1-18-08 Letting, Item 138

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE	17	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 74276		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

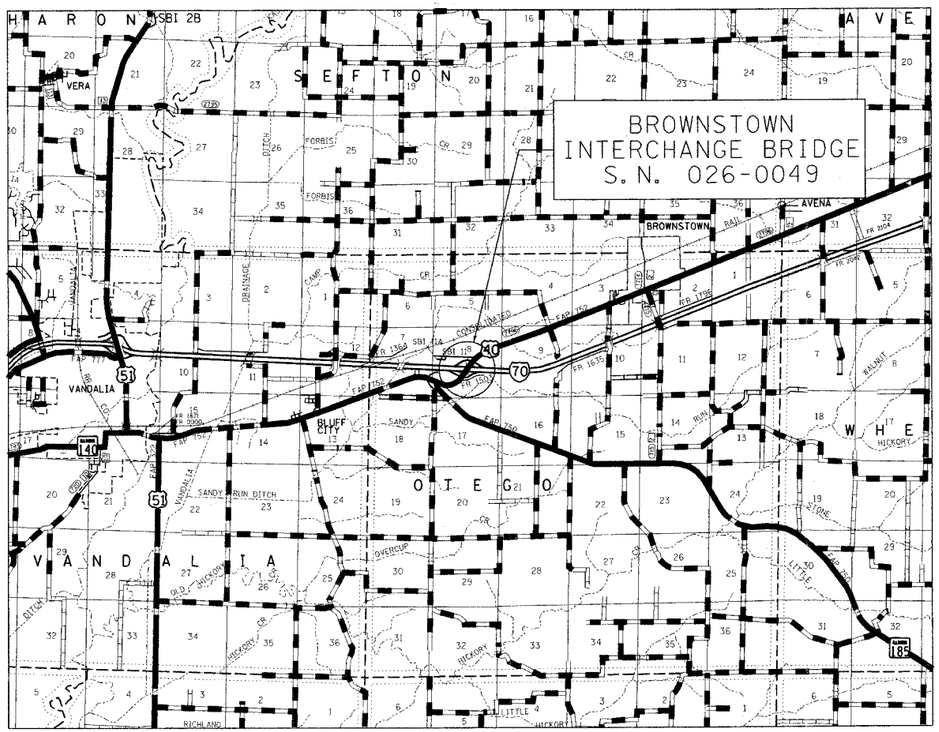
PROPOSED HIGHWAY PLANS

FAP ROUTE 752 (US 40)
D7 BRIDGE REPAIRS 2008–4

FAYETTE COUNTY
C–97–109–07

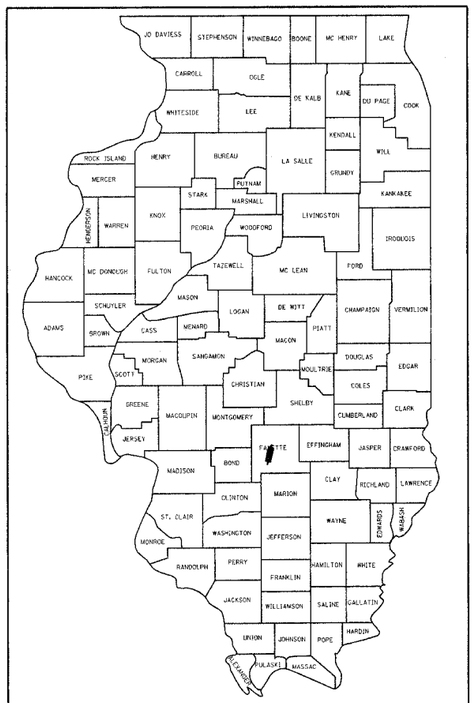
FOR INDEX OF SHEETS, SEE SHEET NO.

2005 ADT = 2500



GROSS LENGTH = 985 FT
NET LENGTH = 985 FT

D–97–069–07



LOCATION OF SECTION INDICATED THUS: –

0 100′ 200′ 300′ — 1″ = 100′
0 10′ 20′ 30′ — 1″ = 10′
0 50′ 100′ — 1″ = 50′
0 50′ 100′ — 1″ = 40′
0 50′ 100′ — 1″ = 30′
0 50′ 100′ — 1″ = 20′

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
PROJECT MANAGER

CONTRACT NO. 74276

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED October 29 20 07

Christine M. Reed
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

December 7, 20 07

Eric E. Harm
ENGINEER OF DESIGN AND ENVIRONMENT

December 7, 20 07

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 INDICATED ON THE CHECKSHEET; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THIS PROJECT IS LOCATED AT THE BROWNSTOWN I-70 and US 40 INTERCHANGE BRIDGE IN FAYETTE COUNTY. THE PROJECT INCLUDES THE STRUCTURE NUMBER 026-0049.

THE WORK INCLUDED IN THIS PROJECT CONSISTS OF CONSTRUCTION OF PCC BASE COURSE WIDENING, REMOVAL OF THE EXISTING NON-ASBESTOS BITUMINOUS WEARING SURFACE AND WATERPROOFING MEMBRANE SYSTEM, REMOVAL OF THE EXISTING PREFORMED JOINT SEAL EXPANSION JOINTS AND REPLACING THEM WITH PREFORMED JOINT STRIP SEAL EXPANSION JOINTS, REPLACING EXISTING BEARINGS WITH ELASTOMERIC BEARING ASSEMBLIES, CONSTRUCTION OF THE WATERPROOFING MEMBRANE AND BITUMINOUS WEARING SURFACES, PAVEMENT STRIPING, 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 MATERIAL USED FOR AGGREGATE SHOULDERS, TYPE B SHALL BE CRUSHED STONE.

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

STR#	YELLOW FT	WHITE FT
026-0049	1970	1013

ALL EXISTING RAISED REFLECTIVE MARKERS LOCATED WITHIN THE LIMITS OF THE ABUTMENTS AT THE STRUCTURE SHALL BE REMOVED. THIS WORK WILL BE INCLUDED IN THE COST AT THE CONTRACT UNIT PRICE FOR HOT-MIX ASPHALT SURFACE REMOVAL. REPLACEMENT OF THE BI-DIRECTIONAL AMBER MARKERS AT THE COMPLETION OF THE HOT MIX ASPHALT CONSTRUCTION WILL BE PAID FOR AT THE CONTRACT PRICE FOR RAISED REFLECTIVE PAVEMENT MARKER.

THE REFLECTIVE LENSE OF ALL RAISED REFLECTIVE MARKERS LOCATED BETWEEN THE STOP BARS AND THE ABUTMENTS 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 FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

BITUMINOUS CONCRETE	112	LBS/SQ YD - IN
AGGREGATE SHOULDERS	2.05	TON/CU YD
BITUMINOUS PRIME COAT	0.1	GAL/SQ YD
AGGREGATE PRIME COAT	4	LBS/SQ YD

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:
STRUCTURE 026-0049

MIXTURE USE: SURFACE COURSE
APPLICATION: POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE,
MIX "D" N90
PG GRADE: SBS PG 70-22
RAP %: 0%
DESIGN AIR VOIDS: 4.0% @ NDESIGN = 90
MIXTURE COMPOSITION: IL-9.5
FRICTION AGGREGATE: MIXTURE D

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

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
635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
701006-01	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
701201-02	LANE CLOSURE, 2L 2W, DAY ONLY, ON-ROAD TO 24" OFF-ROAD, SPEEDS > 45 MPH
701301-02	LANE CLOSURE, 2L 2W, SHORT TIME OPERATIONS
701311-02	LANE CLOSURE, 2L 2W, MOVING DAY ONLY OPERATIONS
701321-09	LANE CLOSURE, 2L 2W, BRIDGE REPAIR WITH BARRIER
701326-02	LANE CLOSURE, 2L 2W, PAVEMENT WIDENING, FOR SPEEDS > 45 MPH
701406-04	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAYTIME ONLY
701901	TRAFFIC CONTROL DEVICES
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 = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES & INDEX OF SHEETS	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			752		FAYETTE		2
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -					CONTRACT NO. 74276		
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE: SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	100% STATE SFTY-2A TOTAL QUANTITIES	CONSTRUCTION TYPE CODE: STRUCTURE NUMBER 026-0049	
35400300	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 8"	SQ YD	233	233	
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	27	27	
40600300	AGGREGATE (PRIME COAT)	TON	1	1	
40603545	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90	TON	97	97	
44000155	HOT-MIX ASPHALT SURFACE REMOVAL, 1 1/2"	SQ YD	269	269	
44000156	HOT-MIX ASPHALT SURFACE REMOVAL, 1 3/4"	SQ YD	890	890	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	15	15	
50102400	CONCRETE REMOVAL	CU YD	11.4	11.4	
50157300	PROTECTIVE SHIELD	SQ YD	249	249	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	13.2	13.2	
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	1270	1270	
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	12	12	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1630	1630	
50800515	BAR SPLICERS	EACH	30	30	
52000110	PREFORMED JOINT STRIP SEAL	FOOT	75	75	
52100020	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12	12	
52100520	ANCHOR BOLTS, 1"	EACH	24	24	
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	890	890	
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	5	5	
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	
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	1	
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	4	4	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70106700	TEMPORARY RUMBLE STRIP	EACH	6	6	
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	94	94	
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	3160	3160	
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	347	347	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	675	675	

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	100% STATE SFTY-2A TOTAL QUANTITIES	CONSTRUCTION TYPE CODE: STRUCTURE NUMBER 026-0049	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	675	675	
* 78000812	45 MIL HOT SPRAY THERMOPLASTIC PAVEMENT MARKING LINE - 4 INCH	FOOT	3028	3028	
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	2	2	
78100105	RAISED REFLECTIVE PAVEMENT MARKER (BRIDGE)	EACH	2	2	
* 78100300	REPLACEMENT REFLECTOR	EACH	8	8	
78300100	PAVEMENT MARKING REMOVAL	SQ FT	781	781	
X0322050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	8	8	
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	30	30	
Z0030240	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 2	EACH	2	2	
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	3	3	
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	25	25	
Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	78	78	
Z0030340	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE) TEST LEVEL 2	EACH	2	2	

*SPECIALTY ITEMS

Rev.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES
		DRAWN -	REVISED -		
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	PLOT DATE = $DATE$	DATE -	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		3
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Bridge Repair Schedule

Structure Number	Length	Hot-Mix Asphalt Surface Removal 1 3/4"	Concrete Removal	Concrete Superstructure	Reinforcement Bars, Epoxy Coated	Bar Splicers	Structural Repair of Concrete (Depth equal to or less than 5 Inches)	Deck Slab Repair (Full Depth, Type I)	Deck Slab Repair (Full Depth, Type II)	Deck Slab Repair (Partial)	Waterproofing Membrance System	Polyermized Hot-Mix Asphalt Surface Course, Mixture D, N90	Preformed Joint Strip Seal
026-0049	FEET	SQ YD	CU YD	CU FT	POUND	EACH	SQ FT	SQ YD	SQ YD	SQ YD	SQ YD	TON	FEET
Stage I	368.91	500	5.70	6.60	815.0						445	37.4	37.5
Stage II		390	5.70	6.60	815.0						445	37.4	37.5
TOTAL	368.91	890	11.4	13.2	1630	30	30	3.0	25.0	78.0	890	75	75

Pavement Marking Schedule

STRUCTURE NUMBER	Pavement Marking Removal	Work Zone Pavement Marking Removal	Short-term Pavement Marking	45 Mil Themoplastic Hot Spray 4"	Temporary Pavement Marking - Line 4"	Raised Reflective Pavement Marker	Raised Reflective Pavement Marker, Reflector Removal	Replacement Reflector
026-0049	SQ FT	SQ FT	FEET	FEET	FEET	EACH	EACH	EACH
TOTAL	781	347	94	3028	3160	4	8	8

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN -	REVISED -
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	PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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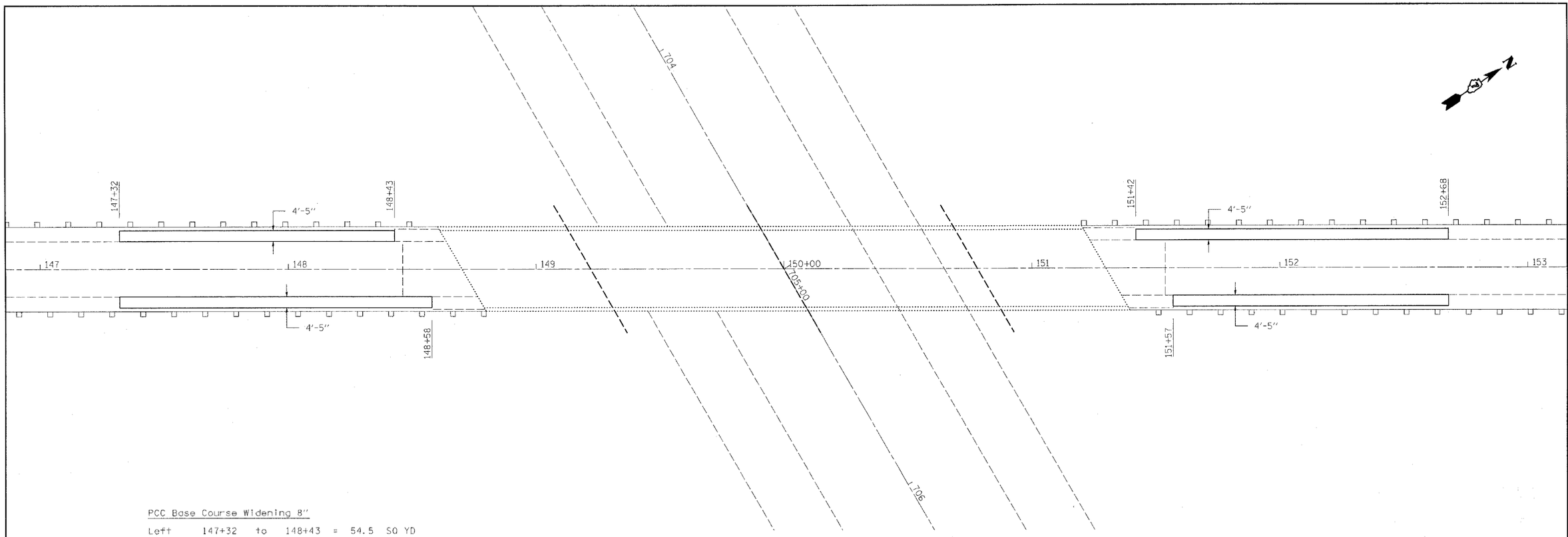
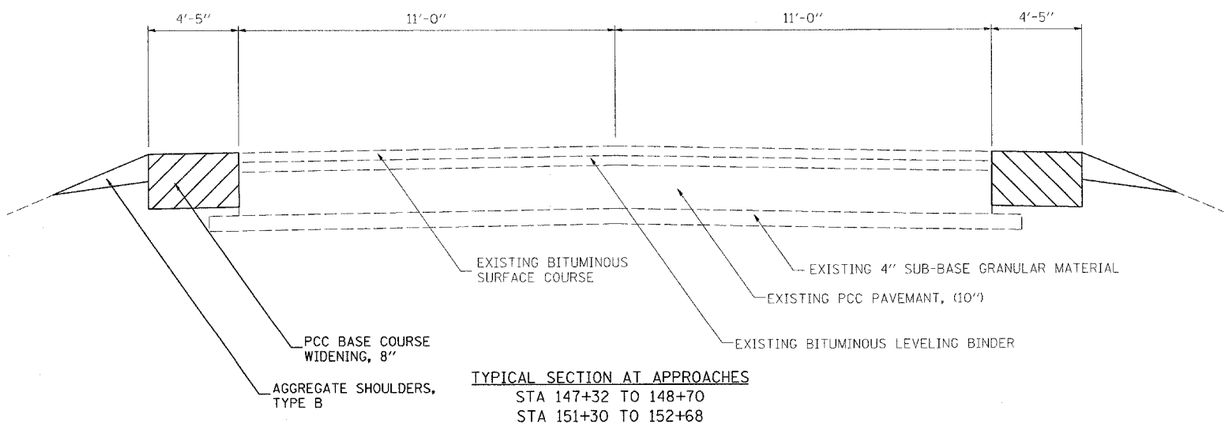
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PCC Base Course Widening 8"

Left	147+32	to	148+43	=	54.5	SQ YD
Right	147+32	to	148+58	=	61.9	SQ YD
Left	151+42	to	152+68	=	61.9	SQ YD
Right	151+57	to	152+68	=	54.5	SQ YD



TYPICAL SECTION AT APPROACHES
STA 147+32 TO 148+70
STA 151+30 TO 152+68

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		DRAWN -	REVISED -							752		FAYETTE		5
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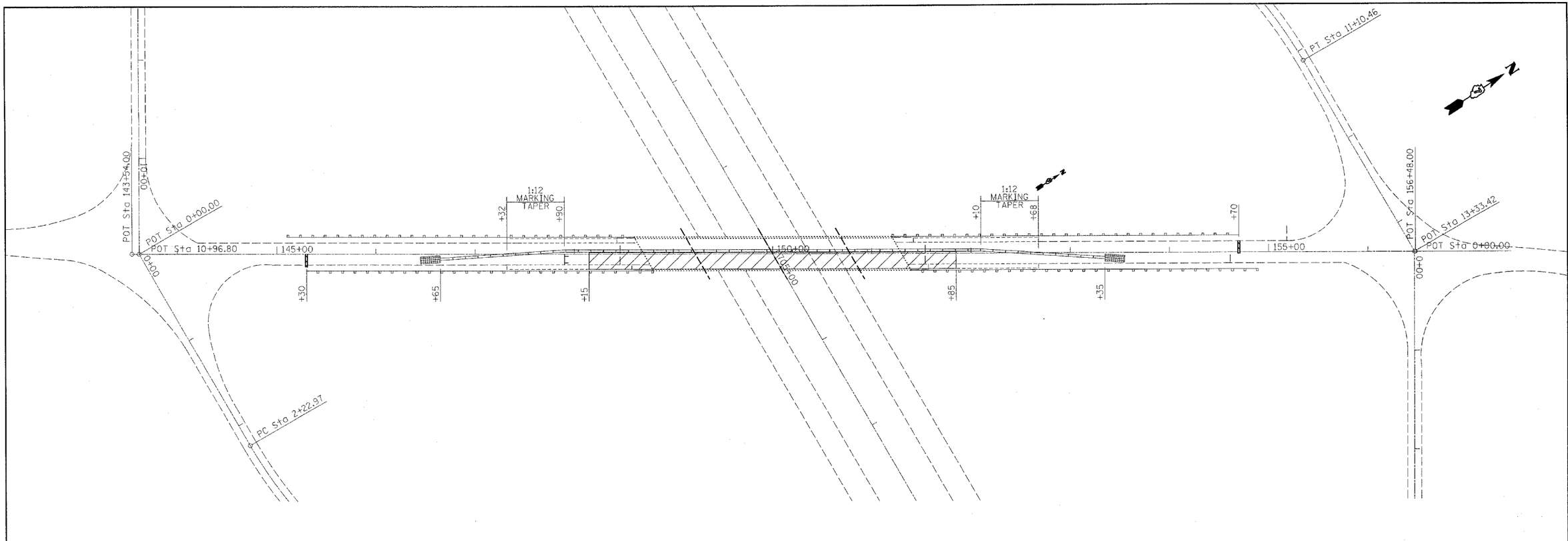
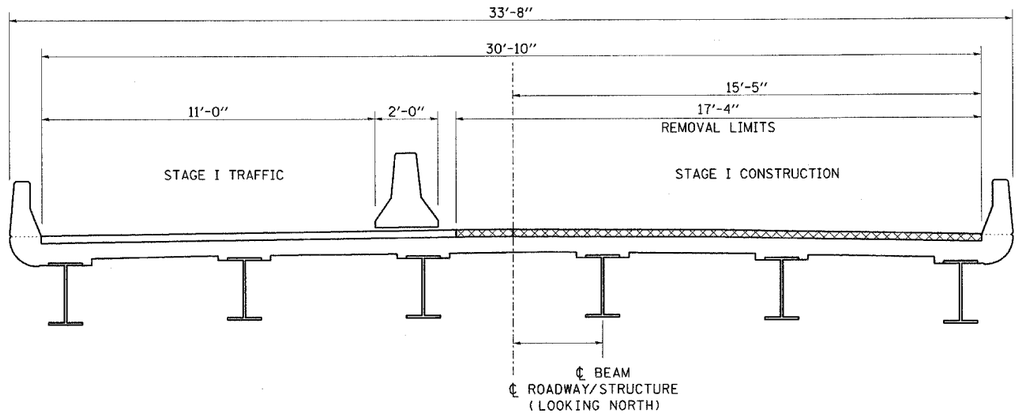


TRAFFIC CONTROL DETAILS NOT SHOWN
ARE TO CONFORM WITH STANDARD
701321

STAGE I CONSTRUCTION



- WORK AREA
- HOT-MIX ASPAHLT SURFACE REMOVAL
- HOT-MIX WEARING SURFACE & WATER PROOFING MEMBRANE
- ATTENUATOR
- TYPE III BARRICADE
- TEMPORARY CONCRETE BARRIER

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		DRAWN -	REVISED -
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	PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE I CONSTRUCTION S.N. 026-0049

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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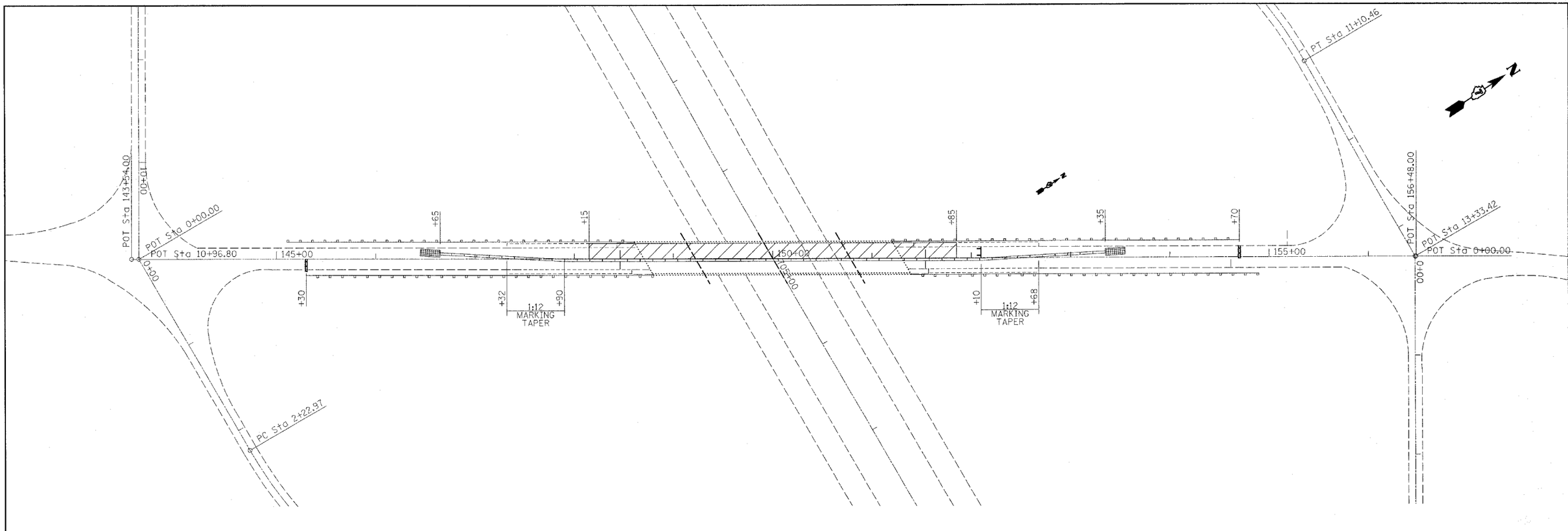
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



TRAFFIC CONTROL DETAILS NOT SHOWN
ARE TO CONFORM WITH STANDARD
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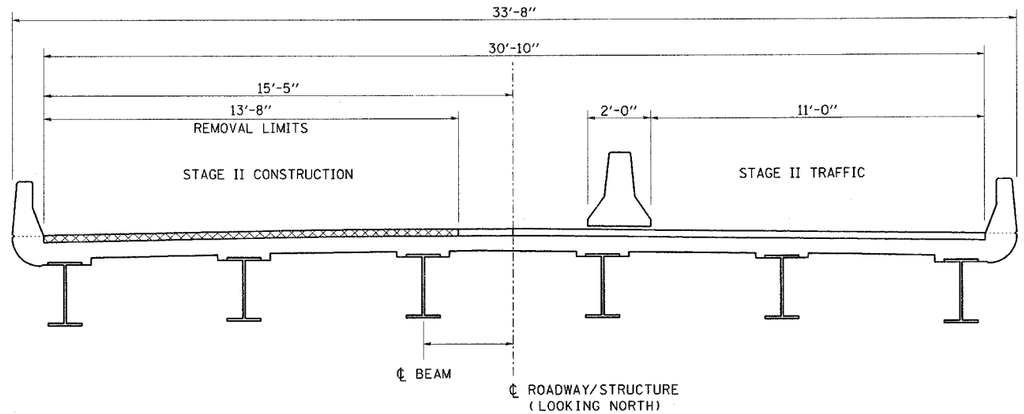
STAGE II CONSTRUCTION



WORK AREA

HOT-MIX ASPAHLT SURFACE REMOVAL

HOT-MIX WEARING SURFACE &
WATER PROOFING MEMBRANE

ATTENUATOR

TYPE III BARRICADE

TEMPORARY CONCRETE BARRIER

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN -	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE II CONSTRUCTION S.N. 026-0049

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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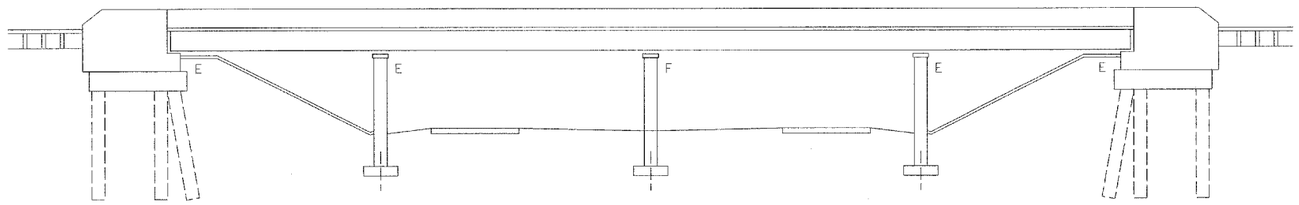
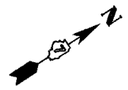
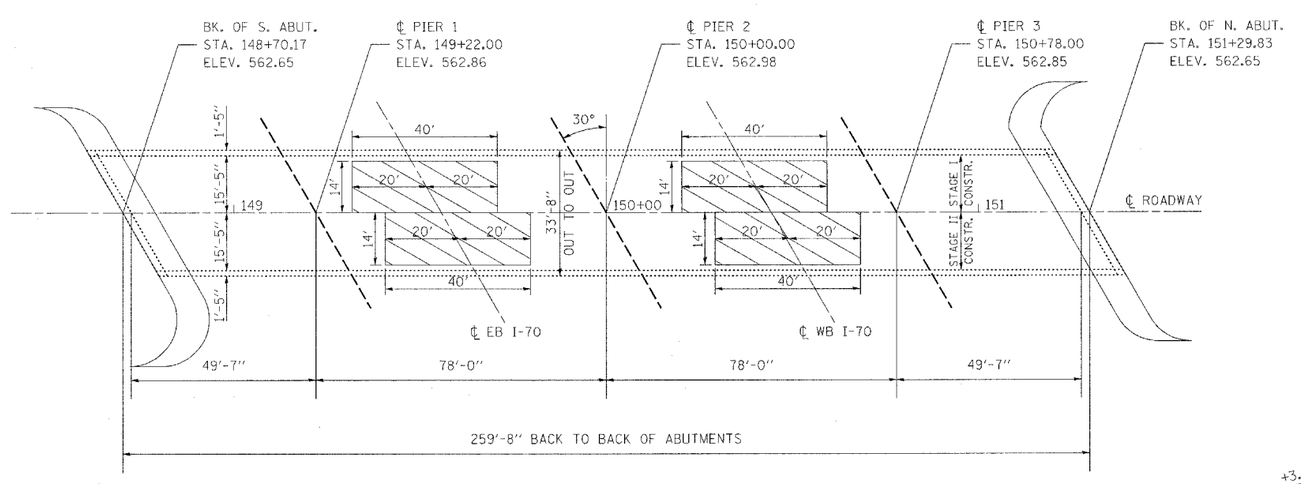
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



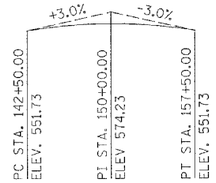
ELEVATION





PLAN

PROTECTIVE SHIELD



PROFILE GRADE

GENERAL NOTES

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.

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.

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 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50 F.

All construction joints shall be bonded.

Removal of all existing expansion joints shall be included in the contract unit price for Concrete Removal.

Prior to pouring concrete at all expansion joint locations, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete.

All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.

BILL OF MATERIALS

ITEM DESCRIPTION	UNIT	QUANTITY
Concrete Removal	CU YD	11.4
Concrete Superstructure	CU YD	13.2
Preformed Joint Strip Seal	FOOT	75
Structural Repair of Concrete (Depth Equal or Less than 5")	SQ FT	30
Hot-Mix Asphalt Surface Removal, 1 3/4"	SQ YD	890
Reinforcement Bars, Epoxy Coated	POUND	1630
Bar Splicers	EACH	30
Elastomeric Bearing Assembly, Type II	EACH	12
Jack and Remove Existing Bearings	EACH	12
Furnishing and Erecting Structural Steel	POUND	1270
Protective Shield	SQ YD	249
Deck Slab Repair (Full Depth, Type I)	SQ YD	3
Deck Slab Repair (Full Depth, Type II)	SQ YD	25
Deck Slab Repair (Partial)	SQ YD	78
Waterproofing Membrance System	SQ YD	890
Polyermized Hot-Mix Asphalt Surface Course, Mixture "D", N90 *	TON	75

* Deck Slab Quantity Only

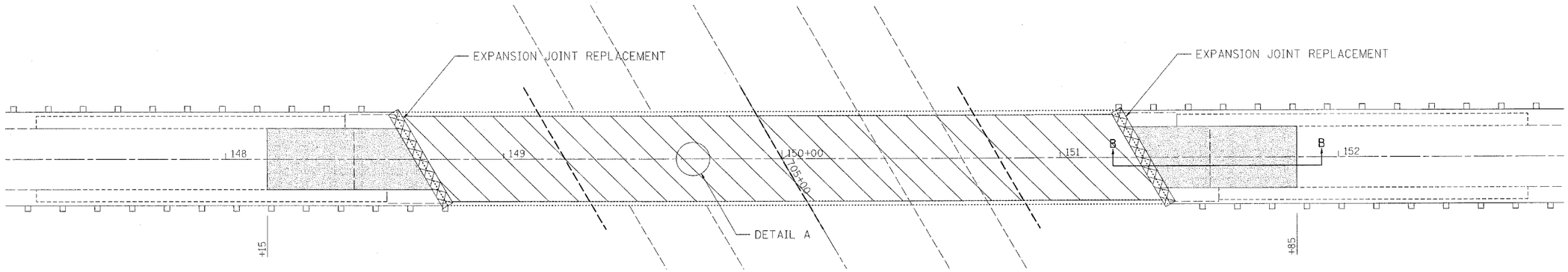
FILE NAME = #FILE1#	USER NAME = #USER#	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = #SCALE#	CHECKED -	REVISED -
	PLOT DATE = #DATE#	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION S.N. 026-0049

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

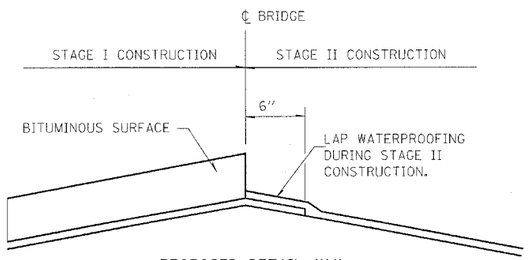
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		8
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



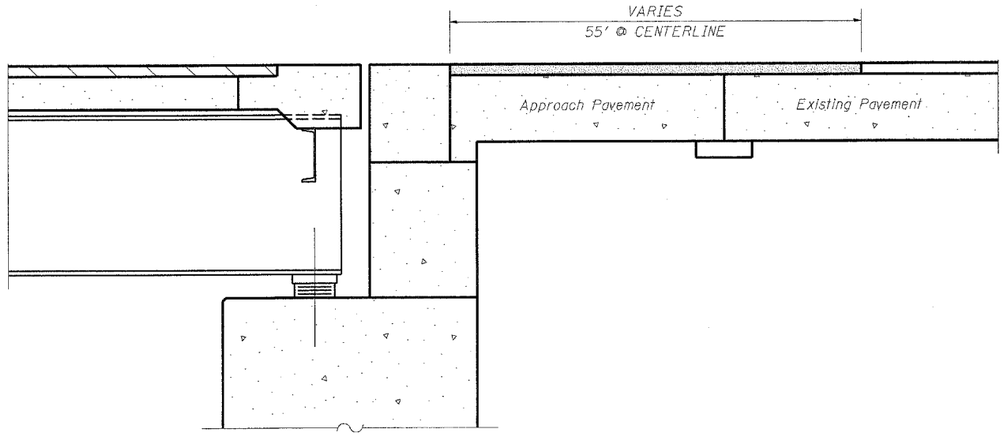
PLAN VIEW

HOT-MIX ASPHALT SURFACE REMOVAL, 1¾"

HOT-MIX ASPHALT SURFACE REMOVAL 1½"



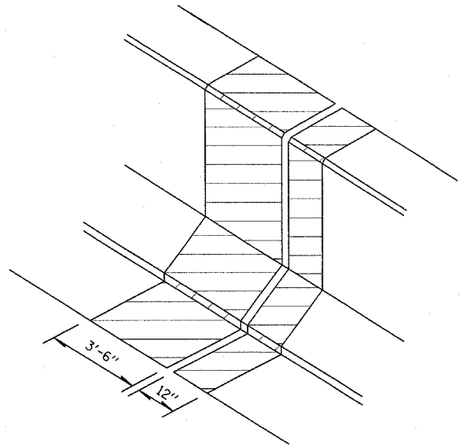
PROPOSED DETAIL "A"



SECTION B-B

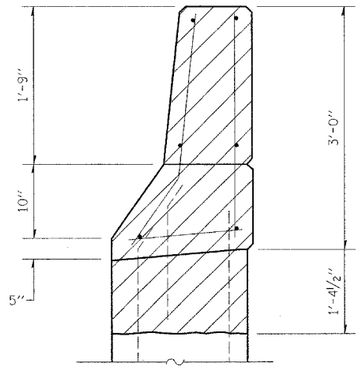
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**OVERLAY DETAILS**				
		DRAWN -	REVISED -						
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA.	TO STA.	
	PLOT DATE = $DATE$	DATE -	REVISED -						

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		9
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

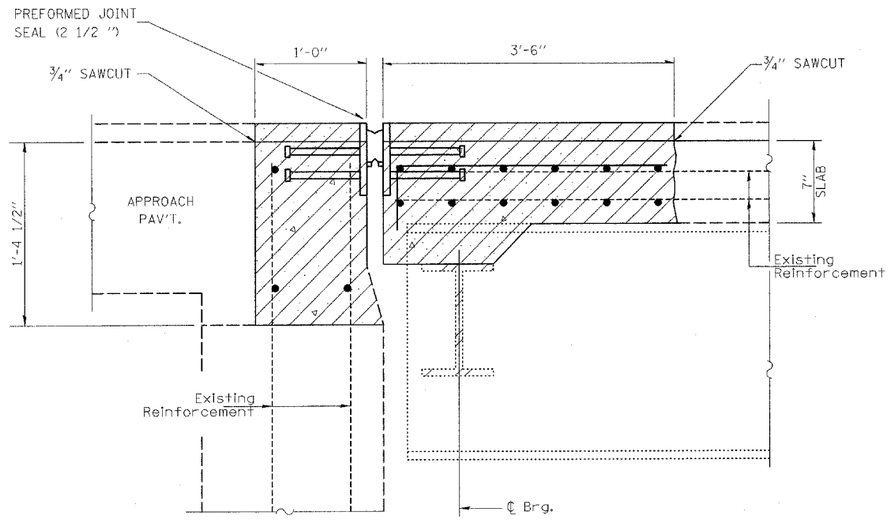


TYPICAL CONCRETE REPLACEMENT
AT EACH ABUTMENT

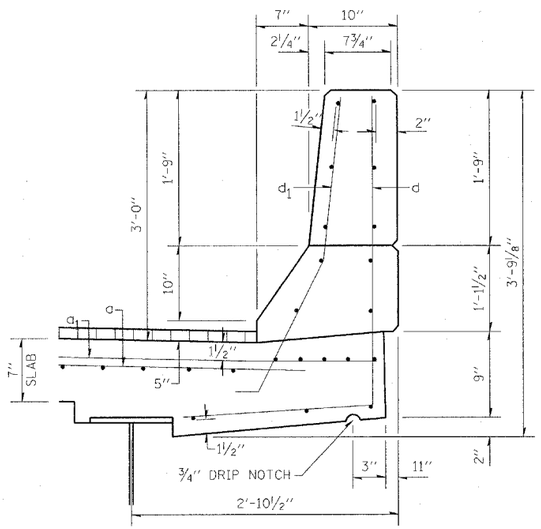
CONCRETE REMOVAL (LIMITS ARE FROM OUT TO OUT OF DECK)



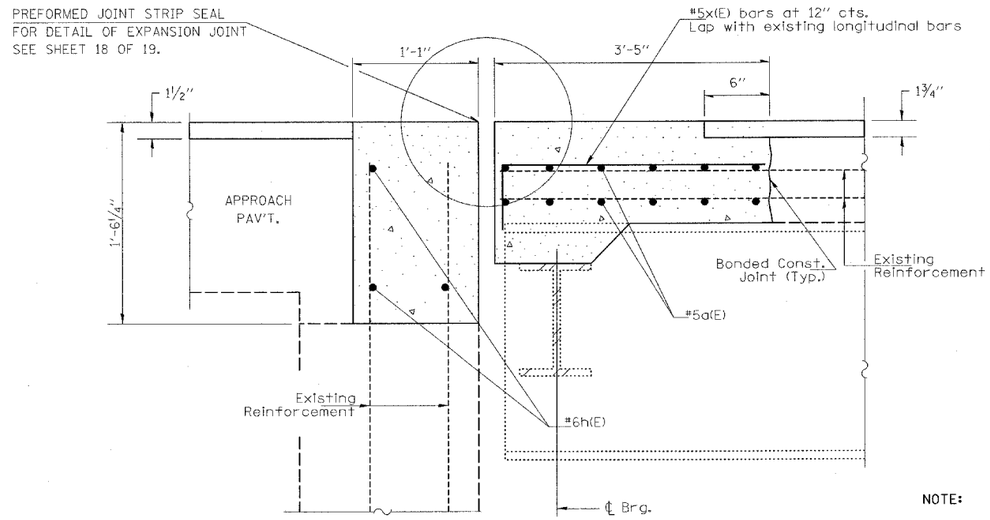
WINGWALL DETAIL



EXISTING EXPANSION JOINTS AT ABUTMENTS



PARAPET DETAIL



POLYMERIZED HOT-MIX ASPHALT
SURFACE COURSE, MIXTURE "D", N90

PROPOSED EXPANSION JOINTS AT ABUTMENTS

NOTE: EXISTING REINFORCEMENT BARS ARE TO BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. ANY REINFORCMENT 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 = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT & REBAR DETAILS

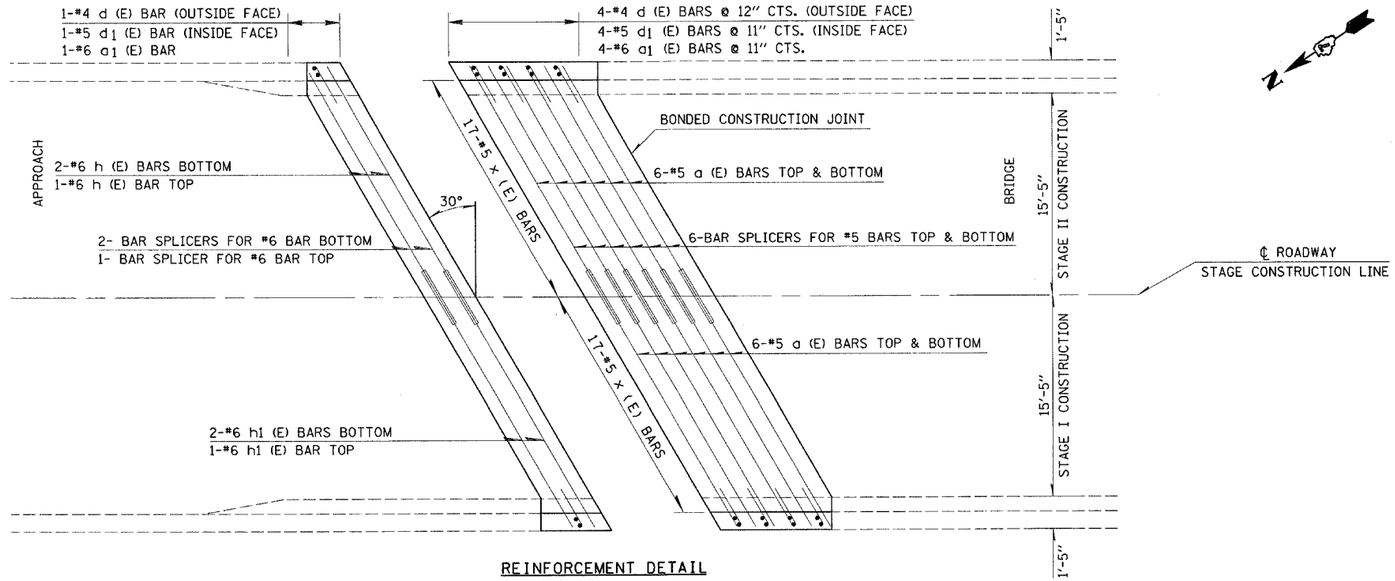
SCALE: | SHEET NO. OF SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		10
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BAR LIST - PER ABUTMENT - STR #026-0049

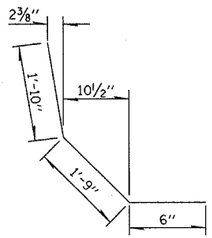
BAR	NUMBER OF BARS		TOTAL	SIZE	LENGTH	SHAPE
	STAGE I	STAGE II				
d(E)	12	12	24	5	17'-10"	——
d1(E)	5	5	10	6	4'-0"	——
h(E)	3	3	6	6	17'-6"	——
x(E)	17	17	34	5	3'-3"	⌐¬
d(E)	5	5	8	4	4'-11"	⌋
d1(E)	5	5	8	5	4'-2"	⌊
Concrete Removal					CU YD	5.7
REINFORCEMENT BARS (EPOXY COATED)					POUND	815
CONCRETE SUPERSTRUCTURE					CU YD	6.6

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED

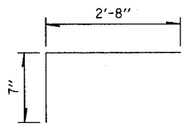


REINFORCEMENT DETAIL

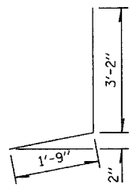
NORTH ABUTMENT (SOUTH ABUTMENT SIMILAR)



BAR d_1 (E)



BAR x(E)



BAR d(E)

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).

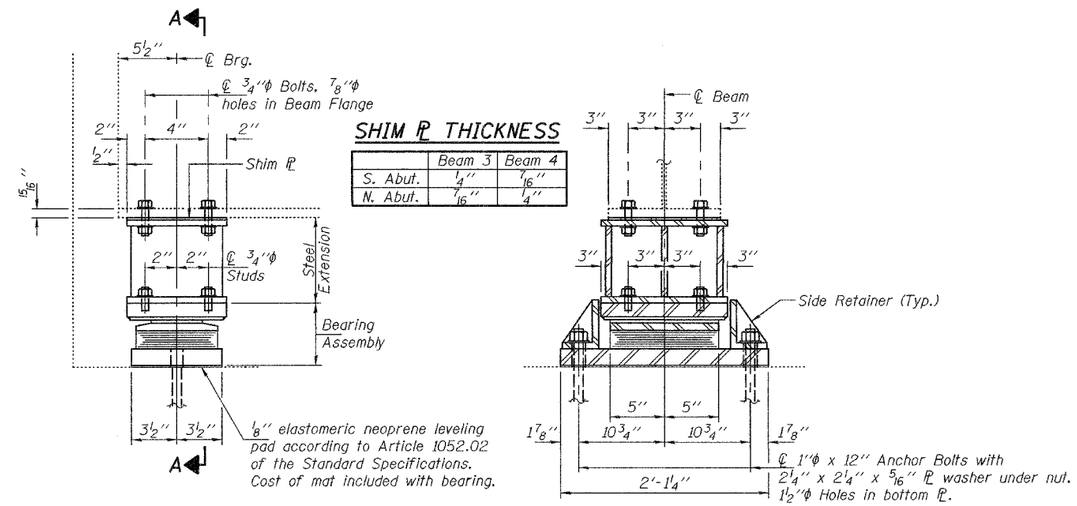
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION JOINT & REBAR DETAILS

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		11
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



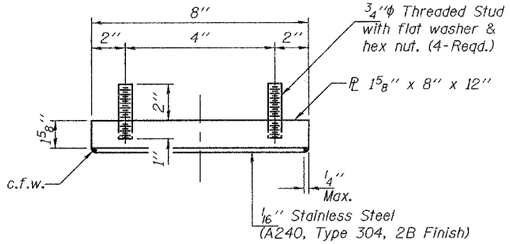
ELEVATION AT ABUTMENT

SECTION A-A

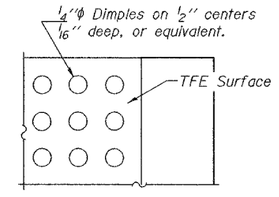
SHIM PL THICKNESS

	Beam 3	Beam 4
S. Abut.	¼"	7/16"
N. Abut.	7/16"	4"

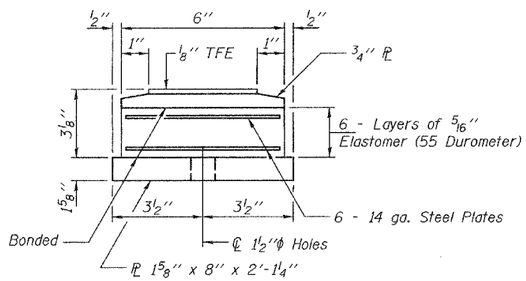
TYPE II TFE ELASTOMERIC EXP. BRG.



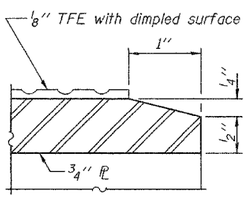
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

BEAM REACTIONS

RP	(K)	17.1
RL	(K)	28.4
Imp.	(K)	8.1
R (Total)	(K)	53.6

Notes:

Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.

New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Min. jack capacity = 30 Tons.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

Anchor bolts for Type II bearings shall be placed in holes drilled through the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

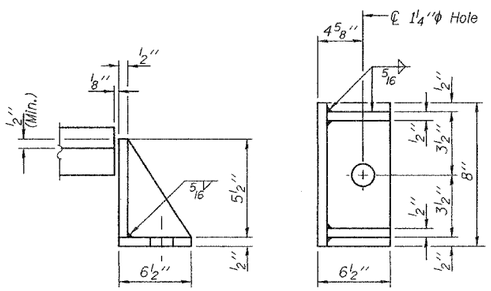
Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

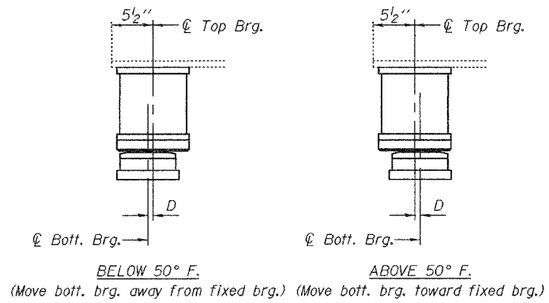
Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

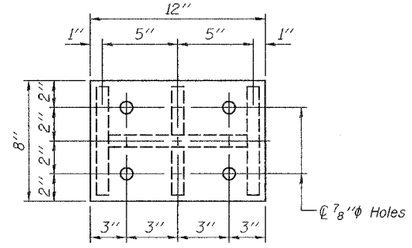


BELOW 50° F.
(Move bott. brg. away from fixed brg.)

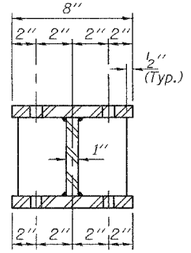
ABOVE 50° F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

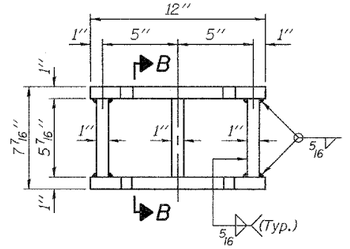
D = ⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.



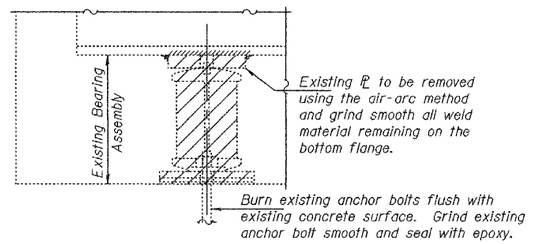
PLAN TOP AND BOTTOM PLATE



SECTION B-B



STEEL EXTENSION DETAIL



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

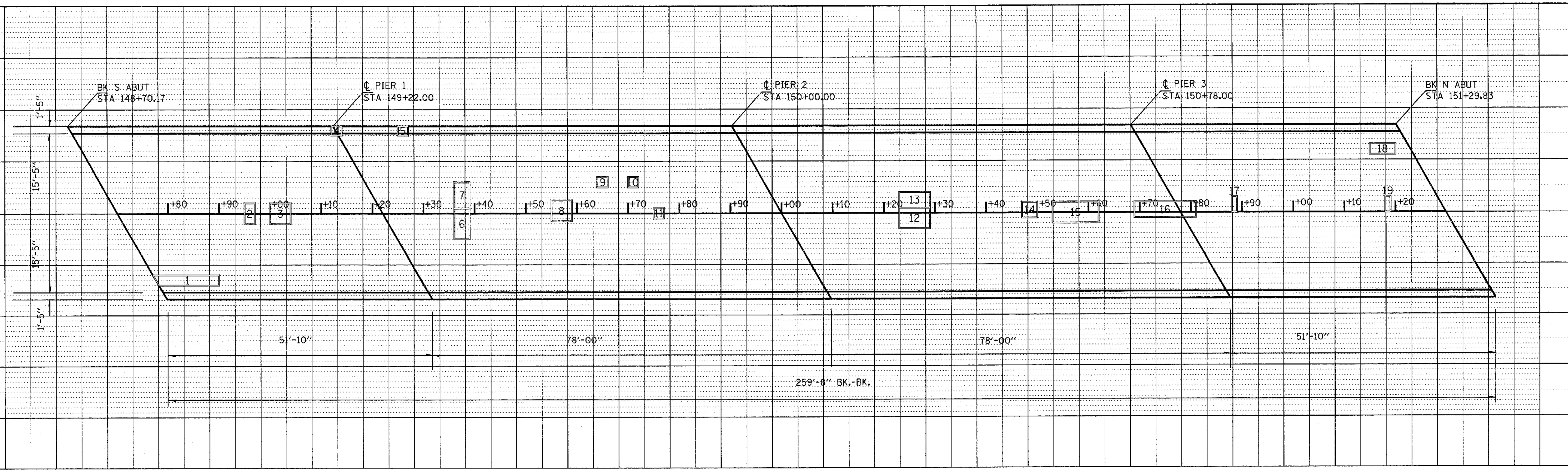
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12
Jack and Remove Existing Bearings	Each	12
Furnishing and Erecting Structural Steel	Pound	1270
Anchor Bolt 1"ϕ	Each	12

BEARING DETAILS
ABUTMENTS
SN 026-0049
FAYETTE COUNTY

TYII/REPS 11-01-2006

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			752		FAYETTE		12
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -					CONTRACT NO. 74276		
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE:	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ YD	DECK SLAB REPAIR (FD TY 1) SQ YD	DECK SLAB REPAIR (FD TY 2) SQ YD	
1	3' x 16'			5.3	
2	4' x 2'			0.9	
3	4' x 4'			1.8	
4	2' x 2'	0.4			
5	2' x 2'	0.4			
6	6' x 3'			2	
7	5' x 3'			1.7	
8	4' x 4'			1.8	
9	2' x 2'	0.4			
10	2' x 2'	0.4			
11	2' x 2'	0.4			
12	4' x 6'			2.7	
13	3' x 6'			2	
14	3' x 3'			1	
15	4' x 9'			4	
16	3' x 2'			0.7	
17	3' x 1'	0.3			
18	2' x 5'			1.1	
19	3' x 1'	0.3			

NOTE: A QUANTITY OF 78 SQUARE FEET WAS ESTIMATED FOR PARTIAL DEPTH PATCHING. ENGINEER SHALL DETERMINE ACTUAL LOCATION IN THE FIELD AND DOCUMENT IN AS-BUILT PLANS.

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE DECK PATCHING FAYETTE COUNTY S.N. 026-0049	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -							13
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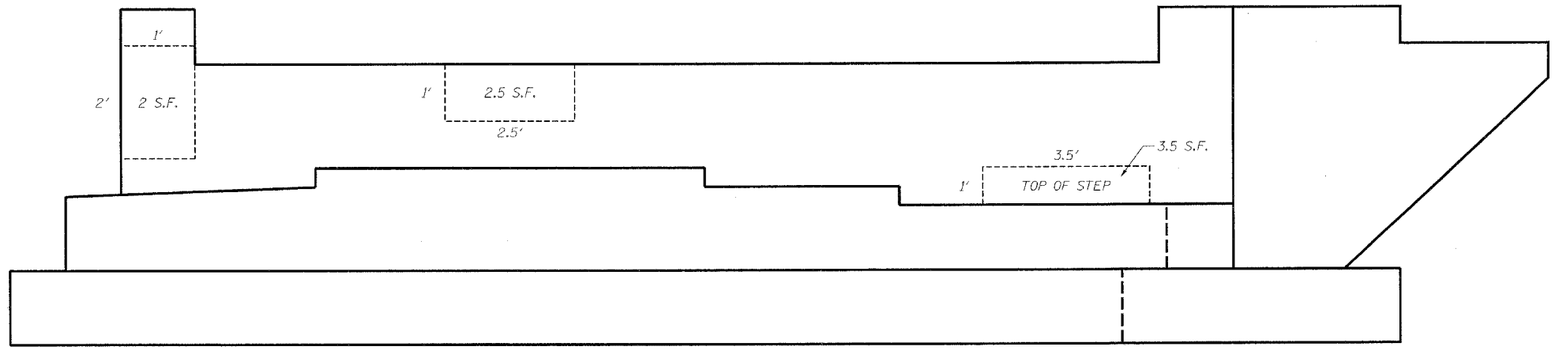
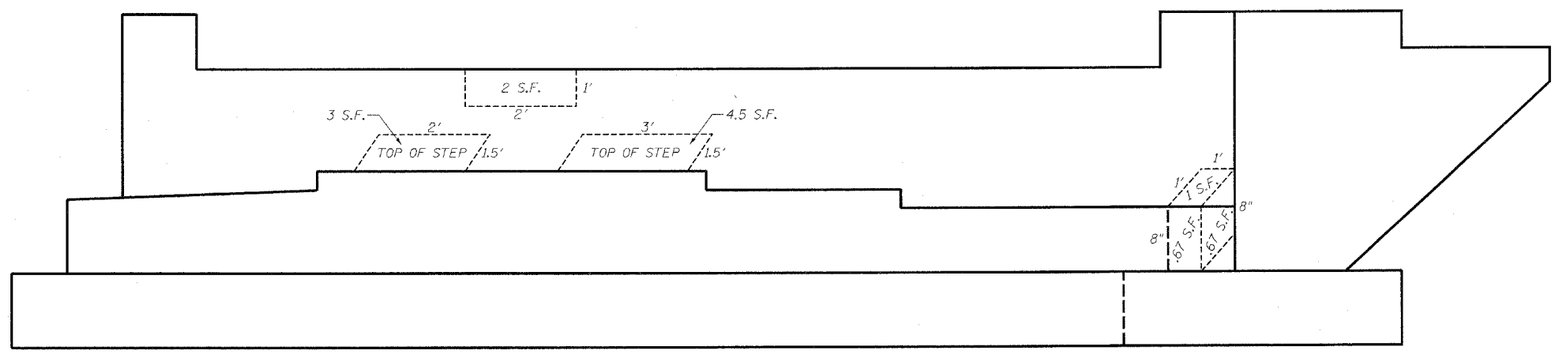
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE: SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SOUTH ABUTMENT

NOTE: QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES TO BE DETERMINED BY THE RESIDENT ENGINEER.



NORTH ABUTMENT

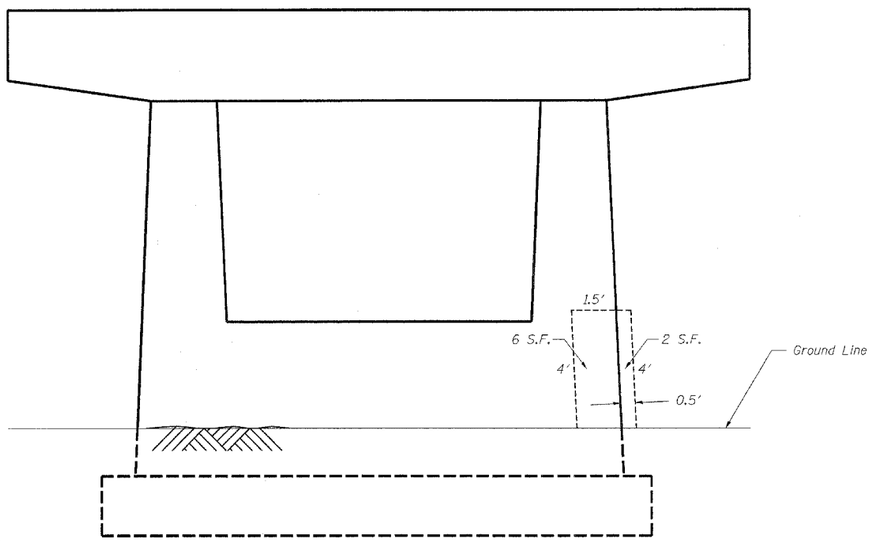
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -
	PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

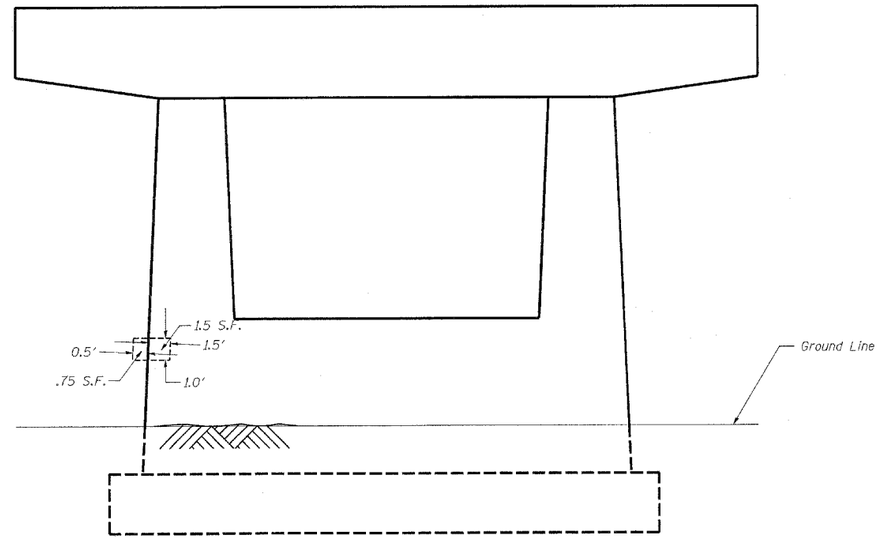
STRUCTURAL REPAIR OF CONCRETE ABUTMENTS DETAILS

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		14
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PIER 3
(FACING SOUTH)

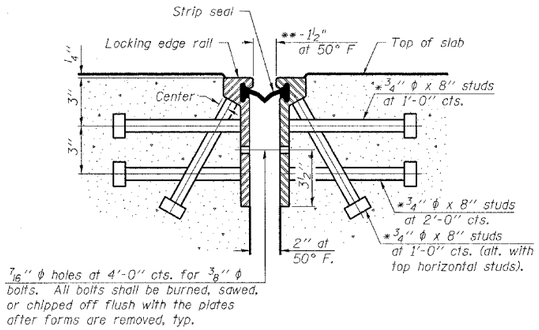


PIER 3
(FACING NORTH)

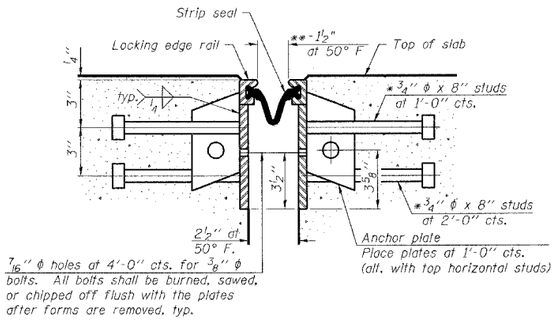
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL REPAIR OF CONCRETE PIER 3 DETAILS	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			752		FAYETTE		15
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -					CONTRACT NO. 74276		
	PLOT DATE = $DATE$	DATE	REVISED -		SCALE: SHEET NO. OF SHEETS STA. TO STA.	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

** When joint is fixed, dimension is set at 1½".



SECTION THRU ROLLED RAIL JOINT



SECTION THRU WELDED RAIL JOINT

Notes:

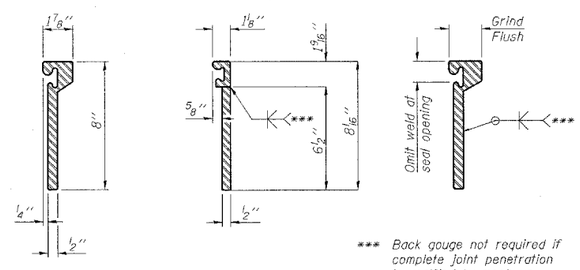
The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

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

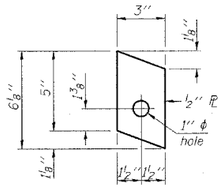
The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

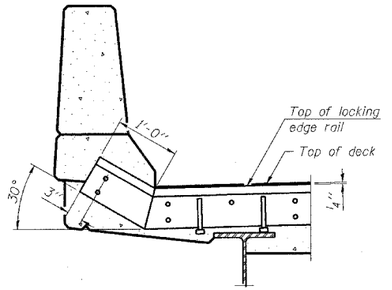
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



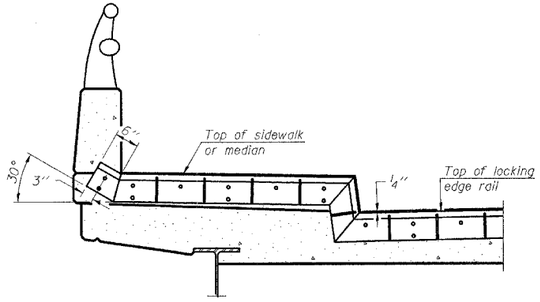
*** Back gauge not required if complete joint penetration is verified by mock-up.



ANCHOR ℄
(for welded rail)



AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

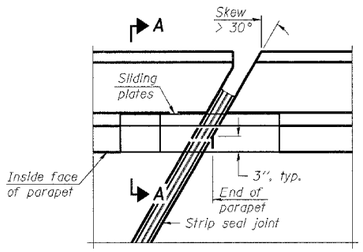
ROLLED (EXTRUDED) RAIL

WELDED RAIL

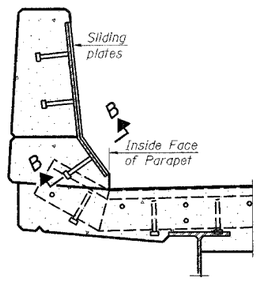
LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

LOCKING EDGE RAILS



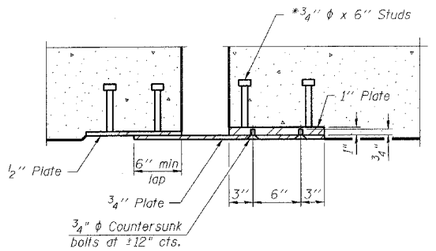
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

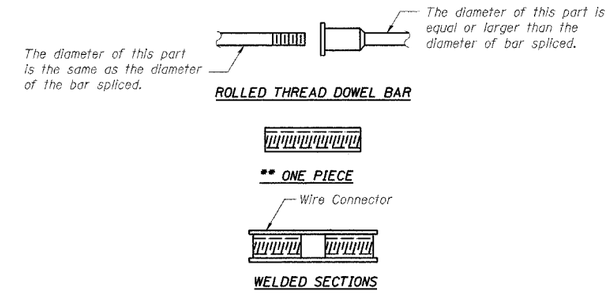
Item	Unit	Total
Preformed Joint Strip Seal	Foot	75

PREFORMED JOINT STRIP SEAL

EJ-SSJ 11-1-06

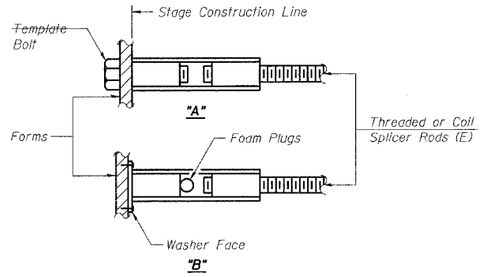
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PREFORMED JOINT STRIP SEAL		
	DRAWN -	REVISED -					
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA. TO STA.
	PLOT DATE = $DATE$	DATE -	REVISED -				

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		16
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



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.

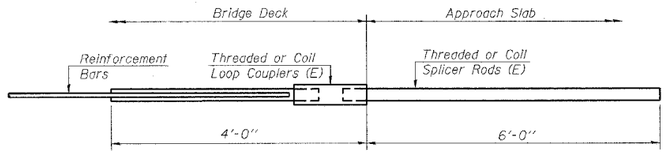
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kips) = 1.25 x fy x A_1

② Minimum *Pull-out Strength (Tension in kips) = 0.66 x fy x A_1

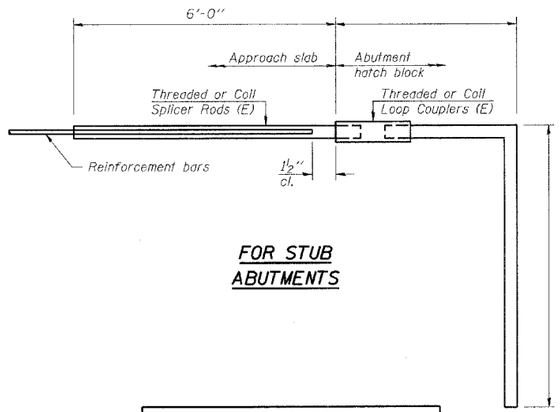
Where fy = Yield strength of lapped reinforcement bars in ksi.
A_1 = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



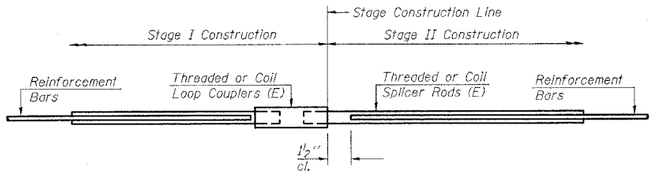
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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	6	APPROACH
#5	24	DECK

BAR SPLICER ASSEMBLY DETAILS

BSD-1 11-1-06

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY DETAILS			
		DRAWN -	REVISED -					
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -					
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE:	SHEET NO. OF SHEETS	STA.	TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
752		FAYETTE		17
		CONTRACT NO. 74276		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		