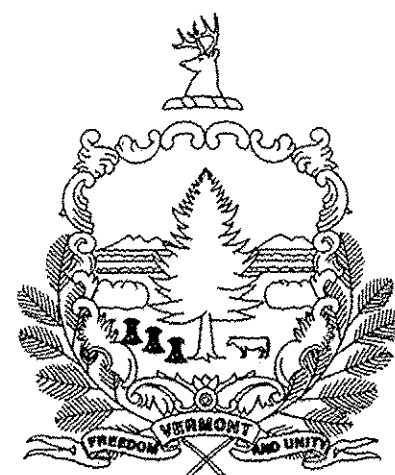


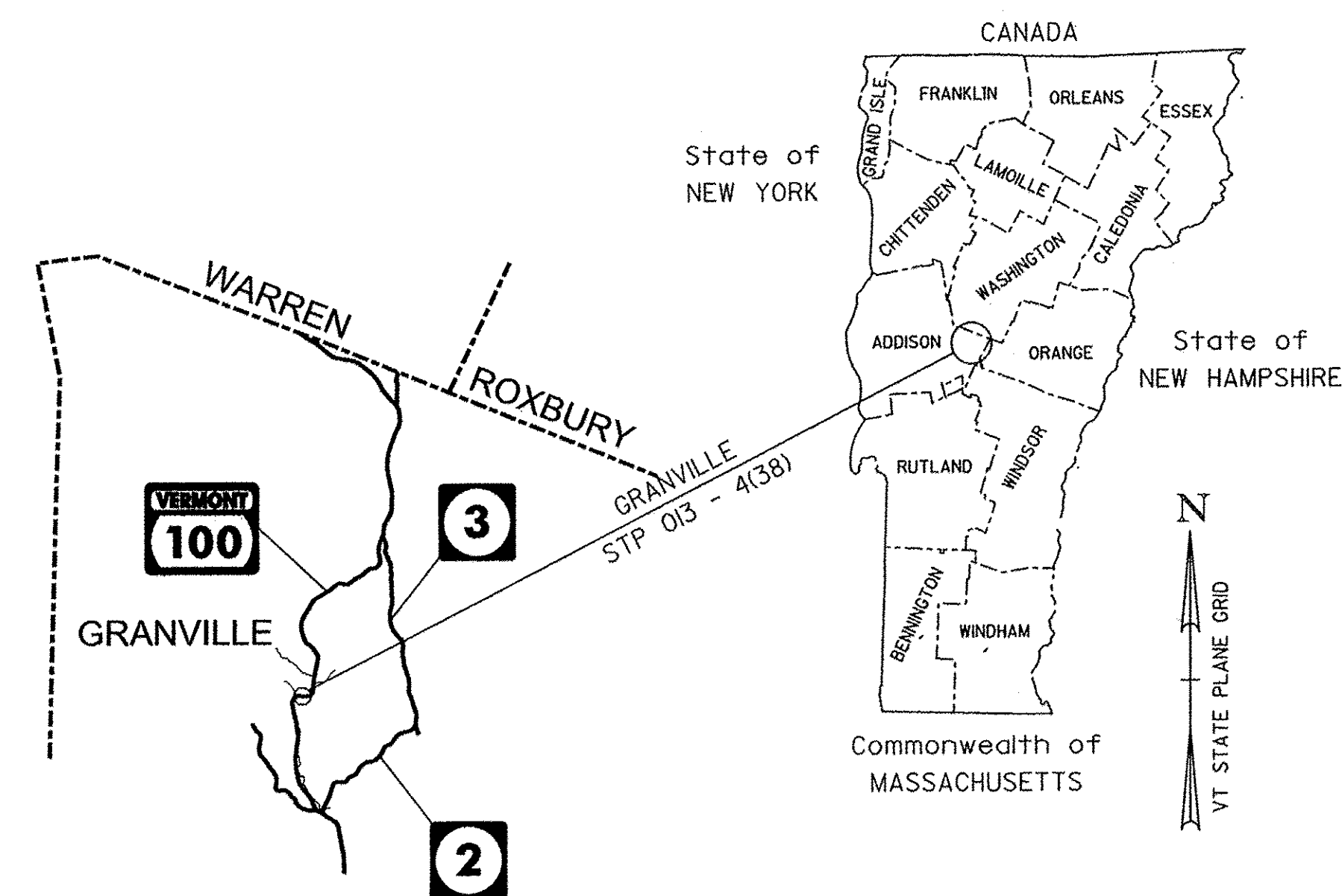
**INDEX OF SHEETS**

SEE SHEET 2

STATE OF VERMONT  
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT  
BRIDGE PROJECT  
TOWN OF GRANVILLE  
COUNTY OF ADDISON  
PROJECT STP 013 - 4(38)



ROUTE NO.: VT 100  
BRIDGE NO.: 155  
PROJECT LOCATION: BR 155 OVER ALDER MEADOW BROOK  
APPROXIMATELY 5.7 MILES NORTH OF  
JUNCTION WITH VT 125

PROJECT DESCRIPTION: THIS PROJECT INVOLVES REMOVING AND REPLACING THE SHEET  
MEMBRANE WATERPROOFING AND BITUMINOUS CONCRETE  
PAVEMENT ON THE BRIDGE AND ITS APPROACHES ALONG WITH  
MINOR RELATED WORK.

LENGTH OF STRUCTURE: BR 155 32.10'

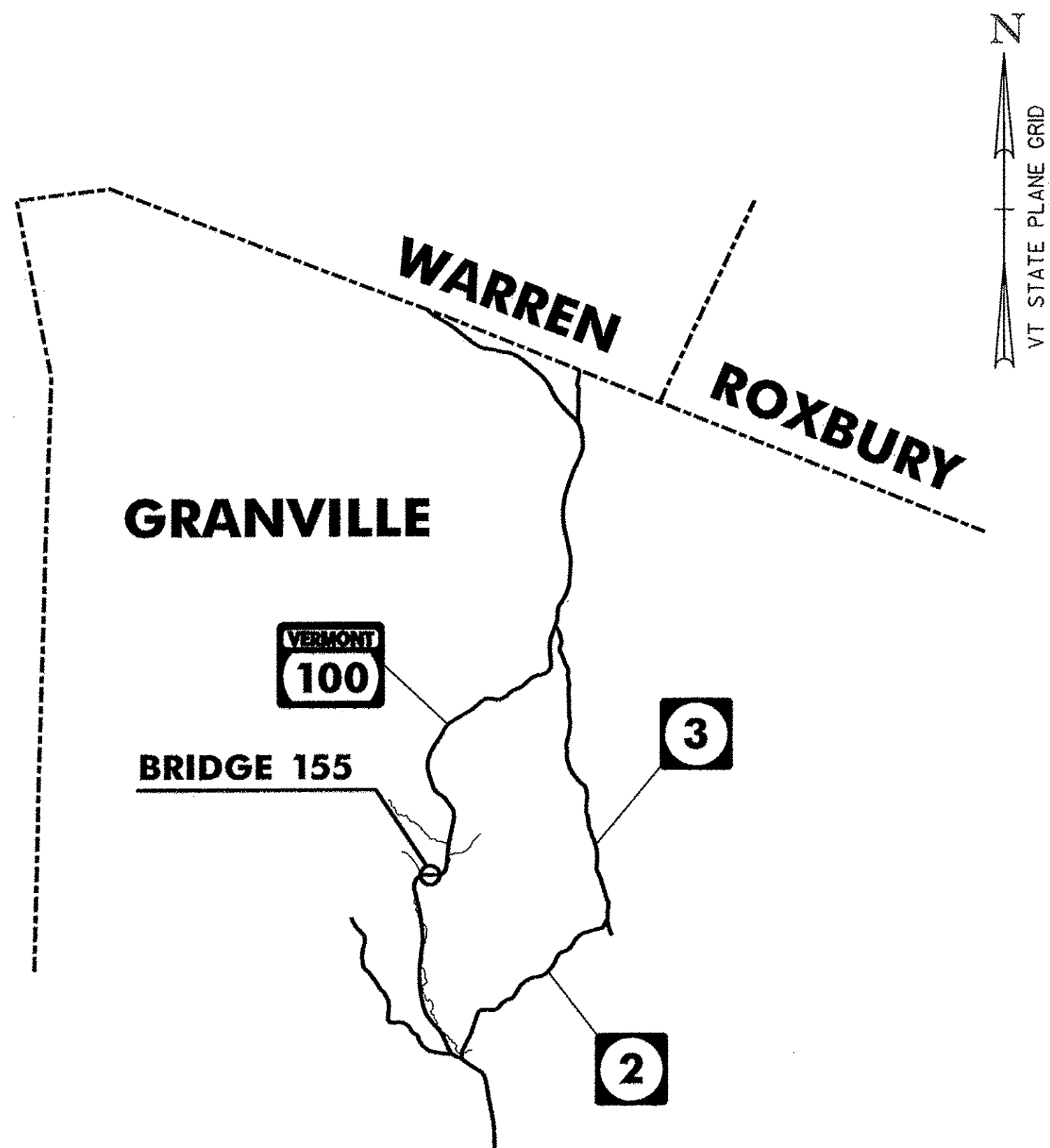
QUALITY ASSURANCE PROGRAM: LEVEL I

SURVEYED BY : N/A  
SURVEYED DATE : N/A

DATUM  
VERTICAL N/A  
HORIZONTAL N/A

**CONVENTIONAL SYMBOLS**

COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
FENCE LINE	
STONE WALL	
TRAVELED WAY	
GUARD RAIL	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
CONTROL OF ACCESS	
PROPERTY LINE	
R.O.W. TAKING LINE	
SLOPE RIGHTS	
TOP OF CUT	
TOE OF SLOPE	



**RECORD PLANS**

CONTRACTOR: J.P. SICARD, INC. - BARTON, V.T.  
RESIDENT ENGINEER: CHRIS LAVALET  
CONSTRUCTION BEGAN: FEBRUARY 1, 2011  
CONSTRUCTION COMPLETE: JANUARY 19, 2012  
RECORD PLANS BY: CHRIS LAVALET & NICK GARBACIK

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET  
OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY *Chris Lavalet* RESIDENT ENGINEER  
DATE 6/2/14

NOTE: Any further information concerning final quantities, amounts or other details  
relative to this project may be found at Central Files in the electronic archives.

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING  
CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY  
ADMINISTRATION OR THE DIRECTOR OF PROGRAM  
DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE  
WITH THESE PLANS AND THE STANDARD SPECIFICATIONS  
FOR CONSTRUCTION DATED 2006, AS APPROVED BY THE  
FEDERAL HIGHWAY ADMINISTRATION ON JUNE 15, 2006  
FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT  
REVISIONS AND SUCH REVISED SPECIFICATIONS AND  
SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE  
PLANS.

PLANS PREPARED BY:



DIRECTOR OF PROGRAM DEVELOPMENT  
APPROVED *[Signature]* DATE 4-15-13  
PROJECT MANAGER : DOUGLAS BONNEAU  
PROJECT NAME : GRANVILLE  
PROJECT NUMBER : STP 013 - 4(38)  
SHEET 1 OF 11 SHEETS

## INDEX OF SHEETS

1. TITLE SHEET
2. INDEX OF SHEETS AND PROJECT NOTES
3. QUANTITY SHEET #1
4. TRAFFIC CONTROL SHEET
5. BITUMINOUS CONCRETE REMOVAL PLAN
6. BITUMINOUS CONCRETE DETAILS SHEET
7. PAVEMENT JOINT DETAILS
8. BARRIER RAIL DETAILS
- 9 - 11. REFERENCE PLANS - BRIDGE 155

## VAOT STANDARD SHEETS

01/02/04	E-100	CONSTRUCTION APPROACH SIGNS
05/30/03	E-101	CONSTRUCTION SIGN DETAILS
06/30/03	E-102	CONSTRUCTION SIGN DETAILS
05/01/04	E-102A	CONSTRUCTION SIGN DETAILS
03/01/04	E-106	TRAFFIC CONTROL MISCELLANEOUS DETAILS
06/30/03	E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS
06/08/09	E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS
06/08/09	E-108A	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING
08/08/95	E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE
08/08/95	E-121	STANDARD SIGN PLACEMENT CONVENTIONAL ROAD
01/03/00	G-1	STEEL BEAM GUARDRAIL WITH STEEL POSTS, STEEL BEAM GUARDRAIL WITH WOOD POSTS

## PROJECT NOTES

### GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, DATED 2012, AND ITS LATEST REVISIONS.
2. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.
3. ALL COSTS ASSOCIATED WITH PROTECTION OF TRAFFIC DURING REMOVAL OF THE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".
4. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE DECK. THIS WORK WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".
5. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE BITUMINOUS CONCRETE REMOVAL PLAN, SHALL BE THOROUGHLY FLUSHED BY THE CONTRACTOR. THE COST FOR FLUSHING THE FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WILL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.
6. ATTACHED REFERENCE PLANS ARE FOR A PREVIOUS BRIDGE WIDENING ONLY SO LIMITED INFORMATION IS PROVIDED. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

## TRAFFIC CONTROL

7. THE TRAFFIC CONTROL PLAN SHOWN ON THE TRAFFIC CONTROL SHEET IS A SCHEMATIC ONLY AND SHOULD BE USED AS A REFERENCE. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN DEPICTING EACH PHASE OF THE PLANNED WORK. THE PLAN SHALL BE SUBMITTED IN ACCORDANCE WITH SUBSECTION 105.03 AND SHALL BE STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN AN APPROPRIATE DISCIPLINE IN THE STATE OF VERMONT. PAYMENT FOR PREPARING AND SUBMITTING THE TRAFFIC CONTROL PLAN AND MAKING ANY NECESSARY REVISIONS TO THE PLAN WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 641.10, "TRAFFIC CONTROL". THE CONTRACTOR SHALL ALLOW TWO WEEKS FOR APPROVAL OF THE TRAFFIC CONTROL PLAN. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS AN APPROVED TRAFFIC CONTROL PLAN.
8. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON THE TRAFFIC CONTROL SHEET AND FOR TEMPORARY TRAFFIC CONTROL DEVICES INCLUDING RETROREFLECTIVE DRUMS, SIGNS, AND SIGN POSTS WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ITEM 641.10, "TRAFFIC CONTROL". THE QUANTITY FOR ITEM 630.15, "FLAGGERS" AS SHOWN ON THE QUANTITY SUMMARY SHEET WAS ESTIMATED FOR TRAFFIC CONTROL.
9. TRAFFIC WILL BE ALLOWED TO DRIVE ON THE BARE CONCRETE BRIDGE DECK AFTER THE REMOVAL OF THE BARRIER MEMBRANE, BUT PRIOR TO THE DECK BEING CLEANED AND PREPARED FOR THE NEW SHEET MEMBRANE. ONCE THE CONCRETE BRIDGE DECK IS PREPARED FOR THE NEW SHEET MEMBRANE, NO TRAFFIC WILL BE ALLOWED ON THE NEW MEMBRANE UNTIL THE SECOND LIFT OF BITUMINOUS CONCRETE PAVEMENT IS IN PLACE.

## GUARDRAIL REPAIR

10. A SECTION OF STEEL BEAM GUARDRAIL, INCLUDING WOOD POSTS, ALONG THE NORTHEAST CORNER OF THE BRIDGE ADJACENT TO ABUTMENT NO. 2 SHALL BE REMOVED AND REPLACED. THIS WORK WILL BE PAID FOR UNDER ITEM 621.76, "REPLACE GUARDRAIL POST ASSEMBLY" AND ITEM 621.77, "REPLACE GUARDRAIL BEAM UNIT".

## PAVEMENT REMOVAL

11. THE FINAL ONE HALF INCH OF PAVEMENT ON THE CONCRETE BRIDGE DECK SHALL BE REMOVED BY LOADER, GRADER OR EQUIPMENT APPROVED BY THE ENGINEER. COLD PLANING TO REMOVE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".
12. DURING BRIDGE PAVEMENT REMOVAL, THE CONTRACTOR SHALL EXERCISE CARE TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING CONCRETE BRIDGE DECK. ANY DAMAGE TO THE CONCRETE BRIDGE DECK SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 580.
13. CARE SHALL BE TAKEN TO PROTECT ANY SCUPPERS OR DROP INLETS AT ALL STAGES OF CONSTRUCTION. ANY DAMAGE TO THESE STRUCTURES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.
14. AFTER THE REMOVAL OF THE BRIDGE PAVEMENT, THE BARRIER MEMBRANE SHALL BE REMOVED AND THE CONCRETE BRIDGE DECK SHALL BE CLEANED IN ACCORDANCE WITH SUBSECTION 580.04 AND TO THE SATISFACTION OF THE ENGINEER. REMOVAL OF THE BARRIER MEMBRANE AND THE CLEANING OF THE CONCRETE BRIDGE DECK WILL BE PAID FOR UNDER ITEM 580.16, "SURFACE PREPARATION FOR MEMBRANE".
15. ONCE THE BARRIER MEMBRANE IS REMOVED, ANY AREAS ON THE CONCRETE BRIDGE DECK THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE METHOD FOR DETERMINING AREAS OF UNSOUND CONCRETE SHALL BE APPROVED BY THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BRIDGE DECK AND THE LIMITS OF THE REPAIR. THE REPAIRS SHALL BE PAID FOR UNDER ITEM 580.10, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I", ITEM 580.11, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II", OR ITEM 580.12, "REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III". QUANTITIES FOR ITEMS 580.10, 580.11, AND 580.12 AS SHOWN ON THE QUANTITY SHEET ARE ESTIMATED.
16. ANY REPAIR WORK REQUIRING THE USE OF ITEM 580.20, "RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE" SHALL BE APPROVED BY THE ENGINEER.
17. UPON THE ENGINEER'S APPROVAL OF THE CONCRETE BRIDGE DECK'S CONDITION, ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 519. THE CONTRACTOR SHALL NOT INSTALL ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" WHEN THE DECK CONCRETE AND/OR DECK PATCH AREAS' MOISTURE CONTENT IS ABOVE SECTION 519 SPECIFICATIONS OR MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS LESS.

## PAVEMENT

18. FOLLOWING THE INSTALLATION OF THE NEW SHEET MEMBRANE WATERPROOFING ON THE CONCRETE BRIDGE DECK, THE CONCRETE BRIDGE DECK SHALL BE PAVED CURB TO CURB WITH ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)" IN ~~TWO 1/4"~~ **FOUR** LIFTS. THE PAVEMENT SHALL BE TYPE IVS FOR BOTH LIFTS, NO EXCEPTIONS.
19. CARE SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT. ANY COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES SHALL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".
20. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGE. THE COST FOR THIS WORK WILL BE INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)". ANY DAMAGE TO THE NEW SHEET MEMBRANE CAUSED BY CORING THE PAVEMENT SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.
21. EMULSIFIED ASPHALT SHALL BE APPLIED AT A RATE OF 0.08 GAL/SY TO ALL COLD PLANED SURFACES AND AT A RATE OF 0.03 TO 0.04 GAL/SY BETWEEN PAVEMENT LIFTS. PAYMENT SHALL BE UNDER ITEM 404.65, "EMULSIFIED ASPHALT".
22. THE CONTRACTOR SHALL INSTALL TEMPORARY PAVEMENT MARKINGS ON ALL PAVED SURFACES THAT WILL NOT HAVE THE PERMANENT MARKINGS APPLIED WITHIN 14 CALENDAR DAYS OF THE FINAL PAVING OPERATIONS AS DIRECTED BY THE ENGINEER.

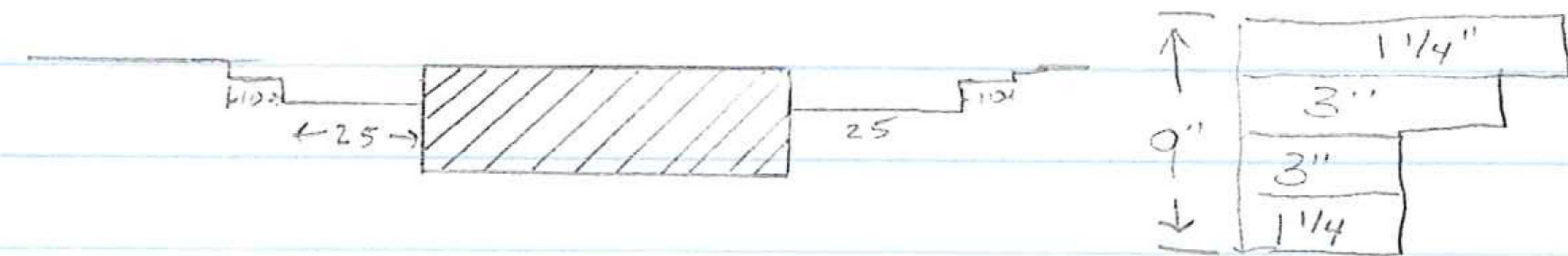
PROJECT NAME:	GRANVILLE		
PROJECT NUMBER:	STP 013 - 4(38)		
FILE NAME:	88b192-notes.dgn	PLOT DATE:	4/11/2013
PROJECT LEADER:	JPB	DRAWN BY:	MWS
DESIGNED BY:	PJM	CHECKED BY:	SRB
<b>INDEX OF SHEETS AND PROJECT NOTES</b> SHEET 2 OF 11			

# QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES								TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
						ROADWAY	BRIDGE NO. 155	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
						1			1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
							237		237		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
							3.3		3.3		CWT	EMULSIFIED ASPHALT	404.65				
						1			1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
							10		10		GAL	WATER REPELLENT, SILANE	514.10				
							40		40		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
							109		109		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
							40		40		LF	JOINT SEALER, HOT POURED	524.11				
							109		109		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
							10		10		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10				
							20		20		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11				
							5		5		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12				
							977		977		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
							5		5		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20				
							360		360		HR	TRUCK-MOUNTED ATTENUATOR	608.45				
							3		3		EACH	ENERGY ABSORPTION ATTENUATOR	621.56				
							2		2		EACH	REPLACE GUARDRAIL POST ASSEMBLY	621.76				
							1		1		EACH	REPLACE GUARDRAIL BEAM UNIT	621.77				
							220		220		LF	TEMPORARY TRAFFIC BARRIER	621.90				
							220		220		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95				
							360		360		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
							160		160		HR	FLAGGERS	630.15				
								1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
								1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
								1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
								3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
						1			1		LS	MOBILIZATION/DEMobilIZATION	635.11				
							1		1		LS	TRAFFIC CONTROL	641.10				
							2		2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
							1085		1085		LF	4 INCH WHITE LINE	646.20				
							1085		1085		LF	4 INCH YELLOW LINE	646.21				
							2010		2010		LF	TEMPORARY 4 INCH WHITE LINE, TYPE II TAPE	646.601				
							1085		1085		LF	TEMPORARY 4 INCH YELLOW LINE, TYPE II TAPE	646.611				
							22		22		LF	TEMPORARY 24 INCH STOP BAR, TYPE II TAPE	646.681				
							589		589		SF	PAVEMENT MARKING MASK	646.86				
							1		1		EACH	SPECIAL PROVISION (TEMPORARY TRAFFIC SIGNAL SYSTEM, PORTABLE)	900.620				
							1		1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650				
							1		1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650				
							63		63		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				



This is the way we did it.



### Coldplanning

North Approach  $35 \times 30.5 / 9 = 118.6 \text{ cy} \times \$20 \text{ per cy} = \$2372.22$

South Approach  $35 \times 30.5 / 9 = 118.6 \text{ cy} \times \$20 \text{ per cy} = \$2372.22$

### PAVING

North Approach  $25 \text{ FT} \times 30.5 \text{ FT} \times 4 \frac{1}{4} \text{\"/>}$

$10 \times 30.5 \text{ FT} \times 1 \frac{1}{4} \text{\"/>}$

South Approach Same as North

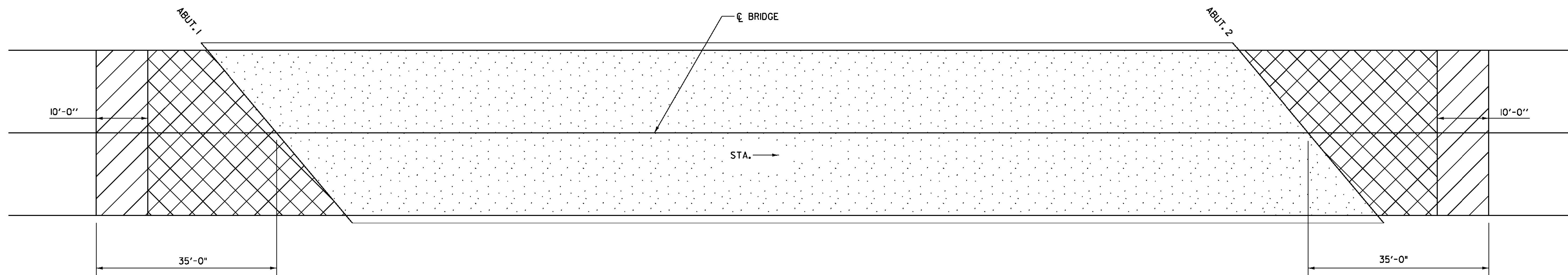
Bridge Deck  $32 \text{ FT} \times 30.5 \text{ FT} \times 0.75 \text{ FT} / 27 = 27.11 \text{ cy} \times 2 \text{ TON/cy} = 54.22 \text{ TON}$

Total TONS =  $70.04 \text{ TON} \times \$273.00 \text{ per TON} = 19,120.92$




This is the way we have proposed to them on how to complete the project. And with Change order we discussed

Cold planning would stay per plan. The only change would be addition of paving lifts and we had to add more traffic barrier because of the increase in longitudinal joint. Both of which we have items for

Total Cost =  $\$23,865.36$



THIS BRIDGE DOES NOT HAVE APPROACH SLABS. THEREFORE, ALL PAVEMENT REMOVAL BEHIND ABUTMENTS SHALL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".

-  COLD PLANE - 1/2"
-  COLD PLANE - 3"
-  REMOVE BIT. CONC. PAV'T - TO THE TOP OF THE CONCRETE BRIDGE DECK AND REMOVE THE BARRIER MEMBRANE.

**NOTE:**

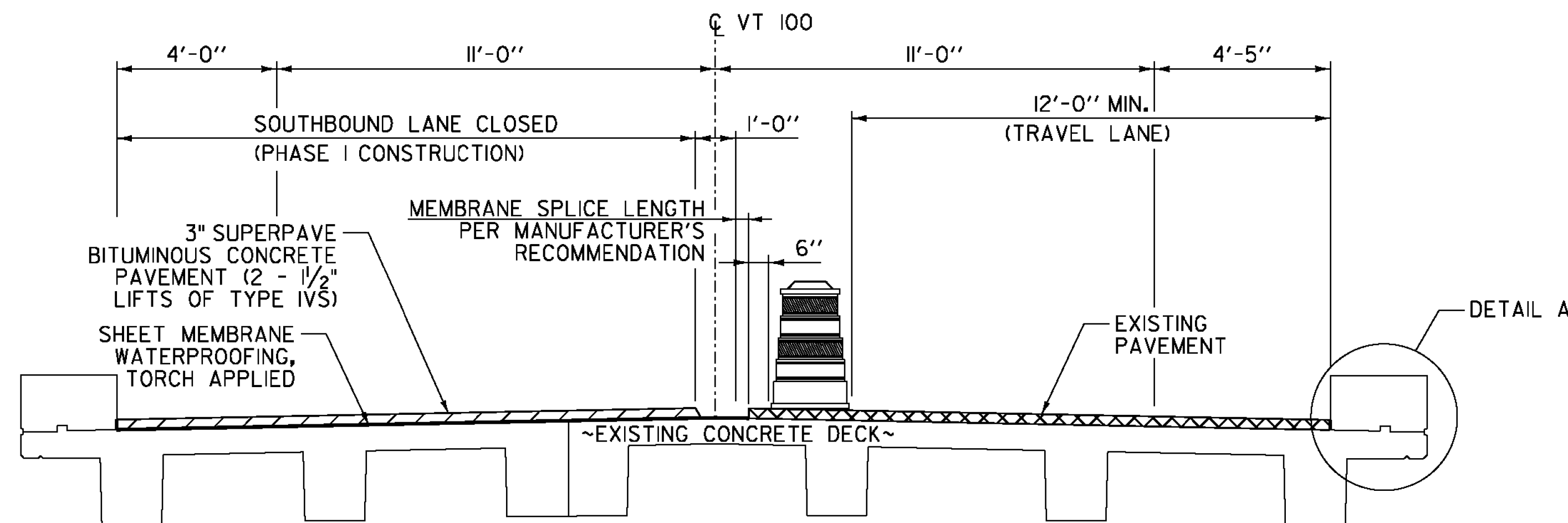
1. COLD PLANING WILL BE PAID FOR UNDER ITEM 210.10 EXCEPT AS OTHERWISE SPECIFIED IN NOTE II ON SHEET 2.
2. REMOVAL OF THE BIT. CONC. PAV'T. WILL BE PAID FOR UNDER ITEM 529.10.
3. REMOVAL OF THE BARRIER MEMBRANE WILL BE PAID FOR UNDER ITEM 580.16.

**BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN**

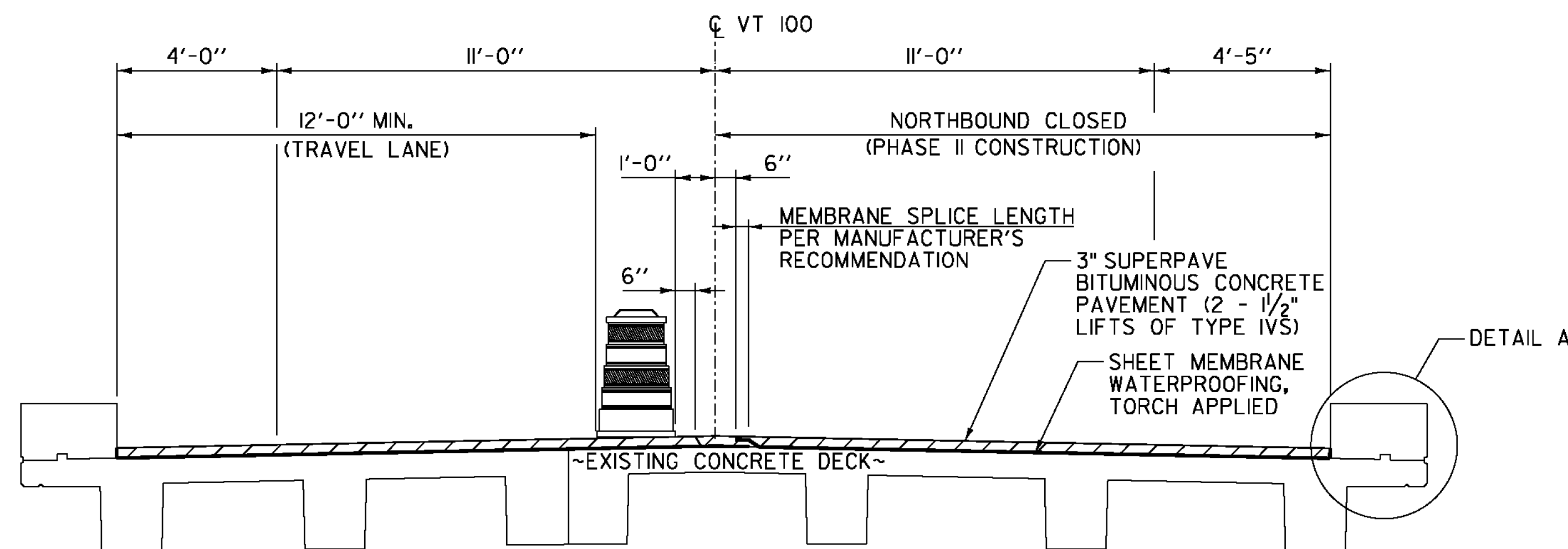
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SEE PAGE 4A

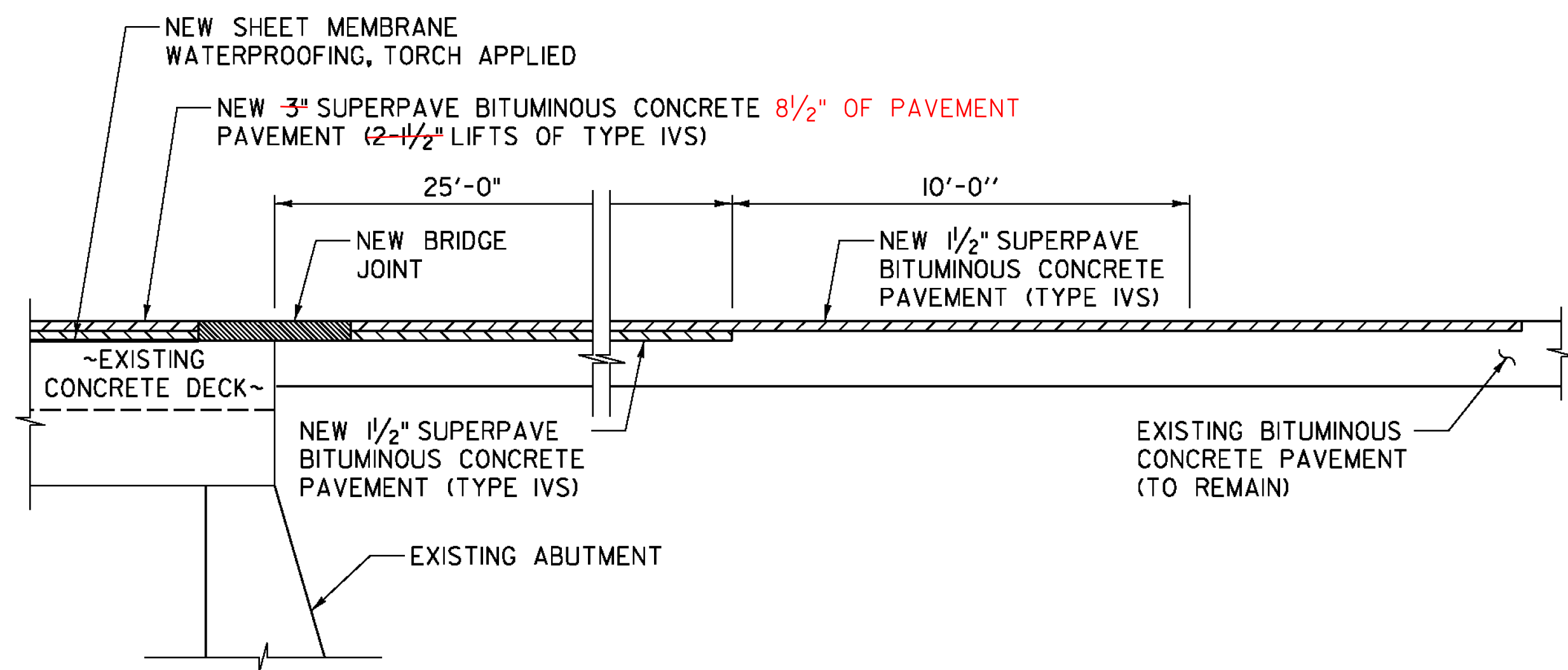
PROJECT NAME: GRANVILLE	
PROJECT NUMBER: STP 013 - 4(38)	
FILE NAME: 88b192-removal.dgn	PLOT DATE: 4/11/2013
PROJECT LEADER: JPB	DRAWN BY: MWS
DESIGNED BY: PJM	CHECKED BY: SRB
<b>BITUMINOUS CONCRETE REMOVAL PLAN</b> SHEET 5 OF 11	



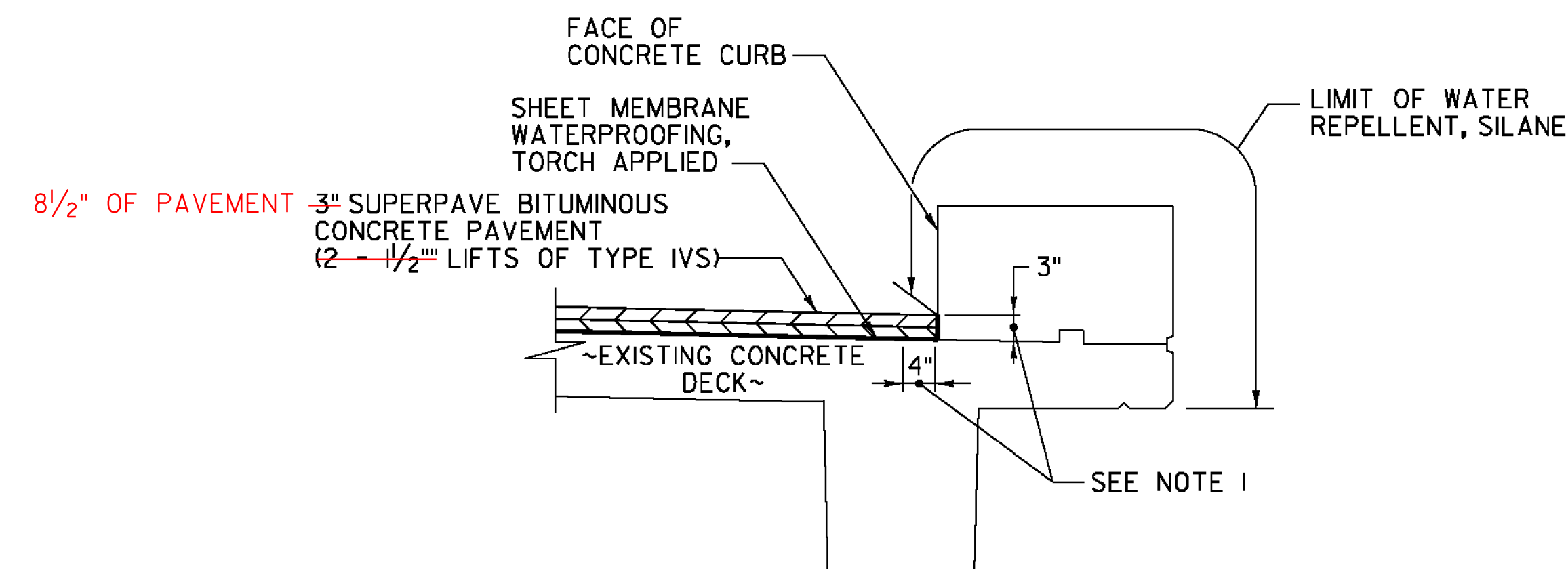
**TYPICAL SECTION - PHASE I CONSTRUCTION**  
NOT TO SCALE



**TYPICAL SECTION - PHASE II CONSTRUCTION**  
NOT TO SCALE



**TYPICAL APPROACH SECTION**  
NOT TO SCALE



**DETAIL A NOTES:**

1. INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF TWO COATS OF POLYURETHANE MEMBRANE.
2. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
3. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
4. IN ADDITION TO THE REQUIREMENTS OF SUBSECTION 519.04, BLAST CLEAN 3" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.

**DETAIL A**  
NOT TO SCALE

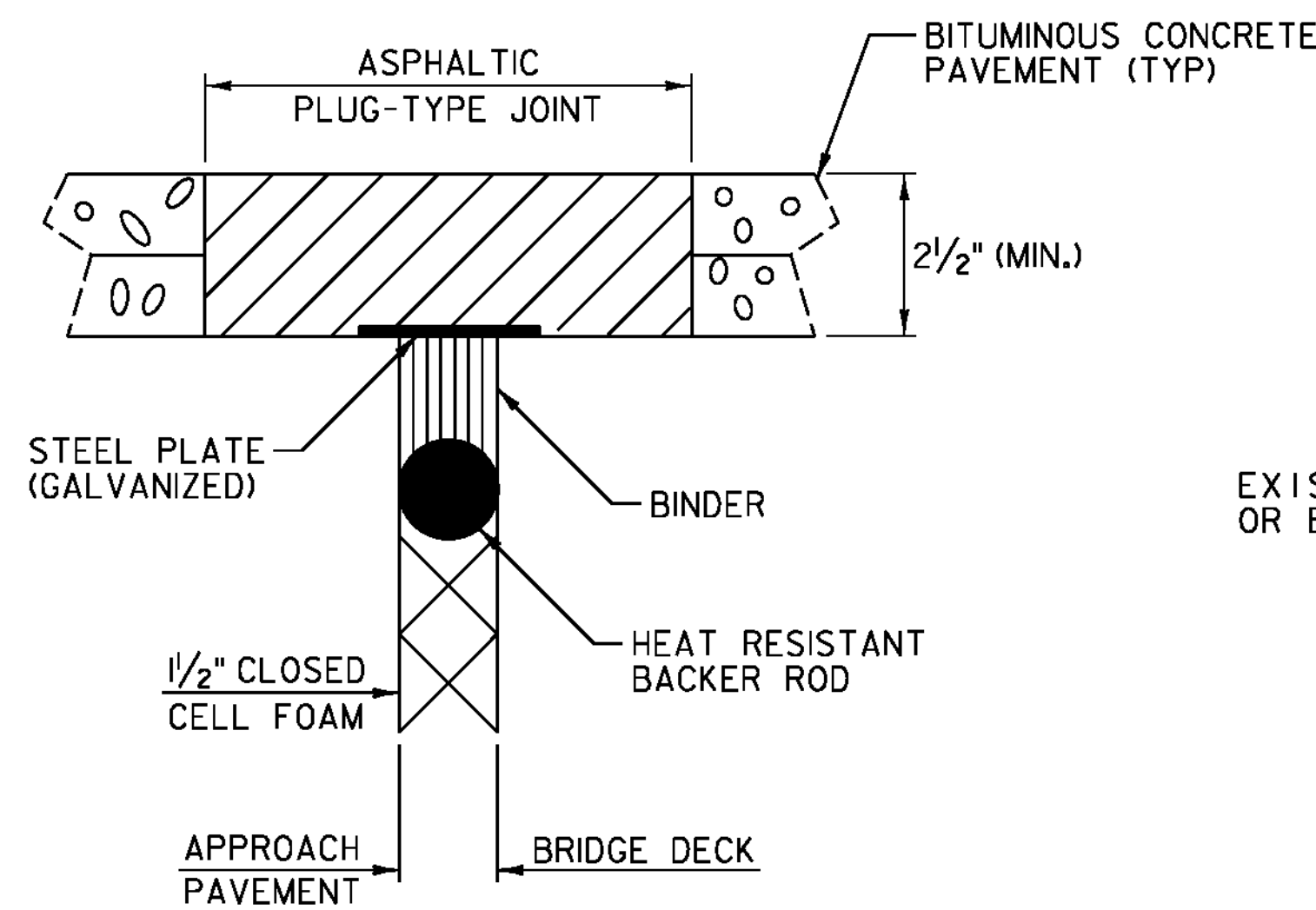
**BRIDGE LENGTH AND WIDTH (CURB TO CURB)**

WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
30.42	32.10

**JOINT REPLACEMENT SCHEDULE**

JOINT TYPE	ABUT. 1	ABUT. 2
ASPHALTIC PLUG-TYPE	-	39.40 LF
SAWED PAVEMENT	39.40 LF	-

PROJECT NAME: GRANVILLE  
 PROJECT NUMBER: STP 013 - 4(38)  
 FILE NAME: 88b192-conc\_details.dgn PLOT DATE: 4/11/2013  
 PROJECT LEADER: JPB DRAWN BY: MWS  
 DESIGNED BY: PJM CHECKED BY: SRB  
**BITUMINOUS CONCRETE DETAILS SHEET** SHEET 6 OF 11



**ASPHALTIC PLUG-TYPE JOINT DETAIL**  
(NOT TO SCALE)

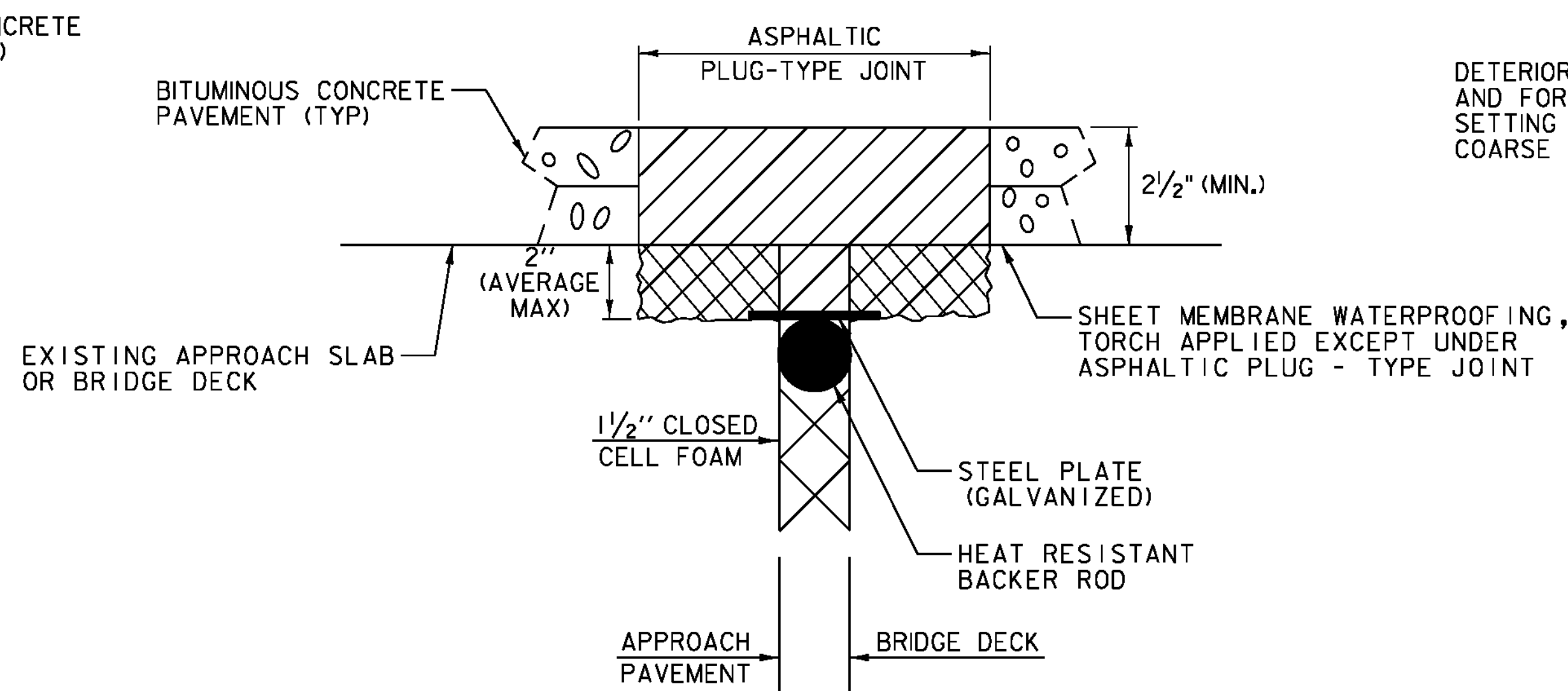
NOTES:

1. THE JOINT SHALL BE LOCATED CENTRALLY OVER THE DECK EXPANSION GAP OR FIXED JOINT MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. THE JOINT SHALL BE EXCAVATED AS SHOWN ON THE PLANS BY USE OF SAWS AND PNEUMATIC HAMMER OR A HAMMER AND CHISEL.
3. THE JOINT AREA SHALL BE BLAST CLEANED OF DEBRIS AND ASPHALT. THE JOINT AREA SHALL BE THOROUGHLY DRIED USING HOT COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. SPALLED AND DEFECTIVE CONCRETE SHALL BE REPAIRED WITH AN APPROVED MATERIAL AS AGREED UPON BY THE ENGINEER.
5. PROPERLY SIZED HEAT RESISTANT BACKER ROD SHALL BE PLACED IN THE MOVEMENT GAP ALLOWING FOR 1 INCH +/- OF BINDER ABOVE THE ROD.
6. THE BINDER MATERIAL SHALL BE HEATED AND PLACED AS RECOMMENDED BY THE MANUFACTURER.
7. PLACE 1/4 INCH THICK BY 8 INCH WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRESTAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.
  - A. THE STEEL PLATES MAY BE OMITTED WHERE THE APPROACH SLAB IS COVERED WITH A STONE BASE OR BITUMINOUS PAVEMENT AND VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.
  - B. FOR ALL EXPANSION LENGTHS OVER 100 FEET, THE CONTRACTOR SHALL BE REQUIRED TO USE STEEL PLATE. ADJACENT SURFACES SHALL BE GROUND DOWN TO ENSURE FULL CONTACT WITH THE STEEL PLATE.
8. THE BINDER MATERIAL AND AGGREGATE SHALL BE HEATED AND MIXED AS RECOMMENDED BY THE MANUFACTURER.
9. THE INSTALLATION OF MATERIAL, COMPACTION, AND TOPCOATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOPCOATING, AN ANTI-SKID MATERIAL SHALL BE CAST OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. JOINT SHALL BE PROTECTED FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 125°F ±.

**WEATHER LIMITATIONS**

BINDER MATERIAL SHALL BE APPLIED ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL:

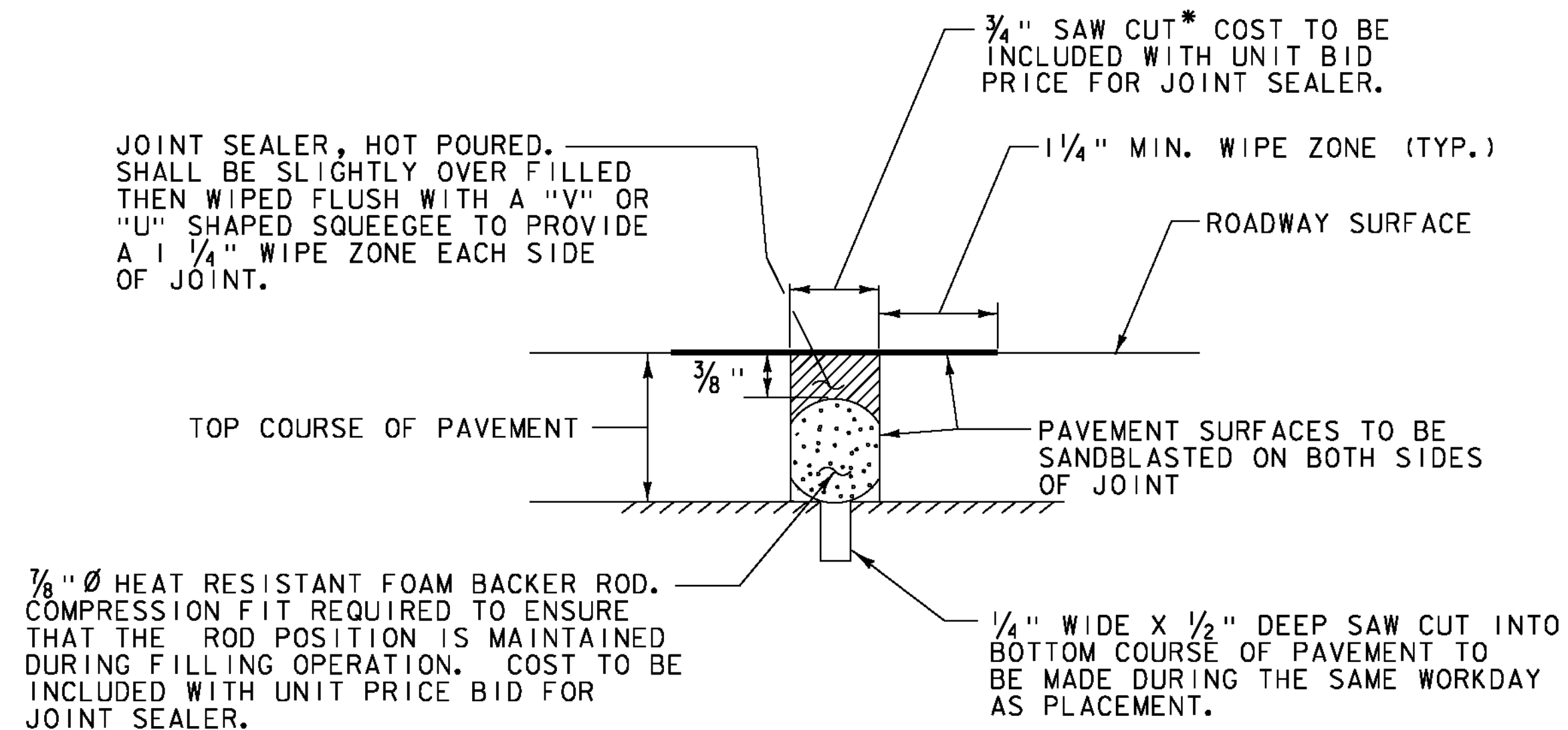
- A. THE AMBIENT AIR TEMPERATURE IS AT LEAST 50°F AND RISING.
- B. THE ROAD SURFACE IS SUFFICIENTLY DRY.
- C. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



**ASPHALTIC PLUG-TYPE JOINT DETAIL**  
**REMOVAL OF UP TO**  
**2" DETERIORATED CONCRETE**  
(NOT TO SCALE)

NOTES:

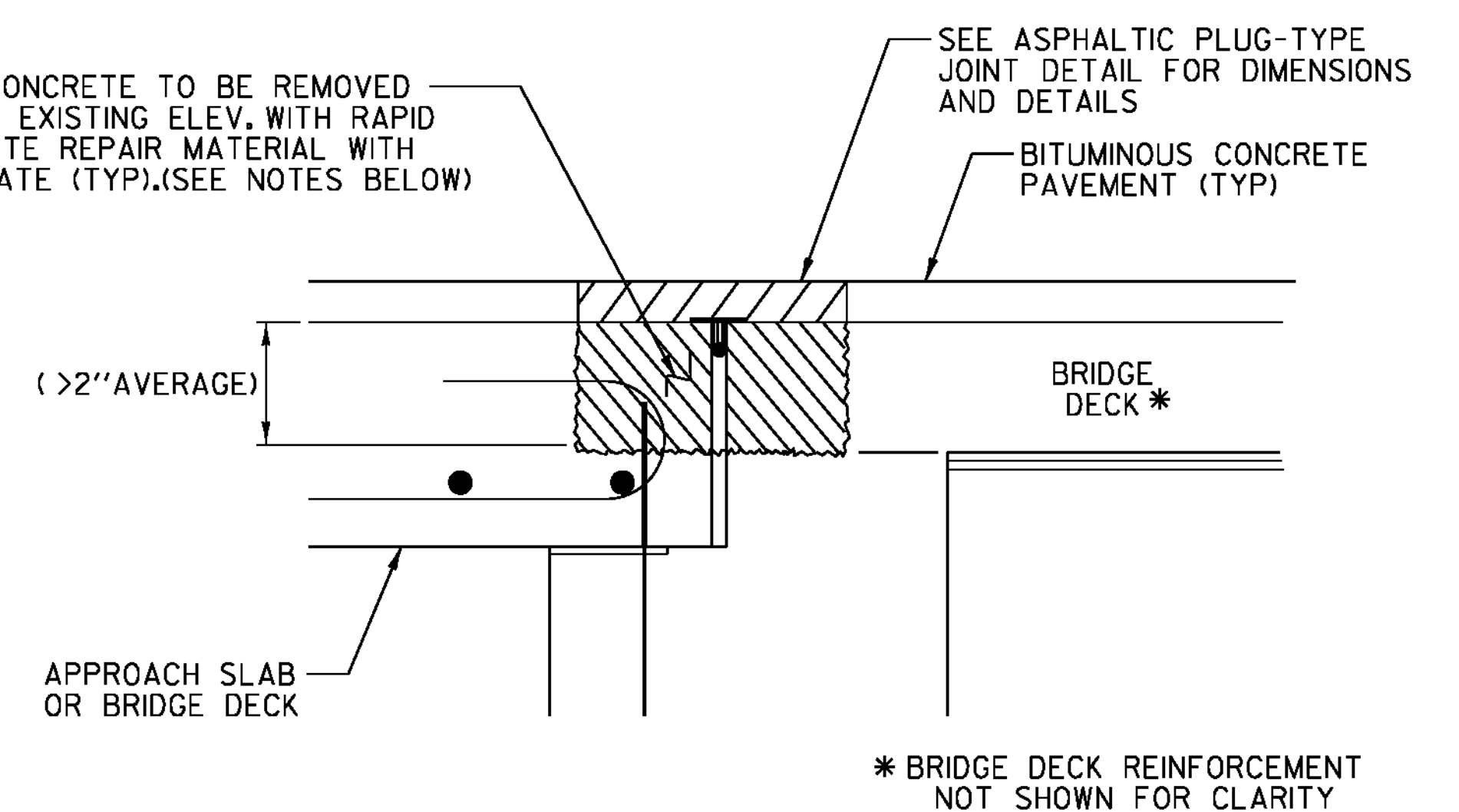
1. UPON ENCOUNTERING UP TO 2" AVERAGE OF DETERIORATED CONCRETE, THE CONTRACTOR SHALL REMOVE THE DETERIORATED MATERIAL AND REPLACE IT WITH THE ASPHALTIC PLUG JOINT MATERIAL AS DIRECTED BY THE ENGINEER.
2. REMOVAL OF THE DETERIORATED CONCRETE WILL NOT BE PAID SEPARATELY BUT WILL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR ITEM 516.10. THE ADDITIONAL PLUG JOINT MATERIAL BELOW THE DESIGN DEPTH REQUIRED TO REPLACE THE DETERIORATED CONCRETE WILL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR THE ITEM 516.10.
3. THE STEEL PLATE IN THE ASPHALTIC PLUG JOINT MAY BE OMITTED ONLY IF THE REPAIRED SURFACE IS SO IRREGULAR IT WILL CAUSE VERTICAL MOVEMENT AND IT IS DIRECTED BY THE ENGINEER.



**SAWED PAVEMENT JOINT DETAIL**  
(NOT TO SCALE)

\* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.

DETERIORATED CONCRETE TO BE REMOVED AND FORMED TO EXISTING ELEV. WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE (TYP). (SEE NOTES BELOW)



**ASPHALTIC PLUG-TYPE JOINT DETAIL**  
**REMOVAL OF > 2"**  
**DETERIORATED CONCRETE**  
(NOT TO SCALE)

NOTES:

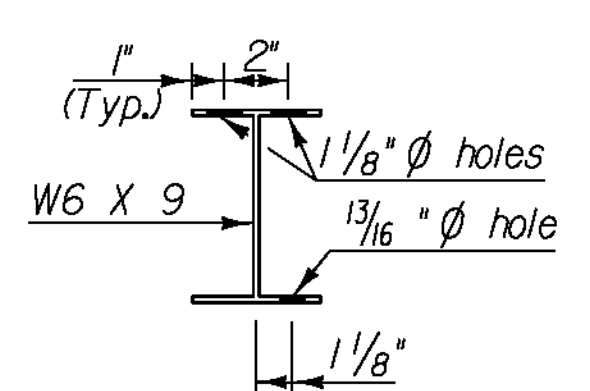
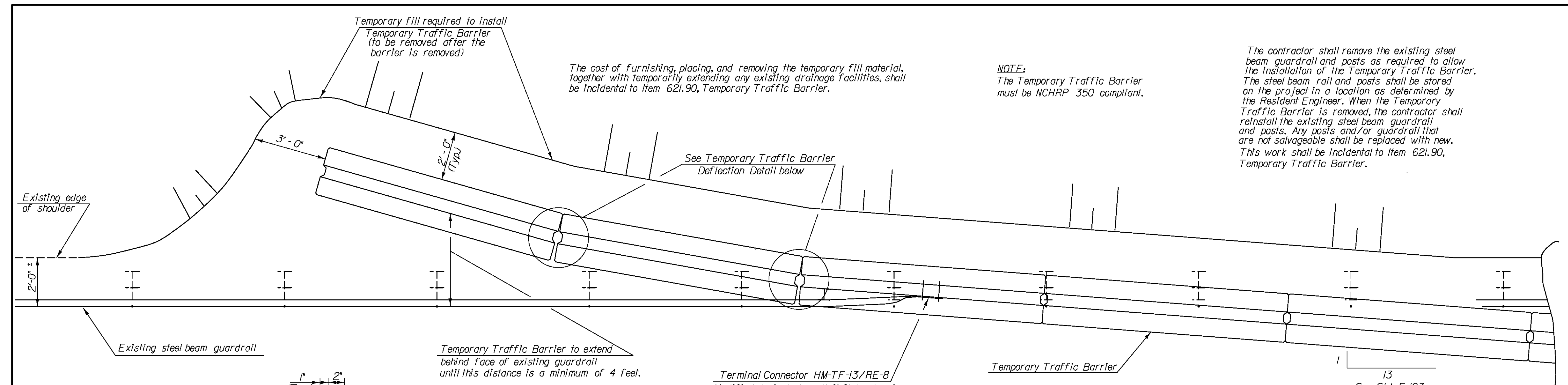
1. UPON ENCOUNTERING GREATER THAN 2" AVERAGE OF DETERIORATED CONCRETE, THE CONTRACTOR SHALL REMOVE THE DETERIORATED MATERIAL AND REPLACE IT WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. REMOVAL OF THE DETERIORATED CONCRETE WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 580.20 "RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE".
3. THE STEEL PLATE IN THE ASPHALTIC PLUG JOINT MAY BE OMITTED ONLY IF THE REPAIRED SURFACE IS SO IRREGULAR IT WILL CAUSE VERTICAL MOVEMENT AND IT IS DIRECTED BY THE ENGINEER.

\* BRIDGE DECK REINFORCEMENT NOT SHOWN FOR CLARITY

PROJECT NAME: GRANVILLE  
PROJECT NUMBER: STP 013 - 4(38)

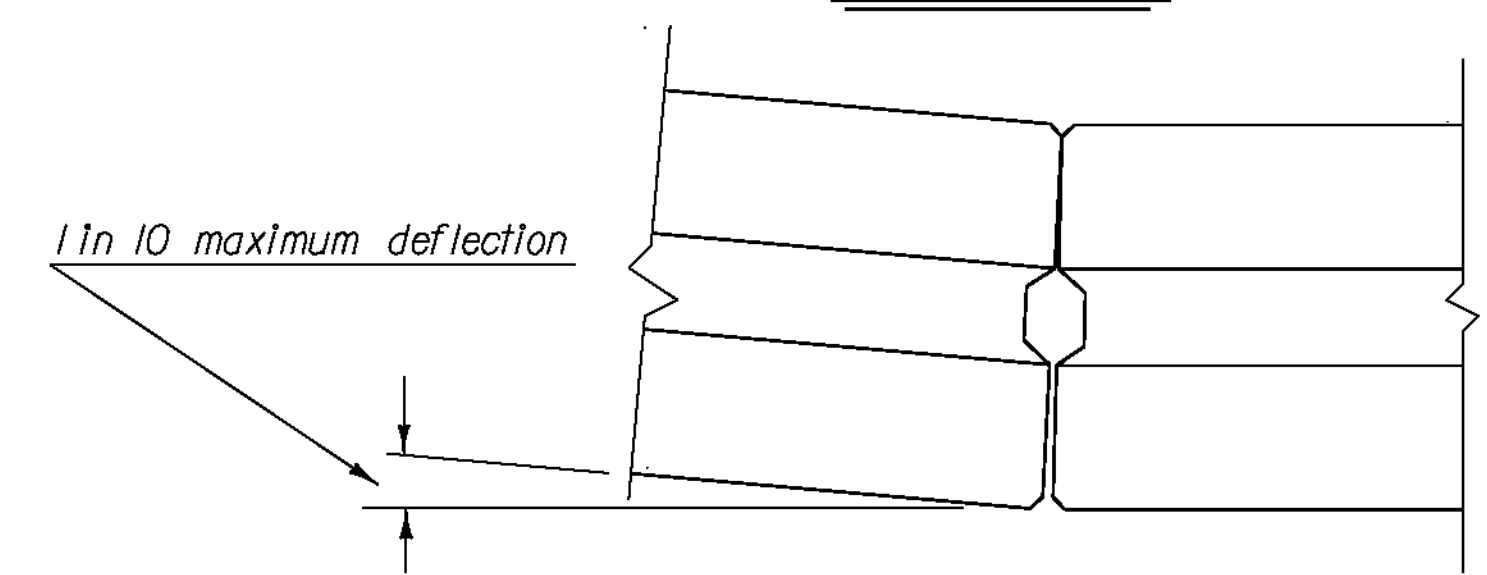
FILE NAME: 88b192-joint.dgn  
PROJECT LEADER: JPB  
DESIGNED BY: PJM  
**PAVEMENT JOINT DETAILS**

PLOT DATE: 4/11/2013  
DRAWN BY: MWS  
CHECKED BY: SRB  
SHEET 7 OF 11



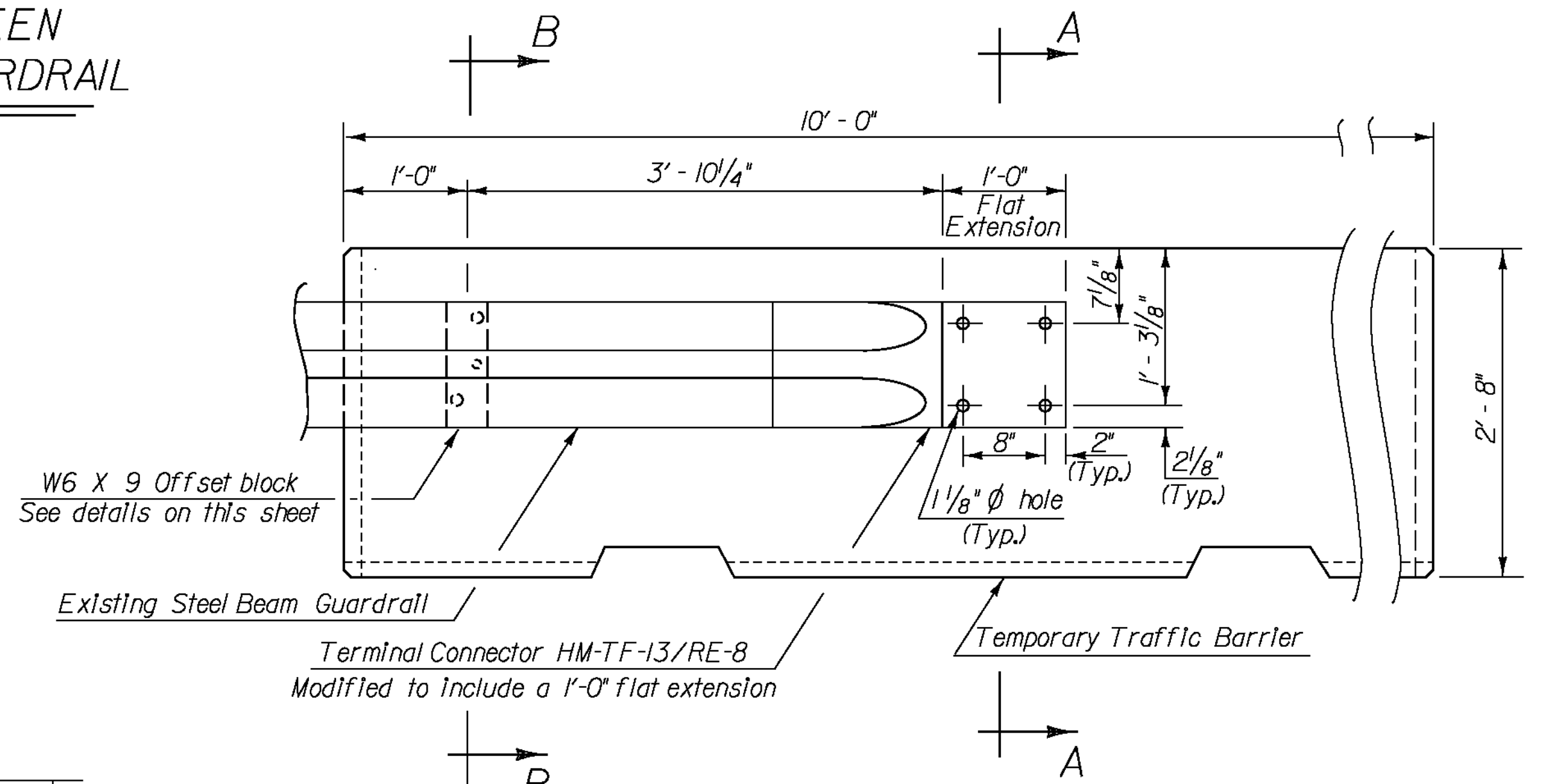
**PLAN VIEW SHOWING POSITIVE CONNECTION BETWEEN TEMPORARY TRAFFIC BARRIER AND EXISTING GUARDRAIL**

$\frac{1}{2}'' = 1' - 0''$



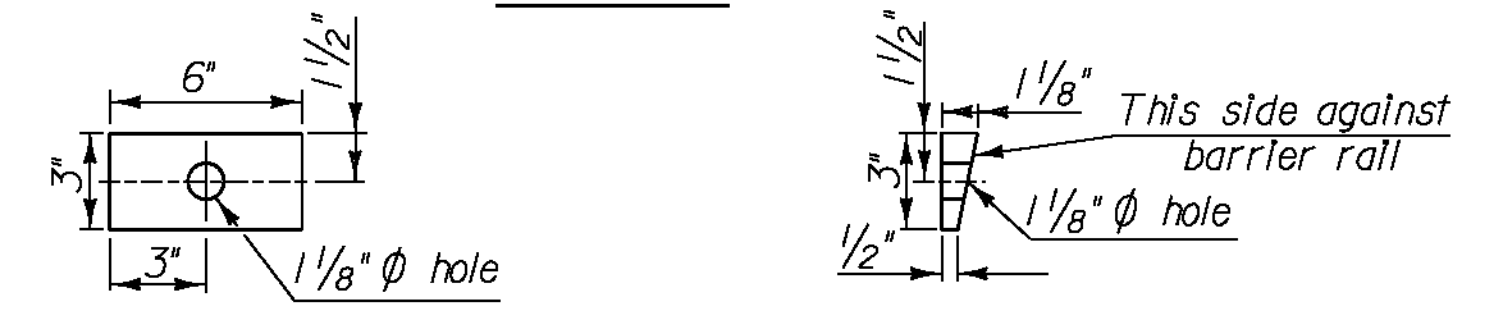
**TEMPORARY TRAFFIC BARRIER DEFLECTION DETAIL**

NTS



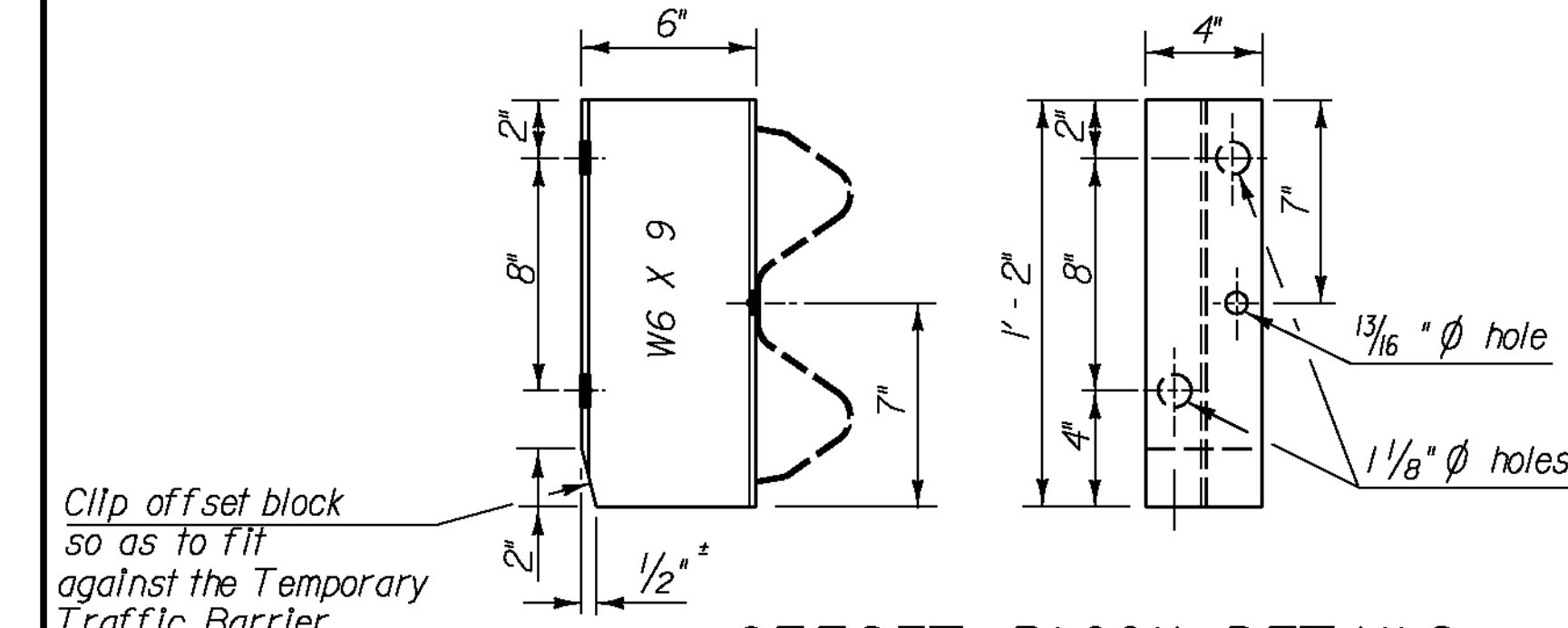
**ELEVATION VIEW SHOWING POSITIVE CONNECTION BETWEEN TEMPORARY TRAFFIC BARRIER AND EXISTING GUARDRAIL**

$1'' = 1' - 0''$



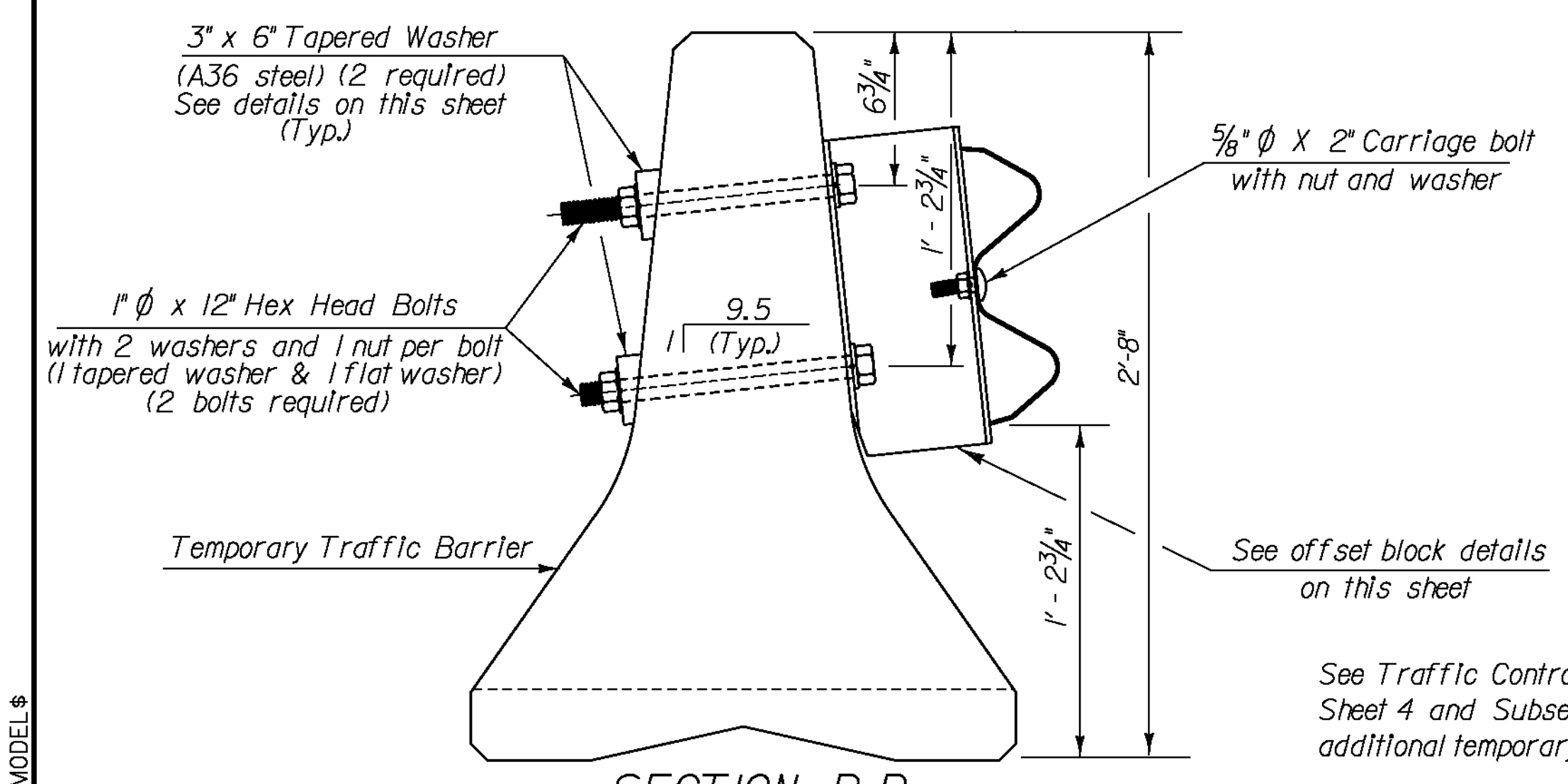
**TAPERED WASHER DETAILS**

$1'' = 6''$



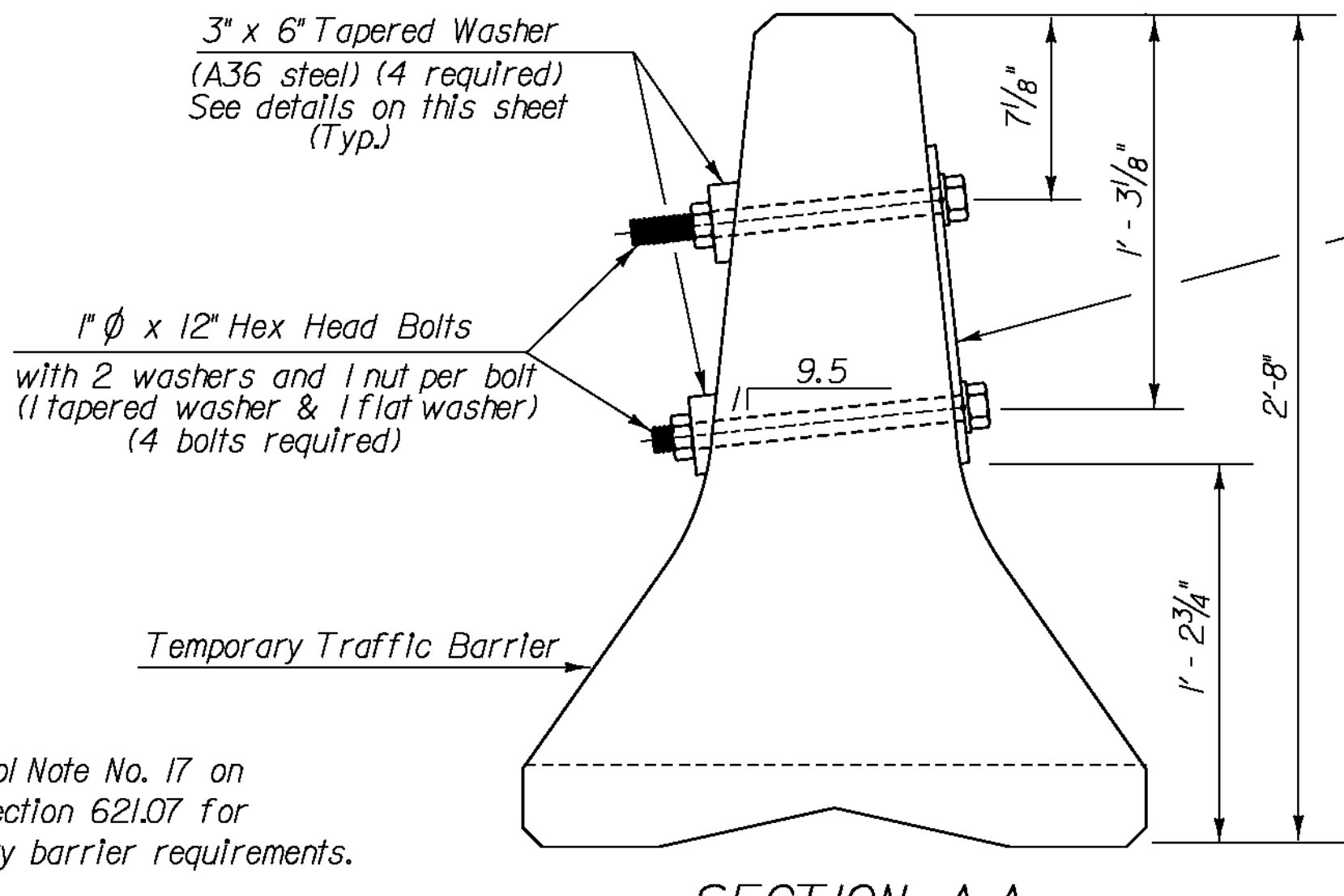
**OFFSET BLOCK DETAILS**

$1'' = 6''$



**SECTION B-B**

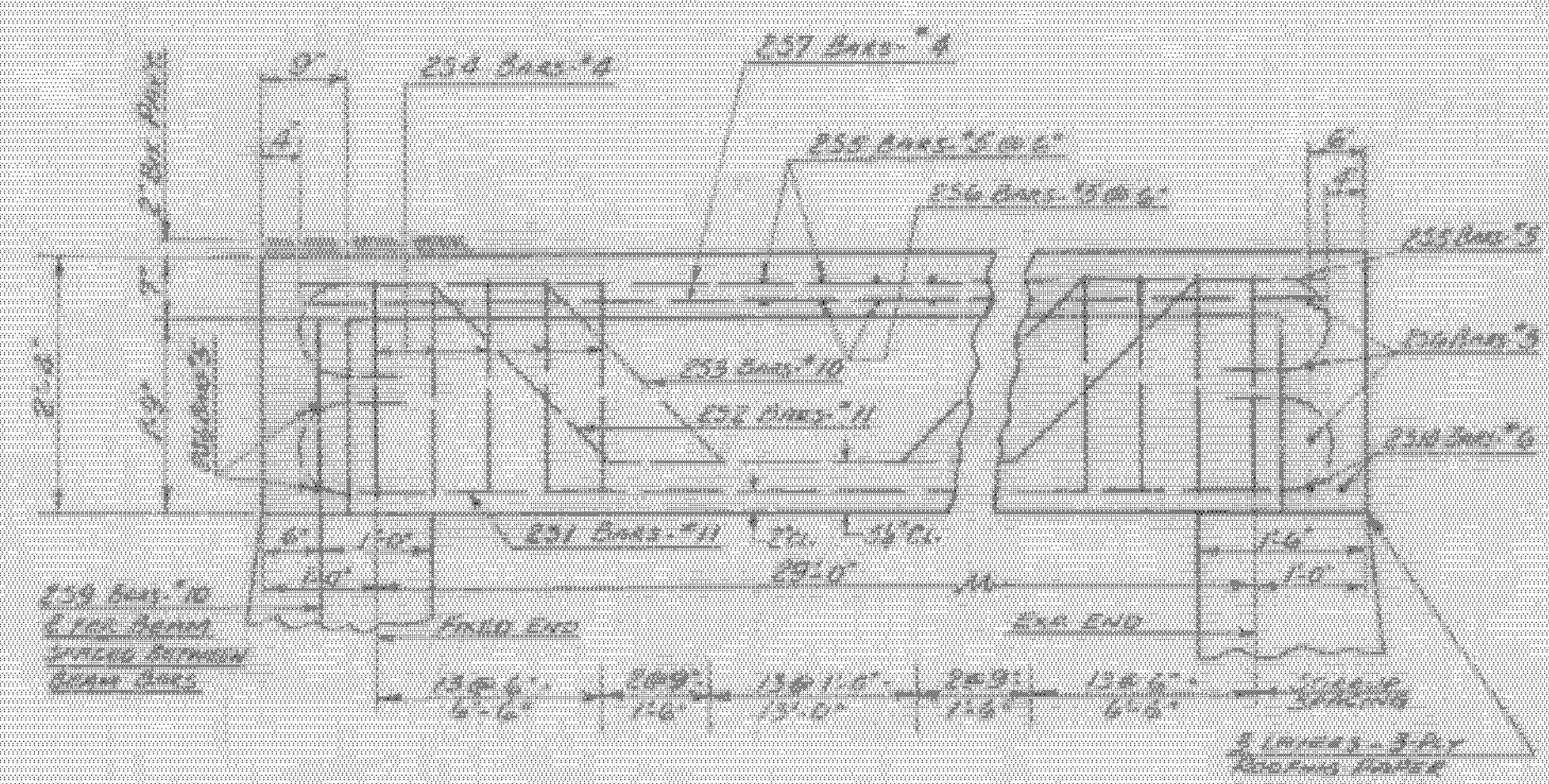
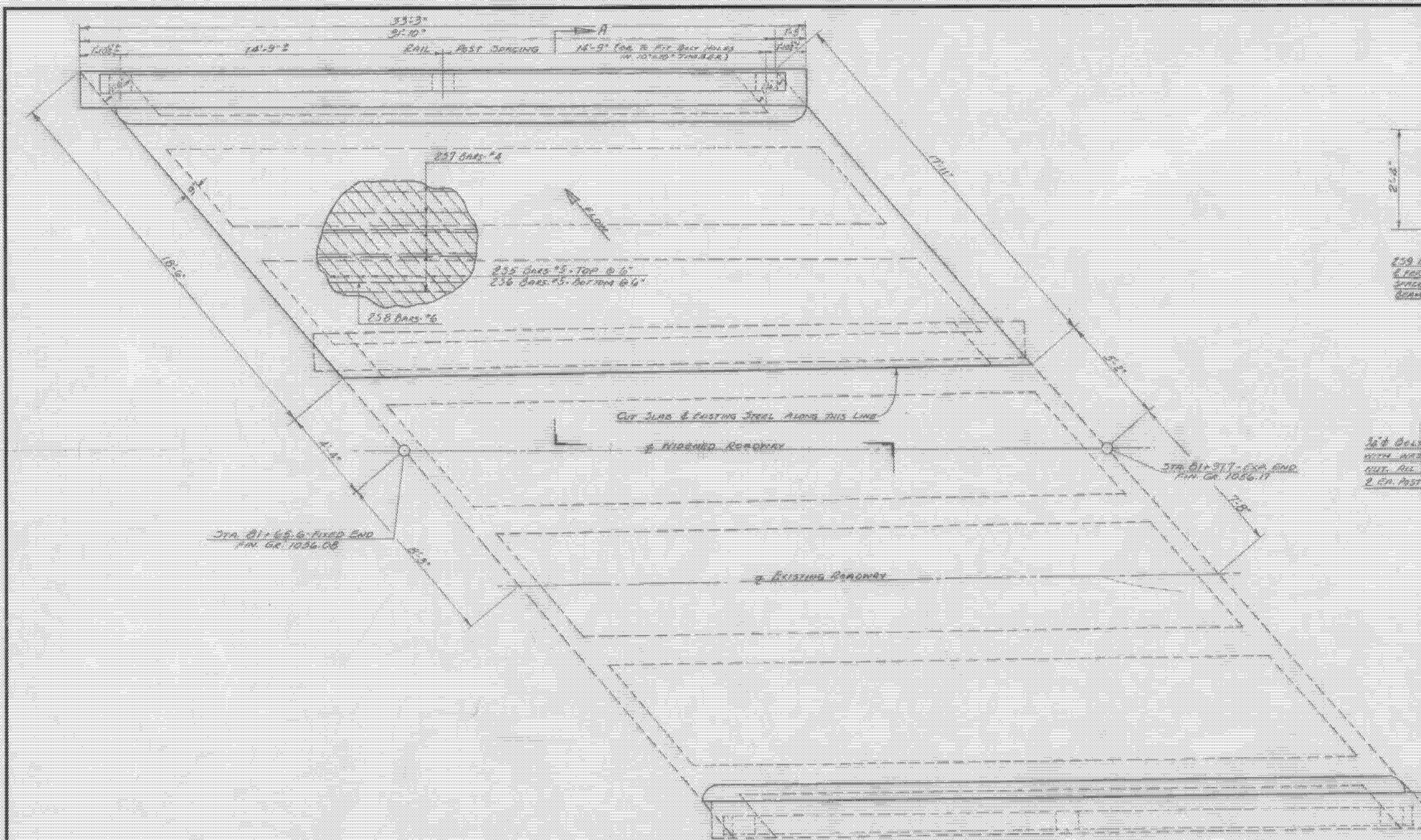
$1'' = 6''$



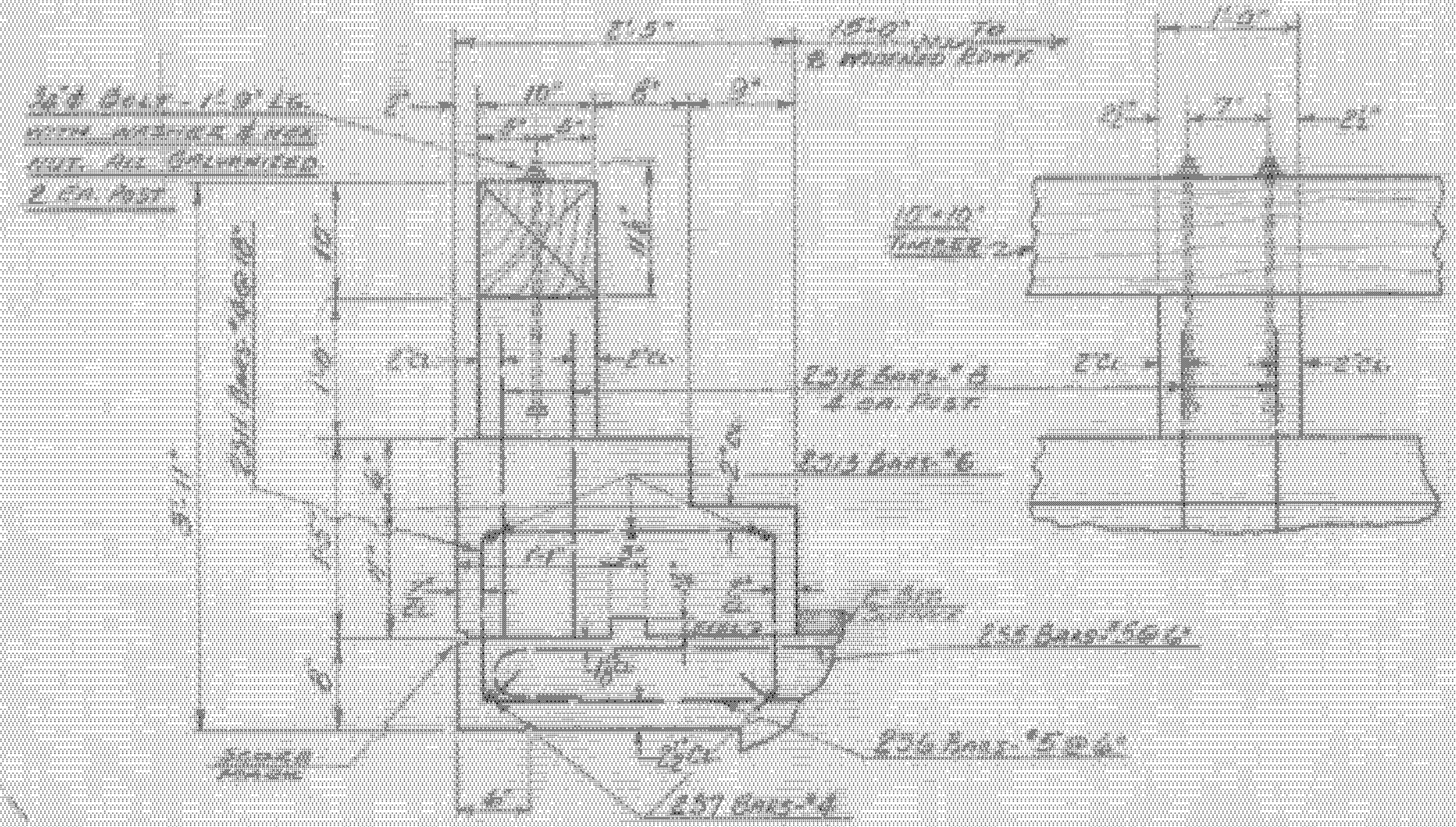
**SECTION A-A**

MODEL: \$MODEL\$

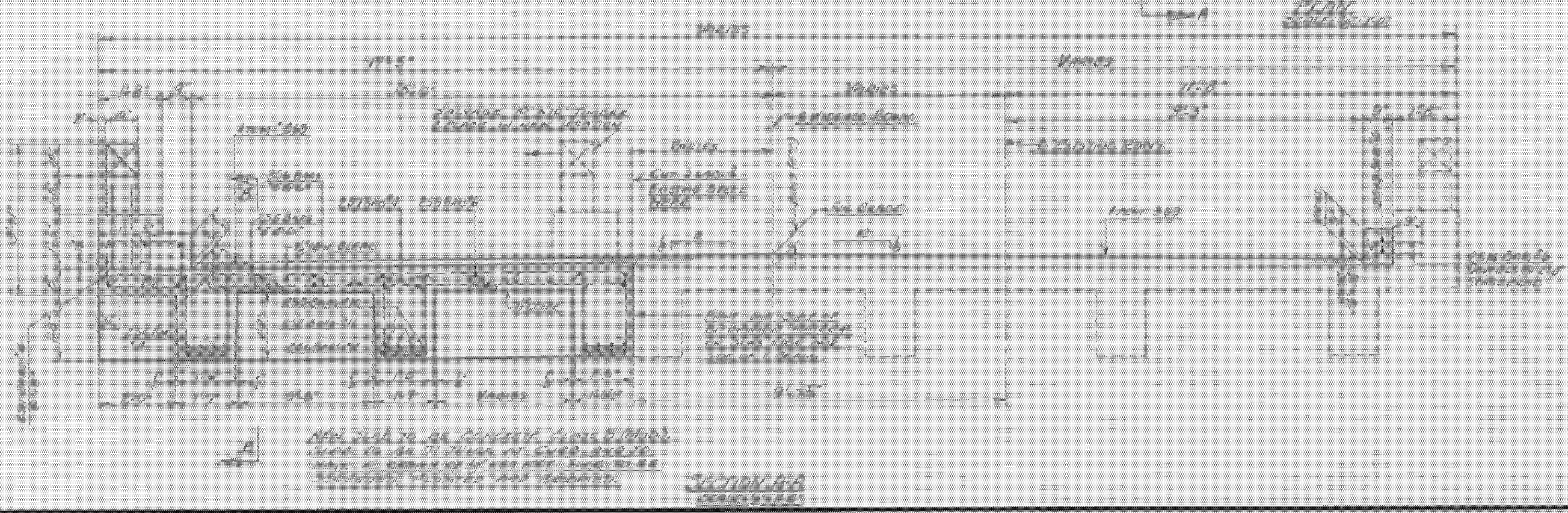
PROJECT NAME:	GRANVILLE	PLOT DATE:	4/11/2013
PROJECT NUMBER:	STP 013 - 4(38)	DRAWN BY:	MWS
FILE NAME:	88b192-r-all.dgn	CHECKED BY:	SRB
PROJECT LEADER:	JPB	SHEET	8 OF 11
DESIGNED BY:	PJM	<b>BARRIER RAIL DETAILS</b>	



BEAM ELEVATION B-B (FOR SQUARE BRIDGE)  
SCALE 3/4"=1'-0"



VIEWS OF NEW CURB & RAIL  
SCALE 1"=1'-0"



SECTION A-A  
SCALE 1/2"=1'-0"

**QUANTITIES**

ITEM	DESCRIPTION	UNIT	NET	DEAD	TOTAL	PROV.
363	BITUMINOUS CONC. PAV. FOR BRIDGE APPROACH	Sq. Yd.	20	3	23	23
401B	CONCRETE CLASS B (MOD.)	CY	26	1	27	27
418	REINFORCING STEEL (3605 BOUND BRIDGE)	TON				
589	ROADWAY AND RESTRICTION COALS	TONS				
574	REINFORCING SUPERSTRUCTURE FOR WIDENING	LS	1		1	1

GRANVILLE  
STP 013-4(38)  
SHEET 9 OF 11  
FOR REFERENCE ONLY

**STATE OF VERMONT**  
DEPARTMENT OF HIGHWAYS

TOWN OF GRANVILLE

ROUTE NO. 100 LOG STA. 233+78

SUPERSTRUCTURE WIDENING

BRIDGE NO. 2

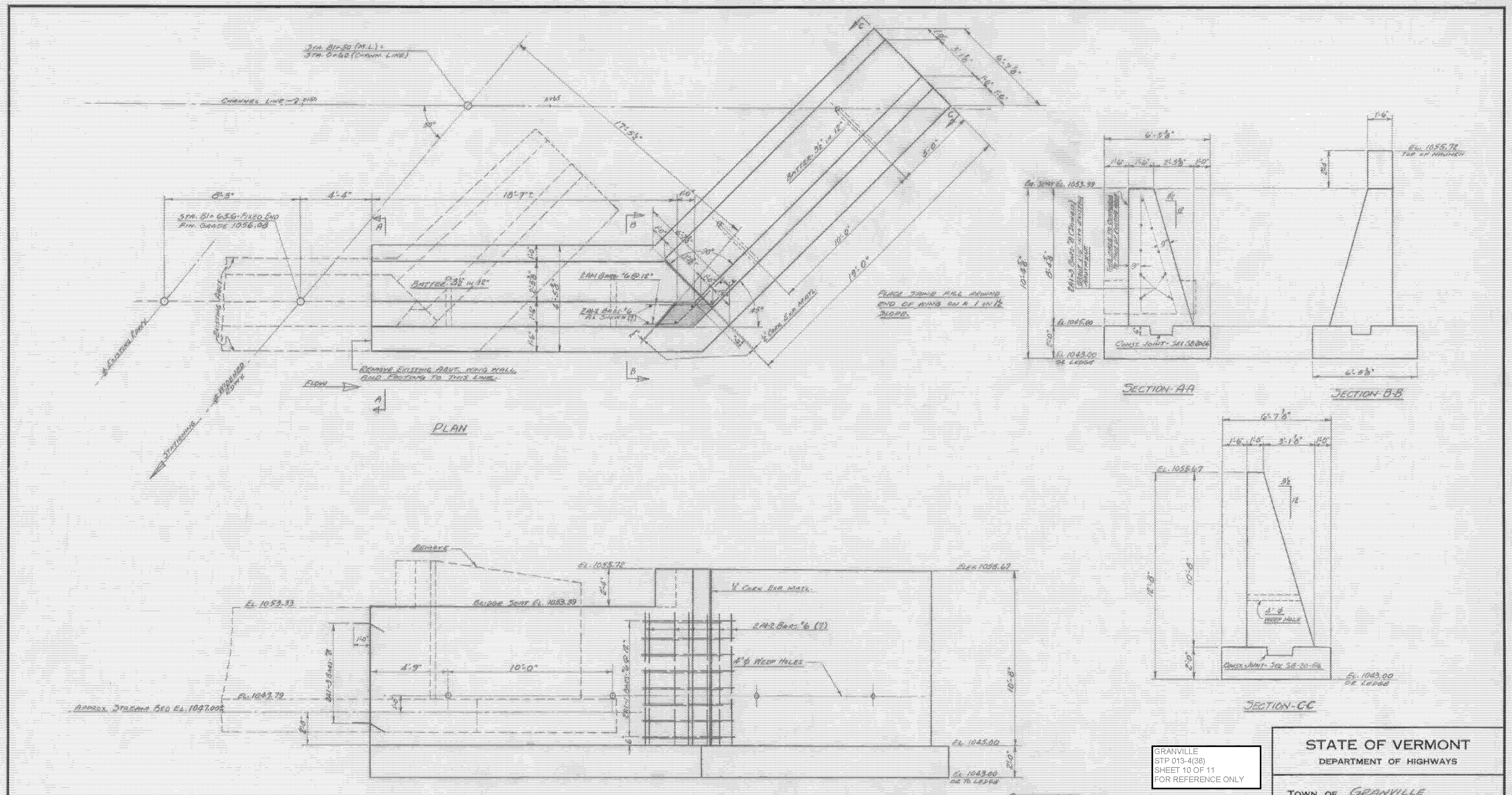
SCALE AS NOTED

SURVEYED BY *James & Burket*

DRAWN BY *E.T.B.* CHECKED BY *M.B.H.*

PROJECT NO. *5-1577(3)*

SHEET 93 OF 202



PLAN

ELEVATION

SECTION AA

SECTION BB

SECTION CC

**QUANTITIES**

ITEM	DESCRIPTION	UNIT	NET	DIRTY	TOTAL	AMOUNT
101-B	SOLID ROCK EXCAVATION	CY	20	0	20	20
106-C	UNCLASSIFIED CHANNEL EXCAVATION	CY	81	8	89	81
107	STRUCTURE EXCAVATION	CY	63	7	70	63
401-B	CONCRETE CLASS 8 (MOB)	CY	53	3	56	30.6
402	REINFORCING STEEL (USE BARS STEEL SHEET)	TONS				
302	STONE FILL FOR SLOPE PROTECTION	CY	2505		5	0

GRANVILLE  
STP 013-4(38)  
SHEET 10 OF 11  
FOR REFERENCE ONLY

**STATE OF VERMONT**  
DEPARTMENT OF HIGHWAYS

TOWN OF GRANVILLE

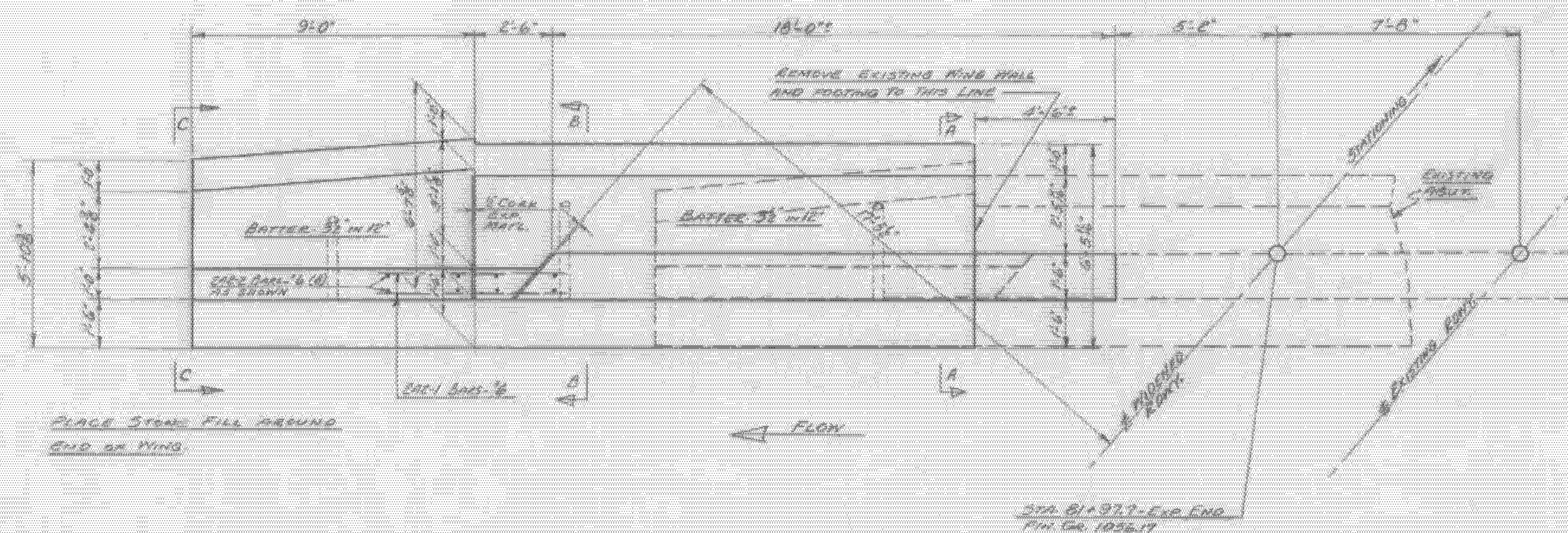
ROUTE No. Vt 100 LOG STA 233+25

DETAILS OF ABUTMENT No. 1

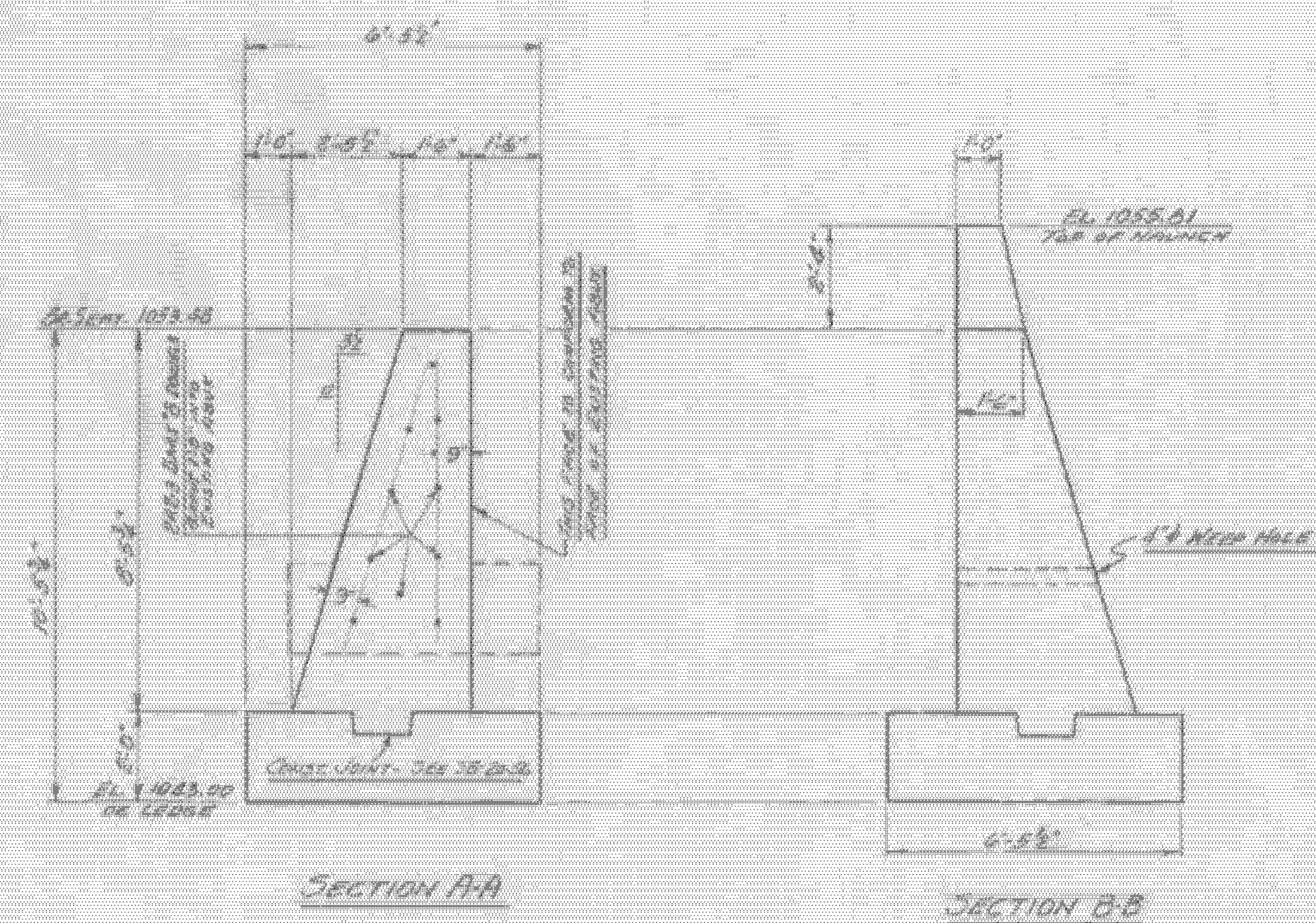
BRIDGE No. 2

SCALE 3/8" = 1'-0"

SURVEYED BY Palmer & Burley  
DRAWN BY R.K. 901 CHECKED BY A.H.M.  
PROJECT No. 5-157 (B)  
SHEET 44 OF 202

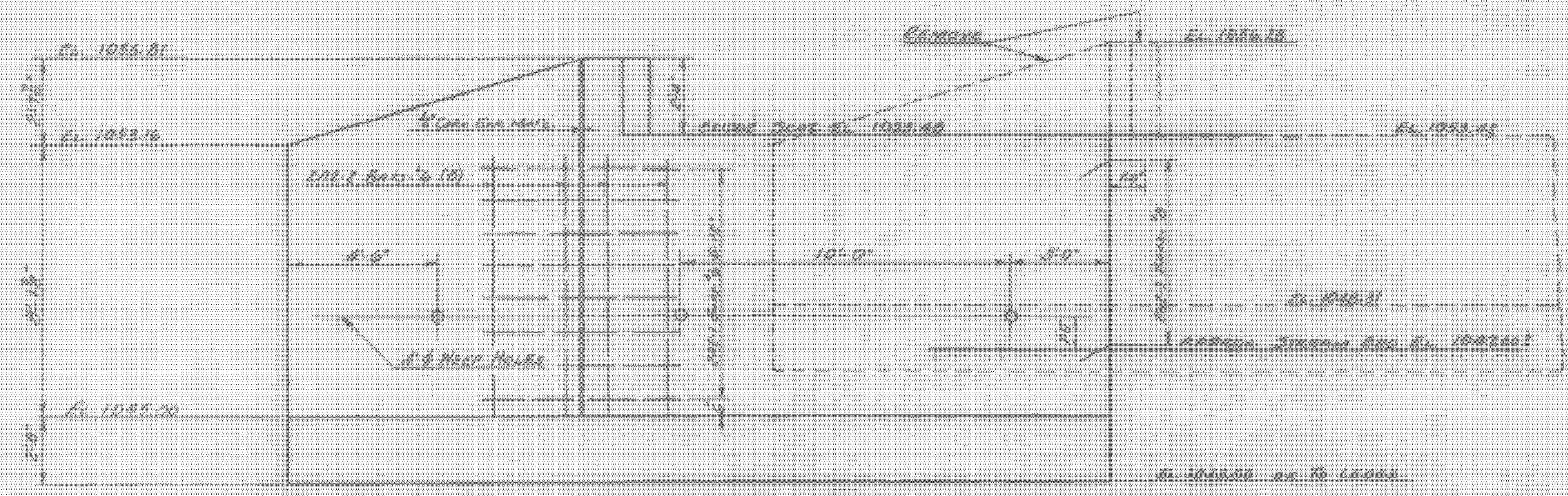


PLAN

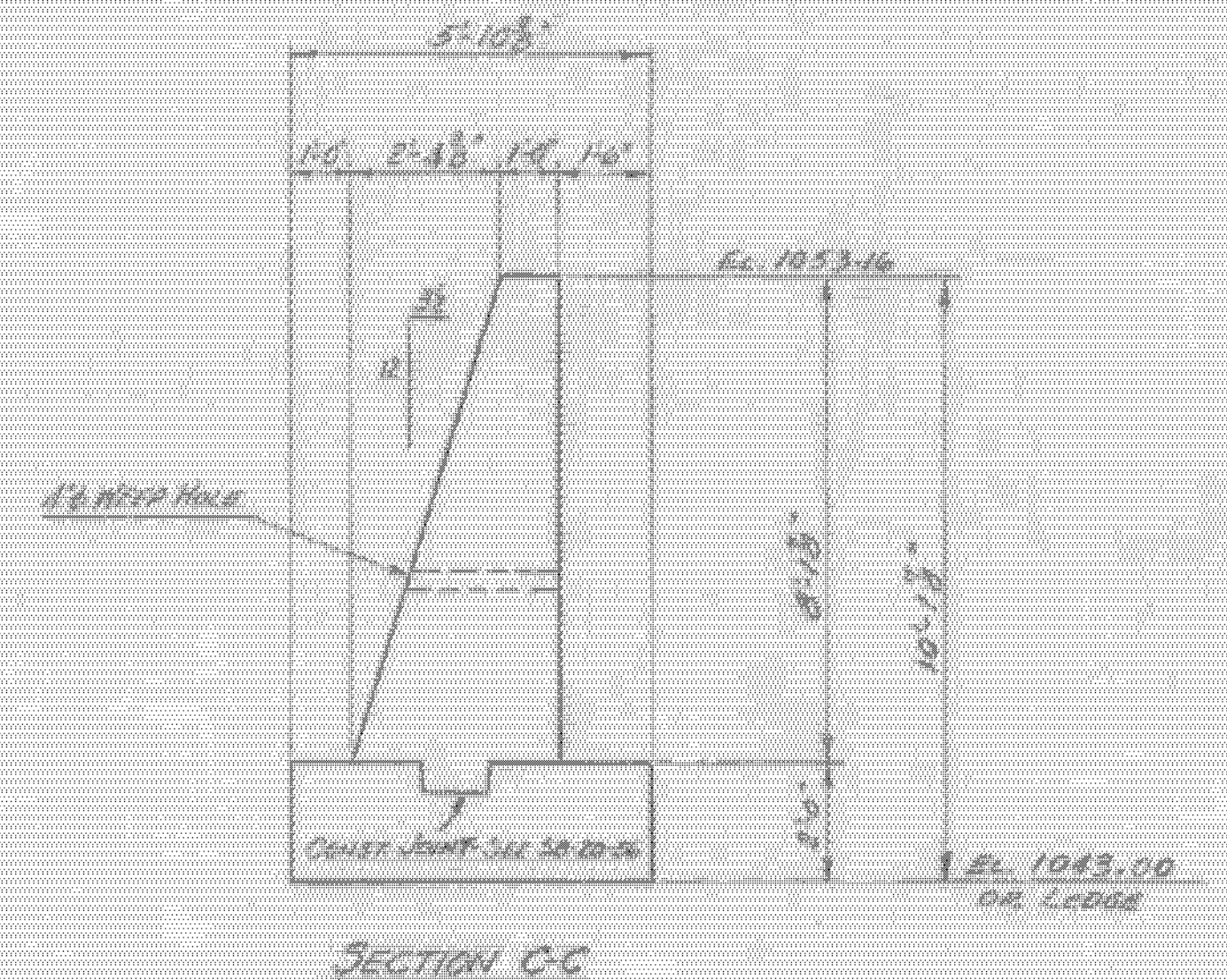


SECTION A-A

SECTION B-B



ELEVATION



SECTION C-C

GRANVILLE  
STP 013-4(38)  
SHEET 11 OF 11  
FOR REFERENCE ONLY

QUANTITIES					
ITEM	DESCRIPTION	UNIT	NET	GRAN	FINN
101-B	SOLID ROCK EXCAVATION	CY	8	1	9
107	STRUCTURE EXCAVATION	CY	58	6	58
101-B	CONCRETE CLASS B (MOD.)	CY	53	2	41
102	REINFORCING STEEL (SEE REINFT. STEEL CHART)	LBS			418
522	STONE FILL FOR SLOPE PROTECTION	CY		5	0

STATE OF VERMONT  
DEPARTMENT OF HIGHWAYS

TOWN OF GRANVILLE

ROUTE No. 100 LOG STA. 233+78

DETAILS OF ABUTMENT No. 2

BRIDGE No. 2

SCALE 3/4" = 1'-0"

SURVEYED BY PALMER & BURLEY

DRAWN BY R.C.B. CHECKED BY J.B.M.

PROJECT No. 5-109(78)

SHEET 45 OF 202