

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	OGLE	15	1

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

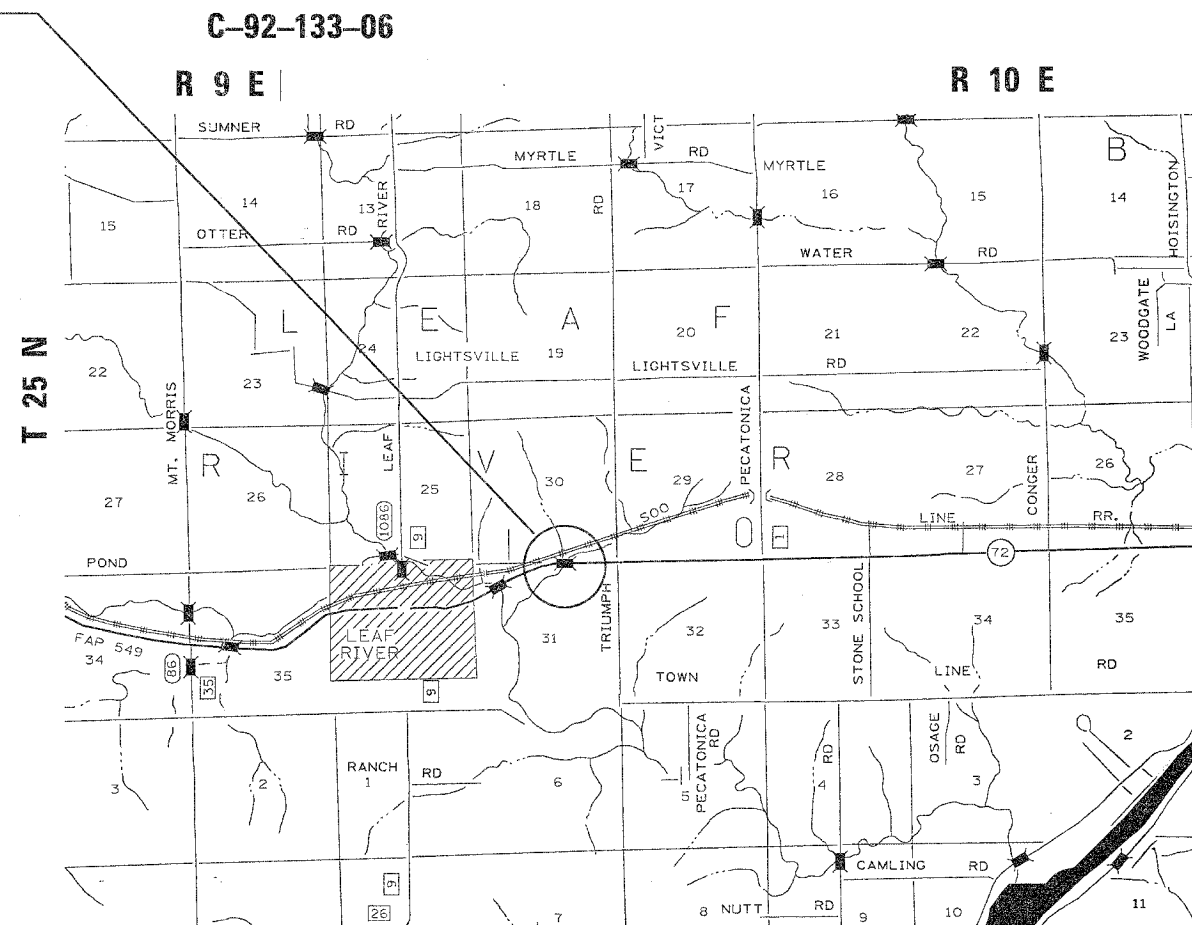
FAP ROUTE 549 (IL 72)
SECTION 117BR-M
OGLE COUNTY

D-92-025-06



LOCATION OF SECTION INDICATED THUS: -

Project Location
 Structure No. 071-0068

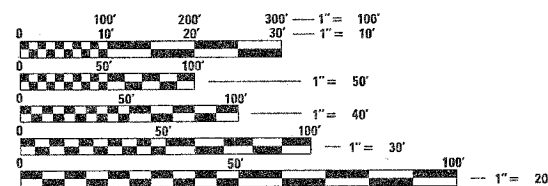


INDEX OF SHEETS

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STANDARDS

- 630001-07 Steel Plate Beam Guardrail
- 630301-04 Shoulder Widening for Type 1 (Special) Guardrail Terminals
- 631032-03 Traffic Barrier Terminal, Type 6A
- 635001 Delineators
- 635006-02 Reflector and Terminal Marker Placement
- 635011-01 Reflector Marker and Mounting Details
- 701006-02 Off-Road Operations, 2L, 2W, 4.5 m (15') to 600 mm (24") From Pavement Edge
- 701201-02 Lane Closure, 2L, 2W, Day Only, for Speeds > 45 MPH
- 701316-03 Lane Closure, 2L, 2W, Bridge Repair, for Speeds > 45 MPH
- 701321-08 Lane Closure, 2L, 2W, Bridge Repair with Barrier
- 702001-06 Traffic Control Devices
- 704001-03 Temporary Concrete Barrier
- 720011 Metal Posts for Signs, Markers and Delineators
- 728001 Telescoping Steel Sign Support
- 729001 Applications of Types A and B Metal Posts (For Signs & Markers)



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

CONTRACT NO. 64C02

BRIDGE MAINTENANCE ENGINEER: MAHMOUD ETEMADI (815) 284-5393

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED January 31st 20 07
Joseph L. Connor
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

March 23, 20 07
Eric E. Harwood
 INTERIM ENGINEER OF DESIGN AND ENVIRONMENT

March 23, 20 07
Milton R. Sewell, P.E.
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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 OF THE STATE OF ILLINOIS**

SUMMARY OF QUANTITIES

CONTRACT NO. 64C02				
F.A.P. RYE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	Ogle	15	2
STA.		TO STA.		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

100 % State
SFTY-2A

Pay Code	Item Description	Units	Quantity
20400800	FURNISHED EXCAVATION	CU YD	75
40300200	BITUMINOUS MATERIALS (PRIME COAT)	TON	0.2
40600300	AGGREGATE (PRIME COAT)	TON	1
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	160
40600990	TEMPORARY RAMP	SQ YD	300
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	86
42001300	PROTECTIVE COAT	SQ YD	199
44000086	HOT-MIX ASPHALT SURFACE REMOVAL COMPLETE	SQ YD	106
48101200	AGGREGATE SHOULDERS, TYPE B	TON	50
50102400	CONCRETE REMOVAL	CU YD	3.1
50300255	CONCRETE SUPERSTRUCTURE	CU YD	3.6
50300260	BRIDGE DECK GROOVING	SQ YD	186
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	798
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	450
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3030
* 50901050	STEEL RAILING, TYPE SM	FOOT	107
* 63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	375
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	260
63500105	DELINEATORS	EACH	4
67100100	MOBILIZATION	L SUM	1
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	2

100 % State
SFTY-2A

Pay Code	Item Description	Units	Quantity
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	64
70300520	PAVEMENT MARKING TAPE, TYPE III 4"	FOOT	2580
70300570	PAVEMENT MARKING TAPE, TYPE III 24"	FOOT	24
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	535
70400100	TEMPORARY CONCRETE BARRIER	FOOT	275
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	550
78200400	GUARDRAIL REFLECTORS	EACH	4
78200410	GUARDRAIL MARKERS, TYPE A	EACH	16
78300100	PAVEMENT MARKING REMOVAL	SQ FT	150
X0301424	SILICONE JOINT SEALER	FOOT	33
X0320047	REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS	SQ FT	798
X0320887	POLYMER CONCRETE	CU FT	2.4
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	199
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	5
50800515	BAR SPLICERS	EACH	64
Z0003700	BEARING PAD ADJUSTMENT	EACH	12
Z0017300	DOWEL REPAIR	EACH	12
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
Z0032700	KEYWAY REPAIR	FOOT	266

* SPECIALTY ITEM

Summary of Quantities
 Illinois Route 72 over Tributary to Mud Creek
 FAP Route 549
 Section 117BR-M
 Ogle County
 Structure No. 071-0068

GENERAL NOTES

CONTRACT NO. 64C02			
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS
549	117BR-M	Ogle	15
SHEET NO.		3	
STA.		TO STA.	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	

The following Mixture Requirements are applicable for this project:

Mixture Uses(s):	Surface
PG:	PG 64-22
RAP%: (Max)	15%
Design Air Voids	4.2 @ N50
Mixture Composition (Gradation Mixture)	IL 9.5 or 12.5
Friction Aggregate	C
20 Year ESAL	0.4

A contingency item of 75 Cubic Yards of Furnish Excavation is included to build up the shoulders when required by the Resident Engineer.

A contingency item of 50 Tons of Aggregate Shoulders, Type B is included to build up the shoulders when required by the Resident Engineer.

This structure will retain the same number 071-0068.

At bridge expansion joints, if temporary expansion joint bulkheads are attached to adjacent deck slabs or abutments for support, the Contractor shall cut the attachments as soon as the concrete has set to prevent joint damage due to horizontal contraction or expansion.

Culvert & bridge flows must be maintained throughout the project. Normal flow shall be allowed to pass at the rate it enters the jobsite. High flows shall be allowed to pass without causing damage to upstream properties.

The millings from Hot-Mix Asphalt Surface Removal shall be used to build up the existing shoulders, as shown on the typical sections and/or as directed by the Engineer. The shoulder shall be rolled and compacted as directed by the Engineer. Excess grindings or large chunks shall be disposed of by the Contractor. No grindings will be allowed on the foreslopes. The cost shall be included in the contract unit price for the BITUMINOUS SURFACE REMOVAL specified.

Embankment quantities for the construction of the Traffic Barrier Terminals as shown in the plans are included in quantities for Furnished Excavation.

The Contractor shall supply the Resident Engineer with the manufacturer's installation requirements for the type of Steel Plate Beam Guardrail Terminal Type I Special (Tangent) or Steel Plate Beam Guardrail Terminal Type I Special (Flared).

One 16d galvanized nail shall be used to toe nail the wood block out to the wood post on all Traffic Barrier Terminal Type I Specials.

Delineators shall be placed at the ends of approach guardrail terminal sections, and at each headwall or end section of AR Culverts. This work will be paid for at the contract unit price each for DELINEATORS.

The Resident Engineer shall mark out No Passing zones and contact the Bureau of Operations one or two days before the finish of each resurfacing location so that locations can be painted within the guidelines of Section 703 Work Zone Pavement Marking.

Install a "TO ACTIVATE SIGNAL" sign for the traffic signal detector loops. The detail of this sign is included in the plans. This work will be included in the cost of TRAFFIC CONTROL AND PROTECTION STANDARD 701321.

The final top 100 mm (four inches) of soil in any right-of-way area disturbed by the Contractor must be capable of supporting vegetation. The soil must be from the A horizon (zero to 2⁵/₃₂ deep) of soil profiles of local soils.

The Contractor shall seed all disturbed areas within the project limits. Seeding Class 4 or 6 (modified) shall be used, except in front of properties where the grass will be mowed, then use Seeding, Class 1 (modified). Class 6 (modified) shall be used on front slopes and ditch bottoms. Class 4 shall be used behind Type A gutter, on all backslopes and areas behind the backslope, and beyond the toe of front slope on fill sections without ditches. This work will be included in the contract unit price per Cubic Meter (Cubic Yard) for FURNISH EXCAVATION.

Fertilizer shall be applied to all disturbed areas and incorporated into the seedbed prior to seeding or placement of sod at the rate specified in Sections 250 and 252 of the Standard Specifications. This work shall be included in the cost of FURNISH EXCAVATION.

Mulch Method II shall be applied over all seeded areas. This shall be included in the cost of the FURNISH EXCAVATION.

The Contractor shall be responsible for protecting utility property during construction operations as outlined in Article 107.31 of the Standard Specifications. A minimum of 48 hours advance notice is required for non-emergency work. The JULIE number is 800-892-0123. The following listed utilities located within the project limits or immediately adjacent to the project construction limits are members of JULIE:

ComEd 630/ 437-2129

Leaf River Telephone Co. 815/738-2213

Commitments:

All work on the structures over Mud Creek Tributary shall be performed from the existing deck and no work shall take place below the existing ground.

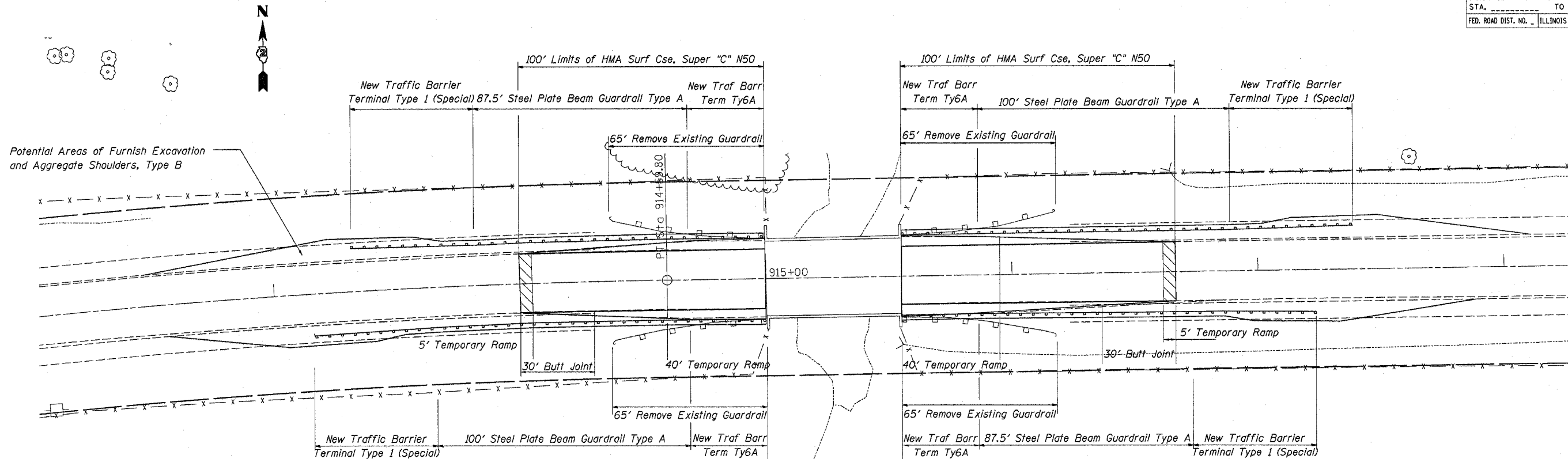
No trees shall be removed.

No materials shall be placed below the structure.

General Notes
Illinois Route 72 over Tributary to Mud Creek
FAP Route 549
Section 117BR-M
Ogle County
Structure No. 071-0068

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	Ogle	15	9
STA. _____ TO STA. _____		FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT		

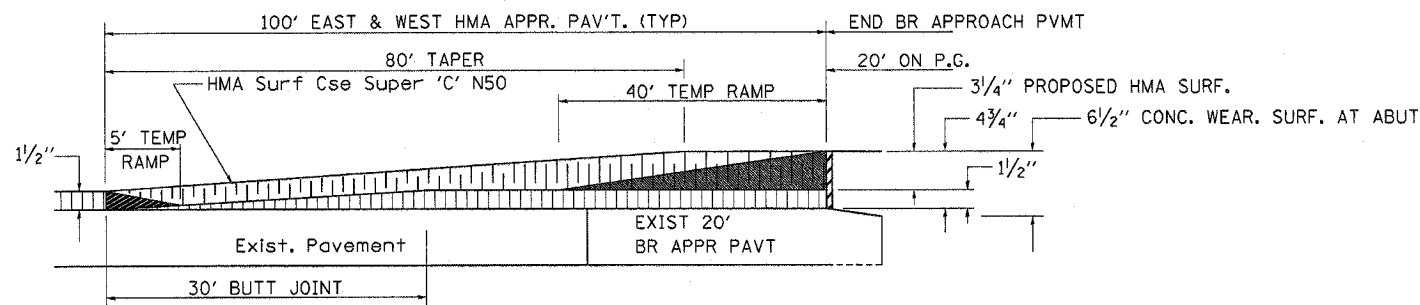
Station Equation 914+59.80 BK(Roadway Plan) = 547+15.80 AH(Bridge Plans)



Steel Plate Beam Guardrail Type A
Foot

HMA Surf Rem - Butt Jt	Sq. Yd.
Sta. 914+00 to 914+30	80
Sta. 916+36 to 916+66	80
Total	160

Lt. Sta 913+81 to 914+68.5	87.5
Rt. Sta. 913+68 to 914+68	100
Lt. Sta. 915+86.5 to 916+86.5	100
Rt. Sta. 915+86 to 916+73.5	87.5
Total	375



APPROACH PAVEMENT PROFILE

Temporary Ramp	Sq. Yd.
Sta. 914+00 to Sta. 914+05	14
Sta. 914+60 to Sta. 915+00	116
Sta. 915+55 to Sta. 915+95	116
Sta. 916+50 to Sta. 916+55	14
Total	300

HMA Materials Prime Coat	Ton
East and West Approaches	0.2
Total	0.2

Aggregate Prime Coat	Ton
East and West Approaches	1
Total	1

HMA Surf Cse, Super 'C' N50	Ton
Sta. 914+00 to Sta. 915+00	43
Sta. 915+55 to Sta. 916+55	43
Total	86

Remove SPBGR	Foot
Lt. Sta 914+37 to 914+99	65
Rt. Sta. 914+37 to 970+69.5	65
Lt. Sta. 915+55 to 916+18	65
Rt. Sta. 915+55 to 916+18	65
Total	260

Roadway Plan
Illinois Route 72 over Tributary to Mud Creek
FAP Route 549
Section 117BR-M
Ogle County
Structure No. 071-0068

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	Ogle	15	5
STA. _____ TO STA. _____		FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT		

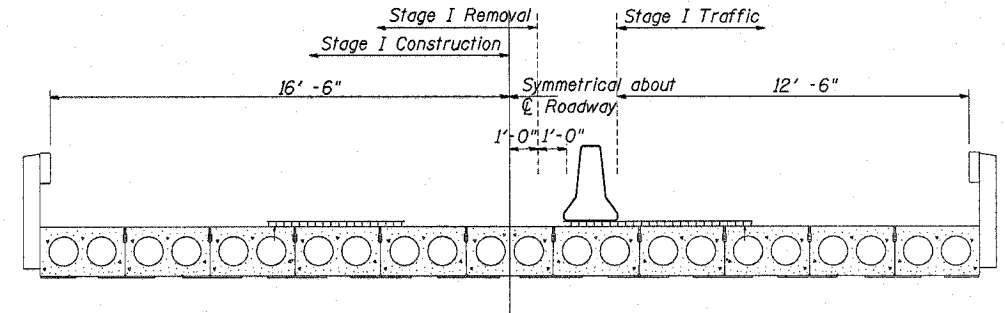
Traffic Control Plan

Stage I

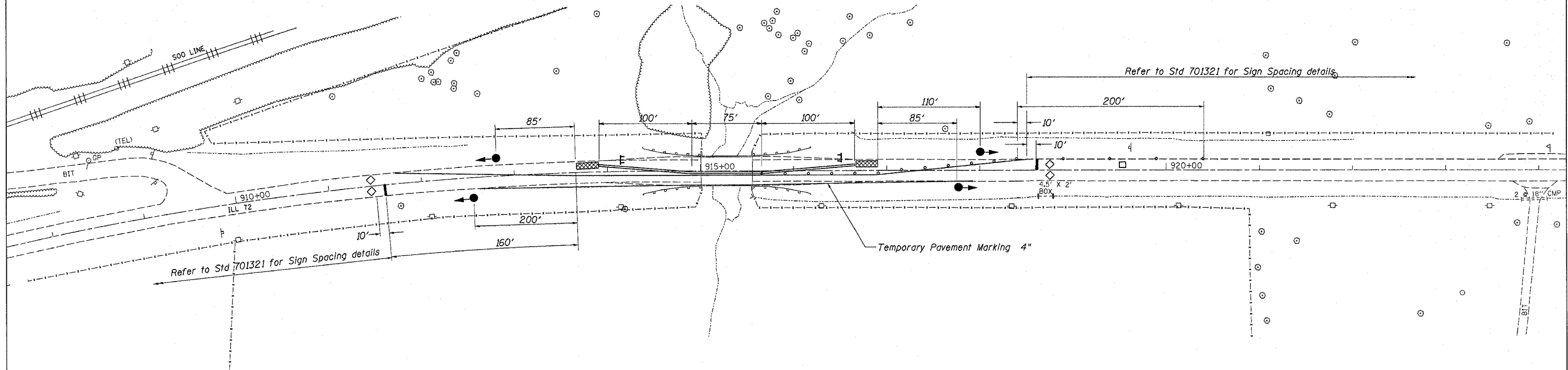
Refer to Traffic Control & Protection Std 701321 for additional requirements.

Proposed Sequence of Operations

1. Install Stage I Std 701321
2. Build Stage I Deck Overlay and Bridge Rail
3. Remove Barrier Wall and Install Stage I Std 701316
4. Construct Furnished Excavation, Guardrail, and Temporary Ramps
5. Remove Std 701316 and Install Std 701321 for Stage II
6. Build Stage II Deck Overlay and Guardrail
7. Remove Barrier Wall and Install Stage II Std 701316
8. Construct Furnished Excavation, Guardrail, and Temporary Ramps
9. Remove Standard 701316
10. Complete Project using Standard 701201



CROSS SECTION
(Looking East)



Temporary Bridge Traffic Signals	
	Each
Standard 701321	1
Total	1

Temporary Concrete Barrier	
	Foot
Standard 701321	275
Total	275

Pavement Marking Tape, Type III 24"	
	Foot
Stop Bars	24
Total	24

Short Term Pavement Marking	
	Foot
Post Stage II	64
Total	64

Traffic Control & Protection Std 701321	
	Each
Entire Project	1
Total	1

Temporary Impact Attenuators	
	Each
Standard 701321	2
Total	2

Temporary Pavement Marking 4"	
	Foot
Sta 912+05 to 918+50 Stage I	1290
Sta 912+05 to 918+50 Stage II	1290
Total	2580

Pavement Marking Removal	
	Sq Ft
Stage I	100
Stage II	50
Total	150

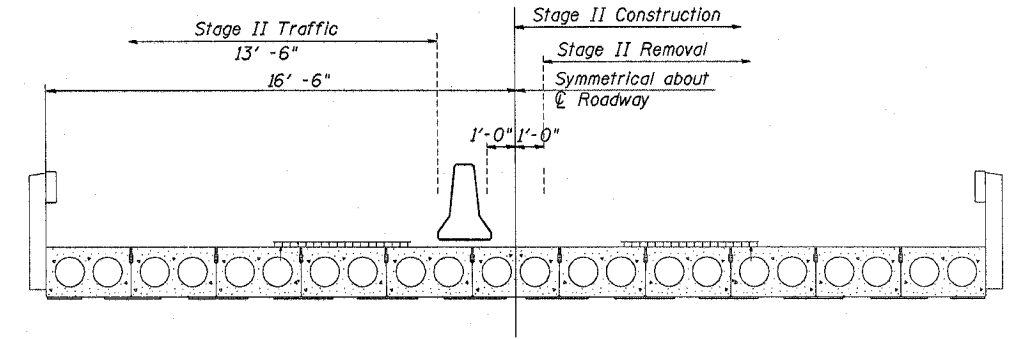
Traffic Control Plan
Illinois Route 72 over Tributary to Mud Creek
FAP Route 549
Section 117BR-M
Ogle County
Structure No. 071-0068

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	Ogle	15	6
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT		

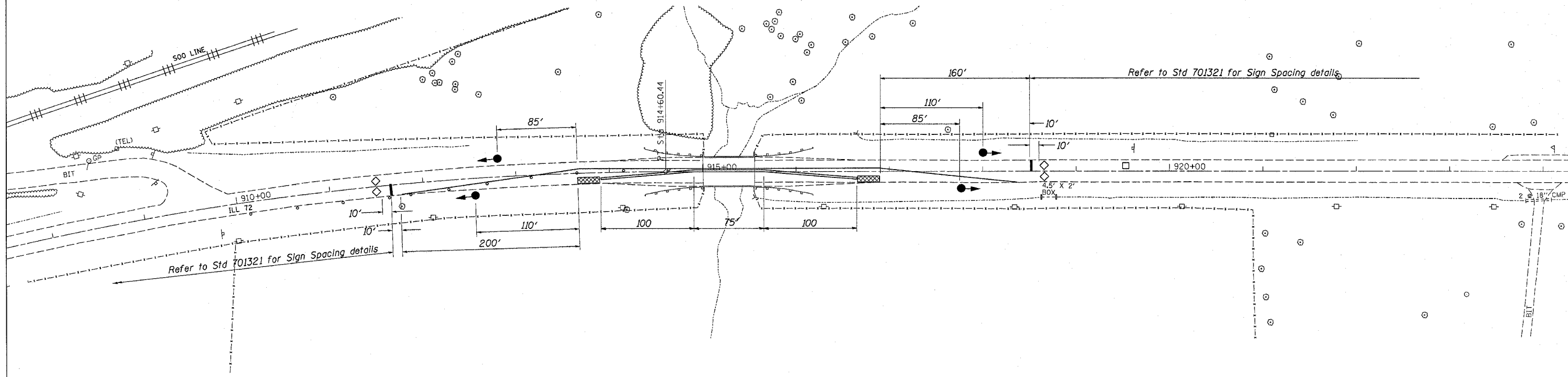
Traffic Control Plan

Stage II

Refer to Traffic Control & Protection Std 701321 for additional requirements.



CROSS SECTION
(Looking East)



Relocate Temporary Concrete Barrier	
	Foot
Temporary Storage between Stages	275
Stage II	275
Total	550

Workzone Pavement Marking Removal	
	Sq Ft
Stage II	35
Post Stage II	452
Stop Bars	48
Total	150

Relocate Temporary Impact Attenuators	
	Each
Stage II	2
Total	2

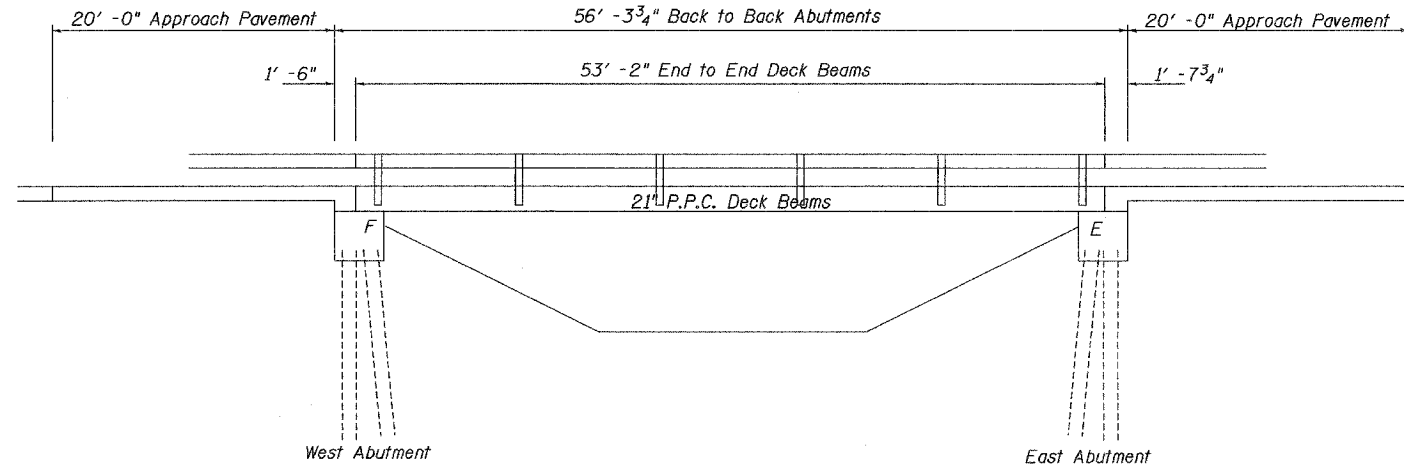
Traffic Control Plan
Illinois Route 72 over Tributary to Mud Creek
FAP Route 549
Section 117BR-M
Ogle County
Structure No. 071-0068

PLOT DATE = Mon Jan 22 14:05:51 2007
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 USER NAME = jtracy

Station Equation 914+59.80 BK(Roadway Plan) = 547+15.80 AH(Bridge Plans)

CONTRACT NO. 64C02				
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	Ogle	15	7
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. _____		ILLINOIS FED. AID PROJECT _____		

Sheet 1 of 5 Sheets



Elevation

Note:
Existing Beams 1, 8, 9, 10 & 11 from the North are to be Removed and Replaced. For details see sheets 13 thru 15 of 15.

General Notes

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 AASHTO M 270 Grade 36, unless otherwise noted.

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

Reinforcement bars designated (E) shall be epoxy coated.

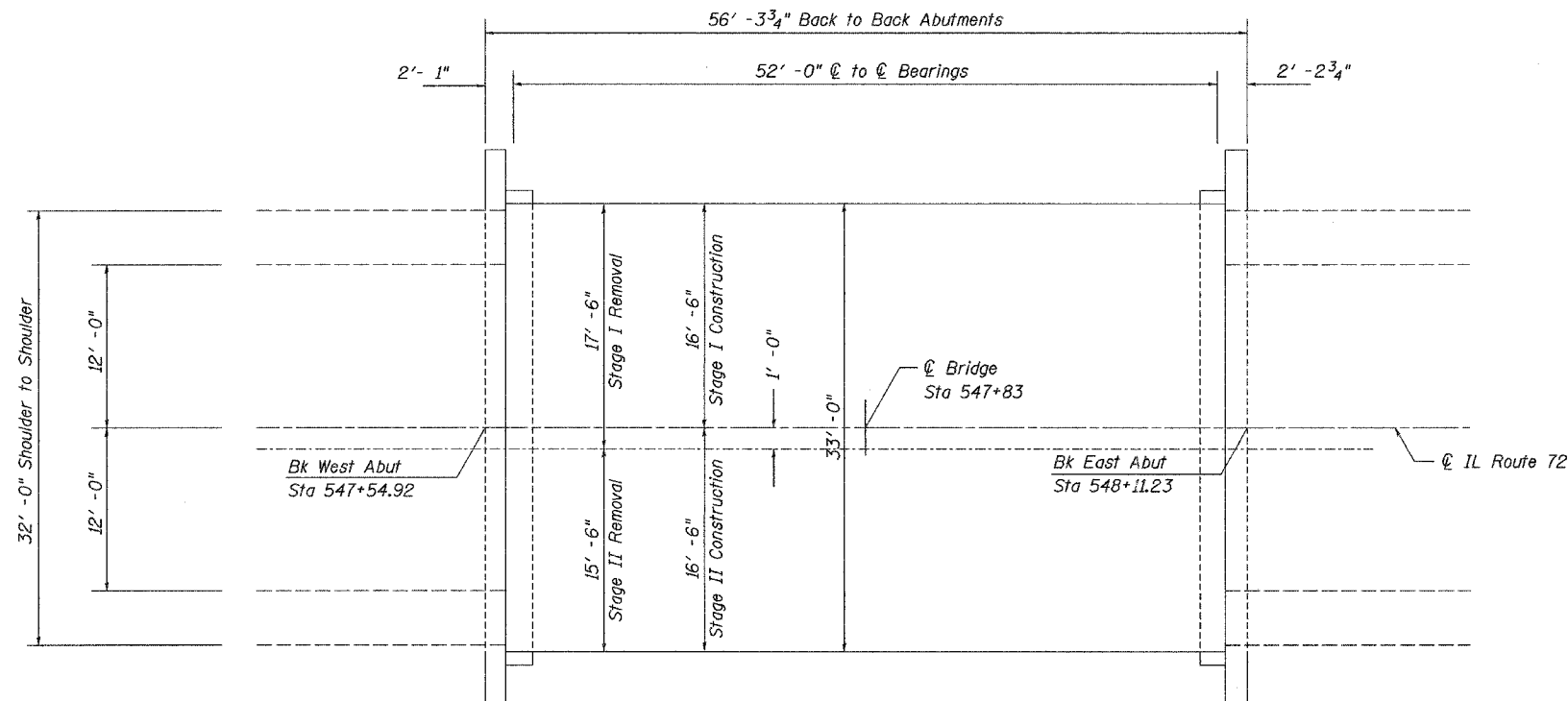
Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

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

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M 300, Type 1. Cost included with Furnishing and Erecting Structural Steel.

Total Bill of Material

ITEM	UNIT	QUANTITY
HMA SUR REM COMPLETE	SQ YD	106
CONC WEARING SURF 5"	SQ YD	199
BR DECK GROOVING	SQ YD	186
CONC SUPERSTRUCTURE	CU YD	3.6
CONC REM	CU YD	3.1
F & E STRUCT STEEL	POUND	450
REINF BARS, EPOXY CTD	POUND	3030
KEYWAY REPAIR	FT	266
DOWEL REPAIR	EA	12
BEARING PAD ADJUSTMENT	EA	12
SILICONE JOINT SEALER	FT	33
PROTECTIVE COAT	SQ YD	199
BAR SPLICERS	EA	64
STEEL RAILING TYPE SM	FOOT	107
POLYMER CONCRETE	CU FT	2.4
PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	798
REMOVAL OF EXISTING PPC DECK BEAMS	SQ FT	798
ASBESTOS BEARING PAD REMOVAL	EACH	5



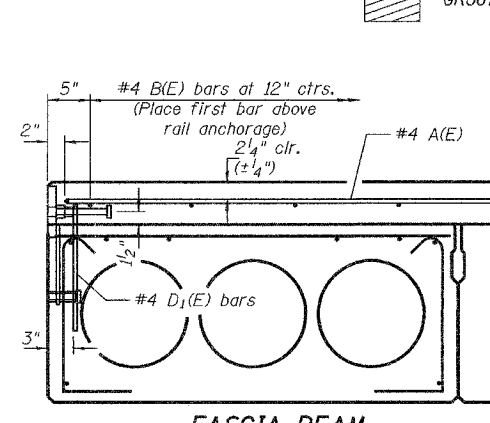
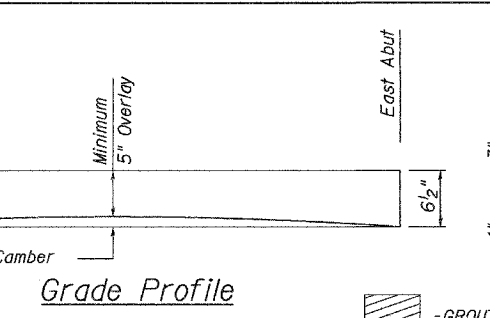
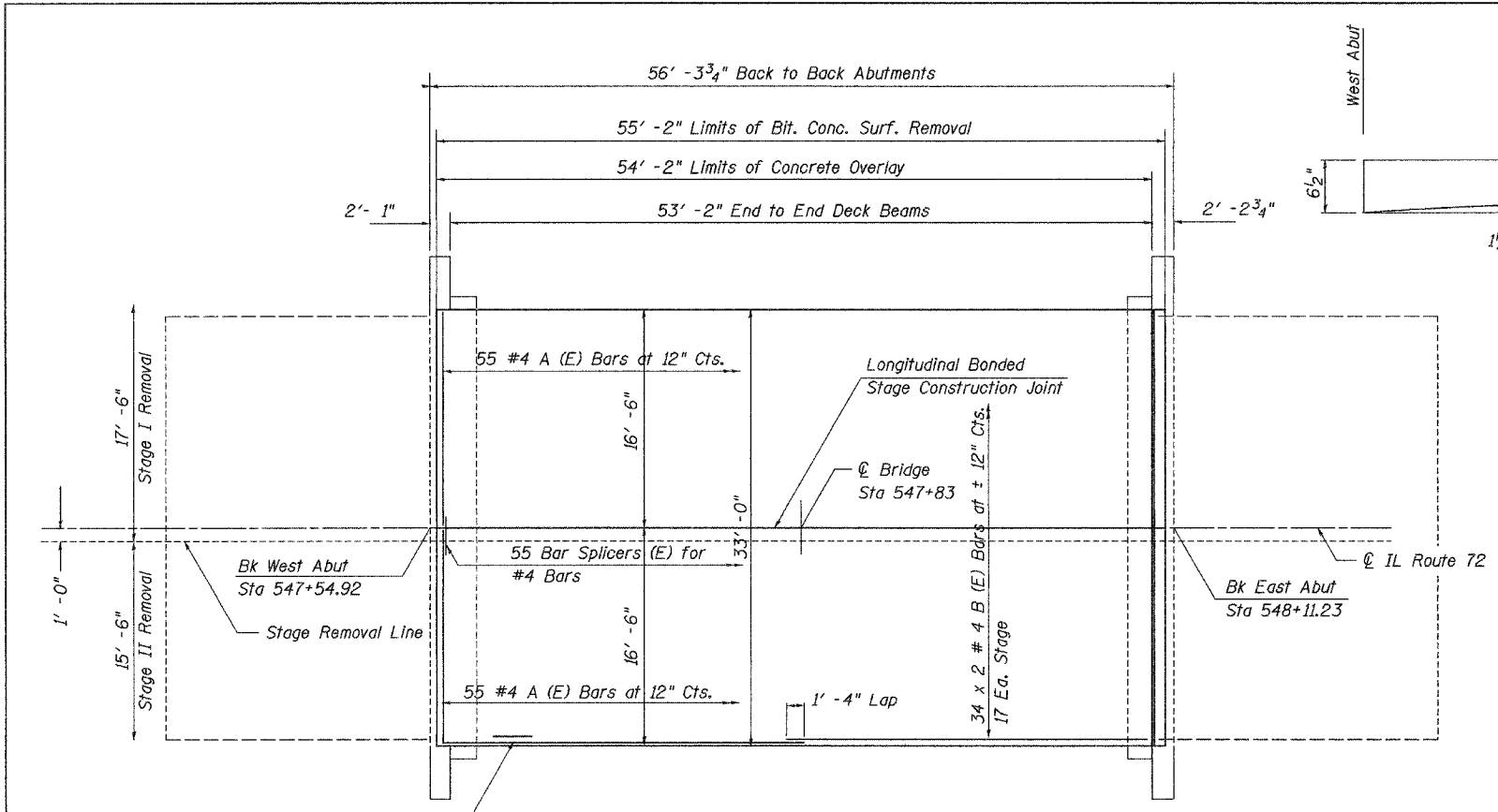
Plan

DESIGN STRESSES

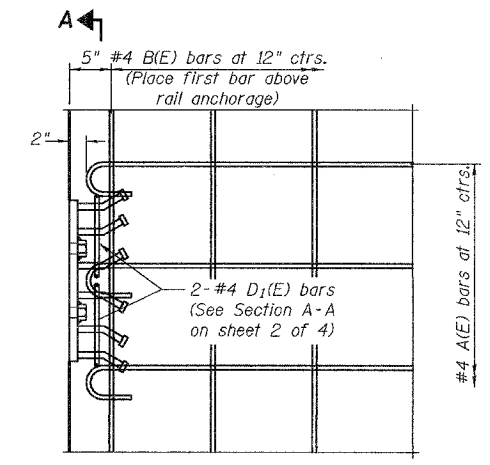
FIELD UNITS
f'c = 5,000 psi (Conc. Wearing Surface)
f'c = 3500 psi
fy = 60,000 psi (Reinforcement Bars)

General Plan and Elevation
Illinois Route 72 over Tributary to Mud Creek
FAP Route 549
Section 117BR-M
Ogle County
Structure No. 071-0068

DATE =
DRAWN BY =
CHECKED BY =
SCALE =
USER =



See typical section on sheet 14 of 15 for dimensions, strand pattern and bar callouts not shown.
 The rail anchorage shall be cast with the beam and the wearing surface be cast in the field. Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam. Drilling into the beam will not be permitted.



PARTIAL DECK PLAN AT RAIL ANCHORAGE

Bill of Material

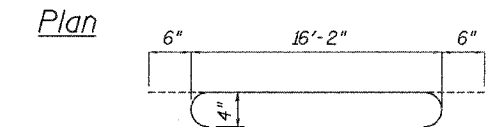
BAR	NO.	SIZE	LENGTH	SHAPE
A (E)	110	4	17' - 2"	U
A ₁ (E)	3	5	13' - 3"	U
A ₂ (E)	3	5	4' - 3"	U
B (E)	68	4	27' - 9"	U
H (E)	12	6	16' - 2"	U
U (E)	34	5	4' - 8"	U

HMA SUR REM COMPLETE	SQ YD	106
CONC WEARING SURF 5"	SQ YD	199
BR DECK GROOVING	SQ YD	186
CONC SUPERSTRUCTURE	CU YD	3.6
CONC REM	CU YD	3.1
F & E STRUCT STEEL	POUND	450
REINF BARS, EPOXY CTD	POUND	3030
KEYWAY REPAIR	FT	266
DOWEL REPAIR	EA	12
BEARING PAD ADJUSTMENT	EA	12
SILICONE JOINT SEALER	FT	33
PROTECTIVE COAT	SQ YD	199
BAR SPLICERS	EA	64
POLYMER CONCRETE	CU FT	2.4

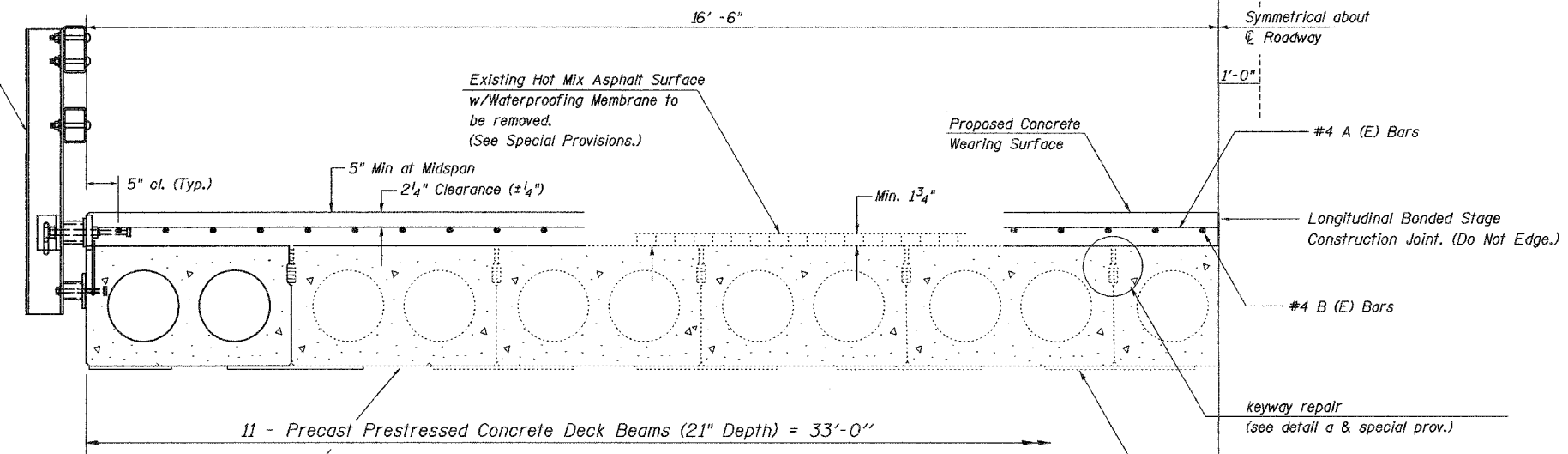
REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
 BARS INDICATED THUS 34X3-#4 BARS INDICATES 34 LINES OF BARS WITH 3 LENGTHS PER LINE.

Deck Plan and Cross Section
 Illinois Route 72 over Tributary to Mud Creek
 FAP Route 549
 Section 117BR-M
 Ogle County
 Structure No. 071-0068

Remove, Clean, and Reset existing nameplate on new bridge rail. Cost Included with Steel Railing, Type SM



Remove existing Steel Bridge Rail. Replace with new Steel Railing, Type SM



Fill openings surrounding fabric bearing pads west abutment with epoxy grout. To be paid for as bearing pad adjustment. (See special provisions)

HALF CROSS SECTION (Looking East)

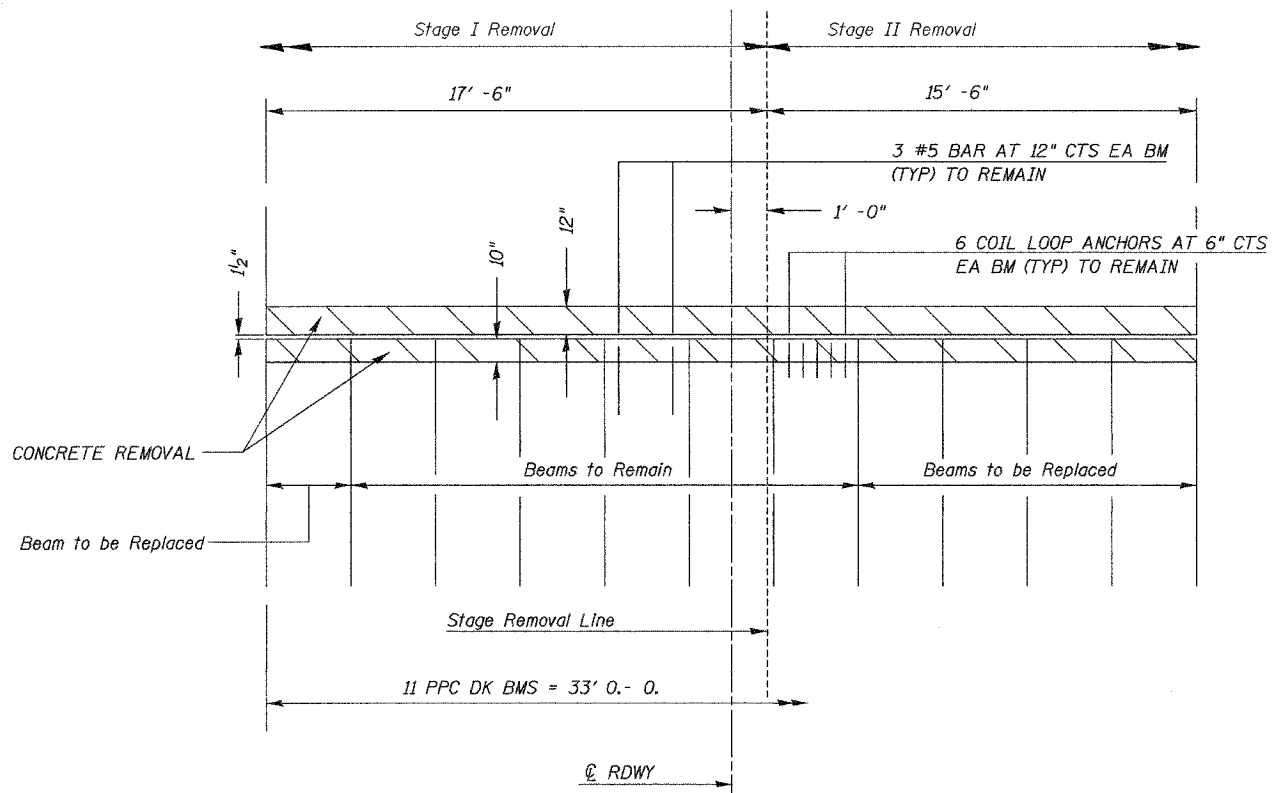
The contractor shall install 1/8" x 9" x 9" stainless steel shims at bearing pads, where required on east abutment. To be paid for as bearing pad adjustment. (See special provisions.)

note: The quantity given for keyway repair includes the full length of all keyways. The actual keyway repair locations shall be determined by the engineer after removal of the existing wearing surface.

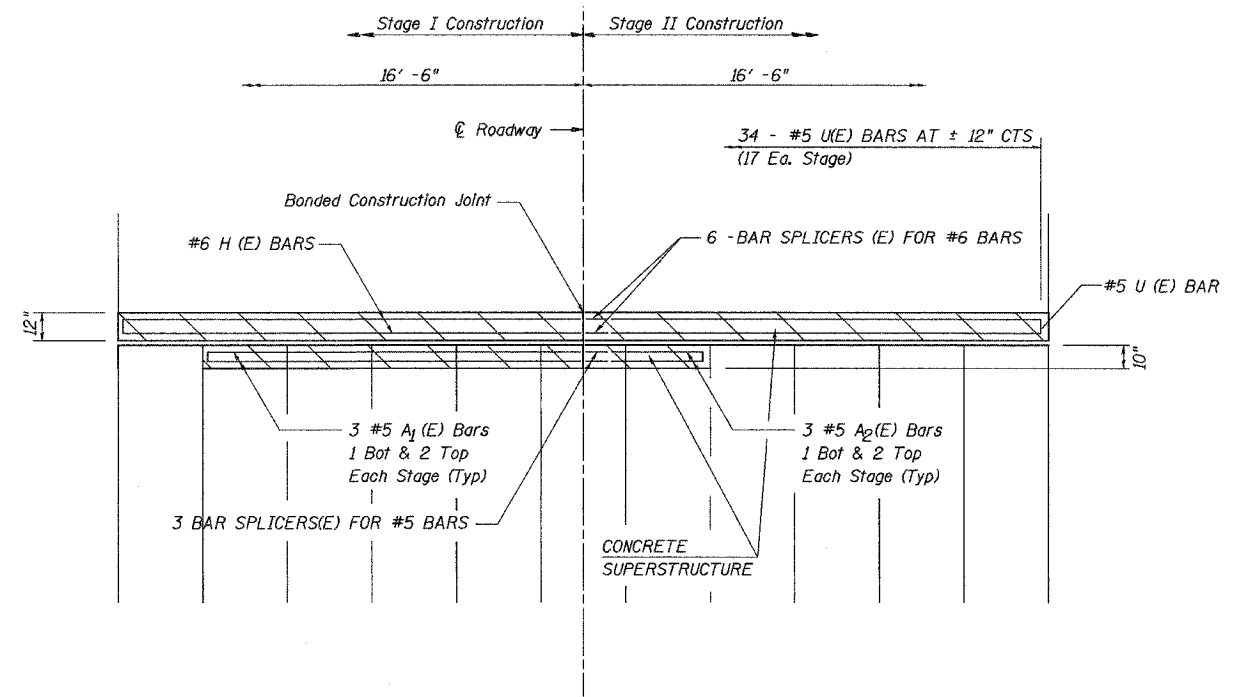
DATE = 05/11/06
 DRAWN BY = JML
 CHECKED BY = JML
 PLOT SCALE = 1/8" = 1'-0"
 USER NAME = JML

CONTRACT NO. 64C02				
F.A.P. RT#	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	OGLE	15	9
STA. _____		TO STA. _____		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Sheet 3 of 5 Sheets



EXISTING PARTIAL PLAN (EAST ABUTMENT)
(Looking East)

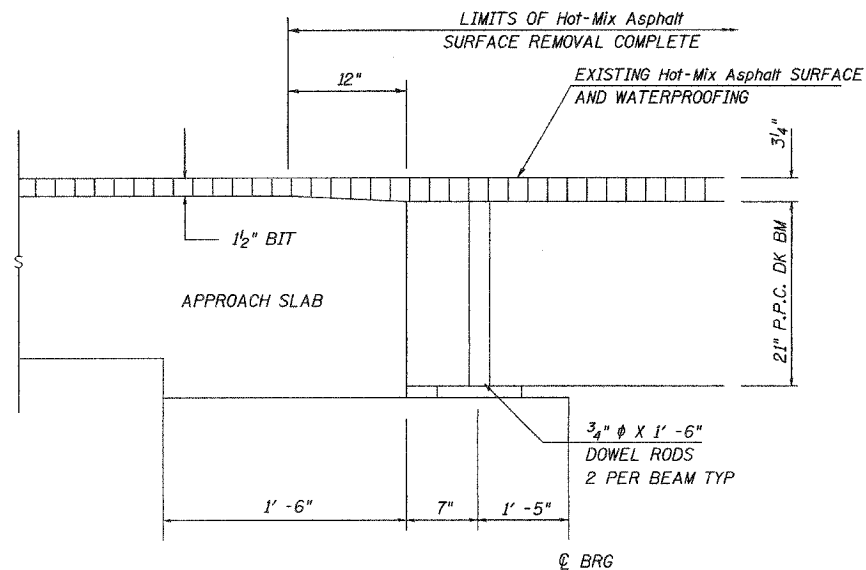


PROPOSED PARTIAL PLAN (EAST ABUTMENT)
(Looking East)

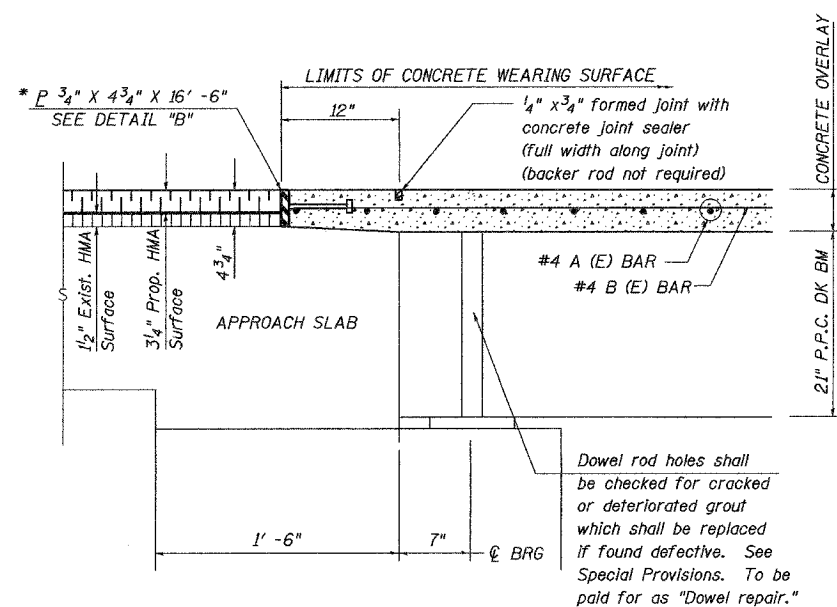
Partial Joint Plan
Illinois Route 72 over Tributary to Mud Creek
FAP Route 549
Section 117BR-M
Ogle County
Structure No. 071-0068

* DATE *
 * FILE NAME *
 * PLOT SCALE *
 * USER NAME *

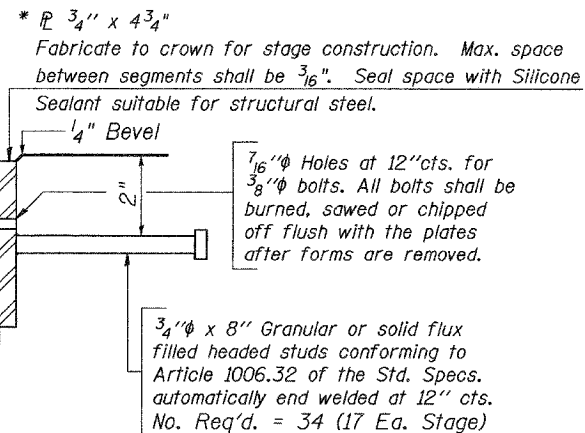
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	Ogle	15	10
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



EXISTING SECTION THRU WEST ABUTMENT

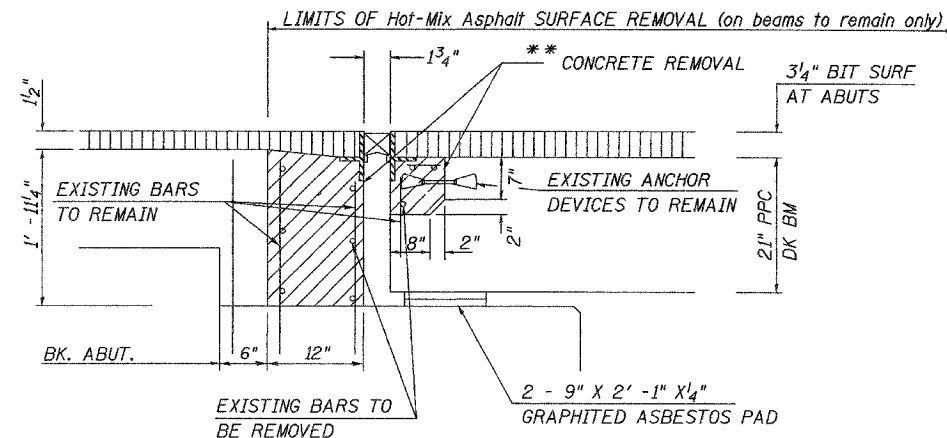


PROPOSED SECTION THRU WEST ABUTMENT



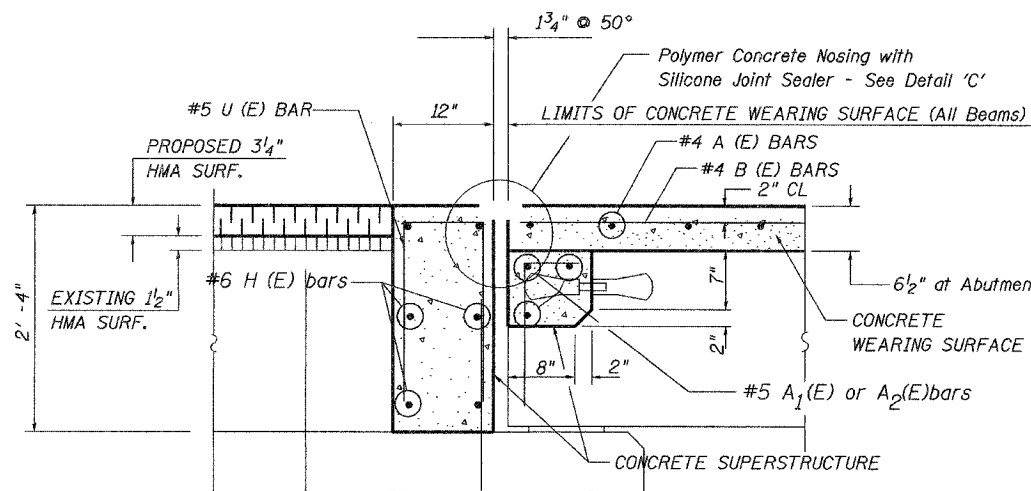
DETAIL "B"

** Note: The contractor shall use extreme care during concrete removal so as not to damage the PPC Deck Beams



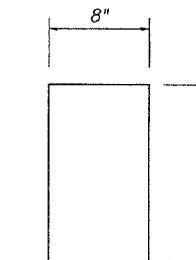
EXISTING SECTION THRU EAST ABUTMENT (EXPANSION)

Note: Existing reinforcement bars & coil loop anchor devices extending into the removal areas shall be cleaned, straightened and incorporated into the new construction. any reinforcement bars or coil loops that are damaged during concrete removal shall be replaced with approved bar splicer or anchorage system. Cost included with concrete removal.



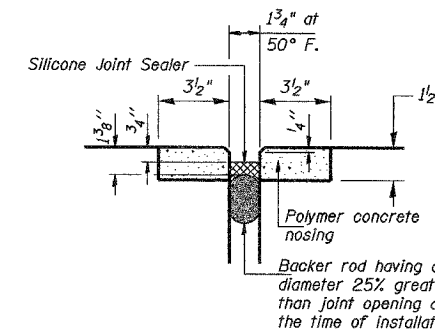
PROPOSED SECTION THRU EAST ABUTMENT (EXPANSION)

(Section at beams to remain)



#5 U (E) BAR

DETAIL "C"



Joint Details
 Illinois Route 72 over Tributary to Mud Creek
 FAP Route 549
 Section 117BR-M
 Ogle County
 Structure No. 071-0068

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
FAP 549	117BR-M	Ogle	15	11
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract #64C02

NOTES

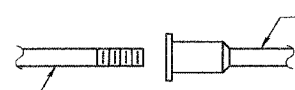
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the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

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**

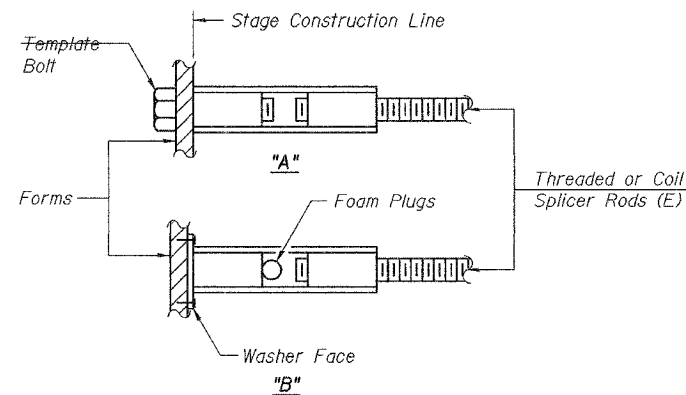
Wire Connector



WELDED SECTIONS

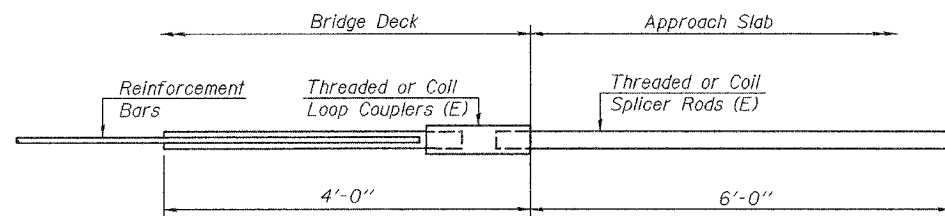
BAR SPLICER ASSEMBLY ALTERNATIVES

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



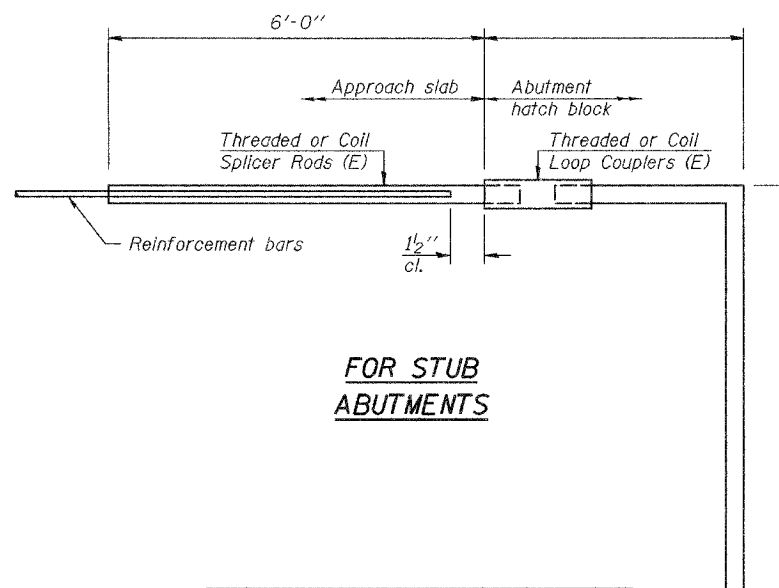
INSTALLATION AND SETTING METHODS

"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.



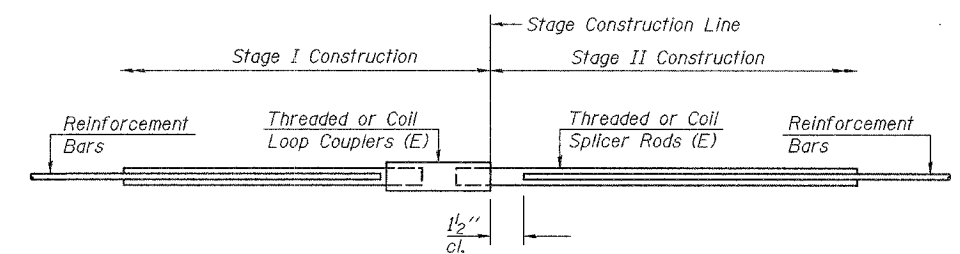
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#4	55	Deck
#5	3	Deck
#6	6	East Abutment

DESIGNED -	200
CHECKED -	EXAMINED
DRAWN -	ENGINEER OF STRUCTURAL SERVICES
CHECKED -	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

BSD-1 11-1-06

Bar Splicer Details
Illinois Route 72 over Tributary to Mud Creek
FAP Route 549
Section 117BR-M
Ogle County
Structure No. 071-0068

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
549	117BR-M	OGLE	15	12
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

STOP LINE SIGN FOR TEMPORARY SIGNALS



SIZE: 600(24) x 450(18)
 100(4) CAPITAL LETTERS - BLACK
 13 (1/2) BORDER - BLACK
 WHITE REFLECTIVE - TYPE B
 ENGINEERING GRADE SHEETING

GENERAL NOTE:

THIS SIGN SHALL BE INSTALLED AT THE STOP LINE AS DIRECTED BY ENGINEER.
 ALL DIMENSIONS ARE IN MILLIMETERS (INCHES) UNLESS OTHERWISE NOTED.

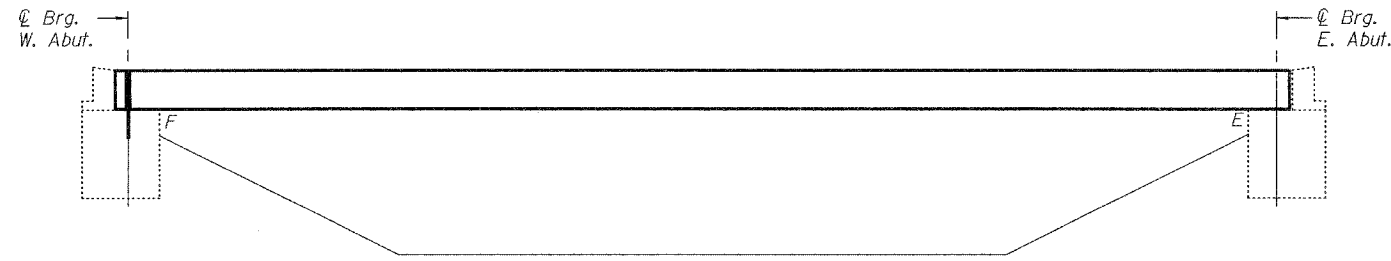
PLOT DATE * Mon Jan 22 14:05:59 2007
 FILE NAME * D:\bar\cadd\plans\016 County\071006S\071006S.dgn
 PLOTTER * HP DesignJet 500 / IN.
 REFERENCE * #REF*

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

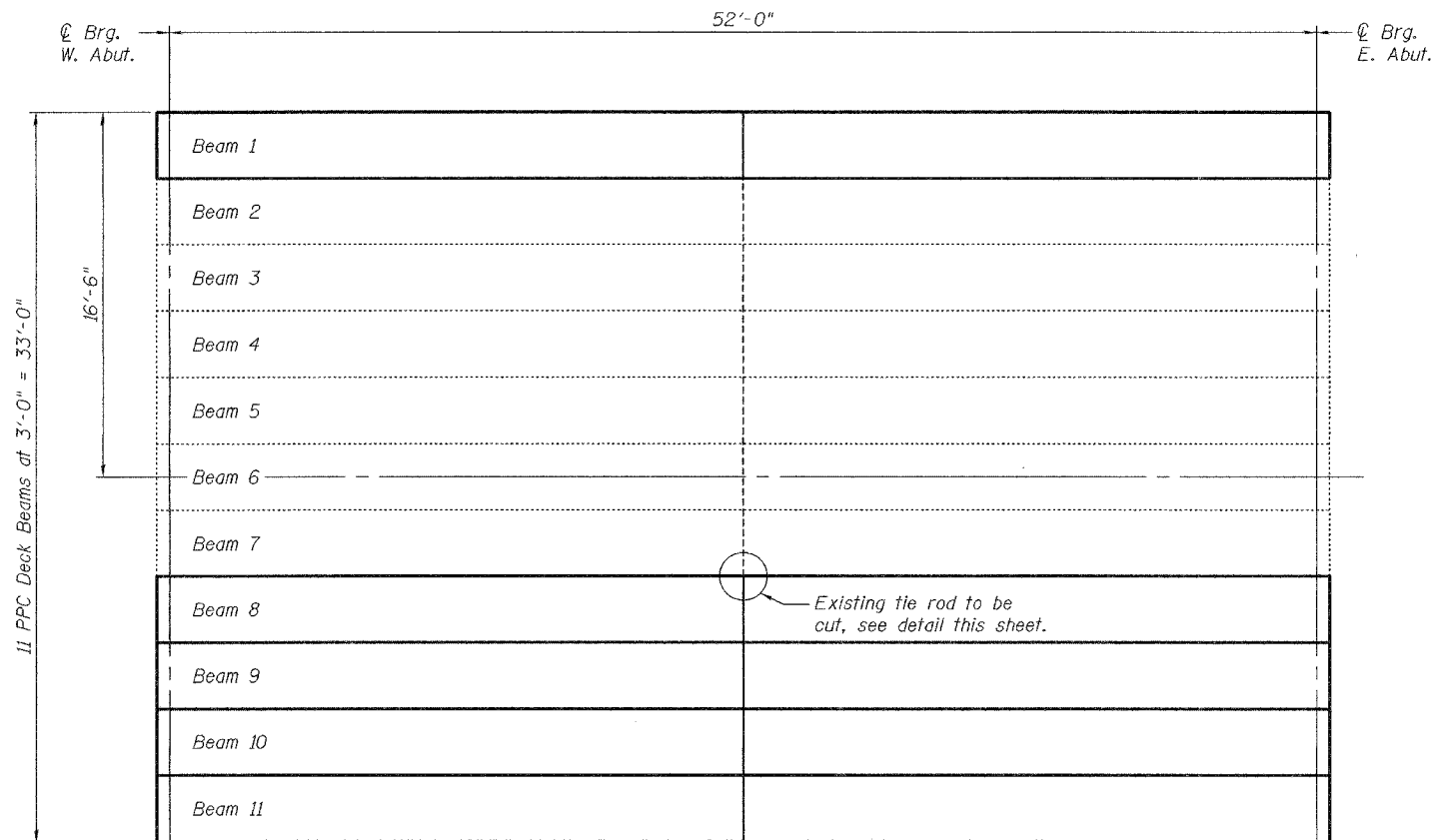
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
		Ogle	15	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Contract Number: 64C02

SHEET NO. 1
3 SHEETS

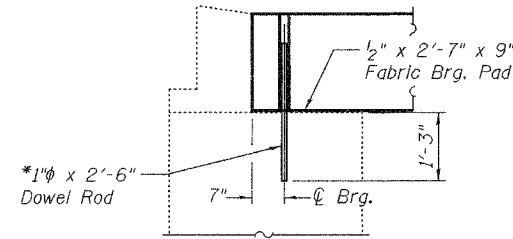


ELEVATION

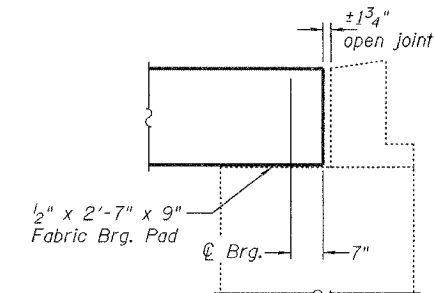


PLAN

*Existing dowel rods are to be burned off, ground flush, and sealed with epoxy prior to placement of new beams. Cost included in Removal of Existing PPC Deck Beams. After beams have been erected holes shall be drilled into cap and dowel rods placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure a minimum of 24 hours prior to grouting the shear keys.



TYPICAL SECTION WEST ABUTMENT



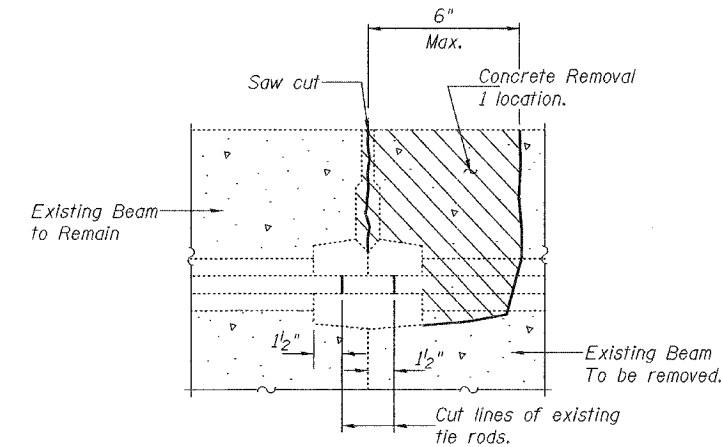
TYPICAL SECTION EAST ABUTMENT

NOTES

The cut strands at each beam end shall be given two coats of zinc dust spray or paint meeting the requirements of ASTM A780. The zinc dust spray or paint shall be applied before corrosion appears and allowed to dry according to manufacturer's specifications prior to another coat of zinc. A concrete sealer meeting the requirements of Section 587 of the Standard Specifications shall be applied to the exterior face and 9" in on the underside of each fascia beam. The sealer shall be applied after visible crack growth has subsided. This work shall be performed by the producer and included with the cost of the beam.

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 beams. To distribute load to multiple beams and protect the concrete, 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. Prior to placement of the timber mats the following shall be done: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys. A temporary means of lateral restraint will be required for fascia beams at expansion ends of beams to prevent movement of the beams.

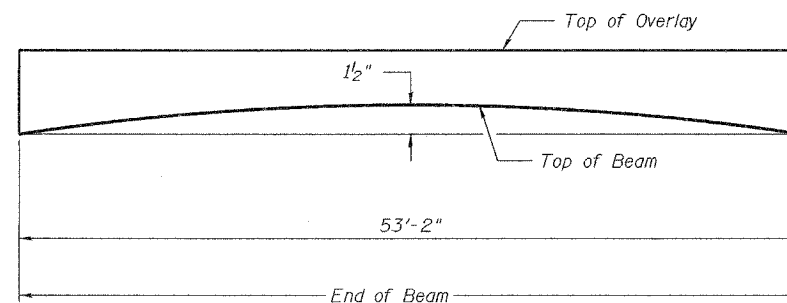
Any damage done to the bridge during beam removal shall be repaired by the Contractor. Cost to be included in the cost of Removal of Existing PPC Deck Beams.



BEAM REMOVAL DETAIL
AT TRANSVERSE TIES

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	798
Removal of Existing PPC Deck Beams	Sq. Ft.	798
Asbestos Bearing Pad Removal	Each	5
Steel Railing, Type SM	Foot	107



ANTICIPATED INITIAL CAMBER DIAGRAM

DESIGN STRESSES
PRECAST UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f'_s = 270,000$ psi ($1/2$ " ϕ low lax strands)
 $f'_{si} = 201,960$ psi ($1/2$ " ϕ low lax strands)

PLAN AND ELEVATION

F.A. RT. 549
OGLE COUNTY
SN 071-0068

DESIGNED	Vicor H. Voliz
CHECKED	John [Signature]
DRAWN	[Signature]
CHECKED	VHV AIB

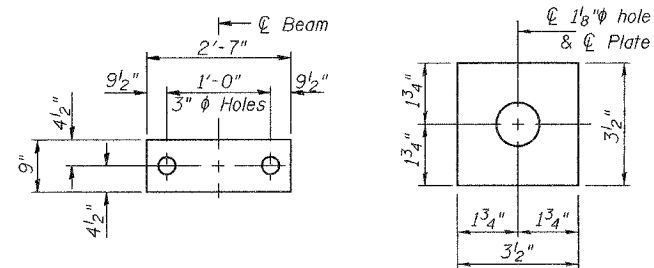
EXAMINED	March 2, 2007
REPAIR PLANT UNIT CHIEF	[Signature]
PASSED	[Signature]
ENGINEER OF BRIDGES AND STRUCTURES	



Expires: November 30, 2008

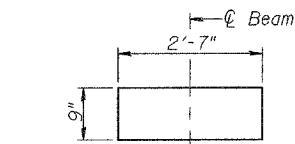
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	CONTRACT NO.	SHEET NO.	SHEET NO. 2 3 SHEETS
		Ogle	15	14	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract Number: 64C02		

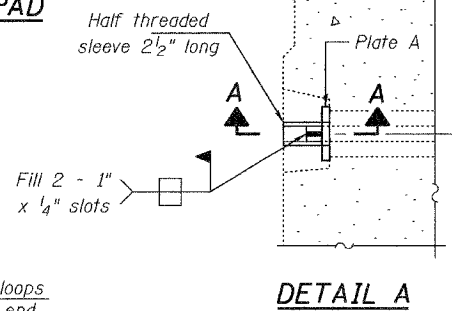


FABRIC BEARING PAD
FIXED

PLATE A
(1 Required)

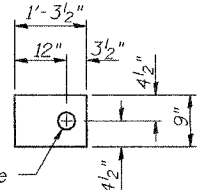


FABRIC BEARING PAD
EXPANSION

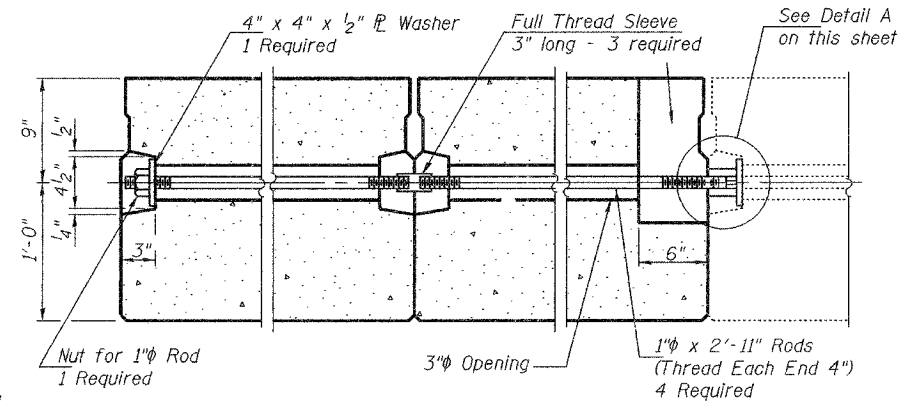


DETAIL A

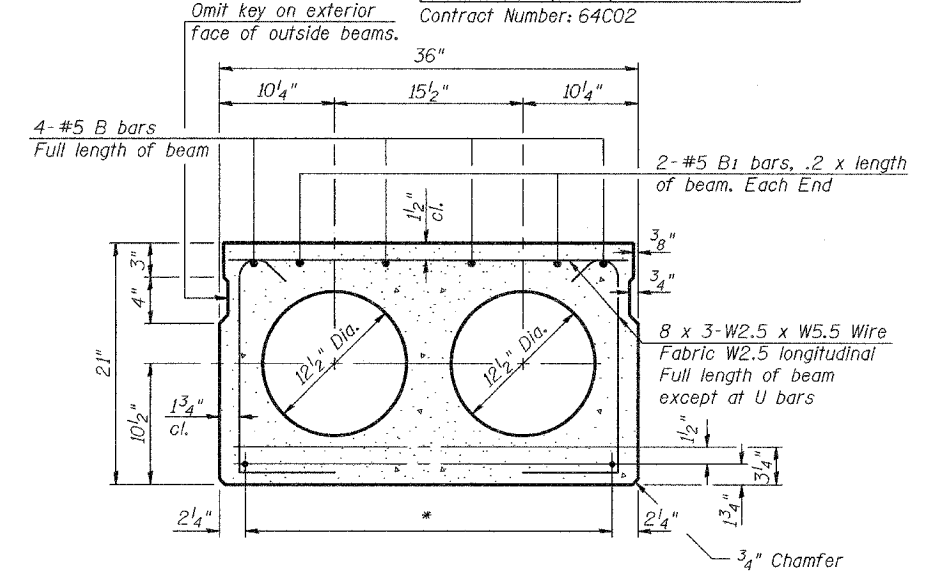
FABRIC ADJUSTING SHIM
(Fixed shown, expansion similar without hole)



6" x 6" x 16 1/2" Blockout to be filled with Class BS Concrete after Beams have been installed. Cost shall be included in the cost of "Concrete Wearing Surface". North Face of Beam 8 only.

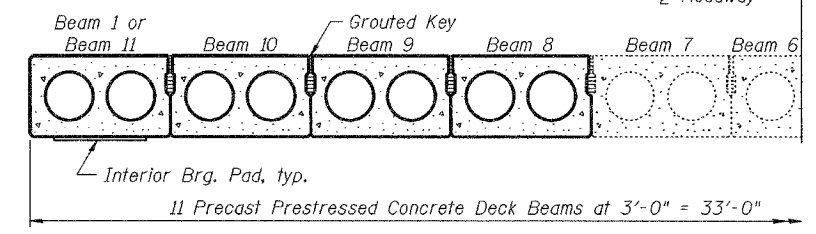


TYPICAL TRANSVERSE TIE ASSEMBLY

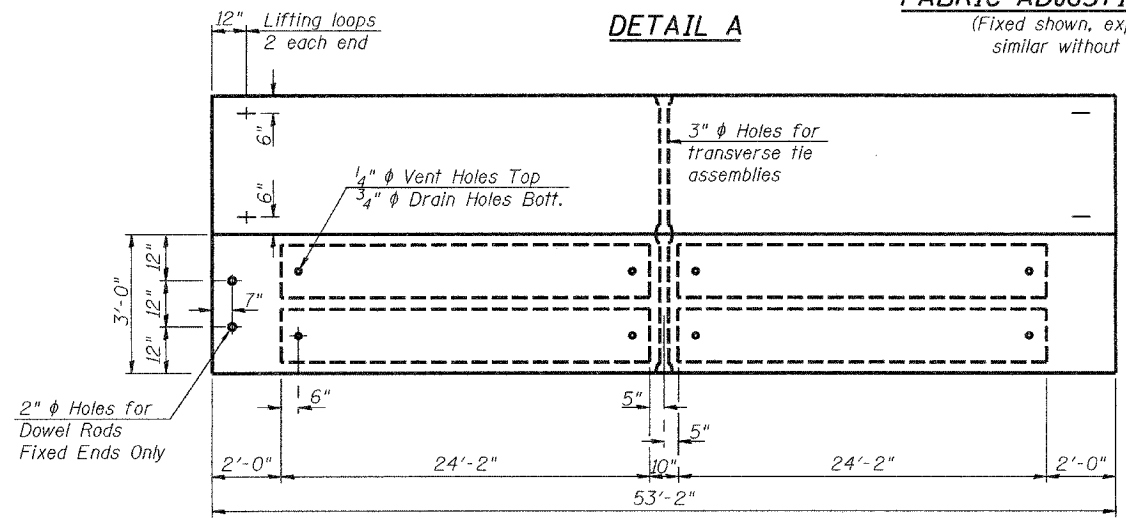


TYPICAL SECTION

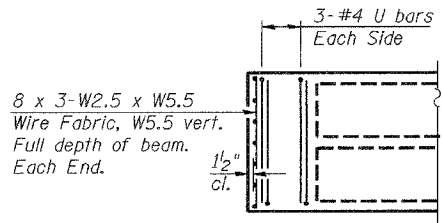
1/2" φ Strands, Each Strand Stressed to 30,900 Lbs.
6-Strands 1 3/4" up, 8-Strands 3/4" up, 2-Strands 9" up



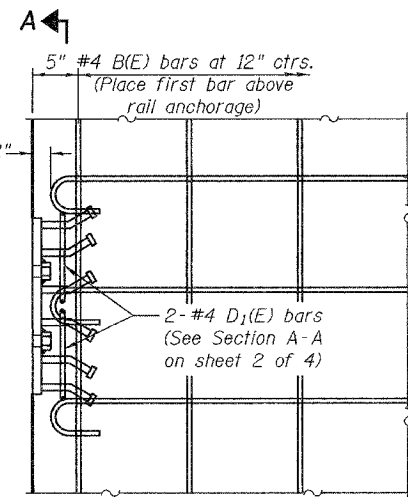
HALF CROSS SECTION
(Looking West)



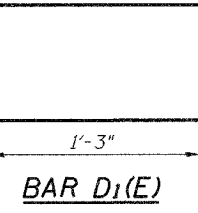
PLAN



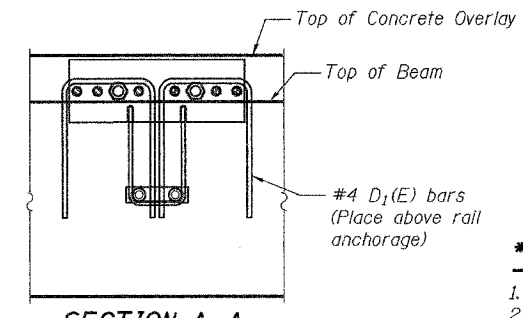
END PLAN



PARTIAL DECK PLAN AT
RAIL ANCHORAGE



BAR D1(E)



SECTION A-A

* 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 1/2".

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

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2 - 1/2" φ - 270 ksi strands, as shown. The 1" φ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Non prestressing steel shall conform to 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) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'cl, shall be 5,000 p.s.i.

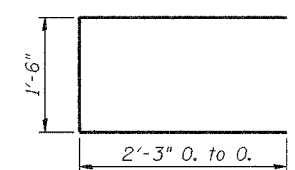
BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms.	Sq. Ft.	798
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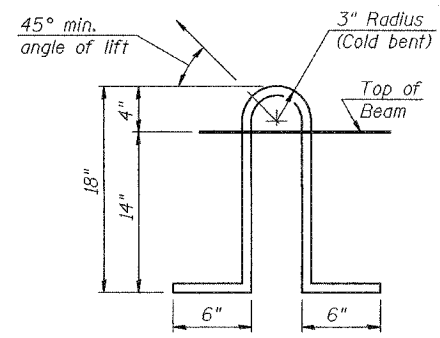
DECK BEAM DETAILS
F.A. RT. 549
OGLE COUNTY
SN 071-0068

DESIGNED	V.H.V.
CHECKED	A.J.B.
DRAWN	Drew Christopher
CHECKED	V.H.V. A.J.B.

March 2, 2007
EXAMINED *Carl Proyer*
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES



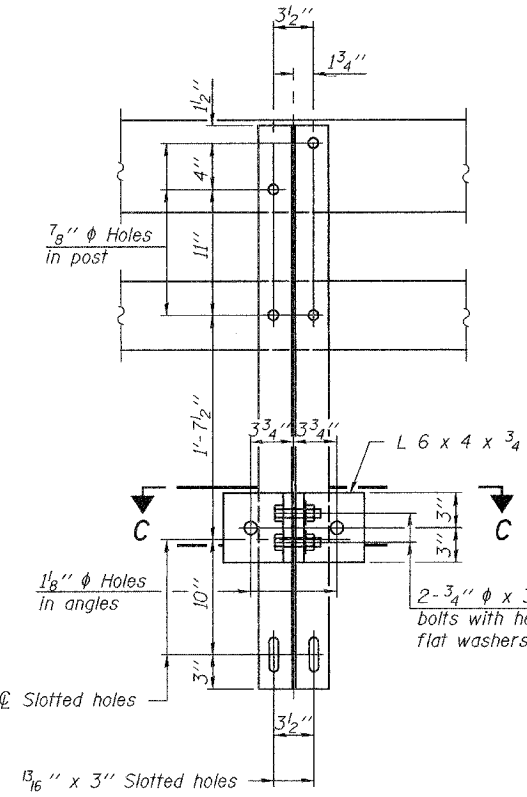
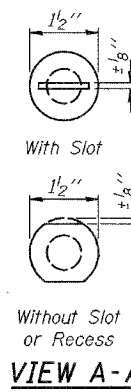
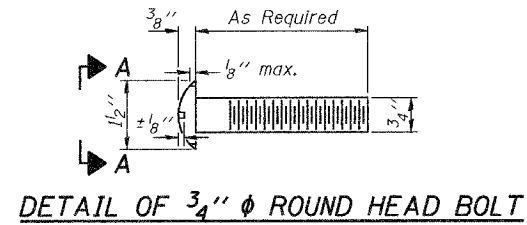
BAR U



LIFTING LOOP DETAIL

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

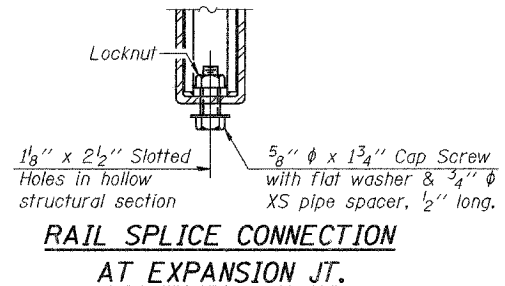
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 3
		Ogle	15	15	3 SHEETS
Contract Number: 64C02					



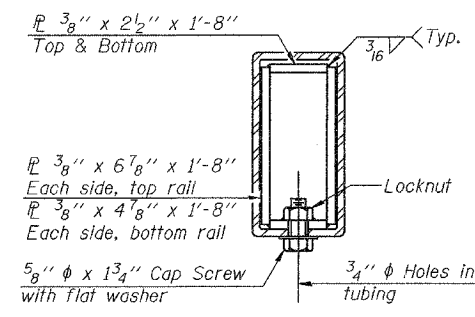
SECTION B-B

4-3/4" ϕ x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. 7/8" ϕ holes in hollow structural section may be drilled in the field.

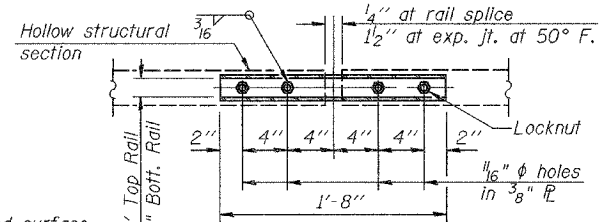
2-1" ϕ x 7-3/4" AASHTO M-164 anchor bolts with flat washer and lockwasher
2-5/8" ϕ x 5-3/4" cap screws with flat washer



RAIL SPLICE CONNECTION AT EXPANSION JT.

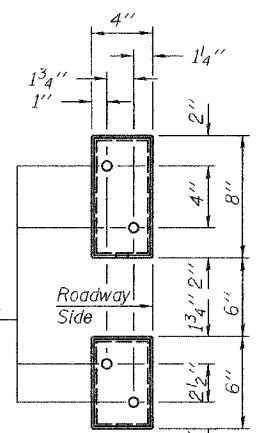


SECTION AT RAIL SPLICE

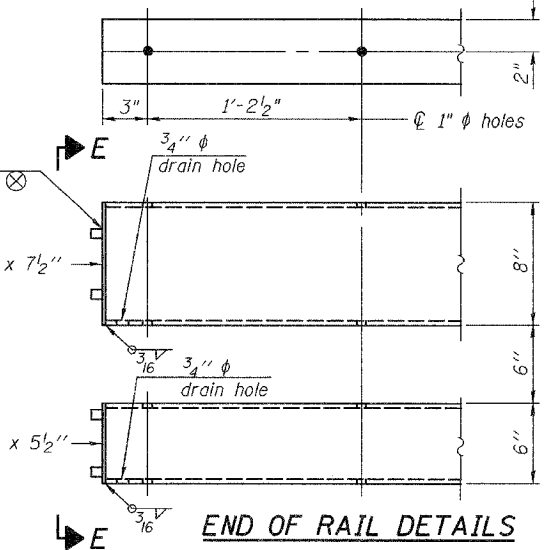


PLAN-BOTT. SPLICE P TYPICAL

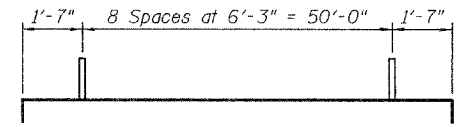
5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



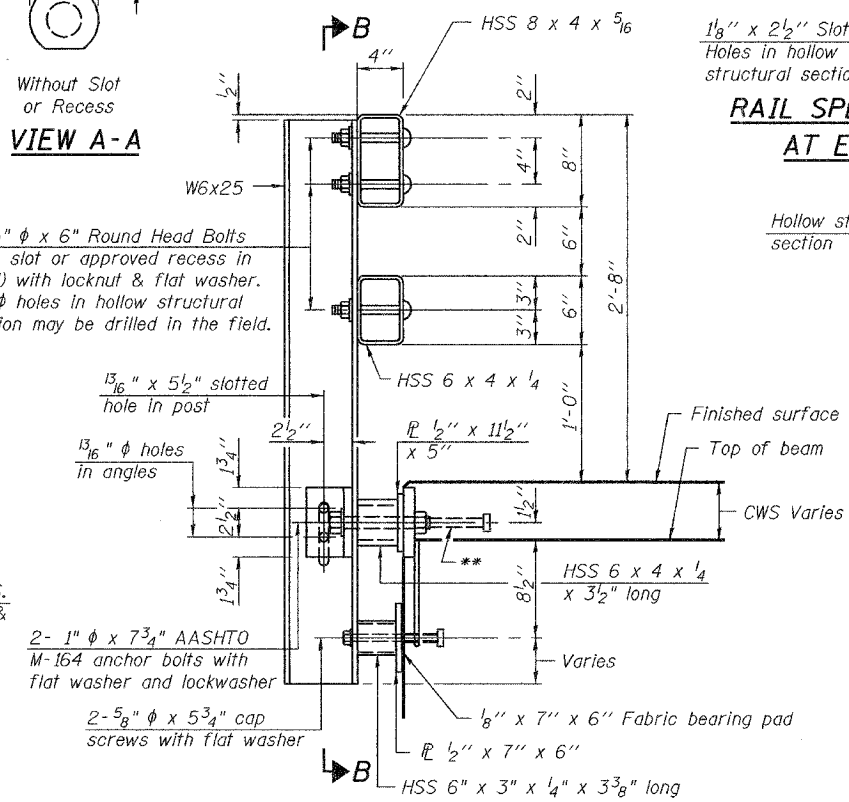
VIEW E-E



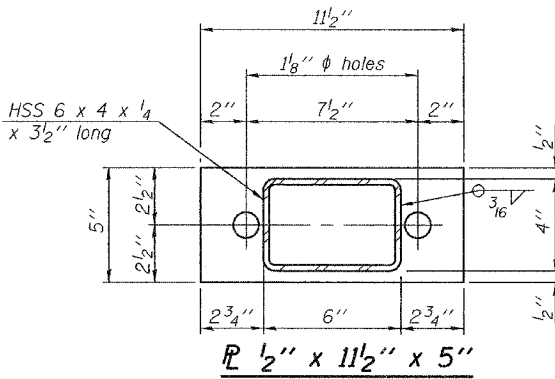
END OF RAIL DETAILS



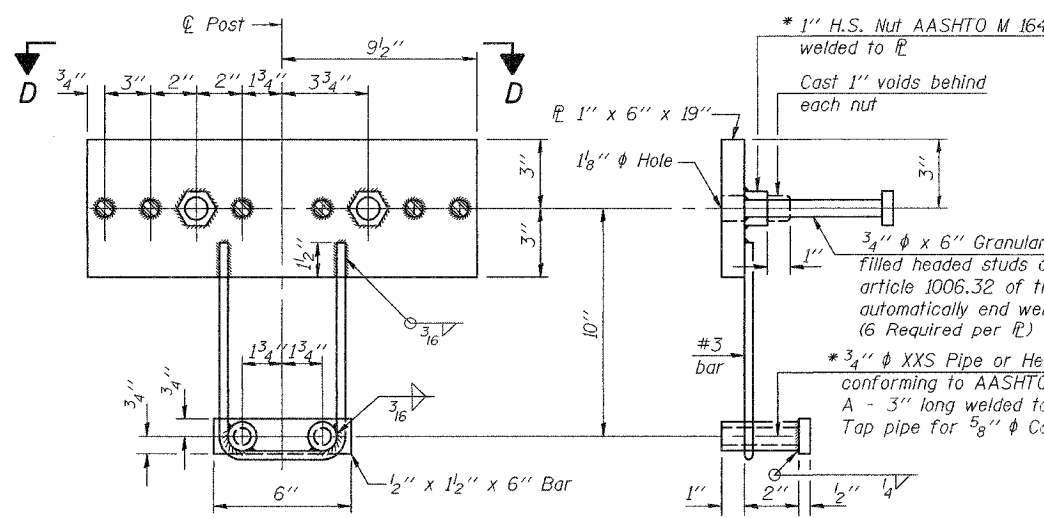
RAIL SPACING



SECTION AT RAIL POST



SECTION C-C



ANCHOR DEVICE

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	107

DECK RAIL DETAILS

F.A. RT. 549
OGLE COUNTY
SN 071-0068

Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection.
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing.
Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

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

DESIGNED	V.H.V.
CHECKED	A.J.B.
DRAWN	Drew Christopher
CHECKED	V.H.V. A.J.B.

March 2, 2007
EXAMINED *Carl Krueger*
REPAIR PLANS UNIT CHIEF
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

R-34CWS 11-1-06 (6'-3" Maximum Post Spacing) (5" minimum to 7'-8" maximum CWS thickness)