

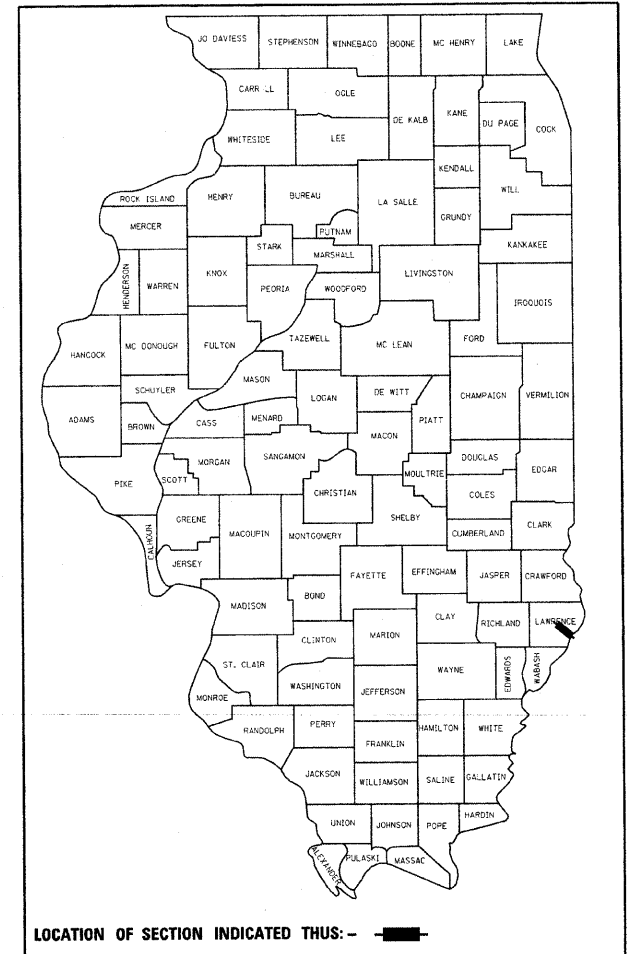
| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------|--------------------------|--------------------|--------------|-----------|
| 1807 | D7 BRIDGE REPAIRS 2009-2 | LAWRENCE | 22 | 1 |
| FED. ROAD DIST. NO. | ILLINOIS | CONTRACT NO. 74328 | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
**PROPOSED
HIGHWAY PLANS**

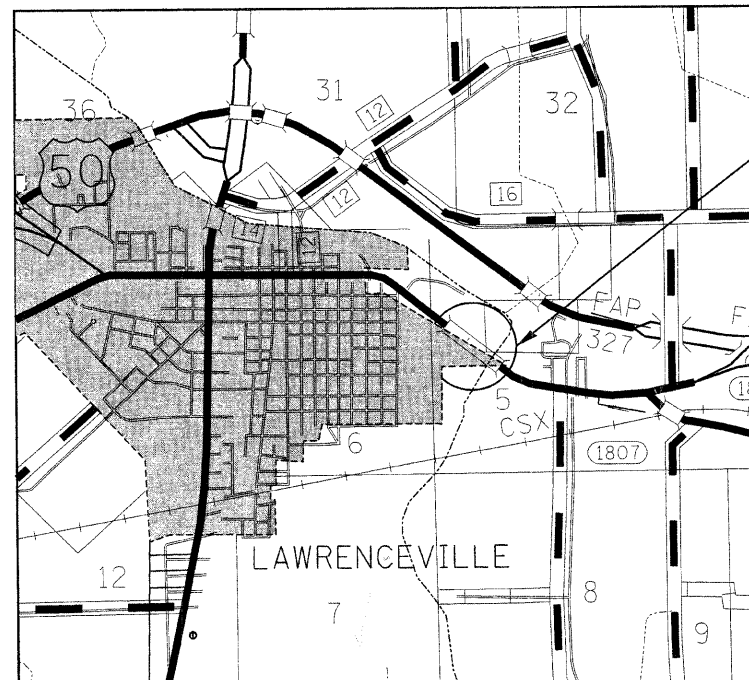
FAS ROUTE 1807 (US BUS. 50)
D-7 BRIDGE REPAIRS 2009-2
LAWRENCE COUNTY

FOR INDEX OF SHEETS, SEE SHEET NO. 2

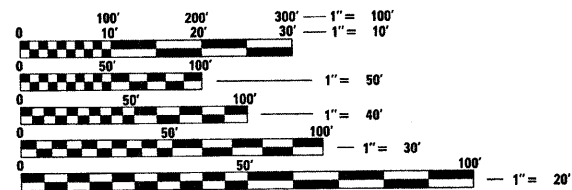
D-07-044-08



C-97-094-08



LOCATION OF PROJECT
STR #051-0053



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

PROJECT ENGINEER: ALEC RING
PROJECT MANAGER

GROSS LENGTH = 1236.23 FT. = 0.234 MILE
NET LENGTH = 1236.23 FT. = 0.234 MILE

CONTRACT NO. 74328

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED July 11, 2008

Roger L. Duckell
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

August 15, 2008
Eric E. Horn
INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

August 15, 2008
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS; THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2007; THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS, ADOPTED JANUARY 1, 2008; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THIS PROJECT IS LOCATED NEAR LAWRENCEVILLE ON BUS US-50 IN LAWRENCE COUNTY. THE PROJECT INCLUDES STRUCTURE NUMBER 051-0053.

THE WORK INCLUDED IN THIS PROJECT CONSISTS OF CONSTRUCTION OF PCC BASE COURSE WIDENING, REMOVAL OF THE EXISTING NEOPRENE JOINT SEAL EXPANSION JOINTS AND REPLACING THEM WITH PREFORMED JOINT STRIP SEAL EXPANSION JOINTS, AND A FINGER JOINT AT PIER 1, AND ALL OTHER WORK NECESSARY TO COMPLETE THIS SECTION.

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 WORK HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR WORK.

ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF THE RIGHT OF WAY. EXCAVATION AND DISPOSAL OF THE EXCAVATED MATERIAL WILL BE INCLUDED IN THE CONTRACT PRICE FOR PCC BASE CORSE WIDENING, 8".

THE TOTAL QUANTITY OF PAINT PAVEMENT MARKING - LINE 4 INCH CONSISTS OF:

| STR# | WHITE FT | YELLOW FT |
|----------|----------|-----------|
| 051-0053 | 2915 | 682 |

THE REFLECTIVE LENSE OF ALL RAISED REFLECTIVE MARKERS LOCATED BETWEEN THE START OF TAPER AND THE ABUTMENT ON EACH SIDE OF THE STRUCTURE SHALL BE REMOVED PRIOR TO STAGE I CONSTRUCTION. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL. REPLACEMENT OF THE BI-DIRECTIONAL AMBER REFLECTORS AT THE COMPLETION OF STAGE II WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR REPLACEMENT REFLECTOR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATION AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE J.U.L.I.E. NUMBER IS 800-892-0123. A MINIMUM OF 96 HOURS ADVANCE NOTICE IS REQUESTED.

INDEX OF SHEETS

SHEET NO

- 1 COVER SHEET
- 2 INDEX OF SHEETS, HIGHWAY STANDARDS AND GENERAL NOTES
- 3 SUMMARY OF QUANTITIES
- 4 BASE COURSE WIDENING
- 5 STAGE CONSTRUCTION I
- 6 STAGE CONSTRUCTION I AT PIER 1
- 7 STAGE CONSTRUCTION II
- 8-14 BRIDGE PLAN AND DETAILS 051-0053
- 15 PREFORMED JOINT STRIP SEAL
- 16 BAR SPLICER ASSEMBLY
- 17-22 FINGER PLATE DETAILS AT PIER 1

LIST OF HIGHWAY STANDARDS

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-01 AREAS OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 701001-01 OFF-ROAD OPERATIONS, 2L, 2W, More Than 4.5 m (15') Away
- 701006-02 OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" AWAY, SPEEDS > 45 MPH
- 701011-01 OFF-ROAD MOVING OPERATIONS, 2L 2W, DAY ONLY, FOR SPEEDS > 45 MPH
- 701321-09 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
- 701326-02 LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING for Speeds > 45 MPH
- 701901 TRAFFIC CONTROL DEVICES
- 704001-04 TEMPORARY CONCRETE BARRIER
- 720001 SIGN PANEL MOUNTING DETAILS
- 720006-01 SIGN PANEL ERECTION DETAILS
- 780001-01 TYPICAL PAVEMENT MARKINGS
- 781001-02 TYPICAL APPLICATIONS OF RAISED REFLECTIVE PAVEMENT MARKERS

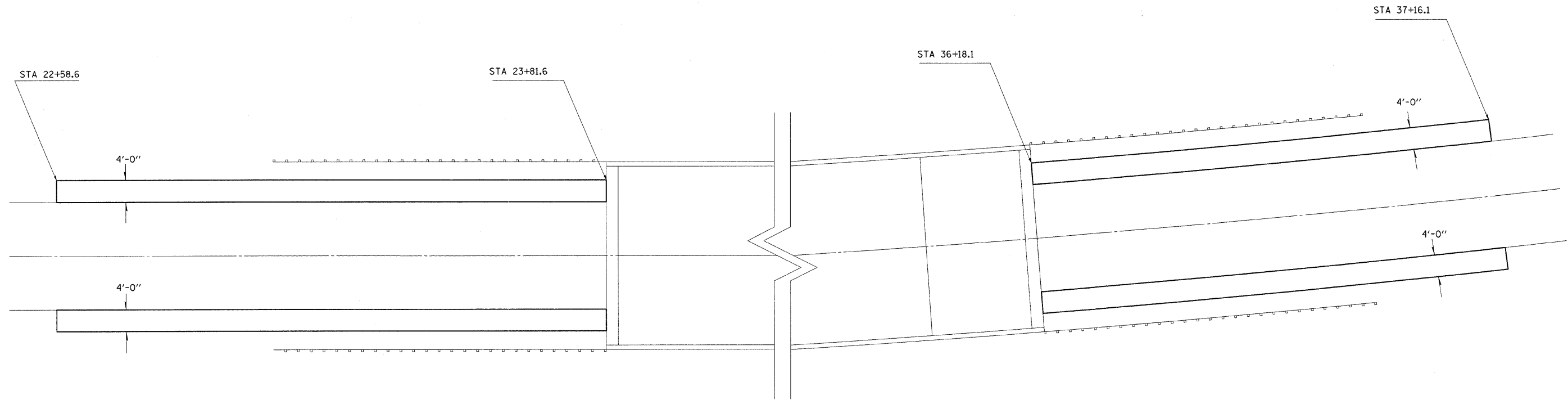
| | | | | | | | | | | | |
|--|-----------------------|------------|-------------------------------|---|--|-------------|---------|--------|--------------|-----------|------|
| FILE NAME = c:\projects\74328b\shshtcover_74328.dgn | USER NAME = teasieyck | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | GENERAL NOTES & INDEX OF SHEETS | F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | |
| PLOT SCALE = 20,0000' / IN. | CHECKED - | REVISED - | 1807 D7 BRIDGE REPAIRS 2009-2 | | | LAWRENCE | 22 | 2 | | | |
| PLOT DATE = 7/11/2008 | DATE - | REVISED - | CONTRACT NO. 74328 | | | | | | | | |
| | | | SCALE: | | | SHEET NO. | OF | SHEETS | STA. | TO | STA. |

| SUMMARY OF QUANTITIES | | | 100% STATE | CONSTRUCTION TYPE CODE | | |
|-----------------------|---|--------|------------------|------------------------------|--|--|
| CODE NO | ITEM | UNIT | TOTAL QUANTITIES | STR # 051-0053 SFTY-2A | | |
| 35400300 | PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 8" | SO YD | 196 | 196 | | |
| 48101200 | AGGREGATE SHOULDERS, TYPE B | TON | 8 | 8 | | |
| 50102400 | CONCRETE REMOVAL | CU YD | 29 | 29 | | |
| 50300255 | CONCRETE SUPERSTRUCTURE | CU YD | 30 | 30 | | |
| 50800205 | REINFORCEMENT BARS, EPOXY COATED | POUND | 5240 | 5240 | | |
| 50800515 | BAR SPLICERS | EACH | 55 | 55 | | |
| 52000110 | PREFORMED JOINT STRIP SEAL | FOOT | 168 | 168 | | |
| 52000212 | FINGER PLATE EXPANSION JOINT, 4" | FOOT | 39 | 39 | | |
| 52000600 | FABRIC REINFORCED ELASTOMERIC TROUGH | FOOT | 39 | 39 | | |
| 67100100 | MOBILIZATION | L SUM | 1 | 1 | | |
| 70100405 | TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 | EACH | 1 | 1 | | |
| 70100500 | TRAFFIC CONTROL AND PROTECTION, STANDARD 701326 | L SUM | 1 | 1 | | |
| 70103815 | TRAFFIC CONTROL SURVEILLANCE | CAL DA | 4 | 4 | | |
| 70106500 | TEMPORARY BRIDGE TRAFFIC SIGNALS | EACH | 1 | 1 | | |
| 70300100 | SHORT-TERM PAVEMENT MARKING | FOOT | 177 | 177 | | |
| 70300220 | TEMPORARY PAVEMENT MARKING - LINE 4" | FOOT | 5830 | 5830 | | |
| 70301000 | WORK ZONE PAVEMENT MARKING REMOVAL | SQ FT | 1068 | 1068 | | |
| 70400100 | TEMPORARY CONCRETE BARRIER | FOOT | 1437.5 | 1437.5 | | |
| 70400200 | RELOCATE TEMPORARY CONCRETE BARRIER | FOOT | 1437.5 | 1437.5 | | |
| * 78001110 | PAINT PAVEMENT MARKING - LINE 4" | FOOT | 3597 | 3597 | | |
| * 78100300 | REPLACEMENT REFLECTOR | EACH | 6 | 6 | | |
| 78300100 | PAVEMENT MARKING REMOVAL | SQ FT | 587 | 587 | | |
| X0321781 | MECHANICAL SPLICE | EACH | 90 | 90 | | |
| X0322050 | RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL | EACH | 6 | 6 | | |
| Z0030250 | IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3 | EACH | 2 | 2 | | |
| Z0030350 | IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3 | EACH | 2 | 2 | | |

*Specialty Items

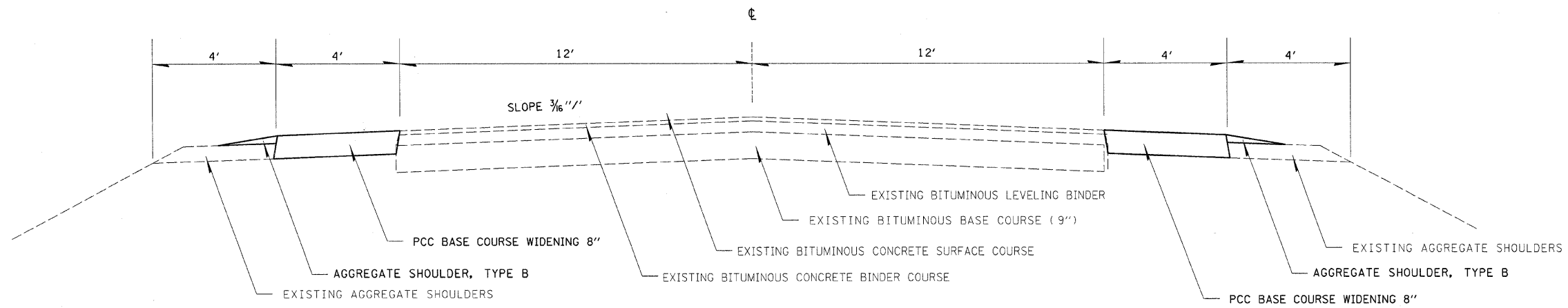
Rev.

| | | | | | | | | | | | |
|--|-----------------------|------------|-----------|---|------------------------------|--------------------|--------------------------|----------|-----------------|--------------|---------|
| FILE NAME = c:\projects\74328b\shisoq_74328.dgn | USER NAME = teasleyek | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | SUMMARY OF QUANTITIES | F.A.S RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | |
| | | DRAWN - | REVISED - | | | 1807 | 07 BRIDGE REPAIRS 2009-2 | LAWRENCE | 22 | 3 | |
| | | CHECKED - | REVISED - | | | CONTRACT NO. 74328 | | | | | |
| | | DATE - | REVISED - | | | SCALE: | SHEET NO. | OF | SHEETS | STA. | TO STA. |



Aggregate Shoulders, Type B
 Station Left 22+58.6 to 23+81.6 = 2.0 Ton
 Station Right 22+58.6 to 23+81.6 = 2.0 Ton
 Station Left 36+18.1 to 37+16.1 = 1.6 Ton
 Station Right 36+18.1 to 37+16.1 = 1.6 Ton
 8.0 Ton

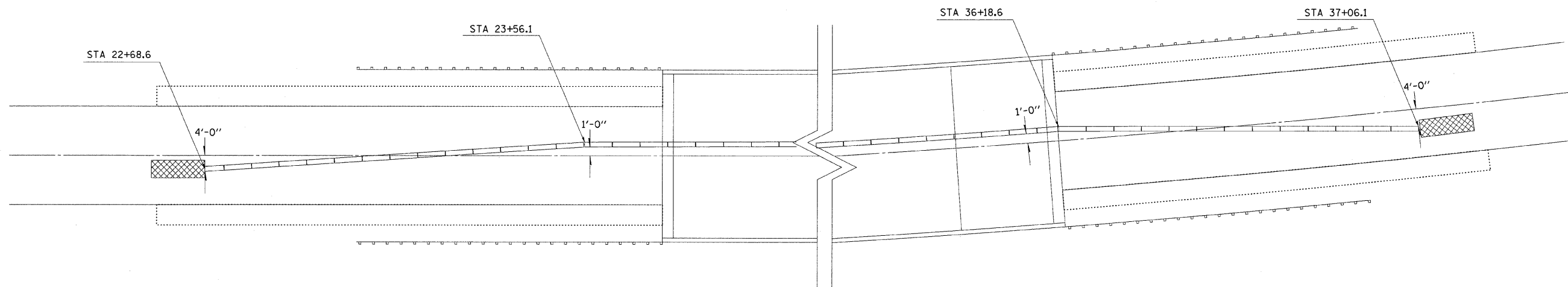
Base Course Widening
 Station Left 22+58.6 to 23+81.6 = 54.7 SQ YDS
 Station Right 22+58.6 to 23+81.6 = 54.7 SQ YDS
 Station Left 36+18.1 to 37+16.1 = 43.6 SQ YDS
 Station Right 36+18.1 to 37+16.1 = 43.6 SQ YDS
 196.0 SQ YDS



BUS US 50

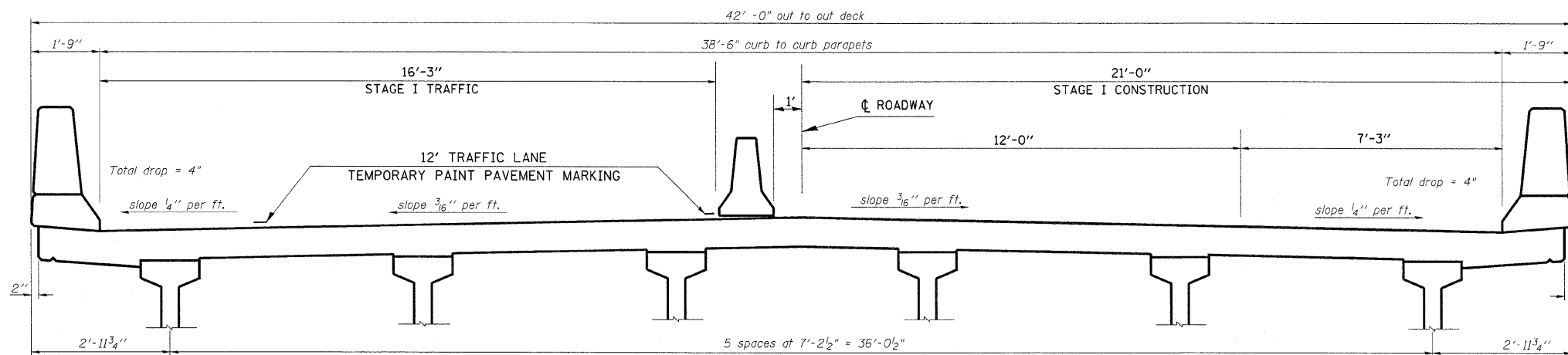
STA 22+58.6 TO STA 23+81.6
 STA 36+18.1 TO STA 37+16.1

| | | | | | | | | | | | | | |
|--|-----------------------|------------|-----------|---|---|------------------------|----------|----|--------------------|---------|--------|--------------|-----------|
| FILE NAME = | USER NAME = teasleyck | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | PCC BASE COURSE WIDENING | | | | F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| ci:\projects\74328b\shd\detail\74328.dgn | | DRAWN - | REVISED - | | 1807 | D7 BRIDGE REPAIRS 09-2 | LAWRENCE | 23 | 4 | | | | |
| PLOT SCALE = 20.0000' / IN. | | CHECKED - | REVISED - | | SCALE: SHEET NO. OF SHEETS STA. TO STA. | | | | CONTRACT NO. 74328 | | | | |
| PLOT DATE = 7/11/2008 | | DATE - | REVISED - | | FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT | | | | | | | | |



IMPACT ATTENUATOR, TEMPORARY

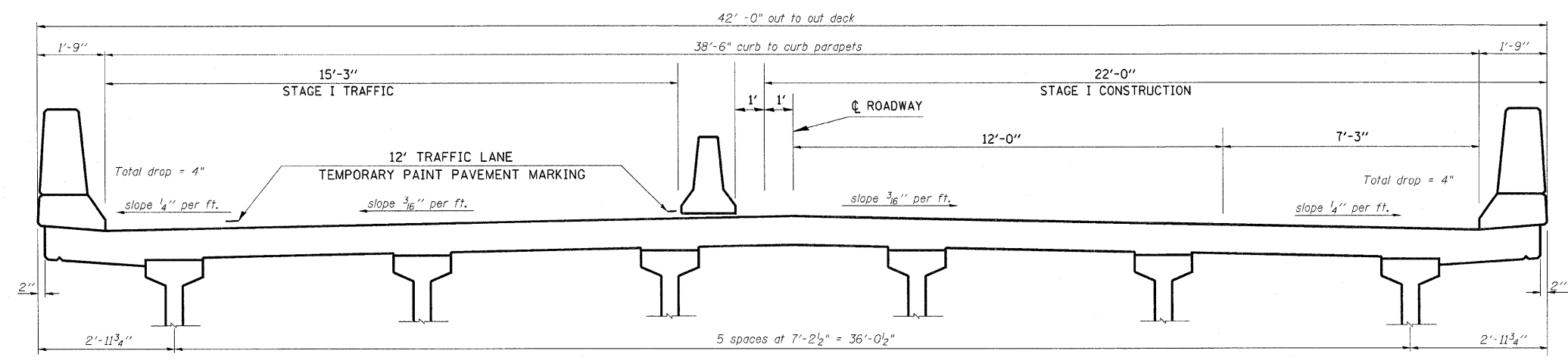
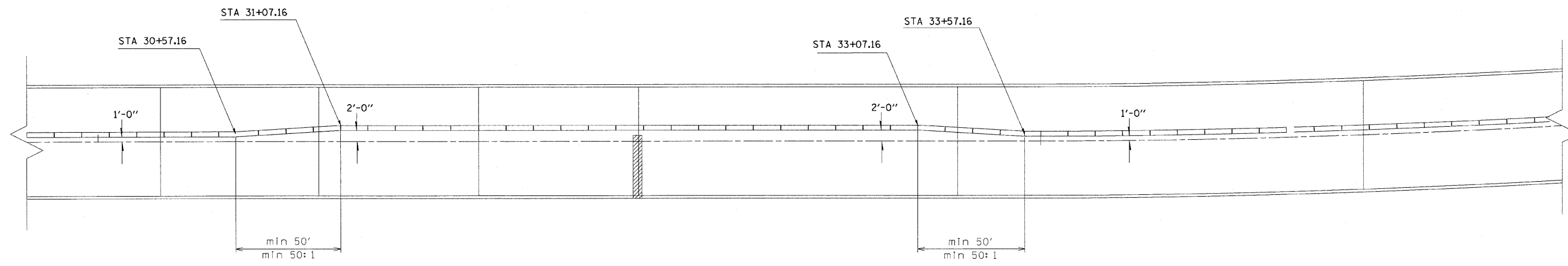
TEMPORARY CONCRETE BARRIER STA 22+68.6 to 37+06.1 = 1437.5 FT
 IMPACT ATTENUATOR, TEMPORARY = 2.0 EACH



CROSS SECTION

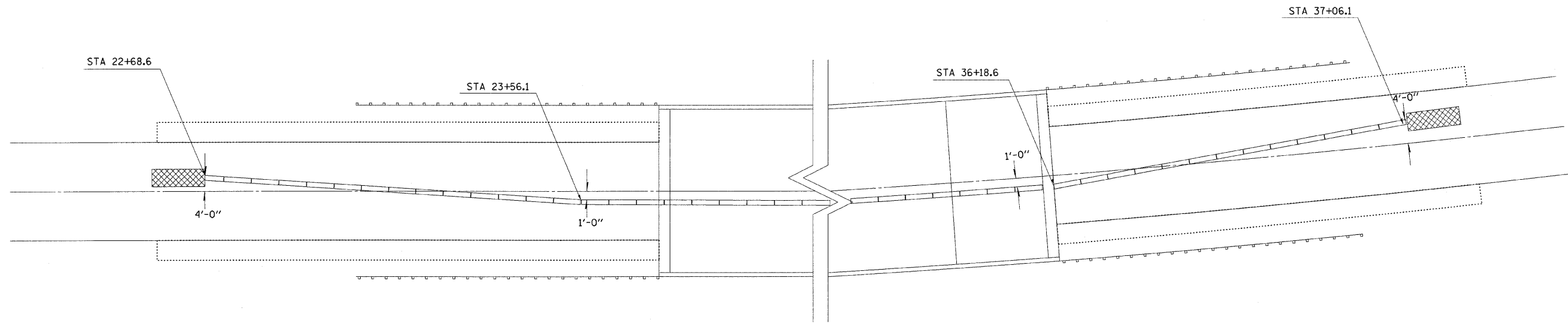
(Looking East)

| | | | | | | | | | | | | |
|--|-----------------------------|------------|-----------|---|---|--|--|--------------------|------------------------|----------|-----------------|--------------|
| FILE NAME = | USER NAME = teasleyck | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | STAGE ONE CONSTRUCTION DETAILS | | | F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| ca:\projects\74328b\shststgoonst_74328.dgn | PLOT SCALE = 20,0000' / IN. | DRAWN - | REVISED - | | | | | 1807 | D7 BRIDGE REPAIRS 09-2 | LAWRENCE | 22 | 5 |
| PLOT DATE = 7/11/2008 | DATE - | CHECKED - | REVISED - | | SCALE: SHEET NO. OF SHEETS STA. TO STA. | | | CONTRACT NO. 74328 | | | | |
| | | | | | FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT | | | | | | | |



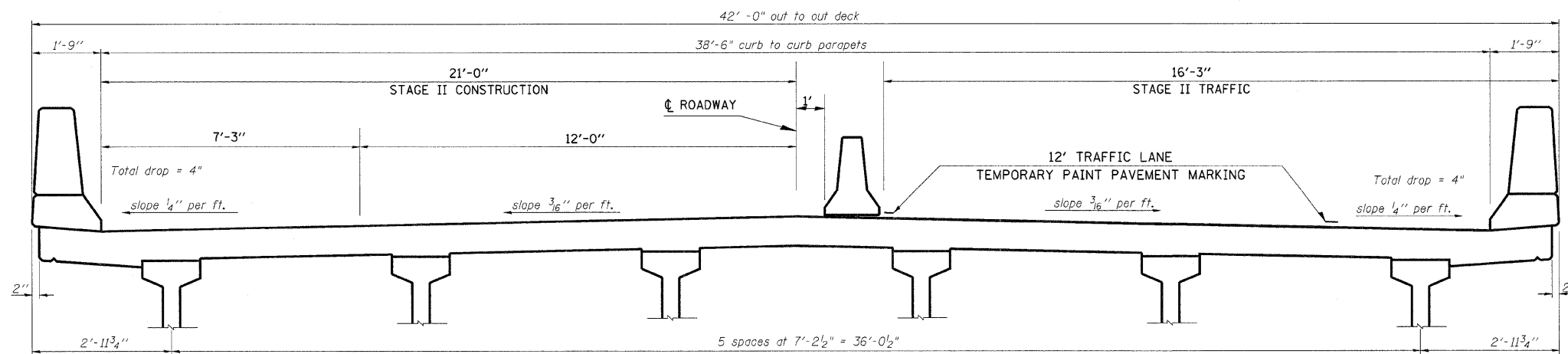
CROSS SECTION AT PIER 1
(Looking East)

| | | | | | | | | | | | | |
|---|-----------------------|------------|---|---|---|--------------------|--|------------------------|----------|--------|--------------|-----------|
| FILE NAME = | USER NAME = toaslejak | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | STAGE ONE CONSTRUCTION DETAILS AT PIER 1 | | | F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| c:\projects\74328b\shststgconst_74328.dwg | DRAWN - | REVISED - | 1807 | | | | | D7 BRIDGE REPAIRS 09-2 | LAWRENCE | 22 | 6 | |
| PLOT SCALE = 20.0000' / IN. | CHECKED - | REVISED - | SCALE: SHEET NO. OF SHEETS STA. TO STA. | | | CONTRACT NO. 74328 | | | | | | |
| PLOT DATE = 7/11/2008 | DATE - | REVISED - | FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT | | | | | | | | | |



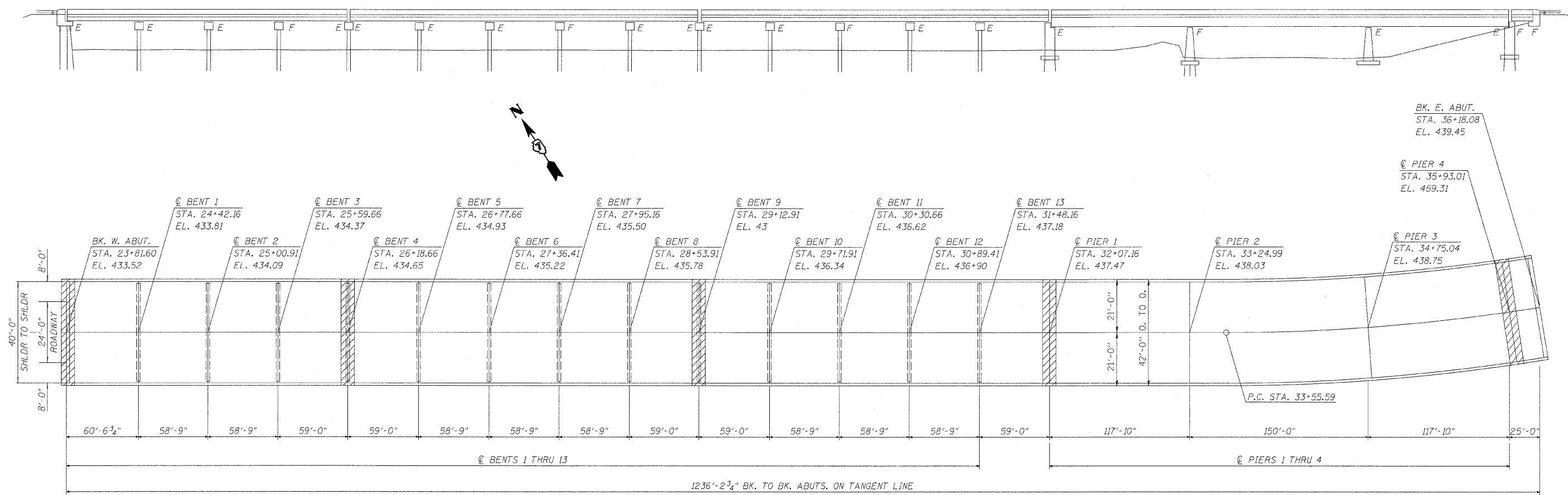
 IMPACT ATTENUATOR, TEMPORARY

RELOCATE TEMPORARY CONCRETE BARRIER STA 22+68.6 to 37+06.1 = 1437.5 FT
 RELOCATE IMPACT ATTENUATOR, TEMPORARY = 2.0 EACH



CROSS SECTION
(Looking East)

| | | | | | | | | | | | | | |
|--|-----------------------|------------|-----------|---|---------------------------------------|------------------------|-----------|------|---------------------|---------------------------|--------|--------------|-----------|
| FILE NAME = | USER NAME = teasleyck | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | STAGE TWO CONSTRUCTION DETAILS | | | | F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| ci:\projects\74328b\stgconst_74328.dgn | | DRAWN - | REVISED - | | 1807 | D7 BRIDGE REPAIRS 09-2 | LAWRENCE | 22 | 7 | | | | |
| PLOT SCALE = 20,0000' / IN. | | CHECKED - | REVISED - | | CONTRACT NO. 74328 | | | | FED. ROAD DIST. NO. | ILLINOIS FED. AID PROJECT | | | |
| PLOT DATE = 7/11/2008 | | DATE - | REVISED - | | SCALE: | SHEET NO. | OF SHEETS | STA. | TO STA. | | | | |



GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

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 compensations 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.

Removal of Bituminous Surface at the Expansion Joint shall be included in the contract unit price for concrete removal.

Existing reinforcement bars shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system (cost included in concrete removal).

Joint openings shall be adjusted according to Article 520.04(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50 F.

SCOPE OF WORK

New strip seal at W.About., Bent 4, Bent 9 & Pier 4.
New finger plate at Pier 1.

BILL OF MATERIALS

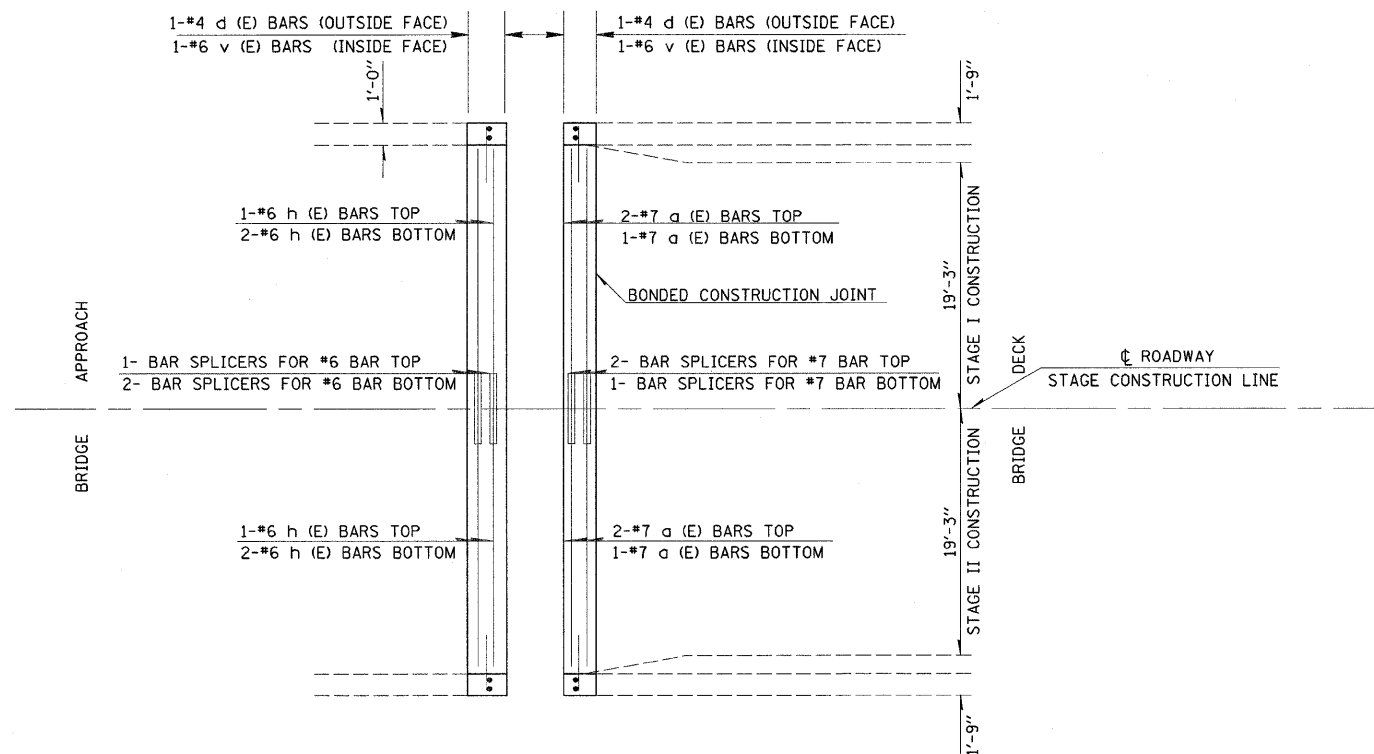
| ITEM DESCRIPTION | UNIT | QUANTITY |
|----------------------------------|-------|----------|
| Concrete Removal | CU YD | 11.8 |
| Concrete Superstructure | CU YD | 13.3 |
| Reinforcement Bars, Epoxy Coated | POUND | 2240 |
| Bar Splicers | EACH | 29 |
| Preformed Joint Strip Seal | FOOT | 168 |

BAR LIST - WEST ABUTMENT

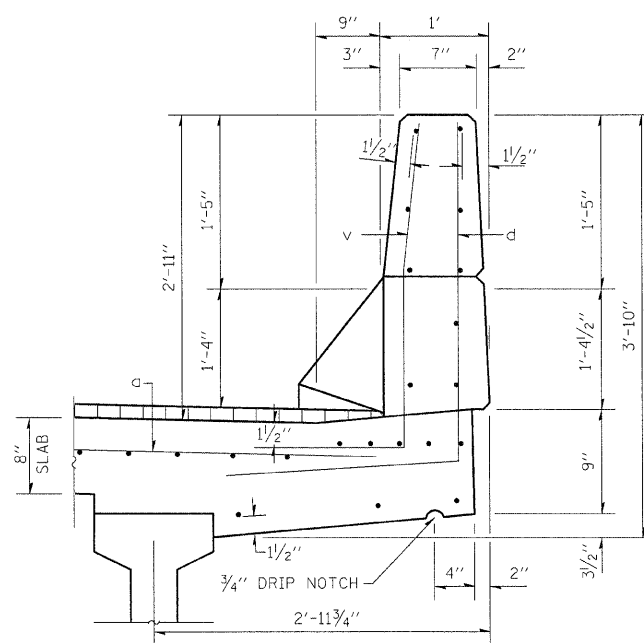
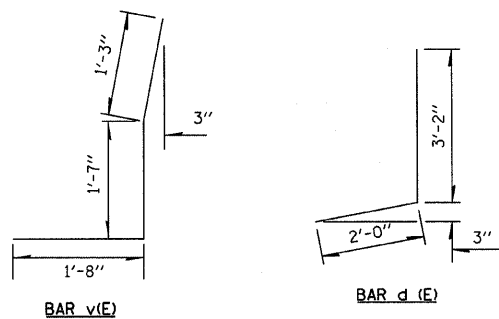
| BAR | NUMBER OF BARS | | TOTAL | SIZE | LENGTH | SHAPE |
|-----------------------------------|----------------|----------|-------|-------|--------|-------|
| | STAGE I | STAGE II | | | | |
| d(E) | 3 | 3 | 6 | 7 | 20'-6" | — |
| h(E) | 3 | 3 | 6 | 6 | 20'-6" | — |
| d(E) | 2 | 2 | 4 | 4 | 5'-2" | J |
| v(E) | 2 | 2 | 4 | 6 | 4'-6" | J |
| CONCRETE REMOVAL | | | | CU YD | 3.1 | |
| REINFORCEMENT BARS (EPOXY COATED) | | | | POUND | 480 | |
| CONCRETE SUPERSTRUCTURE | | | | CU YD | 3.5 | |

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED

NOTE: EXISTING REINFORCEMENT BARS ARE TO BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL OPERATIONS SHALL BE REPAIRED OR REPLACED USING AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM (COST INCLUDED IN CONCRETE REMOVAL).

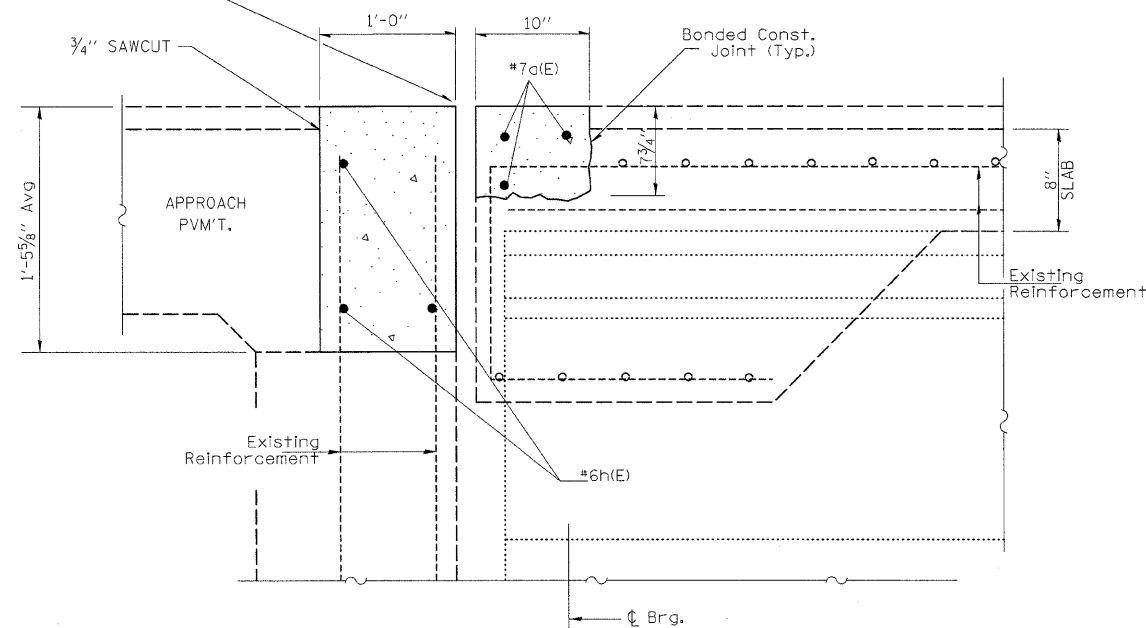


REINFORCEMENT DETAIL
WEST ABUTMENT



PARAPET DETAIL

PREFORMED JOINT STRIP SEAL FOR DETAIL OF EXPANSION JOINT SEE SHEET OF



PROPOSED EXPANSION JOINT AT WEST ABUTMENT

FILE NAME =
c:\projects\74328b\shdtdetails_74328.dgn

USER NAME = teasleyck
PLOT SCALE = 20.0000 / IN.
PLOT DATE = 7/11/2008

DESIGNED -
DRAWN -
CHECKED -
DATE -

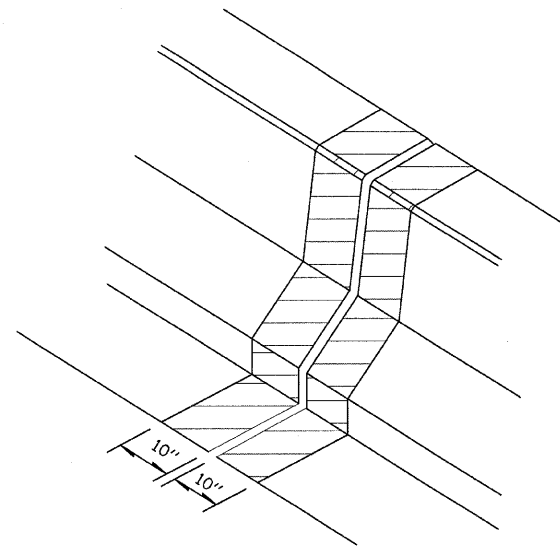
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

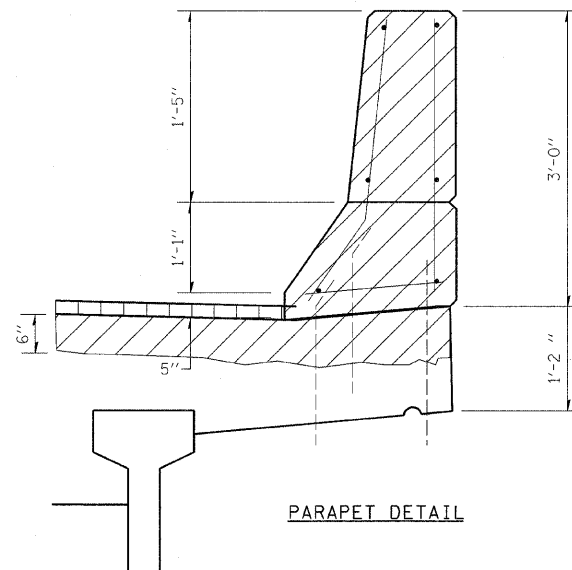
EXPANSION JOINT & REBAR DETAILS
WEST ABUTMENT

SCALE: SHEET NO. OF SHEETS STA. TO STA.

| F.A.S. RTE | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|------------------------|----------|--------------------|-----------|
| 1807 | D7 BRIDGE REPAIRS 09-2 | LAWRENCE | 22 | 10 |
| FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT | | | CONTRACT NO. 74328 | |

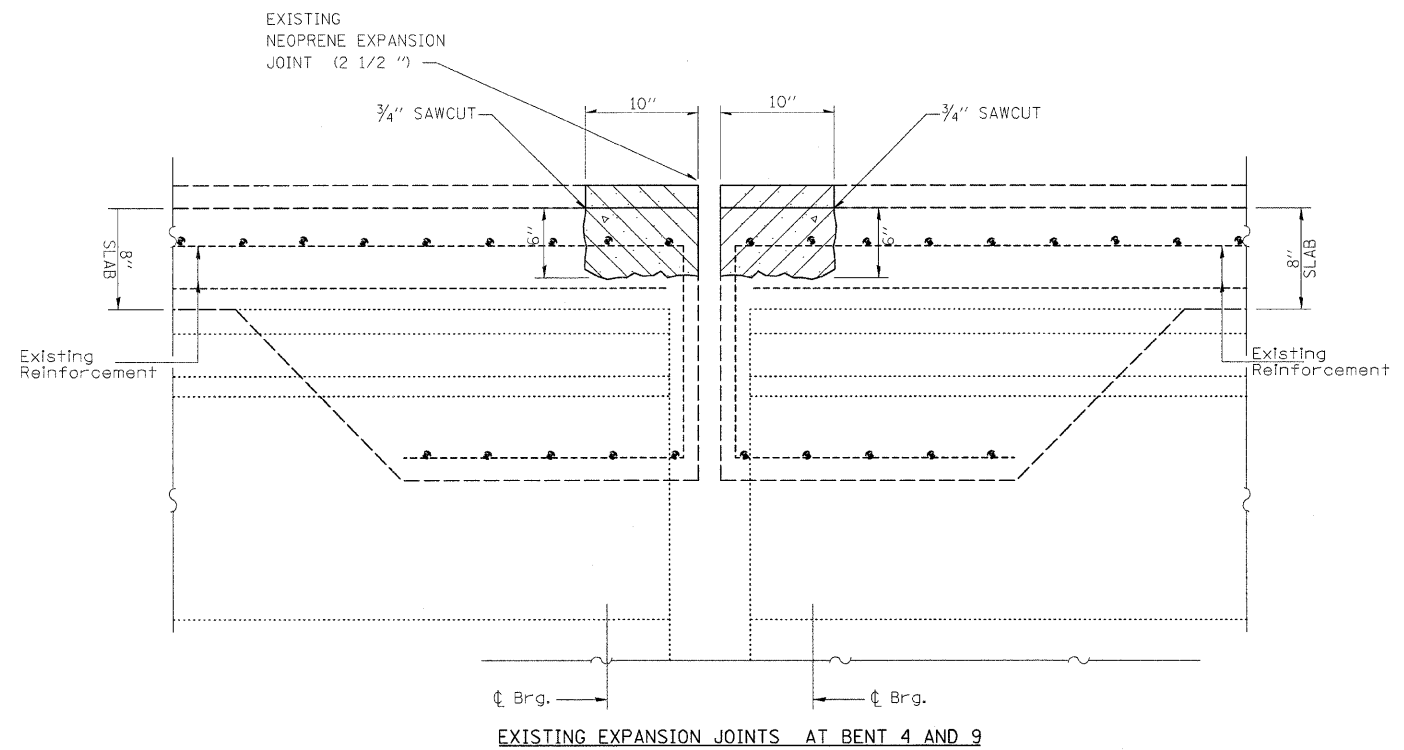


TYPICAL CONCRETE REMOVAL AT EACH JOINT

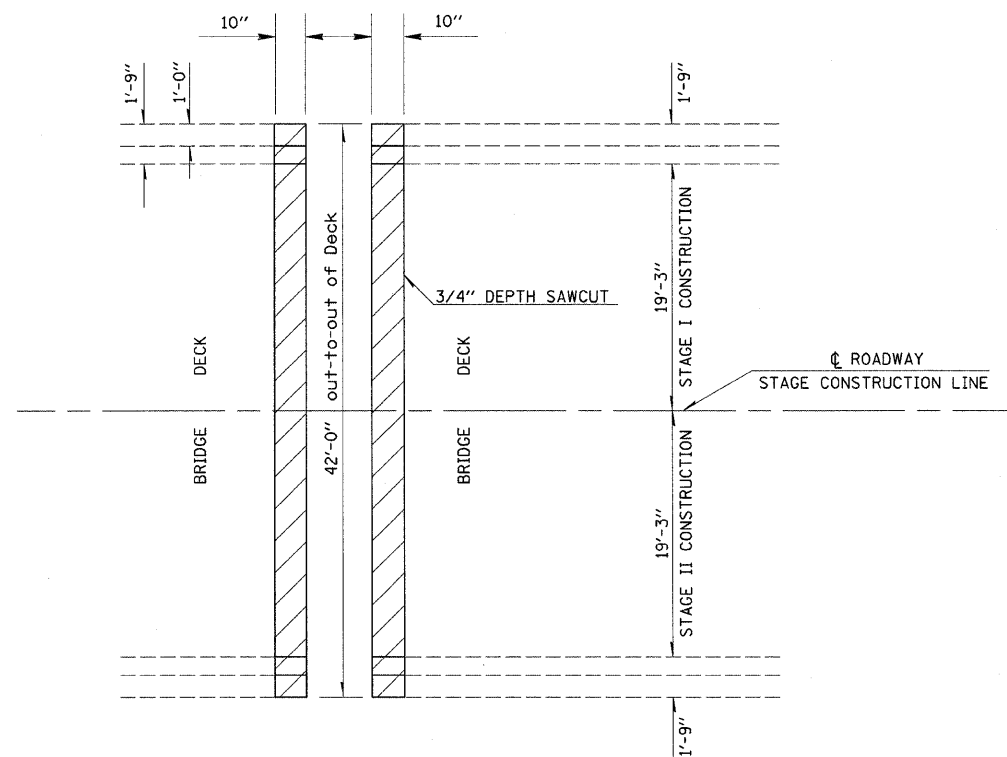


PARAPET DETAIL

CONCRETE REMOVAL (LIMITS ARE FROM OUT TO OUT OF DECK)



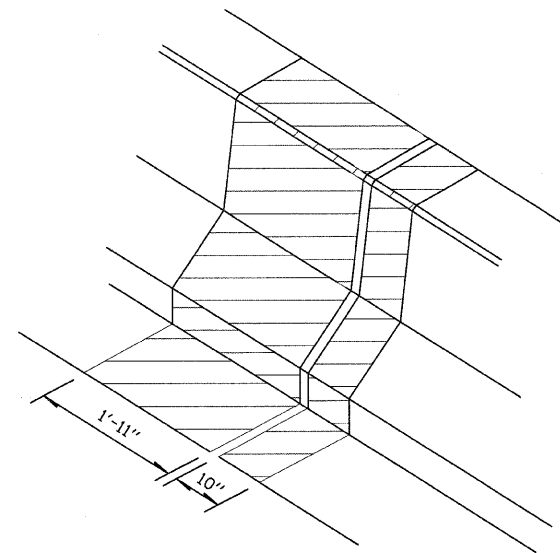
EXISTING EXPANSION JOINTS AT BENT 4 AND 9



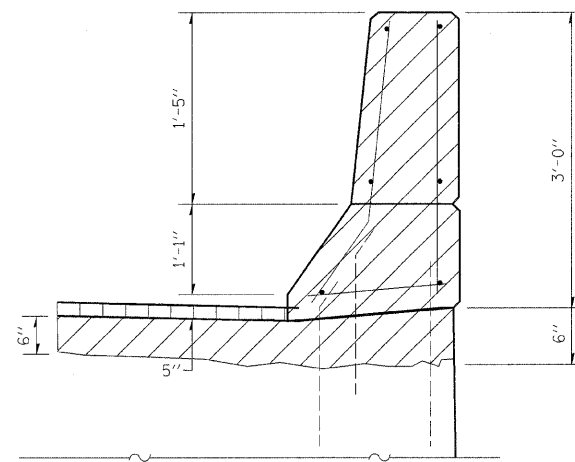
REMOVAL PLAN VIEW
BENT 4 (BENT 9 SIMILIAR)

NOTE: EXISTING REINFORCEMENT BARS ARE TO BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL OPERATIONS SHALL BE REPAIRED OR REPLACED USING AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM (COST INCLUDED IN CONCRETE REMOVAL).

| | | | | | | | | | | | | |
|--|-----------------------|------------|-----------|---|---|------------------------|---------------------------|--------------------|---------|--------|--------------|-----------|
| FILE NAME = | USER NAME = teasleyck | DESIGNED - | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | REMOVAL DETAILS BENT 4 AND 9 | | | F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| c:\projects\74328b\ahdtdetails.74328.dgn | | DRAWN - | REVISED - | | 1807 | D7 BRIDGE REPAIRS 09-2 | LAWRENCE | 22 | 11 | | | |
| PLOT SCALE = 28.0000' / IN. | | CHECKED - | REVISED - | | SCALE: SHEET NO. OF SHEETS STA. TO STA. | | | CONTRACT NO. 74328 | | | | |
| PLOT DATE = 7/11/2008 | | DATE - | REVISED - | | FED. ROAD DIST. NO. | | ILLINOIS FED. AID PROJECT | | | | | |

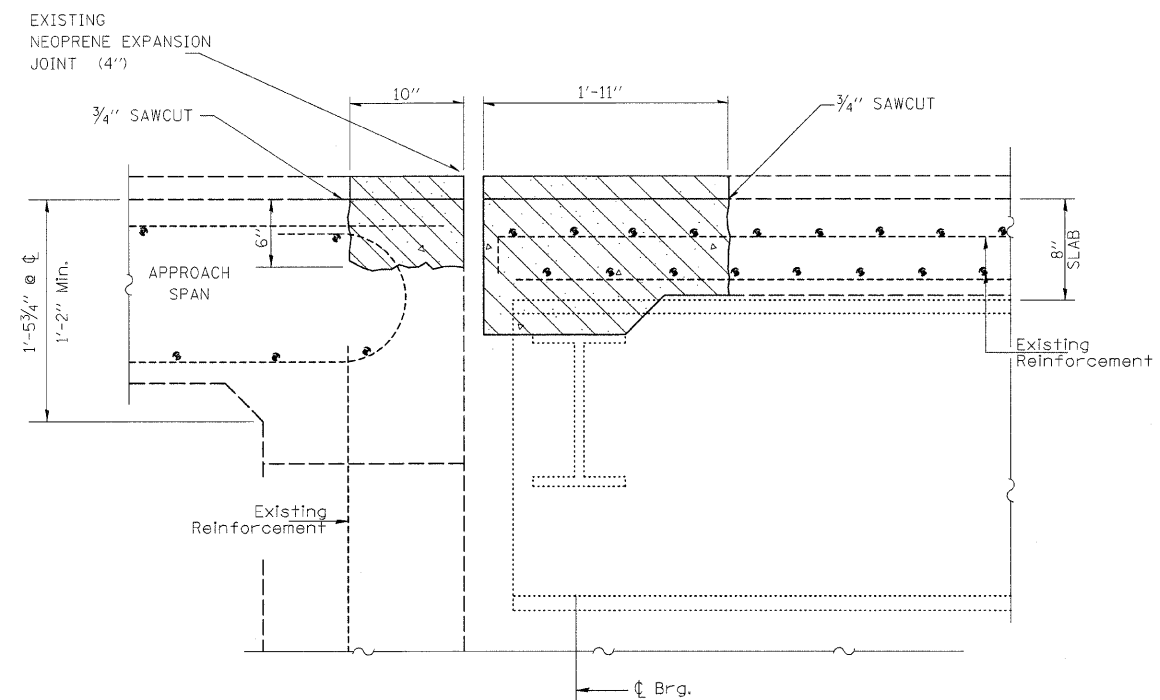


TYPICAL CONCRETE REMOVAL AT PIER 4

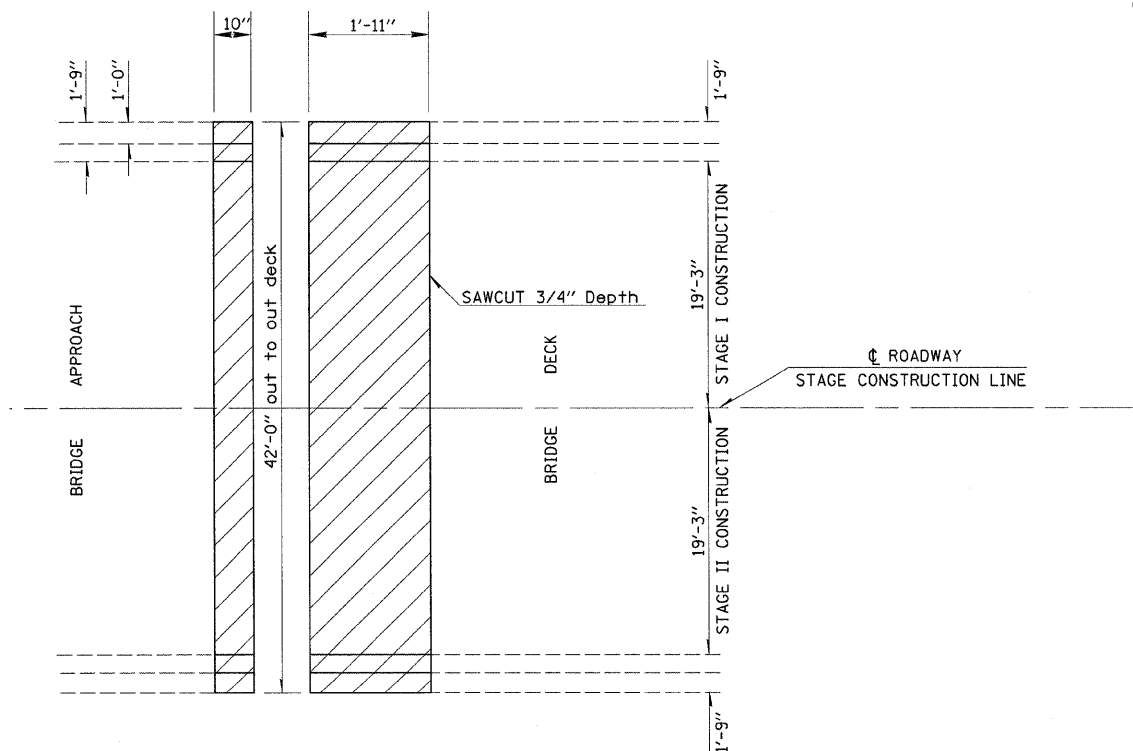


PARAPET DETAIL

CONCRETE REMOVAL (LIMITS ARE FROM OUT TO OUT OF DECK)



EXISTING EXPANSION JOINT AT PIER 4



REMOVAL PLAN VIEW

PIER 4

NOTE: EXISTING REINFORCEMENT BARS ARE TO BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL OPERATIONS SHALL BE REPAIRED OR REPLACED USING AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM (COST INCLUDED IN CONCRETE REMOVAL).

FILE NAME =
c:\projects\74328b\shsdetails\74328.dgn

USER NAME = teasleyck
PLOT SCALE = 20.0000' / 1" IN.
PLOT DATE = 7/11/2008

DESIGNED -
DRAWN -
CHECKED -
DATE -

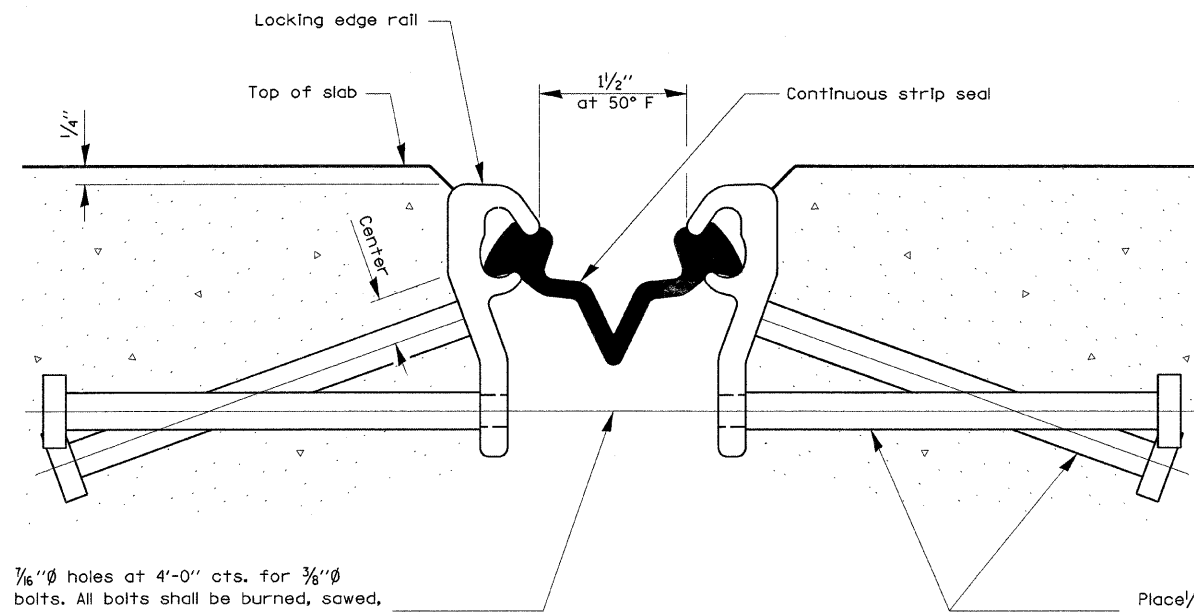
REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL DETAILS PIER 4

SCALE: SHEET NO. OF SHEETS STA. TO STA.

| | | | | |
|---|------------------------|----------|--------------------|-----------|
| F.A.S. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 1807 | D7 BRIDGE REPAIRS 09-2 | LAWRENCE | 22 | 13 |
| FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT | | | CONTRACT NO. 74328 | |



1/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

Place 1/2" \times 6" granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded at 1'-0" alt. cts.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.

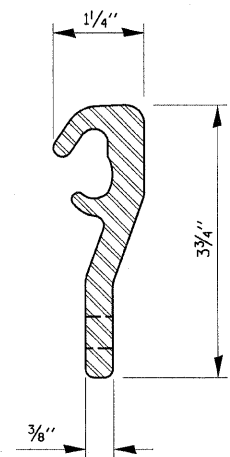
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.

The Inside of the Locking Edge Rail groove shall be free of weld residue.

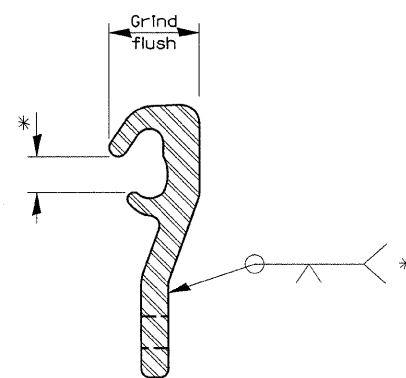
Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed.

**SECTION THRU STRIP SEAL JOINT
FOR OVERLAY OVER DECK BEAMS**

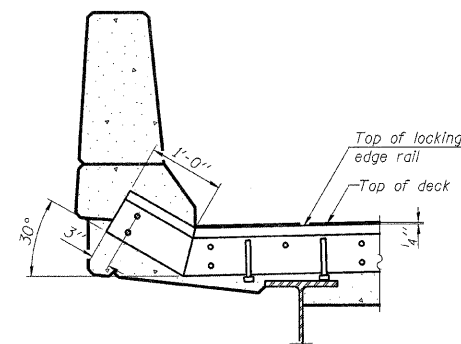


LOCKING EDGE RAIL



LOCKING EDGE RAIL SPLICE

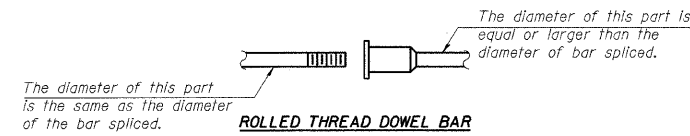
* Omit weld at seal opening.



AT PARAPET

BILL OF MATERIAL

| LOCATION | Item | Unit | Total |
|----------|----------------------------|------|-------|
| W ABUT | Preformed Joint Strip Seal | Foot | 42' |
| BENT 4 | Preformed Joint Strip Seal | Foot | 42' |
| BENT 9 | Preformed Joint Strip Seal | Foot | 42' |
| PIER 4 | Preformed Joint Strip Seal | Foot | 42' |



ROLLED THREAD DOWEL BAR



**** ONE PIECE**

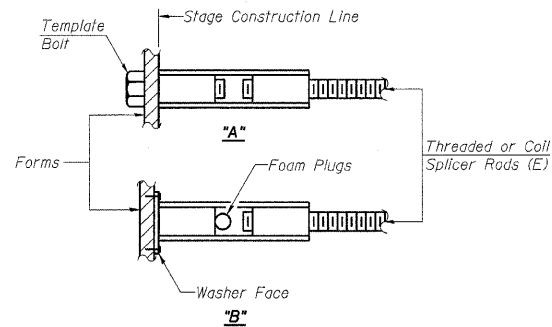
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.

NOTES

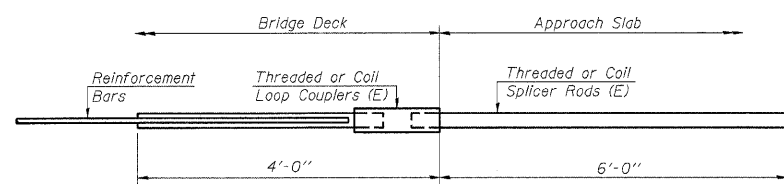
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_s$
- ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_s$

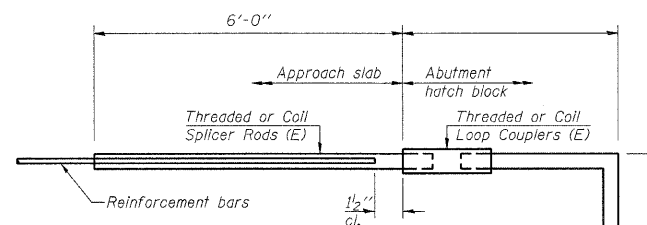
Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

| BAR SPLICER ASSEMBLIES | | | |
|------------------------|---------------------------------|------------------------------|---------------------------------------|
| Bar Size to be Spliced | Splicer Rod or Dowel Bar Length | Strength Requirements | |
| | | Min. Capacity kips - tension | Min. Pull-Out Strength kips - tension |
| #4 | 1'-8" | 14.7 | 7.9 |
| #5 | 2'-0" | 23.0 | 12.3 |
| #6 | 2'-7" | 33.1 | 17.4 |
| #7 | 3'-5" | 45.1 | 23.8 |
| #8 | 4'-6" | 58.9 | 31.3 |
| #9 | 5'-9" | 75.0 | 39.6 |
| #10 | 7'-3" | 95.0 | 50.3 |
| #11 | 9'-0" | 117.4 | 61.8 |



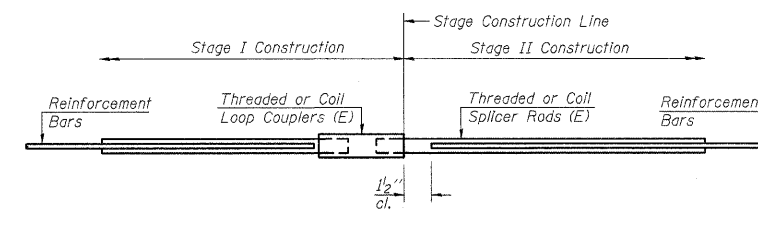
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

| | | |
|--------------------------|---------------------|--|
| Bar Splicer for #5 bar | | |
| Min. Capacity = | 23.0 kips - tension | |
| Min. Pull-out Strength = | 12.3 kips - tension | |
| No. Required = | | |



FOR STUB ABUTMENTS

| | | |
|--------------------------|---------------------|--|
| Bar Splicer for #5 bar | | |
| Min. Capacity = | 23.0 kips - tension | |
| Min. Pull-out Strength = | 12.3 kips - tension | |
| No. Required = | | |



STANDARD

| Bar Size | No. Assemblies Required | Location |
|----------|-------------------------|----------|
| #6 | 3 | W ABUT |
| #7 | 3 | W ABUT |
| #7 | 6 | BENT 4 |
| #7 | 6 | BENT 9 |
| #5 | 8 | PIER 4 |
| #6 | 3 | PIER 4 |

BAR SPLICER ASSEMBLY DETAILS

BSD-1

11-1-06

WEST ABUTMENT, BENT 4, BENT 9 & PIER 4

| | | | | | | | | | | | | |
|---|--------------------------|-----------------------|------------------------|---|------------------------------------|-----------|----|------------------------|-----------------------------------|--------------------|---------------------|---------------------------|
| FILE NAME = c:\projects\74328b\shd\details\74328.dgn | USER NAME = teaslejak | DESIGNED - DRAWN - | REVISED - REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | BAR SPLICER ASEMBLY DETAILS | | | F.A.S. RTE. 1807 | SECTION D7 BRIDGE REPAIRS 09-2 | COUNTY LAWRENCE | TOTAL SHEETS 22 | SHEET NO. 16 |
| PLOT SCALE = 28,2000 1/1 IN. | CHECKED - | REVISED - | REVISED - | | SCALE: | SHEET NO. | OF | SHEETS | STA. | TO STA. | FED. ROAD DIST. NO. | ILLINOIS FED. AID PROJECT |
| PLOT DATE = 7/11/2008 | DATE - | REVISED - | REVISED - | | | | | | | CONTRACT NO. 74328 | | |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | |
|-----------------------|----------|-------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FA 1 | * | LAWRENCE | 22 | 17 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | |

SHEET NO. 1
6 SHEETS

Contract Number: 74328
* D7 Bridge Repairs 2009-2

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 50, 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.

Finger Plate Expansion Joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

Tapered shims shall be added under the stools, as required by the Engineer, to make a smooth finger joint. Cost shall be included with Finger Plate Expansion Joint.

The finger plates shall be flame cut as provided in Article 505.04(k) of the Standard Specifications.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction.

Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

Fasteners shall be high strength bolts. Bolts 3/4"φ, open holes 13/16"φ, unless otherwise noted.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Finger Plate Expansion Joint.

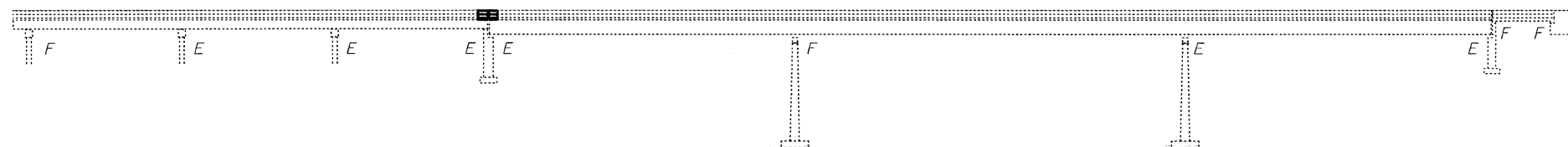
The Contractor shall use extreme care during concrete removal so as not to damage the PPC I-Beam.

The deck surface shall have its final finish tined according to Article 420.09(e)(1) of the Standard Specifications. Cost included with Concrete Superstructure.

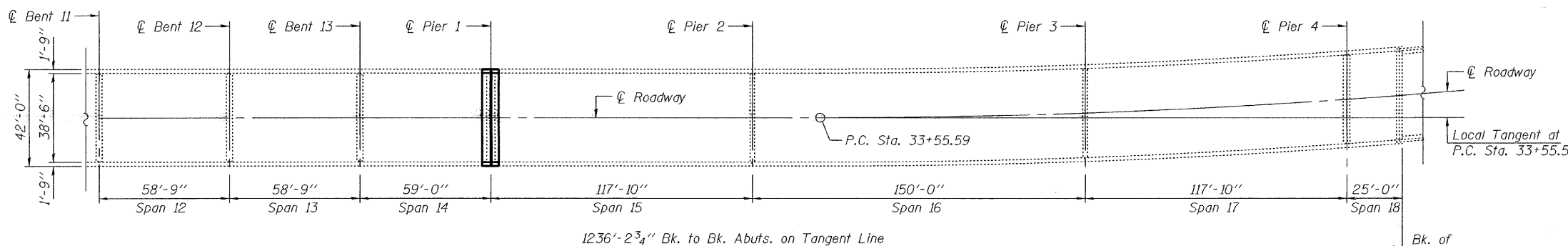
Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

Field welding of construction accessories will not be permitted to beam or girders.

Estimated weight of Structural Steel = 20,280 pounds.



PARTIAL ELEVATION



PARTIAL PLAN

Remove existing Neoprene Expansion Joint at Pier 1 and replace with Finger Plate Joint.

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)

TOTAL BILL OF MATERIAL

| ITEM | UNIT | QUANTITY |
|--------------------------------------|---------|----------|
| Concrete Removal | Cu. Yd. | 17.2 |
| Concrete Superstructure | Cu. Yd. | 16.7 |
| Reinforcement Bars, Epoxy Coated | Pound | 3000 |
| Finger Plate Expansion Joint | Foot | 39 |
| Fabric Reinforced Elastomeric Trough | Foot | 39 |
| Bar Splacers | Each | 26 |
| Mechanical Splice | Each | 90 |

| | |
|----------|--------------------|
| DESIGNED | Adrian T. Holloway |
| CHECKED | [Signature] |
| DRAWN | Steffen |
| CHECKED | AJH AJB |

| | | |
|----------|-------------|---------------|
| EXAMINED | [Signature] | JULY 31, 2008 |
| PASSED | [Signature] | |



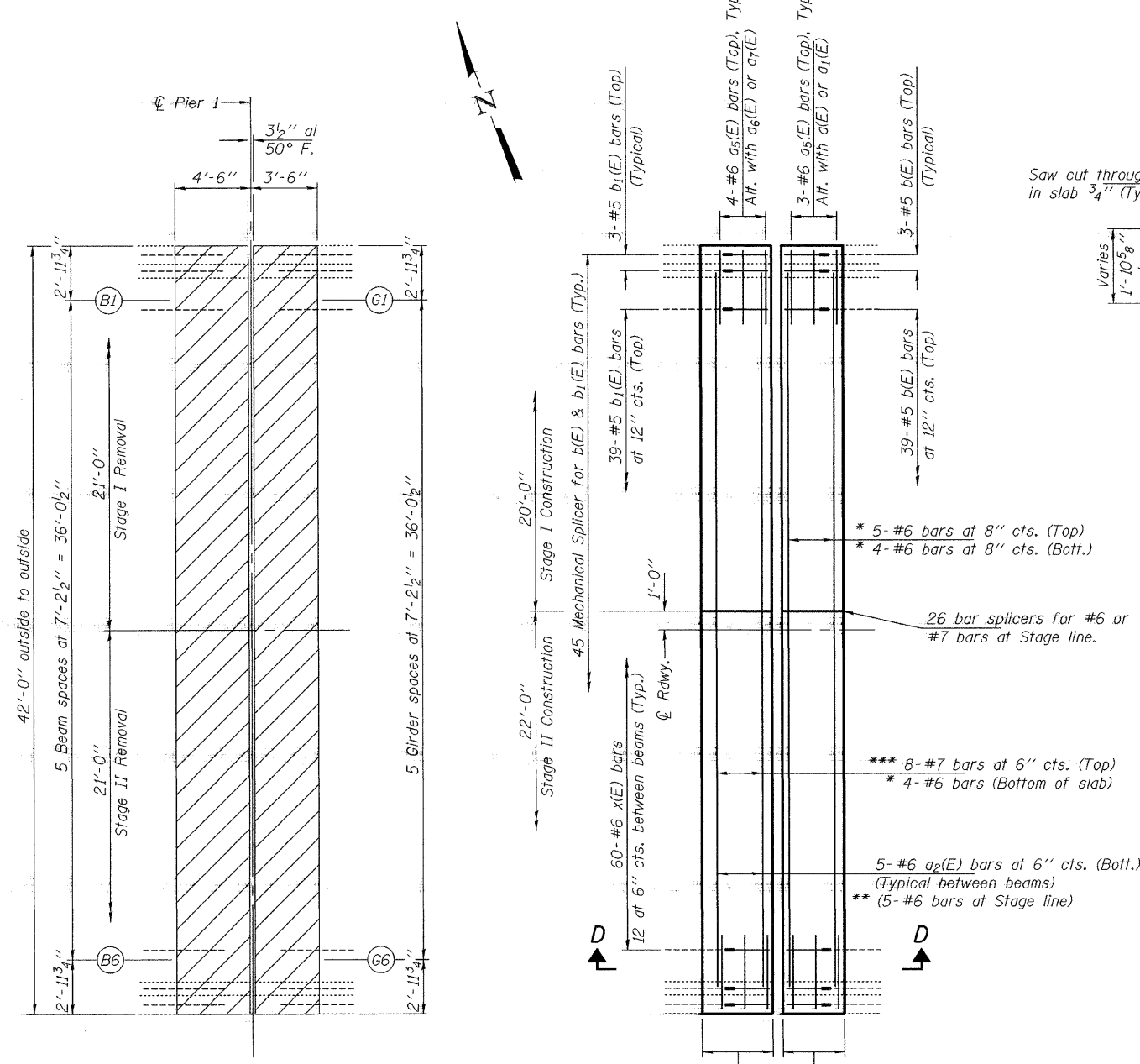
Expires: November 30, 2008

PLAN & ELEVATION
FA RT. 1 SPUR
LAWRENCE COUNTY
SN 051-0053

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|---------|----------|-------------------|-----------|-------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 2 6 SHEETS |
| FA 1 | * | LAWRENCE | 22 | 18 | |
| FED. ROAD DIST. NO. 7 | | ILLINOIS | FED. AID PROJECT- | | |

Contract Number: 74328
* D7 Bridge Repairs 2009-2

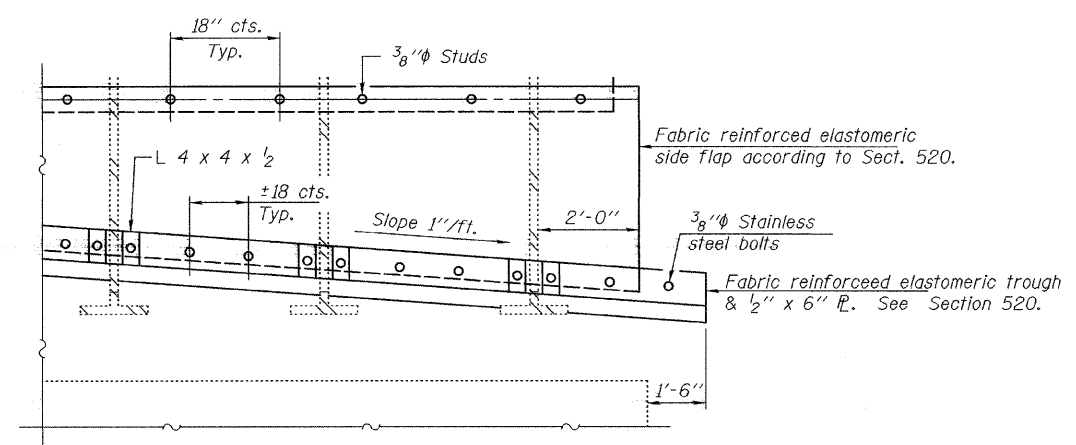


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

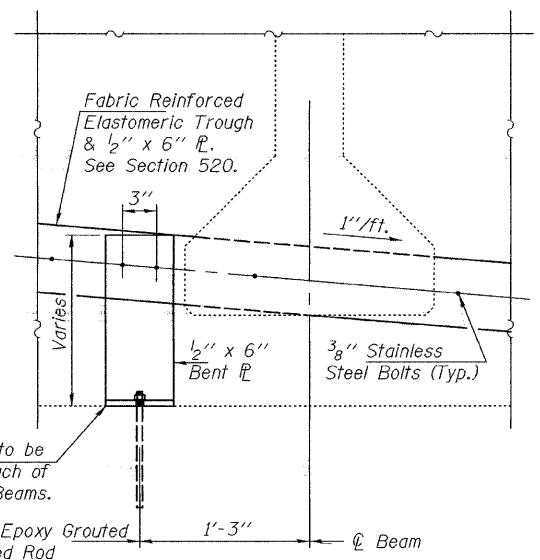
| | | | | |
|-----------------------|----------|------------------|--------------|-----------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| FA 1 | * | LAWRENCE | 22 | 20 |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT | | |

SHEET NO. 4
6 SHEETS

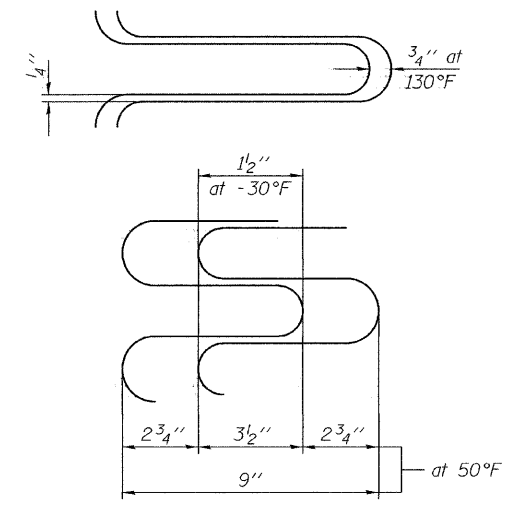
Contract Number: 74328
* D7 Bridge Repairs 2009-2



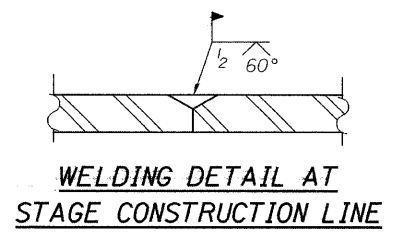
SECTION E-E



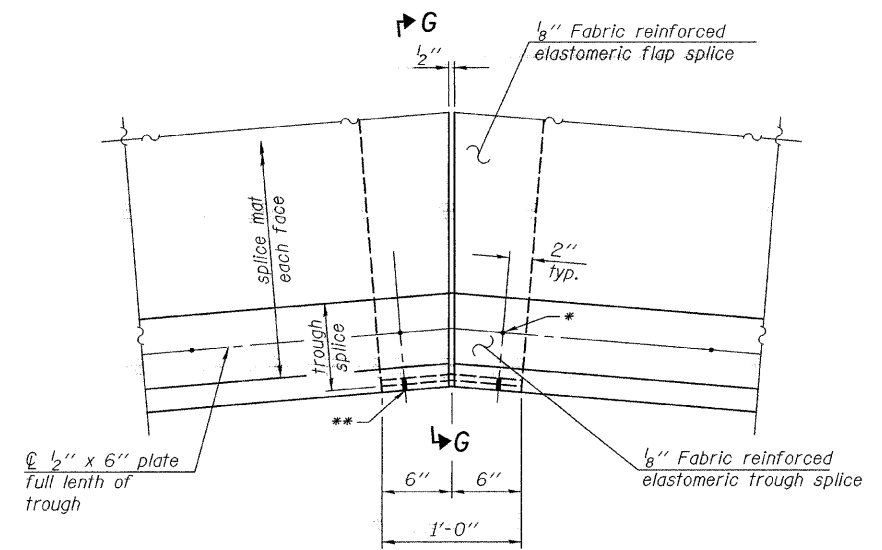
SECTION F-F



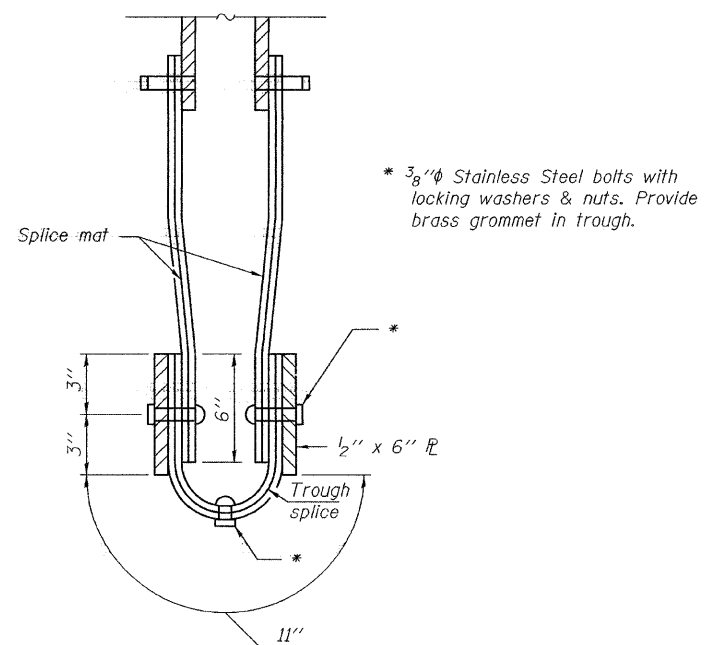
FINGER DETAIL



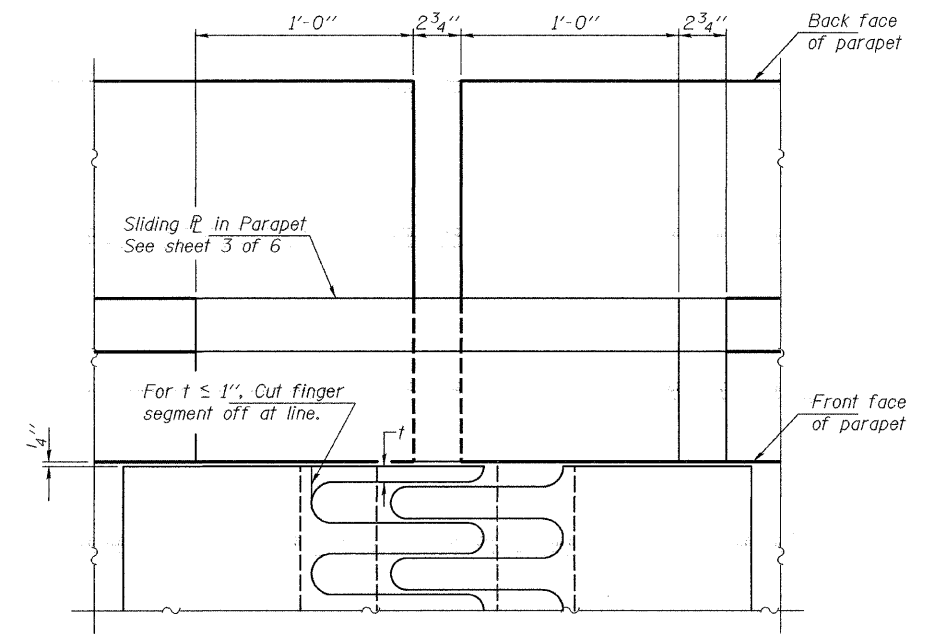
WELDING DETAIL AT STAGE CONSTRUCTION LINE



TROUGH SPLICE DETAIL



SECTION G-G



DETAIL B

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

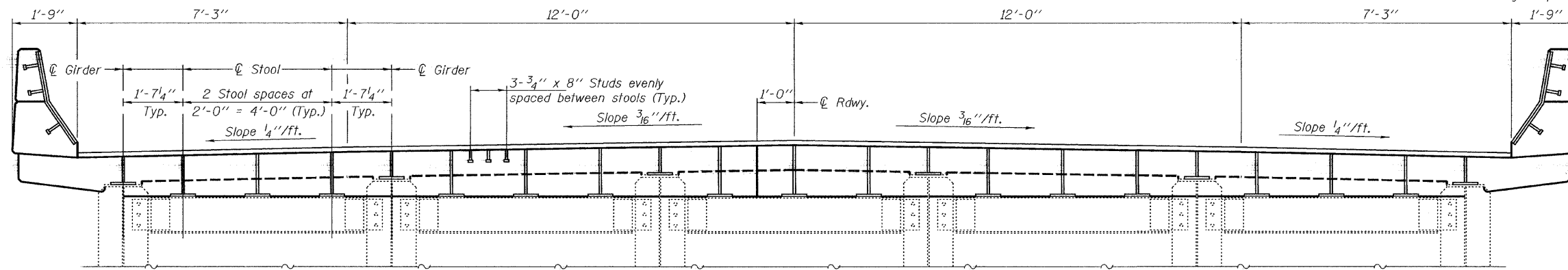
JULY 31, 2008
EXAMINED *Carl Perry*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

REPAIR DETAILS
FA RT. 1 SPUR
LAWRENCE COUNTY
SN 051-0053

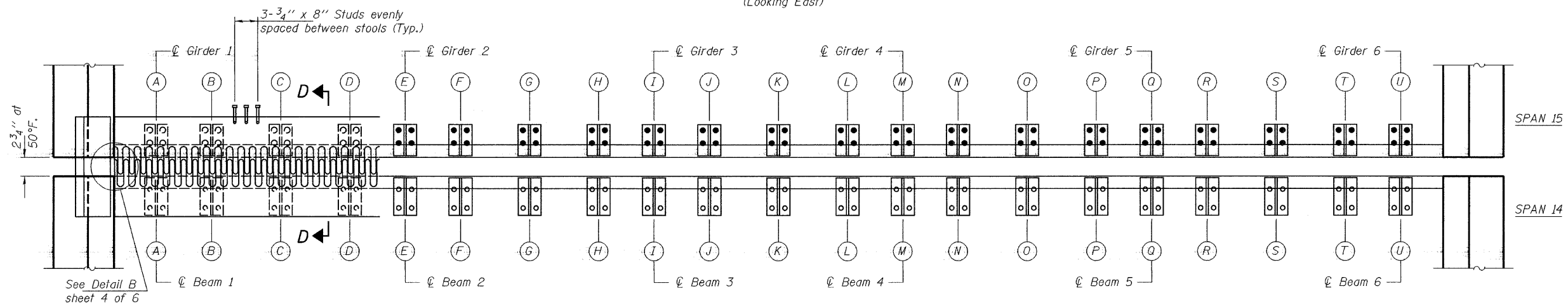
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|-------------------|--------------|-----------|-------------------------|
| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. | SHEET NO. 5 6 SHEETS |
| FA 1 | * | LAWRENCE | 22 | 21 | |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | | |

Contract Number: 74328
* D7 Bridge Repairs 2009-2

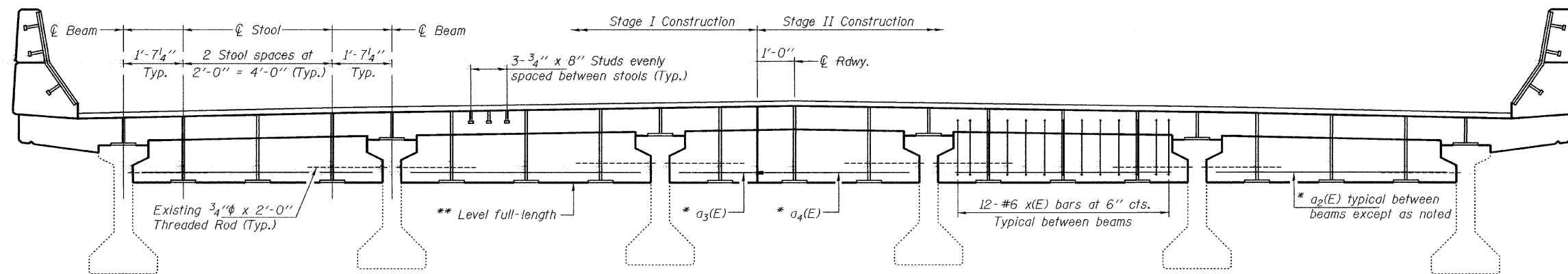


SECTION THRU SPAN 15
(Looking East)



PLAN

Note:
See sheet 3 of 6 for Sec. D-D.



SECTION THRU SPAN 14
(Looking East)

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

JULY 31, 2008
EXAMINED *Carl Perry*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

- * These bars need to be placed in the fabrication shop, prior to the installation of the Finger Plate.
- ** The support system for the Finger Plate Assembly shall be sufficiently rigid as to prevent any movement or rotation of Finger Plate & stools during the placing of the concrete. Cast included with Finger Plate Expansion Joint.

REPAIR DETAILS
FA RT. 1 SPUR
LAWRENCE COUNTY
SN 051-0053

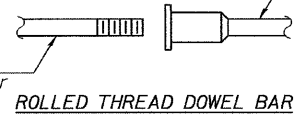
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|----------|-------------------|--------------|-----------|-------------|
| ROUTE NO. | SECTION | COUNTY | STATE SHEETS | SHEET NO. | SHEET NO. 6 |
| FA 1 | * | LAWRENCE | 22 | 22 | 6 SHEETS |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | | |

Contract Number: 74328
* D7 Bridge Repairs 2009-2

The diameter of this part is equal or larger than the diameter of bar spliced.

The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



** ONE PIECE

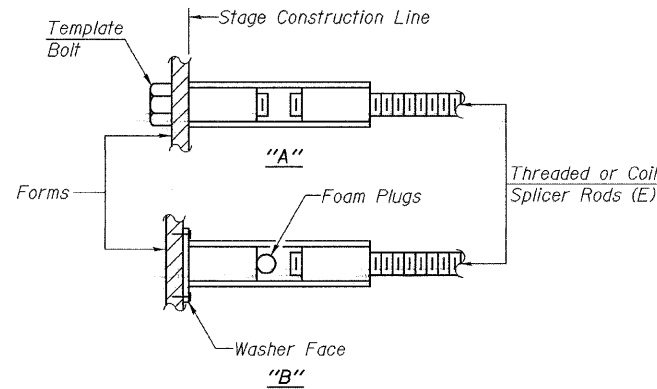
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" :Set bar splicer assembly by means of a template bolt.
"B" :Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

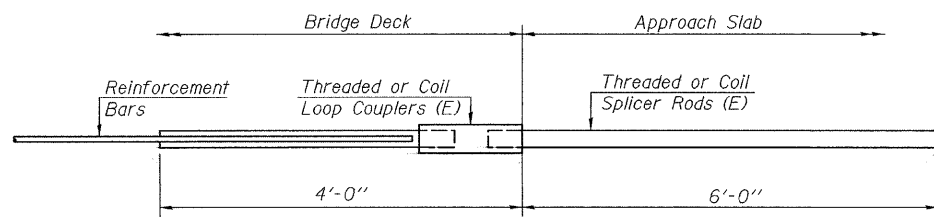
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

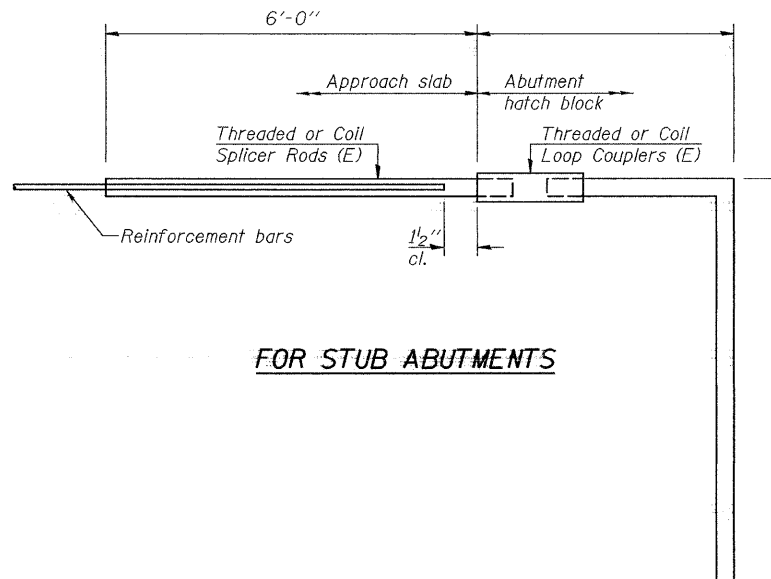
- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$
- ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

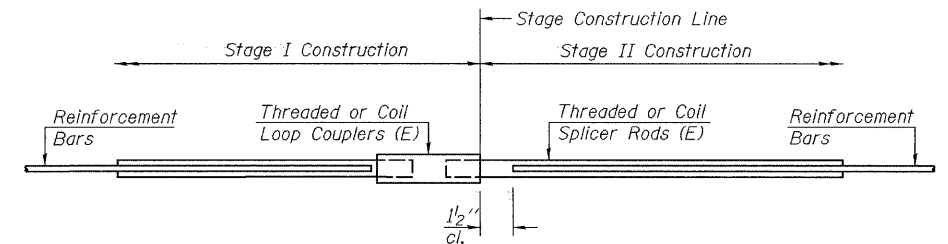
| Bar Size to be Spliced | Splicer Rod or Dowel Bar Length | Strength Requirements | |
|------------------------|---------------------------------|------------------------------|---------------------------------------|
| | | Min. Capacity kips - tension | Min. Pull-Out Strength kips - tension |
| #4 | 1'-8" | 14.7 | 7.9 |
| #5 | 2'-0" | 23.0 | 12.3 |
| #6 | 2'-7" | 33.1 | 17.4 |
| #7 | 3'-5" | 45.1 | 23.8 |
| #8 | 4'-6" | 58.9 | 31.3 |
| #9 | 5'-9" | 75.0 | 39.6 |
| #10 | 7'-3" | 95.0 | 50.3 |
| #11 | 9'-0" | 117.4 | 61.8 |



FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS



FOR STUB ABUTMENTS



STANDARD

| | |
|--------------------------|---------------------|
| Bar Splicer for #5 bar | |
| Min. Capacity = | 23.0 kips - tension |
| Min. Pull-out Strength = | 12.3 kips - tension |
| No. Required = | |

| | |
|--------------------------|---------------------|
| Bar Splicer for #5 bar | |
| Min. Capacity = | 23.0 kips - tension |
| Min. Pull-out Strength = | 12.3 kips - tension |
| No. Required = | |

| Bar Size | No. Assemblies Required | Location |
|----------|-------------------------|----------|
| #6 | 18 | Deck |
| #7 | 8 | Deck |
| | | |
| | | |

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

JULY 31, 2008
EXAMINED *Carl Perry*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

BSD-1 5-16-08

REPAIR DETAILS
FA RT. 1 SPUR
LAWRENCE COUNTY
SN 051-0053