

OCT 10 1995

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

## BEL 26-7.12 WAYNE TOWNSHIP BELMONT COUNTY

**BEL-26-7.12**

OHIO

FHWA REGION 5

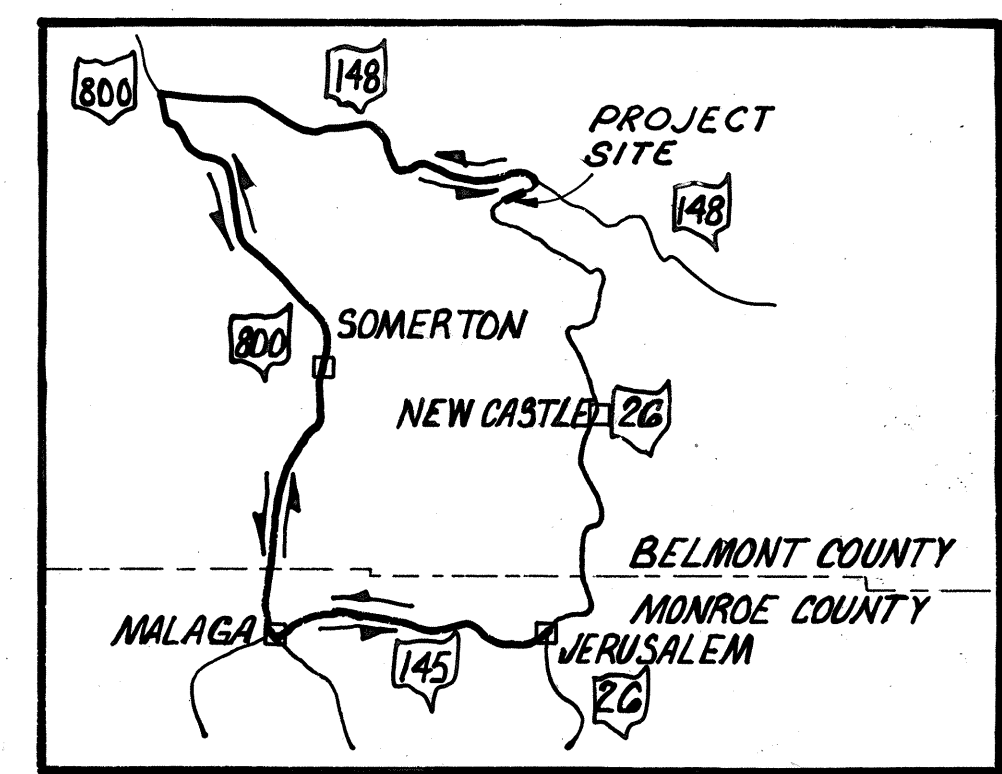
FEDERAL PROJECT

1  
25

BRO-0705(1)

DESIGN DESIGNATION	
CURRENT ADT (1991)	320
DESIGN ADT (2011)	512
DHV	51
D	60%
T	3.1%
V	55 MPH
LEGAL SPEED	55 MPH
FUNCTIONAL CLASSIFICATION	COLLECTOR (RURAL)

DESIGN EXCEPTION	APPROVAL DATE
VERTICAL ALIGNMENT	FEB. 19, 1991
STOPPING SIGHT DISTANCE (VERTICAL)	FEB. 19, 1991
GRADES	FEB. 19, 1991



All references to Federal Number BRZ-0705(1) appearing in these plans shall be considered to read BRO-750(1)

### 1991 SPECIFICATIONS

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

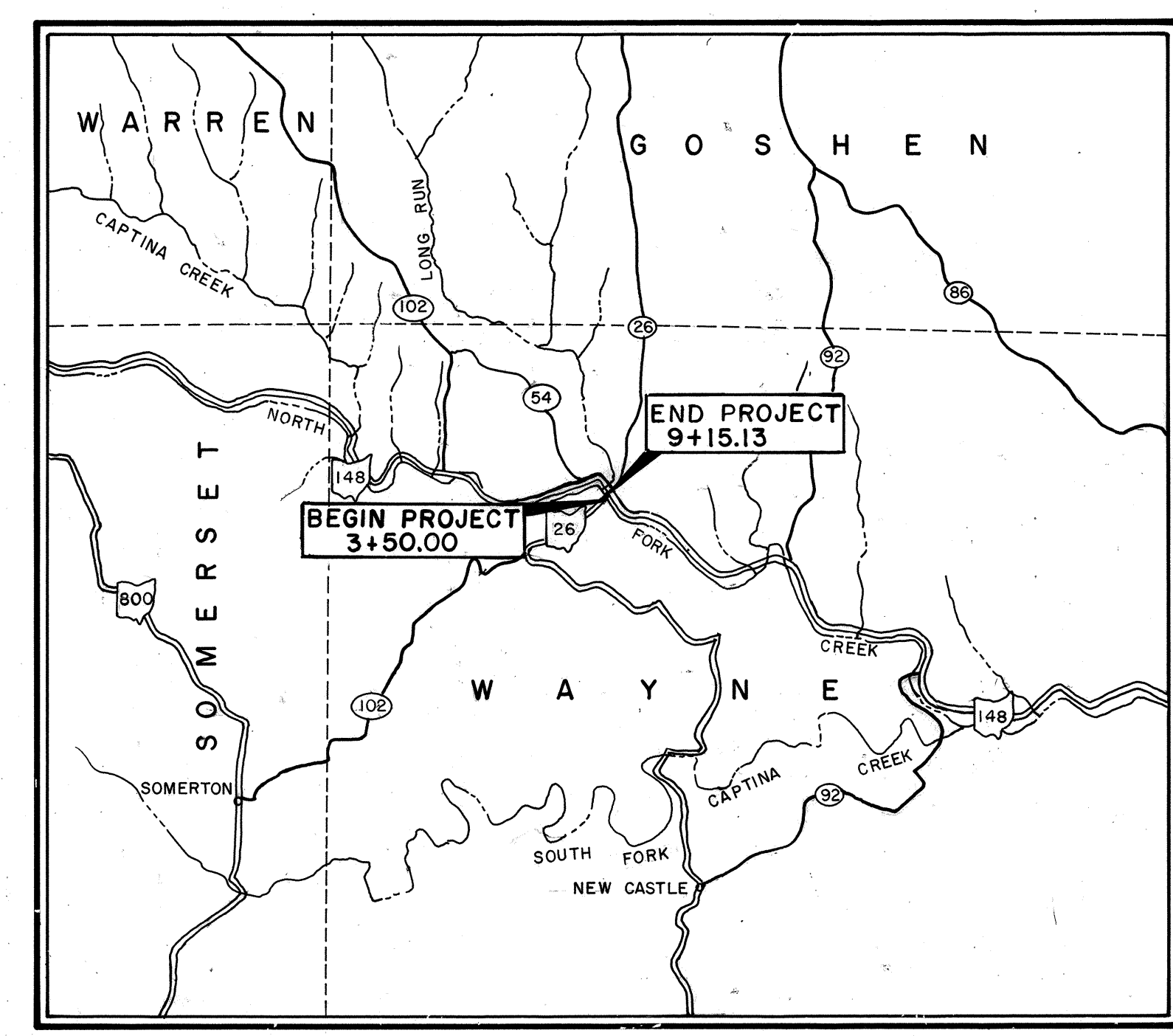
I hereby approve these plans and declare that the making of this improvement will require the closing to traffic of the highway and that detours will be provided as indicated on the plans.

### CONVENTIONAL SIGNS

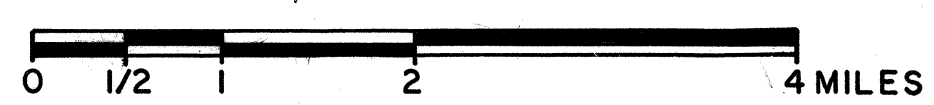
County Line	-----	Limited Access (only)	-----	LA	-----
Township Line	-----	Right of Way (only)	-----	RW	-----
Section Line	-----	Limited Access & Right of Way	-----	LA & RW	-----
Corporation Line	----- or -----	Existing Right of Way	-----	-R/W	-----
Fence Line (existing)	-x-x-	Property Line	-----	(in existing fence)	-x-x-
Center Line	-----	Railroad	-----	or	-----
Trees, Stumps, (to be removed)	-----	Guardrail (existing)	-----	(proposed)	-----
Utility Poles: Telephone $\phi$ , Power $\phi$ , Light $\phi$ .					

### INDEX OF SHEETS

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LOCATION MAP  
SCALE IN MILES

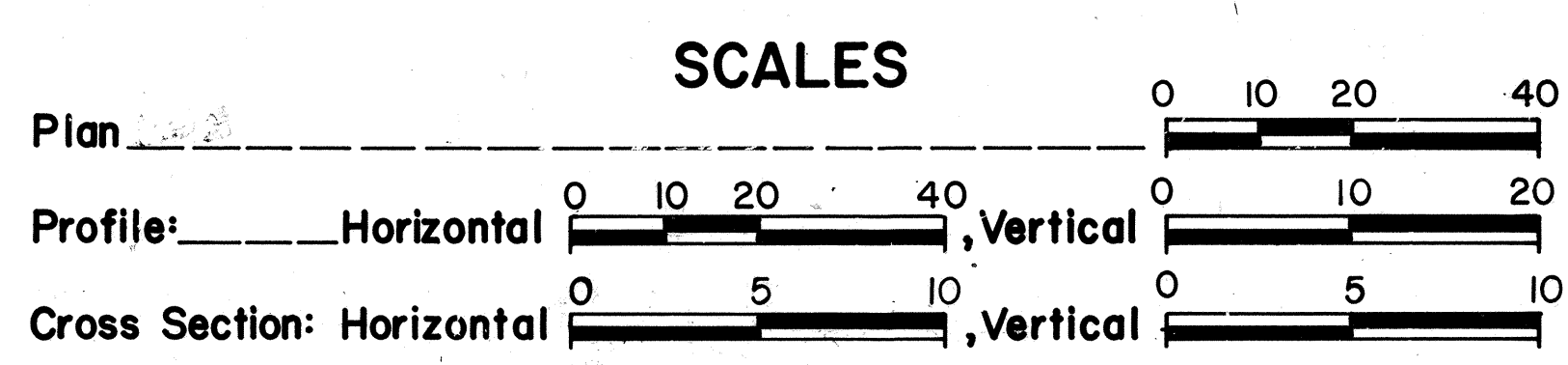


### LINE DATA

Begin Project	Sta. 3+50.00
End Project	Sta. 9+15.13
Length of Project = 565.13 Lin. Ft. or 0.107 Mi.	
Begin Work	Sta. 3+50.00
End Work	Sta. 9+60.00
Length of Work = 610.00 Lin. Ft. or 0.116 Mi.	

**UNDERGROUND UTILITIES**  
TWO WORKING DAYS  
**BEFORE YOU DIG**  
Call 800-362-2764 (Toll free)  
OHIO UTILITIES PROTECTION SERVICE  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

Portion to be improved \_\_\_\_\_  
State & Federal Routes \_\_\_\_\_  
Other Roads \_\_\_\_\_



SUPPLEMENTAL SPECIFICATIONS	
802	4-13-90
836	11-12-85
849	12-24-85
949	9-26-86

Approved John H. McClain  
Date 12/10/92 District Deputy Director of Transportation

Approved B.D. Handelman  
Date 1/9/92 Engineer, Bureau of Bridge and Structural Design

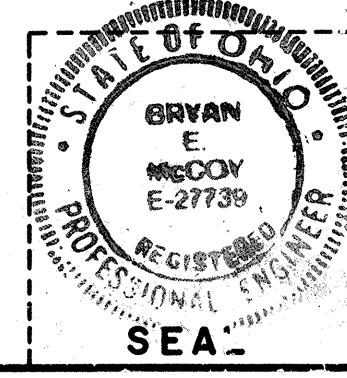
Approved George L. Rutz  
Date 1/2/92 Deputy Director, Planning and Design

Approved Jerry Wiley  
Date 3-2-92 Director, Department of Transportation

STRUCTURE PLANS REVIEWED BY:  
**Burgess & Niple, Limited**  
Engineers and Architects

Bryan E. McCoy  
Bryan E. McCoy

Plan Prepared By:  
**McCoy Associates Inc.**  
2620 Ridgewood Road  
Akron, Ohio 44313  
(216) 867-4727



SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
BP-5	10-1-87	AS-1-81	11-27-81	DBR-2-73	4-10-73
BP-6	10-1-87				
GR-1.1	5-6-91	LA-1	6-1-79	EXJ-3-82	8-1-84
GR-1.2	5-6-91	MT-99.10	11-14-86		
GR-2.1	5-6-91	MT-101.60	4-1-90	PSBD-1-81	6-20-89
GR-3.4	5-6-91	TTC-44.10	8-29-84		
GR-4.1	5-6-91	TTC-41.20	3-26-79		
GR-4.2	5-6-91	TTC-42.20	3-26-79		
		TTC-52.10	4-3-79		
MC-4	7-26-76	TTC-52.20	4-3-79		
MC-11	8-1-78				

REVISED 6-11-92

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: \_\_\_\_\_

DIVISION ADMINISTRATOR \_\_\_\_\_ DATE \_\_\_\_\_

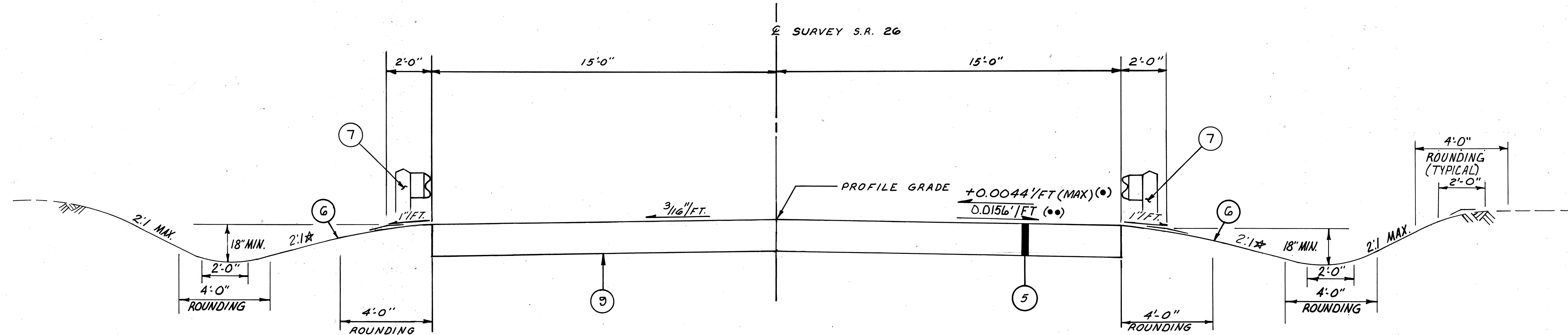
Project: BEL-26-7.12  
Date of Letting \_\_\_\_\_, Contract No. \_\_\_\_\_

# TYPICAL SECTIONS

TYPE 404 ON 301

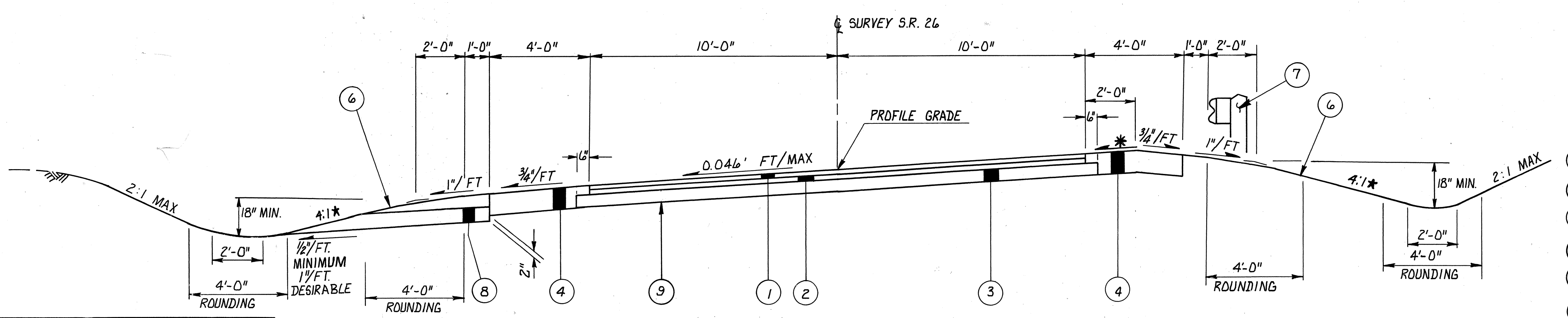
FHWA REGION	STATE	PROJECT
5	OHIO	

BEL 26-7.12



APPROACH SLAB SECTION

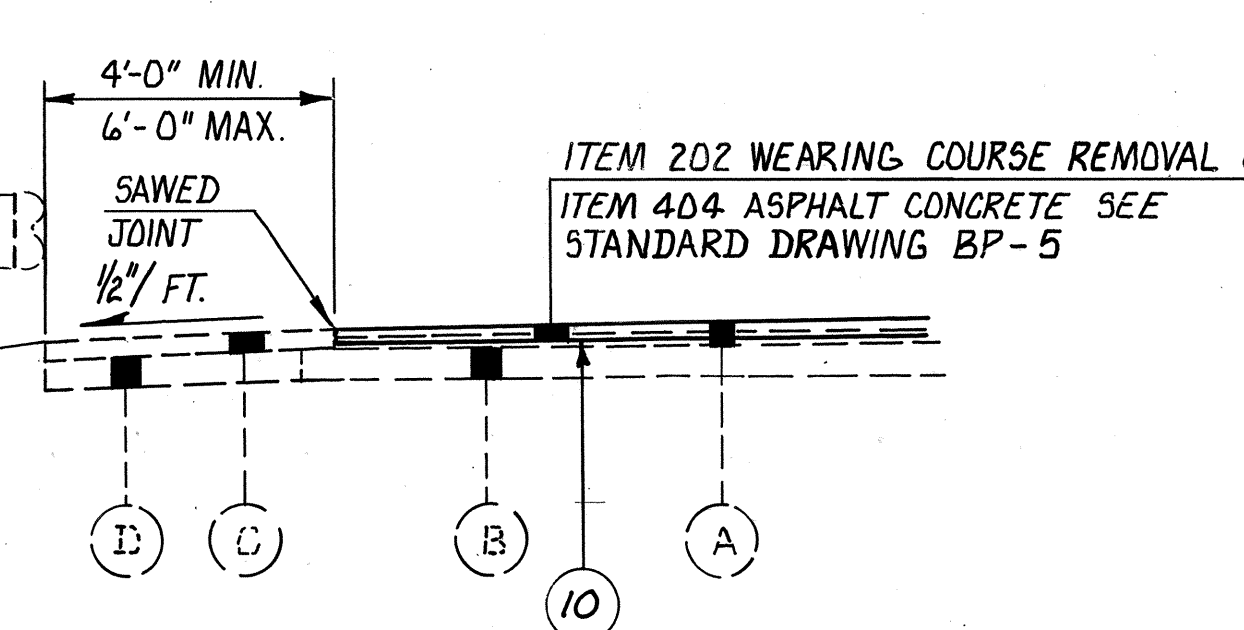
STA. 7+80.87 TO 8+05.87=25.00 LIN. FT. •  
 STA. 8+90.13 TO 9+15.13=25.00 LIN. FT. ••  
 TOTAL = 50.00 LIN. FT.



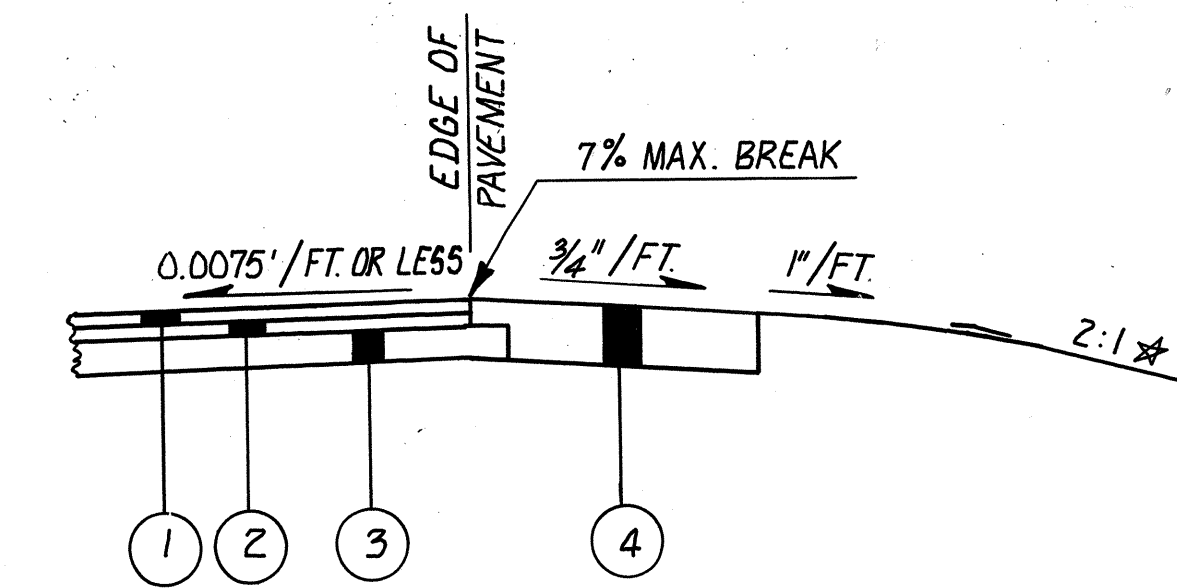
SUPERELEVATED PAVEMENT SECTION

STA. 3+50.00 TO STA. 7+80.87 = 430.87 LIN. FT.

STATION	ELEV.	OFFSET LT.	CROSS SLOPE	ELEV.	OFFSET RT.	CROSS SLOPE	ELEV.
3+50	990.47	10'	-0.156	990.31	10'	-0.156	990.31
+7.5	987.56			987.40		-0.034	987.47
4+00	984.67			984.51		-0.031	984.64
+12.5	983.25			983.09		-	983.25
+2.5	981.84			981.68		+0.031	981.87
+5.0	979.06			978.90		+0.034	979.15
+7.5	976.33			976.17		+0.156	976.49
5+00	973.66		-0.272	973.39		+0.272	973.93
+2.5	971.05		-0.388	970.66		+0.388	971.44
+40.5	969.46		-0.46	969.00		+0.46	969.92
+5.0	968.49			968.03			968.95
+7.5	965.99			965.53			966.45
6+00	963.54			963.08			964.00
+2.5	961.12			960.66			961.58
+5.0	958.70			958.24			959.16
+64.5	957.33		-0.46	956.87		+0.46	957.79
+7.5	956.39		-0.411	955.98		+0.411	956.80
7+00	954.31		-0.295	954.02		+0.295	954.61
+2.5	952.44		-0.179	952.26		+0.179	952.62
+3.0	952.10		-0.156	951.94		+0.156	952.26
+5.0	950.80			950.64		+0.166	950.91
+7.5	949.39	10'		949.23	10'	+0.044	949.43
+92.5	948.53	15'		948.30	15'	-	948.53
8+00	948.19			947.96		-0.019	948.16
+2.5	947.22			946.99		-0.081	947.10
+5.0	946.48			946.25		-0.144	946.26
+5.5	946.35			946.12		-0.156	946.12



SHOULDER DETAIL  
 STA. 9+15.13 (LT) TO STA. 9+40 (LEFT)  
 STA. 9+15.13 (RT) TO STA. 9+40 (RIGHT)



SHOULDER DETAIL  
 SUPERELEVATED SECTION

LEGEND

- (1) ITEM 404 1 1/4" ASPHALT CONCRETE, AC-20
- (2) ITEM 402 1 3/4" ASPHALT CONCRETE, AC-20
- (3) ITEM 301 5" BITUMINOUS AGGREGATE BASE, AC-20
- (4) ITEM 304 8" AGGREGATE BASE, AS PER PLAN
- (5) ITEM G11 REINFORCED CONCRETE APPROACH SLAB (7'-15")
- (6) ITEM 659 SEEDING AND MULCHING
- (7) ITEM 606 GUARDRAIL, TYPE 5
- (8) ITEM 605 AGGREGATE DRAINS
- (9) ITEM 203 SUBGRADE COMPACTION
- (10) ITEM 407 TACK COAT
- (A) EXISTING ASPHALT CONCRETE
- (B) EXISTING BITUMINOUS AGGREGATE BASE
- (C) EXISTING BITUMINOUS AGGREGATE BASE
- (D) EXISTING AGGREGATE BASE
- \* SAME SLOPE AS PAVEMENT
- ★ SEE CROSS-SECTIONS FOR SLOPE

# GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-26-7.12

**ELEVATION DATUM**

ALL ELEVATIONS REFER TO U.S.G.S. DATUM.

**ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS**

THE ROUNDED CORNERS SHOWN ON THE TYPICAL SECTIONS, APPLY TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN ON THESE PLANS.

**UNDERGROUND UTILITIES**

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

**UTILITY OWNERSHIP**

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

<b><u>TELEPHONE</u></b>	<b><u>ELECTRIC</u></b>
OHIO BELL TELEPHONE	BELMONT ELECTRIC COOPERATIVE, INC.
840 ORCHARD STREET	37791 BARNESVILLE - BETHESDA ROAD
ZANESVILLE, OHIO 43701	P.O. BOX 270
1-614-454-3515	BARNESVILLE, OHIO 43713
	1-614-425-4018

**REMOVAL OF TREES OR STUMPS**

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING, EXCEPT THAT THOSE TREES FOR WHICH PROTECTION AND PRESERVATION WORK IS INDICATED ELSEWHERE IN THESE PLANS SHALL NOT BE REMOVED.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZE	NO. TREES	NO. STUMPS	TOTAL
18"	2	1	3
30"	0	1	1
48"	0	0	0
60"	0	0	0

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE ADDITIONAL TREES OR STUMPS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

**LOCATION OF GUARDRAIL**

THE LOCATION OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

**WATERING PERMANENT SEEDED AREAS**

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH AND TO CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09:

659 WATER                  6 M GAL.

**TEMPORARY SOIL EROSION AND SEDIMENT CONTROL**

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER, FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207 STRAW OR HAY BALES                  50 EACH

**SEEDING**

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREA BETWEEN THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS.

**EROSION CONTROL**

ITEMS 601 AND 660 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE EITHER OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THESE ITEMS WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

**CONTINGENCY QUANTITIES**

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

**CONNECTIONS BETWEEN EXISTING AND PROPOSED GUARDRAIL**

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "BEAM RAIL SPLICE" AS SHOWN ON STANDARD DRAWING GR-1. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE GUARDRAIL RUNS.

**ITEM - 304 AGGREGATE BASE, AS PER PLAN**

MATERIALS FURNISHED FOR THIS ITEM SHALL EXCLUDE ALL SLAG EXCEPT GRANULATED SLAG OR CRUSHED AIR-COOLED BLAST FURNACE SLAG.

**ITEM 605 AGGREGATE DRAINS**

AGGREGATE DRAINS SHALL BE PLACED AT FIFTY (50) FOOT INTERVALS ON EACH SIDE OF NORMAL CROWNED SECTIONS AND AT TWENTY-FIVE (25) FOOT INTERVALS ON THE LOW SIDE ONLY OF SUPERELEVATED SECTIONS, EXCEPT WHERE ITEM 605 PIPE UNDERDRAINS HAVE BEEN PROVIDED.

AN AGGREGATE DRAIN SHALL BE PLACED AT THE LOW POINT OF EACH SAG VERTICAL CURVE.

AN ESTIMATED QUANTITY OF 131 LIN. FT. OF ITEM 605 AGGREGATE DRAINS HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE WITH THIS ITEM.

**407 TACK COAT**

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

**ITEM SPECIAL - IRON PINS**

BREAK POINTS IN THE PROPOSED PERMANENT RIGHT OF WAY LINE AS SHOWN ON THE R/W PLAN, SHALL BE MONUMENTED WITH IRON PINS ESTABLISHED AND SET BY AN OHIO REGISTERED SURVEYOR. THE IRON PIN SHALL BE COMPOSED OF A DURABLE MATERIAL HAVING A MINIMUM LENGTH OF THIRTY (30) INCHES AND A MINIMUM CROSS-SECTIONAL AREA OF 0.2 SQUARE INCHES. EACH PIN MUST BE IDENTIFIED WITH A DURABLE MARKER BEARING THE SURVEYOR'S OHIO REGISTRATION NUMBER AND/OR NAME OR COMPANY NAME AND BE DETECTABLE WITH CONVENTIONAL INSTRUMENTS FOR FINDING FERROUS OR MAGNETIC OBJECTS.

ESTABLISHING RIGHT OF WAY CORNERS AND SETTING IRON PINS SHALL BE PAID FOR AT THE CONTRACT PRICE FOR ITEM SPECIAL - IRON PINS, WHICH PRICE SHALL BE FULL COMPENSATION FOR ALL SERVICES, MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK:

ITEM SPECIAL - IRON PINS                  13 EACH

**TEMPORARY WORK ZONE MARKINGS**

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE MARKINGS, AS PER THE REQUIREMENTS OF STANDARD DRAWING MT-99.10:

ITEM 614 TEMPORARY CENTER LINE, CLASS II                  0.11 MI.

IF THE 642 PERMANENT MARKINGS ARE IN PLACE PRIOR TO REOPENING THE HIGHWAY TO THROUGH TRAFFIC, THIS ITEM MAY BE NONPERFORMED.

**MAINTAINING TRAFFIC**

THE DETOUR SHOWN ON SHEET 1 SHALL NOT BE PLACED INTO EFFECT UNTIL THE CONTRACTOR IS READY TO REMOVE THE EXISTING BRIDGE. WHILE THE DETOUR IS IN EFFECT, THE CONTRACTOR SHALL CONTINUOUSLY PROCEED WITH WORK ON THE NEW BRIDGE, APPROACH SLABS AND GUARDRAIL UNTIL THAT PORTION OF THE WORK IS COMPLETED. IF THE CONTRACTOR CANNOT PROCEED WITH CONSTRUCTION OF THE ADJOINING PAVEMENT BECAUSE OF WEATHER OR SCHEDULING LIMITATIONS, THE DETOUR SHALL BE REMOVED AND THE REMAINDER OF THE WORK SHALL BE ACCOMPLISHED UNDER TRAFFIC. THE DURATION OF THE DETOUR SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND SUBSEQUENTLY REMOVE APPROVED TRAFFIC CONTROL DEVICES AS PER ITEM 614, MAINTAINING TRAFFIC, INCLUDING BARRICADES AND SIGNS IN ACCORDANCE WITH STANDARD DRAWING MT-101.60. DETOUR SIGNS AND SUPPORTS WILL BE ERECTED AND MAINTAINED BY THE STATE. THE CONTRACTOR SHALL PROVIDE AT LEAST TWO WEEKS NOTICE TO THE DISTRICT TRAFFIC ENGINEER PRIOR TO CLOSURE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE A OR B	40 CU. YD.
ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE C	20 CU. YD.
ITEM 616 CALCIUM CHLORIDE	5 TON
ITEM 616 WATER	10 M-GAL.

SEPARATE PAYMENT SHALL BE MADE FOR ITEMS 410 AND ITEM 616 NOTED ABOVE. ALL OTHER WORK REQUIRED FOR TRAFFIC MAINTENANCE SHALL BE INCLUDED WITH PAYMENT FOR ITEM 614 MAINTAINING TRAFFIC. LOCAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES TO THE PRIVATE DRIVES WITHIN THE WORK LIMITS OF THE PROJECT AS REQUIRED UNDER CONSTRUCTION AND MATERIALS SPECIFICATIONS 614.02.

# TEMPORARY SIGN SUPPORT REQUIREMENTS

## A. PLACEMENT OF SIGNS WHICH WILL REMAIN MORE THAN ONE DAY:

- 1) LATERAL PLACEMENT TO NEAREST EDGE OF SIGNS SHALL BE AS FOLLOWS:
  - a) ON THE RIGHT SIDE OF THE ROAD FOR APPROACHING TRAFFIC (EXCEPT FOR DUAL MOUNTED SIGNS AND SIGNS DESIGNATED IN THE PLANS FOR LEFT SIDE MOUNTING).
  - b) CURBED ROADWAY - PREFERABLY 2 FT. (MINIMUM 1 FT.) BEHIND FACE OF CURB.
  - c) UNCURBED ROADWAY-12 FT. FROM EDGE OF TRAFFIC LANE OR 6 FT. FROM EDGE OF PAVED OR USEABLE SHOULDER, WHICHEVER IS GREATER.
  - d) BEHIND GUARDRAIL OR BARRIER - PREFERABLY 2 FT. BEHIND FACE OF GUARDRAIL (MINIMUM 1 FT.) FOR SIGNS ON CLASS A SUPPORTS; 4 FT. FOR CLASS B OR C SUPPORTS 1 FT. BEHIND FACE OF CONCRETE BARRIER UNLESS BARRIER TOP MOUNTING IS REQUIRED BY THE PLAN.
- 2) VERTICAL CLEARANCE OF SIGNS, MEASURED ABOVE ROADWAY ELEVATION; SHALL BE AS FOLLOWS:
  - a) RURAL - 5 FT. WHEN PARKED CARS, CONSTRUCTION EQUIPMENT, ETC WILL NOT OBSCURE SIGN VISIBILITY.
  - b) RURAL AREAS WITH PARKED CARS OR CONSTRUCTION EQUIPMENT - 7 FT.
  - c) URBAN - 7 FT.
  - d) CARE SHALL BE TAKEN TO ASSURE THAT SIGNS WILL NOT BE OBSCURED BY CONSTRUCTION EQUIPMENT, TREES, WEEDS OR OTHER OBSTACLES. BRUSH, WEEDS OR GRASS WITHIN THE RIGHT OF WAY SHALL BE TRIMMED AS NECESSARY. SIGNS SHALL NORMALLY BE VISIBLE TO TRAFFIC 400 TO 600 FT. IN ADVANCE OF THE SIGN.
- 3) SUPPORTS FOR SIGNS WHICH WILL REMAIN IN PLACE MORE THAN ONE DAY SHALL BE FIXED RATHER THAN PORTABLE EXCEPT IN SITUATIONS WHERE THE SIGN MUST REST ON PERMANENT PAVEMENT OR OTHER SURFACE WHICH WOULD BE DAMAGED BY INSERTION OF POST TYPE SUPPORTS.

## B. PLACEMENT OF SIGNS WHICH WILL REMAIN FOR ONE DAY OR LESS:

- 1) SAME AS A-1 ABOVE EXCEPT THAT SIGNS MAY BE PLACED ON THE ROADWAY ONLY IF THEY DO NOT INTRUDE INTO A TRAFFIC LANE IN USE.
- 2) MINIMUM OF 1 FT. ABOVE ROADWAY

## C. CLASSES OF SUPPORTS:

ALL TEMPORARY SIGN SUPPORTS SHALL BE OF THE FOLLOWING TYPES:

### 1) CLASS A:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF 40 MPH AND HIGHER ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL OTHER LOCATIONS.

### 2) CLASS B:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF LESS THAN 40 MPH ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL APPLICATIONS DEFINED FOR CLASS C SUPPORTS.

### 3) CLASS C:

SUPPORTS MAY ONLY BE USED WHERE FULLY PROTECTED BY GUARDRAIL, CONCRETE BARRIER AND IN LOCATIONS POSITIVELY PROTECTED FROM TRAFFIC SUCH AS ON RETAINING WALLS OR WHERE TRAFFIC APPROACH SPEEDS ARE LESS THAN 25 MPH.

## D. TRAFFIC APPROACH SPEEDS:

TRAFFIC APPROACH SPEEDS SHALL BE THE LOCALLY POSTED SPEED (NOT ADVISORY SPEED SIGNS) OR THE MEASURED ACTUAL (85TH PERCENTILE) SPEED (IF AVAILABLE) OF APPROACHING TRAFFIC, WHICHEVER IS HIGHER, ADJACENT TO THE SIGN LOCATION.

### TABLE

APPROACH SPEED (MPH)	COMPLETELY PROTECTED BY GUARDRAIL OR BARRIER	PARTLY PROTECTED BY GUARDRAIL OR BARRIER *	GREATER THAN 30' FROM EDGE OF PAVEMENT	WITHIN 30' FROM EDGE OF PAVEMENT
40 AND HIGHER	A, B OR C	A OR B	A OR B **	A ONLY
26 TO 39	A, B OR C	A OR B	A OR B	A OR B
0 TO 25	A, B OR C	A, B OR C	A, B OR C	A, B OR C

\* IF SUPPORTS ARE BEHIND GUARDRAIL BUT NOT FULLY 5.5' BEHIND FACE OF RAIL OR IF SIGN IS NOT 1' BEHIND FACE OF CONCRETE BARRIER.

\*\* 30' CRITERION IS BASED UPON STRAIGHT ROADWAY AND A SLOPE OF 6:1 OR FLATTER. SUPPORTS ON THE OUTSIDE OF CURVES OR LOCATED DOWN A SLOPE (STEEPER THAN 6:1) WILL REQUIRE USE OF CLASS A SUPPORTS.

## E. BALLASTING

BALLASTING OF PORTABLE SUPPORTS SHALL BE WITH SANDBAGS PLACED WITHIN 1 FT. OF THE GROUND. IN NO CASE SHALL HARD OBJECTS BE USED FOR BALLAST.

## F. STRENGTH OF SIGN SUPPORTS

THE CONTRACTOR SHALL CHOOSE SIGN SUPPORTS OF ADEQUATE STRENGTH AND WITH ADEQUATE FOUNDATIONS AND ANCHORAGE TO SUPPORT THE SIGN SIZES ERRECTED. PROPRIETARY DEVICES SHALL NOT BE LOADED BEYOND THE LIMITS RECOMMENDED BY THE MANUFACTURER. SLIP BASE TYPE BREAKAWAY BEAM CONNECTIONS SHALL BE AT LEAST PARTIALLY EMBEDDED IN CONCRETE CONSISTING OF A 1 FT. DEEP BY 12" DIAMETER COLLAR. SIGN SUPPORTS WHICH FAIL UNDER TYPICAL WIND LOAD CONDITIONS SHALL BE IMMEDIATELY MODIFIED OR REPLACED WITH A SUPPORT OF ADEQUATE STRENGTH.

## G. PROHIBITED SUPPORTS

THE FOLLOWING SUPPORT TYPES SHALL NOT BE PERMITTED ON PROJECTS:

- 1) SUPPORTS FABRICATED FROM AUTOMOTIVE AXLE DIFFERENTIAL ASSEMBLIES AND SIMILARLY HEAVY ASSEMBLIES WHICH CANNOT BE CONSIDERED BREAKAWAY TYPE.
- 2) SUPPORTS CONSISTING OF VERTICAL POSTS WITH ANGLED BRACES MADE FROM DRIVEPOST OR OTHER RIGID ELEMENTS.

CALC BY \_\_\_\_\_  
DATE \_\_\_\_\_  
CHKD BY \_\_\_\_\_  
DATE \_\_\_\_\_

BEL-26-7.12

OHIO  
FHWA REGION 5

3A  
25

# CLASS A SUPPORTS FIXED SUPPORTS

- 1) ALL #2, #3, AND #4 POST WHEN INSTALLED SINGLY OR IN PAIRS ACCORDING TO THE DETAILS OF TC-41.20. THE NUMBER OF SUPPORTS SHALL BE AS SHOWN ON TC-52.10 AND TC-52.20.
- 2) THE FOLLOWING POST TYPES, WHEN INSTALLED SINGLY, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
  - a) - UP TO 4' X 4' WOOD
  - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
  - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
  - d) - UP TO 2 1/4 INCH SQUARE, 12 GAUGE WALL, PUNCHED STEEL POST
  - e) - UP TO 6' X 8' WOOD WITH BREAKAWAY HOLES SHOWN BELOW
- 3) THE FOLLOWING POST TYPES WHEN INSTALLED IN PAIRS WITH LESS THAN 7 FT. BETWEEN POSTS, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
  - a) - UP TO 4' X 4' WOOD
  - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
  - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
  - d) - UP TO 2 INCH SQUARE, 14 GAUGE WALL, PUNCHED STEEL POST
- 4) FIXED TYPE III BARRICADES:
- 5) ALL BREAKAWAY CONNECTION BEAM SUPPORTS, WHEN INSTALLED ACCORDING TO THE PROPER DETAILS SHOWN ON TC-41.10 WITH A MINIMUM CLEAR DISTANCE BETWEEN SUPPORTS OF 7 FT. FOR SUPPORTS LARGER THAN W6 X 9.
- 6) ANY BREAKAWAY POST OR POST AND CONNECTION WHICH HAS BEEN CRASH TESTED AND APPROVED BY THE FHWA AS SATISFYING THE BREAKAWAY CRITERIA DESCRIBED IN 630.06.

( CONTINUED ON )

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

REVISED BY:	DATE:
210510	DATE 05/07/90
TEMPORARY SIGN SUPPORT	
PLAN INSERT SHEET	

CALC BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 CHKD BY \_\_\_\_\_  
 DATE \_\_\_\_\_

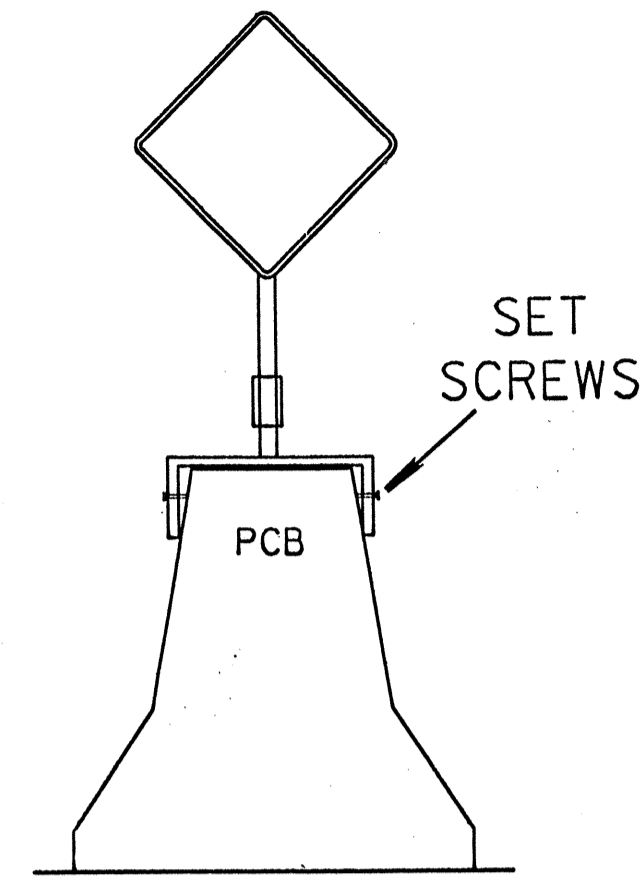
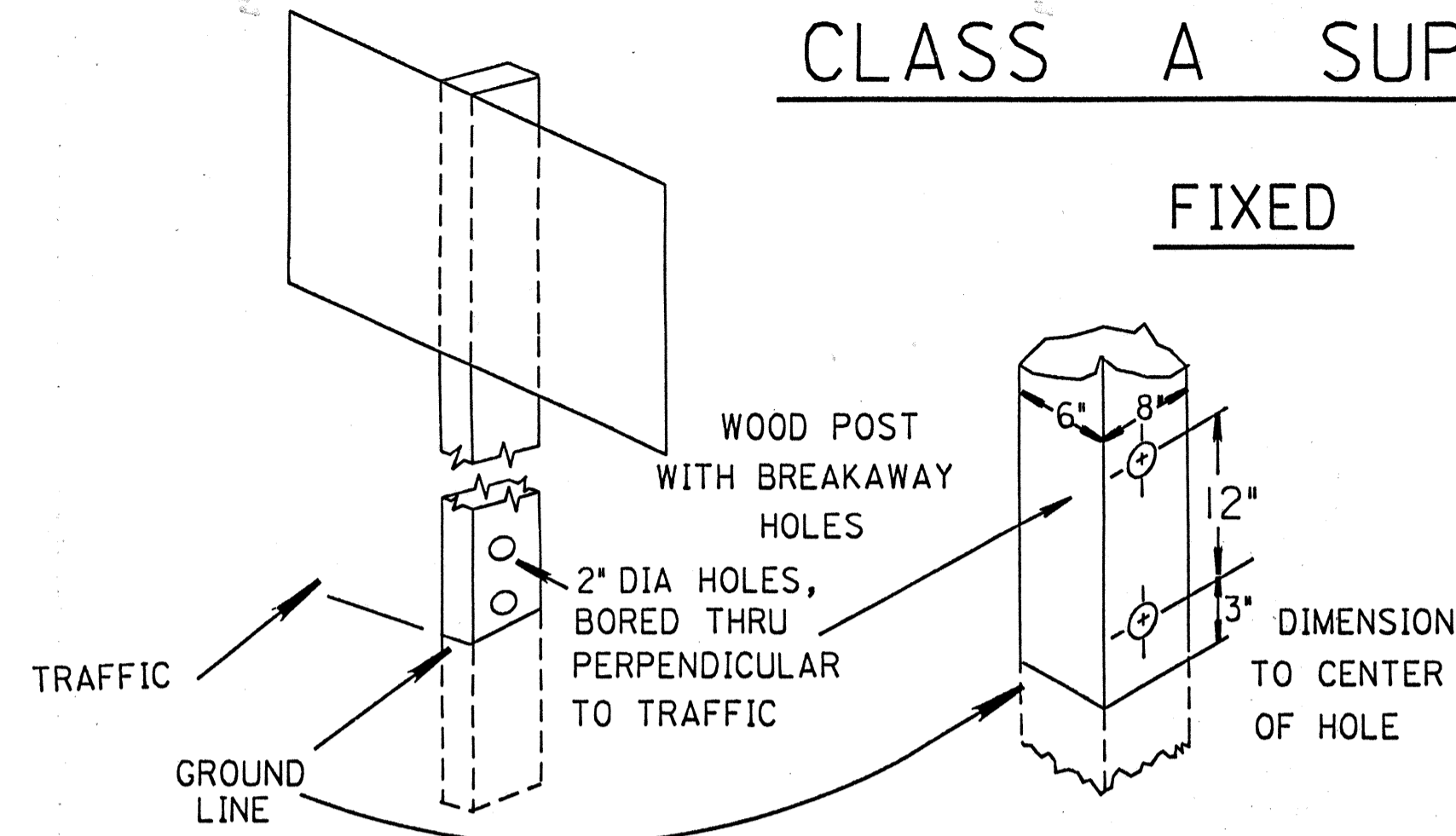
BEL-26-7.12

OHIO  
 FHWA REGION 5

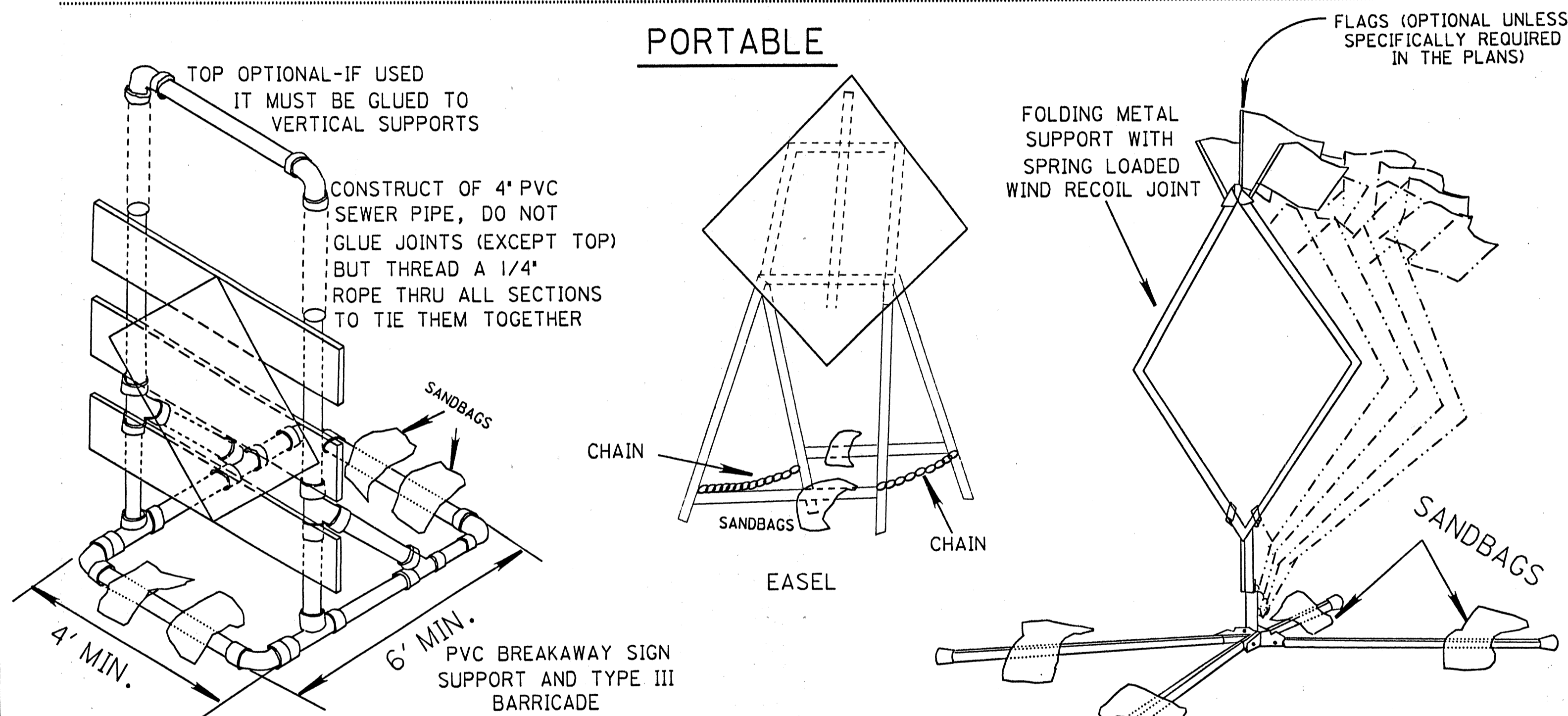
3B  
 25

# CLASS A SUPPORTS

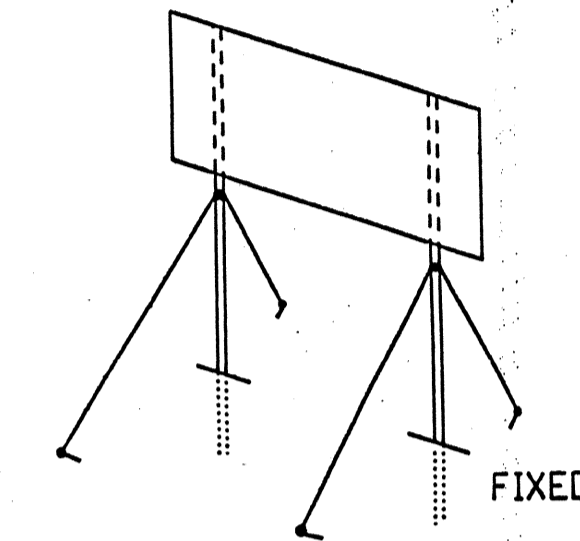
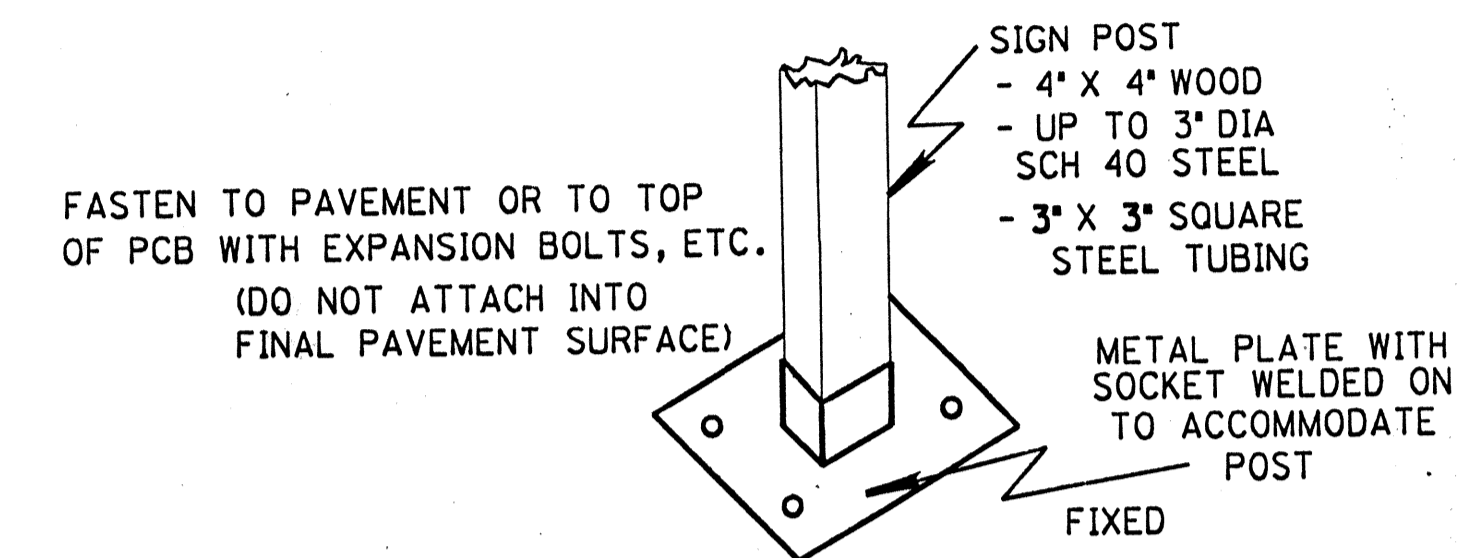
## FIXED



## PORTABLE



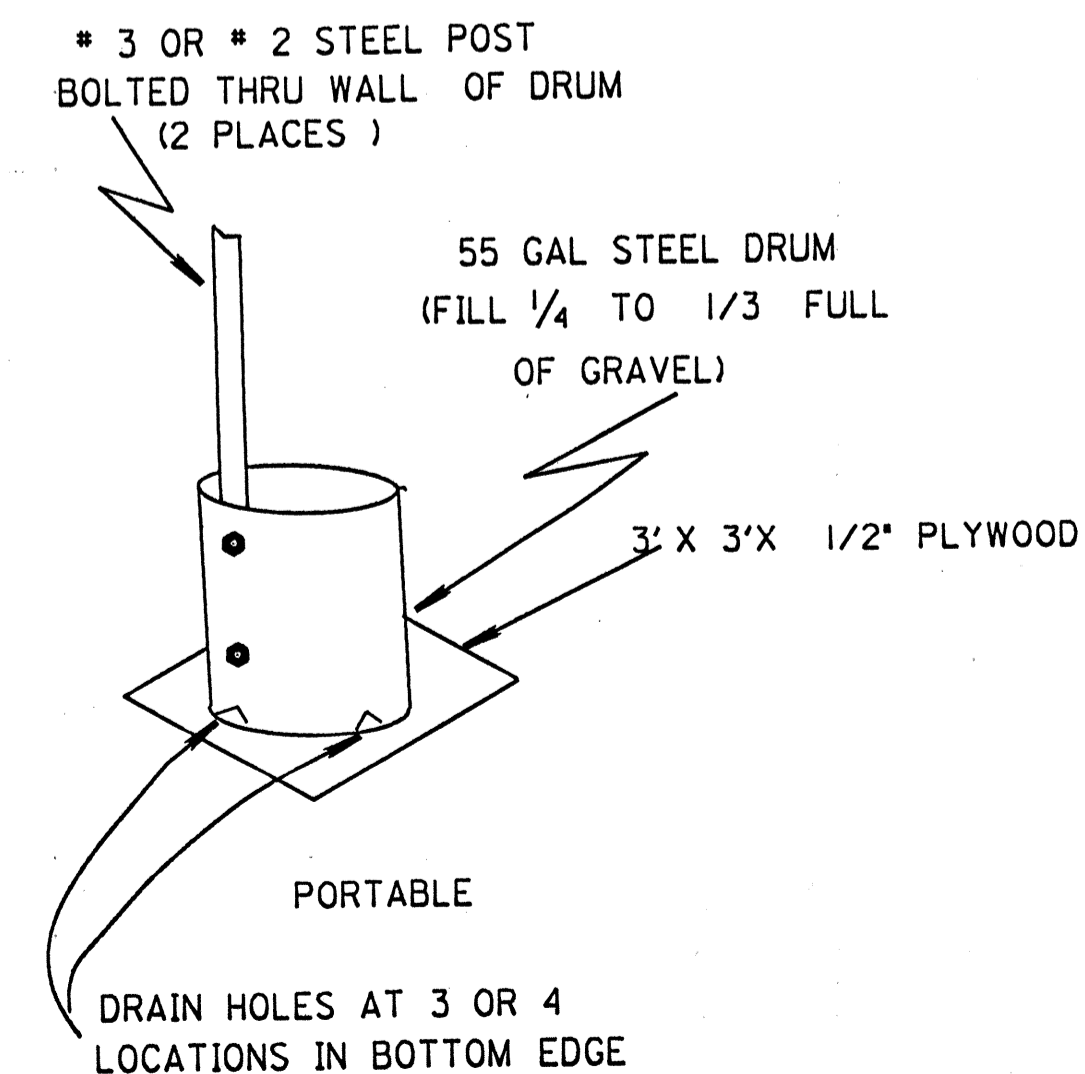
# CLASS B SUPPORTS



ANY CLASS A SIGN POST WITH GUY WIRES ADDED TO INCREASE SIGN CARRYING ABILITY. (GUY WIRES SHALL NOT BE HEAVIER THAN 1/8\"/>

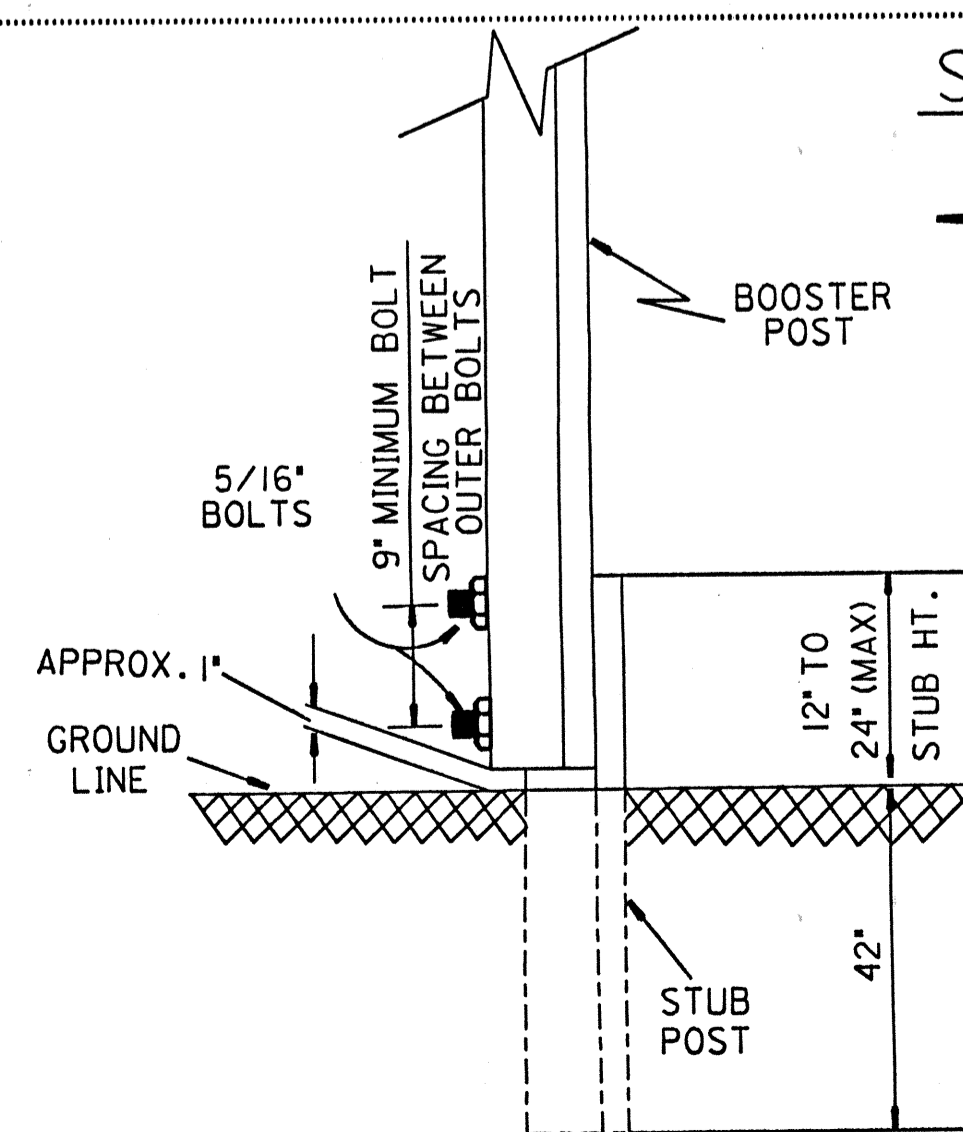
# CLASS C SUPPORTS

1. ALL BEAM TYPE SUPPORTS WITHOUT BREAKAWAY CONNECTIONS.
2. SUPPORTS SIMILAR TO BUT LARGER THAN PERMITTED FOR CLASS A OR B.
3. THE STEEL DRUM(S) SHOWN BELOW MAY BE USED ONLY WHEN LOCATED BEHIND GUARDRAIL OR BARRIER.



ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

## STUBBING STANDARD



### NOTES

1. FOR USE WITH #3 POST OR SMALLER ONLY
2. BOLTS SHALL BE STEEL OR ALUMINUM
3. A MINIMUM OF TWO FASTENERS SHALL BE USED PER ASSEMBLY
4. BOOSTER POST SHALL BE MOUNTED BEHIND STUB POST
5. BOOSTER POST SHALL BE THE SAME OR 1 LB./FT. LESS THAN STUB POST

REVISED BY:	DATE:
210511	DATE
TEMPORARY SIGN SUPPORT	
PLAN INSERT SHEET	
	05/07/90

# CALCULATIONS

## ITEM 202 - WEARING COURSE REMOVED

STA. 9+15.13 TO STA. 9+40 =  $[24.87' \times (21.5' + 28')/2]/9 = 68.39$  S.Y.

## ITEM 203 - SUBGRADE COMPACTION

STA. 3+50 TO STA. 7+80.87 =  $(430.87' \times 21')/9 = 1005.36$  S.Y.  
 STA. 7+80.87 TO STA. 8+05.87 =  $(25' \times 30')/9 = 83.33$  S.Y.  
 STA. 8+90.13 TO STA. 9+15.13 =  $(25' \times 30')/9 = 83.33$  S.Y.  
 1,172.03 S.Y.

## ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20

STA. 3+50 TO STA. 7+80.87 =  $(430.87' \times 21' \times 5''/12)/27 = 139.63$  C.Y.

## ITEM 304 - AGGREGATE BASE, AS PER PLAN

STA. 3+50 TO STA. 7+80.87 (LT. & RT.) =  $(430.87' \times 2.46 \text{ S.F.} \times 2 \text{ SIDES})/27 = 78.51$  C.Y.  
 DRIVE @ STA. 7+72 (LT.) =  $(907.99 \text{ S.F.} \times 6''/12)/27 = 16.81$  C.Y.  
 DRIVE @ STA. 7+54 (RT.) =  $(816.81 \text{ S.F.} \times 6''/12)/27 = 15.13$  C.Y.  
 110.45 C.Y.

## ITEM 402 - ASPHALT CONCRETE, AC-20

STA. 3+50 TO STA. 7+80.87 =  $(430.87' \times 20' \times 1.75''/12)/27 = 46.54$  C.Y.

## ITEM 404 - ASPHALT CONCRETE, AC-20

STA. 3+50 TO STA. 7+80.87 =  $(430.87' \times 20' \times 1.25''/12)/27 = 33.25$  C.Y.  
 STA. 9+15.13 TO STA. 9+40 =  $[24.87' \times (21.5' + 28')/2 \times 1.25''/12]/27 = 2.37$  C.Y.  
 35.62 C.Y.

## ITEM 407 - TACK COAT

STA. 9+15.13 TO STA. 9+40 =  $[24.87' \times (21.5' + 28')/2 \times 0.075]/9 = 5.13$  GAL.

## ITEM 611 - REINFORCED CONCRETE APPROACH SLAB (T=15")

STA. 7+80.87 TO STA. 8+05.87 =  $(25' \times 30')/9 = 83.33$  S.Y.  
 STA. 8+90.13 TO STA. 9+15.13 =  $(25' \times 30')/9 = 83.33$  S.Y.  
 166.66 S.Y.

## ITEM 642 - CENTER LINE

STA. 3+50 TO STA. 9+60 =  $610'/5280 = 0.12$  MI.

## ITEM 642 - EDGE LINE

STA. 3+50 TO STA. 9+60 =  $(610' \times 2 \text{ SIDES})/5280 = 0.23$  MI.

## ITEM 659 - COMMERCIAL FERTILIZER

FROM ITEM 659 SEEDING AND MULCHING:  $2758 \text{ S.Y.} \times 0.00009 = 0.25$  TON

## ITEM 659 - AGRICULTURAL LIMING

FROM ITEM 659 SEEDING AND MULCHING:  $2758 \text{ S.Y.} \times 0.00045 = 1.24$  TON

# GENERAL SUMMARY

QUANTITIES	
CALC. BY: F.J.J.	DATE: 12-12-90
CHKD. BY: G.C.K.	DATE: 12-18-90

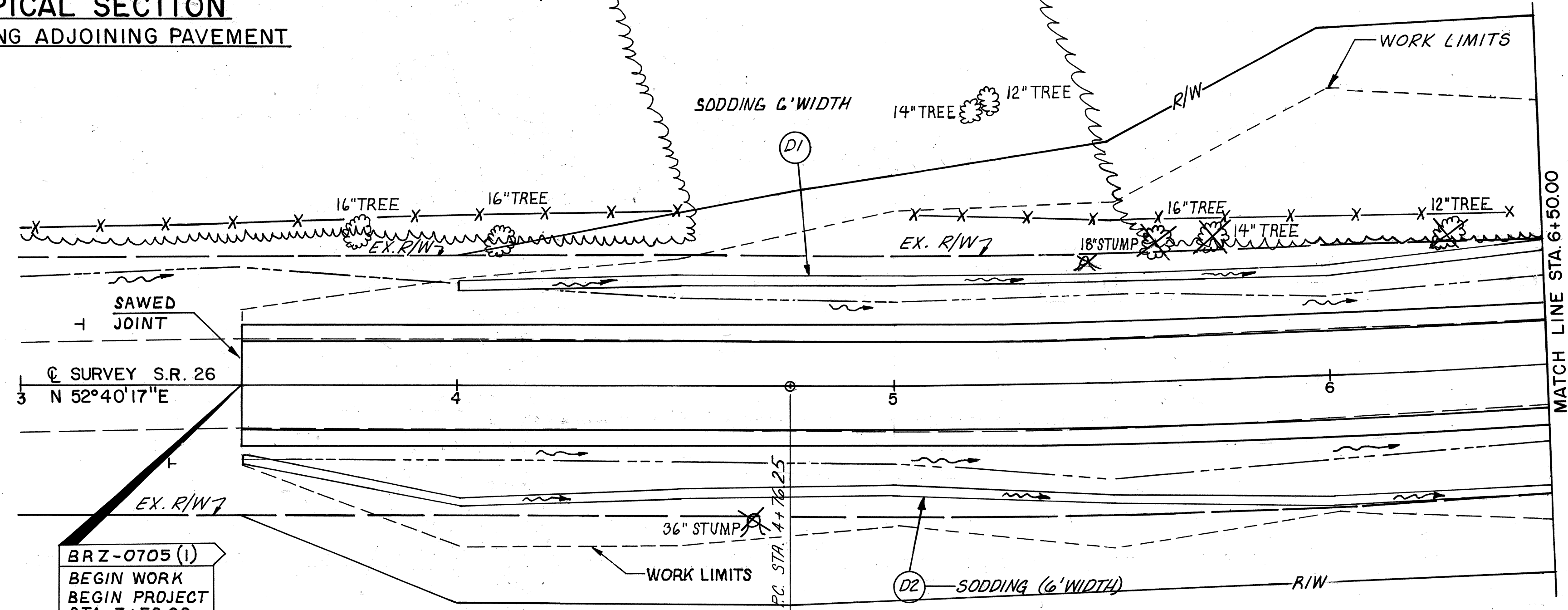
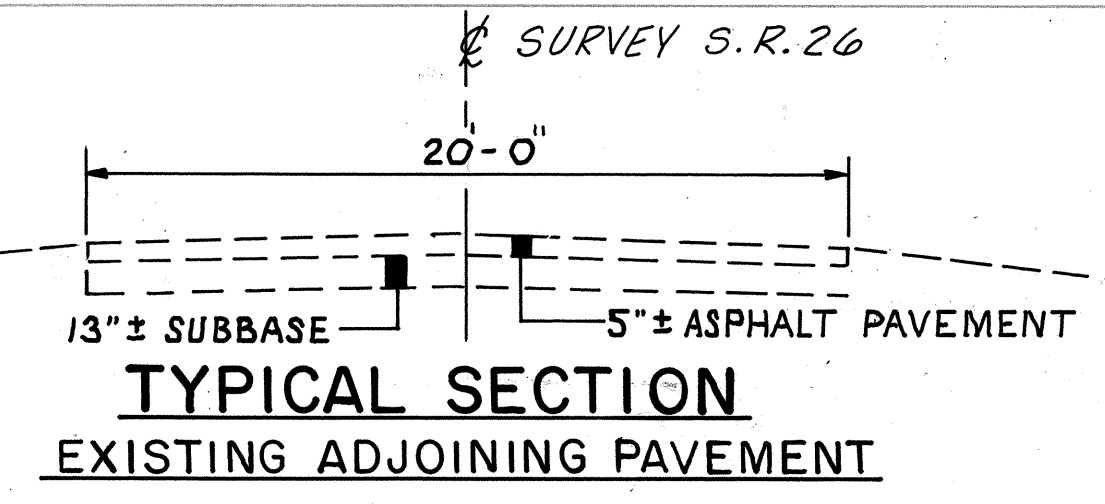
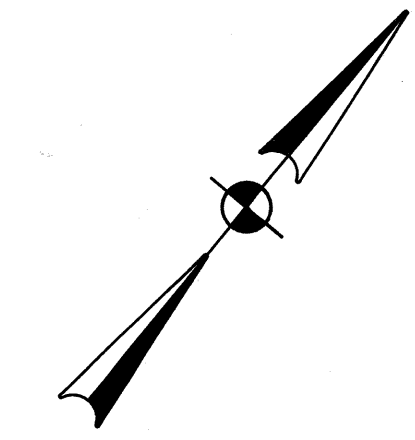
FHWA REGION	STATE	PROJECT
5	OHIO	

BELMONT COUNTY  
BEL-26-7.12

SHEET NO.	PARTICIPATION				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
	3	4	5	6					
									ROADWAY
	LUMP				201	11000	LUMP		CLEARING AND GRUBBING
		68			202	23500	68	SQ YD	WEARING COURSE REMOVED
			40		202	35100	40	LIN FT	PIPE REMOVED 24" AND UNDER
			125		202	38000	125	LIN FT	GUARDRAIL REMOVED
			1581	1318	203	12000	2899	CU YD	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
			280	562	203	20000	842	CU YD	EMBANKMENT
		1172			203	50000	1172	SQ YD	SUBGRADE COMPACTION
			162.5		606	13000	162.5	LIN FT	GUARDRAIL, TYPE 5
			1		606	25000	1	EACH	ANCHOR ASSEMBLY, TYPE A
			2		606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T
			4		606	35140	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4
	13				SPECIAL	69011500	13	EACH	IRON PINS
									EROSION CONTROL
	50				207	70000	50	EACH	STRAW OR HAY BALES
			271		601	32000	271	CU YD	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER
			2		601	32200	2	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER
			1708	1050	659	10000	2758	SQ YD	SEEDING AND MULCHING
		0.25			659	20000	0.25	TON	COMMERCIAL FERTILIZER
		1.24			659	30000	1.24	TON	AGRICULTURAL LIMING
	6				659	35000	6	M GAL	WATER
			367	145	660	30000	512	SQ YD	SODDING
									DRAINAGE
			80		603	06400	80	LIN FT	15" CONDUIT, TYPE D
	131				605	31100	131	LIN FT	AGGREGATE DRAIN
									PAVEMENT
		140			301	10002	140	CU YD	BITUMINOUS AGGREGATE BASE, AC-20
		110			304	20001	110	CU YD	AGGREGATE BASE, AS PER PLAN
		47			402	20000	47	CU YD	ASPHALT CONCRETE, AC-20
		36			404	20000	36	CU YD	ASPHALT CONCRETE, AC-20
		5			407	10000	5	GALLON	TACK COAT
		167			611	25000	167	SQ YD	REINFORCED CONCRETE APPROACH SLAB (T=15")
									MAINTENANCE OF TRAFFIC
		40			410	12000	40	CU YD	TRAFFIC COMPACTED SURFACE, TYPE A OR B
		20			410	13000	20	CU YD	TRAFFIC COMPACTED SURFACE, TYPE C
		0.11			614	21400	0.11	MILE	TEMPORARY CENTER LINE, CLASS II
		10			616	10000	10	M GAL	WATER
		5			616	20000	5	TON	CALCIUM CHLORIDE
									TRAFFIC CONTROL
			12		630	03100	12	LIN FT	GROUND MOUNTED SUPPORT, NO. 3 POST
			4		630	85000	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE
			1		630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION
			4		630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
		0.23			642	00090	0.23	MILE	EDGE LINE
		0.12			642	00290	0.12	MILE	CENTER LINE
			6		802	00100	6	EACH	BARRIER REFLECTOR, TYPE A
									FOR STRUCTURE QUANTITIES, SEE SHEET 14
	LUMP				614	11000	LUMP		MAINTAINING TRAFFIC
					619	15000	LUMP		FIELD OFFICE, TYPE A
					623	10000	LUMP		CONSTRUCTION LAYOUT STAKES
					624	10000	LUMP		MOBILIZATION

QUANTITIES		FHWA REGION	STATE	PROJECT
CALC. BY	F.I.J.	5	OHIO	
DATE:	12-10-90			
CHKD. BY	M.A.M.			
DATE:	12-18-90			

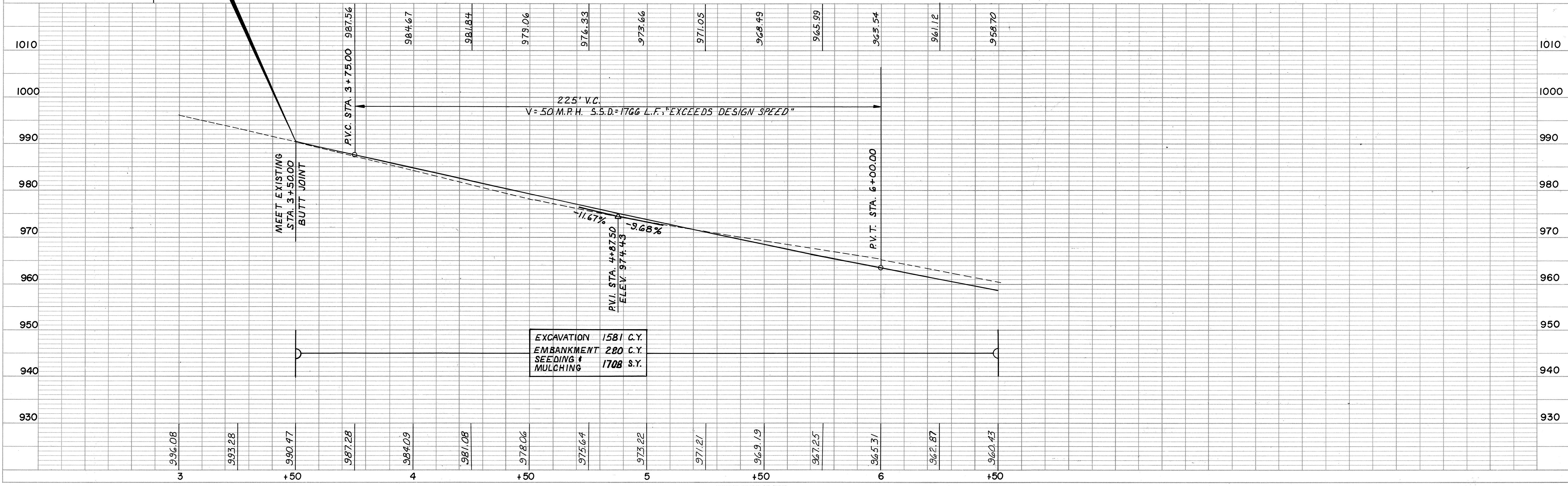
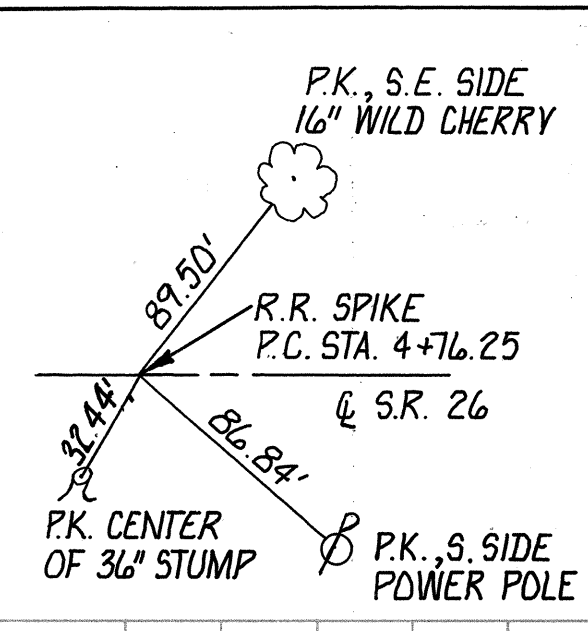
BEL 26-7.12



**CURVE DATA**  
 P.I. = STA. 6+02.61  
 $\Delta = 05^{\circ}13'59''$   
 D.C. = 02^{\circ}04'19.61"  
 T = 126.36'  
 L = 252.54'  
 R = 2765.03'  
 Lc = 252.46'  
 CHORD BEARING =  
 N 50^{\circ}03'17" E  
 E = 2.89'

REF. NO.	LOCATION		SIDE	SODDING
	FROM	TO		
D1	4+00	6+50	LT.	167
D2	3+50	6+50	RT.	200
TOTAL				367

**NOTE**  
 1. FENCE WITHIN THE WORK LIMITS SHALL BE REMOVED UNDER ITEM 203



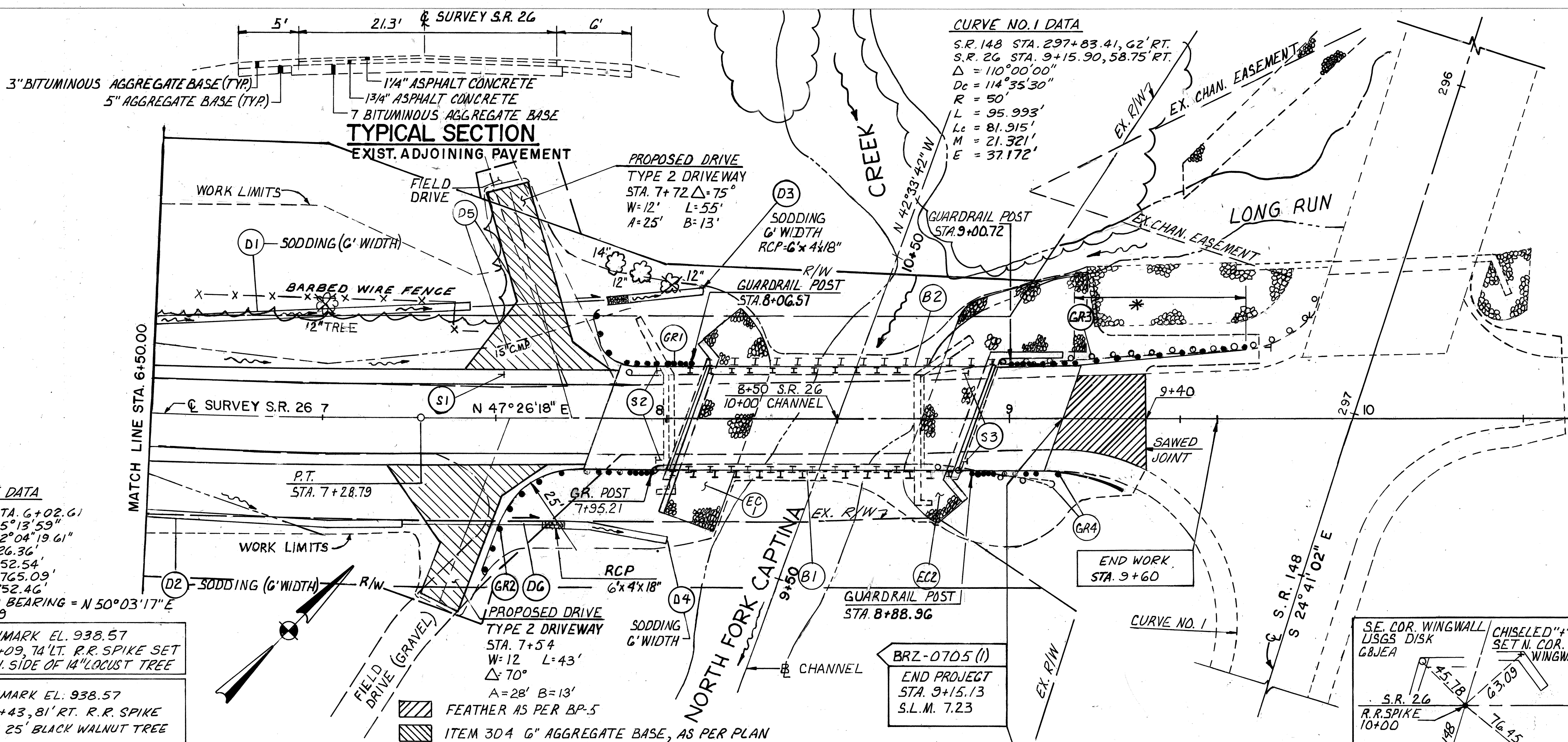
EXCAVATION	1581 C.Y.
EMBANKMENT	280 C.Y.
SEEDING & MULCHING	1708 S.Y.

**PLAN**  
 SURVEYED, PLOTTED, NOTE BOOK, ALIGNMENT CHECKED, RT. OF WAY CHECKED.

**PROFILE**  
 SURVEYED, GRADES CHECKED, E.M.'S. NOTED, STRUCTURE NOTATIONS CHECKED.

QUANTITIES  
 CALC. BY F.I.J.  
 DATE: 12-10-90  
 CHKD. BY G.C.K.  
 DATE: 12-12-90

BEL 26-7.12



**CURVE DATA**  
 P.I. = STA. 6+02.61  
 $\Delta = 05^{\circ}13'59''$   
 $D_c = 02^{\circ}04'19.61''$   
 $T = 126.36'$   
 $L = 252.54'$   
 $R = 2765.09'$   
 $L_c = 252.46'$   
 CHORD BEARING =  $N 50^{\circ}03'17'' E$   
 $E = 2.89'$

BENCHMARK EL. 938.57  
 STA. 8+09.74 LT. R.R. SPIKE SET IN N.W. SIDE OF 14" LOCUST TREE

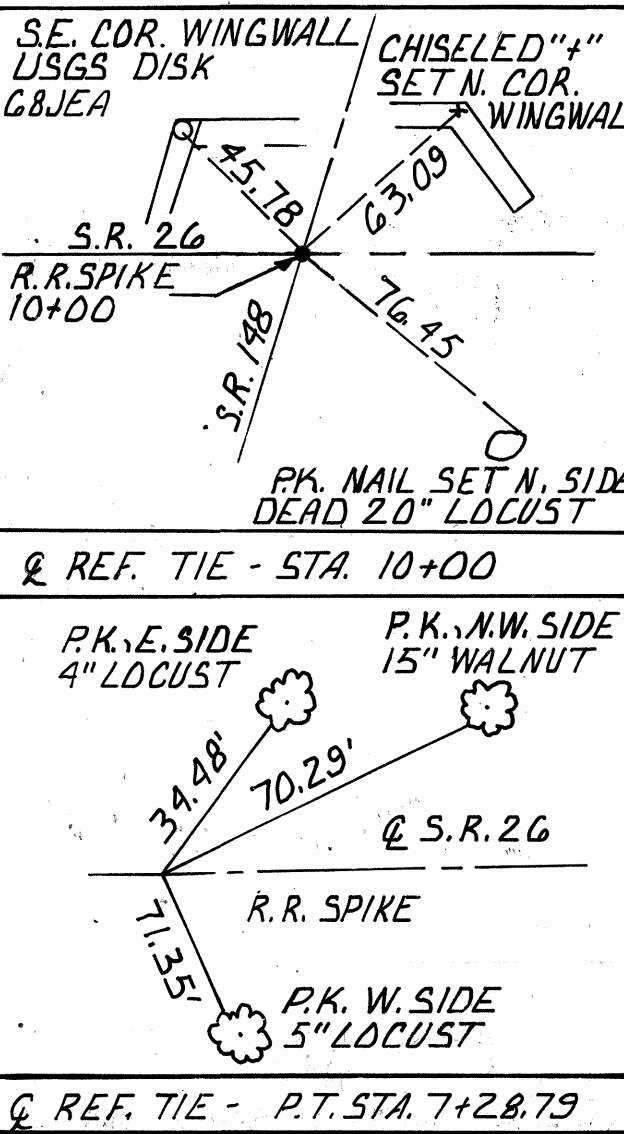
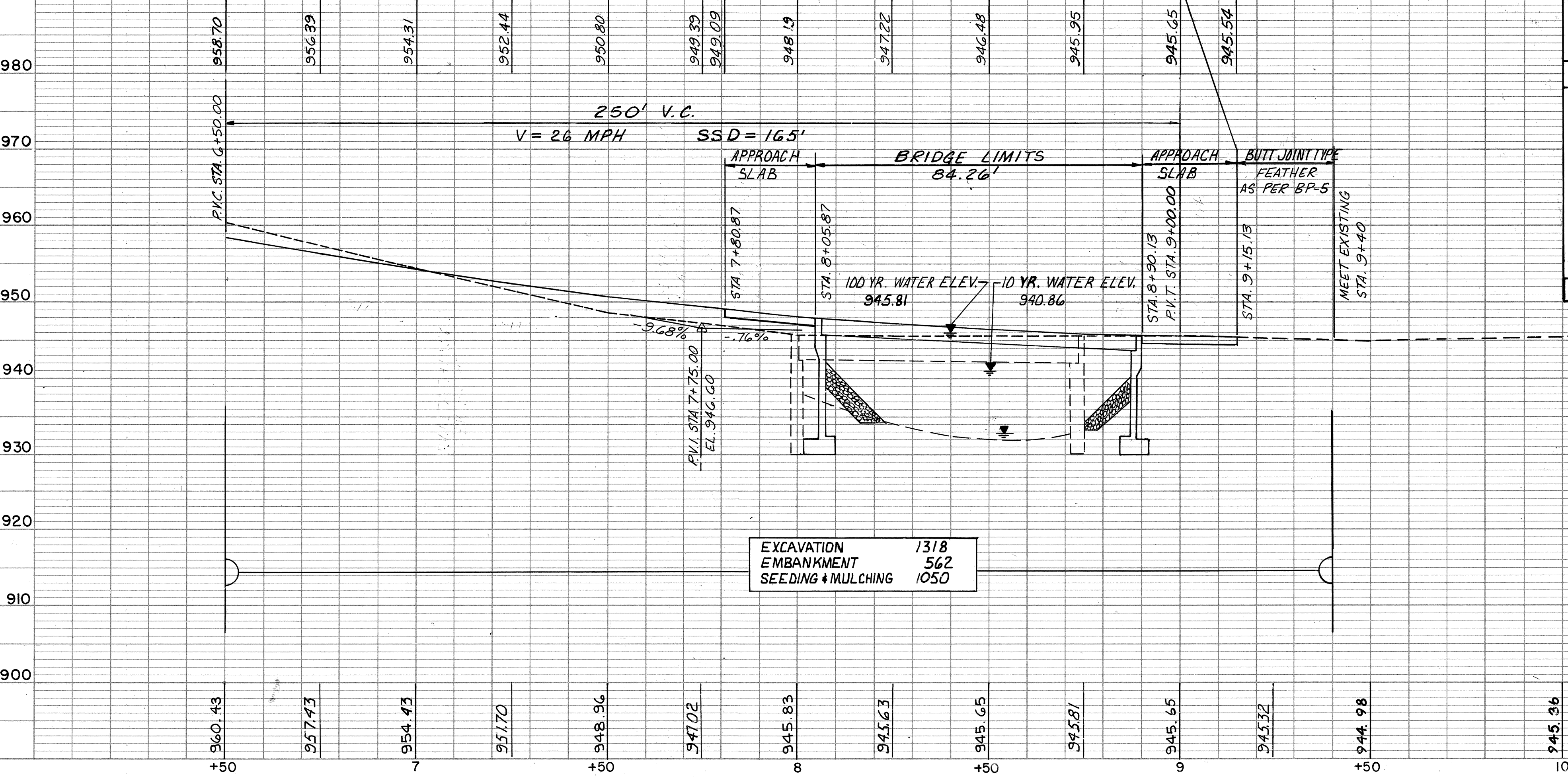
BENCHMARK EL. 938.57  
 STA. 8+43.81 RT. R.R. SPIKE SET IN 25' BLACK WALNUT TREE

**CURVE NO. 1 DATA**  
 S.R. 148 STA. 297+83.41, G2' RT.  
 S.R. 26 STA. 9+15.90, 58.75' RT.  
 $\Delta = 110^{\circ}00'00''$   
 $D_c = 114^{\circ}35'30''$   
 $R = 50'$   
 $L = 95.993'$   
 $L_c = 81.915'$   
 $M = 21.321'$   
 $E = 37.172'$

REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES																	
			202	601	601	603	630	630	630	630	660									
			PIPE REMOVED 24" AND UNDER	ROCK CHANNEL PROTECTION TYPE A WITH FILTER	ROCK CHANNEL PROTECTION TYPE C WITH FILTER	15" CONDUIT TYPE D	REMOVAL OF GROUND MOUNTED SIGN # REFLECTOR	REMOVAL OF GROUND MOUNTED SIGN # REFLECTOR SUPPORT # DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN # STORAGE	GROUND MOUNTED SIGN # STORAGE SUPPORT, NO. 3	SCODDING									
EC-1	9+57	10+21	LT		17															
EC-2	9+81	10+65	RT		154															
D-1	6+50	7+42	LT																	61
D-2	6+50	7+23.5	RT																	49
D-3	7+82	8+10	LT				1													15
D-4	7+63.5	8+00	RT				1													20
D-5	7+42	7+82	LT	40				40												
D-6	7+23.5	7+63.5	RT					40												
S-1	7+52		LT						1											11.5
S-2	7+97		LT/RT							2	2									
S-3	8+88		LT/RT							2	2									
TOTAL				40	271	2	80		1	4	4	11.5	145							

REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES							
			202	606	802	802	802	802		
			GUARDRAIL REMOVED	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE A	ANCHOR ASSEMBLY TYPE T	BRIDGE TERMINAL ASSEMBLY TYPE 4	BARRIER REFLECTOR TYPE A		
GR-1	7+19.53	8+06.97	LT	12.5	25.0		1	1		
GR-2	7+48.69	7+95.21	RT	12.5	50.0		1	1		
GR-3	8+74	9+69.47	LT	87.5	68.75				1	
GR-4	8+74	9+32.30	RT	12.5	18.75		1			
B-1	7+69	9+45	RT							3
B-2	7+77	9+59.71	LT							3
TOTAL				12.5	162.5		1	2	4	6

\* GUARDRAIL TAPERED IN 50' TO CONNECT TO EXISTING GUARDRAIL  
 † GUARDRAIL RUN GR-1 INCLUDES 6.25 L.F. OF GUARDRAIL ON A 5 FT. RADIUS  
 ‡ GUARDRAIL RUN GR-2 INCLUDES 31.25 L.F. OF GUARDRAIL ON A 25 FT. RADIUS



**EXISTING STRUCTURE**  
 STRUCTURE FILE NO. 0701327  
 TYPE: STEEL BEAM  
 SPAN: 71'-9"  
 ROADWAY: 26'-0"  
 ALIGNMENT: TANGENT  
 SKEW: NONE  
 WEARING SURFACE: ASPHALT  
 APPROACH SLAB: NONE  
 BUILT: 1959  
 CONDITION: POOR

**PROPOSED STRUCTURE**  
 TYPE: PRECAST, PRESTRESSED CONCRETE  
 BOX BEAMS SUPPORTED ON REINFORCED CONCRETE SUBSTRUCTURE  
 SPAN: 80'-0"  
 ROADWAY: 30'-0" F/F GUARDRAIL  
 LOADING: HS 20-44 AND ALTERNATE MILITARY LOADING  
 SKEW: 20° LEFT FORWARD  
 ALIGNMENT: TANGENT  
 WEARING SURFACE: MONOLITHIC CONCRETE  
 APPROACH SLAB: 25'-0"  
 SUPERELEVATION: NONE  
 CROWN: 3/16" / FT.

EXCAVATION 1318  
 EMBANKMENT 562  
 SEEDING & MULCHING 1050

PLAN  
 SURVEYED, PLOTTED, NOTE BOOK, ALIGNMENT CHECKED, RT. OF WAY CHECKED.

PROFILE  
 SURVEYED, PLOTTED, GRADES CHECKED, R.A.'S NOTED, STRUCTURE NOTATIONS CHECKED.



QUANTITIES  
 CALC. BY: M.A.M.  
 DATE: 12-10-90  
 CHKD. BY: F.I.J.  
 DATE: 12-19-90

FHWA REGION	STATE	PROJECT
5	OHIO	

7  
25

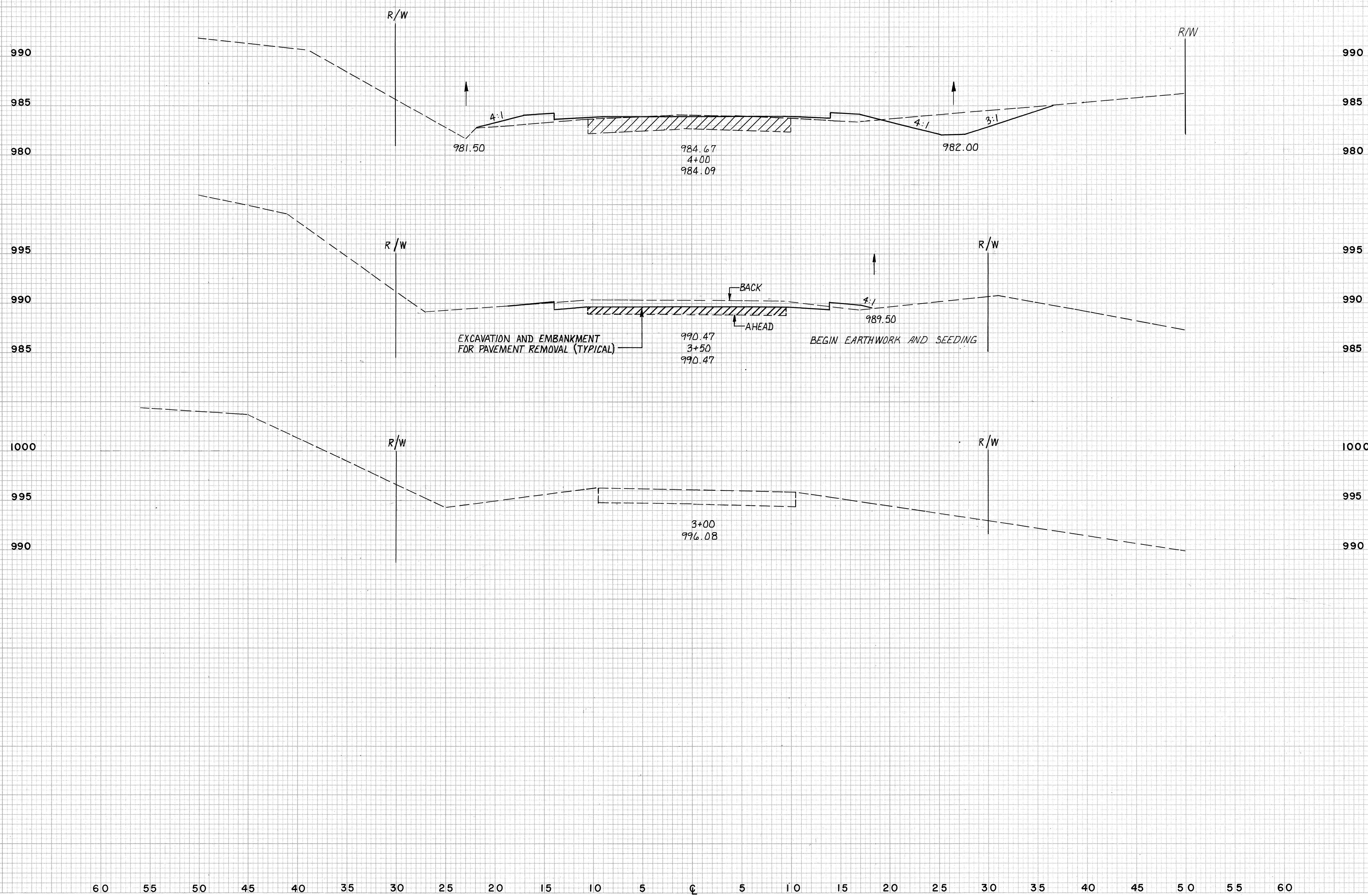
BEL 26-7.12

END AREA	VOLUME	
CUT	FILL	CUT/FILL
SUBTOTAL	192	147

SEEDING	
WIDTH	SQ. YDS.
43	4+50
208	
32	
122	
120	AHEAD BACK
SUB-TOTAL 330	

FINAL SURVEY NOTE BOOK NO. \_\_\_\_\_  
 SURVEYED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 PLOTTED BY \_\_\_\_\_  
 TEMPLATE NO. \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_

ORIGINAL SURVEY NOTE BOOK NO. \_\_\_\_\_  
 SURVEYED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 PLOTTED BY \_\_\_\_\_  
 TEMPLATE NO. \_\_\_\_\_  
 AREAS CHECKED \_\_\_\_\_



END AREA	VOLUME	
CUT	FILL	CUT/FILL
4+50	68	56
990		111 91
985		
980	52	42
995		81 56
990		
985	AHEAD BACK	35 0 18 0
1000		
995		
990		

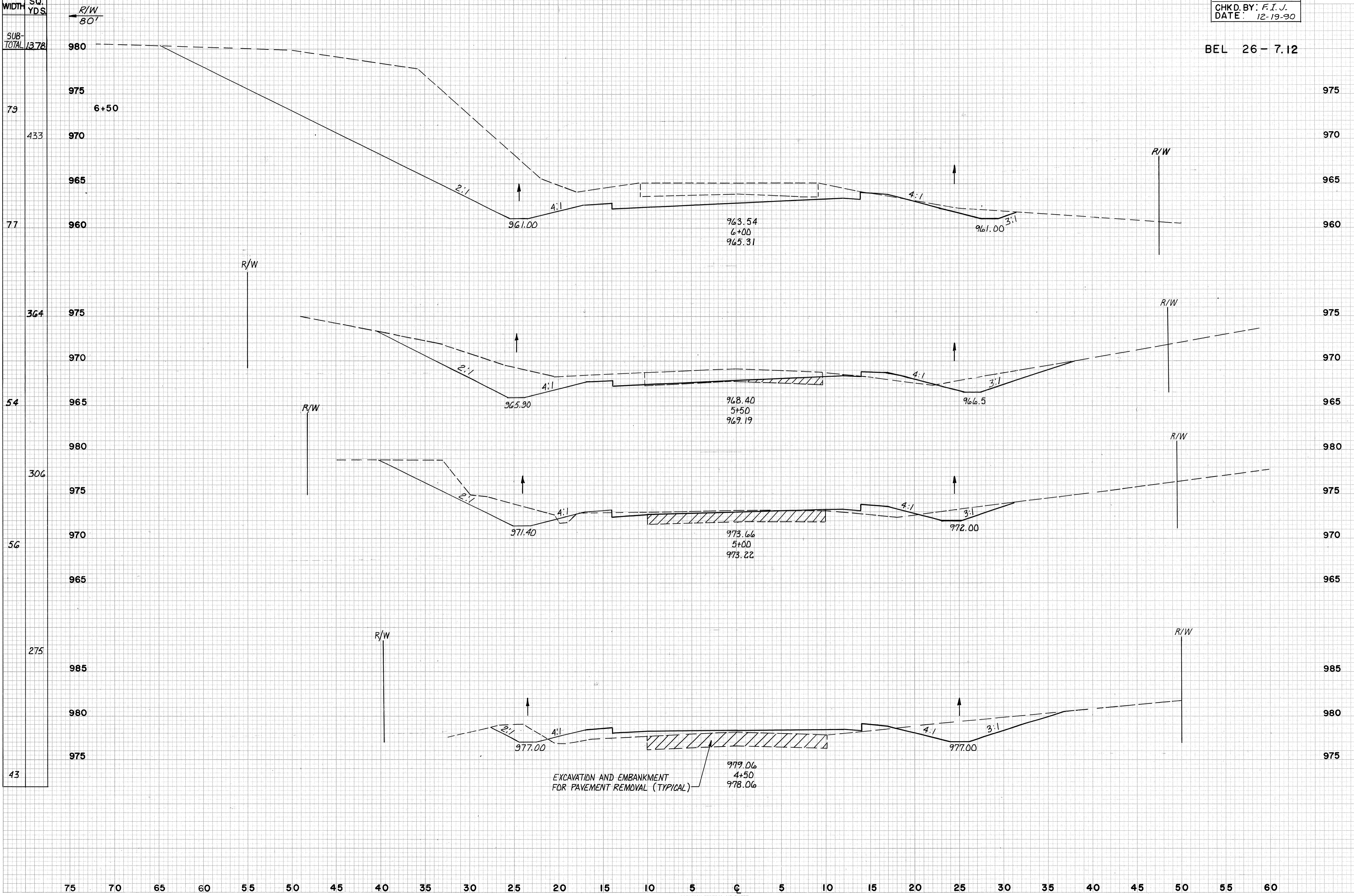
**QUANTITIES**  
 CALC. BY: M.A.M.  
 DATE: 12-10-90  
 CHKD. BY: F.I.J.  
 DATE: 12-19-90

FHWA REGION	STATE	PROJECT	<b>8</b> <b>25</b>
5	OHIO		

BEL 26-7.12

SEEDING	
WIDTH	SQ. YDS.
79	433
77	364
54	306
56	275
43	
<b>SUB-TOTAL 1378</b>	

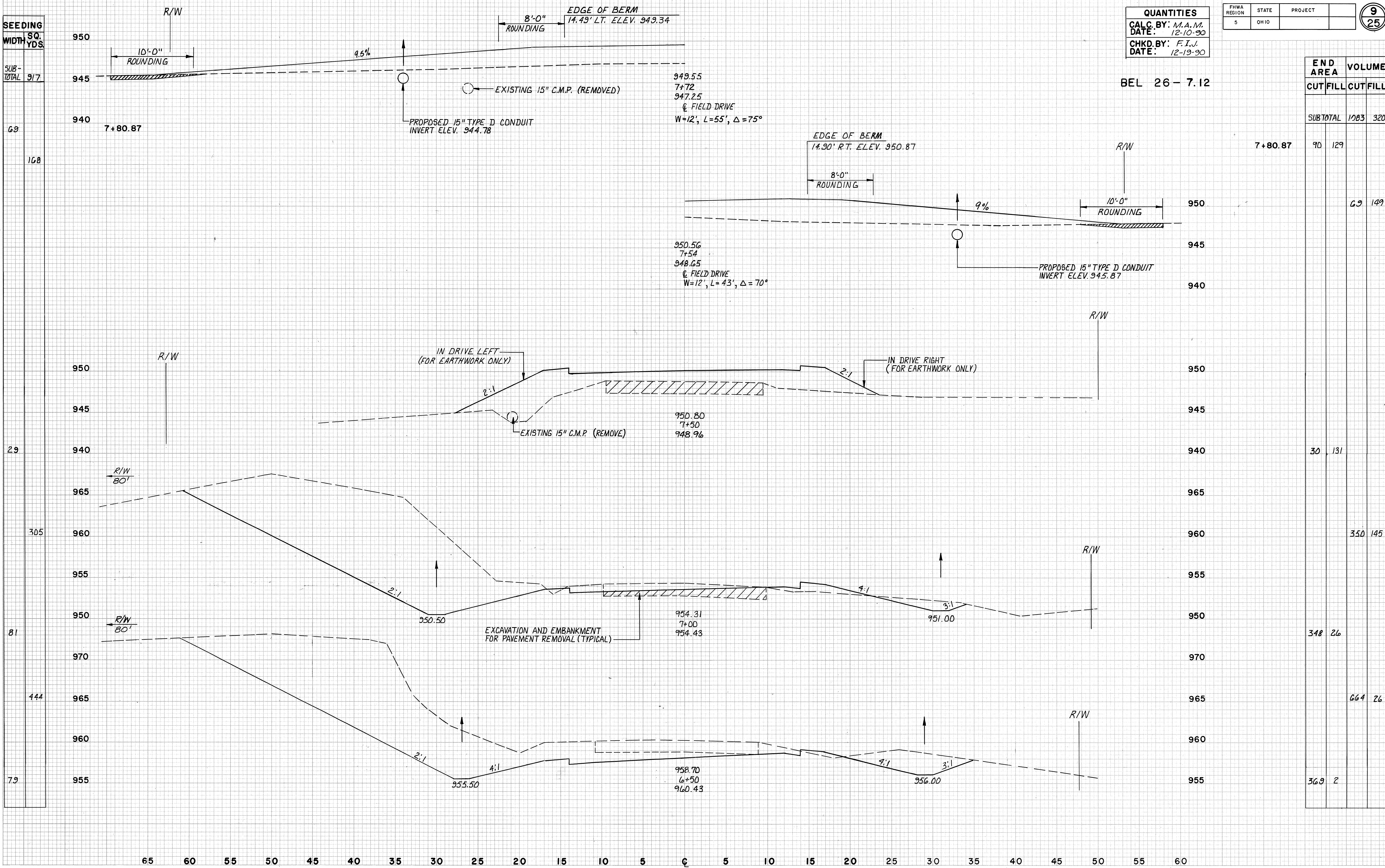
END AREA	VOLUME	
	CUT	FILL
6+50	369	2
		690
	376	0
		424
	82	10
		144
	74	33
		131
68	56	
<b>SUBTOTAL</b>		<b>1389</b>
		<b>133</b>



ORIGINAL SURVEY BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 SURVEY PLOTTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 TEMPLATE NO. \_\_\_\_\_  
 AREAS CHECKED BY: \_\_\_\_\_

**QUANTITIES**  
 CALC. BY: M.A.M.  
 DATE: 12-10-90  
 CHKD. BY: F.I.J.  
 DATE: 12-19-90

FNWA REGION	STATE	PROJECT	<b>9</b> <b>25</b>
5	OHIO		



SEEDING	SQ. YDS.
WIDTH	
SUB-TOTAL	917
69	168
29	305
81	444
79	

BEL 26-7.12

END AREA	VOLUME	
	CUT	FILL
SUBTOTAL	1083	320
7+80.87	90	129
	69	149
	30	131
	348	26
	664	26
	369	2

FINAL SURVEY  
 SURVEYED BY: \_\_\_\_\_  
 PLOTTED BY: \_\_\_\_\_  
 NOTE BOOK NO.: \_\_\_\_\_  
 AREA CHECKED: \_\_\_\_\_

ORIGINAL SURVEY  
 SURVEYED BY: \_\_\_\_\_  
 PLOTTED BY: \_\_\_\_\_  
 NOTE BOOK NO.: \_\_\_\_\_  
 AREA CHECKED: \_\_\_\_\_

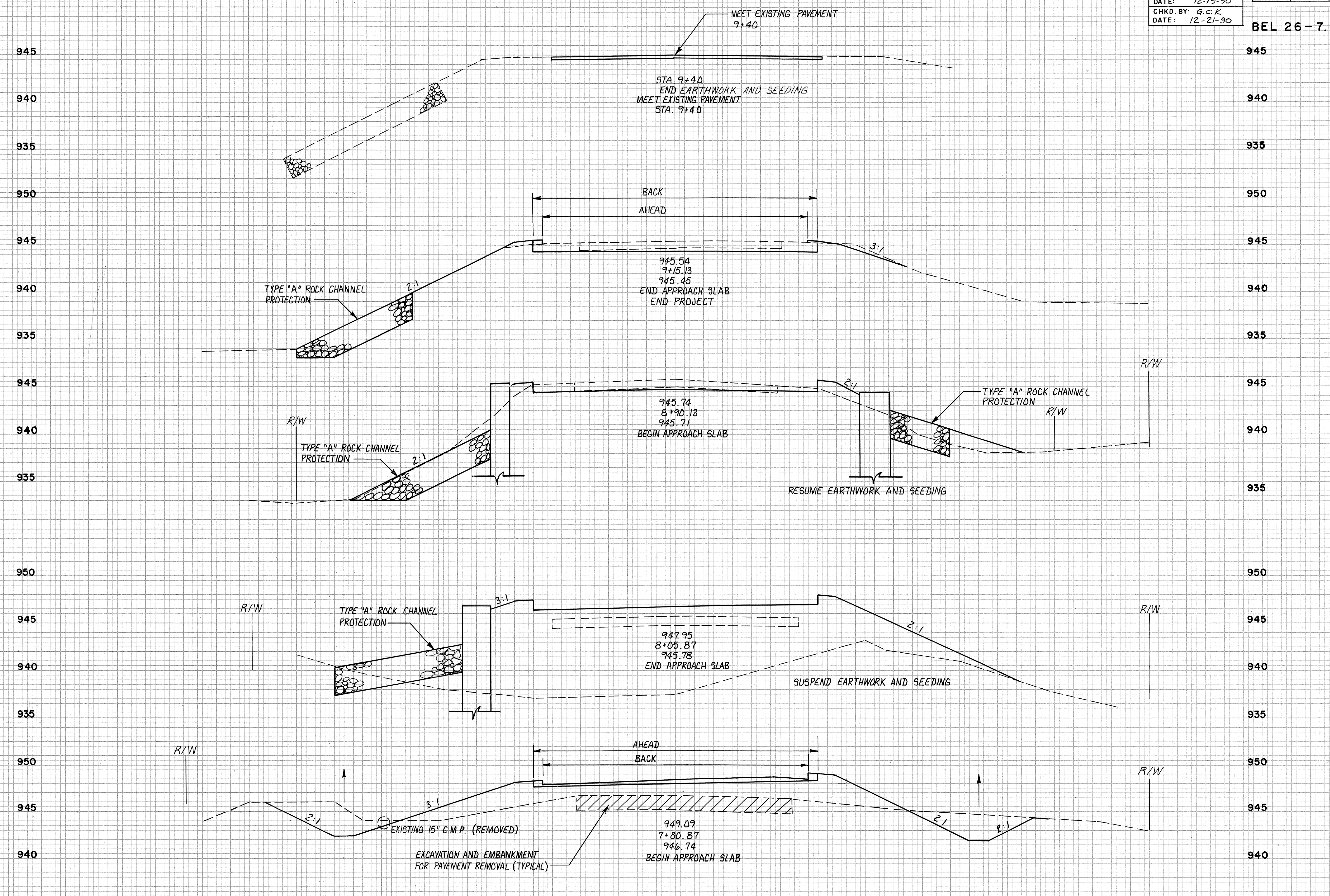
SEEDING	
WIDTH	SQ. YDS.
37	133
27	
25	
60	
18	
0	
0	
31	
36	
67	
69	

DATE: \_\_\_\_\_ BY: \_\_\_\_\_

FINAL SURVEY SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO. \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_

ORIGINAL SURVEY SURVEYED, PLOTTED, TEMPLATE, NOTE BOOK, AREAS CHECKED, NO. \_\_\_\_\_



END AREA	VOLUME	
	CUT	FILL
9+40	0	0
	0	2
AHEAD BACK	0	5
BACK	37	4
		32
		9
AHEAD BACK	32	16
BACK	0	0
		32
		9
AHEAD BACK	0	0
BACK	0	378
		42
		231
AHEAD BACK	90	129
BACK	90	129

60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60

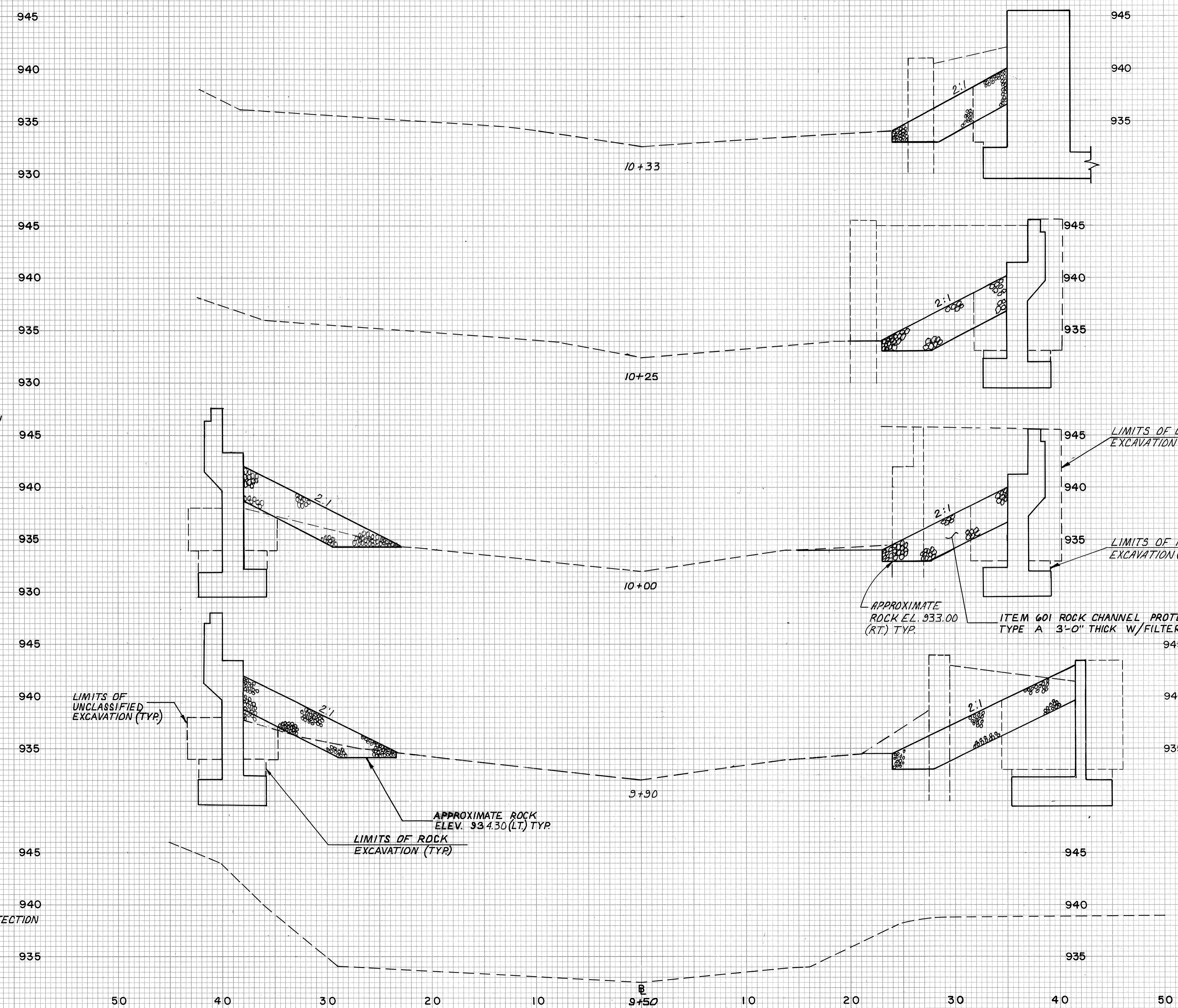
QUANTITIES  
 CALC. BY: F.I.J.  
 DATE: 12-19-90  
 CHKD. BY: G.C.K.  
 DATE: 12-21-90

FHWA REGION	STATE	PROJECT
5	OHIO	

11  
25

BEL 26-7.12

END AREA	VOLUME	
	CUT	FILL
	161	0
0	0	0
23	0	8
108	0	19
70	0	82
42	0	21
0	0	31
0	0	0



END EARTHWORK  
 STA. 10+52  
 END ROCK CHANNEL PROTECTION  
 STA. 10+67 (RT.)

END ROCK CHANNEL PROTECTION  
 STA. 10+20 (LT.)

APPROXIMATE ROCK EL. 933.00 (RT.) TYP.  
 ITEM 601 ROCK CHANNEL PROTECTION TYPE A 3'-0" THICK W/FILTER (TYP.)

LIMITS OF UNCLASSIFIED EXCAVATION (TYP.)

LIMITS OF UNCLASSIFIED EXCAVATION (TYP.)

LIMITS OF ROCK EXCAVATION (TYP.)

APPROXIMATE ROCK ELEV. 934.30 (LT.) TYP.  
 LIMITS OF ROCK EXCAVATION (TYP.)

BEGIN ROCK CHANNEL PROTECTION  
 STA. 9+82 (RT.)

BEGIN EARTHWORK  
 STA. 9+80

BEGIN ROCK CHANNEL PROTECTION  
 STA. 9+57 (LT.)

FINAL SURVEY  
 SURVEYED  
 PLOTTED  
 NOTE BOOK  
 NO. AREAS CHECKED

ORIGINAL SURVEY  
 SURVEYED  
 PLOTTED  
 NOTE BOOK  
 NO. AREAS CHECKED

BELMONT COUNTY  
BEL-26-7.12

EARTHWORK LIMITS SHOWN ARE APPROXIMATE.  
ACTUAL SLOPES SHALL CONFORM TO PLAN  
CROSS SECTIONS.  
CLEARS ESTIMATED 10 YEAR HIGH WATER ELEVATION  
BY 0.37'.

**DRAINAGE DATA**  
DRAINAGE AREA 22.47 MI.<sup>2</sup>  
Q10 = 2779 CFS EL. 940.86 V10 = 10.27 FT/S  
Q100 = 5946 CFS EL. 945.81 V100 = 13.89 FT/S  
ORDINARY HIGH WATER SURFACE EL. 938.00  
NORMAL WATER SURFACE EL. 933.33  
EXISTING WATERWAY OPENING = 600 SF  
PROPOSED WATER WAY OPENING = 640 SF

**DESIGN DESIGNATION**

CURRENT ADT (1990)	320
DESIGN ADT (2010)	512
DHV	51
D	60%
T	31%
V	55 MPH
LEGAL SPEED	55 MPH
ADTT (2010)	16

**EXISTING STRUCTURE**  
STRUCTURE FILE NO. 0701327  
TYPE: STEEL BEAM  
SPAN: 71'-9"  
ROADWAY: 26'-0"  
ALIGNMENT: TANGENT  
SKEW: NONE  
WEARING SURFACE: ASPHALT  
APPROACH SLAB: NONE  
BUILT: 1959  
CONDITION: POOR

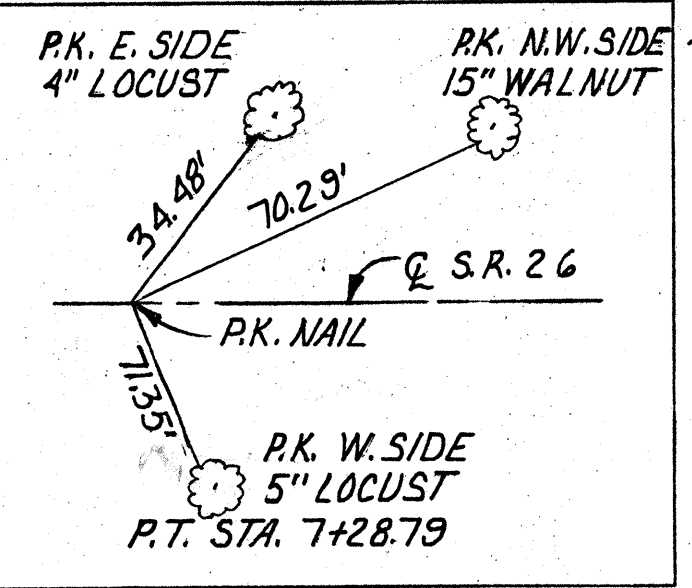
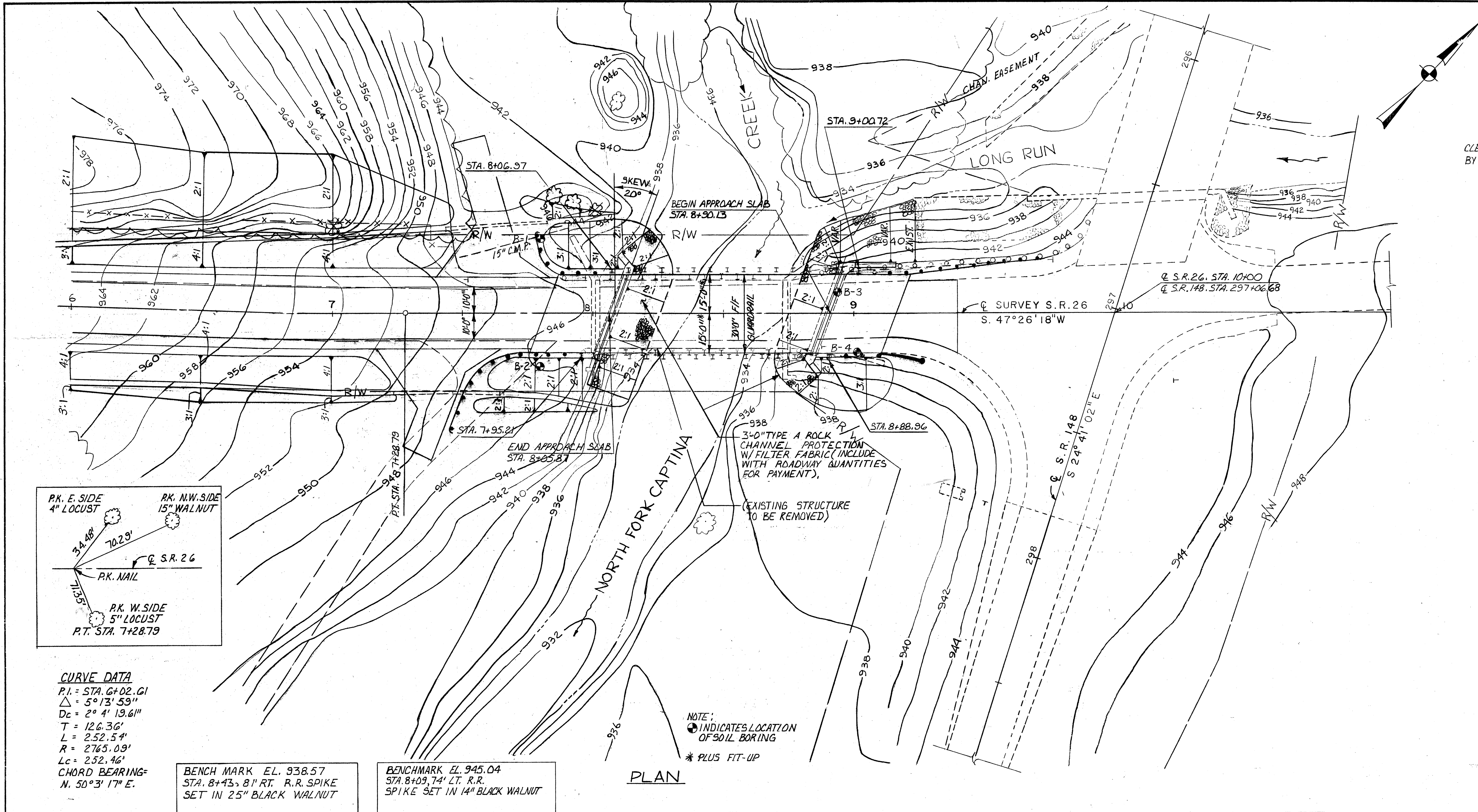
**PROPOSED STRUCTURE**  
TYPE: PRECAST, PRESTRESSED CONCRETE  
BOX BEAMS SUPPORTED ON REINFORCED  
CONCRETE SUBSTRUCTURE  
SPAN: 80'-0"  
ROADWAY: 30'-0" F/F GUARDRAIL  
LOADING: HS 20-44 AND ALTERNATE  
MILITARY LOADING  
SKEW: 20° LEFT FORWARD  
ALIGNMENT: TANGENT  
WEARING SURFACE: MONOLITHIC  
CONCRETE  
APPROACH SLAB: 25'-0"  
SUPERELEVATION: VARIES

REVIEWED BY BURGESS & NIPLE, LTD.  
M.P.B. 9-5-91

**McCOY ASSOCIATES INC.** 1/11  
CONSULTING ENGINEERS  
AKRON, OHIO

**SITE PLAN**  
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STA. 8+05.87  
TO STA. 8+90.13

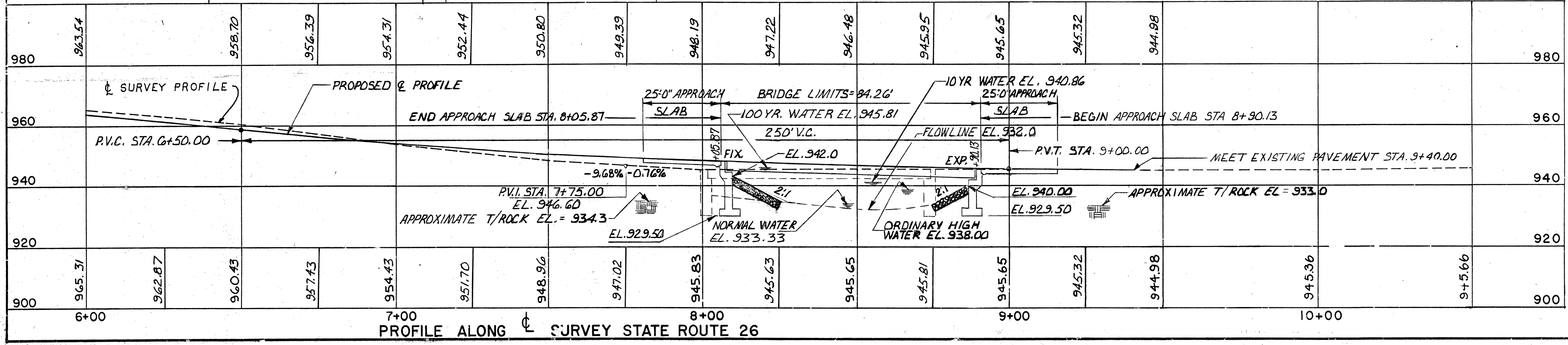
DESIGNED	DRAWN	TRACED	CHECKED	PREVIEWED	DATE	REVISED
JGC	JWD		SAM		4.A.M. 12-21-90	



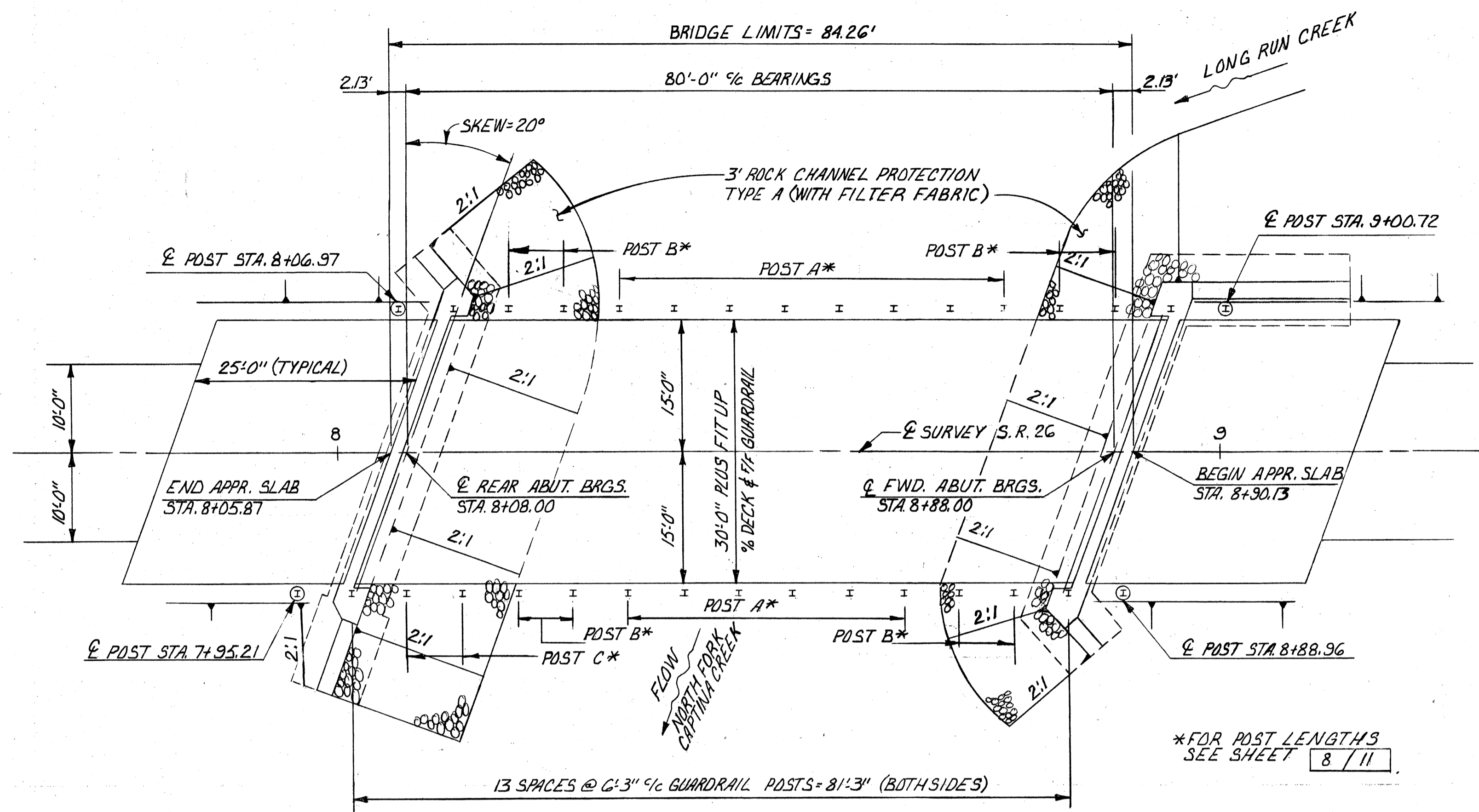
**CURVE DATA**  
P.I. = STA. 6+02.61  
Δ = 5° 13' 53"  
Dc = 2° 4' 19.6"  
T = 126.36'  
L = 252.54'  
R = 2765.09'  
Lc = 252.46'  
CHORD BEARING = N. 50° 3' 17" E.

BENCH MARK EL. 938.57  
STA. 8+43.81 RT. R.R. SPIKE  
SET IN 25" BLACK WALNUT

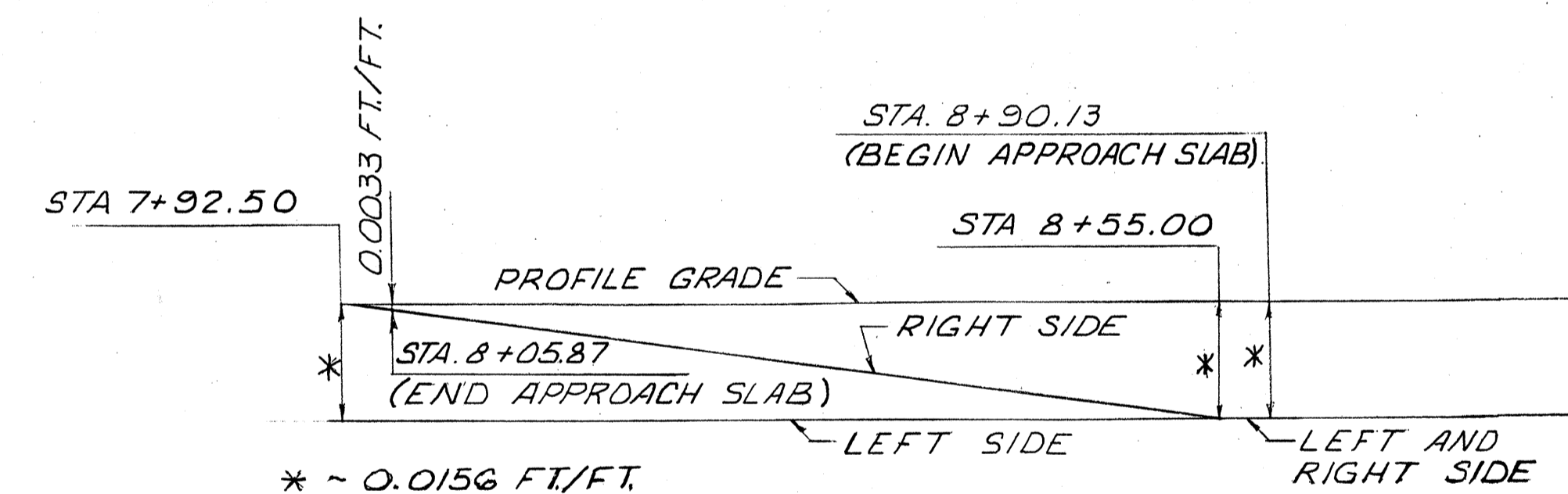
BENCH MARK EL. 945.04  
STA. 8+09.74 LT. R.R.  
SPIKE SET IN 14" BLACK WALNUT



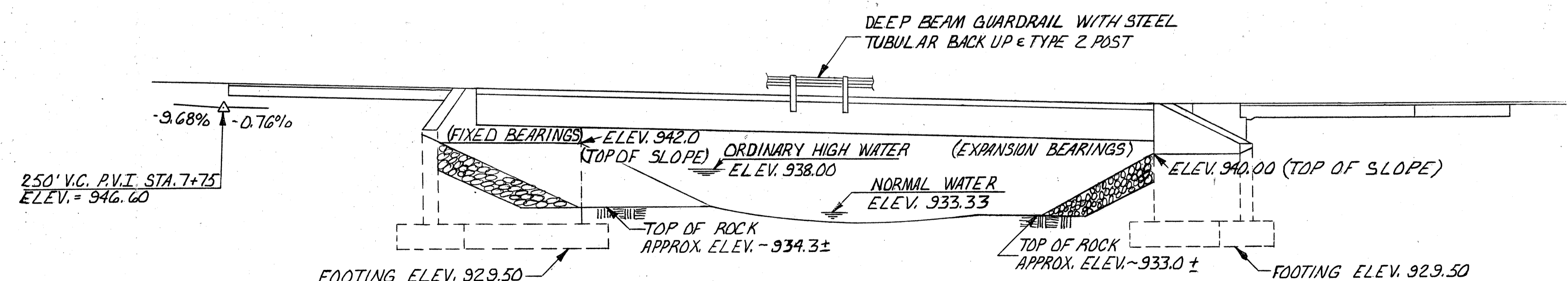
BELMONT COUNTY  
BEL-26-7.12



PLAN



SUPERELEVATION TRANSITION DIAGRAM



ELEVATION

McCOY ASSOCIATES INC. 2/11  
CONSULTING ENGINEERS  
AKRON, OHIO

GENERAL PLAN  
& ELEVATION  
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	JGC	JWD	SAM	M.A.M. 12-21-90		

## ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT'S	PIERS	GENERAL
202	11002	LUMP	LUMP SUM	STRUCTURE REMOVED, OVER 20 FOOT SPAN				LUMP
503	11100	LUMP	LUMP SUM	COFFERDAMS, CRIBS AND SHEETING				LUMP
503	21300	LUMP	LUMP SUM	UNCLASSIFIED EXCAVATION		LUMP		
503	31100	129	CU YD	ROCK AND/OR SHALE EXCAVATION		129		
509	12400	15264	POUND	REINFORCING STEEL, GRADE 60		15264		
509	15800	8534	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	3396	5138		
511	31601	60	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN	60			
511	44500	139	CU YD	CLASS C CONCRETE, ABUTMENT ABOVE FOOTING		139		
511	46500	83	CU YD	CLASS C CONCRETE, FOOTING		83		
SPECIAL	51267500	98	SQ YD	SEALING OF CONCRETE SURFACES *	98			
SPECIAL	51267502	66	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY) *		66		
515	51650	2	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM (76-88' LENGTH) (CB42-36) *	2			
515	54860	6	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM (78-90' LENGTH) (CB42-48) *	6			
516	10500	64	LIN FT	STRUCTURAL EXPANSION JOINT AND ELASTOMERIC COMPRESSION SEAL	64			
516	41100	16	EACH	1/8" PREFORMED BEARING PAD, 711.21	16			
516	43100	32	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) (1 5/8" X 6" X 12")	32			
517	72300	187.50	LIN FT	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS AND ANCHOR BOLTS)	187.50			
518	21200	68	CU YD	POROUS BACKFILL WITH FILTER FABRIC		68		
518	41100	112	LIN FT	6" PERFORATED HELICAL CORRUGATED STEEL PIPE, 707.01		112		
518	41200	71	LIN FT	6" NON-PERFORATED HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01		71		
511+	33404	60	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE, USING SHRINKAGE COMPENSATING CEMENT *	60			
511+	33410	LUMP	SUM	CLASS S CONCRETE, USING SHRINKAGE COMPENSATING CEMENT, FOR PRE- POUR TESTING *	LUMP			

\*SEE PROPOSAL NOTE

+ALTERNATE BID ITEM. THESE TWO ITEMS SHALL CONSTITUTE ONE ALTERNATE BID TO CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN.

QUANTITIES	
CALC. BY: JGC	DATE: 9-90
CHKD. BY: SAM	DATE: 9-90

FHWA REGION	STATE	PROJECT
5	OHIO	

14  
25

BELMONT COUNTY  
BEL-26-7.12

## STRUCTURAL GENERAL NOTES

### REFERENCE

SHALL BE MADE TO STANDARD DRAWINGS:

DBR-2-73 DATED 4/10/73

AS-1-81 DATED 11/27/81

EXJ-3-82 REVISED 8/1/84

PSBD-1-81 REVISED 6/20/89

AND TO SUPPLEMENTAL SPECIFICATION:

836 DATED 11/12/85

849 DATED 12/24/85

949 DATED 09/26/86

### DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1989, INCLUDING THE 1990 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

### DESIGN DATA:

- DESIGN LOADING - HS 20-44 AND ALTERNATE MILITARY LOADING
- CLASS C CONCRETE - COMPRESSIVE STRENGTH 4000 PSI FOR SUBSTRUCTURE
- CLASS S CONCRETE - COMPRESSIVE STRENGTH 4500 PSI FOR SUPERSTRUCTURE AND DECK JOINTS
- REINFORCING STEEL - ASTM A615, A616, OR A617 - GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI
- GRADE 40, MINIMUM YIELD STRENGTH 40,000 PSI FOR PRESTRESSED BOX BEAMS ONLY

### CONCRETE FOR PRESTRESSED CONCRETE BEAMS -

UNIT STRESS 2,200 PSI COMPRESSION, 444 PSI TENSION

PRESTRESSING STAND - ASTM A416, F'S = 270,000 PSI, INITIAL PRESTRESS = 0.70 F'S

### DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL AND SEALING OF CONCRETE SURFACES.

### MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

### REMOVAL OF EXISTING STRUCTURE

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC THE EXISTING STRUCTURE SHALL BE REMOVED. SUITABLE WASTE MASONRY MAY BE PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.

### FOUNDATION BEARING PRESSURE

ABUTMENT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 3.70 TONS PER SQUARE FOOT.

### FOOTINGS

SHALL BE PLACED IN BEDROCK AT THE ELEVATION SHOWN.

### ITEM SPECIAL - SEALING OF CONCRETE SURFACES

SPECIFIED CONCRETE SURFACES SHALL BE SEALED USING MATERIALS SPECIFIED IN THE PROPOSAL, SEE SHEET NOS. 6/10 AND 8/10 FOR DETAIL OF AREAS TO BE SEALED. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS, APPLICATION PROCEDURES AND MEASUREMENT AND PAYMENT.

### SHIMS:

1/8" THICK PREFORMED BEARING PAD, SHIMS, PLAN AREA 6" X 12" SHALL BE PLACED ON TOP OF BEARINGS WHERE REQUIRED FOR PROPER BEARING. THE AMOUNT SUPPLIED IS SUFFICIENT FOR 2 SHIMS PER BEAM.

### ITEM 511, CLASS S CONCRETE, SUPERSTRUCTURE, AS PER PLAN

MEMBRANE CURING PER SUPPLEMENTAL SPECIFICATION 836 WILL NOT BE PERMITTED. CONCRETE SHALL BE CURED BY METHOD (A), WATER CURING.

McCoy ASSOCIATES INC. 3 / 11  
CONSULTING ENGINEERS  
AKRON, OHIO

**ESTIMATED QUANTITIES AND  
STRUCTURAL GEN. NOTES**  
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

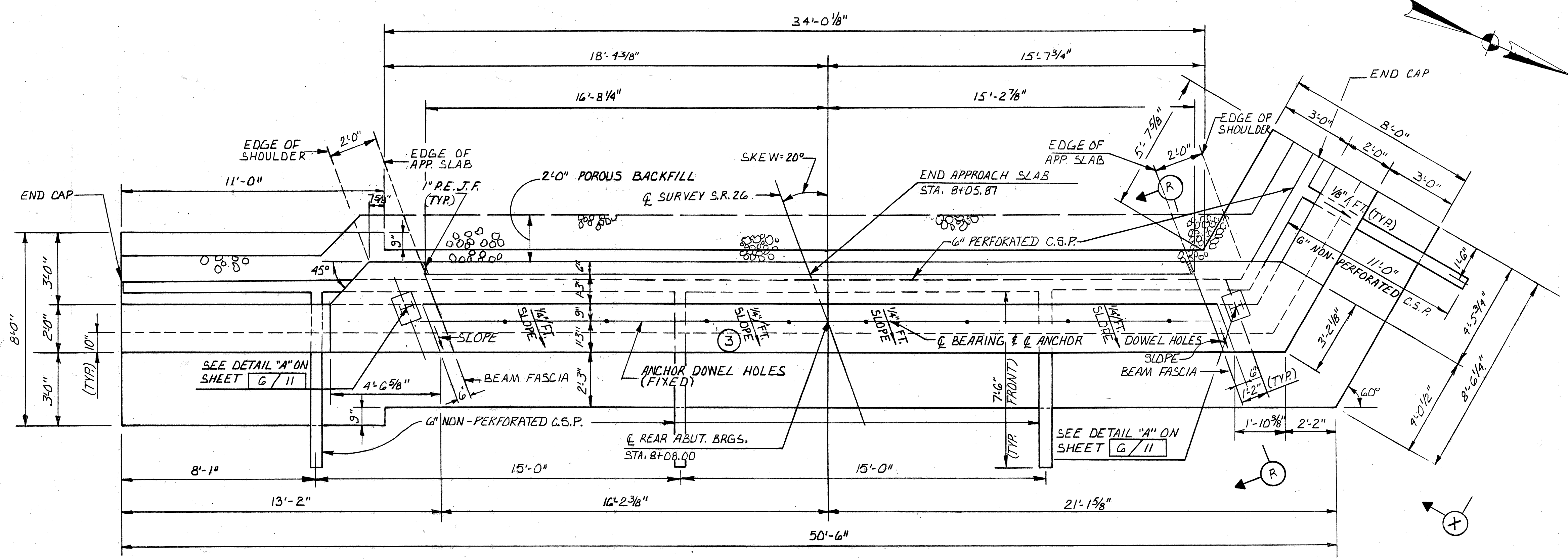
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	PNA		SAM	M.A.M.	12-21-90	



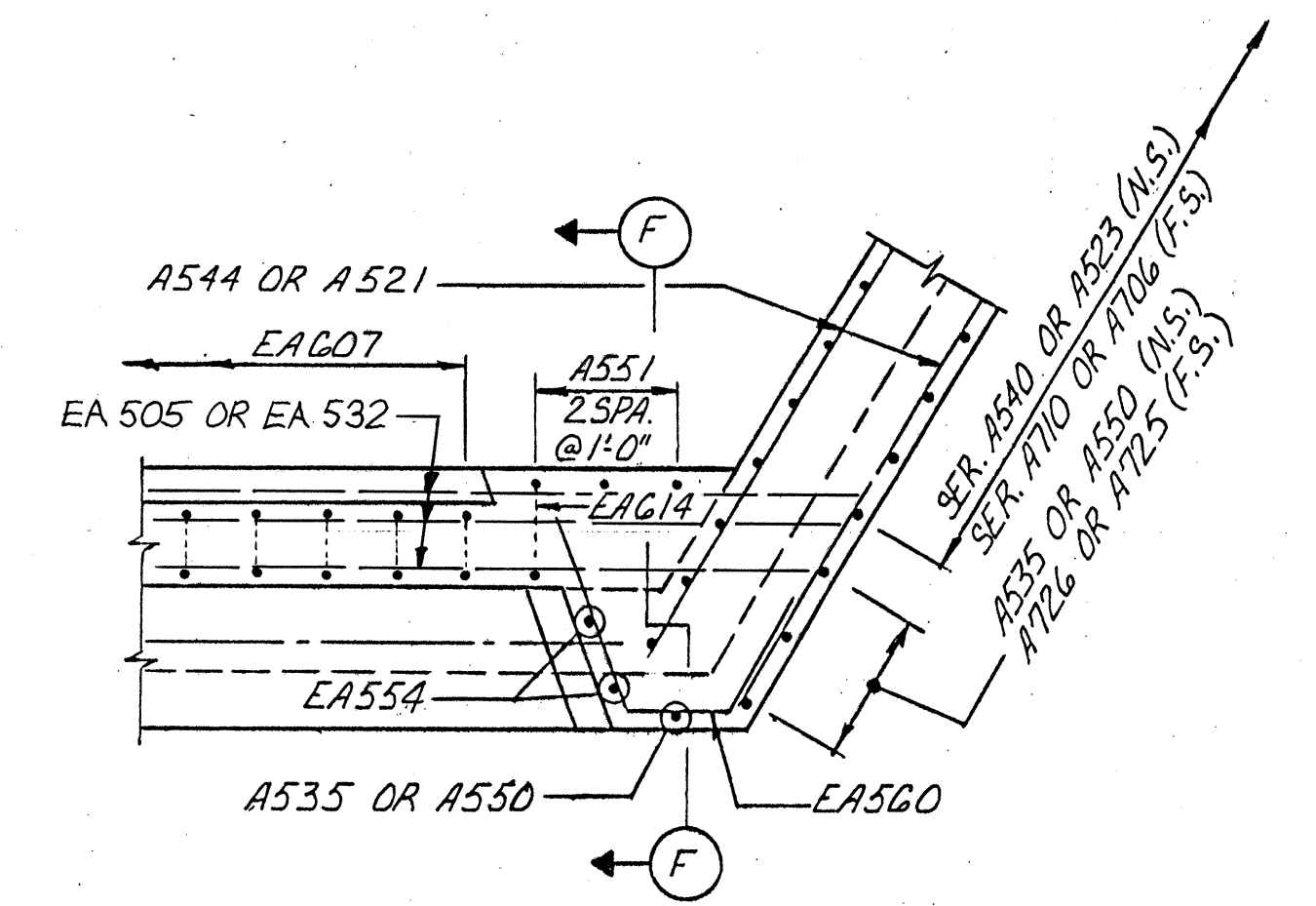
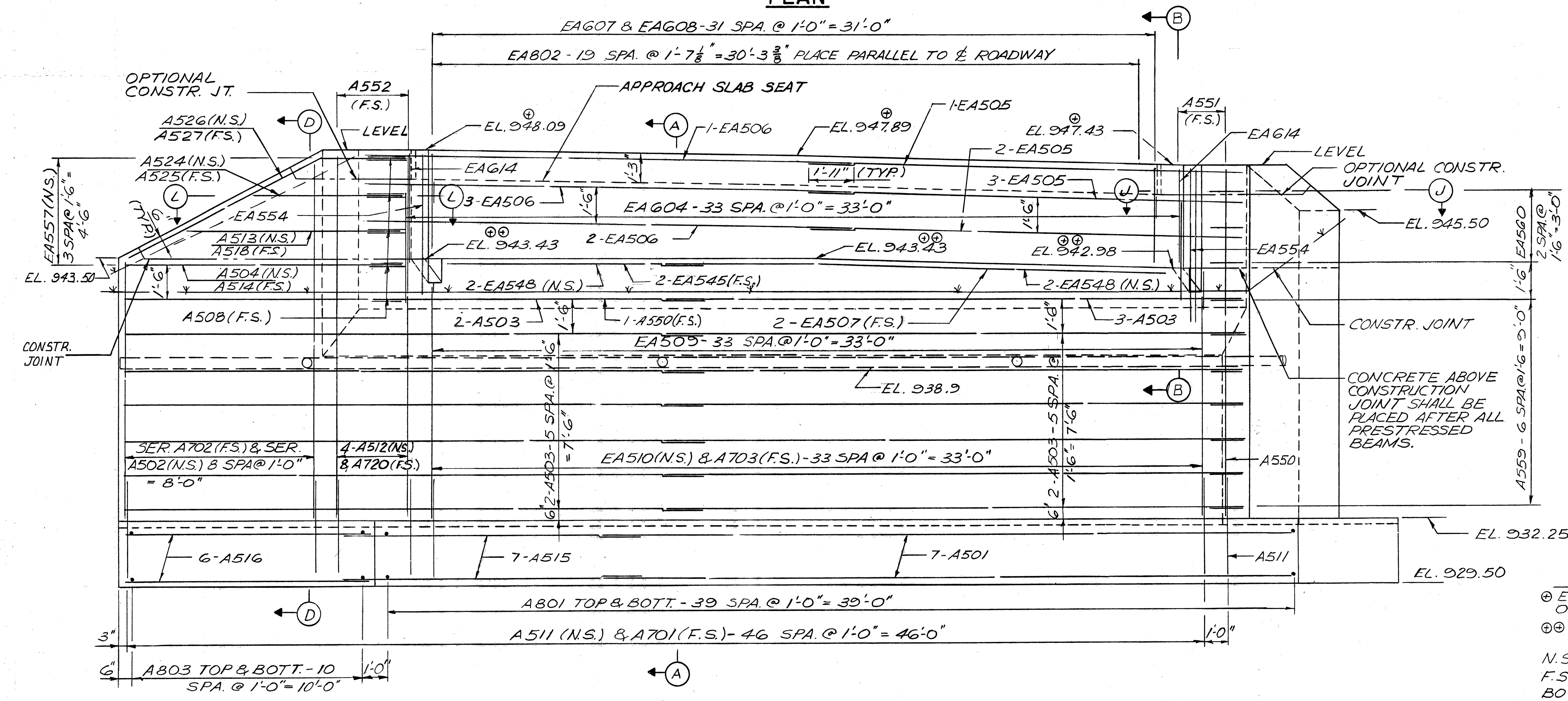
BELMONT COUNTY  
BEL-26- 7.12

**NOTES**

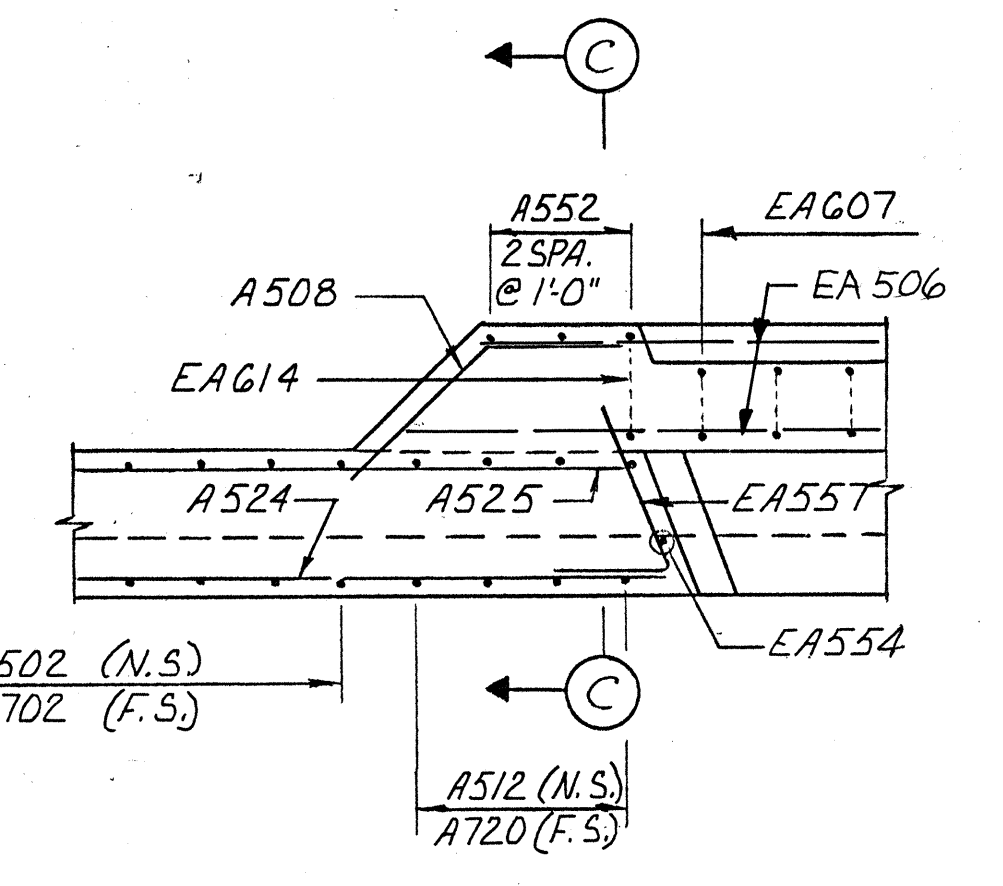
- FOR SECTION R-R, A-A, B-B, C-C, D-D, & F-F AND ADDITIONAL NOTES SEE SHEET G/11.
- FOR VIEW X-X SEE SHEET 7/11.
- SEE DETAIL "X" SHEET G/11.



**PLAN**



**SECTION J-J**



**SECTION L-L**

**LEGEND**

- ⊕ ELEVATIONS AT FACE OF BACKWALL
- ⊕⊕ ELEVATIONS AT  $\bar{\bar{c}}$  BEARING
- N.S. ~ NEAR SIDE
- F.S. ~ FAR SIDE
- BOTT. ~ BOTTOM
- SPA. ~ SPACES

**McCOY ASSOCIATES INC.** 4/11  
CONSULTING ENGINEERS  
AKRON, OHIO

**REAR ABUTMENT DETAILS**

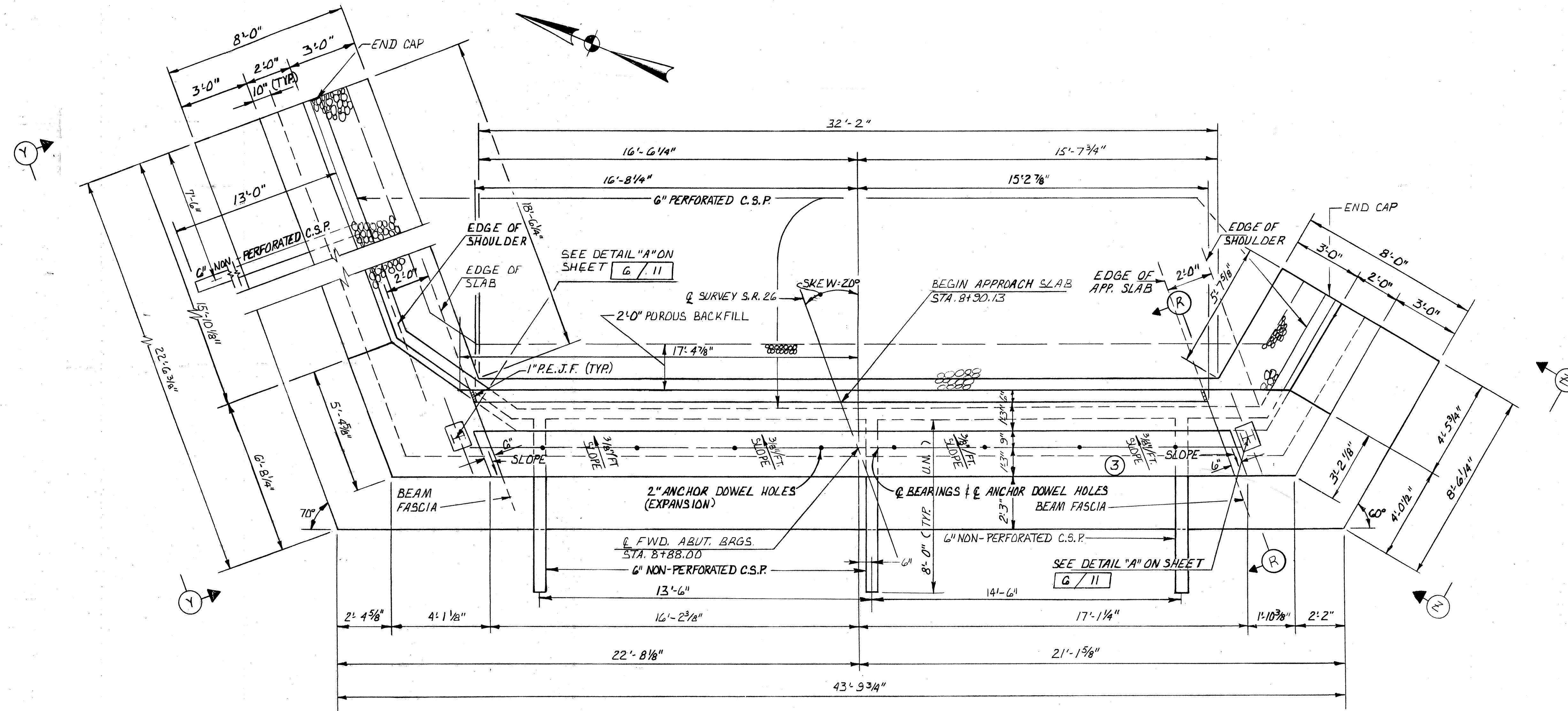
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	JGC	JWD	SAM	M.A.M.	12-21-90	

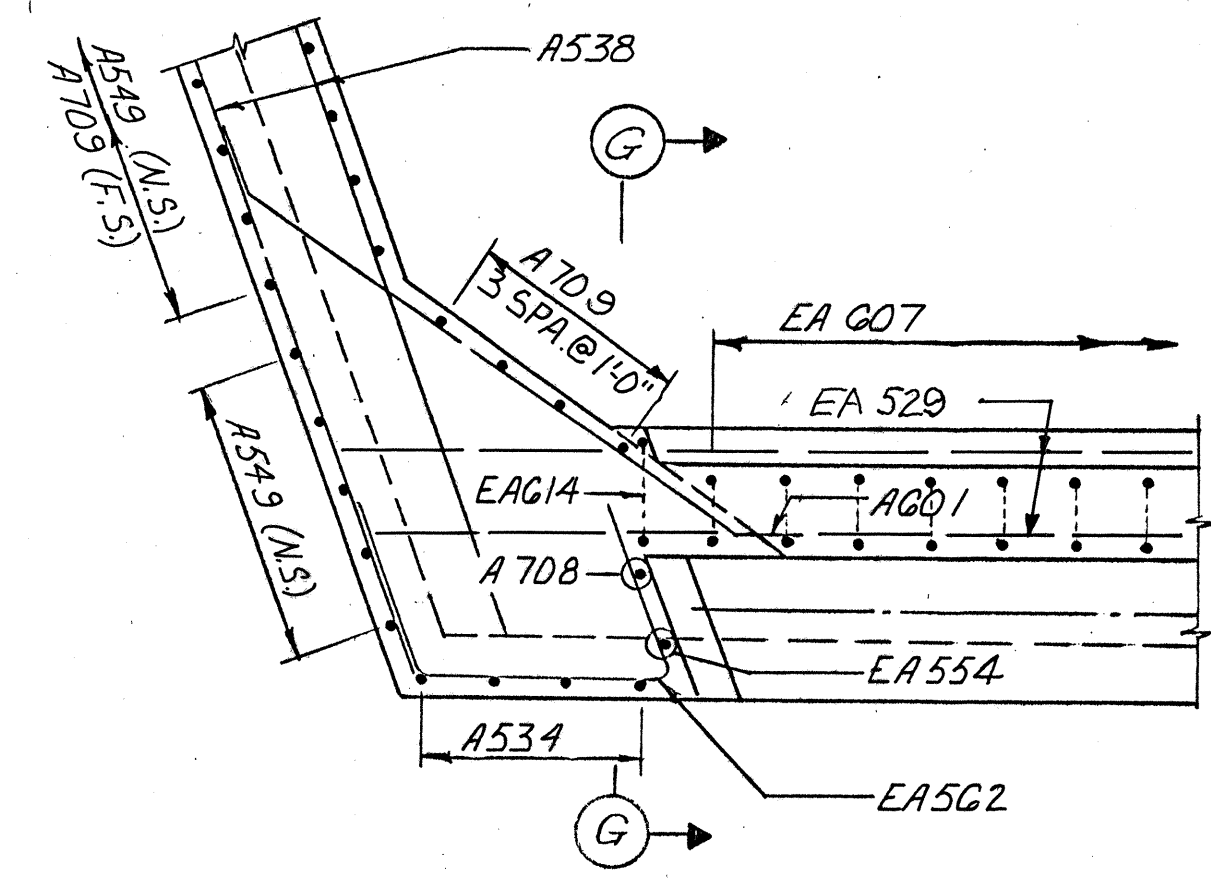
BELMONT COUNTY  
BEL-26-7.12

**NOTES**

- FOR SECTION A-A, P-P, R-R AND ADDITIONAL NOTES SEE SHEET **G/11**.
- FOR VIEWS Y-Y AND Z-Z SEE SHEET **7/11**.
- SEE DETAIL "X" SHEET **G/11**.
- FOR SECTION J-J AND ADDITIONAL NOTES SEE SHEET **4/11**.

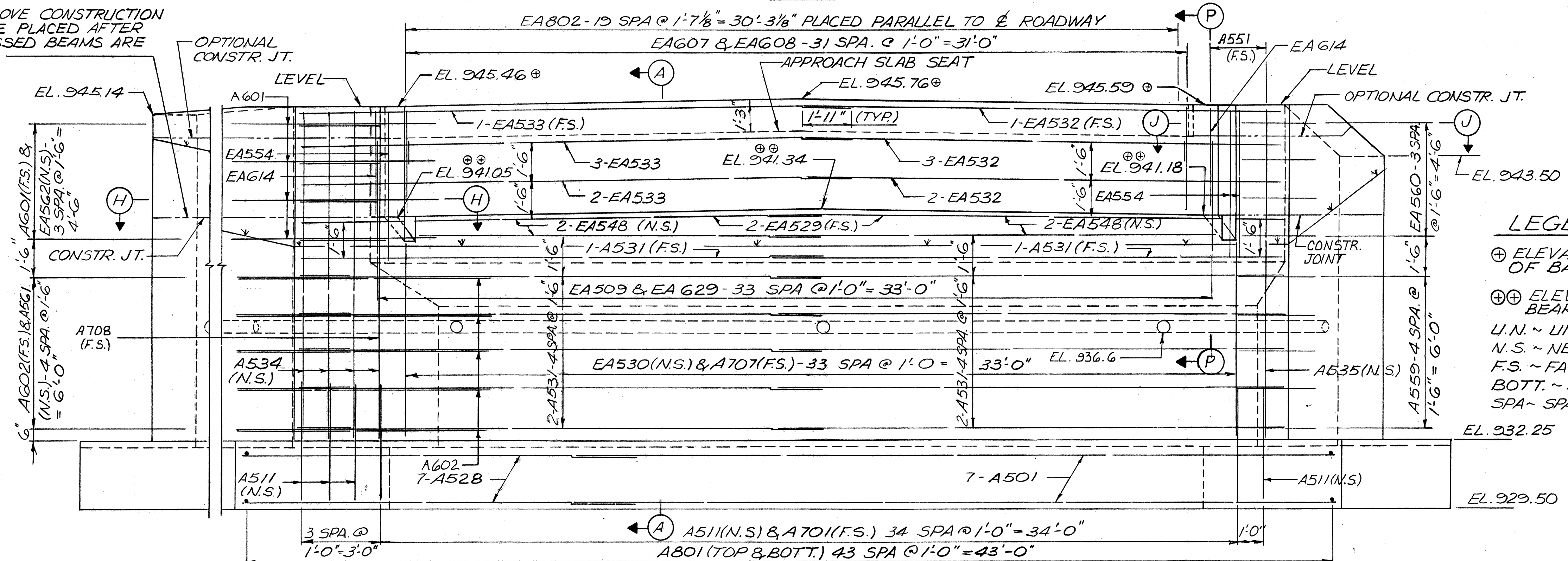


**PLAN**

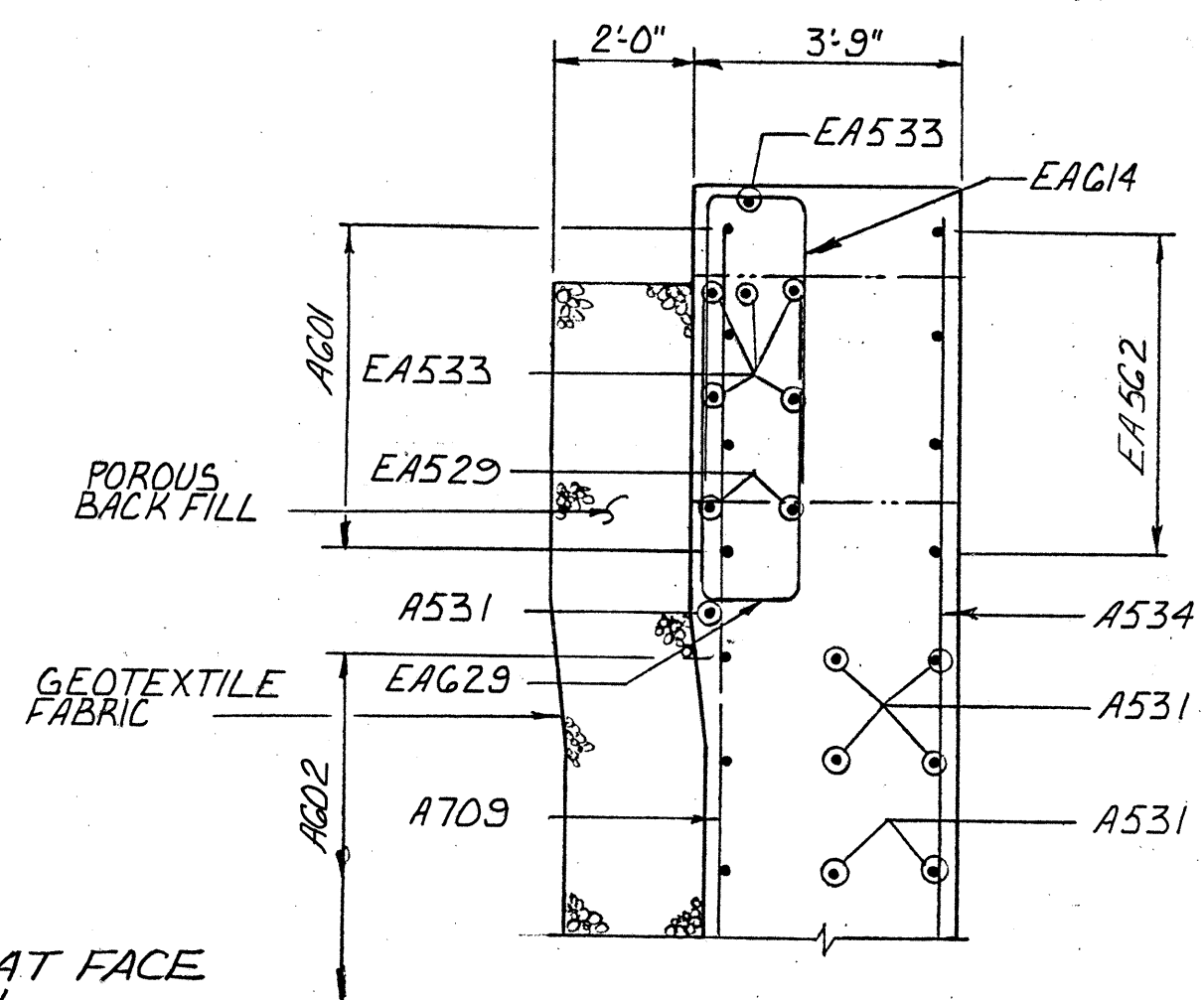


**SECTION H-H**

CONCRETE ABOVE CONSTRUCTION JOINT SHALL BE PLACED AFTER ALL PRESTRESSED BEAMS ARE IN POSITION.



**ELEVATION**



**SECTION G-G**

**LEGEND**

- ⊕ ELEVATIONS AT FACE OF BACK WALL
- ⊕⊕ ELEVATIONS AT BEARING
- U.N. ~ UNLESS NOTED
- N.S. ~ NEAR SIDE
- F.S. ~ FAR SIDE
- BOTT. ~ BOTTOM
- SPA - SPACES

McCOY ASSOCIATES INC. 5/11  
CONSULTING ENGINEERS  
AKRON, OHIO

**FORWARD ABUTMENT DETAILS**  
BRIDGE NO. BEL-26 - 721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	JGC	JWD	SAM	M.A.M.	12-21-90	

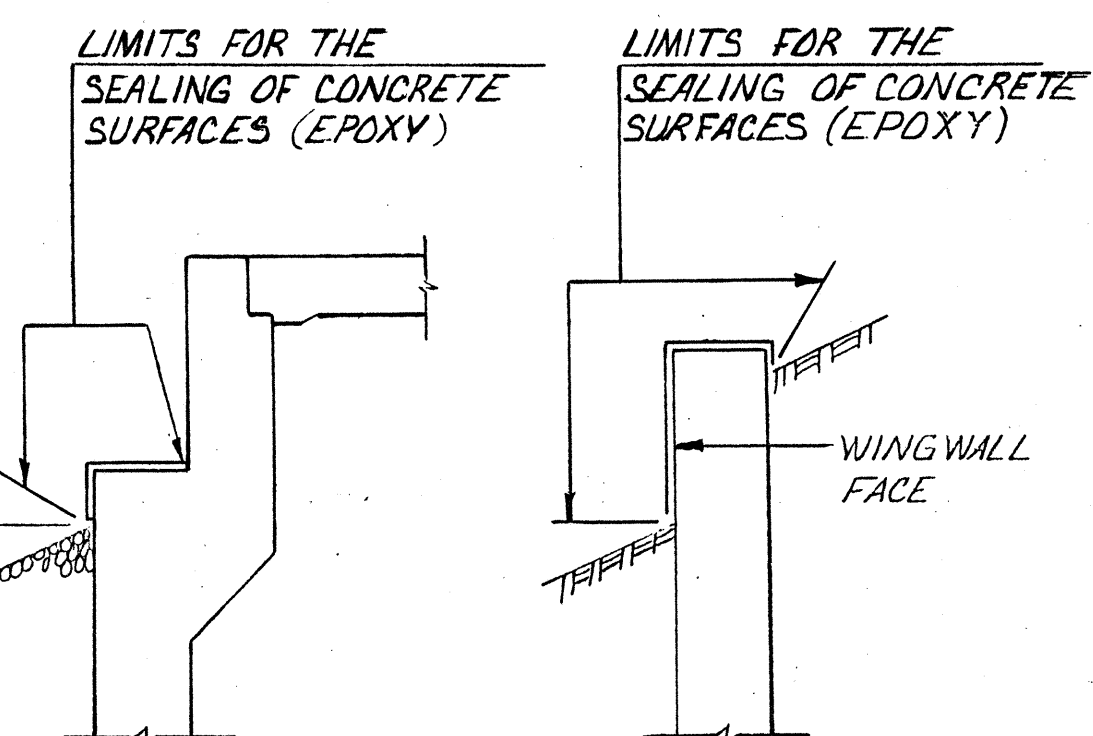
BELMONT COUNTY  
BEL 26-7.12

**NOTES**

- REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR DOWEL HOLES.
- IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE ADJACENT BLOCKED OUT AREA HAS BEEN PLACED.
- THE 2 FOOT THICK POROUS BACKFILL SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1'-0" BELOW THE EMBANKMENT SURFACE, AND LATERALLY TO THE ENDS OF THE WING WALLS, EXCEPT AS NOTED IN SECTION E-E, SHEET 7/11
- REINFORCING STEEL LAP LENGTHS UNLESS NOTED:  
NO. 5 BAR = 1'-8"  
NO. 7 BAR = 2'-7"
- PAYMENT FOR TYPE A WATERPROOFING SHALL BE INCLUDED WITH ITEM 611-REINFORCED CONCRETE APPROACH SLAB.

**LEGEND**

E.S. = EACH SIDE  
N.S. = NEAR SIDE  
F.S. = FAR SIDE  
R.A. = REAR ABUTMENT  
F.A. = FORWARD ABUTMENT  
CONSTR. = CONSTRUCTION  
JT. = JOINT  
SER. = SERIES



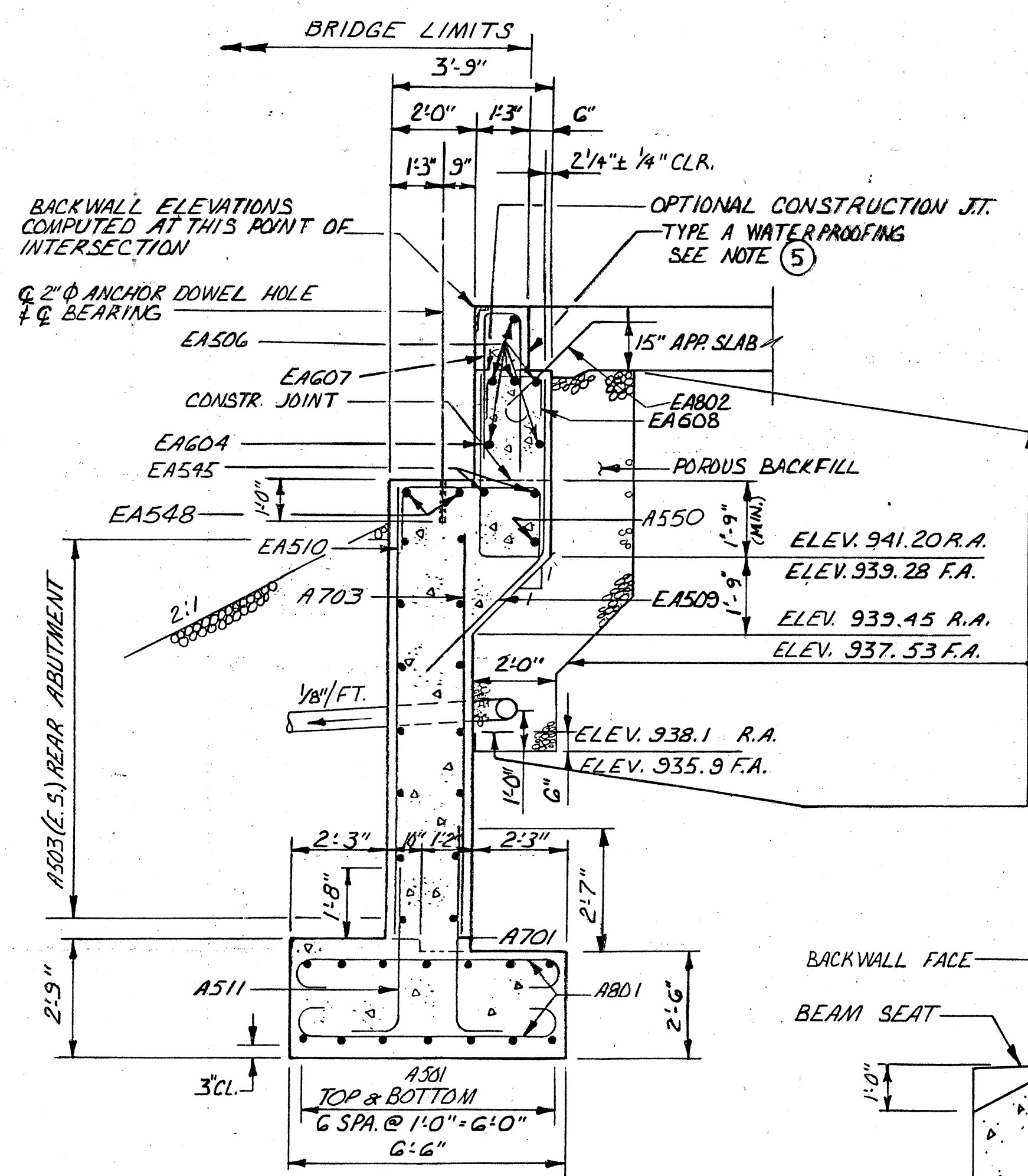
**LIMITS FOR THE SEALING OF CONCRETE SURFACES**

**McCoy Associates, Inc.** 6/11  
CONSULTING ENGINEERS  
AKRON, OHIO

**ABUTMENT DETAILS**

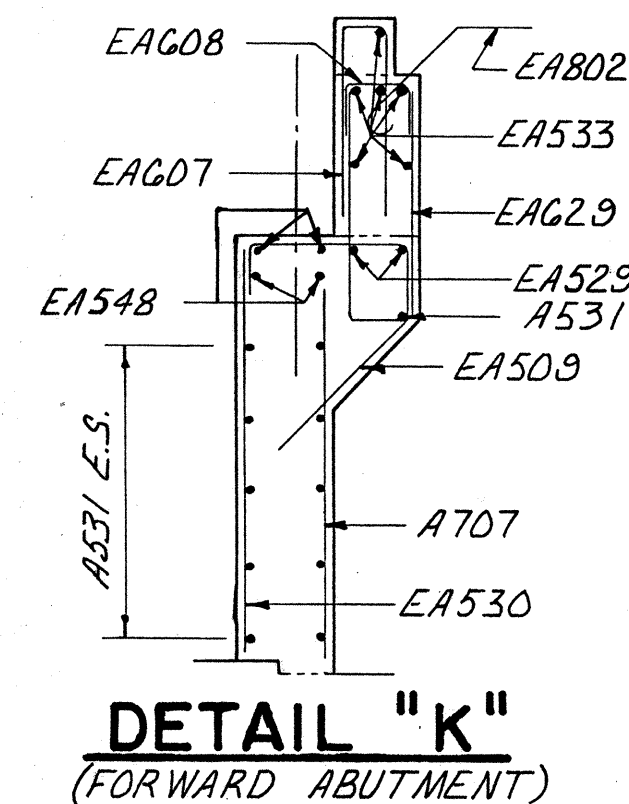
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	JGC	JWD	SAM	M.A.M.	12-21-90	

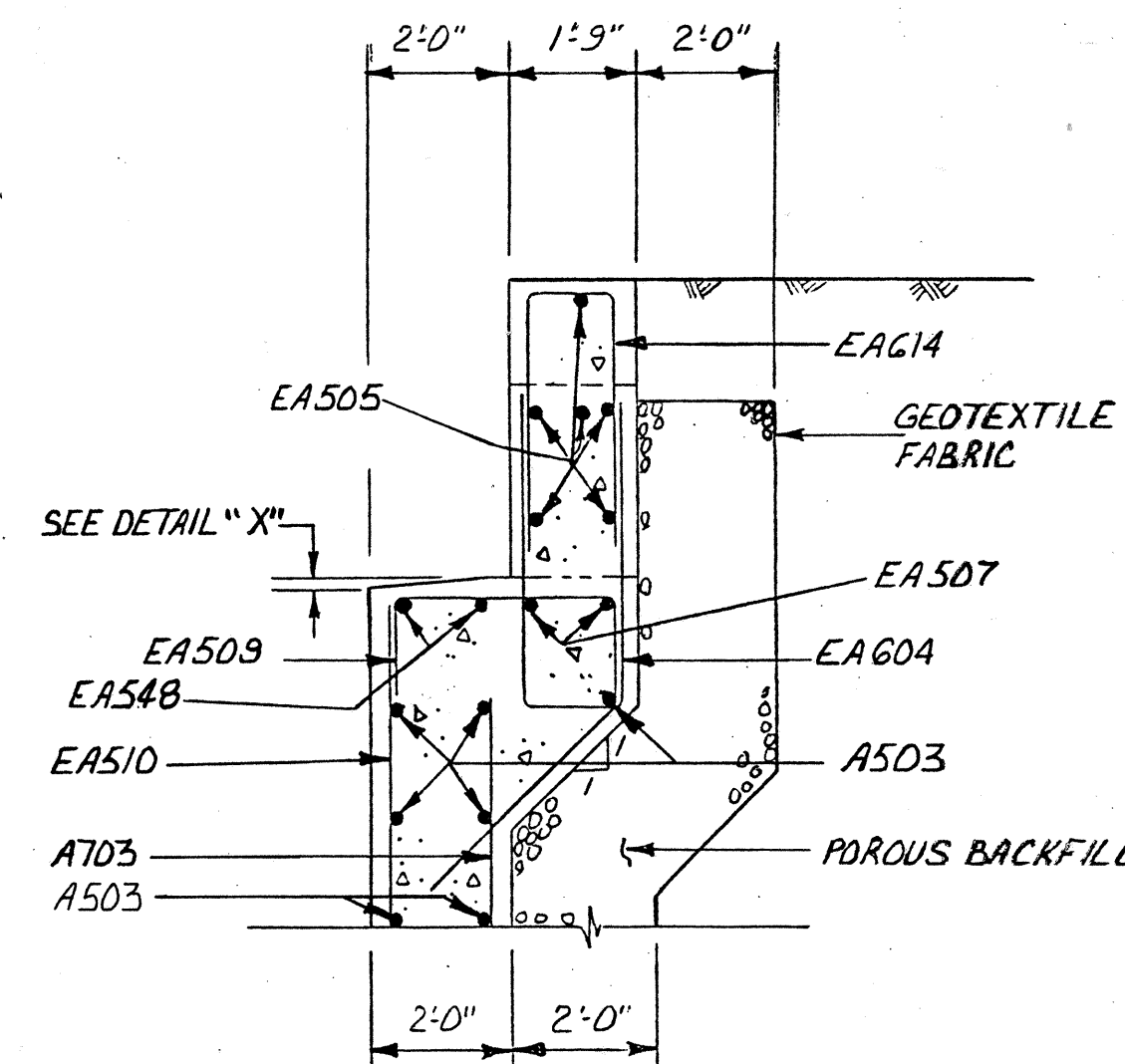


FOR REINFORCING IN STEM AND BACKWALL OF FORWARD ABUTMENT SEE DETAIL "K"

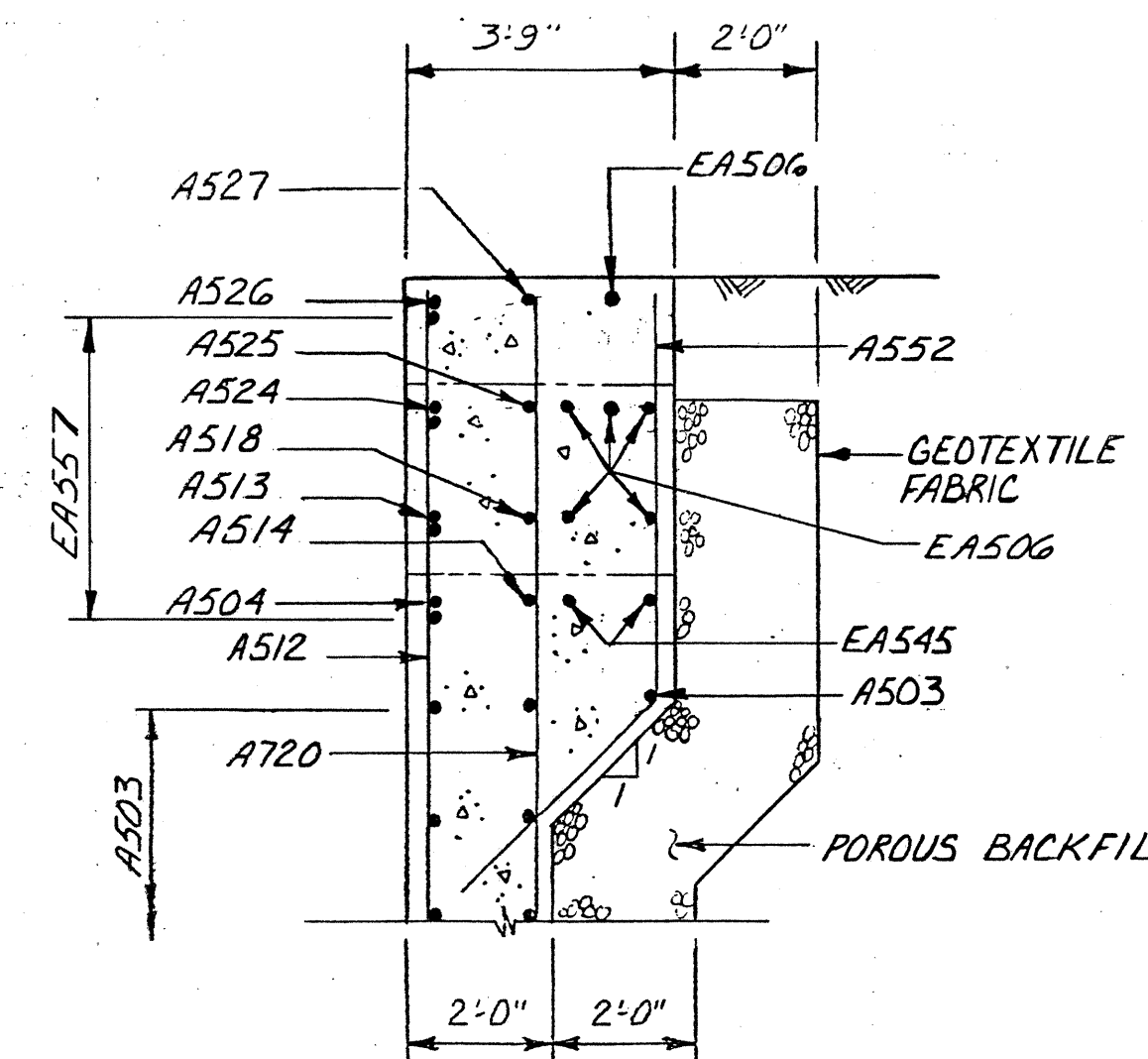
**SECTION A-A**



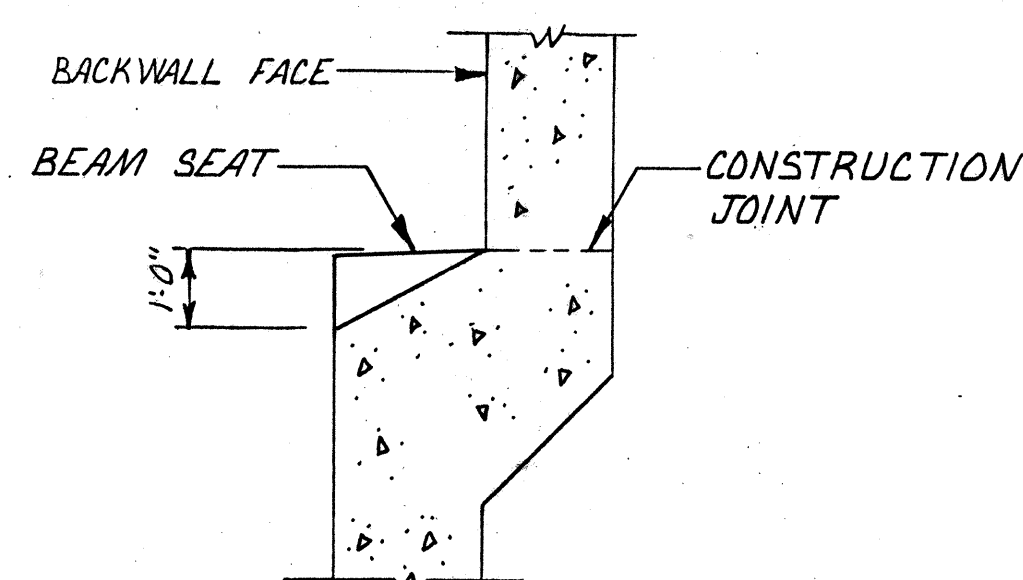
**DETAIL "K"**  
(FORWARD ABUTMENT)



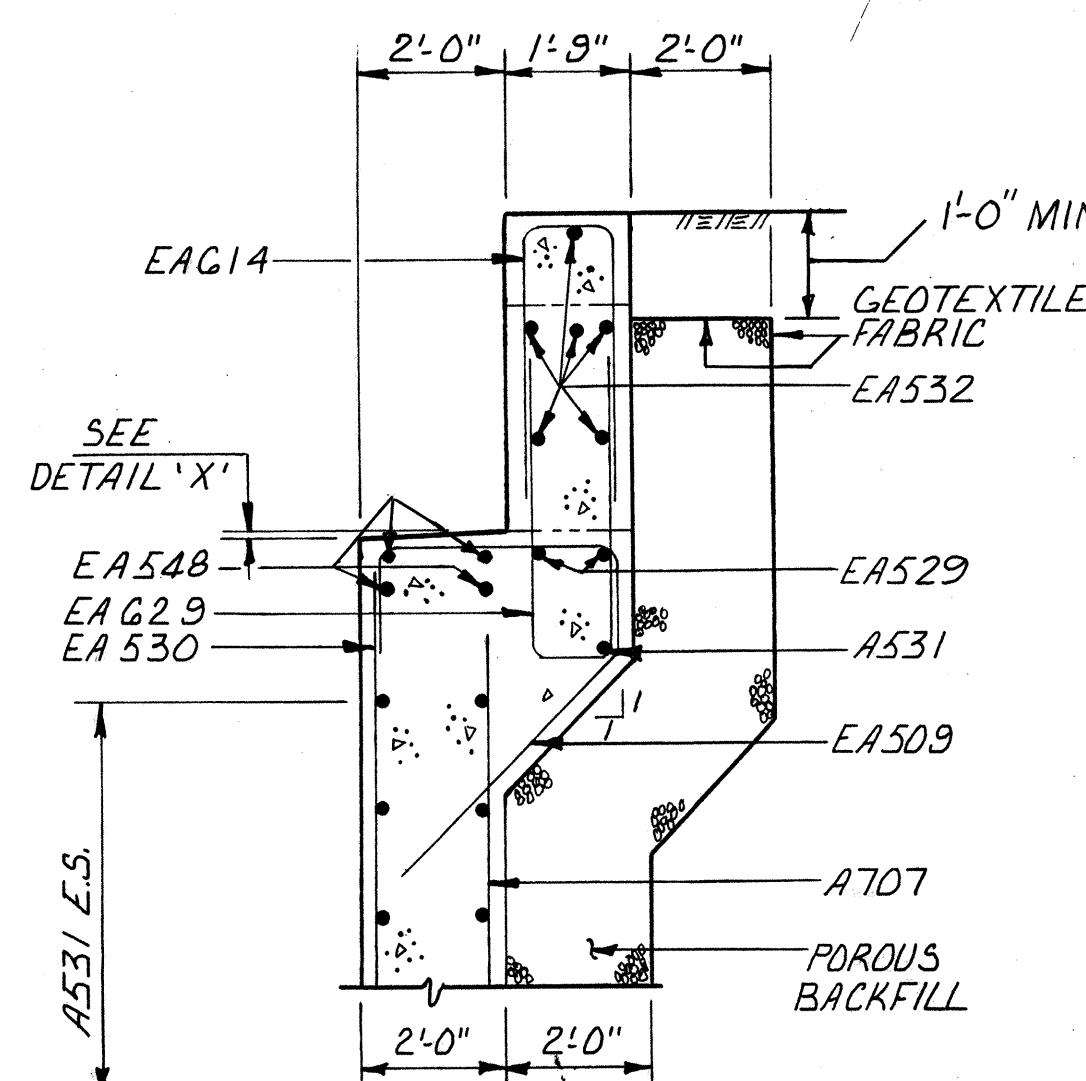
**SECTION B-B**



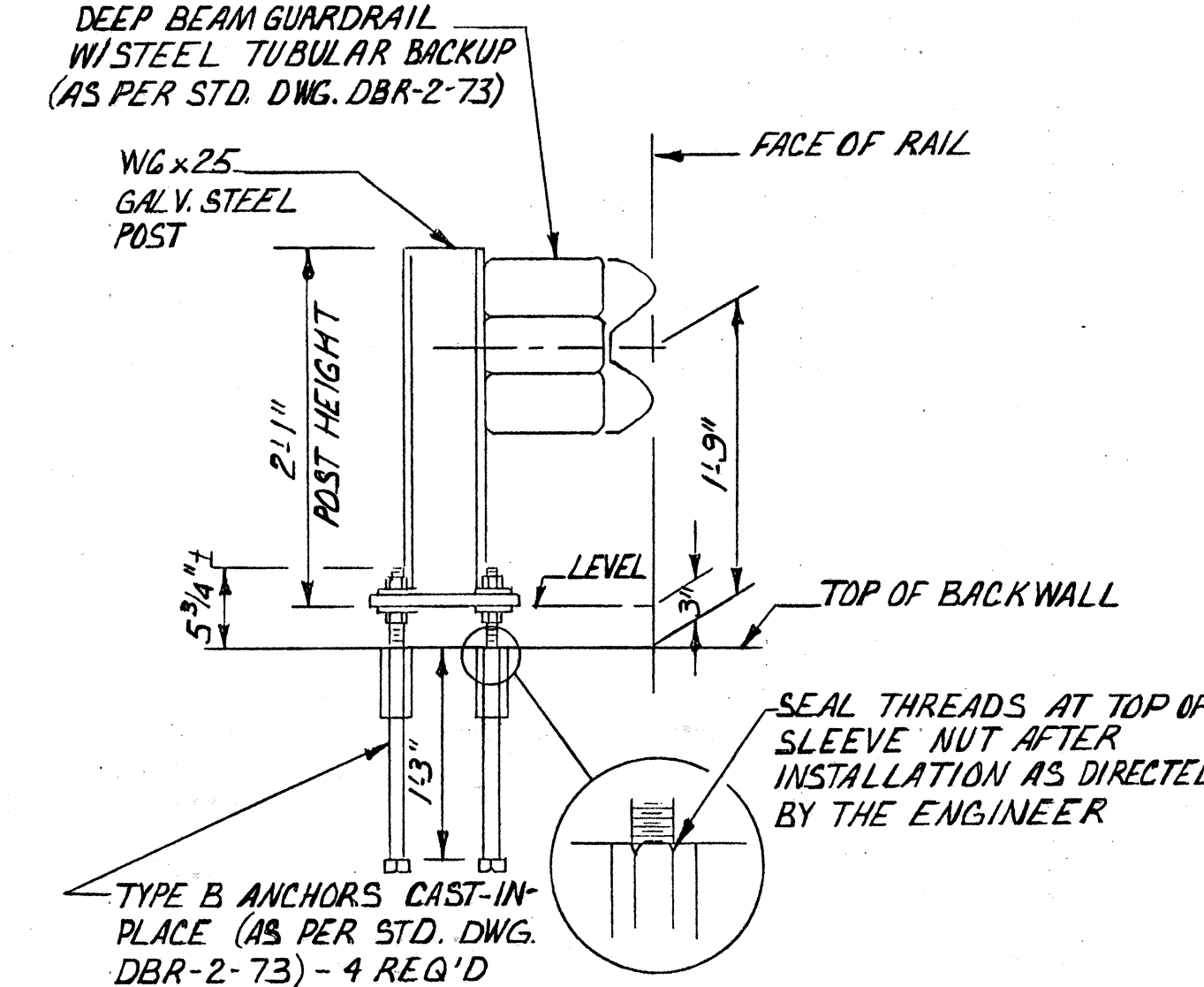
**SECTION C-C**



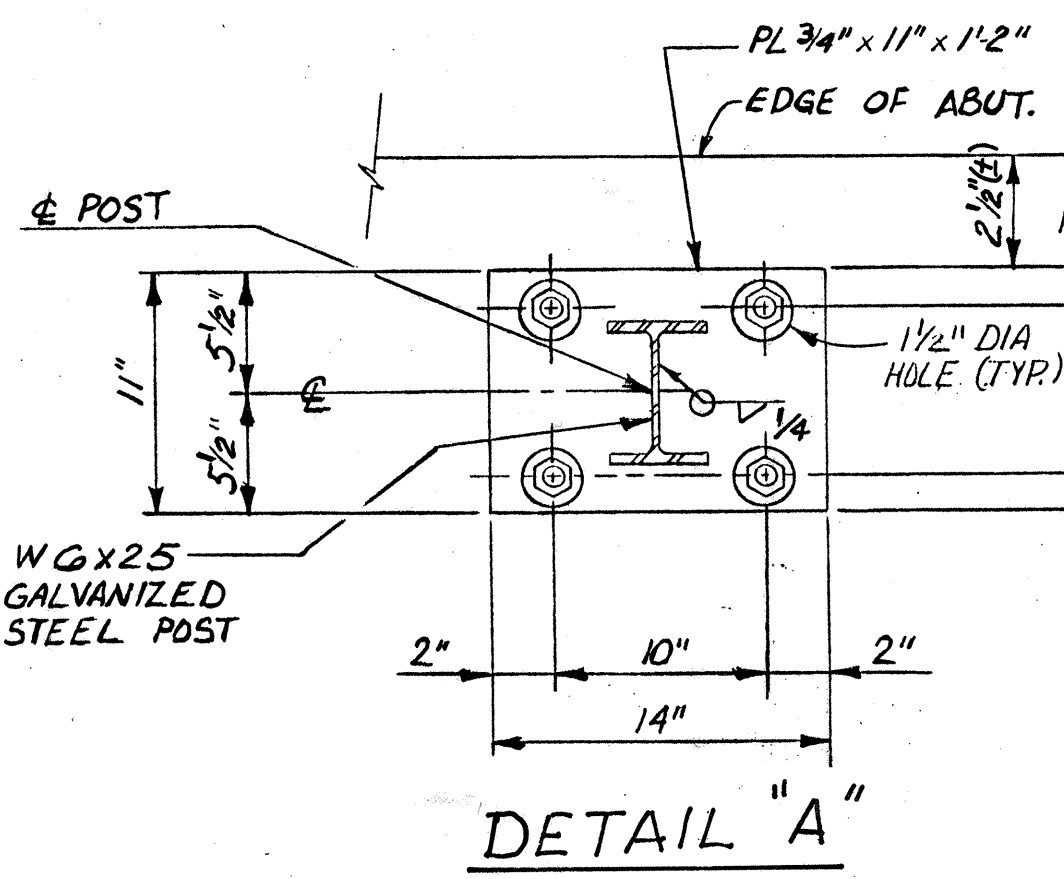
**SECTION R-R**  
ABUTMENT SEAT DRAIN



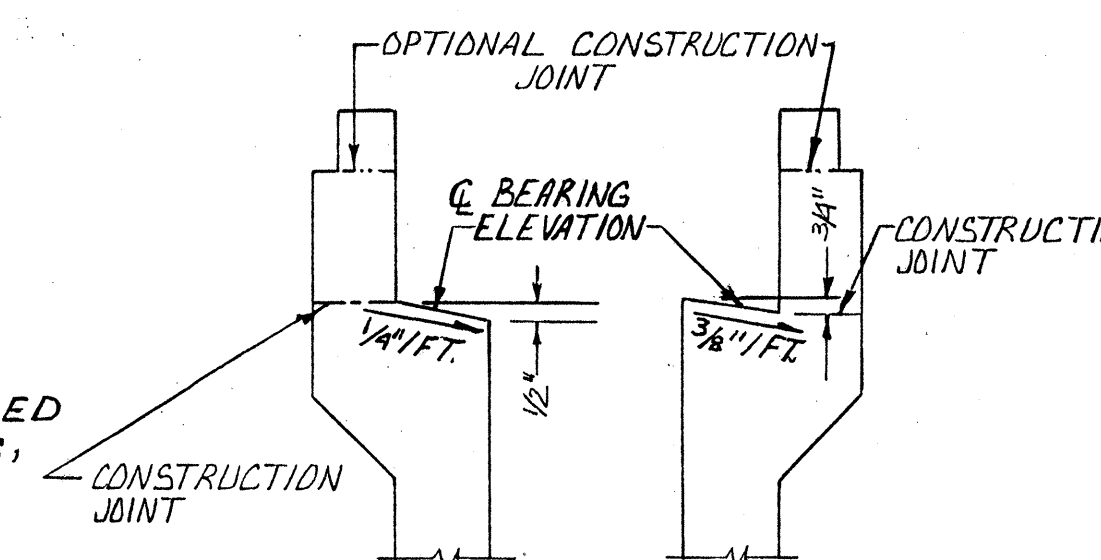
**SECTION P-P**



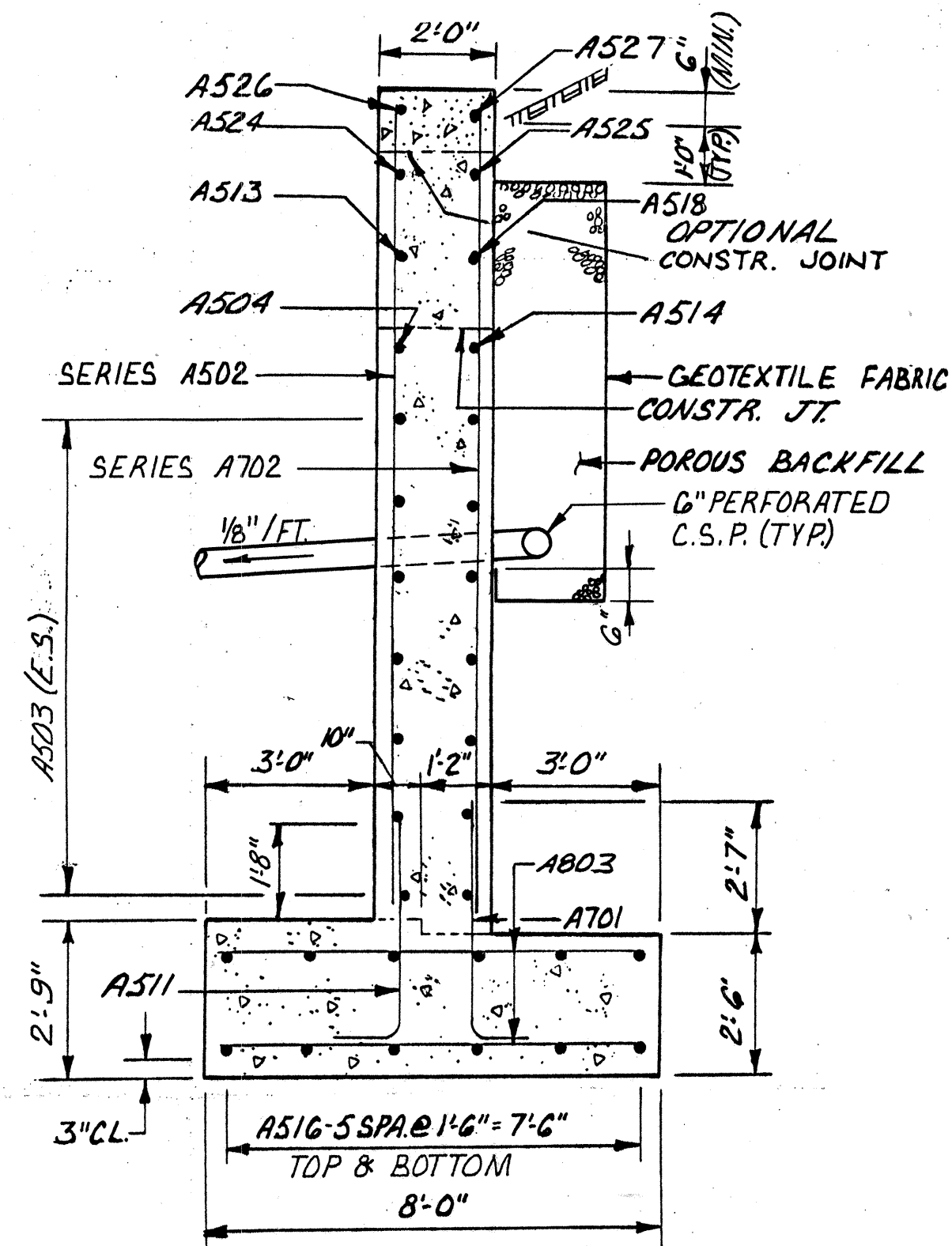
**DETAIL "A"**



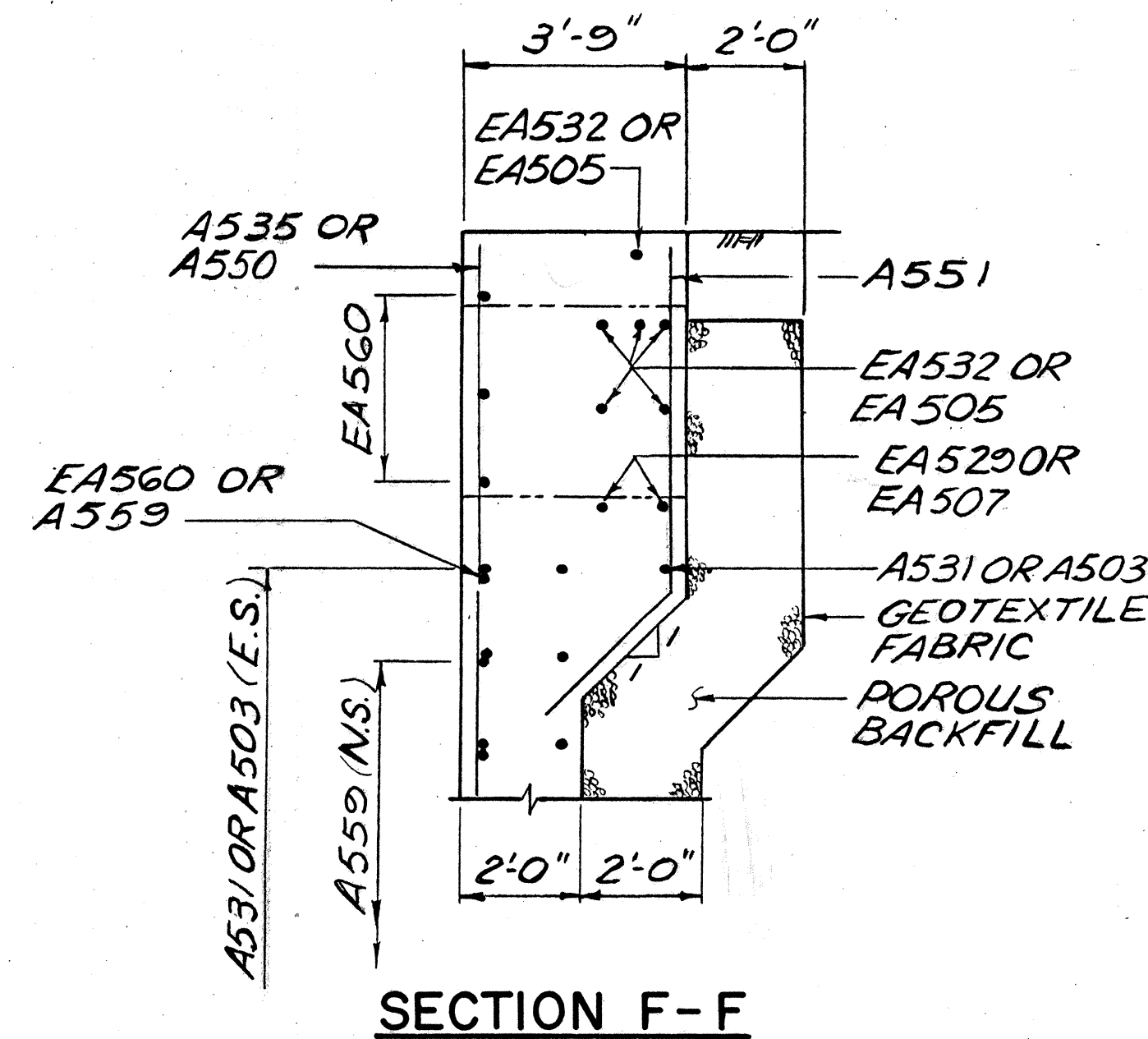
STEEL PLATES, ANCHORS, NUTS & WASHERS SHALL BE GALVANIZED AS PER 711.02. COST OF THE BACKWALL MOUNTED POSTS, BASE PLATES, CONNECTIONS AND ANCHORAGE SHALL BE INCLUDED WITH ITEM 517, RAILING FOR PAYMENT.



**DETAIL "X"**  
(ALONG SKEW)

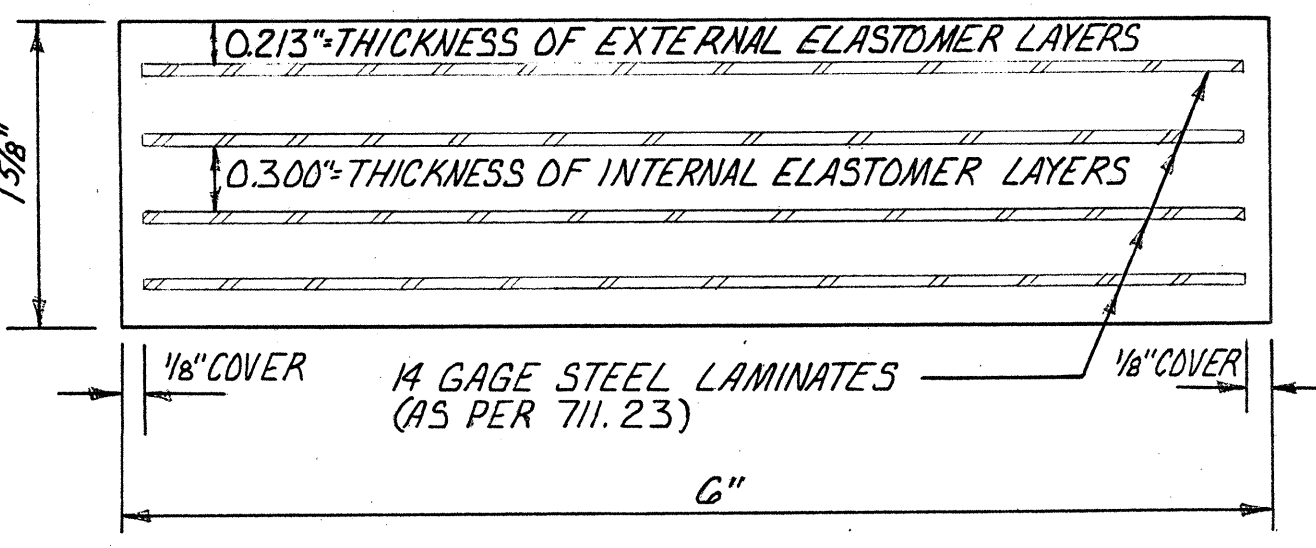
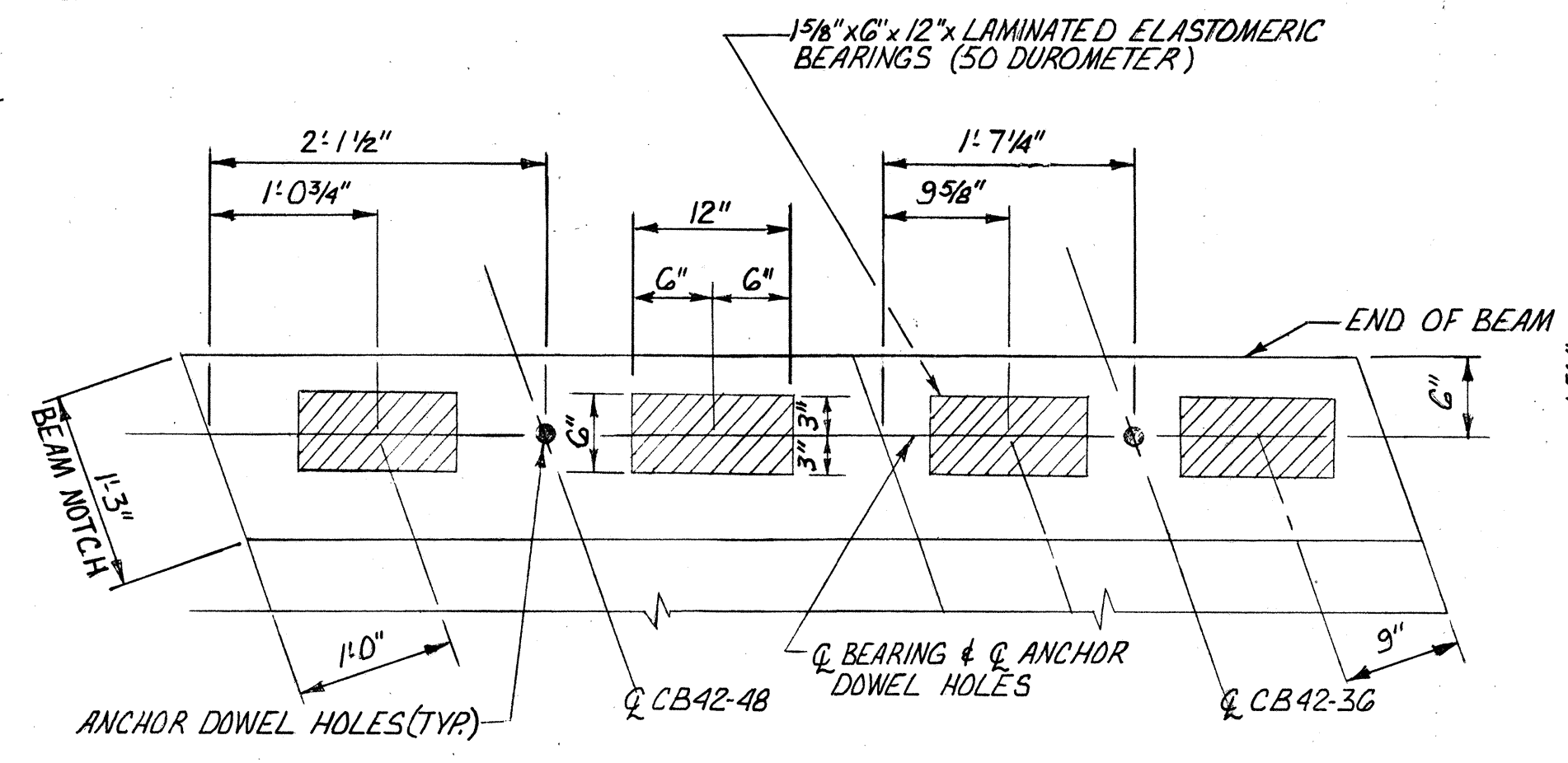
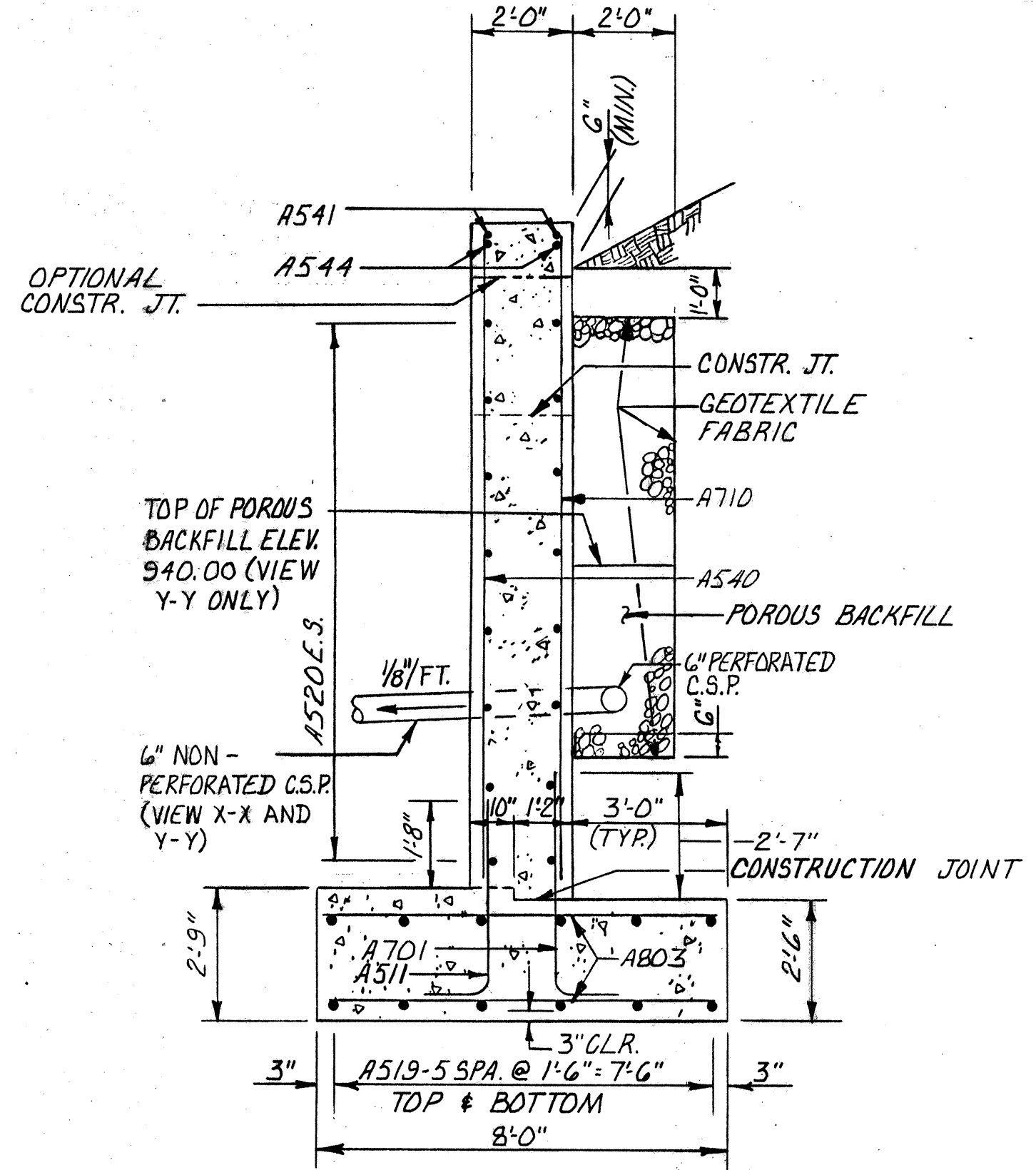
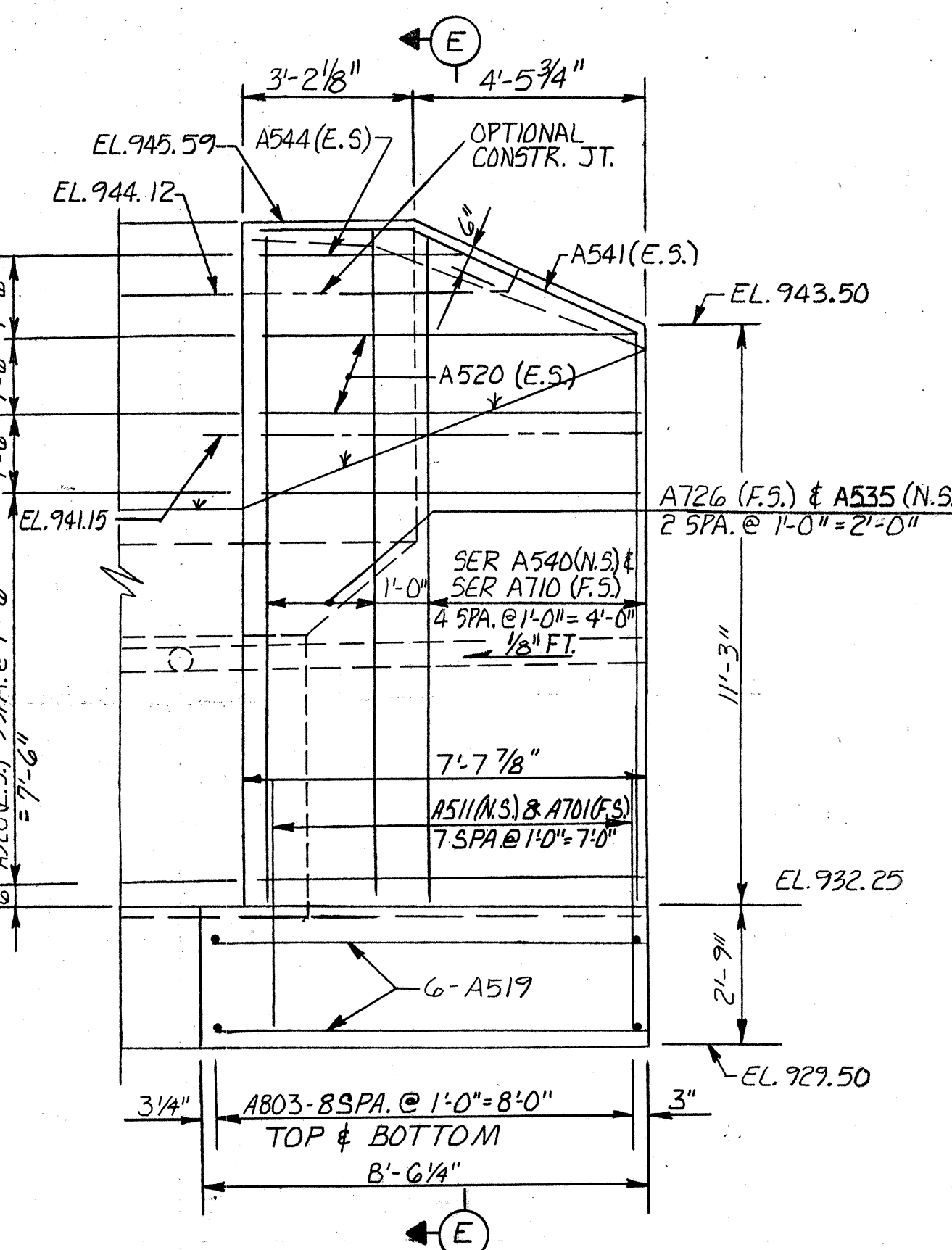
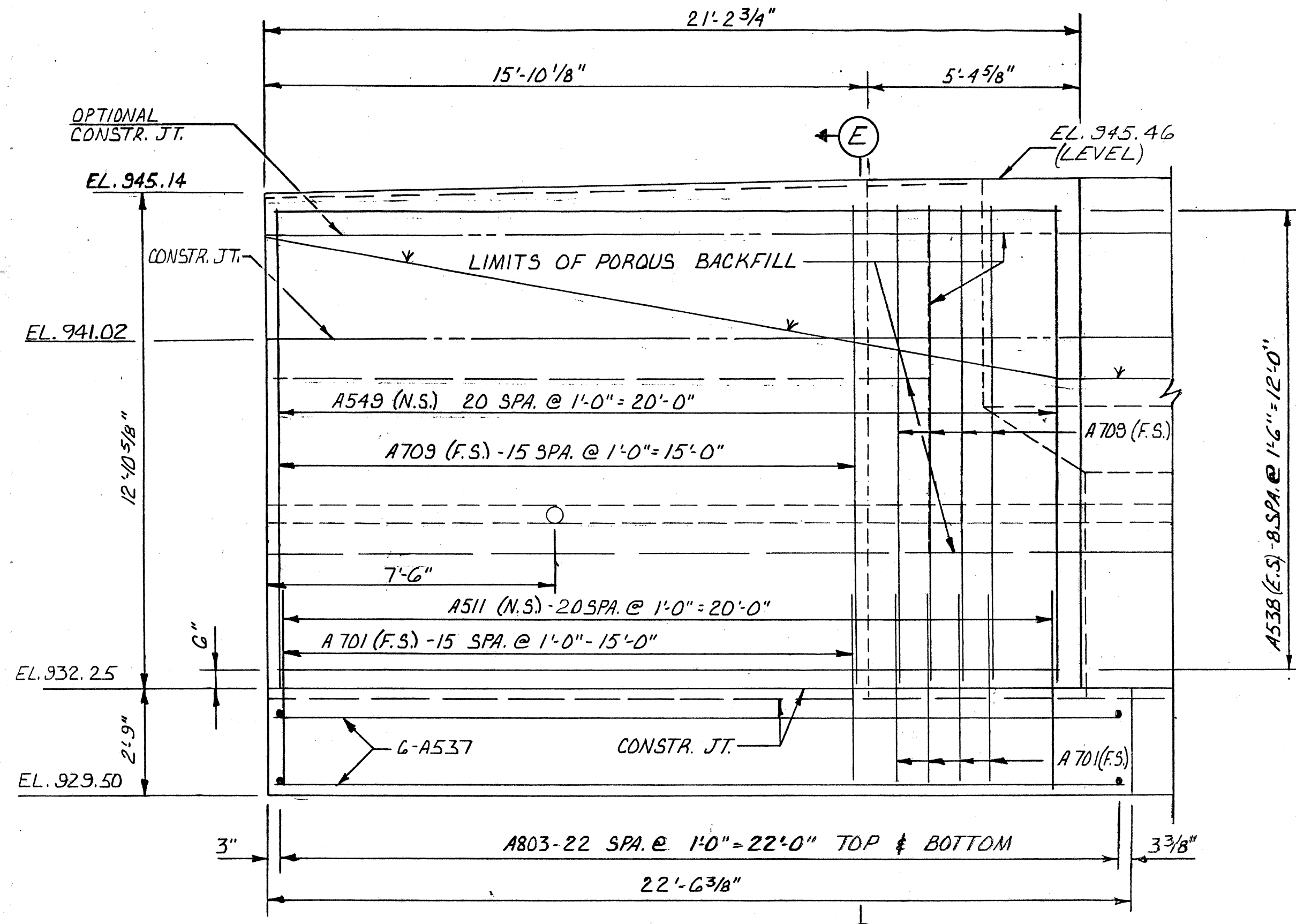
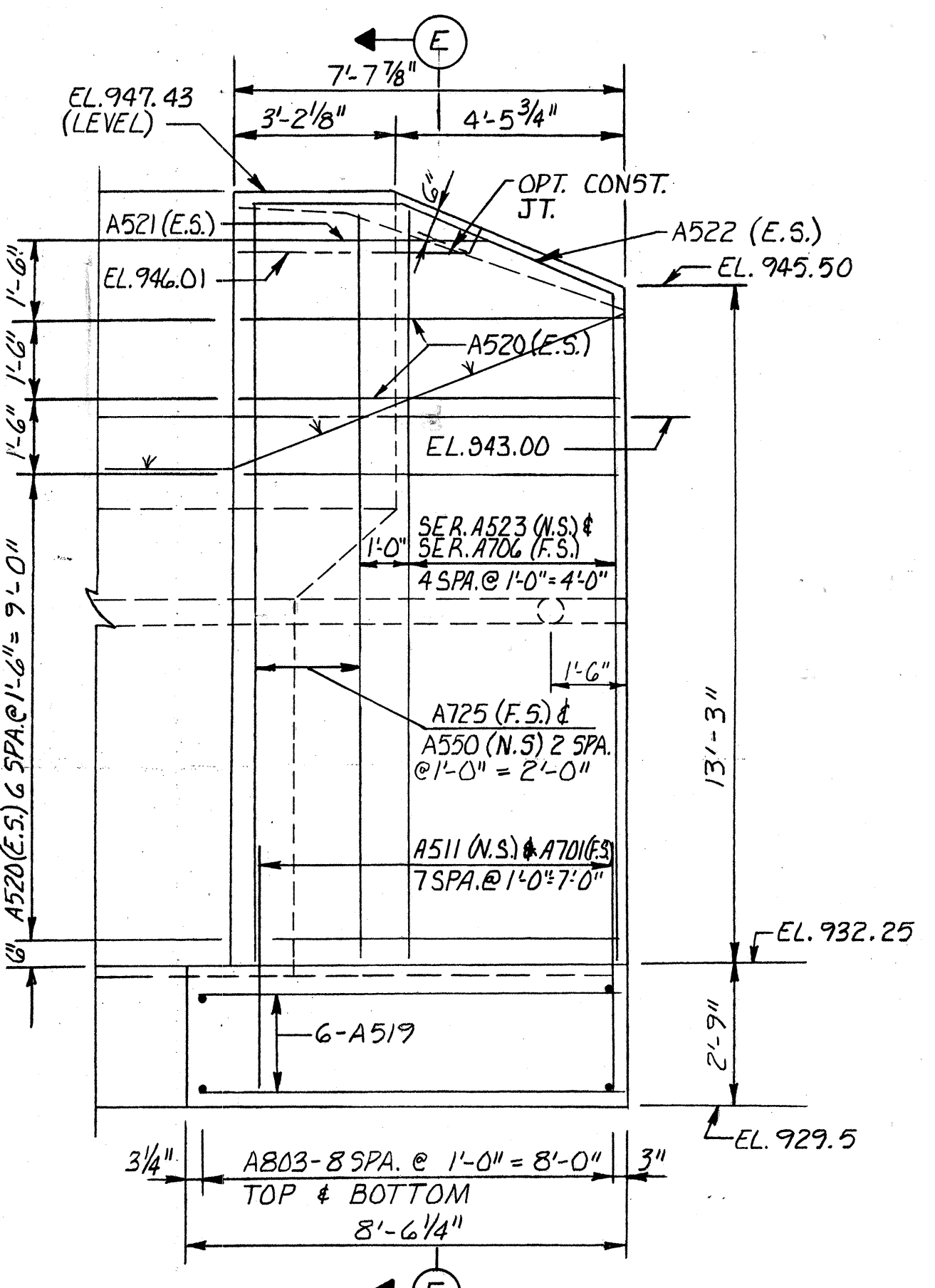


**SECTION D-D**



**SECTION F-F**

BELMONT COUNTY  
BEL 26-7.12



- NOTES
- FOR ADDITIONAL ABUTMENT NOTES SEE SHEET G/11
  - ELASTOMERIC TEST PAD: THE ELASTOMERIC BEARING MANUFACTURER SHALL SUPPLY A PLAIN ELASTOMERIC PAD FOR TESTING PURPOSES. THE PAD SHALL BE FURNISHED FROM THE SAME BATCH OF NEOPRENE THAT IS USED IN THE FABRICATION OF THE LAMINATED ELASTOMERIC BEARINGS AND THE FABRICATOR SHALL CERTIFY THE IDENTITY OF THE ELASTOMER. THE PAD SHALL HAVE A 1/2 INCH THICKNESS AND SHALL HAVE MINIMUM LENGTH AND WIDTH DIMENSIONS OF 6 INCHES. PAYMENT FOR THE TEST PAD WILL BE INCLUDED IN THE PRICE BID FOR THE BEARINGS.
  - BEARING TOLERANCE: INDIVIDUAL ELASTOMERIC LAYER THICKNESS +/- 20 PERCENT OF DESIGN VALUE (NOT TO EXCEED +/- 1/8").  

PLAN DIMENSIONS	-0, + 1/4 INCH
DESIGN THICKNESS <= 1 1/4 INCH	-0, + 1/8 INCH
DESIGN THICKNESS > 1 1/4 INCH	-0, + 1/4 INCH
EDGE COVER OF EMBEDDED LAMINATES	-0, + 1/8 INCH
  - BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION.

BEARING REACTIONS  
DEAD LOAD REACTION = 26.0K  
LIVE LOAD REACTION = 10.5K  
MAXIMUM DESIGN LOAD REACTION = 36.5K

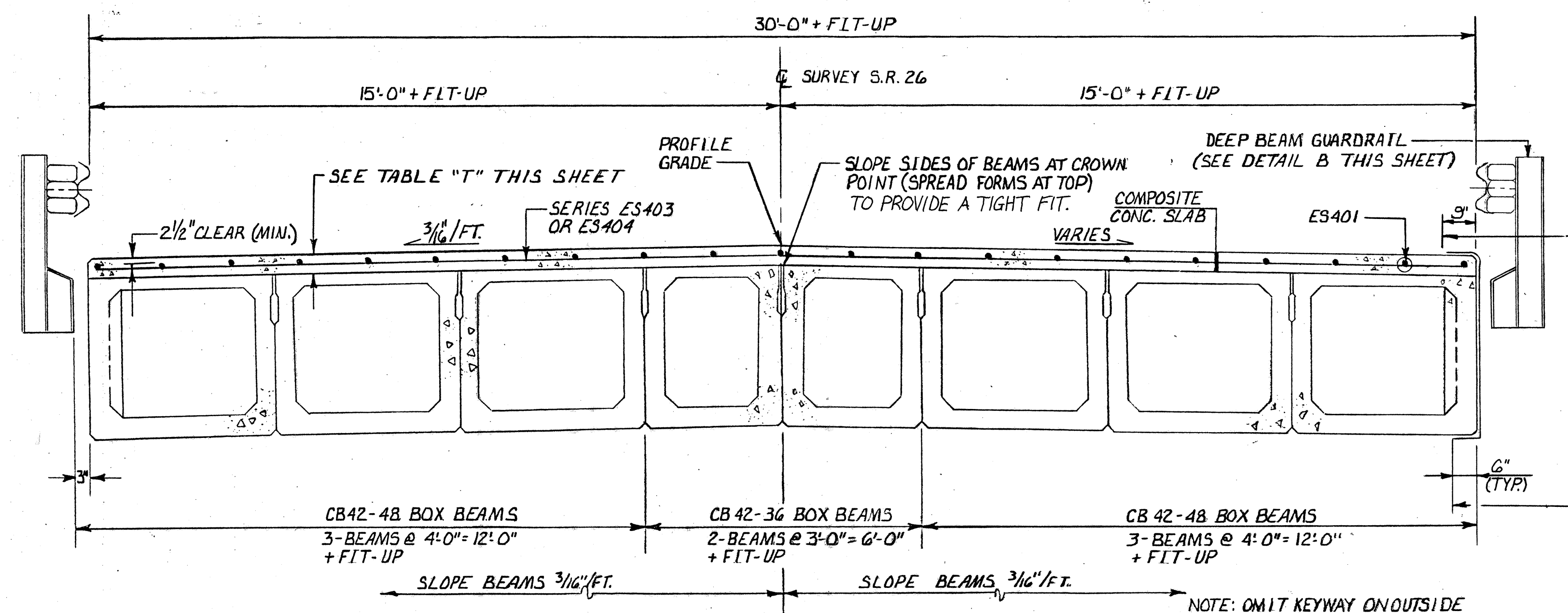
McCOY ASSOCIATES, INC. 7/11  
CONSULTING ENGINEERS  
AKRON, OHIO

ABUTMENT DETAILS

BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

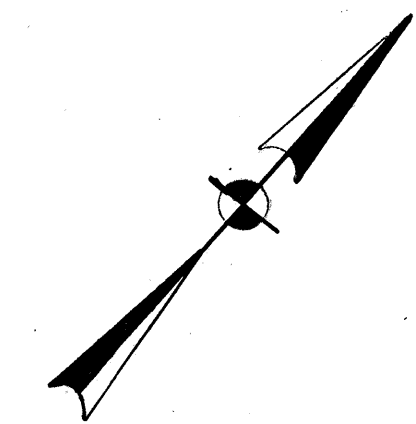
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	JGC	JWD	SAM	M.A.M.	12-21-90	

BELMONT COUNTY  
BEL-26-7.12



**TRANSVERSE SECTION**

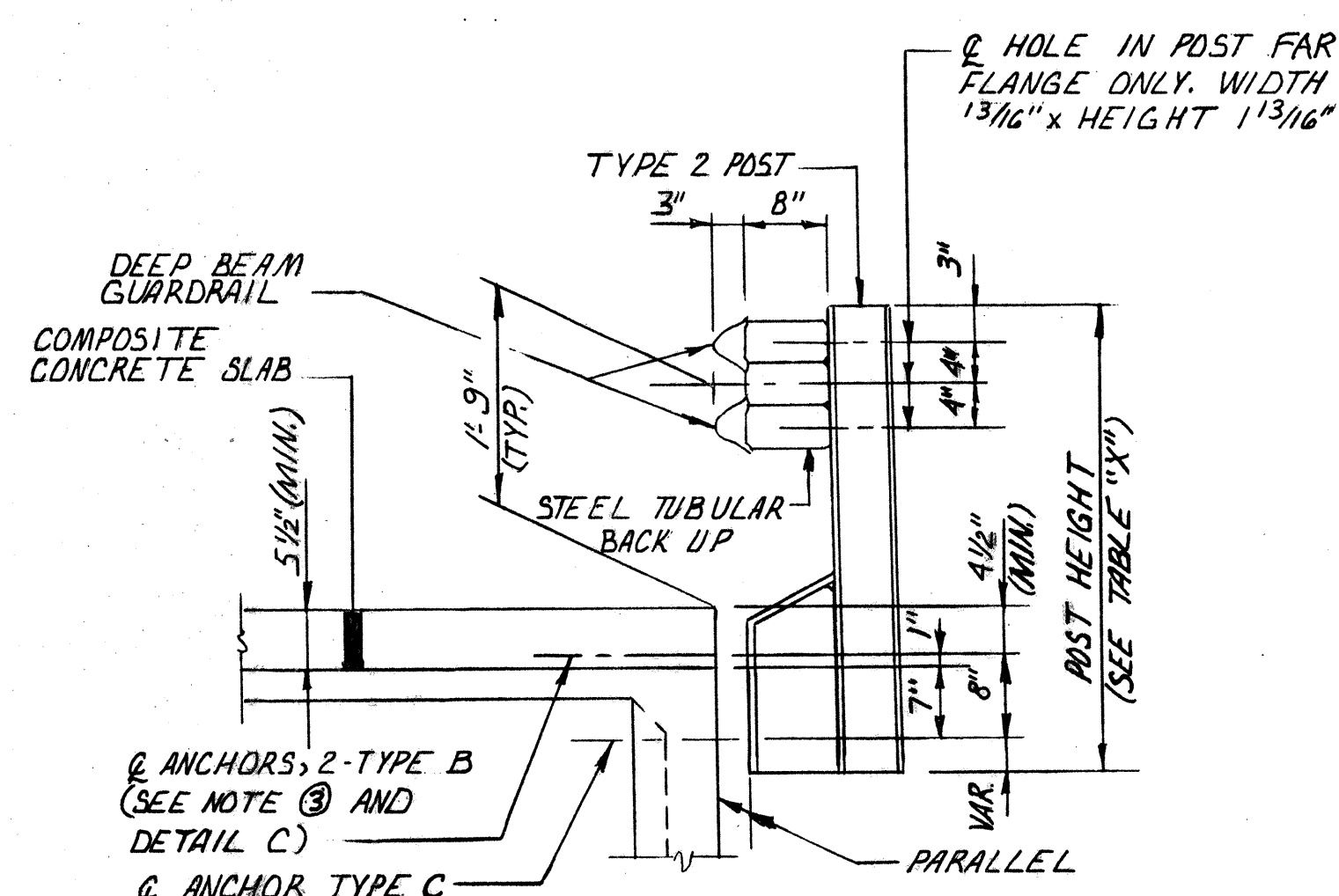
- NOTES**
- FOR ADDITIONAL BOX BEAM DETAILS SEE SHEET 9/11
  - COMPOSITE CONCRETE DECK SLAB: CALCULATED CAMBER OF BEAMS AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP IS 7/8". ESTIMATED DEFLECTION OF BEAMS DUE TO WEIGHT OF DECK SLAB AND RAILING IS 3/8". NET CAMBER IS 1/2". MIDDLE ORDINATE OF VERTICAL CURVATURE IS 3 1/2". NET CURVATURE IS 4". WHICH IS MORE THAN NECESSARY TO PLACE THE DECK SLAB SURFACE PARALLEL TO THE PROPOSED ROADWAY SURFACE. TO COMPENSATE FOR THIS EXCESS CURVATURE, THE DECK SLAB SHALL BE THICKENED FROM 5 1/2" (MINIMUM) AT MID SPAN TO 3 1/2" (MINIMUM) AT SPAN ENDS. SEE TABLE "T" BELOW.
  - 1/2" x 3" SLOTTED HOLES SHALL BE PROVIDED IN THE RAILING POST ANCHORAGE PLATE SO THAT THE GUARDRAIL CAN BE MAINTAINED AT 1'-9" ABOVE CONCRETE DECK. (SEE DETAIL - C).



**TABLE "X"**

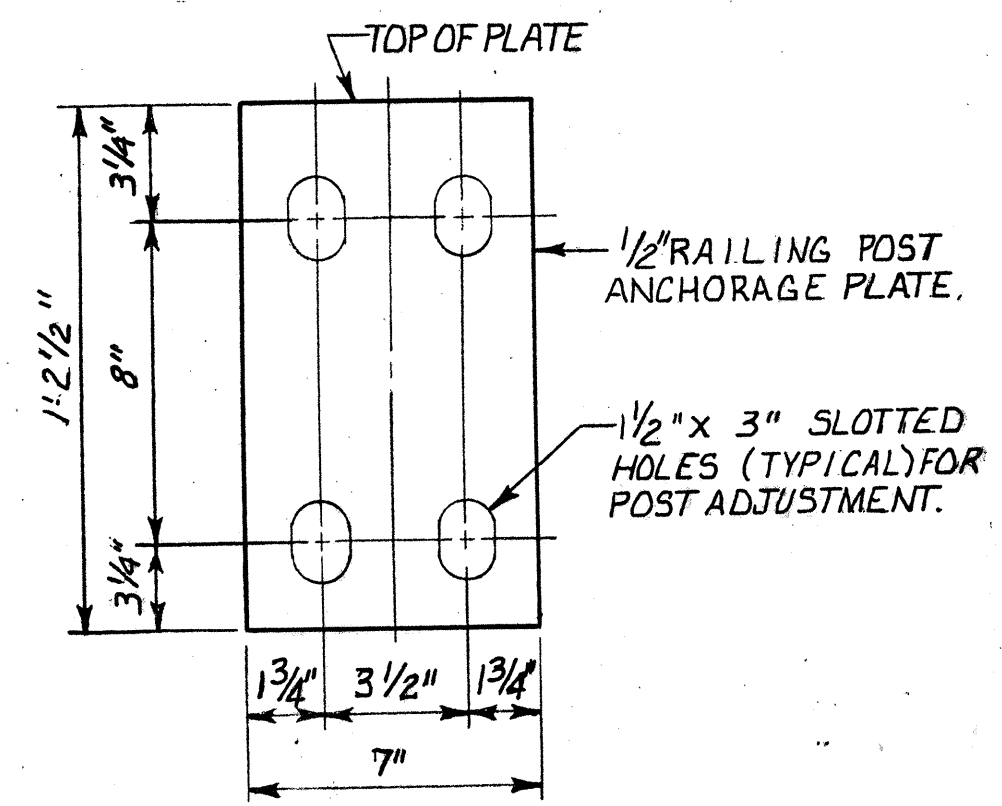
POST TYPE	POST HEIGHT	NO.
A	3'-8 3/8"	14
B	3'-10 3/8"	8
C	4'-0 3/8"	2

NOTE: SEE GENERAL PLAN, SH.T. 2/11 FOR POST TYPE LOCATIONS.

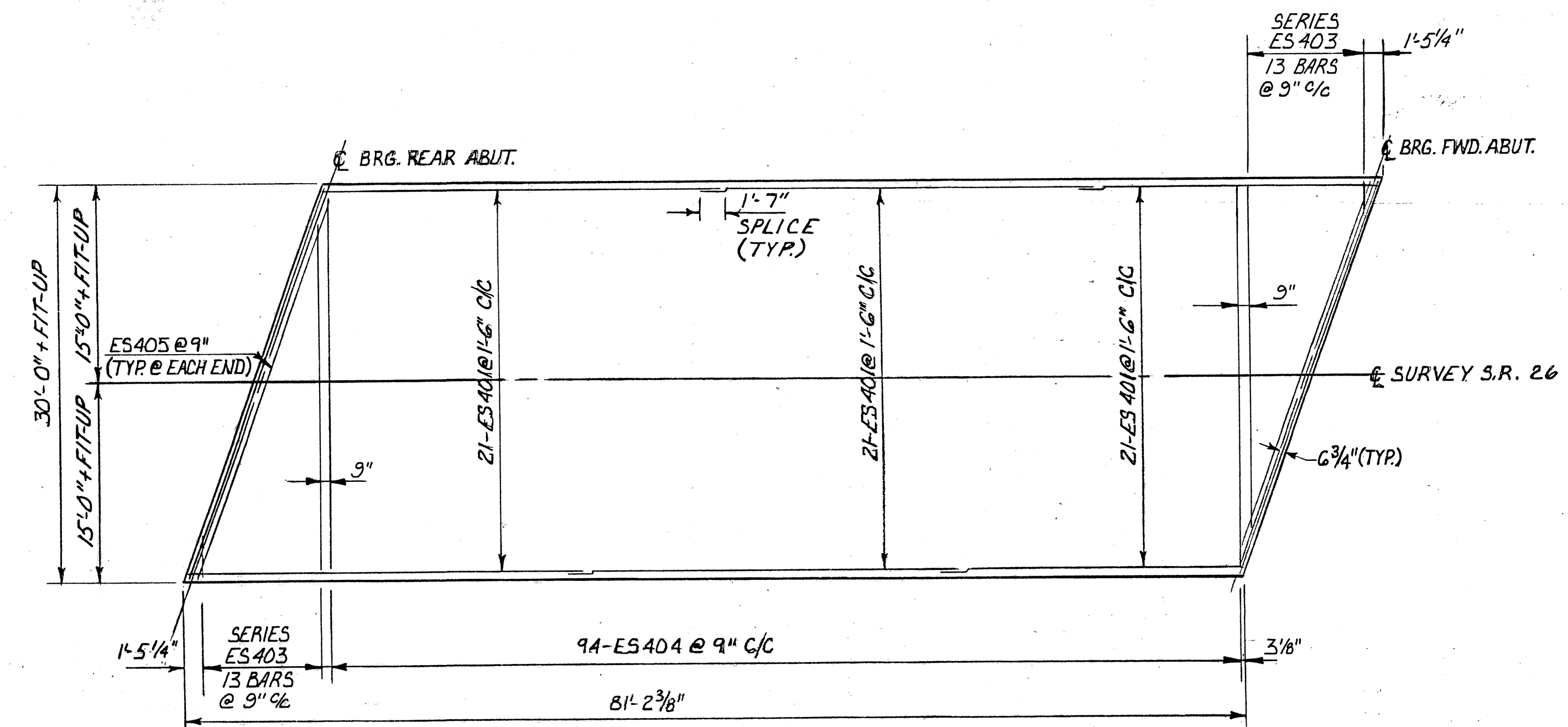


NOTE: FOR ADDITIONAL DETAILS FOR TYPE 2 POST SEE STANDARD DRAWING DBR-2-73

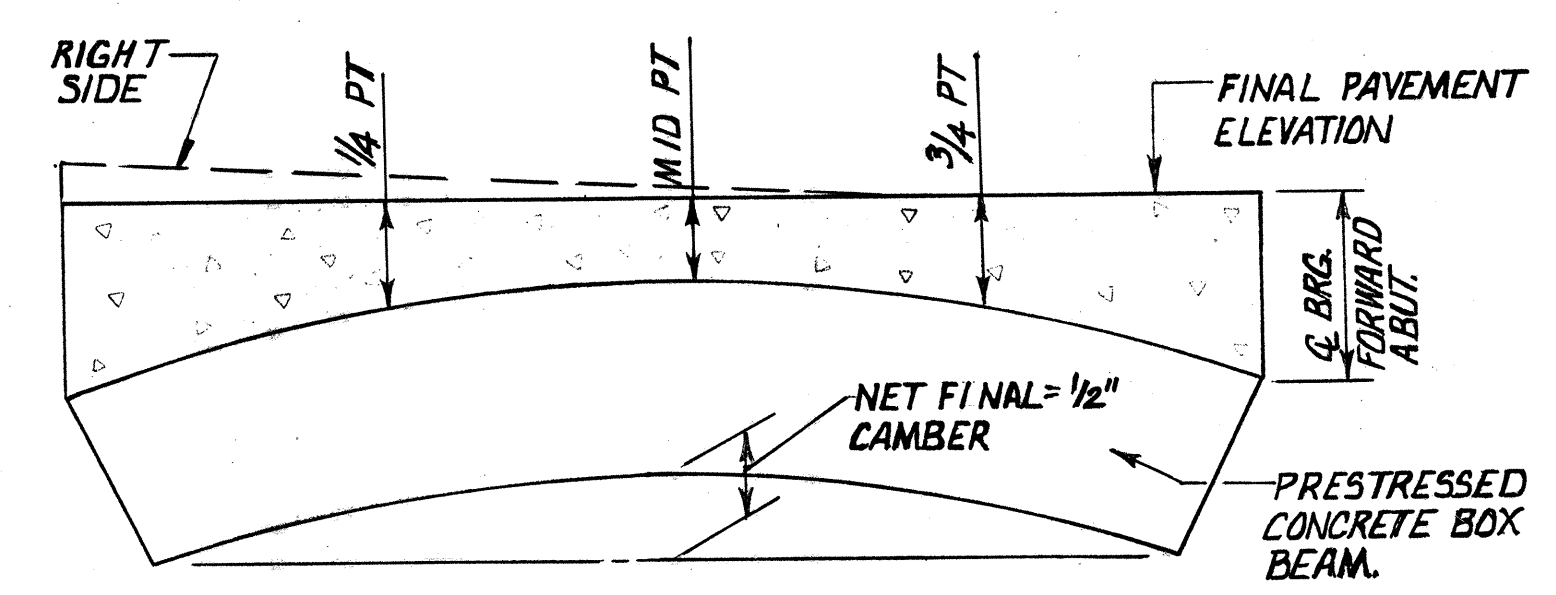
**DETAIL B**  
GUARDRAIL POST DETAIL  
(RIGHT SIDE SHOWN LEFT SIDE SIMILAR)



**DETAIL - C**



**SLAB PLAN**



**CONCRETE THICKNESS DIAGRAM**  
(SEE TABLE "T")

**TABLE "T"**

LOCATION	LEFT EDGE & S.R. 26	RIGHT EDGE
REAR ABUT.	9 1/2"	11 7/8"
1/4 POINT	6 3/8"	8"
MID POINT	5 1/2"	6 1/8"
3/4 POINT	6 1/2"	6 1/2"
FORWARD ABUT.	9 1/2"	9 1/2"

**McCOY ASSOCIATES, INC.** 8/11  
CONSULTING ENGINEERS  
AKRON, OHIO

**SUPERSTRUCTURE DETAILS**  
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	JGC	JWD	SAM	M.A.M.	12-21-90	

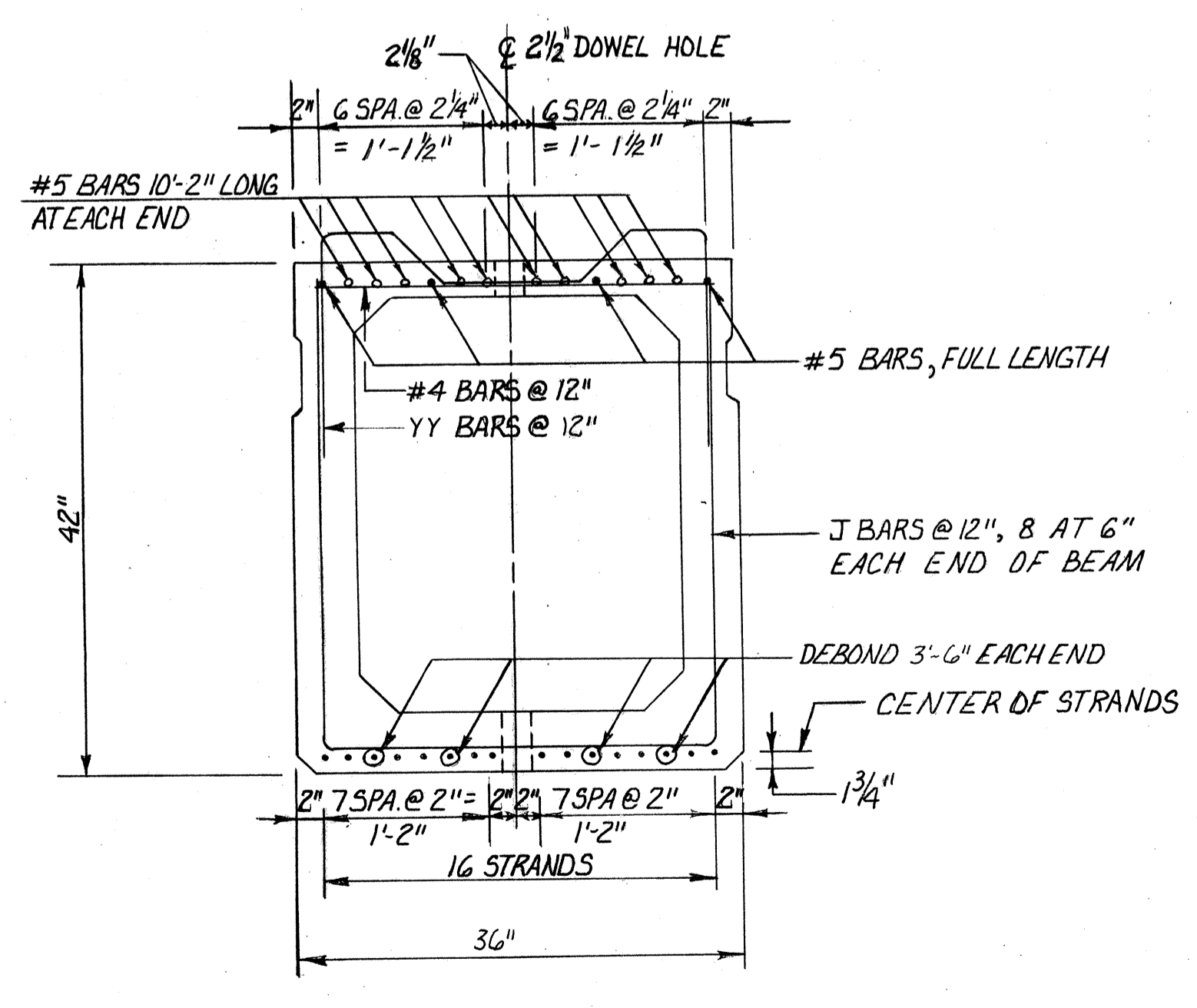
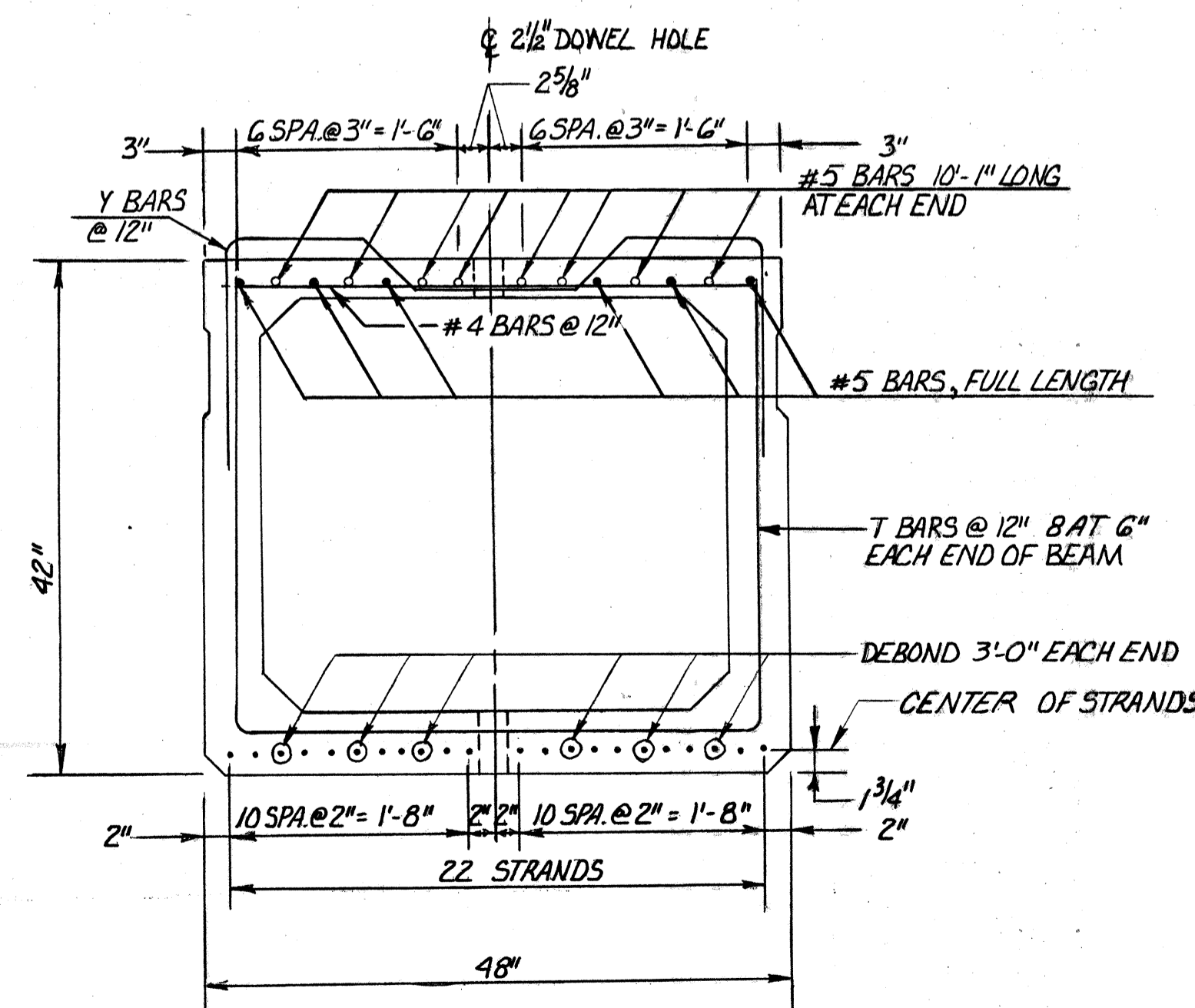
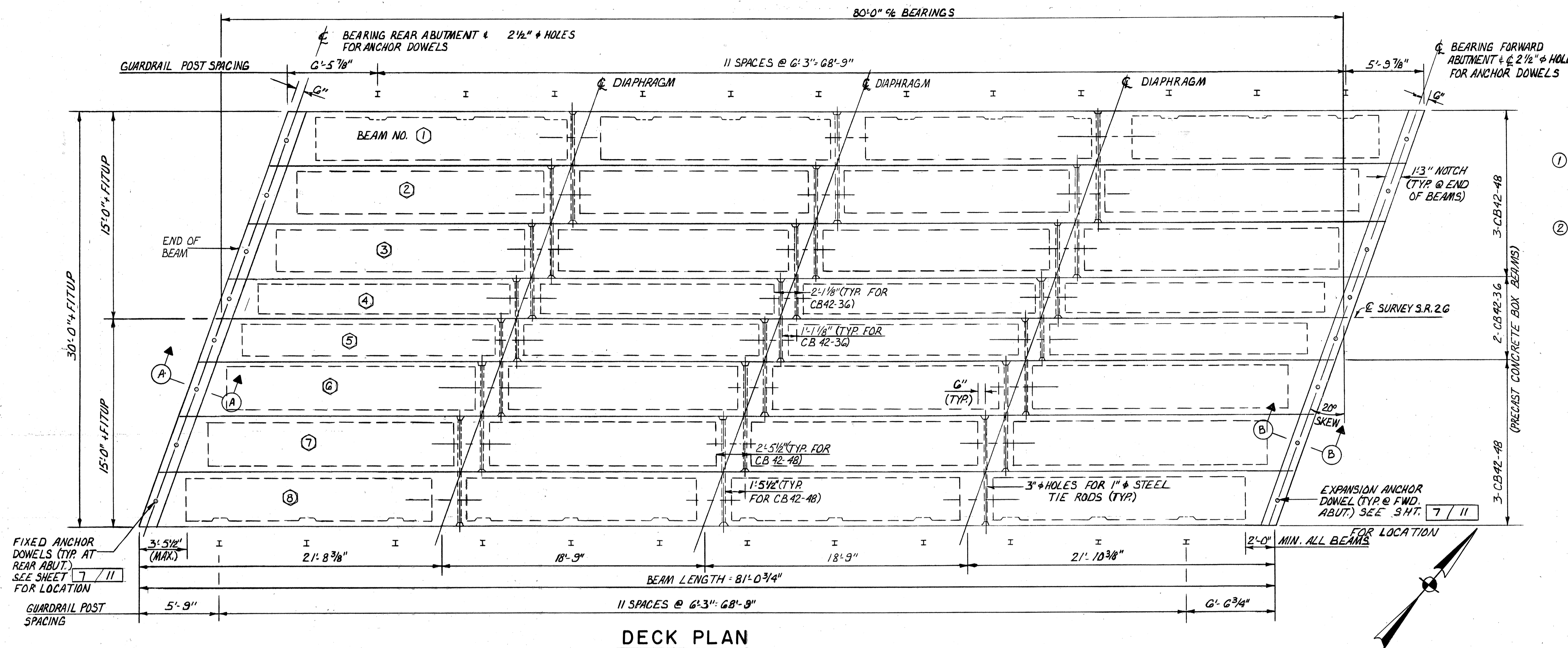
FHWA REGION	STATE	PROJECT
5	OHIO	

20  
25

BELMONT COUNTY  
BEL 26-7.12

**NOTES**

- PRESTRESSING STRANDS: 1/2" DIAMETER, 270 K SEVEN WIRE, ASTM A416, UNCOATED STRESSED-RELIEVED STRANDS. AREA=0.153 SQ. IN. EACH. INITIAL STRESS: 0.7F'S=189,000 P.S.I.
- FOR SECTION A-A AND B-B SEE SHEET 10/11



NOTE: THE FABRICATORS SHOP DRAWING SHALL SHOW COMPLETE DETAILS OF THE BEAM REINFORCING.

McCOY ASSOCIATES INC. CONSULTING ENGINEERS AKRON, OHIO

**SUPERSTRUCTURE DETAILS**

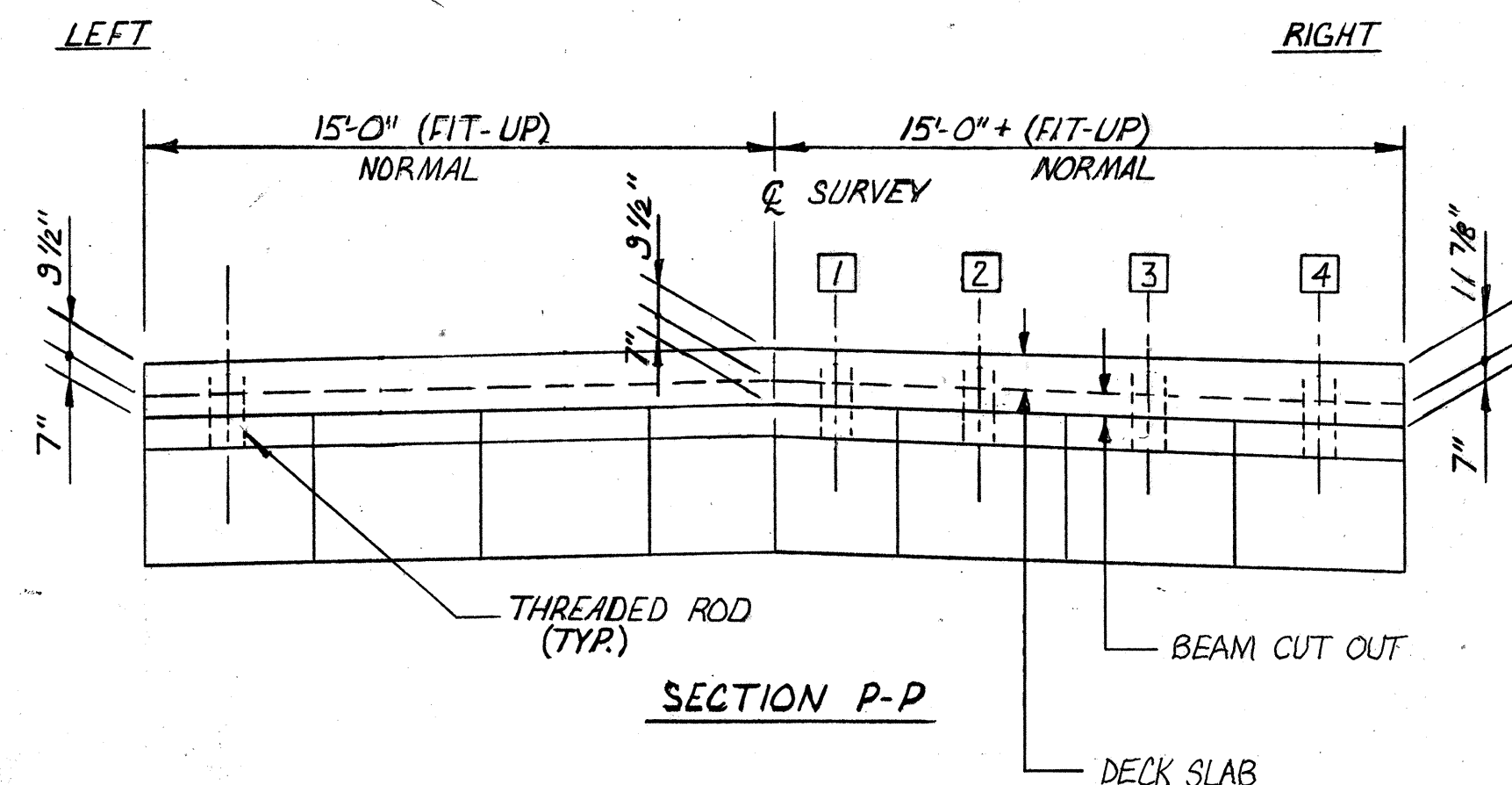
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
BELMONT COUNTY STATE ROUTE 26

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JGC	SAM	JWD	SAM	M.A.M.	12-21-90	

BELMONT COUNTY  
BEL-26- 7.12

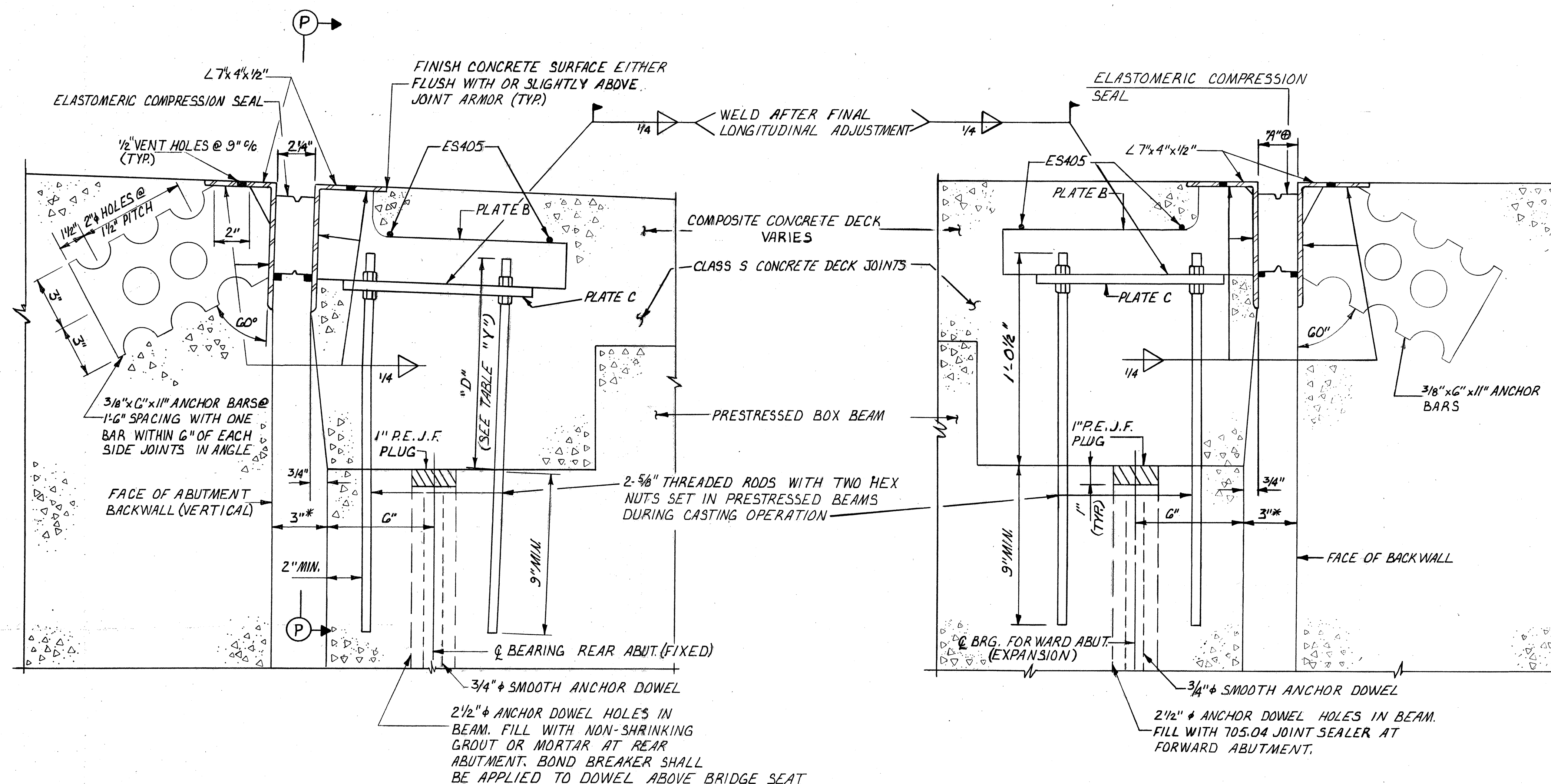
NOTES

- FOR SUPERSTRUCTURE DETAILS SEE SHEETS 8/11 AND 9/11
- COMPRESSION SEALS FOR BRIDGE DECK JOINTS SHALL BE FURNISHED IN ONE CONTINUOUS PIECE.
- LEGEND  
\* @ 60°F  
⊕ SEE TABLE "A" THIS SHEET



ROD LOCATION	"D"
1	1'-0 3/4"
2	1'-1 1/4"
3	1'-1 7/8"
4	1'-2 1/2"

TEMPERATURE (°F)	DIM "A" (INCHES)
80	2 1/8
60	2 1/4
40	2 3/8



SECTION A-A

FOR ADDITIONAL COMPRESSION SEAL EXPANSION JOINT DETAILS SEE STD. DWG. EXJ-3-82 SHEETS 1 THRU 3.

SECTION B-B

FOR ADDITIONAL COMPRESSION SEAL EXPANSION JOINT DETAILS SEE STD. DWG. EXJ-3-82 SHEETS 1 THRU 3. SEE SECTION A-A FOR OTHER DETAILS.

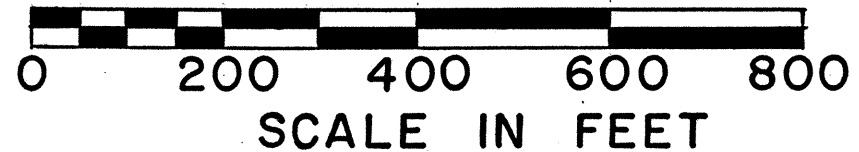
<b>McCOY ASSOCIATES INC.</b> 10/11 CONSULTING ENGINEERS AKRON, OHIO					
<b>COMPRESSION SEAL EXPANSION JOINT DETAILS</b> BRIDGE NO. BEL-26-0721 OVER NORTH FORK CAPTINA CREEK BELMONT COUNTY STATE ROUTE 26					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JGC	JGC	JWD	SAM	M.A.M.	12-21-90





# PROPERTY & UTILITY PLAN

BELMONT COUNTY  
WAYNE TOWNSHIP  
SECTION 23, T6N, R5W



FHWA REGION	STATE	PROJECT
5	OHIO	

23  
25

BELMONT COUNTY  
BEL 26-7.12  
RIGHT OF WAY PLAN

1  
3

**POWER**  
BELMONT ELECTRIC COOPERATIVE, INC.  
37791 BARNESVILLE-BETHESDA RD.  
P.O. BOX 270  
BARNESVILLE, OHIO 43713  
(614) 425-4018

**TELEPHONE**  
THE OHIO BELL TELEPHONE COMPANY  
840 ORCHARD ST.  
ZANESVILLE, OHIO 43701  
(614) 454-3515

UTILITY IDENTIFIER

(P)

(T)

NOTE: UNDERGROUND UTILITIES: THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 O.R.C.

BEGIN ACQUISITION STA. 3+50.00

BEGIN PROJECT STA. 3+50.00 SLM 3.12 BRZ-0705(1)

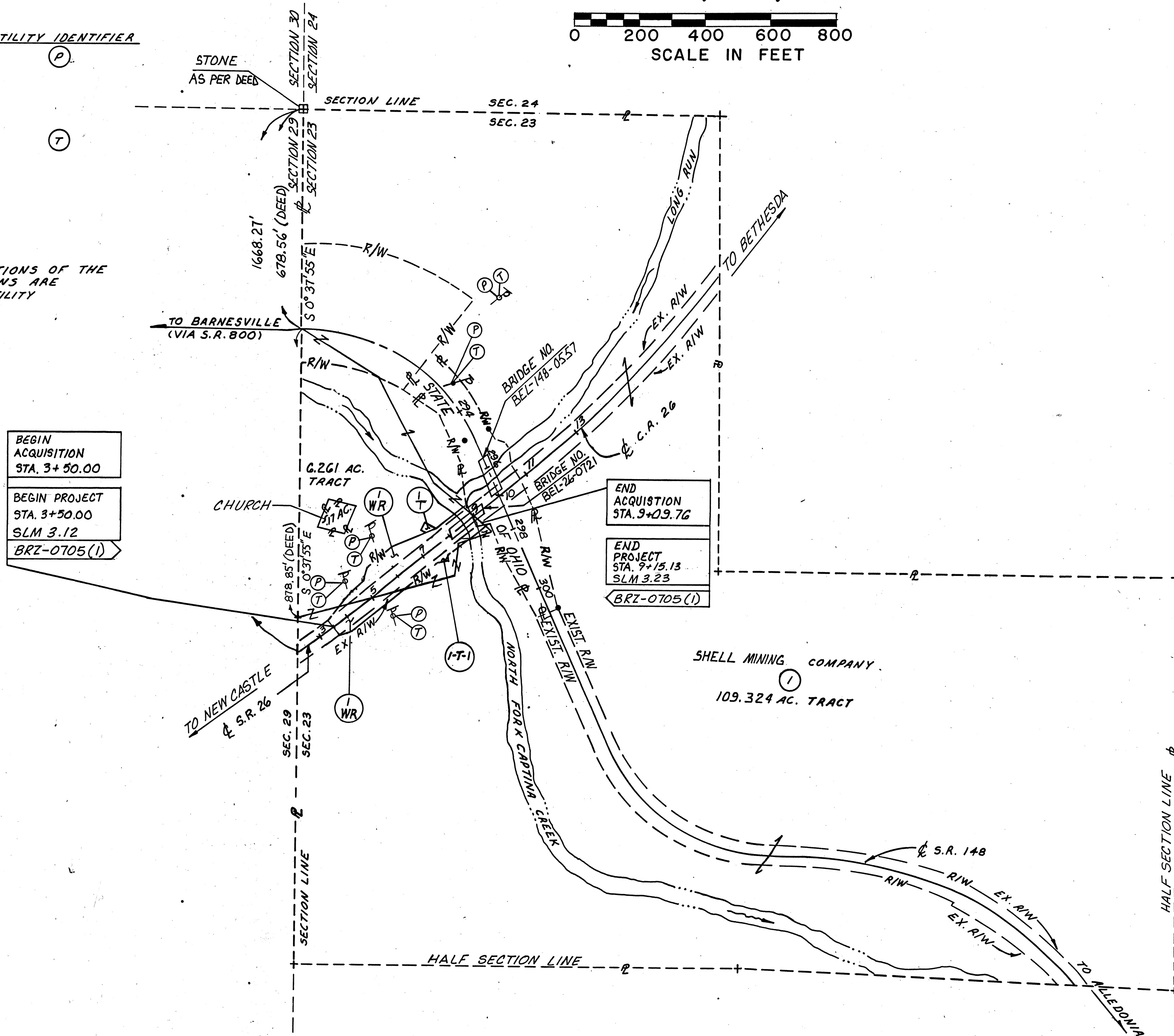
END ACQUISITION STA. 3+09.76

END PROJECT STA. 3+15.13 SLM 3.23 BRZ-0705(1)

(WR) SHELL MINING CO.

(T)

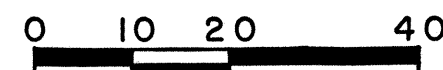
(T-1)



• INDICATES EXISTING MONUMENT FOUND

REVISIONS	BY	DATE
PLANS COMPLETED		9-27-91

BELMONT COUNTY  
WAYNE TOWNSHIP  
SEC 23 T-6-N, R-5-W

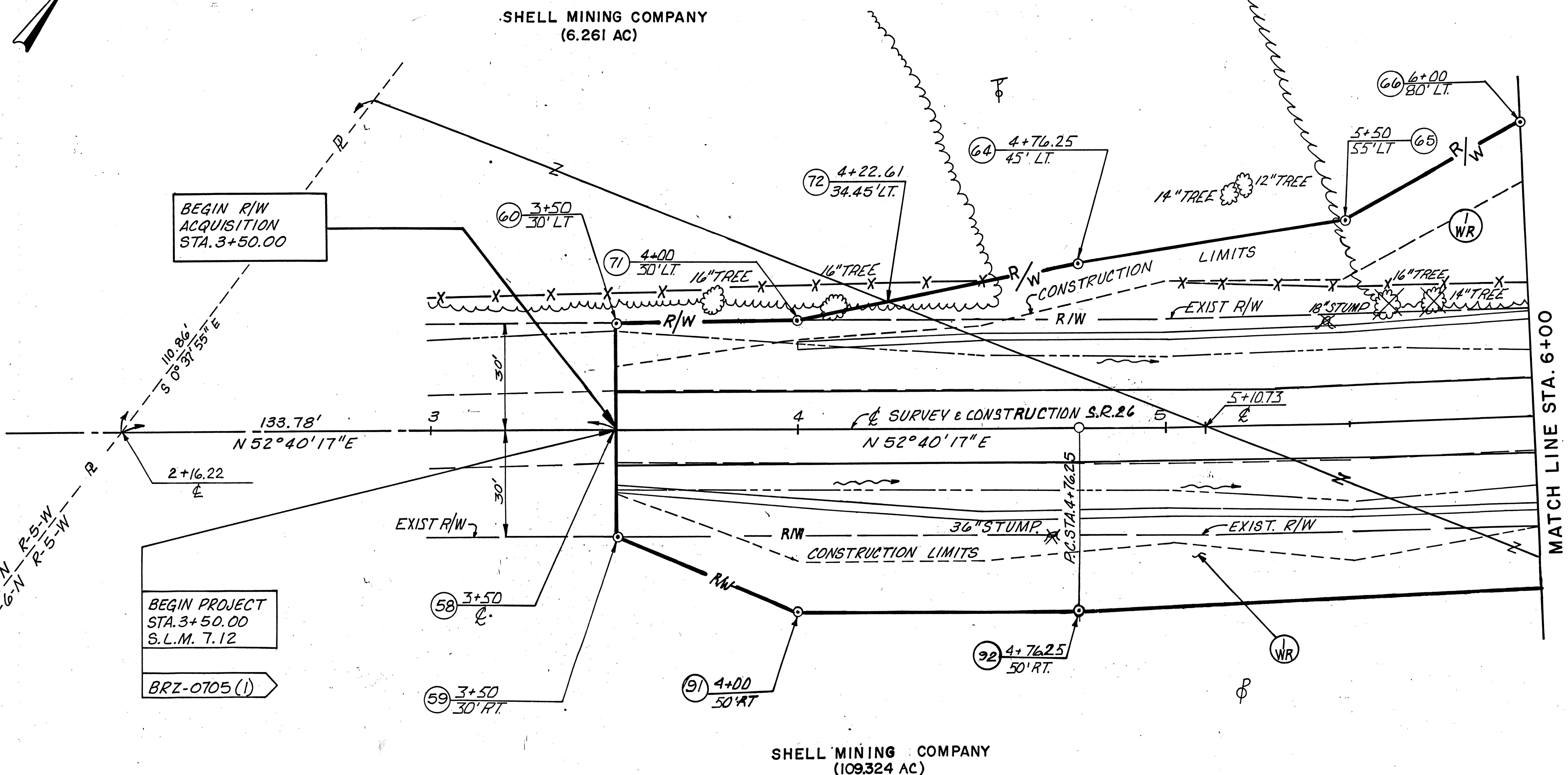


FHWA REGION	STATE	STATE PROJECT NO.
5	OHIO	11911 (O)

24  
25

BELMONT COUNTY  
BEL 26-7.12  
RIGHT OF WAY PLAN

2  
3



**☉ S.R. 26 CURVE DATA**  
 P.I. = STA. 6+02.61 R = 2765.09'  
 Δ = 5°13'59" Lc = 252.54'  
 Dc = 2°04'19.61" P.C. = 4+76.25  
 T = 126.36' P.T. = 7+28.79  
 E = 2.89'  
 CHORD BEARING = N 50°03'17"E

NOTE: PARCEL DESCRIPTION DETAILED INFORMATION IS SHOWN ON SHEET 3A

NOTE: IRON PINS THIS SHEET=8 QUANTITY CARRIED TO GENERAL SUMMARY

☉ INDICATES IRON PIN SET  
( ) INDICATES TRACT ACREAGE

Added Note to Remarks Column	Dist. 11	12-6-91
for Reservation for Mineral Rights		
REVISIONS	BY	DATE
PLAN COMPLETED		9-27-91

- TOTAL NUMBER OF  
 OWNERSHIPS  
 TOTAL TAKES  
 OWNERSHIPS WITH STRUCTURES INVOLVED  
 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

NOTE: RECORD AREA AFTER OUTSALES MINUS TOTAL P.R.O. MINUS NET TAKE EQUALS NET RESIDUE.

NOTE: ALL AREAS IN ACRES UNLESS OTHERWISE NOTED

PARCEL	OWNER	AUDITORS PARCEL NUMBER	SHEET NO.	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED	
				BOOK	PAGE							LEFT	RIGHT			BOOK	PAGE
I-WR	SHELL MINING COMPANY, A DELAWARE CORPORATION	47-00100.000	2,3	647	240	109.324	9.436	0.337	0.222	0.115	—	0.215	99.558	STATE	RESERVES ALL MINERALS UNDERLYING THE SURFACE OF THIS PARCEL		
		47-00013.000	2,3	647	846	6.261	0.495	0.941	0.521	0.420	—	5.229	0.117				
TOTAL PARCEL I-WR						115.585	9.931	1.278	0.743	0.535	—	5.444	99.675				
I-T			3					384 S.F.		384 S.F.					TO CONSTRUCT DRIVE & DO NECESSARY GRADING-DURATION ONE YEAR		
I-T-1			3					146 S.F.		146 S.F.				STATE	TO CONSTRUCT DRIVE & DO NECESSARY GRADING-DURATION ONE YEAR		

BELMONT COUNTY  
WAYNE TOWNSHIP  
SEC 23 T-6-N, R-5-W

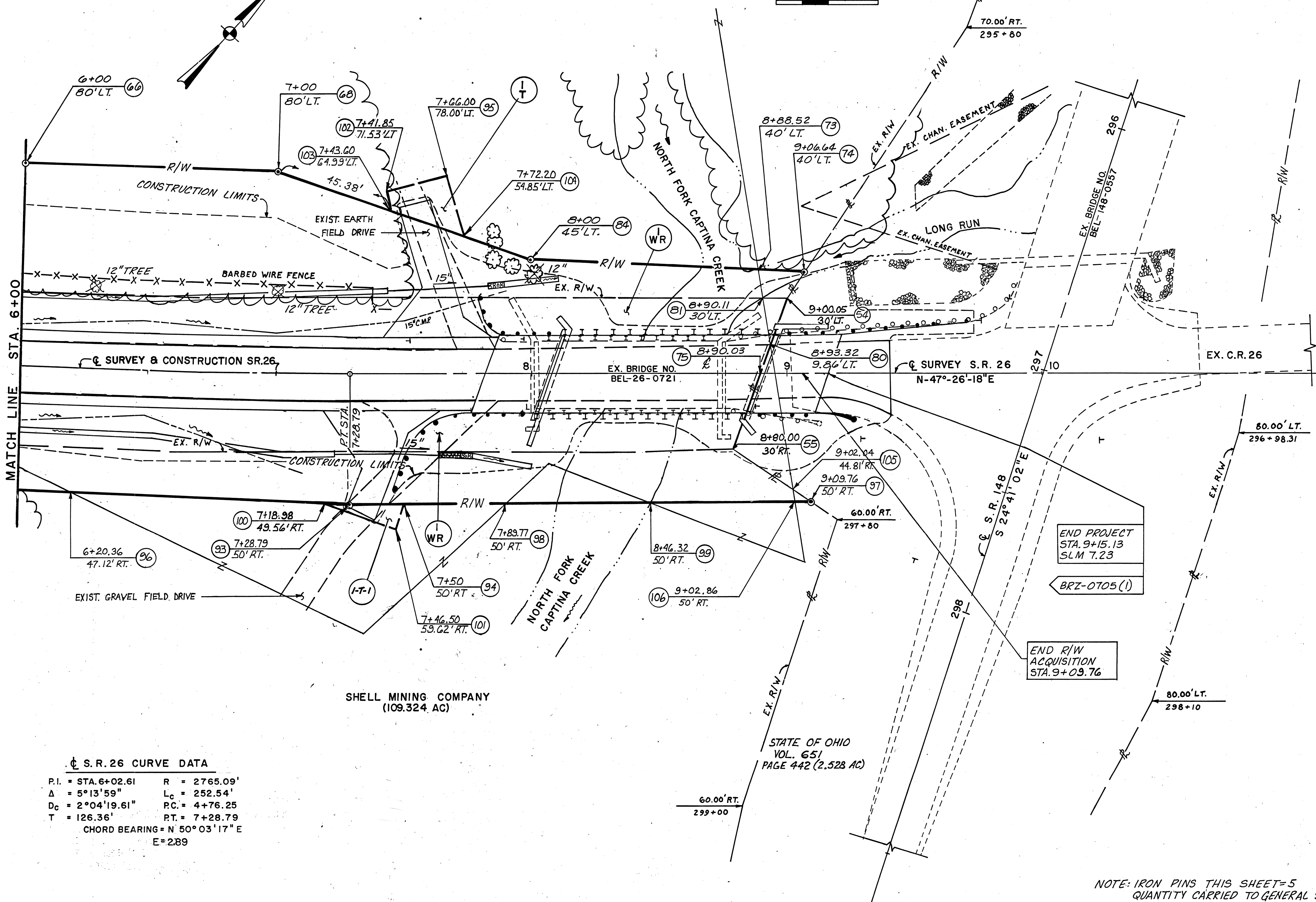
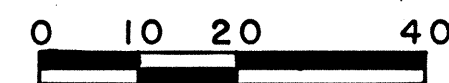
FHWA REGION	STATE	PROJECT
5	OHIO	

25  
25

BELMONT COUNTY  
BEL 26 - 7.12  
RIGHT OF WAY PLAN

3  
3

SHELL MINING COMPANY  
(6.261 AC)



PARCEL 1-WR		
COURSE	BEARING	DISTANCE
58-60	N-37°19'43"-W	30.00'
60-71	N-52°40'17"-E	50.00'
71-64	N-41°32'32"-E	77.71'
64-65	N-44°02'44"-E	73.10'
65-66	N-23°29'25"-E	54.81'
66-68	N-49°04'16"-E	97.10'
68-84	N-66°57'12"-E	105.21'
84-73	N-50°40'16"-E	88.66'
73-74	N-47°26'18"-E	18.12'
74-54	S-09°11'03"-E	11.98'
54-55	S-24°04'49"-E	63.26'
55-97	N-81°20'42"-E	35.85'
97-93	S-47°26'18"-W	180.97'
93-92	S-50°03'18"-W	257.02'
92-91	S-52°40'17"-W	76.25'
91-59	S-74°28'22"-W	53.85'
59-58	N-37°19'43"-W	30.00'

PARCEL 1-T		
COURSE	BEARING	DISTANCE
95-104	S-57°33'42"-E	23.97'
104-103	S-66°57'12"-W	30.34'
103-102	N-57°33'42"-W	6.77'
102-95	N-32°26'18"-E	25.00'

PARCEL 1-T AREA = 384 SQ. FT.

PARCEL 1-T-1		
COURSE	BEARING	DISTANCE
101-100	S-67°26'18"-W	29.47'
100-93	N-50°03'18"-E	10.00'
93-94	N-47°26'18"-E	21.21'
94-101	S-22°33'42"-E	10.24'

PARCEL 2-T AREA = 146 SQ. FT.

REVISIONS	BY	DATE
PLAN COMPLETED		9-29-91

☉ S.R. 26 CURVE DATA  
 P.I. = STA. 6+02.61 R = 2765.09'  
 Δ = 5°13'59" Lc = 252.54'  
 Dc = 2°04'19.61" PC = 4+76.25  
 T = 126.36' RT = 7+28.79  
 CHORD BEARING = N 50°03'17" E  
 E = 289

SHELL MINING COMPANY  
(109.324 AC)

STATE OF OHIO  
VOL. 651  
PAGE 442 (2.528 AC)

© INDICATES IRON PIN SET

NOTE: IRON PINS THIS SHEET-5  
QUANTITY CARRIED TO GENERAL SUMMARY

R/W PLAN-STA 6+00 TO STA 9+00.76

**GEOLOGY OF THE SITE**

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED PORTION OF THE FLUSHING ESCARPMENT ON THE NARROW FLOODPLAIN OF AND OVER NORTH FORK OF CAPTINA CREEK IN AN AREA WHERE SHALLOW VALLEY FILL AND ALLUVIAL DEPOSITS OVERLIE SHALE AND LIMESTONE BEDROCK OF PENNSYLVANIAN AGE.








**EXPLORATION**








THE EXPLORATION CONSISTED OF FOUR DRIVE SAMPLE CORE-BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM ROTARY EARTH AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON MAY 2 AND 17, 1988.

**INVESTIGATIONAL FINDINGS AND OBSERVATIONS**

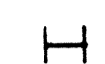
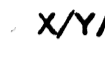

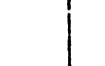

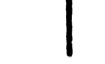
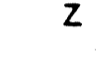
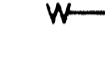
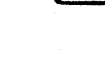
THE BORINGS DISCLOSED THAT RELATIVELY LOOSE SILTS AND STIFF CLAYS CONTAINING VARIOUS AMOUNTS OF GRAVELS OVERLIE GENTLY SLOPING BEDROCK SURFACE. BORING B-1 (LOCATED IN THE GENERAL VICINITY OF THE REAR ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT APPROXIMATELY 10.0 FEET BELOW GROUND SURFACE, ELEVATION 934.9 FEET AND WAS DISCONTINUED AFTER PENETRATING 6.0 FEET BELOW BEDROCK SURFACE AT 16.0 FOOT DEPTH, ELEVATION 929.4 FEET. BORING B-2 (LOCATED IN THE GENERAL VICINITY OF THE REAR ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT APPROXIMATELY 12.5 FEET BELOW GROUND SURFACE, ELEVATION 933.7 FEET AND WAS DISCONTINUED AFTER PENETRATING 10.0 FEET BELOW BEDROCK SURFACE AT 22.0 FOOT DEPTH, ELEVATION 923.4 FEET. BORING B-3 (LOCATED IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 12.5 FOOT DEPTH, ELEVATION 933.1 FEET AND CONTINUED TO A DEPTH OF 25.0 FEET, ELEVATION 920.6 FEET WHERE IT WAS TERMINATED AFTER PENETRATING 13.0 FEET BELOW BEDROCK SURFACE. BORING B-4 (LOCATED IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 12.0 FOOT DEPTH, ELEVATION 932.9 FEET AND CONTINUED TO A DEPTH OF 25.0 FEET, ELEVATION 918.4 FEET WHERE IT WAS TERMINATED AFTER PENETRATING 13.0 FEET BELOW BEDROCK SURFACE.

NO FREE WATER WAS ENCOUNTERED IN ANY OF THE TEST BORINGS.




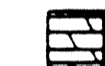



-  Auger Boring Location - Plan View.
-  Press and/or Drive Sample and/or Core Boring Location - Plan View.
-  Drive Rod Penetration Resistance Sounding Location - Plan View.
-  Capped Pile
-  Footing
-  Footing on Pile
-  Top of Rock

-  Coal
-  Weathered Mudstone or Claystone
-  Mudstone or Claystone
-  Weathered Shale
-  Shale
-  Weathered Siltstone
-  Siltstone

**LEGEND**

-  Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
-  Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.  
X = Number of Blows for First 6 inches.  
Y = Number of Blows for Second 6 inches.  
Z = Number of Blows for Third 6 inches.
-  Drive Rod Penetration Resistance Sounding Log - Profile
-  Casing
-  Resistance "R" < 10,000 lbs.
-  Resistance "R" > 10,000 lbs.
-  Z Indicates Final Measurement of Penetration, in Inches.
-  W Indicates Free Water Elevation.
-  Indicates Static Water Elevation.

**SYMBOLS OF ROCK TYPES**

-  Weathered Sandstone
-  Sandstone
-  Leached Dolomite
-  Dolomite
-  Leached Limestone
-  Limestone
-  Boulders or Cobbles

**GENERAL INFORMATION**

**Drive Rod Penetration Sounding Tests**

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

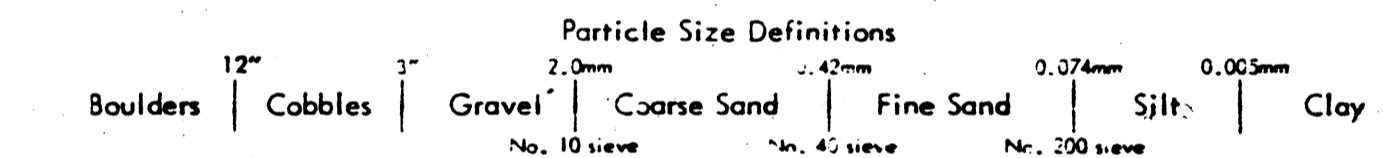
**Drive Sample Borings - Drive-Press Sample Borings**

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1.2 and/or 5-foot depth intervals, driven by means of a 140-pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.



**NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.**

REVISED 11/29/91

NOTE: Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

OHIO DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS - TESTING LABORATORY  
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

**STRUCTURE FOUNDATION INVESTIGATION**  
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
SEC. BEL-26-7.12

CHECKED BY /AF	REVIEWED BY R.D.R.	DATE 6/22/88
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EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.  
CLEARS ESTIMATED 10 YEAR HIGH WATER ELEVATION BY 1.52'.

**DRAINAGE DATA**

DRAINAGE AREA	22.47 MI. <sup>2</sup>
Q10 = 2779 CFS EL. 940.86	V10 = 10.27 FT/S
Q100 = 5946 CFS EL. 945.81	V100 = 13.89 FT/S
ORDINARY HIGH WATER SURFACE EL. 938.00	
NORMAL WATER SURFACE EL. 933.33	
EXISTING WATERWAY OPENING = 600 SF	
PROPOSED WATERWAY OPENING = 640 SF	

**DESIGN DESIGNATION**

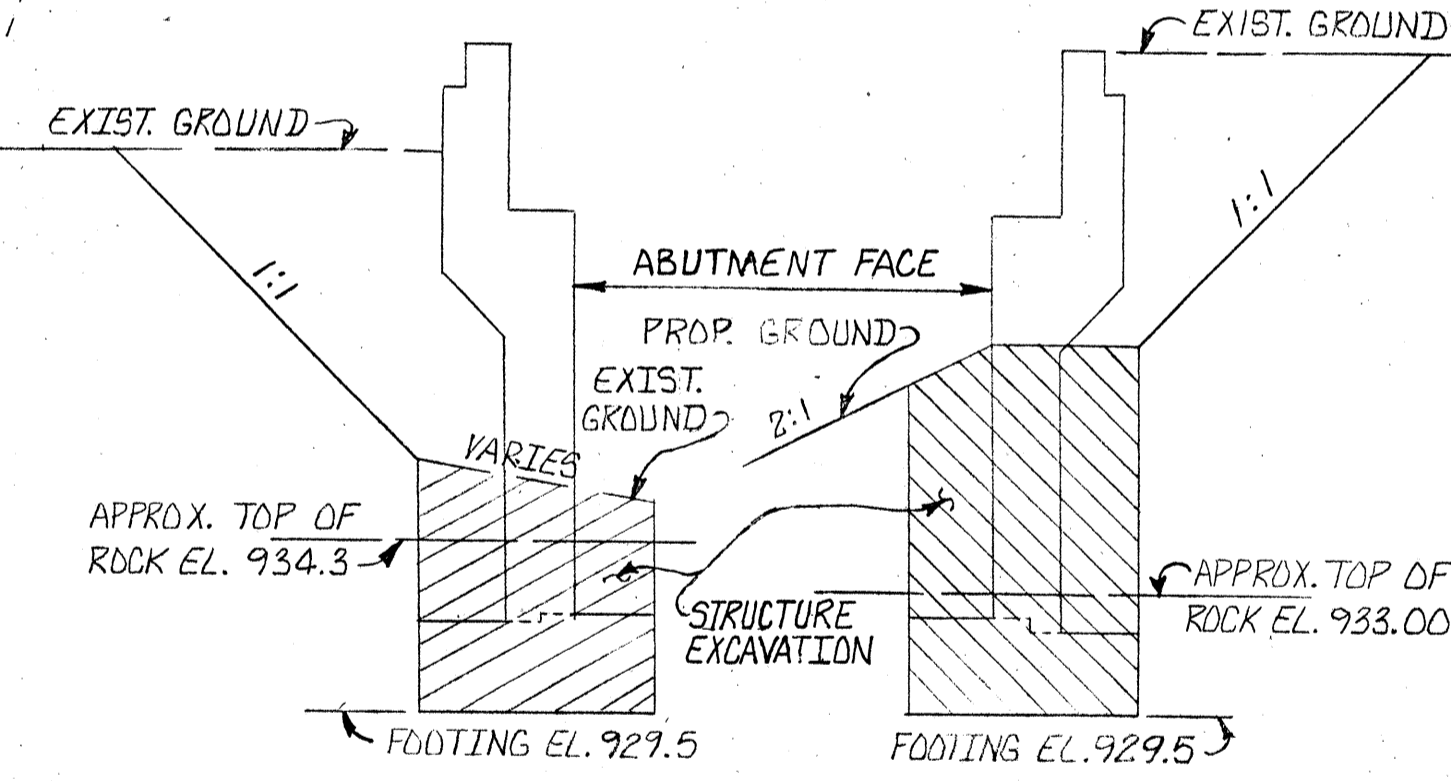
CURRENT ADT (1990)	320
DESIGN ADT (2010)	512
DHV	51
D	60%
T	3.1%
V	55 MPH
LEGAL SPEED	55 MPH
ADTT (2010)	16

**EXISTING STRUCTURE**

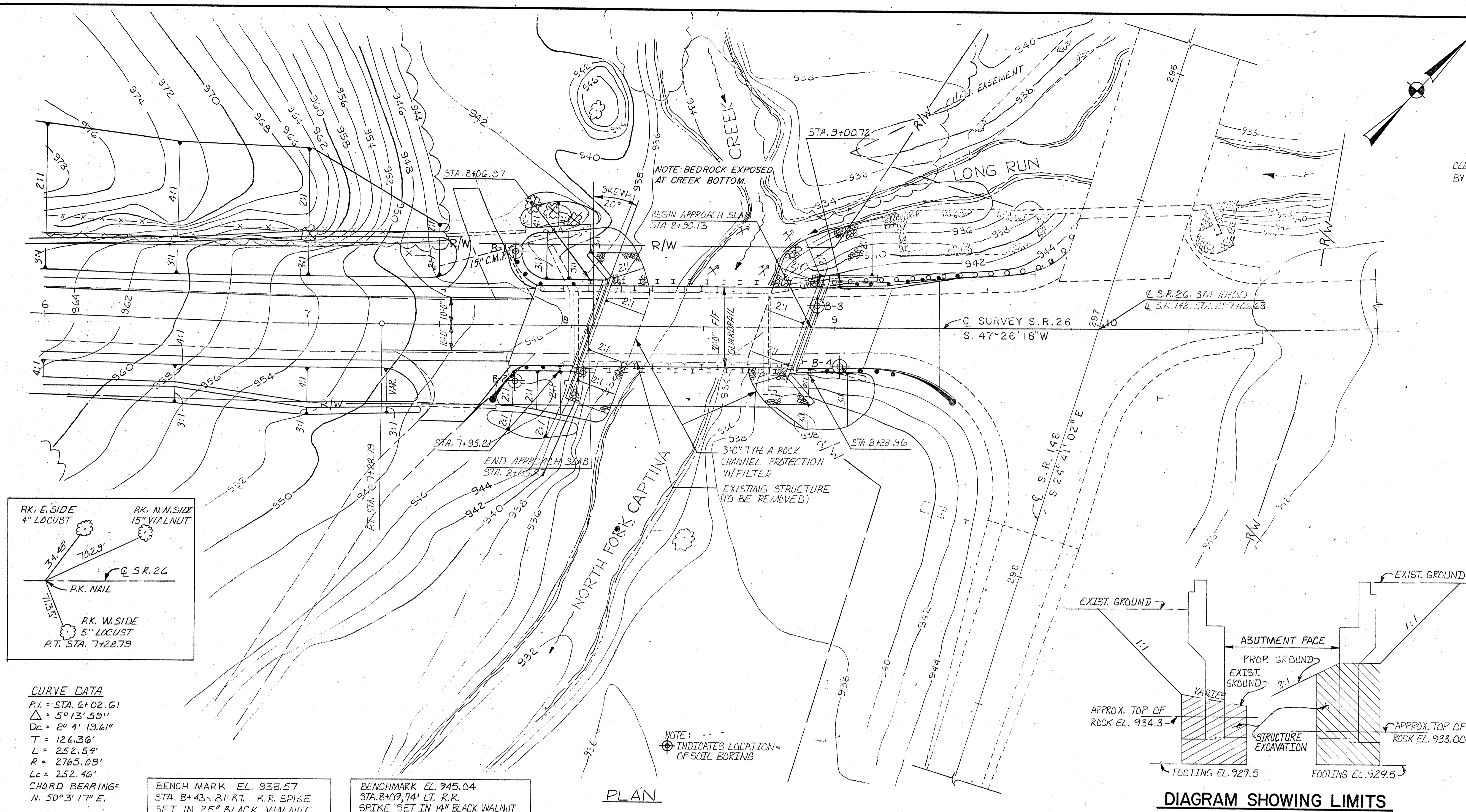
STRUCTURE FILE NO. 0701327  
TYPE: STEEL BEAM  
SPAN: 71'-9"  
ROADWAY: 26'-0"  
ALIGNMENT: TANGENT  
SKEW: NONE  
WEARING SURFACE: ASPHALT  
APPROACH SLAB: NONE  
BUILT: 1959  
CONDITION: POOR

**PROPOSED STRUCTURE**

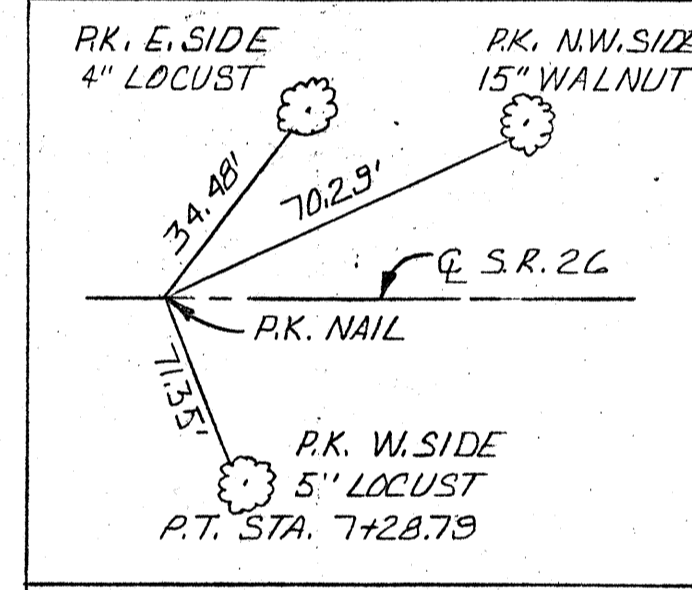
TYPE: PRECAST, PRESTRESSED CONCRETE BOX BEAMS SUPPORTED ON REINFORCED CONCRETE SUBSTRUCTURE  
SPAN: 80'-0"  
ROADWAY: 30'-0" FIF GUARDRAIL  
LOADING: HS 20-44 AND ALTERNATE MILITARY LOADING  
SKEW: 20° LEFT FORWARD  
ALIGNMENT: TANGENT  
WEARING SURFACE: MONOLITHIC CONCRETE  
APPROACH SLAB: 25'-0"  
SUPERELEVATION: NONE  
CROWN: 3/16 IN./FT.



**DIAGRAM SHOWING LIMITS OF STRUCTURE EXCAVATION**



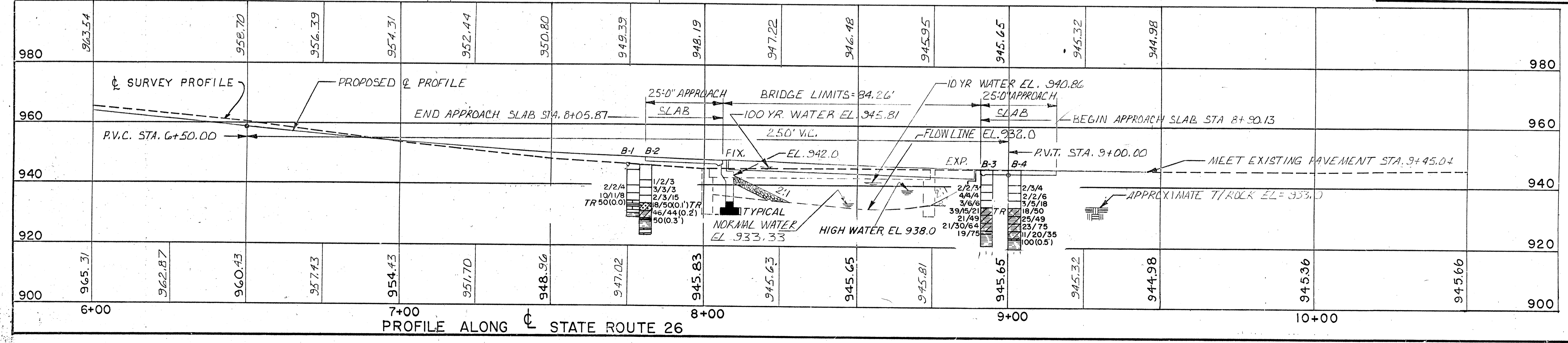
**PLAN**



**CURVE DATA**  
P.I. = STA. 6+02.61  
Δ = 5°13'59"  
Dc = 2° 4' 13.61"  
T = 126.36'  
L = 252.54'  
R = 2765.09'  
Lc = 252.46'  
CHORD BEARING = N. 50°3'17" E.

BENCH MARK EL. 938.57  
STA. 8+43.81 RT. R.R. SPIKE SET IN 25" BLACK WALNUT

BENCH MARK EL. 945.04  
STA. 8+09.74' LT. R.R. SPIKE SET IN 14" BLACK WALNUT



**PROFILE ALONG STATE ROUTE 26**

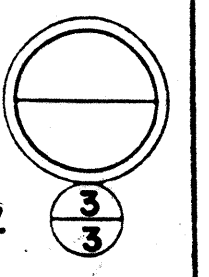
REVISED 1/29/91

OHIO DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS-TESTING LABORATORY  
600 WEST BROAD STREET COLUMBUS, OHIO 43223

**STRUCTURE FOUNDATION INVESTIGATION**  
BRIDGE NO. BEL-26-0721  
OVER NORTH FORK CAPTINA CREEK  
SEC. BEL-26-7.12

**PLAN AND PROFILE**

DRAWN BY	CHECKED BY	REVIEWED BY	DATE
A.F.	A.F.	R.D.R.	6/22/88



**LOG OF BORING**

Date Started 5/2/88 Sampler Type SS Dia. 1 3/8" Water Elev. -  
 Date Completed 5/2/88 Casing Length - Dia. -  
 Boring No. B-1 Station & Offset 7+79, 28' LT. (REAR ABUTMENT) Surface Elev. 944.9'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.		
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.	
944.9	0				SOD AND TOPSOIL											VISUAL
944.4	2	AUGERED			BROWN SANDY CLAY W/STONE FRAGMENTS (DRILLER'S DESCRIPTION)											VISUAL
939.9	4	AUGERED			BROWN SANDY CLAY	1	8	13	14	38	27	36	13	22		A-6A
937.4	6	2/2/4			BROWN SILTY GRAVELLY SAND NO PENETRATION	2	23	31	28	11	17	NP	NP	15		A-2-4
934.9	10	10/11/8 50(0.0)			BROKEN LIMESTONE (DRILLER'S DESCRIPTION)											VISUAL
930.9	14		3.5	0.5	LIMESTONE, GRAY, CRYSTALLING, HARD, DENSE, MARINE, MASSIVE, BROKEN. NO CORE LOSS.											
929.4	16				CLAY SHALE, GRAY, FIRM WITH SCATTERED THIN CLAY SEAMS, BROKEN. CORE LOSS 33%.											

BOTTOM OF BORING

**LOG OF BORING**

Date Started 5/17/88 Sampler Type SS Dia. 1 3/8" Water Elev. -  
 Date Completed 5/17/88 Casing Length - Dia. -  
 Boring No. B-3 Station & Offset 8+93, 7' LT. (FORWARD ABUT.) Surface Elev. 945.6'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.		
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.	
945.6	0				ASPHALT SUBBASE											VISUAL
944.1	2	AUGERED			BROWN SILTY SAND	7	14	17	28	20	11	NP	NP	11		A-3A
940.6	6	2/2/3			BROWN SILTY SAND	8	10	14	39	27	10	NP	NP	20		A-4A
938.1	8	4/4/4			BROWN SILTY GRAVELLY SAND	9	36	16	26	14	8	NP	NP	8		A-1-B
935.0	10	3/6/6			GRAY WEATHERED CLAY SHALE	10									14	VISUAL
933.1	12	39/15/21			GRAY WEATHERED CLAY SHALE	11									10	VISUAL
930.6	14	21/49			GRAY WEATHERED CLAY SHALE	18									8	VISUAL
928.1	18	21/30/64			GRAY CLAY SHALE	13									10	VISUAL
926.6	20	19/75			CLAY SHALE, DARK-GRAY, MEDIUM-FIRM, CARBONACEOUS FISSILE WITH SCATTERED THIN CLAY SEAMS, BROKEN AND JOINTED. CORE LOSS 10%.											
924.6	22		3.6	0.4												
920.6	26															

BOTTOM OF BORING

**LOG OF BORING**

Date Started 5/17/88 Sampler Type SS Dia. 1 3/8" Water Elev. -  
 Date Completed 5/17/88 Casing Length - Dia. -  
 Boring No. B-2 Station & Offset 7+79, 21' FT. (REAR ABUTMENT) Surface Elev. 946.2'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.		
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.	
946.2	0				SOD AND TOPSOIL											VISUAL
945.7	2	AUGERED			BROWN SANDY CLAY W/GRAVEL AND STONE FRAGMENTS (DRILLER'S DESCRIPTION)											VISUAL
941.2	4	AUGERED			BROWN SANDY SILT W/COAL FRAGMENTS	1	14	12	18	29	27	31	10	22		A-4A
938.7	6	1/2/3			BROWN SANDY SILT	2	4	5	44	28	19	NP	NP	18		A-4A
936.2	8	3/3/3			BROWN SANDY CLAY	3	0	13	27	28	32	30	12	33		A-6A
933.7	12	2/3/15			GRAY WEATHERED SANDSTONE	4									10	VISUAL
931.2	14	18/50(0.1)			GRAY WEATHERED CLAY SHALE	5									11	VISUAL
928.7	16	46/44(0.2)			GRAY WEATHERED CLAY SHALE	6									8	VISUAL
928.4	18	50(0.3)			CLAY SHALE, DARK-GRAY, MEDIUM-FIRM, CARBONACEOUS FISSILE WITH SCATTERED THIN CLAY SEAMS, BROKEN AND JOINTED. CORE LOSS 43%.											
925.4	20		3.7	1.3												
923.4	22				LIMESTONE, GRAY, HARD, DENSE, BROKEN. NO CORE LOSS.											

BOTTOM OF BORING

**LOG OF BORING**

Date Started 5/2/88 Sampler Type SS Dia. 1 3/8" Water Elev. -  
 Date Completed 5/2/88 Casing Length - Dia. -  
 Boring No. B-4 Station & Offset 9+02, 15' FT. (FORWARD ABUTMENT) Surface Elev. 945.4'

Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	Physical Characteristics							SHTL Class.		
							% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.		W.C.	
945.4	0				FILL MATERIAL (DRILLER'S DESCRIPTION)											VISUAL
940.4	2	AUGERED			BROWN SANDY SILT	1	12	13	25	29	21	NP	NP	21		A-4A
937.9	6	2/3/4			BROWN SILTY GRAVELLY SAND	2	15	13	41	17	14	NP	NP	12		A-3A
935.4	8	2/2/6			BROWN SILTY GRAVELLY SAND	3	24	13	31	17	15	NP	NP	20		A-2-4
932.9	12	3/5/18			GRAY WEATHERED CLAY SHALE	4									10	VISUAL
930.4	14	18/50			GRAY WEATHERED CLAY SHALE	5									12	VISUAL
927.9	16	25/49			GRAY WEATHERED CLAY SHALE	6									5	VISUAL
925.4	18	23/75			GRAY WEATHERED CLAY SHALE	7									9	VISUAL
922.9	20	11/20/35			GRAY WEATHERED CLAY SHALE	8									5	VISUAL
922.4	22	100(0.5)			CLAY SHALE, DARK-GRAY, FIRM, CARBONACEOUS WITH SCATTERED THICK CLAY SEAMS, VERY BADLY BROKEN AND JOINTED. CORE LOSS 25%.											
918.4	26		3.0													

BOTTOM OF BORING

Ref- to J-15 2666

REVISED 1/29/91

OHIO DEPARTMENT OF TRANSPORTATION  
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BORING DATA			
TYPED BY	CHECKED BY	REVIEWED BY	DATE
L.A.O.	A.F.	R.D.R.	6/22/88