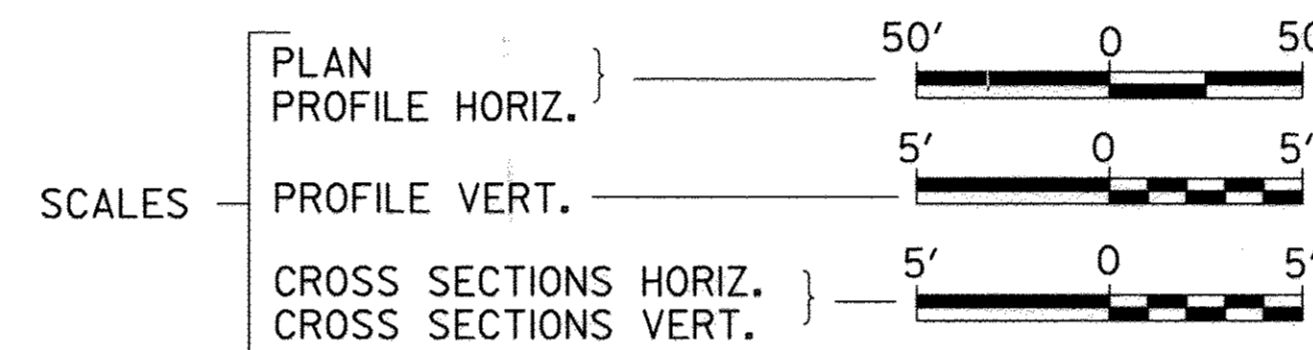


# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED SURFACE TRANSPORTATION PROGRAM-BRIDGE BUREAU COUNTY SECTION 08-00215-00-BR F.A.S. 1235 (CH 19) OVER BRANCH OF EAST BUREAU CREEK PROJECT NO. BRS-1235(105) JOB NUMBER C-93-044-17

|                       |                           |                  |                    |                |
|-----------------------|---------------------------|------------------|--------------------|----------------|
| F.A.S. RTE.<br>1235   | SECTION<br>08-00215-00-BR | COUNTY<br>BUREAU | TOTAL SHEETS<br>23 | SHEET NO.<br>1 |
| FED. ROAD DIST. NO. 7 |                           | ILLINOIS         | CONTRACT NO. 87671 |                |

**INDEX OF SHEETS**

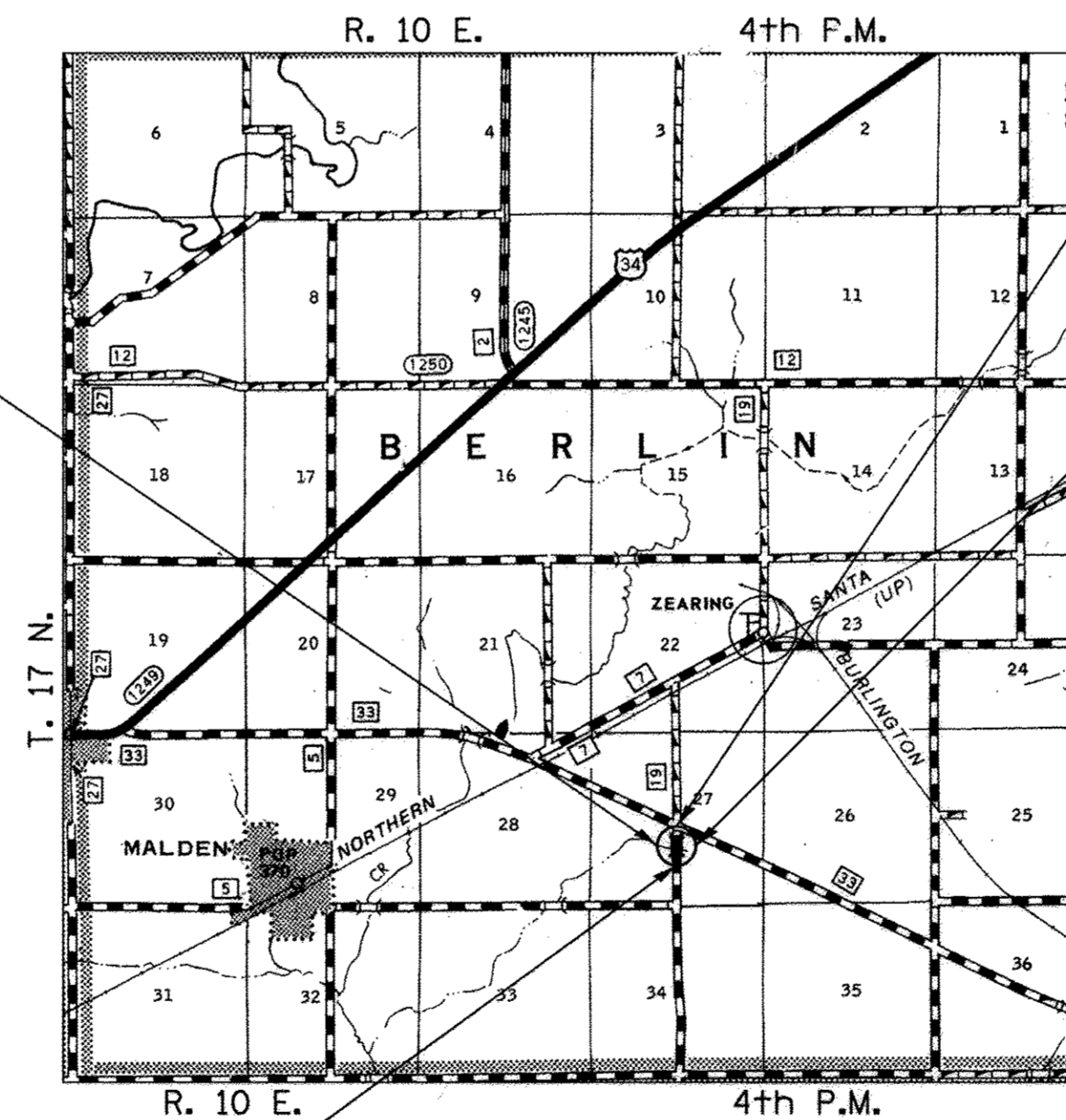
| SHEET NO. | DESCRIPTION  |
|-----------|--|
| 1.        | COVER SHEET  |
| 2.        | GENERAL NOTES, TYPICAL SECTIONS, PAVEMENT DESIGN INFORMATION |
| 3.        | SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES               |
| 4.        | TRAFFIC CONTROL PLAN   |
| 5.        | EROSION CONTROL PLAN   |
| 6.        | PLAN AND PROFILE   |
| 7.-18.    | STRUCTURE PLANS  |
| 19.-23.   | CROSS SECTIONS   |



**REQUIRED HIGHWAY STANDARDS**

- 00001-06
- 28001-07
- 51501-03
- 60101-05
- 60111-02
- 63031-07
- 70191-06
- 72501-01
- BLR 21-9
- BLR 26-3
- BLR 27-1

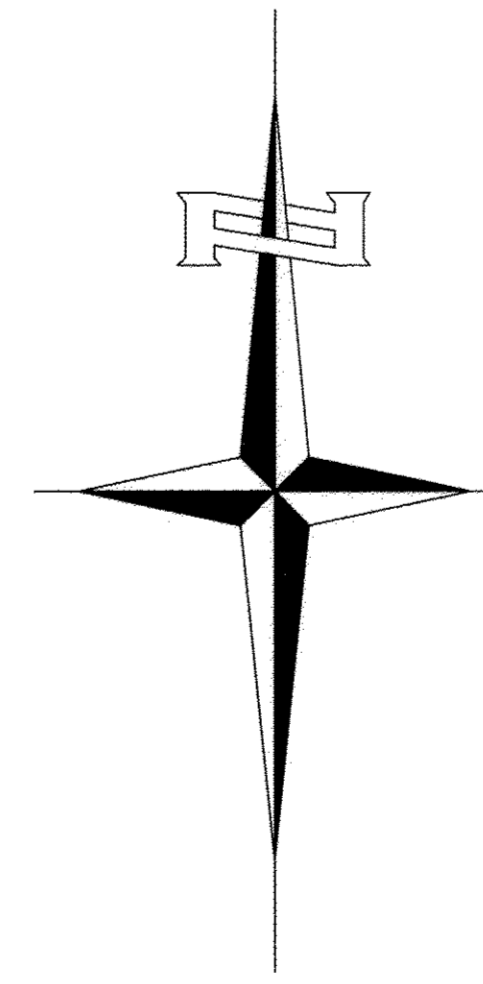
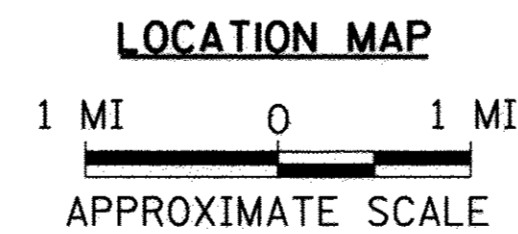
EXISTING STRUCTURE NO. 006-3011  
THREE SPAN PRECAST NELSON BEAM BRIDGE ON  
TIMBER PILE BENT PIERS AND TIMBER PILE BENT  
ABUTMENTS, ALL WITH CONCRETE CAPS,  
±50'-0" BK TO BK, AND ±26'-0" O TO O DECK,  
NO SKEW. (TO BE REMOVED BY OTHERS)



SECTION 08-00215-00-BR  
ENDS  
STATION 22+00.00

PROPOSED STRUCTURE SN 006-3018  
SINGLE SPAN 27" PPC DECK BEAM SUPERSTRUCTURE  
ON CONCRETE SPILL-THRU PILE BENT ABUTMENTS,  
58'-0" BK TO BK, AND 30'-0" O TO O DECK,  
NO SKEW

SECTION 08-00215-00-BR  
BEGINS  
STATION 18+00.00



PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

**UTILITY COMPANIES**

- AMEREN ILLINOIS  
LASALLE, ILLINOIS
- FRONTIER COMMUNICATIONS  
ROSEVILLE, ILLINOIS

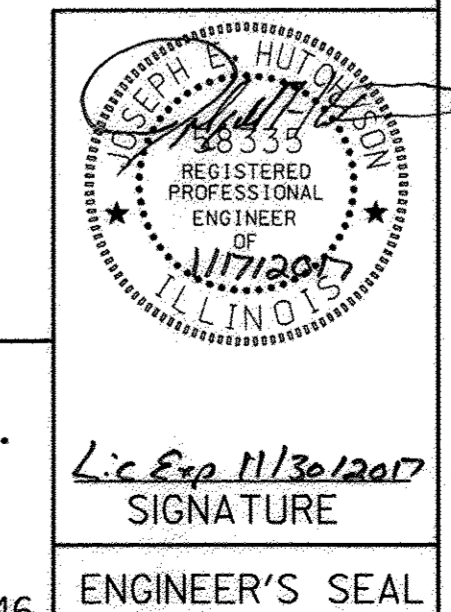
**J.U.L.I.E.**  
**JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION**  
1-800-892-0123  
OR 811

NET LENGTH OF PROJECT = 400.00 FEET = 0.076 MILES  
DESIGN CLASSIFICATION: MINOR COLLECTOR (NON-URBAN)  
DESIGN ADT: 150 (16)  
DESIGN SPEED: 40 MPH

**Hutchison Engineering, Inc.**  
JACKSONVILLE-SHOREWOOD-PEORIA

2017

JOB#3546



*Joseph B. Hutchison*  
REGISTERED PROFESSIONAL ENGINEER  
OF ILLINOIS  
SIGNATURE

ENGINEER'S SEAL

PLANS DESIGNED IN ACCORDANCE WITH BUREAU  
OF LOCAL ROADS AND STREETS MANUAL GUIDELINES  
FOR TWO LANE RURAL COLLECTORS - RECONSTRUCTION

APPROVED 01/31 2017

*John C. ...*  
BUREAU COUNTY ENGINEER

PASSED 2/15 2017

*David R. ...*  
DISTRICT THREE ENGINEER OF  
LOCAL ROADS & STREETS

Released For  
Bid Based on  
Limited Review 2/15 2017

*Kevin ...*  
REGION TWO ENGINEER  
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**HOT-MIX ASPHALT MIXTURE REQUIREMENTS**

|                            | HMA BINDER       | HMA SURFACE      |
|----------------------------|------------------|------------------|
| PG GRADE                   | PG 64-22         | PG 64-22         |
| DESIGN AIR VOIDS           | 4% @ N50         | 4% @ N50         |
| MIXTURE COMPOSITION        | IL-19.0          | IL-9.5           |
| FRICTION AGGREGATE         |                  | MIXTURE C        |
| DENSITY TEST METHOD        | LR1030           | LR1030           |
| MIXTURE WEIGHT             | 112#/SQ. YD./IN. | 112#/SQ. YD./IN. |
| QUALITY MANAGEMENT PROGRAM | QC/QA            | QC/QA            |
| SUBLOT SIZE                | N/A              | N/A              |
| LOCATIONS                  | ENTIRE PROJECT   | ENTIRE PROJECT   |

If RAP option is selected, the asphalt cement grade may need to be adjusted. This will be determined by the Engineer.

**STRUCTURAL DESIGN INFORMATION  
COUNTY HIGHWAY 19**

ROAD CLASSIFICATION: CLASS IV 80,000 lb./20 YEAR DESIGN  
 STRUCTURAL DESIGN TRAFFIC:  
 PV = 132 SU = 14 MU = 4  
 PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:  
 P = 88% S = 9% M = 3%  
 DESIGN  $E_{r1}$  : 3 ksi  
 ASPHALT PAVEMENT THICKNESS: 3 3/4"  
 SUBBASE GRANULAR MATERIAL, TYPE A: 12"

**GENERAL NOTES**

THE REMOVAL OF EXISTING ASPHALT SURFACE AND GRAVEL OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE PROJECT SHALL BE REMOVED AS EARTH EXCAVATION AND NO COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENTS ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.

THE PROFILE GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND IN THE STATION CROSS SECTIONS ARE TO THE TOP OF THE FINISHED SURFACE.

ALL EXISTING DRAINAGE STRUCTURES NOT BEING REMOVED BY THE CONTRACTOR THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION

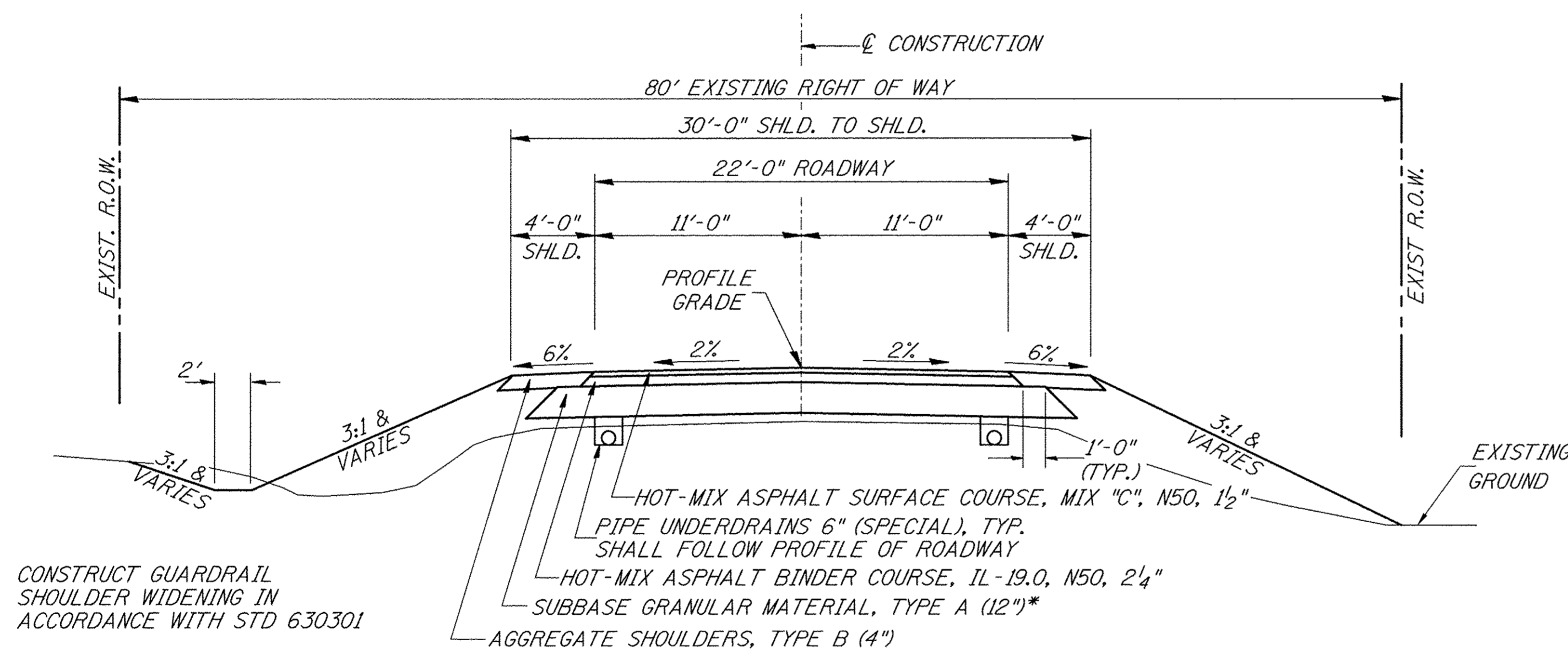
THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING AND TRENCHING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

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

THE FINAL SURFACE OF ALL DISTURBED/EMBANKMENT AREAS SHALL BE SEEDED. THE TOP 4 INCHES OF THE SEEDER AREAS SHALL BE COHESIVE VEGETATION SUSTAINING SOIL SUBJECT TO THE APPROVAL OF THE ENGINEER. THE COST OF SHAPING THE SLOPES AND PROVIDING VEGETATION SUSTAINING SOIL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION. TOPSOIL MAY BE STRIPPED AND STOCKPILED FROM THE SITE OR HAULED IN FROM AN ALTERNATE LOCATION AS APPROVED BY THE ENGINEER.

ALL ELEVATIONS SHOWN REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.



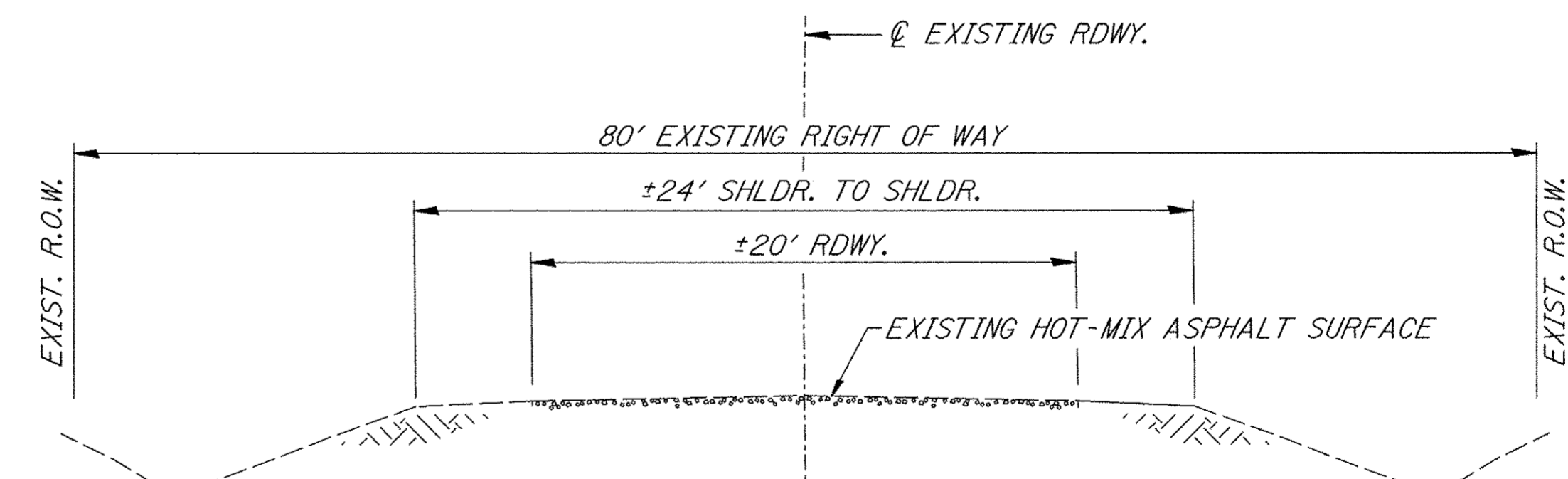
CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

**PROPOSED TYPICAL SECTION**

STA. 18+00.00 TO STA. 19+71.00  
 STA. 20+29.00 TO STA. 22+00.00

BRIDGE OMISSION  
 STA. 19+71.00 TO STA. 20+29.00

\*TOP 3"-CA-6 GRADATION  
 BOTTOM 9"-CA-2 GRADATION



**EXISTING TYPICAL SECTION**

|  |                        |            |           |   |   |  |  |                  |                         |                                |                    |             |
|--|------------------------|------------|-----------|---|---|--|--|------------------|-------------------------|--------------------------------|--------------------|-------------|
| FILE NAME =<br>V:\Bridges\3546-Bureau\3546\001.dgn | USER NAME = JHutchison | DESIGNED - | REVISED - | <b>BUREAU COUNTY<br/>COUNTY HIGHWAY 19 OVER<br/>BRANCH OF EAST BUREAU CREEK</b> | <b>GENERAL NOTES, TYPICAL SECTIONS,<br/>PAVEMENT DESIGN INFORMATION</b> |  |  | F.A.S. RTE. 1235 | SECTION 08-00215-00-BR  | COUNTY BUREAU                  | TOTAL SHEETS 23    | SHEET NO. 2 |
| PLOT SCALE = 1.0000' / in.                         | CHECKED -              | REVISED -  | REVISED - |   |   |  |  | SCALE: NONE      | SHEET NO. 1 OF 1 SHEETS | STA. 18+00.00 TO STA. 22+00.00 | CONTRACT NO. 87671 |             |
| PLOT DATE = 1/16/2017                              | DATE -                 | REVISED -  | REVISED - |   | FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT NO. BRS-1235(105)       |  |  |                  |                         |                                |                    |             |

**SUMMARY OF QUANTITIES**

| CODE NO. | ITEM  | UNIT  | QUANTITY |
|----------|---|-------|----------|
| 20300100 | CHANNEL EXCAVATION                                  | CU YD | 50       |
| 20400800 | FURNISHED EXCAVATION                                | CU YD | 240      |
| 20700220 | POROUS GRANULAR EMBANKMENT                          | CU YD | 36.1     |
| 25100630 | EROSION CONTROL BLANKET                             | SQ YD | 1,936    |
| 28000305 | TEMPORARY DITCH CHECKS                              | FOOT  | 60       |
| 28000400 | PERIMETER EROSION BARRIER                           | FOOT  | 395      |
| 31100100 | SUBBASE GRANULAR MATERIAL, TYPE A                   | TON   | 605      |
| 40600275 | BITUMINOUS MATERIALS (PRIME COAT)                   | POUND | 2,075    |
| 40603080 | HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50         | TON   | 106      |
| 40603310 | HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50        | TON   | 90       |
| 48101200 | AGGREGATE SHOULDERS, TYPE B                         | TON   | 60       |
| 50300225 | CONCRETE STRUCTURES                                 | CU YD | 25.7     |
| 50300280 | CONCRETE ENCASEMENT                                 | CU YD | 2.6      |
| 50400505 | PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH) | SQ FT | 1,685    |
| 50800105 | REINFORCEMENT BARS                                  | POUND | 2,850    |
| 51200957 | FURNISHING METAL SHELL PILES 12"X0.250"             | FOOT  | 360      |
| 51202305 | DRIVING PILES                                       | FOOT  | 360      |
| 51203200 | TEST PILE METAL SHELLS                              | EACH  | 2        |
| 51500100 | NAME PLATES   | EACH  | 1        |
| 58100200 | WATERPROOFING MEMBRANE SYSTEM                       | SQ YD | 193      |
| 58300100 | PORTLAND CEMENT MORTAR FAIRING COURSE               | FOOT  | 150      |
| 60108200 | PIPE UNDERDRAINS 6" (SPECIAL)                       | FOOT  | 760      |
| 63100075 | TRAFFIC BARRIER TERMINAL, TYPE 5A                   | EACH  | 2        |
| 63100167 | TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT  | EACH  | 2        |
| 67100100 | MOBILIZATION  | L SUM | 1        |
| X2020410 | EARTH EXCAVATION (SPECIAL)                          | CU YD | 430      |
| X2501100 | SEEDING, CLASS 3 (SPECIAL)                          | ACRE  | 0.4      |
| X2810210 | STONE RIPRAP, CLASS A5 (SPECIAL)                    | TON   | 560      |
| X7010216 | TRAFFIC CONTROL AND PROTECTION, (SPECIAL)           | L SUM | 1        |
| XX006199 | STEEL BRIDGE RAIL, TYPE SM (SPECIAL)                | FOOT  | 116      |
| Z0013798 | CONSTRUCTION LAYOUT                                 | L SUM | 1        |

① SEE SPECIAL PROVISIONS    Δ SPECIALTY ITEMS    CONSTRUCTION CODE TYPE: 0011  
NOTE: PAVEMENT MARKING DONE BY OTHERS

**PAVEMENT SCHEDULE**

| STATION TO STATION  | WIDTH       | LENGTH  | SUBBASE GRANULAR MATERIAL, TYPE A (TON) | PRIME COAT POUND 0.25 lb./SQ FT | HOT-MIX ASPHALT BINDER CSE, IL-19.0, N50 TON | HOT-MIX ASPHALT SURF CSE, MIX "C", N50 TON |
|---------------------|-------------|---------|---|---------------------------------|--|--|
| 18+00.00 - 18+50.00 | 24.38' AVG. | 50.00'  | 85                                      |                                 |  |  |
| 18+50.00 - 19+71.00 | 25.63'      | 121.00' | 217                                     |                                 |  |  |
| 20+29.00 - 21+50.00 | 25.63'      | 121.00' | 217                                     |                                 |  |  |
| 21+50.00 - 22+00.00 | 24.43' AVG. | 50.00'  | 86                                      |                                 |  |  |
| 18+00.00 - 18+50.00 | 23.38' AVG. | 50.00'  |   | 292                             |  |  |
| 18+50.00 - 19+71.00 | 24.63'      | 121.00' |   | 745                             |  |  |
| 20+29.00 - 21+50.00 | 24.63'      | 121.00' |   | 745                             |  |  |
| 21+50.00 - 22+00.00 | 23.43' AVG. | 50.00'  |   | 293                             |  |  |
| 18+00.00 - 18+50.00 | 21.19' AVG. | 50.00'  |   |                                 | 15   |  |
| 18+50.00 - 19+71.00 | 22.44'      | 121.00' |   |                                 | 38   |  |
| 20+29.00 - 21+50.00 | 22.44'      | 121.00' |   |                                 | 38   |  |
| 21+50.00 - 22+00.00 | 21.24' AVG. | 50.00'  |   |                                 | 15   |  |
| 18+00.00 - 18+50.00 | 20.88' AVG. | 50.00'  |   |                                 |  | 10   |
| 18+50.00 - 19+71.00 | 22.13'      | 121.00' |   |                                 |  | 25   |
| BRIDGE DECK         | 30.00'      | 58.00'  |   |                                 |  | 20   |
| 20+29.00 - 21+50.00 | 22.13'      | 121.00' |   |                                 |  | 25   |
| 21+50.00 - 22+00.00 | 20.93' AVG. | 50.00'  |   |                                 |  | 10   |
| <b>TOTAL</b>        |             |         | <b>605</b>                              | <b>2,075</b>                    | <b>106</b>                                   | <b>90</b>                                  |

**EARTHWORK SUMMARY**

| STATION TO STATION       | EARTH EXCAVATION | CHANNEL EXCAVATION | STRUCTURE EXCAVATION | FILL       | WASTE (SHORTAGE) |
|--------------------------|------------------|--------------------|----------------------|------------|------------------|
|                          | CU YD            | CU YD              | CU YD                | CU YD      | CU YD            |
| RDWY 18+00.00 - 19+71.00 | 225              |                    |                      | 277        | (108)            |
| RDWY 20+29.00 - 22+00.00 | 206              |                    |                      | 284        | (130)            |
| CHANNEL                  |                  | 50                 |                      |            |                  |
| STRUCTURE                |                  |                    | 105                  |            |                  |
| <b>TOTAL</b>             | <b>431</b>       | <b>50</b>          | <b>105</b>           | <b>561</b> | <b>(238)</b>     |
| <b>USE</b>               | <b>430</b>       | <b>50</b>          | <b>*105</b>          | <b>-</b>   | <b>(240)</b>     |

(\* 25% SHRINKAGE)

\*STRUCTURE EXCAVATION SHALL BE COMPLETED IN ACCORDANCE WITH SECTION 502 OF THE STANDARD SPECIFICATIONS. INDIVIDUAL PAYMENT FOR STRUCTURE EXCAVATION WILL NOT BE MADE, BUT SHALL BE IN ACCORDANCE WITH SECTION 502.13.

**EROSION CONTROL BLANKET**

| STATION TO STATION | SIDE  | WIDTH  | LENGTH | AREA (SQ YD) |
|--------------------|-------|--------|--------|--------------|
| 18+00 - 19+71      | LEFT  | VARIES | 171'   | 484          |
| 18+00 - 19+71      | RIGHT | VARIES | 171'   | 484          |
| 20+29 - 22+00      | LEFT  | VARIES | 171'   | 484          |
| 20+29 - 22+00      | RIGHT | VARIES | 171'   | 484          |
| <b>TOTAL</b>       |       |        |        | <b>1,936</b> |

**TEMPORARY DITCH CHECKS**

| STATION      | SIDE  | FOOT      |
|--------------|-------|-----------|
| 18+65        | RIGHT | 12        |
| 18+95        | LEFT  | 12        |
| 19+25        | RIGHT | 12        |
| 19+85        | RIGHT | 12        |
| 19+86        | LEFT  | 12        |
| <b>TOTAL</b> |       | <b>60</b> |

**PERIMETER EROSION BARRIER**

| STATION TO STATION | SIDE  | FOOT       |
|--------------------|-------|------------|
| 20+29 - 22+00      | LEFT  | 195        |
| 20+29 - 22+00      | RIGHT | 200        |
| <b>TOTAL</b>       |       | <b>395</b> |

**AGGREGATE SHOULDERS, TYPE B**

| STATION TO STATION  | SIDE  | WIDTH      | LENGTH  | TON       |
|---------------------|-------|------------|---------|-----------|
| 18+00.00 - 18+50.00 | LEFT  | 3.00' AVG. | 50.00'  | 4         |
| 18+00.00 - 18+50.00 | RIGHT | 3.00' AVG. | 50.00'  | 4         |
| 18+50.00 - 19+71.00 | LEFT  | 4.00'      | 121.00' | 11        |
| 18+50.00 - 19+71.00 | RIGHT | 4.00'      | 121.00' | 11        |
| 20+29.00 - 21+50.00 | LEFT  | 4.00'      | 121.00' | 11        |
| 20+29.00 - 21+50.00 | RIGHT | 4.00'      | 121.00' | 11        |
| 21+50.00 - 22+00.00 | LEFT  | 3.00' AVG  | 50.00'  | 4         |
| 21+50.00 - 22+00.00 | RIGHT | 3.00' AVG  | 50.00'  | 4         |
| <b>TOTAL</b>        |       |            |         | <b>60</b> |

**TRAFFIC BARRIER TERMINAL, TYPE 5A**

| SIDE         | STATION TO STATION  | EACH     |
|--------------|---------------------|----------|
| RIGHT        | 19+57.75 - 19+71.00 | 1        |
| LEFT         | 20+29.00 - 20+42.25 | 1        |
| <b>TOTAL</b> |                     | <b>2</b> |

**TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT**

| SIDE         | STATION TO STATION  | EACH     |
|--------------|---------------------|----------|
| RIGHT        | 19+07.75 - 19+57.75 | 1        |
| LEFT         | 20+42.25 - 20+92.25 | 1        |
| <b>TOTAL</b> |                     | <b>2</b> |

**PIPE UNDERDRAINS 6" (SPECIAL)**

| STATION TO STATION | SIDE  | FOOT       |
|--------------------|-------|------------|
| 18+00 - 19+66      | LEFT  | 174        |
| 18+00 - 19+66      | RIGHT | 177        |
| 19+66 - 19+71      | LEFT  | 13         |
| 19+66 - 19+71      | RIGHT | 16         |
| 20+29 - 20+34      | LEFT  | 16         |
| 20+29 - 20+34      | RIGHT | 13         |
| 20+34 - 22+00      | LEFT  | 177        |
| 20+34 - 22+00      | RIGHT | 174        |
| <b>TOTAL</b>       |       | <b>760</b> |



- 1

ROAD CLOSED  
1 1/4 MILES AHEAD  
LOCAL TRAFFIC ONLY

R11-3

ROAD CLOSED  
1 1/4 MILES AHEAD  
LOCAL TRAFFIC ONLY
- 2

ROAD CLOSED  
1 MILE AHEAD  
LOCAL TRAFFIC ONLY

R11-3

ROAD CLOSED  
1 MILE AHEAD  
LOCAL TRAFFIC ONLY
- 3

ROAD  
CLOSED  
AHEAD

W20-3

ROAD CLOSED  
AHEAD
- 4

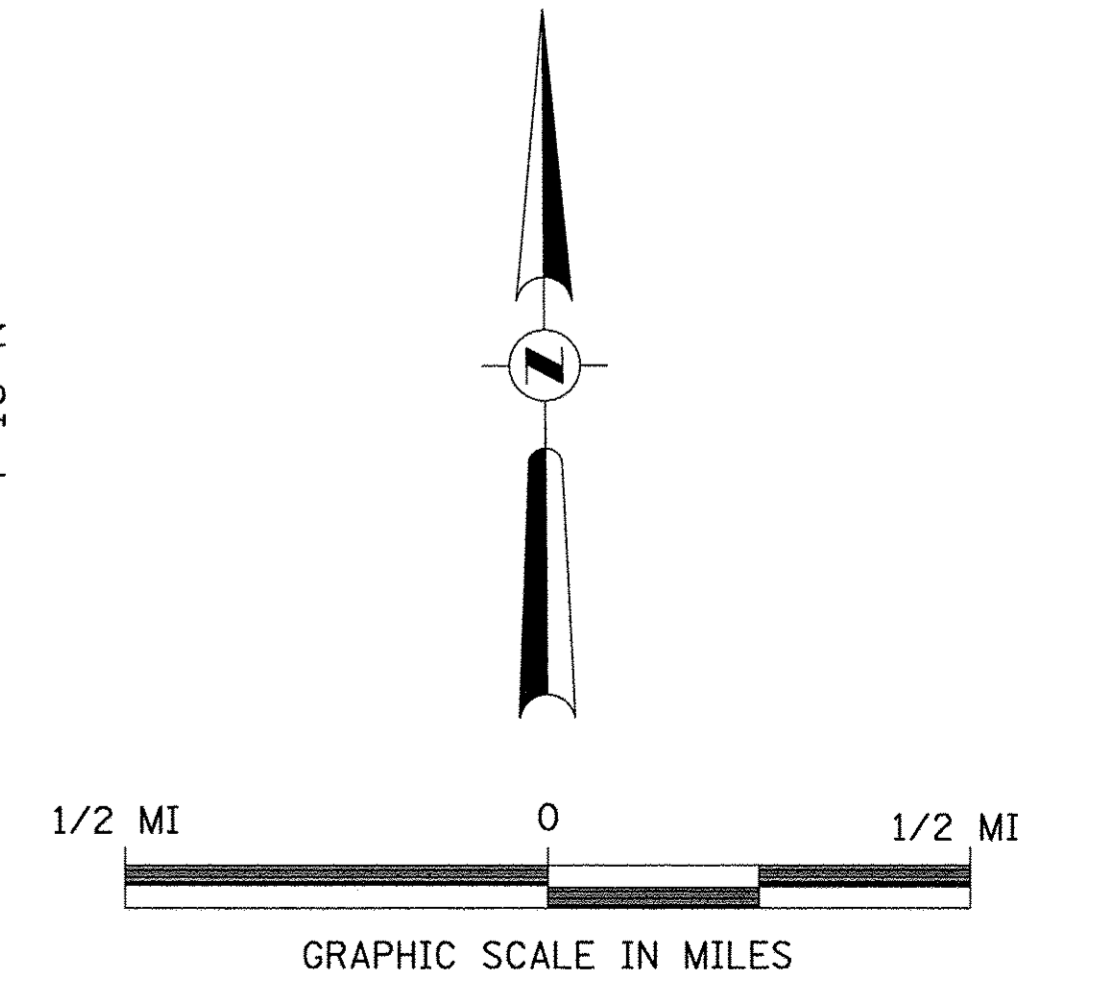
ROAD  
CLOSED  
500 FT

W20-3

ROAD CLOSED  
500 FT
- 5

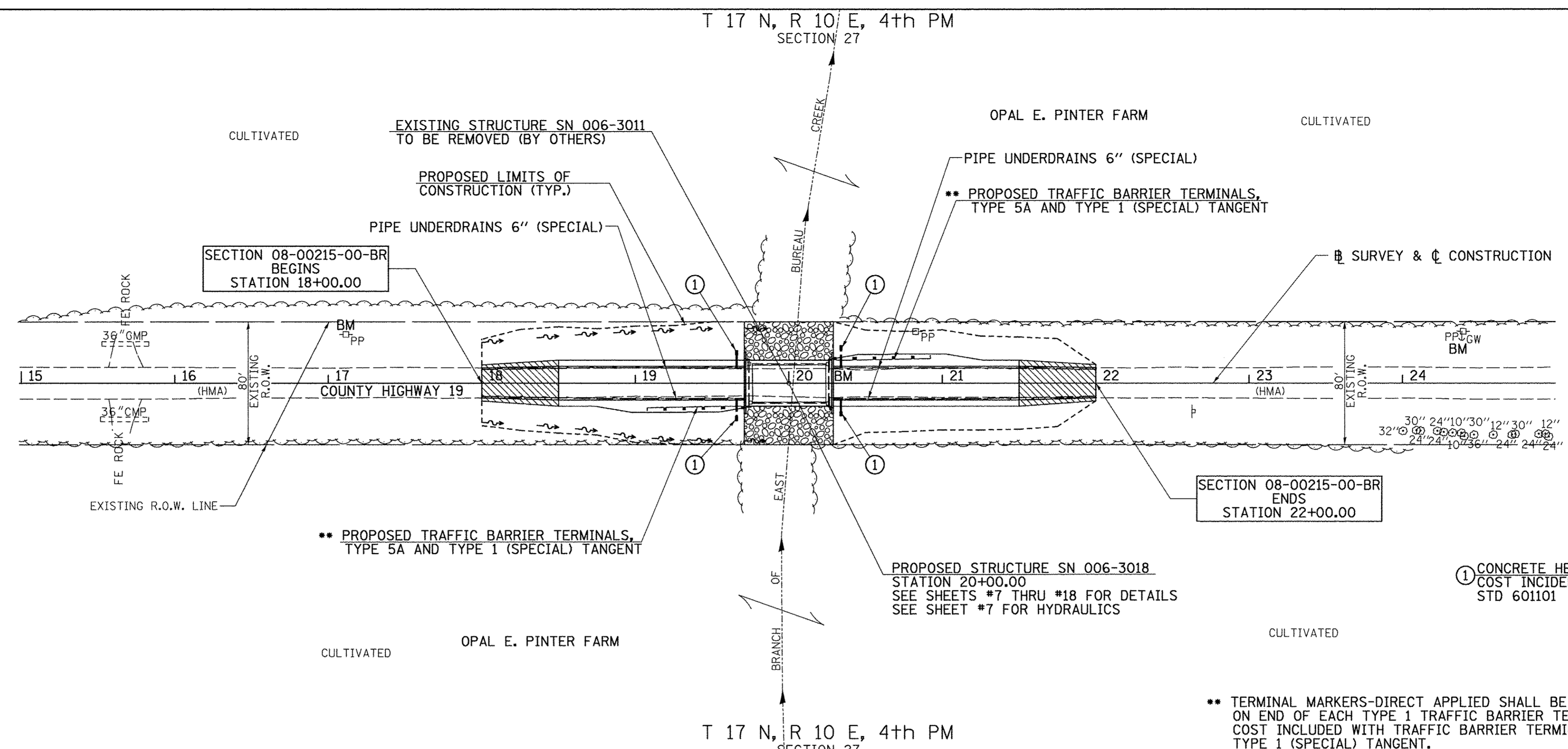
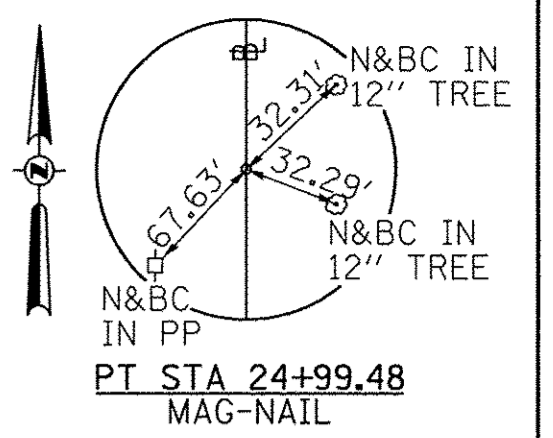
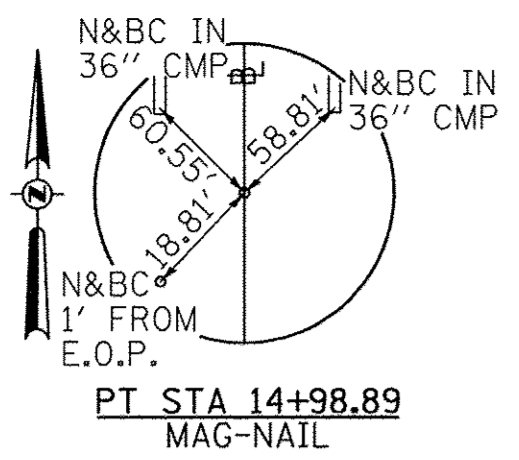
TYPE III BARRICADES

SEE STANDARD BLR 21  
AND SPECIAL PROVISIONS



|  |                        |            |           |   |                             |                        |                           |  |                       |                   |
|--|------------------------|------------|-----------|---|-----------------------------|------------------------|---------------------------|--|-----------------------|-------------------|
| FILE NAME =<br>V:\Bridges\3546-Bureau\3546h001.dgn | USER NAME = JHutchison | DESIGNED - | REVISED - | <b>BUREAU COUNTY<br/>COUNTY HIGHWAY 19 OVER<br/>BRANCH OF EAST BUREAU CREEK</b> | <b>TRAFFIC CONTROL PLAN</b> | F.A.S.<br>RTE.<br>1235 | SECTION<br>08-00215-00-BR | COUNTY<br>BUREAU   | TOTAL<br>SHEETS<br>23 | SHEET<br>NO.<br>4 |
| PLOT SCALE = 1.0000' / 1" =                        |                        | CHECKED -  | REVISED - | SCALE: NONE    SHEET NO. 1 OF 1 SHEETS    STA. 18+00.00 TO STA. 22+00.00        |                             | CONTRACT NO. 87671     |                           | FED. ROAD DIST. NO. 7 ILLINOIS    FED. AID PROJECT BRS-1235(105) |                       |                   |
| PLOT DATE = 1/16/2017                              |                        | DATE -     | REVISED - |   |                             |                        |                           |  |                       |                   |

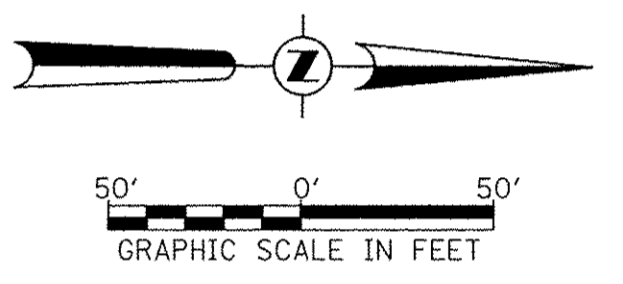




**LEGEND**

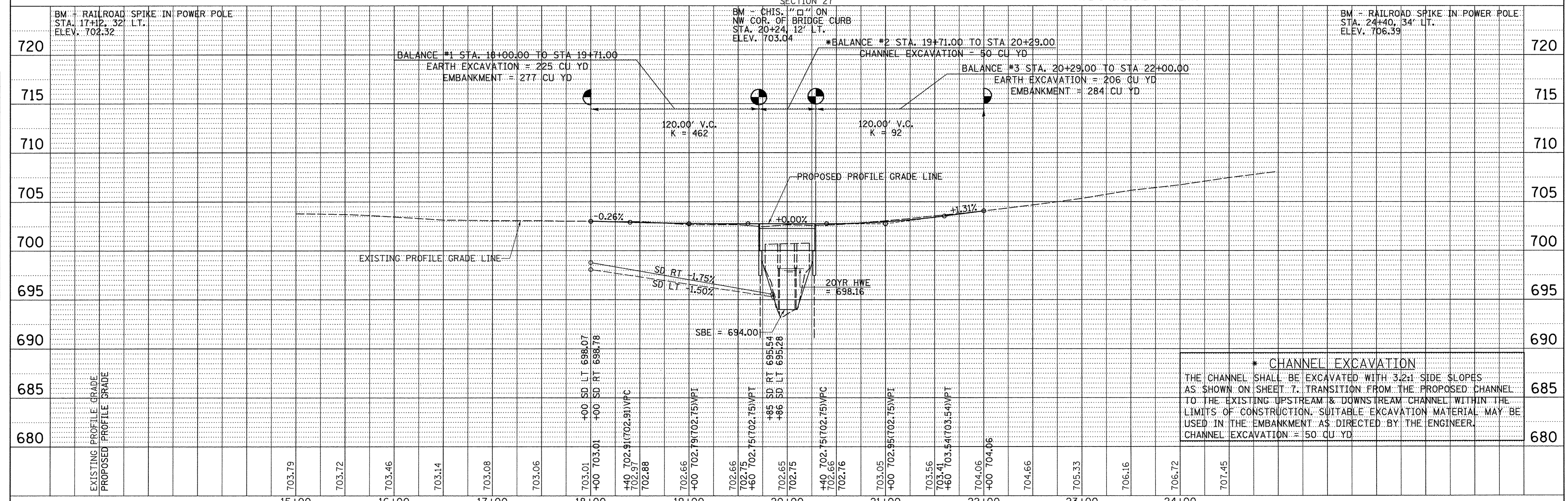
- TRANSITION TO OR FROM EXISTING TO PROPOSED TYPICAL PAVEMENT
- PROPOSED RIPRAP PLACEMENT
- SPECIAL DITCH WITH FLOW DIRECTION

\*\* TERMINAL MARKERS-DIRECT APPLIED SHALL BE PLACED ON END OF EACH TYPE 1 TRAFFIC BARRIER TERMINAL. COST INCLUDED WITH TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT.



|          |  |
|----------|--|
| DATE     |  |
| BY       |  |
| REVISION |  |
| NO.      |  |

|          |  |
|----------|--|
| DATE     |  |
| BY       |  |
| REVISION |  |
| NO.      |  |



**\* CHANNEL EXCAVATION**  
 THE CHANNEL SHALL BE EXCAVATED WITH 3:2:1 SIDE SLOPES AS SHOWN ON SHEET 7. TRANSITION FROM THE PROPOSED CHANNEL TO THE EXISTING UPSTREAM & DOWNSTREAM CHANNEL WITHIN THE LIMITS OF CONSTRUCTION. SUITABLE EXCAVATION MATERIAL MAY BE USED IN THE EMBANKMENT AS DIRECTED BY THE ENGINEER.  
 CHANNEL EXCAVATION = 50 CU YD

|  |                              |            |           |   |  |  |  |                         |  |  |  |                    |                        |               |                 |               |
|--|------------------------------|------------|-----------|---|--|--|--|-------------------------|--|--|--|--------------------|------------------------|---------------|-----------------|---------------|
| FILE NAME =<br>V:\Bridge\3546-Bureau\3546p\001.dgn | USER NAME = JHutchison       | DESIGNED - | REVISED - | <b>BUREAU COUNTY<br/>COUNTY HIGHWAY 19 OVER<br/>BRANCH OF EAST BUREAU CREEK</b> |  |  |  | <b>PLAN AND PROFILE</b> |  |  |  | F.A.S. RTE. 1235   | SECTION 08-00215-00-BR | COUNTY BUREAU | TOTAL SHEETS 23 | SHEET NO. 6   |
| *MODELNAME*  | PLOT SCALE = 50.0000' / 1in. | CHECKED -  | REVISED - |   |  |  |  |                         |  |  |  | SCALE: 1"=50'      | SHEET 1                | OF 1          | SHEETS          | STA. 18+00.00 |
|  | PLOT DATE = 1/16/2017        | DATE -     | REVISED - |   |  |  |  |                         |  |  |  | CONTRACT NO. 87671 |                        |               |                 |               |

B.M.: RR Spike in Power Pole  
Sta. 17+12, 32' Lt.  
Elev. 702.32

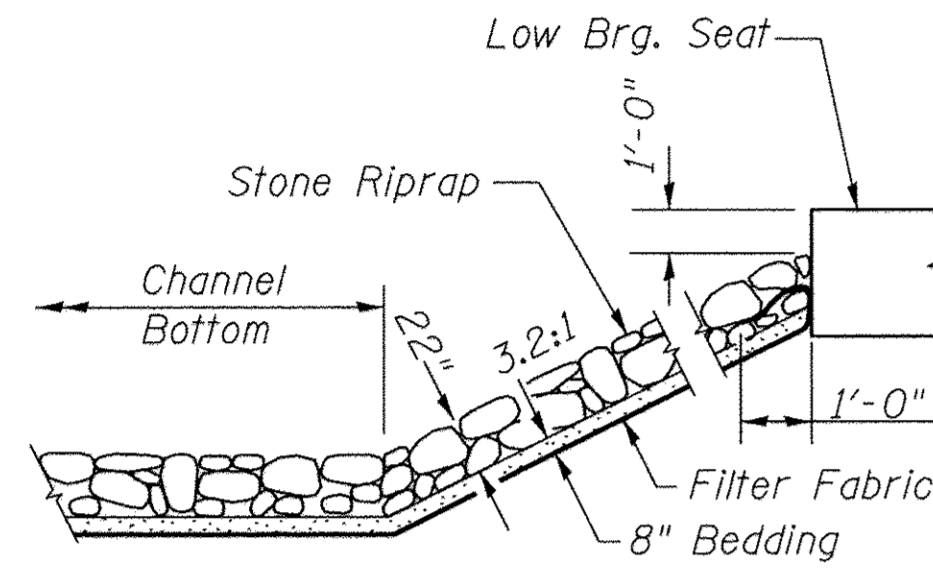
RR Spike in Power Pole  
Sta. 24+40, 34' Lt.  
Elev. 706.39

**Existing Structure:**

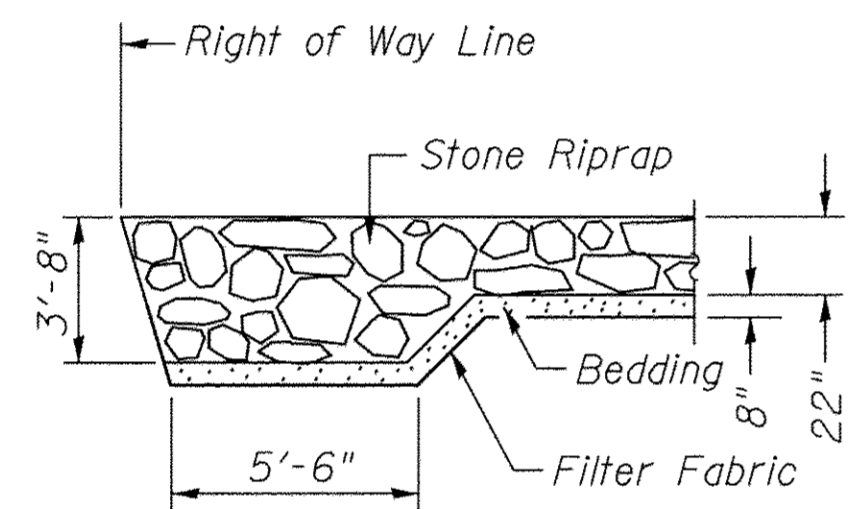
Three span precast Nelson beam bridge on timber pile bent piers with concrete caps and timber pile bent abutments with concrete caps. The structure is ±50'-0" back to back of abutments, ±26'-0" out to out deck, and is not skewed. Str. No. 006-3011 To Be Removed by Others.

Salvage: None

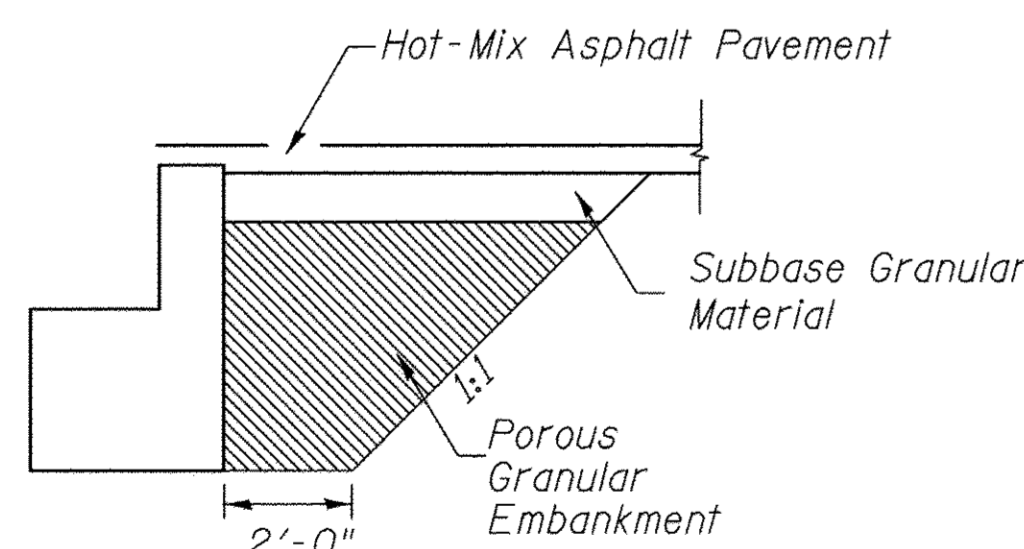
Road to be closed to traffic during construction.



**STONE RIPRAP DETAIL**

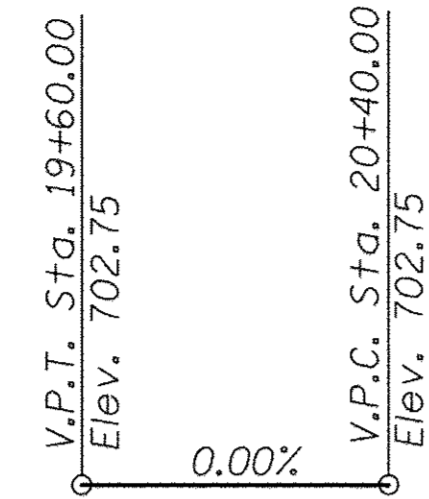


**SECTION A-A**

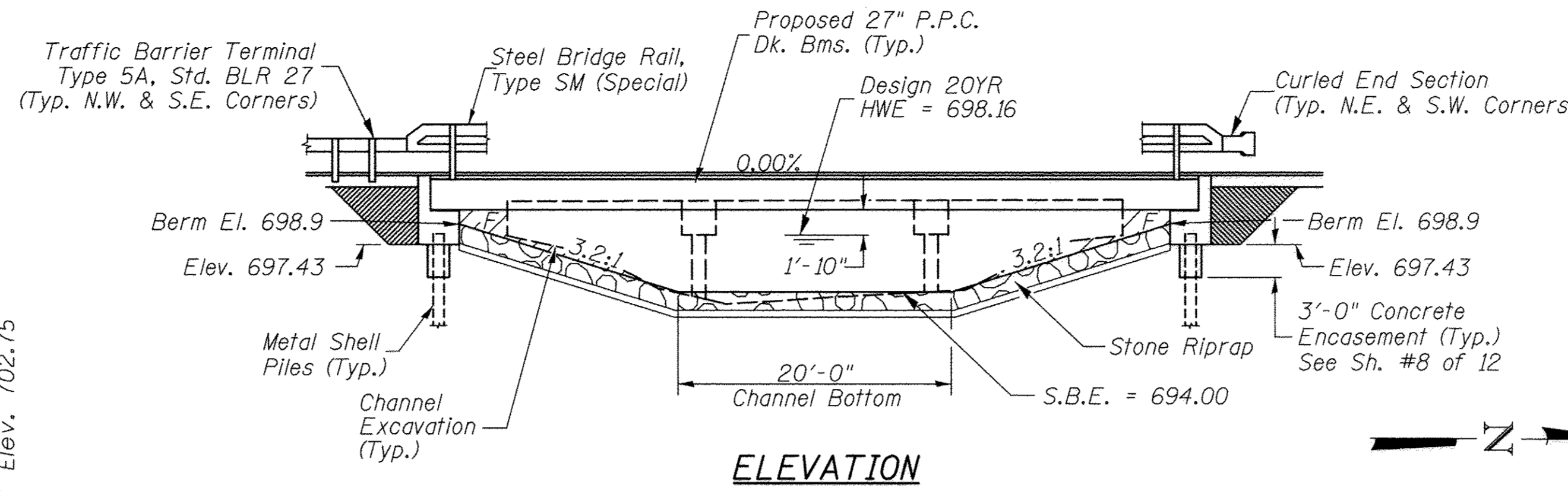


**SECTION B-B**

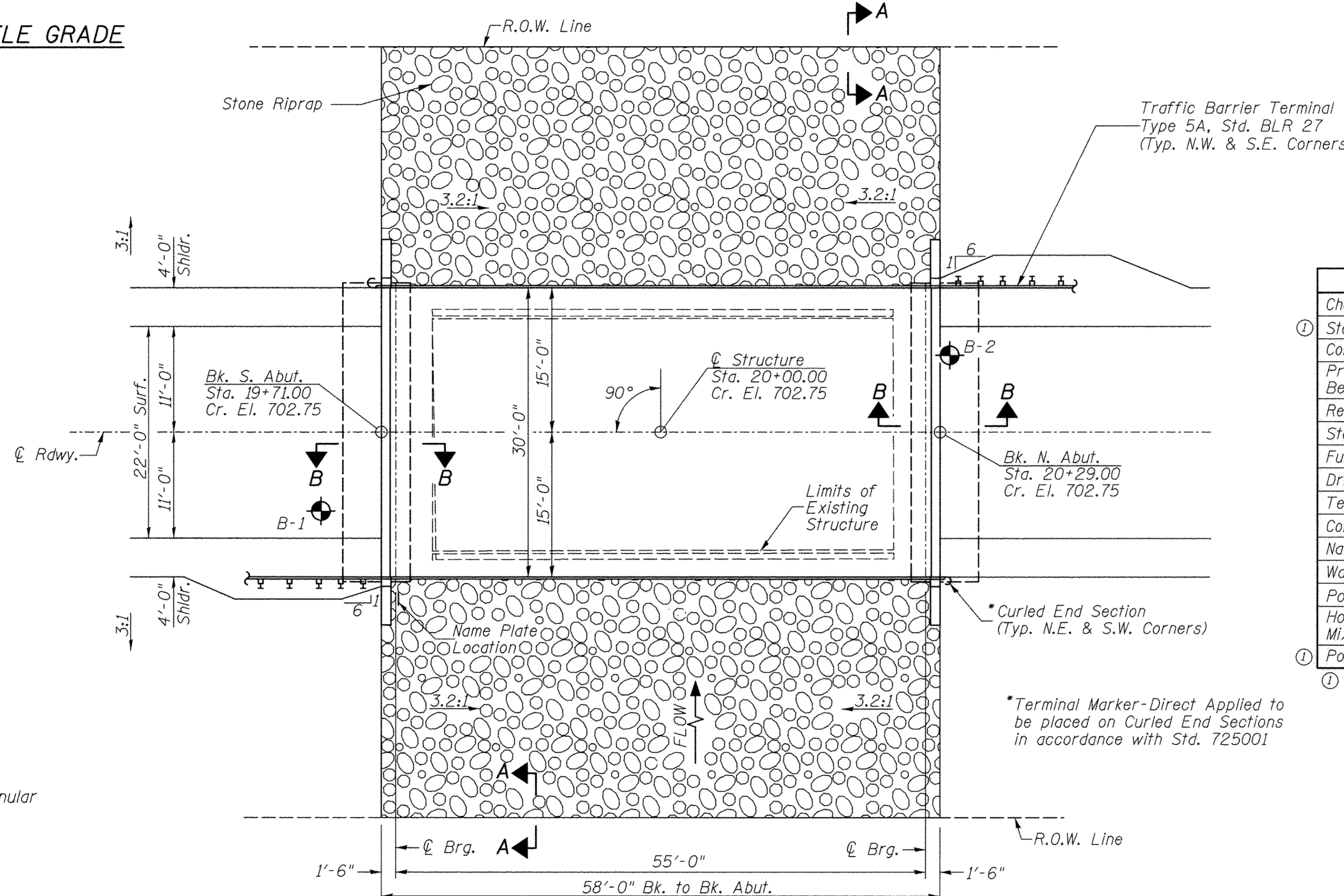
**PROFILE GRADE**



**EXISTING STRUCTURE TO BE REMOVED BY OTHERS**



**ELEVATION**



**PLAN**

**DESIGN SCOUR TABLE**

| Location               | S. Abut. | N. Abut. |
|------------------------|----------|----------|
| Design Scour Elevation | 697.43   | 697.43   |

**WATERWAY INFORMATION**

| Drainage Area = 2.67 Sq. Mi. |           | Low Grade Elev. = 702.75 @ Sta. 20+00.00 |                 |       |             |       |            |        |               |       |
|------------------------------|-----------|--|-----------------|-------|-------------|-------|------------|--------|---------------|-------|
| Flood                        | Freq. Yr. | Q C.F.S.                                 | Opening Sq. Ft. |       | Nat. H.W.E. |       | Head - Ft. |        | Headwater El. |       |
|                              |           |  | Exist.          | Prop. | Exist.      | Prop. | Exist.     | Prop.  | Exist.        | Prop. |
| Design                       | 20        | 709                                      | 126             | 139   | 698.16      | 0.60  | 0.42       | 698.76 | 698.58        |       |
| Base                         | 100       | 1,060                                    | 146             | 162   | 698.64      | 1.15  | 0.81       | 699.79 | 699.45        |       |

**DESIGN SPECIFICATIONS**

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims

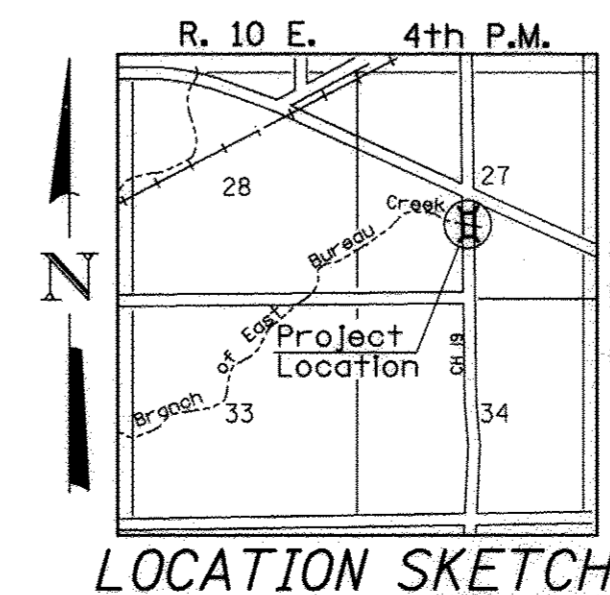
**DESIGN STRESSES**

(FIELD UNITS)  $f'_c = 3,500$  p.s.i.  $f_y = 60,000$  p.s.i. (Rein.)

(PRECAST PRESTRESSED UNITS)  $f'_c = 6,000$  p.s.i.  $f'_{ci} = 5,000$  p.s.i.  $f'_s = 270,000$  p.s.i. ( $1/2$ " Strands)  $f'_{si} = 201,960$  p.s.i. ( $1/2$ " Strands)

**LOADING HL-93**

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



**LOCATION SKETCH**

**GENERAL NOTES**

The Contractor shall drive test piles to 100% of the nominal required bearing specified in production locations at the substructures specified or approved by the Engineer before ordering the remainder of the piles. For Soil Boring Logs, See Sheets 9-12 of 12. A Corrosion Inhibitor shall be used in the concrete for Precast Prestressed Concrete Deck Beams according to Article 1020.05(b)(10) of the Standard Specifications. Reinforcement Bars shall conform to the requirements of ASTM A706 Grade 60. Reinforcement Bars designated (E) shall be epoxy coated. Layout of the slope protection system may be varied in the field to suit ground conditions as directed by the Engineer. The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

**BRANCH OF EAST BUREAU CREEK  
BUILT 2011 BY  
BUREAU COUNTY  
SEC. 08-00215-00-BR  
C.H. 19 STATION 20+00.00  
F.A. PROJ. BRS-1235(105)  
STR. NO. 006-3018 LOADING HL-93**

**NAME PLATE**

Locate Name Plate at S.E. Wingwall Corner of Bridge (See Std. 515001)

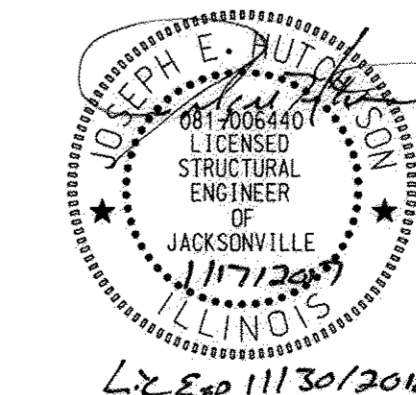
**TOTAL BILL OF MATERIAL**

| ITEM  | UNIT  | SUPER | SUB   | TOTAL |
|---|-------|-------|-------|-------|
| Channel Excavation                                  | CU YD | —     | 50    | 50    |
| ① Stone Riprap, Class A5 (Special)                  | TON   | —     | 560   | 560   |
| Concrete Structures                                 | CU YD | —     | 25.7  | 25.7  |
| Precast Prestressed Concrete Deck Beams (27" Depth) | SQ FT | 1,685 | —     | 1,685 |
| Reinforcement Bars                                  | POUND | —     | 2,850 | 2,850 |
| Steel Bridge Rail, Type SM (Special)                | FOOT  | 116   | —     | 116   |
| Furnishing Metal Shell Piles 12"x0.250"             | FOOT  | —     | 360   | 360   |
| Driving Piles                                       | FOOT  | —     | 360   | 360   |
| Test Pile Metal Shells                              | EACH  | —     | 2     | 2     |
| Concrete Encasement                                 | CU YD | —     | 2.6   | 2.6   |
| Name Plates   | EACH  | —     | 1     | 1     |
| Waterproofing Membrane System                       | SQ YD | 193   | —     | 193   |
| Portland Cement Mortar Fairing Course               | FOOT  | 150   | —     | 150   |
| Hot-Mix Asphalt Surface Course, Mix "C", N50        | TON   | 20    | —     | 20    |
| ① Porous Granular Embankment                        | CU YD | —     | 36.1  | 36.1  |

① See Special Provisions

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

*Joseph E. Autry* 11/17/2017  
Illinois Structural No. 6440  
Expires 11/30/2018

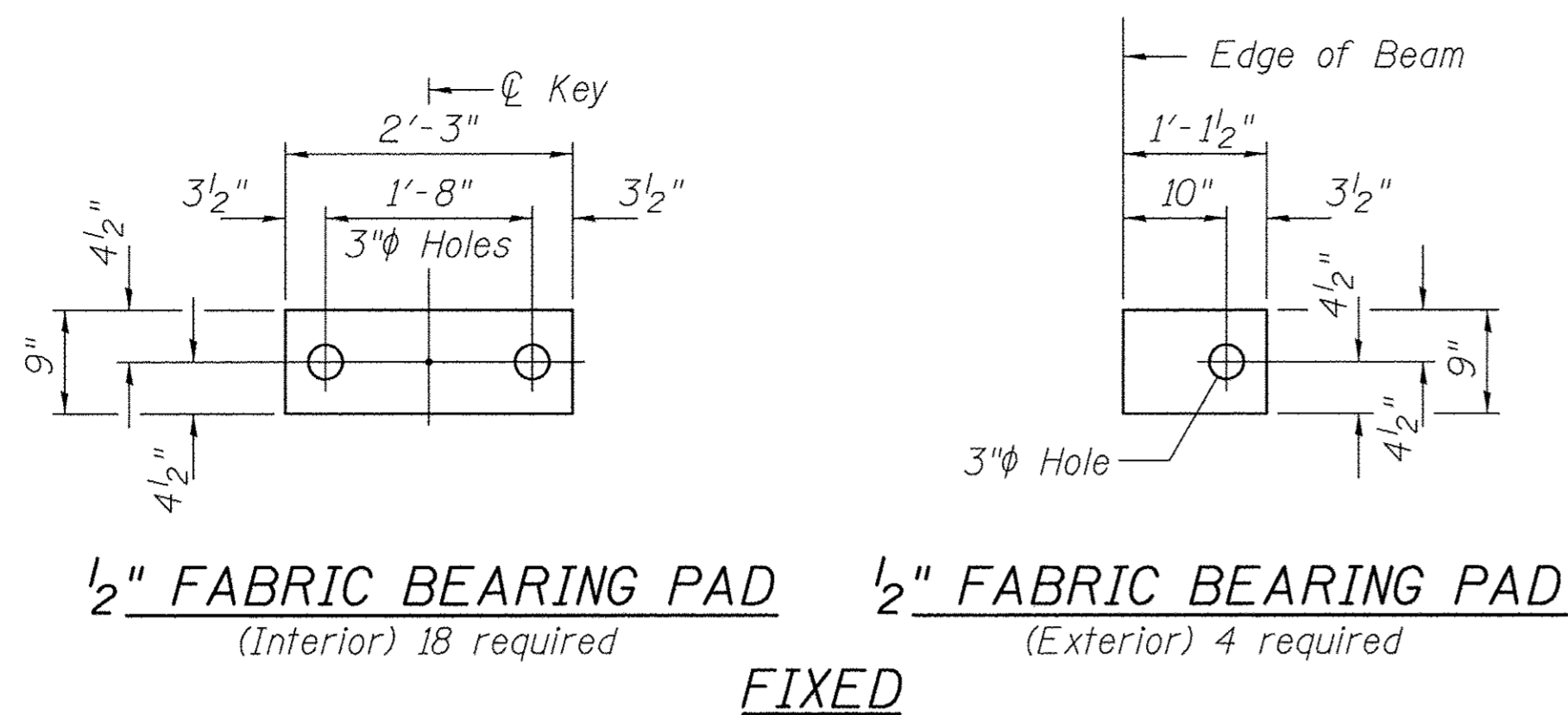


**GENERAL PLAN & ELEVATION**

**BUREAU COUNTY  
SECTION 08-00215-00-BR  
COUNTY HIGHWAY 19 OVER  
BRANCH OF EAST BUREAU CREEK**

|          |               |
|----------|---------------|
| DESIGNED | C.T.M.        |
| CHECKED  | S.T.M./J.E.H. |
| DRAWN    | C.T.M.        |
| CHECKED  | S.T.M./J.E.H. |

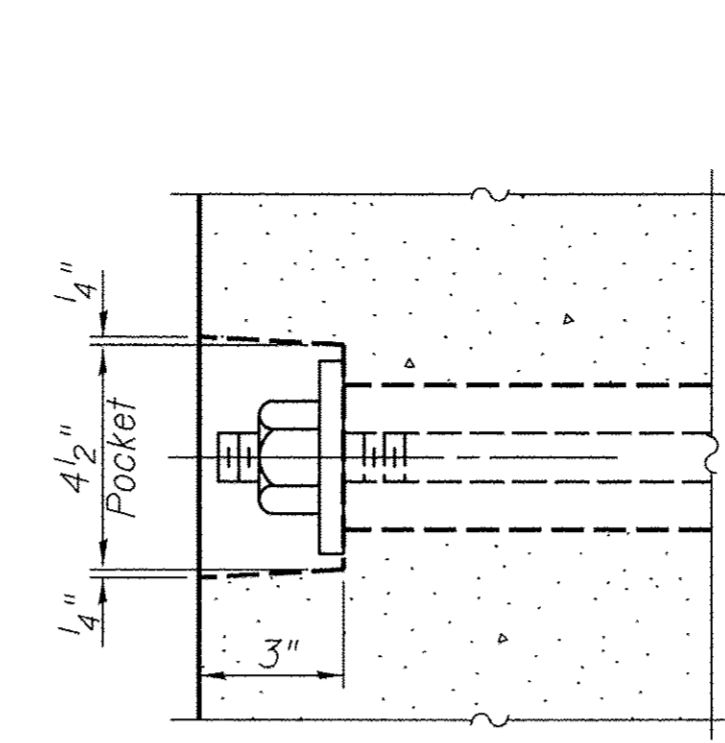
| SHEET NO. 1           | F.A.S. RTE. | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO. |
|-----------------------|-------------|----------------|--------------------------------|--------------|-----------|
| 12 SHEETS             | 1235        | 08-00215-00-BR | BUREAU                         | 23           | 7         |
| S.N. 006-3018         |             |                | CONTRACT NO. 87671             |              |           |
| FED. ROAD DIST. NO. 7 |             | ILLINOIS       | FED. AID PROJECT BRS-1235(105) |              |           |



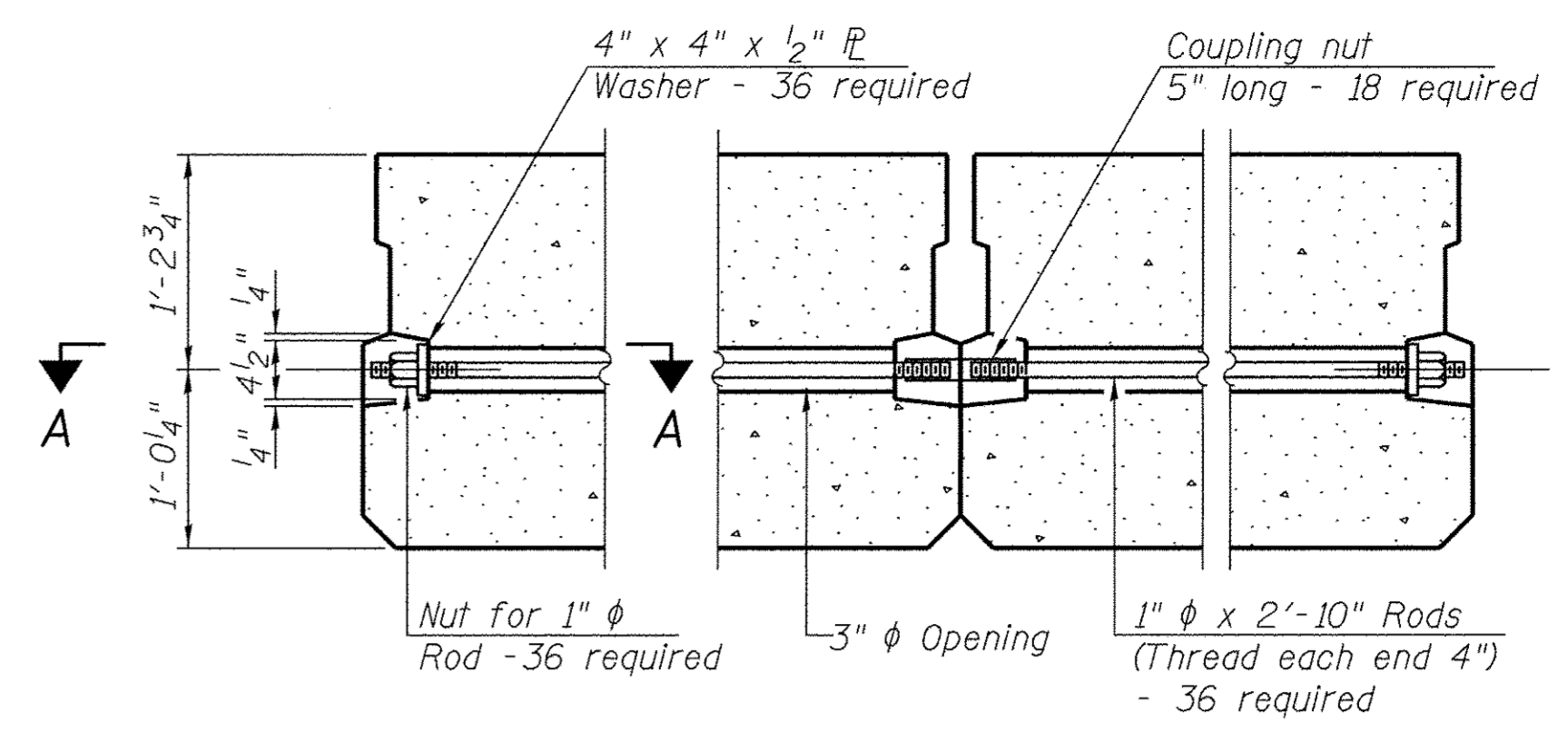
**1/2" FABRIC BEARING PAD**  
(Interior) 18 required

**1/2" FABRIC BEARING PAD**  
(Exterior) 4 required

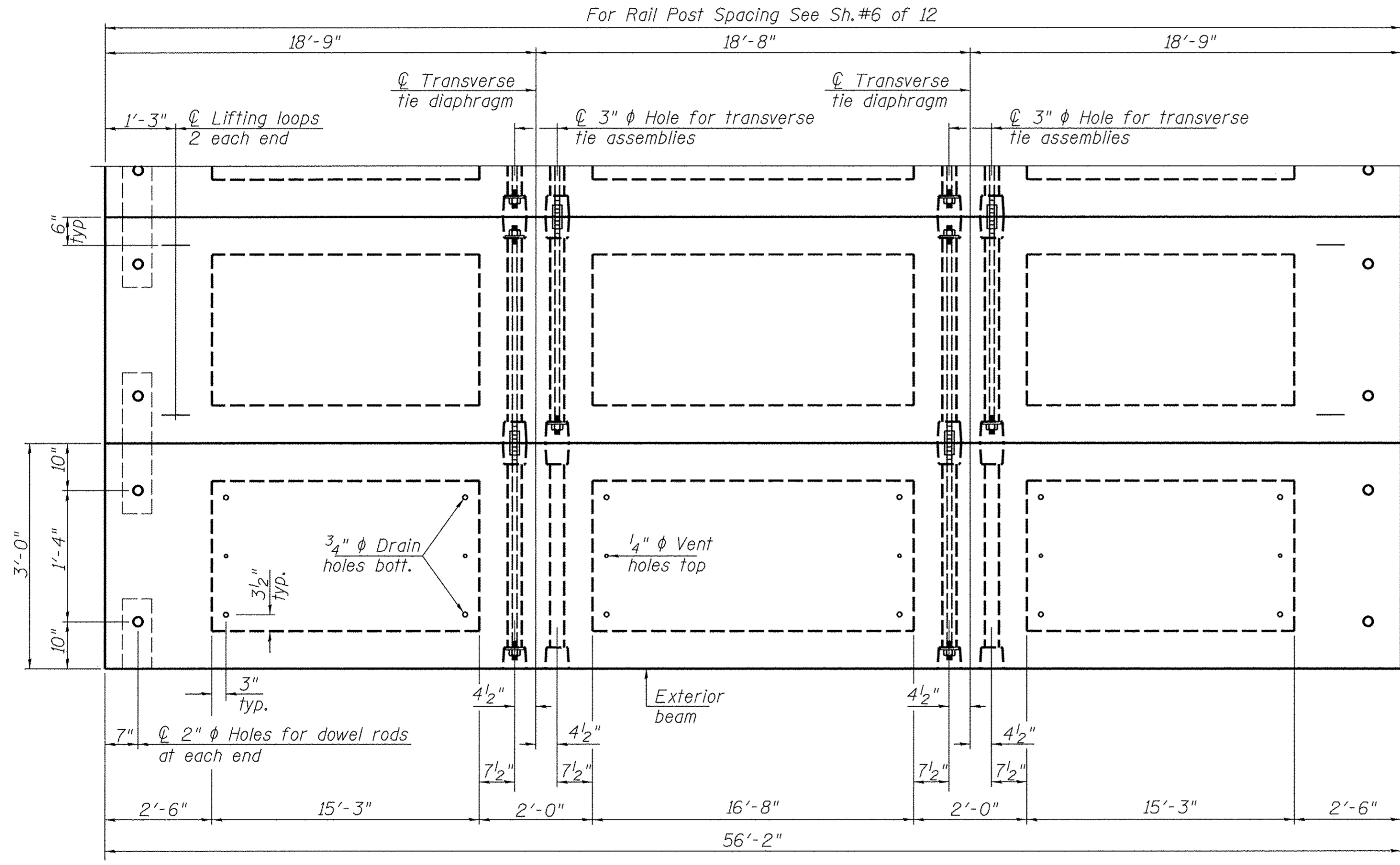
**FIXED**



**SECTION A-A**

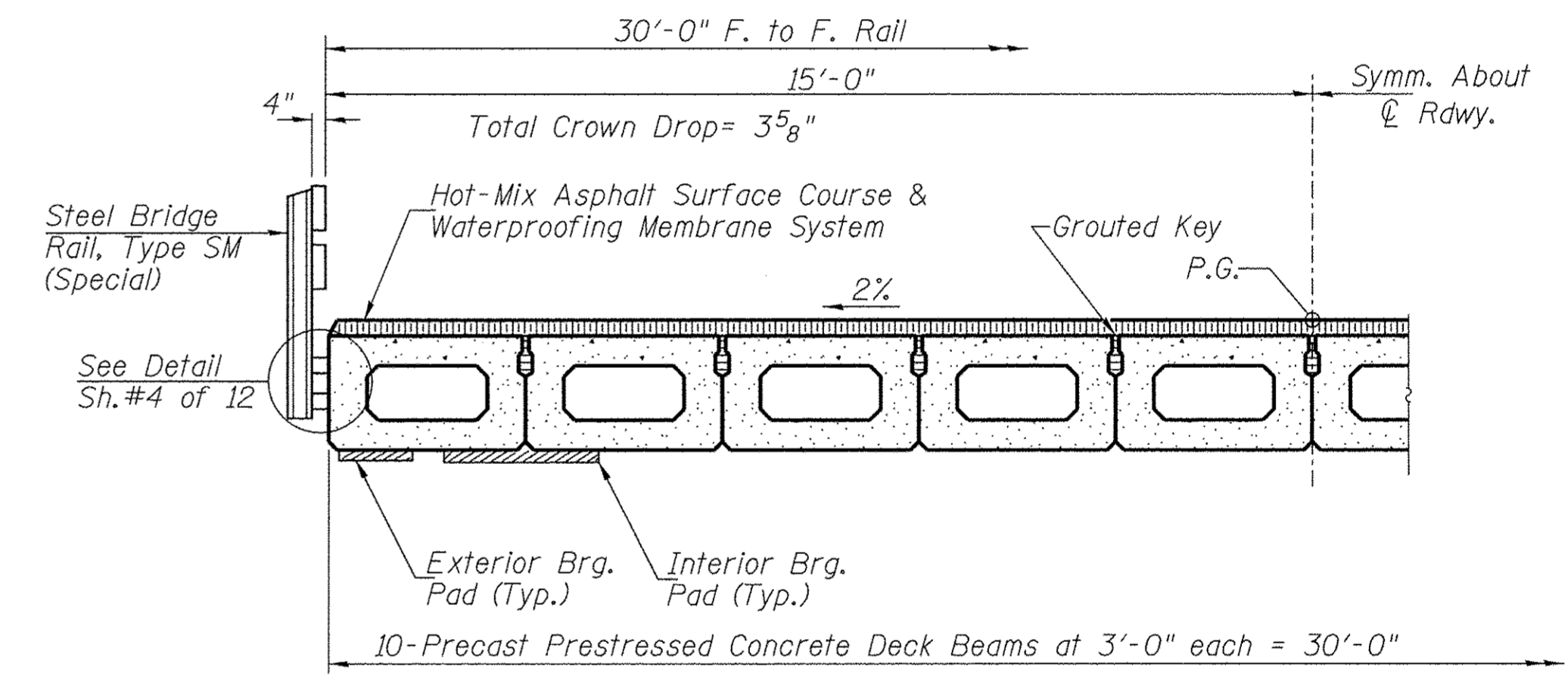


**TYPICAL TRANSVERSE TIE ASSEMBLY**



**PLAN VIEW**

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



**HALF CROSS SECTION**

**BILL OF MATERIAL**

| ITEM  | UNIT  | QUANTITY |
|---|-------|----------|
| Precast Prestressed Concrete Deck Beams (27" Depth) | SQ FT | 1,685    |

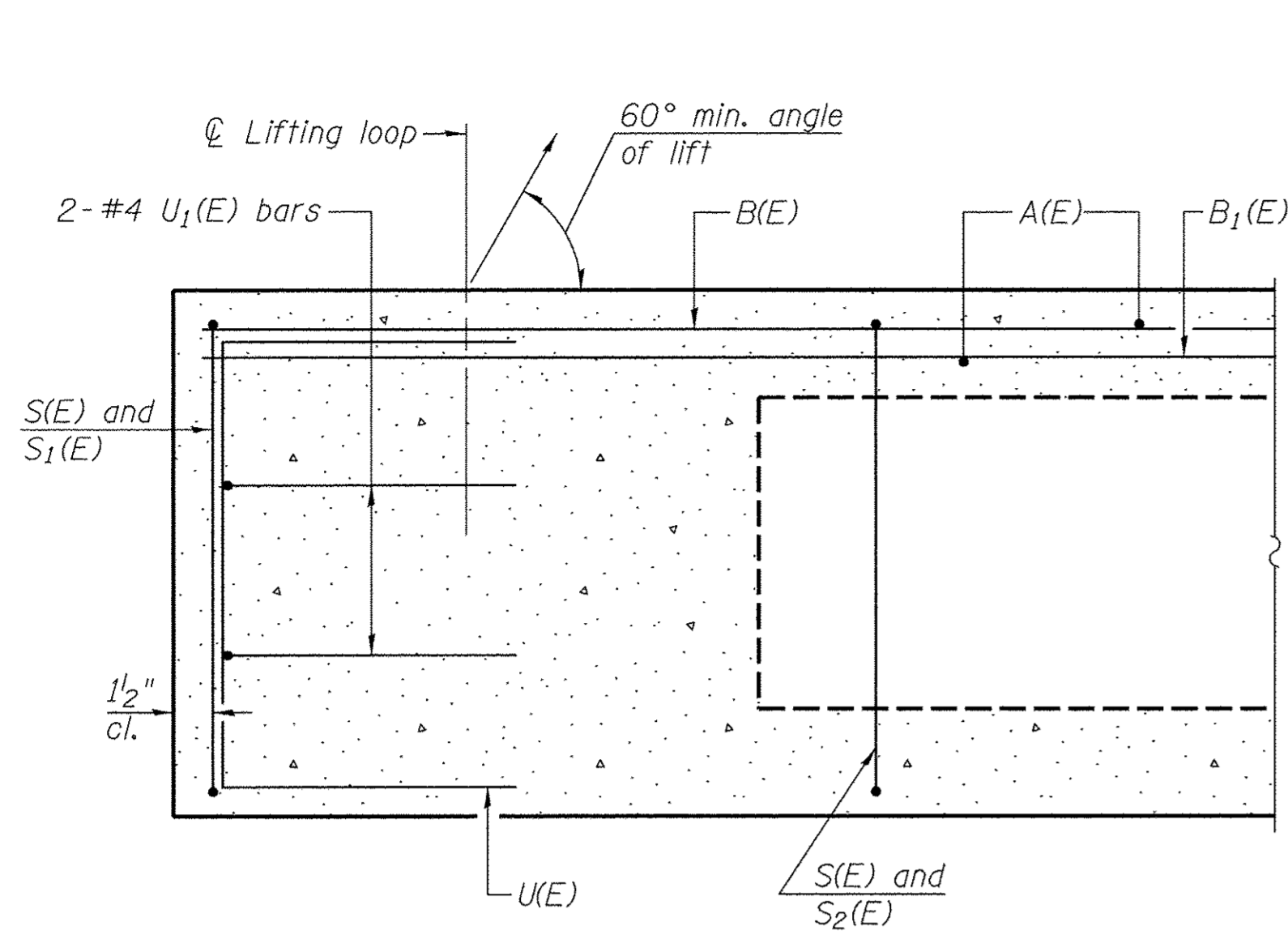
**NOTES**

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.  
 Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.  
 A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling.  
 Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 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.

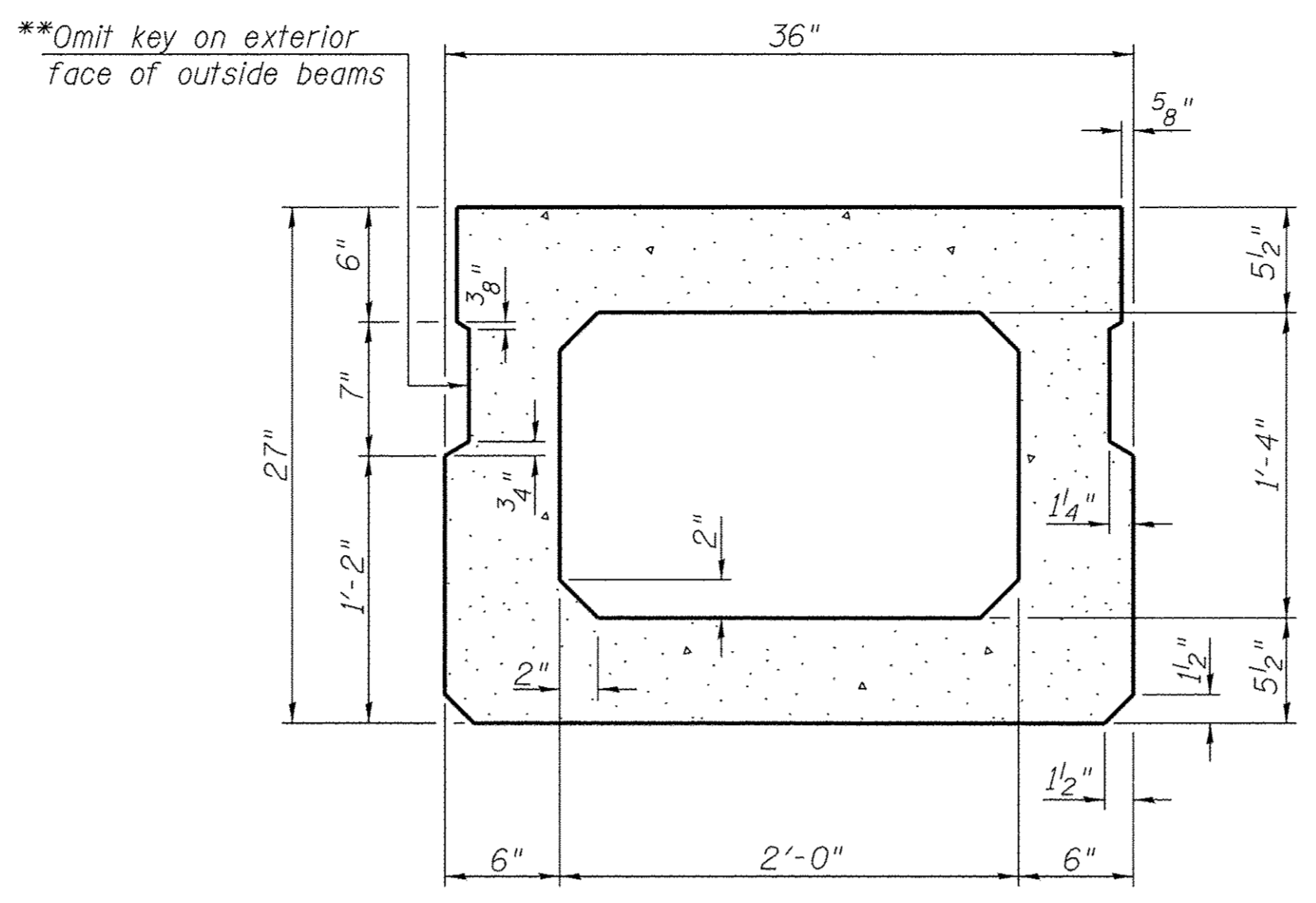
**SUPERSTRUCTURE**  
**BUREAU COUNTY**  
**SECTION 08-00215-00-BR**  
**COUNTY HIGHWAY 19 OVER**  
**BRANCH OF EAST BUREAU CREEK**

| SHEET NO.                      | F.A.S. RTE. | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO.          |
|--------------------------------|-------------|----------------|--------------------------------|--------------|--------------------|
| 2                              | 1235        | 08-00215-00-BR | BUREAU                         | 23           | 8                  |
| 12 SHEETS                      |             |                | S.N. 006-3018                  |              | CONTRACT NO. 87671 |
| FED. ROAD DIST. NO. 7 ILLINOIS |             |                | FED. AID PROJECT BRS-1235(105) |              |                    |





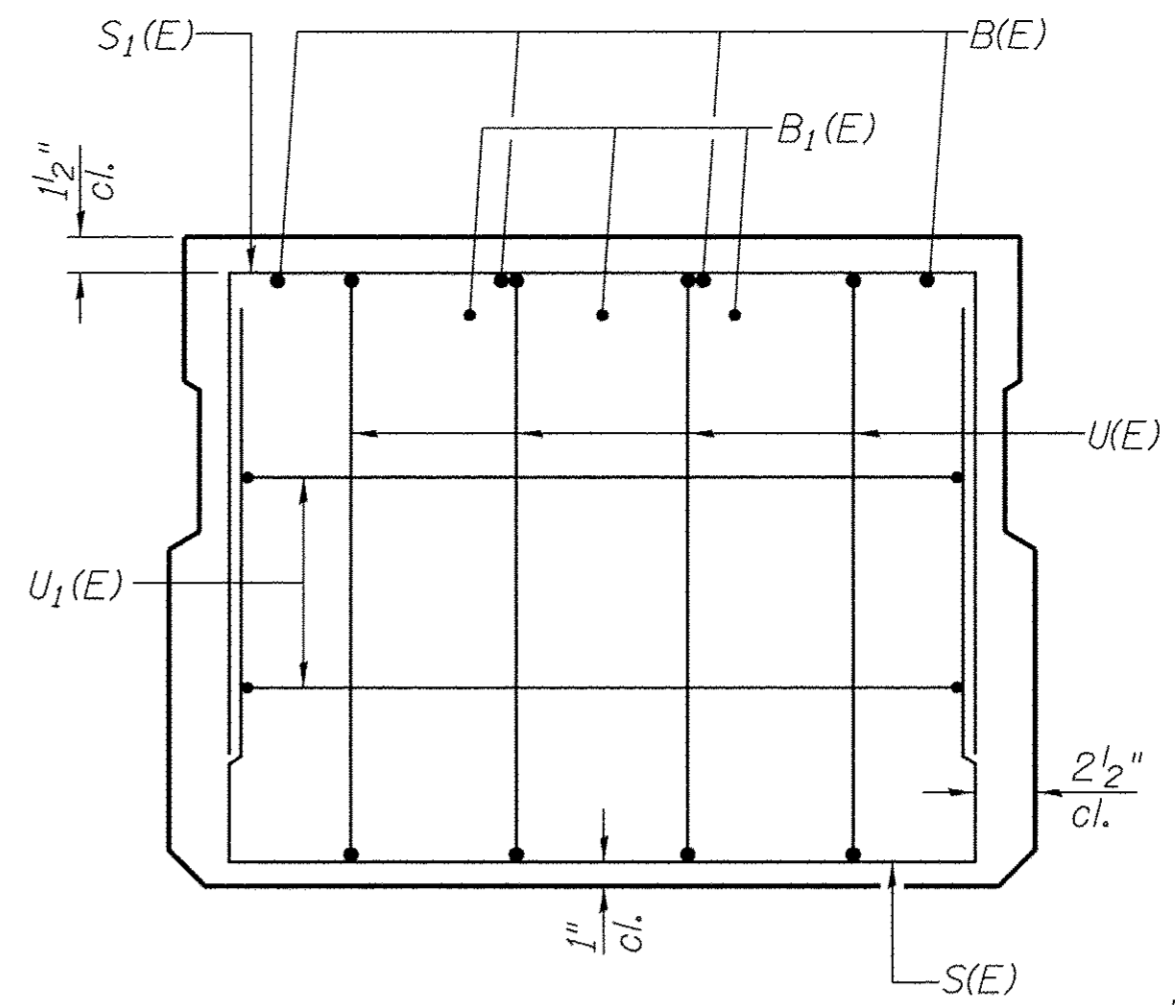
**SECTION C-C**



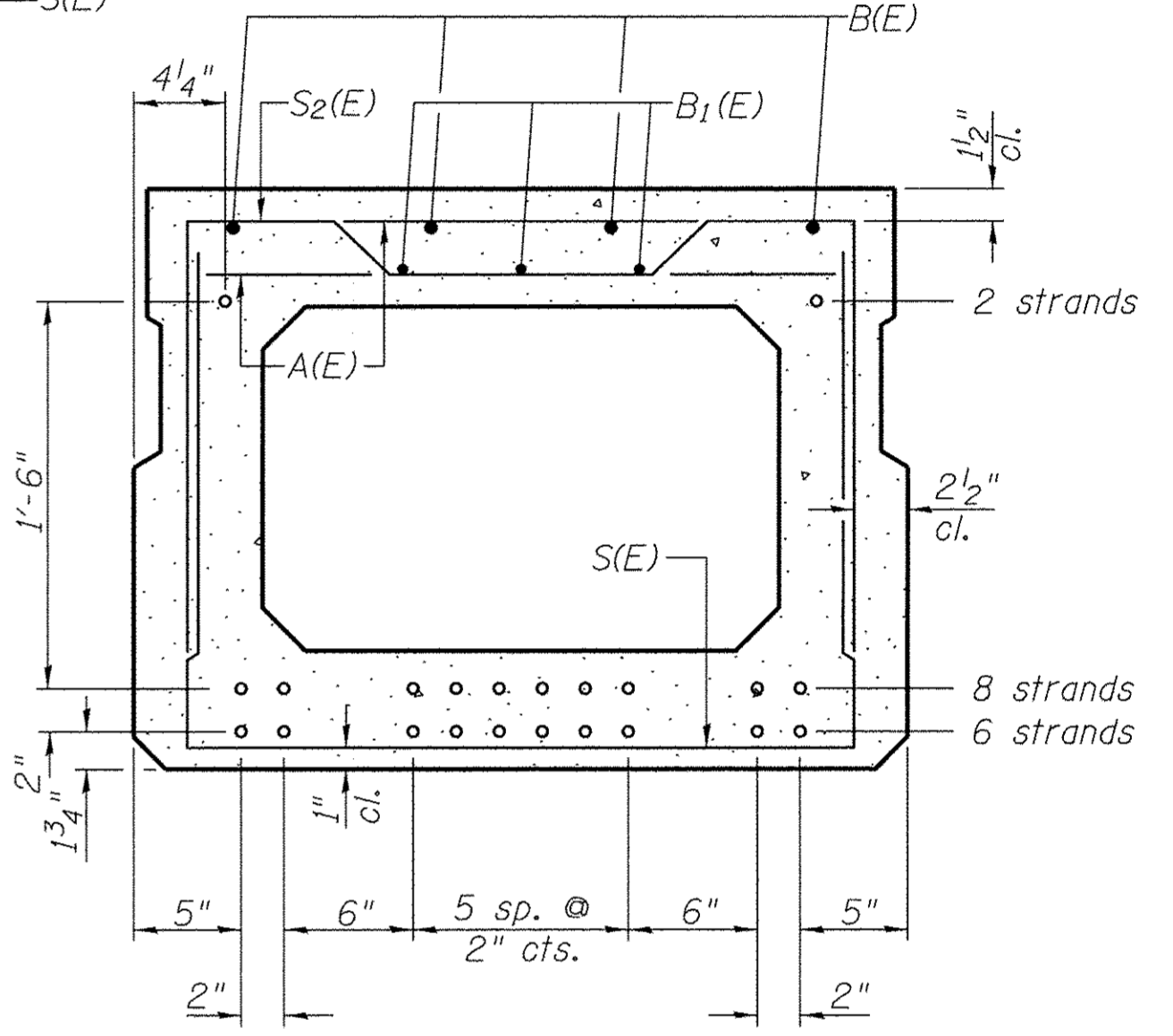
**SECTION A-A**  
(Showing Dimensions)

\*\*Omit key on exterior face of outside beams.

\*\*Rail post anchor devices (Sheet 4 of 12) to be cast into exterior face of outside beams.



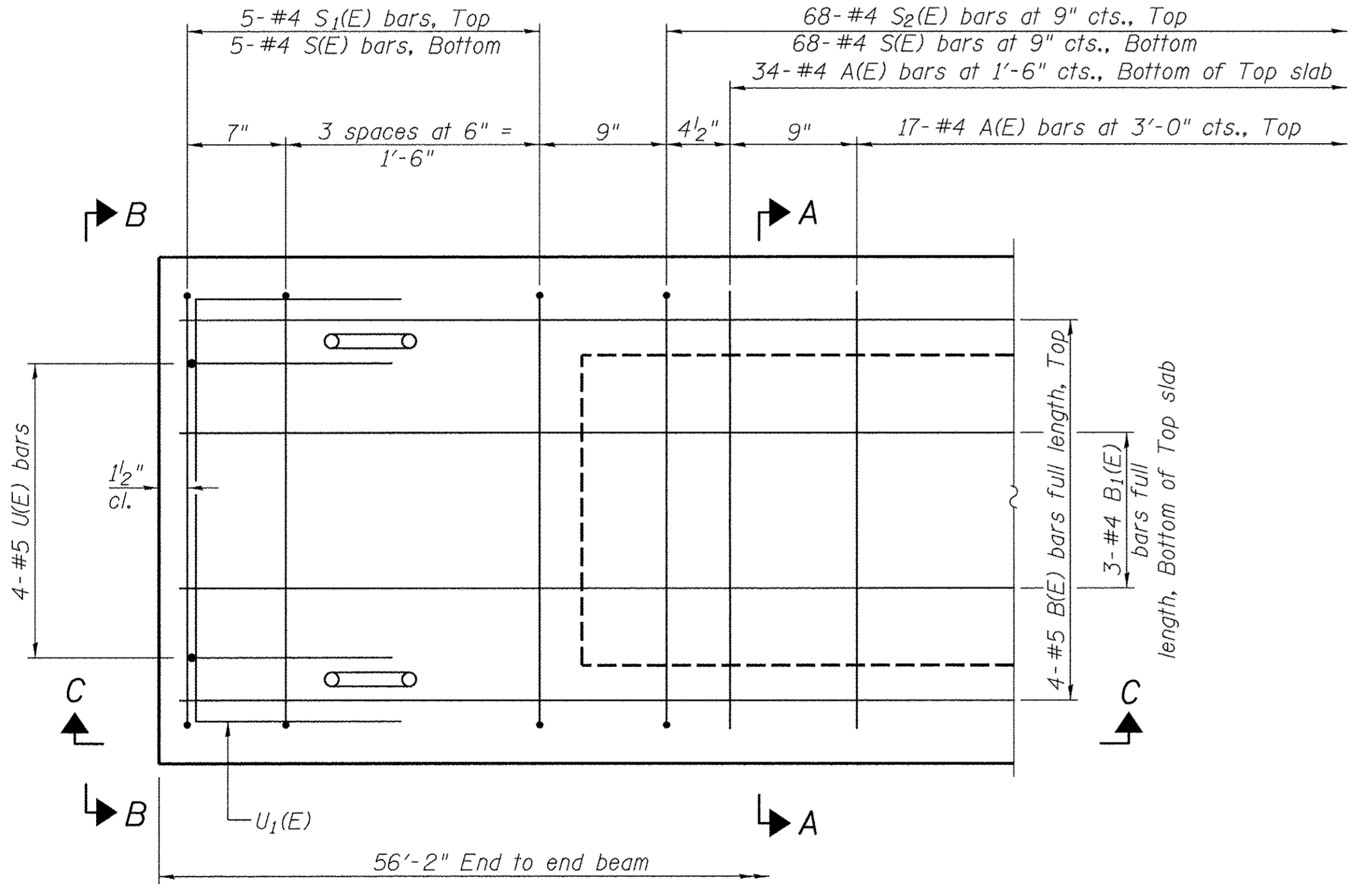
**VIEW B-B**



**SECTION A-A**

16-1/2" Strands Each Strand Stressed to 30,900 Lbs.  
6-Strands 1 3/4" up, 8-Strands 3 3/4" up, 2-Strands 1'-9 3/4" up

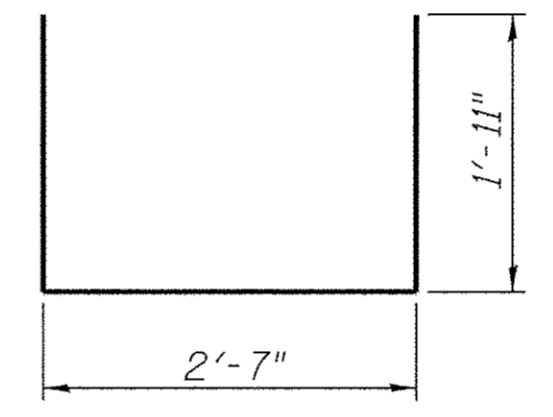
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



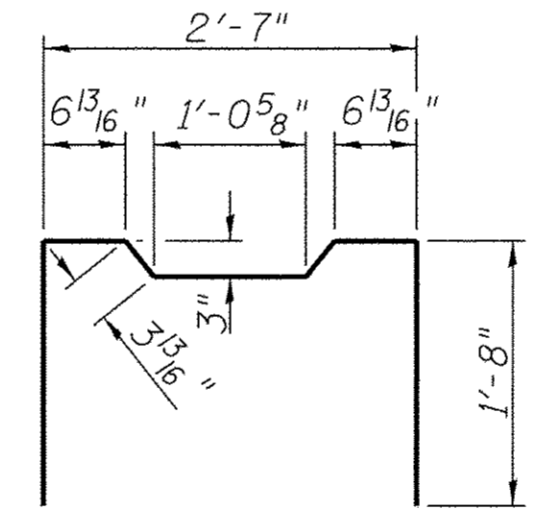
**PLAN VIEW**

**MINIMUM BAR LAP**  
#4 bar = 1'-11"  
#5 bar = 2'-6"

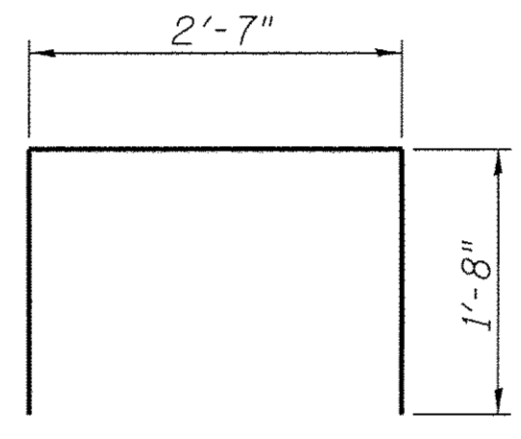
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



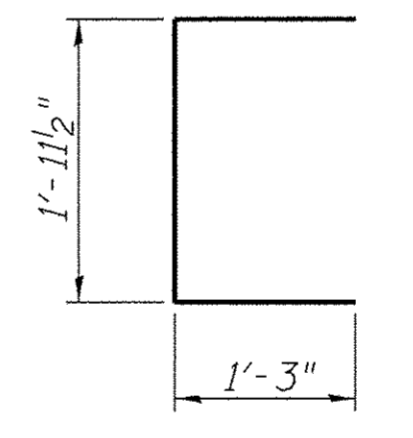
**BAR S(E)**



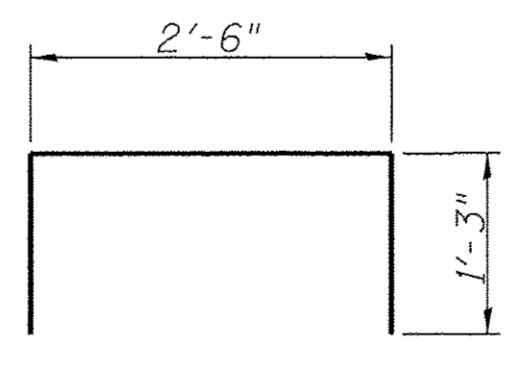
**BAR S2(E)**



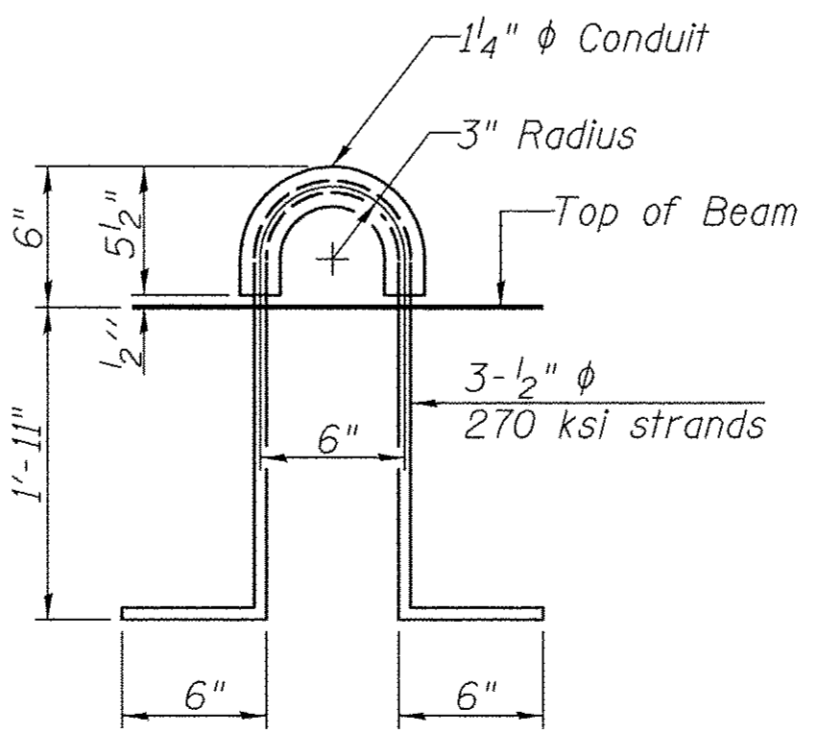
**BAR S1(E)**



**BAR U(E)**



**BAR U1(E)**



**LIFTING LOOP DETAIL**

**BAR LIST-ONE BEAM ONLY**

(For information only)

| Bar   | No. | Size | Length   | Shape |
|-------|-----|------|----------|-------|
| A(E)  | 51  | #4   | 2'-7"    | —     |
| B(E)  | 4   | #5   | *55'-11" | —     |
| B1(E) | 3   | #4   | *55'-11" | —     |
| S(E)  | 78  | #4   | 6'-5"    | □     |
| S1(E) | 10  | #4   | 5'-11"   | □     |
| S2(E) | 68  | #4   | 6'-2"    | □     |
| U(E)  | 8   | #5   | 4'-6"    | □     |
| U1(E) | 4   | #4   | 5'-0"    | □     |

\* Total Length, Lap as necessary

Note: See Sheet 2 of 12 for additional details and Bill of Material.

**SUPERSTRUCTURE DETAILS**

**BUREAU COUNTY**

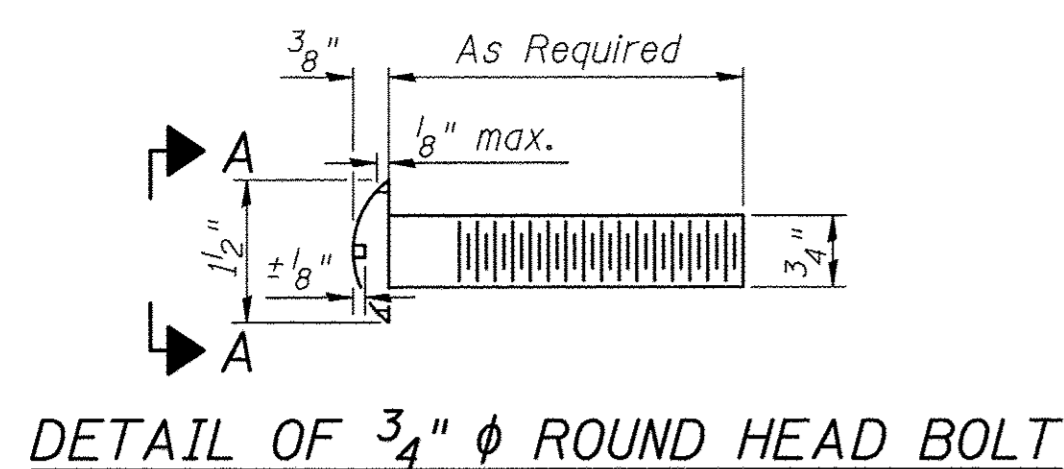
**SECTION 08-00215-00-BR**

**COUNTY HIGHWAY 19 OVER**

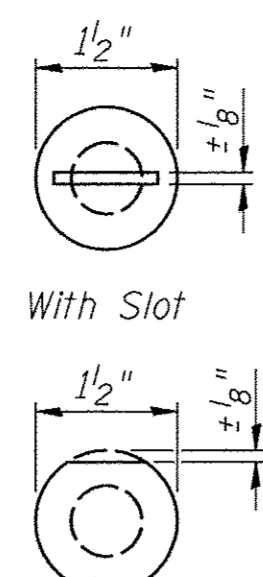
**BRANCH OF EAST BUREAU CREEK**

|             |                                |                |                                |              |           |
|-------------|--------------------------------|----------------|--------------------------------|--------------|-----------|
| SHEET NO. 3 | F.A.S. RTE.                    | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO. |
|             | 1235                           | 08-00215-00-BR | BUREAU                         | 23           | 9         |
| 12 SHEETS   | S.N. 006-3018                  |                | CONTRACT NO. 87671             |              |           |
|             | FED. ROAD DIST. NO. 7 ILLINOIS |                | FED. AID PROJECT BRS-1235(105) |              |           |

FOR RAIL POST SPACING SEE SH.#6 OF 12



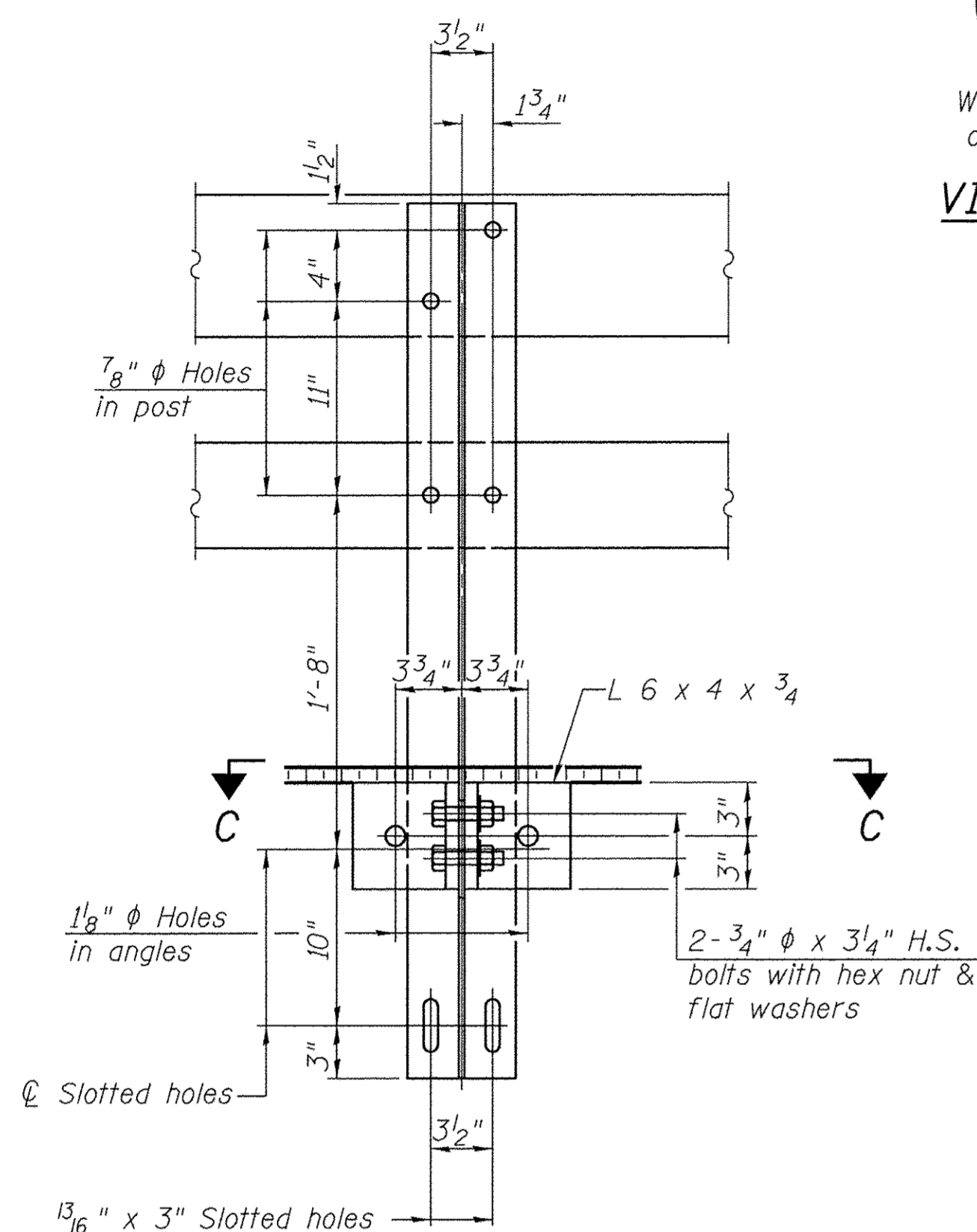
DETAIL OF 3/4"  $\phi$  ROUND HEAD BOLT



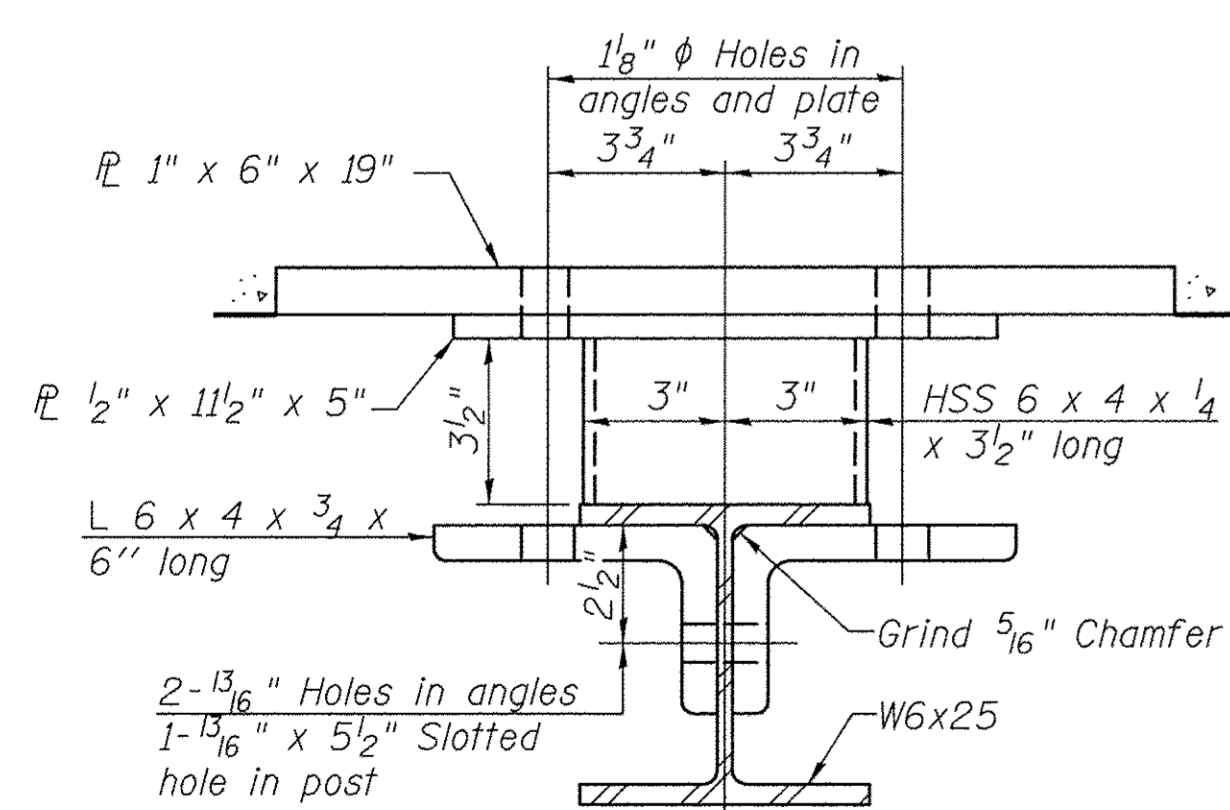
With Slot

Without Slot or Recess

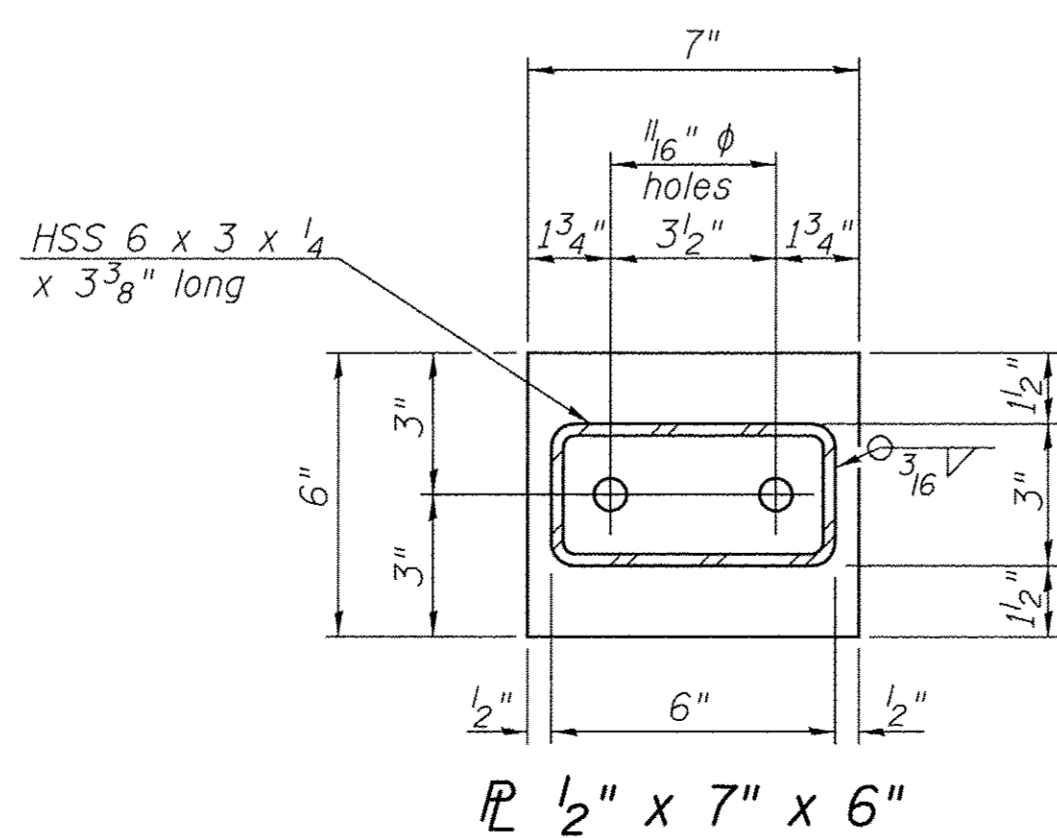
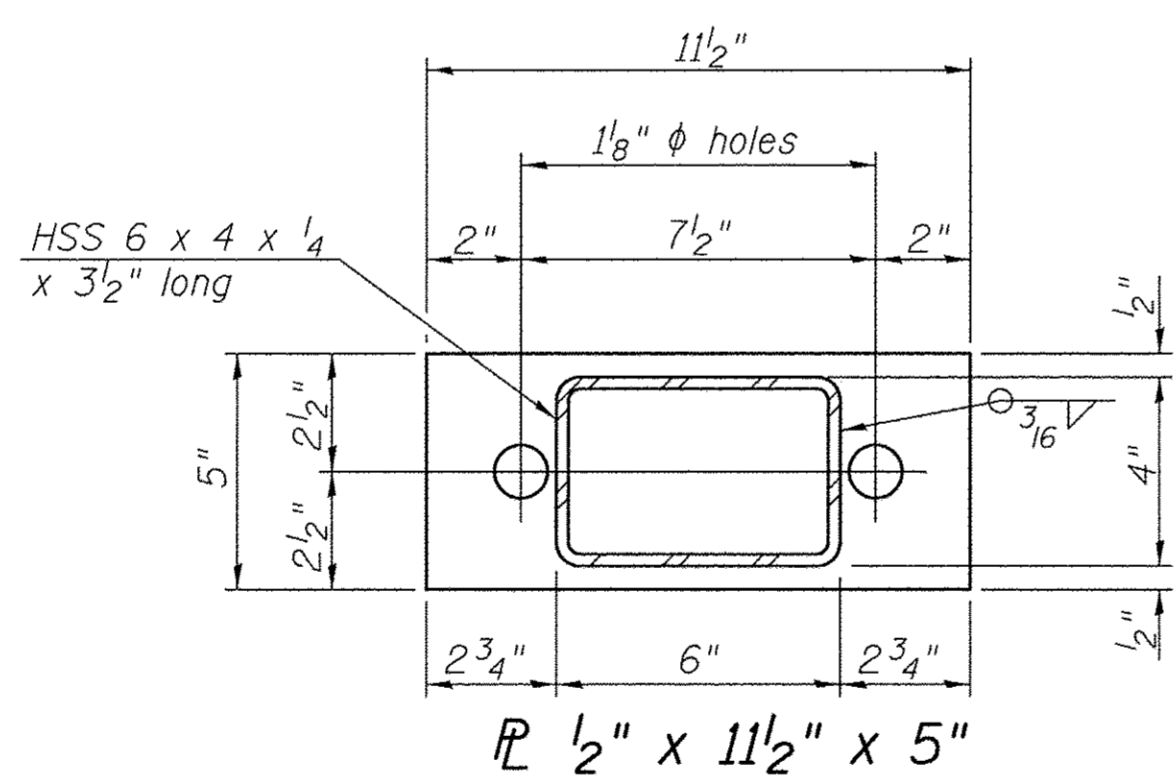
VIEW A-A



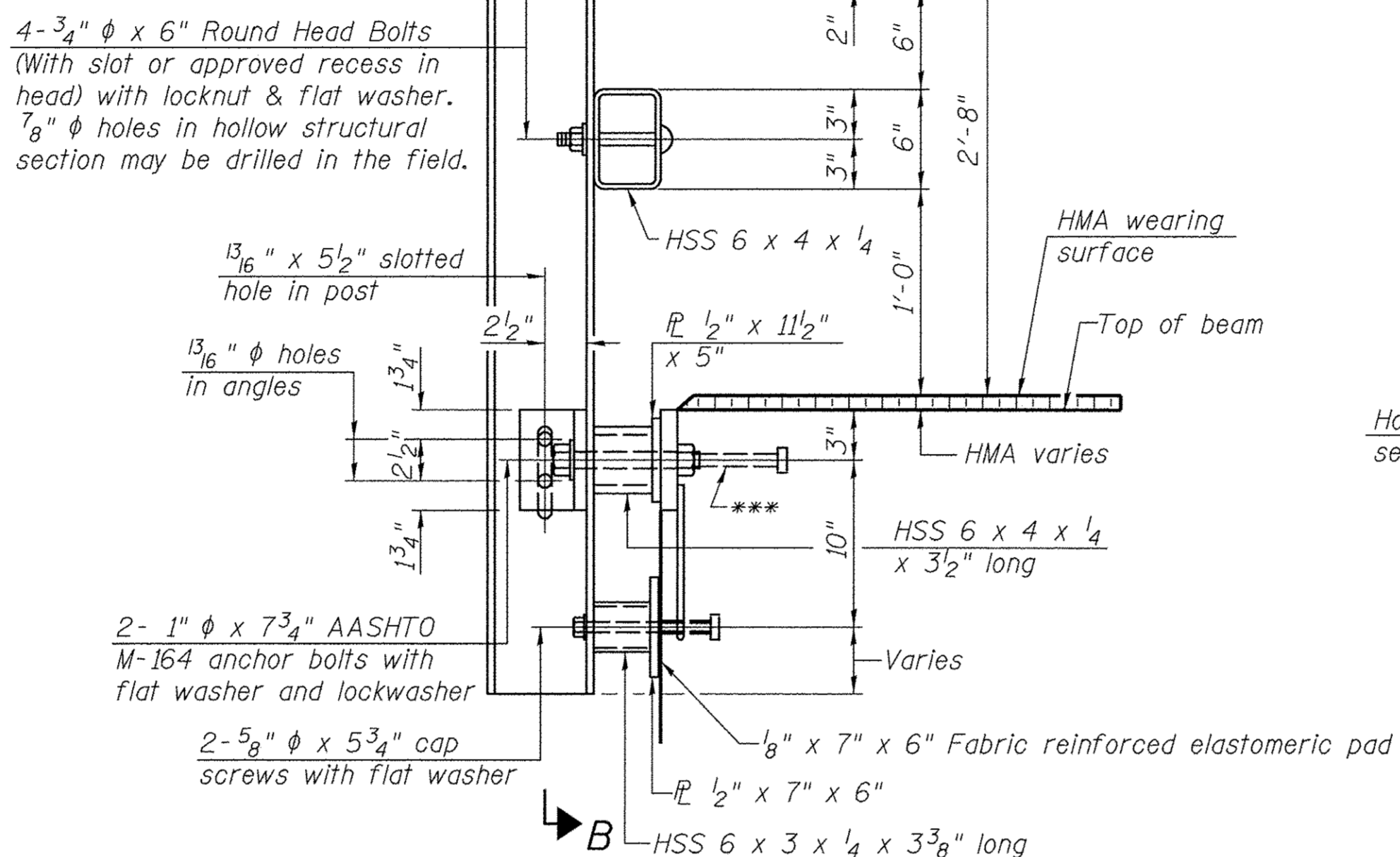
SECTION B-B



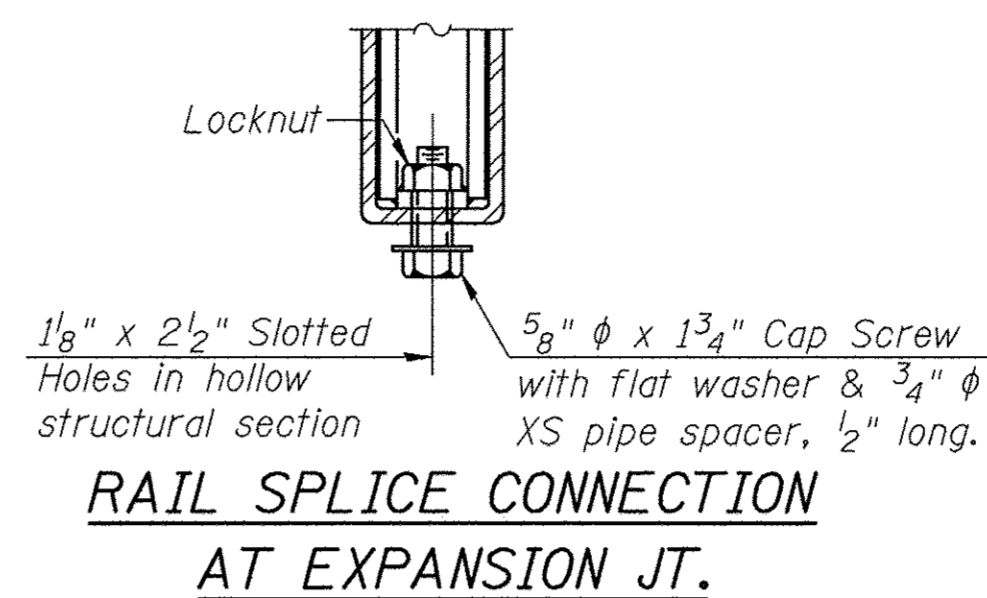
SECTION C-C



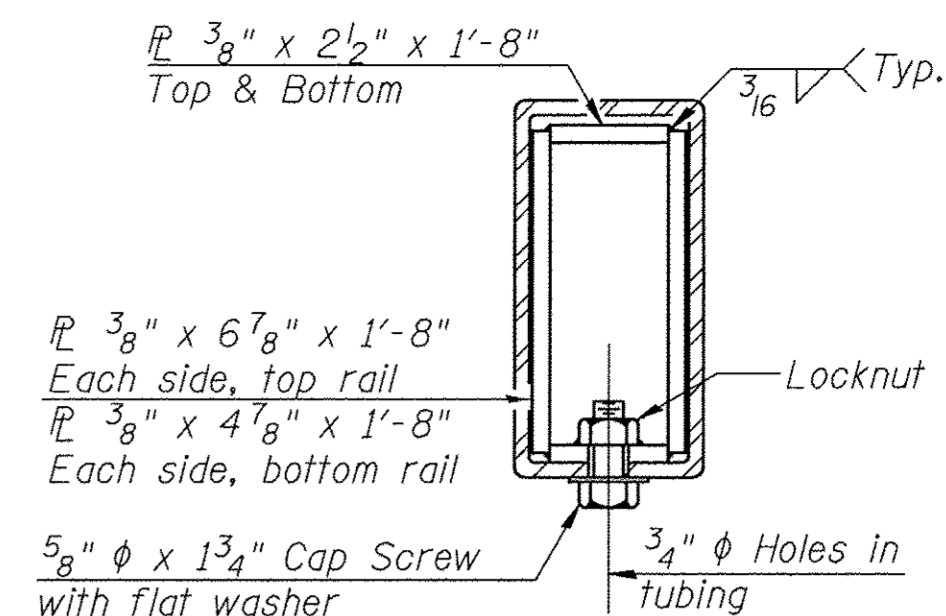
SECTION AT RAIL POST



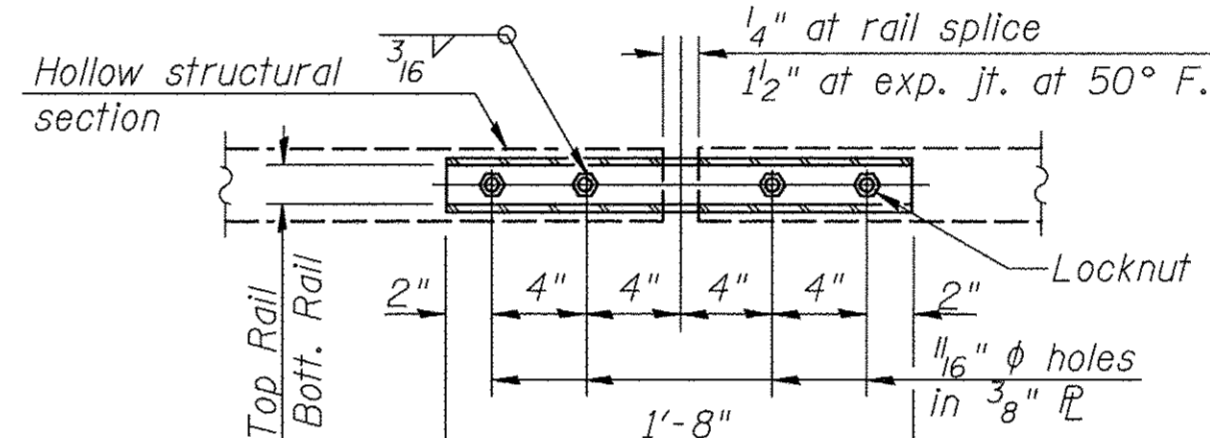
SECTION AT RAIL POST



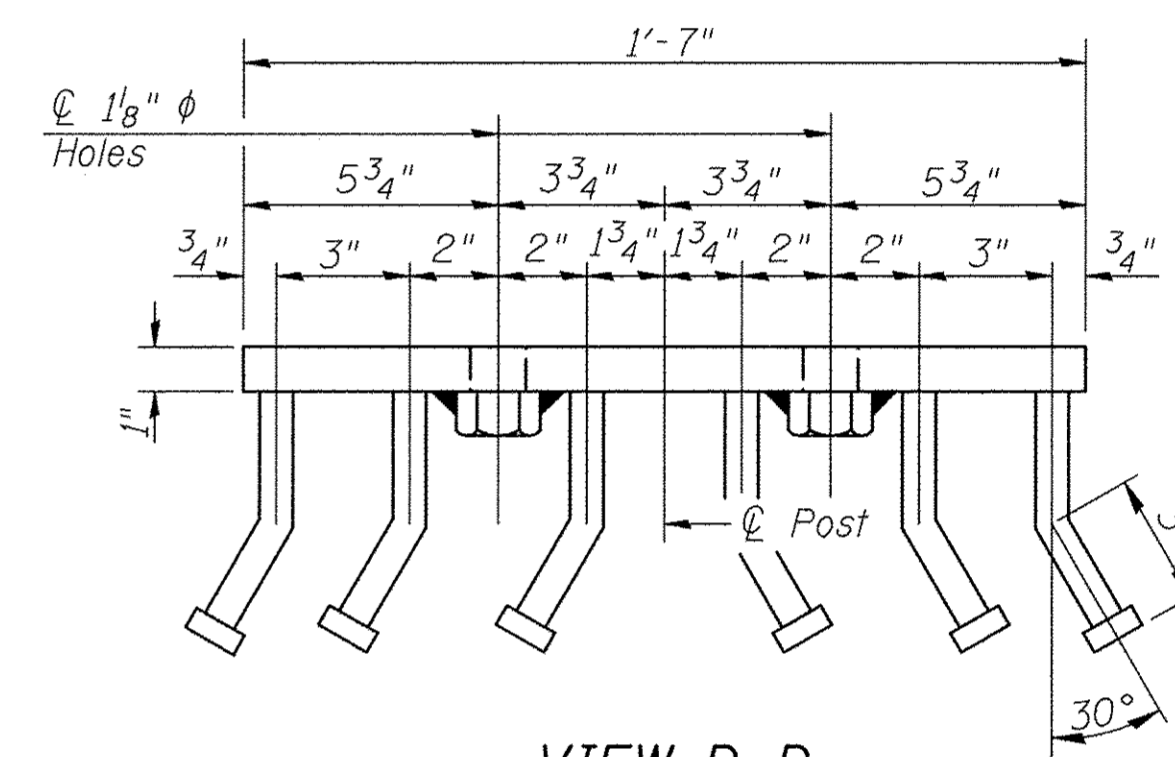
RAIL SPLICE CONNECTION AT EXPANSION JT.



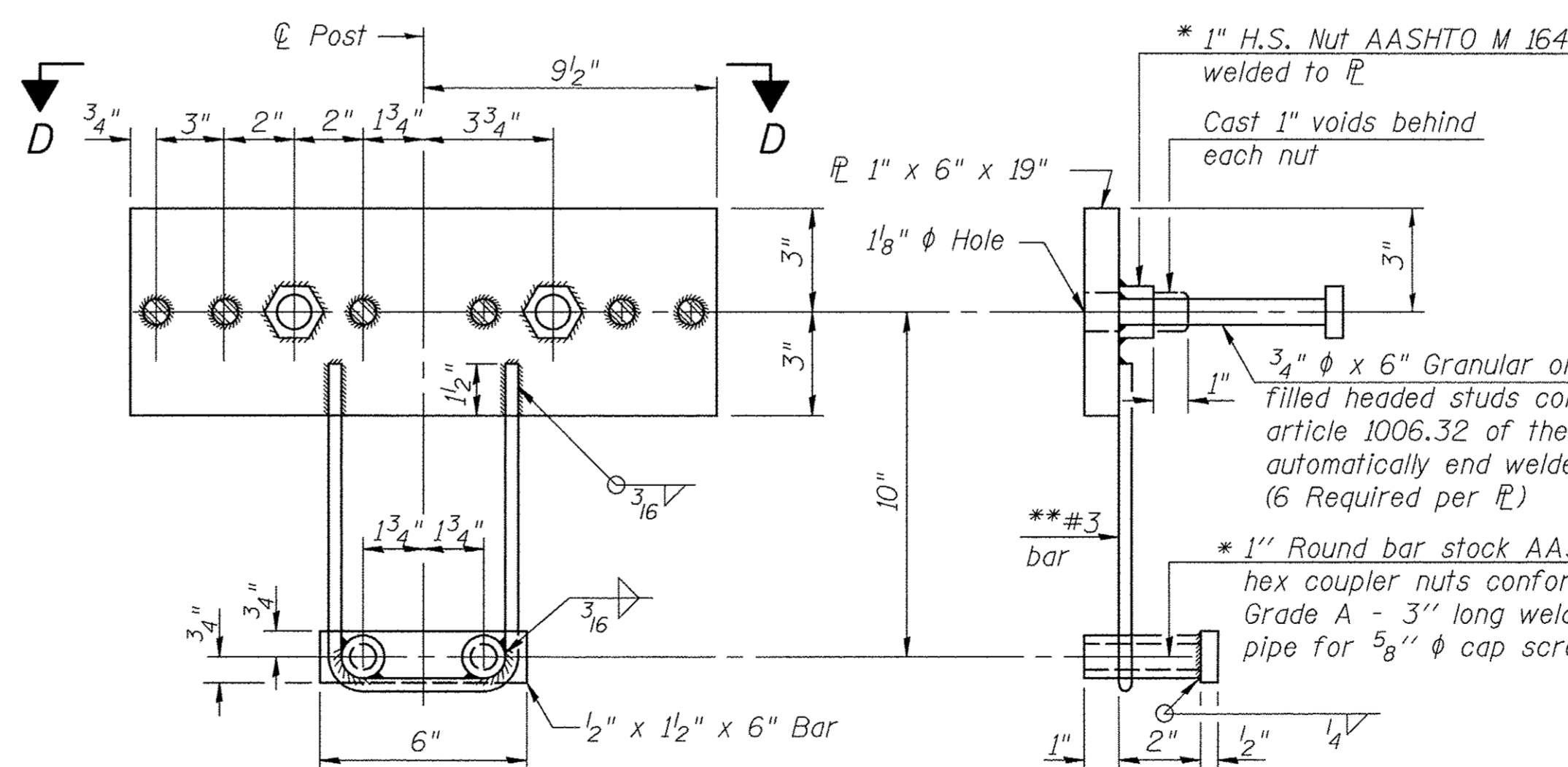
SECTION AT RAIL SPLICE



PLAN-BOTT. SPLICE R TYPICAL



VIEW D-D



ANCHOR DEVICE

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

\*\*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.

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 Bridge Rail, Type SM (Special).  
All steel rail members 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.

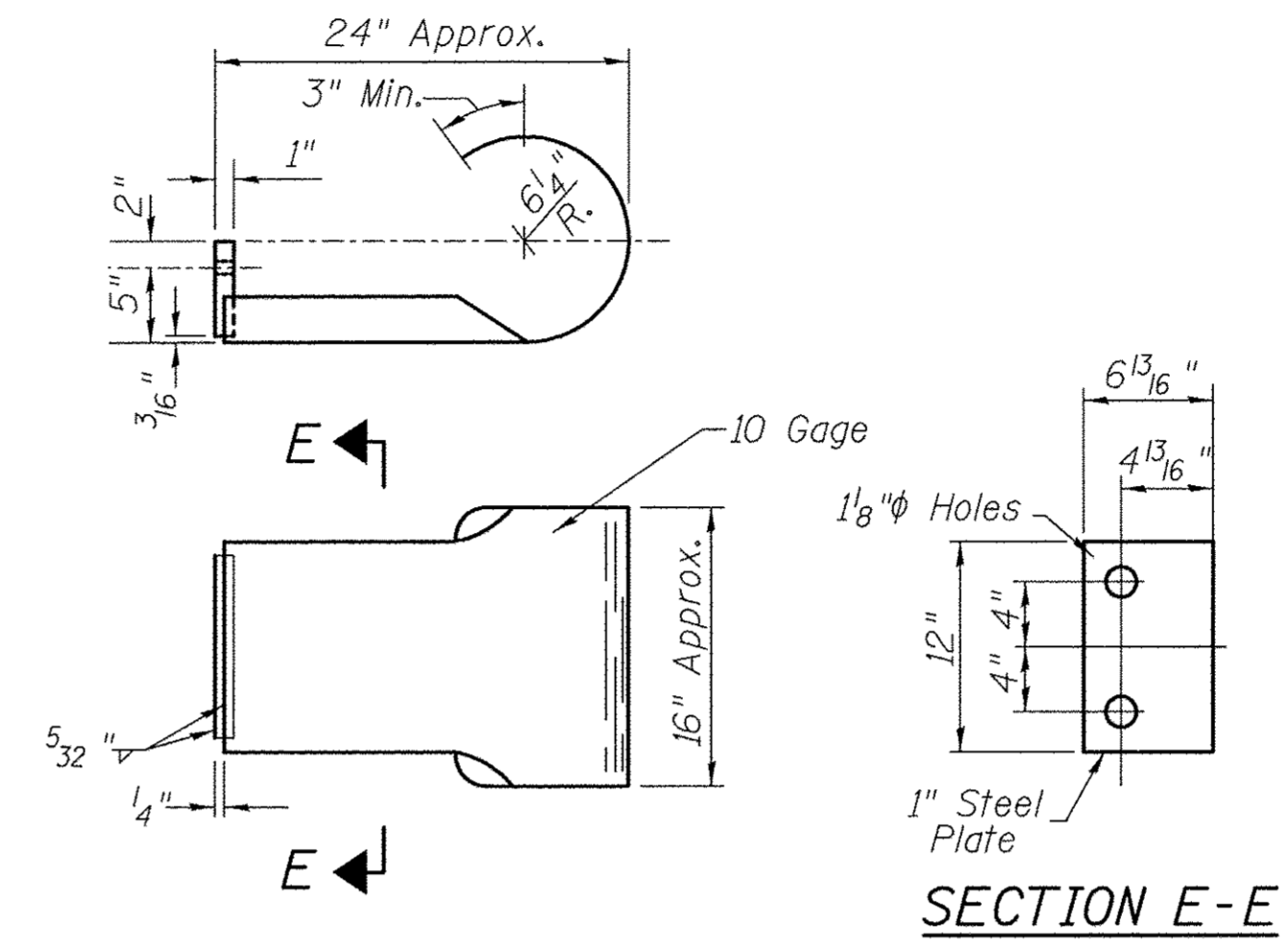
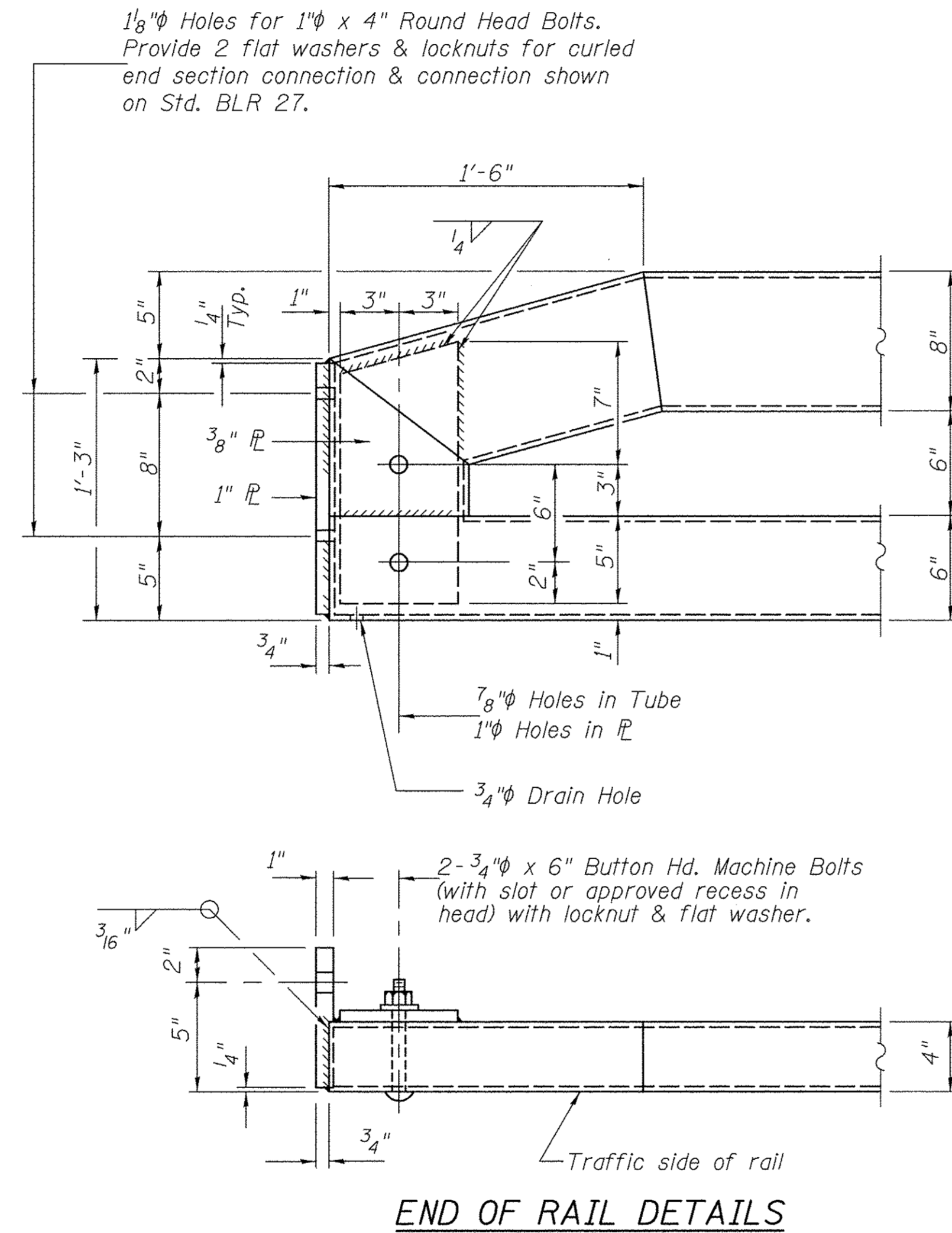
BILL OF MATERIAL

| ITEM                                 | UNIT | QUANTITY |
|--------------------------------------|------|----------|
| Steel Bridge Rail, Type SM (Special) | FOOT | 116      |

STEEL BRIDGE RAIL, TYPE SM (SPECIAL)  
BUREAU COUNTY  
SECTION 08-00215-00-BR  
COUNTY HIGHWAY 19 OVER  
BRANCH OF EAST BUREAU CREEK

| SHEET NO.                      | F.A.S. RTE.   | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO. |
|--------------------------------|---------------|----------------|--------------------------------|--------------|-----------|
| 4                              | 1235          | 08-00215-00-BR | BUREAU                         | 23           | 10        |
| 12 SHEETS                      | S.N. 006-3018 |                | CONTRACT NO. 87671             |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS |               |                | FED. AID PROJECT BRS-1235(105) |              |           |

(Sheet 1 of 2)



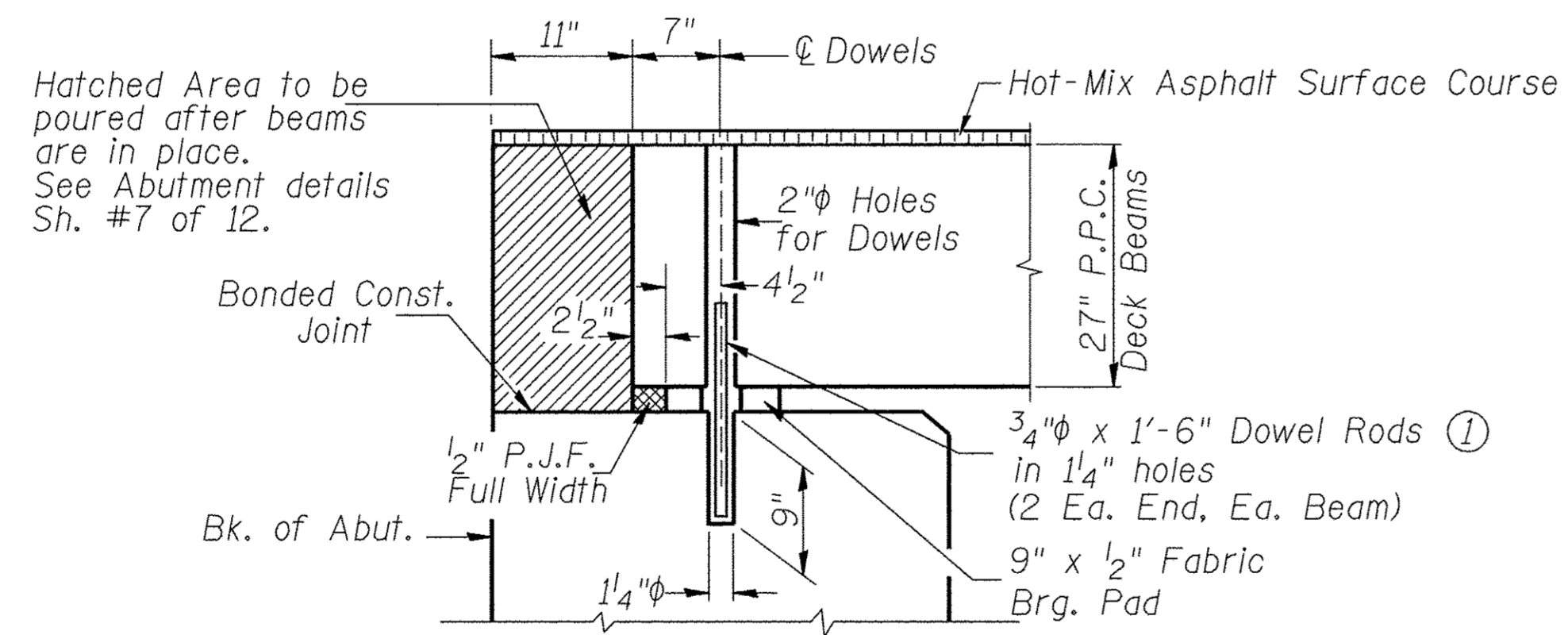
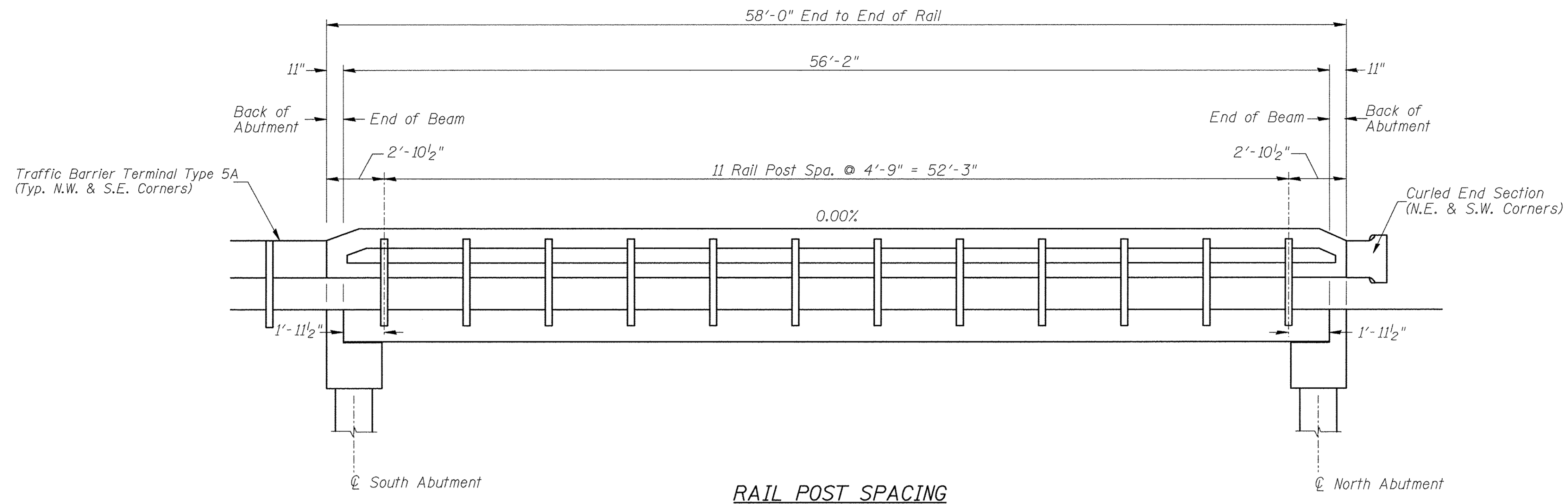
**CURLED END SECTION**

(2 Req'd) Terminal Markers-Direct Applied shall be placed on end of each Curled End Section. Cost of Curled End Sections and Terminal Markers-Direct Applied included with Steel Bridge Rail, Type SM (Special). (N.E. & S.W. Corners)

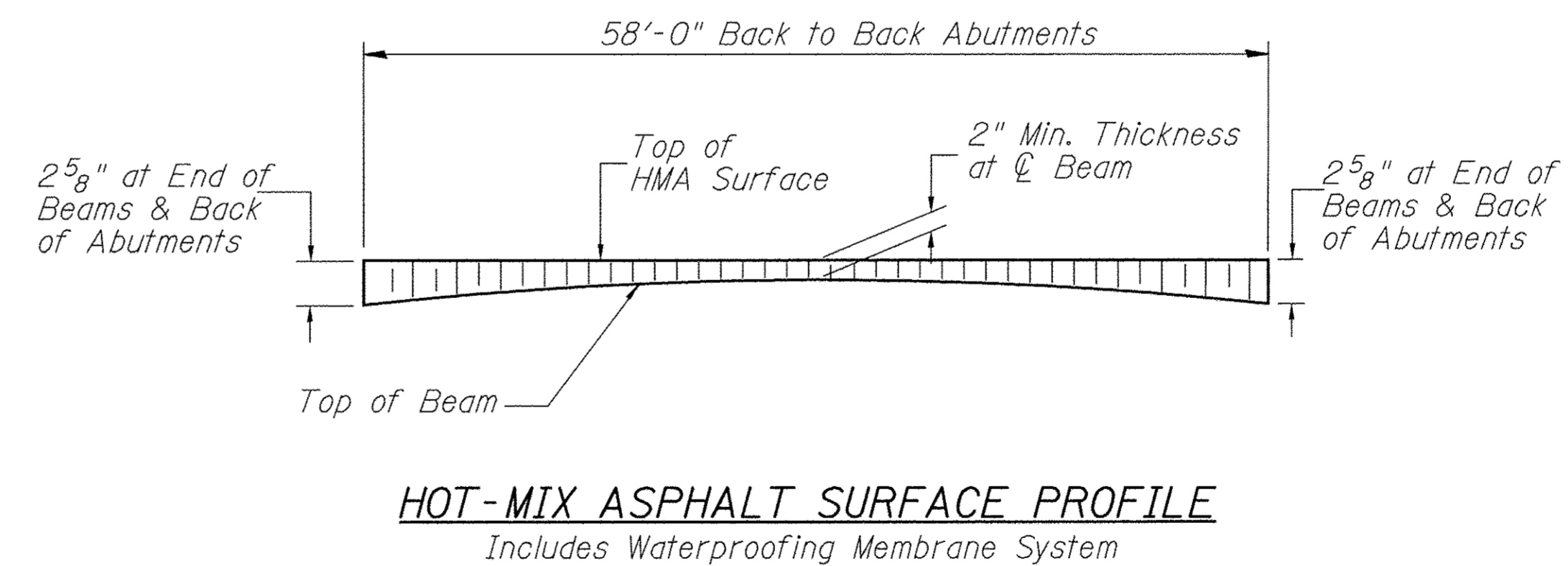
**STEEL BRIDGE RAIL, TYPE SM (SPECIAL)**  
**BUREAU COUNTY**  
**SECTION 08-00215-00-BR**  
**COUNTY HIGHWAY 19 OVER**  
**BRANCH OF EAST BUREAU CREEK**

(Sheet 2 of 2)

|             |                                |                |                                |              |           |
|-------------|--------------------------------|----------------|--------------------------------|--------------|-----------|
| SHEET NO. 5 | F.A.S. RTE.                    | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO. |
|             | 1235                           | 08-00215-00-BR | BUREAU                         | 23           | 11        |
| 12 SHEETS   | S.N. 006-3018                  |                | CONTRACT NO. 87671             |              |           |
|             | FED. ROAD DIST. NO. 7 ILLINOIS |                | FED. AID PROJECT BRS-1235(105) |              |           |

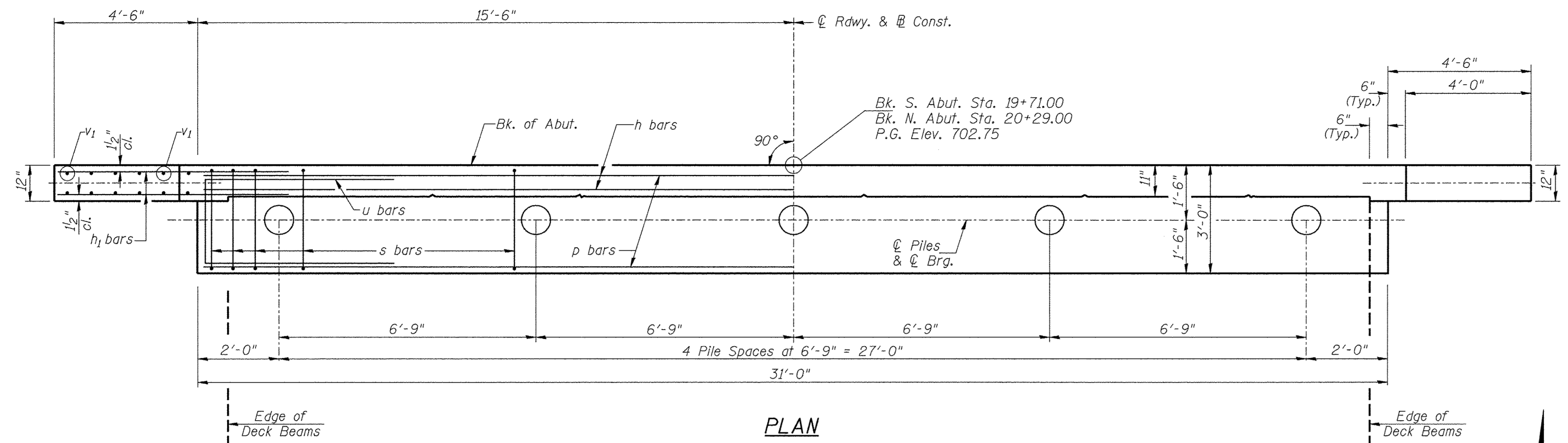


① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.

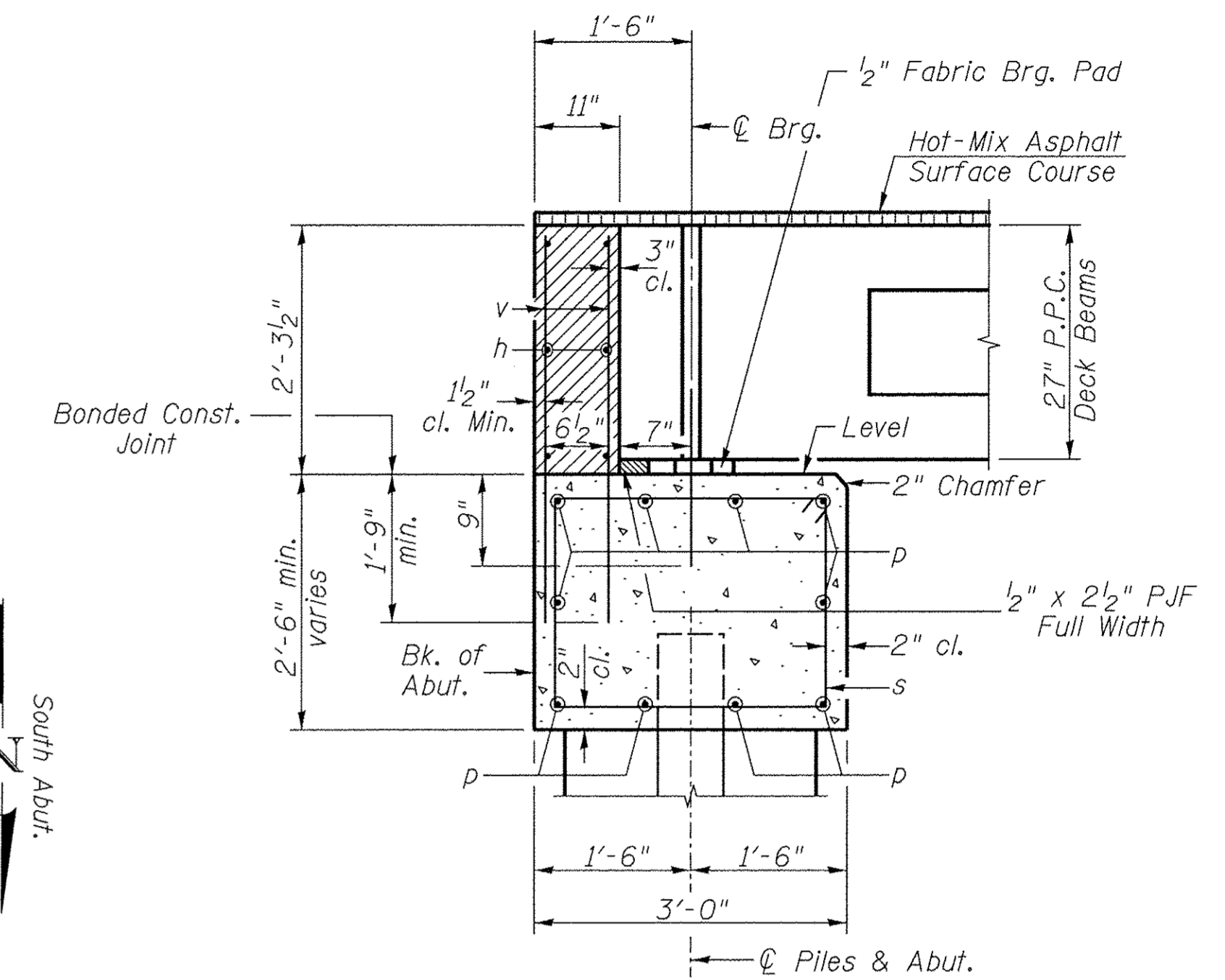


**RAIL POST SPACING AND  
SUPERSTRUCTURE DETAILS  
BUREAU COUNTY  
SECTION 08-00215-00-BR  
COUNTY HIGHWAY 19 OVER  
BRANCH OF EAST BUREAU CREEK**

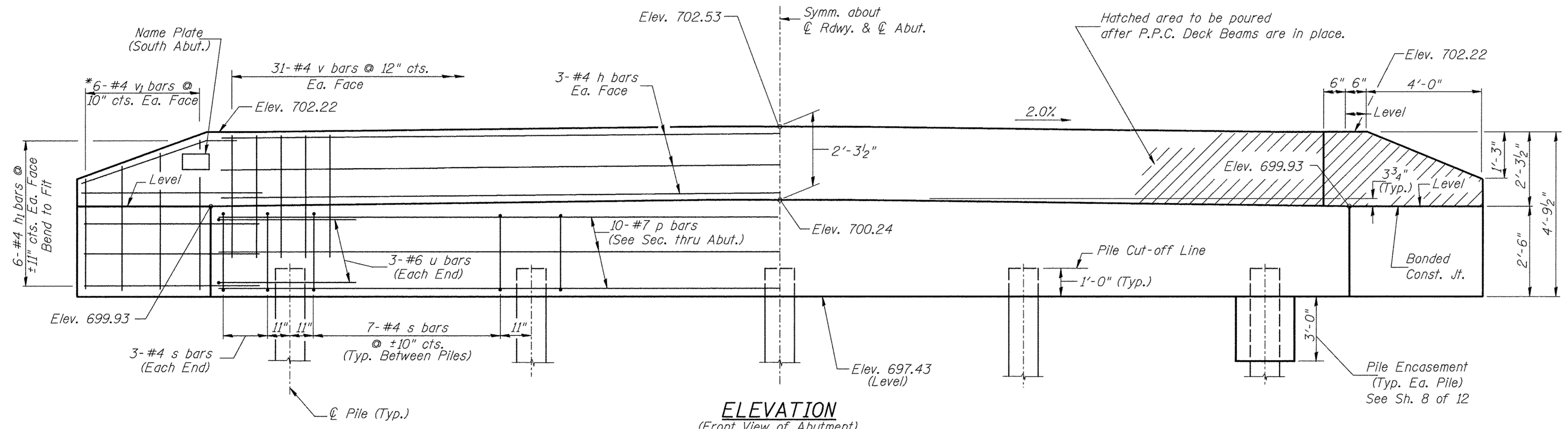
|                                |                     |                           |                                |                    |                 |
|--------------------------------|---------------------|---------------------------|--------------------------------|--------------------|-----------------|
| SHEET NO. 6<br>12 SHEETS       | F.A.S. RTE.<br>1235 | SECTION<br>08-00215-00-BR | COUNTY<br>BUREAU               | TOTAL SHEETS<br>23 | SHEET NO.<br>12 |
|                                | S.N. 006-3018       |                           | CONTRACT NO. 87671             |                    |                 |
| FED. ROAD DIST. NO. 7 ILLINOIS |                     |                           | FED. AID PROJECT BRS-1235(105) |                    |                 |



**PLAN**



**SECTION THRU ABUT.**



**ELEVATION**  
(Front View of Abutment)

**TWO ABUTMENTS  
BILL OF MATERIAL**

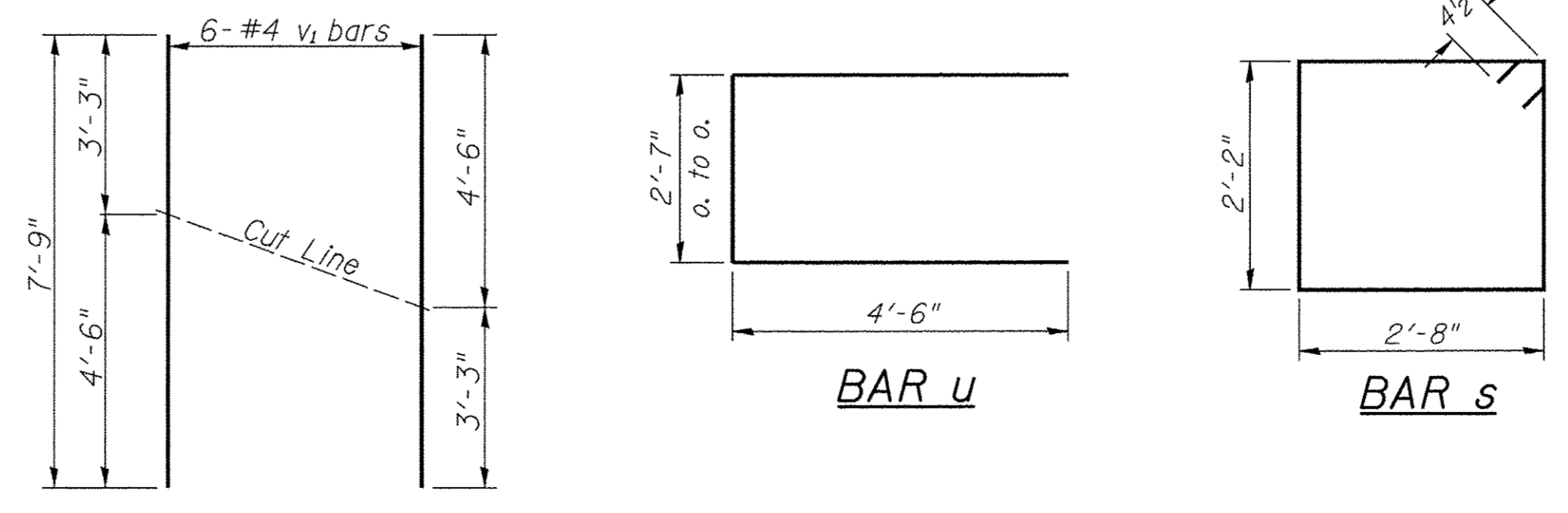
| BAR                                     | NO. | SIZE | LENGTH | SHAPE |
|---|-----|------|--------|-------|
| h                                       | 12  | #4   | 30'-9" | —     |
| h <sub>t</sub>                          | 48  | #4   | 6'-6"  | —     |
| p                                       | 20  | #7   | 30'-9" | —     |
| s                                       | 68  | #4   | 10'-5" | □     |
| u                                       | 12  | #6   | 11'-7" | □     |
| v                                       | 124 | #4   | 4'-0"  | —     |
| v <sub>1</sub>                          | 24  | #4   | 7'-9"  | —     |
| Concrete Structures                     |     |      | CU YD  | 25.7  |
| Reinforcement Bars                      |     |      | POUND  | 2,850 |
| Name Plates                             |     |      | EACH   | 1     |
| Furnishing Metal Shell Piles 12"x0.250" |     |      | FOOT   | 360   |
| Driving Piles                           |     |      | FOOT   | 360   |
| Test Pile Metal Shells                  |     |      | EACH   | 2     |
| Concrete Encasement                     |     |      | CU YD  | 2.6   |

**DESIGN STRESSES**

$f'_c = 3,500$  p.s.i.  
 $f_y = 60,000$  p.s.i.

**PILE DATA**

Type & Size: Metal Shell 12"x0.250" walls  
Nominal Required Bearing: 249 kips  
Factored Resistance Available: 137 kips  
Est. Length: 45' South Abutment  
45' North Abutment  
No. Req'd.: 10 (Includes 1 Test Pile at Each Abut.)



**BAR CUTTING DIAGRAM**

\*Order v<sub>1</sub> bars full length. Cut as shown and use remainder of bars in opposite face.

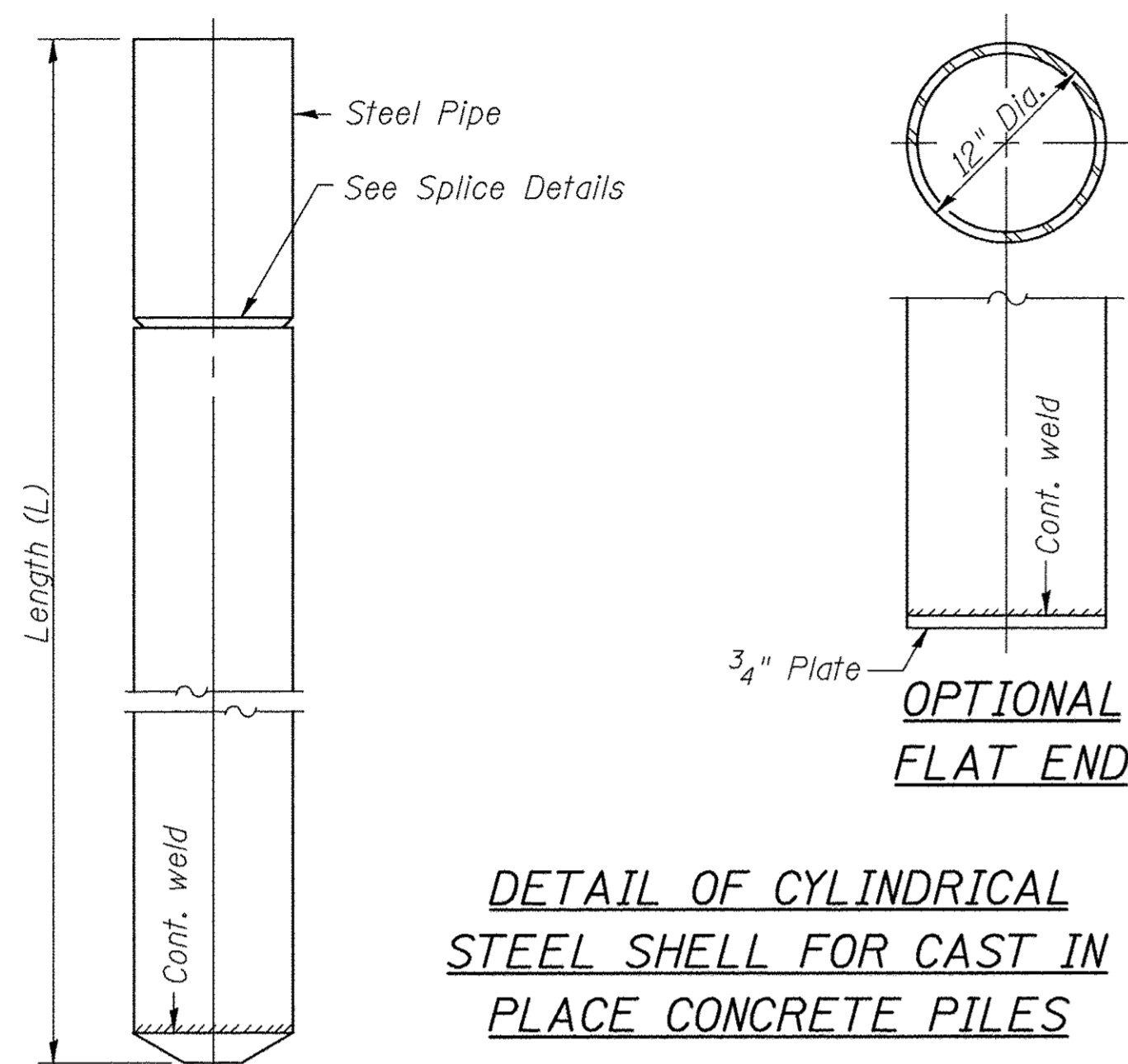
**NOTES**

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to ASTM A706 Grade 60.

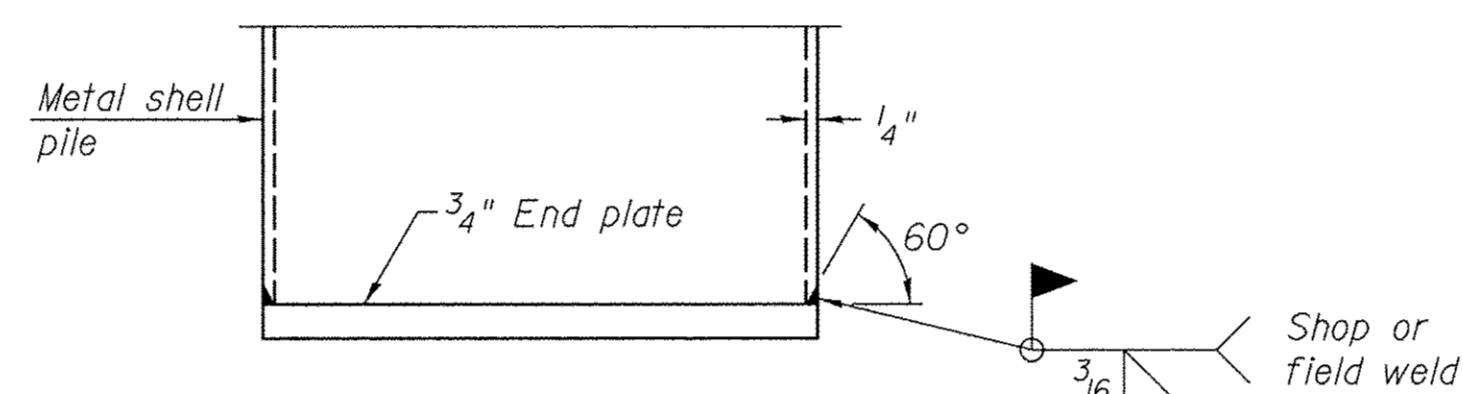
**ABUTMENTS  
BUREAU COUNTY  
SECTION 08-00215-00-BR  
COUNTY HIGHWAY 19 OVER  
BRANCH OF EAST BUREAU CREEK**

|                                |                     |                           |                                |                    |                 |
|--------------------------------|---------------------|---------------------------|--------------------------------|--------------------|-----------------|
| SHEET NO. 7<br><br>12 SHEETS   | F.A.S. RTE.<br>1235 | SECTION<br>08-00215-00-BR | COUNTY<br>BUREAU               | TOTAL SHEETS<br>23 | SHEET NO.<br>13 |
|                                | S.N. 006-3018       |                           | CONTRACT NO. 87671             |                    |                 |
| FED. ROAD DIST. NO. 7 ILLINOIS |                     |                           | FED. AID PROJECT BRS-1235(105) |                    |                 |

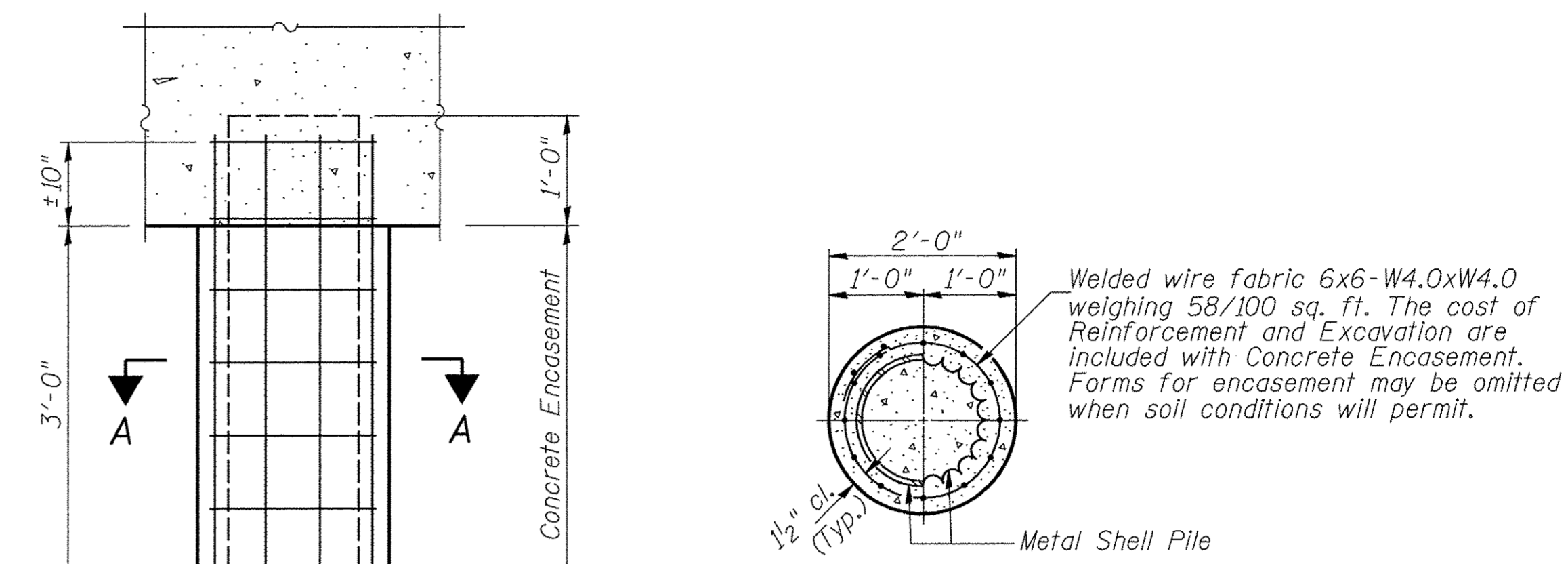
Notes: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 0.25 inches with a tolerance of 5%. The shell shall be according to Article 1006.05(a) of the Standard Specifications, and shall be ASTM A252 Grade 3.



**DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES**

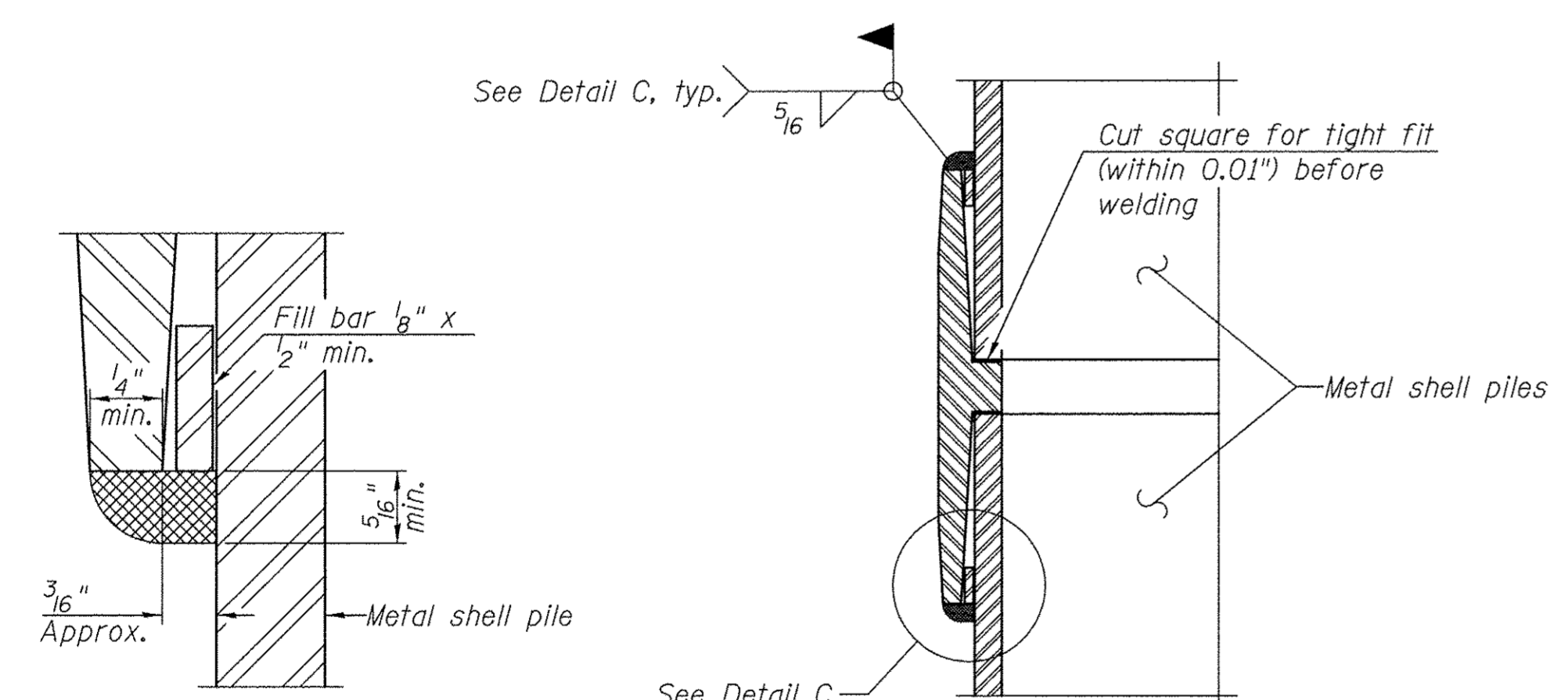


**END PLATE ATTACHMENT**



**ELEVATION**

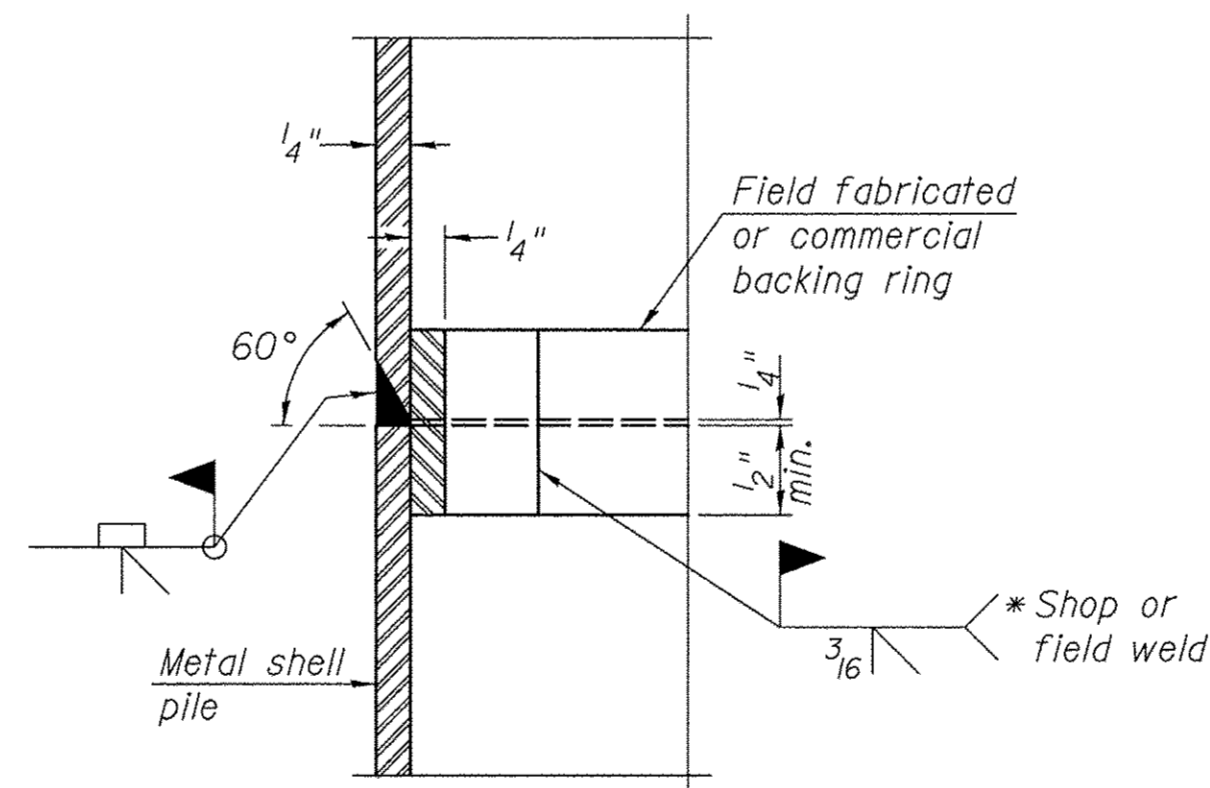
**DETAIL OF METAL SHELL PILE ENCASEMENT AT ABUTMENTS**



**DETAIL C**

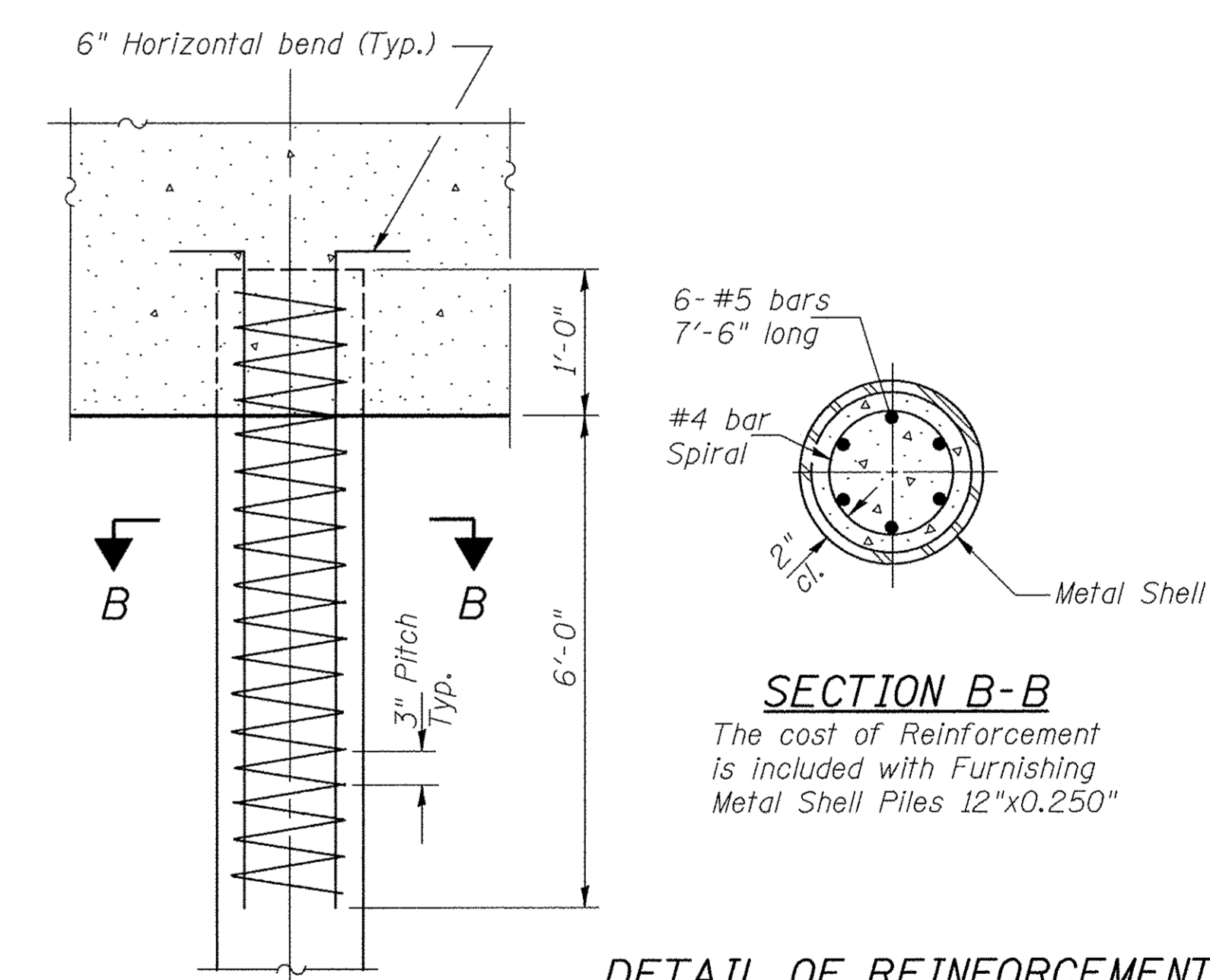
**WELDED COMMERCIAL SPLICE**

Notes:  
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.  
Pile segments shall be driven to solid contact with splicer before welding.



**COMPLETE PENETRATION WELD SPLICE**

\* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



**ELEVATION**

**SECTION B-B**  
The cost of Reinforcement is included with Furnishing Metal Shell Piles 12"x0.250"

**DETAIL OF REINFORCEMENT FOR METAL SHELLS AT ABUTMENTS**

**METAL SHELL PILE DETAILS**  
BUREAU COUNTY  
SECTION 08-00215-00-BR  
COUNTY HIGHWAY 19 OVER  
BRANCH OF EAST BUREAU CREEK

|                                |             |                |                                |              |           |
|--------------------------------|-------------|----------------|--------------------------------|--------------|-----------|
| SHEET NO. 8<br>12 SHEETS       | F.A.S. RTE. | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO. |
|                                | 1235        | 08-00215-00-BR | BUREAU                         | 23           | 14        |
| S.N. 006-3018                  |             |                | CONTRACT NO. 87671             |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS |             |                | FED. AID PROJECT BRS-1235(105) |              |           |

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354  
 Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net

Client: Hutchison Engineering, Inc.  
 Project Name: CH 19 Section 08-000215-00-BR  
 Project Site: Bureau County, Illinois

**BORING LOG**  
 Sheet 1 of 4  
 Boring No. B-1  
 Surface Elev. 703.40  
 Auger Depth 76' Rotary Depth NA  
 Start Date 11/27/15 Finish Date 11/27/15

Location: 8' Right of Station 19+65

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS                                | Graphic Log | Depth in feet | SAMPLES    |             |          |                 |               | DRILLED BY                        | REMARKS |
|------------------|---|-------------|---------------|------------|-------------|----------|-----------------|---------------|-----------------------------------|---------|
|                  |   |             |               | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear |                                   |         |
| 703.40           |   |             |               |            |             |          |                 |               | Randy Safranski<br>Diedrich D-120 |         |
| 702.40           |   |             | 1             |            |             |          |                 |               |                                   |         |
| 701.40           |   |             | 2             |            |             |          |                 |               |                                   |         |
| 700.40           | Dense Clay Mixed With Concrete Fragments (Fill)         |             | 3             | 1          | SS          | ---      | ---             | ---           |                                   |         |
| 699.40           |   |             | 4             |            |             |          |                 |               |                                   |         |
| 698.40           | <i>Had To Move 3 Times To Penetrate Concrete Rubble</i> |             | 5             | 2          | SS          | ---      | ---             | ---           |                                   |         |
| 697.40           |   |             | 6             |            |             |          |                 |               |                                   |         |
| 696.40           |   |             | 7             |            |             |          |                 |               |                                   |         |
| 695.40           |   |             | 8             | 3          | SS          | ---      | ---             | ---           |                                   |         |
| 694.40           |   |             | 9             |            |             |          |                 |               |                                   |         |
| 693.40           | Medium Brown Fine Sand                                  |             | 10            | 4          | SS          | ---      | 12              | ---           |                                   |         |
| 692.40           |   |             | 11            |            |             |          |                 |               |                                   |         |
| 691.40           |   |             | 12            |            |             |          |                 |               |                                   |         |
| 690.40           | Stiff Brownish Gray Clay                                |             | 13            | 5          | SS          | 1.5      | 9               | B 15          |                                   |         |
| 689.40           |   |             | 14            |            |             |          |                 |               |                                   |         |
| 688.40           |   |             | 15            |            |             |          |                 |               |                                   |         |
| 687.40           |   |             | 16            | 6          | SS          | 1.4      | 9               | B 15          |                                   |         |
| 686.40           |   |             | 17            |            |             |          |                 |               |                                   |         |
| 685.40           | Stiff Brownish Gray Clay Till                           |             | 18            | 7          | SS          | 1.5      | 10              | B 15          |                                   |         |
| 684.40           |   |             | 19            |            |             |          |                 |               |                                   |         |
| 683.40           |   |             | 20            | 8          | SS          | 1.9      | 13              | B 13          |                                   |         |

Groundwater Data: Static water level after auger removal - Elevation 694.0.  
 Comments:

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354  
 Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net

Client: Hutchison Engineering, Inc.  
 Project Name: CH 19 Section 08-000215-00-BR  
 Project Site: Bureau County, Illinois

**BORING LOG**  
 Sheet 2 of 4  
 Boring No. B-1  
 Surface Elev. 703.40  
 Auger Depth 76' Rotary Depth NA  
 Start Date 11/27/15 Finish Date 11/27/15

Location: 8' Right of Station 19+65

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS           | Graphic Log | Depth in feet | SAMPLES    |             |          |                 |               | DRILLED BY                        | REMARKS |
|------------------|------------------------------------|-------------|---------------|------------|-------------|----------|-----------------|---------------|-----------------------------------|---------|
|                  |                                    |             |               | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear |                                   |         |
| 682.40           |                                    |             |               |            |             |          |                 |               | Randy Safranski<br>Diedrich D-120 |         |
| 681.40           | Very Stiff Brownish Gray Clay Till |             | 22            |            |             |          |                 |               |                                   |         |
| 680.40           |                                    |             | 23            | 9          | SS          | 2.0      | 12              | B 14          |                                   |         |
| 679.40           |                                    |             | 24            |            |             |          |                 |               |                                   |         |
| 678.40           |                                    |             | 25            | 10         | SS          | 1.8      | 10              | B 15          |                                   |         |
| 677.40           |                                    |             | 26            |            |             |          |                 |               |                                   |         |
| 676.40           |                                    |             | 27            |            |             |          |                 |               |                                   |         |
| 675.40           | Stiff Brownish Gray Clay Till      |             | 28            | 11         | SS          | 1.6      | 8               | B 16          |                                   |         |
| 674.40           |                                    |             | 29            |            |             |          |                 |               |                                   |         |
| 673.40           |                                    |             | 30            |            |             |          |                 |               |                                   |         |
| 672.40           |                                    |             | 31            | 12         | SS          | 1.7      | 9               | B 15          |                                   |         |
| 671.40           |                                    |             | 32            |            |             |          |                 |               |                                   |         |
| 670.40           |                                    |             | 33            | 13         | SS          | 1.9      | 10              | B 15          |                                   |         |
| 669.40           |                                    |             | 34            |            |             |          |                 |               |                                   |         |
| 668.40           |                                    |             | 35            |            |             |          |                 |               |                                   |         |
| 667.40           |                                    |             | 36            | 14         | SS          | 2.3      | 14              | B 14          |                                   |         |
| 666.40           |                                    |             | 37            |            |             |          |                 |               |                                   |         |
| 665.40           |                                    |             | 38            |            |             |          |                 |               |                                   |         |
| 664.40           | Very Stiff Gray Clay Till          |             | 39            |            |             |          |                 |               |                                   |         |
| 663.40           |                                    |             | 40            |            |             |          |                 |               |                                   |         |
| 662.40           |                                    |             | 41            | 15         | SS          | 2.4      | 13              | B 14          |                                   |         |

Groundwater Data: Static water level after auger removal - Elevation 694.0.  
 Comments:

**SOIL BORING LOGS**  
**BUREAU COUNTY**  
**SECTION 08-00215-00-BR**  
**COUNTY HIGHWAY 19 OVER**  
**BRANCH OF EAST BUREAU CREEK**

|                                |               |                |                                |              |           |
|--------------------------------|---------------|----------------|--------------------------------|--------------|-----------|
| SHEET NO. 9                    | F.A.S. RTE.   | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO. |
|                                | 1235          | 08-00215-00-BR | BUREAU                         | 23           | 15        |
| 12 SHEETS                      | S.N. 006-3018 |                | CONTRACT NO. 87671             |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS |               |                | FED. AID PROJECT BRS-1235(105) |              |           |

|  |                                       |                            |  |
|--|---------------------------------------|----------------------------|--|
|  | <b>Midwest Testing Services, Inc.</b> | <b>BORING LOG</b>          | Phone: 815-223-6696                            |
|  | 3705 Progress Blvd.<br>Peru, IL 61354 | Sheet <u>3</u> of <u>4</u> | Fax: 815-223-6659<br>e-mail: mts37@comcast.net |

Client: Hutchison Engineering, Inc.  
 Project Name: CH 19 Section 08-000215-00-BR  
 Project Site: Bureau County, Illinois

Boring No. B-1  
 Surface Elev. 703.40  
 Auger Depth 76' Rotary Depth NA  
 Start Date 11/27/15 Finish Date 11/27/15

Location: 8' Right of Station 19+65

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS        | Graphic Log | Depth in feet | SAMPLES    |             |          |                 |               |              | DRILLED BY                        | REMARKS |                   |
|------------------|---------------------------------|-------------|---------------|------------|-------------|----------|-----------------|---------------|--------------|-----------------------------------|---------|-------------------|
|                  |                                 |             |               | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear | Moisture (%) |                                   |         | Dry Density (PCF) |
| 661.40           |                                 |             |               |            |             |          |                 |               |              |                                   |         |                   |
| 660.40           | Very Stiff Gray Clay Till       |             | 43            |            |             |          |                 |               |              | Randy Safranski<br>Diedrich D-120 |         |                   |
| 659.40           |                                 |             | 44            |            |             |          |                 |               |              |                                   |         |                   |
| 658.40           | Very Stiff Gray Sandy Loam Till |             | 45            | 16         | SS          | 3.7      | 28              | S             | 10           |                                   |         |                   |
| 657.40           |                                 |             | 46            |            |             |          |                 |               |              |                                   |         |                   |
| 656.40           | Dense Gray Sandy Loam Till      |             | 47            |            |             |          |                 |               |              |                                   |         |                   |
| 655.40           |                                 |             | 48            |            |             |          |                 |               |              |                                   |         |                   |
| 654.40           |                                 |             | 49            |            |             |          |                 |               |              |                                   |         |                   |
| 653.40           |                                 |             | 50            | 17         | SS          | 4.6      | 45              | S             | 8            |                                   |         |                   |
| 652.40           | Very Stiff Gray Clay Till       |             | 51            |            |             |          |                 |               |              |                                   |         |                   |
| 651.40           |                                 |             | 52            |            |             |          |                 |               |              |                                   |         |                   |
| 650.40           |                                 |             | 53            |            |             |          |                 |               |              |                                   |         |                   |
| 649.40           |                                 |             | 54            |            |             |          |                 |               |              |                                   |         |                   |
| 648.40           | Very Stiff Gray Clay Till       |             | 55            | 18         | SS          | 3.2      | 22              | B             | 13           |                                   |         |                   |
| 647.40           |                                 |             | 56            |            |             |          |                 |               |              |                                   |         |                   |
| 646.40           |                                 |             | 57            |            |             |          |                 |               |              |                                   |         |                   |
| 645.40           |                                 |             | 58            |            |             |          |                 |               |              |                                   |         |                   |
| 644.40           | Very Stiff Gray Clay Till       |             | 59            |            |             |          |                 |               |              |                                   |         |                   |
| 643.40           |                                 |             | 60            | 19         | SS          | 3.0      | 20              | B             | 13           |                                   |         |                   |
| 642.40           |                                 |             | 61            |            |             |          |                 |               |              |                                   |         |                   |
| 641.40           |                                 |             | 62            |            |             |          |                 |               |              |                                   |         |                   |

Groundwater Data: Static water level after auger removal - Elevation 694.0.  
 Comments:

|  |                                       |                            |  |
|--|---------------------------------------|----------------------------|--|
|  | <b>Midwest Testing Services, Inc.</b> | <b>BORING LOG</b>          | Phone: 815-223-6696                            |
|  | 3705 Progress Blvd.<br>Peru, IL 61354 | Sheet <u>4</u> of <u>4</u> | Fax: 815-223-6659<br>e-mail: mts37@comcast.net |

Client: Hutchison Engineering, Inc.  
 Project Name: CH 19 Section 08-000215-00-BR  
 Project Site: Bureau County, Illinois

Boring No. B-1  
 Surface Elev. 703.40  
 Auger Depth 76' Rotary Depth NA  
 Start Date 11/27/15 Finish Date 11/27/15

Location: 8' Right of Station 19+65

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS          | Graphic Log | Depth in feet | SAMPLES    |             |          |                 |               |              | DRILLED BY                        | REMARKS |                   |
|------------------|-----------------------------------|-------------|---------------|------------|-------------|----------|-----------------|---------------|--------------|-----------------------------------|---------|-------------------|
|                  |                                   |             |               | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear | Moisture (%) |                                   |         | Dry Density (PCF) |
| 640.40           |                                   |             |               |            |             |          |                 |               |              |                                   |         |                   |
| 639.40           | Very Stiff To Hard Gray Clay Till |             | 64            |            |             |          |                 |               |              | Randy Safranski<br>Diedrich D-120 |         |                   |
| 638.40           |                                   |             | 65            | 20         | SS          | 3.9      | 22              | S             | 11           |                                   |         |                   |
| 637.40           |                                   |             | 66            |            |             |          |                 |               |              |                                   |         |                   |
| 636.40           |                                   |             | 67            |            |             |          |                 |               |              |                                   |         |                   |
| 635.40           | Very Stiff To Hard Gray Clay Till |             | 68            |            |             |          |                 |               |              |                                   |         |                   |
| 634.40           |                                   |             | 69            |            |             |          |                 |               |              |                                   |         |                   |
| 633.40           |                                   |             | 70            | 21         | SS          | 4.1      | 12              | S             | 11           |                                   |         |                   |
| 632.40           |                                   |             | 71            |            |             |          |                 |               |              |                                   |         |                   |
| 631.40           | Very Stiff To Hard Gray Clay Till |             | 72            |            |             |          |                 |               |              |                                   |         |                   |
| 630.40           |                                   |             | 73            |            |             |          |                 |               |              |                                   |         |                   |
| 629.40           |                                   |             | 74            |            |             |          |                 |               |              |                                   |         |                   |
| 628.40           |                                   |             | 75            | 22         | SS          | 4.4      | 23              | S             | 10           |                                   |         |                   |
| 627.40           |                                   | 76          |               |            |             |          |                 |               |              |                                   |         |                   |
| 626.40           |                                   | 77          |               |            |             |          |                 |               |              |                                   |         |                   |
| 625.40           |                                   | 78          |               |            |             |          |                 |               |              |                                   |         |                   |
| 624.40           |                                   | 79          |               |            |             |          |                 |               |              |                                   |         |                   |
| 623.40           |                                   | 80          |               |            |             |          |                 |               |              |                                   |         |                   |
| 622.40           |                                   | 81          |               |            |             |          |                 |               |              |                                   |         |                   |
| 621.40           |                                   | 82          |               |            |             |          |                 |               |              |                                   |         |                   |
| 620.40           |                                   | 83          |               |            |             |          |                 |               |              |                                   |         |                   |

Groundwater Data: Static water level after auger removal - Elevation 694.0.  
 Comments:

**SOIL BORING LOGS**  
**BUREAU COUNTY**  
**SECTION 08-00215-00-BR**  
**COUNTY HIGHWAY 19 OVER**  
**BRANCH OF EAST BUREAU CREEK**

|                       |               |                |                                |              |           |
|-----------------------|---------------|----------------|--------------------------------|--------------|-----------|
| SHEET NO. 10          | F.A.S. RTE.   | SECTION        | COUNTY                         | TOTAL SHEETS | SHEET NO. |
|                       | 1235          | 08-00215-00-BR | BUREAU                         | 23           | 16        |
| 12 SHEETS             | S.N. 006-3018 |                | CONTRACT NO. 87671             |              |           |
| FED. ROAD DIST. NO. 7 |               | ILLINOIS       | FED. AID PROJECT BRS-1235(105) |              |           |



|  |                                       |                            |  |
|--|---------------------------------------|----------------------------|--|
|  | <b>Midwest Testing Services, Inc.</b> | <b>BORING LOG</b>          | Phone: 815-223-6696                            |
|  | 3705 Progress Blvd.<br>Peru, IL 61354 | Sheet <u>1</u> of <u>4</u> | Fax: 815-223-6659<br>e-mail: mts37@comcast.net |

Client: Hutchison Engineering, Inc.  
 Project Name: CH 19 Section 08-000215-00-BR  
 Project Site: Bureau County, Illinois

Boring No. B-2  
 Surface Elev. 703.50  
 Auger Depth 76' Rotary Depth NA  
 Start Date 11/27/15 Finish Date 11/27/15

Location: 8' Lt. Of Station 20+30

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS               | Graphic Log | Depth in feet | SAMPLES    |             |          |                 |               |              | DRILLED BY                        | REMARKS |
|------------------|--|-------------|---------------|------------|-------------|----------|-----------------|---------------|--------------|-----------------------------------|---------|
|                  |  |             |               | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear | Moisture (%) |                                   |         |
| 703.50           |  |             |               |            |             |          |                 |               |              | Randy Safranski<br>Diedrich D-120 |         |
| 702.50           |  |             | 1             |            |             |          |                 |               |              |                                   |         |
| 701.50           |  |             | 2             |            |             |          |                 |               |              |                                   |         |
| 700.50           | Very Stiff Black And Brown Clay (Fill) |             | 3             | 1          | SS          | 2.2      | 14              | S             | 16           |                                   |         |
| 699.50           |  |             | 4             |            |             |          |                 |               |              |                                   |         |
| 698.50           |  |             | 5             | 2          | SS          | 2.4      | 12              | S             | 18           |                                   |         |
| 697.50           |  |             | 6             |            |             |          |                 |               |              |                                   |         |
| 696.50           | Stiff Black Clay                       |             | 7             |            |             |          |                 |               |              |                                   |         |
| 695.50           |  |             | 8             | 3          | SS          | 1.2      | 6               | S             | 27           |                                   |         |
| 694.50           |  |             | 9             |            |             |          |                 |               |              |                                   |         |
| 693.50           | Stiff Brownish Gray Clay               |             | 10            | 4          | SS          | 1.6      | 7               | B             | 26           |                                   |         |
| 692.50           |  |             | 11            |            |             |          |                 |               |              |                                   |         |
| 691.50           |  |             | 12            |            |             |          |                 |               |              |                                   |         |
| 690.50           |  |             | 13            | 5          | SS          | 1.6      | 8               | B             | 13           |                                   |         |
| 689.50           |  |             | 14            |            |             |          |                 |               |              |                                   |         |
| 688.50           | Stiff Brownish Gray Clay Till          |             | 15            | 6          | SS          | 1.2      | 9               | B             | 15           |                                   |         |
| 687.50           |  |             | 16            |            |             |          |                 |               |              |                                   |         |
| 686.50           |  |             | 17            |            |             |          |                 |               |              |                                   |         |
| 685.50           |  |             | 18            | 7          | SS          | 1.4      | 11              | B             | 13           |                                   |         |
| 684.50           |  |             | 19            |            |             |          |                 |               |              |                                   |         |
| 683.50           |  |             | 20            | 8          | SS          | 1.7      | 12              | B             | 13           |                                   |         |

Groundwater Data: Static water level after auger removal - Elevation 693.0.  
 Comments:

|  |                                       |                            |  |
|--|---------------------------------------|----------------------------|--|
|  | <b>Midwest Testing Services, Inc.</b> | <b>BORING LOG</b>          | Phone: 815-223-6696                            |
|  | 3705 Progress Blvd.<br>Peru, IL 61354 | Sheet <u>2</u> of <u>4</u> | Fax: 815-223-6659<br>e-mail: mts37@comcast.net |

Client: Hutchison Engineering, Inc.  
 Project Name: CH 19 Section 08-000215-00-BR  
 Project Site: Bureau County, Illinois

Boring No. B-2  
 Surface Elev. 703.50  
 Auger Depth 76' Rotary Depth NA  
 Start Date 11/27/15 Finish Date 11/27/15

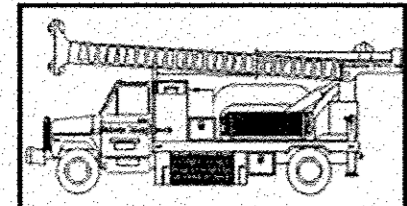
Location: 8' Lt. Of Station 20+30

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS      | Graphic Log | Depth in feet | SAMPLES    |             |          |                 |               |              | DRILLED BY                        | REMARKS |
|------------------|-------------------------------|-------------|---------------|------------|-------------|----------|-----------------|---------------|--------------|-----------------------------------|---------|
|                  |                               |             |               | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear | Moisture (%) |                                   |         |
| 682.50           |                               |             |               |            |             |          |                 |               |              | Randy Safranski<br>Diedrich D-120 |         |
| 681.50           |                               |             | 22            |            |             |          |                 |               |              |                                   |         |
| 680.50           |                               |             | 23            | 9          | SS          | 1.9      | 13              | B             | 12           |                                   |         |
| 679.50           |                               |             | 24            |            |             |          |                 |               |              |                                   |         |
| 678.50           |                               |             | 25            |            |             |          |                 |               |              |                                   |         |
| 677.50           | Stiff Brownish Gray Clay Till |             | 26            | 10         | SS          | 1.7      | 11              | B             | 13           |                                   |         |
| 676.50           |                               |             | 27            |            |             |          |                 |               |              |                                   |         |
| 675.50           |                               |             | 28            | 11         | SS          | 1.4      | 9               | B             | 14           |                                   |         |
| 674.50           |                               |             | 29            |            |             |          |                 |               |              |                                   |         |
| 673.50           |                               |             | 30            |            |             |          |                 |               |              |                                   |         |
| 672.50           |                               |             | 31            | 12         | SS          | 1.6      | 11              | B             | 12           |                                   |         |
| 671.50           | Very Stiff Gray Clay Till     |             | 32            |            |             |          |                 |               |              |                                   |         |
| 670.50           |                               |             | 33            | 13         | SS          | 2.2      | 13              | B             | 14           |                                   |         |
| 669.50           |                               |             | 34            |            |             |          |                 |               |              |                                   |         |
| 668.50           |                               |             | 35            |            |             |          |                 |               |              |                                   |         |
| 667.50           |                               |             | 36            | 14         | SS          | 2.3      | 15              | B             | 13           |                                   |         |
| 666.50           |                               |             | 37            |            |             |          |                 |               |              |                                   |         |
| 665.50           |                               |             | 38            |            |             |          |                 |               |              |                                   |         |
| 664.50           |                               |             | 39            |            |             |          |                 |               |              |                                   |         |
| 663.50           |                               |             | 40            |            |             |          |                 |               |              |                                   |         |
| 662.50           |                               |             | 41            | 15         | SS          | 2.2      | 14              | B             | 14           |                                   |         |

Groundwater Data: Static water level after auger removal - Elevation 693.0.  
 Comments:

**SOIL BORING LOGS**  
**BUREAU COUNTY**  
**SECTION 08-00215-00-BR**  
**COUNTY HIGHWAY 19 OVER**  
**BRANCH OF EAST BUREAU CREEK**

|                                |               |                                |                    |              |           |
|--------------------------------|---------------|--------------------------------|--------------------|--------------|-----------|
| SHEET NO. 11                   | F.A.S. RTE.   | SECTION                        | COUNTY             | TOTAL SHEETS | SHEET NO. |
|                                | 1235          | 08-00215-00-BR                 | BUREAU             | 23           | 17        |
| 12 SHEETS                      | S.N. 006-3018 |                                | CONTRACT NO. 87671 |              |           |
| FED. ROAD DIST. NO. 7 ILLINOIS |               | FED. AID PROJECT BRS-1235(105) |                    |              |           |



**Midwest Testing Services, Inc.**  
3705 Progress Blvd.  
Peru, IL 61354

**BORING LOG**

Sheet 3 of 4

Phone: 815-223-6696  
Fax: 815-223-6659  
e-mail: mts37@comcast.net

Client: Hutchison Engineering, Inc.  
Project Name: CH 19 Section 08-000215-00-BR  
Project Site: Bureau County, Illinois

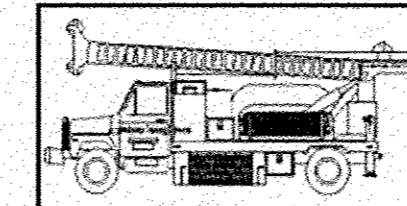
Boring No. B-2  
Surface Elev. 703.50  
Auger Depth 76' Rotary Depth NA  
Start Date 11/27/15 Finish Date 11/27/15

Location: 8' Lt Of Station 20+30

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS        | Graphic<br>Log | Depth<br>in feet | SAMPLES    |             |          |                 |               |              | DRILLED BY                        | REMARKS |
|------------------|---------------------------------|----------------|------------------|------------|-------------|----------|-----------------|---------------|--------------|-----------------------------------|---------|
|                  |                                 |                |                  | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear | Moisture (%) |                                   |         |
| 661.50           |                                 |                |                  |            |             |          |                 |               |              | Randy Safranski<br>Diedrich D-120 |         |
| 660.50           |                                 |                | 43               |            |             |          |                 |               |              |                                   |         |
| 659.50           |                                 |                | 44               |            |             |          |                 |               |              |                                   |         |
| 658.50           |                                 |                | 45               |            |             |          |                 |               |              |                                   |         |
| 657.50           | Hard Gray Silty Loam Till       |                | 46               | 16         | SS          | 1.2      | 34              | S             | 9            |                                   |         |
| 656.50           |                                 |                | 47               |            |             |          |                 |               |              |                                   |         |
| 655.50           |                                 |                | 48               |            |             |          |                 |               |              |                                   |         |
| 654.50           |                                 |                | 49               |            |             |          |                 |               |              |                                   |         |
| 653.50           |                                 |                | 50               |            |             |          |                 |               |              |                                   |         |
| 652.50           |                                 |                | 51               | 17         | SS          | 4.5      | 37              | S             | 7            |                                   |         |
| 651.50           |                                 |                | 52               |            |             |          |                 |               |              |                                   |         |
| 650.50           |                                 |                | 53               |            |             |          |                 |               |              |                                   |         |
| 649.50           |                                 |                | 54               |            |             |          |                 |               |              |                                   |         |
| 648.50           | Very Dense Gray Sandy Loam Till |                | 55               | 18         | SS          | 4.3      | 51              | S             | 5            |                                   |         |
| 647.50           |                                 |                | 56               |            |             |          |                 |               |              |                                   |         |
| 646.50           |                                 |                | 57               |            |             |          |                 |               |              |                                   |         |
| 645.50           |                                 |                | 58               |            |             |          |                 |               |              |                                   |         |
| 644.50           | Very Stiff Gray Clay Till       |                | 59               |            |             |          |                 |               |              |                                   |         |
| 643.50           |                                 |                | 60               |            |             |          |                 |               |              |                                   |         |
| 642.50           |                                 |                | 61               | 19         | SS          | 3.6      | 25              | B             | 12           |                                   |         |
| 641.50           |                                 |                | 62               |            |             |          |                 |               |              |                                   |         |

Groundwater Data: Static water level after auger removal - Elevation 693.0.

Comments:



**Midwest Testing Services, Inc.**  
3705 Progress Blvd.  
Peru, IL 61354

**BORING LOG**

Sheet 4 of 4

Phone: 815-223-6696  
Fax: 815-223-6659  
e-mail: mts37@comcast.net

Client: Hutchison Engineering, Inc.  
Project Name: CH 19 Section 08-000215-00-BR  
Project Site: Bureau County, Illinois

Boring No. B-2  
Surface Elev. 703.50  
Auger Depth 76' Rotary Depth NA  
Start Date 11/27/15 Finish Date 11/27/15

Location: 8' Lt. Of Station 20+30

| (DEPTH)<br>ELEV. | DESCRIPTION OF MATERIALS  | Graphic<br>Log | Depth<br>in feet | SAMPLES    |             |          |                 |               |              | DRILLED BY                        | REMARKS |
|------------------|---------------------------|----------------|------------------|------------|-------------|----------|-----------------|---------------|--------------|-----------------------------------|---------|
|                  |                           |                |                  | Sample No. | Sample Type | Qu (TSF) | N Value (Blows) | Bulge / Shear | Moisture (%) |                                   |         |
| 640.50           |                           |                |                  |            |             |          |                 |               |              | Randy Safranski<br>Diedrich D-120 |         |
| 639.50           |                           |                | 64               |            |             |          |                 |               |              |                                   |         |
| 638.50           |                           |                | 65               |            |             |          |                 |               |              |                                   |         |
| 637.50           |                           |                | 66               | 20         | SS          | 2.5      | 21              | B             | 12           |                                   |         |
| 636.50           |                           |                | 67               |            |             |          |                 |               |              |                                   |         |
| 635.50           |                           |                | 68               |            |             |          |                 |               |              |                                   |         |
| 634.50           |                           |                | 69               |            |             |          |                 |               |              |                                   |         |
| 633.50           | Very Stiff Gray Clay Till |                | 70               |            |             |          |                 |               |              |                                   |         |
| 632.50           |                           |                | 71               | 21         | SS          | 3.2      | 18              | B             | 13           |                                   |         |
| 631.50           |                           |                | 72               |            |             |          |                 |               |              |                                   |         |
| 630.50           |                           |                | 73               |            |             |          |                 |               |              |                                   |         |
| 629.50           |                           |                | 74               |            |             |          |                 |               |              |                                   |         |
| 628.50           |                           |                | 75               |            |             |          |                 |               |              |                                   |         |
| 627.50           |                           |                | 76               | 22         | SS          | 3.7      | 25              | S             | 10           |                                   |         |
| 626.50           |                           |                | 77               |            |             |          |                 |               |              |                                   |         |
| 625.50           |                           |                | 78               |            |             |          |                 |               |              |                                   |         |
| 624.50           |                           |                | 79               |            |             |          |                 |               |              |                                   |         |
| 623.50           |                           |                | 80               |            |             |          |                 |               |              |                                   |         |
| 622.50           |                           |                | 81               |            |             |          |                 |               |              |                                   |         |
| 621.50           |                           |                | 82               |            |             |          |                 |               |              |                                   |         |
| 620.50           |                           |                | 83               |            |             |          |                 |               |              |                                   |         |

Groundwater Data: Static water level after auger removal - Elevation 693.0.

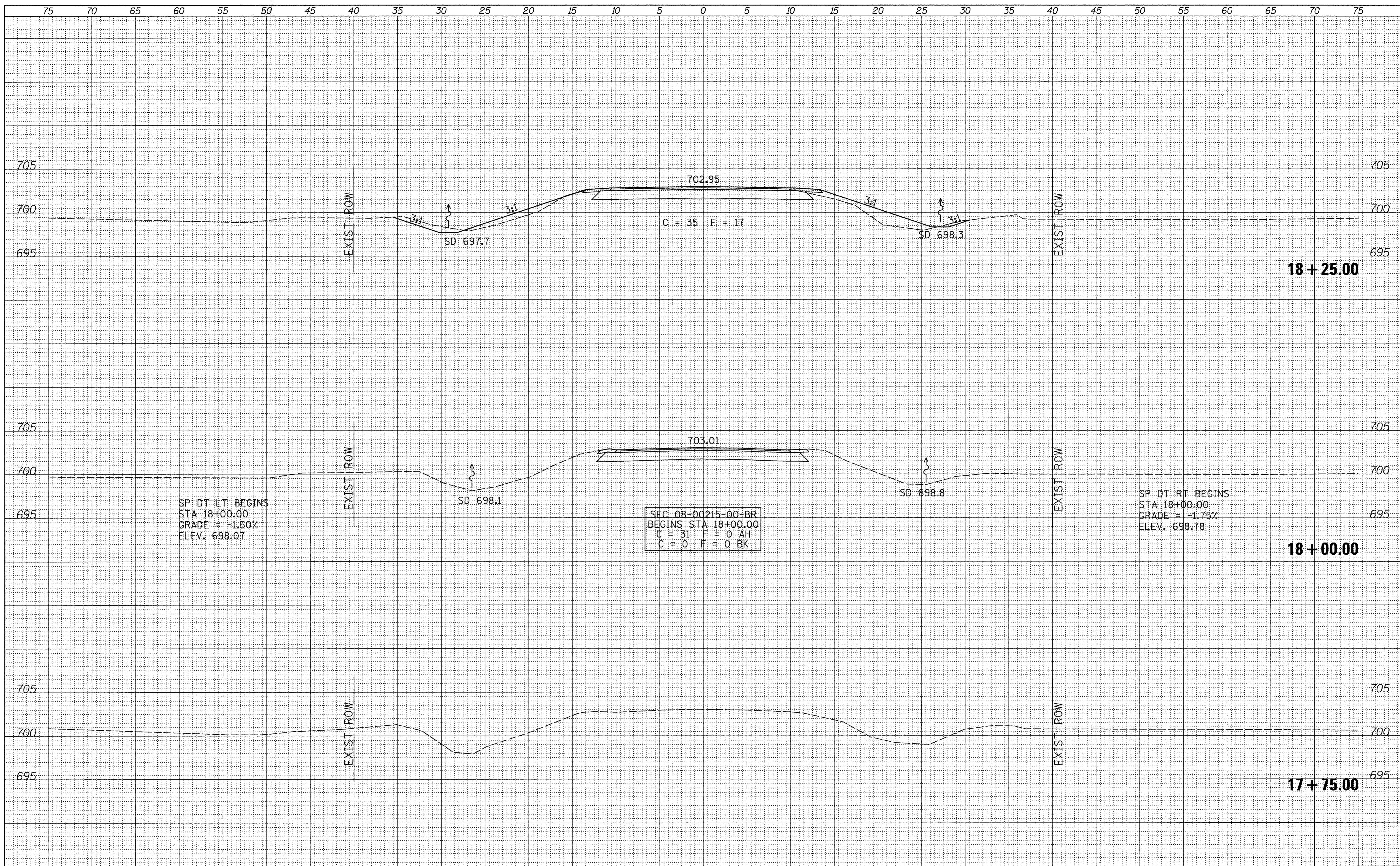
Comments:

**SOIL BORING LOGS**  
**BUREAU COUNTY**  
**SECTION 08-00215-00-BR**  
**COUNTY HIGHWAY 19 OVER**  
**BRANCH OF EAST BUREAU CREEK**

|                                |                |                |                                |                 |              |
|--------------------------------|----------------|----------------|--------------------------------|-----------------|--------------|
| SHEET NO. 12                   | F.A.S.<br>RTE. | SECTION        | COUNTY                         | TOTAL<br>SHEETS | SHEET<br>NO. |
|                                | 1235           | 08-00215-00-BR | BUREAU                         | 23              | 18           |
| 12 SHEETS                      | S.N. 006-3018  |                | CONTRACT NO. 87671             |                 |              |
| FED. ROAD DIST. NO. 7 ILLINOIS |                |                | FED. AID PROJECT BRS-1235(105) |                 |              |

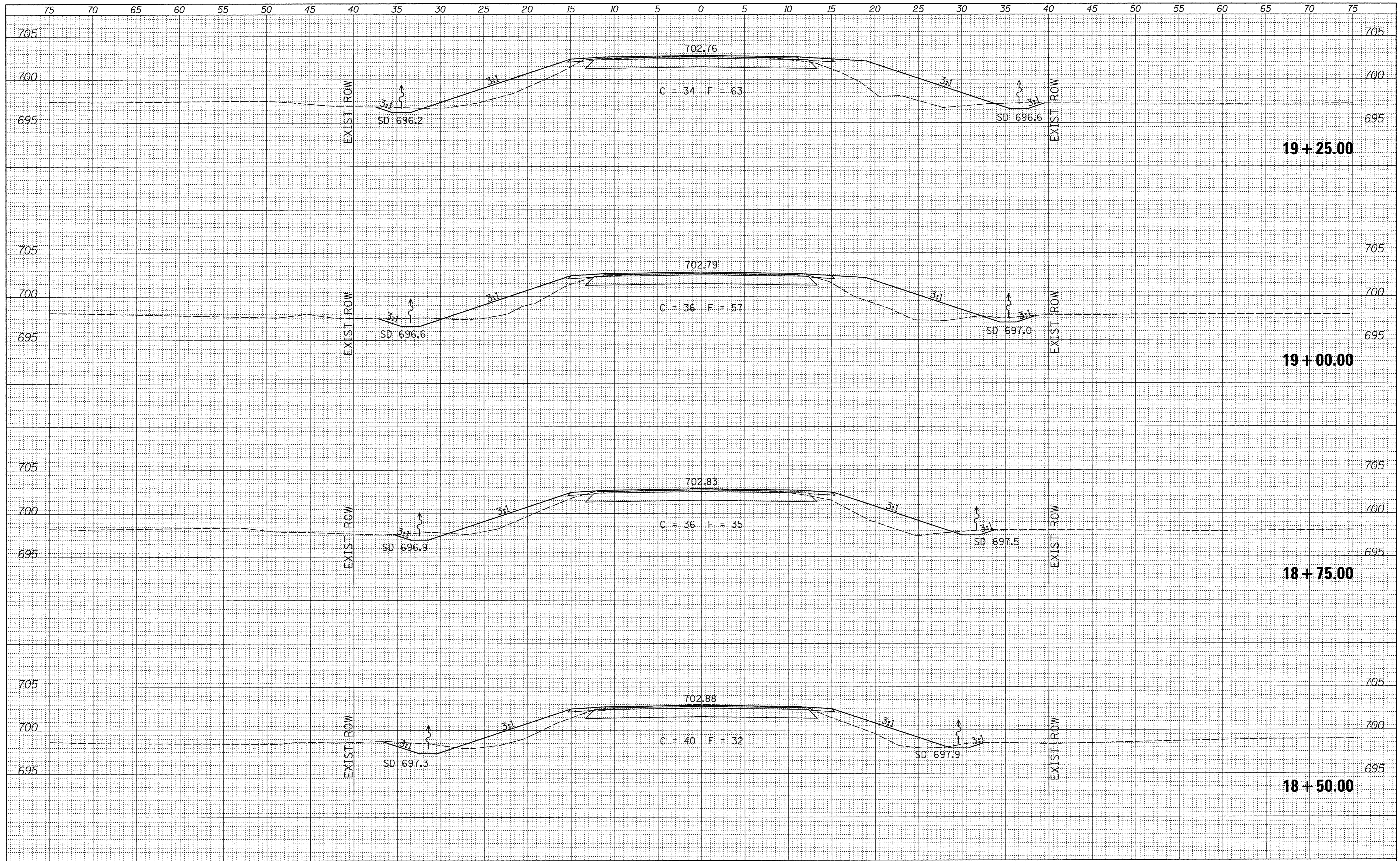
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|              | ADJ'S CHECKED |    |      |

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| ORIGINAL SURVEY | SURVEYED      | BY | DATE |
| NOTE BOOK       | PLOTTED       |    |      |
| NO.             | TEMPLATE      |    |      |
|                 | AREAS CHECKED |    |      |
|                 | ADJ'S CHECKED |    |      |



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

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| ORIGINAL SURVEY | DATE |
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| DATE -     | REVISED - |

**BUREAU COUNTY  
 COUNTY HIGHWAY 19 OVER  
 BRANCH OF EAST BUREAU CREEK**

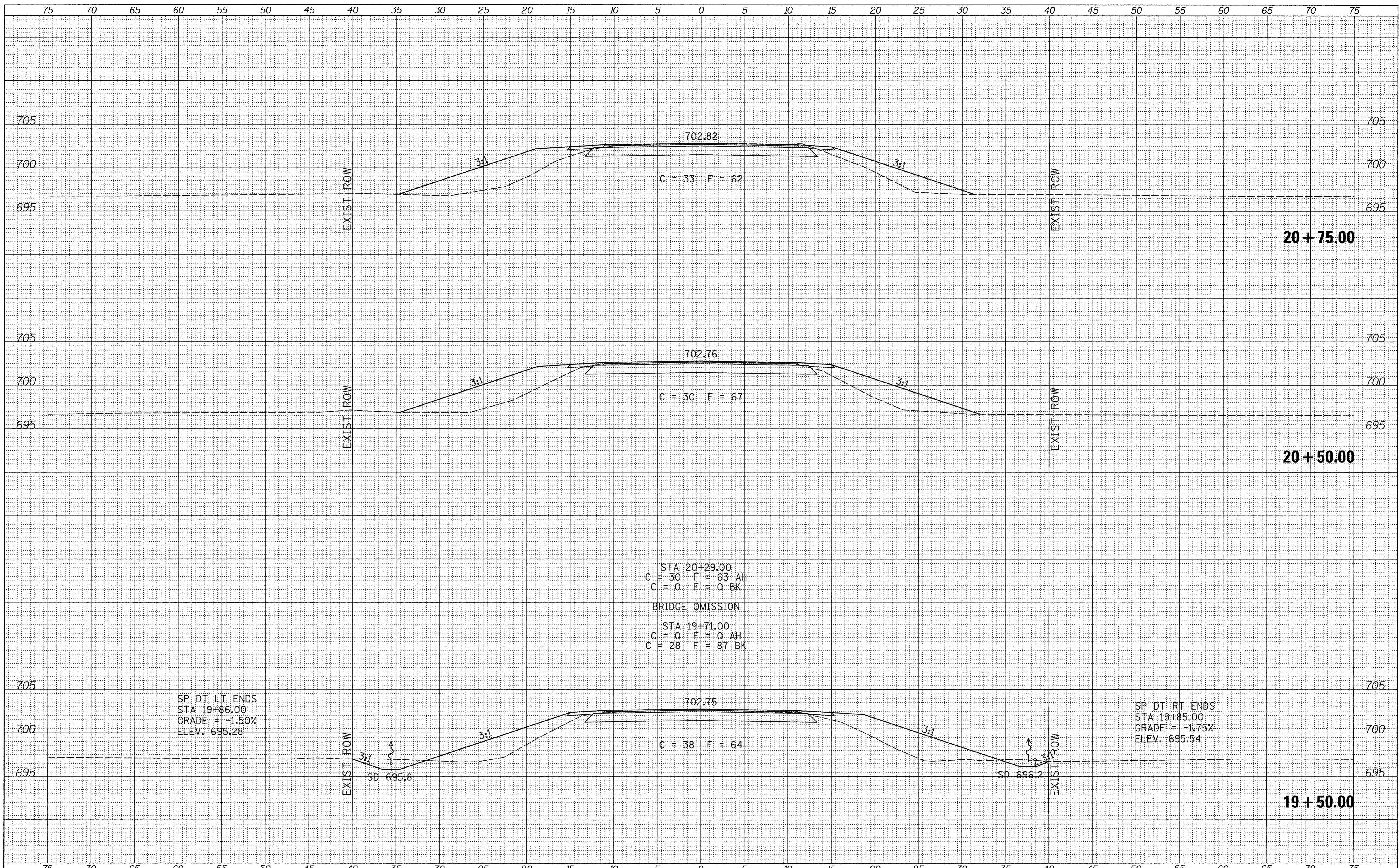
**CROSS SECTIONS**

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|                                |                        |               |                    |              |
|--------------------------------|------------------------|---------------|--------------------|--------------|
| F.A.S. RTE. 1235               | SECTION 08-00215-00-BR | COUNTY BUREAU | TOTAL SHEETS 23    | SHEET NO. 20 |
| FED. ROAD DIST. NO. 7 ILLINOIS |                        |               | CONTRACT NO. 87671 |              |
| FED. AID PROJECT BRS-1235(105) |                        |               |                    |              |

|               |  |
|---------------|--|
| DATE          |  |
| BY            |  |
| FINAL SURVEY  |  |
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**BUREAU COUNTY  
 COUNTY HIGHWAY 19 OVER  
 BRANCH OF EAST BUREAU CREEK**

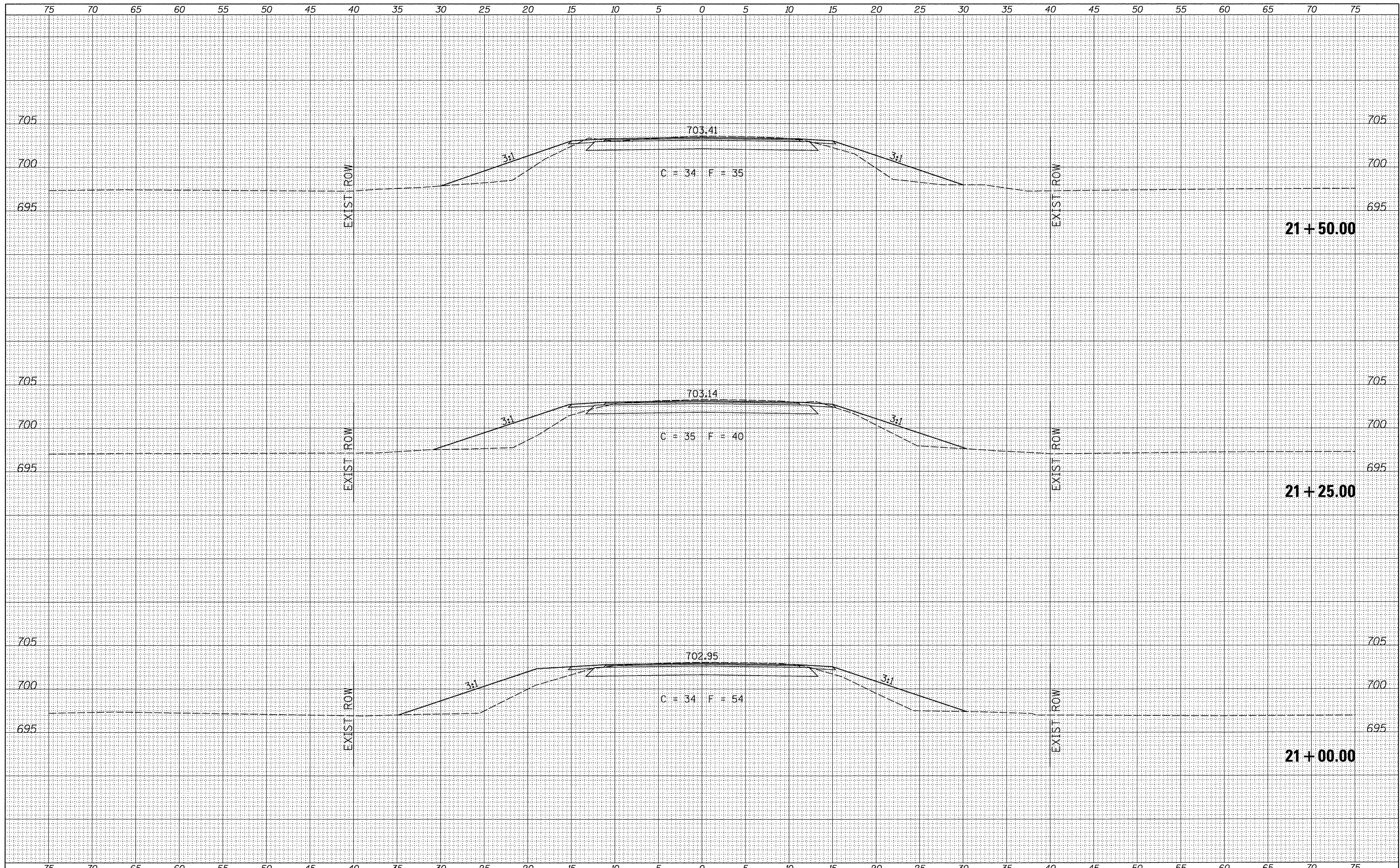
**CROSS SECTIONS**

SCALE: 1"=5' SHEET 3 OF 5 SHEETS STA. 19+50.00 TO STA. 20+75.00

|                                |                           |                  |                    |                 |
|--------------------------------|---------------------------|------------------|--------------------|-----------------|
| F.A.S. RTE.<br>1235            | SECTION<br>08-00215-00-BR | COUNTY<br>BUREAU | TOTAL SHEETS<br>23 | SHEET NO.<br>21 |
| FED. ROAD DIST. NO. 7 ILLINOIS |                           |                  | CONTRACT NO. 87671 |                 |
| FED. AID PROJECT BRS-1235(105) |                           |                  |                    |                 |

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| NOTE BOOK     |    |      |
| NO.           |    |      |
| AREAS CHECKED |    |      |
| AREAS CHECKED |    |      |

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| ORIGINAL SURVEY | BY | DATE |
| SURVEYED        |    |      |
| NOTE BOOK       |    |      |
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| DRAWN -    | REVISED - |
| CHECKED -  | REVISED - |
| DATE -     | REVISED - |

**BUREAU COUNTY  
 COUNTY HIGHWAY 19 OVER  
 BRANCH OF EAST BUREAU CREEK**

**CROSS SECTIONS**

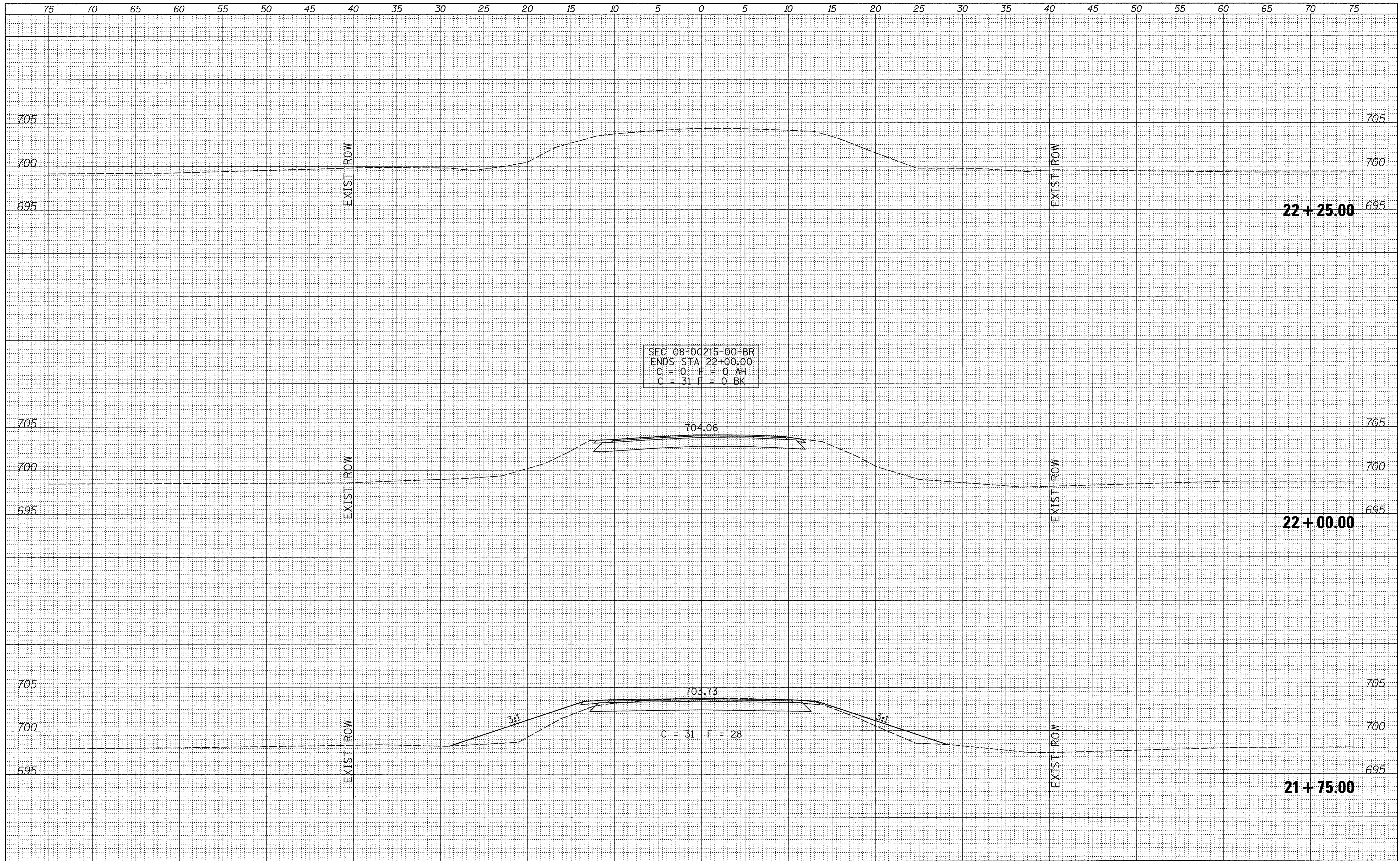
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| F.A.S. RTE. 1235               | SECTION 08-00215-00-BR | COUNTY BUREAU                  | TOTAL SHEETS 23 | SHEET NO. 22 |
| FED. ROAD DIST. NO. 7 ILLINOIS |                        | FED. AID PROJECT BRS-1235(105) |                 |              |

CONTRACT NO. 87671

|              |               |      |
|--------------|---------------|------|
| FINAL SURVEY | SUPERVISED    | DATE |
| NOTE BOOK    | TEMP. DATE    |      |
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| ORIGINAL SURVEY | SUPERVISED    | DATE |
| NOTE BOOK       | TEMP. DATE    |      |
| NO.             | AREAS CHECKED |      |



SEC 08-00215-00-BR  
 ENDS STA 22+00.00  
 C = 0 F = 0 AH  
 C = 31 F = 0 BK

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| MODELNAME*  | PLOT SCALE = 5.00000' / in. | DRAWN -    | REVISED - |   | SCALE: 1"=5'                   | SHEET 5 | OF 5 | SHEETS | STA. 21+75.00          | TO STA. 22+25.00          | CONTRACT NO. 87671 |                       |                    |
|   | PLOT DATE = 1/13/2017       | CHECKED -  | REVISED - |   | FED. ROAD DIST. NO. 7 ILLINOIS |         |      |        |                        |                           |                    |                       |                    |
|   |                             | DATE -     | REVISED - |   | FED. AID PROJECT BRS-1235(05)  |         |      |        |                        |                           |                    |                       |                    |