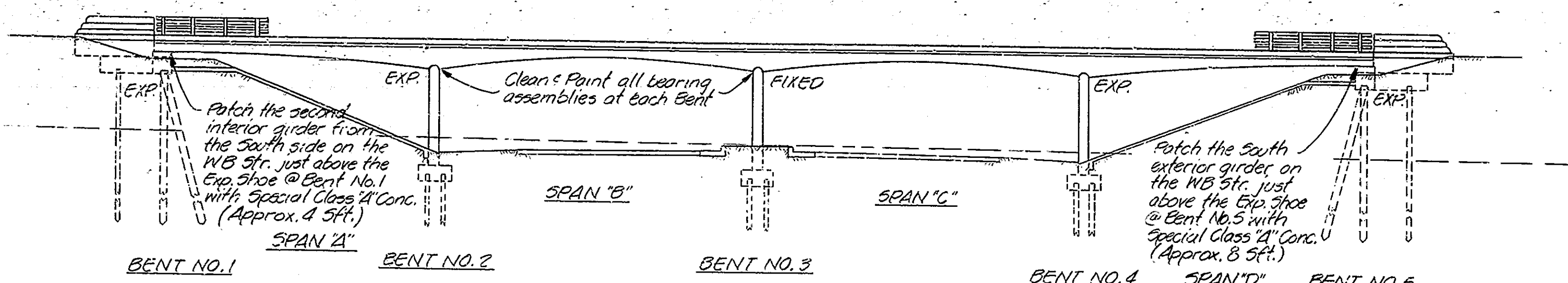
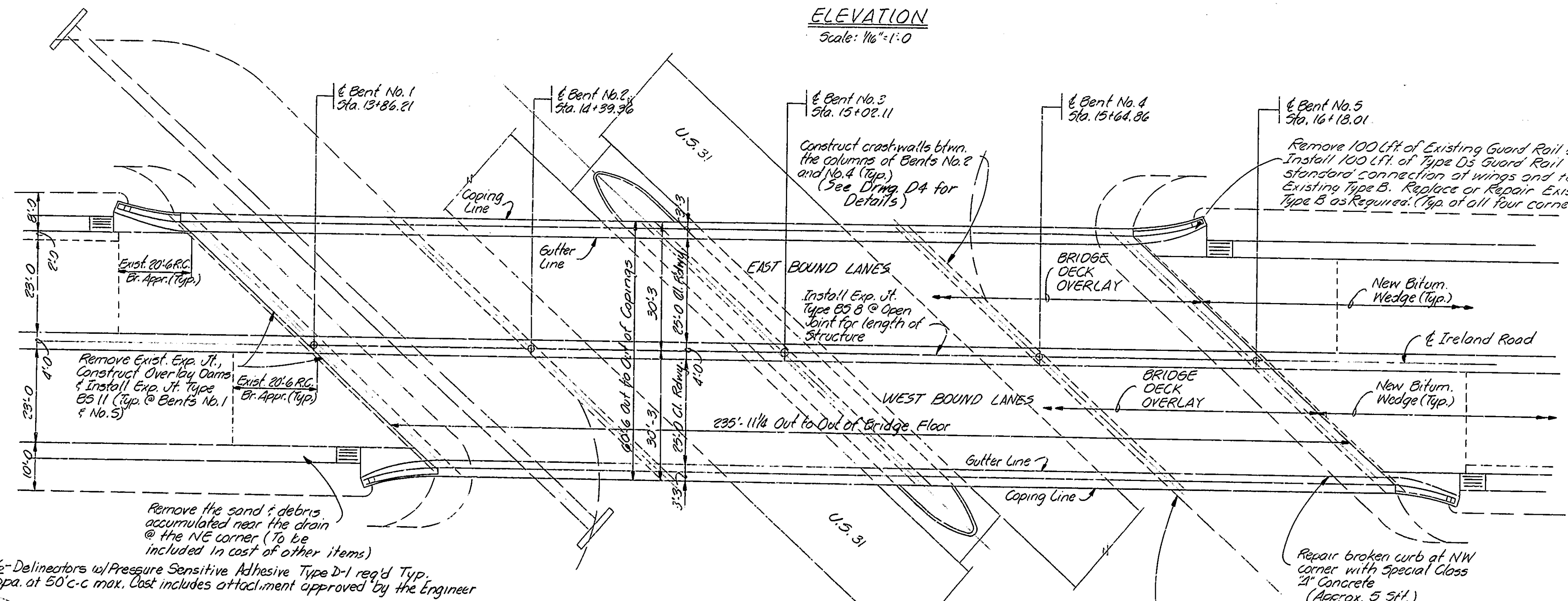


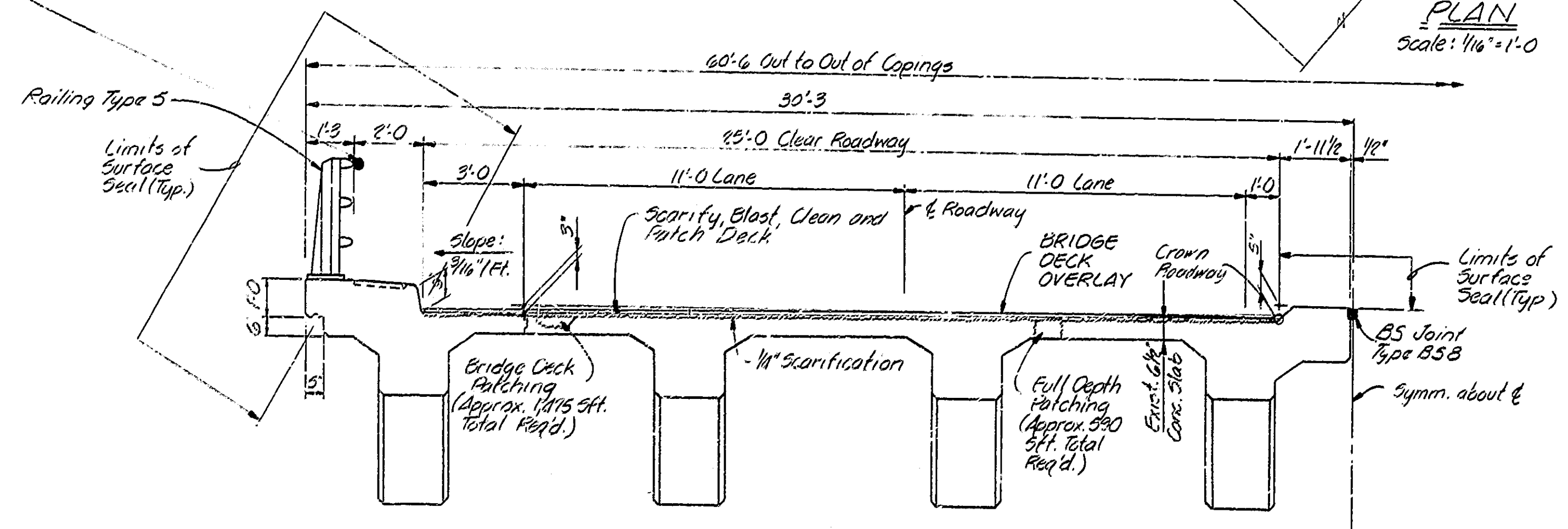
STRUCTURE IS BUILT ON A 500' V.C.



ELEVATION
Scale: 1/8" = 1'-0"



PLAN
Scale: 1/8" = 1'-0"



HALF SECTION
Scale: 3/8" = 1'-0"

DESIGNED: J. E. ...
DRAWN: ...
TRACED: ...

GENERAL NOTES

Plans for the existing structure are on file in the Central Office as Bridge File: 20-F9-4049 and are available on request.
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 the new part to the old.
The hand chipping and cleaning of deteriorated deck areas shall be as directed by the Engineer. It is the intent of these plans that all such deteriorated concrete be removed and should there be any doubt as to the quality of the concrete, removal shall continue until PERFECTLY SOUND CONCRETE is exposed. All existing non-full depth patches shall be removed.
Concrete in patches for deteriorated deck areas below scarified depth shall be Modified Portland Cement Concrete or Special Class 21 Concrete. See the Special Provisions.
For the composition of concrete in overlay dams see the Special Provisions.
All bituminous material required in this Contract shall be included in the pay item "Bituminous Mixture for Approaches" except tack coat which will be paid for separately.
Seal all exposed concrete surfaces as noted on the plans with a penetrating epoxy sealer.
Seal all cracks and joints in the approach pavement with a hot poured joint sealer before placing bituminous wedges.
All removal equipment used for partial concrete removals of bridge structures shall be hand held. Pneumatic hammers, 50 lbs. maximum weight shall be used for all removal areas to be patched and all areas within 24 inches of full depth removal lines. Pneumatic hammers up to 90 lbs. maximum weight may be used for other removals outside these limits. Deck areas that are to be removed, full depth, shall become completely separated from adjacent concrete before hammers heavier than 30 lbs. may be used.

CONSTRUCTION PROCEDURE

Two directional traffic is to be maintained by keeping one structure open while the other structure is being repaired as shown on sheets 243 (A050A), Erect warning signs and barricades and close structure to traffic (4049A).
Scarify the entire bridge floor to a depth of 1/4 inch. Remove scarified dust.
Remove existing patches and all deteriorated concrete below the level of scarification, ground exposed reinforcing along curbs inaccessible to scarifying equipment and as required for the construction of overlay dams.
Place the bridge deck patching and overlay as shown on the plans and in accordance with the Special Provisions. Install BS expansion joint seals.
Clean and seal exposed concrete surfaces as noted on the plans including curved wingwalls with a penetrating epoxy sealer.
Place the bituminous wedge and level courses and construct all other work shown on the plans including removal and installation of guard rail.
The sequence of the above notes does not necessarily indicated the sequence of operations.
Salvaged Guard Rail is to remain property of I.D.O.H.

MATERIAL NOTES

BRIDGE DECK OVERLAY: 1 3/4" Modified or 2 1/2" Dense Portland Cement Concrete (1 1/2" or 2 1/4" respectively above the original surface)
BITUMINOUS WEDGE: 110 lbs./5.Y. Bituminous Surface Type II B over Variable Depth Bituminous Binder or Base.
PAVEMENT RELIEF JOINT: 110 lbs./5.Y. Bituminous Surface Type II B over 1870 lbs./5.Y. Bituminous Base.
PAINT: All paint shall be in accordance with the Special Provisions.
First Field Coat: Zinc Silicate.
Second Field Coat: Vinyl Finish Coat.
MEDIAN CROSSOVER: 110 lbs./5.Y. Bituminous Surface Type II B over 1210 lbs./5.Y. Bituminous Base.

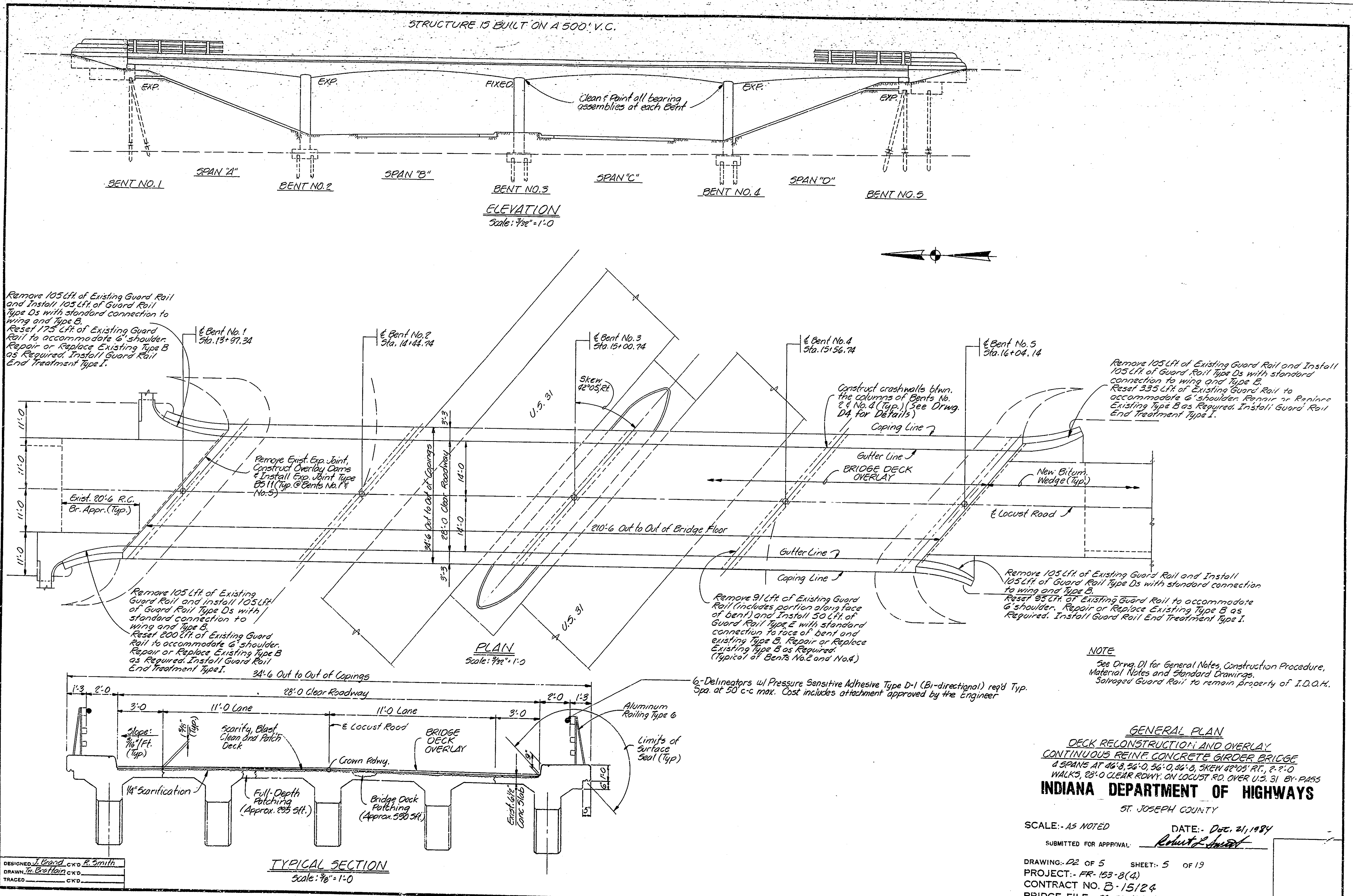
STANDARD DRAWINGS		
BRIDGE	ROAD	DESCRIPTION
	ME	Concrete Center Curb
	GR7	Pier Connection Details
	GR8	Guard Rail Class Ds
	CB2	Temporary Concrete Barrier
	1A	Standard Detour Signs
	?	Standard Detour Signs
	2A	Standard Detour Signs
	3	Standard Detour Signs
	4	Standard Detour Signs
	5	Standard Detour Signs
	MT3	Sign Standards
CI		Reinforcing Bar Notes

GENERAL PLAN
DECK RECONSTRUCTION AND OVERLAY
CONTINUOUS REINFORCED CONCRETE GIRDER BRIDGE

4 SPANS AT 52'-4, 62'-9, 52'-9, 52'-0, SKEW 25°19' LT., 2'-2" WALKS, 1'-4" MEDIAN, 2'-25" CLEAR ROADWAYS ON IRELAND ROAD OVER U.S. 31 BY PASS.

INDIANA DEPARTMENT OF HIGHWAYS
ST. JOSEPH COUNTY

SCALE: AS NOTED DATE: Dec 21, 1984
SUBMITTED FOR APPROVAL: Robert L. ...
DRAWING: D1 OF 5 SHEET: 4 OF 9
PROJECT: FR-153-B(4)
CONTRACT NO. B-15124
BRIDGE FILE: 20-71-4050A



Remove 105 Lft of Existing Guard Rail and Install 105 Lft of Guard Rail Type Ds with standard connection to wing and Type B.
Reset 175 Lft of Existing Guard Rail to accommodate 6' shoulder. Repair or Replace Existing Type B as Required. Install Guard Rail End Treatment Type I.

± Bent No. 1 Sta. 13+97.34

± Bent No. 2 Sta. 14+44.74

± Bent No. 3 Sta. 15+00.74

± Bent No. 4 Sta. 15+56.74

± Bent No. 5 Sta. 16+04.14

Exist. 20'-6" R.C. Br. Appr. (Typ.)

Remove Exist. Exp. Joint, Construct Overlay Cams & Install Exp. Joint Type B511 (Typ. @ Bents No. 1 & No. 5)

U.S. 31

U.S. 31

Construct crashwalls btwn. the columns of Bents No. 2 & No. 4 (Typ.) (See Drwg. D4 for Details)

Remove 105 Lft of Existing Guard Rail and Install 105 Lft of Guard Rail Type Ds with standard connection to wing and Type B. Reset 335 Lft of Existing Guard Rail to accommodate 6' shoulder. Repair or Replace Existing Type B as Required. Install Guard Rail End Treatment Type I.

Remove 105 Lft of Existing Guard Rail and install 105 Lft of Guard Rail Type Ds with standard connection to wing and Type B. Reset 200 Lft of Existing Guard Rail to accommodate 6' shoulder. Repair or Replace Existing Type B as Required. Install Guard Rail End Treatment Type I.

Remove 91 Lft of Existing Guard Rail (includes portion along face of bent) and install 50 Lft of Guard Rail Type E with standard connection to face of bent and existing Type B. Repair or Replace Existing Type B as Required. (Typical of Bents No. 2 and No. 4)

Remove 105 Lft of Existing Guard Rail and Install 105 Lft of Guard Rail Type Ds with standard connection to wing and Type B. Reset 95 Lft of Existing Guard Rail to accommodate 6' shoulder. Repair or Replace Existing Type B as Required. Install Guard Rail End Treatment Type I.

NOTE
See Drwg. D1 for General Notes, Construction Procedure, Material Notes and Standard Drawings.
Salvaged Guard Rail to remain property of I.D.O.H.

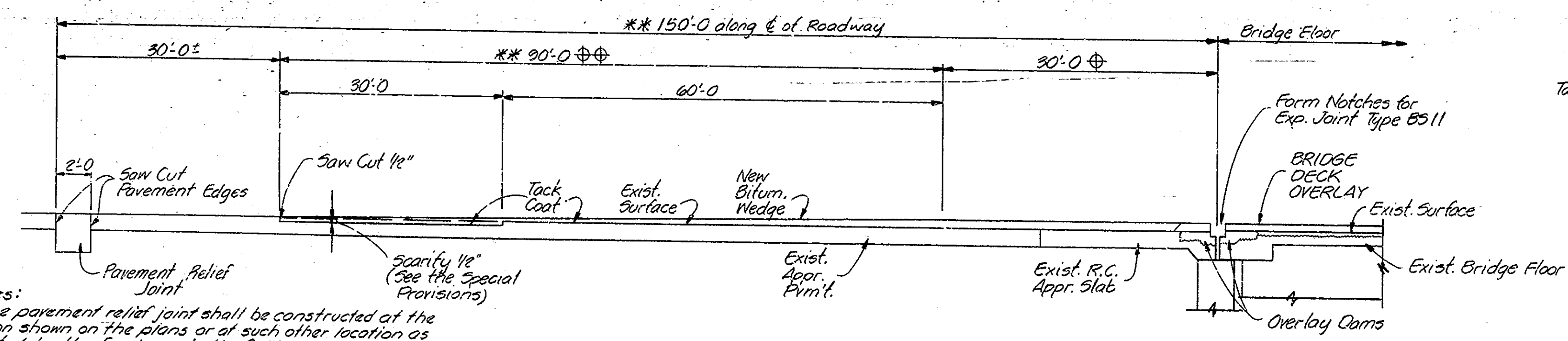
DESIGNED: J. Grand, C.K.D., R. Smith
DRAWN: M. Brittain, C.K.D.
TRACED: C.K.D.

GENERAL PLAN
DECK RECONSTRUCTION AND OVERLAY
CONTINUOUS REINFORCED CONCRETE GIRDER BRIDGE
4 SPANS AT 46'-8", 56'-0", 56'-0", 46'-8", SKEW 42°05' RT., 2'-0" WALKS, 28'-0" CLEAR ROWY. ON LOCUST RD. OVER U.S. 31 BY-PASS
INDIANA DEPARTMENT OF HIGHWAYS
ST. JOSEPH COUNTY

SCALE: AS NOTED DATE: Dec. 21, 1984
SUBMITTED FOR APPROVAL: *Robert L. Smith*

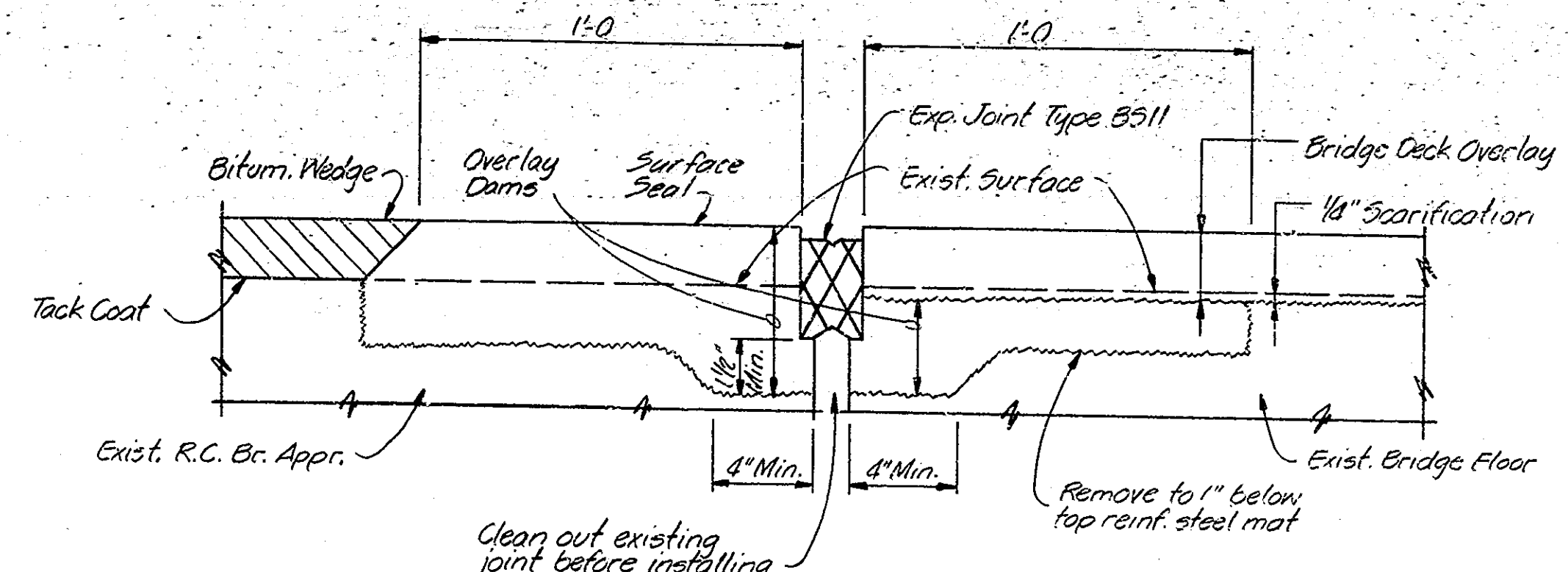
DRAWING: 22 OF 5 SHEET: 5 OF 19
PROJECT: FR-153-8(4)
CONTRACT NO. B-15124
BRIDGE FILE: 20-71-4039A

Top of wedge shall be a continuation of bridge deck profile.
 Top of wedge shall be tapered uniformly to meet existing pavement.
 ** Dimensions required with 1 3/4" Bridge Deck Overlay.
 (See the Special Provisions if 2 1/2" Bridge Deck Overlay is used.)



TYPICAL APPROACH SECTION
 Not to Scale

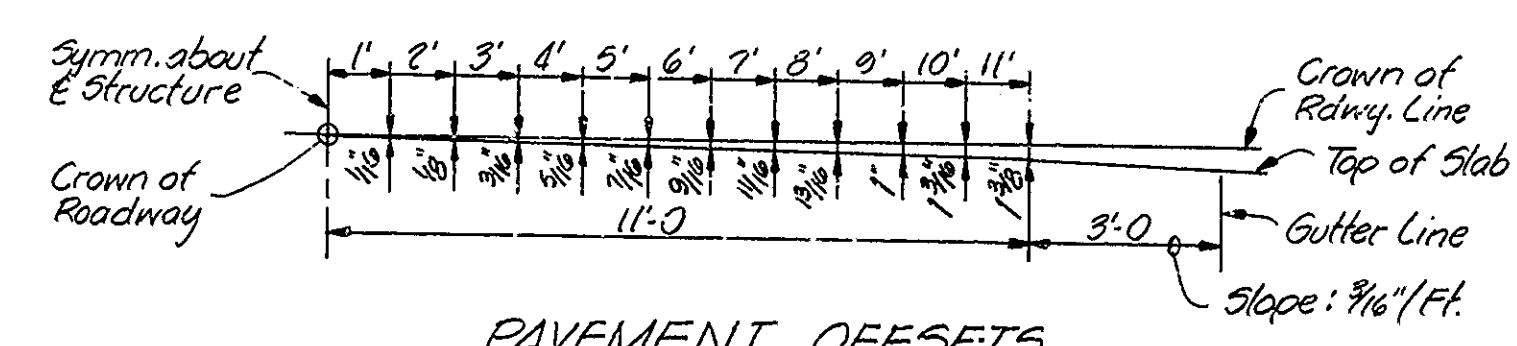
Notes:
 The pavement relief joint shall be constructed at the location shown on the plans or at such other location as directed by the Engineer in the field.
 The pavement relief joints shall be installed such that the joint is continuous through the concrete median curb on structure 4050A.
 Pavement relief joints will not be required on Structure 4049A.



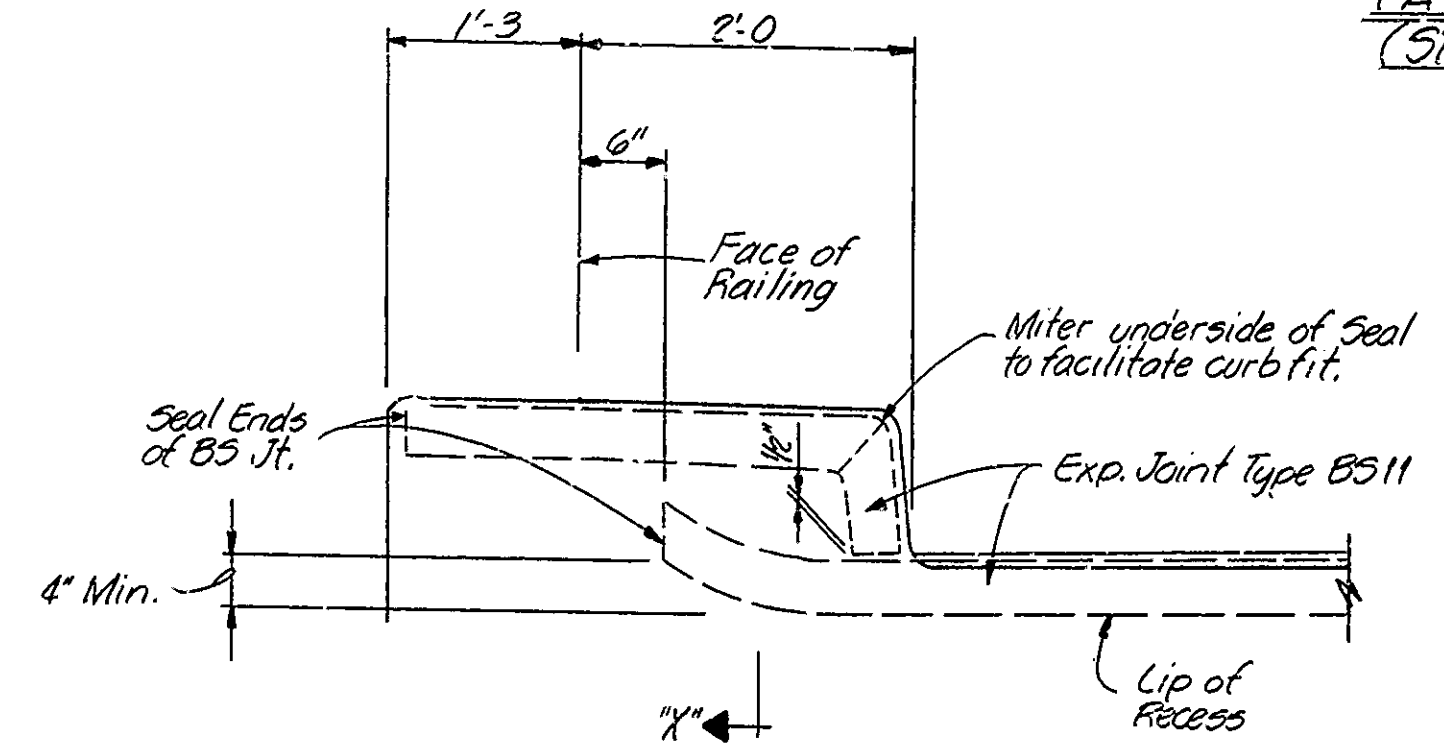
TYPICAL SECTION AT BENTS NO. 1 AND NO. 5
 Scale: 3/8" = 1'-0"

Bridge Seal	A	B	C	D	E
BSB	2"	*	1 1/4"	3/8"	1/2"
BS11	3 1/8"	*	2 1/8"	1/2"	3/4"

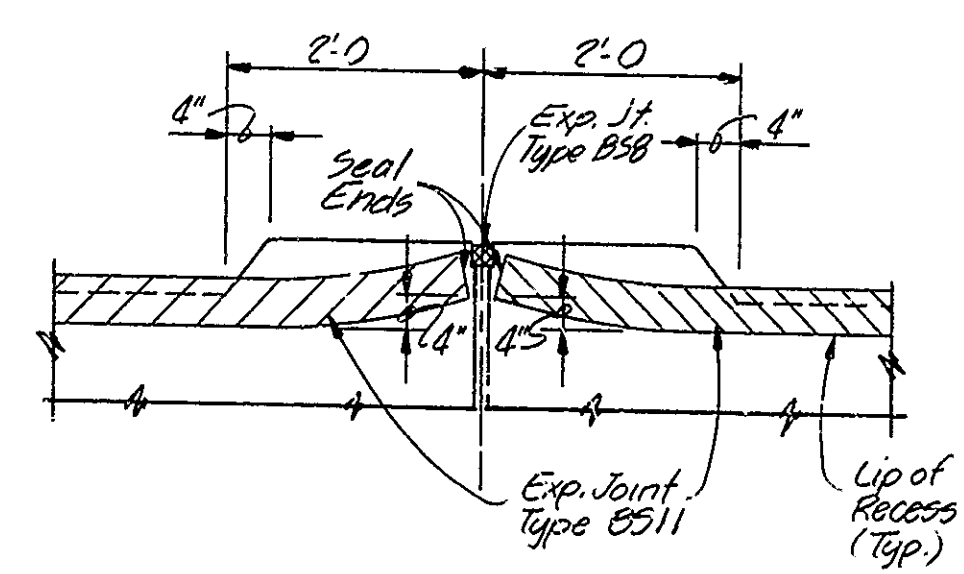
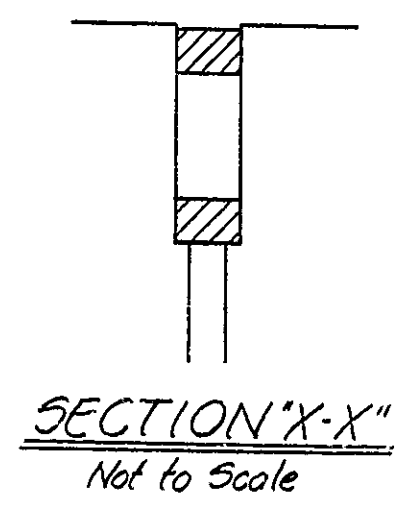
* To be determined in the field.
 (See the Special Provisions)



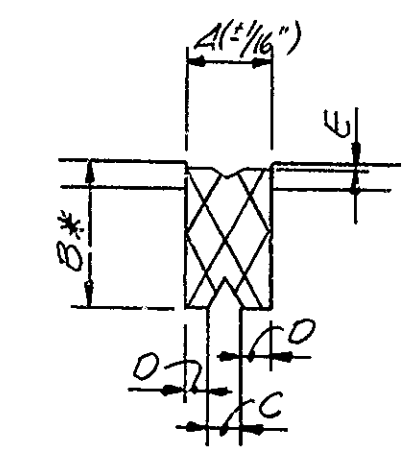
PAVEMENT OFFSETS
 (STRUCTURE: 4049A)
 Scale: 3/8" = 1'-0"



CURB SECTION AT BENTS NO. 1 & NO. 5
 Scale: 1" = 1'-0"



BS JOINT TREATMENT AT CENTER CURB
 (STRUCTURE: 4050A)
 Scale: 3/4" = 1'-0"



EXP. JOINT TYPE BS
 Not to Scale

DETAILS

INDIANA DEPARTMENT OF HIGHWAYS

ST. JOSEPH COUNTY

SCALE: AS NOTED

DATE: Dec. 21, 1994

SUBMITTED FOR APPROVAL: *Robert J. Smith*

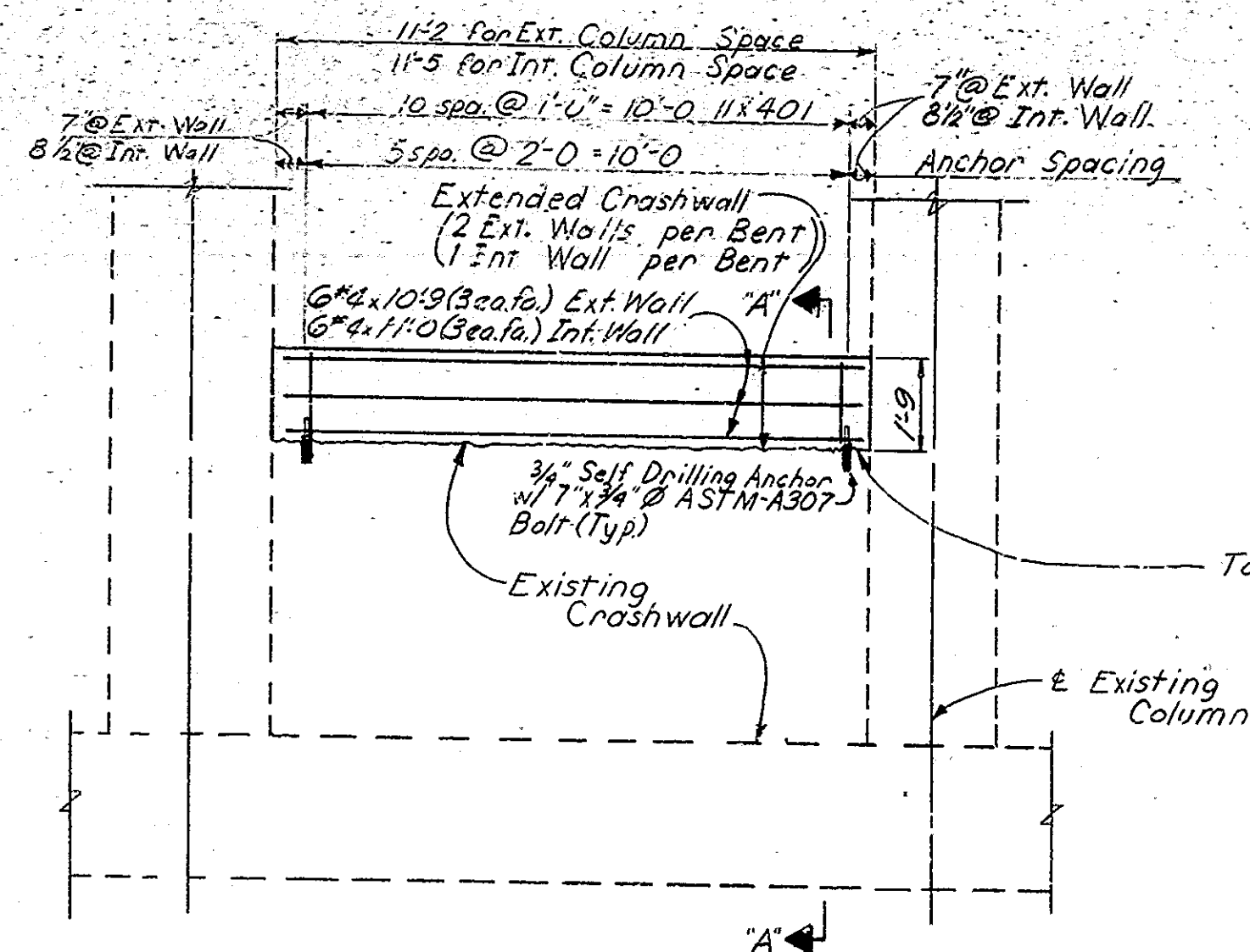
DRAWING: D3 OF 5 SHEET: 6 OF 19

PROJECT: FR-133-3(4)

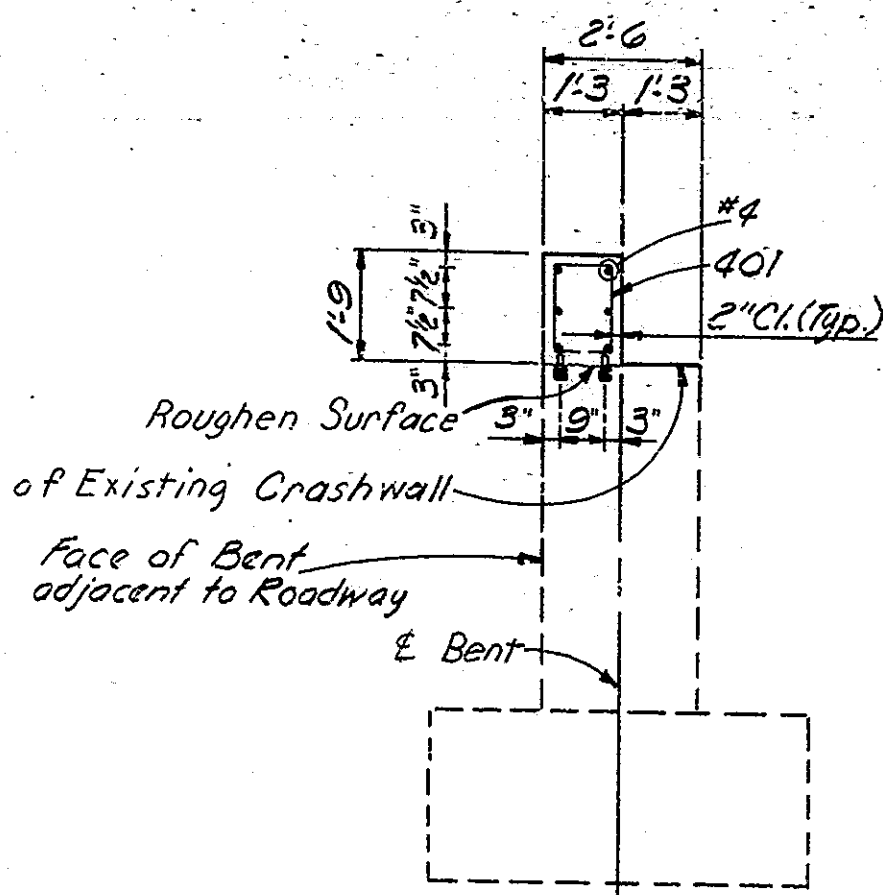
CONTRACT NO. B-15124

BRIDGE FILE: 20-71-4050A & 20-71-4049A

DESIGNED: J. Brand, C.K.O., B. Smith
 DRAWN: T. B. H. C.K.O.
 TRACED: C.K.O.



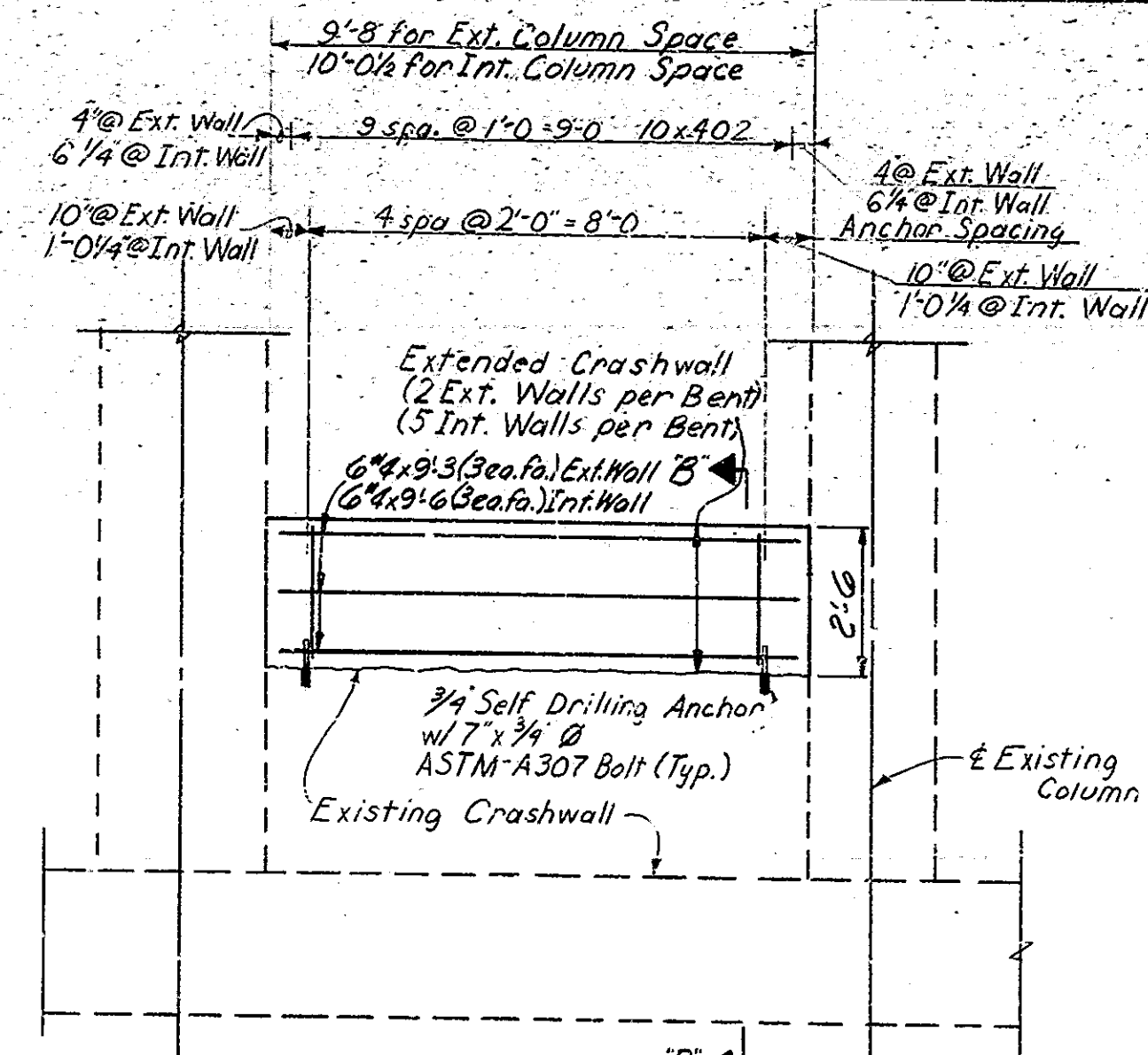
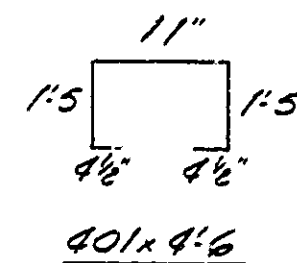
PARTIAL ELEVATION OF BENT NO. 2 or BENT NO. 4
SHOWING EXTENDED CRASHWALLS
BRIDGE FILE: 20-71-4049A
Scale: 3/8"=1'-0"



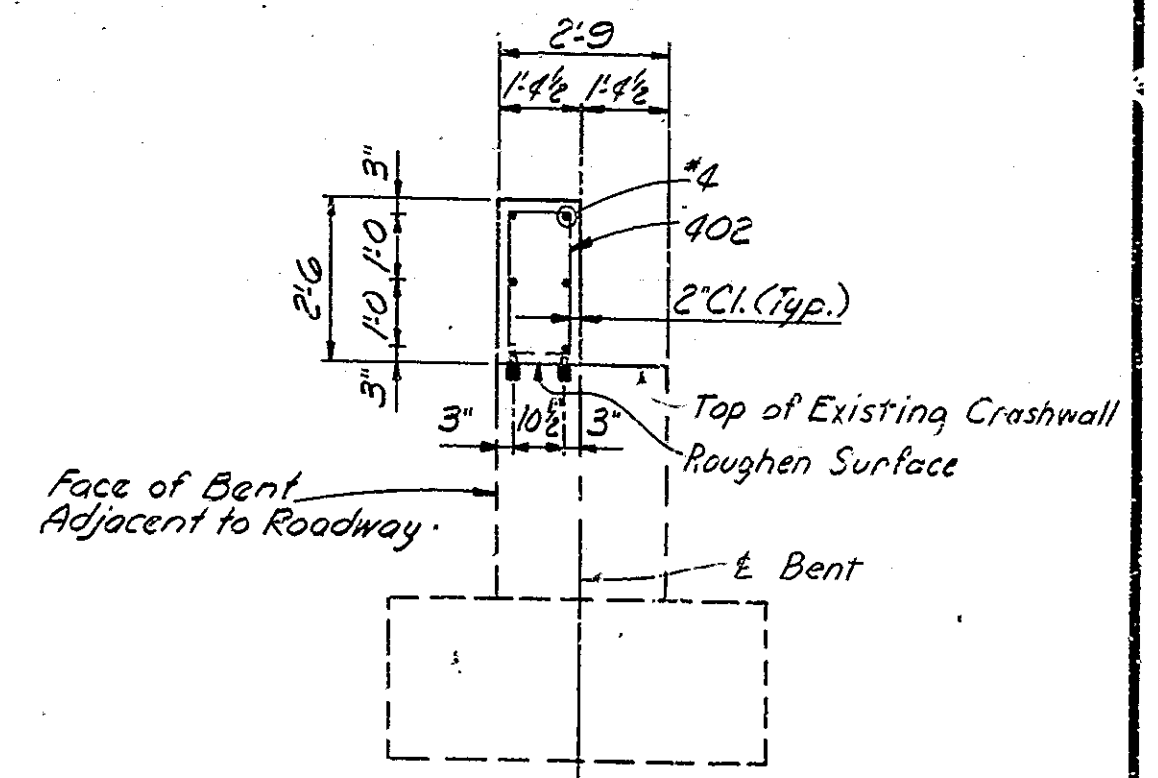
SECTION "A-A"
Scale: 3/8"=1'-0"

**BILL OF MATERIALS
EXTENDED CRASHWALLS
BENT NO. 2
(Bent No. 4 Same)**

REINFORCING STEEL			
Mark on Size	No. of Bars	Length (Ft.)	Weight (Lbs.)
401	33	4'-6"	
#4	4	11'-0"	
#4	8	10'-9"	
Total Steel			186
CONCRETE			
Class B in Extended Crashwall			2.7 Cys
MISCELLANEOUS			
3/4" Expansion Anchors			36 Each



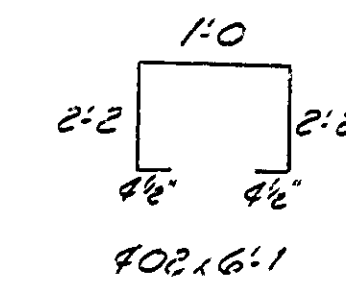
PARTIAL ELEVATION OF BENT NO. 2 or BENT NO. 4
SHOWING EXTENDED CRASHWALLS
BRIDGE FILE: 20-71-4050A
Scale: 3/8"=1'-0"



SECTION "B-B"
Scale: 3/8"=1'-0"

**BILL OF MATERIALS
EXTENDED CRASHWALLS
BENT NO. 2
(Bent No. 4 Same)**

REINFORCING STEEL			
Mark on Size	No. of Bars	Length (Ft.)	Weight (Lbs.)
402	70	2'-7"	
#4	30	5'	
#4	12	9'-3"	
Total Steel			549
CONCRETE			
Class B in Extended Crashwall			8.9 Cys
MISCELLANEOUS			
3/4" Expansion Anchors			70 Each



NOTE
See Bridge Standard C1 for Reinforcing Bar Notes.

DESIGNED: J. BRAND, C.K.D. & S.MITH
DRAWN: M. BIRD, C.K.D. SHEETZ
TRACED: C.K.D.

CRASHWALL DETAILS
INDIANA DEPARTMENT OF HIGHWAYS
ST. JOSEPH COUNTY

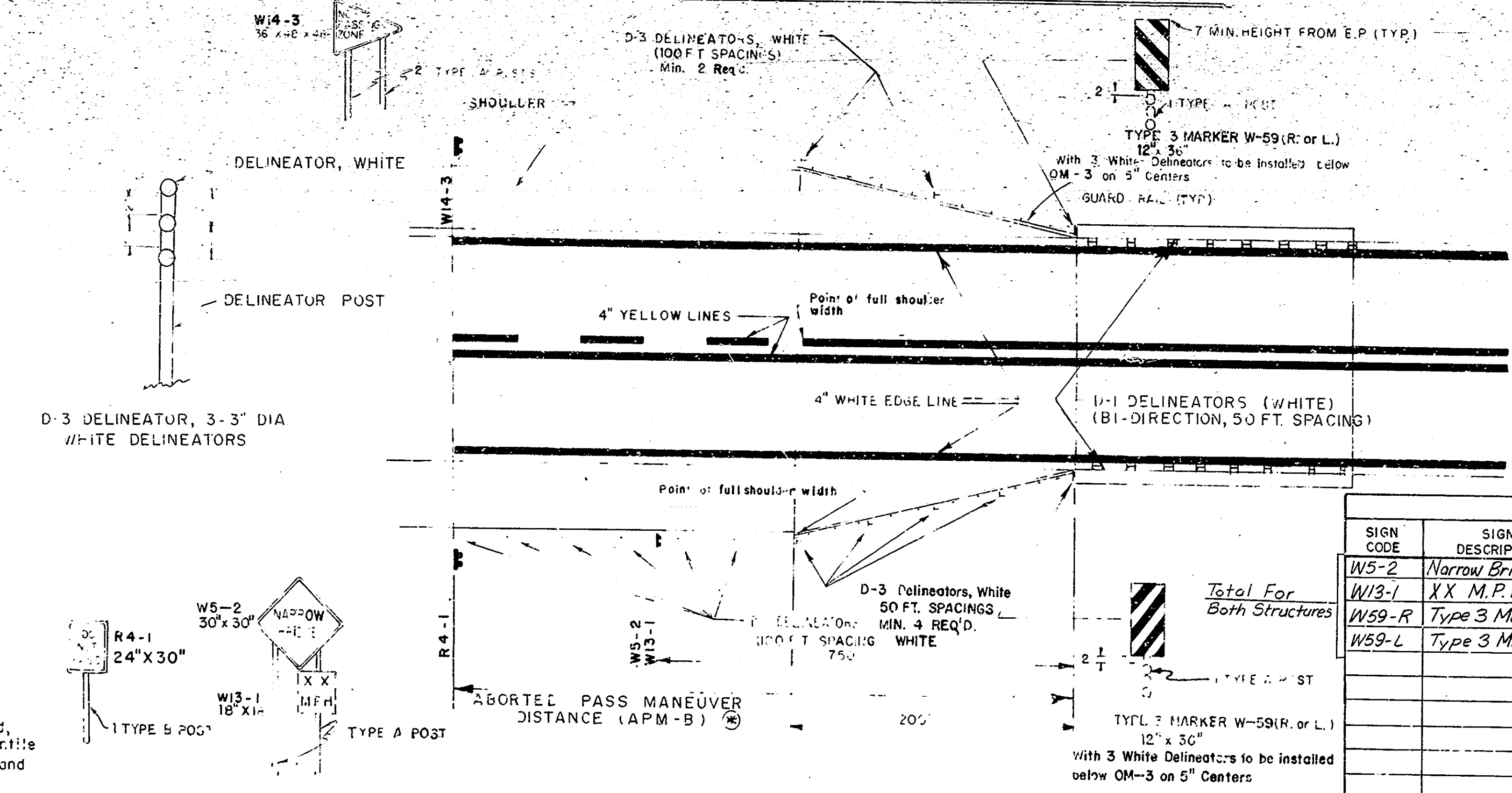
SCALE: AS NOTED DATE: DEC 21, 1984
SUBMITTED FOR APPROVAL: Robert L. Smith

DRAWING: D4 OF 5 SHEET: 7 OF 19
PROJECT: FR-153-B(4)
CONTRACT NO. B-15124
BRIDGE FILE: 20-71-4050A & 20-71-4049A

F - D-1 OR D-3 DELINEATOR
H - D-1 DELINEATOR (BI-DIRECTIONAL)

PLACEMENT OF TRAFFIC CONTROL DEVICES AT NARROW BRIDGES

- GENERAL NOTES**
- Pavement Markings are optional unless the road has markings currently.
 - No Passing Zone signs are required if ADT is greater than 750 or if posted speed is 50 MPH or greater.
 - Guard rail should be installed at all narrow bridges, as it is desirable.
 - See appropriate Guard rail standard sheets for guard rail placement.
 - Sign sizes shown are Standard. Larger sizes may be used if desired.
 - Signs and pavement markings shall be in accordance with the current Indiana Manual on Uniform Traffic Control Devices.
 - Any bridge, culvert, obstruction, or approach having a clear two-way roadway of 18ft. to 22ft. inclusive or having a roadway clearance less than the approach pavement or where the handrail or curbs is 3ft. or less from the edge of pavement shall be considered a NARROW BRIDGE.
 - The W5-2 sign is to be installed when these conditions are met.
 - No passing zone are not to be shown for dual lane divided or 4 lane undivided highways.
 - D-3 Delineators are required if ADT is greater than 500.
 - Delineators are at locations where sight distance restrictions exist. The 100 ft spacing may be varied in developed areas to insure their existence does not create a nuisance.
 - Or more if required because of sight distance.
 - The minimum length of the "No Passing Zone", if marked, shall be the "Distance (APM-B)". If the 85th percentile speed is not known, add 5 MPH to the posted limit and use the appropriate "Distance (APM-B)".



ABORTED PASS MANEUVER DISTANCE

85th Percentile Speed	Distance (APM-B)
30	350'
35	400'
40	450'
45	500'
50	550'
55	600'
60	650'

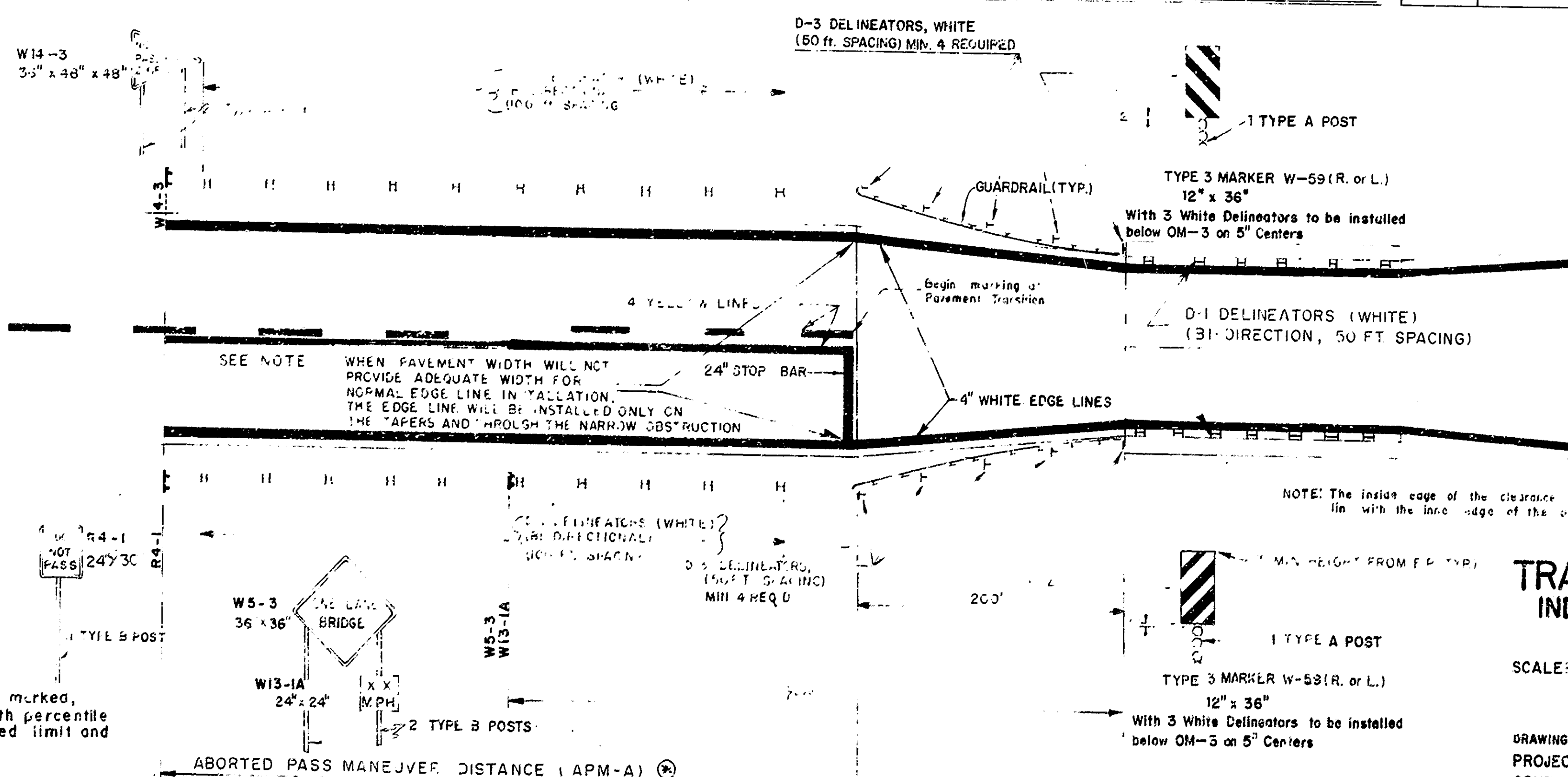
NOTE: The inside edge of the clearance marker shall be in line with the inner edge of the obstruction.

SIGN AND POST SUMMARY								
SIGN CODE	SIGN DESCRIPTION	Nº of SIGNS	SHEETING TYPE	THICKNESS (INCHES)	TOT. AREA SFT.	Nº of POSTS	POST TYPE	TOT. LENGTH LFT.
W5-2	Narrow Bridge	4	II	0.08"	25.0	8	A	108
W13-1	XX M.P.H.	4	II	0.08"	9.0	-	-	-
W59-R	Type 3 Marker	4	II	0.08"	12.0	4	A	56
W59-L	Type 3 Marker	4	II	0.08"	12.0	4	A	56
Total For Both Structures								

F - D-1 OR D-3 DELINEATOR
H - D-1 DELINEATOR (BI-DIRECTIONAL)

PLACEMENT OF TRAFFIC CONTROL DEVICES AT ONE LANE BRIDGES

- GENERAL NOTES**
- Guard rail should be installed at all one lane bridges, as it is desirable.
 - See appropriate guard rail standard sheets for guard rail placement.
 - Sign sizes shown are Standard. Larger sizes may be used if desired.
 - Any bridge, culvert, obstruction, or approach less than 18 feet between opposite vertical surfaces shall be considered a "ONE LANE BRIDGE". The W5-3 sign is to be installed when these conditions are met.
 - Pavement markings are optional, unless the road has markings currently or has an ADT greater than 250.
 - No passing signs are required if ADT is greater than 750 or if the posted speed is 50 MPH or greater.
 - D-3 Delineators are required if ADT is greater than 250.
 - D-1 Delineators are usually not necessary but should be considered at locations where sight distance restrictions exist. The 100 ft spacing may be varied in developed areas to insure their existence does not create a nuisance. Existing conditions may warrant the use of delineators on one side only.
 - Or more if required because of sight distance.
 - The minimum length of the "No Passing Zone", if marked, shall be the "Distance (APM-A)". If the 85th percentile speed is not known, add 5 M.P.H. to the posted limit and use the appropriate "Distance (APM-A)".



ABORTED PASS MANEUVER DISTANCE

85th Percentile Speed	Distance (APM-A)
30	400'
35	500'
40	600'
45	700'
50	800'
55	900'
60	1000'

TRAFFIC SIGN DETAILS SHEET INDIANA DEPARTMENT OF HIGHWAYS

SCALE - None
DATE - January 4, 1985
DRAWING - D5 OF 5
PROJECT - FR-153-8(4)
CONTRACT NO B-15124
BRIDGE FILE - 20-71-4099A & 20-71-4050A

