

| | | | | |
|---------------------|-----------------------|--------------------|--------------|-----------|
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 770 | D7 BEAM REPAIR 2008-5 | MOULTRIE | 6 | 1 |
| FED. ROAD DIST. NO. | ILLINOIS | CONTRACT NO. 74302 | | |

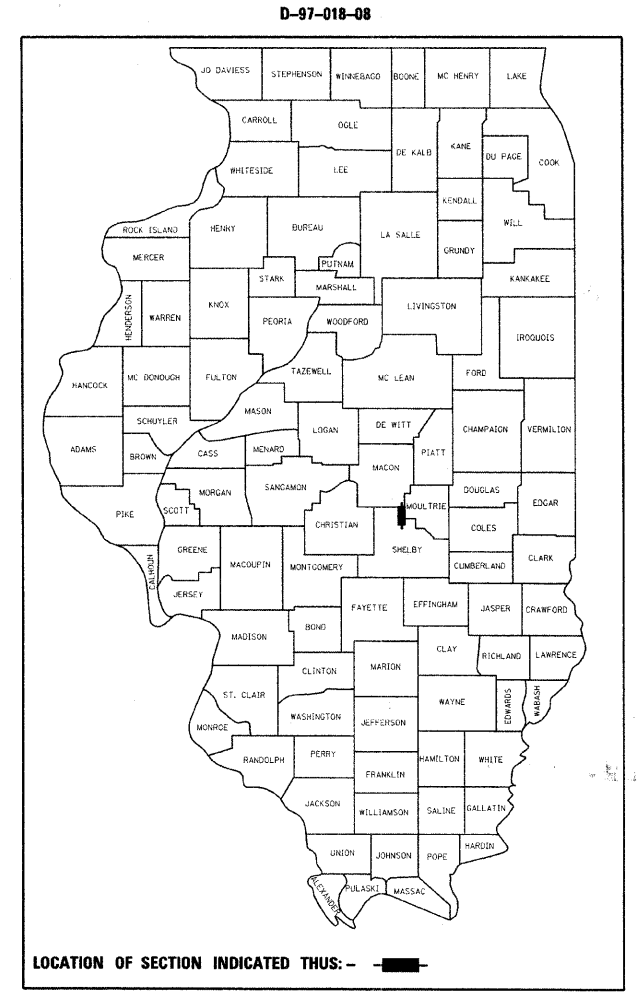
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

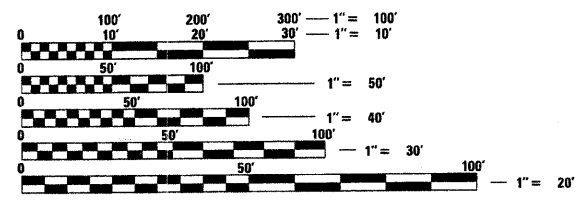
FAP ROUTE 770 (IL 128)
D7 BEAM REPAIR 2008-5

MOULTRIE COUNTY
C-97-053-08

FOR INDEX OF SHEETS, SEE SHEET NO. 2

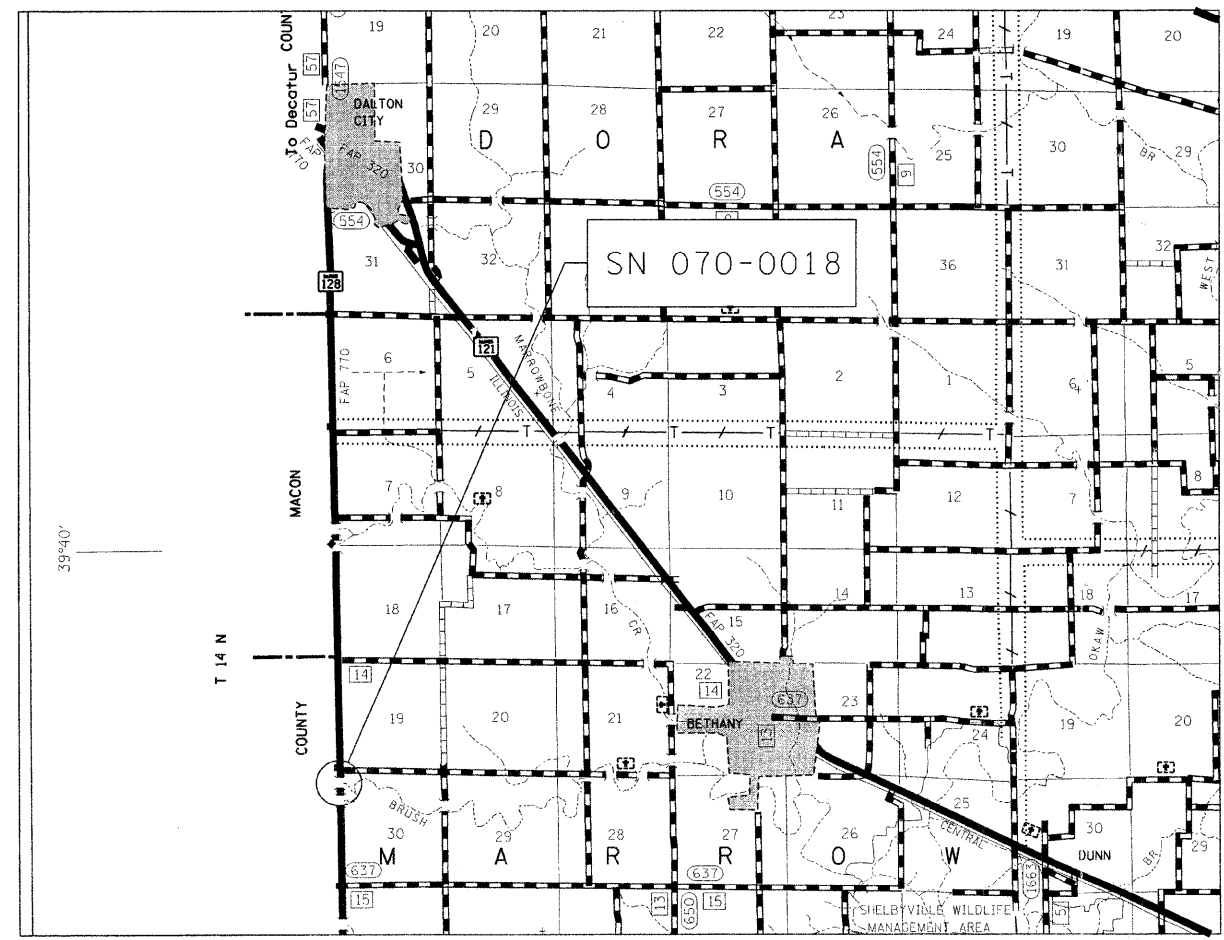


ADT (2005) = 2500



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

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



STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED February 15, 2008

Christine M. Reed
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 21, 2008
Eric Edwards
 ENGINEER OF DESIGN AND ENVIRONMENT

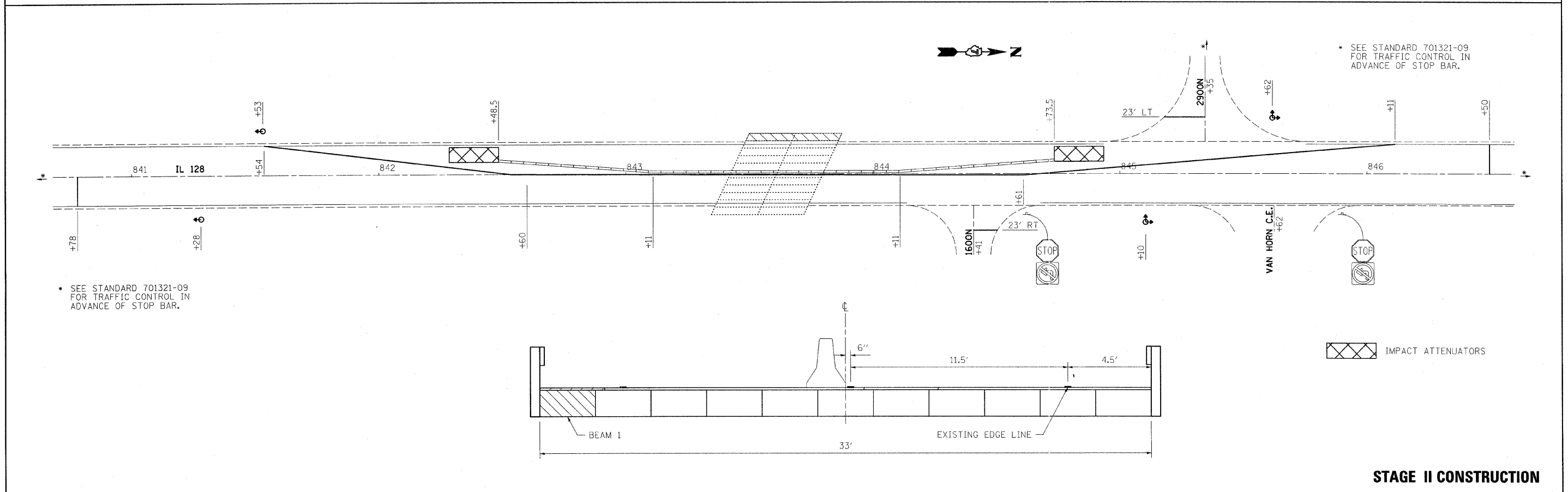
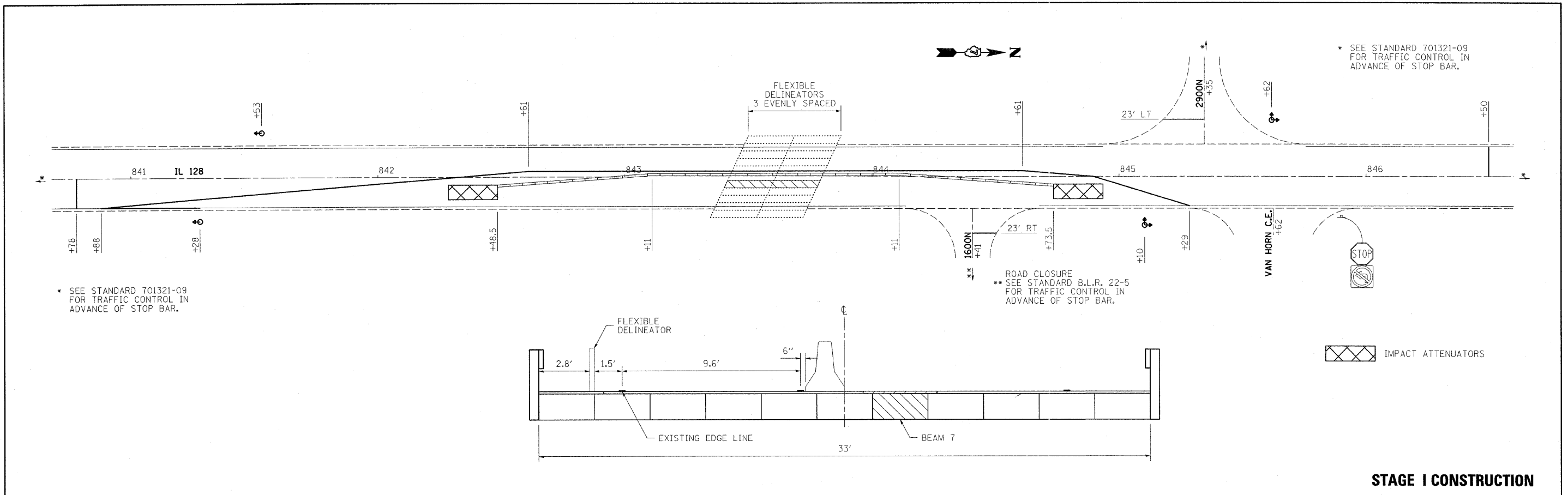
March 21, 2008
Christine M. Reed
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

PROJECT ENGINEER: MARK DAUGHERTY
 PROJECT MANAGER: BRIAN J. BIEMAN

CONTRACT NO. 74302

| SUMMARY OF QUANTITIES | | | 100% STATE | CONSTRUCTION TYPE CODE | |
|-----------------------|---|-------|------------------|------------------------|--|
| CODE NO | ITEM | UNIT | TOTAL QUANTITIES | SFTY-2A | |
| 40603335 | HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50 | TON | 4 | 4 | |
| 44001005 | HOT-MIX ASPHALT SURFACE REMOVAL | SQ YD | 7 | 7 | |
| 50400305 | PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH) | SQ FT | 222 | 222 | |
| 50900905 | REMOVING AND RE-ERECTING EXISTING RAILING | FOOT | 38 | 38 | |
| 58100200 | WATERPROOFING MEMBRANE SYSTEM | SQ YD | 32 | 32 | |
| 58300100 | PORTLAND CEMENT MORTAR FAIRING COURSE | FOOT | 113 | 113 | |
| 67100100 | MOBILIZATION | L SUM | 1 | 1 | |
| 70100405 | TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 | EACH | 1 | 1 | |
| 70101835 | TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 22 | L SUM | 1 | 1 | |
| 70106500 | TEMPORARY BRIDGE TRAFFIC SIGNALS | EACH | 1 | 1 | |
| 70106700 | TEMPORARY RUMBLE STRIP | EACH | 6 | 6 | |
| 70301000 | WORK ZONE PAVEMENT MARKING REMOVAL | SQ FT | 457 | 457 | |
| 70400100 | TEMPORARY CONCRETE BARRIER | FOOT | 225 | 225 | |
| 70400200 | RELOCATE TEMPORARY CONCRETE BARRIER | FOOT | 125 | 125 | |
| X0320047 | REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS | SQ FT | 225 | 225 | |
| Z0001900 | ASBESTOS BEARING PAD REMOVAL | EACH | 2 | 2 | |
| Z0030250 | IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3 | EACH | 2 | 2 | |
| Z0030350 | IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3 | EACH | 2 | 2 | |

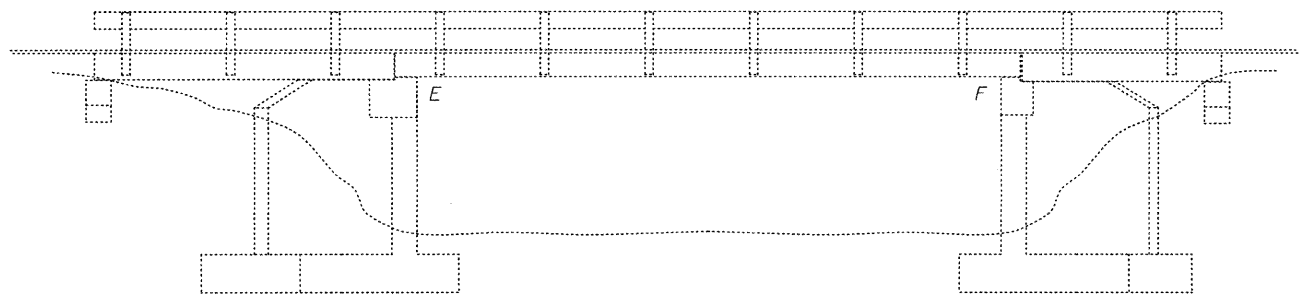


| | | | | | | | | | | | | |
|---|-----------------------------|------------|-----------|---|---|-----------|--------------------|----------------------------------|--------------------|--------------------|----------------|--|
| FILE NAME = c:\projects\74302d\ststage_74302.dgn | USER NAME = steffernk | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | STAGE CONSTRUCTION | | S.B.I. RTE. 169 | SECTION D7 BEAM REPAIR 2008-5 | COUNTY MOULTRIE | TOTAL SHEETS 8 | SHEET NO. 4 | |
| | PLOT SCALE = 20,0000' / IN. | DRAWN - | REVISED - | | SCALE: | SHEET NO. | OF SHEETS | STA. | TO STA. | CONTRACT NO. 74302 | | |
| | PLOT DATE = 2/15/2008 | CHECKED - | REVISED - | | FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT | | | | | | | |
| | | DATE - | REVISED - | | | | | | | | | |

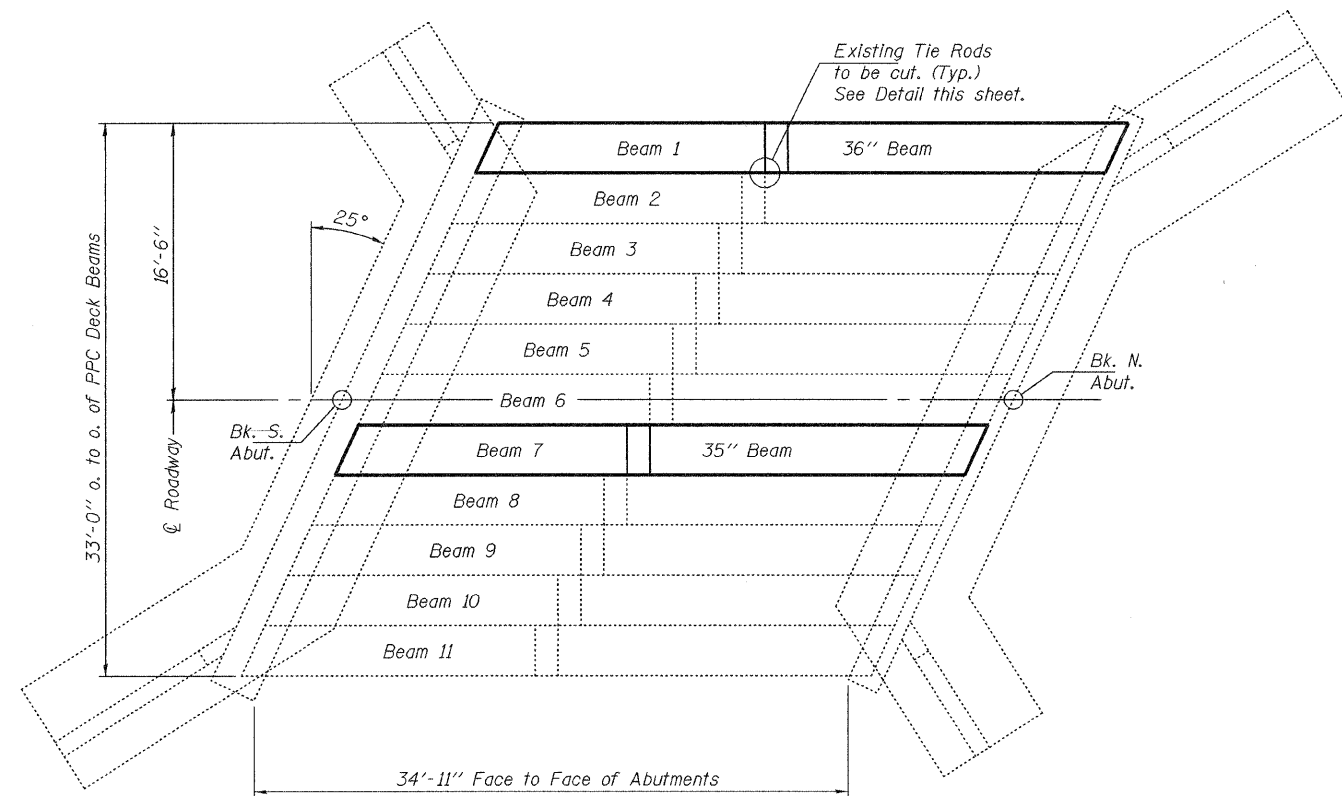
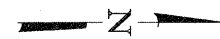
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|-------------------|--------------|-----------|-------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 1 4 SHEETS |
| | | MOULTRIE & SHELBY | 8 | 5 | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | | |

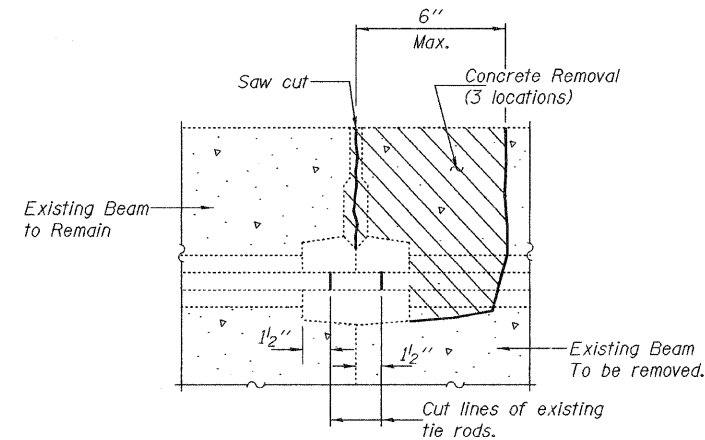
Contract Number: 74302



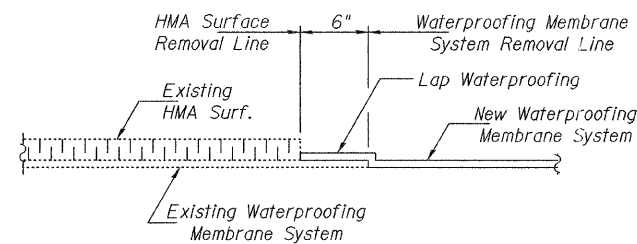
ELEVATION



PLAN



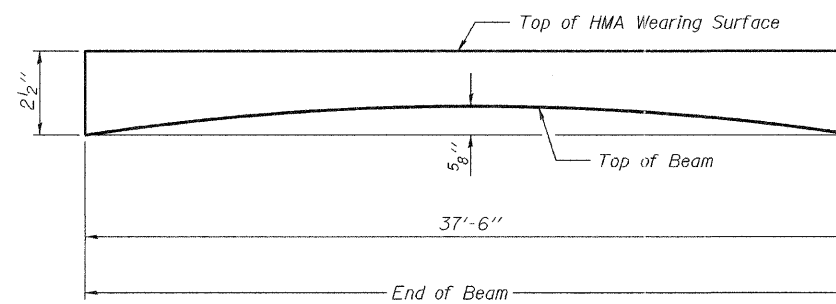
BEAM REMOVAL DETAIL
AT TRANSVERSE TIES



WATERPROOFING TREATMENT

DESIGN STRESSES

PRECAST PRESTRESSED UNITS
 $f'c = 5,000$ psi
 $f'ci = 4,000$ psi
 $f's = 270,000$ psi ($\frac{1}{2}$ " ϕ low lax strands)
 $f'si = 201,960$ psi ($\frac{1}{2}$ " ϕ low lax strands)



ANTICIPATED INITIAL CAMBER DIAGRAM

GENERAL NOTES

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractor's responsibility to account for the condition of the beams when developing construction procedures.

If the contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new or existing beams. To distribute load to multiple beams and protect the existing surface, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. If heavy equipment will be placed on new PPC deck beams, the following shall be done prior to placement of the timber mats: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys.

Any damage done to the bridge during beam removal shall be repaired by the Contractor. Cost to be included in the cost of Removal of Existing PPC Deck Beams.

The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with PPC Deck Beams.

Temporary Concrete Barrier shall only be anchored into the overlay and not into the PPC Deck Beams.

TOTAL BILL OF MATERIAL

| ITEM | UNIT | QUANTITY |
|---|---------|----------|
| Removal of Existing PPC Deck Beams | Sq. Ft. | 225 |
| Precast Prestressed Concrete Deck Beams (17" Depth) | Sq. Ft. | 222 |
| Hot-Mix Asphalt Surface Removal | Sq. Yd. | 6.7 |
| HMA Surface Course Mix "D" N50 | Tons | 3.9 |
| PC Mortar Fairing Course | Foot | 113 |
| Asbestos Bearing Pad Removal | Each | 2 |
| Waterproofing Membrane System | Sq. Yd. | 31.7 |
| Removing & Re-erecting Existing Railing | Foot | 38 |

PLAN & ELEVATION

OVER BRUSH CREEK
MOULTRIE & SHELBY COUNTIES
SN 070-0018

| | |
|----------|---------------------|
| DESIGNED | Adrian T. Holloway |
| CHECKED | John J. [Signature] |
| DRAWN | Steffen |
| CHECKED | ATH AJB |

MARCH 3, 2008
 EXAMINED [Signature]
 ENGINEER OF STRUCTURAL SERVICES
 PASSED [Signature]
 ENGINEER OF BRIDGES AND STRUCTURES

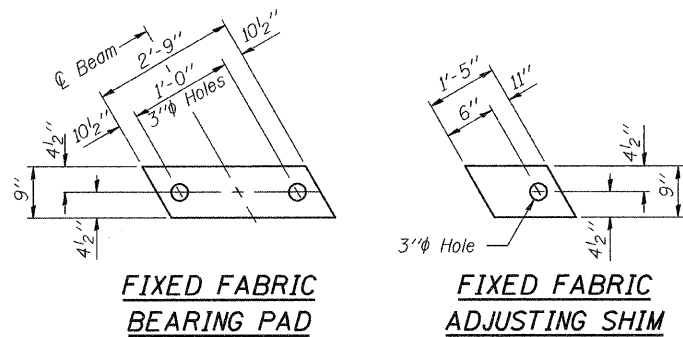


EXPIRES 11-30-2008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|---------|-------------------|------------------|-----------|-------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 2 4 SHEETS |
| | | MOULTRIE & SHELBY | 8 | 6 | |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | FED. AID PROJECT | | |

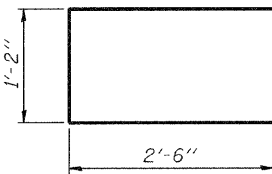
Contract Number: 74302



FIXED FABRIC BEARING PAD

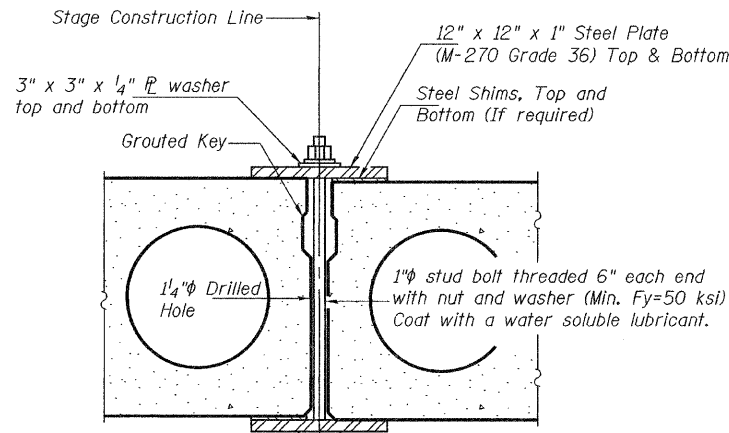
(Expansion Bearing Pads and Adjusting Shims similar without holes)

FIXED FABRIC ADJUSTING SHIM

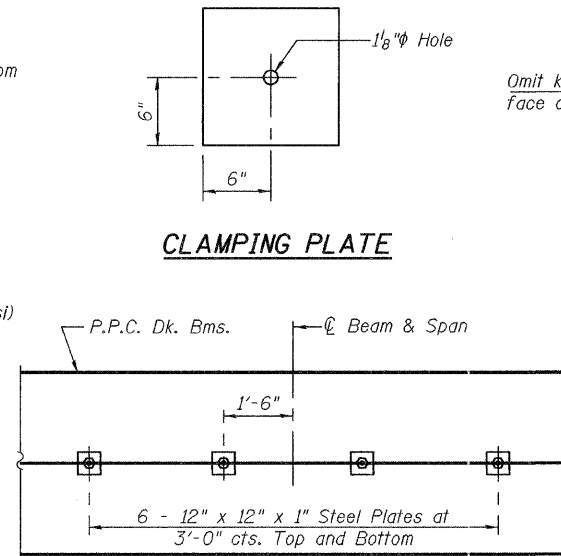


BAR U1

Notes:
See Special Provisions For Stage Construction Precast Prestressed Concrete Deck Beams.
See Stage Construction Detail for Traffic Lane.
Cost is included with Precast Prestressed Concrete Deck Beams.



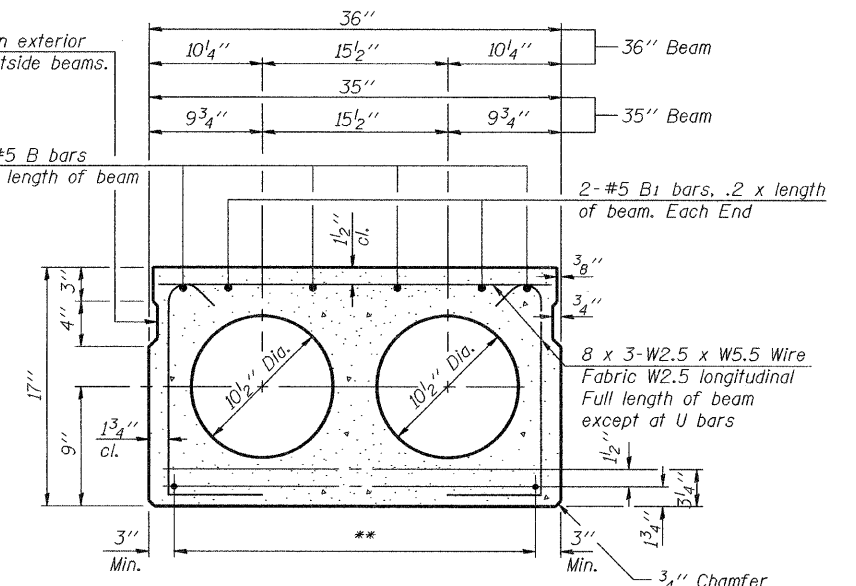
SECTION



CLAMPING PLATE

Omit key on exterior face of outside beams.

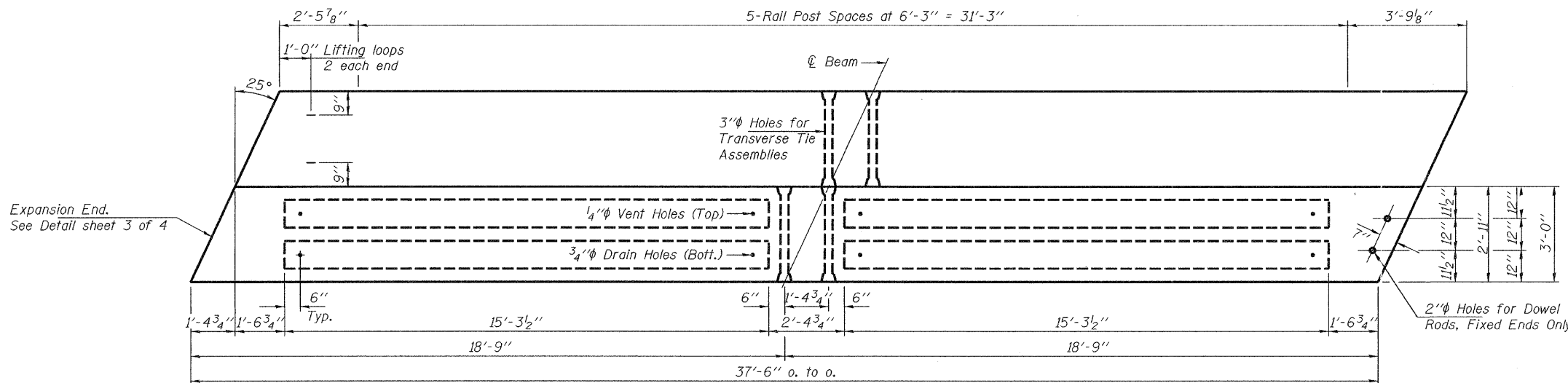
4-#5 B bars Full length of beam



TYPICAL SECTION

11-1/2" Strands, Each Strand Stressed to 30,900 Lbs.
9-Strands 1 3/4" up, 2-Strands 12" up

Note:
Place strands symmetrically about centerline of beam.



PLAN

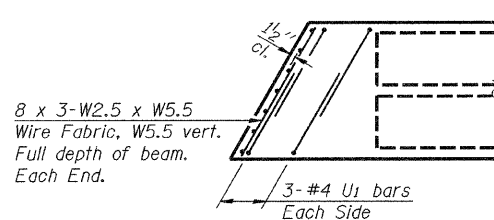
Expansion End. See Detail sheet 3 of 4

2" Holes for Dowel Rods, Fixed Ends Only

**** TRANSVERSE PLACEMENT GUIDELINES**

1. Place strands symmetrically about centerline of beam.
2. The minimum distance from center to center of strands in all directions shall be 2".
3. The minimum clearance from strand to dowel hole shall be 1/2".
4. The minimum clearance from strand to void shall be 1/2".

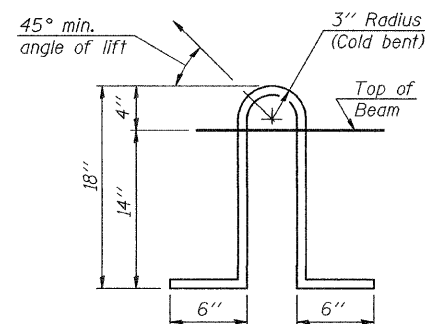
Vertical placement of strands shall not be adjusted to satisfy the above guidelines.



END PLAN

| | |
|----------|---------|
| DESIGNED | ATH |
| CHECKED | AJB |
| DRAWN | Steffen |
| CHECKED | ATH AJB |

MARCH 3, 2008
EXAMINED *Carl Perry*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2-1/2" 270 ksi strands, as shown. 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. Non prestressing steel shall conform to ASTM A 706 (IL MOD), 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 shown 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. Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'ci, shall be 4000 p.s.i.

BILL OF MATERIAL

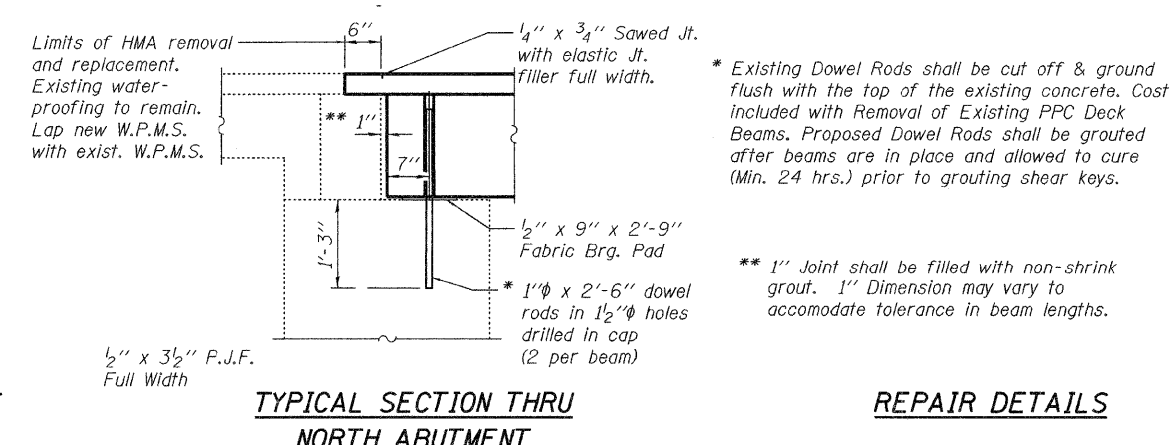
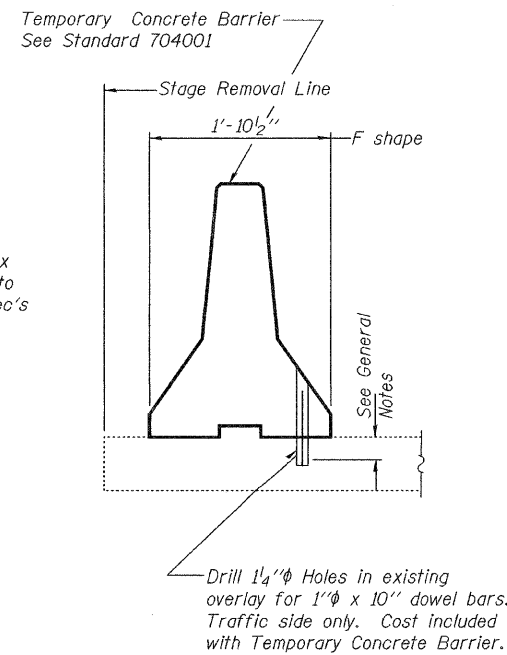
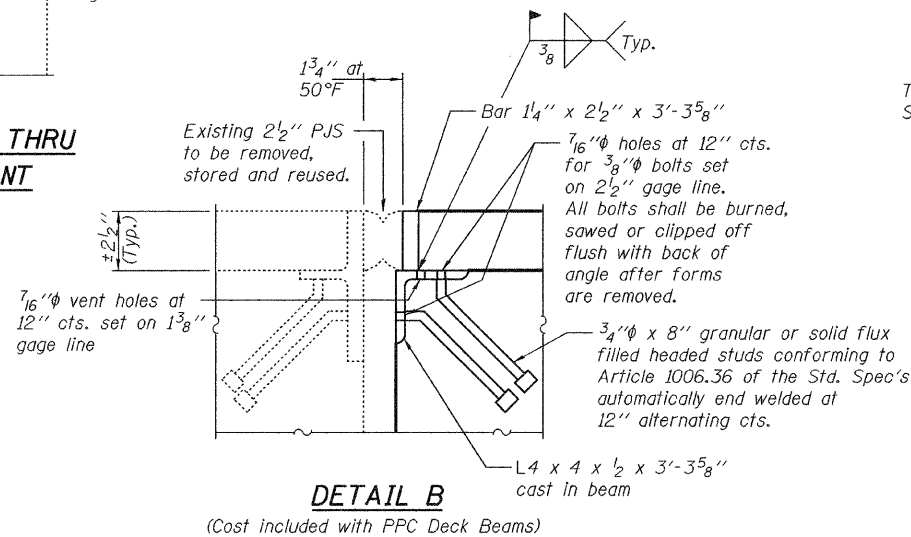
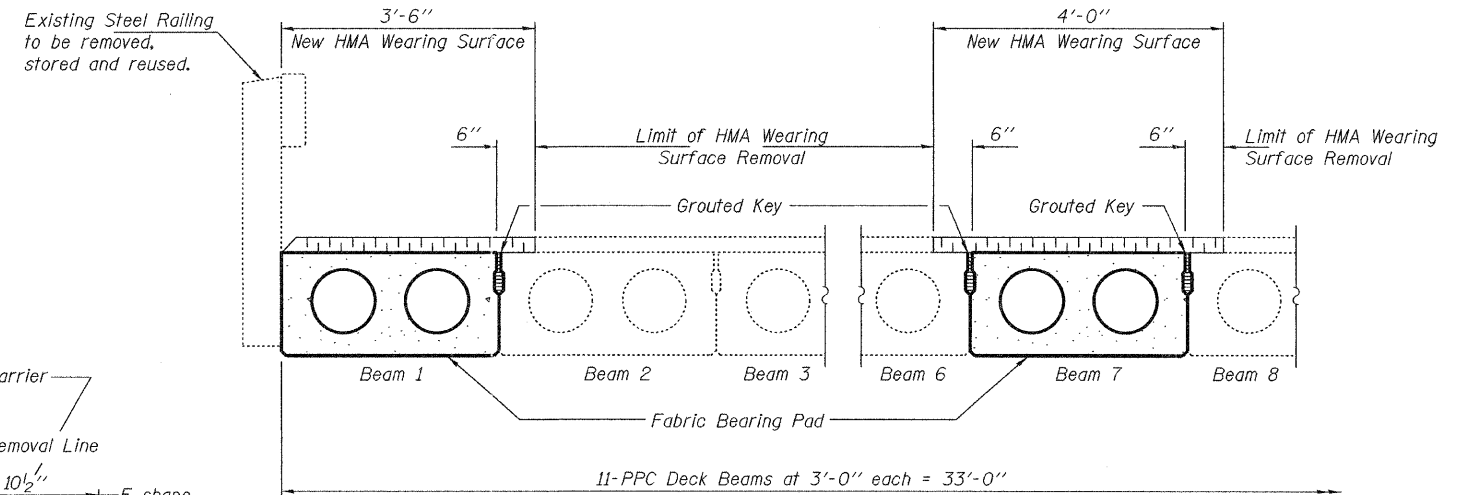
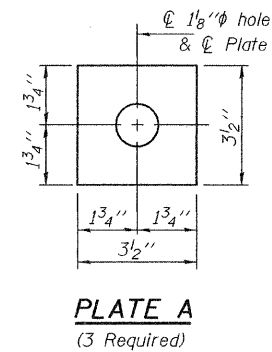
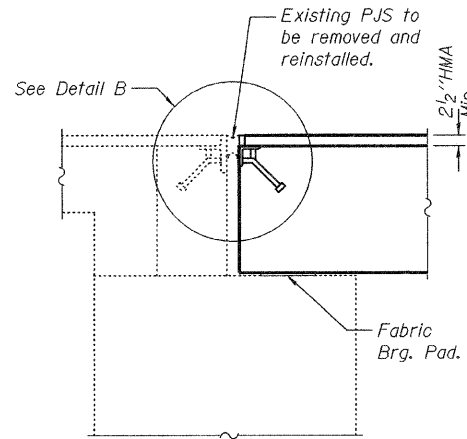
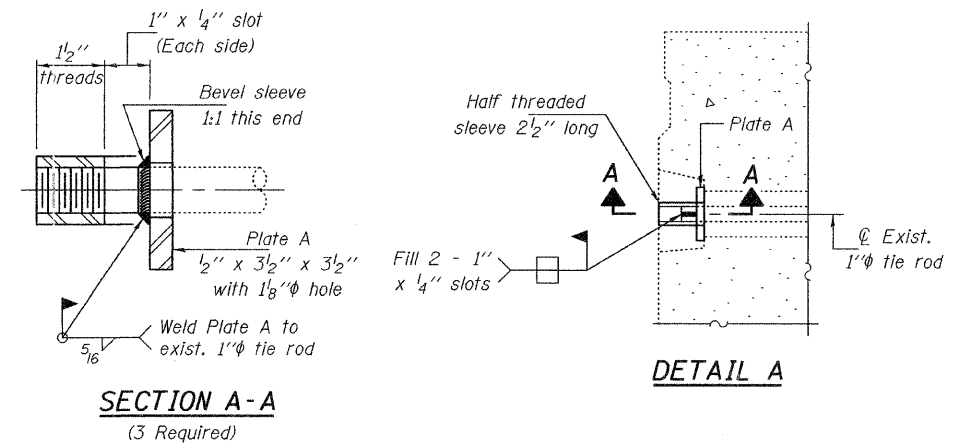
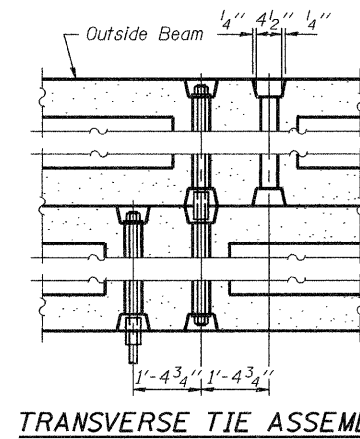
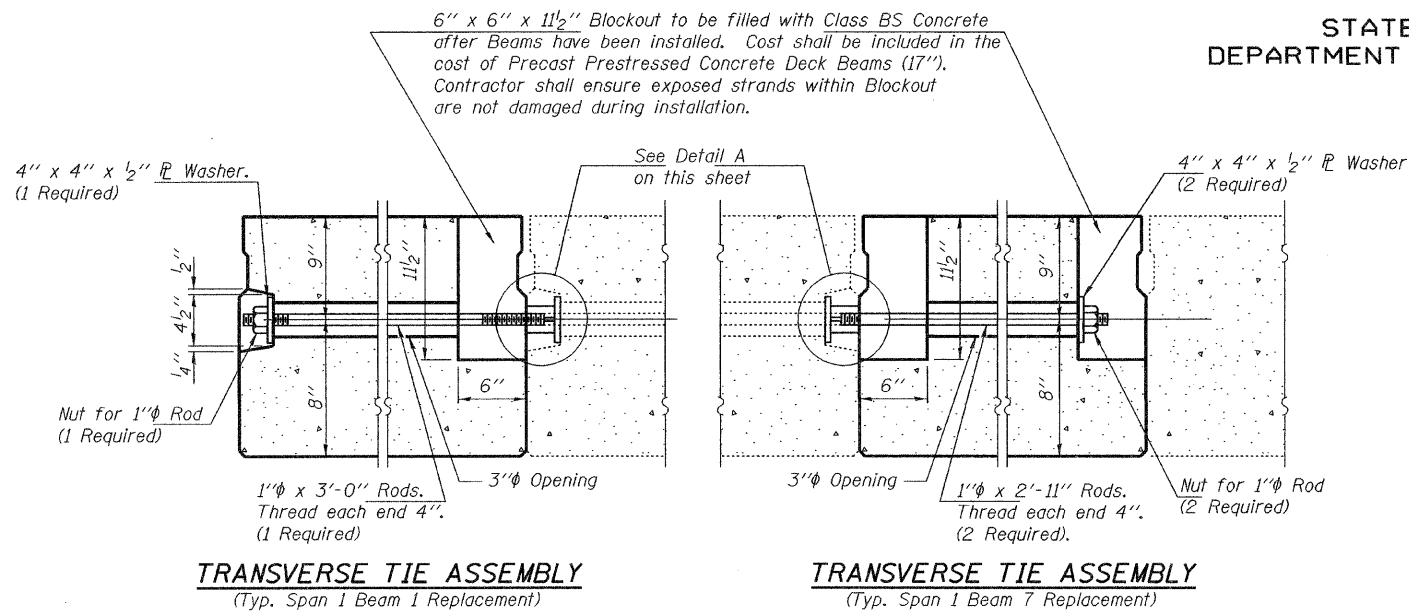
| | | |
|-------------------------------------|---------|-----|
| Precast Prestressed Conc. Deck Bms. | Sq. Ft. | 222 |
| | | |

REPAIR DETAILS

OVER BRUSH CREEK
MOULTRIE & SHELBY COUNTIES
SN 070-0018

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|-------------------|------------------------|-----------|-------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 3 4 SHEETS |
| | | MOULTRIE & SHELBY | 8 | 7 | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | Contract Number: 74302 | | |



* Existing Dowel Rods shall be cut off & ground flush with the top of the existing concrete. Cost included with Removal of Existing PPC Deck Beams. Proposed Dowel Rods shall be grouted after beams are in place and allowed to cure (Min. 24 hrs.) prior to grouting shear keys.

** 1" Joint shall be filled with non-shrink grout. 1" Dimension may vary to accommodate tolerance in beam lengths.

| | |
|----------|---------|
| DESIGNED | ATH |
| CHECKED | AJB |
| DRAWN | Steffen |
| CHECKED | ATH AJB |

MARCH 3, 2008

EXAMINED *Carl Hoyer*
ENGINEER OF STRUCTURAL SERVICES

PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

TEMPORARY CONCRETE BARRIER

TYPICAL SECTION THRU NORTH ABUTMENT

REPAIR DETAILS

OVER BRUSH CREEK
MOULTRIE & SHELBY COUNTIES
SN 070-0018

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|-------------------|------------------|-----------|-------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 4 4 SHEETS |
| | | MOULTRIE & SHELBY | 8 | 8 | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | | FED. AID PROJECT | | |

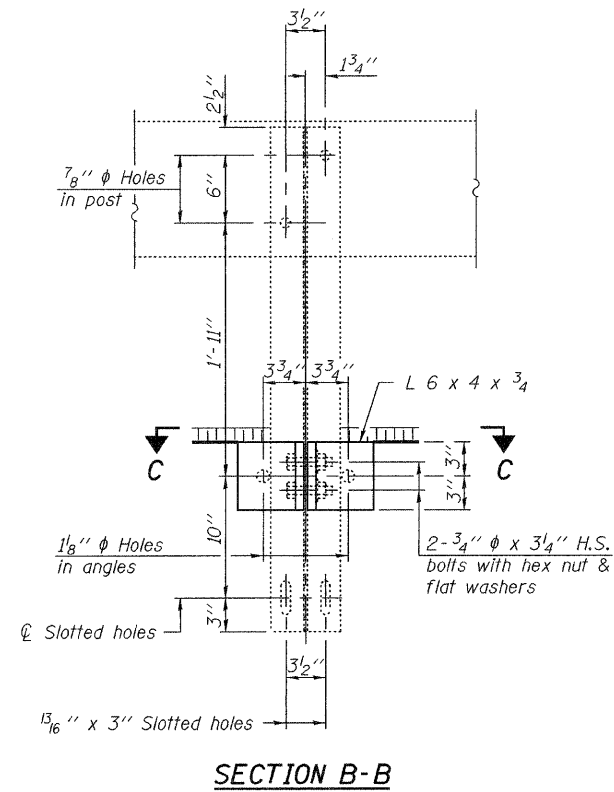
Contract Number: 74302

Notes:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

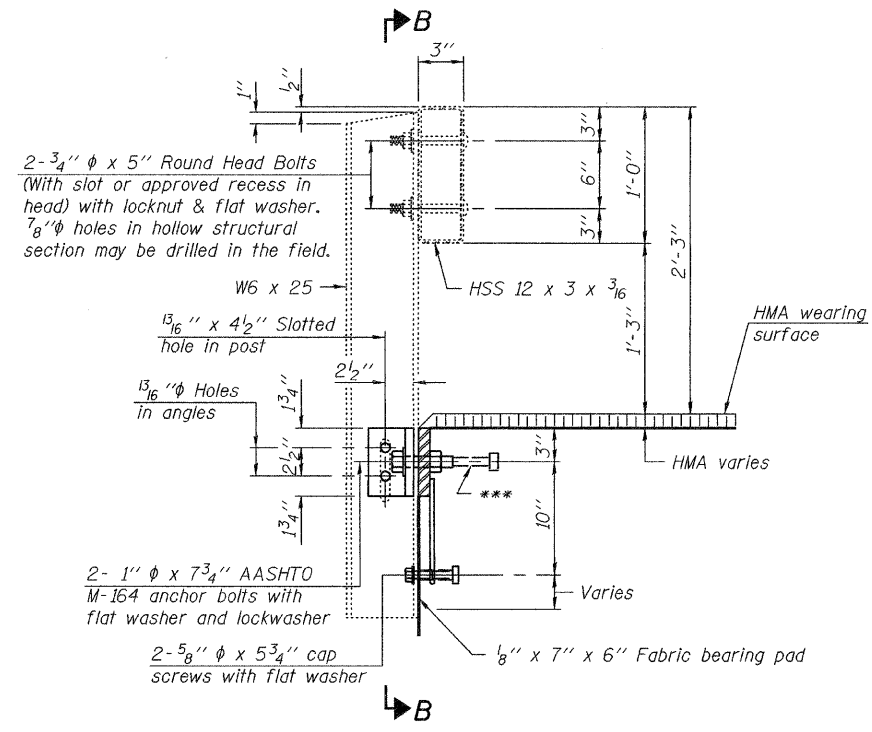
* Threaded areas shall be plugged or blocked off during casting of beam.

** 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".

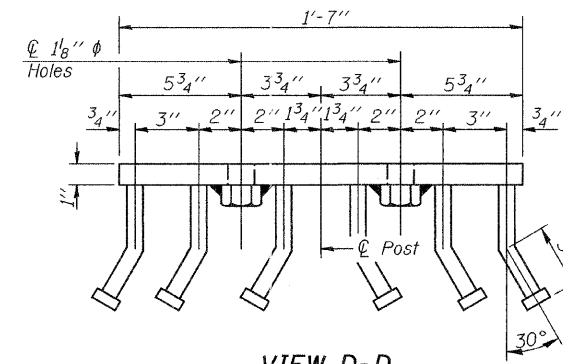
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



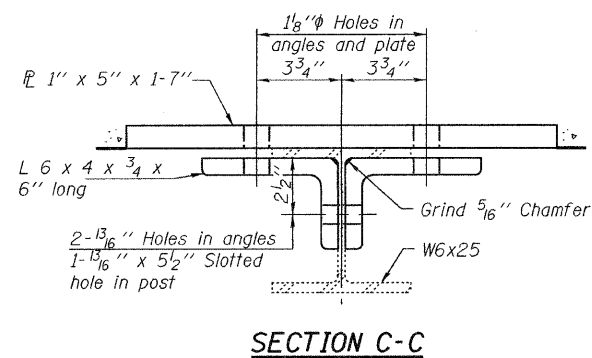
SECTION B-B



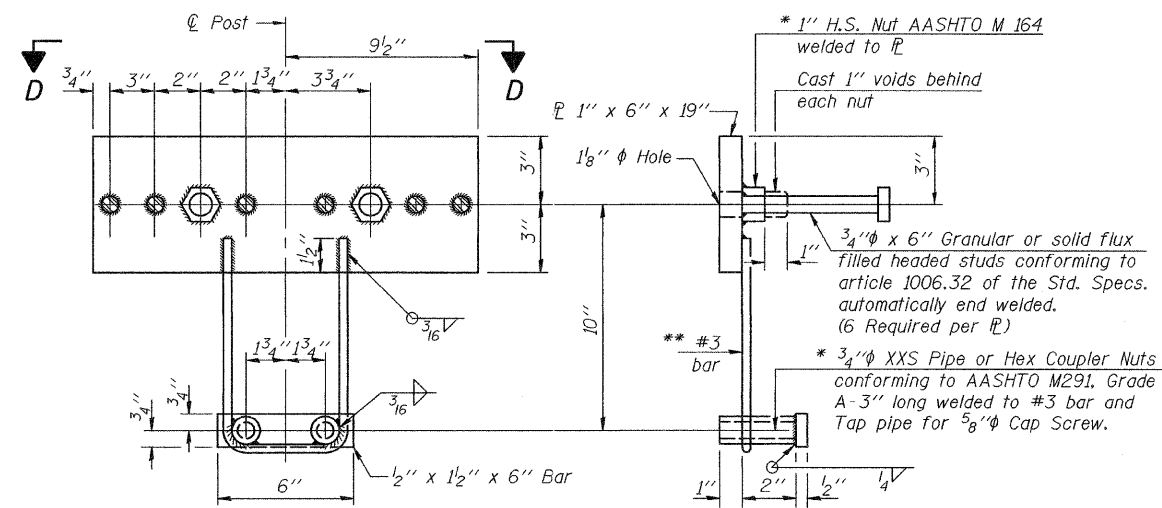
SECTION AT RAILING POST



VIEW D-D



SECTION C-C



ANCHOR DEVICE

REPAIR DETAILS

OVER BRUSH CREEK
MOULTRIE & SHELBY COUNTIES
SN 070-0018

| | |
|----------|---------|
| DESIGNED | ATH |
| CHECKED | AJB |
| DRAWN | Steffen |
| CHECKED | ATH AJB |

MARCH 3, 2008
EXAMINED *Carl Hoyer*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES