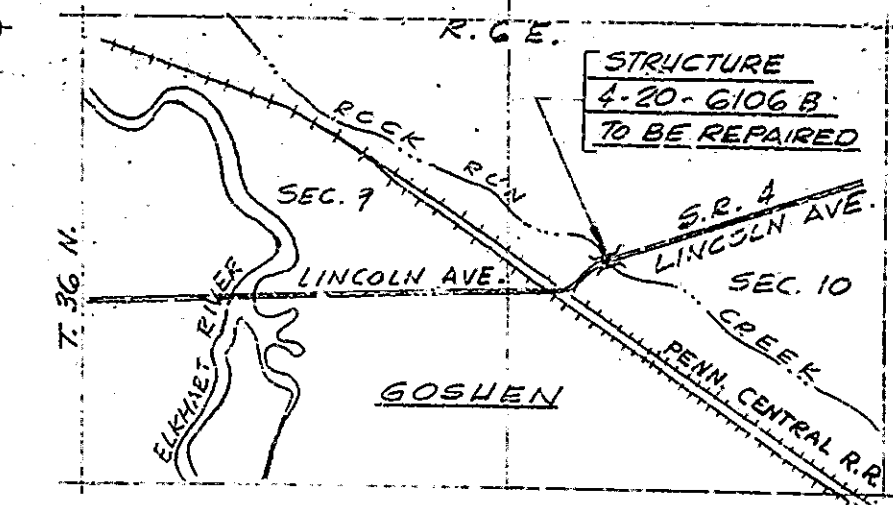
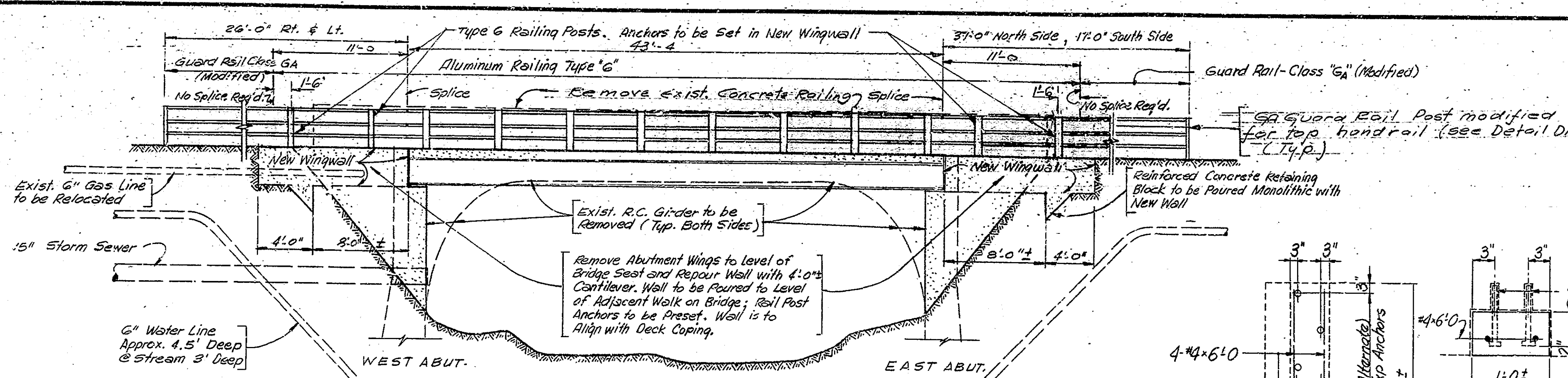


FEDERAL REG. NO.	STATE	PROJECT NO.	FISCAL YEAR
5	IND.	ST-54B(1)	1975



BILL OF MATERIALS ABUTMENT REPAIRS

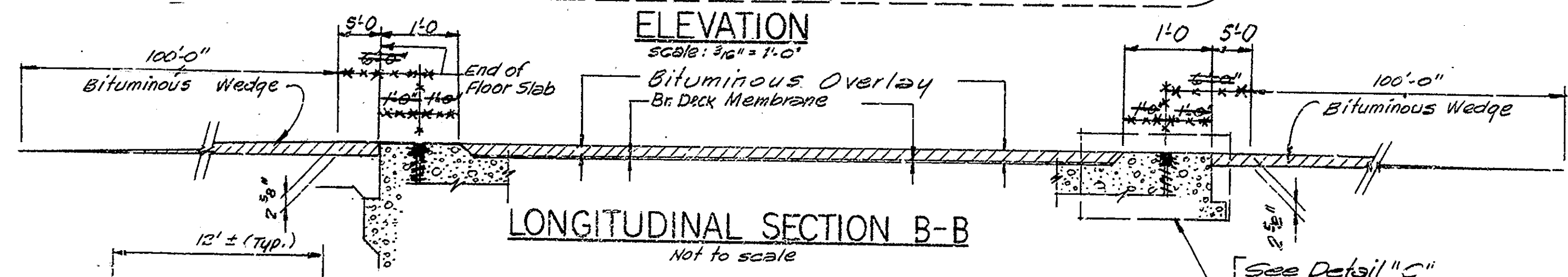
SIZE IN #BARS	LENGTH	WEIGHT
#4	6'-0"	64#
CONC. CLASS A IN SUBSTR.		
4 @ 0.3 cys.		
EXP ANCHOR w/ 3/8" BOLT		
2400.		



INDEX

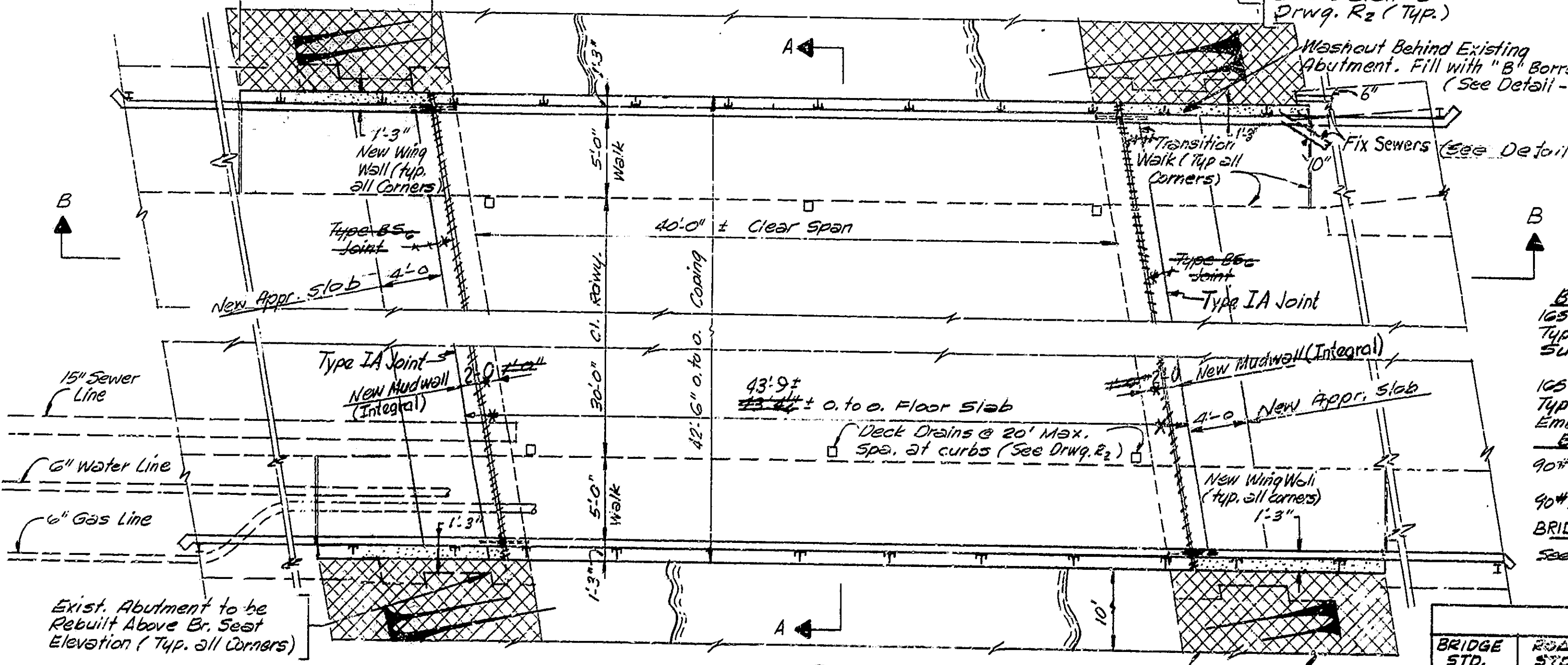
STRUCTURE	TYPE	SPAN	OVER	REVISED
4-20-6106 B	STEEL BEAM BRIDGE	40'-0"	ROCK RUN CREEK	

SHEET	SHEET DESIGNATION	SUBJECT	REVISED
1	R1	Title Sheet and General Plan	
2	R2	Gen. Notes, Constr. Procedure & Details	
3	R3	Floor Slab Details	
4	R4	Details	
5	R5	Mudwall & Wingwall Details	
6	R6	Superstructure Details & Summary	
7	BR1	Aluminum Bridge Railing	R-9-1-73
8	BR2	Aluminum Bridge Railing Details	R-9-1-73
9	C1	Reinforcing Bar Notes	R-6-1-72
10	C2	Type "A" Construction Joint	R-12-17-74
11	GR4	Guard Rail Class GA or G5T	A-Feb-1971
12	GR5	Aluminum Guard Rail Details	R-10-1-71
13	ME	Integral Concrete Curb - Type "C"	R-3-1-71
14	MA1	Sidewalk	R-7-1-75
15	Sheet 2	Standard Detour Signs	R-10-28-75
16	Sheet 2A	Standard Detour Signs	R-10-28-75
17	Sheet 3	Standard Detour Signs	R-4-2-73
18	Sheet 3A	Standard Detour Signs	R-10-28-75
19	Sheet 4	Standard Detour Signs	R-10-28-74
20	Sheet 5	Sign Design Details	R-10-1-74



REPAIRS AT ABUTMENT CORNERS

NOTE:
For General Notes, Construction Procedure and Layout, See Drwg. R2



MATERIAL NOTES

BITUMINOUS OVERLAY TO BE:
105# / Sq. Yd. Hot Asphaltic Concrete Surface Type "B" over 50# / Sq. Yd. Hot Asphaltic Concrete Surface Type "D"

OR
105# / Sq. Yd. Hot Asphaltic Emulsion Surface Type III over 50# / Sq. Yd. Hot Asphaltic Emulsion Type III

BITUMINOUS WEDGE TO BE:
90# / Sq. Yd. H.A.C. Surface Type "B" over H.A.E. Base.
OR
90# / Sq. Yd. H.A.E. Surface Type III over H.A.E. Base.

BRIDGE DECK MEMBRANE TO BE:
See Special Provisions

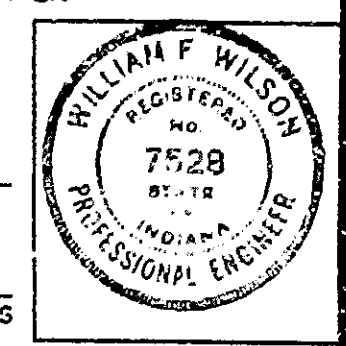
STANDARDS DRAWINGS

BRIDGE STD.	2540 STD.	DESCRIPTION
BR1		Aluminum Bridge Railing
BR2		Aluminum Bridge Railing Details
C1		Reinforcing Bar Notes
C2		Type "A" Construction Joint
GR4		Guard Rail Class GA or G5T
GR5		Aluminum Guard Rail Details
ME		Integral Concrete Curb - Type "C"
MA1		Sidewalk
Sheet 2		Standard Detour Signs
Sheet 2A		Standard Detour Signs
Sheet 3		Standard Detour Signs
Sheet 3A		Standard Detour Signs
Sheet 4		Standard Detour Signs
Sheet 5		Sign Design Details

PLANS PREPARED BY
BEAM, LONGEST & NEFF INC.
CONSULTING ENGINEERS
INDIANAPOLIS, INDIANA

CERTIFIED **MARCH 14, 1975**
DATE

William F. Wilson
BEAM, LONGEST & NEFF, INC., CONSULTING ENGINEERS



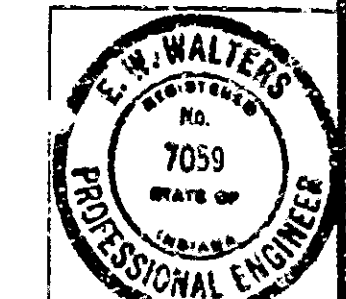
APPROVED **4-17-75**
M. K. Kellors
CHIEF HIGHWAY ENGINEER INDIANA STATE HIGHWAY COMMISSION

TITLE SHEET AND GENERAL PLAN
DECK RECONSTRUCTION AND OVERLAY TO
STEEL BEAM BRIDGE
1 - SPAN 40'-0" 30'-0" ROADWAY
2 - 5'-0" WALKS SKEW 10° LT.
OVER ROCK RUN CREEK ON SR. 4
INDIANA STATE HIGHWAY COMMISSION
ELKHART COUNTY

SCALE: 3/4" = 1'-0" Unless Noted
APRIL 16, 1975

RECOMMENDED FOR APPROVAL: *E. W. Walters*
ENGINEER OF BRIDGE DESIGN

DRAWING: R1 OF 6
PROJECT: ST-54B(1)
BRIDGE CONTRACT NO. B-10377
BRIDGE FILE: 4-20-6106 A



Rev. 4-29-76 J.W.M./R.S./S.J.R.
Rev. 11-6-75 J.W.M.

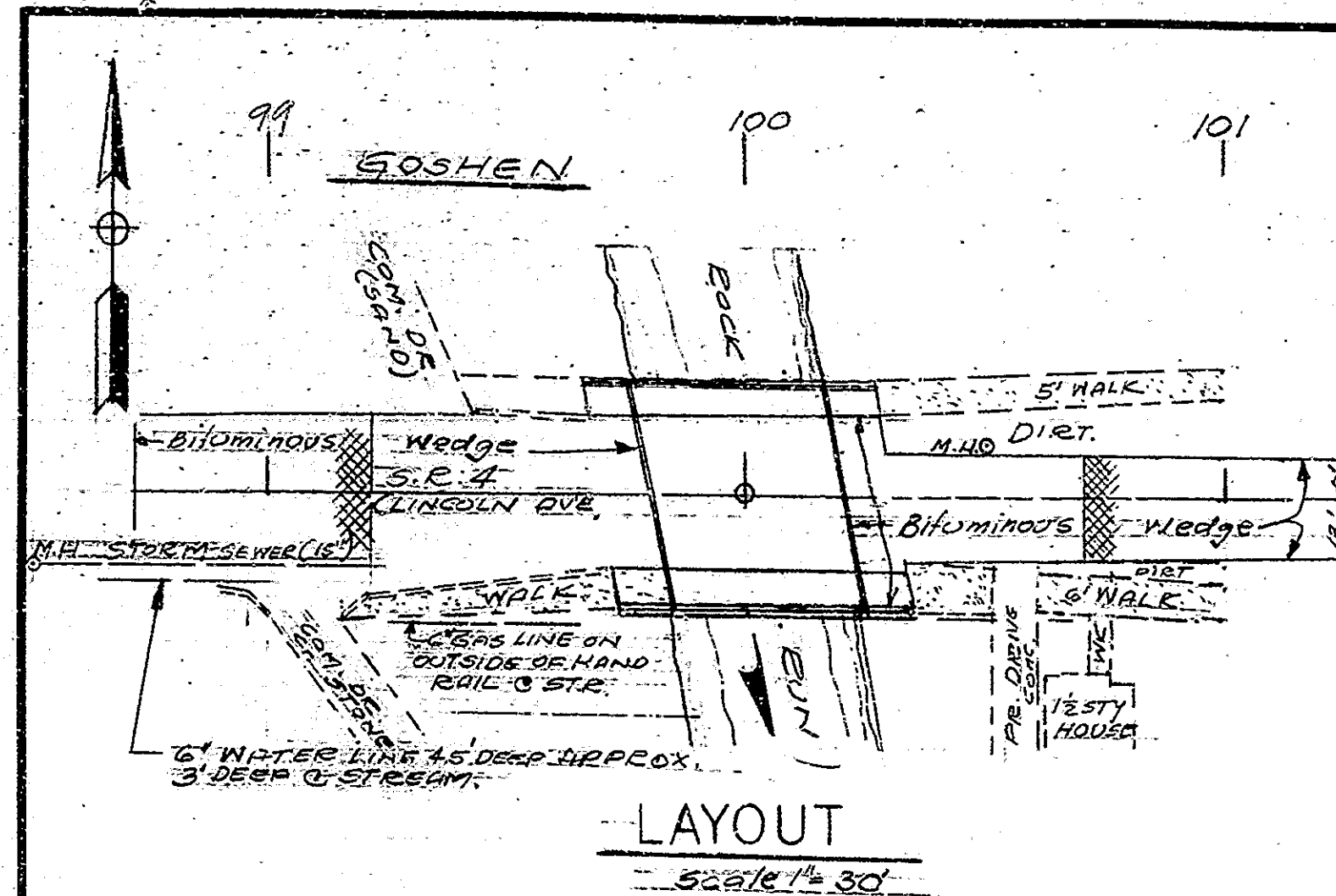
INDIANA STATE HIGHWAY COMMISSION
STANDARD SPECIFICATIONS DATED 1974
TO BE USED WITH THESE PLANS.

DESIGNED	C.K.D.
DRAWN	C.K.D.
TRACED	C.K.D.
	J.L.G.

SECTION A-A
Scale: 1/4" = 1'-0"

DATE	REVISIONS
11-6-75	1, 2, 3, 6, 14 & 16
4-29-76	1 thru 6

Rev. 4-29-76 Abutment Corner Repairs Added, Integral mudwalls noted.
Rev. 11-6-75 Membranes noted.



PUBLIC UTILITIES:
 ELECTRICITY: I.N.P.S. Co. OFFICE: GOSHEN, IND.
 TELEPHONE: GENERAL TELEPHONE Co. OFFICE: GOSHEN, IND.
 GAS LINE: N.I.P.S. Co. OFFICE: GOSHEN, IND.
 WATER & SEWER: TOWN OF GOSHEN.

BENCH MARK
 Level Datum is on N.G.S. Level
 Datum using I.S.H.C. B.M. L-160
 E.L. 799.51

GENERAL NOTES

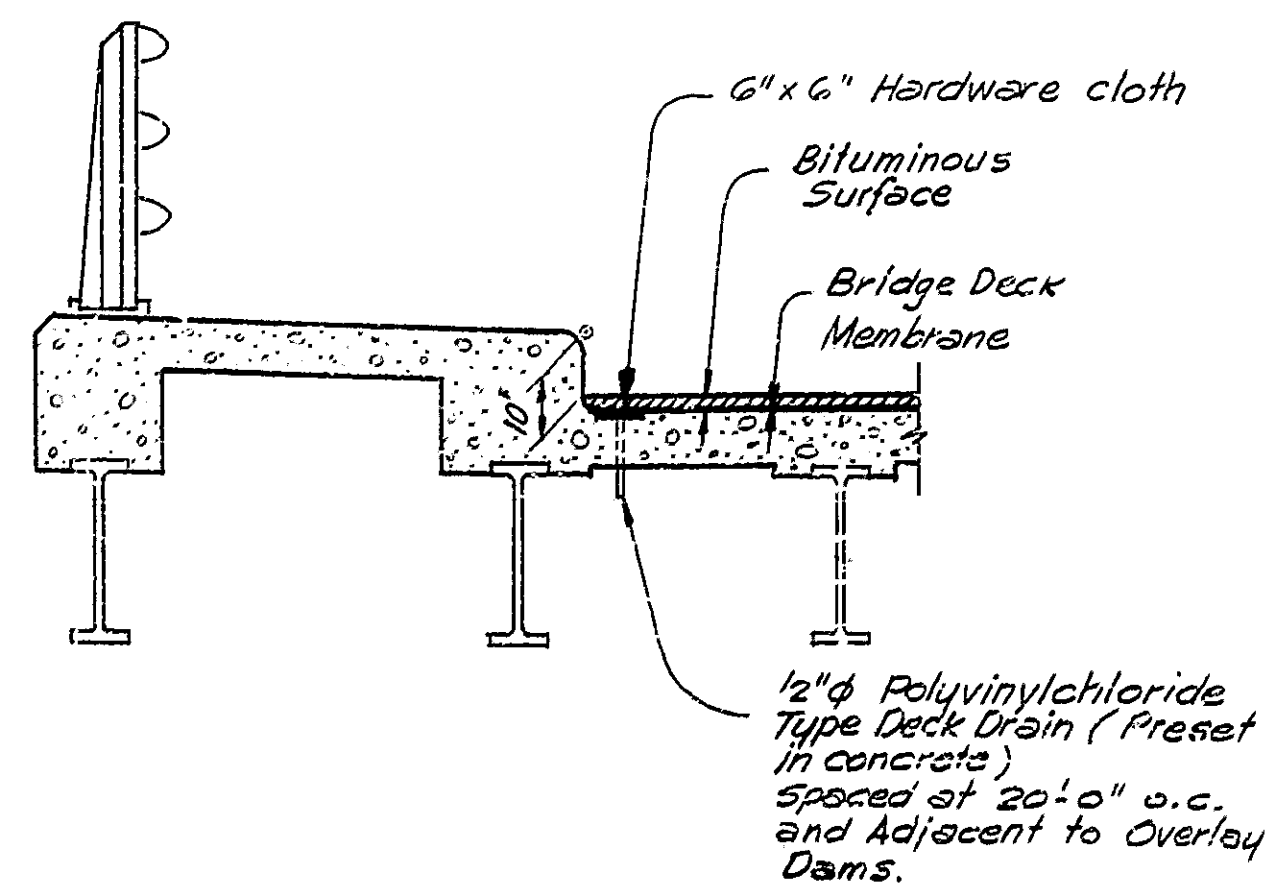
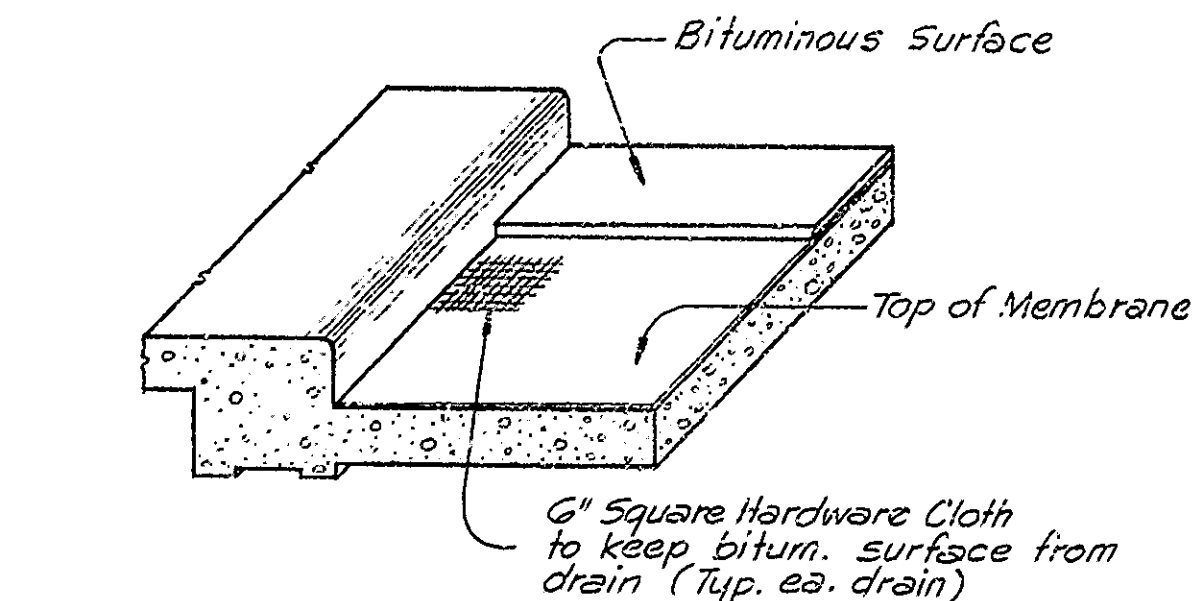
- Reinforcing steel covering shall be 2 1/2 inches in the top and 1 inch in the bottom of floor slabs and 2 inches in all other parts, unless noted.
- Concrete in midwalls to be class "X". Concrete in wingwalls to be Class "A".
- Concrete in superstructure to be class "C".
- Continuous concrete pours shall be required between construction joints as shown on plans.
- Waterproof back of midwalls and wingwalls in accordance with Art 702.22 of the Specifications.
- Bevel forms 1/4 inch under copings and chamfer exposed edges 1/4 inch unless noted.
- All railing post to be constructed perpendicular to grade.
- The front face of midwalls to be sealed in accordance with Article 702.20 of the Specifications.
- See Special Provisions for items included in this Contract.
- Where new work is to be fitted to old work, the Contractor shall check all dimensions and conditions in the field and report any errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of new part to old.
- All bituminous material required in this Contract to be included in the pay item "Bituminous Mixture for Approaches" unless noted.
- The Contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in conformity with the Engineer's Drawings and specifications and shall submit five (5) copies of these to the Engineer. See Article 711.04 of the Specifications.
- The tops and sides of the top flange of the existing steel beams shall be Commercial Blast Cleaned prior to pouring the new sleep. This work shall be in accordance with applicable provisions of Section G19 of the Specifications. The cost of this work will not be paid for directly, but shall be included in the price bid for "Concrete, class C in Superstructure".
- The edges of all concrete removal areas in the pavement and abutments shall be sawcut to a minimum depth of 1 inch or to the level of the reinforcing steel, whichever is less, prior to concrete removal. The cost of sawcutting will not be paid for directly, but shall be included in the cost of the associated removal pay items in the contract.

CONSTRUCTION PROCEDURE

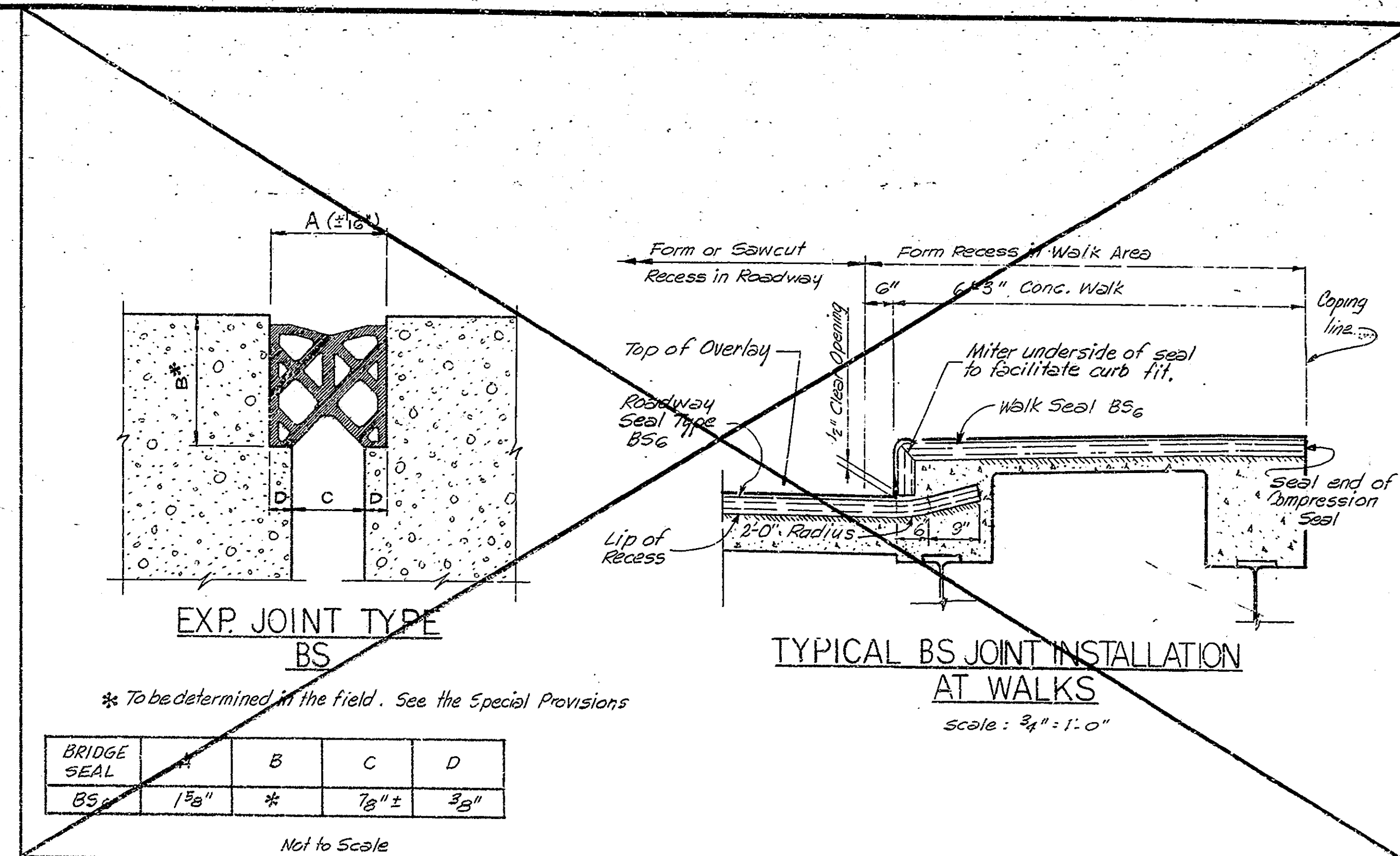
- Close structure to traffic.
- Remove superstructure deck, R.C. Girders, concrete railing and abutments as shown on plans.
- Remove abutment midwalls. Install new steel beams and shear connectors. Place superstructure deck and rails.
- Seal top of overlay dams and other bridge areas (see General Notes).
- Construct bituminous wedges and all other work shown on the plans, including installation of guard rail.
- When all work is completed, open structure to traffic.

NOTE:

The numbers do not necessarily indicate the sequence of operations.

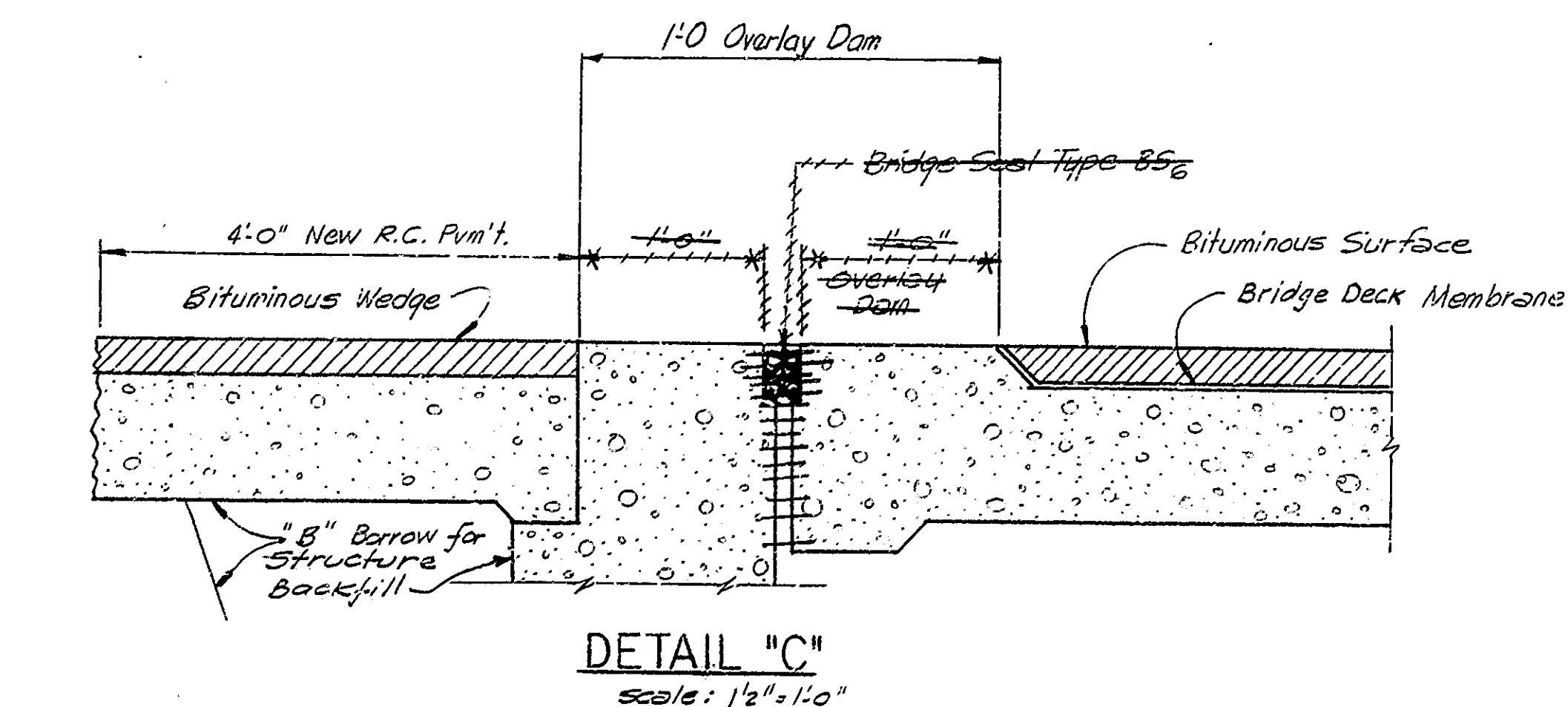


DECK DRAIN DETAIL
 scale: 1/2" = 1'-0"



BRIDGE SEAL	A	B	C	D
BS	1 1/2"	*	7/8" ±	3/8"

Not to Scale



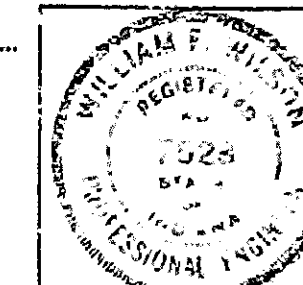
DETAIL "C"
 scale: 1/2" = 1'-0"

**GENERAL NOTES,
 CONSTRUCTION PROCEDURE
 LAYOUT AND DETAILS
 INDIANA STATE HIGHWAY COMMISSION**

SCALE: As Noted DATE: MAR 14, 1975

SUBMITTED FOR APPROVAL: William J. Allen

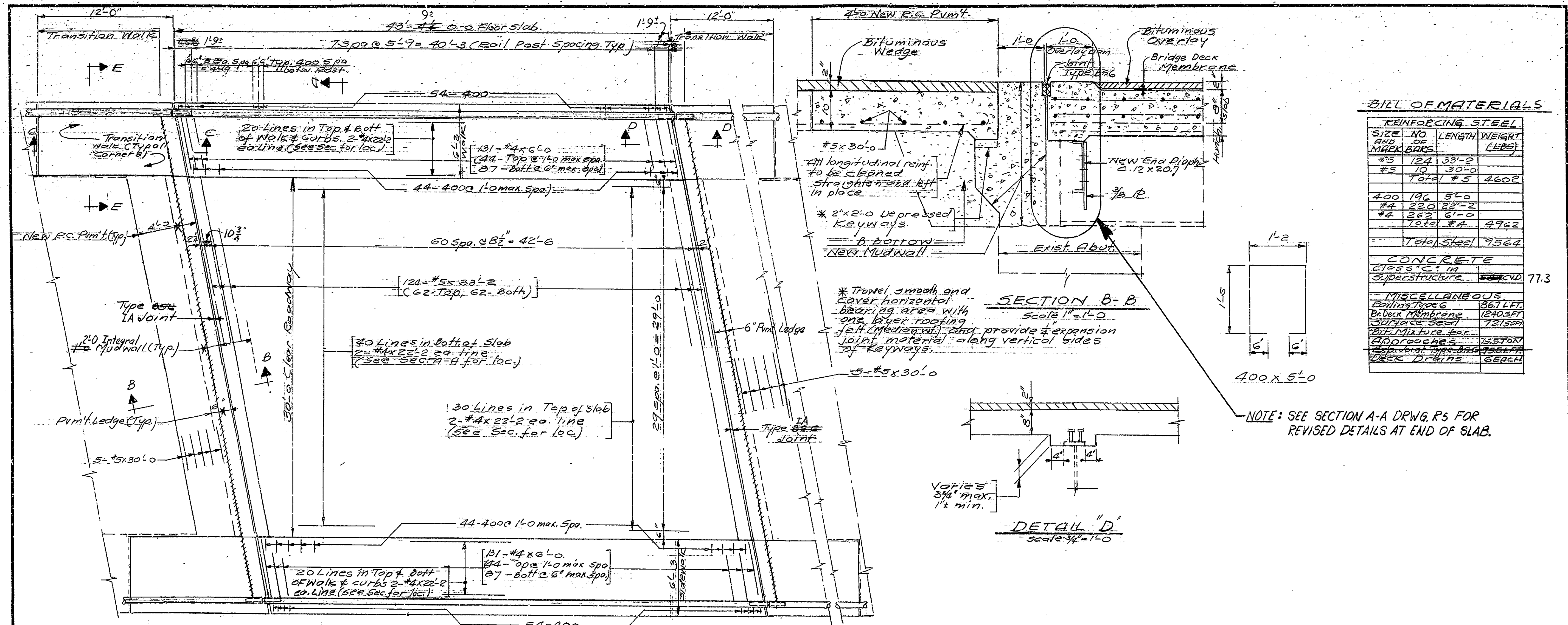
DRAWING: R2 OF 6
 PROJECT: ST-54 B(1)
 CONTRACT NO. B-10377
 BRIDGE FILE: 4-20-6106A



Rev. 4-29-76 General Notes, Constr. Procedure
 BS3 Exp. Joint Eliminated
 Rev. 11-6-75 Br. Deck Membrane

DRAWING 40-527 2387

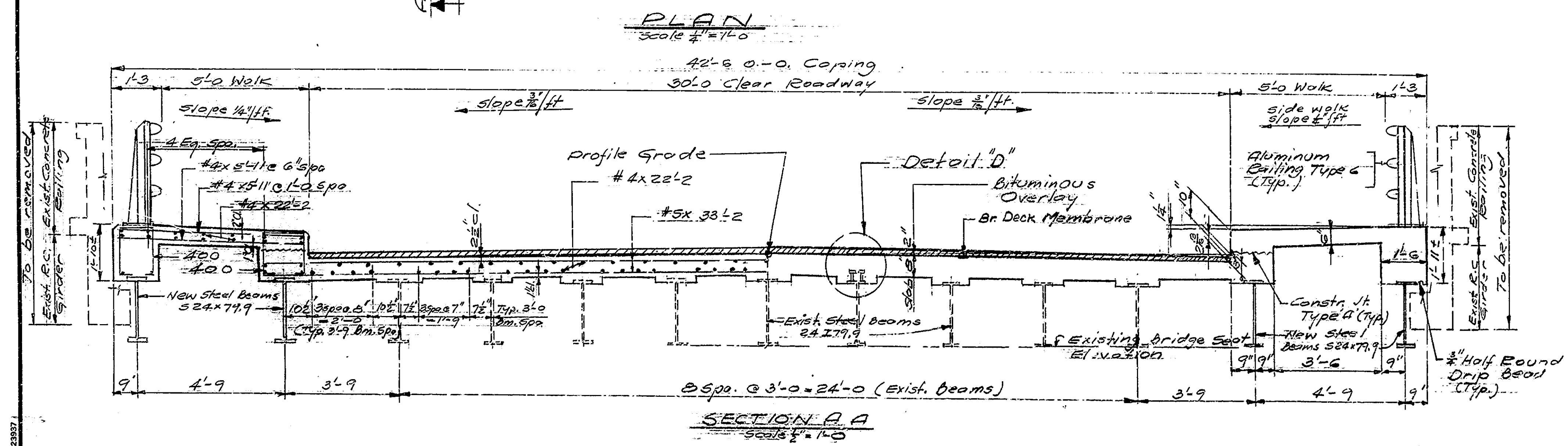
DESIGNED	C.K.D.
DRAWN	E.B.
TRACED	C.K.D.
	J.L.G.



BILL OF MATERIALS

REINFORCING STEEL			
SIZE AND MARK	NO. OF BARS	LENGTH (FEET)	WEIGHT (LBS)
#5	124	33'-2"	
#5	10	30'-0"	
Total #5			4602
#4	196	5'-0"	
#4	220	22'-2"	
#4	362	6'-0"	
Total #4			4962
Total Steel			9564
CONCRETE			
CLASS C-11 in Superstructure			
77.3			
MISCELLANEOUS			
Reinforcing Bars	867 LBS		
Br. Deck Membrane	1240 SF		
Surface Seal	721 SF		
Grout Mixture for			
Approaches	15570 LBS		
Expansion Joints	25 LBS		
Deck Drains	6 EACH		

NOTE: SEE SECTION A-A DRWG. R5 FOR REVISED DETAILS AT END OF SLAB.



NOTES

For reinforcing bar notes see Br. Std. C/
 For Type A' Constr. Jt. see Br. Std. C3
 The top reinforcing in the deck shall be securely fastened to the deck forms and the beams to prevent lifting during concrete placement.
 The top of overlay dams & vertical face of curbs and top of walks to be sealed.
 For sections C-C, D-D, E-E & Corner Details see Drwg. R4.
 The Contractor will have the option of using permanent metal forms for the concrete bridge deck in lieu of removable forms in this contract see special provisions.

FLOOR SLAB DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE: As Noted DATE: MAR. 14, 1975
 SUBMITTED FOR APPROVAL: William J. Wilson

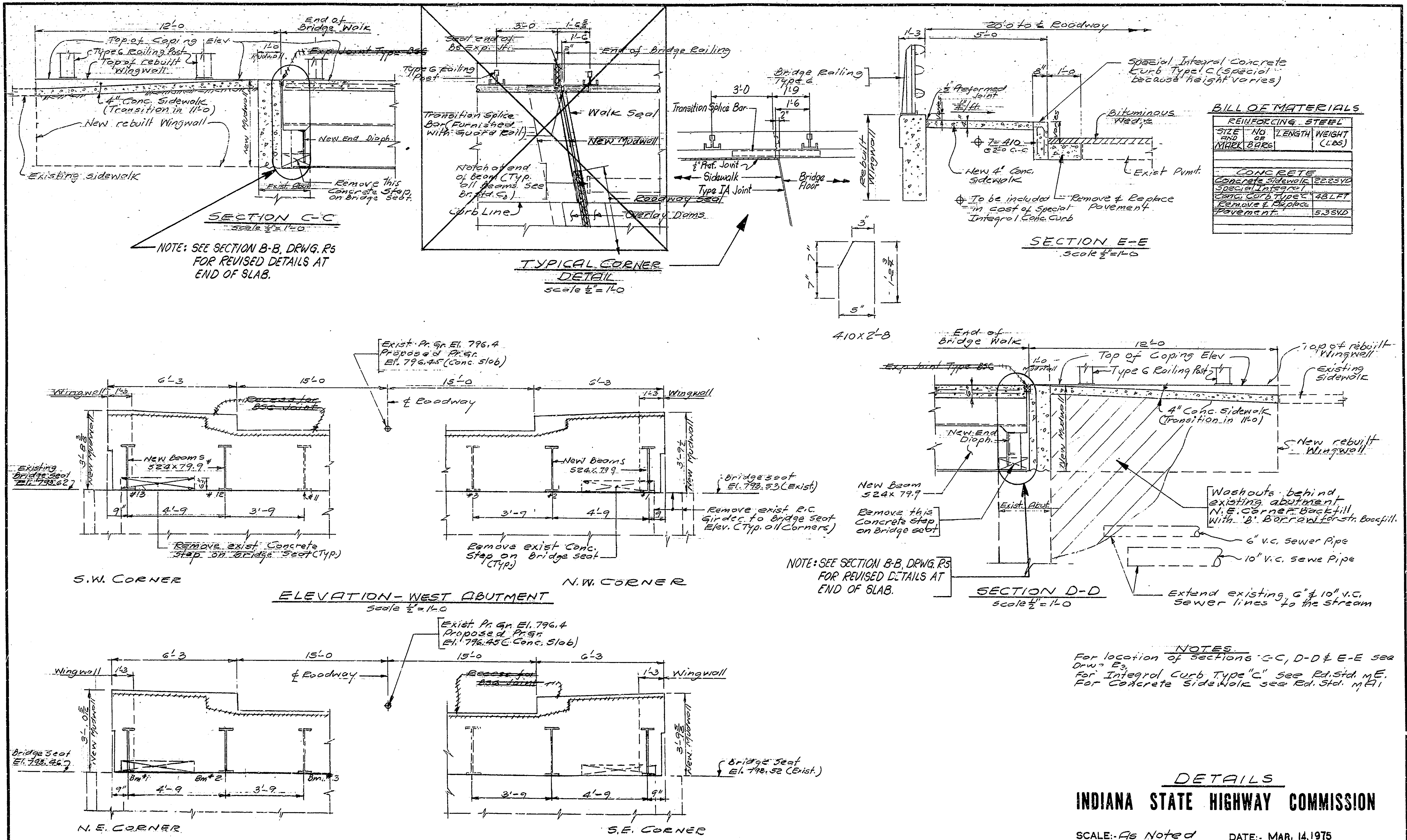
DRAWING: E3 OF 6
 PROJECT: 57-54 B(1)
 CONTRACT NO. B-10377
 BRIDGE FILE: 4-20-6106A

Rev. 4-29-76 Slab length revised, Integral midwalls added, BS6 Exp. Jt. deleted, Bill of Materials revised.

Rev. 11-6-75 Notes

DESIGNED: CWD
 DRAWN: EB
 TRACED: CWD

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
57-54 B(1)		20	20	4-20-6106A



BILL OF MATERIALS

REINFORCING STEEL			
SIZE AND MARK	NO OF BARS	LENGTH	WEIGHT (LBS)
CONCRETE			
Concrete Sidewalk	2223YD		
Special Integral Concrete Curb Type C	48LFT		
Remove & Replace Pavement	5335YD		

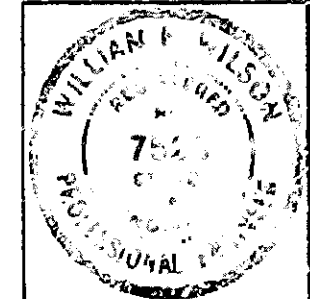
NOTE: SEE SECTION B-B, DRWG. R5 FOR REVISED DETAILS AT END OF SLAB.

NOTE: SEE SECTION B-B, DRWG. R5 FOR REVISED DETAILS AT END OF SLAB.

NOTES:
 For location of sections C-C, D-D & E-E see Draw. E3.
 For Integral Curb Type "C" see Rd. Sid. M.E.
 For Concrete Sidewalk see Ed. Std. M.E.1

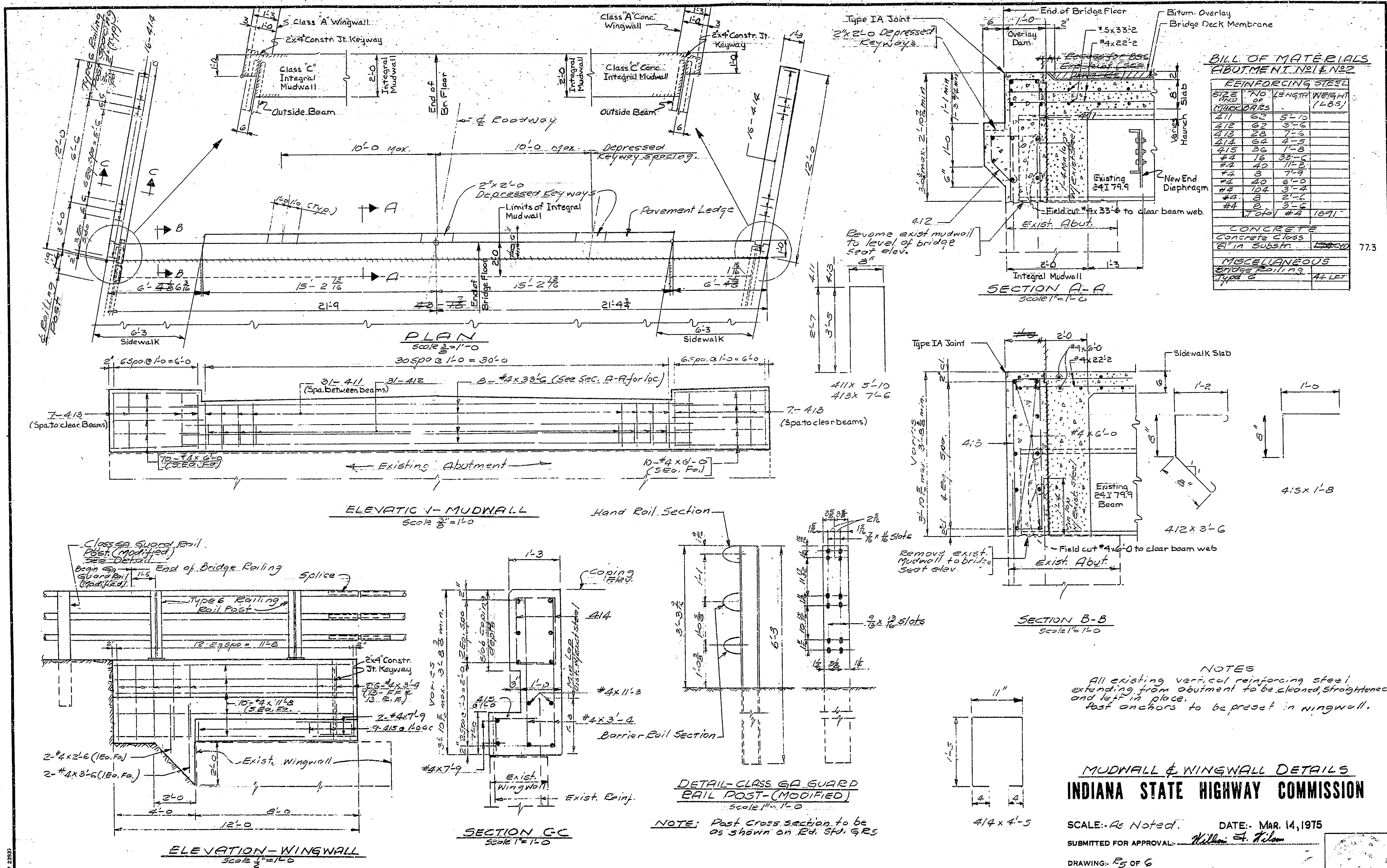
DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE: As Noted DATE: MAR. 14, 1975
 SUBMITTED FOR APPROVAL: *William F. Wilson*
 DRAWING: E4 OF 6
 PROJECT: ST-54 B (1)
 CONTRACT NO. B-10377
 BRIDGE FILE: 4-20-6106A



DESIGNED	CWD
DRAWN	E12
TRACED	CWD

Rev. 4-29-76 Integral wingwall details noted, Corner details revised, B56 Exp. Joint detailed.



BILL OF MATERIALS
ABUTMENT NO. 1 & 2

REINFORCING STEEL			
SIZE	NO. OF	LENGTH	WEIGHT
(INCHES)	(PIECES)	(FEET)	(LBS)
411	62	5'-10"	
412	62	3'-6"	
413	28	7'-6"	
414	64	4'-5"	
415	36	7'-8"	
#2	16	38'-0"	
#2	40	11'-0"	
#2	8	7'-0"	
#2	40	6'-0"	
#4	104	3'-4"	
#4	8	2'-0"	
#4	8	3'-0"	
TOTAL	#4	1891'	

CONCRETE	
Concrete Class	77.3
6" in Substr.	11-10

MISCELLANEOUS	
Bridge Rebar #2	44 LET
Type G	

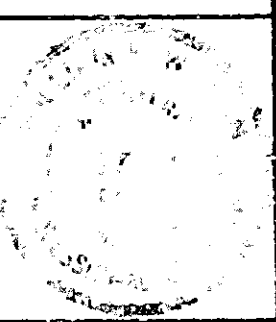
NOTES
All existing vertical reinforcing steel extending from abutment to be cleaned, straightened and left in place.
Post anchors to be precast in wingwall.

MUDWALL & WINGWALL DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE: As Noted. DATE: MAR. 14, 1975

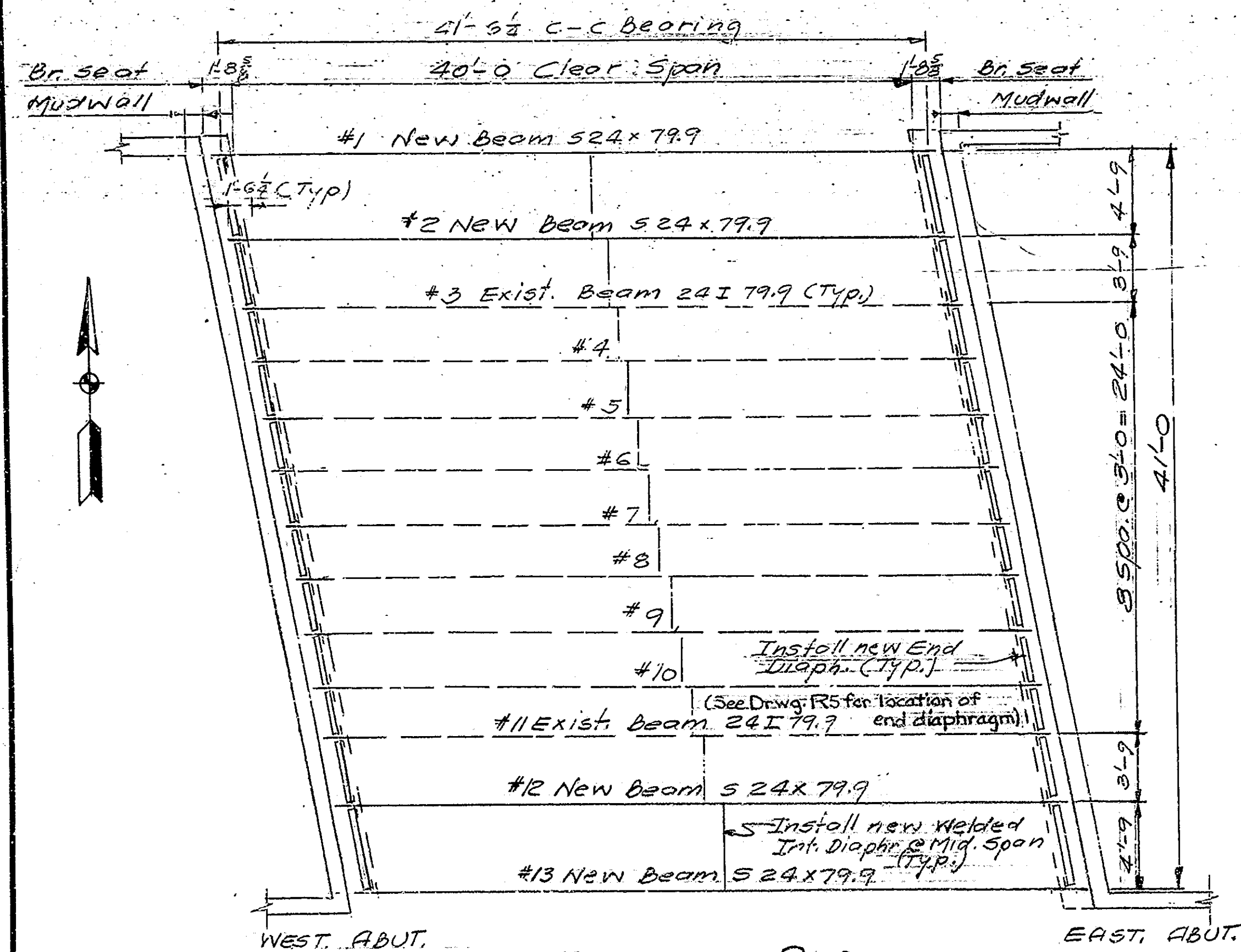
SUBMITTED FOR APPROVAL: *William E. Tolson*

DRAWING: R5 OF 6
PROJECT: ST-54 B(1)
CONTRACT NO. B-10377
BRIDGE FILE: 4-20-6106A



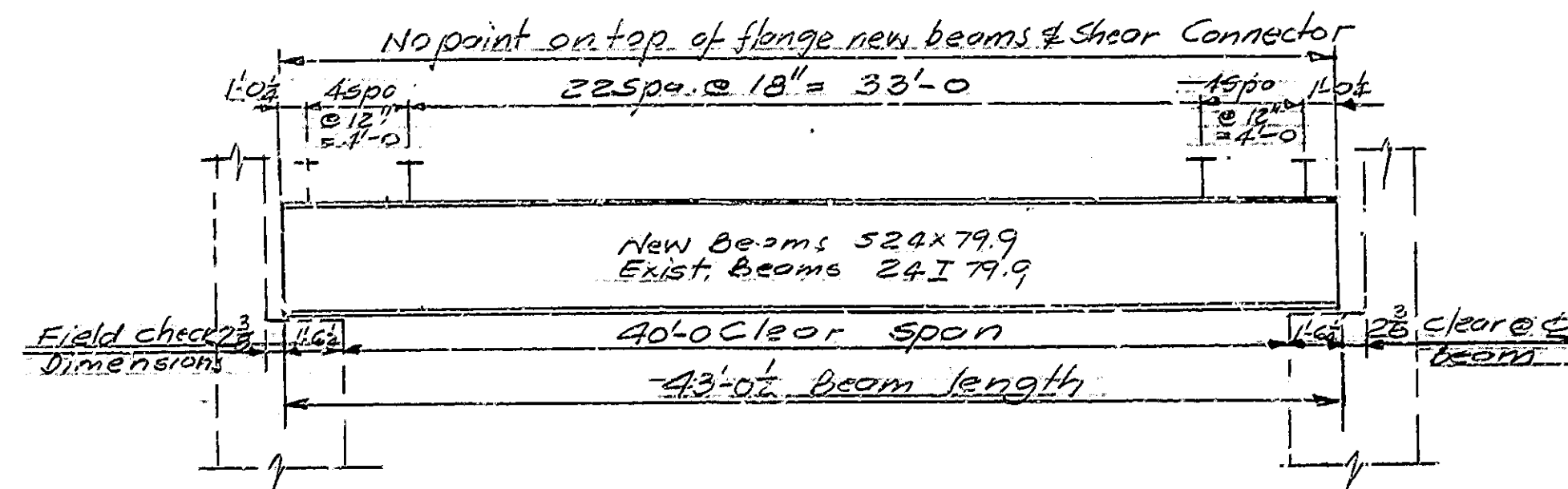
DESIGNED	CWD
DRAWN	JLG
TRACED	CWD

Rev. 4-29-76 Integral Mudwall noted, BS6 Exp. Joint Deleted, End Diaphragm location noted.

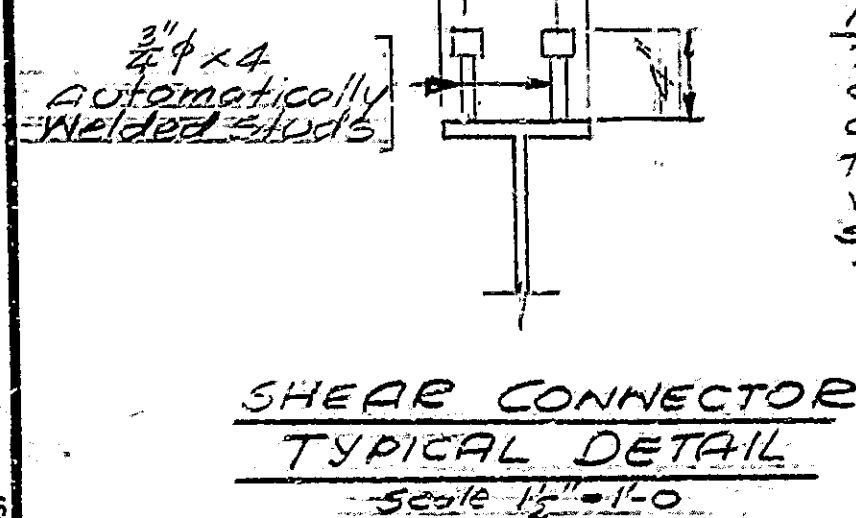


FRAMING PLAN
Scale 3/16" = 1'-0"

All Interior Diaphragms N14x26
All End Diaphragms C12x20.7



BEAM ELEVATION
Showing Shear Connectors Spacing
(Typ. Beam 1 thru 13)
No Scale



**SHEAR CONNECTOR
TYPICAL DETAIL**
Scale 1/2" = 1'-0"

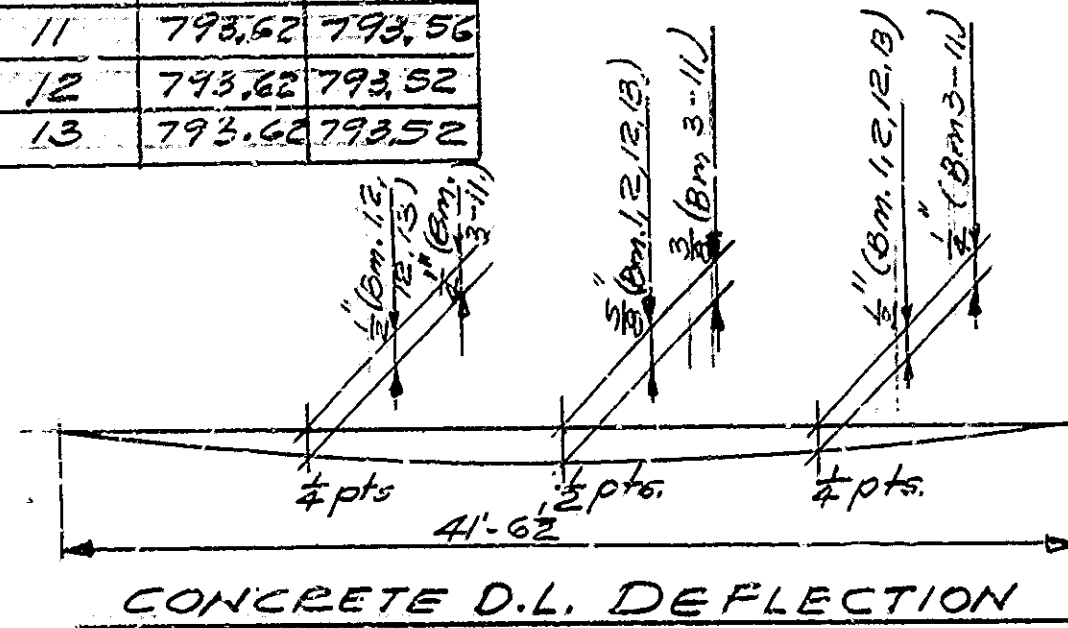
NOTE
The Contractor may use welded channels or 1/2\"/>

FABRICATION AND ERECTION NOTES
High strength bolts unless noted open holes
Unless noted all paint shall be in accordance with current state highway specifications: Shop Paint, Zinc Silicate Paint See Special Field Paint, Vinyl Finish Coat Provisions
All structural steel shall conform to ASTM A-36 unless otherwise noted
The contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect and construct all parts of the work in conformity with the Engineers drawings and specifications and shall submit (5) copies to the Engineer. See Art. 7110.4 of the Specifications. As soon as the engineer has approved the field welds, all welds and any surface fraying which the shop work has been omitted or becomes worn off or has otherwise become defective shall be thoroughly cleaned of all charred paint or any foreign matter and completely covered with one coat of shop paint.
Estimated weight of structural steel 17462 lbs.
The weight of high strength bolts is not included in the estimated weight of structural steel.
The cost of these bolts shall be included in the cost of structural steel.

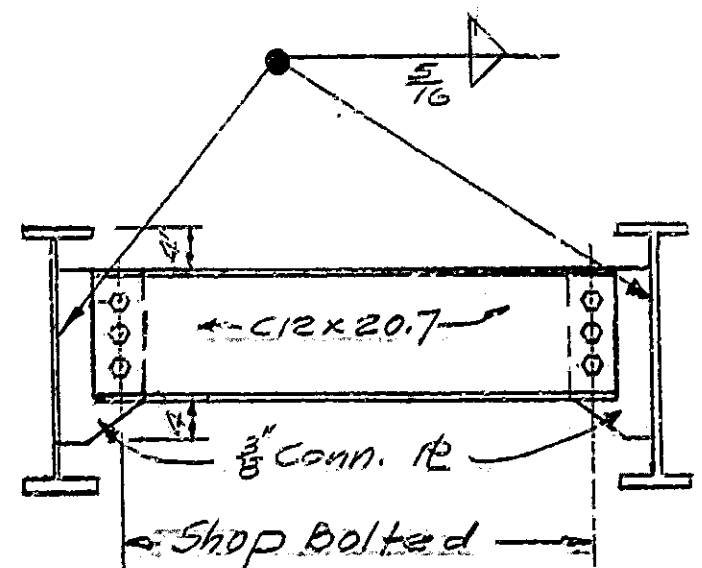
* Includes 496 lbs for 3/4\"/>

PRESENT BRIDGE SEAT ELEVATIONS
(See Field Book BR-2091)

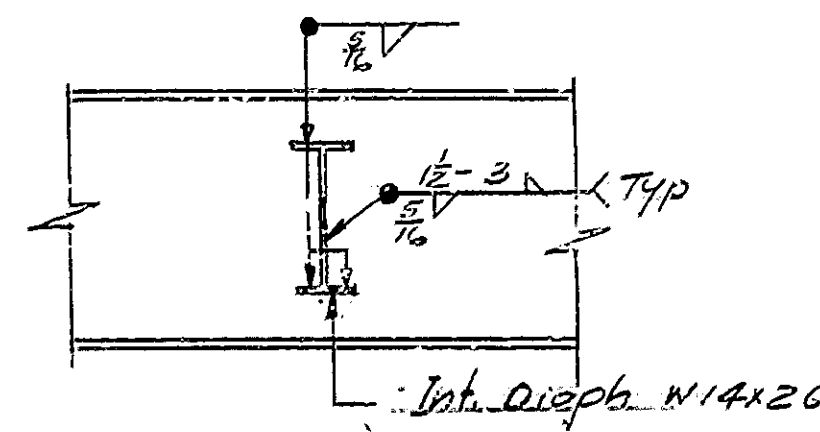
BEAM NO.	WEST ABUT.	EAST ABUT.
1	793.33	793.46
2	793.53	793.46
3	793.54	793.49
4	793.57	793.51
5	793.55	793.54
6	793.55	793.57
7	793.54	793.58
8	793.56	793.56
9	793.57	793.58
10	793.63	793.54
11	793.62	793.56
12	793.62	793.52
13	793.62	793.52



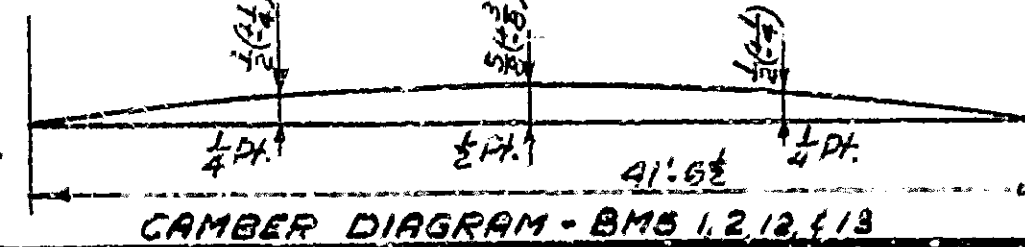
CONCRETE D.L. DEFLECTION



TYPICAL END DIAPHRAGM CONNECTION
Scale 3/8" = 1'-0"



TYPICAL INTERIOR DIAPHRAGM CONNECTION
Scale 3/8" = 1'-0"



CAMBER DIAGRAM - BMS 1, 2, 13, 11, 13

SUMMARY

CODE No.	DESCRIPTION	UNIT	QUANTITY
51328	Removal of Present Structure (Portions)	LSUM	1
52303	Removal of Pavement	SYD	29.9
51002	Concrete Class C in Superstr.	CYD	77.3
51005	Concrete Class A in Substr.	CYD	9.6
52300	Reinf. Concrete Pavement (10')	SYD	28.9
06070	Concrete Sidewalk (4')	SYD	38.3
	Special Integral Conc. Curb (Type C)	LFT	48
51125	Bridge Railing Type 6	LFT	130.7
	Guard Rail Class 9a (Modified)	LFT	62.0
	Bridge Deck Membrane (124057)	LSUM	1
52470	Bituminous Mixture for Approaches	TON	53.9
51826	Surface Seal	SFT	721.3
51885	Expansion Joint Type Bse	LFT	76
51038	Structural Steel	LSUM	1
51030	Reinforcing Steel	LBS	11,519
	8" Borrow for Structure Backfill	CYD	30
52380	Sodding	SYD	100
	Pipe Sewer, 6" V.C.	LFT	20
	Pipe Sewer, 10" V.C.	LFT	20
51106	Deck Drains	EACH	6
52340	Construction Signs (Type A)	EACH	16
52345	Construction Signs (Type B)	EACH	3
52350	Standard Barricodes (Type III)	EACH	2
	3/4" Exp. Anchor w/ 3/4" Bolt	EACH	24

FABRICATION AND ERECTION NOTES (CONT'D)
Diaphragm connections to beams may be bolted in lieu of field welded connections. If the contractor elects to use connections other than shown in the contract plans, he shall submit details to the Engineer for approval. He shall assume full responsibility for layout of all diaphragm connections and for accuracy of all fitted parts. No increase in pay weight will be permitted.

Structural steel used on this project need not conform to the Charpy V-Notch Toughness test requirements specified in Art. 909.02 of the Supplemental Specifications.

Beams must be cambered to a smooth curve. Camber must be checked after shop welding is completed and while beams are supported in such a way as to have bending moment in the direction of camber.

SUPERSTRUCTURE DETAILS & SUMMARY
INDIANA STATE HIGHWAY COMMISSION

SCALE: As Noted DATE: MAR. 14, 1975

SUBMITTED FOR APPROVAL: *William J. Kilian*

DRAWING: B OF 6
PROJECT: ST-54 B (1)
CONTRACT NO. B-10371
BRIDGE FILE: 4-20-6106A

BRUNING 40-527 23937

DESIGNED: EP	CND: WJL/JLG
TRACED: CND:	

Summary Items 51002, 51005, 51030 Revised; 51885 Deleted; 3" Exp. Rev. 4-29-76 Anchors Added; End diaphragm location referenced; Rev. 11-6-75 Notes, Code Numbers and Camber Diagram Added.