

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
HIG-62-1739

FED. RD. DIVISION	STATE	PROJECT	1
2	OHIO	STATE	7

HIGHLAND COUNTY
HIG-62-1739

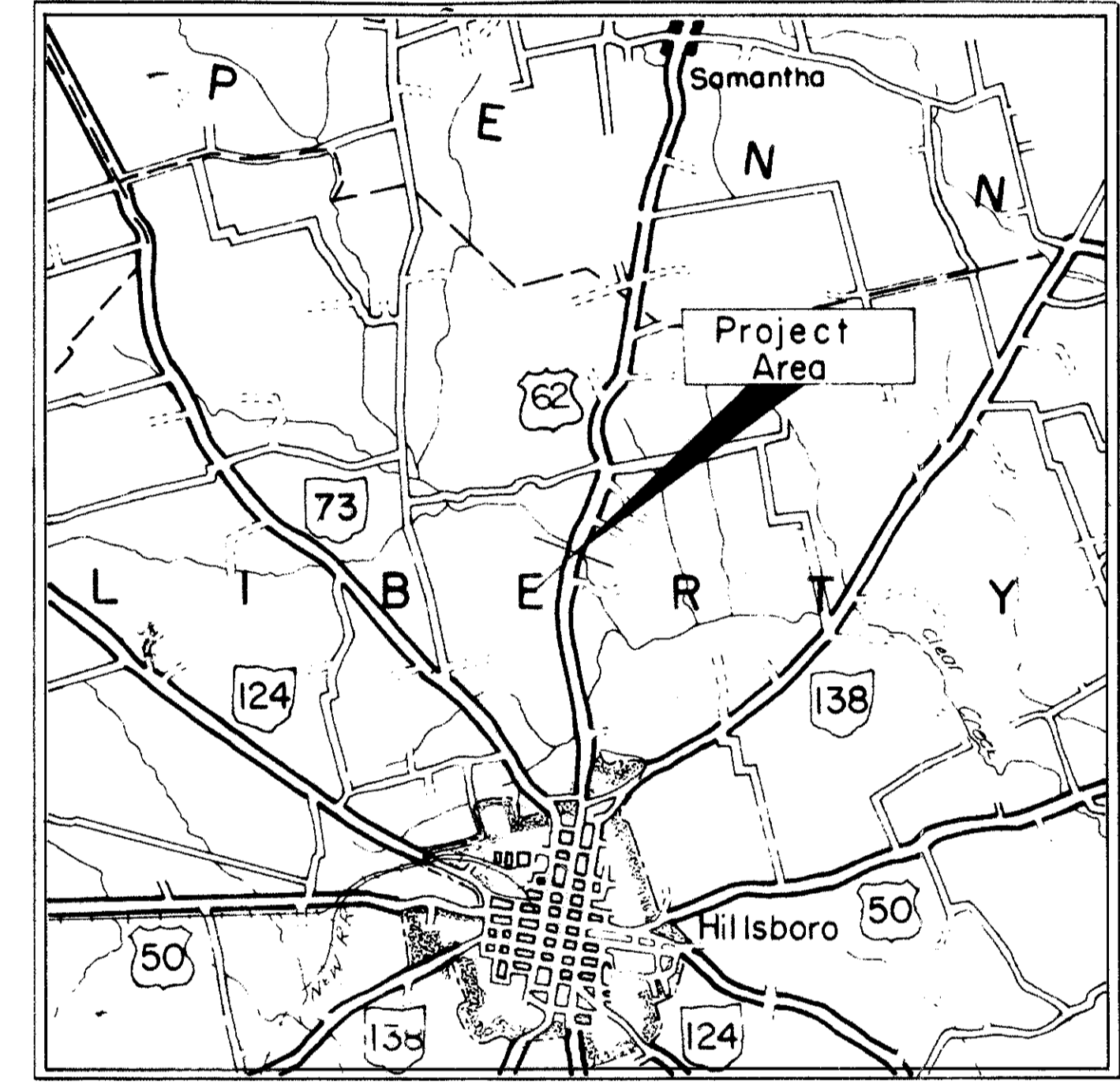
PLAN NO BR-16

BRIDGE OVER CLEAR CREEK
LIBERTY TOWNSHIP
HIGHLAND COUNTY

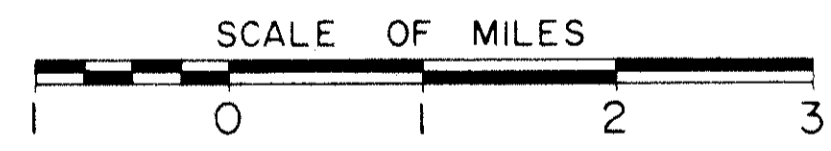
STRUCTURE IMPROVEMENT — BRIDGE MAJOR REPAIR

CONVENTIONAL SIGNS

County Line —————	Limited Access (only) ——— LA ———
Township Line —————	Right of Way (only) ——— RW ———
Section Line —————	Limited Access & Right of Way ——— LA&RW ———
Corporation Line ——— or ———	Existing Right of Way ———
Fence Line (existing) — x — (proposed) — x —	Property Line ——— (in existing fence) — x —
Center Line ——— 352 ——— 353 ———	Railroad ———
Trees , Stumps	Guardrail (existing) — o — o — (proposed) — o — o —
Utility Poles: Telephone ϕ , Power ϕ , Light ϕ	



LOCATION MAP



Portion to be improved ———

State Roads ———

Other Roads ———

SCALES

Structure Details — Scales Shown

INDEX OF SHEETS

Title Sheet ———	1
Plan, Profile & Right-of-Way ———	2
Estimated Quantities & Notes ———	3
Structure Details ———	4-6
Traffic Control & Work Procedure ———	7

LINE DATA

Begin Project	Sta. 918+19.45
End Project	Sta. 918+95.49
Net Length of Project	76.04 Lin. Ft. or 0.014 Mile
Begin Work	Sta. 906+60.00
End Work	Sta. 930+75.00
	2415.00 Lin. Ft. or 0.457 Mile

1969 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Highways, including changes and supplemental specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: *W. J. R. Runk*
Date: 4-25-69 Division Deputy Director

Approved: *C. H. Alwater*
Date: 5-2-69 Engineer of Bridges

Approved: *J. S. [Signature]*
Date: 5-14-69 Engineer of Maintenance

Approved: *[Signature]*
Date: 5-14-69 Deputy Director of Operations

Approved: _____
Date: _____ Deputy Director of Right of Way

Approved: *Thomas M. Major*
Date: 5/14/69 Deputy Director of Planning & Programming

Approved: *F. W. Wilson*
Date: 5-14-69 First Assistant Director

Approved: *P. E. Masten*
Date: 5-14-69 Director of Highways

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

MC-3	11-1-68		
GR-2A	1-1-67		

SUPPLEMENTAL SPECIFICATIONS

808	1-1-69
812	1-1-67
825	1-1-69
929	3-28-67

UTILITY OWNERS
 Columbus & Southern Ohio Electric Co
 215 N. Front St.
 Columbus, Ohio 43215

Ohio Bell Telephone Co.
 3233 Woodman Drive
 Dayton, Ohio

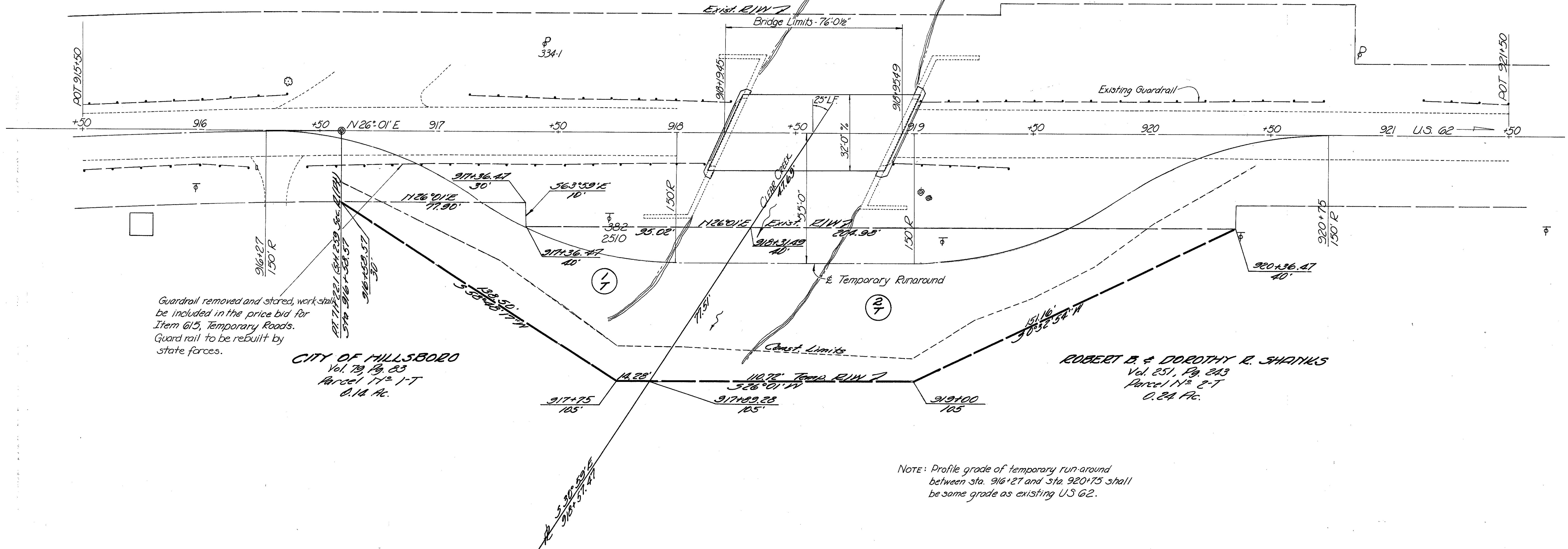
V.M.S. 2414
 LIBERTY TOWNSHIP
 HIGHLAND COUNTY

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

2
7

HIG-62-1739

PLAN No BR-16

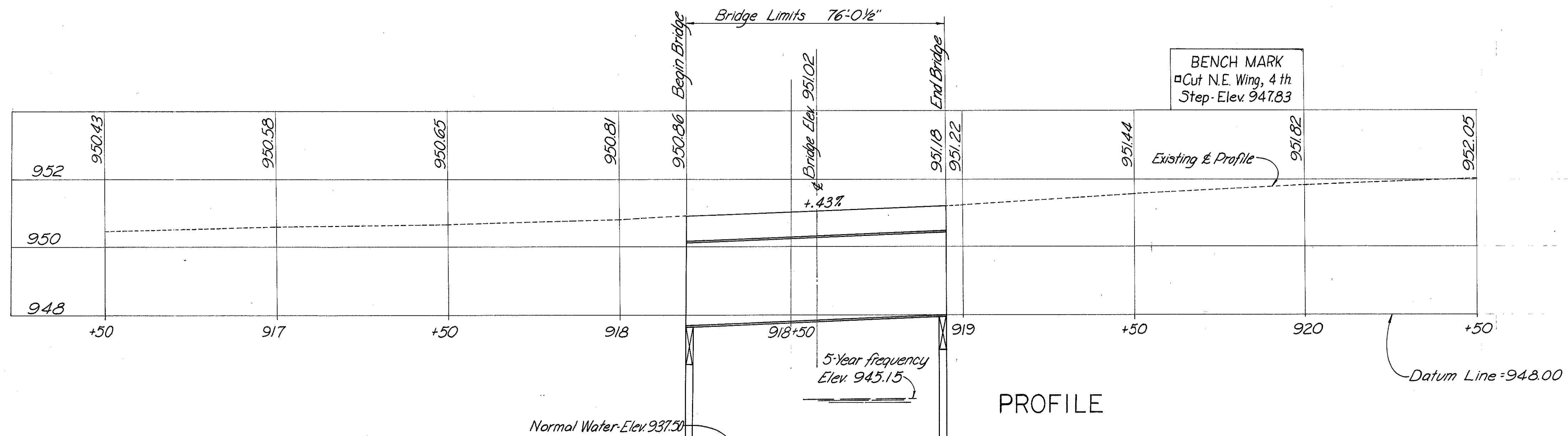


Guardrail removed and stored, work shall be included in the price bid for Item 615, Temporary Roads. Guard rail to be rebuilt by state forces.

CITY OF HILLSBORO
 Vol. 79, Pg. 83
 Parcel 17-1-T
 0.14 Ac.

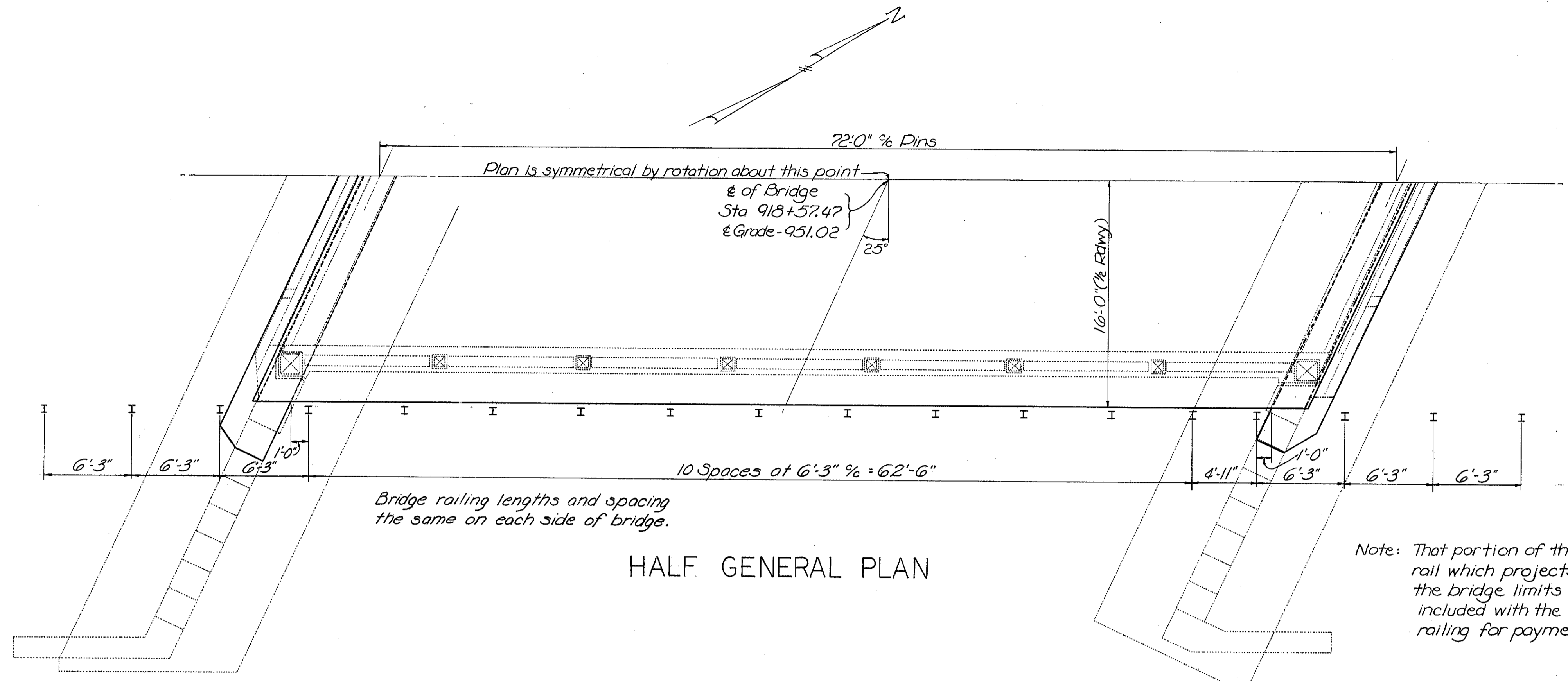
ROBERT B. & DOROTHY R. SHANKS
 Vol. 251, Pg. 243
 Parcel 11-2-T
 0.24 Ac.

NOTE: Profile grade of temporary run-around between sta. 916+27 and Sta. 920+75 shall be same grade as existing US 62.



PLAN, PROFILE AND
 RIGHT OF WAY
 FOR BRIDGE REPAIR
 BR. No. HIG-62-1739
 OVER CLEAR CREEK
 HIGHLAND COUNTY

PREPARED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.A.B.	D.A.B.	D.E.B.				



GENERAL NOTES

REFERENCE: Detailed drawings of the existing bridge no. HIG-62-1739 may be inspected in the office of the Bureau of Bridges in Columbus or the Division Office in Chillicothe.

DIMENSION: The contractor shall verify all dimensions of the existing structure in the field before ordering structural steel, etc., required for this construction.

PROPOSED WORK: The work proposed is outlined in detail on the plan and under the portion of notes called "Proposed Work."

WELDING: All welding shall be class "A" except as otherwise shown.

FIELD OFFICE: The contractor shall provide a 150 Sq. Ft. minimum field office in accordance with Item 619. The contractor shall have a telephone installed and maintained during the construction of this project.

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association for Highway Bridges, 1965, including the Ohio "Supplement" to these specifications.

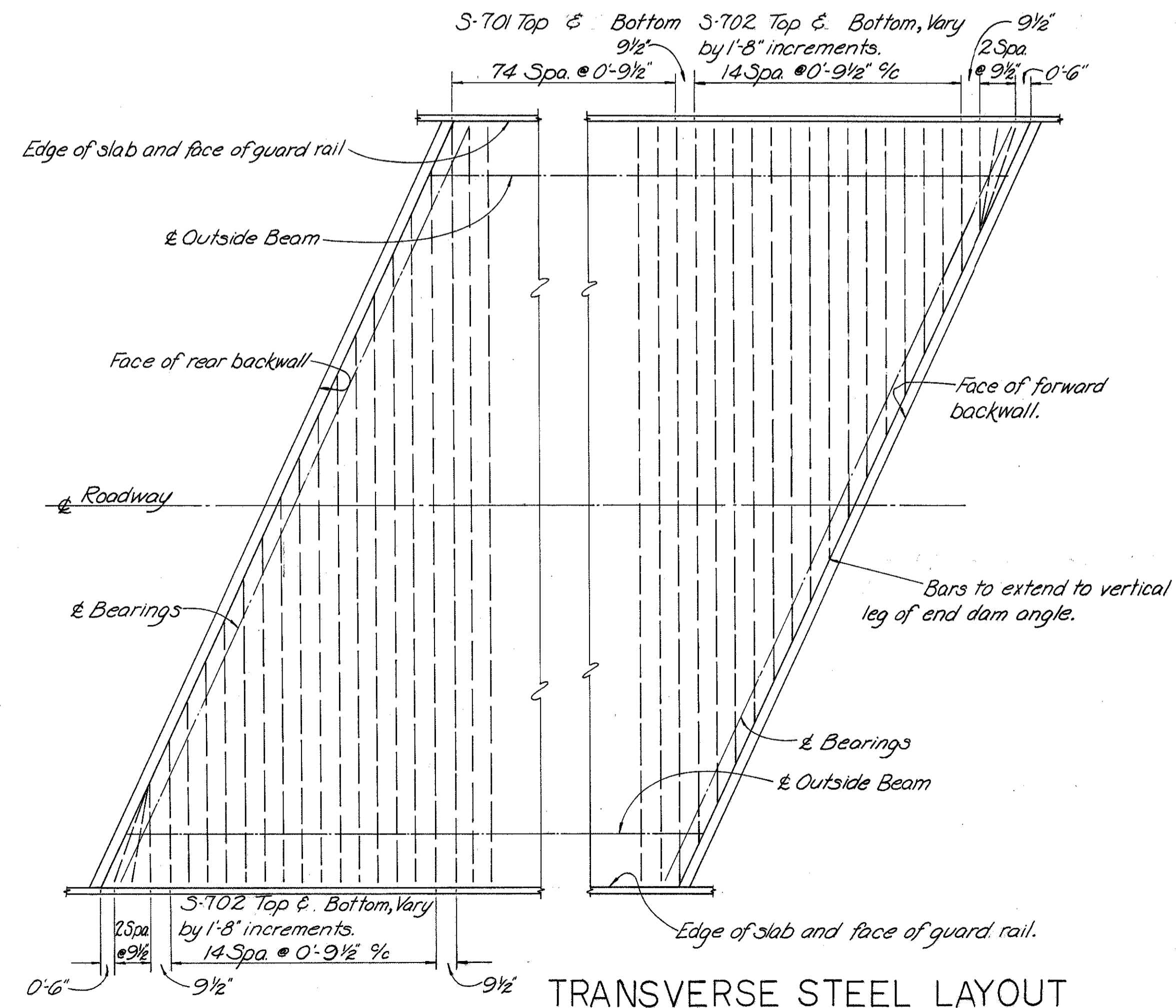
DESIGN DATA:
 Design Loading HS-15-44
 Concrete Class C-unit stress 1200 p.s.i. for superstructure.
 Concrete Class E-unit stress 1333 p.s.i. for substructure.
 Reinforcing steel ASTM A-615, A-616 or A-617 unit stress 20,000 p.s.i.
 New structural steel ASTM A-36 basic unit stress 20,000 p.s.i.

TEMPORARY RUN-AROUND, BRIDGE AND APPROACHES: The temporary run-around bridge loading shall be HS-15-44, with unit stresses increased 50%. The temporary structure shall conform to the requirement of Item 502. The approaches and bridge shall conform to the line and grade shown on the plan. The bridge shall have a roadway width of 22 feet. The approach pavement shall be class "B" and have a minimum width of 20 feet. To provide clearance for the temporary run-around approaches a portion of the existing guardrail shall be carefully removed and stored. After the run-around embankment has been removed the guardrail shall be re-erected by state forces. Payment for this removal and storing shall be included in the price bid for Item 615, temporary roads. The temporary run-around, bridge and approaches, when no longer needed to maintain traffic, shall be removed and disposed of by the contractor. The temporary bridge shall become the property of the contractor. After the above work has been completed, the right of way, temporary and existing, shall be restored to the original slope and elevation.

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the owners. The contractor and owners are requested to cooperate by arranging their work in such a manner that inconvenience to either would be held to a minimum.

PAINT: Painting of structural steel shall be according to Item 514 except field coat shall meet the requirements of supplemental specification 929.

CONT. ON THIS SHEET



GENERAL NOTES CONT.

JACKING SUPERSTRUCTURE: The superstructure shall be jacked at the abutments. A sufficient number of jacks shall be used to raise and properly position the superstructure. The rocker and bolster assemblies shall be sand blast cleaned, new swedge bolts and shims shall be installed as required. The operation of jacking and adjusting the bearing assemblies, installing swedge bolts and shims shall be completed before any concrete is placed. Payment for jacking and adjusting bearing assemblies shall be included in Item 513, the lump sum bid for "Raise, support & lower superstructure, adjust rockers & bolsters." The Contractors attention is directed to Section 107.12

REMOVED MATERIALS: Removed materials shall become the property of the contractor and shall be removed from the job site by him.

CONCRETE SURFACE TREATMENT: This work shall consist of furnishing and applying a concrete surface treatment to the top of concrete deck, fascia of concrete deck and abutment bridge seats.

ESTIMATED QUANTITIES		DESCRIPTION
Item	Total Unit	
202	Lump Sum	Portions of existing structure removed
502	Lump Sum	Temporary run-around bridge
503	30 Cu. Yd.	Unclassified excavation
509	20,336 Lb.	Reinforcing steel (includes dowels)
510	92 Ea.	Dowel holes
511	61 Cu. Yd.	Class C concrete, superstructure
511	20 Cu. Yd.	Class C concrete, abutments and wings
512	22 Sq. Yd.	Type "B" waterproofing
513	18,611 Lb.	Structural steel
513	Lump Sum	Raise, support & lower superstructure, adjust rockers & bolsters
514	Lump Sum	Field painting of new structural steel, (one prime coat and two complete field coats)
514	Lump Sum	Clean & paint existing structural steel, (one prime coat and two complete field coats)
516	13 Sq. Ft.	Preformed expansion joint filler
517	152 Lin. Ft.	Railing, (2 deep beam rails, with steel posts and bolts)
518	Lump Sum	Porous backfill
519	30 Sq. Ft.	Patching concrete structures
615	Lump Sum	Temporary road
615	675 Sq. Yd.	Class B, temporary pavement
808	61 Units	Water-reducing, set retarding admixture
812	1432 Ea.	Welded steel shear connectors
825	316 Sq. Yd.	Concrete surface treatment
619	Lump Sum	Field office
614	Lump Sum	Maintaining Traffic

NOTES & ESTIMATED QUANTITIES FOR BRIDGE REPAIR BR N° HIG 62 1739 OVER CLEAR CREEK HIGHLAND COUNTY

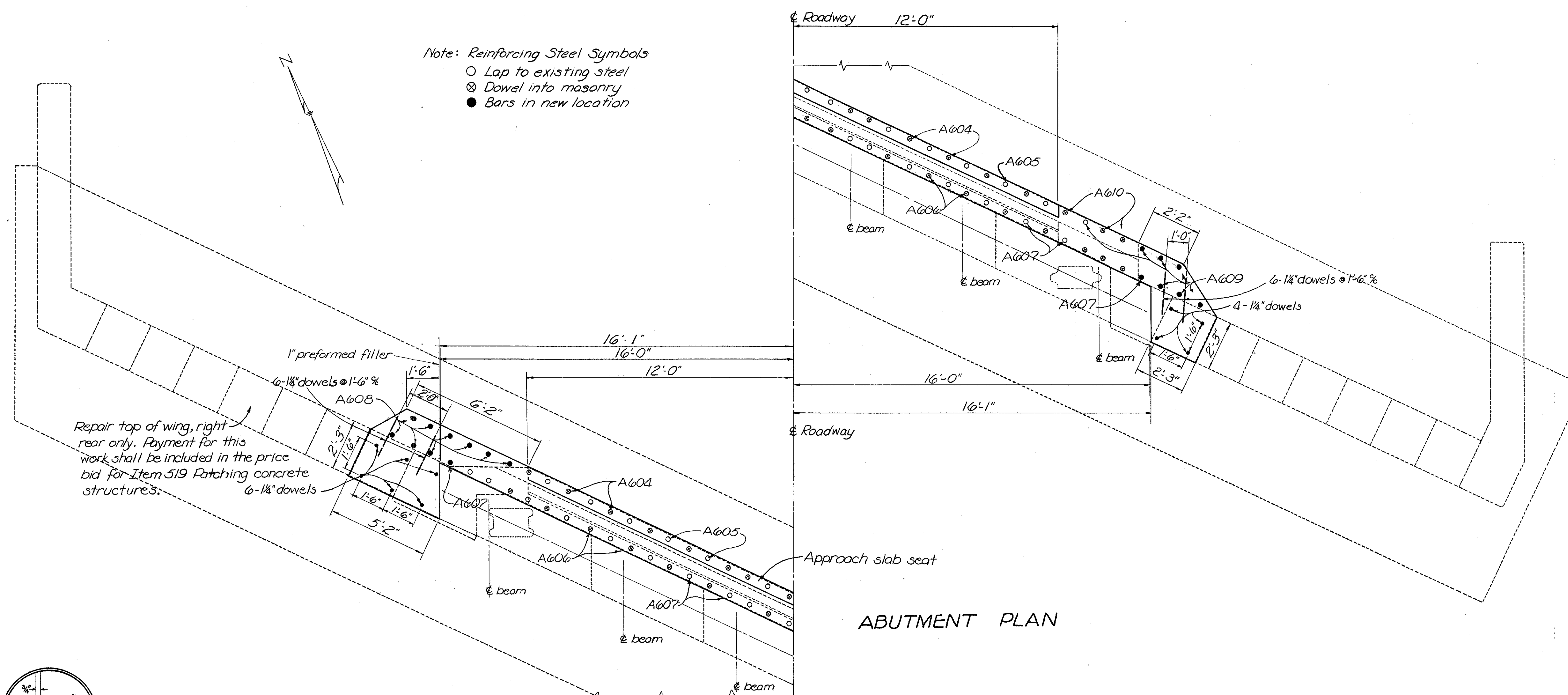
PREPARED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DAB	DAB	DEB				

HIG-62-1739

PLAN N^o BR-16

Note: Reinforcing Steel Symbols

- Lap to existing steel
- ⊗ Dowel into masonry
- Bars in new location

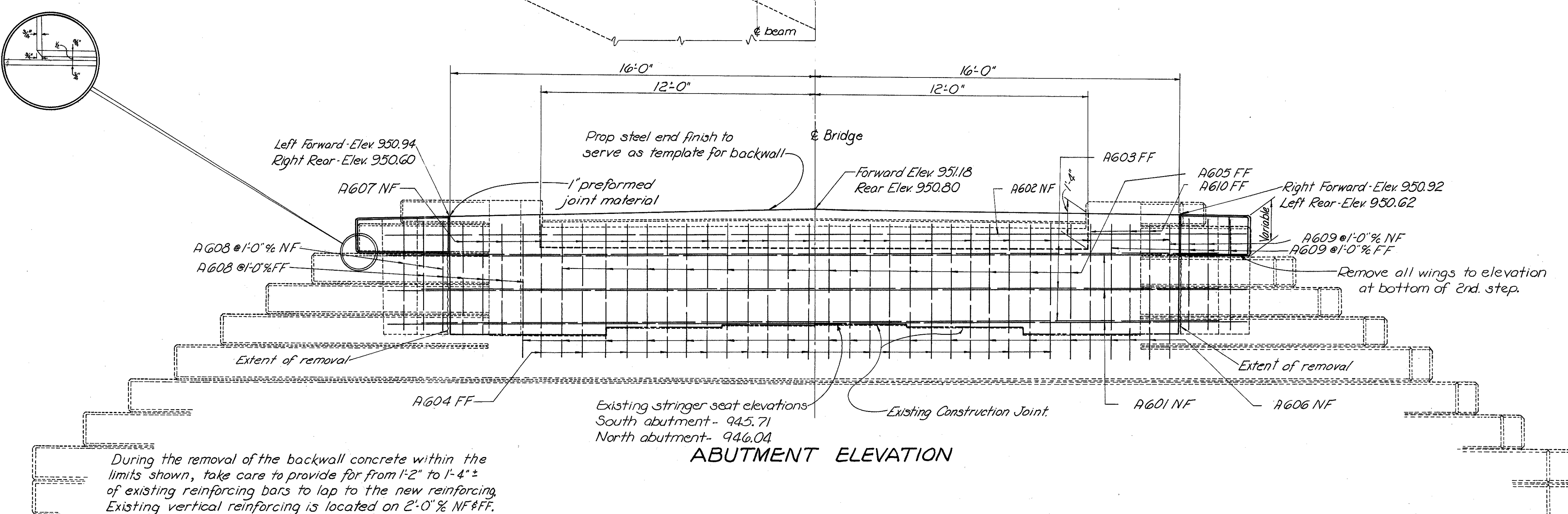


ABUTMENT PLAN

REINFORCING STEEL LIST

Mark	Size	N ^o	Weight	Shape	Length
S702	3/4"	72	2508	St.	Varies from 4'-3" to 29'-10"
S602	3/4"	102	5707	St.	37'-3"
S701	7/8"	150	9658	St.	31'-6"
A601	3/4"	6	371	St.	41'-2"
A602	3/4"	2	124	St.	41'-2"
A603	3/4"	6	352	St.	39'-0"
A604	3/4"	28	217	St.	5'-2"
A605	3/4"	26	140	St.	3'-7"
A606	3/4"	34	319	St.	6'-3"
A607	3/4"	38	271	St.	4'-9"
A608	3/4"	18	135	St.	5'-0"
A609	3/4"	14	107	St.	5'-1"
A610	3/4"	6	60	St.	6'-8"
Dowels	1/4"	44	367	St.	2'-0"
Replacement bars					
RE6	3/4"	1	-	St.	6'-11"
RE7	3/4"	1	-	St.	7'-3"

BAR SIZE is indicated in the bar mark. The first digit where three digits are used indicates the bar size number. For example, A601 is a No. 6 size bar, 3/4" φ.

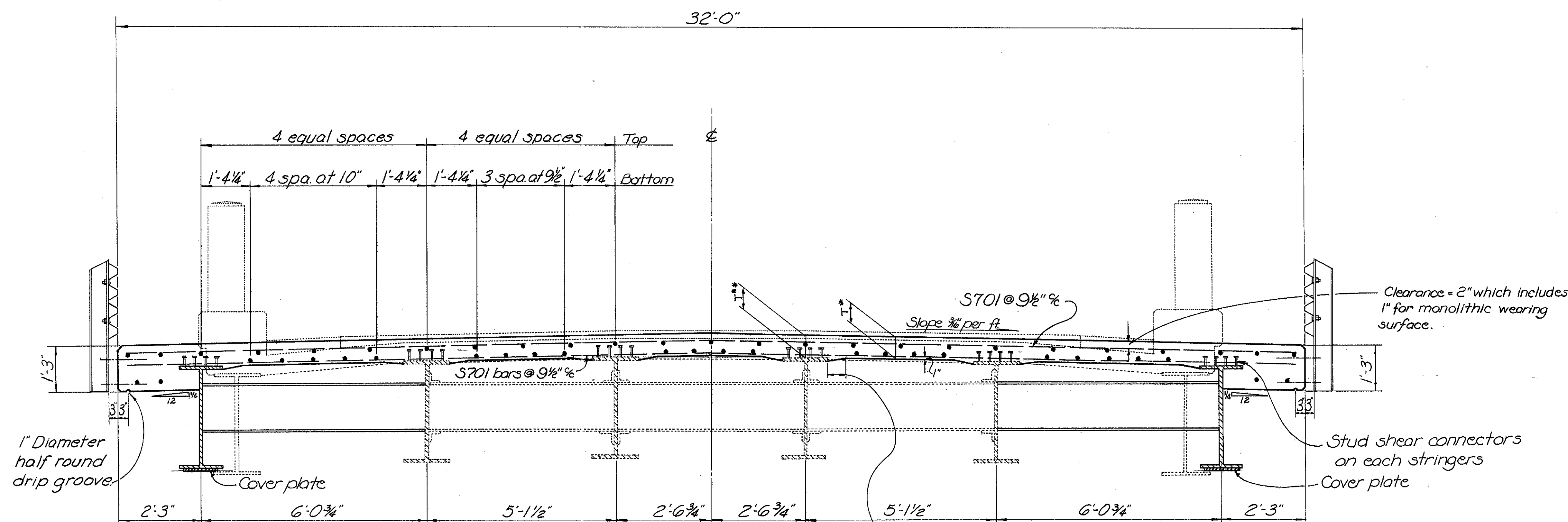


ABUTMENT ELEVATION

SUBSTRUCTURE DETAILS FOR BRIDGE REPAIR BR. N^o HIG-62-1739 OVER CLEAR CREEK HIGHLAND COUNTY

PREPARED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DAB.	DAB.	DEB.				

All longitudinal bars S602
Lap S602 bars 1'-11" minimum.

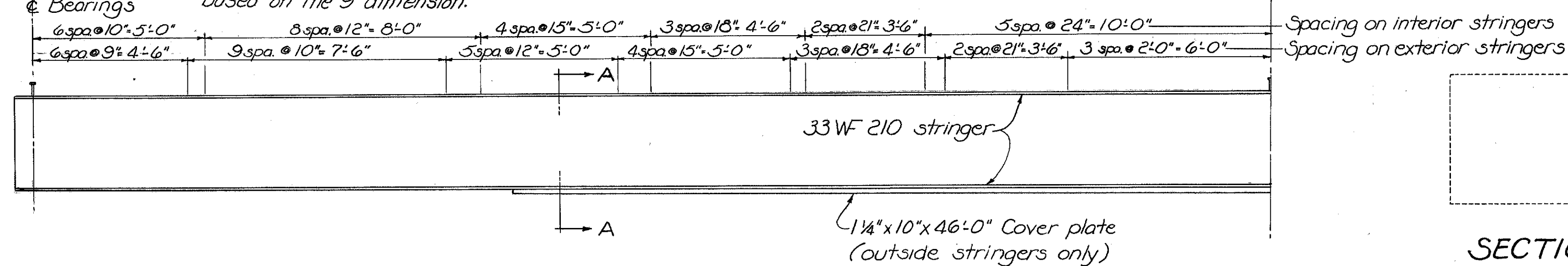


* T = 7 1/4" includes 1" for mono. wearing surface

** Note: This is the nominal dimension. The quantity of deck concrete to be paid for shall be based on this dimension, even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

TRANSVERSE SECTION

A typical haunch width of 9" has been used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width. Payment shall be based on the 9" dimension.

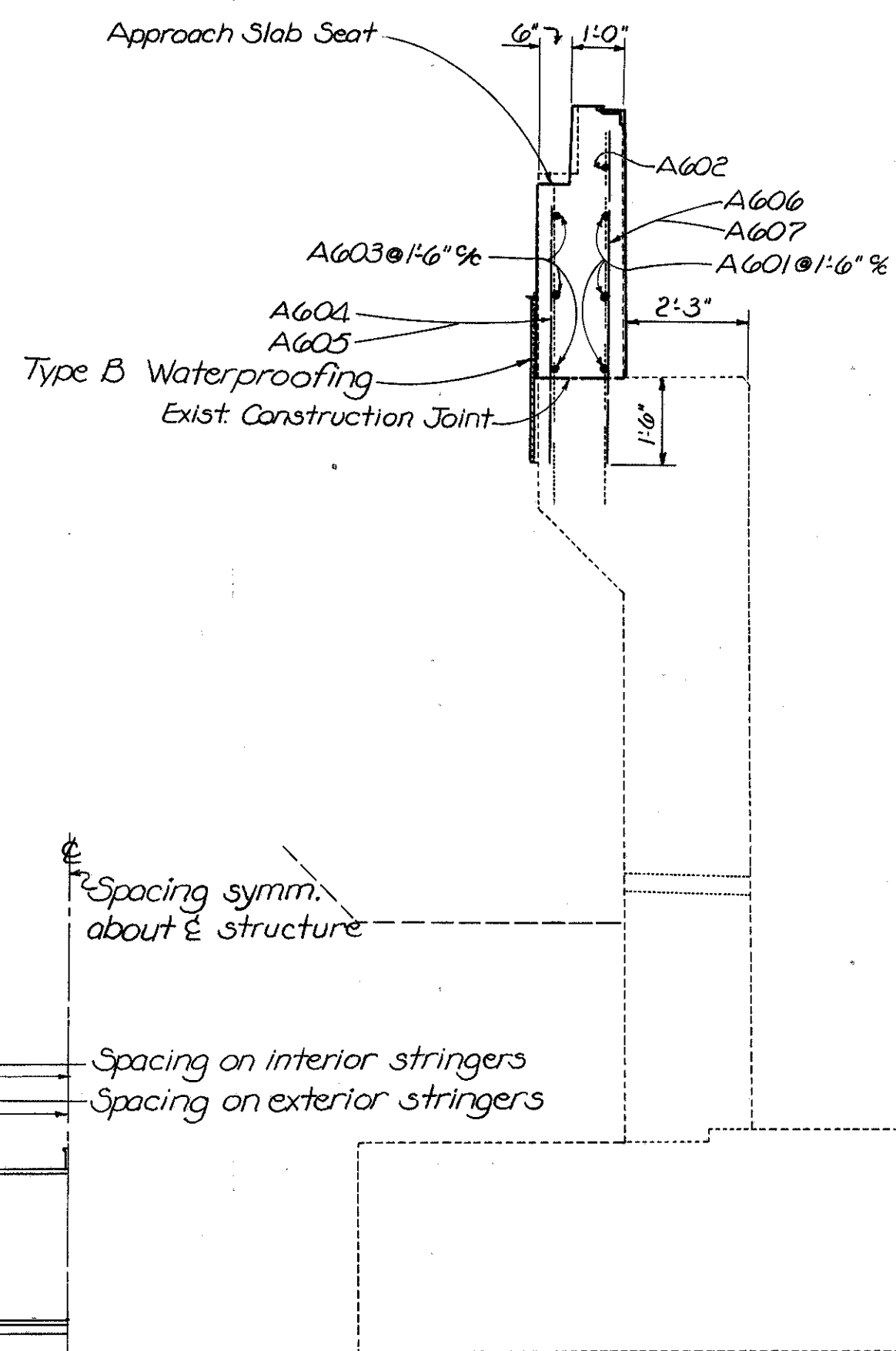


SHEAR CONNECTOR LAYOUT AND COVER PLATE DETAIL

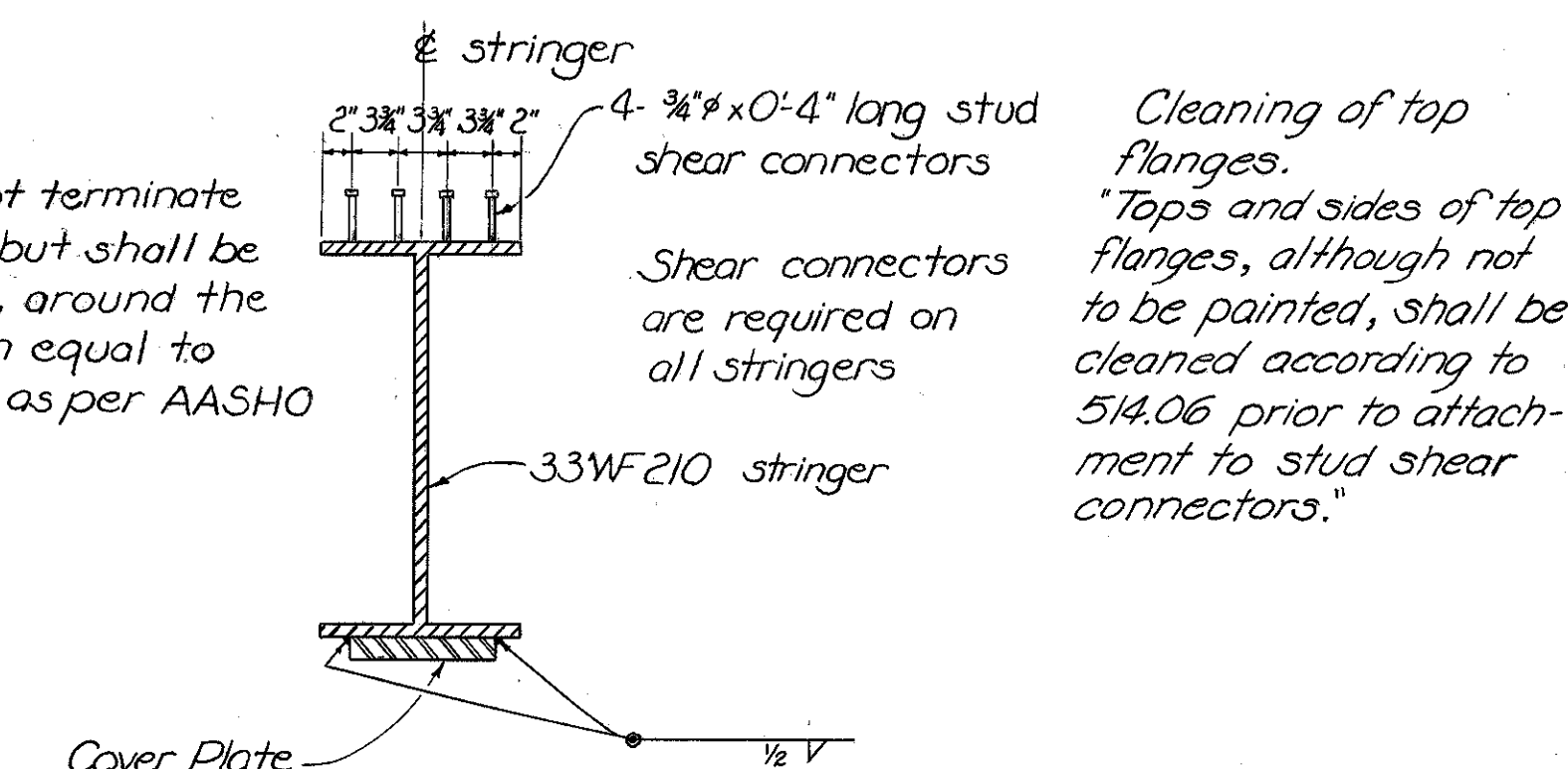
Note: All 1 1/4" x 1'-8" swedge bolts shall be doweled 1'-0" into existing masonry, and their dowel holes shall be paid for under Item 510.

Payment for the swedge bolts shall included in the price bid for Item 513 Structural steel

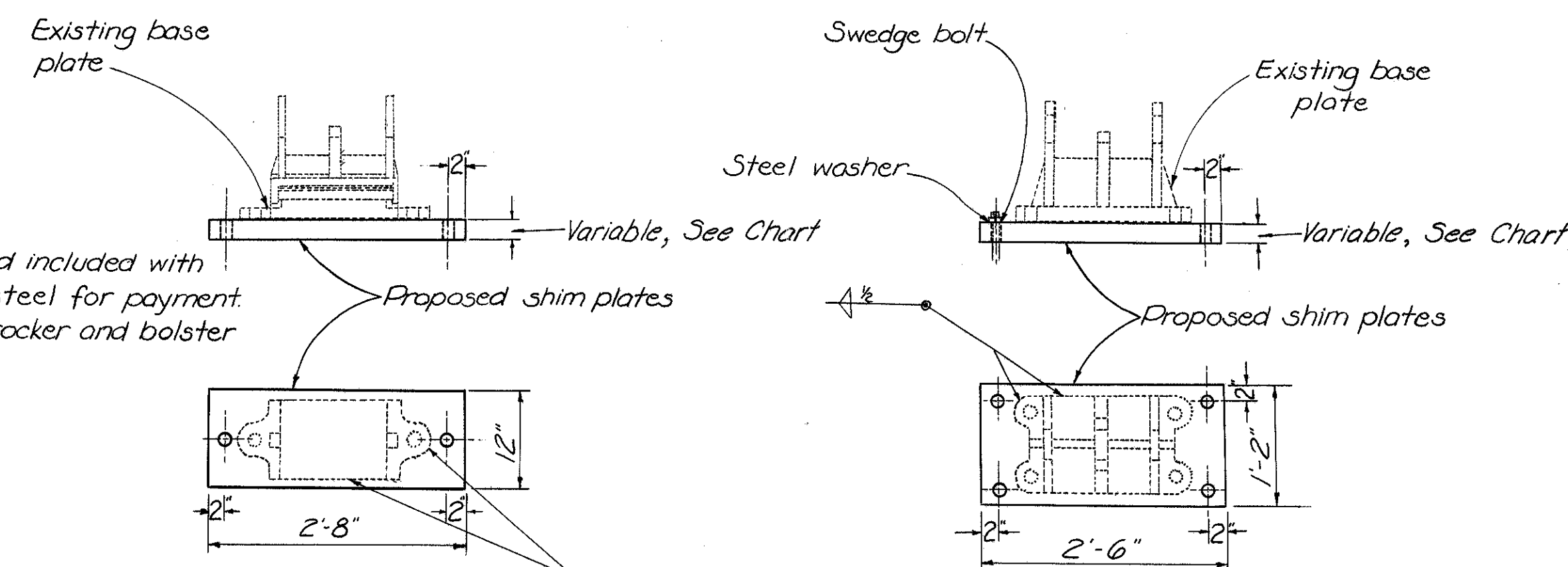
Fillet welds shall not terminate at corners of plate but shall be continuous, full size, around the corners for a length equal to twice the weld size, as per AASHTO sec. 1.7.31.



SECTION AT E



SECTION A-A



REAR ABUTMENT ROCKER PLATE

FORWARD ABUTMENT BOLSTER PLATE

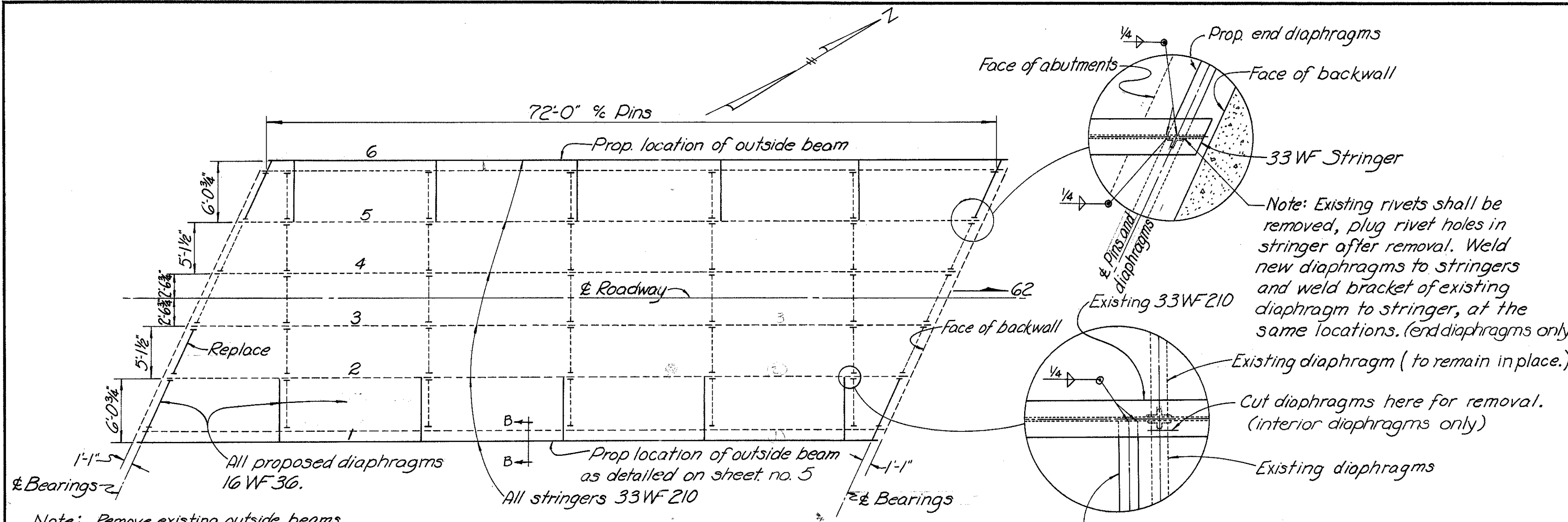
ABUTMENT SHIM CHART		
	Rear Abutment	Forward Abutment
Beam 1	4"	4 1/4"
Beam 2	2 1/2"	3"
Beam 3	2 3/4"	2 3/4"
Beam 4	2 3/4"	2 9/8"
Beam 5	2 9/8"	2 9/8"
Beam 6	5 1/4"	6"

Beams are numbered from east to west

SUPERSTRUCTURE DETAILS FOR BRIDGE REPAIR BR. NO. HIG-62-1739 OVER CLEAR CREEK HIGHLAND COUNTY

HIG-62-1739

PLAN No BR-16



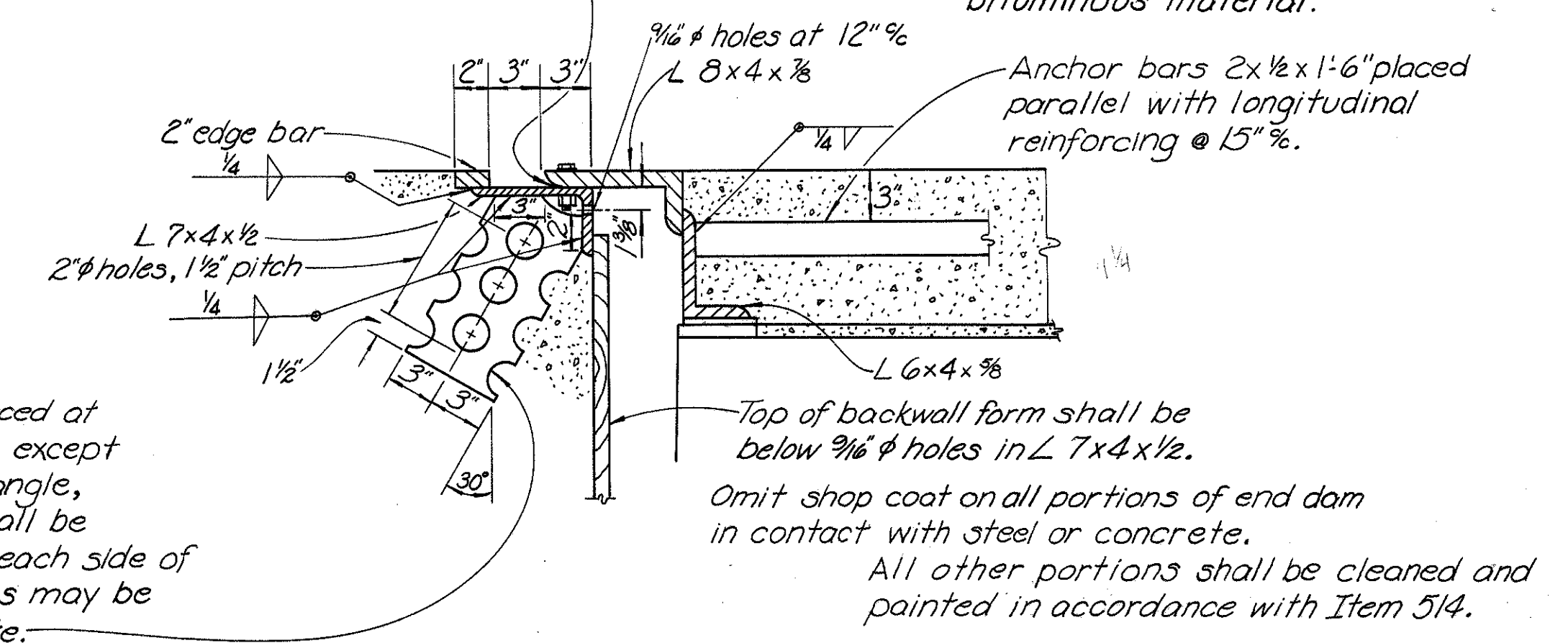
STEEL LAYOUT
SHOWING DIAPHRAGM
REPLACEMENTS
AND STRINGER LOCATION

Note: Remove existing outside beams and diaphragms, install new diaphragms at locations shown and reset outside beams.

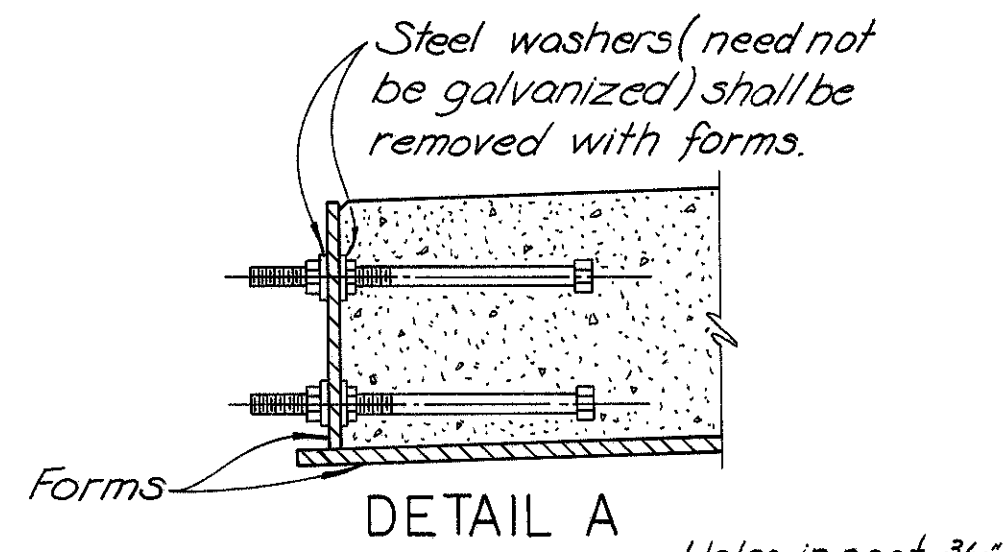
NOTE:
A welded butt joint in the end dam, at or near the center line of roadway, will be required for that portion of the end dam attached to the superstructure. The portion attached to the backwall shall be placed in segments not less than 6'-0" in length, with a joint at each joint in the backwall and with one of the joints at or near the centerline of the roadway. These shall be closely butted but shall not be welded.

This contact surface shall not be painted and shall be lubricated with flake graphite prior to placing of backwall concrete.

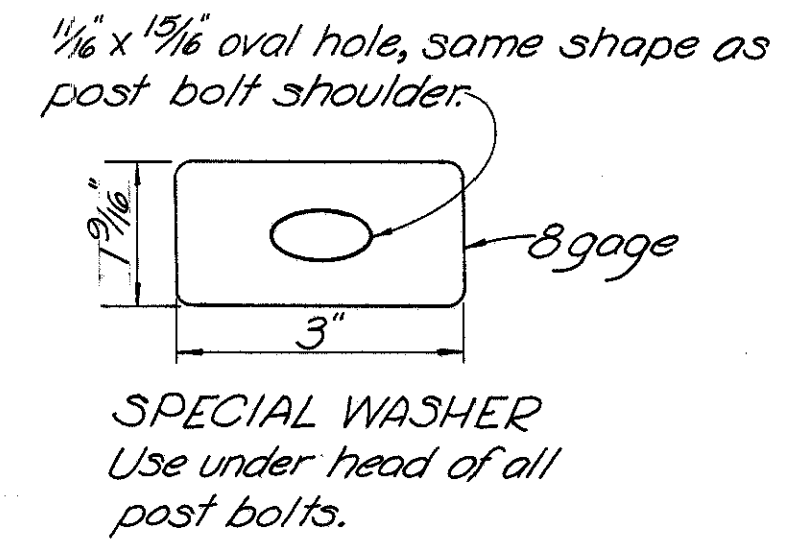
5/8" x 2" bolts at not more than 2'-0" with nuts tack-welded to under side of lower angle. 1 1/8" holes in upper angle. Center 3/8" bolts in 1 1/8" holes. Apply flake graphite between washers and angle. Turn nuts tight and release one-half turn. Remove bolts as soon as concrete has set, preferably within two hours after placing, to avoid damage due to temperature expansion and contraction of superstructure. Fill holes with bituminous material.



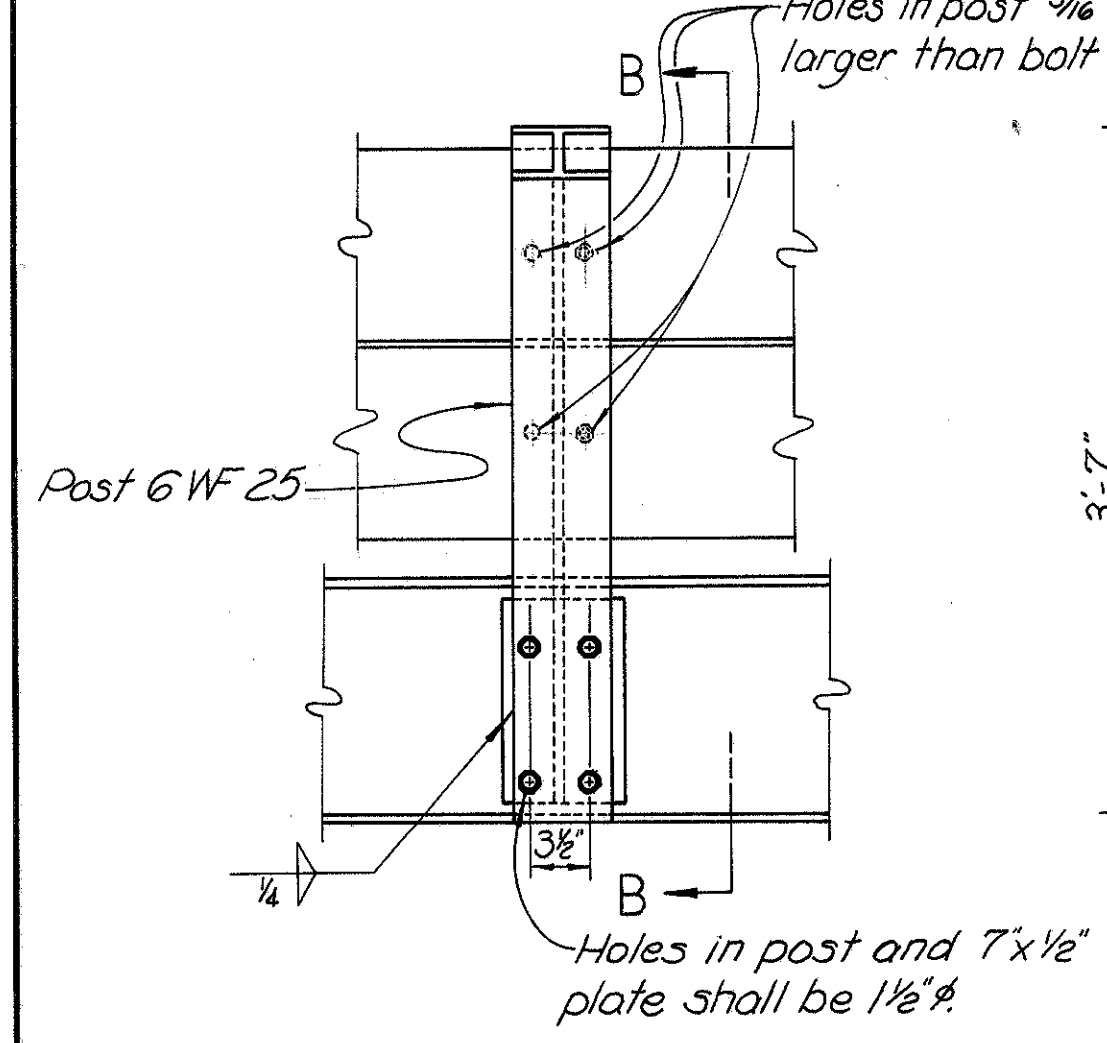
ROADWAY END DAM



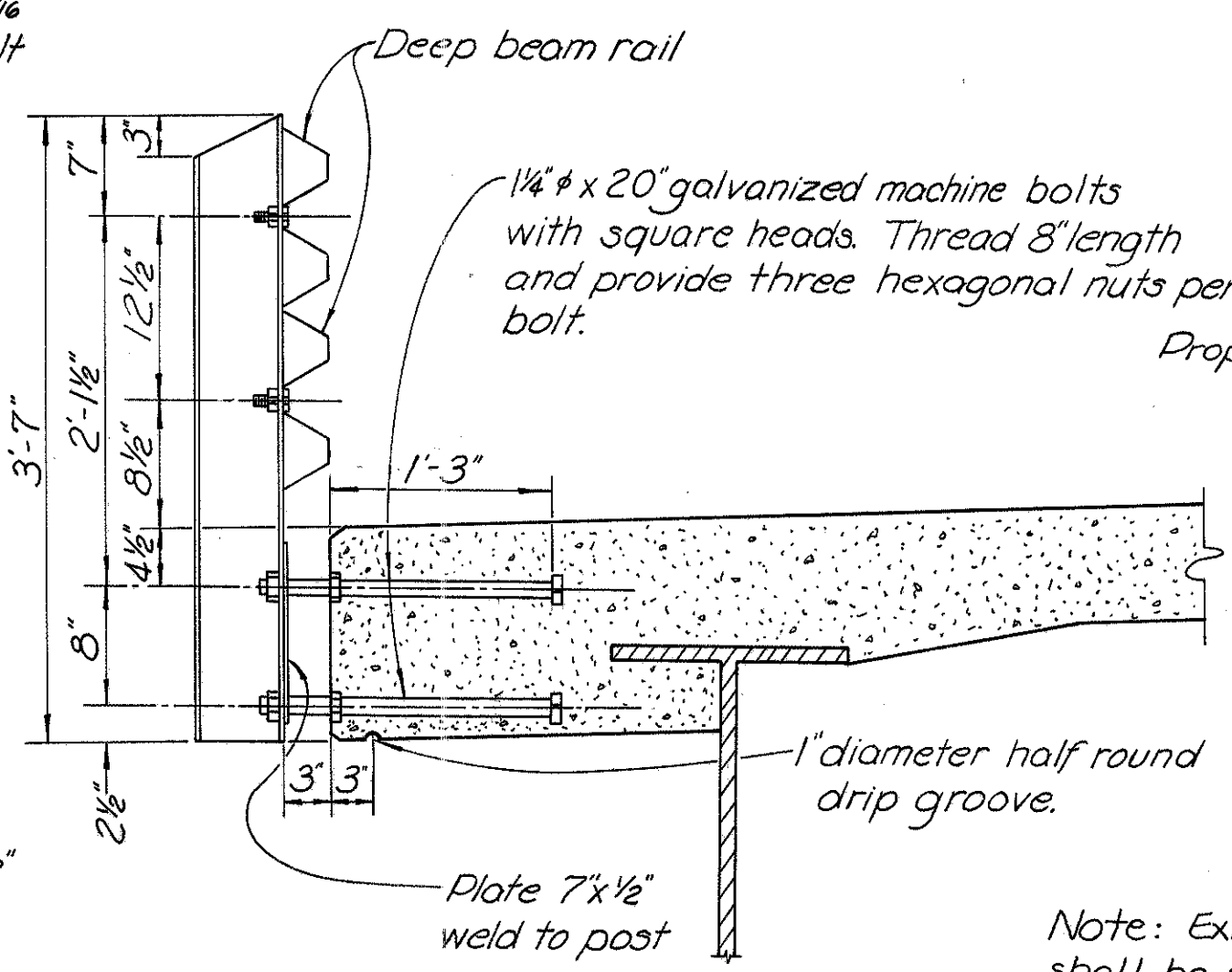
DETAIL A



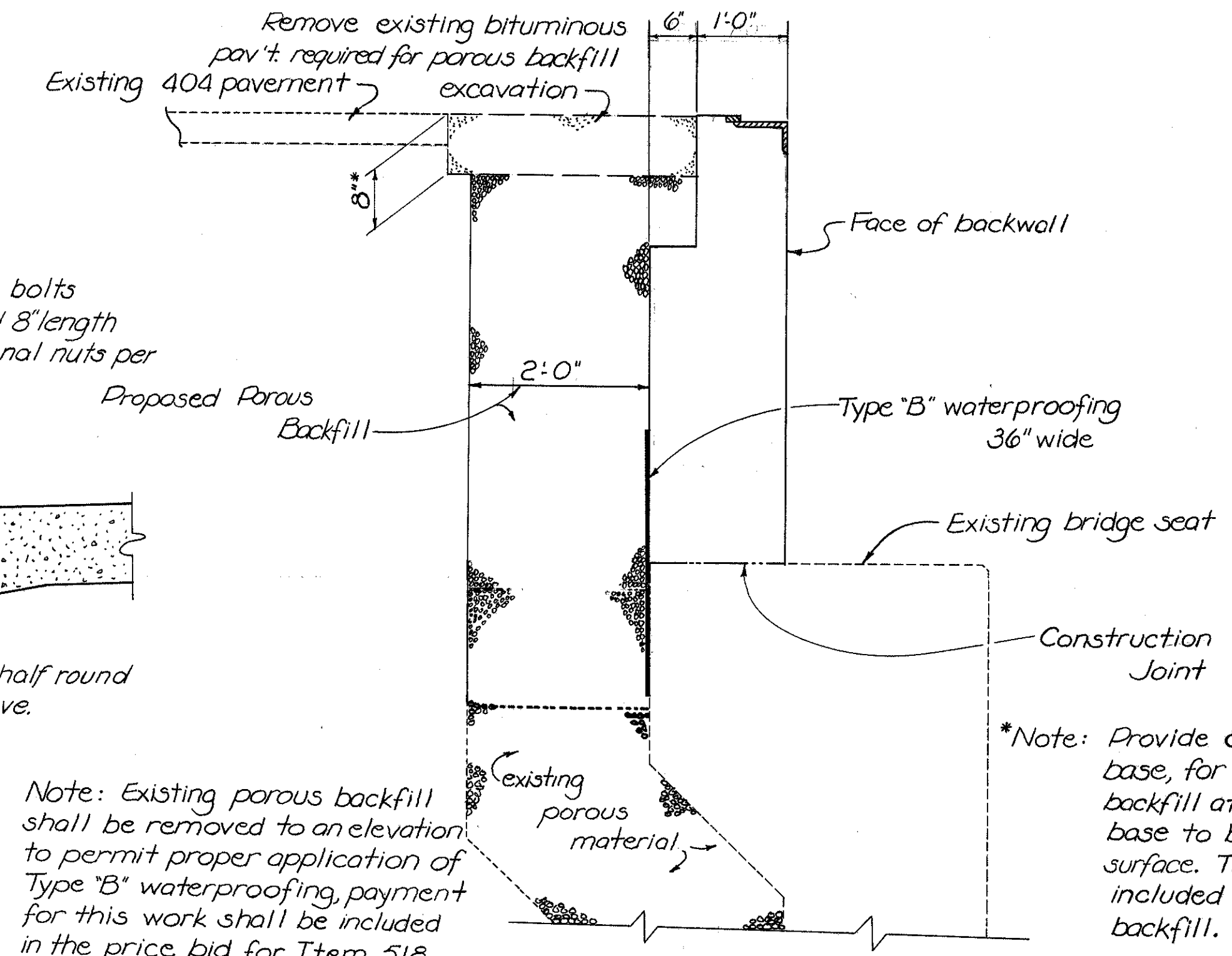
SPECIAL WASHER
Use under head of all
post bolts.



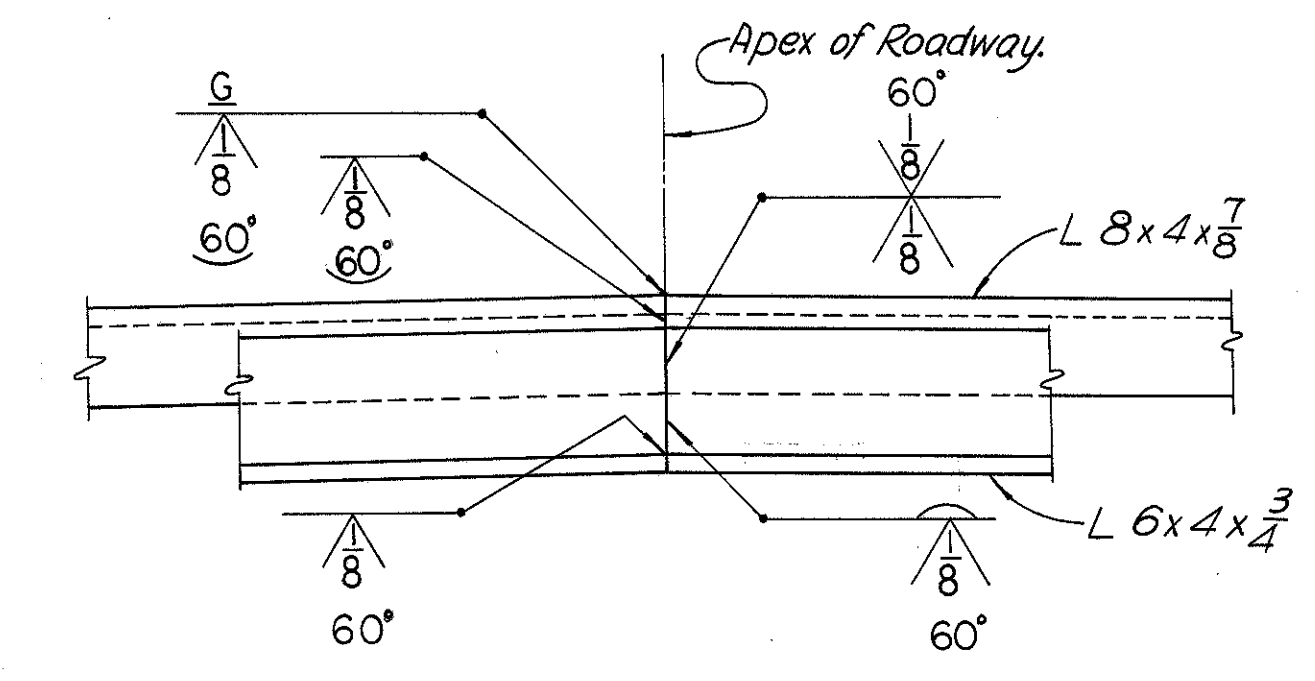
ELEVATION
OF RAILING POSTS



SECTION B-B



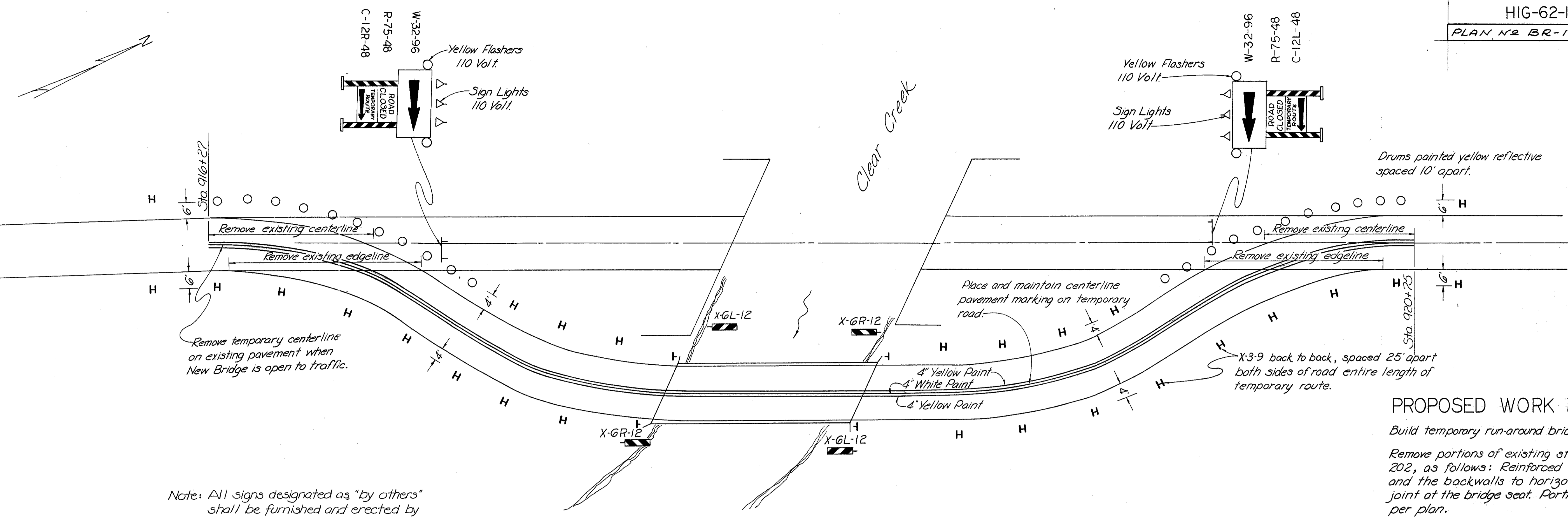
POROUS BACKFILL DETAIL



WELDED BUTT JOINT IN
SUPERSTRUCTURE END DAM

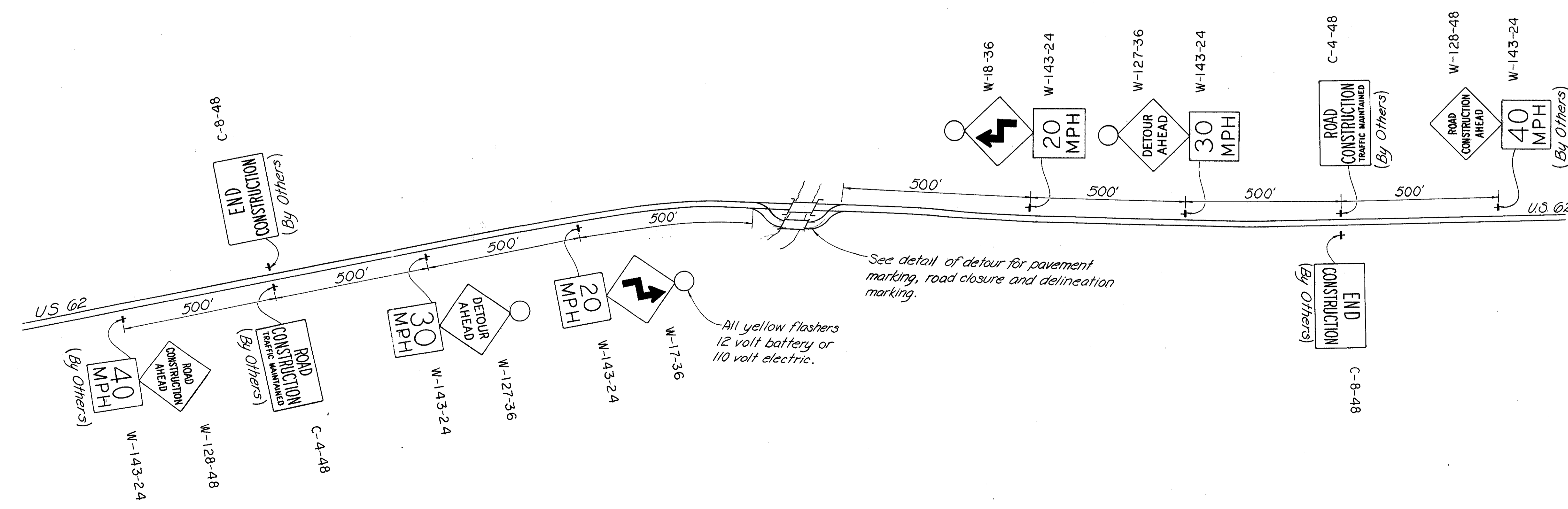
SUPERSTRUCTURE DETAILS
FOR BRIDGE REPAIR
BR. No. HIG-62-1739
OVER CLEAR CREEK
HIGHLAND COUNTY

PREPARED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.A.B.	D.A.B.	D.E.B.				



Note: All signs designated as "by others" shall be furnished and erected by the State.

- ### PROPOSED WORK PROCEDURE
- Build temporary run-around bridge and approaches.
 - Remove portions of existing structure as per Item 202, as follows: Reinforced concrete slab, railings and the backwalls to horizontal construction joint at the bridge seat. Portions of wings as per plan.
 - Remove cast iron scuppers, and steel end finish at each end of bridge.
 - Remove diaphragms, remove and strengthen outside stringers with cover plates. Reset beams and install new diaphragms as outlined on sheet No. 6.
 - Raise existing stringers at each abutment, install swedge bolts and shims under rockers and bolsters as required.
 - Provide new steel end finish for each end of bridge
 - Install steel shear connectors on upper flange of each stringer as shown on sheet 5.
 - Place reinforced concrete deck slab and steel railing.
 - Install new abutment backwalls and portions of wings as per plan.
 - Clean all existing structural steel.
 - Remove temporary run-around bridge and approaches.
 - Paint all new and existing structural steel.



WORK PROCEDURE
TRAFFIC CONTROL
FOR BRIDGE REPAIR
BR N° HIG 62 1739
OVER CLEAR CREEK
HIGHLAND COUNTY

PREPARED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.C.W.	C.C.W.	D.E.B.				

HIG-62-1739
BR-16
H-2