

D - 93 - 012 - 00

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STANDARDS

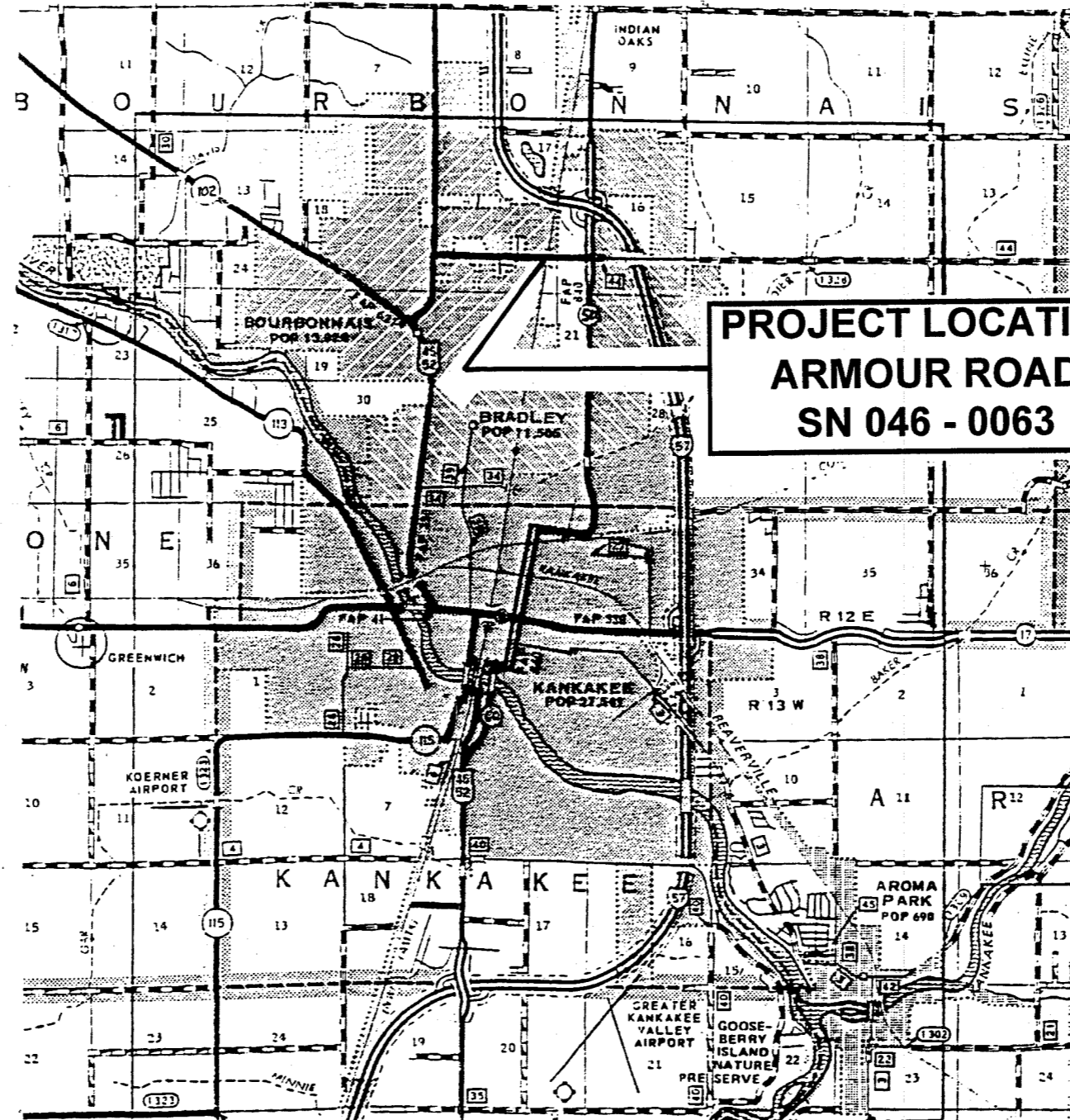
- 420001 -02 PAVEMENT JOINTS
- 420401 -02 BRIDGE APPROACH PAVEMENT
- 420701 PAVEMENT FABRIC
- 515001 NAME PLATE FOR BRIDGES
- 606001 -01 COMBINATION CURB AND COMBINATION CONCRETE CURB AND GUTTER
- 606301 -02 PC CONCRETE ISLANDS AND MEDIANS
- 630001 STEEL PLATE BEAM GUARDRAIL
- 701426 -01 LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATIONS, FOR SPEEDS >= 45 MPH
- 701602 URBAN LANE CLOSURE, MULTILANE 2W WITH MOUNTABLE MEDIAN
- 701606 -03 URBAN LANE CLOSURE, MULTILANE 2W WITH MOUNTABLE MEDIAN
- 702001 -01 TRAFFIC CONTROL DEVICES
- 704001 TEMPORARY CONCRETE BARRIER
- 780001 -01 TYPICAL PAVEMENT MARKINGS

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PROJECT ENGINEER: TOM SCHAEFER (815) 434-8446
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TOWNSHIP: BOURBONNAIS
CONTRACT NO.: 86957

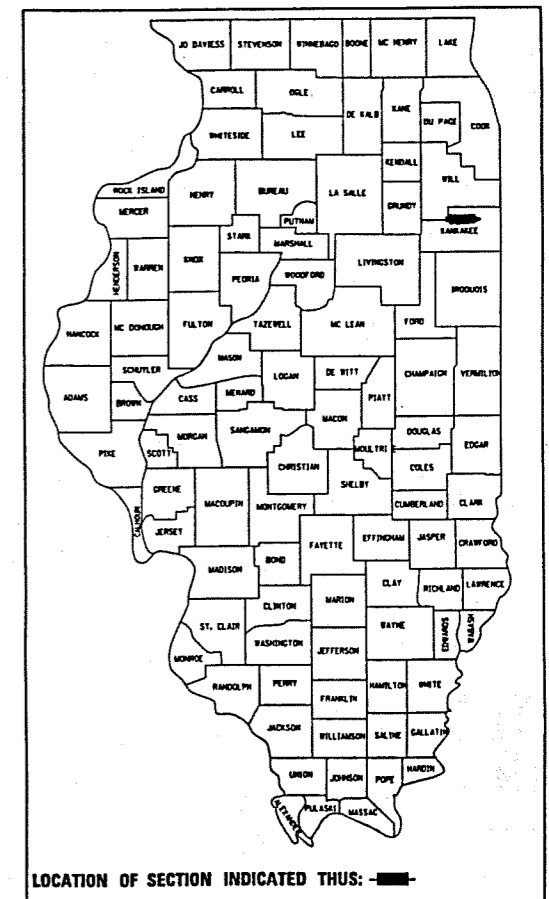
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED HIGHWAY

FAS ROUTE 1305 (ARMOUR ROAD)
SECTION (79R - VB) I
KANKAKEE COUNTY

C-93-138-99



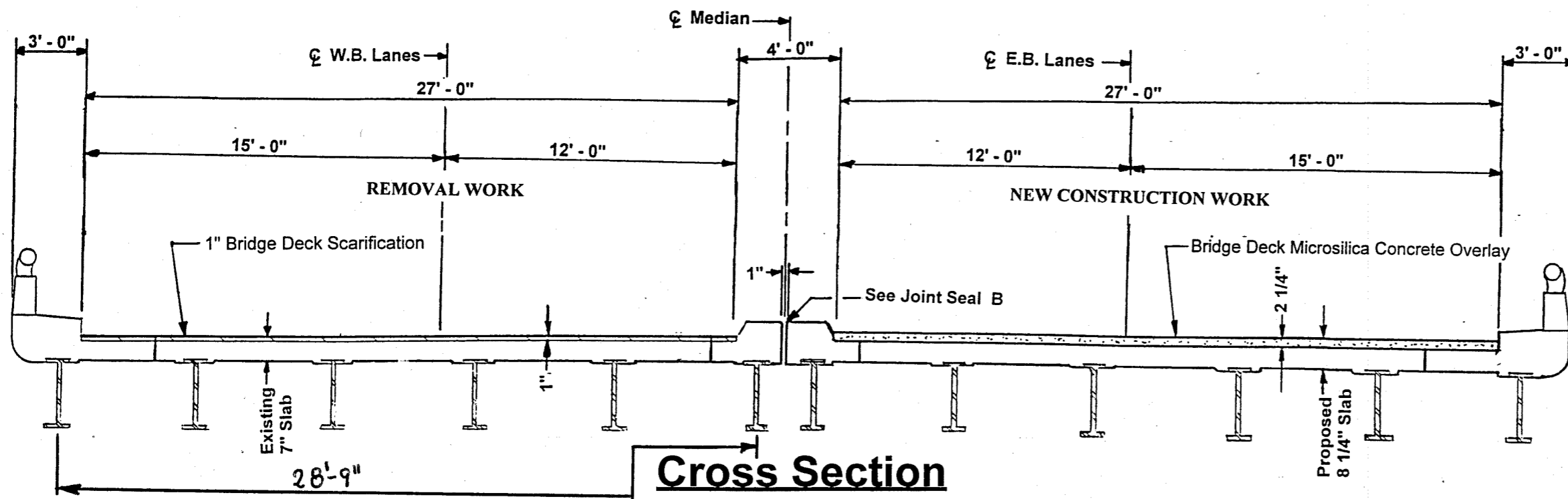
PROJECT LOCATION
ARMOUR ROAD
SN 046 - 0063



2001 ADT 19200
%P.V. 95.3 %S.U. 2.9 %M.U. 1.8

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
SUBMITTED April 23 2001
DISTRICT ENGINEER
May 11, 2001
Michael Reine
ENGINEER OF DESIGN AND ENVIRONMENT
May 11, 2001
James C. Slifer
DIRECTOR, DIVISION OF HIGHWAYS

Revised by: RWO 04/27/01



Cross Section

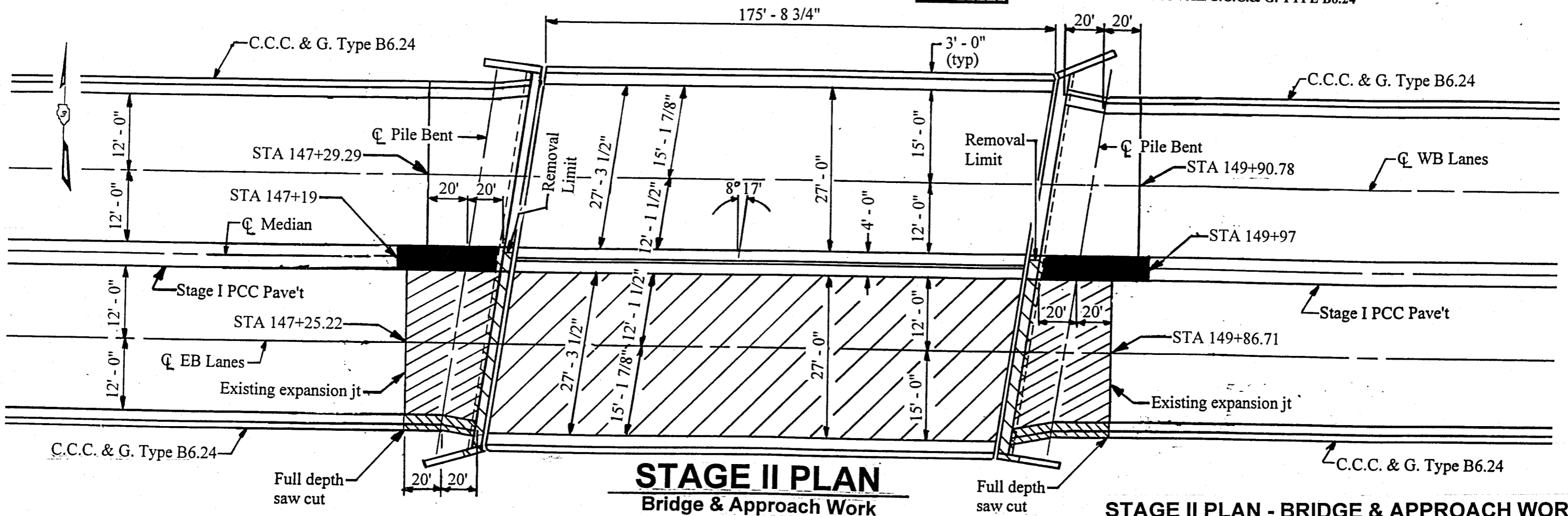
Looking East

Limits of Protective Shield
(Span 2 only)

NOTE: Removal and New Work shown is typical of both sides.

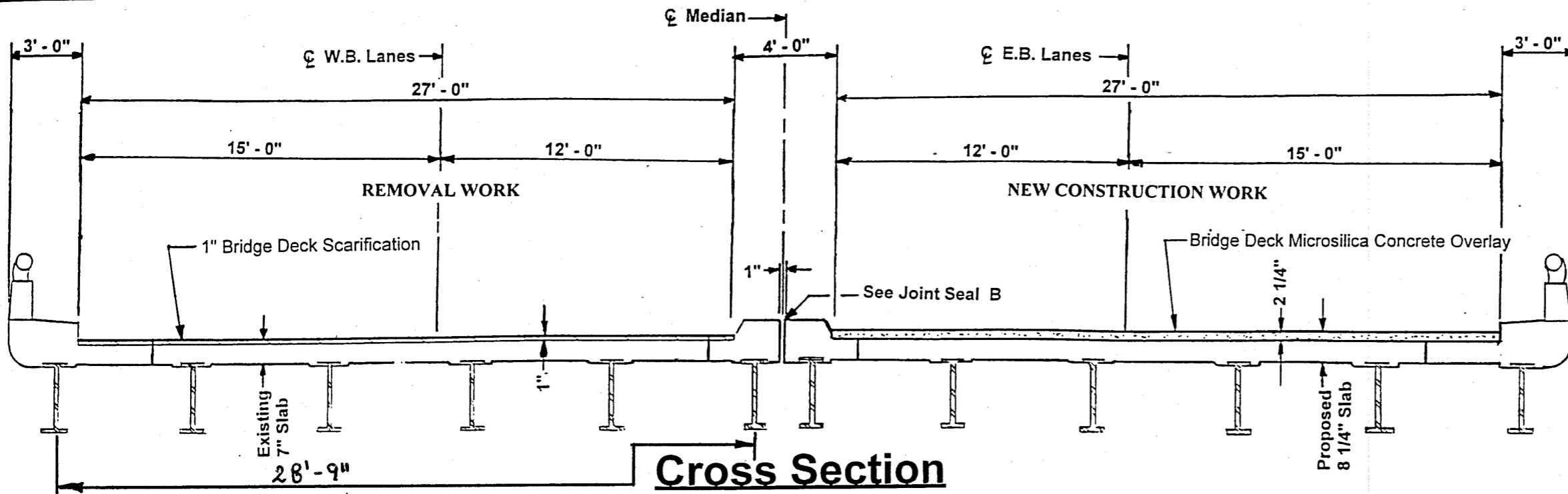
KEY

[Solid black box]	TEMPORARY AGGREGATE
[Diagonal hatching, top-left to bottom-right]	APPROACH SLAB REMOVAL/BRIDGE APPROACH PAVEMENT SPECIAL
[Diagonal hatching, top-right to bottom-left]	CONCRETE REMOVAL/CONCRETE STRUCTURE
[Horizontal hatching]	BRIDGE DECK SCARIFICATION/BRIDGE DECK MICROSILICA CONCRETE OVERLAY
[Vertical hatching]	CURB & GUTTER REMOVAL/C.C.C. & G. TYPE B6.24



STAGE II PLAN
 Bridge & Approach Work

STAGE II PLAN - BRIDGE & APPROACH WORK



Cross Section

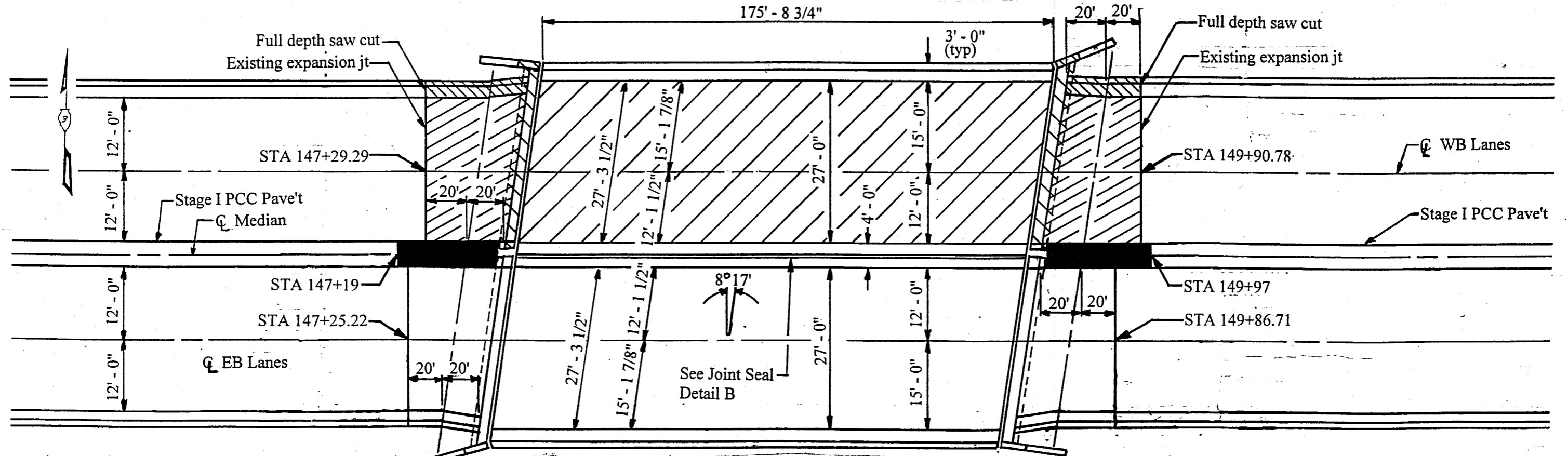
Looking East

Limits of Protective Shield
(Span 2 only)

NOTE: Removal and New Work shown is typical of both sides.

KEY

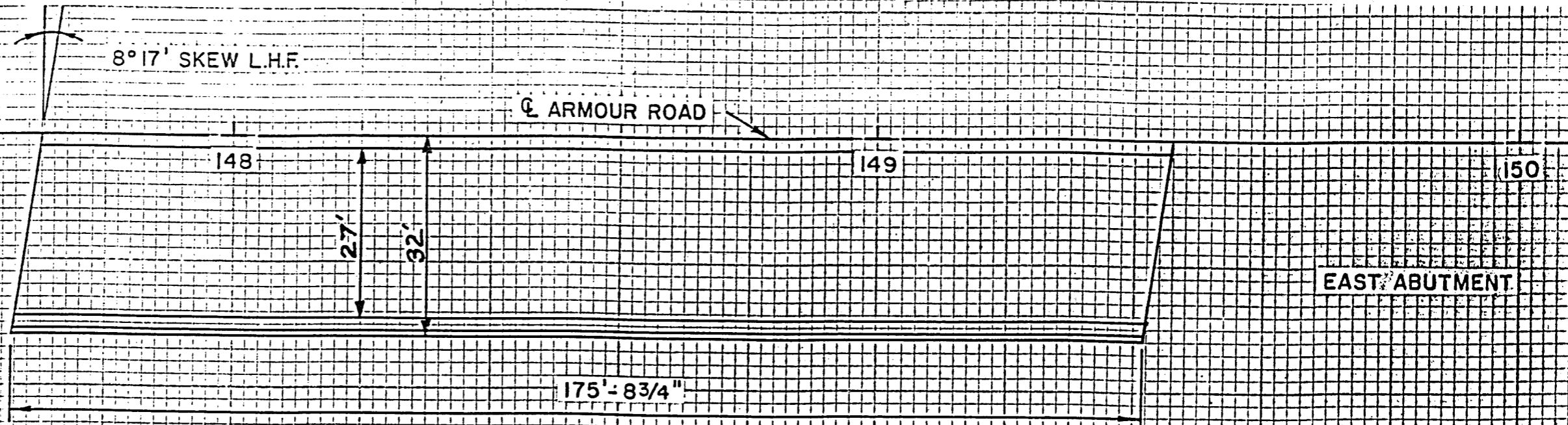
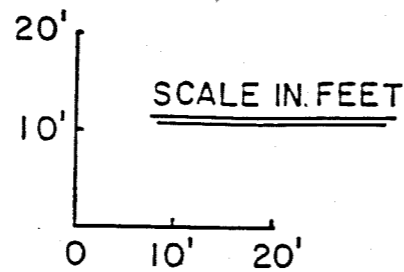
	TEMPORARY AGGREGATE
	APPROACH SLAB REMOVAL/BRIDGE APPROACH PAVEMENT SPECIAL
	CONCRETE REMOVAL/CONCRETE STRUCTURE
	BRIDGE DECK SCARIFICATION/BRIDGE DECK MICRO SILICA CONCRETE OVERLAY
	CURB & GUTTER REMOVAL/C.C.C. & G. TYPE B6.24



STAGE III PLAN

Bridge & Approach Work

STAGE III PLAN - BRIDGE & APPROACH WORK



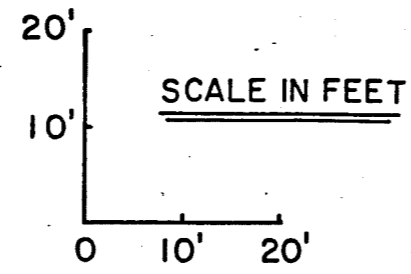
S. N. 046-0063 (EASTBOUND LANES) DECK PATCHING PLAN

DECK LENGTH: 175.73' DECK WIDTH 32.00' O-O / 27.00' F-F
 TOTAL DECK AREA: 625 SQ YD
 DECK AREA LESS SAFETY WALKS AND MEDIAN: 527 SQ YD
 DECK SLAB REPAIR (PARTIAL) : _____
 DECK SLAB REPAIR (FULL DEPTH) : _____
 PERPAIRED BY: _____ DATE: _____

Locations of "AS BUILT" deck patching will be plotted by the Resident Engineer and included in the "AS BUILT" PLANS.

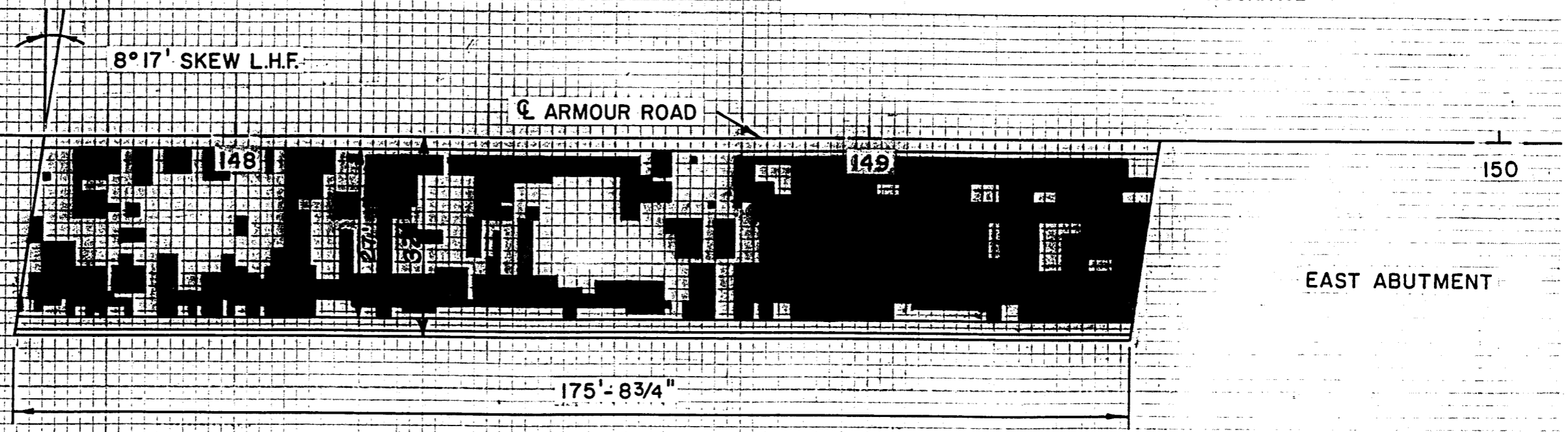
STAGE II FULL AND PART DEPTH DECK REPAIRS

Revised By: RWD 04/27/01



S. N. 046-0063 (EASTBOUND LANES) DECK SURVEY

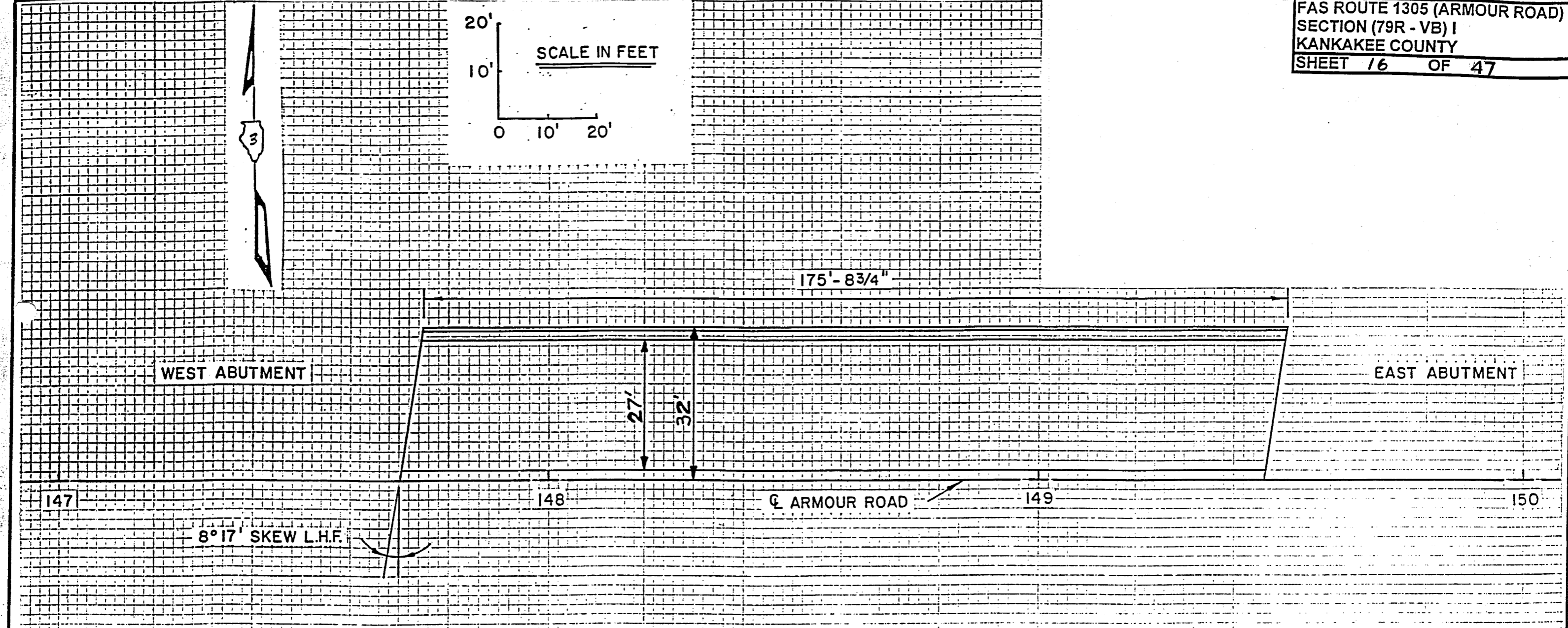
DATE: 04/24/01
 CHECKED BY GS METHOD: CHAIN DRAG
 LENGTH: 175.73'
 WIDTH: 32.00' O-O / 27.00' F-F
 TOTAL DECK AREA: 625 SQ YD
 TOTAL DECK AREA LESS
 SAFETY WALKS AND MEDIAN: 527 SQ YD
 DELAMINATED AREA = 299 SQ YDS
 BRIDGE DECK SCARIFICATION SHALL BE COMPLETED PRIOR TO DECK SLAB REPAIRS.
 DECK SLAB REPAIR (PARTIAL) IS ESTIMATED AT 50% OF DELAMINATED AREA:
 150 SQ YDS 28% OF DECK SURFACE
 DECK SLAB REPAIR (FULL DEPTH) IS ESTIMATED AT 10% OF DELAMINATED AREA:
 30 SQ YDS 6% OF DECK SURFACE



DELAMINATION SURVEY OF EXISTING DECK SN 046-0063 (SOUTH HALF)

THIS DATA IS PROVIDED FOR INFORMATION ONLY.
 THE ACTUAL AREAS TO BE REPAIRED WILL BE DETERMINED BY THE ENGINEER
 AFTER BRIDGE DECK SCARIFICATION HAS BEEN COMPLETED.

Revised By: R.W.G. 04/27/01

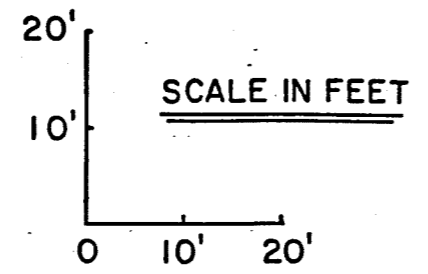


S. N. 046-0063 (WESTBOUND LANES) DECK PATCHING PLAN

DECK LENGTH: 175.73' DECK WIDTH 32.00' O-O / 27.00' F-F
 TOTAL DECK AREA: 625 SQ YD
 DECK AREA LESS SAFETY WALKS AND MEDIAN: 527 SQ YD
 DECK SLAB REPAIR (PARTIAL) : _____
 DECK SLAB REPAIR (FULL DEPTH) : _____
 PERPAIRED BY: _____ DATE: _____

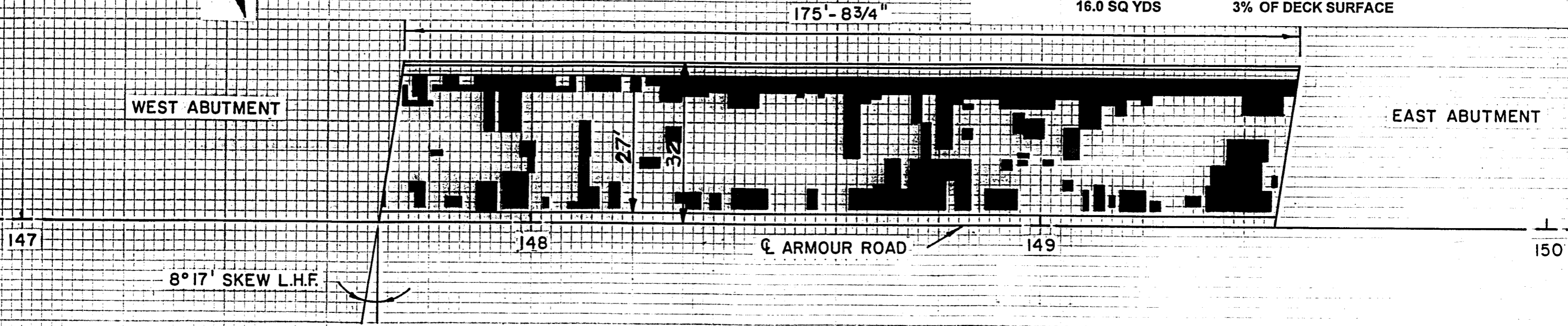
Locations of "AS BUILT" deck patching will be plotted by the Resident Engineer and included in the "AS BUILT " PLANS.

Revised by RWD. 04/27/01



S. N. 046-0063 (WESTBOUND LANES) DECK SURVEY

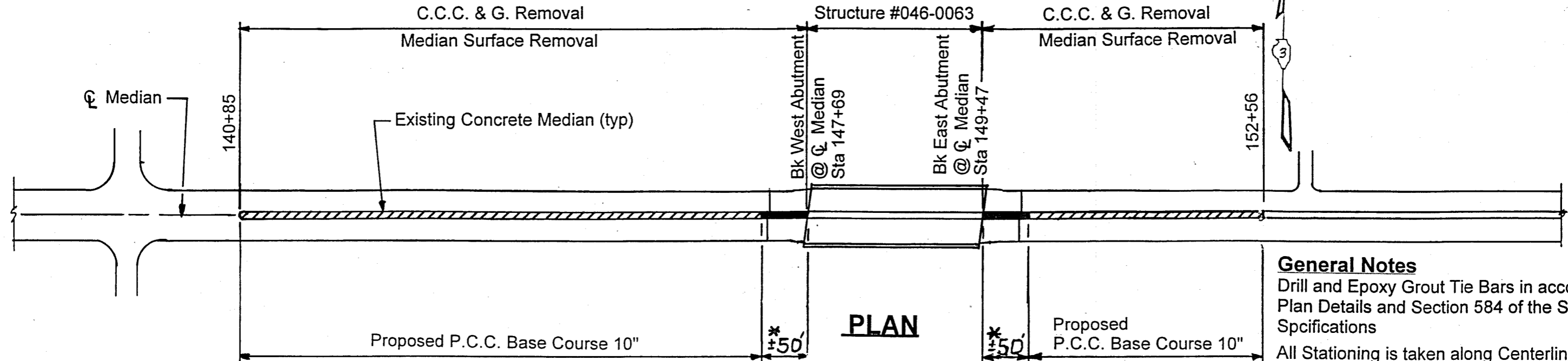
DATE: 04/24/01
 CHECKED BY GS METHOD: CHAIN DRAG
 LENGTH: 175.73'
 WIDTH: 32.00' O-O / 27.00' F-F
 TOTAL DECK AREA: 625 SQ YD
 TOTAL DECK AREA LESS
 SAFETY WALKS AND MEDIAN: 527 SQ YD
 DELAMINATED AREA = 159 SQ YDS
 BRIDGE DECK SCARIFICATION SHALL BE COMPLETED PRIOR TO DECK SLAB REPAIRS.
 DECK SLAB REPAIR (PARTIAL) IS ESTIMATED AT 50% OF DELAMINATED AREA:
 80 SQ YDS 15% OF DECK SURFACE
 DECK SLAB REPAIR (FULL DEPTH) IS ESTIMATED AT 10% OF DELAMINATED AREA:
 16.0 SQ YDS 3% OF DECK SURFACE



DELAMINATION SURVEY OF EXISTING DECK SN 046-0063 (NORTH HALF)

THIS DATA IS PROVIDED FOR INFORMATION ONLY.
 THE ACTUAL AREAS TO BE REPAIRED WILL BE DETERMINED BY THE ENGINEER
 AFTER BRIDGE DECK SCARIFICATION HAS BEEN COMPLETED.

Revised By: RWB 04/27/01

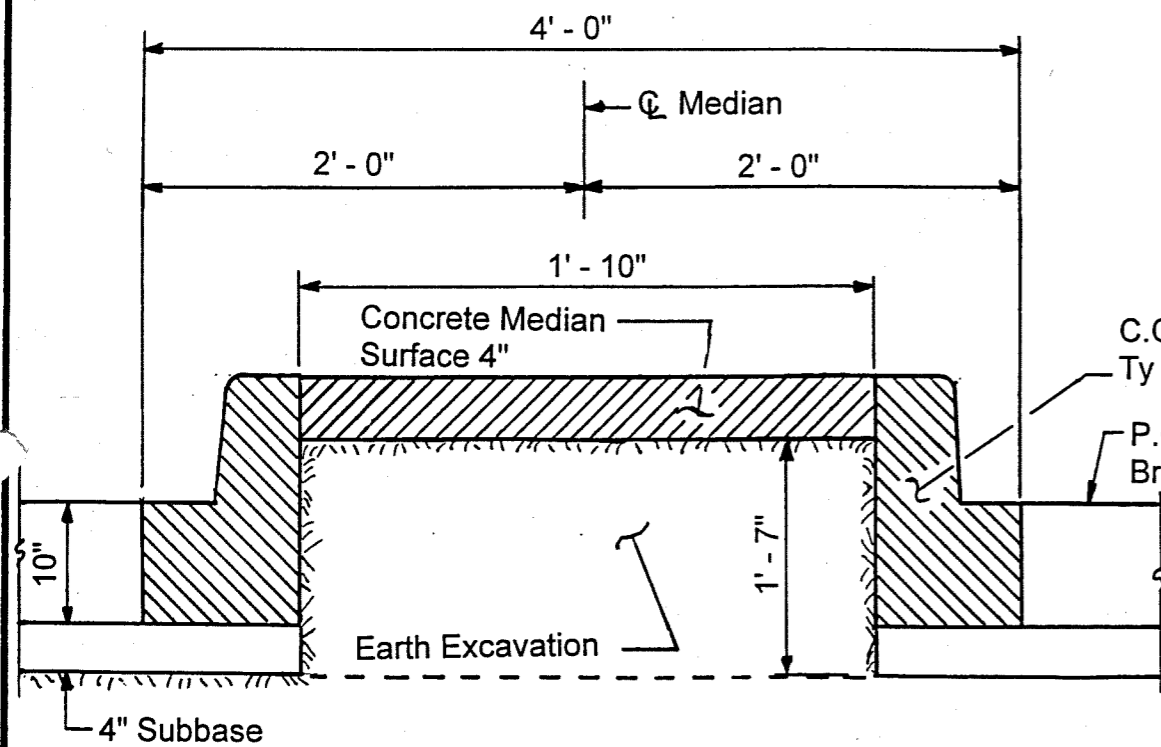
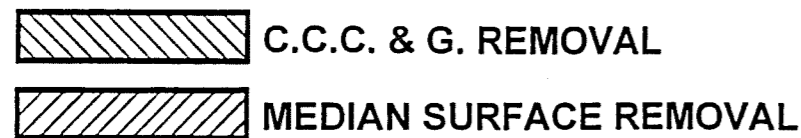


PLAN

General Notes

Drill and Epoxy Grout Tie Bars in accordance with Plan Details and Section 584 of the Standard Specifications
All Stationing is taken along Centerline of Median
Traffic Control & Protection for this stage shall be in accordance with Traffic Control & Protection Standard 701606
Pavement Fabric shall be in accordance with Plan Details and Standard 420701

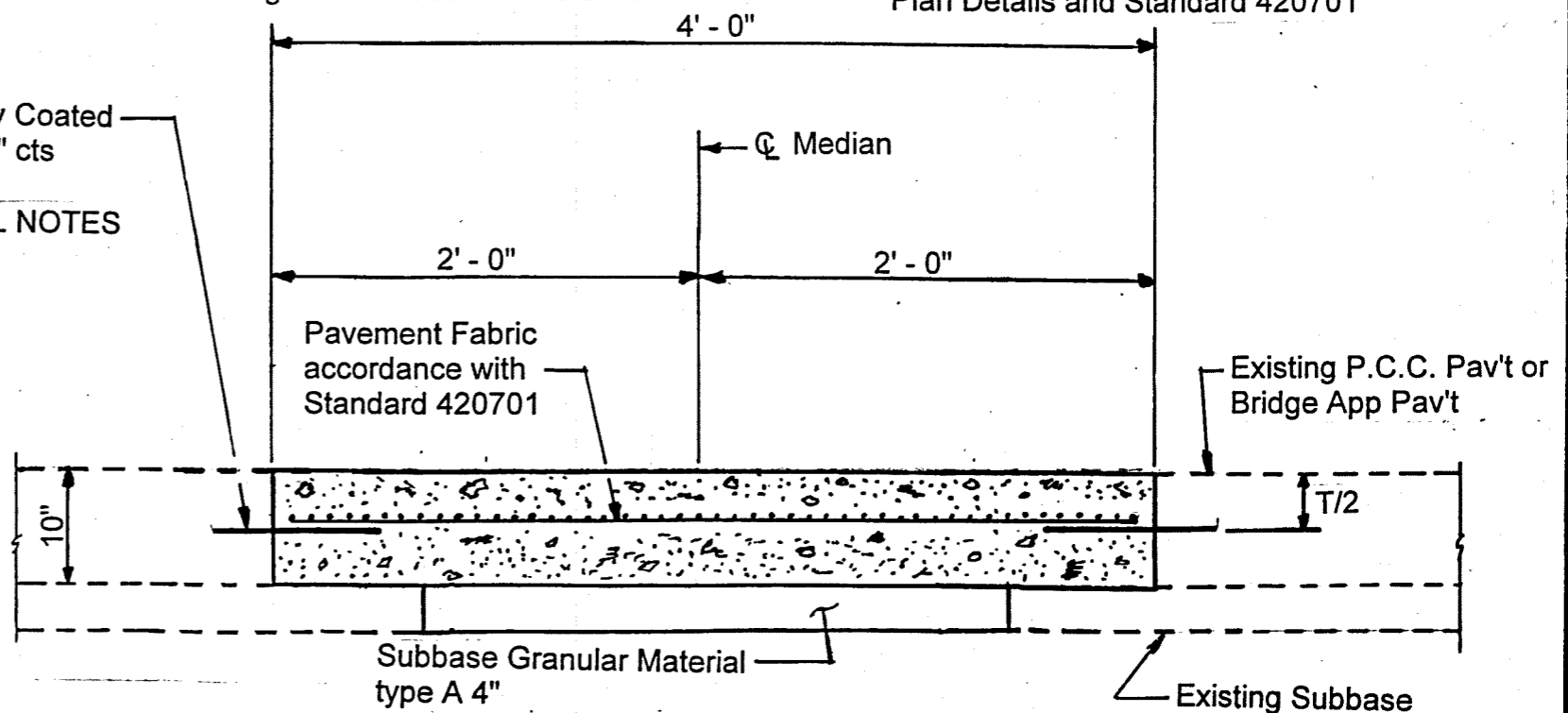
*Proposed Solid Median to be constructed in STAGE IV.
Maintain median at pavement surface elevation with Temporary Aggregate during STAGE II and STAGE III.



EXISTING MEDIAN

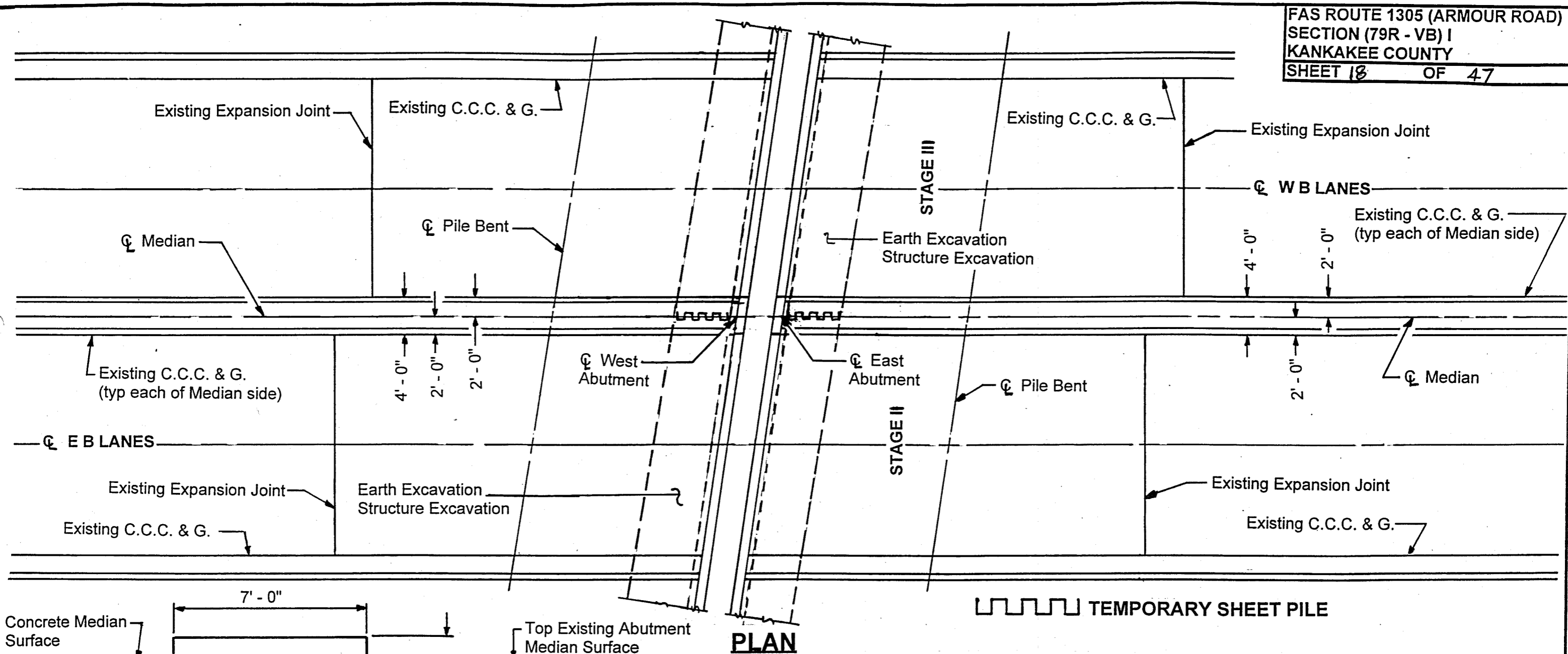
MEDIAN DETAILS
STAGE I and STAGE IV

#6 x 24" Epoxy Coated Tie Bars @ 30" cts (typ each side)
See GENERAL NOTES

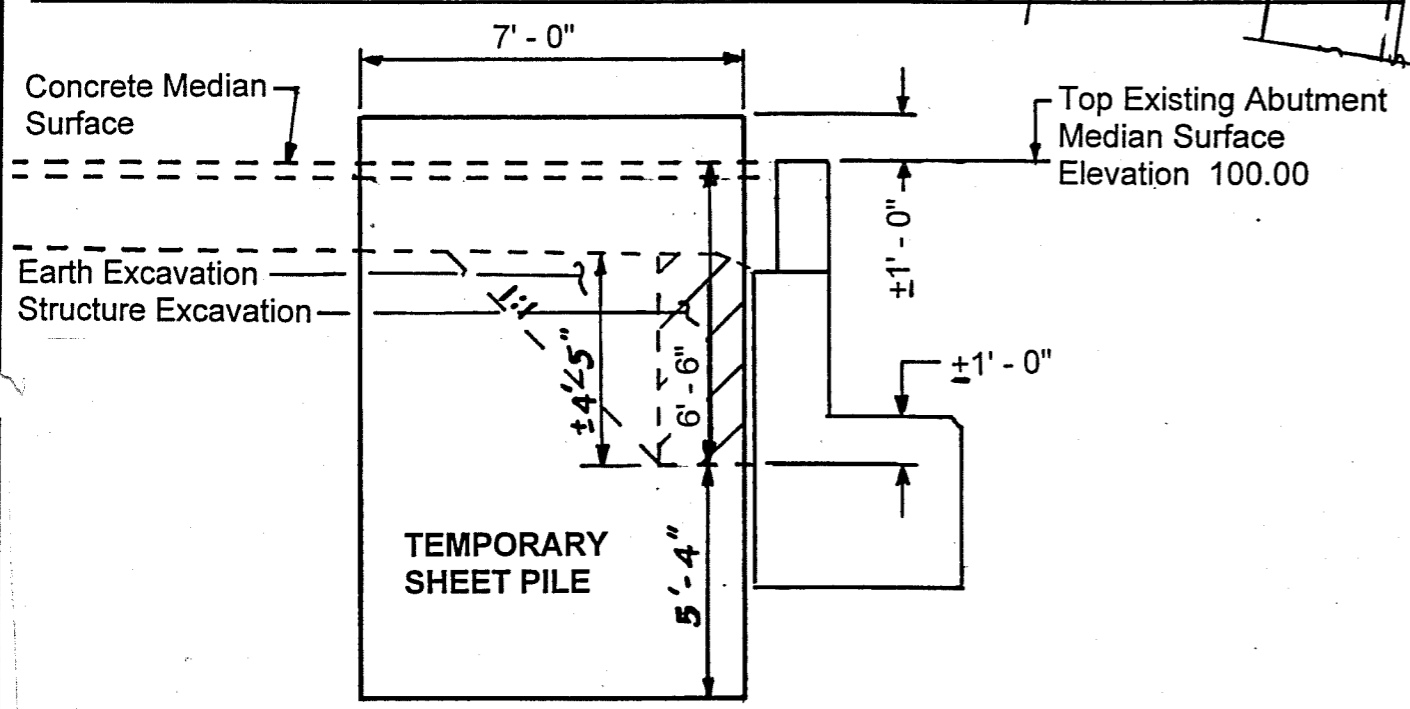


PROPOSED P.C.C. BASE COURSE 10"

MEDIAN DETAILS STAGE I & IV



PLAN



SECTION AT C OF MEDIAN

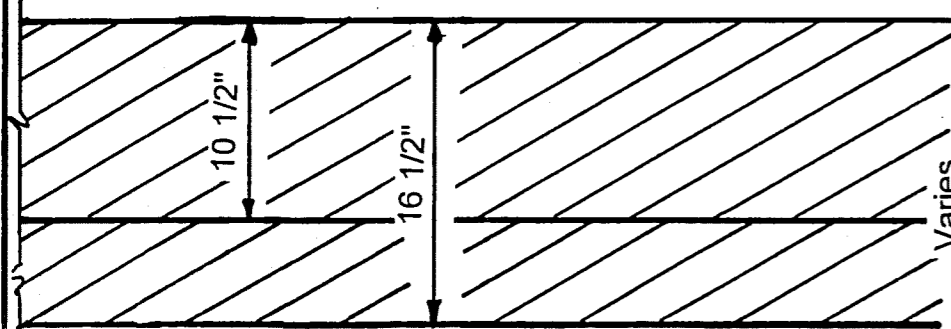
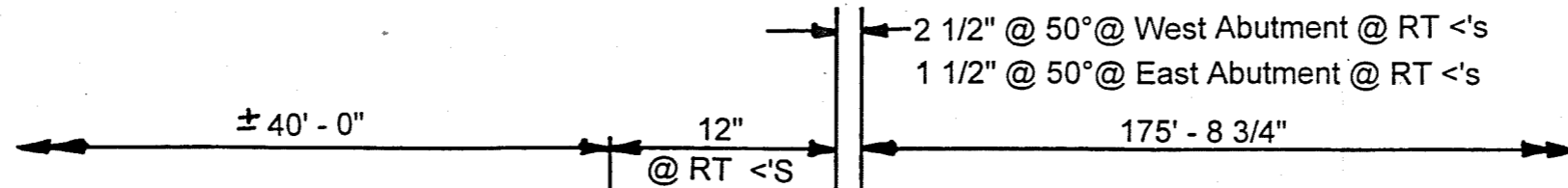
TEMPORARY SHEET PILE DESIGN			
Qu Value	2.5	T.S.F.	UNITS
Required Section Modulus		Cu. In./Ft	2.20
Min. Depth of Embedment		Feet	5.30
Top Elevation		Feet	101.00
Bottom Elevation		Feet	88.20




"If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans for lesser design requirements, then full submittals with required seals will be expected by the Department, for review and approval."

Assumed Datum: Elevation 100.00 = existing elevation at centerline of roadway

TEMPORARY SHEET PILE DETAILS

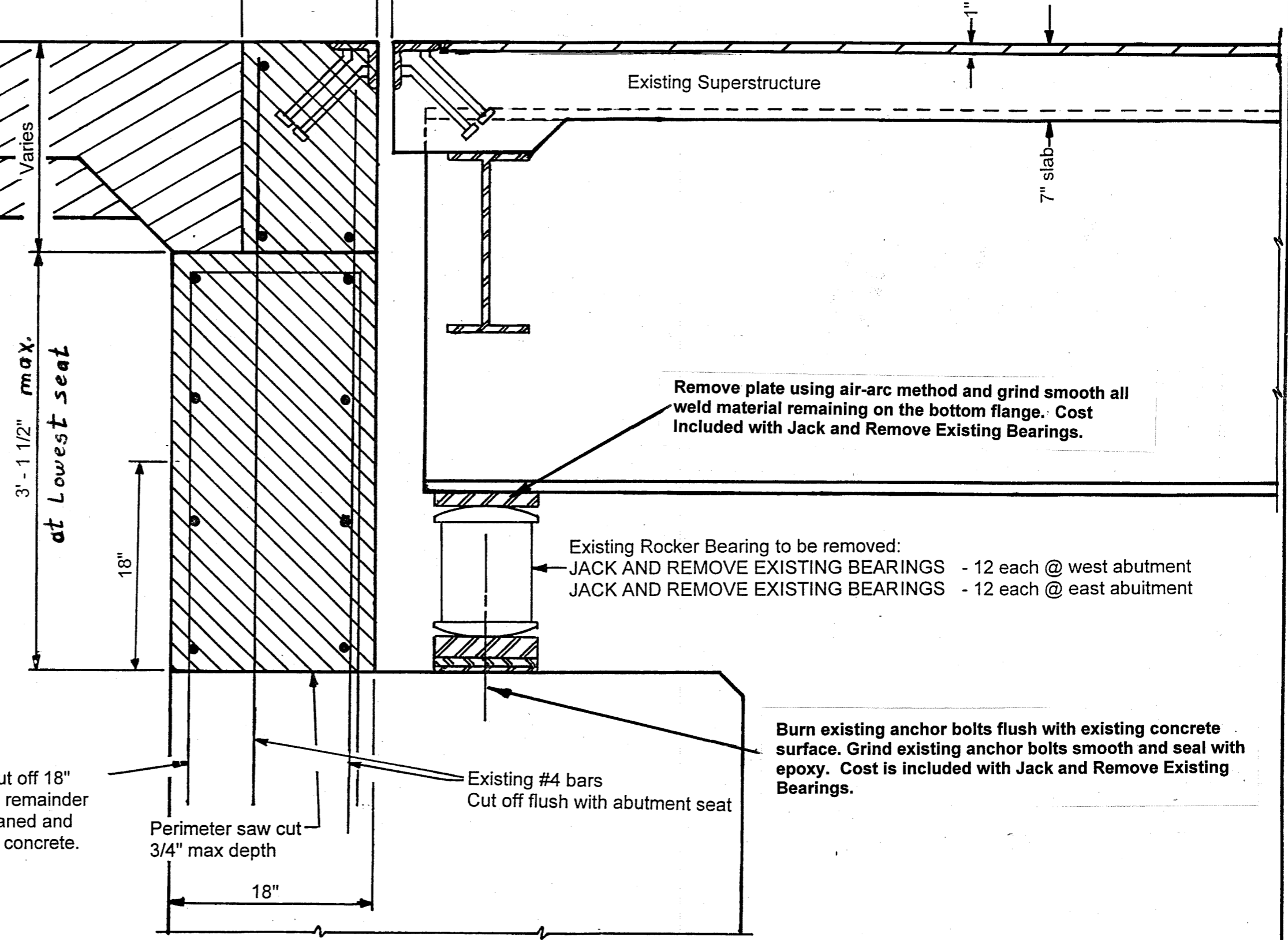
TEMPORARY SHEET PILE DETAILS



- KEY**
-  BRIDGE DECK SCARIFICATION
 -  APPROACH SLAB REMOVAL
 -  CONCRETE REMOVAL

NOTE:
Existing vertical reinforcement bars in the CONCRETE REMOVAL area shall be removed in accordance with plan details and replaced with REINFORCEMENT BARS, EPOXY COATED.
Existing horizontal reinforcement bars in the CONCRETE REMOVAL area shall be removed and replaced with REINFORCEMENT BARS, EPOXY COATED.
The cost of reinforcement removal and cutting existing reinforcement shall not be paid for separately but shall be included in the unit bid price per cubic yard for CONCRETE REMOVAL.
Existing expansion guard steel in the CONCRETE REMOVAL area shall be removed. The cost of removal shall not be paid for separately but shall be included in the unit bid price per cubic yard for CONCRETE REMOVAL.

Existing #4 bar shall be cut off 18" above abutment seat, the remainder shall be straightened, cleaned and incorporated into the new concrete.



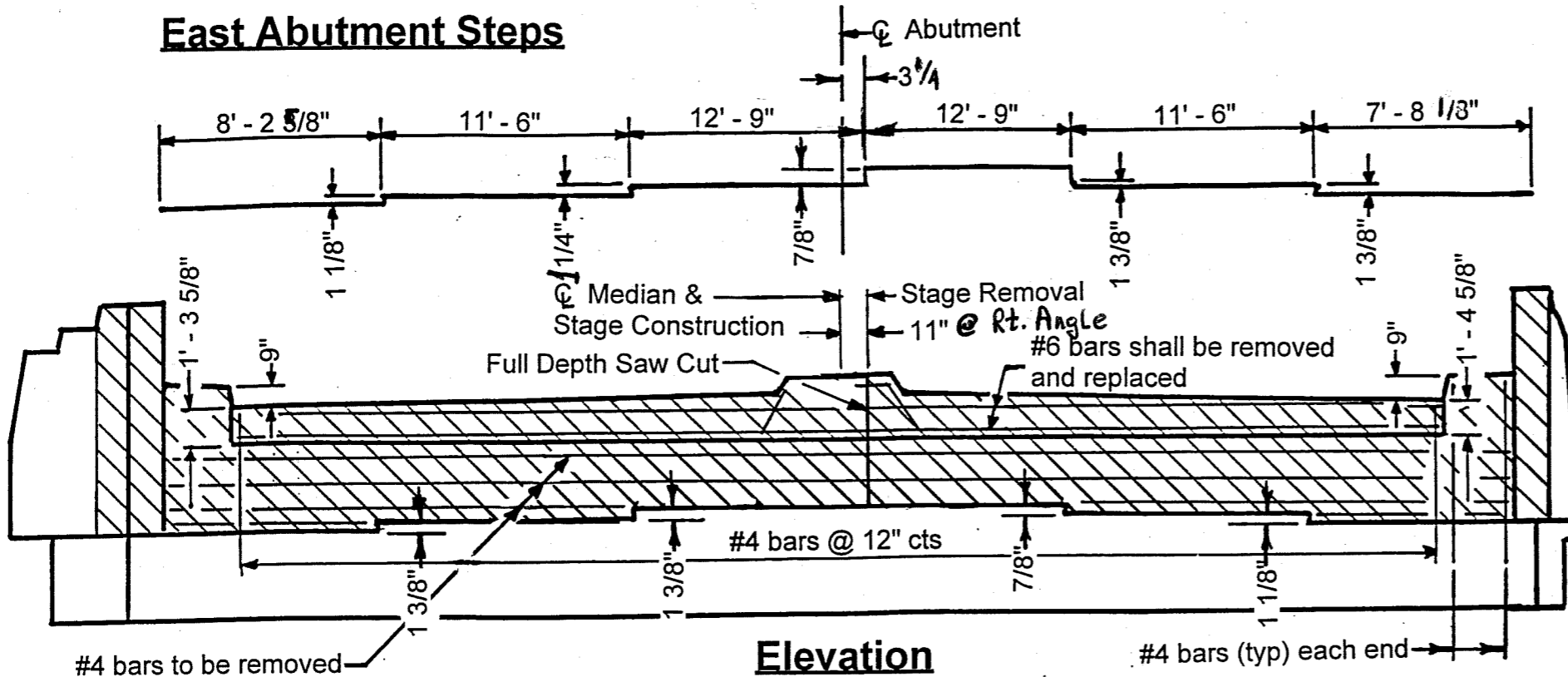
Remove plate using air-arc method and grind smooth all weld material remaining on the bottom flange. Cost Included with Jack and Remove Existing Bearings.

Existing Rocker Bearing to be removed:
JACK AND REMOVE EXISTING BEARINGS - 12 each @ west abutment
JACK AND REMOVE EXISTING BEARINGS - 12 each @ east abutment

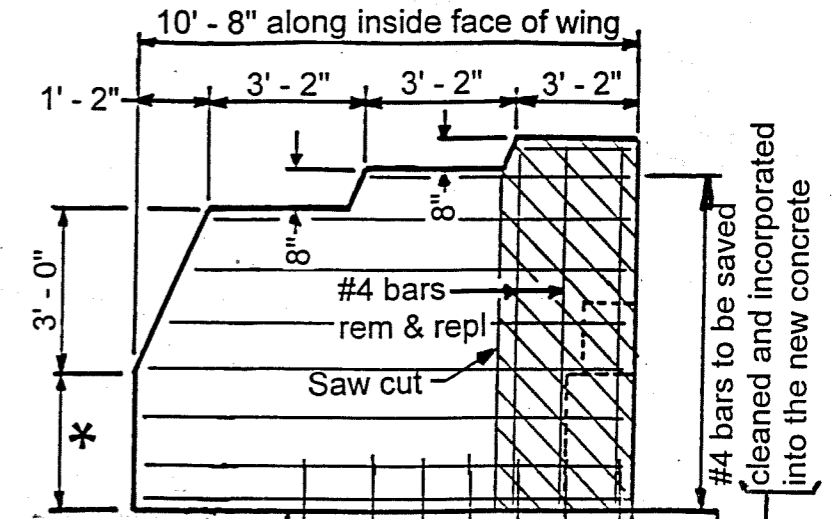
Burn existing anchor bolts flush with existing concrete surface. Grind existing anchor bolts smooth and seal with epoxy. Cost is included with Jack and Remove Existing Bearings.

**EXISTING ABUTMENT SECTION DETAILS
WEST ABUTMENT SHOWN - LOOKING NORTH**

East Abutment Steps



Elevation



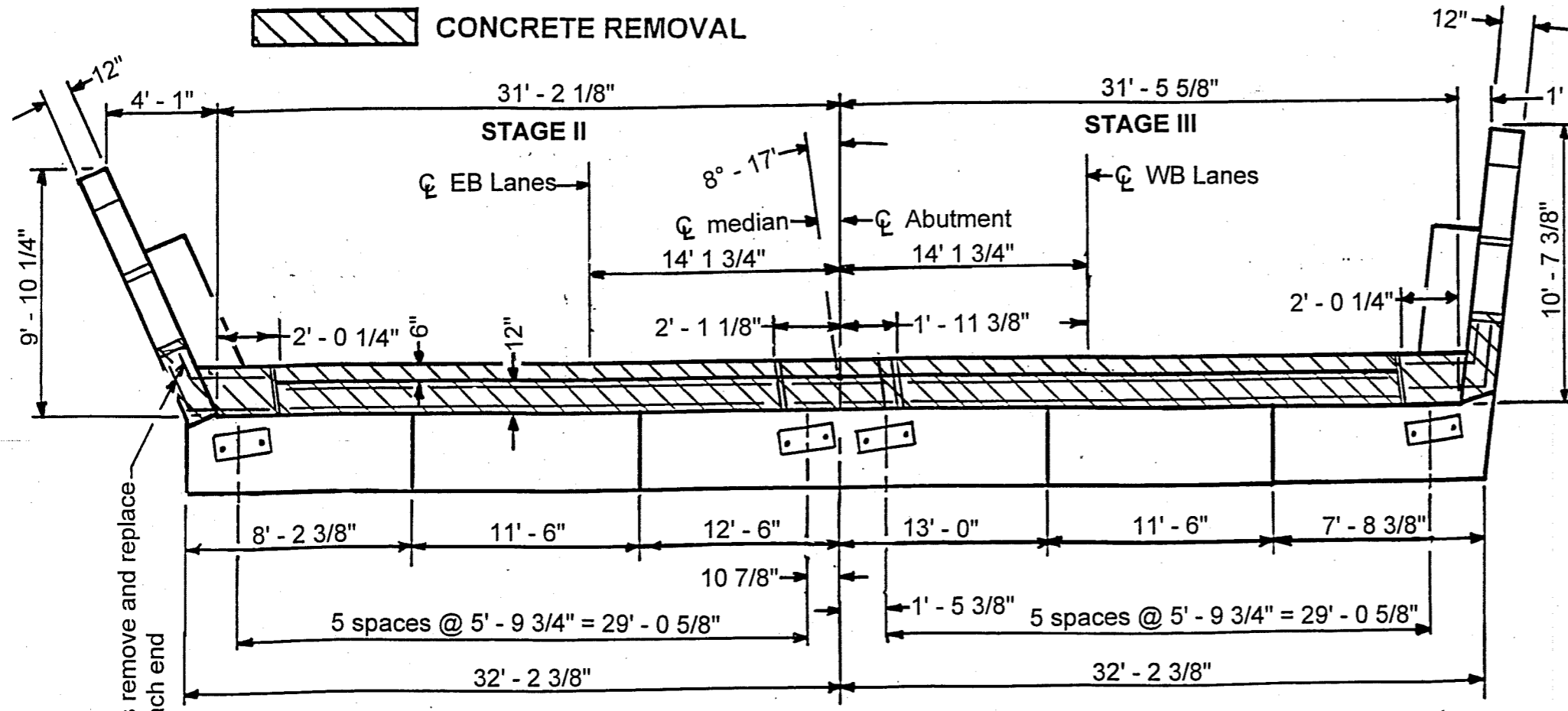
Wing Detail

* **Dimensions**

West Abutment	
N. Wing	3' - 4 3/8"
S. Wing	3' - 4 1/8"
East Abutment	
N. Wing	3' - 4 1/4"
S. Wing	3' - 4 7/8"

Existing #4 bars (each face) shall be cut off flush with abutment seat.

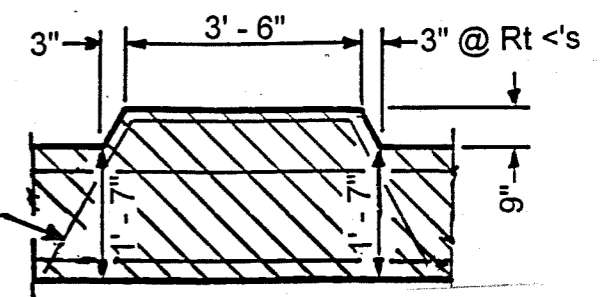
CONCRETE REMOVAL



Full Plan

Existing Abutment Details

West Abutment Shown

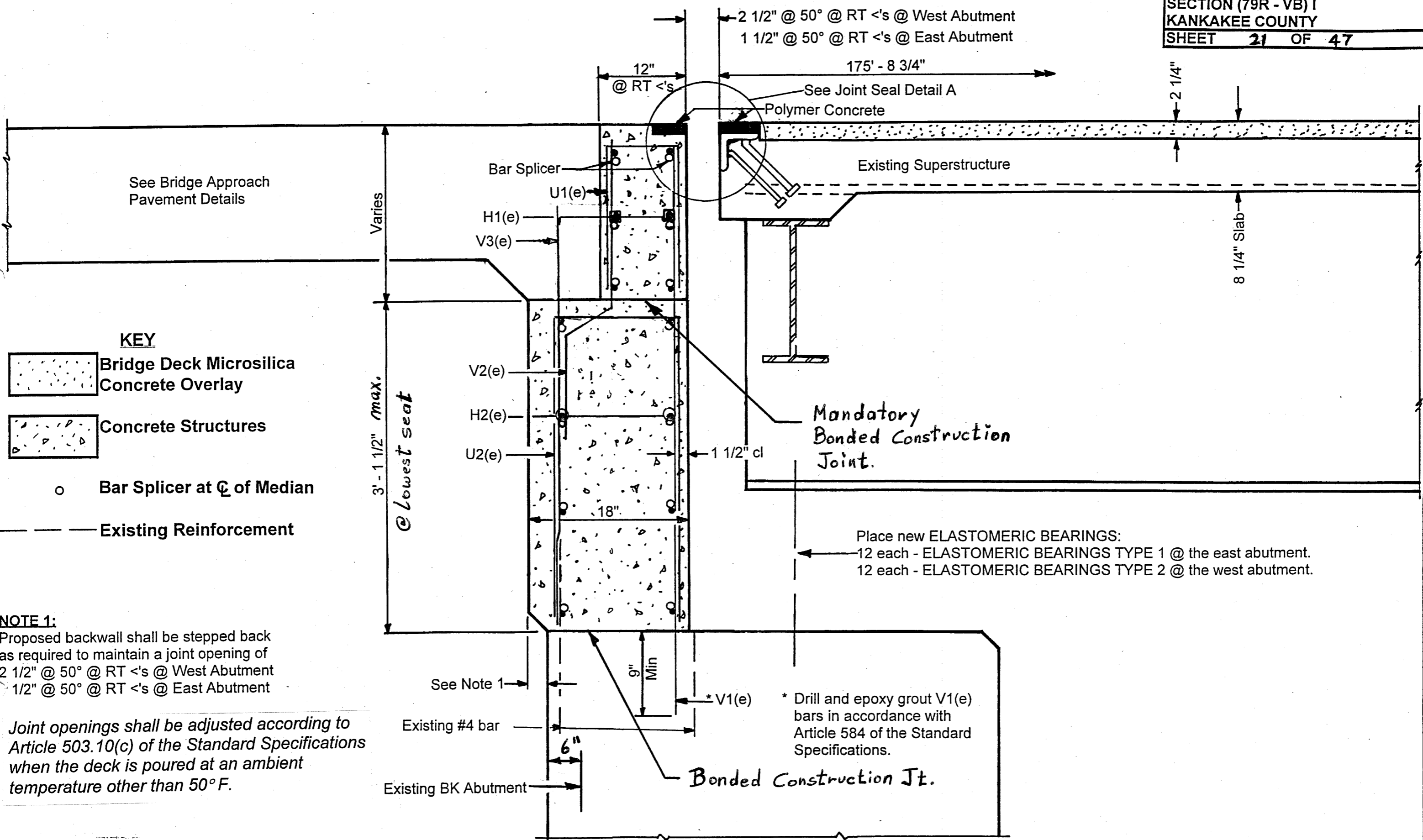


Median Detail


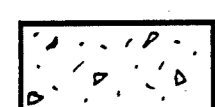


NOTE:
Existing vertical reinforcement bars in the abutment backwall shall be removed in accordance with plan details and replaced with REINFORCEMENT BARS EPOXY COATED.
Existing horizontal reinforcement bars in the CONCRETE REMOVAL area shall be removed and replaced with REINFORCEMENT BARS, EPOXY COATED except as noted. The cost of reinforcement removal and cutting existing reinforcement shall not be paid for separately but shall be included in the unit bid price per cubic yard for CONCRETE REMOVAL.

Existing expansion guard steel in the CONCRETE REMOVAL area shall be removed. The cost of removal shall not be paid for separately but shall be included in the unit bid price per cubic yard for CONCRETE REMOVAL.

REMOVAL DETAILS AT ABUTMENTS



KEY

-  Bridge Deck Microsilica Concrete Overlay
-  Concrete Structures
-  Bar Splicer at $\text{\textcircled{C}}$ of Median
-  Existing Reinforcement

NOTE 1:
 Proposed backwall shall be stepped back as required to maintain a joint opening of 2 1/2" @ 50° @ RT <'s @ West Abutment
 1 1/2" @ 50° @ RT <'s @ East Abutment

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.

Place new ELASTOMERIC BEARINGS:
 12 each - ELASTOMERIC BEARINGS TYPE 1 @ the east abutment.
 12 each - ELASTOMERIC BEARINGS TYPE 2 @ the west abutment.

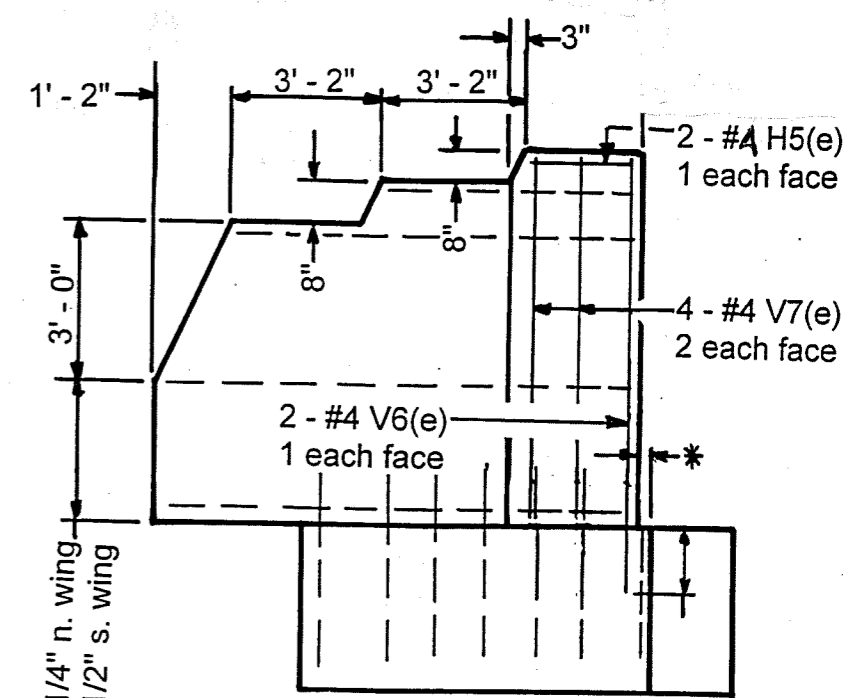
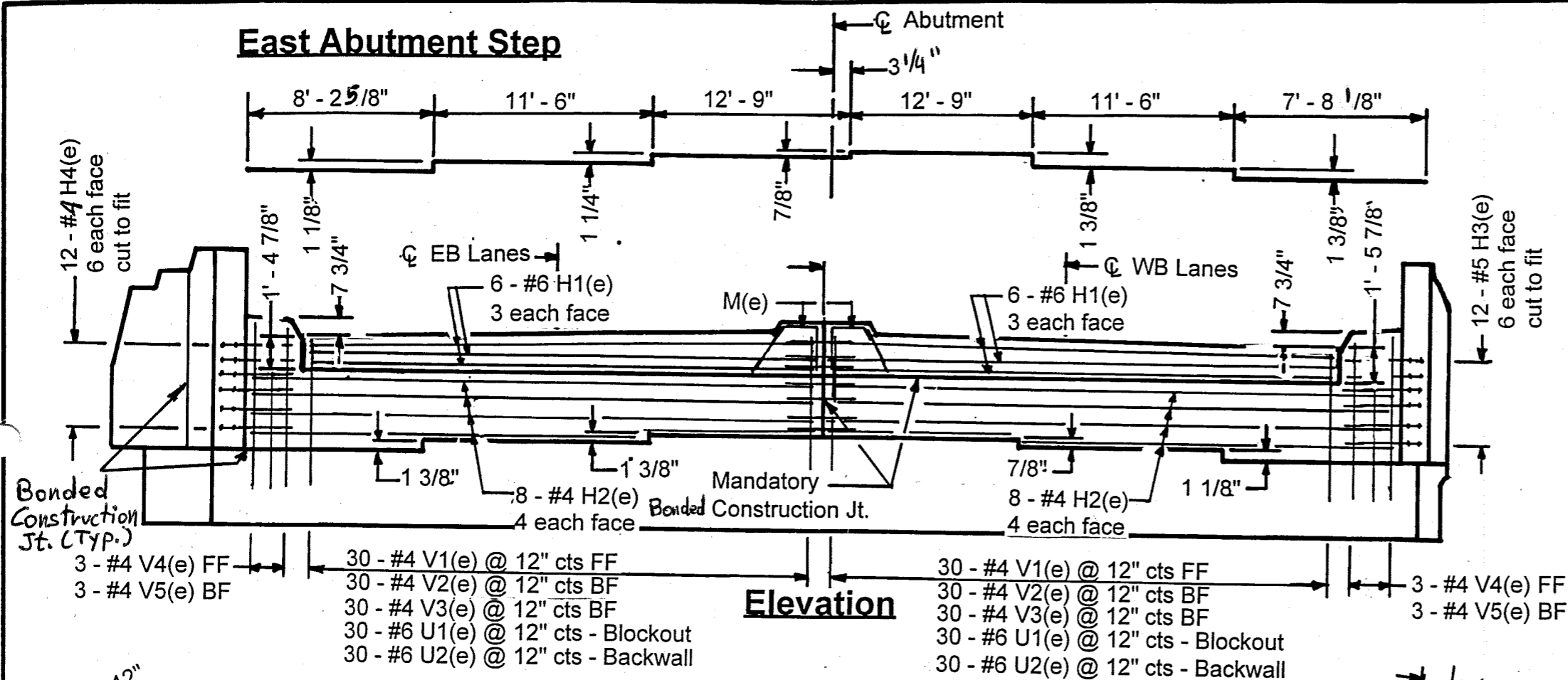
* Drill and epoxy grout V1(e) bars in accordance with Article 584 of the Standard Specifications.

Proposed Abutment Section Details

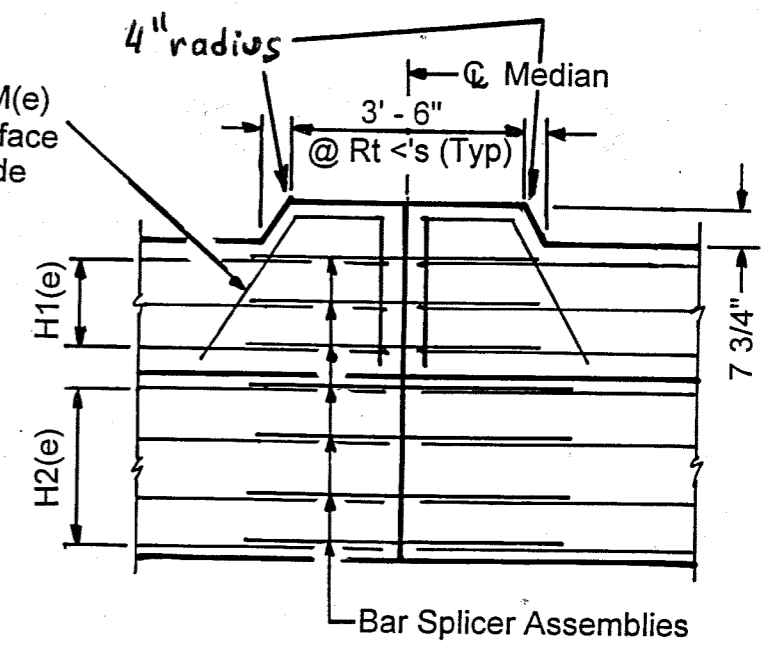
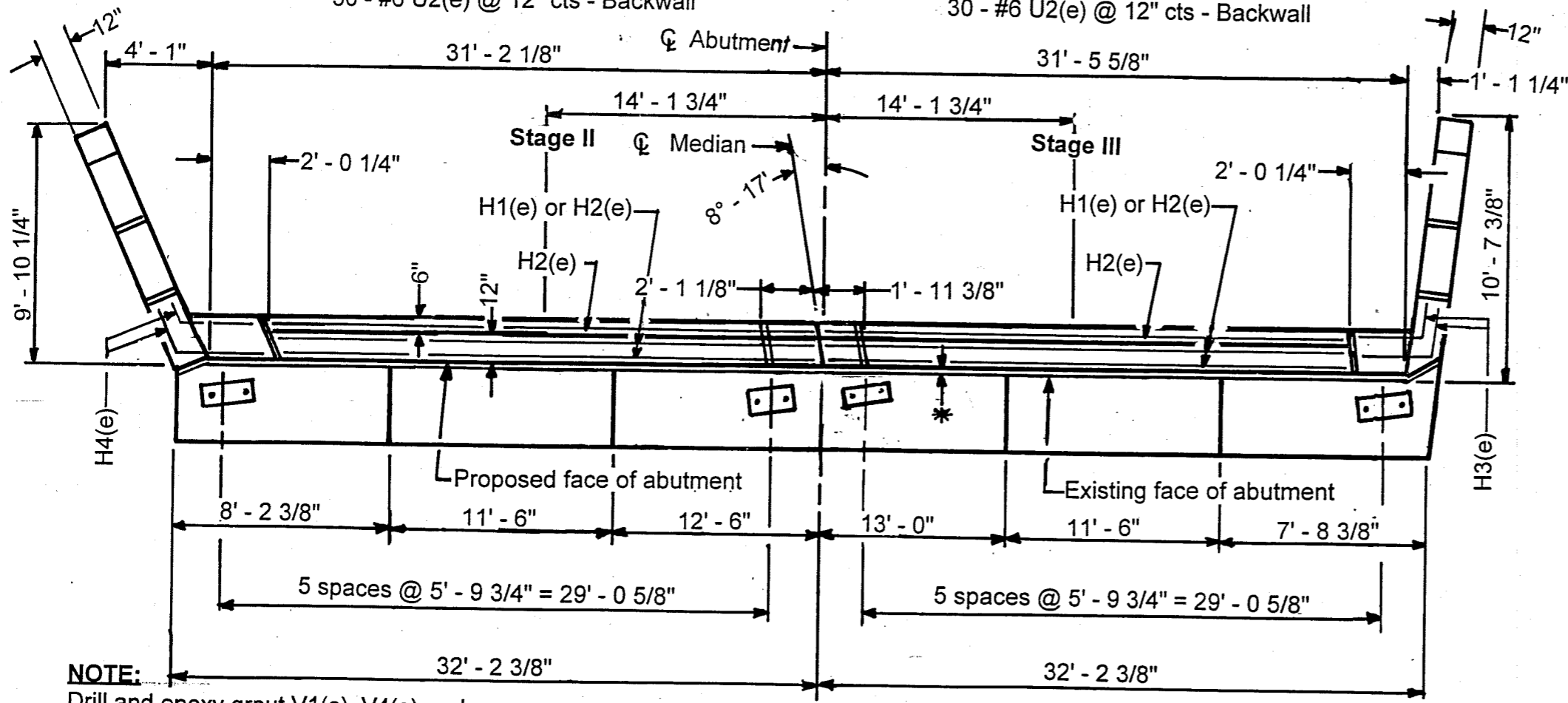
West Abutment Shown

CONSTRUCTION DETAILS AT ABUTMENTS

East Abutment Step



* As required as specified in abutment section detail



NOTE:
Drill and epoxy grout V1(e), V4(e) and V6(e) bars in accordance with Article 584 of the Standard Specifications 9" min depth (typ)

Proposed Abutment Details
West Abutment Shown

**SCHEDULE OF REINFORCEMENT BARS
ABUTMENTS**

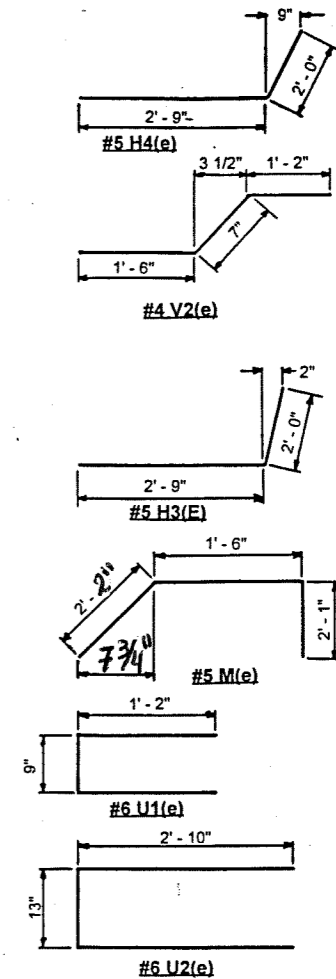
STAGE II						
LOCATION	BAR	SIZE	NO.	LENGTH	WEIGHT	SHAPE
				FOOT	POUND	
WEST ABUTMENT	H1(e)	#6	6	29' - 0"	261	—————
	H2(e)	#4	8	31' - 1"	166	—————
	H4(e)	#4	12	4' - 9"	38	—————
	H5(e)	#4	2	2' - 11"	4	—————
	M(e)	#5	2	5' - 9"	12	—————
	V1(e)	#4	30	5' - 0"	100	—————
	V2(e)	#4	30	3' - 3"	65	—————
	V3(e)	#4	30	4' - 0"	80	—————
	V4(e)	#4	3	5' - 9"	12	—————
	V5(e)	#4	3	5' - 0"	10	—————
	V6(e)	#4	2	8' - 3"	11	—————
	V7(e)	#4	4	7' - 6"	20	—————
	U1(e)	#6	30	3' - 1"	139	—————
	U2(e)	#6	30	6' - 9"	304	—————
EAST ABUTMENT	H1(e)	#6	6	29' - 0"	261	—————
	H2(e)	#4	8	31' - 1"	166	—————
	H3(e)	#4	12	4' - 9"	38	—————
	H5(e)	#4	2	2' - 11"	4	—————
	M(e)	#5	2	5' - 9"	12	—————
	V1(e)	#4	30	5' - 0"	100	—————
	V2(e)	#4	30	3' - 3"	65	—————
	V3(e)	#4	30	4' - 0"	80	—————
	V4(e)	#4	3	5' - 9"	12	—————
	V5(e)	#4	3	5' - 0"	10	—————
	V6(e)	#4	2	8' - 3"	11	—————
	V7(e)	#4	4	7' - 6"	20	—————
	U1(e)	#6	30	3' - 1"	139	—————
	U2(e)	#6	30	6' - 9"	304	—————
SUBTOTAL					2444	

(e) DENOTES EPOXY COATED

**SCHEDULE OF REINFORCEMENT BARS
ABUTMENTS**

STAGE III						
LOCATION	BAR	SIZE	NO.	LENGTH	WEIGHT	SHAPE
				FOOT	POUND	
WEST ABUTMENT	H1(e)	#6	6	29' - 0"	261	—————
	H2(e)	#4	8	31' - 1"	166	—————
	H3(e)	#4	12	4' - 9"	38	—————
	H5(e)	#4	2	2' - 11"	4	—————
	M(e)	#5	2	5' - 9"	12	—————
	V1(e)	#4	30	5' - 0"	100	—————
	V2(e)	#4	30	3' - 3"	65	—————
	V3(e)	#4	30	4' - 0"	80	—————
	V4(e)	#4	3	5' - 9"	12	—————
	V5(e)	#4	3	5' - 0"	10	—————
	V6(e)	#4	2	8' - 3"	11	—————
	V7(e)	#4	4	7' - 6"	20	—————
	U1(e)	#6	30	3' - 1"	139	—————
	U2(e)	#6	30	6' - 9"	304	—————
EAST ABUTMENT	H1(e)	#6	6	29' - 0"	261	—————
	H2(e)	#4	8	31' - 1"	166	—————
	H4(e)	#4	12	4' - 9"	38	—————
	H5(e)	#4	2	2' - 11"	4	—————
	M(e)	#5	2	5' - 9"	12	—————
	V1(e)	#4	30	5' - 0"	100	—————
	V2(e)	#4	30	3' - 3"	65	—————
	V3(e)	#4	30	4' - 0"	80	—————
	V4(e)	#4	3	5' - 9"	12	—————
	V5(e)	#4	3	5' - 0"	10	—————
	V6(e)	#4	2	8' - 3"	11	—————
	V7(e)	#4	4	7' - 6"	20	—————
	U1(e)	#6	30	3' - 1"	139	—————
	U2(e)	#6	30	6' - 9"	304	—————
SUBTOTAL					2444	
TOTAL ABUTMENTS					4888	

(e) DENOTES EPOXY COATED



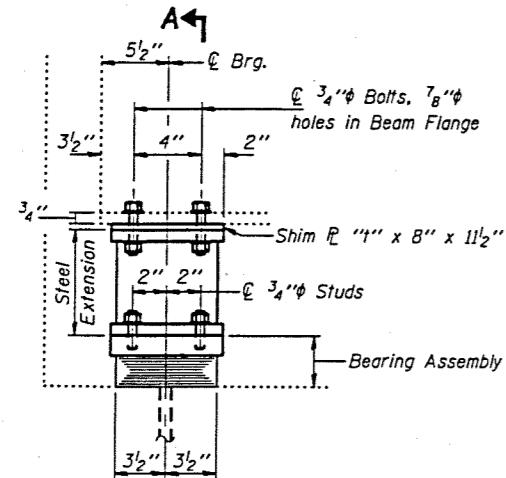
SCHEDULE OF BAR SPLICERS	
LOCATION	BAR SPLICERS EACH
STAGE II	
WEST ABUTMENT	14
EAST ABUTMENT	14
TOTAL	28

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

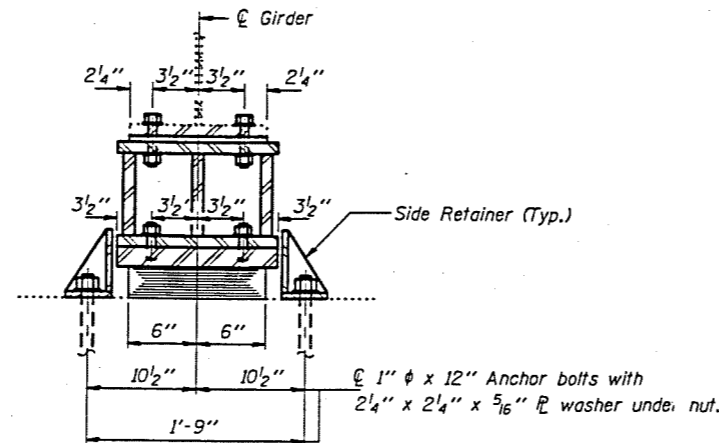
GIRDER REACTIONS

RP	(K)	18.0
RL	(K)	29.7
Imp.	(K)	8.3
R (Total)	(K)	56.0

FAS ROUTE 1305 (ARMOUR ROAD)
SECTION (79R - VB) I
KANKAKEE COUNTY
SHEET 24 OF 27

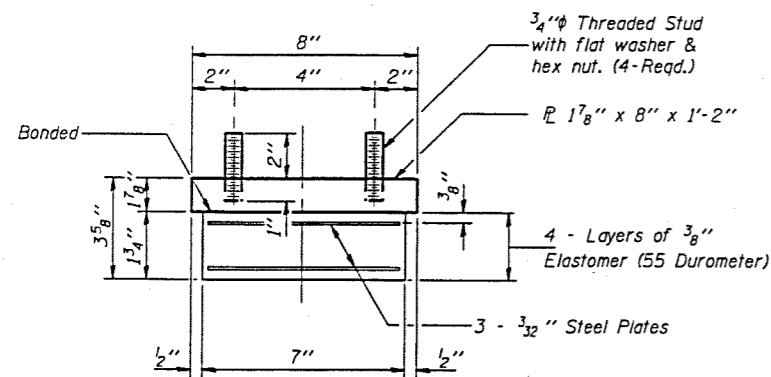


ELEVATION AT EAST ABUTMENT



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



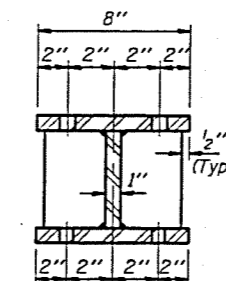
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

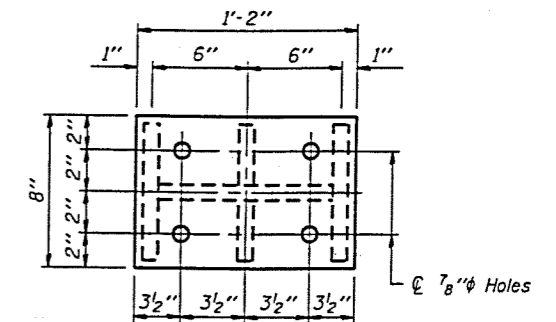
TABLE OF "4" DIMENSIONS

Location	E. Abut.
Beam 1	-
Beam 2	5/8"
Beam 3	-
Beam 4	5/8"
Beam 5	-
Beam 6	1/2"
Beam 7	3/8"
Beam 8	-
Beam 9	5/8"
Beam 10	-
Beam 11	5/8"
Beam 12	-

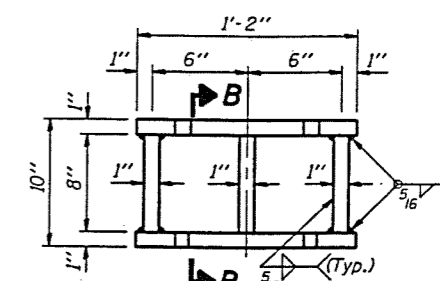
Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of Furnishing and Erecting Structural Steel.
New steel extensions, side retainers, shim @'s, connection bolts, and anchor bolts are included in Furnishing and Erecting Structural Steel.
See Sheet 26 of 47 for Anchor Bolt installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 30 Tons.



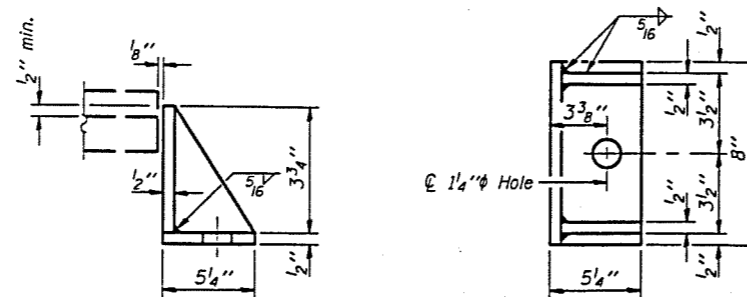
SECTION B-B



PLAN TOP AND BOTTOM PLATE



STEEL EXTENSION DETAIL



SIDE RETAINER

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
Jack and Remove Existing Bearing	Each	12
Furnishing and Erecting Structural Steel	Pound	2040

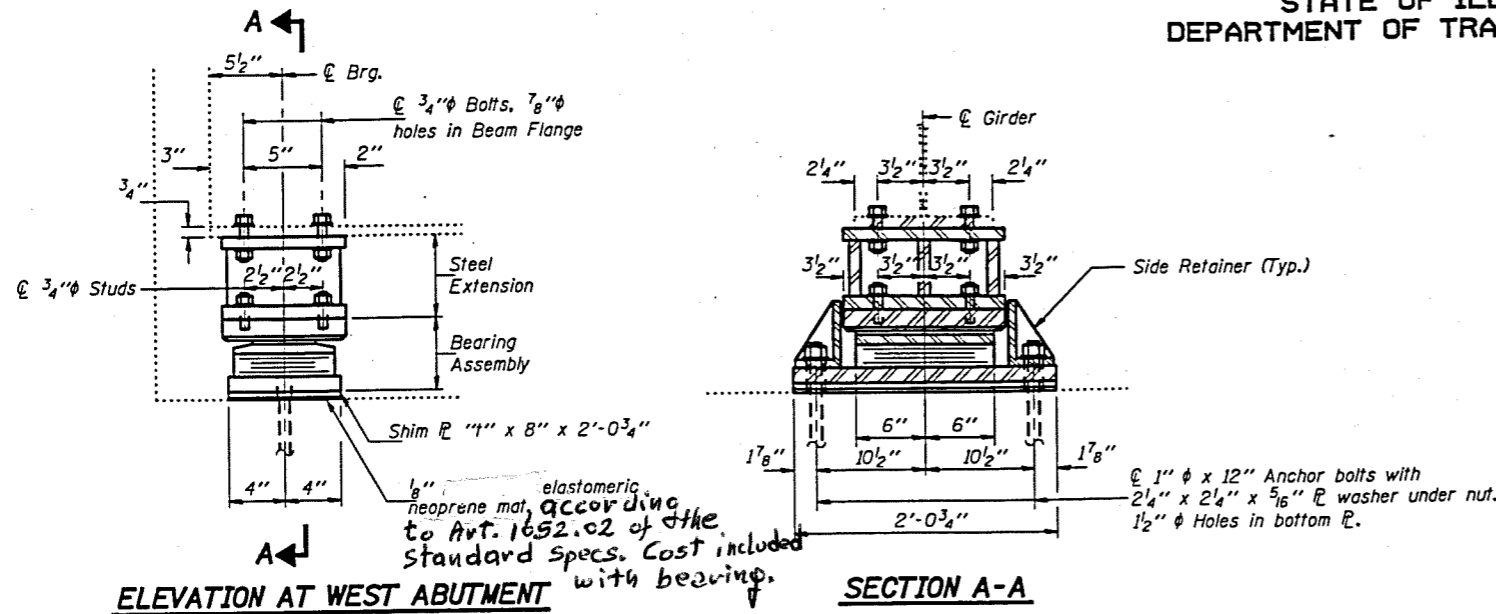
DESIGNED	19
CHECKED	EXAMINED
DRAWN	ENGINEER OF STRUCTURAL SERVICES
CHECKED	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

TYI/REPS 8-03-98

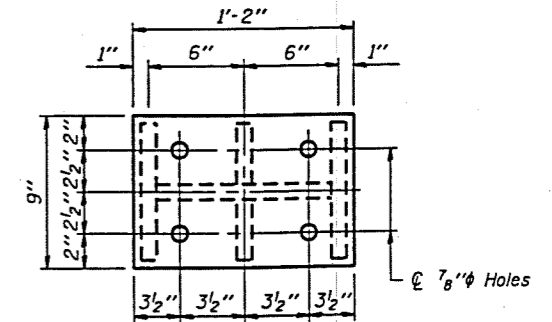
ELASTOMERIC BEARING ASSEMBLY TYPE I

GIRDER REACTIONS

RP	(K)	18.0
Rt	(K)	29.7
Imp.	(K)	8.3
R (Total)	(K)	56.0



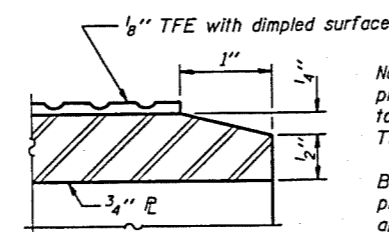
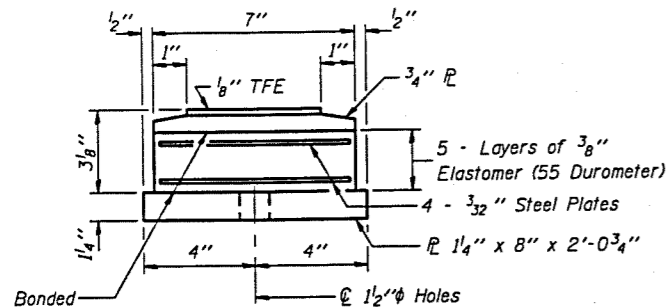
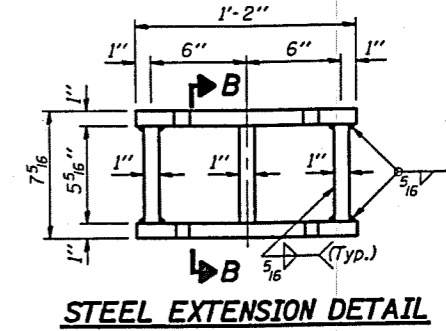
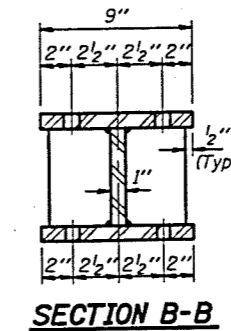
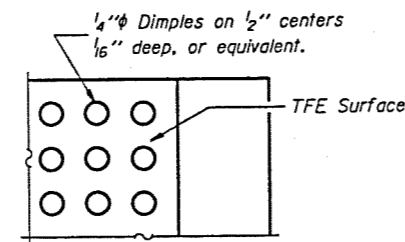
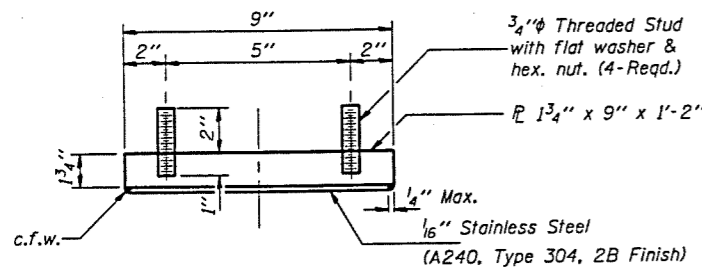
Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of Furnishing and Erecting Structural Steel.
New steel extensions, side retainers, shim R's, connection bolts and anchor bolts are included in Furnishing and Erecting Structural Steel.
See Sheet 26 of 47 for Anchor Bolt installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 30 Tons.



TYPE II TFE ELASTOMERIC EXP. BRG.

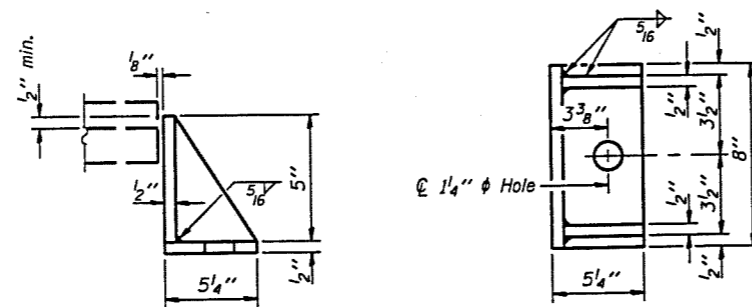
TABLE OF "4" DIMENSIONS

Location	W. Abut.
Beam 1	-
Beam 2	5/8"
Beam 3	-
Beam 4	5/8"
Beam 5	-
Beam 6	1/2"
Beam 7	3/4"
Beam 8	3/4"
Beam 9	5/8"
Beam 10	-
Beam 11	5/8"
Beam 12	-

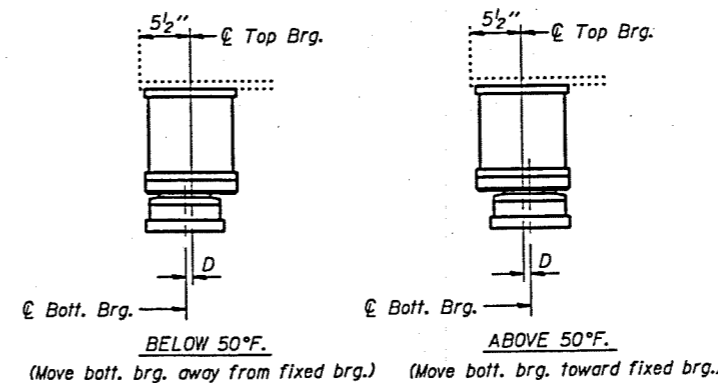


Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



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



D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

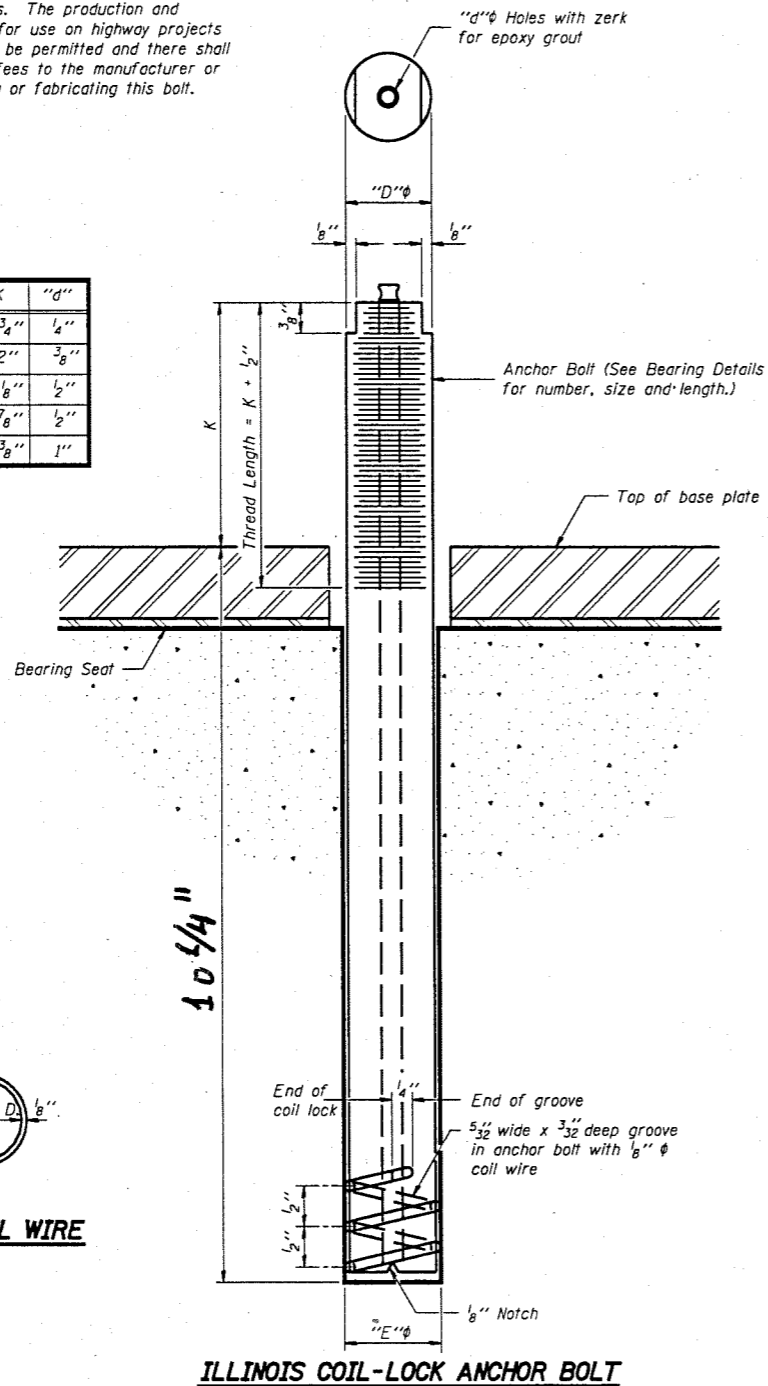
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12
Jack and Remove Existing Bearing	Each	12
Furnishing and Erecting Structural Steel	Pound	1960

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 1/16"	1 3/4"	1/2"
1 1/4"	1 3/8"	1 1/8"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/8"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer of the type specified.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type

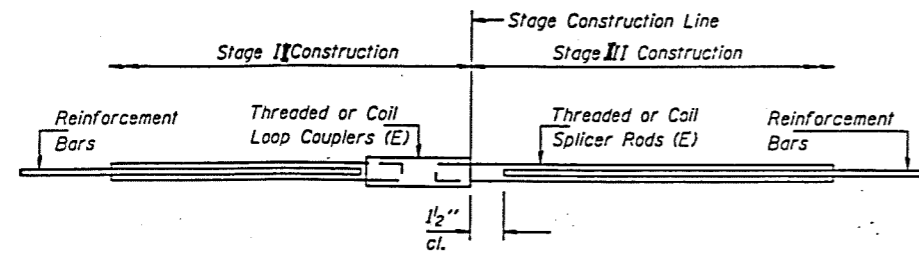
ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

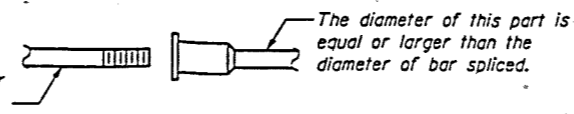
The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".



SPLICER DETAIL

Bar Size	No. Assemblies Required	Location
#4	8	East Abut.
#6	6	East Abut.
#4	8	West Abut.
#6	6	West Abut.

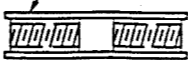
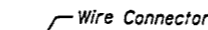
The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



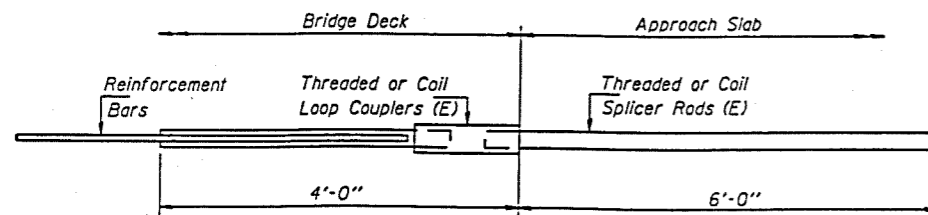
ONE PIECE



WELDED SECTIONS

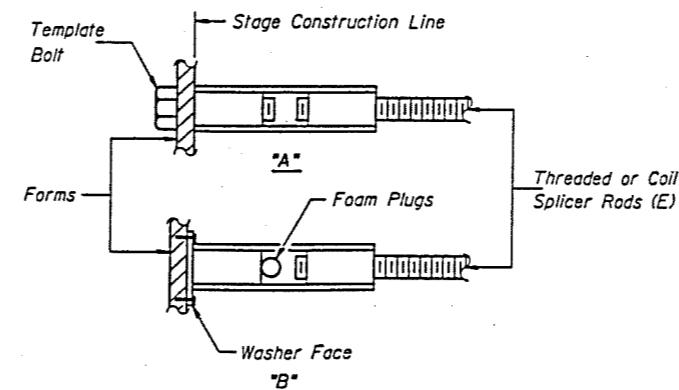
BAR SPLICER ASSEMBLY ALTERNATIVES

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



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #5 BAR**

Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



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 = $1.25 \times f_y \times A_1$
(Tension in kips)
- ② Minimum Pull-out Strength = $1.25 \times f_{s_{allow}} \times A_1$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.

$f_{s_{allow}}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)

A_1 = Tensile stress area of lapped reinforcement bars.

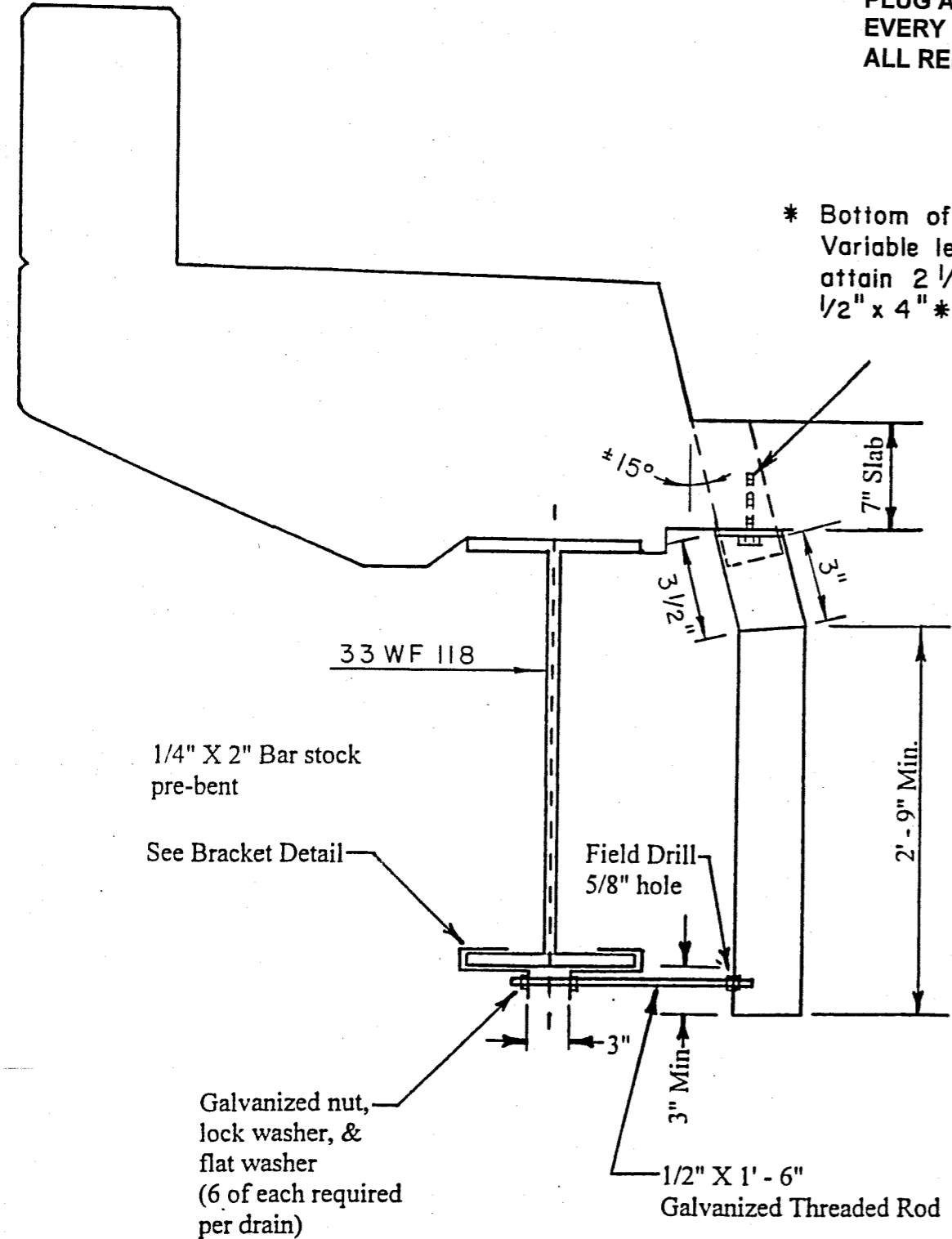
* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6

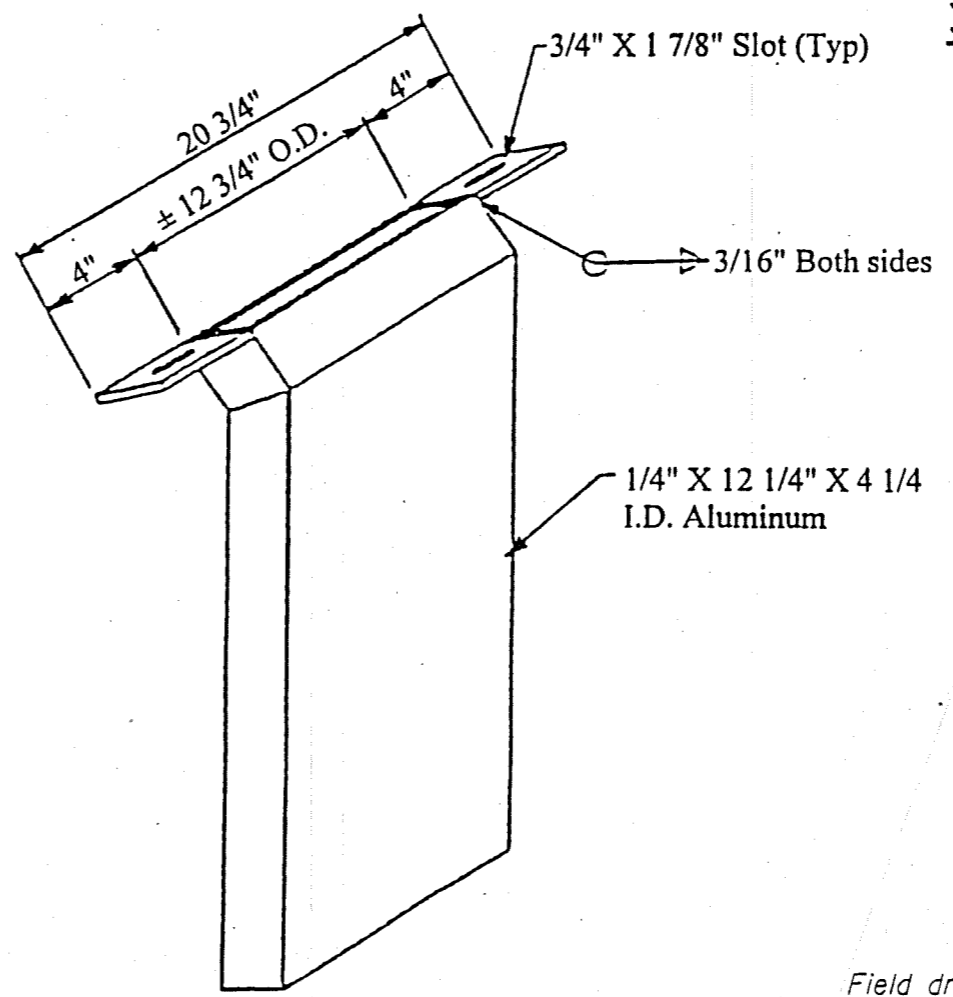
Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

PLUG ALL DRAINS WITHIN 10 FT. OF ABUTMENT AND PIERS AND EVERY OTHER DRAIN.
 ALL REMAINING DRAINS TO BE EXTENDED.

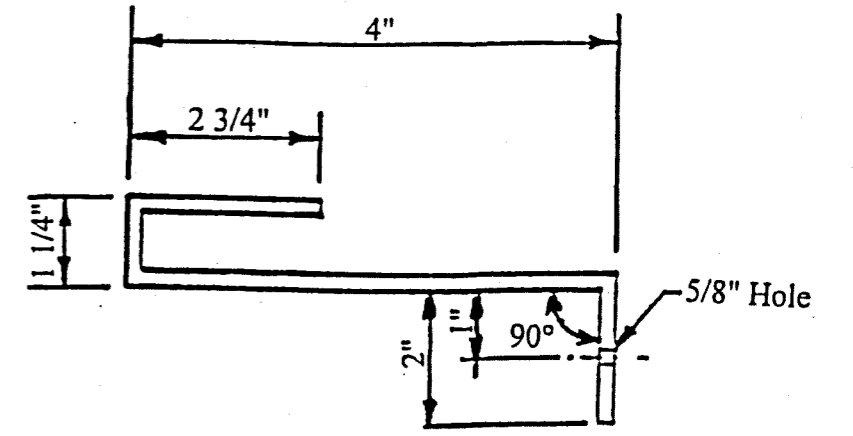
* Bottom of Deck is variable.
 Variable lengths of bolts will be required to attain 2 1/2" minimum embedment.
 1/2" x 4" * Exp. bolt with washer.



1/4" X 2" Bar stock pre-bent
 See Bracket Detail
 Galvanized nut, lock washer, & flat washer (6 of each required per drain)

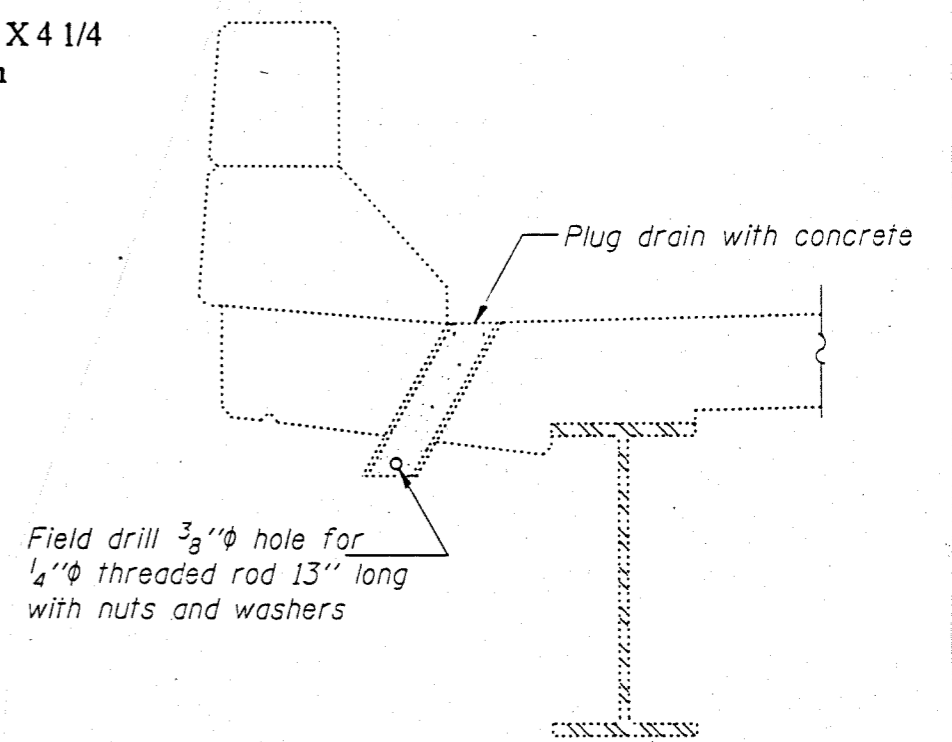


DRAIN EXTENSION
 (12 required)



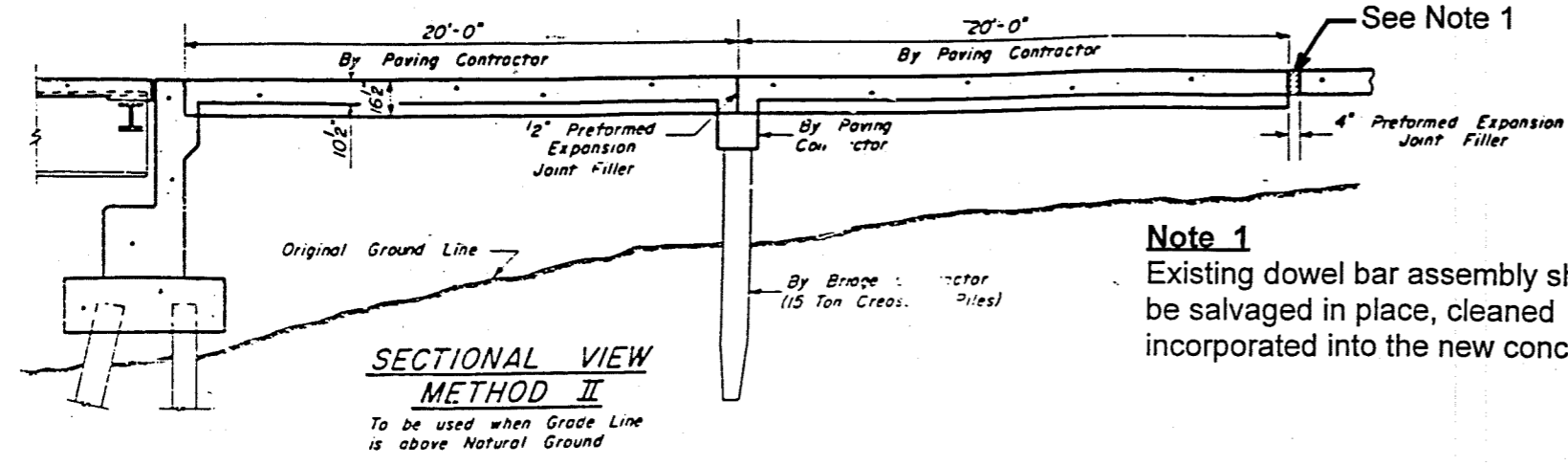
Galvanized Bracket 1/4" X 2" X 10"
 (2 required per drain)

BRACKET DETAIL

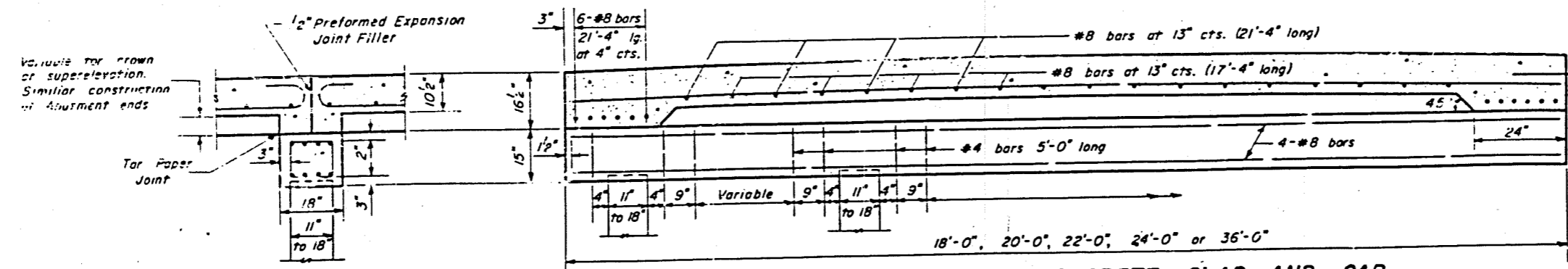
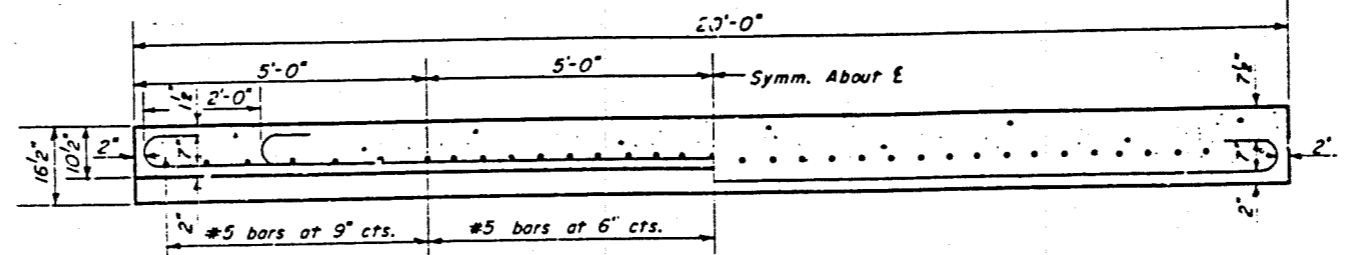
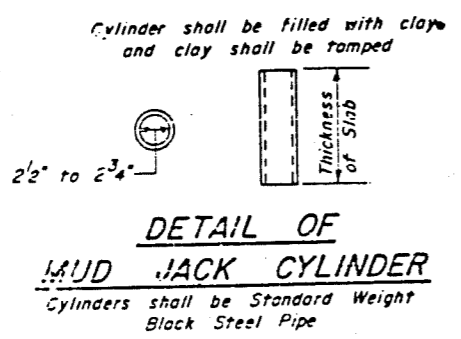
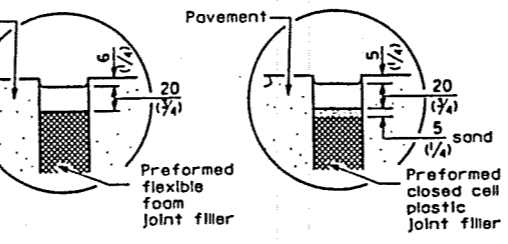
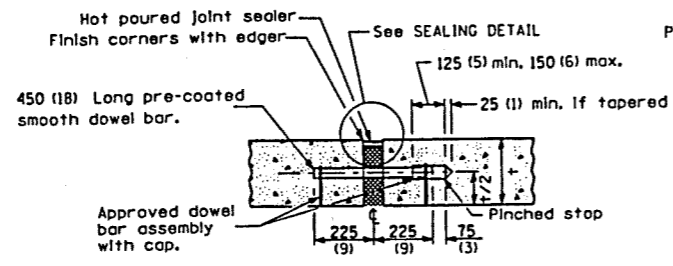
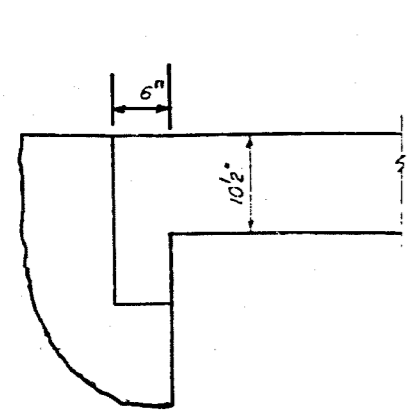
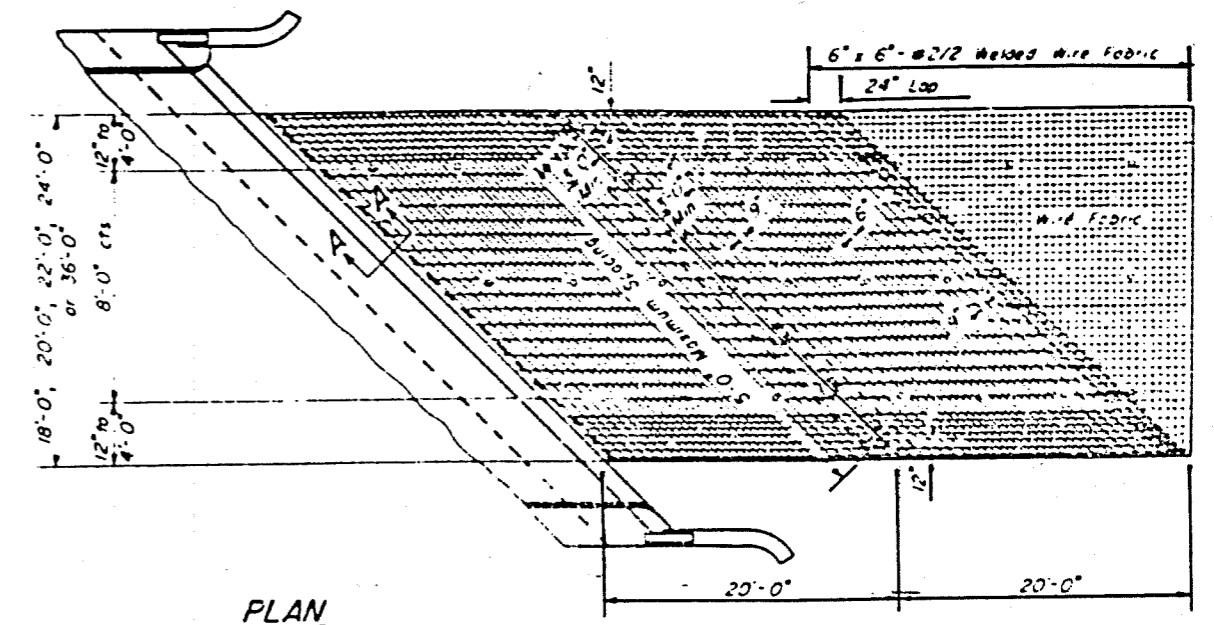


Field drill 3/8" ϕ hole for 1/4" ϕ threaded rod 13" long with nuts and washers

(20 required)
DRAIN ELIMINATION DETAIL



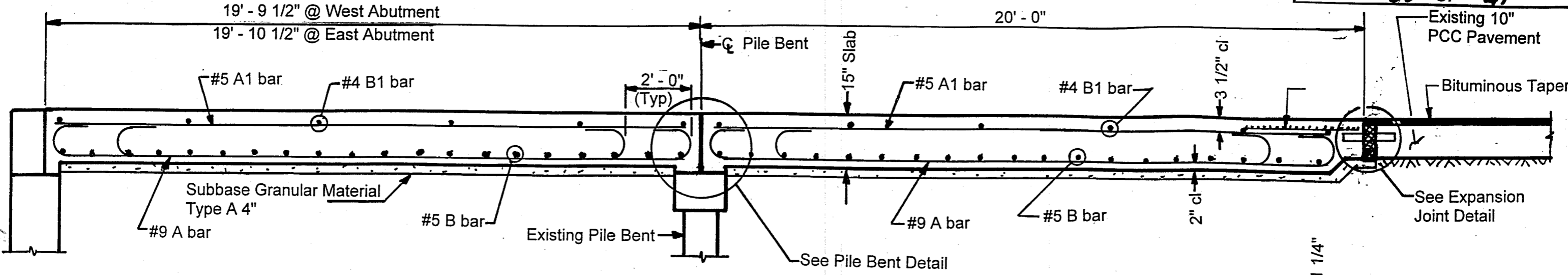
Note 1
Existing dowel bar assembly shall be salvaged in place, cleaned and incorporated into the new concrete.



Note: When road plans show curb and gutter or gutter adjacent to approach slabs place #4 Tie bar 2'-6" long at 2'-6" cts. Cost of the bars included in contract unit price for Curb & Gutter or Gutter.
The transition for gutter shall be made in 100 feet and will be paid for as CONCRETE GUTTER, of the type specified.

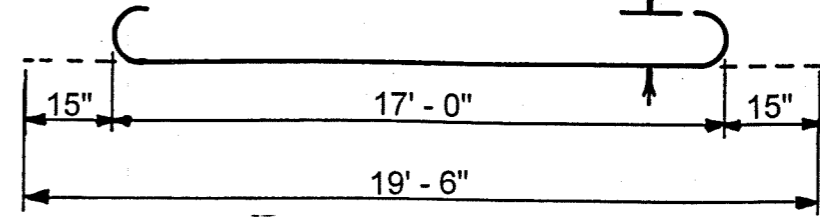
BRIDGE APPROACH PAVEMENT DETAILS

BRIDGE APPROACH PAVEMENT REMOVAL DETAILS

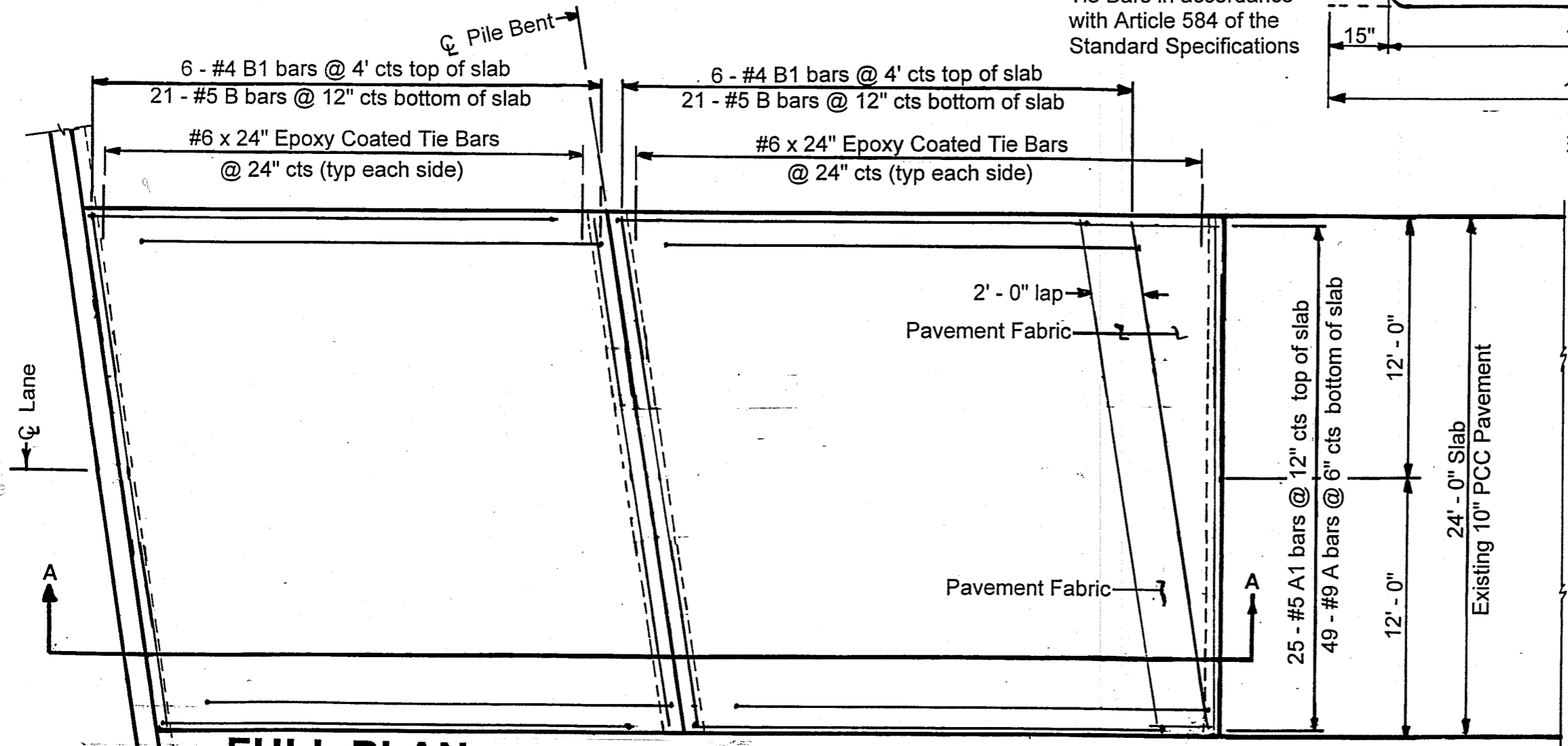


SECTION A - A

Note:
 Drill and Epoxy Grout Tie Bars in accordance with Article 584 of the Standard Specifications



#9 A



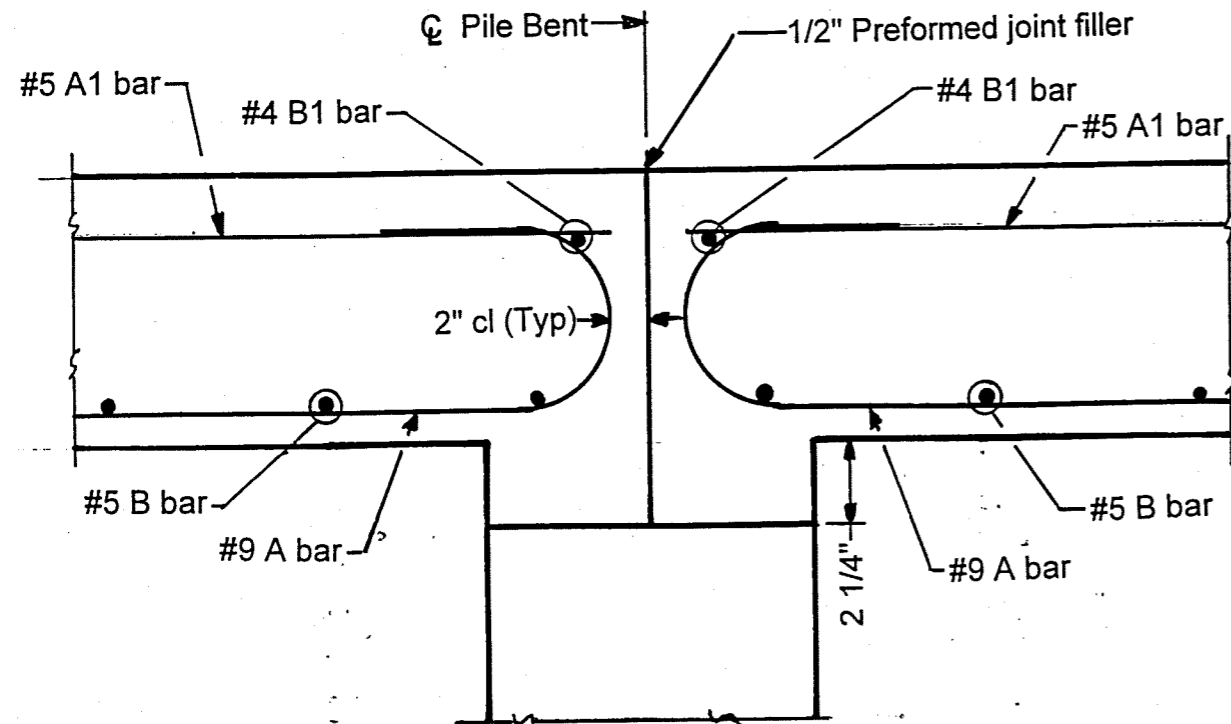
FULL PLAN

24' SLAB SHOWN

BRIDGE APPROACH PAVEMENT SPECIAL

BRIDGE APPROACH PAVEMENT (SPECIAL)

See STANDARDS 420001-02, 420401-02 and 420701 for details not shown

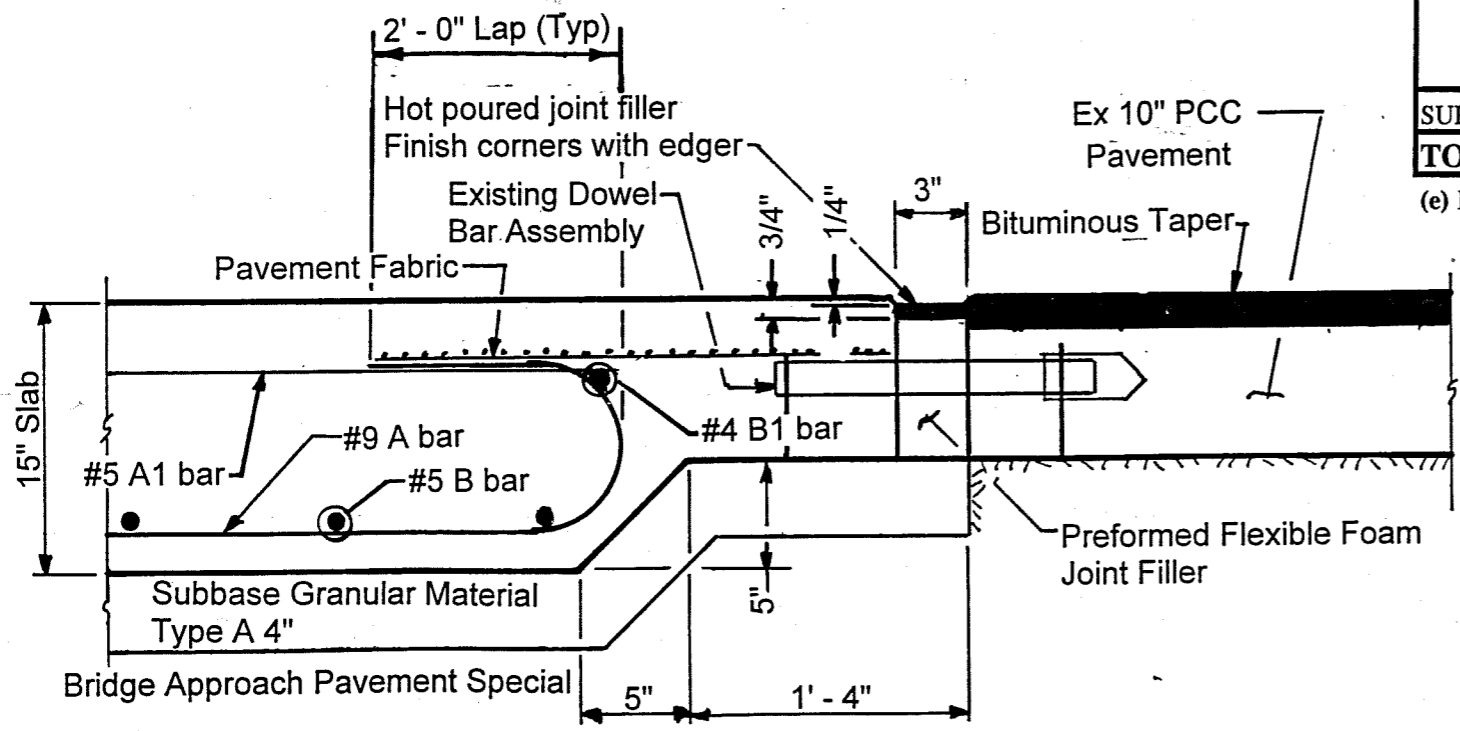


PILE BENT DETAIL

**SCHEDULE OF REINFORCEMENT BARS
BRIDGE APPROACH PAVEMENT (SPECIAL)
FOR 24' PAVEMENT**

STAGE II									
LOCATION	BAR	SIZE	NO.	LENGTH	WEIGHT	SHAPE			
				FOOT	POUND				
WEST APPROACH	A	#9	98	19' - 6"	6497				
	A1	#5	50	19' - 6"	1017				
	B	#5	42	23' - 9"	1040				
EAST APPROACH	B1	#4	12	23' - 9"	190				
	A	#9	98	19' - 6"	6497				
	A1	#5	50	19' - 6"	1017				
				B	#5	42	23' - 9"	1040	
				B1	#4	12	23' - 9"	190	
SUBTOTAL					17490				
STAGE III									
LOCATION	BAR	SIZE	NO.	LENGTH	WEIGHT	SHAPE			
				FOOT	POUND				
WEST APPROACH	A	#9	98	19' - 6"	6497				
	A1	#5	50	19' - 6"	1017				
	B	#5	42	23' - 9"	1040				
EAST APPROACH	B1	#4	12	23' - 9"	190				
	A	#9	98	19' - 6"	6497				
	A1	#5	50	19' - 6"	1017				
				B	#5	42	23' - 9"	1040	
				B1	#4	12	23' - 9"	190	
SUBTOTAL					17490				
TOTAL APPROACH PAVEMENT					34980				

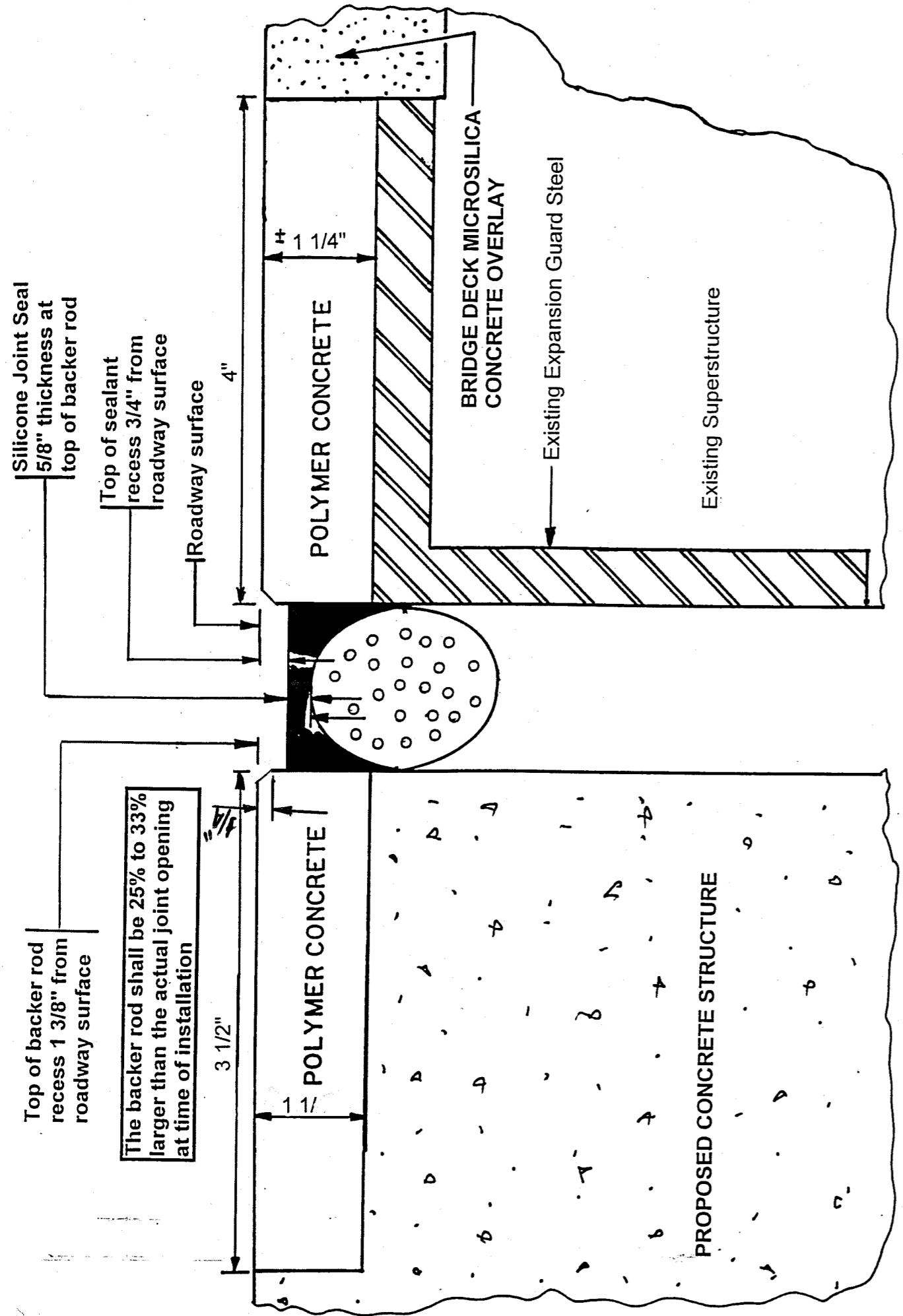
(e) DEMOTES EPOXY COATED



EXPANSION JOINT DETAIL

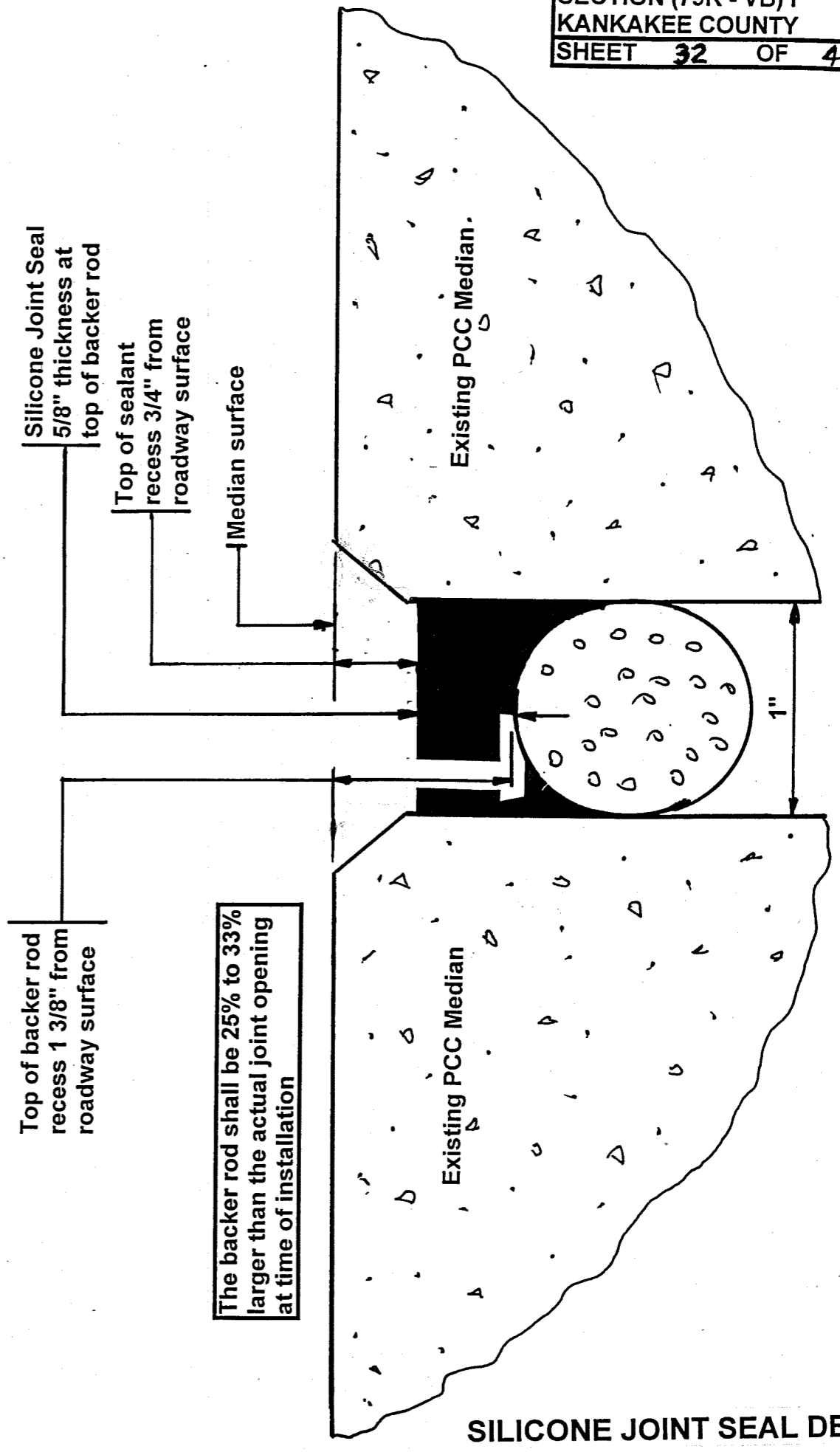
BRIDGE APPROACH PAVEMENT SPECIAL

SCHEDULE OF PAVEMENT FABRIC	
LOCATION	PAVEMENT FABRIC SQ YD
STAGE II	
WEST APPROACH	10
EAST APPROACH	10
SUBTOTAL	20
STAGE III	
WEST APPROACH	10
EAST APPROACH	10
SUBTOTAL	20
TOTAL	40

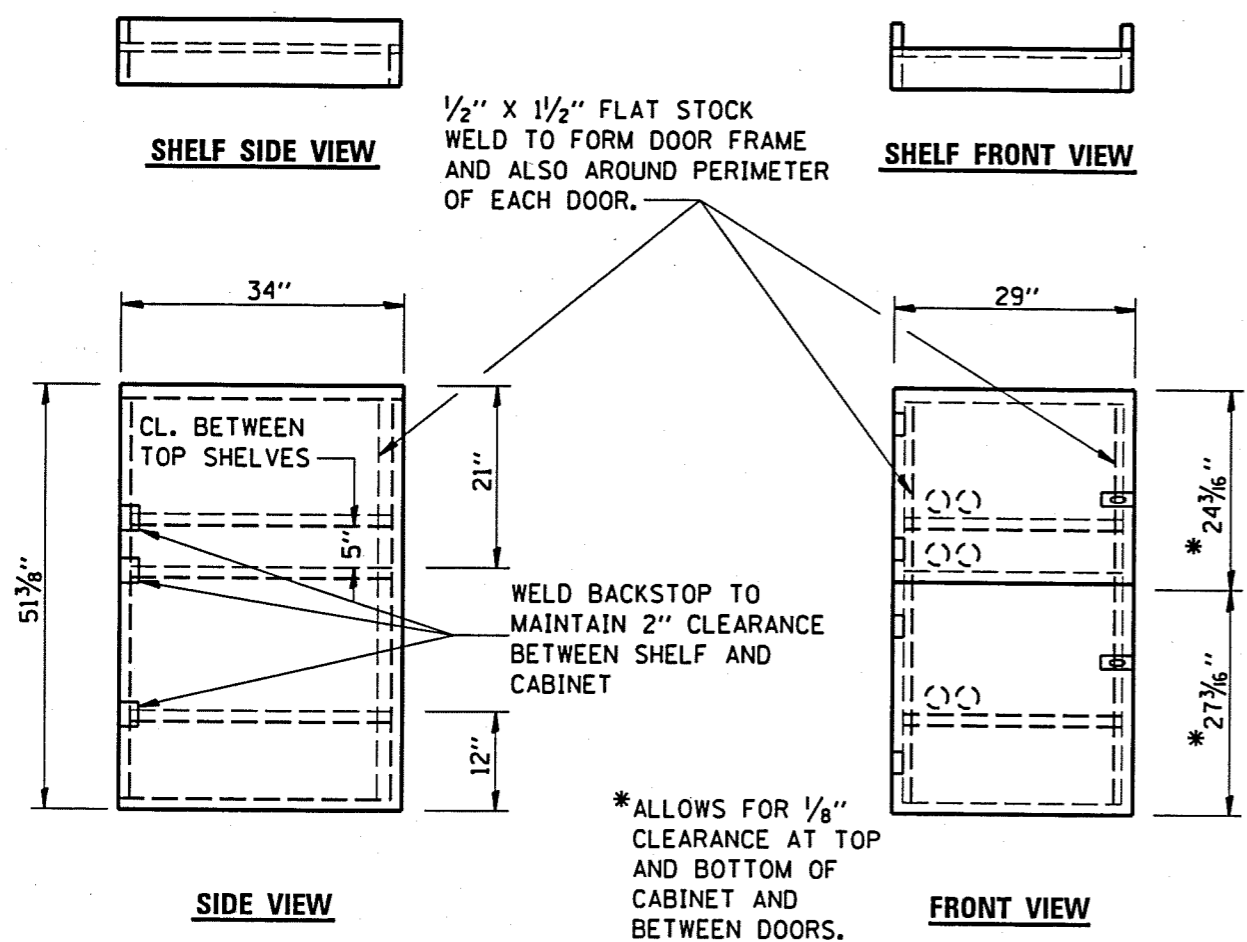


JOINT SEAL DETAIL A

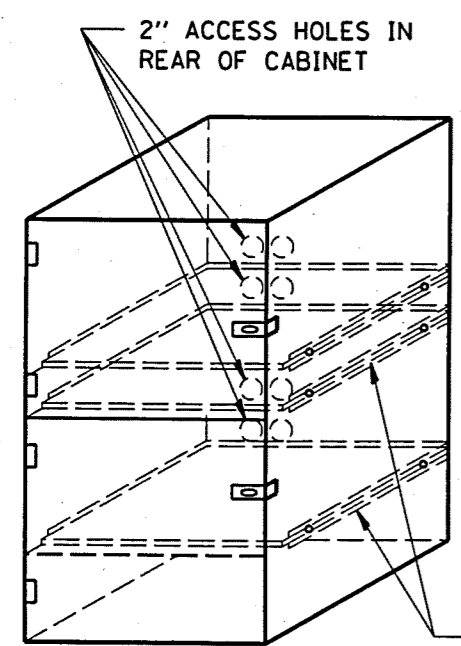
FOR JOINT END TREATMENT AT SIDEWALK AND
 MEDIAN SEE SHEET 33 OF 47



JOINT SEAL DETAIL B

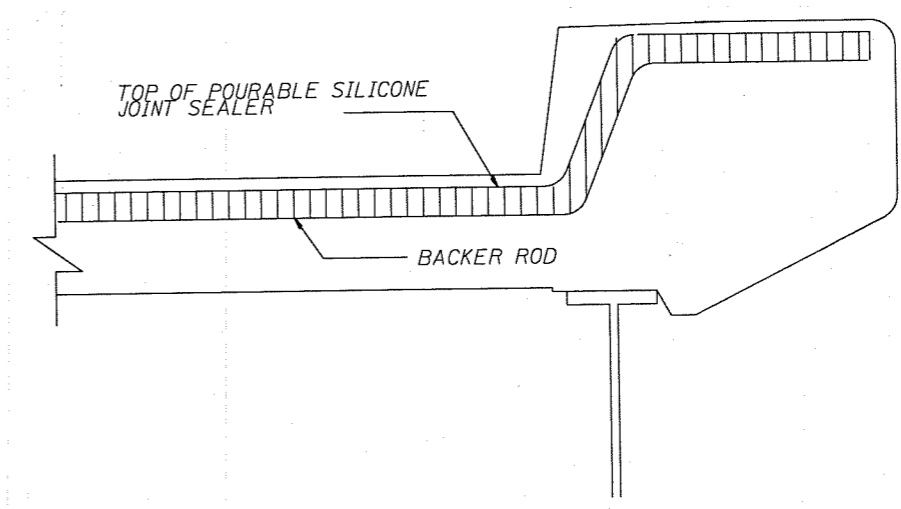


- NOTES:
1. USE 16 GAUGE STEEL FOR CABINET.
 2. THE TOP SHELF SHALL SLIDE IN OR OUT WITH THE TOP DOOR OPEN.
 3. ALL HINGES AND HASPS WILL BE WELDED TO THE CABINET.
 4. ALL EDGES SHALL BE GROUND SMOOTH.
 5. TWO (2" DIA.) ACCESS HOLES WILL BE REQUIRED FOR EACH SHELF.
 6. CABINET SHALL BE PAINTED WITH TWO COATS OF FLAT PAINT.
 7. 2 EACH MATCHING KEY PADLOCKS, WITH 3 KEYS PROVIDED, MASTER MODEL 3 T OR EQUIVALENT.
 8. 4 EACH PLAIN STEEL, NON-REMOVABLE PIN, NO HOLE 4"X4" SQUARE CORNER HINGES TO BE WELDED ON.
 9. 2 EACH EXTRA HEAVY, PLAIN STEEL, FIXED STAPLE, NO HOLE, 7/4" HASPS TO BE WELDED ON.



FLAT STOCK DIMENSIONS VARY DEPENDING ON TYPE OF ROLLER ASSEMBLY.

LOCKABLE COMPUTER CABINET



TYPICAL SILICONE JOINT TREATMENT AT SIDEWALK
 (TREATMENT AT MEDIAN SIMILAR)