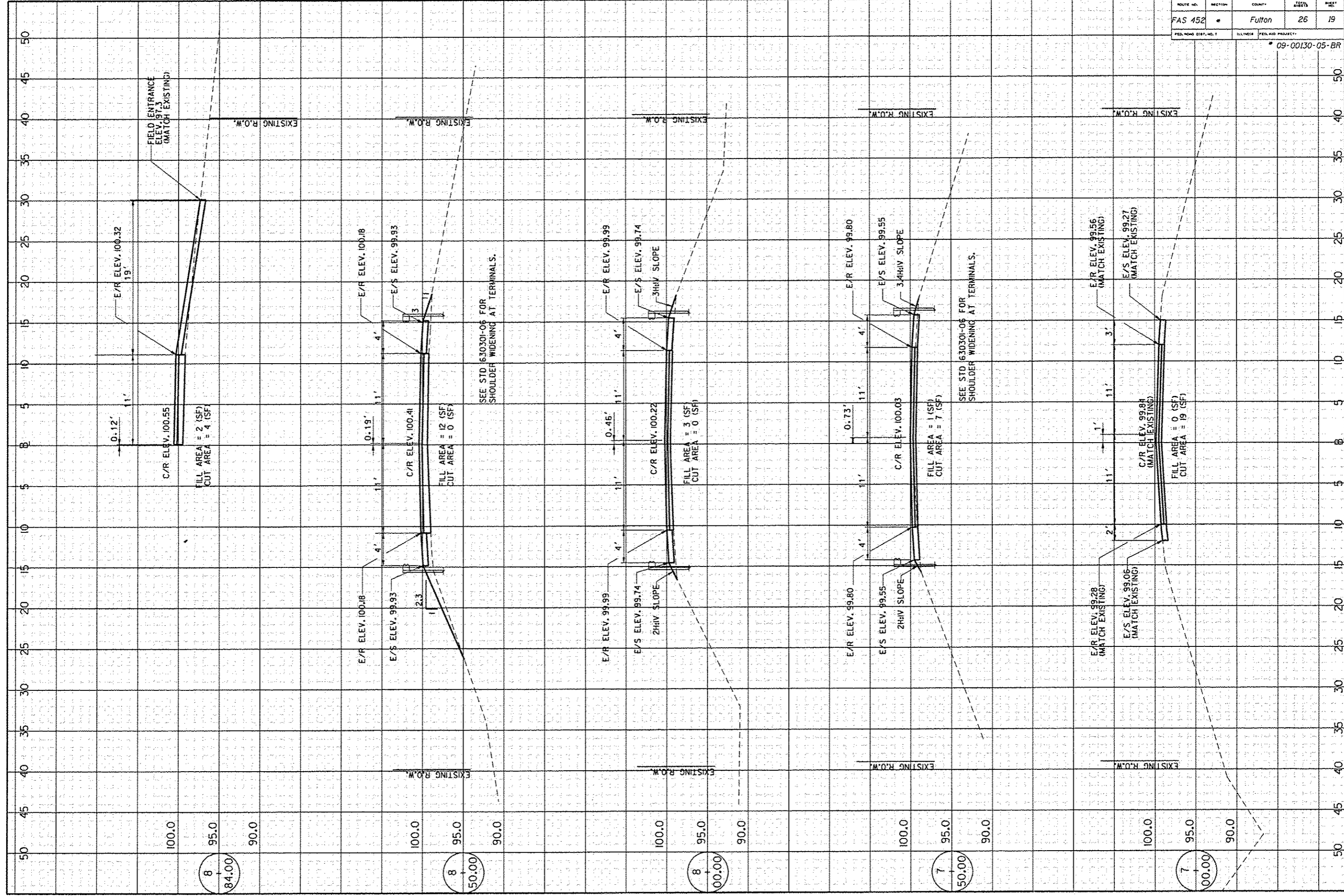
| | | | | | |
|------|------------------|-----|------|----------|------|
| DSGN | K.J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |
| | | | | | APVD |

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3002 CROSSING COURT
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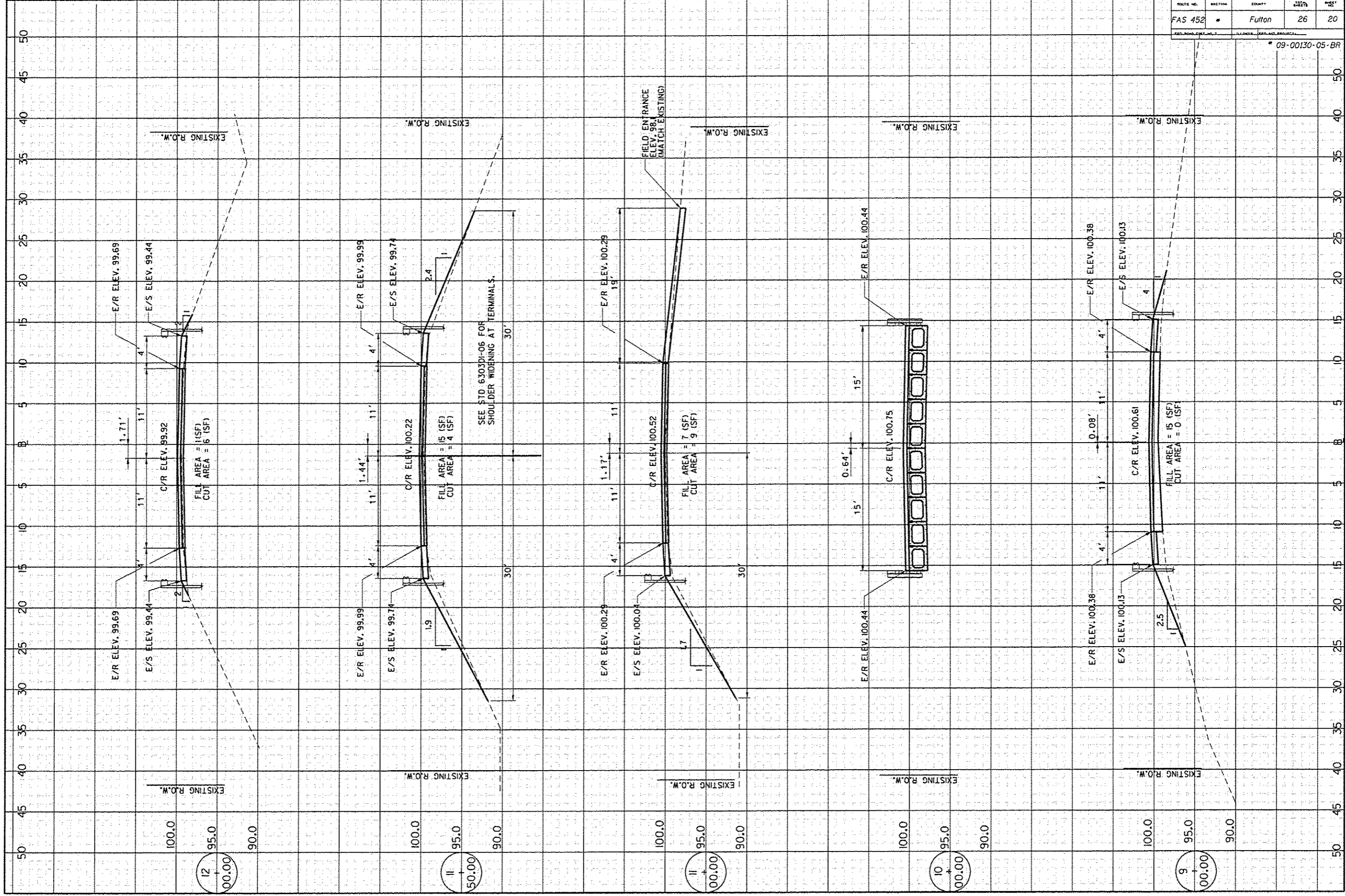
| | |
|--|--------------------|
| STEEL RAILING, TYPE SM (SHEET 1 OF 2) | SHEET 18 |
| FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK | DWG NO. 9029SM.dgn |
| SEC 08-00130-05-BR | DATE DEC 2012 |
| FULTON COUNTY | PROJ NO. 9029 |

| ROUTE NO. | SECTION | COUNT | SHEET | TOTAL |
|-----------------------|---------|----------|-------|------------------|
| FAS 452 | * | Fulton | 26 | 19 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | | FED. AID PROJECT |
| * 09-00130-05-BR | | | | |

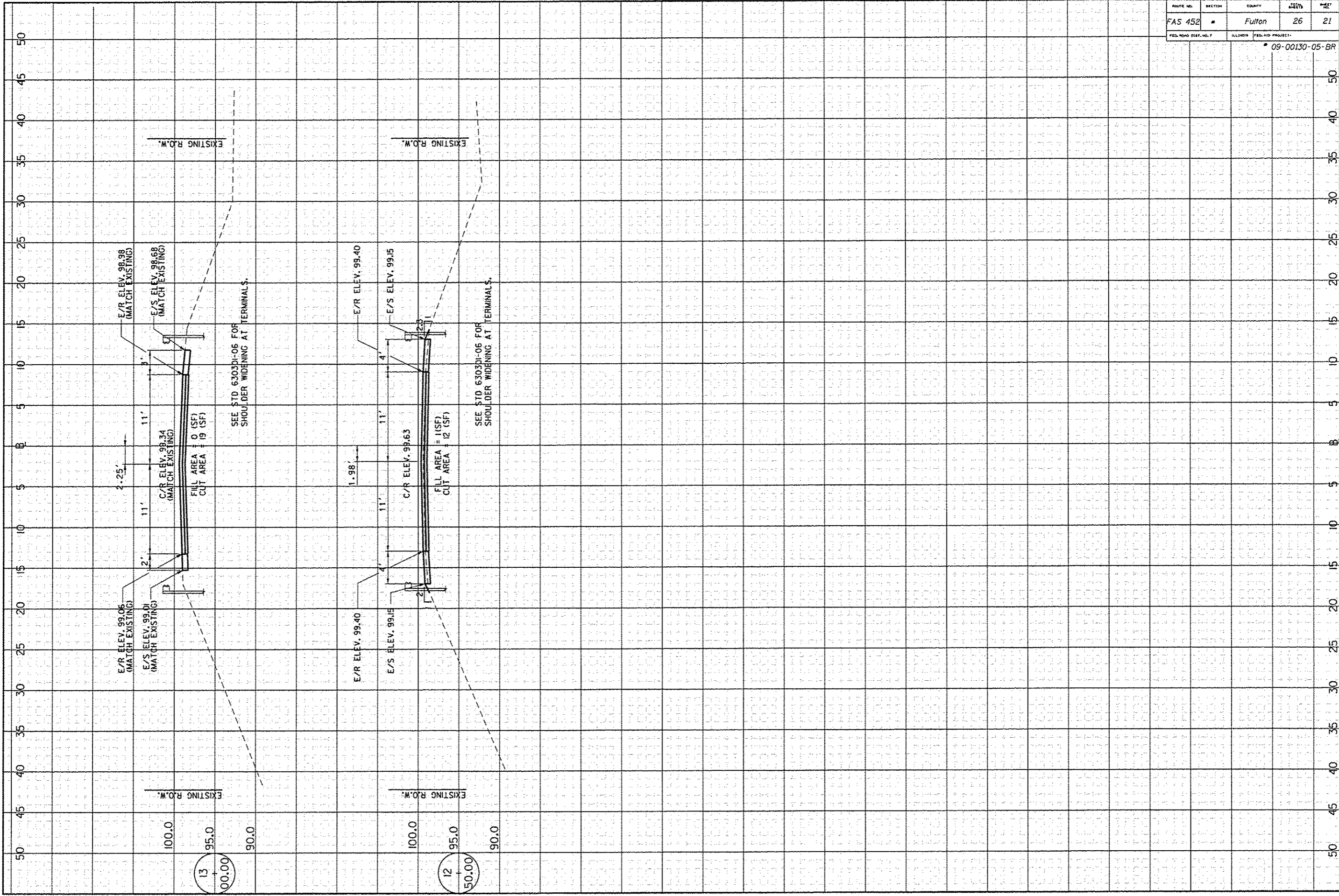


| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL |
|-----------|---------|--------|-------|-------|
| FAS 452 | | Fulton | 26 | 20 |

09-00130-05-BR



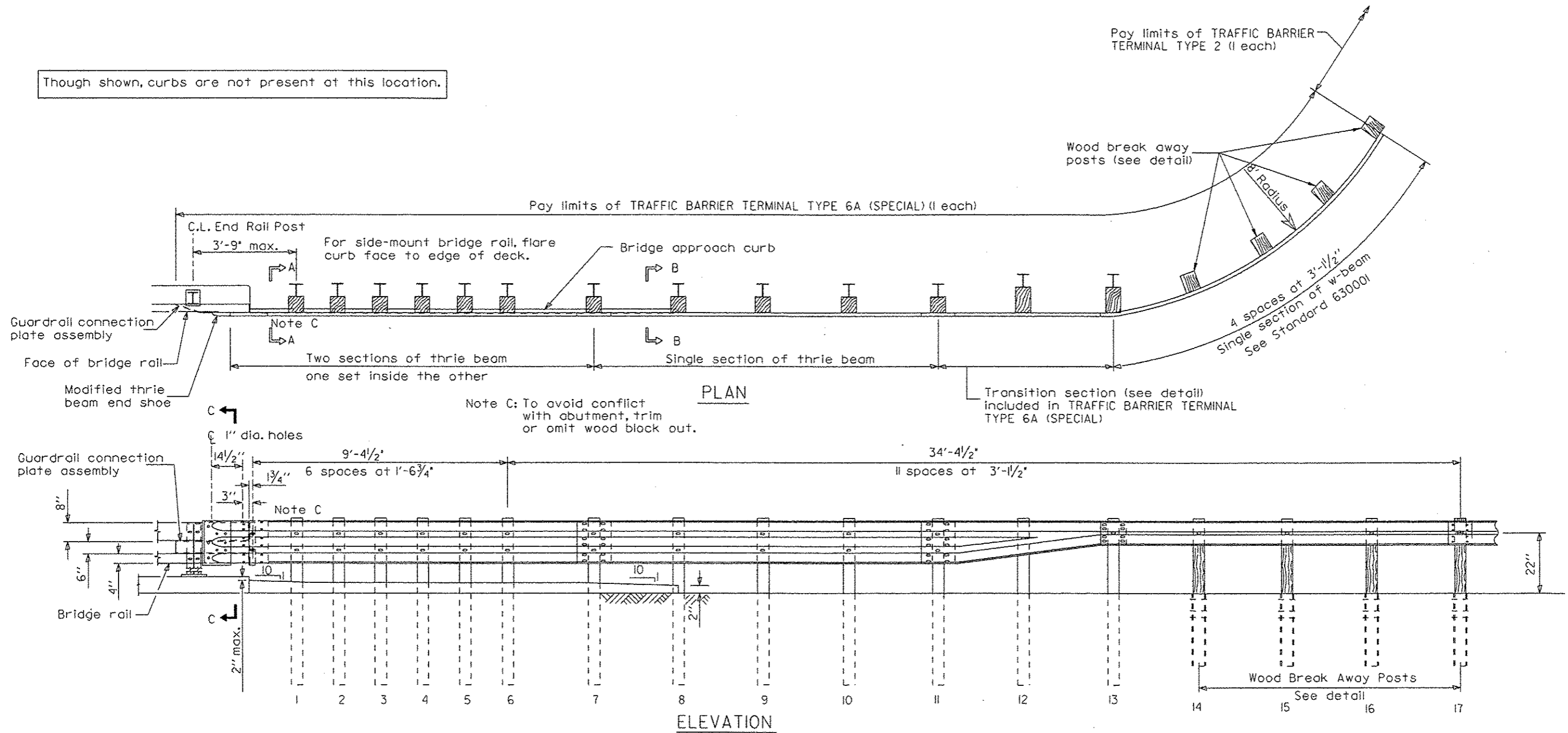
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|-----------------------|----------|-------------------|----------------|-------|
| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL |
| FAS 452 | # | Fulton | 26 | 21 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. ROAD PROJECT | 09-00130-05-BR | |



| | | | | |
|-----------------------|----------|------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FAS452 | * | FULTON | 26 | 22 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

* 08-00130-05-BR

Though shown, curbs are not present at this location.



Sheet 1 of 5

| | | | | | |
|------|------------------|-----|------|----------|----|
| DSGN | J. Hoffmann | | | | |
| DR | K.J. Hoffmann | | | | |
| CHK | J.R. Wolf | | | | |
| APVD | J.A. Fraenhoffer | NO. | DATE | REVISION | BY |



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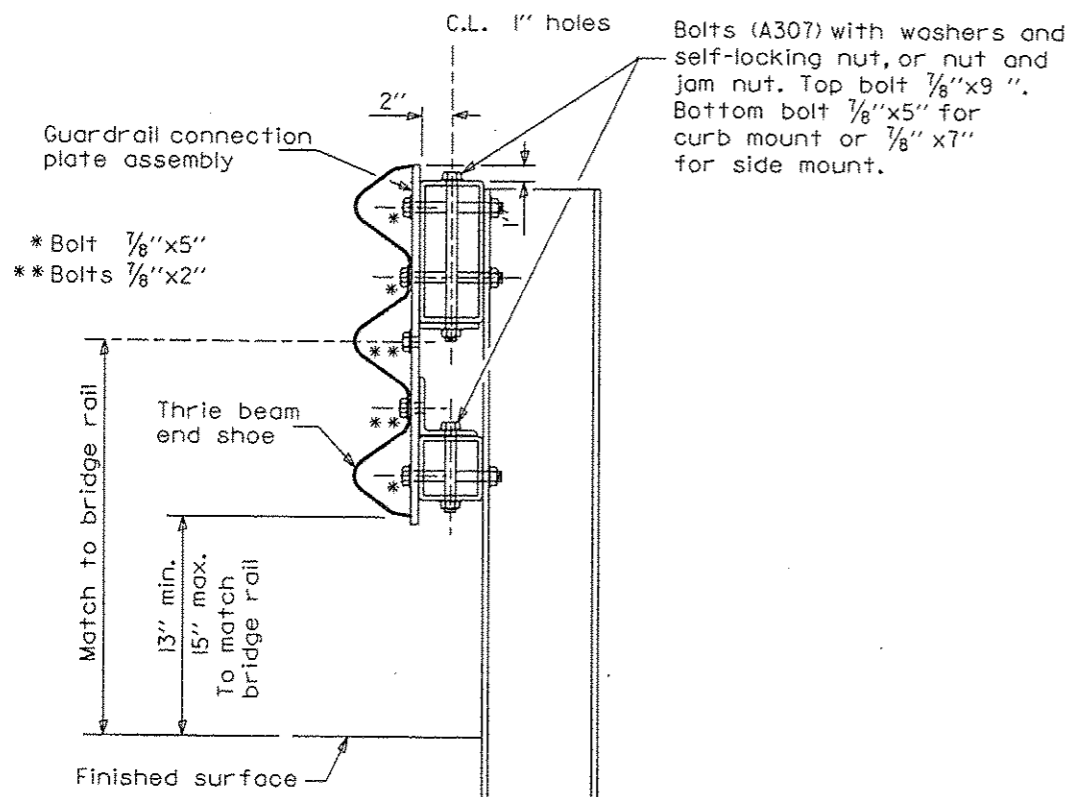
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TRAFFIC BARRIER TERMINAL TYPE 6A (SPECIAL)
 FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK
 SEC 08-00130-05-BR
 FULTON COUNTY

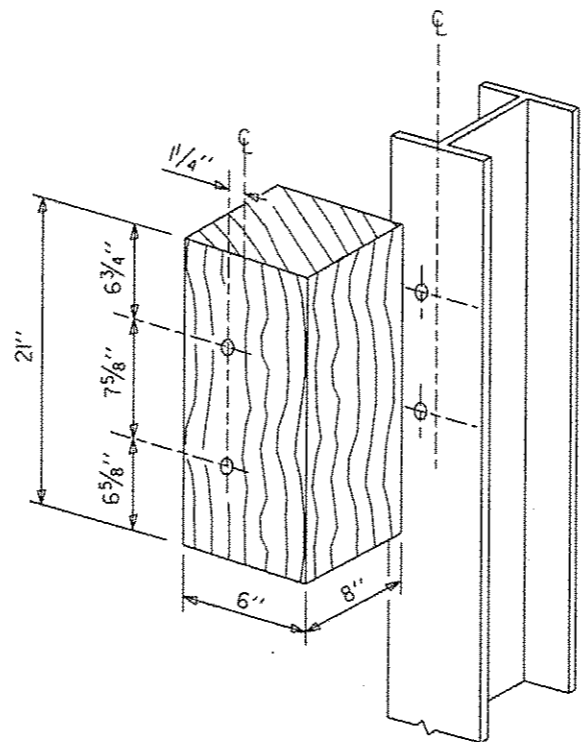
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| SHEET | 22 |
| DWG NO. | 9029-6A.dgn |
| DATE | DEC 2012 |
| PROJ NO. | 9029 |

| ROUTE NO. | SECTION | COUNTY | SHEETS | SHEET |
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| FED. ROAD DIST. NO. 7 | | FED. AID PROJECT | | |

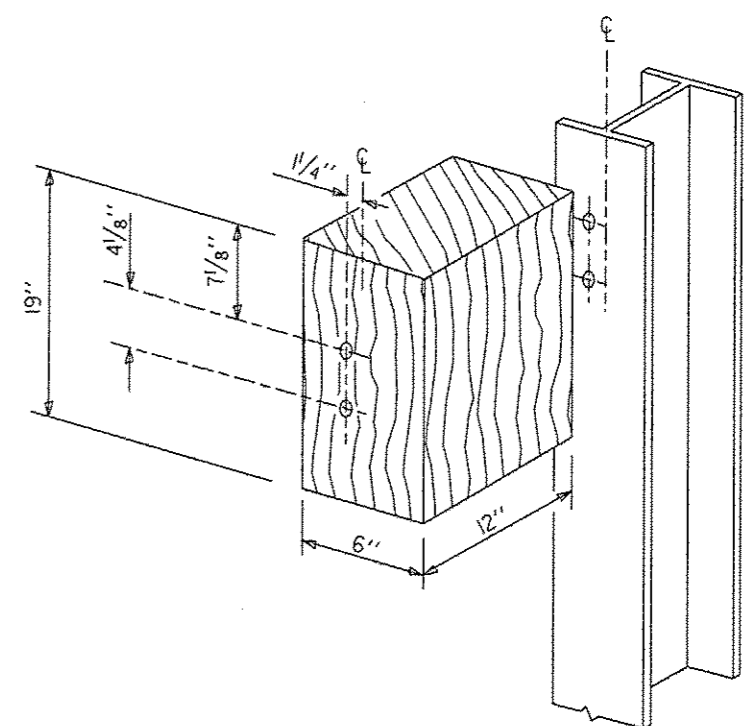
* 08-00130-05-BR



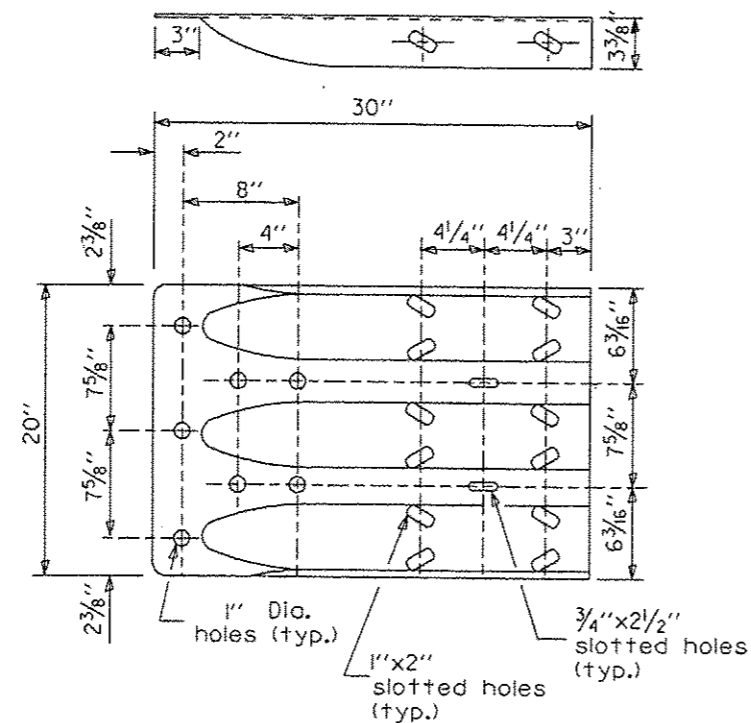
SECTION C-C



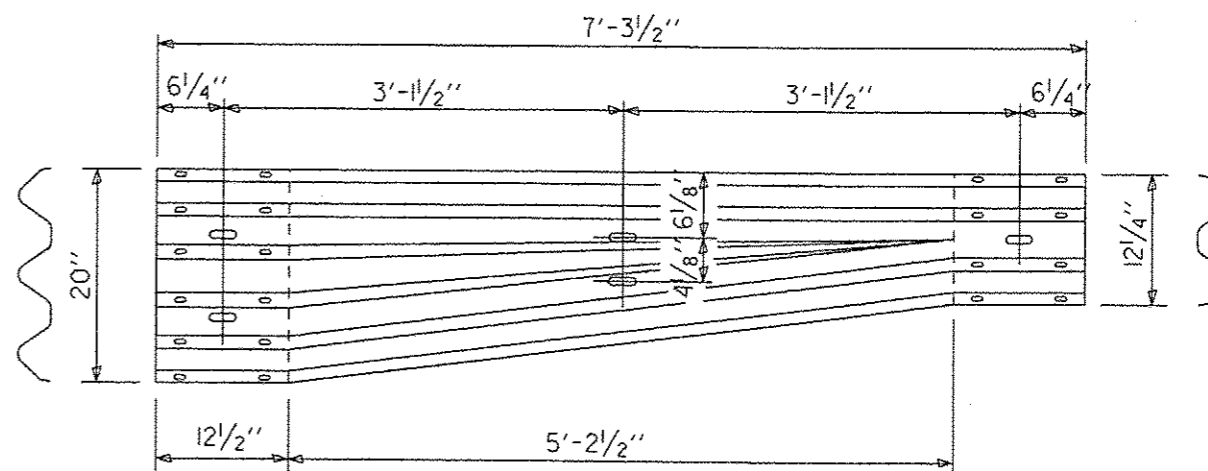
POSTS 1-II WOOD BLOCKOUT DETAIL



POSTS 12-13 WOOD BLOCKOUT DETAIL



MODIFIED THRIE BEAM END SHOE DETAIL



TRANSITION SECTION
(10 gauge rail element)

| | | | | | |
|------|----------------|-----|------|----------|----|
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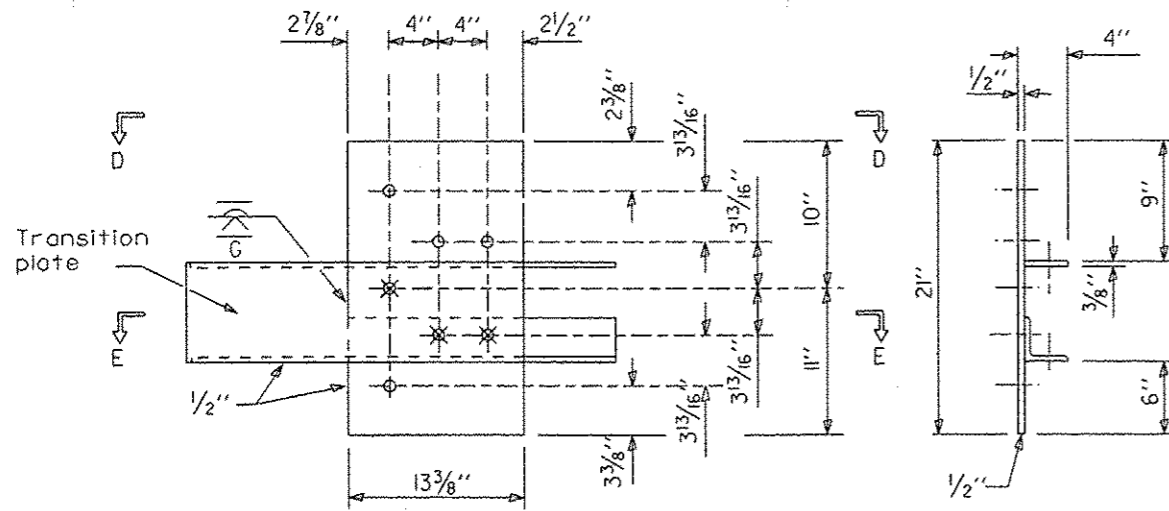
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| ROUTE NO. | SECTION | COUNTY | SHEETS | PAGE |
| FAS452 | * | FULTON | 26 | 24 |
| FED. ROAD DIST. NO. 7 | ALIGNMENT | FED. AID PROJECT | | |

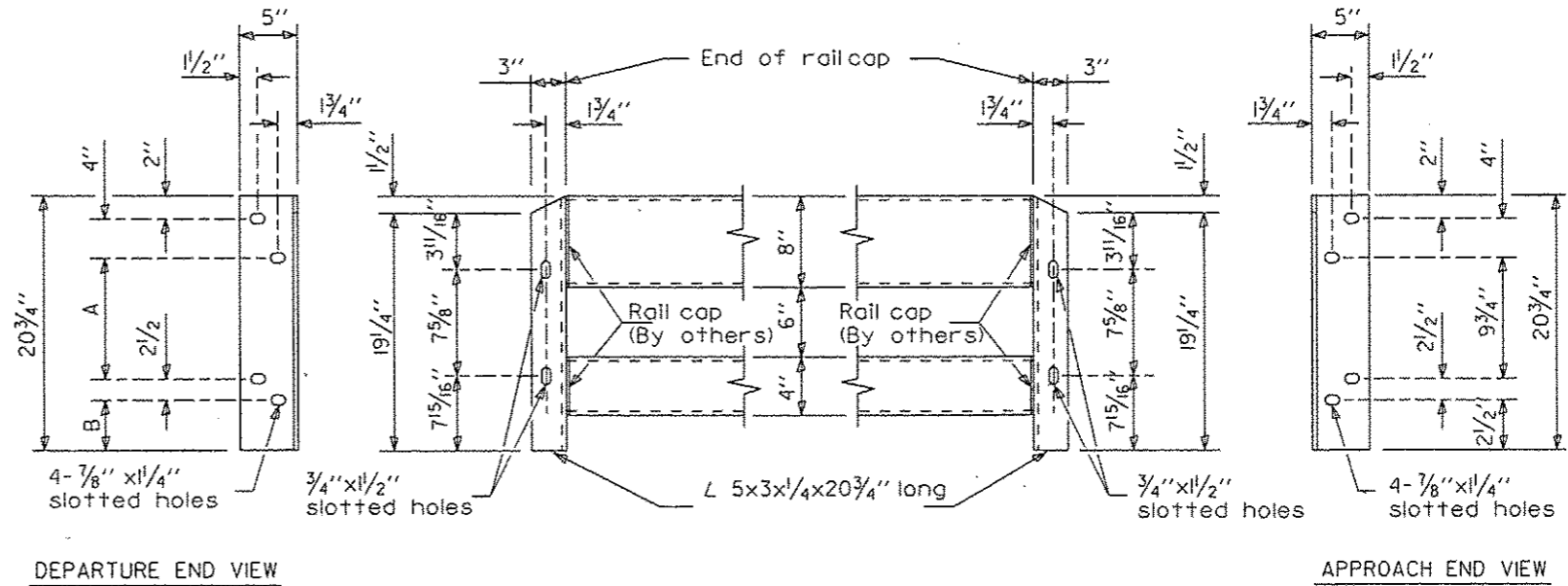
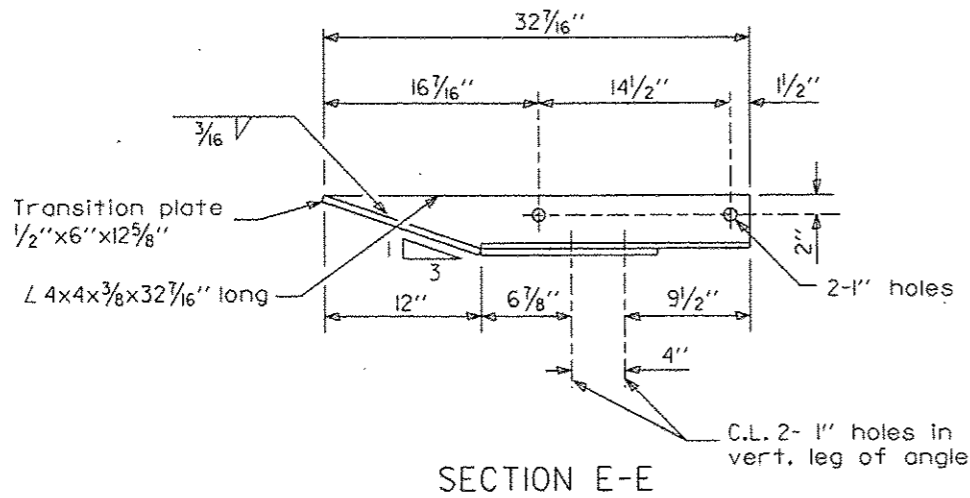
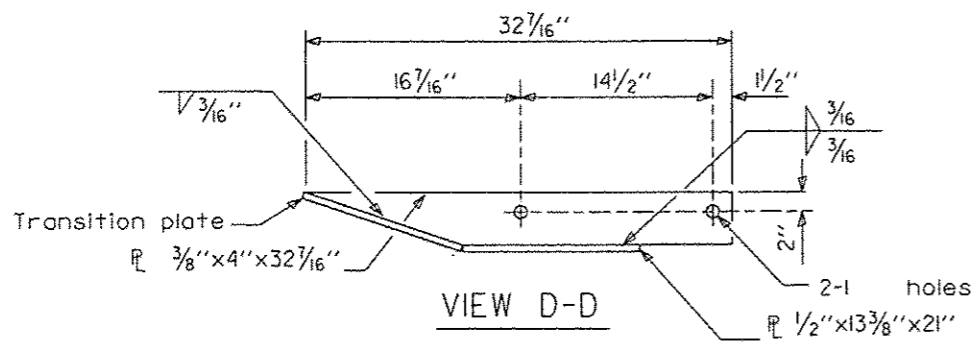
08-00130-05-BR



GUARDRAIL CONNECTION PLATE ASSEMBLY DETAILS
(Mirror for opposite end)

- C.L. 4- 1" holes for 7/8" H.S. bolts and nuts
- ⊗ Drill and tap 3 holes for 7/8" H.S. bolts.

LEGEND



CONNECTION ANGLES

(Install angles to rail caps using 19 washers and self-locking nuts or nuts and jam nuts, to be provided by others)

| | | | | | |
|------|---------------|-----|------|----------|----|
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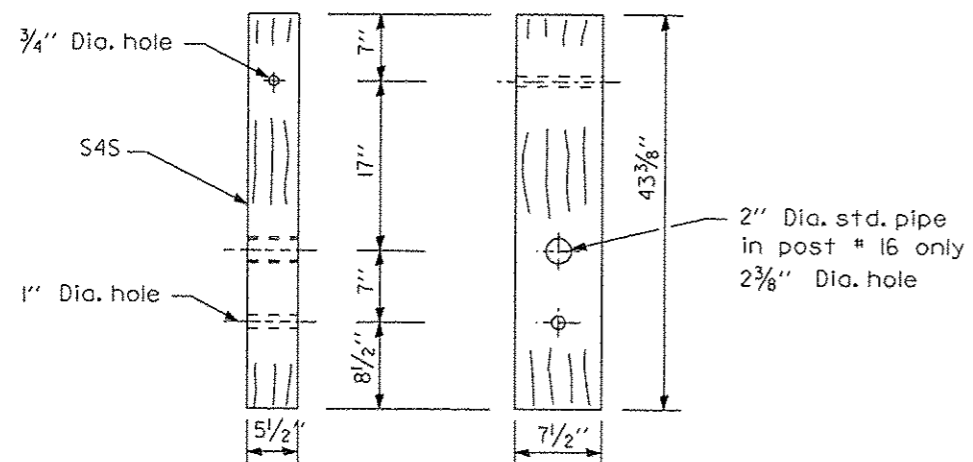
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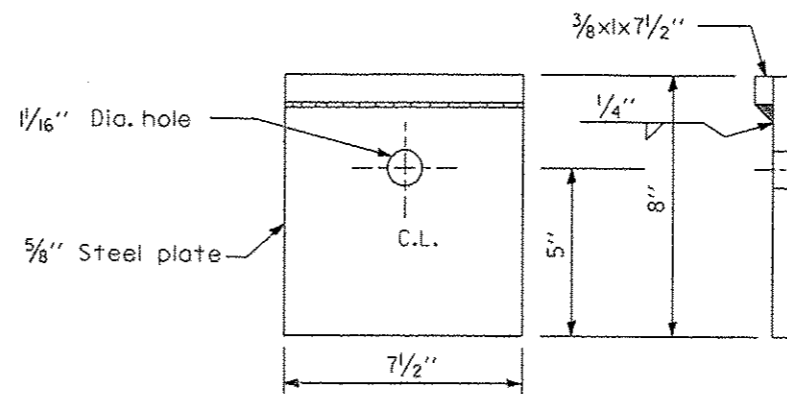
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| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL |
|-----------------------|---------|----------|-------|------------------|
| FAS452 | * | FULTON | 26 | 25 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | | FED. AID PROJECT |

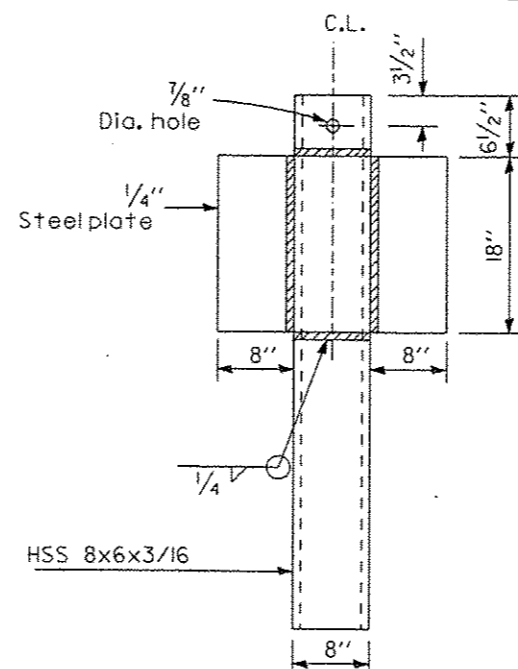
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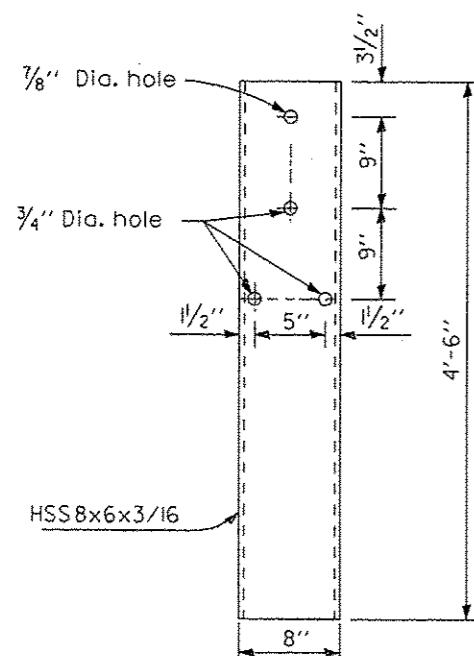
WOOD BREAKAWAY POST
(4 ea.)



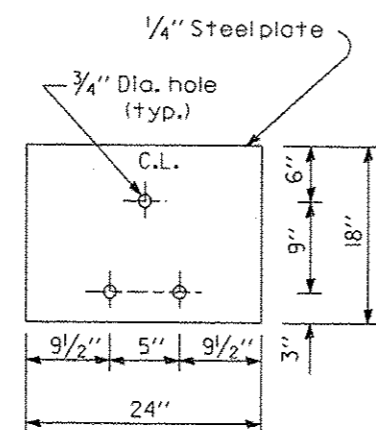
BEARING PLATE K
(1 ea.)



ALTERNATE SOIL PLATE CONNECTION



STEEL TUBE
(4 ea.)



SOIL PLATE H
(4 ea.)

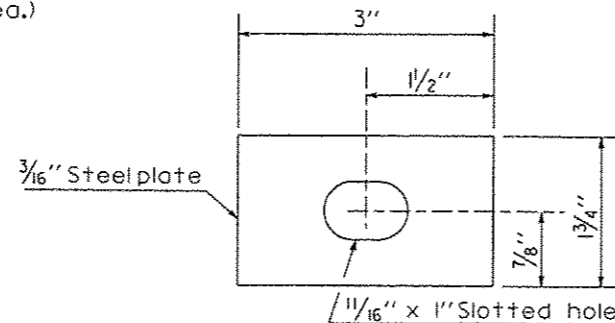


PLATE WASHER F
(1 ea.)

| | | | | | |
|------|------------------|-----|------|----------|----|
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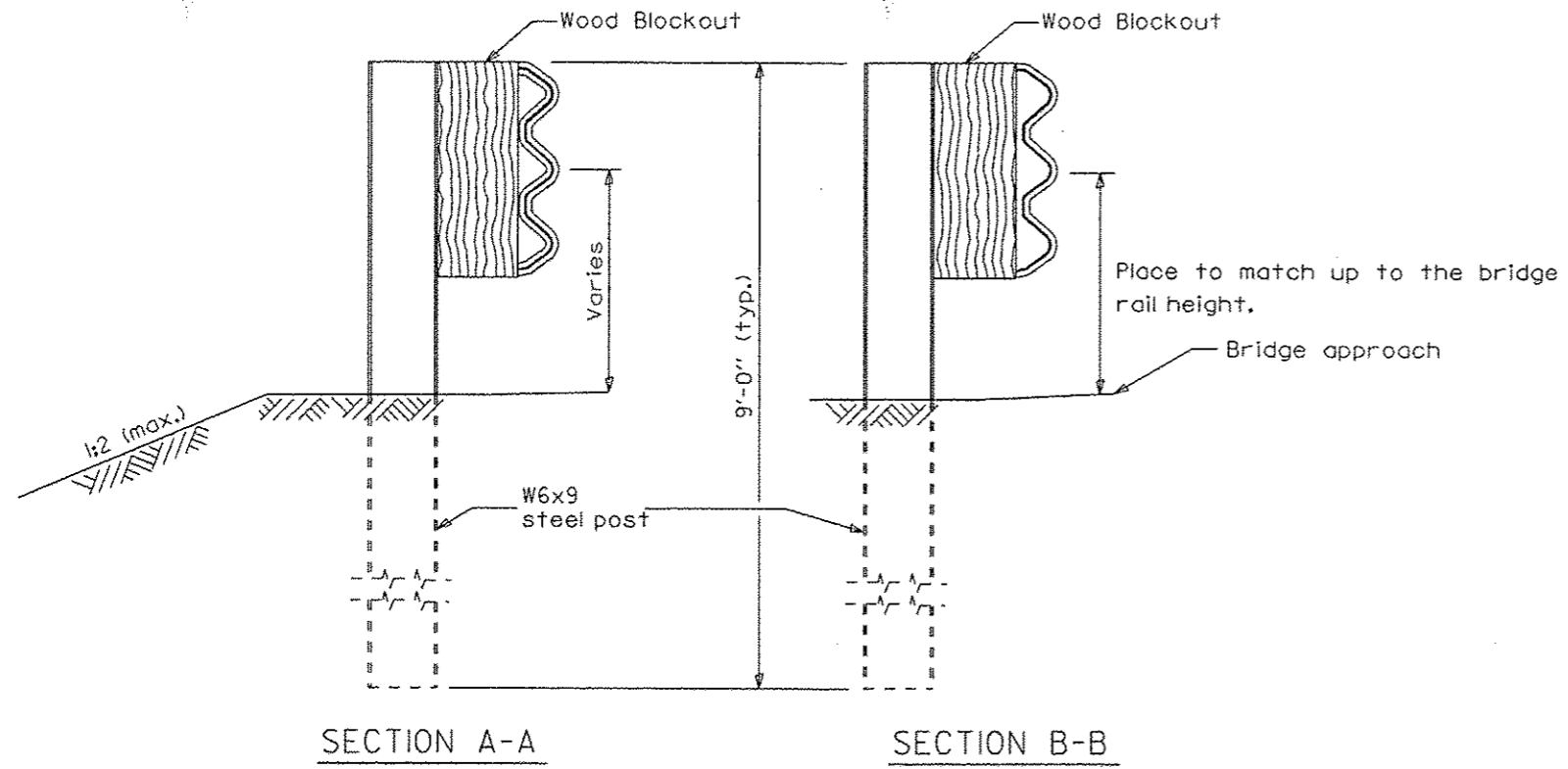
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| FAS452 | * | FULTON | 26 | 26 |
| FED. ROAD DIST. NO. 7 | | ILLINOIS FED. AID PROJECT | | |

08-00130-05-BR



GENERAL NOTES

See Standard 630001 for details of guardrail not shown.

The trailing 4 posts shall be wood breakaway posts.

A two-piece assembly may be substituted for the one piece nose shown above.

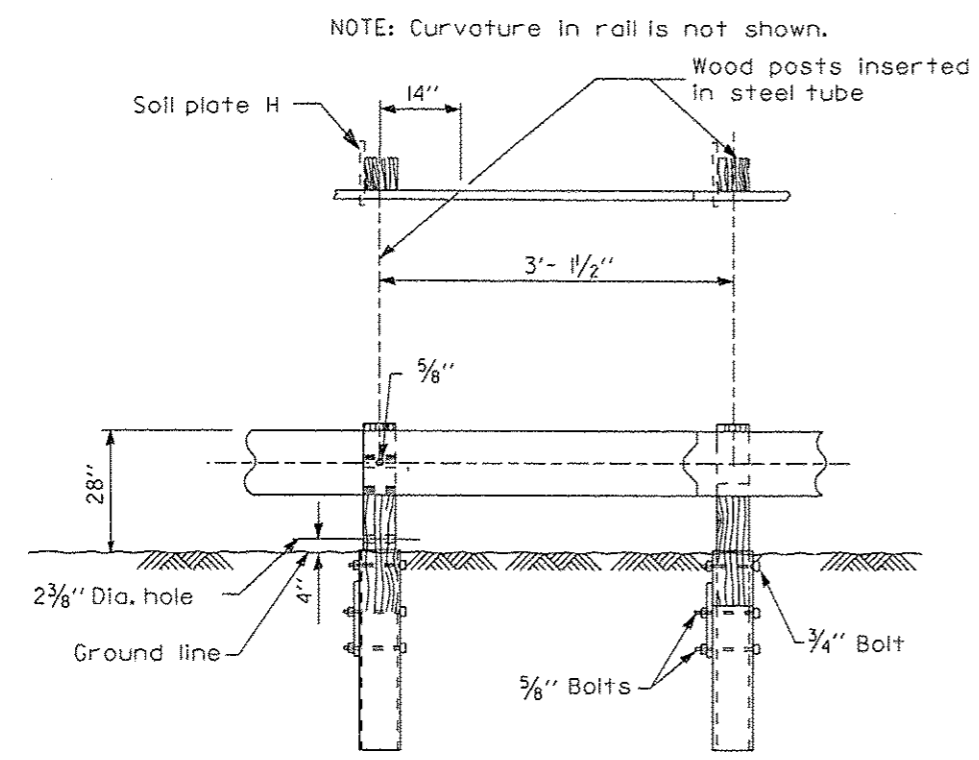
The bearing plate K shall be held in position by (2) two eightpenny nails driven into the post and bent over the top of the plate.

This standard shows attachment to curb mounted bridge rail. Attachment to side mounted bridge rail is similar.

Thrie beam rail shall be bolted to block-out at all posts.

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches unless otherwise shown.



**WOOD BREAKAWAY POSTS
TUBULAR STEEL FOUNDATIONS**

| | | | | | |
|------|------------------|-----|------|----------|----|
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| TRAFFIC BARRIER TERMINAL TYPE 6A (SPECIAL) | SHEET 26 |
| FAS 452 (CH2) OVER LASWELL BRANCH OF PUT CREEK | DWG NO. 8029-6A.dgn |
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