

| T.R.                      | SECTION        | COUNTY             | TOTAL SHEETS | SHEET NO. |
|---------------------------|----------------|--------------------|--------------|-----------|
| 160                       | 09-09123-00-BR | VERMILION          | 19           | 1         |
| FED. AID PROJECT ILLINOIS |                | CONTRACT NO. 91437 |              |           |

# INDEX OF SHEETS

- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES
- 3 TYPICAL SECTIONS / GENERAL NOTES / DETAILS
- 4 ALIGNMENT AND TIES
- 5-6 PLAN AND PROFILE
- 7 GENERAL PLAN & ELEVATION
- 8 SUPERSTRUCTURE
- 9 SUPERSTRUCTURE DETAILS
- 10 BRIDGE RAIL DETAILS
- 11-12 ABUTMENT DETAILS
- 13 PILE DETAILS
- 14 BORING LOGS
- 15-19 CROSS SECTIONS

# HIGHWAY STANDARDS

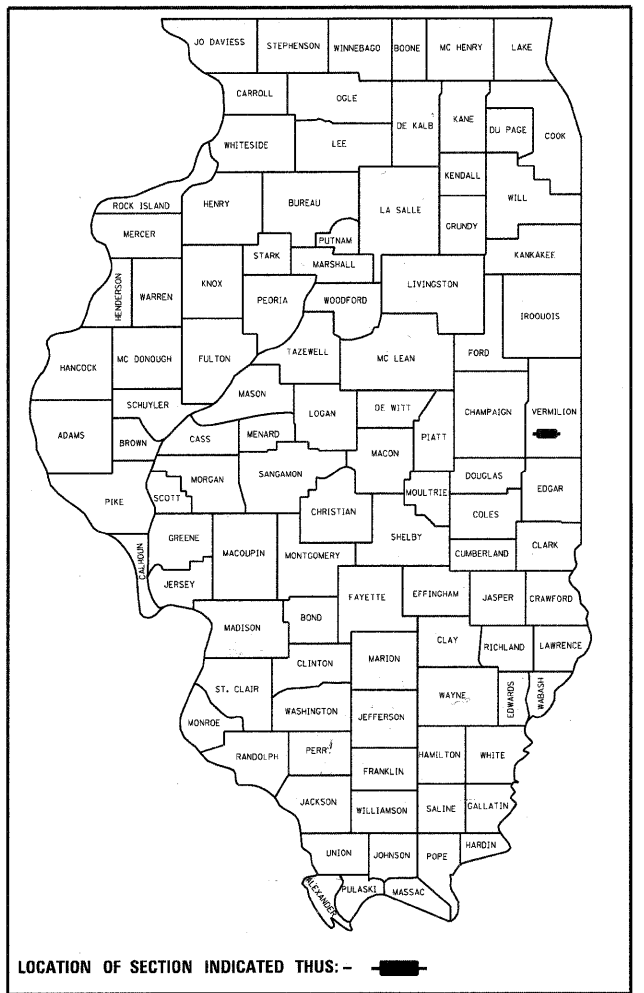
- 000001-05 STANDARD SYMBOLS
- 280001-05 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATE FOR BRIDGES
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701001-02 OFF-ROAD OPERATIONS LESS THAN 15'
- 701006-02 OFF-ROAD OPERATIONS GREATER THAN 15'
- 701901-01 TRAFFIC CONTROL DEVICES
- BLR 21-8 APPLICATION OF TRAFFIC CONTROL DEVICES

# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

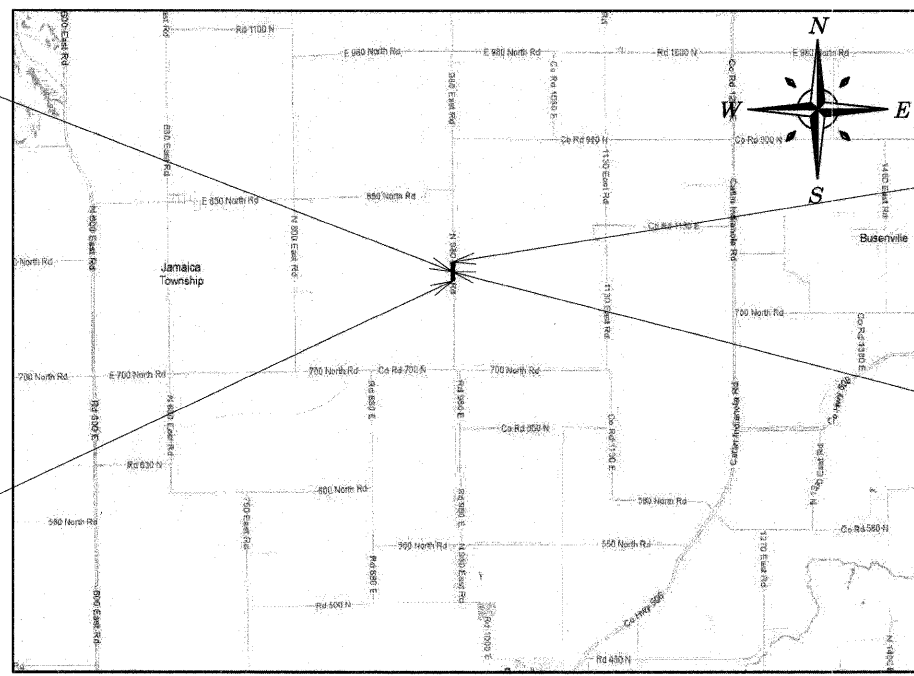
# PROPOSED HIGHWAY PLANS

**TOWNSHIP ROAD 160  
SECTION 09-09123-00-BR  
PROJECT BROS-0183(303)  
BRIDGE REPLACEMENT OVER SWANK CREEK  
VERMILION COUNTY**

C-95-327-10



**ROADWAY OMISSION  
FROM STA 9+68.90  
TO STA 10+31.09**



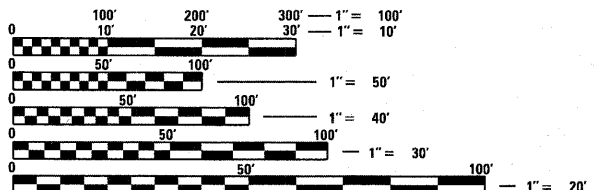
**PROJECT ENDS  
STA 14+00.0**

**PROPOSED STRUCTURE  
REPLACEMENT OVER  
SWANK CREEK  
STATION 10+00  
NEW SN: 092-3123  
OLD SN: 092-3518**

**PROJECT BEGINS  
STA 5+00.0**

| ENGINEERING PLAN SUBMITTAL   |                               |
|--|-------------------------------|
| THESE ENGINEERING PLANS AND SUPPORTING DOCUMENTS ARE ISSUED FOR THE FOLLOWING PURPOSE ONLY |                               |
| <input type="checkbox"/>   | PRELIMINARY PLAN REVIEW NO. 1 |
| <input type="checkbox"/>   | PRE-FINAL PLAN REVIEW NO. 1   |
| <input checked="" type="checkbox"/>  | FINAL PLAN REVIEW NO. 1       |
| <input type="checkbox"/>   | PERMIT APPLICATION            |
| <input type="checkbox"/>   | BIDDING                       |
| <input type="checkbox"/>   | CONSTRUCTION                  |

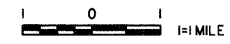
DATE: 10-15-2010



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

**J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811**

## R12W LOCATION MAP



GROSS LENGTH = 900.00 FT. = 0.170 MILE  
NET LENGTH = 837.81 FT. = 0.159 MILE  
ADT = 50  
FUNCTIONAL CLASSIFICATION = LOCAL ROAD (NON-URBAN)

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ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184-003885  
\*\* THIS DOCUMENT IS THE PROPERTY OF ESI CONSULTANTS, LTD. AND NO PART HEREIN SHALL BE USED \*\*  
EXCEPT FOR THIS SPECIFIC PROJECT WITHOUT THE WRITTEN CONSENT OF ESI CONSULTANTS, LTD.

**VERMILION COUNTY  
HIGHWAY DEPARTMENT**

APPROVED October 18 20 10  
*Daniel R. Feuerborn*  
COUNTY ENGINEER

PASSED 10-27 20 10  
*D. H. Spill*  
DISTRICT 5 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED  
ON LIMITED REVIEW 10-27 20 10  
*[Signature]*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION 3 ENGINEER



*[Signature]* 10/19/2010  
Date  
License Expires 11-30-2011

**ESI PROJECT ENGINEER - JOE HICKOX  
ESI PROJECT MANAGER - DANIEL FEUERBORN**

**CONTRACT NO. 91437**

PRINTED DATE: 10/15/2010  
FILE NAME: N:\Projects\VerMilion\_County\10-348\_TR160 - Swank\_C-ROAD\Drawings\Sheets\01-TR160-C5.dwg

### SUMMARY OF QUANTITIES

| PAY CODE   | ITEM  | UNITS | QUANTITY |
|------------|---|-------|----------|
| 20200100   | EARTH EXCAVATION                                    | CU YD | 880      |
| 20300100   | CHANNEL EXCAVATION                                  | CU YD | 450      |
| 20400800   | FURNISHED EXCAVATION                                | CU YD | 276      |
| X2501000   | SEEDING, CLASS 2 (SPECIAL)                          | ACRE  | 0.70     |
| 28000250   | TEMPORARY EROSION CONTROL SEEDING                   | POUND | 84       |
| 28000305   | TEMPORARY DITCH CHECKS                              | FOOT  | 54       |
| 28000400   | PERIMETER EROSION BARRIER                           | FOOT  | 1704     |
| 28000500   | INLET AND PIPE PROTECTION                           | EACH  | 3        |
| 28100107   | STONE RIPRAP, CLASS A4                              | SQ YD | 312      |
| 40200800   | AGGREGATE SURFACE COURSE, TYPE B                    | TON   | 535      |
| 50100100   | REMOVAL OF EXISTING STRUCTURES                      | EACH  | 1        |
| 50105220   | PIPE CULVERT REMOVAL                                | FOOT  | 143      |
| 50200100   | STRUCTURE EXCAVATION                                | CU YD | 115.4    |
| 50300225   | CONCRETE STRUCTURES                                 | CU YD | 31.0     |
| 50400505   | PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH) | SQ FT | 1614     |
| 50800205   | REINFORCEMENT BARS, EPOXY COATED                    | POUND | 4390     |
| * 50900205 | STEEL RAILING, TYPE S1                              | FOOT  | 120      |
| 51201400   | FURNISHING STEEL PILES HP10X42                      | FOOT  | 350      |
| 51202305   | DRIVING PILES                                       | FOOT  | 350      |
| 51203400   | TEST PILE STEEL HP10X42                             | EACH  | 2        |
| 51500100   | NAME PLATES   | EACH  | 1        |
| 542D1063   | PIPE CULVERTS, CLASS D, TYPE 2 18"                  | FOOT  | 302      |
| 59300100   | CONTROLLED LOW-STRENGTH MATERIAL                    | CU YD | 65.0     |
| 67100100   | MOBILIZATION  | L SUM | 1        |
| X7010210   | TRAFFIC CONTROL AND PROTECTION, SPECIAL             | L SUM | 1        |
| XX004566   | CONCRETE CUT-OFF WALL                               | CU YD | 6.4      |
| Z0013798   | CONSTRUCTION LAYOUT                                 | L SUM | 1        |

\* SPECIALTY ITEMS

### EARTHWORK SCHEDULE

| STATION                    | FILL        |                       | CUT         |                 | TOTAL<br>CU YD |
|----------------------------|-------------|-----------------------|-------------|-----------------|----------------|
|                            | SQ FT       | CU YD                 | SQ FT       | CU YD           |                |
| 5+00                       | 8.8         |                       | 3.1         |                 |                |
| 5+50                       | 3.6         | 16.3                  | 5.1         | 5.7             | 22.0           |
| 6+00                       | 0.9         | 6.7                   | 9.8         | 9.4             | 16.1           |
| 6+50                       | 1.0         | 1.7                   | 20.6        | 18.1            | 19.8           |
| 7+00                       | 3.1         | 1.9                   | 37.1        | 38.1            | 40.0           |
| 7+50                       | 7.1         | 5.7                   | 54.6        | 68.7            | 74.4           |
| 8+00                       | 13.6        | 13.1                  | 71.5        | 101.1           | 114.2          |
| 8+50                       | 21.9        | 25.2                  | 83.3        | 132.4           | 157.6          |
| 9+00                       | 153.2       | 40.6                  | 48.2        | 154.3           | 194.9          |
| 9+71                       |             | 402.9                 |             | 126.7           | 529.6          |
| 10+29                      | 126.0       |                       | 42.3        |                 |                |
| 10+83                      | 5.5         | 250.6                 | 53.5        | 84.1            | 334.7          |
| 11+50                      | 8.4         | 13.7                  | 20.1        | 133.4           | 147.1          |
| 12+00                      | 7.9         | 15.6                  | 9.0         | 37.2            | 52.8           |
| 12+50                      | 12.4        | 14.6                  | 2.9         | 16.7            | 31.3           |
| 13+00                      | 13.9        | 23.0                  | 1.4         | 5.4             | 28.4           |
| 13+50                      | 12.5        | 25.7                  | 1.5         | 2.6             | 28.3           |
| 14+00                      |             | 23.1                  |             | 2.8             | 25.9           |
| TOTAL CUT EARTH EXCAVATION | 880.4 CU YD | TOTAL FILL EMBANKMENT | 936.7 CU YD | TOTAL EARTHWORK | 1817.1 CU YD   |
| 20400800 FURNISHED EX =    |             | 276.4 CU YD           |             |                 |                |

### 28000305 TEMPORARY DITCH CHECKS

| STATION | SIDE | EACH | FOOT |
|---------|------|------|------|
| 5+00.0  | LT   | 1    | 6    |
| 5+00.0  | RT   | 1    | 6    |
| 6+50.0  | LT   | 1    | 6    |
| 6+50.0  | RT   | 1    | 6    |
| 8+00.0  | LT   | 1    | 6    |
| 8+00.0  | RT   | 1    | 6    |
| 12+00.0 | LT   | 1    | 6    |
| 13+00.0 | LT   | 1    | 6    |
| 14+00.0 | LT   | 1    | 6    |
| TOTAL   |      | 9    | 54   |

### 40200800 AGGREGATE SURFACE COURSE, TYPE B

| STATION | TO | STATION | DEPTH, FT | CU YD | TON |
|---------|----|---------|-----------|-------|-----|
| 5+00.0  |    | 6+00.0  | 0.5       | 32.5  | 59  |
| 6+00.0  |    | 7+00.0  | 0.5       | 33.3  | 60  |
| 7+00.0  |    | 8+00.0  | 0.5       | 33.3  | 60  |
| 8+00.0  |    | 9+00.0  | 0.5       | 33.3  | 60  |
| 9+00.0  |    | 9+71.0  | 0.5       | 23.7  | 43  |
| 10+29.0 |    | 11+00.0 | 0.5       | 23.7  | 43  |
| 11+00.0 |    | 12+00.0 | 0.5       | 33.3  | 60  |
| 12+00.0 |    | 13+00.0 | 0.5       | 33.3  | 60  |
| 13+00.0 |    | 14+00.0 | 0.5       | 32.1  | 58  |
| 10+82.7 |    | FE      | 0.5       | 17.4  | 32  |
| TOTAL   |    |         |           |       | 535 |

### 28000500 INLET & PIPE PROTECTION

| STATION | SIDE | EACH |
|---------|------|------|
| 9+00.0  | LT   | 1    |
| 9+00.0  | RT   | 1    |
| 11+50.0 | LT   | 1    |
| TOTAL   |      | 3    |

### 28000400 PERIMETER EROSION BARRIER

| STATION | TO | STATION | SIDE | FOOT  |
|---------|----|---------|------|-------|
| 5+00.0  |    | 9+48.0  | LT   | 449.2 |
| 5+00.0  |    | 9+98.2  | RT   | 498.8 |
| 9+98.6  |    | 14+00.0 | LT   | 403.5 |
| 10+48.2 |    | 14+00.0 | RT   | 352.1 |
| TOTAL   |    |         |      | 1704  |

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES  
& SCHEDULES

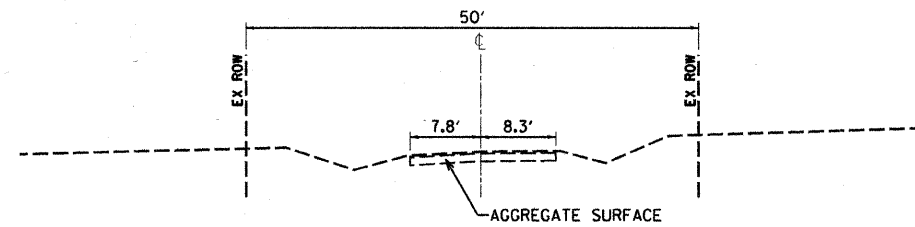
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(217) 346-1500  
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ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184-035696

| T.R.                      | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|---------------------------|----------------|-----------|--------------|-----------|
| 160                       | 09-09123-00-BR | VERMILION | 19           | 2         |
|                           |                |           | CONTRACT NO. | 91437     |
| ILLINOIS FED. AID PROJECT |                |           |              |           |

|                            |                   |           |
|----------------------------|-------------------|-----------|
| USER NAME = #USER#         | DESIGNED - JEH    | REVISED - |
| PLOT SCALE = 1.0000" / IN. | DRAWN - JEH       | REVISED - |
| PLOT DATE = 10/13/2010     | CHECKED - PAT     | REVISED - |
|                            | DATE - 09-20-2010 | REVISED - |

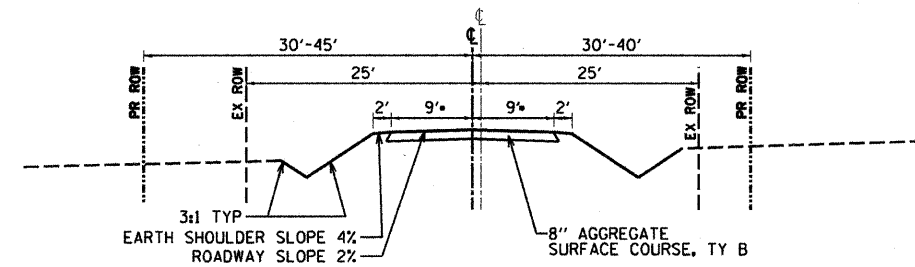
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# TYPICALS



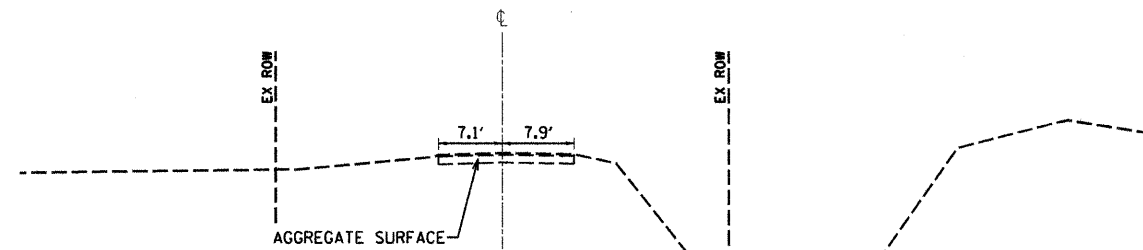
EXISTING TYPICAL CROSS SECTION  
NTS

STA 5+00 TO STA 9+68.90



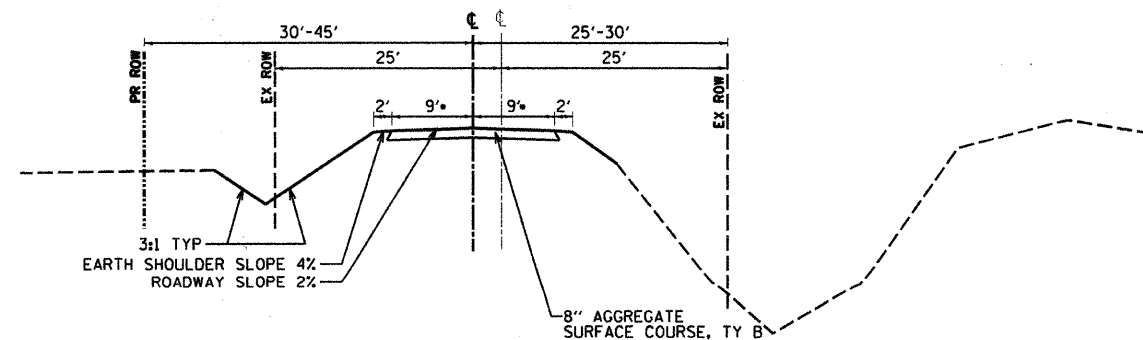
PROPOSED TYPICAL CROSS SECTION  
NTS

STA 5+00 TO STA 9+68.90  
• TAPERS FROM 17.1' TO 18' FROM STA 5+00 TO STA 6+00



EXISTING TYPICAL CROSS SECTION  
NTS

STA 10+31.09 TO STA 14+00



PROPOSED TYPICAL CROSS SECTION  
NTS

STA 10+31.09 TO STA 14+00  
• TAPERS FROM 18' TO 16.7' FROM STA 13+00 TO STA 14+00

# GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2007," THESE PLANS AND THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS.
2. THE REVISION NUMBER INDICATED FOR THE STANDARDS LISTED IN THE INDEX OF SHEETS SHALL BE USED IN CONSTRUCTION OF THIS SECTION.
3. THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES...  
AGGREGATE SURFACE COURSE, TYPE B - 1.8 TON/CU YD  
STONE RIPRAP, CLASS A4 - 1.75 TON/CU YD  
STONE BEDDING - 0.70 TON/CU YD
4. THE AREA TO BE SEEDED SHALL CONSIST OF ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.
5. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATION AND THE BEST INFORMATION AVAILABLE, BUT ARE NOT GUARANTEED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THEIR EXACT LOCATIONS FROM THE UTILITY COMPANIES AND BY FIELD INSPECTION. THE CONTRACTOR IS REQUIRED TO CONTACT J.U.L.I.E AT, 1-800-892-0123, PRIOR TO PROCEEDING WITH ANY EXCAVATION AND WORK ON THE PROJECT.
6. THE PIPE CULVERTS SPECIFIED IN THIS CONTRACT SHALL BE ALUMINIZED STEEL.

PRINTED DATE: 10/12/2010  
FILE NAME: I:\Projects\109148\_Vermilion County\109148\_TR 166 - Sheet C:\ADD\Drawings\Sheets\03\_TR 166\_TYB\_SEC.dgn

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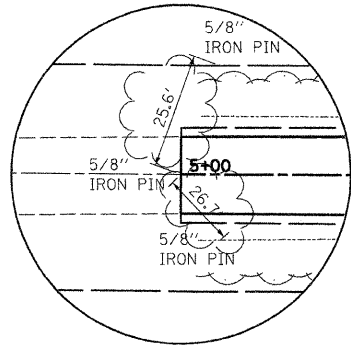
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| USER NAME = #USER#          | DESIGNED - JEH    | REVISED - |
| PLOT SCALE = 20.0000' / IN. | DRAWN - JEH       | REVISED - |
| PLOT DATE = 10/12/2010      | CHECKED - PAT     | REVISED - |
|                             | DATE - 09-20-2010 | REVISED - |

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**TYPICAL SECTIONS & GENERAL NOTES**

SCALE: NTS      SHEET NO. 1 OF 1 SHEETS

| T.R.                      | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|---------------------------|----------------|-----------|--------------|-----------|
| 160                       | 09-09123-00-BR | VERMILION | 19           | 3         |
| CONTRACT NO. 91437        |                |           |              |           |
| ILLINOIS FED. AID PROJECT |                |           |              |           |



P.O.T. STA 5+00.00  
NORTHING 3352917.7617  
EASTING 3293478.6136

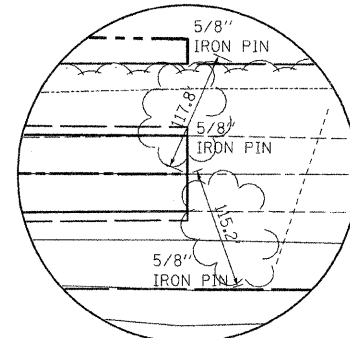
☐ TIE INFORMATION

PROP. CURVE C1-1  
PI STA. = 7+49.98  
Δ = 1° 43' 40" (LT)  
D = 1° 43' 40"  
R = 3,316.14'  
T = 50.01'  
L = 100.00'  
E = 0.38'  
e = -----  
T.R. = -----  
S.E. RUN = -----  
P.C. STA = 6+99.98  
P.T. STA = 7+99.98

PROP. CURVE C2-1  
PI STA. = 8+49.99  
Δ = 1° 31' 13" (RT)  
D = 1° 31' 13"  
R = 3,768.97'  
T = 50.01'  
L = 100.00'  
E = 0.33'  
e = -----  
T.R. = -----  
S.E. RUN = -----  
P.C. STA = 7+99.99  
P.T. STA = 8+99.99

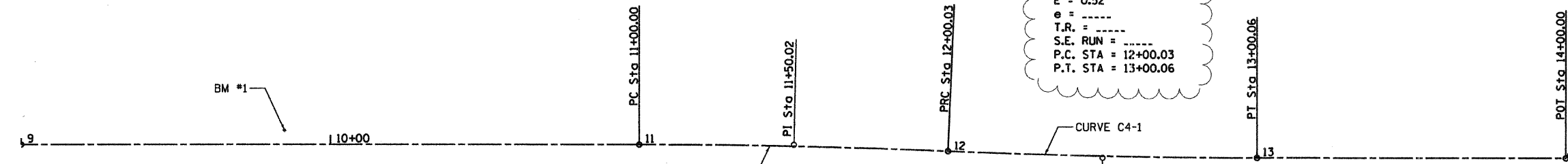
PROP. CURVE C4-1  
PI STA. = 12+50.05  
Δ = 2° 22' 23" (LT)  
D = 2° 22' 21"  
R = 2,414.93'  
T = 50.02'  
L = 100.03'  
E = 0.52'  
e = -----  
T.R. = -----  
S.E. RUN = -----  
P.C. STA = 12+00.03  
P.T. STA = 13+00.06

PROP. CURVE C3-1  
PI STA. = 11+50.02  
Δ = 2° 25' 12" (RT)  
D = 2° 25' 10"  
R = 2,368.08'  
T = 50.02'  
L = 100.03'  
E = 0.53'  
e = -----  
T.R. = -----  
S.E. RUN = -----  
P.C. STA = 11+00.00  
P.T. STA = 12+00.03



P.O.T. STA 14+00.00  
NORTHING 3353817.6483  
EASTING 3293471.0155

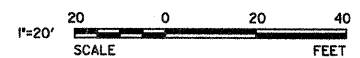
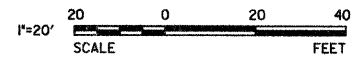
☐ TIE INFORMATION



| CONTROL POINT DATA |          |        |            |            |
|--------------------|----------|--------|------------|------------|
| POINT              | STATION  | OFFSET | NORTHING   | EASTING    |
| POT                | 5+00.00  | 0'     | 3352917.76 | 3293478.61 |
| PC                 | 6+99.98  | 0'     | 3353117.73 | 3293477.07 |
| PRC                | 7+99.99  | 0'     | 3353217.71 | 3293474.79 |
| PT                 | 9+00.00  | 0'     | 3353317.69 | 3293472.33 |
| PC                 | 11+00.00 | 0'     | 3353517.68 | 3293470.07 |
| PRC                | 12+00.03 | 0'     | 3353617.70 | 3293471.05 |
| PT                 | 13+00.06 | 0'     | 3353717.71 | 3293472.03 |
| POT                | 14+00.00 | 0'     | 3353817.65 | 3293471.02 |

**BENCHMARK DATA:**

BM #1: CUT "□" IN THE BRIDGE CURB @ STA 9+84.83, LT 4.82, ELEVATION 669.46, SW CORNER OF BRIDGE  
BM #2: CUT "□" IN THE BRIDGE CURB @ STA 10+20.96, RT 13.12, ELEVATION 669.20, NE CORNER OF BRIDGE



PRINTED DATE: 11/8/2010  
FILE NAME: N:\Projects\118-2200\County of Vermilion\Drawings\Sheets\B4\_TR\_160 - SWAN - CADD\Drawings\Sheets\B4\_TR\_160\_ALIGN-TIES.dwg

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| T.R. | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|------|----------------|-----------|--------------|-----------|
| 160  | 09-09123-00-BR | VERMILION | 19           | 4         |

CONTRACT NO. 91437  
ILLINOIS FED. AID PROJECT

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ALIGNMENT, TIES &  
BENCHMARKS**

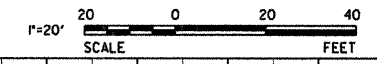
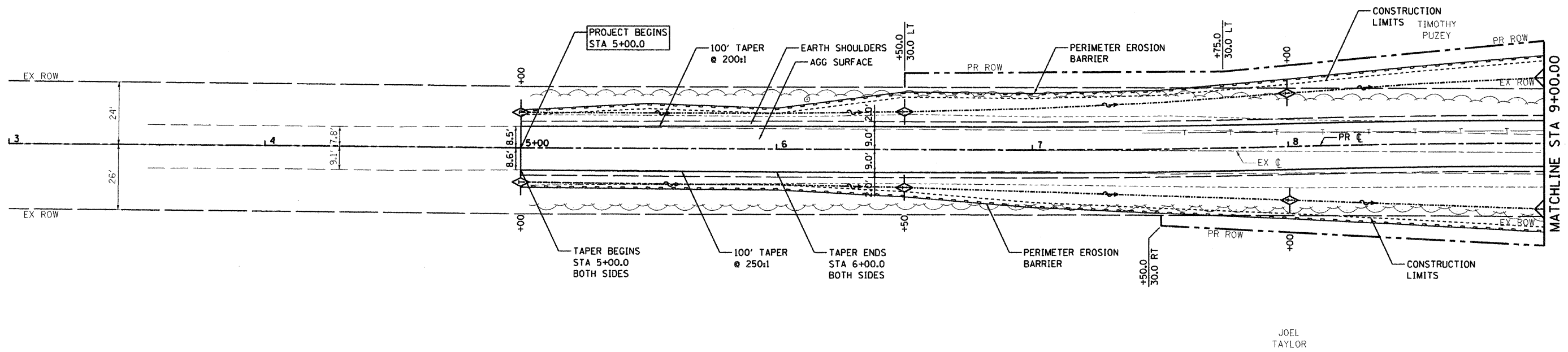
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|-----------------------------|-------------------|----------------------------|
| USER NAME = #USER#          | DESIGNED - JEH    | REVISED - JEH - 11/08/2010 |
| PLOT SCALE = 20.0000' / IN. | DRAWN - JEH       | REVISED -                  |
| PLOT DATE = 11/8/2010       | CHECKED - BRT     | REVISED -                  |
|                             | DATE - 09-20-2010 | REVISED -                  |

SCALE: 1" = 20' SHEET NO. 1 OF 1 SHEETS STA. 5+00.00 TO STA. 14+00.00

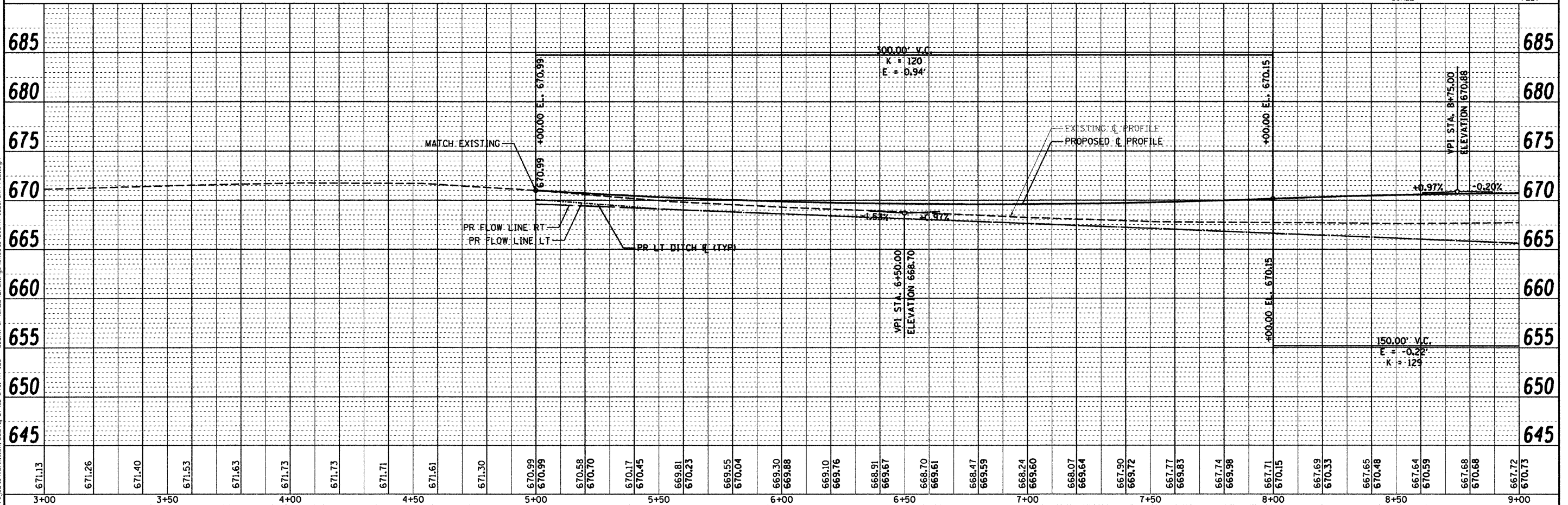
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 ALIGNED: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 ROAD FILE NAME: \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 PROFILE SURVEYED: \_\_\_\_\_  
 GRADES CHECKED: \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 ROAD FILE NAME: \_\_\_\_\_

PRINTED DATE: 10/12/2010  
 FILE NAME: H:\Projects\Verillion, County of IL\160-345, TR 160 - Swank, IL\CRD-Drawings\Sheets\160-TR 160-Plan-Profile.dwg



JOEL TAYLOR



USER NAME = #USER#  
 PLOT SCALE = 20.0000 "/ IN.  
 PLOT DATE = 10/12/2010

DESIGNED - JEH  
 DRAWN - JEH  
 CHECKED - PAT  
 DATE - 09-20-2010

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

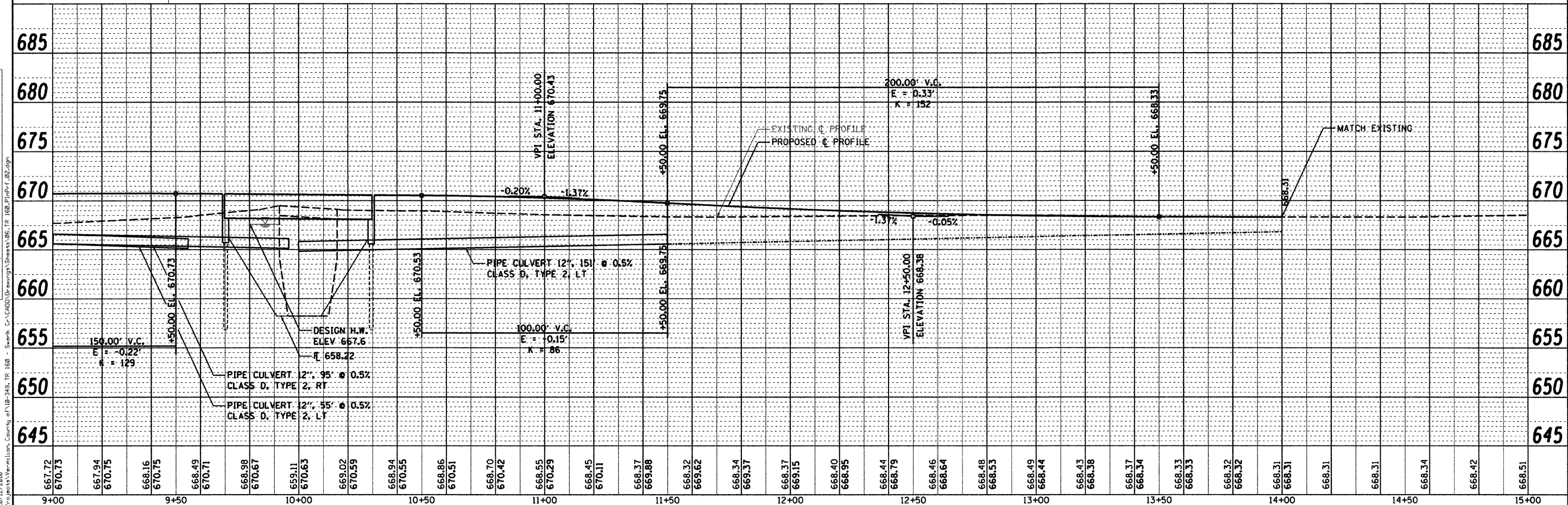
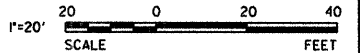
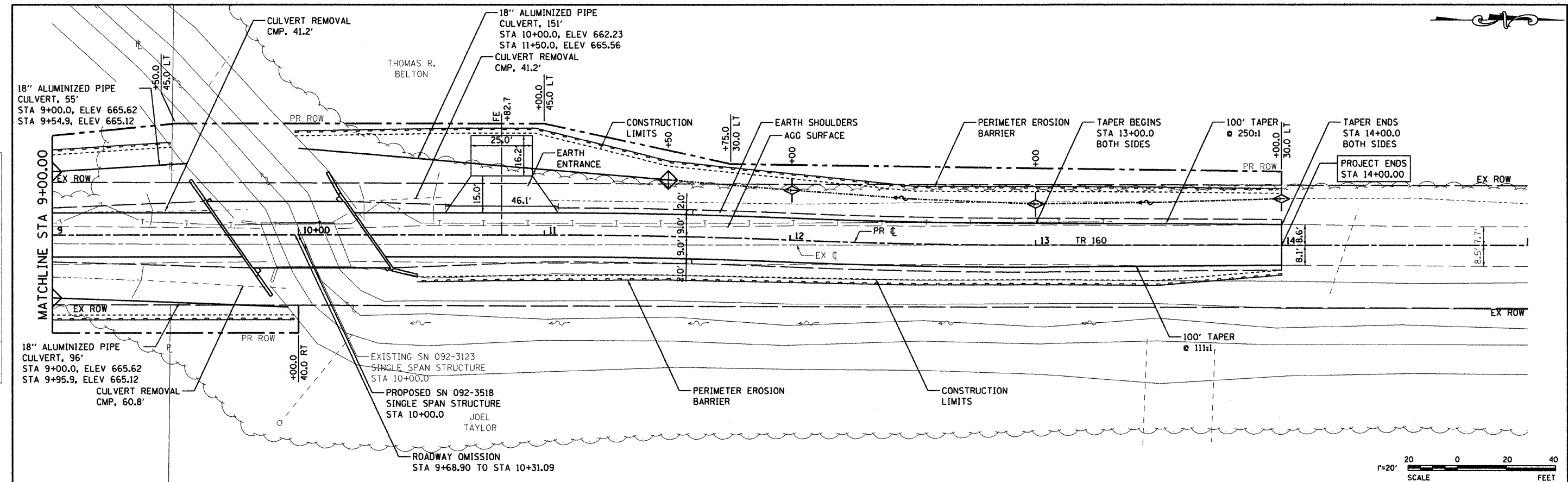
PLAN & PROFILE  
 TR 160 OVER SWANK CREEK  
 SCALE: 1"=20' SHEET NO. 1 OF 2 SHEETS STA. 5+00.00 TO STA. 9+00.00

|                           |                |           |                    |           |
|---------------------------|----------------|-----------|--------------------|-----------|
| T.R.                      | SECTION        | COUNTY    | TOTAL SHEETS       | SHEET NO. |
| 160                       | 09-09123-00-BR | VERMILION | 19                 | 5         |
| ILLINOIS FED. AID PROJECT |                |           | CONTRACT NO. 91437 |           |



|               |  |
|---------------|--|
| DATE          |  |
| BY            |  |
| PLAN          |  |
| SURVEYED      |  |
| ALIGNED       |  |
| CHECKED       |  |
| NO. OF SHEETS |  |
| DATE          |  |

|                |  |
|----------------|--|
| DATE           |  |
| BY             |  |
| PROFILE        |  |
| SURVEYED       |  |
| GRADES CHECKED |  |
| NO. OF SHEETS  |  |
| DATE           |  |



PRINTED DATE: 10/12/2010  
 FILE NAME: N:\Projects\Verillion, County of IL\18-246, TR 160 - Swank Cr\CRD\Drawings\Sheets\BR TR 160\_PlanPrf\_02.dgn

**ESI**  
 CONSULTANTS, LTD.  
 ESRI CONSULTANTS, LTD.  
 ESRI CONSULTANTS, LTD.

|            |            |           |  |
|------------|------------|-----------|--|
| DESIGNED - | JEH        | REVISIONS |  |
| DRAWN -    | JEH        | REVISIONS |  |
| CHECKED -  | PAT        | REVISIONS |  |
| DATE -     | 09-20-2010 | REVISIONS |  |

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PLAN & PROFILE**  
**TR 160 OVER SWANK CREEK**

SCALE: 1"=20'    SHEET NO. 2 OF 2 SHEETS    STA. 9+00.00 TO STA. 14+00.00

|                    |                |           |                           |           |
|--------------------|----------------|-----------|---------------------------|-----------|
| T.R.               | SECTION        | COUNTY    | TOTAL SHEETS              | SHEET NO. |
| 160                | 09-09123-00-BR | VERMILION | 19                        | 6         |
| CONTRACT NO. 91437 |                |           | ILLINOIS FED. AID PROJECT |           |

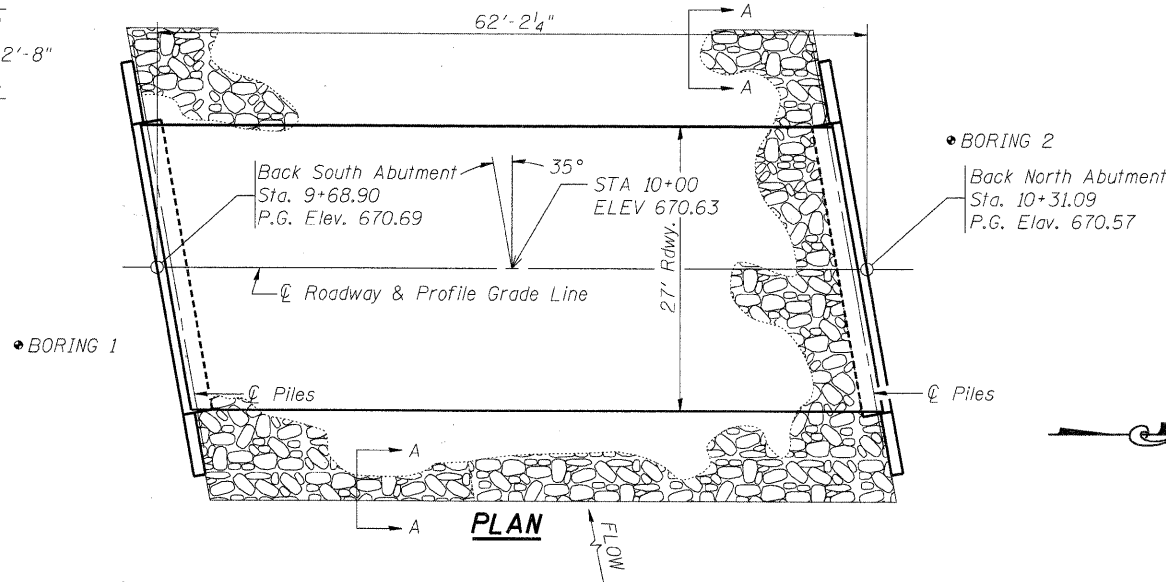
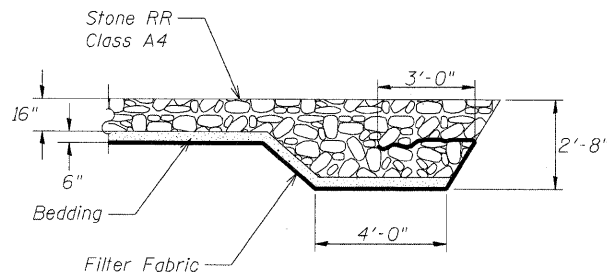
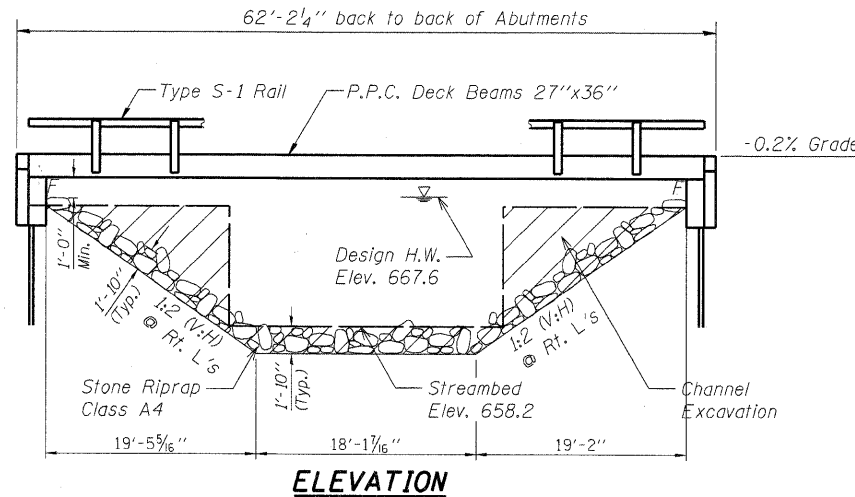
B.M.#1 - Cut square in SW corner of bridge, Sta. 9+81.98, 8.61' Left, Elev. 669.46.  
 B.M.#2 - Cut square in NE corner of bridge, Sta. 10+18.15, 9.24' Right, Elev. 669.20.

Existing Structure - Structure 092-3123 consists of two span Continuous Steel Beams and a reinforced concrete deck on closed abutments. The bk. to bk. of abutments length is 30' and the out-to-out width is 18.5'. The existing structure shall be completely replaced. Road closure shall be used during construction.

Salvage - Any material deemed salvageable by the Engineer shall be stockpiled on the R.O.W. and shall become the property of Vermilion County. The Contractor shall dispose of all remaining material.

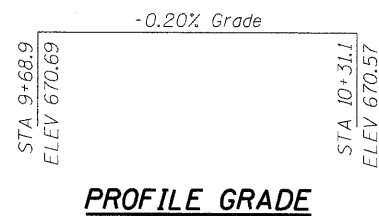
**GENERAL NOTES**

1. The Contractor shall drive 1 test pile in each abutment, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
2. See Bridge Plan Sheet 7 for boring logs.
3. Concrete sealer shall be applied to exterior face of each fascia beam.
4. The Steel H-piles shall be according to AASHTO M270 grade 50.
5. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60. See Special Provisions.
6. Reinforcement bars designated (E) shall be epoxy coated.
7. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.



**TOTAL BILL OF MATERIAL**

| Item  | Unit    | Super | Abuts. | Total |
|---|---------|-------|--------|-------|
| Removal of Existing Structures                      | Each    | -     | -      | 1     |
| Concrete Structures                                 | Cu. Yd. | -     | 31.0   | 31.0  |
| Precast Prestressed Concrete Deck Beams (27" Depth) | Sq. Ft. | 1614  | -      | 1614  |
| Steel Bridge Railing, Type S-1                      | Foot    | 120   | -      | 120   |
| Reinforcement Bars, Epoxy Coated                    | Pound   | -     | 4390   | 4390  |
| Furnishing Steel Piles HP 10x42                     | Foot    | -     | 350    | 350   |
| Driving Piles                                       | Foot    | -     | 350    | 350   |
| Test Piles Steel HP 10x42                           | Each    | -     | 2      | 2     |
| Name Plates   | Each    | 1     | -      | 1     |
| Structure Excavation                                | Cu. Yd. | -     | 115.4  | 115.4 |
| Stone Riprap Class A4                               | Sq. Yd. | -     | -      | 312   |
| Channel Excavation                                  | Cu. Yd. | -     | -      | 450   |
| Controlled Low-Strength Material                    | Cu. Yd. | -     | 65     | 65    |
| Concrete Cut-Off Wall                               | Cu. Yd. | -     | 6.4    | 6.4   |



**DESIGN SPECIFICATIONS**

2007 AASHTO LRFD Bridge Design Specifications with 2008 & 2009 Interims

**LOADING HL-93**

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

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.140  
 Design Spectral Acceleration at 2.0 sec. ( $S_{D5}$ ) = 0.248  
 Soil Site Class = D

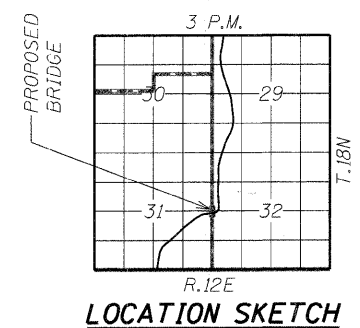
**PILE DATA (2-ABUTS.)**

Type STEEL HP 10x42  
 Nominal Required Bearing 302 kips  
 Factored Resistance Available 166 kips  
 Estimated Pile Length 35 Feet North Abut. and 35 Feet South Abut.  
 10 West  
 Number of Production Piles 2  
 Number of Test Piles 2 (1 In Each Abutment)

SWANK CREEK  
 BUILT 201\_ BY  
 VERMILION COUNTY  
 SEC. 09-09123-00-BR  
 PROJECT NO. BROS-0183(303)  
 TR160 STA. 10+00  
 STR. NO. 092-3518 LOADING HL-93

**LETTERING FOR NAME PLATE**

Locate Name Plate on the Outside face of the Southeast Wingwall



**INDEX OF SHEETS**

1. General Plan & Elevation
2. Superstructure
3. Superstructure Details
4. Steel Railing
- 5.-6. Abutment Details
7. Pile Details
8. Boring Logs



Daniel Feuerborn  
 License Expires 11-30-2012

10/13/2010  
 Date

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

**WATERWAY INFORMATION**

Drainage Area = 4.24 SQ MI Low Grade Elev. = 668.31 @ Sta. 14+00

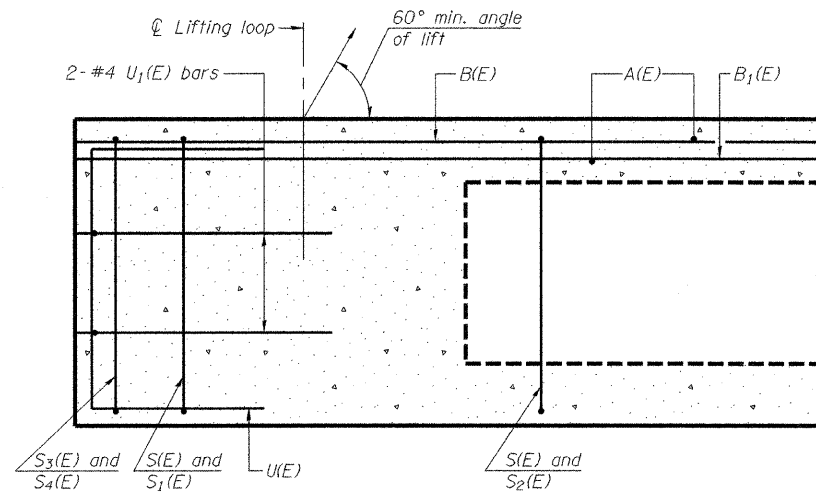
| Flood       | Freq. Yr. | Q C.F.S. | Opening Sq. Ft. |       | Nat. H.W.E. | Head - Ft. |       | Headwater E.I. |       |
|-------------|-----------|----------|-----------------|-------|-------------|------------|-------|----------------|-------|
|             |           |          | Exist.          | Prop. |             | Exist.     | Prop. | Exist.         | Prop. |
| Design      | 15        | 471      | 175.6           | 282.3 | 667.6       | 0.1        | 0.1   | 667.7          | 667.7 |
| Base        | 100       | 870      | 201.3           | 306.9 | 668.7       | 0.5        | 0.1   | 669.2          | 668.8 |
| Overtopping |           |          |                 |       |             |            |       |                |       |
| Max. Calc.  | 500       |          |                 |       |             |            |       |                |       |

**GENERAL PLAN & ELEVATION  
 STRUCTURE NO. 092-3518**

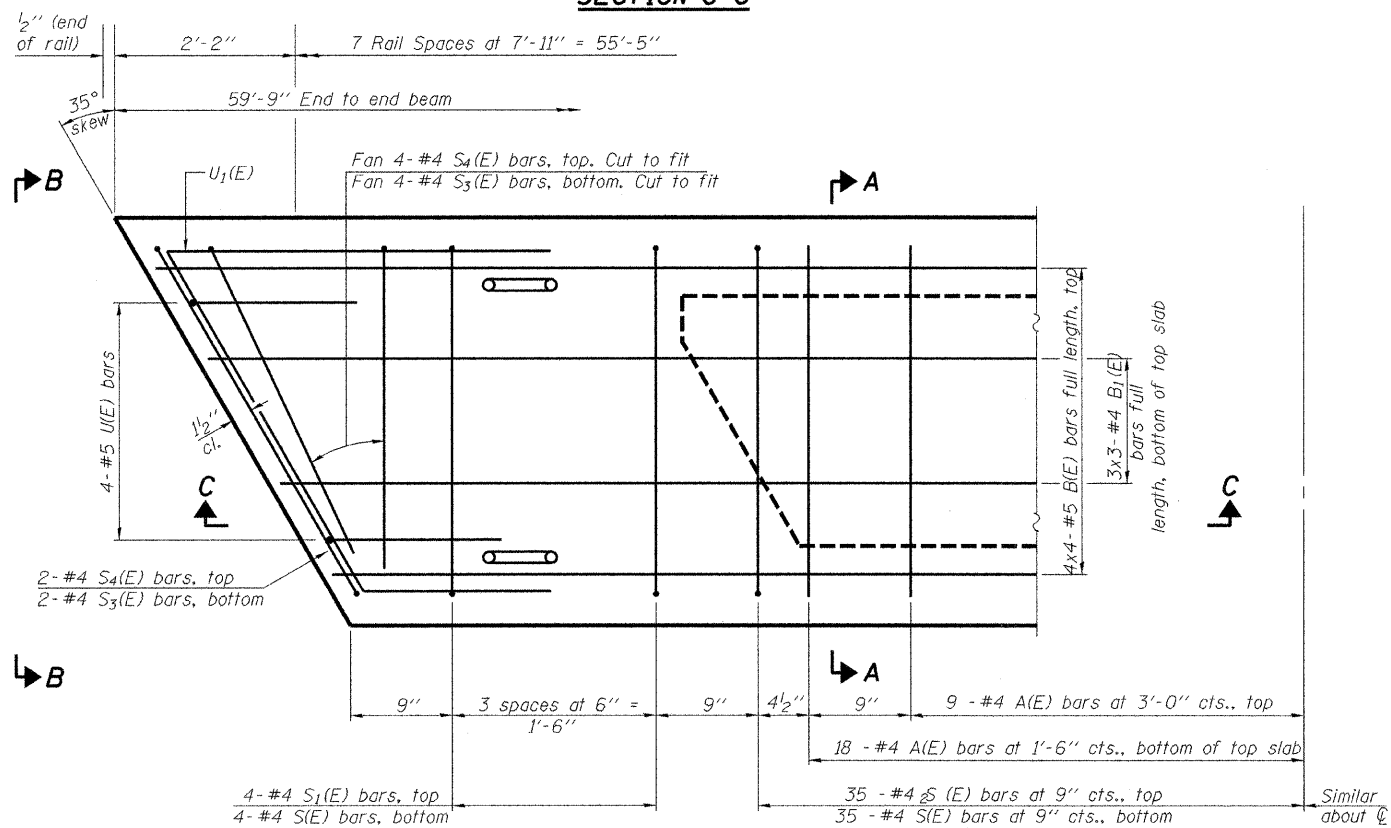
DATE: 09-20-2010 DRAWN BY: JEH CHECKED BY: JDF

| SHEET NO. 1<br>OF 8 SHEETS | T.R. | SECTION<br>09-09123-00-BR | COUNTY<br>VERMILION                             | TOTAL SHEETS | SHEET NO. |
|----------------------------|------|---------------------------|---|--------------|-----------|
|                            | 160  |                           |   | 19           | 7         |
| CONTRACT NO. 91437         |      |                           | FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT |              |           |

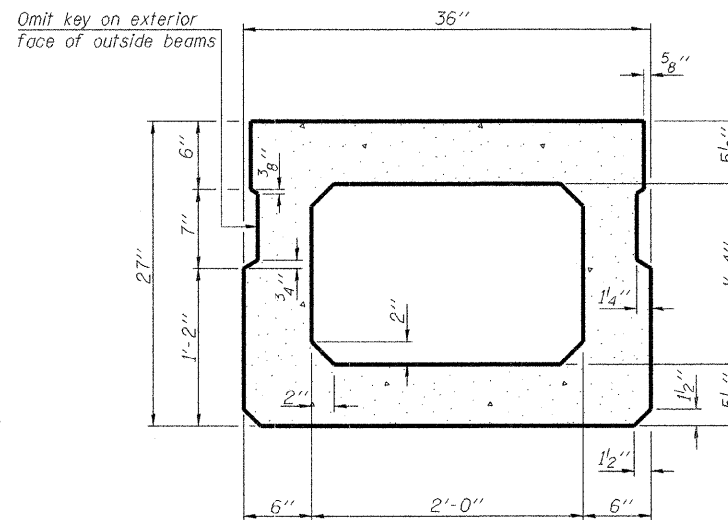




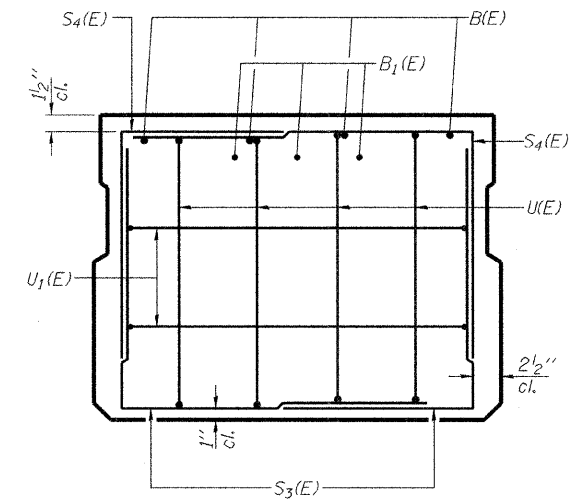
**SECTION C-C**



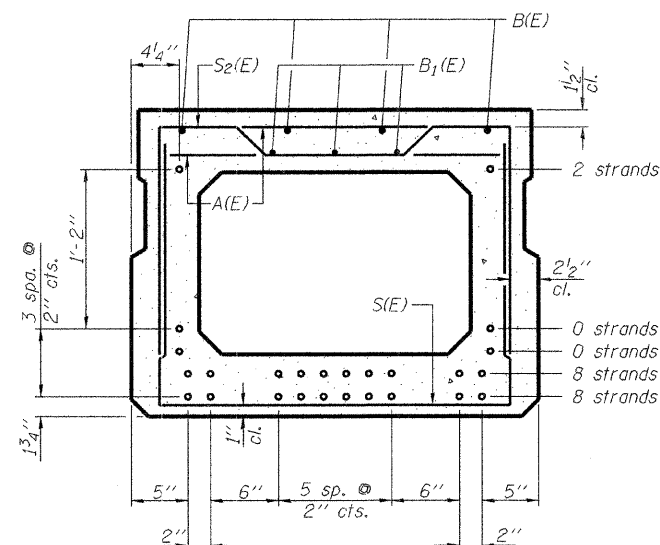
**PLAN VIEW**



**SECTION A-A**  
(Showing dimensions)



**VIEW B-B**



**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)  | 53  | #4   | 2'-7"  | —     |
| B(E)  | 16  | #5   | 16'-9" | —     |
| B1(E) | 9   | #4   | 21'-6" | —     |
| S(E)  | 78  | #4   | 6'-5"  | U     |
| S1(E) | 8   | #4   | 5'-11" | U     |
| S2(E) | 70  | #4   | 6'-2"  | U     |
| S3(E) | 12  | #4   | 4'-3"  | J     |
| S4(E) | 12  | #4   | 4'-0"  | J     |
| U(E)  | 8   | #5   | 4'-6"  | C     |
| U1(E) | 4   | #4   | 7'-8"  | C     |

Note: See sheet 3 of 8 for additional details and Bill of Material.

**MINIMUM BAR LAP**

#4 bar = 2'-0"  
#5 bar = 2'-6"

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

**27" X 36" PPC DECK BEAM**

**SUPERSTRUCTURE**  
**STRUCTURE NO. 092-3518**

DATE: 09-20-2010 DRAWN BY: JEH CHECKED BY: DF



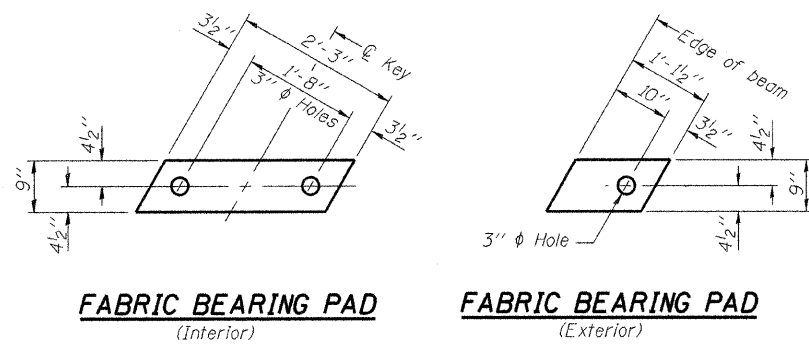
PD-2736-R

11-1-09

|   |                    |                |           |              |           |
|---|--------------------|----------------|-----------|--------------|-----------|
| SHEET NO. 2<br>OF 8 SHEETS                    | T.R.               | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|   | 160                | 09-09123-00-BR | VERMILION | 19           | 8         |
|   | CONTRACT NO. 91437 |                |           |              |           |
| FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT |                    |                |           |              |           |

PRINTED DATE: 10/12/2010 FILE NAME: \\FS-PROD\Drawings\Shasta\08\_TR\_168\_Super.dgn





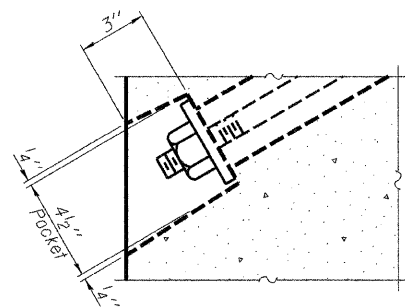
**FABRIC BEARING PAD**  
(Interior)

**FABRIC BEARING PAD**  
(Exterior)

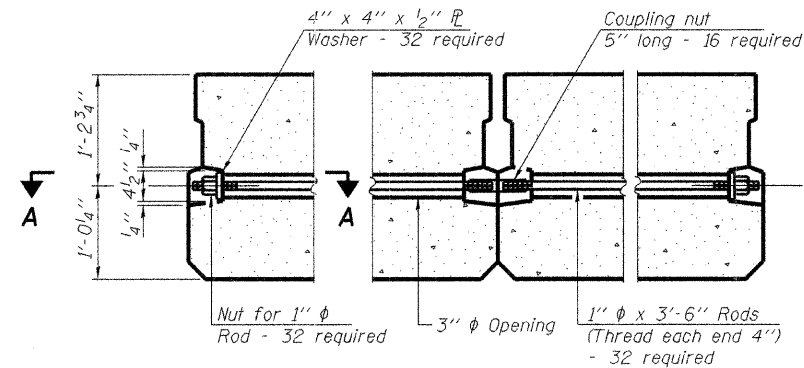
**FIXED**

**Notes:**

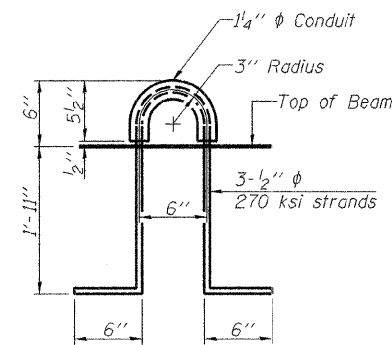
All bearing pads shall be 1" thick.  
Omit holes when using expansion bearings.  
Expansion bearing pad shall be bonded to the substructure.



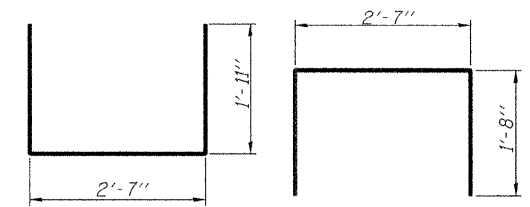
**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**

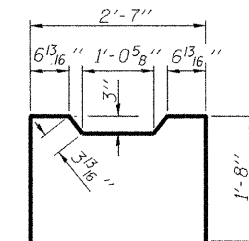


**LIFTING LOOP DETAIL**



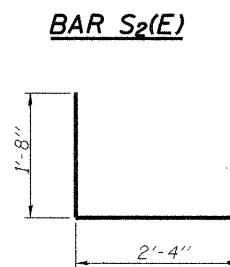
**BAR S(E)**

**BAR S1(E)**



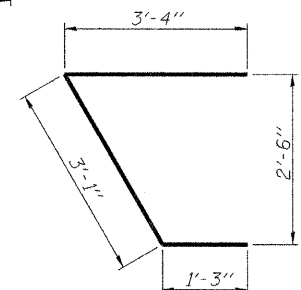
**BAR S2(E)**

**BAR S3(E)**



**BAR S4(E)**

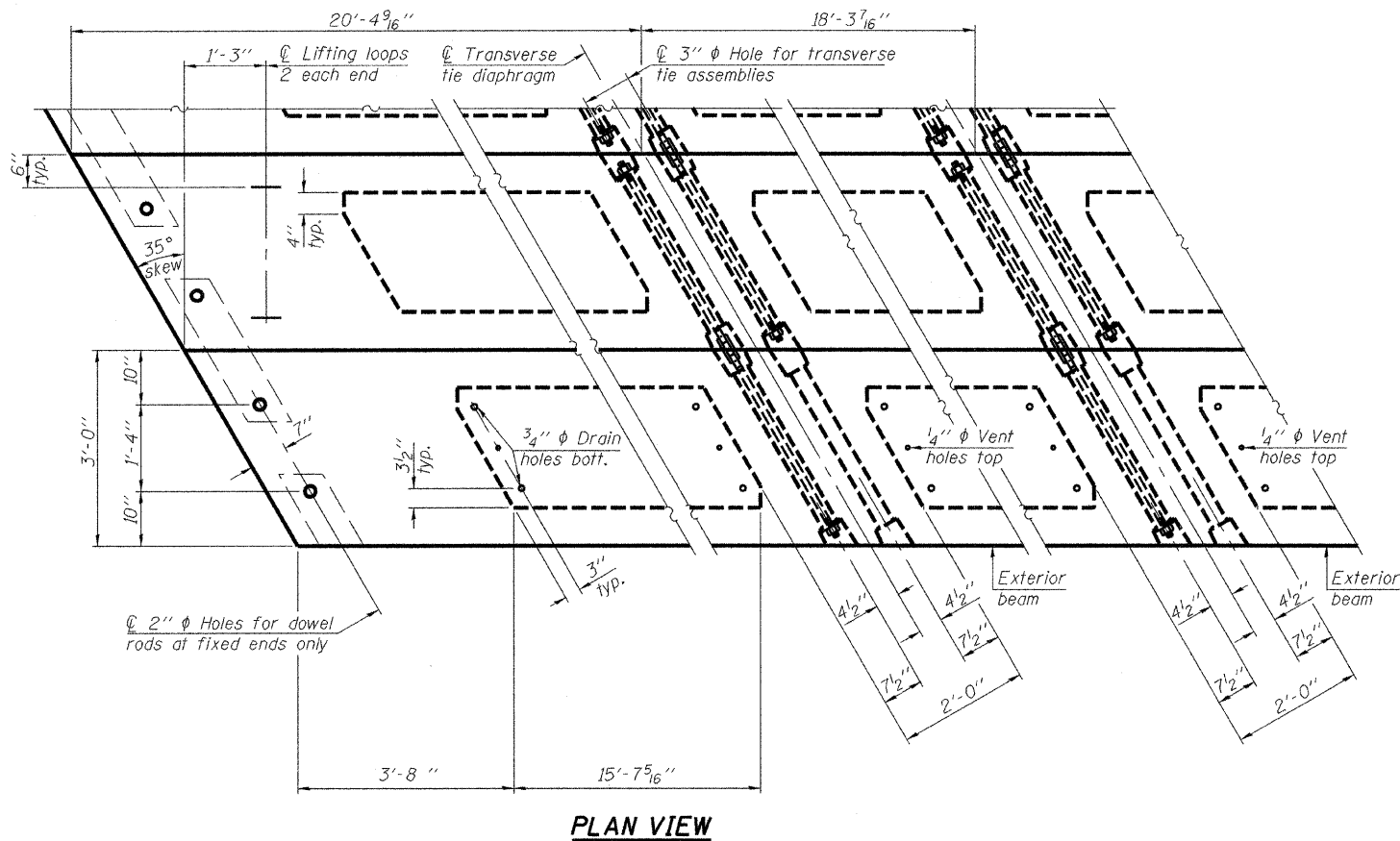
**BAR U(E)**



**BAR U1(E)**

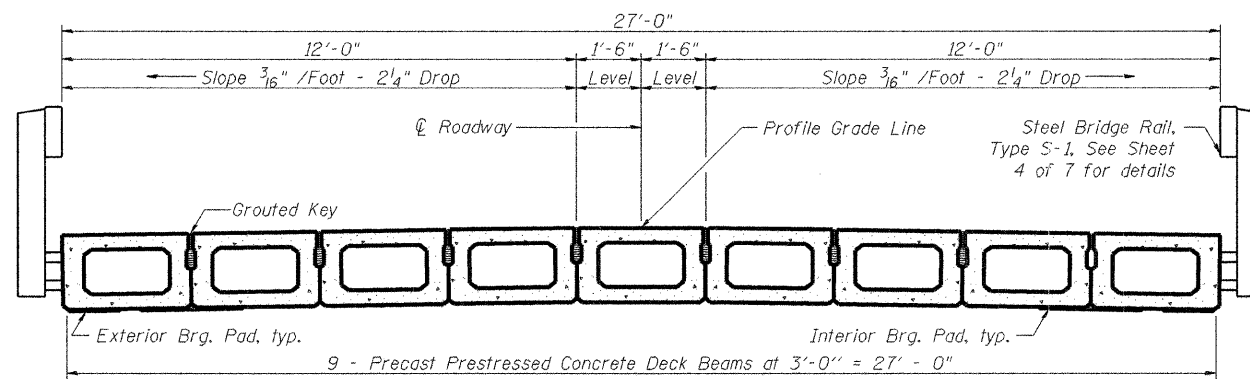
**NOTES**

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 1/8" 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.



**PLAN VIEW**

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



**CROSS SECTION**

**BILL OF MATERIAL**

|   |         |      |
|---|---------|------|
| Precast Prestressed Conc. Deck Bms. (27" depth) | Sq. Ft. | 1614 |
|---|---------|------|

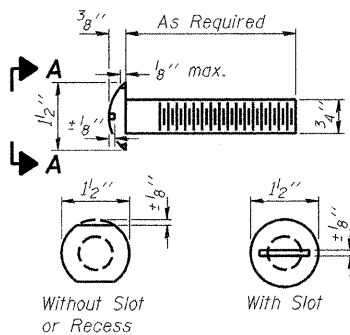
**27" X 36" PPC DECK BEAM**

**SUPERSTRUCTURE DETAILS**  
**STRUCTURE NO. 092-3518**

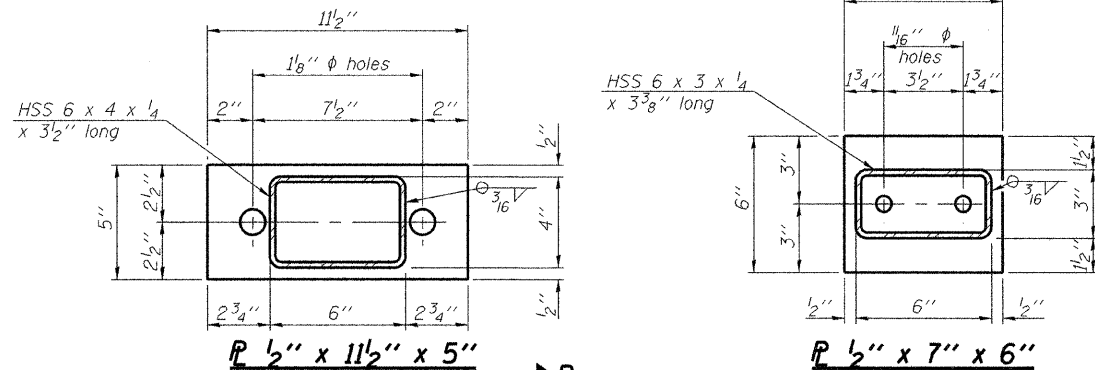
DATE: 09-20-2010 DRAWN BY: JEH CHECKED BY: DF

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| SHEET NO. 3<br>OF 8 SHEETS                    | T.R.               | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|   | 160                | 09-09123-00-BR | VERMILION | 19           | 9         |
|   | CONTRACT NO. 91437 |                |           |              |           |
| FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT |                    |                |           |              |           |



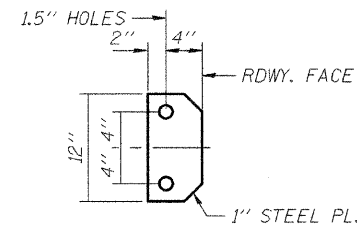


**VIEW A-A  
ROUND HEAD BOLT**

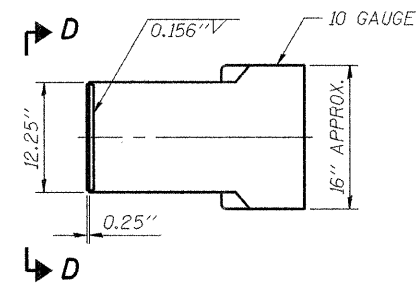


**PLAN 1/2" x 11 1/2" x 5"**

**PLAN 1/2" x 7" x 6"**

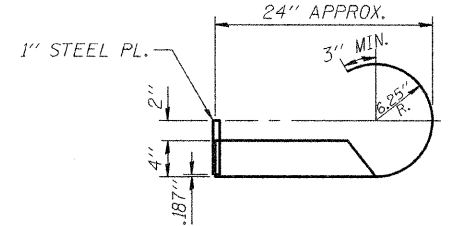


**VIEW D-D**

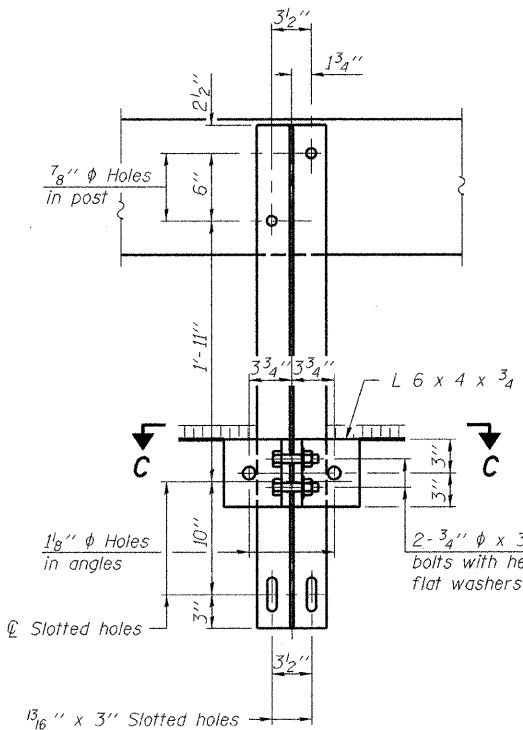


**CURLED END SECTION DETAILS**

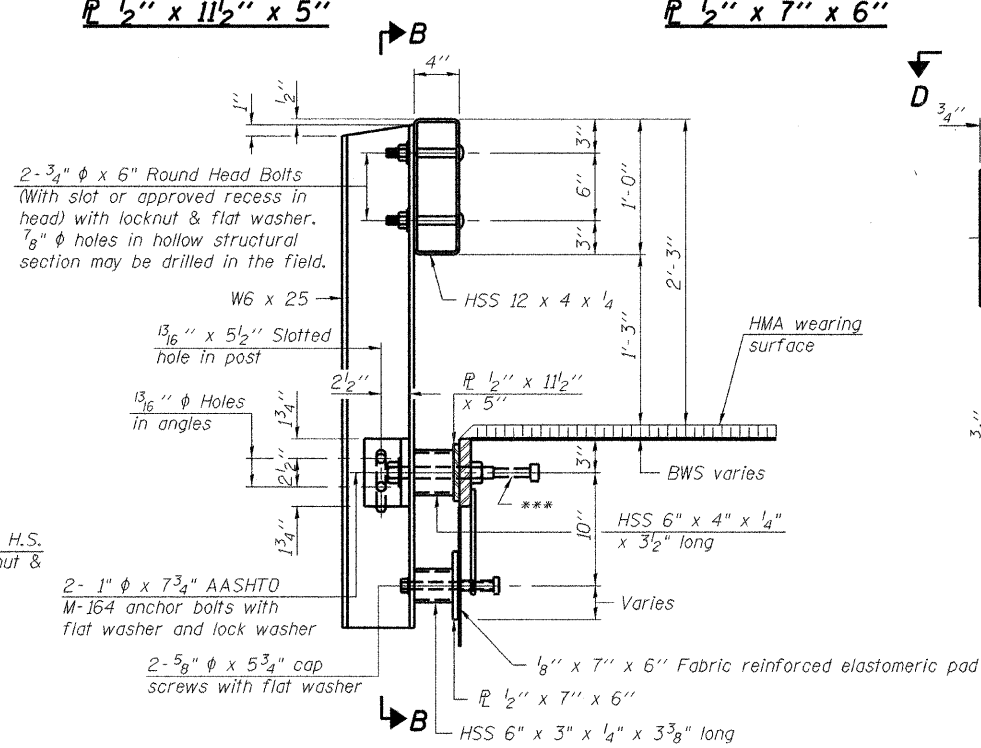
4 REQUIRED - COST INCLUDED IN "STEEL RAILING, TYPE S-1"



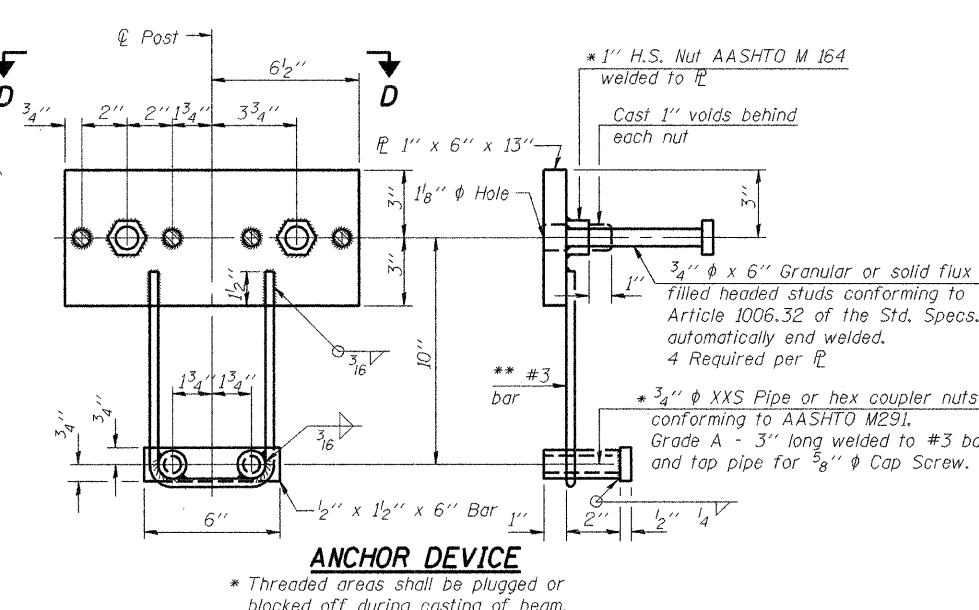
**VIEW D-D**



**SECTION B-B**



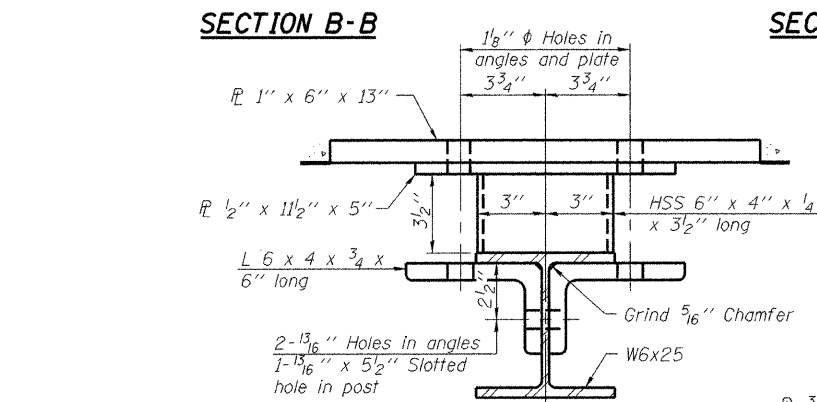
**SECTION AT RAILING POST**



**ANCHOR DEVICE**

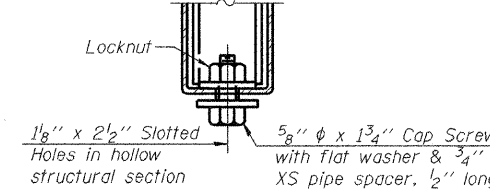
\* Threaded areas shall be plugged or blocked off during casting of beam.

Notes:  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
\*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

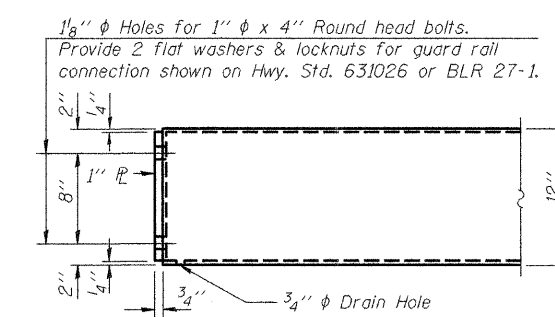


**SECTION C-C**

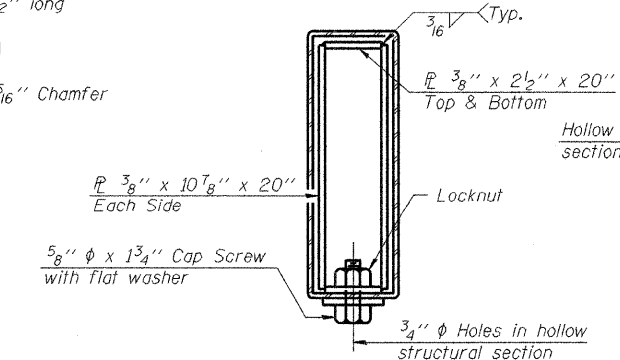
\*\* Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.



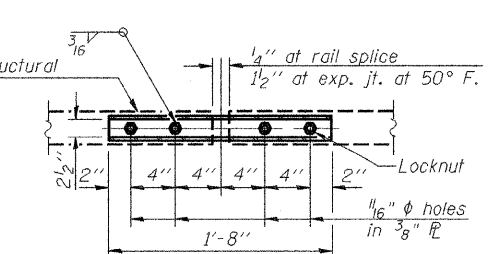
**RAIL SPLICE CONNECTION AT EXPANSION JT.**



**END OF RAIL DETAILS**



**SECTIONS AT RAIL SPLICE**



**PLAN-BOTT. SPLICE P TYPICAL**

**BILL OF MATERIAL**

| Item                    | Unit | Quantity |
|-------------------------|------|----------|
| Steel Railing, Type S-1 | Foot | 120      |

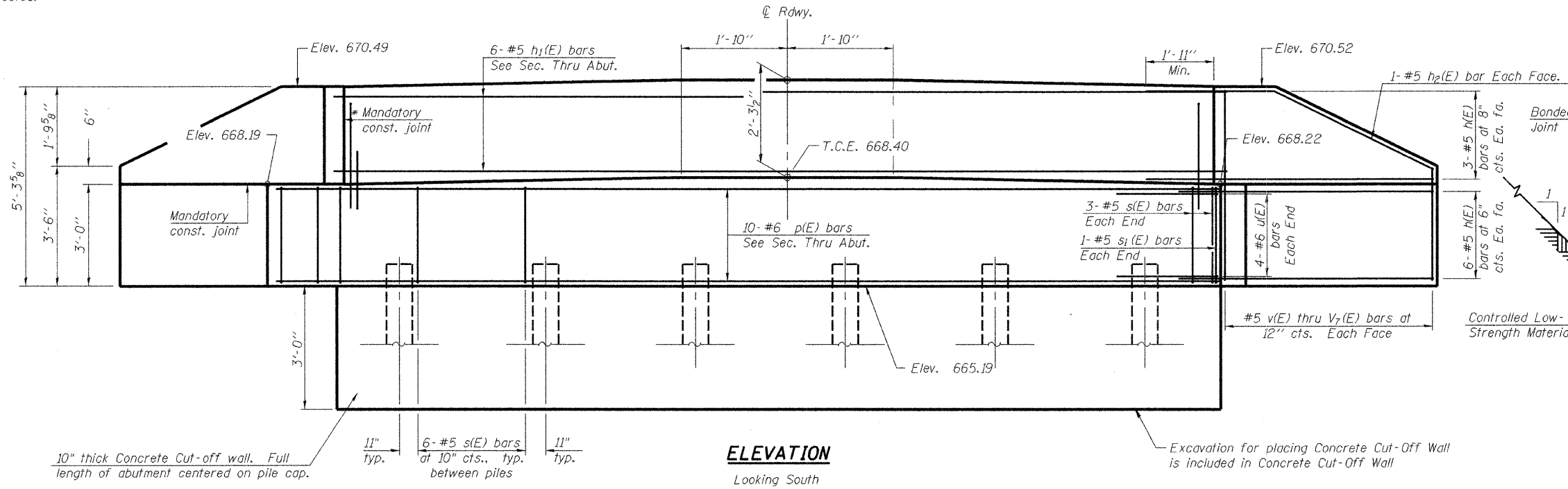
**STEEL RAILING, TYPE S-1  
STRUCTURE NO. 092-3518**

|                  |               |                |
|------------------|---------------|----------------|
| DATE: 09-20-2010 | DRAWN BY: JEH | CHECKED BY: DF |
|------------------|---------------|----------------|

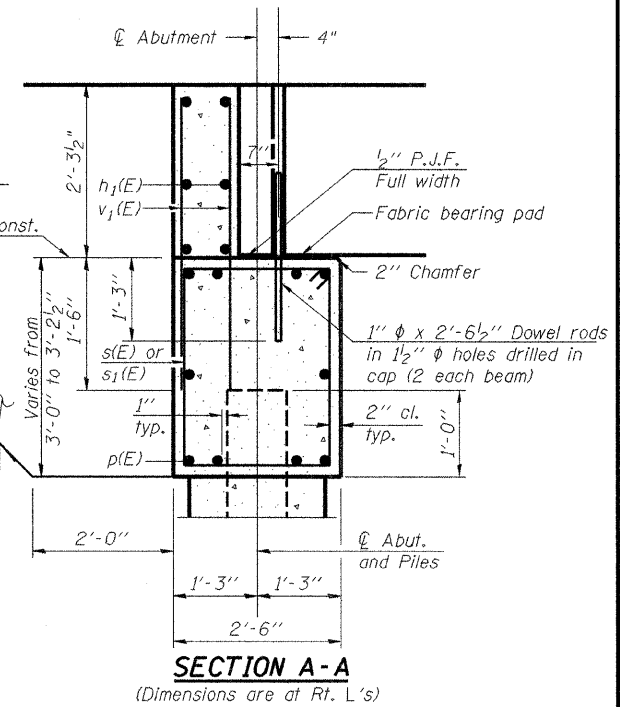
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|---|--------------------|----------------|-----------|--------------|-----------|
| SHEET NO. 4<br>OF 8 SHEETS                      | T.R.               | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|   | 160                | 09-09123-00-BR | VERMILION | 19           | 10        |
|   | CONTRACT NO. 91437 |                |           |              |           |
| FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT |                    |                |           |              |           |

PRINTED DATE: 10/12/2010  
FILE NAME: I:\P\Projects\Vermlion\County of V\18-248, TR 160 - Steel C-C\CDM\Drawings\Sheets\10, TR 160, Rail.rvt

\* Cast top of wingwall flush with exterior beam face after beams have been erected.



**ELEVATION**  
Looking South



**SECTION A-A**  
(Dimensions are at Rt. L's)

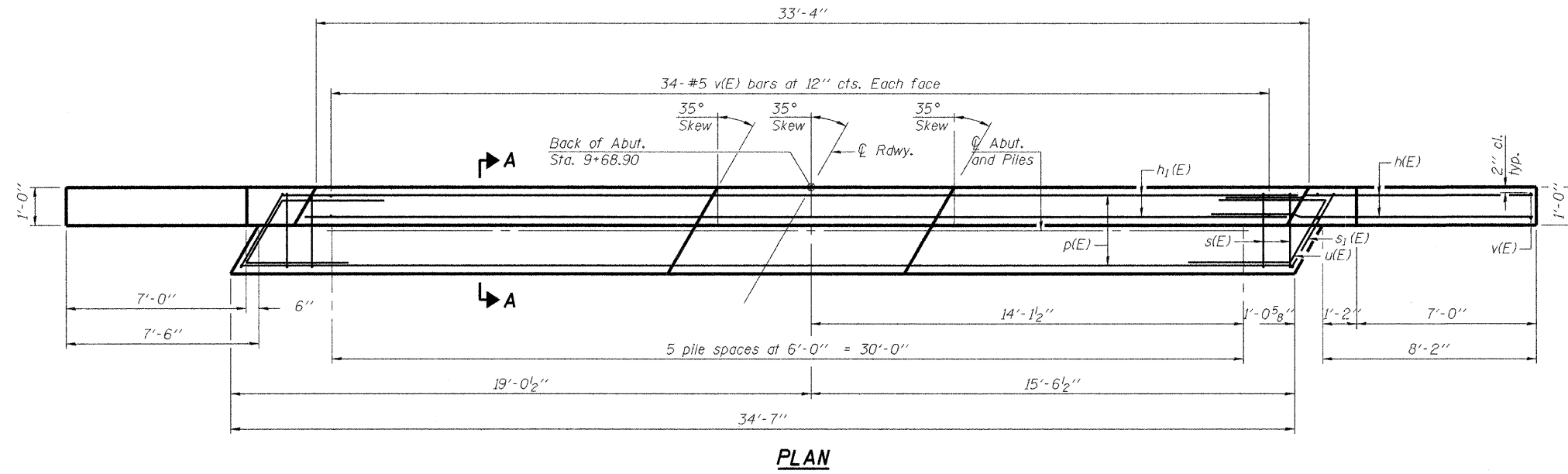
**BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| h(E)                             | 36  | #5      | 10'-4" | —     |
| h1(E)                            | 6   | #5      | 34'-3" | —     |
| h2(E)                            | 4   | #5      | 11'-2" | —     |
| p(E)                             | 10  | #6      | 34'-3" | —     |
| s(E)                             | 36  | #5      | 10'-7" | □     |
| s1(E)                            | 2   | #5      | 11'-5" | □     |
| u(E)                             | 8   | #6      | 11'-5" | ┌     |
| v(E)                             | 72  | #5      | 4'-11" | —     |
| v1(E)                            | 4   | #5      | 4'-8"  | —     |
| v2(E)                            | 4   | #5      | 4'-5"  | —     |
| v3(E)                            | 4   | #5      | 4'-2"  | —     |
| v4(E)                            | 4   | #5      | 3'-11" | —     |
| v5(E)                            | 4   | #5      | 3'-8"  | —     |
| v6(E)                            | 4   | #5      | 3'-5"  | —     |
| v7(E)                            | 4   | #5      | 3'-2"  | —     |
| Structure Excavation             |     | Cu. Yd. | 57.7   |       |
| Concrete Structures              |     | Cu. Yd. | 15.5   |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 2210   |       |
| Furnishing Steel Piles HP 10x42  |     | Foot    | 175    |       |
| Driving Piles                    |     | Foot    | 175    |       |
| Test Pile, Steel HP 10x42        |     | Each    | 1      |       |
| Concrete Cut-Off Wall            |     | Cu. Yd. | 3.2    |       |
| Controlled Low-Strength Material |     | Cu. Yd. | 32.5   |       |

Notes:  
For details of piles see sheet 7 of 8.  
Cast backwall after beams have been erected.

**SOUTH ABUTMENT DETAILS  
STRUCTURE NO. 092-3518**

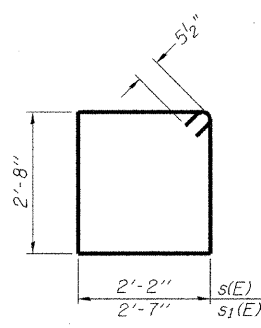
DATE: 09-20-2010 DRAWN BY: JEH CHECKED BY: DF



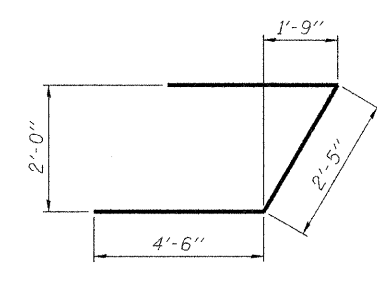
**PLAN**

**PILE DATA**

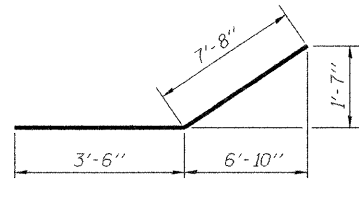
Type: Steel HP 10x42  
Nominal Required Bearing: 302K  
Factored Resistance Available: 166K  
Est. Length: 35'  
No. Production Piles: 5  
No. Test Piles: 1



**BARS s(E) & s1(E)**



**BAR u(E)**



**BAR h2(E)**

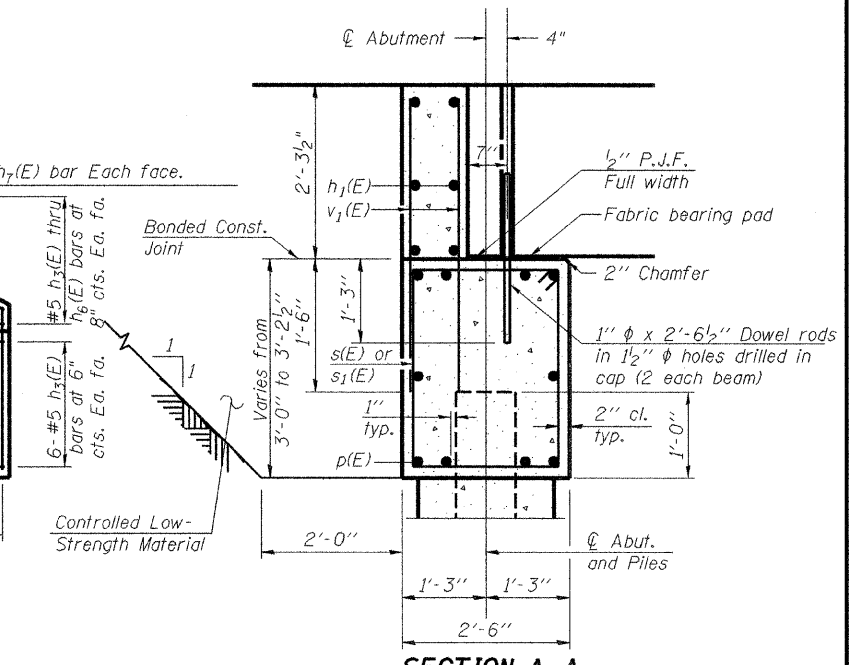
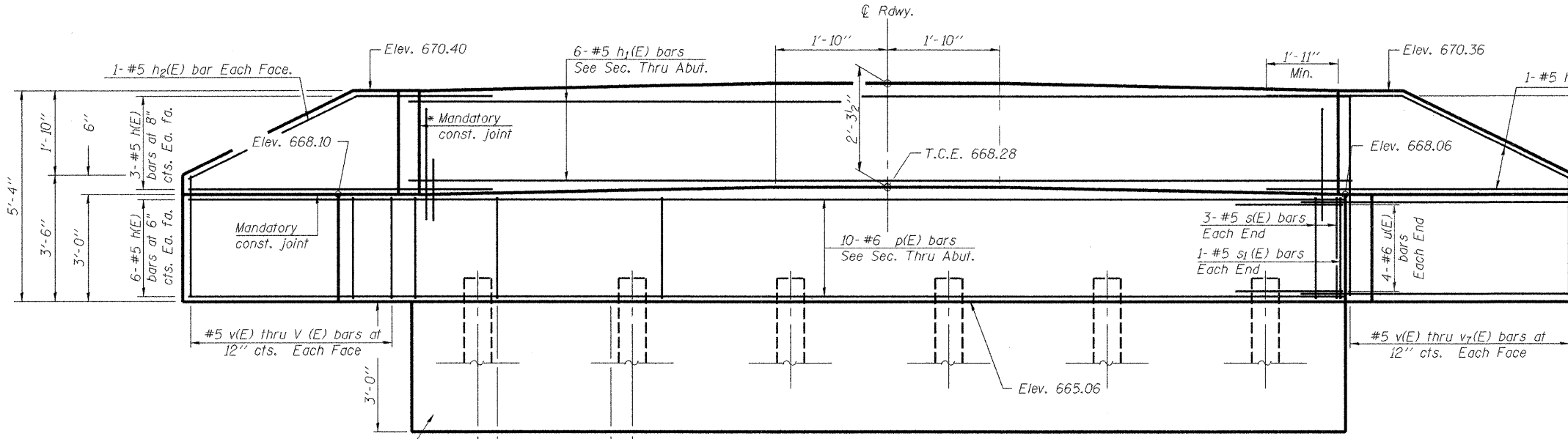
**ESI CONSULTANTS, LTD**  
753 WINDSOR ROAD  
CHARLESTON, IL 61920  
(217) 348-1950  
WWW.ESICONSULTANTS.LTD.COM  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184-003689

AD-2742-R 11-1-09

|                            |      |                |                           |              |           |
|----------------------------|------|----------------|---------------------------|--------------|-----------|
| SHEET NO. 5<br>OF 8 SHEETS | T.R. | SECTION        | COUNTY                    | TOTAL SHEETS | SHEET NO. |
|                            | 160  | 09-09123-00-BR | VERMILION                 | 19           | 11        |
| FED. ROAD DIST. NO. _      |      |                | ILLINOIS FED. AID PROJECT |              |           |

PRINTED DATE: 10/10/2010 FILE NAME: I:\Projects\Vermlion\County of V\B-348, TR. 168 - Seebok Cr.\CAD\DWG\Drawings\Sheets\11 TR 168 S Abutment.dwg

\* Cast top of wingwall flush with exterior beam face after beams have been erected.



**SECTION A-A**  
(Dimensions are at Rt. L's)

10" thick Concrete Cut-off wall. Full length of abutment centered on pile cap.  
11" typ.  
6- #5 s(E) bars at 10" cts., typ. between piles  
11" typ.

**ELEVATION**  
Looking North

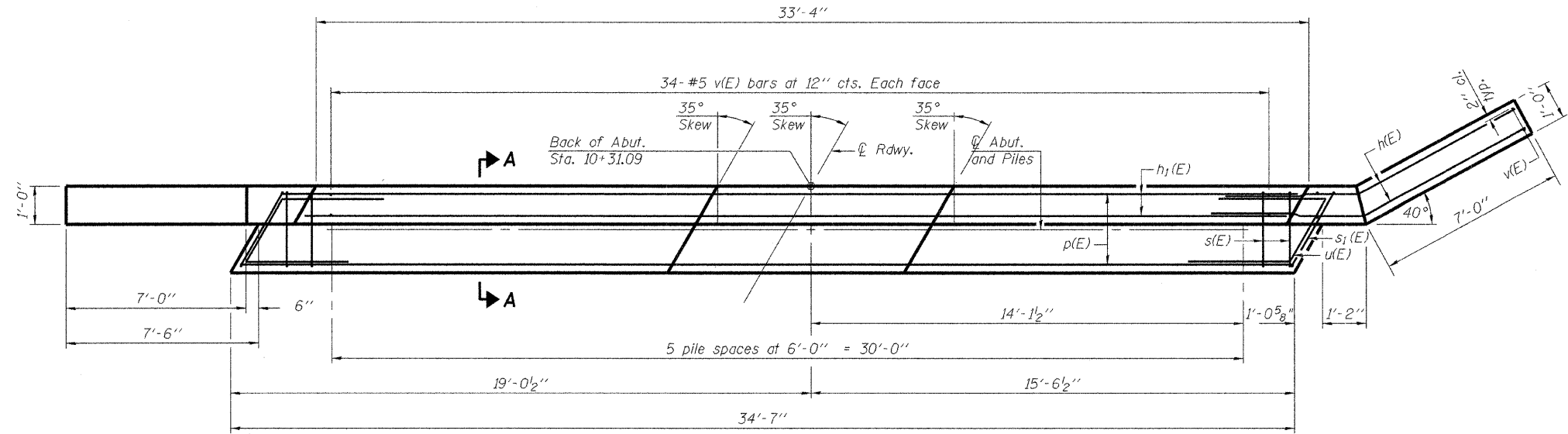
**BILL OF MATERIAL**

| Bar                              | No. | Size    | Length | Shape |
|----------------------------------|-----|---------|--------|-------|
| h(E)                             | 18  | #5      | 10'-4" | —     |
| h1(E)                            | 6   | #5      | 34'-3" | —     |
| h3(E)                            | 14  | #5      | 10'-4" | —     |
| h4(E)                            | 2   | #5      | 9'-3"  | —     |
| h5(E)                            | 2   | #5      | 6'-8"  | —     |
| h6(E)                            | 2   | #5      | 3'-6"  | —     |
| h7(E)                            | 2   | #5      | 7'-0"  | —     |
| p(E)                             | 10  | #6      | 34'-3" | —     |
| s(E)                             | 36  | #5      | 10'-7" | —     |
| s1(E)                            | 2   | #5      | 11'-5" | —     |
| u(E)                             | 8   | #6      | 11'-5" | —     |
| v(E)                             | 72  | #5      | 4'-11" | —     |
| v1(E)                            | 4   | #5      | 4'-8"  | —     |
| v2(E)                            | 4   | #5      | 4'-5"  | —     |
| v3(E)                            | 4   | #5      | 4'-2"  | —     |
| v4(E)                            | 4   | #5      | 3'-11" | —     |
| v5(E)                            | 4   | #5      | 3'-8"  | —     |
| v6(E)                            | 4   | #5      | 3'-5"  | —     |
| v7(E)                            | 4   | #5      | 3'-2"  | —     |
| Structure Excavation             |     | Cu. Yd. | 57.7   |       |
| Concrete Structures              |     | Cu. Yd. | 15.5   |       |
| Reinforcement Bars, Epoxy Coated |     | Pound   | 2180   |       |
| Furnishing Steel Piles HP 10x42  |     | Foot    | 175    |       |
| Driving Piles                    |     | Foot    | 175    |       |
| Test Pile, Steel HP 10x42        |     | Each    | 1      |       |
| Concrete Cut-Off Wall            |     | Cu. Yd. | 3.2    |       |
| Controlled Low-Strength Material |     | Cu. Yd. | 32.5   |       |

Notes:  
For details of piles see sheet 7 of B.  
Cast backwall after beams have been erected.

**NORTH ABUTMENT DETAILS**  
**STRUCTURE NO. 092-3518**

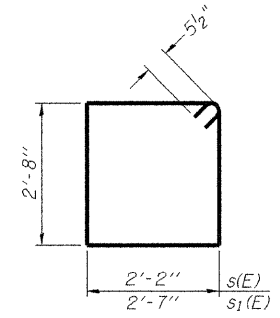
DATE: 09-20-2010 DRAWN BY: JEH CHECKED BY: DF



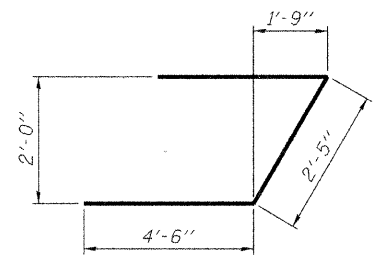
**PLAN**

**PILE DATA**

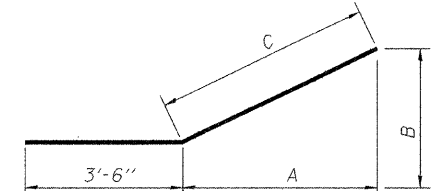
Type: Steel HP 10x42  
Nominal Required Bearing: 302K  
Factored Resistance Available: 166K  
Est. Length: 35'  
No. Production Piles: 5  
No. Test Piles: 1



**BARS s(E) & s1(E)**



**BAR u(E)**



**BAR h3(E), h4(E), h5(E)**

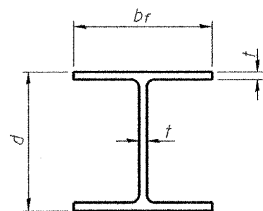
| Bar   | A     | B     | C      |
|-------|-------|-------|--------|
| h3(E) | 5'-3" | 4'-5" | 6'-10" |
| h4(E) | 4'-5" | 3'-8" | 5'-9"  |
| h5(E) | 2'-5" | 2'-0" | 3'-2"  |

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AD-2742-R 11-1-09

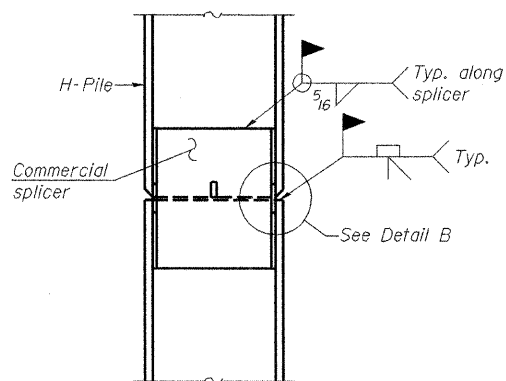
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| SHEET NO. 6<br>OF 8 SHEETS                      | T.R.               | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|   | 160                | 09-09123-00-BR | VERMILION | 19           | 12        |
|   | CONTRACT NO. 91437 |                |           |              |           |
| FED. ROAD DIST. NO. _ ILLINOIS FED. AID PROJECT |                    |                |           |              |           |

PRINTED DATE: 09/10/2010 FILE NAME: H:\Projects\Vermonion\County of\09-248-TR-160 - Seebk C-\CADD\Drawings\Sheets\12 TR 160 N Abutment.dwg

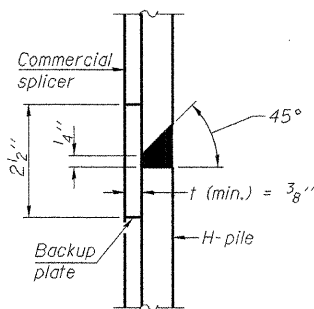


**STEEL PILE TABLE**

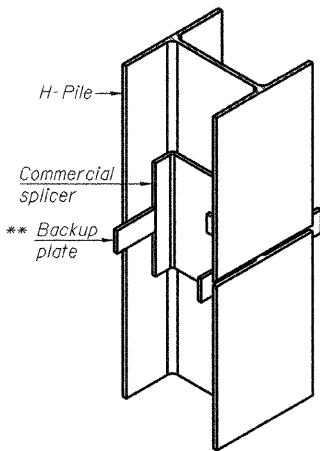
| Designation | Depth d | Flange width b <sub>f</sub> | Web and Flange thickness t | Encasement diameter A |
|-------------|---------|-----------------------------|----------------------------|-----------------------|
| HP 14x117   | 14 1/4" | 14 7/8"                     | 13/16"                     | 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**

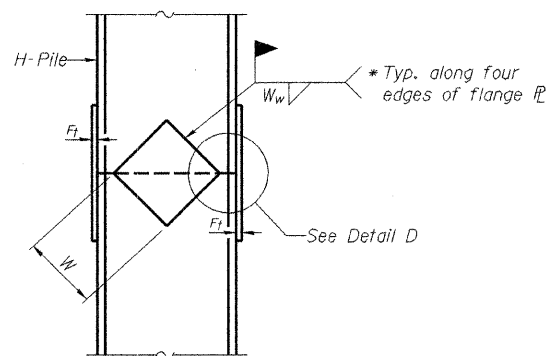


**DETAIL "B"**

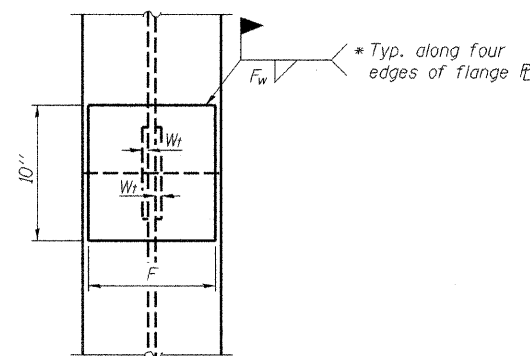


**ISOMETRIC VIEW**

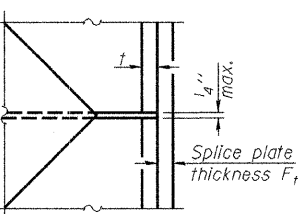
**WELDED COMMERCIAL SPLICE**



**ELEVATION**



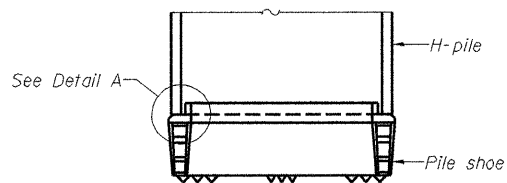
**END VIEW**



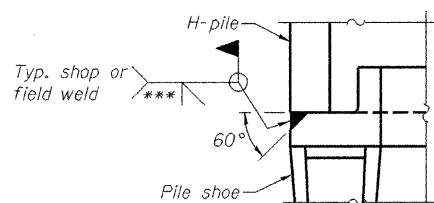
**DETAIL D**

**WELDED PLATE FIELD SPLICE**

| Designation | F       | F <sub>t</sub> | F <sub>w</sub> | W      | W <sub>t</sub> | W <sub>w</sub> |
|-------------|---------|----------------|----------------|--------|----------------|----------------|
| HP 14x117   | 12 1/2" | 1"             | 7/8"           | 7 3/4" | 5 8/8"         | 1/2"           |
| x102        | 12 1/2" | 7/8"           | 3/4"           | 7 3/4" | 5 8/8"         | 1/2"           |
| x89         | 12 1/2" | 3/4"           | 1/16"          | 7 3/4" | 5 8/8"         | 1/2"           |
| x73         | 12 1/2" | 5/8"           | 9/16"          | 7 3/4" | 5 8/8"         | 1/2"           |
| HP 12x84    | 10"     | 7/8"           | 1/16"          | 6 1/2" | 5 8/8"         | 1/2"           |
| x74         | 10"     | 7/8"           | 1/16"          | 6 1/2" | 5 8/8"         | 1/2"           |
| x63         | 10"     | 5/8"           | 1/2"           | 6 1/2" | 1/2"           | 3/8"           |
| x53         | 10"     | 5/8"           | 1/2"           | 6 1/2" | 1/2"           | 3/8"           |
| HP 10x57    | 8"      | 3/4"           | 9/16"          | 5 1/4" | 1/2"           | 3/8"           |
| x42         | 8"      | 5/8"           | 9/16"          | 5 1/4" | 1/2"           | 3/8"           |
| HP 8x36     | 7"      | 5/8"           | 7/16"          | 4 1/4" | 1/2"           | 3/8"           |

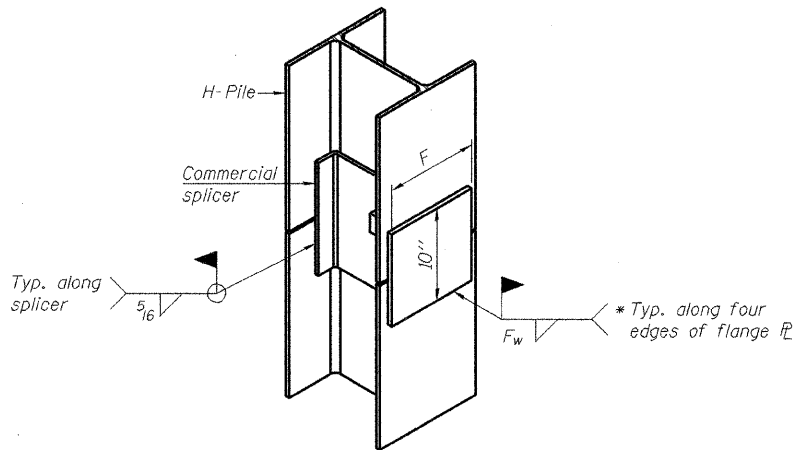


**ELEVATION**



**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.).

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

**HP PILE DETAILS**  
**STRUCTURE NO. 092-3518**  
DATE: 09-20-2010 DRAWN BY: JEH CHECKED BY: DF

|   |                    |                |           |              |           |
|---|--------------------|----------------|-----------|--------------|-----------|
| SHEET NO. 7<br>OF 8 SHEETS                    | T.R.               | SECTION        | COUNTY    | TOTAL SHEETS | SHEET NO. |
|   | 160                | 09-09123-00-BR | VERMILION | 19           | 13        |
|   | CONTRACT NO. 91437 |                |           |              |           |
| FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT |                    |                |           |              |           |



PRINTED DATE: 09/22/2010  
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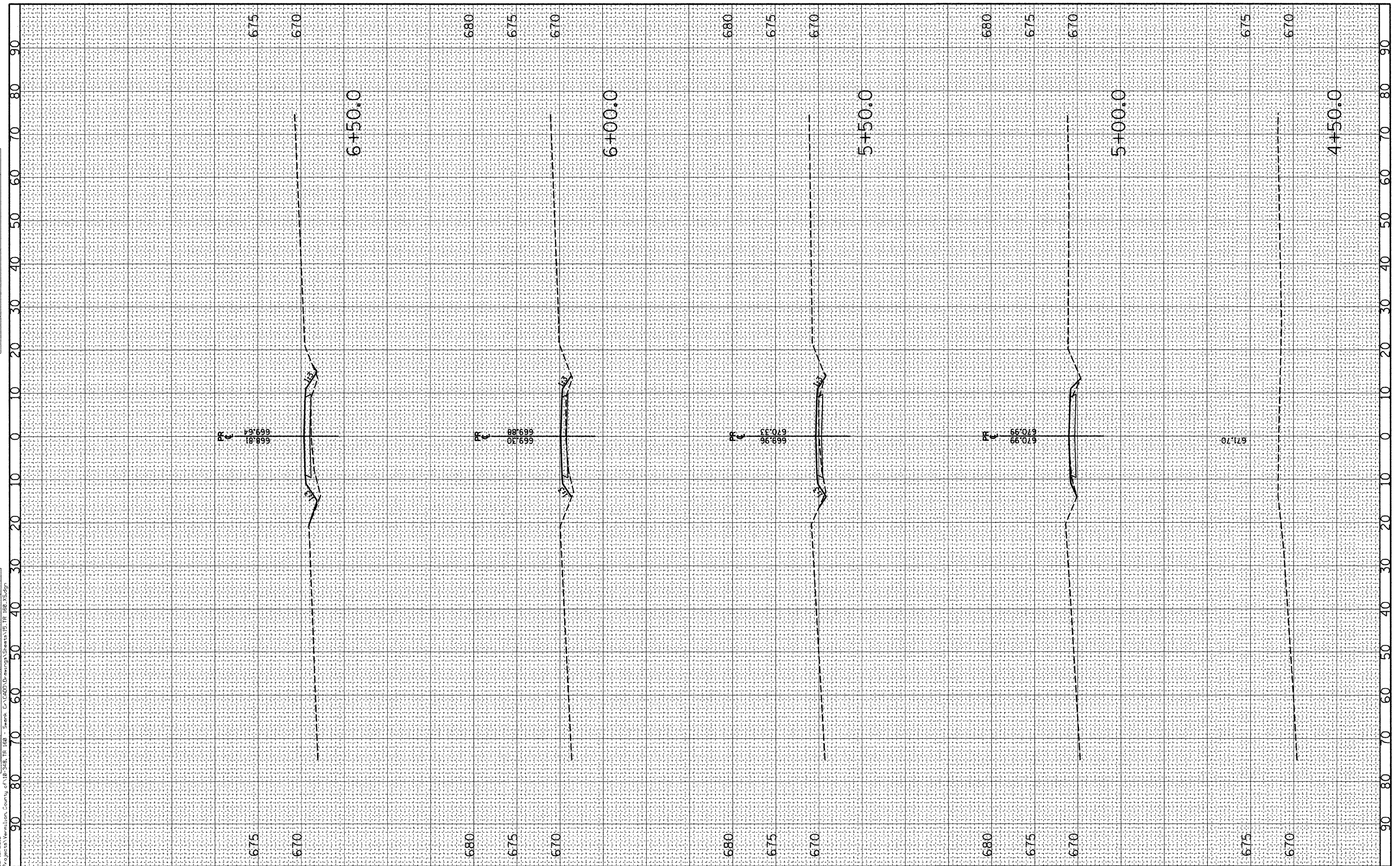




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| FINAL SURVEY | SURVEYED      | BY | DATE |
| NOTE BOOK    | NO.           |    |      |
|              | AREAS CHECKED |    |      |
|              | AREAS CHECKED |    |      |

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| ORIGINAL SURVEY | SURVEYED      | BY | DATE |
| NOTE BOOK       | NO.           |    |      |
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PRINTED DATE: 10/12/2010  
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 PLOT SCALE = 10.0000' / IN.  
 PLOT DATE = 10/12/2010

DESIGNED - JEH  
 DRAWN - JEH  
 CHECKED - PAT  
 DATE - 09-20-2010

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS-SECTIONS  
 TR 160 OVER SWANK CREEK  
 SCALE: 1"=10' 1"=5'  
 STA. 4+50.0 TO STA. 6+50.0

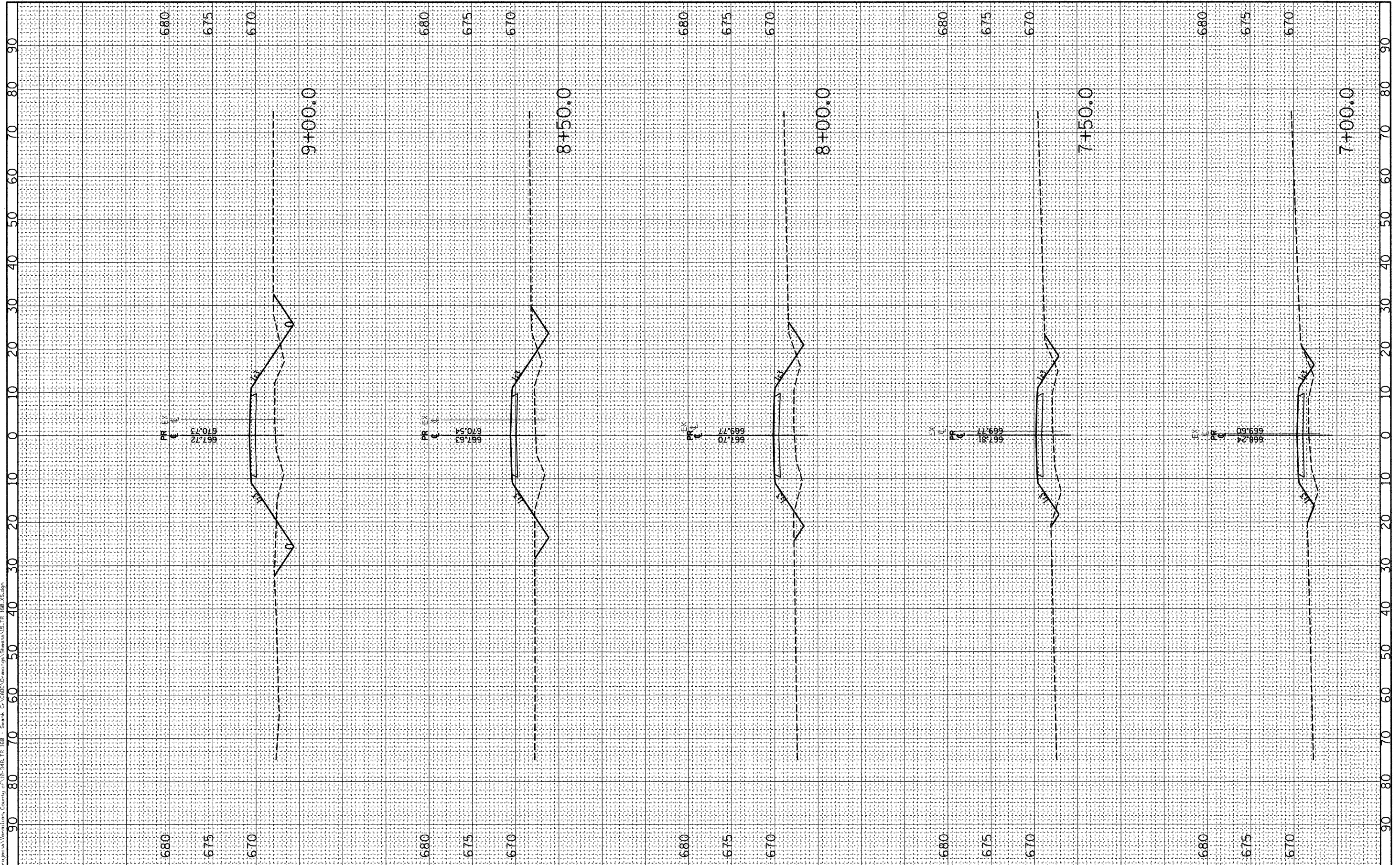
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|---------------------------|----------------|-----------|--------------|-----------|
| 160                       | 09-09123-00-BR | VERMILION | 19           | 15        |
| CONTRACT NO. 91437        |                |           |              |           |
| ILLINOIS FED. AID PROJECT |                |           |              |           |



|              |               |    |      |
|--------------|---------------|----|------|
| FINAL SURVEY | SURVEYED      | BY | DATE |
| NOTE BOOK    | NO. _____     |    |      |
|              | AREAS CHECKED |    |      |

|                 |               |    |      |
|-----------------|---------------|----|------|
| ORIGINAL SURVEY | SURVEYED      | BY | DATE |
| NOTE BOOK       | NO. _____     |    |      |
|                 | AREAS CHECKED |    |      |

PRINTED DATE: 10/12/2010  
 FILE NAME: N:\Projects\Vermlion, County of\10-2465.TR 160 - Swank Cr.\Grid\Drawings\Sheets\15.TR 160.XS.dgn



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 PLOT SCALE = 10,0000' / IN.  
 PLOT DATE = 10/12/2010

DESIGNED - JEH  
 DRAWN - JEH  
 CHECKED - PAT  
 DATE - 09-20-2010

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SCALE: 1"=10' 1"=5'

CROSS-SECTIONS  
 TR 160 OVER SWANK CREEK

STA. 7+00.0 TO STA. 9+00.0

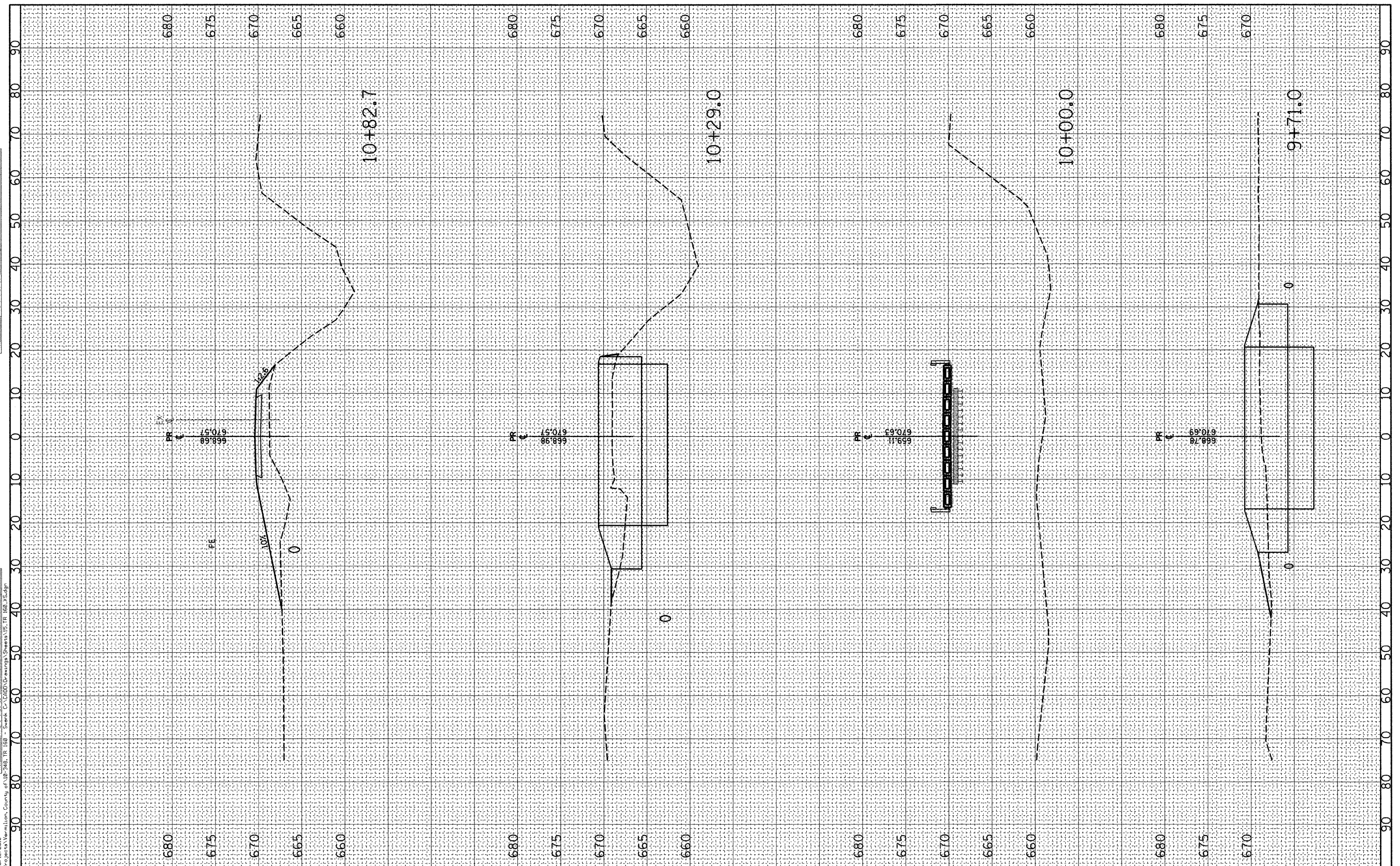
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| 160                       | 09-09123-00-BR | VERMILION | 19           | 16        |
| CONTRACT NO. 91437        |                |           |              |           |
| ILLINOIS FED. AID PROJECT |                |           |              |           |



|               |      |
|---------------|------|
| FINAL SURVEY  | DATE |
| SURVEYED      | BY   |
| PLANNED       |      |
| NOTE BOOK     |      |
| AREAS CHECKED |      |
| NO.           |      |

|                 |      |
|-----------------|------|
| ORIGINAL SURVEY | DATE |
| SURVEYED        | BY   |
| PLANNED         |      |
| NOTE BOOK       |      |
| AREAS CHECKED   |      |
| NO.             |      |

PRINTED DATE: 10/12/2010  
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DESIGNED - JEH  
 DRAWN - JEH  
 CHECKED - PAT  
 DATE - 09-20-2010

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS-SECTIONS  
 TR 160 OVER SWANK CREEK  
 SCALE: 1"=10' 1"V=5'  
 STA. 9+71.0 TO STA. 10+82.7

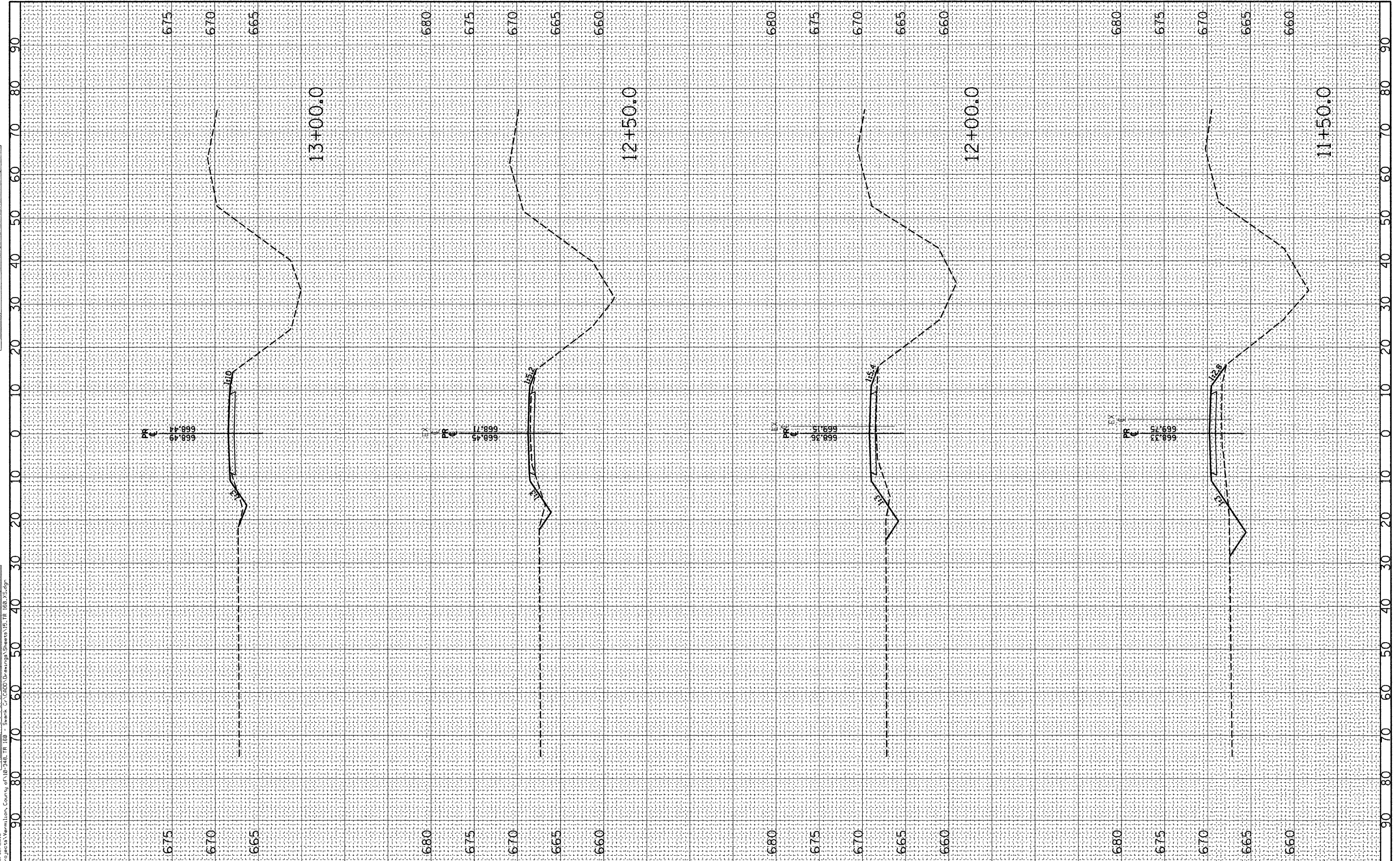
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|---------------------------|----------------|-----------|--------------|-----------|
| 160                       | 09-09123-00-BR | VERMILION | 19           | 17        |
| CONTRACT NO. 91437        |                |           |              |           |
| ILLINOIS FED. AID PROJECT |                |           |              |           |



|               |             |    |      |
|---------------|-------------|----|------|
| FINAL SURVEY  | SURVEYED    | BY | DATE |
| NOTE BOOK     | NO. _____   |    |      |
| AREAS CHECKED | AREAS _____ |    |      |
| AREAS CHECKED | AREAS _____ |    |      |

|                 |             |    |      |
|-----------------|-------------|----|------|
| ORIGINAL SURVEY | SURVEYED    | BY | DATE |
| NOTE BOOK       | NO. _____   |    |      |
| AREAS CHECKED   | AREAS _____ |    |      |
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DESIGNED - JEH  
 DRAWN - JEH  
 CHECKED - PAT  
 DATE - 09-20-2010

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS-SECTIONS  
 TR 160 OVER SWANK CREEK  
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 STA. 11+50.0 TO STA. 13+00.0

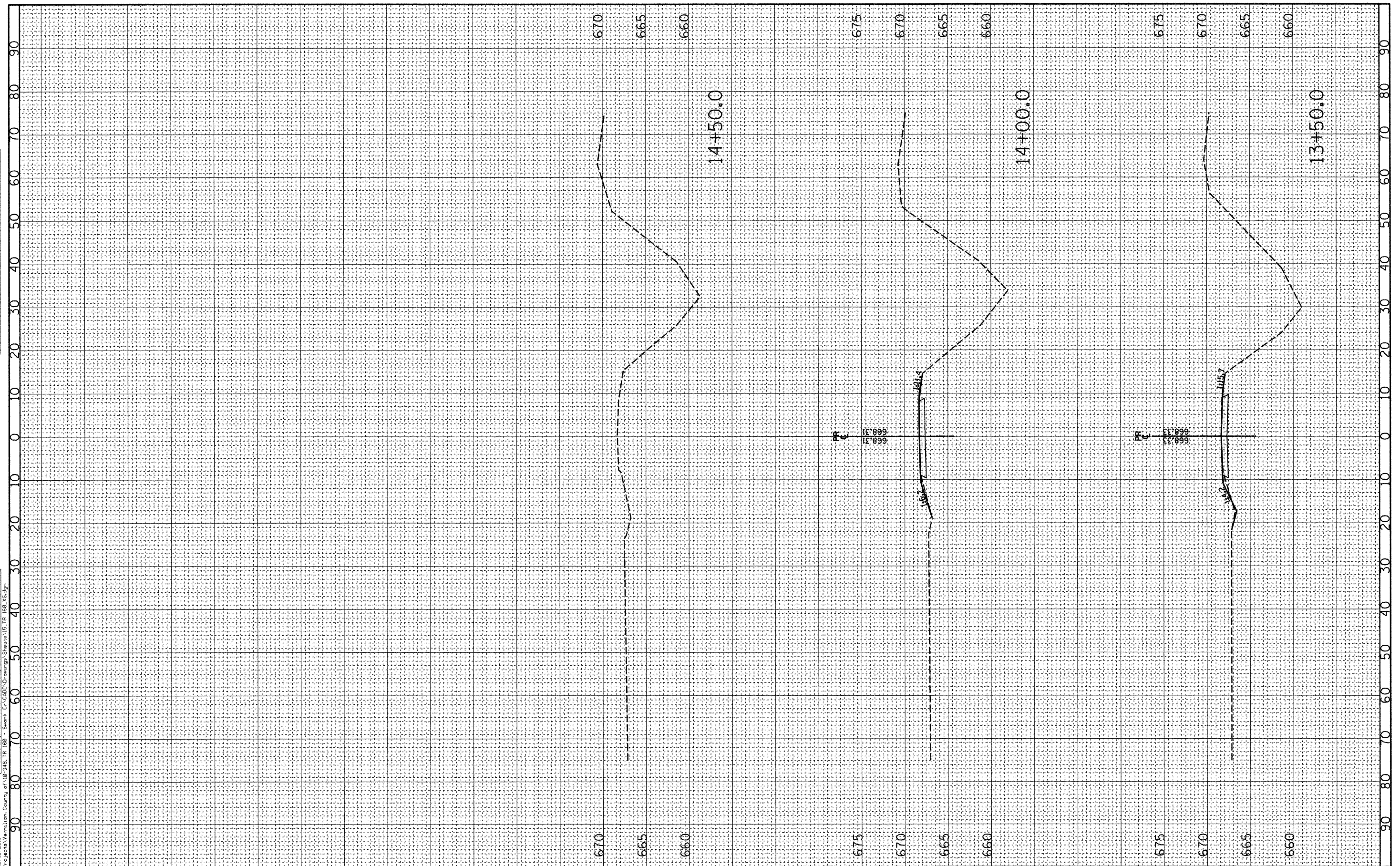
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|                           |                |           |              | CONTRACT NO. 91437 |
| ILLINOIS FED. AID PROJECT |                |           |              |                    |



|                            |             |      |
|----------------------------|-------------|------|
| FINAL SURVEY NOTE BOOK NO. | SURVEYED BY | DATE |
|                            |             |      |
|                            |             |      |
|                            |             |      |

|                               |             |      |
|-------------------------------|-------------|------|
| ORIGINAL SURVEY NOTE BOOK NO. | SURVEYED BY | DATE |
|                               |             |      |
|                               |             |      |
|                               |             |      |

PRINTED DATE: 10/12/2010  
 FILE NAME: N:\Projects\Vermillion, County of\16 TR 160 - Swank Cr\160\Drawings\Sheets\15-TR 160-XS.dgn



USER NAME = #USER\*  
 PLOT SCALE = 10.0000' / IN.  
 PLOT DATE = 10/12/2010

DESIGNED - JEH  
 DRAWN - JEH  
 CHECKED - PAT  
 DATE - 09-20-2010

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS-SECTIONS  
 TR 160 OVER SWANK CREEK**

SCALE: 1"=10' 1"=5'  
 STA. 13+50.0 TO STA. 14+50.0

|                           |                |           |                    |           |
|---------------------------|----------------|-----------|--------------------|-----------|
| T.R.                      | SECTION        | COUNTY    | TOTAL SHEETS       | SHEET NO. |
| 160                       | 09-09123-00-BR | VERMILION | 19                 | 19        |
| ILLINOIS FED. AID PROJECT |                |           | CONTRACT NO. 91437 |           |