

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

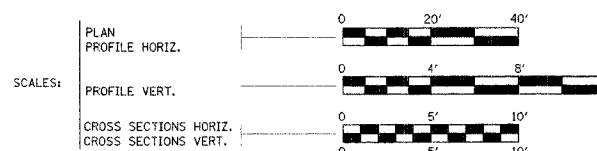
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|-----------------------|----------|------------------|--------------|-----------|
| STATE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| TR 96 | * | VERMILION | 12 | 1 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

*02-03132-00-BR

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION |
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| 2 | SUMMARY OF QUANTITIES, TYPICAL CROSS SECTIONS, & SCHEDULE OF QUANTITIES |
| 3 | PLAN & PROFILE |
| 4 | ROADWAY ALIGNMENT & TIE POINTS |
| 5-9 | BRIDGE PLANS |
| 10 | TEMPORARY EROSION CONTROL PLAN |
| 11-12 | CROSS SECTIONS |

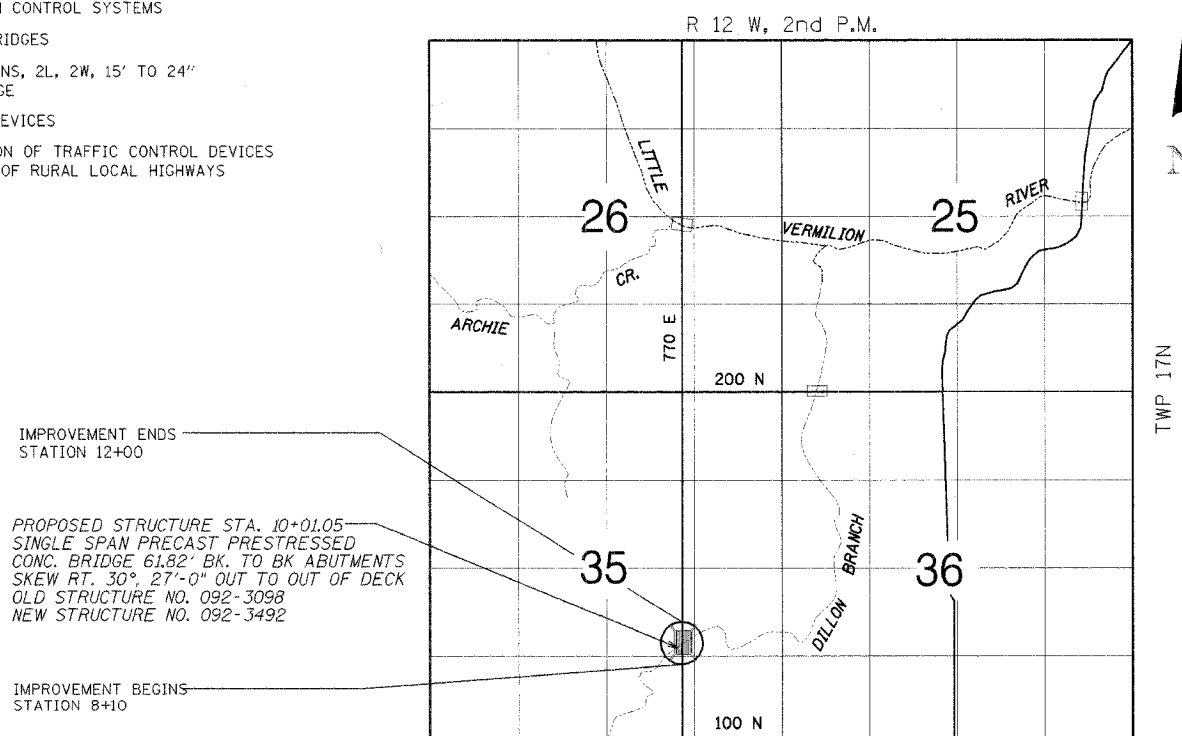
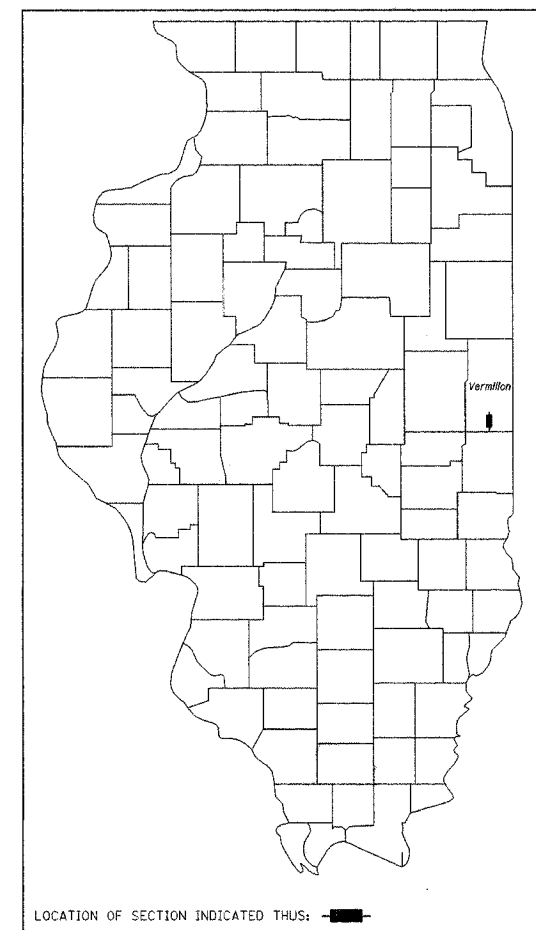
PLANS FOR PROPOSED
BRIDGE REPLACEMENT



VERMILION COUNTY
SECTION 02-03132-00-BR
PROJECT NO. BROS-183(89)
JOB NO. C-95-333-05
TR 96
BRIDGE REPLACEMENT
AND REHABILITATION PROGRAM

ILLINOIS DEPT. OF TRANSPORTATION STANDARD DRAWINGS

| STANDARD NO. | DESCRIPTION |
|--------------|---|
| 000001-04 | STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS |
| 280001-02 | TEMPORARY EROSION CONTROL SYSTEMS |
| 515001-02 | NAME PLATE FOR BRIDGES |
| 701006-02 | OFF ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE |
| 702001-06 | TRAFFIC CONTROL DEVICES |
| BLR 21-6 | TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION OF RURAL LOCAL HIGHWAYS |



IMPROVEMENT ENDS STATION 12+00

PROPOSED STRUCTURE STA. 10+01.05
SINGLE SPAN PRECAST PRESTRESSED CONC. BRIDGE 61.82' BK. TO BK ABUTMENTS
SKEW RT. 30°, 27'-0" OUT TO OUT OF DECK
OLD STRUCTURE NO. 092-3098
NEW STRUCTURE NO. 092-3492

IMPROVEMENT BEGINS STATION 8+10

LOCATION MAP

ADT = 100 (CURRENT), 150 (DESIGN)
FUNCTIONAL CLASS = MINOR COLLECTOR

NET LENGTH OF SECTION = 390.00 FEET = 0.074 MILES

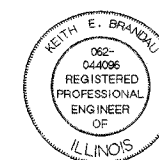
APPROVED 2/20/06
Robert B. Andrews
COUNTY ENGINEER

APPROVED 3/31/06
Tim Deerman
ROAD COMMISSIONER

PASSED 4/10/06
David A. Spill
DISTRICT FOUR ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review 4/11/06
Joseph E. Brandau
DEPUTY DIRECTOR OF HIGHWAYS, REGION FIVE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Keith E. Brandau 2/15/06
KEITH E. BRANDAU
Illinois Licensed Professional Engineer Number 44096
License Expires 11/30/07

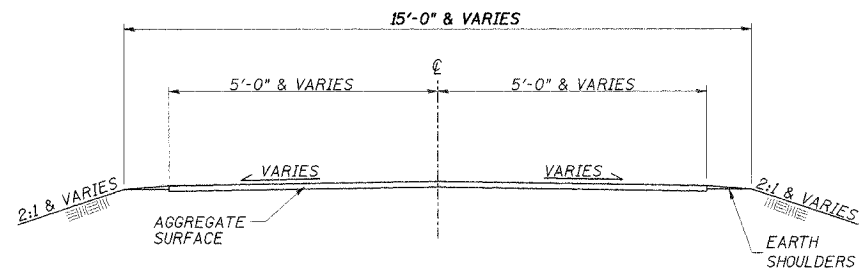
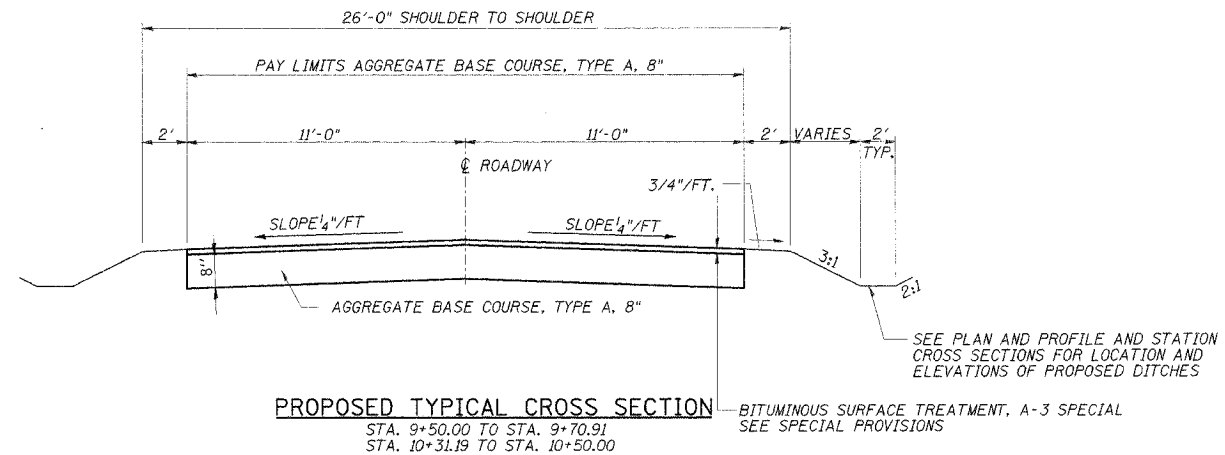
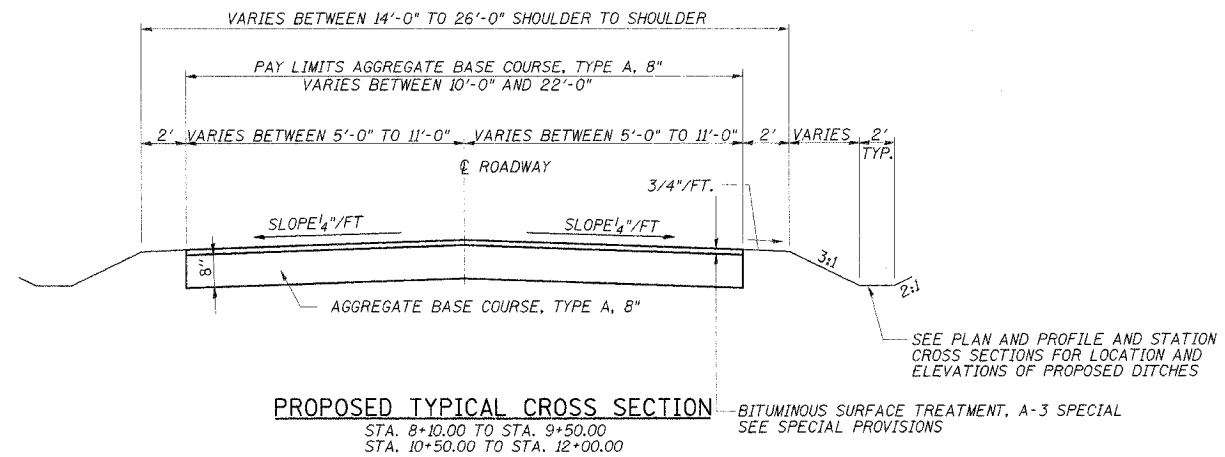
FRAUENHÖFFER

Frauenhoffer and Associates, P.C. Consulting Engineers
3002 Crossing Court Champaign, IL 61822 217-351-6268

| | | | | |
|------------------------|---------|-----------|---------------------|-------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET |
| TR 96 | * | Vermilion | 12 | 2 |
| FED. PROJ. DIST. NO. 7 | | BILLINGS | FED. PROJ. PROJECT- | |
| *02-03132-00-BR | | | | |

SUMMARY OF QUANTITIES

| CODE NO. | ITEM | UNIT | TOTAL QUANTITIES |
|-----------|---|---------|------------------|
| 20100500 | TREE REMOVAL | ACRE | 0.20 |
| *20200100 | EARTH EXCAVATION | CU. YD. | 228 |
| 20400800 | FURNISHED EXCAVATION | CU. YD. | 12 |
| 25000200 | SEEDING, CLASS 2 | ACRE | 0.29 |
| 25100115 | MULCH, METHOD 2 | ACRE | 0.29 |
| 28000250 | TEMPORARY EROSION CONTROL SEEDING | POUND | 300 |
| 28000300 | TEMPORARY DITCH CHECKS | EACH | 8 |
| 28000400 | PERIMETER EROSION BARRIER | FOOT | 787 |
| 35102000 | AGGREGATE BASE COURSE, TYPE B, 8" | SG. YD. | 638 |
| *50100100 | REMOVAL OF EXISTING STRUCTURES | EACH | 1 |
| 50200100 | STRUCTURE EXCAVATION | CU. YD. | 101 |
| 50300225 | CONCRETE STRUCTURES | CU. YD. | 21.8 |
| 50400505 | PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH) | SG. FT. | 1,628 |
| 50800105 | REINFORCEMENT BARS | POUND | 2,240 |
| 50900205 | STEEL RAILING, TYPE S-1 | FOOT | 121 |
| 51201400 | FURNISHING STEEL PILES, HP 10 X 42 | FOOT | 390 |
| 51202700 | DRIVING STEEL PILES | FOOT | 390 |
| 51203400 | TEST PILE, STEEL HP 10 X 42 | EACH | 2 |
| 51204600 | METAL SHOES | EACH | 10 |
| 51500100 | NAME PLATE | EACH | 1 |
| 67100100 | MOBILIZATION | L. SUM | 1.0 |
| *XX004565 | GROUTED RIPRAP | SG. YD. | 299 |
| *XX004566 | CONCRETE CUT-OFF WALL | CU. YD. | 6.4 |
| *XX005699 | BITUMINOUS SURFACE TREATMENT, A-3 SPECIAL | SG. YD. | 638 |
| *XX005977 | CONTROLLED LOW-STRENGTH MATERIAL (CLSM) | CU. YD. | 56 |
| Z0013798 | CONSTRUCTION LAYOUT | L. SUM | 1.0 |



| SEEDING, CLASS 2 | |
|--------------------------|-------------|
| LOCATION | ACRE |
| STA. 8+10 TO STA. 9+70 | 0.16 |
| STA. 10+32 TO STA. 12+00 | 0.13 |
| TOTAL | 0.29 |

| MULCH, METHOD 2 | |
|--------------------------|-------------|
| LOCATION | ACRE |
| STA. 8+10 TO STA. 9+70 | 0.16 |
| STA. 10+32 TO STA. 12+00 | 0.13 |
| TOTAL | 0.29 |

| TREE REMOVAL | |
|-----------------------------|-------------|
| LOCATION | ACRE |
| LT. STA. 8+10 TO STA. 11+00 | 0.14 |
| RT. STA. 8+50 TO STA. 11+00 | 0.06 |
| TOTAL | 0.20 |

| AGGREGATE BASE COURSE, TYPE B, 8" | |
|-----------------------------------|------------|
| LOCATION | SG. YD. |
| STA. 8+10 TO STA. 9+70.91 | 308 |
| STA. 10+31.19 TO STA. 12+00 | 330 |
| TOTAL | 638 |

| CONSTRUCTION LAYOUT | |
|---------------------|----------|
| LOCATION | L. SUM |
| SEC. 02-03132-00-BR | 1 |
| TOTAL | 1 |

| BITUMINOUS SURFACE TREATMENT, A-3 SPECIAL | |
|---|------------|
| LOCATION | SG. YD. |
| STA. 8+10 TO STA. 9+70.91 | 308 |
| STA. 10+31.19 TO STA. 12+00 | 330 |
| TOTAL | 638 |

*SEE SPECIAL PROVISIONS

NOTES:
 SEE PLAN AND PROFILE SHEET 4 FOR PAVEMENT AND SHOULDER TAPERS.

GENERAL NOTES

1. The locations of Existing utilities as shown on the plan are for information only, and are not guaranteed. It shall be the Contractor's responsibility to ascertain their exact location from the utility companies and by field inspection.

| | | | | | |
|------|--------------|-----|------|----------|----|
| DSGN | R.T. Mumm | | | | |
| DR | R.T. Mumm | | | | |
| CHK | K.E. Brandau | | | | |
| APVD | K.E. Brandau | NO. | DATE | REVISION | BY |

FRAUENHOFFER

Frauenhoffer and Associates, P.C. Consulting Engineers
 3002 Crossing Court Champaign, IL 61822 217-351-6268

SUM. OF QUANTITIES AND TYP. SECTIONS

CARROLL ROAD DISTRICT
 SECTION 02-03132-00-BR
 VERMILION COUNTY

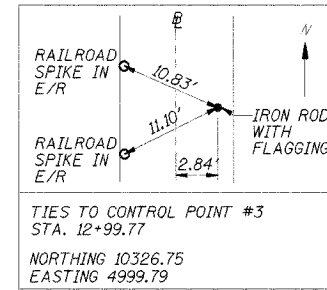
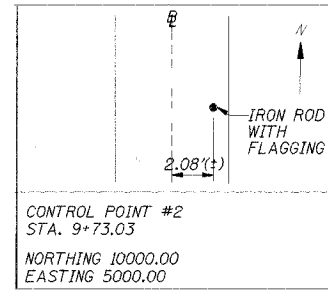
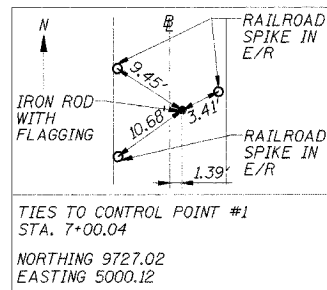
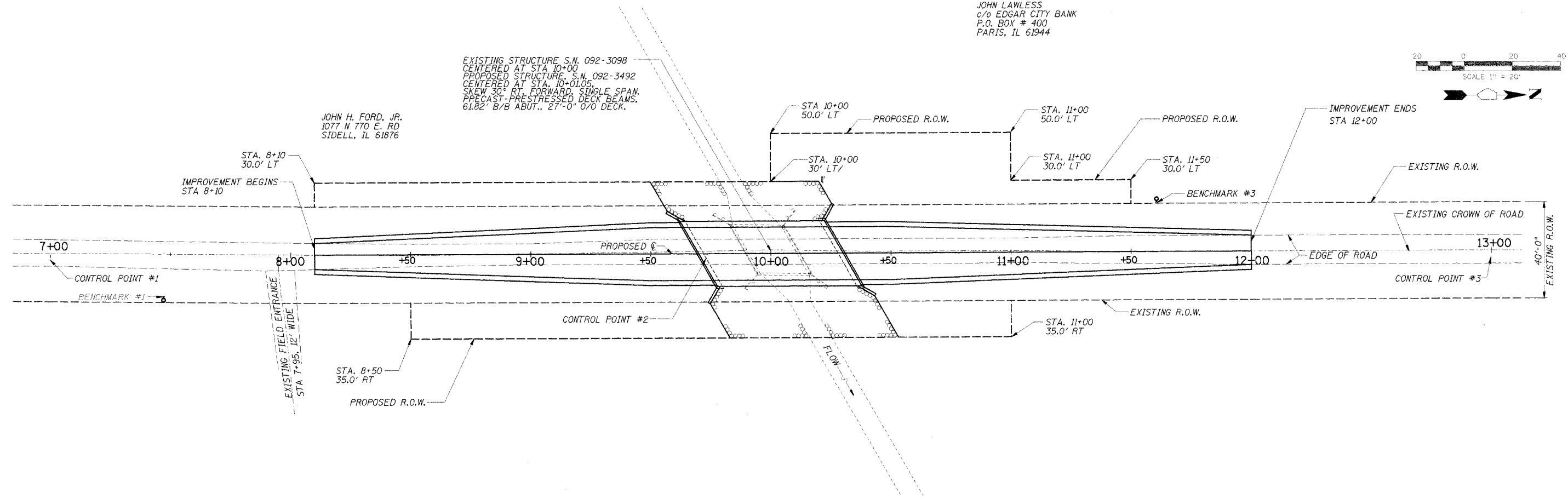
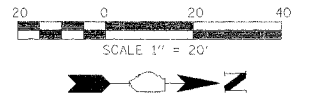
| | |
|-----------|----------------|
| SHEET | 2 |
| DWG. NO. | 5072 - sum.dgn |
| DATE | JAN 2006 |
| PROJ. NO. | 5072 |

| | | | | |
|----------------------|----------|-------------------|--------------|-----------|
| ROUTE NO. | SOLUTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| TR 96 | * | VERMILION | 12 | 4 |
| FED. ROAD EST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | |

*02-03132-00-BR

BM #1 - R.R. SPIKE IN TIMBER POST STA 7+48, 22.6' RT. OF C. ELEV. 103.61
 BM #2 - CHISELED "X" IN TOP OF SOUTHWEST CURB, STA. 9+82, - ELEV. 100.00
 BM #3 - R.R. SPIKE IN POWER POLE STA 11+60, 22.0' RT., ELEV. 106.05
 C.P. = CONTROL POINT

JOHN LAWLESS
 c/o EDGAR CITY BANK
 P.O. BOX # 400
 PARIS, IL 61944



| STA | NORTHING | EASTING |
|------------------------|-----------|----------|
| 8+10 | 9,836.97 | 4,998.40 |
| 9+00 | 9,926.97 | 4,998.13 |
| 9+71.58 (© S. ABUT.) | 9,998.55 | 4,997.92 |
| 10+01.05 (© STRUCTURE) | 10,028.02 | 4,997.83 |
| 10+30.52 (© N. ABUT.) | 10,057.49 | 4,997.75 |
| 11+00 | 10,126.97 | 4,997.54 |
| 12+00 | 10,226.97 | 4,997.24 |

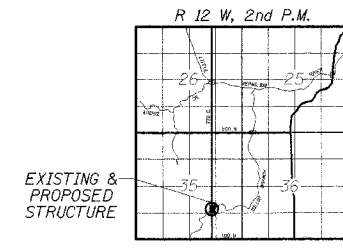
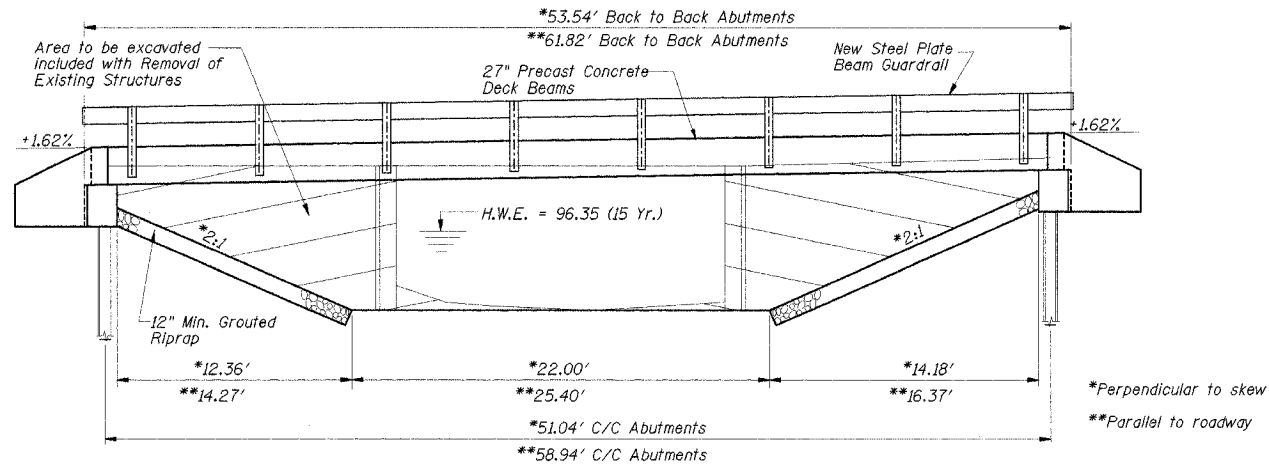
BM #1 - R.R. SPIKE IN TIMBER POST STA 7+48, 22.6' RT. OF ϕ , ELEV. 103.61
 BM #2 - CHISELED "X" IN TOP OF SOUTHWEST CURB, STA. 9+82, - ELEV. 100.00
 BM #3 - R.R. SPIKE IN POWER POLE STA 11+60, 22.0' RT., ELEV. 106.05
 C.P. = CONTROL POINT

BORING DATA

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

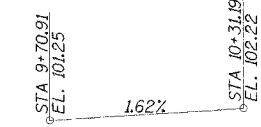
| ROUTE NO. | SECTION | COUNTY | TOWNSHIP | SHEET NO. |
|-----------|---------|-----------|----------|-----------|
| TR 96 | * | VERMILION | 12 | 5 |

*02-03132-00-BR



STRUCTURE NO. 092-3492
 SEC. 02-03132-00-BR BUILT 200
 CARROLL ROAD DISTRICT
 VERMILION COUNTY
 LOADING HS-20-44

NAME PLATE
 See Standard 515001



DESIGN SPECIFICATIONS

AASHTO (2002) and applicable Interims

DESIGN LOADING

HS 20-44
 25 P.S.F Future Wearing Surface

DESIGN STRESSES

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

WATERWAY DATA

| | |
|------------------------------|---------------|
| Drainage Area | 2.96 Sq. Mi. |
| Existing Opening (15 Yr.) | 75.2 Sq. Ft. |
| Required Opening (15 Yr.) | 148.9 Sq. Ft. |
| Proposed Opening (15 Yr.) | 149.6 Sq. Ft. |
| Design Discharge (15 Yr.) | 444.4 C.F.S. |
| Computed Discharge (100 Yr.) | 688.1 C.F.S. |
| 15 Yr. Head | 0.00 Ft. |
| 100 Yr. Head | 0.01 Ft. |

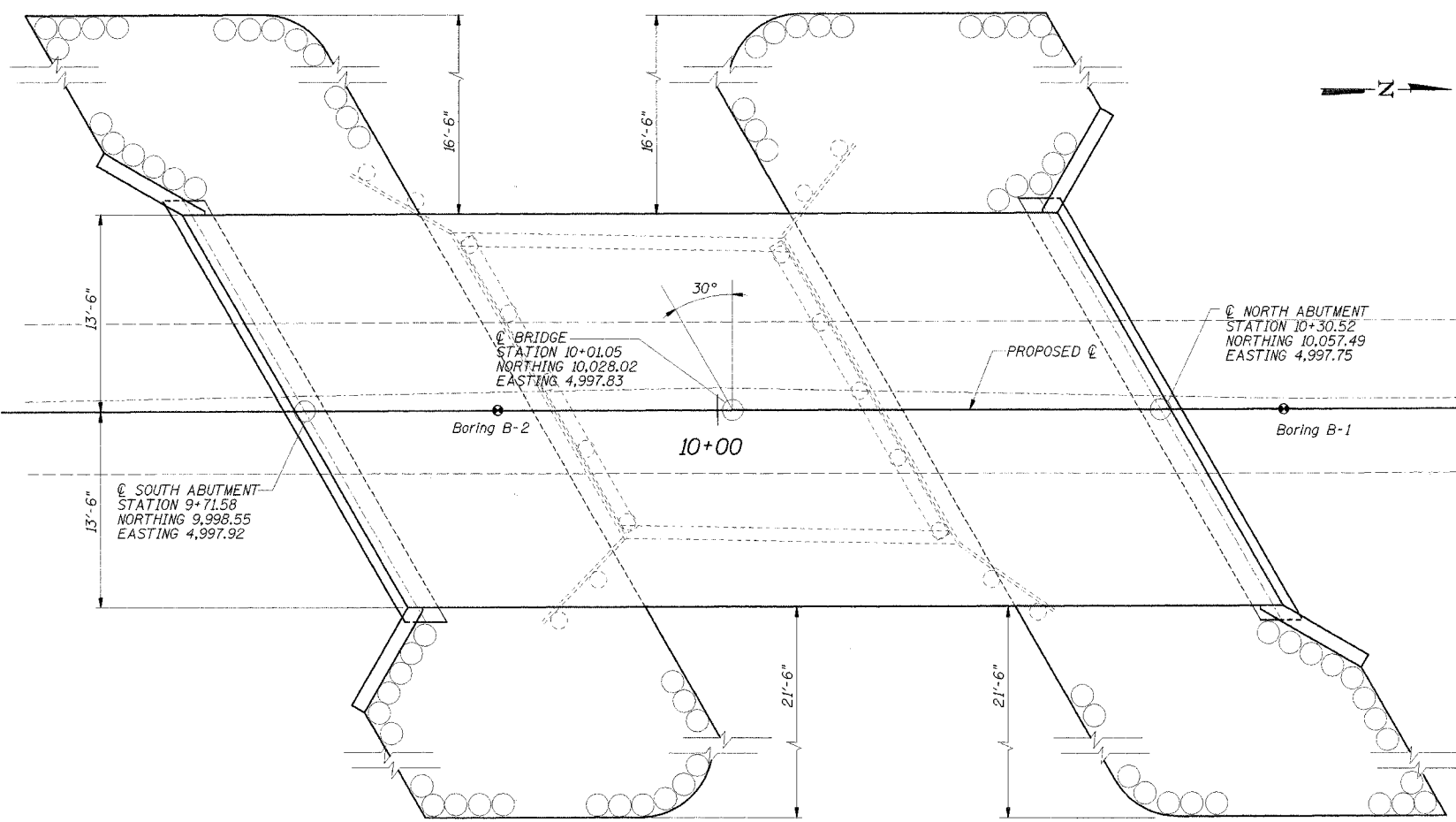
| Elev. | N | Qu | W | Soil Description |
|-------|----|------|----|---|
| 100.0 | | | | Brown Mottled Sandy Clay Loam (Backfill) |
| 5 | 7 | | | Broken Up Concrete/Brick (Drilled Rough) |
| 10 | 15 | 4.5B | 12 | Brown Sandy Clay Loam Till |
| 12 | | 5.2B | 12 | |
| 15 | 9 | 2.1B | 12 | |
| 9 | | 1.9B | 11 | |
| 9 | | 2.7B | 10 | |
| 20 | | | | Gray Clay Loam Till |
| 9 | | 2.3B | 11 | |
| 25 | 14 | 2.2S | 15 | Gray Silty Clay Loam Till with Small Silt Seams |
| 30 | 12 | 2.4B | 11 | |
| 35 | 11 | 2.5B | 11 | |
| 40 | 9 | 2.3B | 11 | |
| 45 | 10 | 1.9B | 13 | |
| 50 | 99 | | 8 | Gray Sand Loam Till with Small Sand Seams |
| 55 | 28 | 6.3S | 12 | Dark Gray Clay Loam Till |

BORING B-2
 STA 9+85.7, Along ϕ of Roadway

BORING B-1
 STA 10+39, Along ϕ of Roadway

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|--|----------|-------|------|-------|
| Removal of Existing Structures | Each | 1 | | 1 |
| Precast Prestressed Concrete Deck Beams (27" Deep) | Sq. Ft. | 1628 | | 1628 |
| Steel Railing, Type S-1 | Foot | 121 | | 121 |
| Concrete Structures | Cu. Yds. | | 21.8 | 21.8 |
| Furnishing Steel Piles, HP10x42 | Foot | | 390 | 390 |
| Driving Steel Piles, HP10x42 | Foot | | 390 | 390 |
| Test Piles, Steel HP10x42 | Each | | 2 | 2 |
| Metal Shoes | Each | | 10 | 10 |
| Concrete Cut-off Wall | Cu. Yds. | | 6.4 | 6.4 |
| Grouted Riprap | Sq. Yds. | | 299 | 299 |
| Name Plate | Each | | 1 | 1 |
| Reinforcement Bars | Pound | | 2240 | 2240 |
| Structure Excavation | Cu. Yds. | | 101 | 101 |
| Controlled Low Strength Material (CLSM) | Cu. Yds. | | 56 | 56 |



GENERAL NOTES

- The Contractor shall drive 1 steel test pile in a permanent location at each abutment as directed by the Engineer before ordering the remainder of piles.
- Boring Data is shown only as a guide to bidders in estimating soil conditions which may be encountered during construction.
- Class SI or MS Concrete shall be used in the abutments.



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

Keith E. Brandau 2/15/06
 KEITH E. BRANDAU
 Illinois Licensed Structural Engineer Number 4905
 License Expires 11/30/06

FRAUENHÖFFER

Frauenhoffer and Associates, P.C. Consulting Engineers
 3002 Crossing Court Champaign, IL 61822 217-351-6268

GENERAL PLAN AND ELEVATION

CARROLL ROAD DISTRICT
 SECTION 02-03132-00-BR
 VERMILION COUNTY

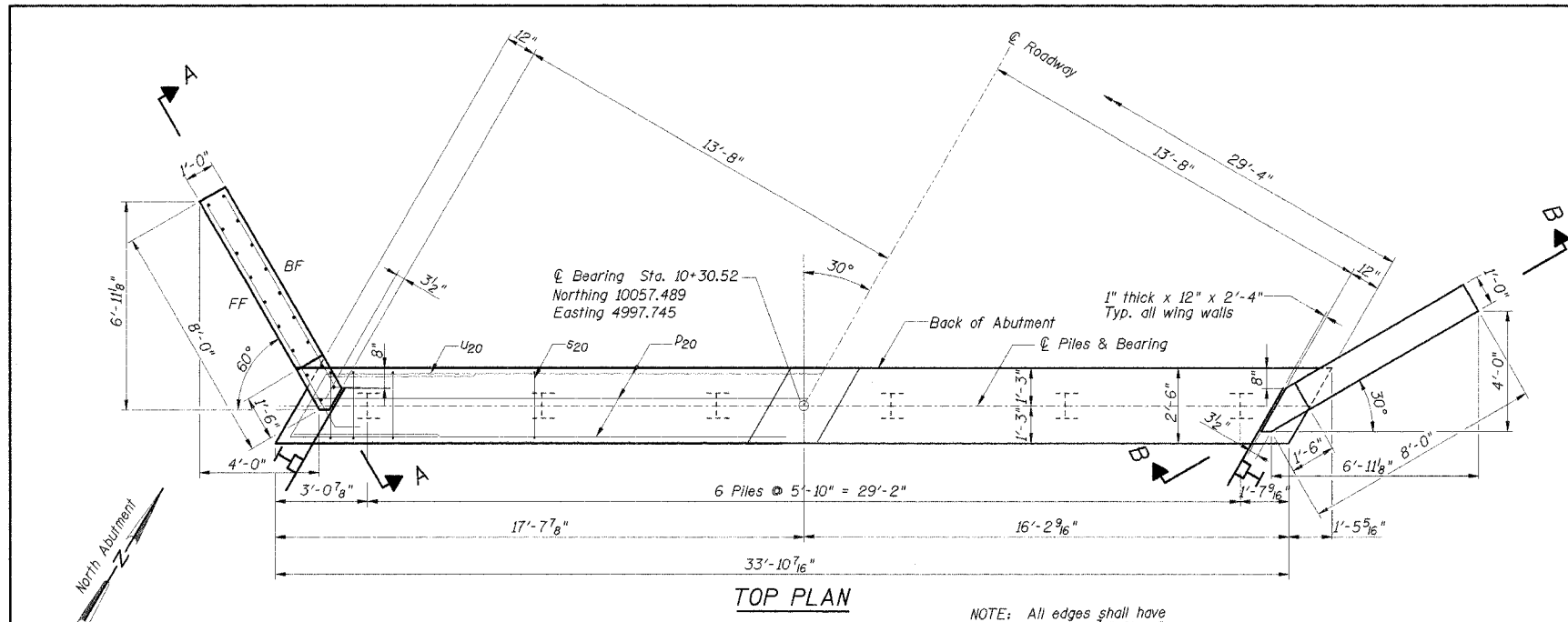
SHEET 5

DWG NO. 5072gpe.dgn
 DATE JAN 2006
 PROJ NO. 5072

| | | | | | |
|------|--------------|-----|------|----------|----|
| DSGN | R.T. Mumm | | | | |
| DR | R.T. Mumm | | | | |
| CHK | K.E. Brandau | | | | |
| APVD | K.E. Brandau | NO. | DATE | REVISION | BY |

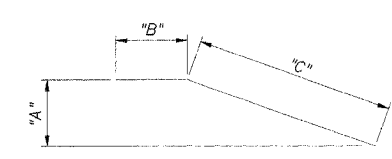
| ROUTE NO. | SECTION | COUNT | TOTAL SHEETS | SHEET NO. |
|------------------------|---------|-----------|------------------|-----------|
| TR 96 | * | Vermilion | 12 | 6 |
| FED. ROAD DIST. VOL. 7 | | ILLINOIS | FED. AID PROJECT | |

*02-03132-00-BR



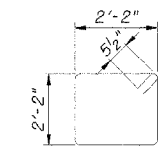
TOP PLAN

NOTE: All edges shall have Standard 3/4" Chamfer, except as noted.

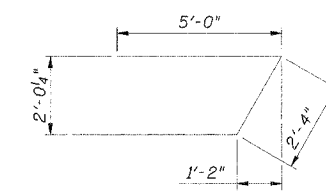


BAR h20, h24, h25, h29, h31

| BAR | "A" | "B" | "C" |
|-----|-----------|--------|-------|
| h20 | 7'-4 3/8" | 0'-10" | 8'-6" |
| h24 | 2'-3 1/2" | 1'-3" | 7'-0" |
| h25 | 5'-0" | 0'-10" | 7'-5" |
| h29 | 2'-3 1/2" | 0'-3" | 7'-0" |
| h31 | 2'-3 1/2" | 1'-0" | 7'-0" |



BAR s20



BAR u20

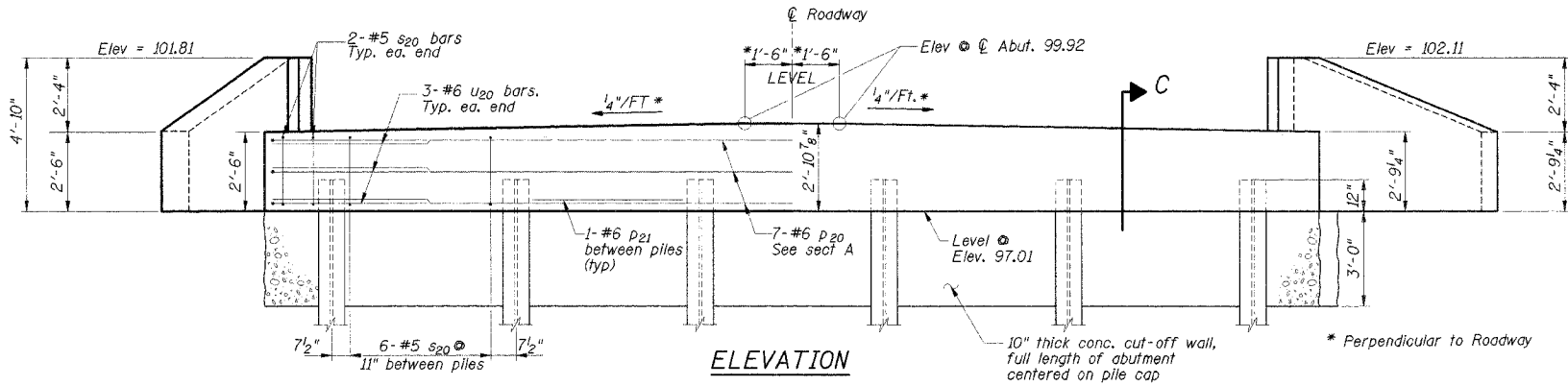
NOTE: Slope top of Abutment to drain between bearing pads

PILE DATA

Type: Steel HP10x42
 No. Required: 5 North Abutment
 Capacity: 30 T/Pile @ North abutment
 Est. Length: 39 Ft. N. Abutment
 Test Piles: 1 North Abutment

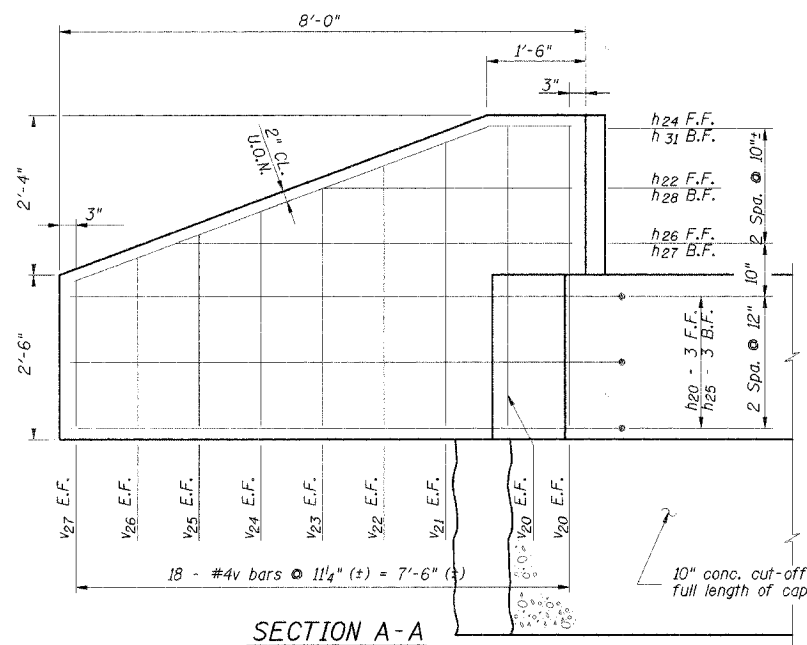
BILL OF MATERIAL-N. ABUT.

| Bar | No. | Size | Length | Shape |
|---|-----|----------|--------|-------|
| h20 | 6 | #5 | 5'-4" | |
| h21 | 1 | #5 | 6'-5" | |
| h22 | 1 | #5 | 3'-10" | |
| h23 | 1 | #5 | 3'-10" | |
| h24 | 2 | #5 | 8'-3" | |
| h25 | 6 | #5 | 8'-3" | |
| h26 | 1 | #5 | 5'-10" | |
| h27 | 1 | #5 | 5'-5" | |
| h28 | 1 | #5 | 3'-1" | |
| h29 | 1 | #5 | 7'-3" | |
| h30 | 1 | #5 | 5'-3" | |
| h31 | 1 | #5 | 8'-0" | |
| h32 | 1 | #5 | 2'-4" | |
| P20 | 7 | #6 | 33'-6" | |
| P21 | 5 | #6 | 4'-10" | |
| s20 | 34 | #5 | 9'-7" | □ |
| u20 | 6 | #6 | 12'-4" | □ |
| v20 | 10 | #4 | 4'-6" | |
| v21 | 6 | #4 | 4'-3" | |
| v22 | 4 | #4 | 3'-11" | |
| v23 | 4 | #4 | 3'-7" | |
| v24 | 4 | #4 | 3'-3" | |
| v25 | 4 | #4 | 2'-11" | |
| v26 | 4 | #4 | 2'-6" | |
| v27 | 4 | #4 | 2'-2" | |
| Concrete Structures | | Cu. Yds. | 10.9 | |
| Reinforcement Bars | | Lbs. | 1120 | |
| Test Pile, Steel HP10x42 | | Each | 1 | |
| Furnish Steel Pile, HP10x42 | | Foot | 195 | |
| Drive Steel Pile | | Foot | 195 | |
| Metal Shoes | | Each | 5 | |
| Concrete Cut-off Wall | | Cu. Yds. | 3.2 | |
| Structure Excavation | | Cu. Yds. | 49 | |
| Controlled Low-Strength Material (CLSM) | | Cu. Yds. | 28 | |



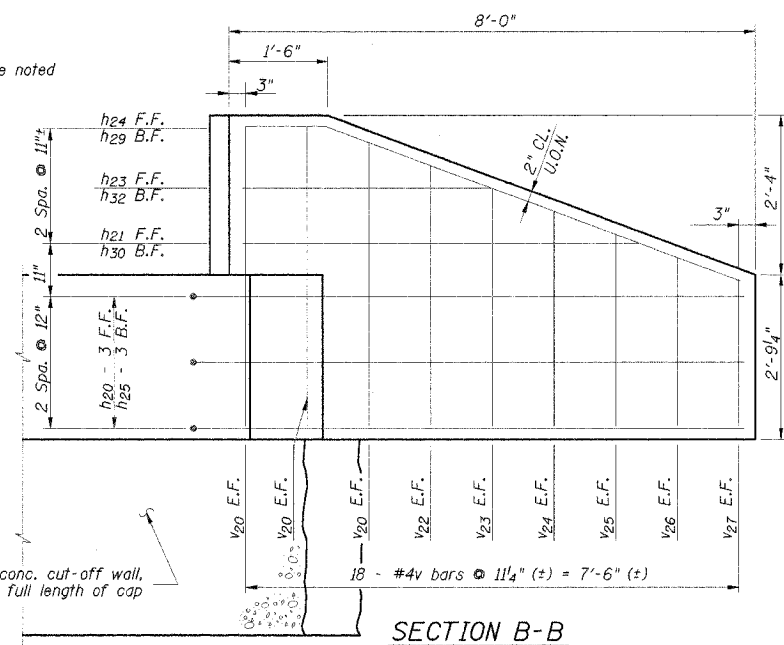
ELEVATION

10" thick conc. cut-off wall, full length of abutment centered on pile cap
 * Perpendicular to Roadway

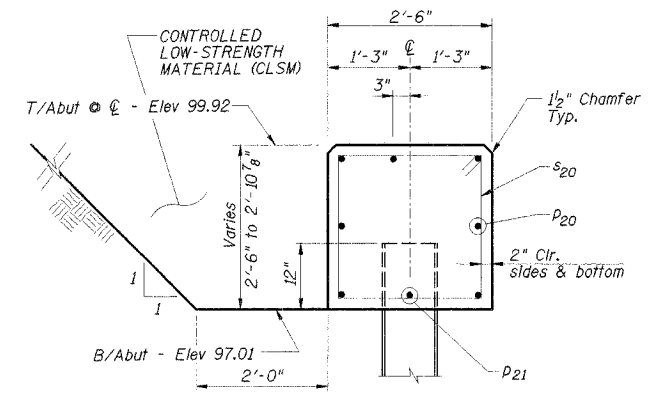


SECTION A-A

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



SECTION B-B



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

| | | | | | |
|------|--------------|-----|------|----------|----|
| DSGN | R.T. Mumm | | | | |
| DR | R.T. Mumm | | | | |
| CHK | K.E. Brandau | | | | |
| APVD | K.E. Brandau | NO. | DATE | REVISION | BY |

FRAUENHÖFFER

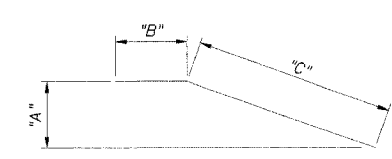
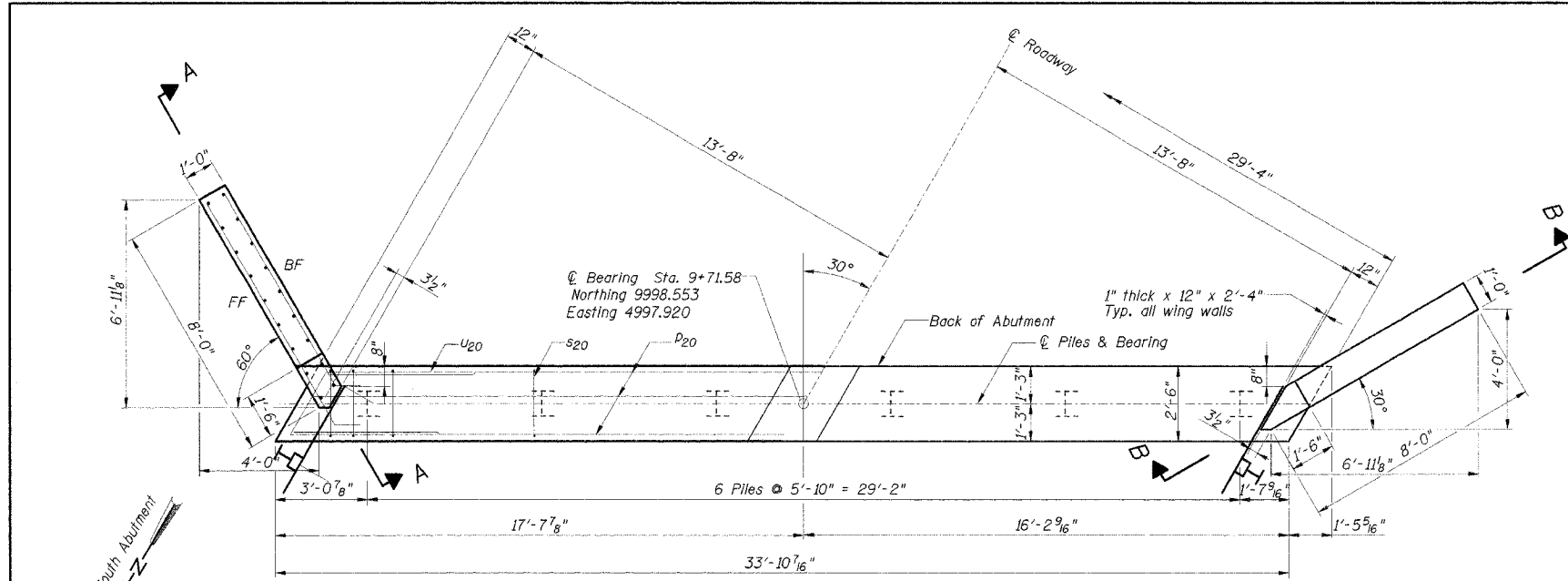
Frauenhoffer and Associates, P.C. Consulting Engineers
 3002 Crossing Court Champaign, IL 61822 217-351-6268

NORTH ABUTMENT
 CARROLL ROAD DISTRICT
 SECTION 02-03132-00-BR
 VERMILION COUNTY

| | |
|----------|----------------|
| SHEET | 6 |
| DWG NO. | 5072-Nabst.dgn |
| DATE | JAN 2006 |
| PROJ NO. | 5072 |

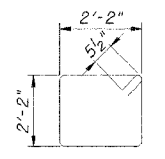
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|-----------------------|---------|-----------|--------------|-----|
| PROJECT NO. | SECTION | COUNT | TOTAL SHEETS | NO. |
| TR 96 | * | Vermilion | 12 | 7 |
| FED. ROAD DIST. NO. 7 | LINES | | PROJECT | |

*02-03132-00-BR

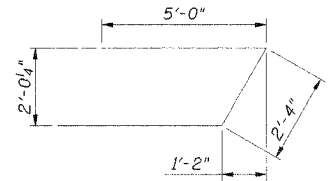


BAR h20, h24, h25, h29, h31

| BAR | "A" | "B" | "C" |
|-----|-----------|--------|-------|
| h20 | 7'-4 3/8" | 0'-10" | 8'-6" |
| h24 | 2'-3 1/2" | 1'-3" | 7'-0" |
| h25 | 5'-0" | 0'-10" | 7'-5" |
| h29 | 2'-3 1/2" | 0'-3" | 7'-0" |
| h31 | 2'-3 1/2" | 1'-0" | 7'-0" |



BAR s20



BAR u20

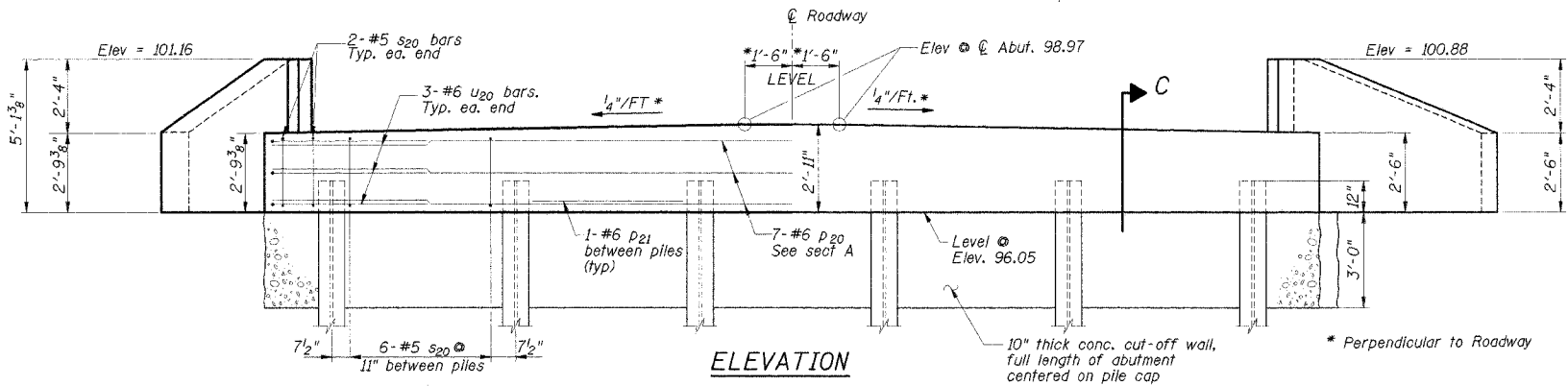
NOTE: SLOPE TOP OF ABUTMENT TO DRAIN BETWEEN BEARING PADS

PILE DATA

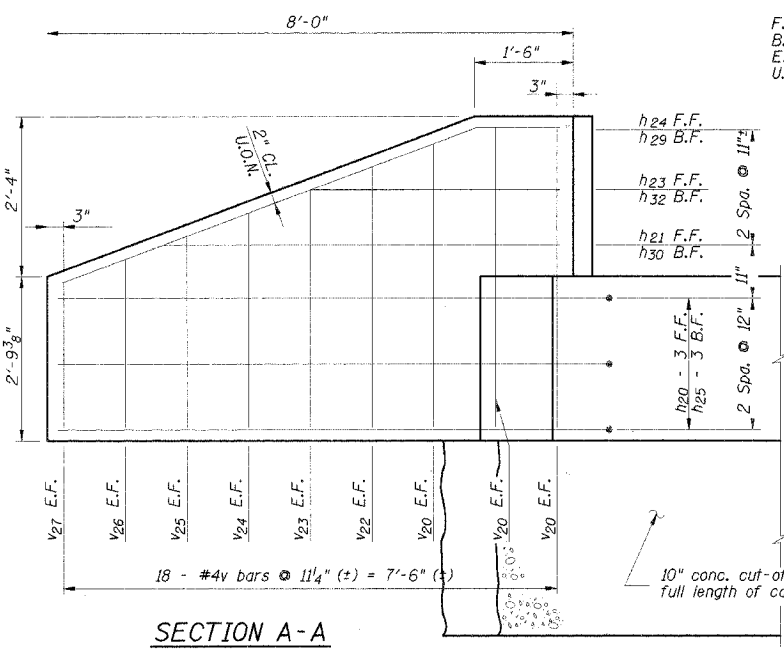
Type: Steel HP10x42
 No. Required: 5 South Abutment
 Capacity: 30 T/Pile @ South abutment
 Est. Length: 39 Ft. S. Abutment
 Test Piles: 1 South Abutment

BILL OF MATERIAL-S. ABUT.

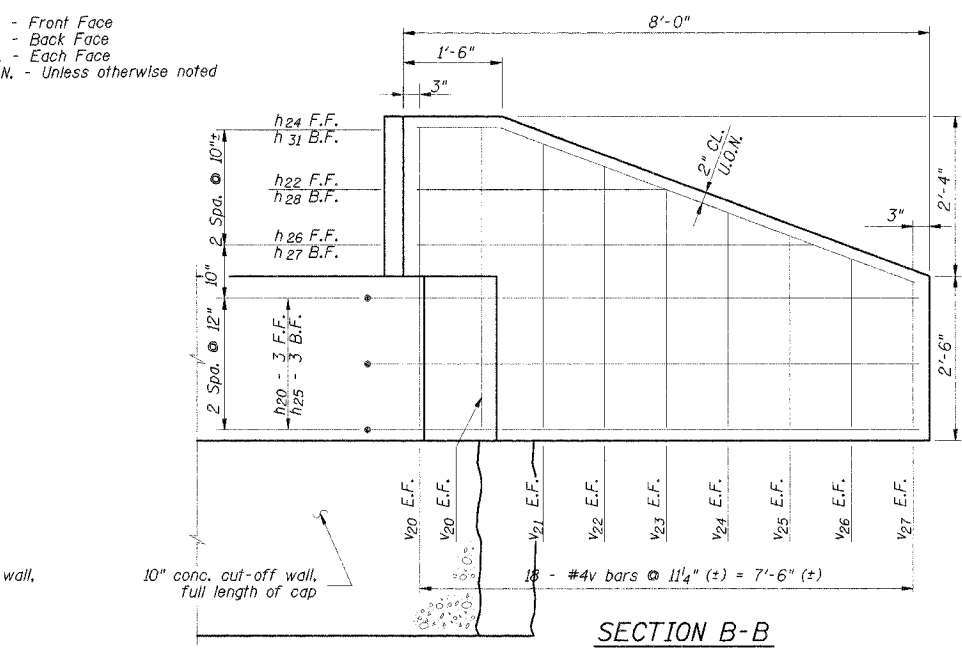
| Bar | No. | Size | Length | Shape |
|---|-----|------|----------|-------|
| h20 | 6 | #5 | 9'-4" | |
| h21 | 1 | #5 | 6'-5" | |
| h22 | 1 | #5 | 3'-6" | |
| h23 | 1 | #5 | 3'-10" | |
| h24 | 2 | #5 | 8'-3" | |
| h25 | 6 | #5 | 8'-3" | |
| h26 | 1 | #5 | 5'-10" | |
| h27 | 1 | #5 | 5'-5" | |
| h28 | 1 | #5 | 3'-1" | |
| h29 | 1 | #5 | 7'-3" | |
| h30 | 1 | #5 | 5'-3" | |
| h31 | 1 | #5 | 8'-0" | |
| h32 | 1 | #5 | 2'-4" | |
| P20 | 7 | #6 | 33'-6" | |
| P21 | 5 | #5 | 4'-10" | |
| S20 | 34 | #5 | 9'-7" | □ |
| U20 | 6 | #6 | 12'-4" | □ |
| V20 | 10 | #4 | 4'-6" | |
| V21 | 6 | #4 | 4'-3" | |
| V22 | 4 | #4 | 3'-11" | |
| V23 | 4 | #4 | 3'-7" | |
| V24 | 4 | #4 | 3'-3" | |
| V25 | 4 | #4 | 2'-11" | |
| V26 | 4 | #4 | 2'-6" | |
| V27 | 4 | #4 | 2'-2" | |
| Concrete Structures | | | Cu. Yds. | 10.9 |
| Reinforcement Bars | | | Lbs. | 1120 |
| Test Pile, Steel HP10x42 | | | Each | 1 |
| Furnish Steel Pile, HP10x42 | | | Foot | 195 |
| Drive Steel Pile | | | Foot | 195 |
| Metal Shoes | | | Each | 5 |
| Concrete Cut-off Wall | | | Cu. Yds. | 3.2 |
| Structure Excavation | | | Cu. Yds. | 52 |
| Controlled Low-Strength Material (CLSM) | | | Cu. Yds. | 28 |



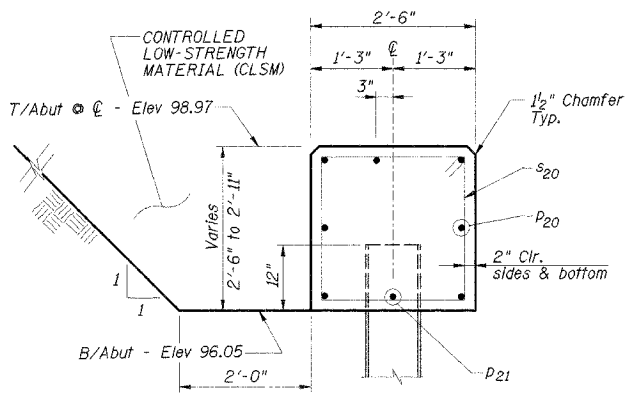
ELEVATION



SECTION A-A



SECTION B-B



SECTION C
(Perpendicular to ϕ of Abutment)

| | | | | | |
|------|--------------|-----|------|----------|----|
| DSGN | R.T. Mumm | | | | |
| DR | R.T. Mumm | | | | |
| CHK | K.E. Brandau | | | | |
| APVD | K.E. Brandau | NO. | DATE | REVISION | BY |

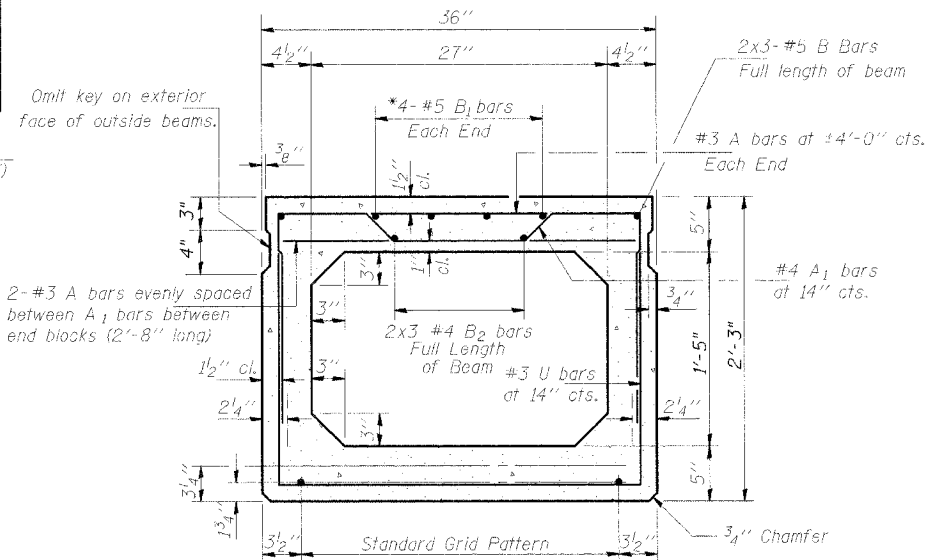
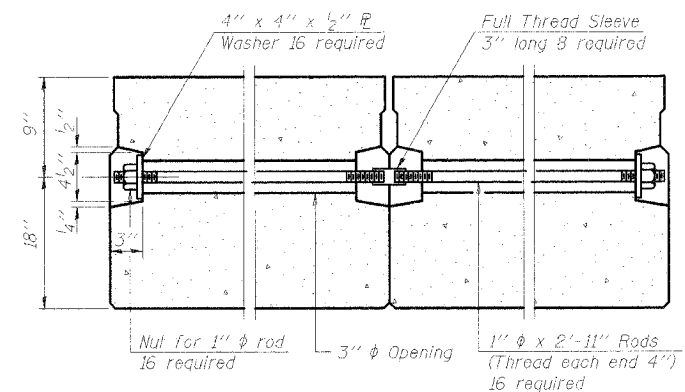
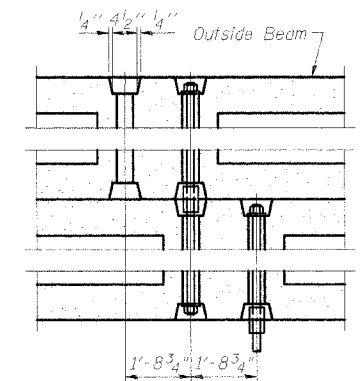
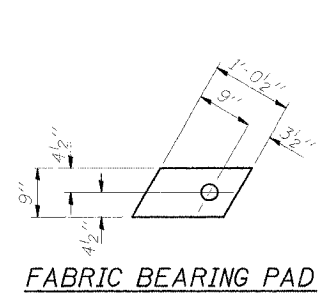
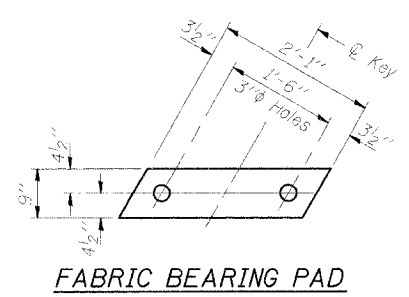
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 3002 Crossing Court Champaign, IL 61822 217-351-6268

SOUTH ABUTMENT
 CARROLL ROAD DISTRICT
 SECTION 02-03132-00-BR
 VERMILION COUNTY

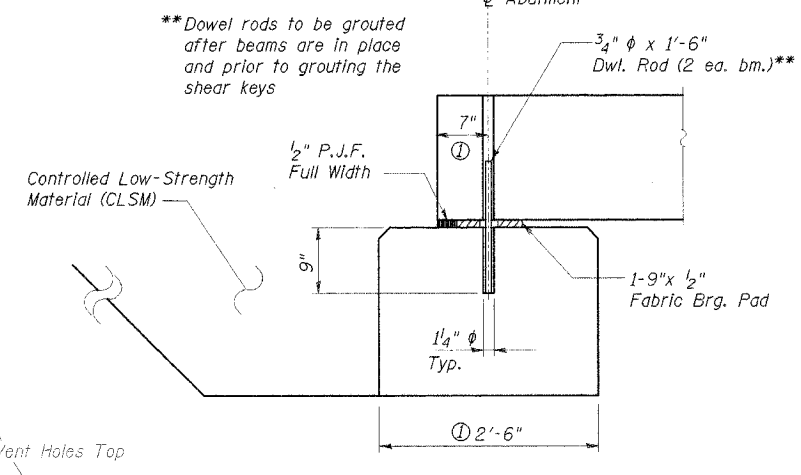
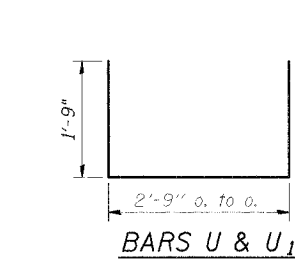
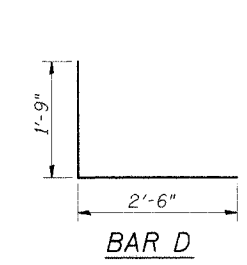
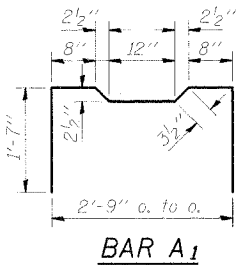
SHEET 7
 DWG NO. 6072-Nabst.dgn
 DATE JAN 2006
 PROJ NO. 5072

| ROUTE NO. | SECTION | COUNTY | SHEET | TOTAL SHEETS |
|-----------------------|---------|-----------|-------|----------------------|
| TR 96 | * | Vermilion | 12 | 8 |
| FED. ROAD DIST. NO. 1 | | ILLINOIS | | FED. AID PROJ. NO. 1 |

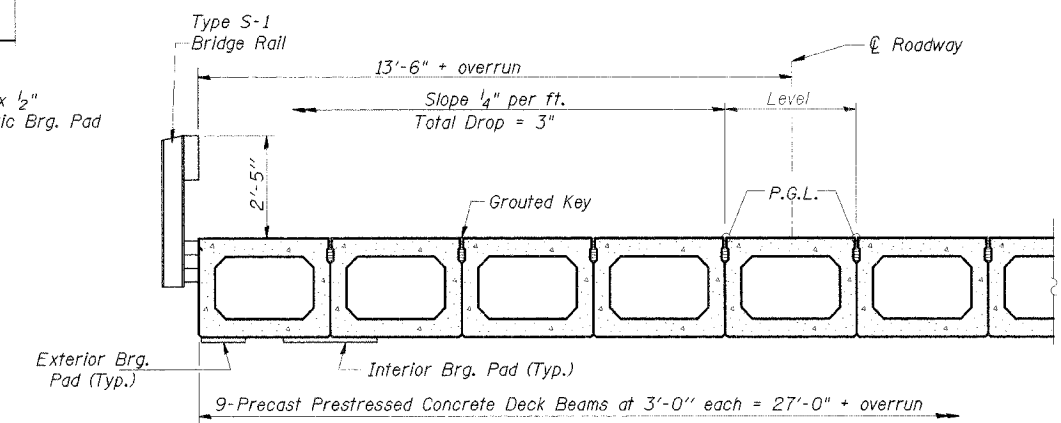
*02-03132-00-BR



Note: Place strands symmetrically about \bar{C} of beam.
 13-1/2" ϕ Strands Each Strand Stressed to 30,900 Lbs.
 7-Strands 1 3/4" up, 4-Strands 3/4" up,
 2-Strands 4 1/2" up



**Dowel rods to be grouted after beams are in place and prior to grouting the shear keys



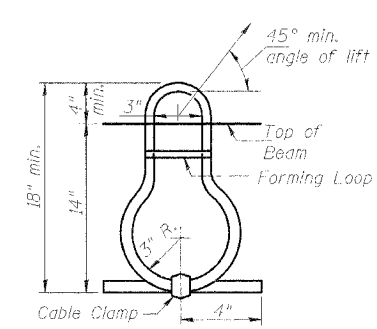
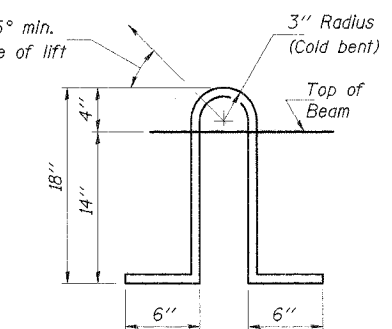
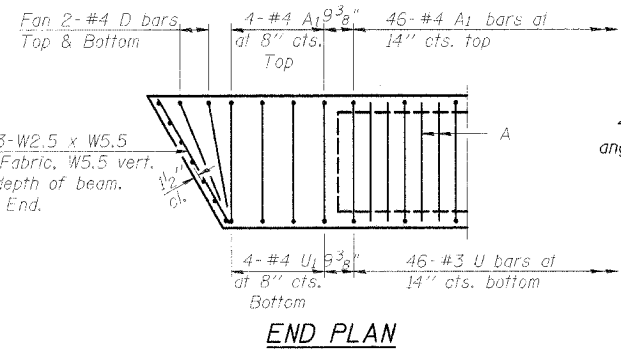
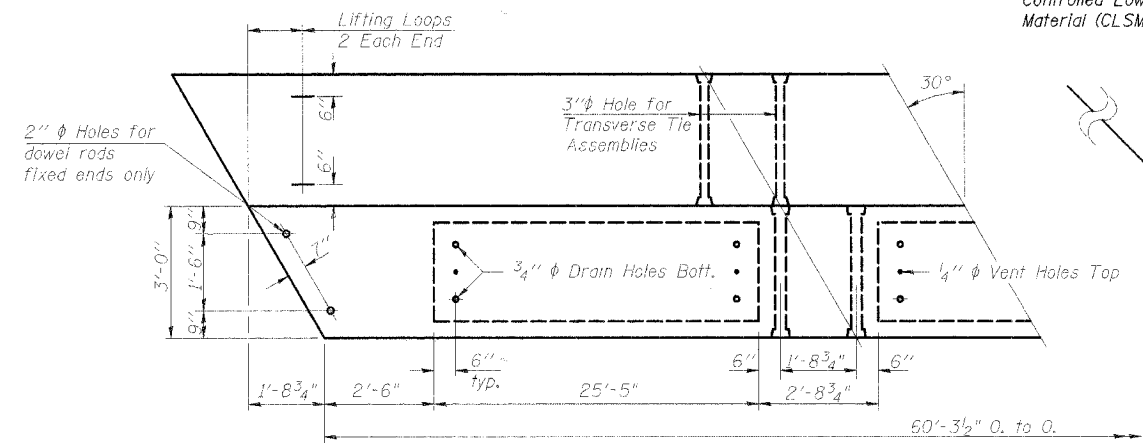
NOTES

HALF CROSS SECTION

BILL OF MATERIAL (One Beam)

| Bar | No. | Size | Length | Shape |
|-------------------------------------|-----|------|---------|---------------|
| A | 94 | #3 | 2'-8" | — |
| A ₁ | 54 | #4 | 6'-1" | ┌ |
| B | 6 | #5 | 21'-10" | — |
| B ₁ | 8 | #5 | 12'-1" | — |
| B ₂ | 6 | #4 | 21'-8" | — |
| D | 8 | #4 | 4'-3" | ┌ |
| U | 46 | #3 | 6'-3" | ┌ |
| U ₁ | 8 | #4 | 6'-3" | ┌ |
| Precast Prestressed Conc. Deck Bms. | | | | Sq. Ft. 1628* |

*Total Quantity of Beams



Prestressing steel shall be uncoated high strength, stress-relieved 7-wire strand, Grade 270. Lifting loops shall be 3/4" diameter, 6x25 class wire rope with Tlber core and shall have a minimum ultimate tensile strength of 45,000 lbs. or 3-1/2" ϕ -270 ksi strands, as shown. 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 that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'ci, shall be 4000 p.s.i. An equal substitution of the low-relaxation strands for the stress-relieved strands will be permitted.

| | | | | | |
|------|--------------|-----|------|----------|----|
| DSGN | R.T. Mumm | | | | |
| DR | R.T. Mumm | | | | |
| CHK | K.E. Brandau | | | | |
| APVD | K.E. Brandau | NO. | DATE | REVISION | BY |

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Frauenhoffer and Associates, P.C. Consulting Engineers
 3002 Crossing Court Champaign, IL 61822 217-351-6268

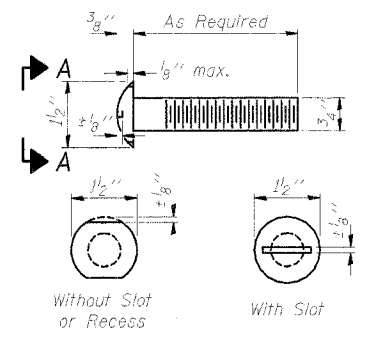
SUPERSTRUCTURE
 CARROLL ROAD DISTRICT
 SECTION 02-03132-00-BR
 VERMILION COUNTY

SHEET 8
 DWG NO. 5072-sup.dgn
 DATE JAN 2006
 PROJ NO. 5072

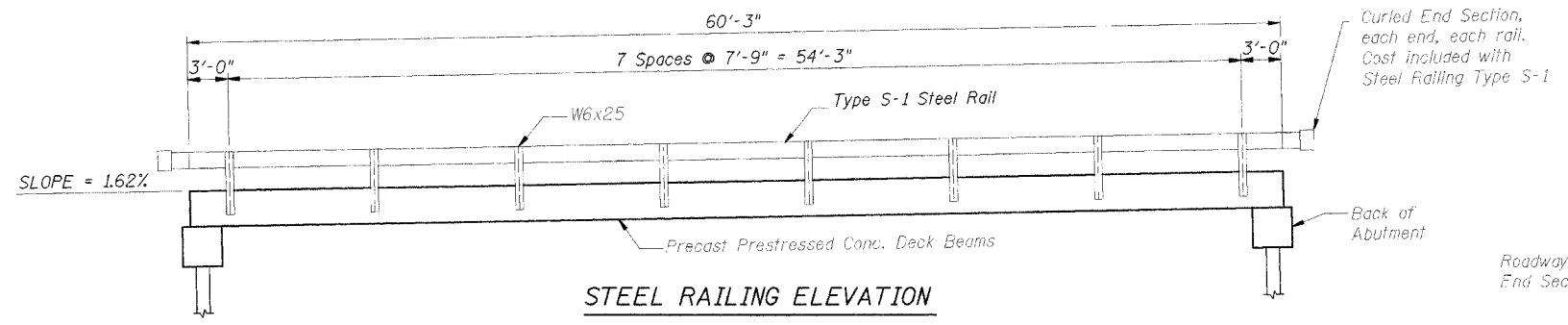
PD-5-R 1 16 04

| | | | | |
|-----------------------|----------|------------------|-------|------|
| SCALE NO. | SECTION | COUNTY | SHEET | DATE |
| TR 96 | * | VERMILION | 12 | 9 |
| FED. ROAD DIST. NO. 7 | LINE NO. | FED. AID PROJECT | | |

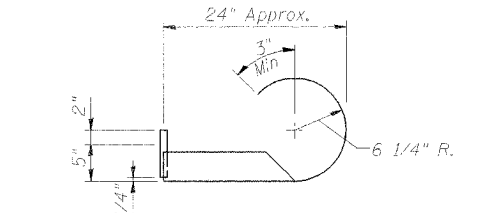
02-03132-00-BR



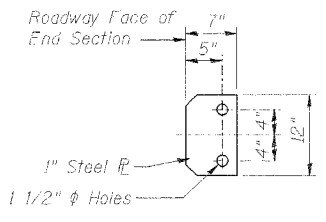
VIEW A-A
ROUND HEAD BOLT



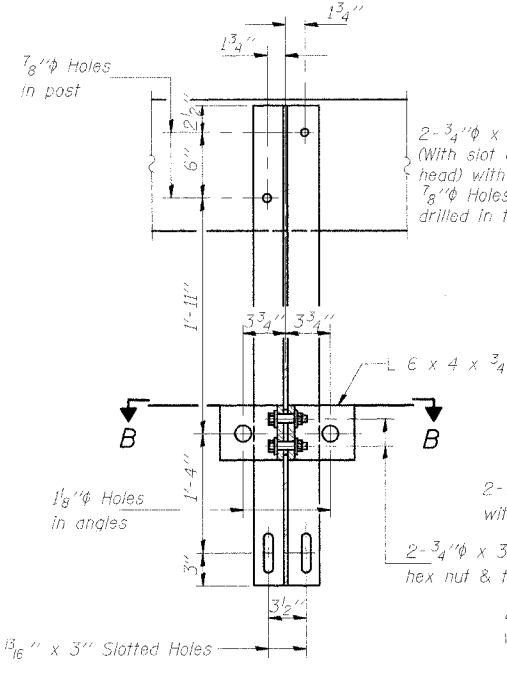
STEEL RAILING ELEVATION



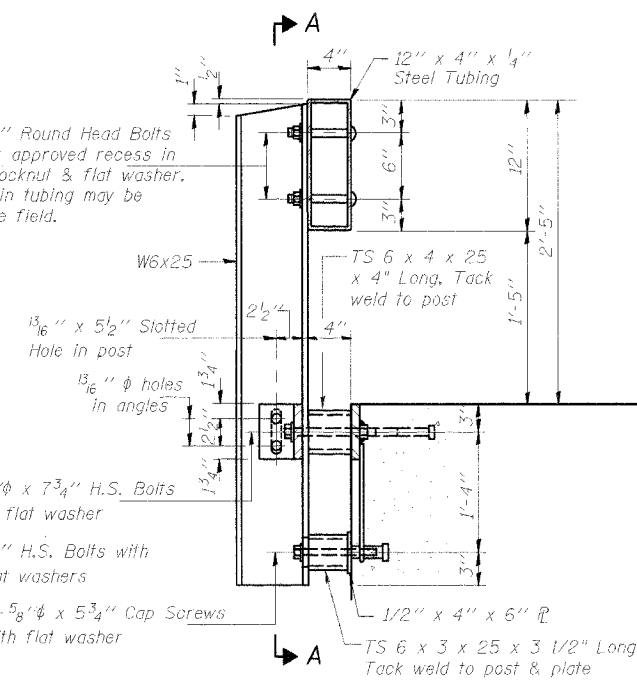
CURLLED END SECTION DETAIL



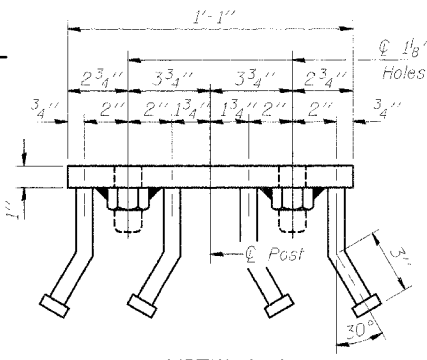
SECTION D-D



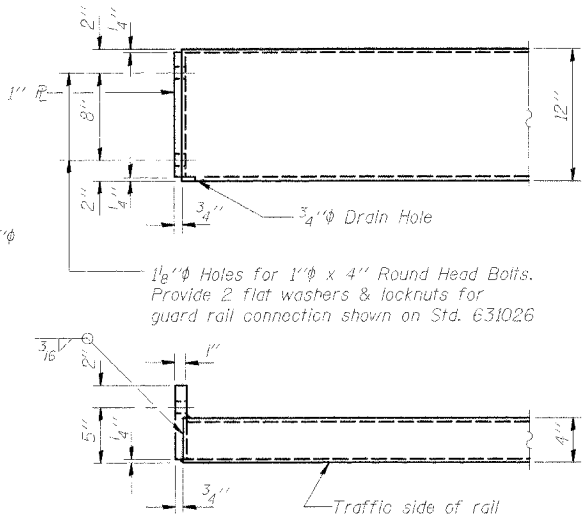
SECTION A-A



SECTION AT RAIL POST



VIEW C-C



END OF RAIL DETAILS

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 36 except posts and angles shall conform to AASHTO M-270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.

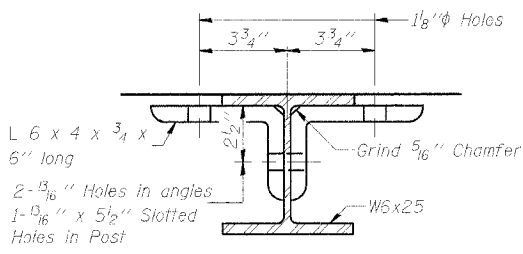
All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8 inch fabric bearing pad between the post and concrete.

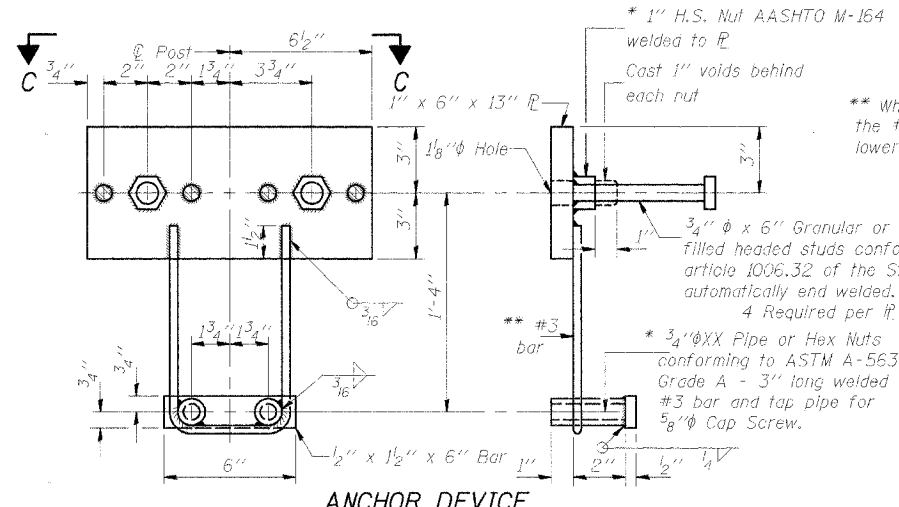
The 3/4 inch high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 505.04(f)(3) of the Standard Specifications. The 1 inch high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8 inch cap screws in bottom of posts shall be tightened to a snug fit only.

BILL OF MATERIAL

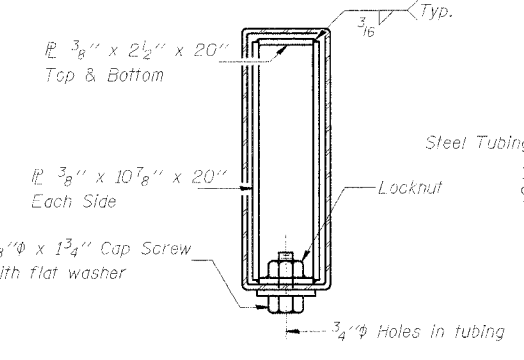
| Item | Unit | Quantity |
|------------------------|------|----------|
| Steel Railing Type S-1 | Foot | 121 |



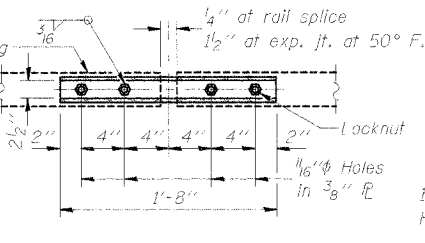
SECTION B-B



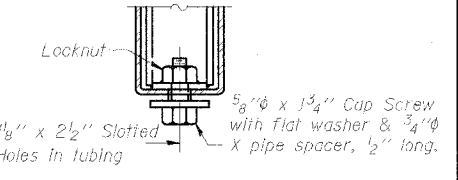
ANCHOR DEVICE



SECTIONS AT RAIL SPLICE



PLAN-BOTT. SPLICE R TYPICAL



RAIL SPLICE CONNECTION AT EXPANSION JT.

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

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3002 Crossing Court Champaign, IL 61822 217-351-6268

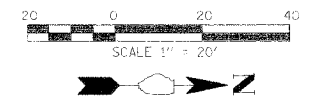
STEEL RAILING TYPE S-1

CARROLL ROAD DISTRICT
SECTION 02-03132-00-BR
VERMILION COUNTY

| | |
|----------|-------------|
| SHEET | 9 |
| DWG NO. | 5072-s1.dgn |
| DATE | JAN 2006 |
| PROJ NO. | 5072 |

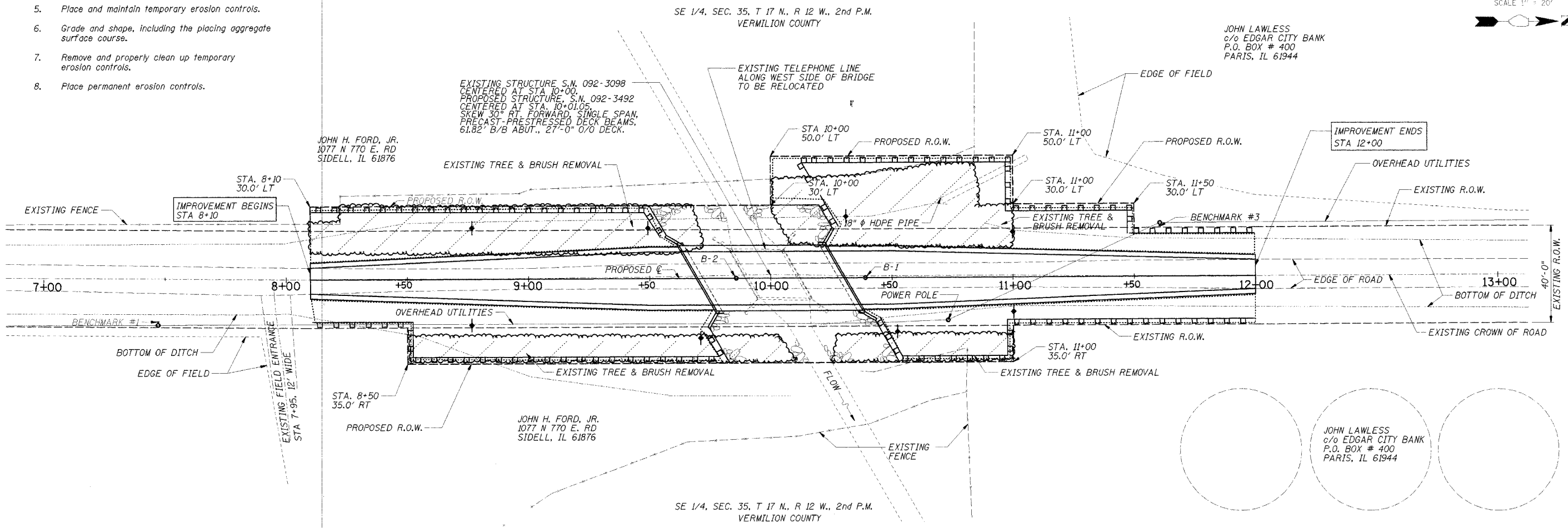
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|---------------------|----------|------------------|-----------|
| ROUTE NO. | SECTION | COUNTY | SHEET NO. |
| TR 96 | * | VERMILION | 12 |
| FED. ROAD DIST. NO. | BUILDING | FED. AID PROJECT | |

* 02-03132-00-BR



INTENDED SEQUENCE

1. Place of the perimeter erosion control barrier prior to the commencement of any work. See Standard 280001.
2. Remove the existing structure.
3. Construct new substructure.
4. Construct new superstructure.
5. Place and maintain temporary erosion controls.
6. Grade and shape, including the placing aggregate surface course.
7. Remove and properly clean up temporary erosion controls.
8. Place permanent erosion controls.



PERIMETER EROSION BARRIER

| STA | OFFSET | TO | STA | OFFSET | LENGTH |
|--------------|--------|----|-------|--------|---------------|
| 8+10 | 30' LT | | 9+50 | 30' LT | 140 FT |
| 8+10 | 20' RT | | 8+50 | 20' RT | 40 FT |
| 8+50 | 20' RT | | 8+50 | 35' RT | 15 FT |
| 8+50 | 35' RT | | 9+79 | 35' RT | 129 FT |
| 9+50 | 30' LT | | 9+59 | 18' LT | 14 FT |
| 9+79 | 35' RT | | 9+73 | 21' RT | 16 FT |
| 10+26 | 21' LT | | 10+12 | 50' LT | 33 FT |
| 10+12 | 50' LT | | 11+00 | 50' LT | 88 FT |
| 11+00 | 50' LT | | 11+00 | 30' LT | 20 FT |
| 11+00 | 30' LT | | 11+50 | 30' LT | 50 FT |
| 11+50 | 30' LT | | 11+50 | 20' LT | 10 FT |
| 11+50 | 20' LT | | 12+00 | 20' LT | 50 FT |
| 10+43 | 18' RT | | 10+53 | 35' RT | 20 FT |
| 10+53 | 35' RT | | 11+00 | 30' LT | 47 FT |
| 11+00 | 35' RT | | 11+00 | 20' RT | 15 FT |
| 11+00 | 20' RT | | 12+00 | 20' RT | 100 FT |
| TOTAL | | | | | 787 FT |

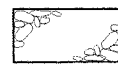
TEMPORARY DITCH CHECKS

| STA | OFFSET | QUANTITY |
|--------------|-----------|---------------|
| 8+75 | LT. | 1 EACH |
| 8+75 | RT. | 1 EACH |
| 9+50 | LT. | 1 EACH |
| 9+71 | RT. | 1 EACH |
| 10+31 | LT. | 1 EACH |
| 10+55 | RT. | 1 EACH |
| 11+00 | LT. & RT. | 2 EACH |
| TOTAL | | 8 EACH |

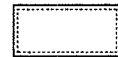
TEMPORARY EROSION CONTROL

| Bill of Materials | | |
|-----------------------------------|-------|----------|
| Item | Unit | Quantity |
| Temporary Erosion Control Seeding | Pound | 300 |
| Temporary Ditch Checks | Each | 8 |
| Perimeter Erosion Barrier | Foot | 787 |

PERMANENT EROSION CONTROL



Grouted RipRap

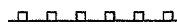


Seeding, Cl. 2 with Fertilizer and Mulch

TEMPORARY EROSION CONTROL



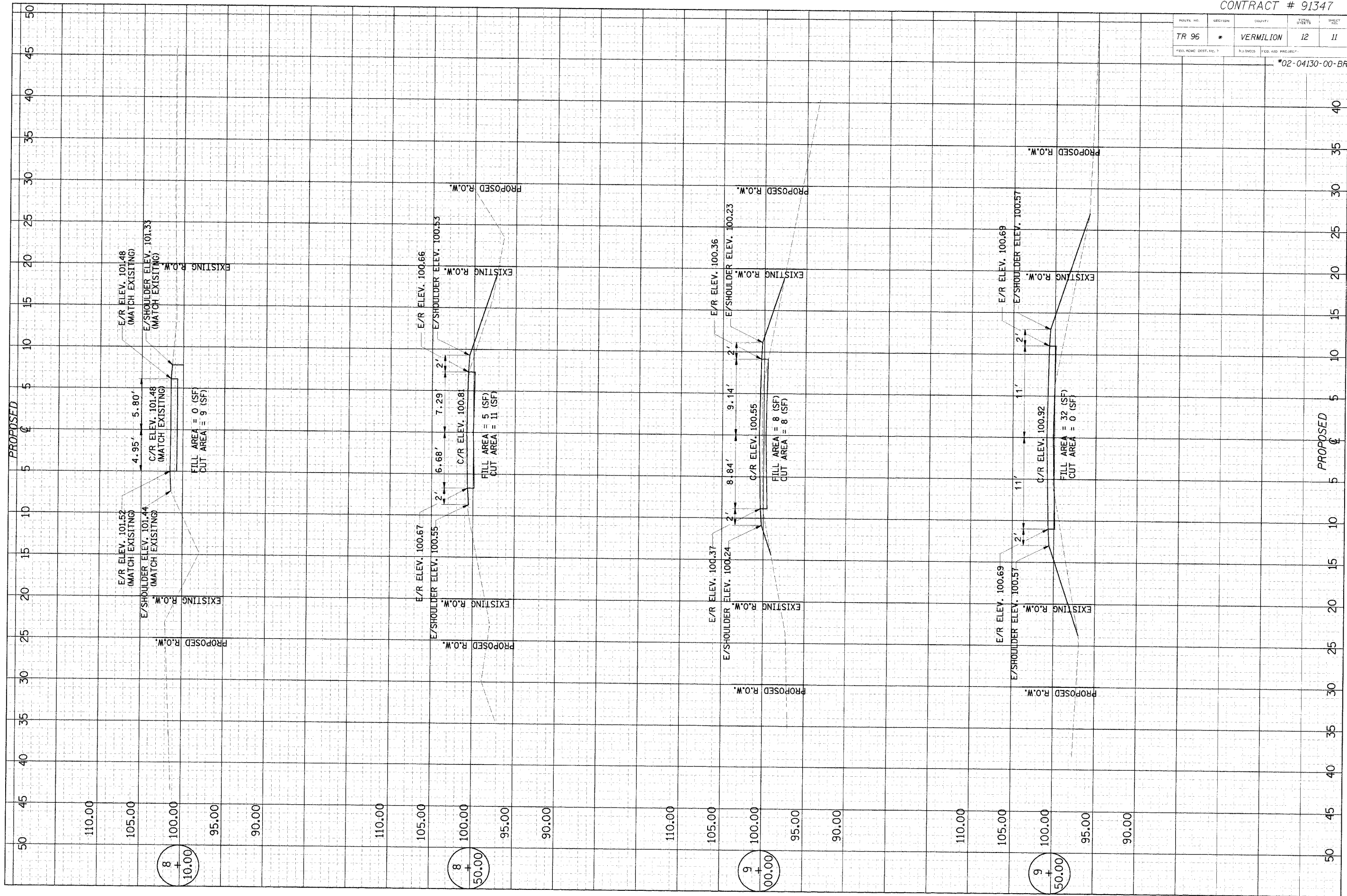
Temporary Ditch Check



Perimeter Erosion Barrier

| | | | | |
|-------------------------|---------|--------------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| TR 96 | * | VERMILION | 12 | 11 |
| *ELEV. ROAD DEST. NO. 1 | | DRAWINGS FOR PROJ. NO. * | | |

*02-04130-00-BR



| | | | |
|----------------------|---------|------------------|-------|
| ROUTE NO. | SECTION | COUNTY | SHEET |
| TR 96 | * | VERMILION | 12 |
| FED. ROAD EST. NO. 7 | | FED. AID PROJECT | |

