

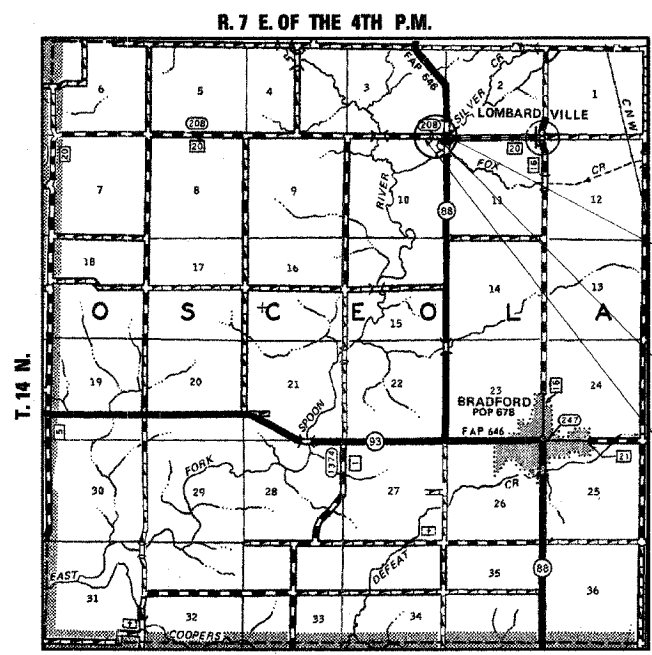
| ROUTE NO.          | SECTION        | COUNTY | TOTAL SHEETS | SHEET NO. |
|--------------------|----------------|--------|--------------|-----------|
| C.H. 20            | 04-00153-00-BR | STARK  | 13           | 1         |
| ILLINOIS           |                |        |              |           |
| CONTRACT NO. 89364 |                |        |              |           |

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**PLANS FOR PROPOSED**  
**BRIDGE REPLACEMENT AND REHABILITATION PROGRAM**  
**SECTION 04-00153-00-BR**  
**STARK COUNTY**  
**PROJECT NO. BRS-208(102)**  
**COUNTY HIGHWAY 20 (FAS. RTE. 208)**  
**JOB NO. C-94-065-05**

| SHEET NO. | TITLE   |
|-----------|---|
| 1.        | COVER SHEET   |
| 2.        | SUMMARY OF QUANTITIES, GENERAL NOTES & TYPICAL SECTIONS |
| 3.        | PLAN AND PROFILE SHEET                                  |
| 4.-9.     | BRIDGE PLANS  |
| 10.-13.   | STATION CROSS SECTIONS                                  |

- STANDARDS:**
- 280001-02
  - 515001-02
  - 630001-05
  - 631026-02
  - 635006-02
  - 701201-02
  - 701301-02
  - 702001-05
  - BLR 21-6
  - BLR 23-1

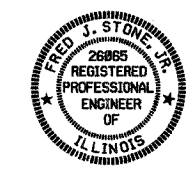
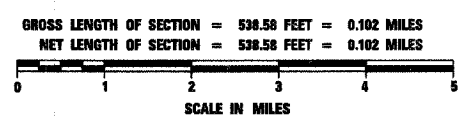
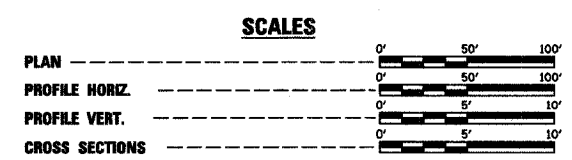
QC/QA BITUMINOUS SUPERPAVE PROJECT



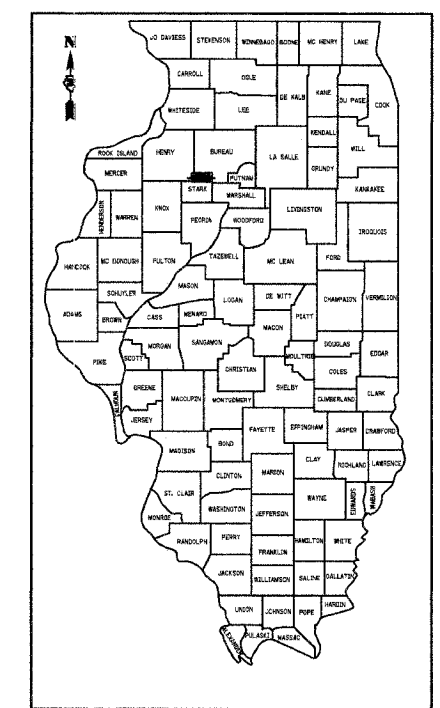
IMPROVEMENT ENDS  
STA. 16+88.58

STA. 15+00 SPECIAL BRIDGE DESIGN  
PRECAST PRESTRESSED DECK BEAM  
BRIDGE, THREE SPANS @ 33'-0", 44'-0",  
33'-0", 28'-0" ROADWAY, 20° LT. SKEW  
EXIST. S.N. 088-3308  
PROP. S.N. 088-3408

IMPROVEMENT BEGINS  
STA. 11+50



*Fred J. Stone, Jr.* (11.02.05)  
ILLINOIS PROFESSIONAL NO. 26065  
EXPIRES 11-30-07



LOCATION OF SECTION INDICATED THUS:

**CLASSIFICATION: RURAL TWO-LANE COLLECTOR**  
**DESIGN VOLUME: ADT UNDER 400**  
**CURRENT ADT: 186 (2005)**  
**DESIGN SPEED: 40 MPH**

TOLL FREE JOINT UTILITY LOCATING  
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)  
TELEPHONE NUMBER 1-800-892-0123

|                   |  |      |
|-------------------|--|------|
| APPROVED          | <i>Dec 8</i>                                       | 2005 |
|                   | <i>Donald P. Fitzgerald</i>                        |      |
|                   | COUNTY ENGINEER                                    |      |
| PASSED            | <i>December 14</i>                                 | 2005 |
|                   | <i>John K. Kahl</i>                                |      |
|                   | DISTRICT FOUR ENGINEER OF LOCAL ROADS & STREETS    |      |
| RELEASING FOR BID | <i>December 15, 2005</i>                           |      |
| BASED ON LIMITED  |  |      |
| REVIEW            | <i>[Signature]</i>                                 |      |
|                   | DEPUTY DIRECTOR OF HIGHWAYS, REGION THREE ENGINEER |      |
|                   | STATE OF ILLINOIS                                  |      |
|                   | DEPARTMENT OF TRANSPORTATION                       |      |

CONTRACT NO. 89364

4440 ASH GROVE  
SPRINGFIELD, IL 62711  
(217) 793-8600  
oasinc@famvid.com

**OZYURT AND STONE, INC.**  
CONSULTING ENGINEERS

**SUMMARY OF QUANTITIES**

X080-2A

| NUMBER   | ITEM  | UNIT   | QUANTITY |
|----------|---|--------|----------|
| 20200100 | EARTH EXCAVATION  | CU YD  | 162      |
| 20300100 | CHANNEL EXCAVATION  | CU YD  | 640      |
| 20400800 | FURNISHED EXCAVATION  | CU YD  | 167      |
| 25001000 | SEEDING, CLASS 2 (SPECIAL)                                  | ACRE   | 0.6      |
| 25100630 | EROSION CONTROL BLANKET                                     | SQ YD  | 3000     |
| 28000250 | TEMPORARY EROSION CONTROL SEEDING                           | POUND  | 40       |
| 28000400 | PERIMETER EROSION BARRIER                                   | FOOT   | 600      |
| 28101700 | RIPRAP, SPECIAL   | TON    | 271      |
| 35101400 | AGGREGATE BASE COURSE, TYPE B                               | TON    | 587      |
| 40600100 | BITUMINOUS MATERIALS (PRIME COAT)                           | GALLON | 410      |
| 50100100 | REMOVAL OF EXISTING STRUCTURES                              | EACH   | 1        |
| 50300225 | CONCRETE STRUCTURES   | CU YD  | 39.4     |
| 50400305 | PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)         | SQ FT  | 3080     |
| 50800105 | REINFORCEMENT BARS  | POUND  | 4410     |
| 50900205 | STEEL RAILING, TYPE S1                                      | FOOT   | 225      |
| 51201400 | FURNISHING STEEL PILES HP10x42                              | FOOT   | 832      |
| 51202700 | DRIVING STEEL PILES   | FOOT   | 832      |
| 51203400 | TEST PILE STEEL HP10x42                                     | EACH   | 2        |
| 51204315 | CONCRETE ENCASEMENT   | CU YD  | 28.4     |
| 51500100 | NAME PLATES   | EACH   | 1        |
| 58100200 | WATERPROOFING MEMBRANE SYSTEM                               | SQ YD  | 343      |
| 58300100 | PORTLAND CEMENT MORTAR FAIRING COURSE                       | FOOT   | 330      |
| 63100075 | TRAFFIC BARRIER TERMINAL, TYPE 5A                           | EACH   | 2        |
| 67100100 | MOBILIZATION  | L SUM  | 1        |
| 70101830 | TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21             | L SUM  | 1        |
| 78201000 | TERMINAL MARKER - DIRECT APPLIED                            | EACH   | 4        |
| LR631020 | TRAFFIC BARRIER TERMINAL, TYPE 1                            | EACH   | 2        |
| X4066414 | BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50 | TON    | 158      |
| X4066614 | BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, IL-19.0, N50  | TON    | 98       |
| X5020501 | UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1     | EACH   | 1        |
| X5020502 | UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2     | EACH   | 1        |

\*SEE SPECIAL PROVISIONS

**GENERAL NOTES**

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKS AND MONUMENTS UNTIL THE OWNER, AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

THE AREA TO BE SEEDDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY, AS DIRECTED BY THE ENGINEER.

SEEDING, CLASS 2 (SPECIAL) = 0.6 ACRE

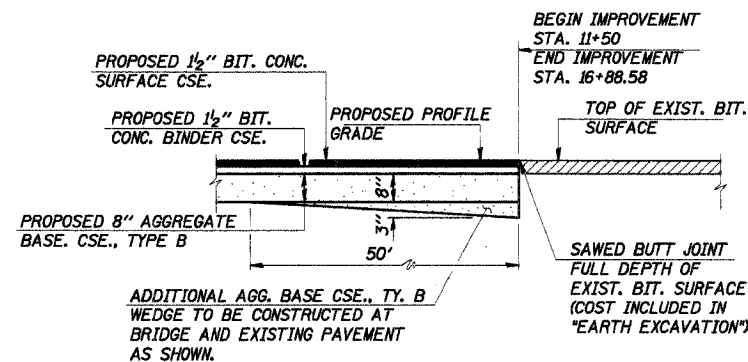
**TEMPORARY EROSION CONTROL**

THE FOLLOWING QUANTITIES ARE ESTIMATES ONLY. ACTUAL QUANTITIES FOR EROSION CONTROL WILL BE DETERMINED BY THE ENGINEER IN THE FIELD AND THERE WILL BE NO ADJUSTMENT IN ANY UNIT PRICE DUE TO A CHANGE IN PLAN QUANTITY.

PERIMETER EROSION BARRIER = 600 FOOT  
 TEMPORARY EROSION CONTROL SEEDINGS = 40 POUND  
 EROSION CONTROL BLANKET = 3000 SQ YD

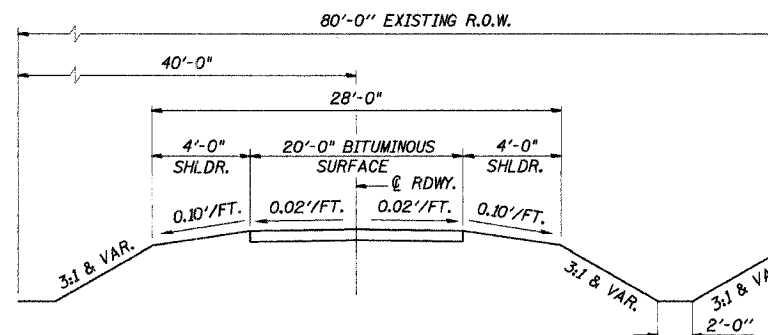
**BITUMINOUS MIXTURE REQUIREMENTS**

| MIXTURE USE(S)                              | SURFACE COURSE/<br>INCIDENTAL BITUMINOUS<br>SURFACING | BINDER COURSE         |
|---|---|-----------------------|
| AC/PG:                                      | 58-22   | 58-22                 |
| RAP %: (MAX)                                | 15%   | 15%                   |
| DESIGN AIR VOIDS:                           | 3.0% @ $N_{des} = 50$                                 | 3.0% @ $N_{des} = 50$ |
| MIXTURE COMPOSITION:<br>(GRADATION MIXTURE) | IL 9.5  | IL 19.0               |
| FRICTION AGGREGATE:                         | MIXTURE C   | N/A                   |



**ELEVATION AT BEGINNING AND END OF IMPROVEMENT**

**JOINT DETAILS**

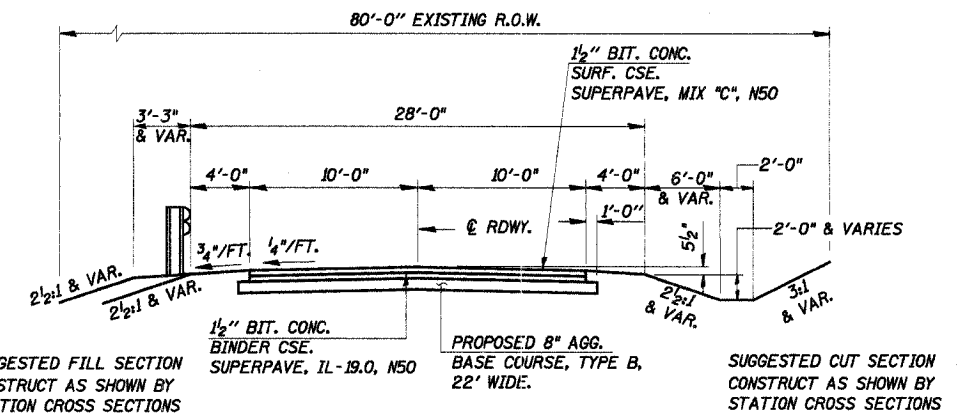


**EXISTING TYPICAL CROSS SECTION**

**EARTHWORK SCHEDULE**

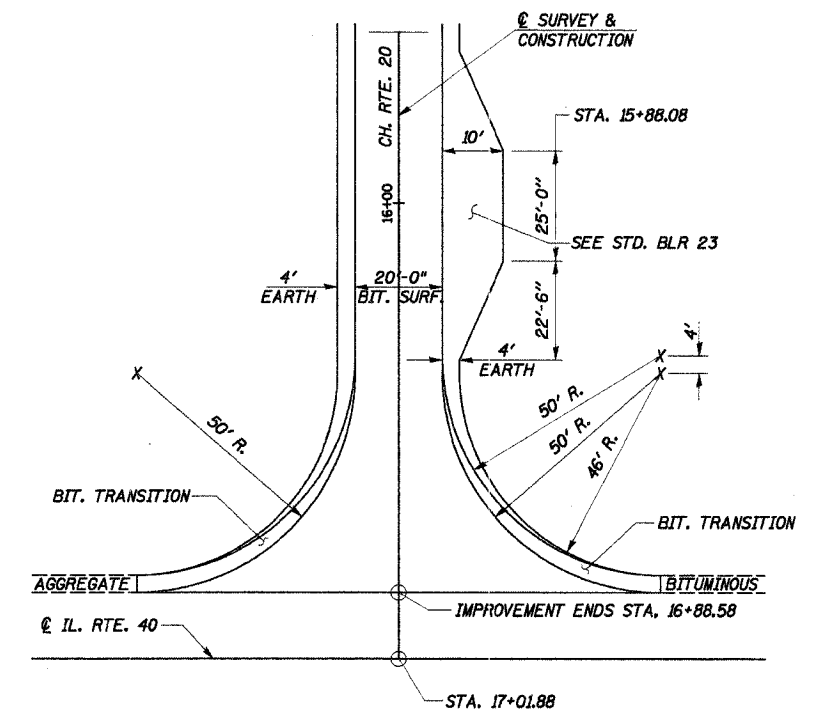
| LOCATION                    | EARTH EXCAVATION | EARTH EXCAVATION ADJUSTED FOR SHRINKAGE (25%) | ESTIMATED SUITABLE CHANNEL EXCAVATION | SUITABLE CHANNEL EXCAVATION ADJUSTED FOR SHRINKAGE (25%) | EMBANKMENT (FOR INFORMATION ONLY) | EARTHWORK BALANCE WASTE (+) SHORTAGE (-)** |
|-----------------------------|------------------|---|---------------------------------------|--|-----------------------------------|--|
|                             | CU YD            | CU YD   | CU YD                                 | CU YD  | CU YD                             | CU YD                                      |
| STA. 11+50 TO STA. 16+88.58 | 162              | 121   | 320                                   | 240  | 528                               | -167                                       |
| TOTALS                      | 162              | 121   | 320                                   | 240  | 528                               | -167                                       |

\*\*FURNISHED EXCAVATION



**TYPICAL PROPOSED CROSS SECTION**

STA. 12+00 TO STA. 16+34.58  
 TRANSITION FROM EXISTING ROADWAY TO PROPOSED ROADWAY TO BE CONSTRUCTED FROM STA. 11+50 TO STA. 12+00.



**INTERSECTION AT IL RTE. 40**

**SUMMARY OF QUANTITIES, GENERAL NOTES AND TYPICAL CROSS SECTION**

C.H. 20  
 SECTION 04-00153-00-BR  
 STARK COUNTY  
 STA. 15+00

4440 ASH GROVE  
 SPRINGFIELD, IL 62711  
 (217) 793-8600  
 oasinc@tamvid.com

**OZYURT AND STONE, INC.**  
 CONSULTING ENGINEERS

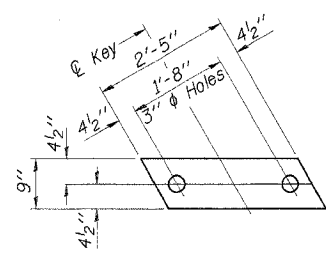
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 FILE: SUMTYP.DGN  
 DATE: 08/12/05



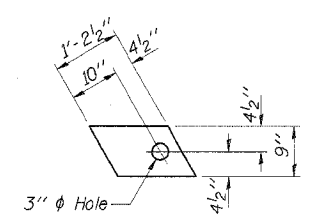


| ROUTE NO. | SECTION        | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------|----------------|--------|--------------|-----------|
| C.H. 20   | 04-00153-00-BR | STARK  | 13           | 5         |

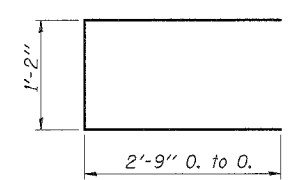
ILLINOIS CONTRACT NO. 89364



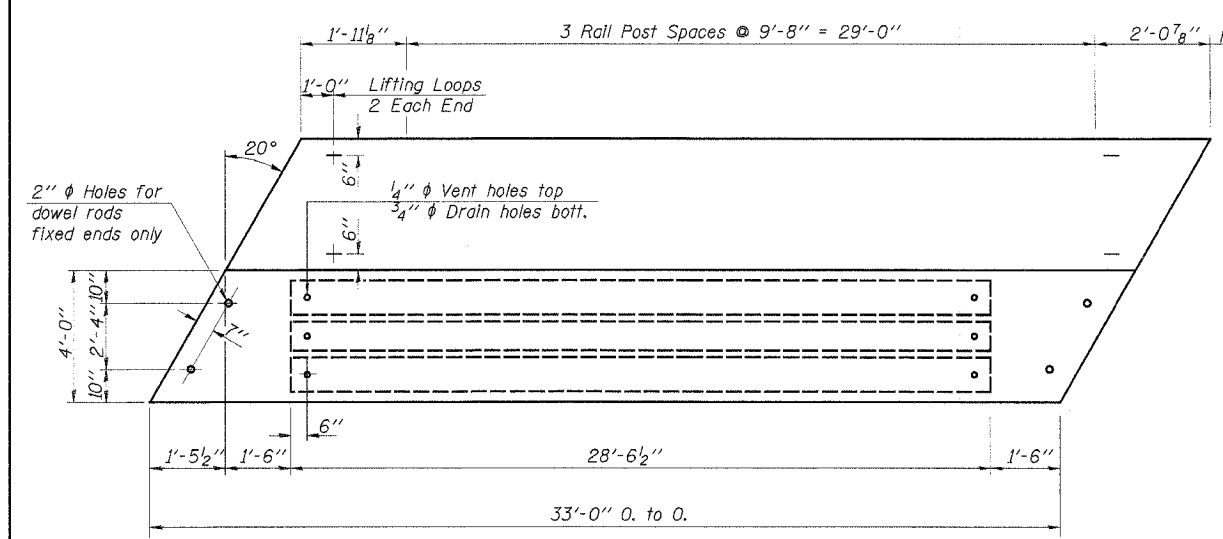
**FABRIC BEARING PAD**  
(Interior)  
(24 Req'd)



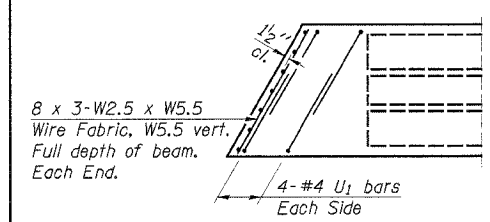
**FABRIC BEARING PAD**  
(Exterior)  
(8 Req'd)  
**FIXED**



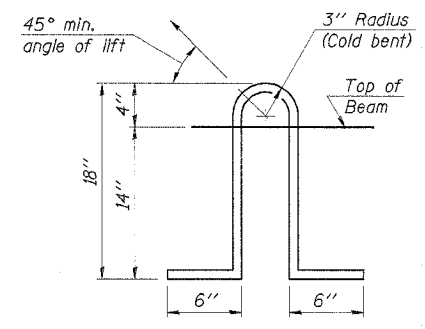
**BAR U<sub>1</sub>**



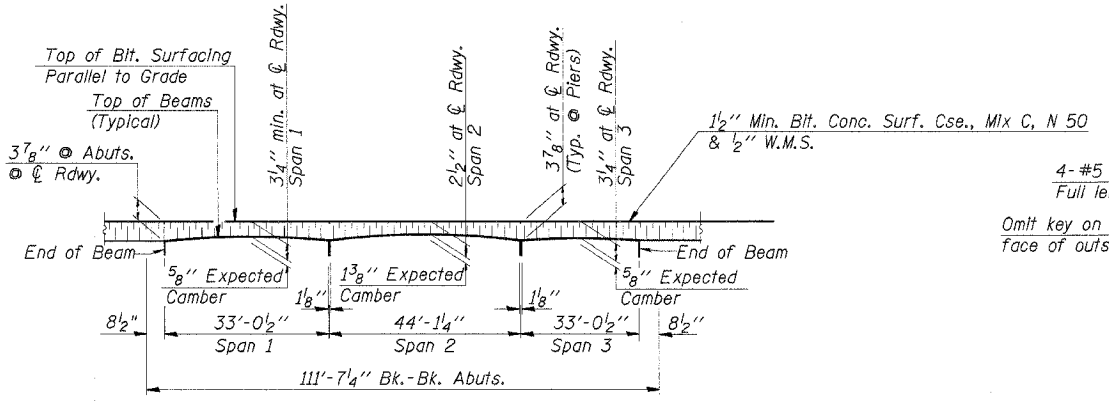
**PLAN**



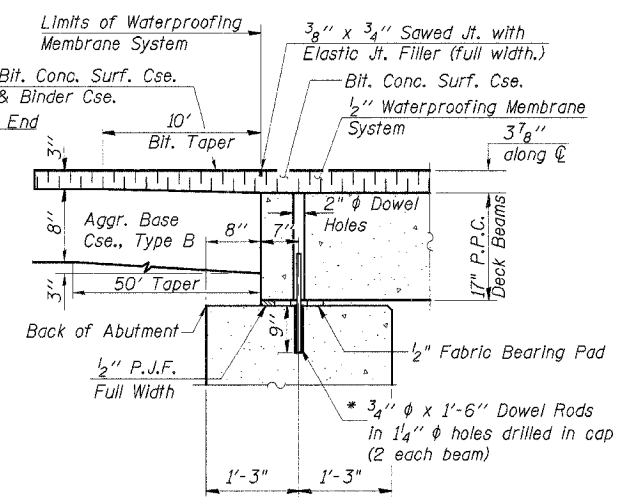
**END PLAN**



**LIFTING LOOP DETAIL**



**BITUMINOUS SURFACE PROFILE**



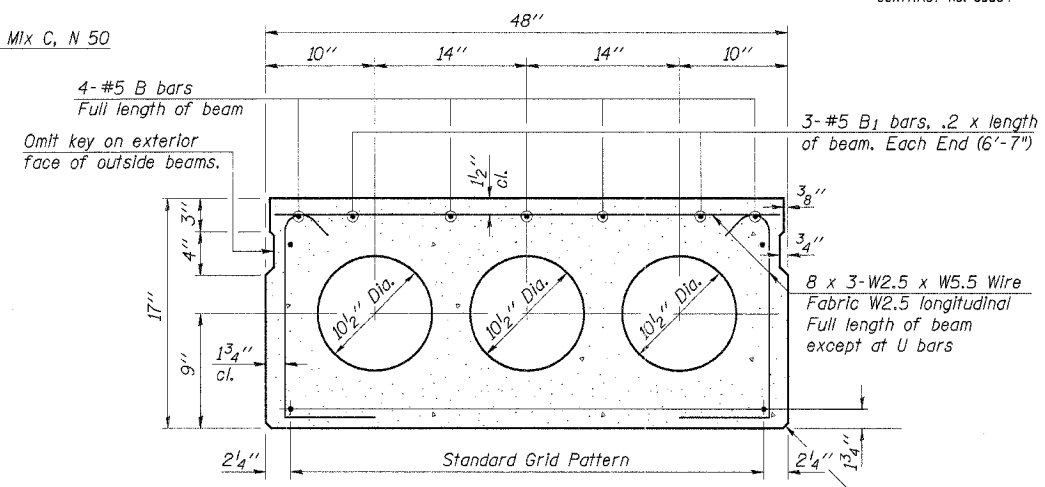
**SEC. THRU ABUT.**

(@ Rt. 1/4's to Abutment)

\* Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hrs.) prior to grouting the shear keys.

**NOTES**

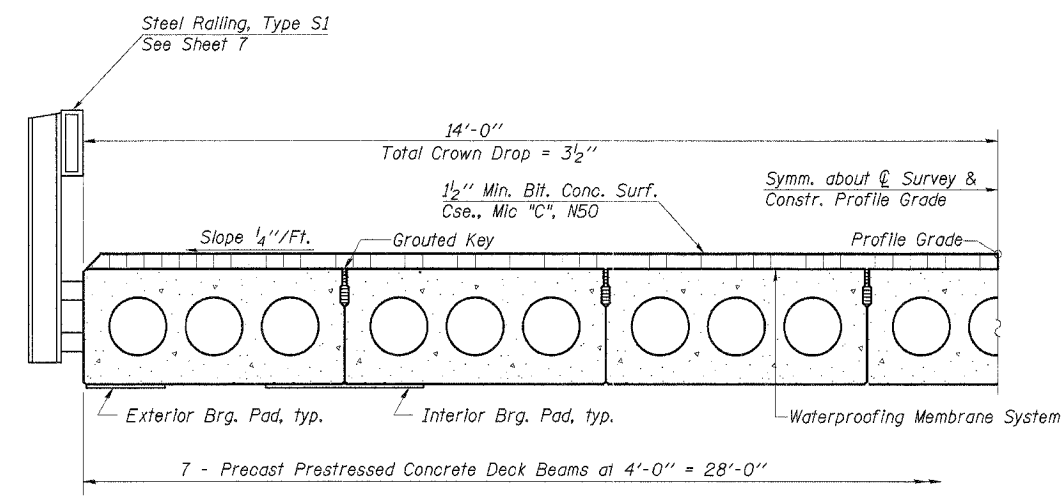
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2 - 1/2" φ-270 ksi strands, as shown. The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Non prestressing steel shall conform to AASHTO M-31 or M-322, Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. (64 Req'd) Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. Required Release Strength, f'ci, shall be 4,000 p.s.i. See Special Provisions for review and distribution of shop drawings. Roll post anchor devices shall be cast into outside beam as elsewhere specified.



**TYPICAL SECTION**

10 - 1/2" φ Strands, Each Strand Stressed to 30,900 Lbs.  
10 - Strands 1 3/4" up

Note: Place strands symmetrically about centerline of beam.



**HALF CROSS SECTION**

**BILL OF MATERIAL**

| Item  | Unit    | Quantity |
|---|---------|----------|
| Precast Prestressed Concrete Deck Beams (17" Depth) | Sq. Ft. | 1848     |
| Bit. Conc. Surf. Cse., Mix "C", N50                 | Ton     | 39       |
| Waterproofing Membrane System                       | Sq. Yd. | 206      |
| P.C. Mortar Fairing Course                          | Foot    | 198      |
| Estimated Total Weight (One Beam) = 21,600 Pounds   |         |          |

|          |           |
|----------|-----------|
| DESIGNED | SFM       |
| CHECKED  | FJS       |
| DRAWN    | SAP & JPS |
| CHECKED  | SFM       |

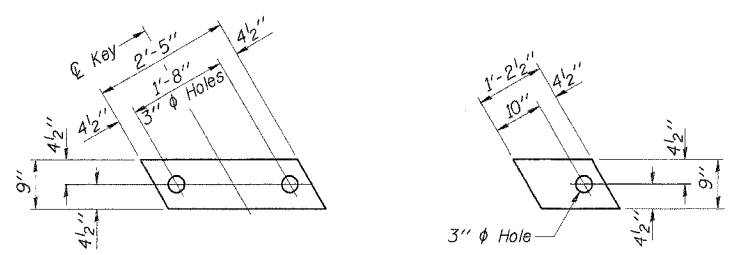
**SUPERSTRUCTURE SPANS 1 & 3**

COUNTY HIGHWAY 20  
SECTION 04-00153-00-BR  
STARK COUNTY  
STATION 15+00

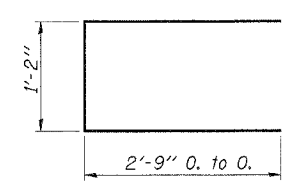
|  |   |  |
|--|---|--|
| 4440 ASH GROVE<br>SPRINGFIELD, IL 62711<br>(217) 793-8600<br>oasinc@tamvid.com | <b>OZYURT AND STONE, INC.</b><br>CONSULTING ENGINEERS | JOB NO.: 0414<br>FILE: super.dgn<br>DATE: 08/12/05 |
|--|---|--|

| ROUTE NO. | SECTION        | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------|----------------|--------|--------------|-----------|
| C.H. 20   | 04-00153-00-BR | STARK  | 13           | 6         |

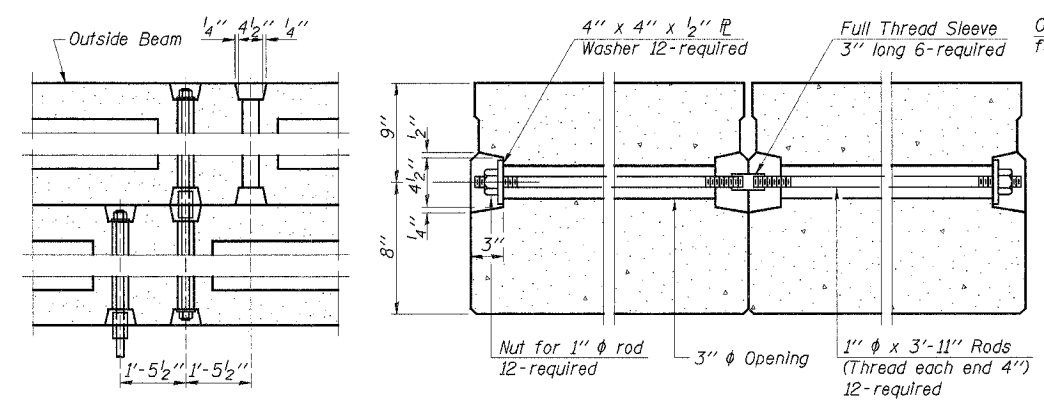
ILLINOIS  
CONTRACT NO. 89364



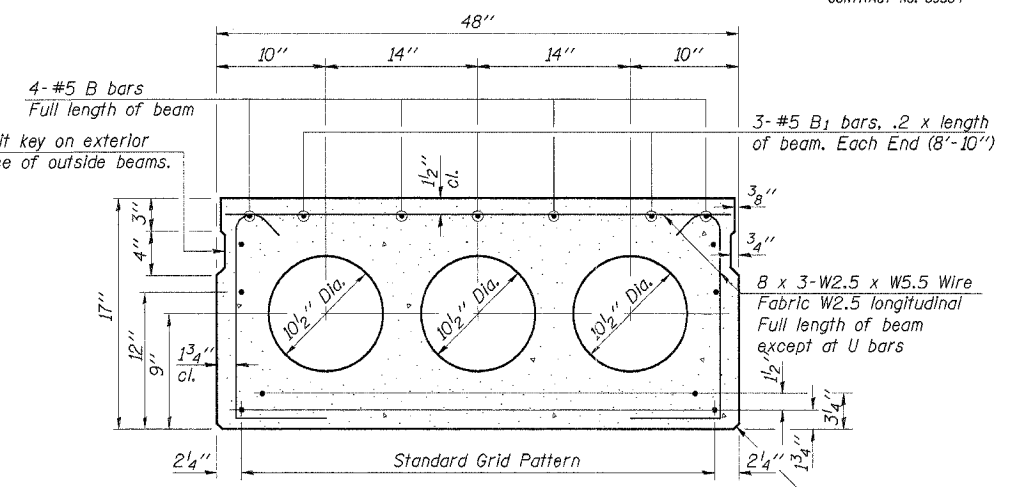
**FABRIC BEARING PAD**  
(Interior) (12 Req'd)  
**FABRIC BEARING PAD**  
(Exterior) (4 Req'd)  
**FIXED**



**BAR U1**

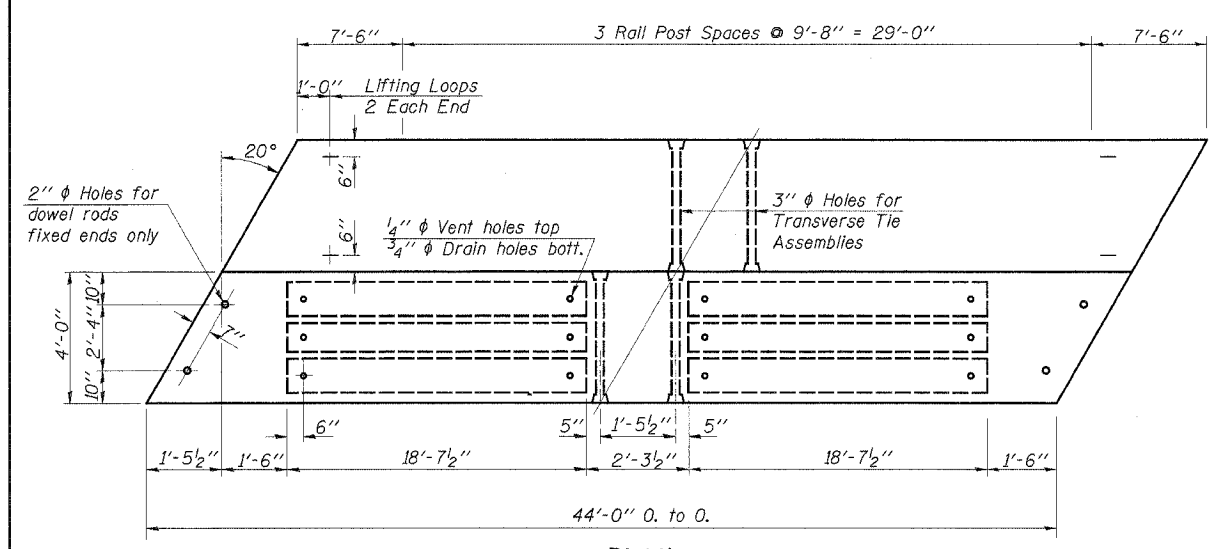


**TYPICAL TRANSVERSE TIE ASSEMBLY**

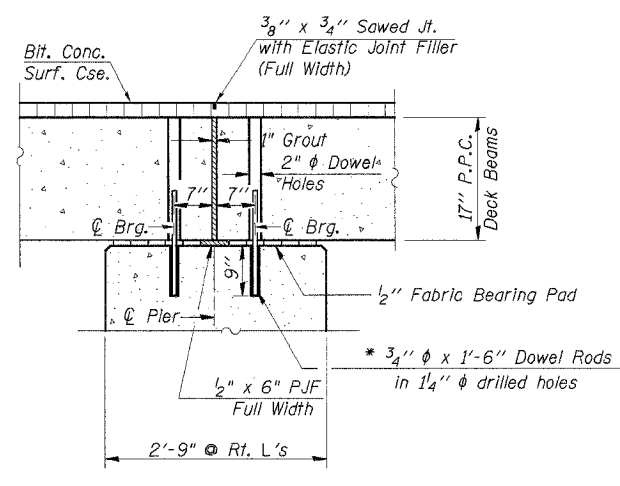


**TYPICAL SECTION**

19-1/2"  $\phi$  Strands, Each Strand Stressed to 30,900 Lbs.  
13-Strands 1 3/4" up, 4-Strands 3/4" up, 2-Strands 12" up  
Note: Place strands symmetrically about  $\phi$  of beam.

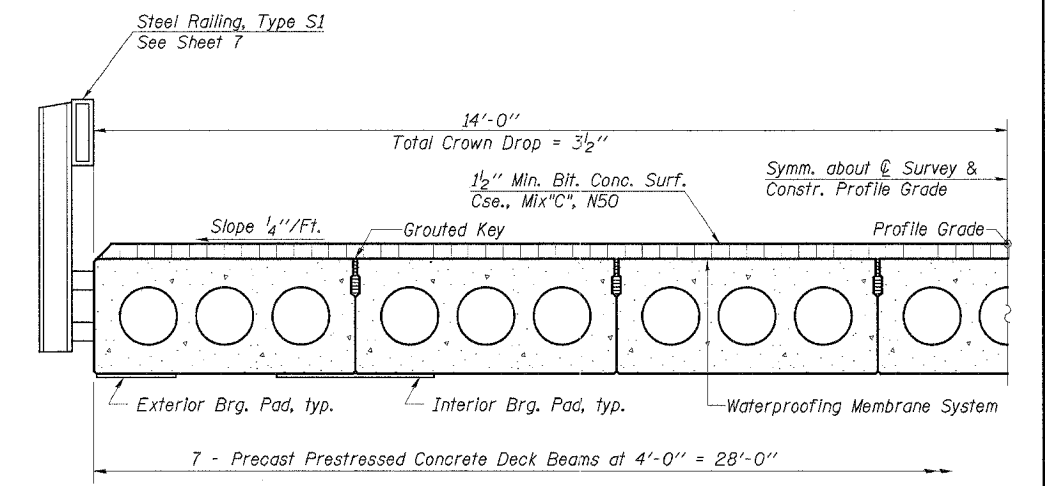


**PLAN**



**SEC. AT PIER**

\* Note: After beams are in place, 1/4" holes shall be drilled into the substructure, and the dowel rods grouted in place and allowed to cure (Min. 24 Hrs.) prior to grouting shear key.



**HALF CROSS SECTION**

Note A:  
The top surface of the beams shall be finished in accordance with Article 504.06 of the Standard Specifications except that the surface shall not be roughed by brooming. The finished surface shall be free of depressions or high spots with sharp corners and the top edge of keys shall be rounded or chamfered a min. of 1/4".

**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. Lifting loops shall be 2 - 1/2"  $\phi$  -270 ksi strands, as shown.  
The 1"  $\phi$  rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.  
Non prestressing steel shall conform to AASHTO M-31 or M-322, Grade 60.  
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. (32 Req'd)  
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.  
Required Release Strength, f'cl, shall be 4,000 p.s.i.  
See Special Provisions for review and distribution of shop drawings.  
Roll post anchor devices shall be cast into outside beam as elsewhere specified.

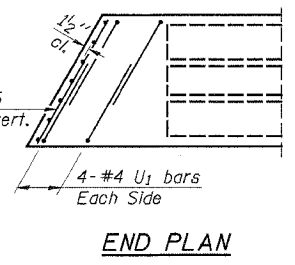
**BILL OF MATERIAL**

| Item  | Unit    | Quantity |
|---|---------|----------|
| Precast Prestressed Concrete Deck Beams (17" Depth) | Sq. Ft. | 1232     |
| Bit. Conc. Surf. Cse., Mix "C", N50                 | Ton     | 23       |
| Waterproofing Membrane System                       | Sq. Yd. | 137      |
| P.C. Mortar Fairing Course                          | Foot    | 132      |
| Estimated Total Weight (One Beam) = 28,190 Pounds   |         |          |

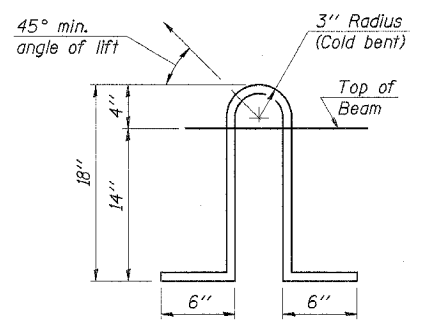
**SUPERSTRUCTURE SPAN 2**

COUNTY HIGHWAY 20  
SECTION 04-00153-00-BR  
STARK COUNTY  
STATION 15+00

|          |           |
|----------|-----------|
| DESIGNED | SFM       |
| CHECKED  | FJS       |
| DRAWN    | SAP & JPS |
| CHECKED  | SFM       |



**END PLAN**



**LIFTING LOOP DETAIL**



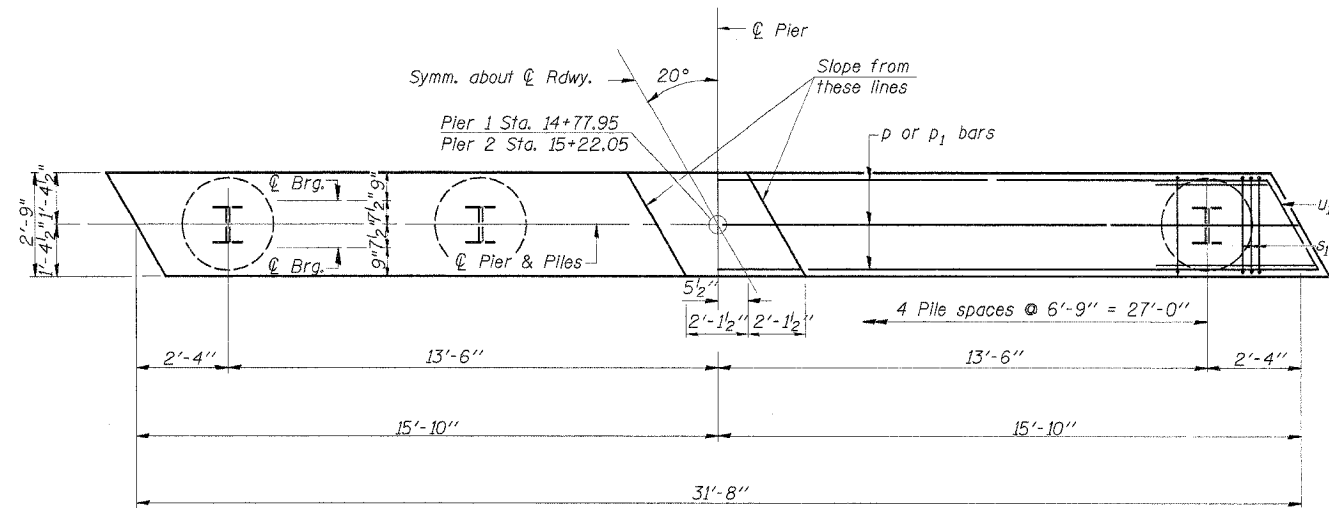




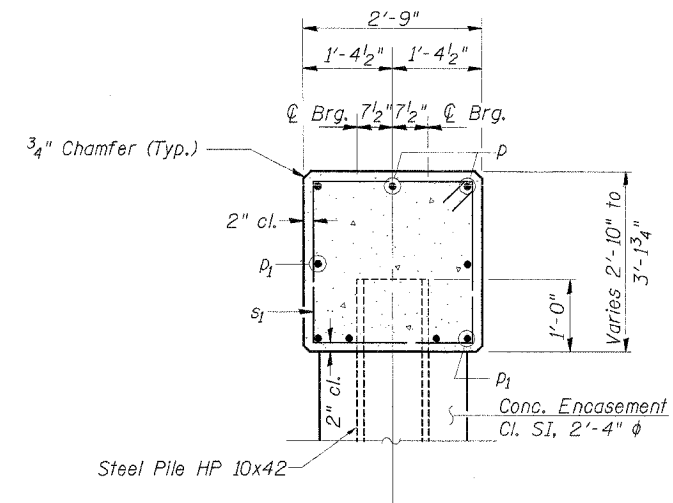


| ROUTE NO. | SECTION        | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------|----------------|--------|--------------|-----------|
| C.H. 20   | 04-00153-00-BR | STARK  | 13           | 9         |

ILLINOIS  
CONTRACT NO. 89364

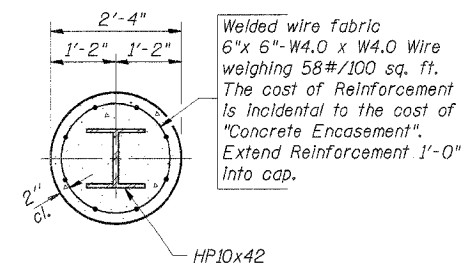


PLAN



SECTION A-A

Note: All edges shall have standard 3/4" chamfer



SECTION B-B

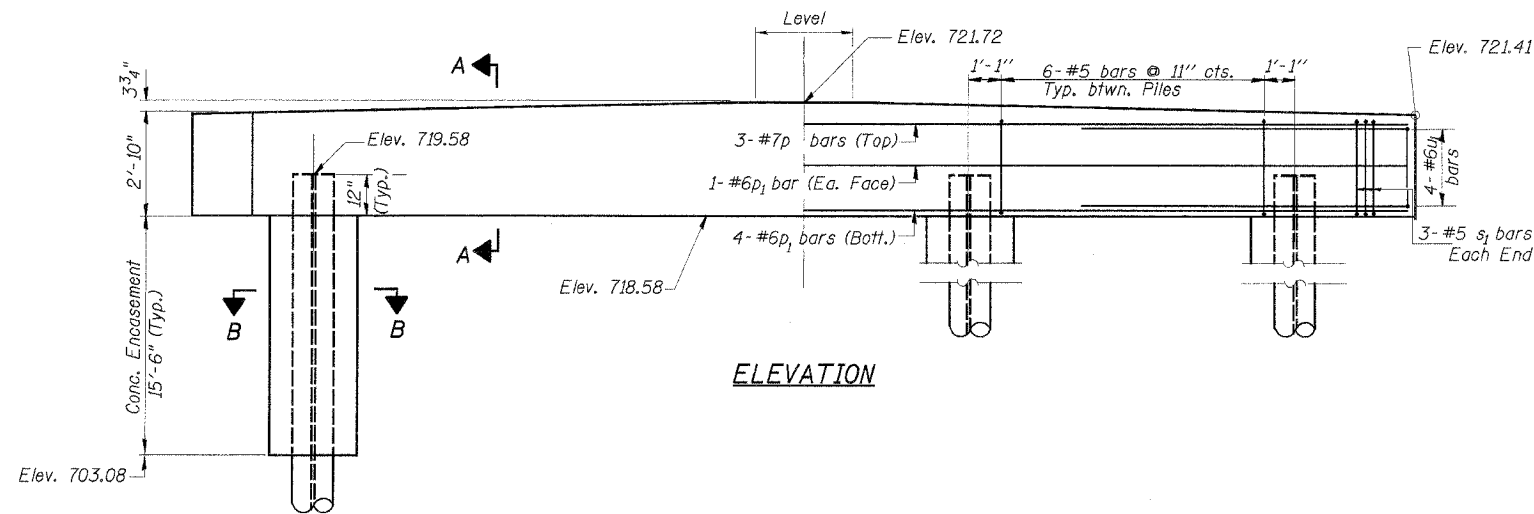
BILL OF MATERIAL - 2 PIERS

| BAR                   | NO. | SIZE | LENGTH  | SHAPE |
|-----------------------|-----|------|---------|-------|
| p                     | 6   | #7   | 31'-4"  | —     |
| p <sub>1</sub>        | 12  | #6   | 31'-4"  | —     |
| s <sub>1</sub>        | 60  | #5   | 10'-9"  | □     |
| u <sub>1</sub>        | 16  | #6   | 12'-7"  | —     |
| Concrete Structures   |     |      | Cu. Yd. | 19.4  |
| Reinforcement Bars    |     |      | Pound   | 1930  |
| Steel Piles, HP 10x42 |     |      | Foot    | 468   |
| Test Pile, HP 10x42   |     |      | Each    | 1     |
| Conc. Encasement      |     |      | Cu. Yd. | 24.6  |

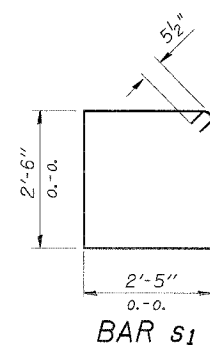
PILE DATA

Type..... Steel Piles HP 10x42  
 Design Capacity..... 46 Tons  
 Drive Piles To..... 69 Tons  
 Drive Test Pile To..... 84 Tons  
 Est. Length..... 52 Feet/Pile  
 No. Req'd(2 Piers)..... 10\*

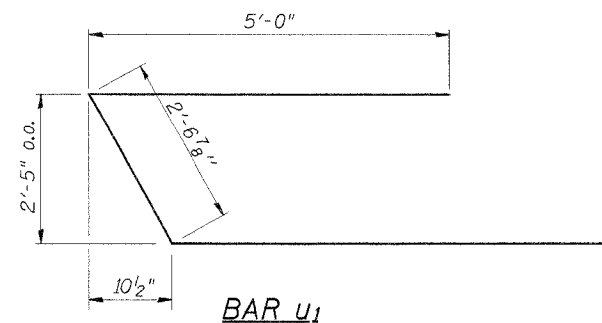
\*Includes 1 Test Pile to be driven in a permanent location, at Pier 2.



ELEVATION



BAR s<sub>1</sub>



BAR u<sub>1</sub>

|          |           |
|----------|-----------|
| DESIGNED | SFM       |
| CHECKED  | FJS       |
| DRAWN    | SAP & JPS |
| CHECKED  | SFM       |

PIERS

COUNTY HIGHWAY 20  
 SECTION 04-00153-00-BR  
 STARK COUNTY  
 STATION 15+00

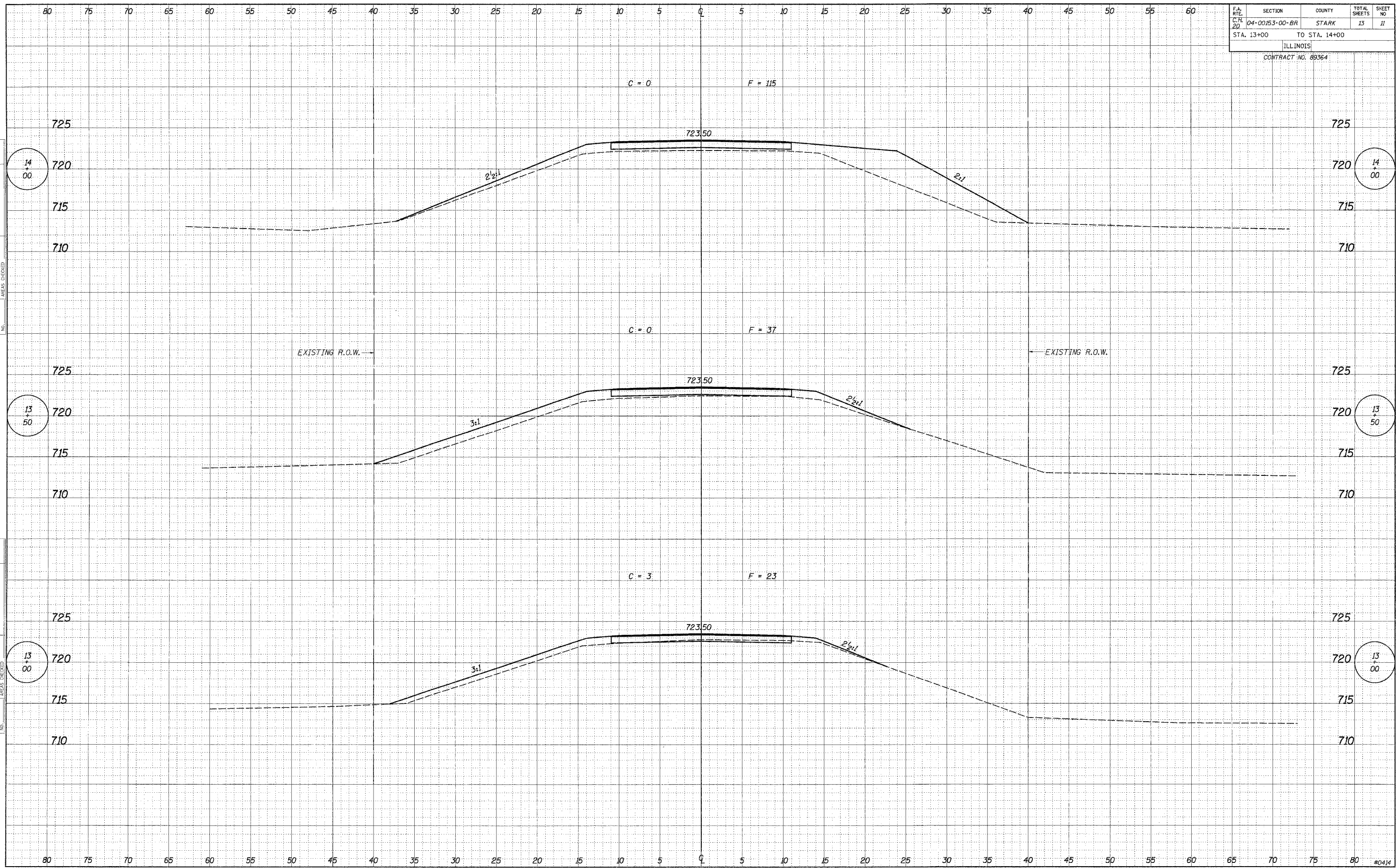
4440 ASH GROVE  
 SPRINGFIELD, IL 62711  
 (217) 793-8600  
 osinc@amvid.com

OZYURT AND STONE, INC.  
 CONSULTING ENGINEERS

JOB NO.: 0414  
 FILE: PIERLT.DGN  
 DATE: 08/12/05



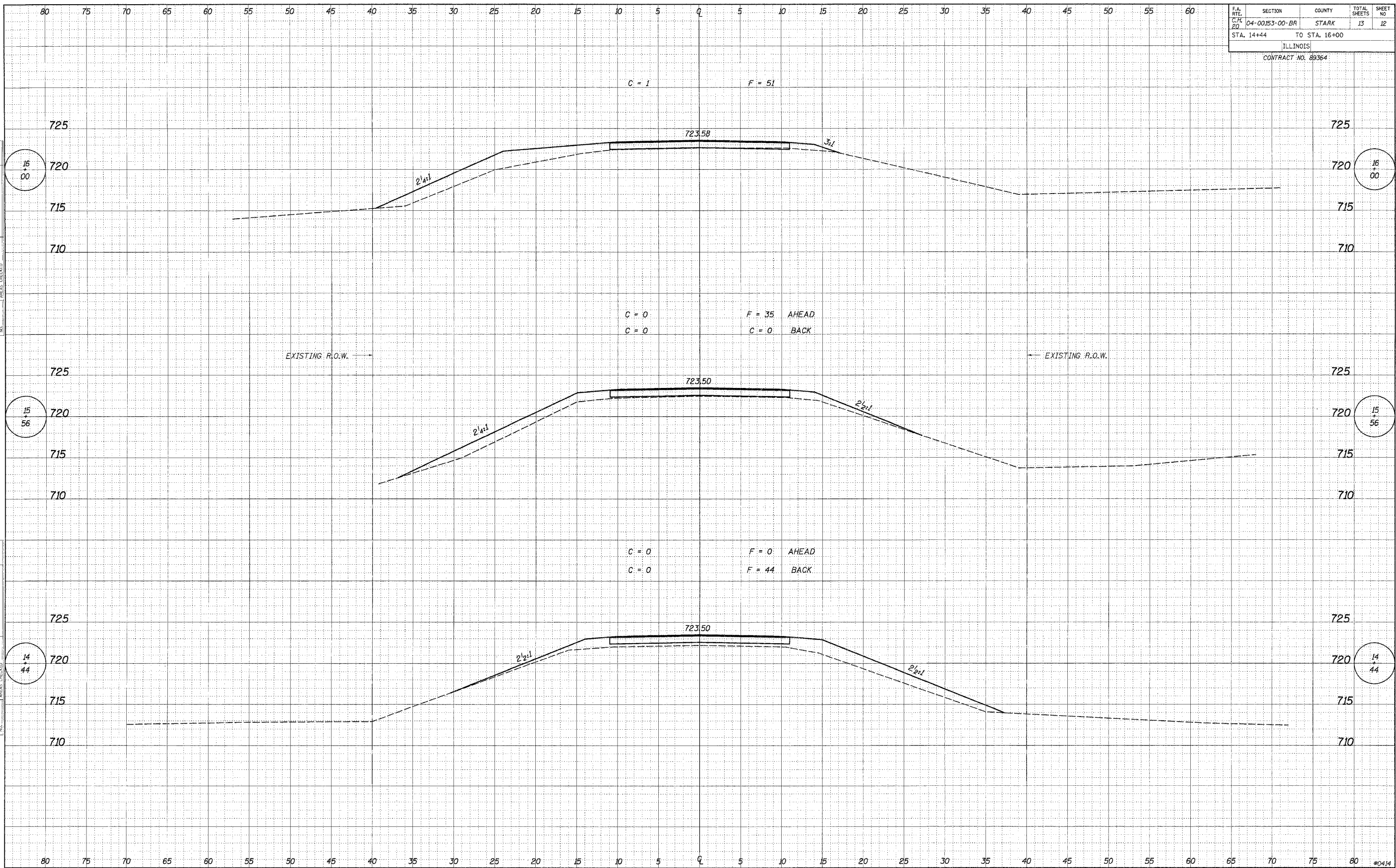
|                    |                |               |              |           |
|--------------------|----------------|---------------|--------------|-----------|
| F.A. R.F.E.        | SECTION        | COUNTY        | TOTAL SHEETS | SHEET NO. |
| C.H. 20            | 04-00153-00-BR | STARK         | 13           | 11        |
| STA. 13+00         |                | TO STA. 14+00 |              |           |
| ILLINOIS           |                |               |              |           |
| CONTRACT NO. 89364 |                |               |              |           |



|                            |    |
|----------------------------|----|
| DATE                       | BT |
| REVISIONS                  |    |
| PLOTTED                    |    |
| TEMPLATE                   |    |
| AREAS CHECKED              |    |
| FINAL SURVEY NOTE BOOK NO. |    |

|                               |    |
|-------------------------------|----|
| DATE                          | BT |
| REVISIONS                     |    |
| PLOTTED                       |    |
| TEMPLATE                      |    |
| AREAS CHECKED                 |    |
| ORIGINAL SURVEY NOTE BOOK NO. |    |

|                    |                |               |              |           |
|--------------------|----------------|---------------|--------------|-----------|
| F.A. RFE.          | SECTION        | COUNTY        | TOTAL SHEETS | SHEET NO. |
| C.P. 20            | 04-00153-00-BR | STARK         | 13           | 12        |
| STA. 14+44         |                | TO STA. 16+00 |              |           |
| ILLINOIS           |                |               |              |           |
| CONTRACT NO. 89364 |                |               |              |           |



DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 TEMPLATE \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_  
 FINAL SURVEY NOTE BOOK NO. \_\_\_\_\_

DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 PLOTTED \_\_\_\_\_  
 TEMPLATE \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_  
 ORIGINAL SURVEY NOTE BOOK NO. \_\_\_\_\_



