

FHWA REGION	STATE	PROJECT	
5	OHIO		

CARROLL COUNTY
CAR-39-12.56

1
22

BRF-39 (48)

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 NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND
THAT PROVISIONS FOR MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET
FORTH ON THE PLANS AND ESTIMATES

APPROVED: John A. McClan
DATE: 4-15-91 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED: B.D. Hanch
DATE: 5/17/91 ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

APPROVED: George L. Rutz
DATE: 7/31/91 CHIEF ENGINEER, PLANNING AND DESIGN

APPROVED: George Wray
DATE: 7/31/91 DIRECTOR, DEPARTMENT OF TRANSPORTATION

C.A.P.

REVISED 9-23-91

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR

DATE

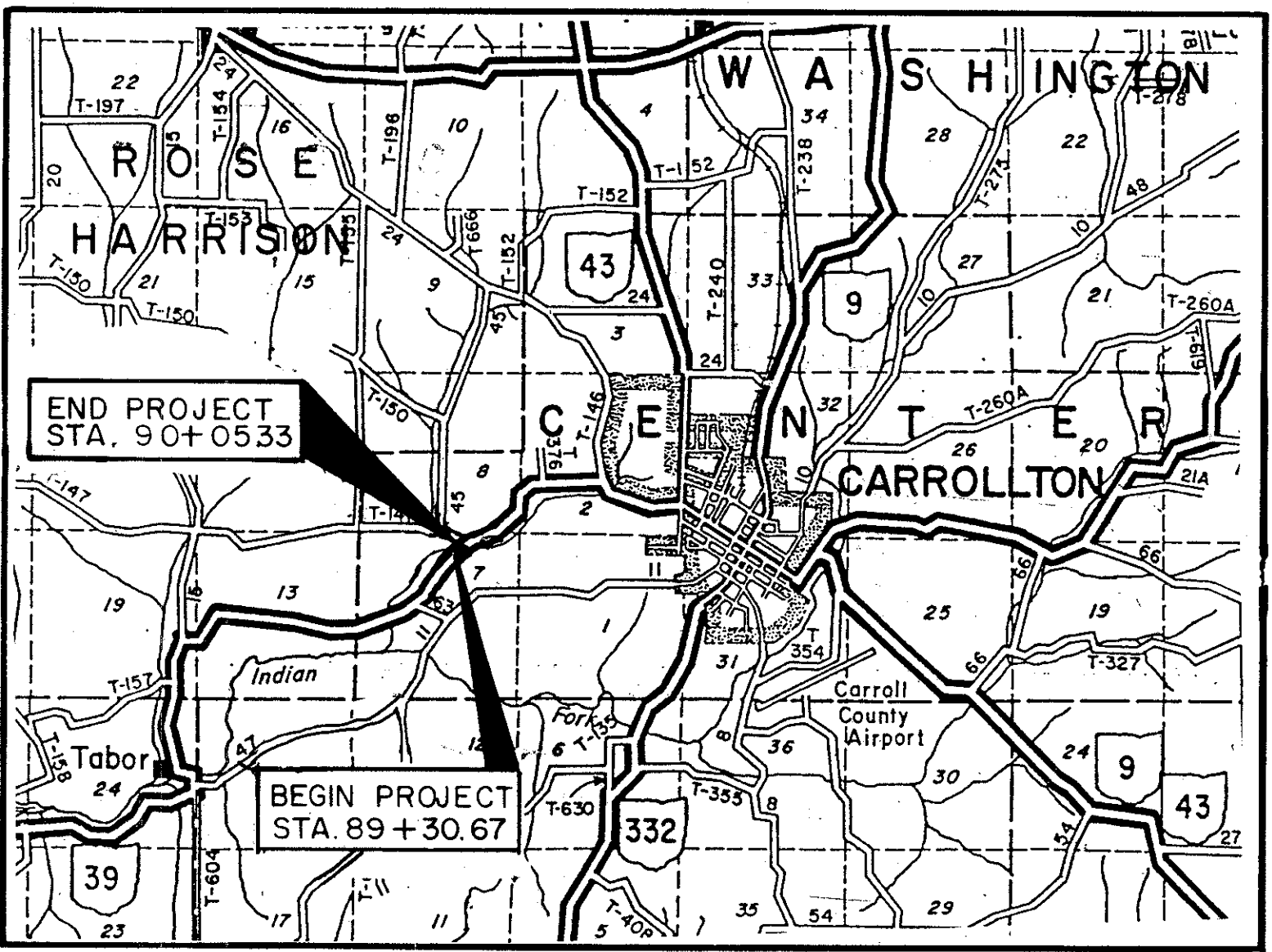
STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

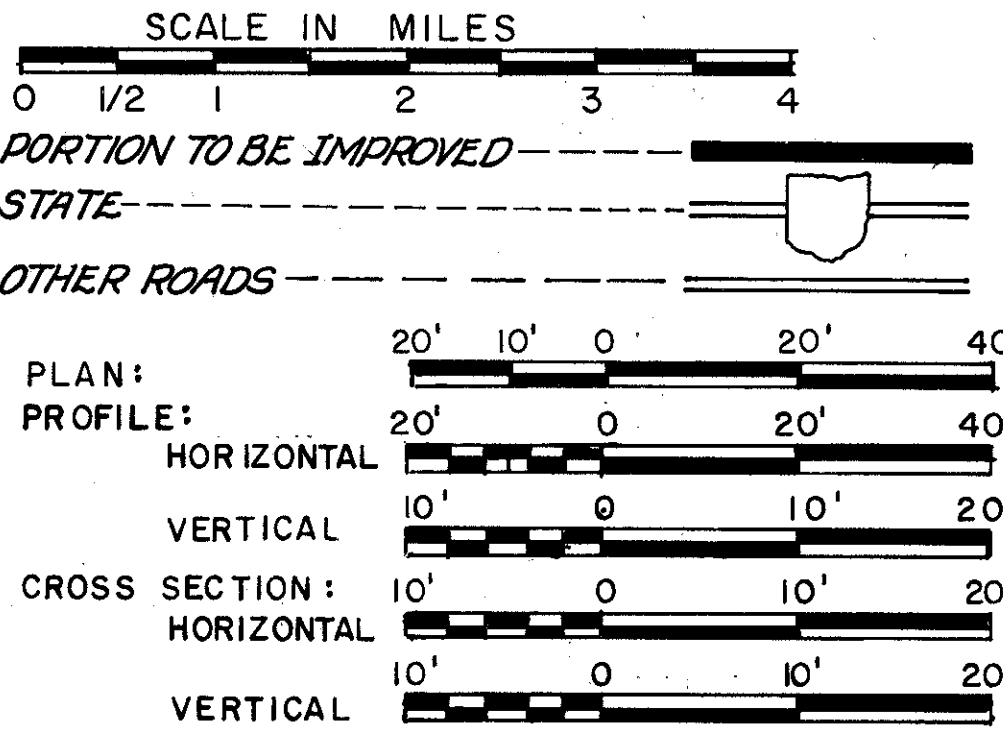
CAR-39-12.56

CENTER TOWNSHIP

CARROLL COUNTY



LOCATION MAP



DESIGN DESIGNATION
CURRENT ADT (1991) = 2640
DESIGN YEAR ADT (2011) = 5124
D.H.V. (2011) = 512
D = 60 %
T = 9.3 %
DESIGN SPEED = 55 MPH
LEGAL SPEED = 55 MPH
FUNCTIONAL CLASSIFICATION = ARTERIAL (RURAL)

DESIGN EXCEPTION **APPROVAL DATE**
BRIDGE WIDTH 7-6-90

CONVENTIONAL SIGNS

RIGHT OF WAY LINE	EXISTING	----- R/W -----
SECTION LINE		
RIGHT OF WAY LINE	PROPOSED	----- R/W -----
CENTER LINE		
CORPORATION LINE		
TOWNSHIP LINE		
UTILITY POLE TELEPHONE	EXISTING	⊕
POWER	EXISTING	⊕
FENCE	EXISTING	-x-x-x-
GUARD RAIL	EXISTING	-o-o-o-o-
	PROPOSED	-o-o-o-o-
WORK LIMITS	PROPOSED	-----

INDEX OF SHEETS

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LINE DATA

BEGIN WORK	STA. 87+80.00
BEGIN PROJECT	STA. 89+30.67
END PROJECT	STA. 90+05.33
END. WORK	STA. 91+55.00
LENGTH OF PROJECT	74.66' = 0.014 MILES
LENGTH OF WORK	375.00' = 0.071 MILES

UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
CALL 800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

SUPPLEMENTAL SPECIFICATIONS			
NUMBER	DATE	NUMBER	DATE
802	4-13-90		
836	11-12-85		

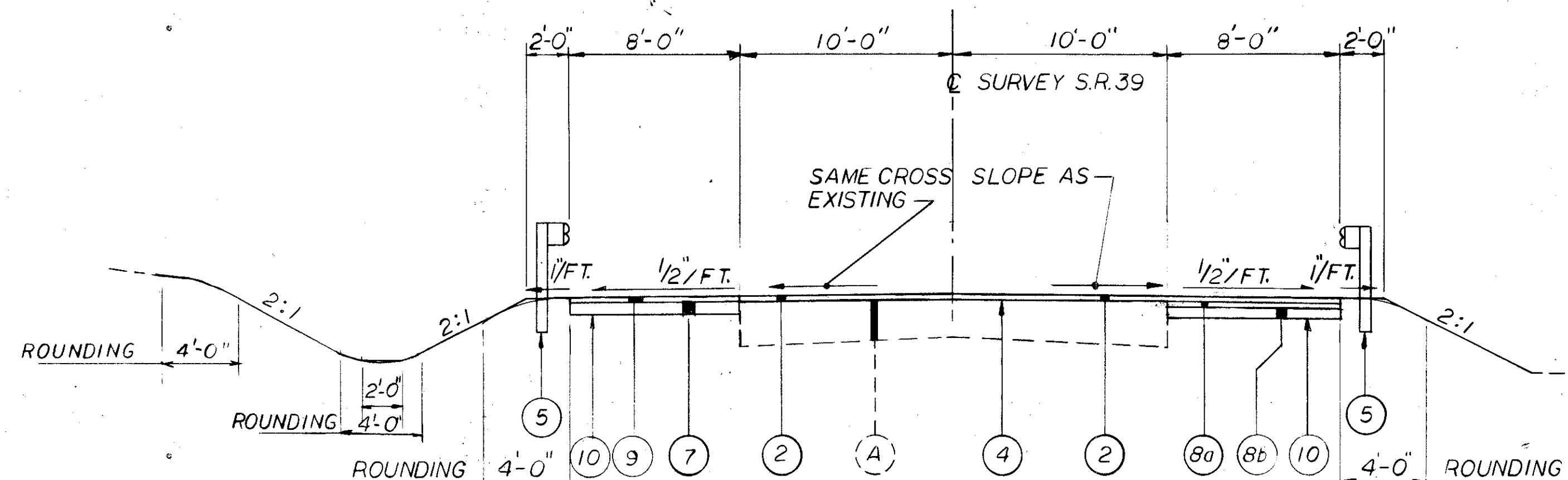
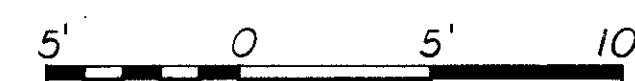
SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
NUMBER	DATE	NUMBER	DATE	NUMBER	DATE
BP-5	10-1-87	MC-9.2	5-6-91	MT-96.11	9-9-88
		MC-11	8-1-78	MT-96.20	9-9-88
GR-1	1-11-85	AS-1-81	11-27-81	MT-96.25	9-9-88
GR-2B	2-5-82	PSBD-1-81	6-20-89	MT-99.10	11-14-86
GR-3	10-25-90				
GR-4	2-5-82	DBR-2-73	4-10-73		

ROBERT P. MADISON INTERNATIONAL, INC.
ARCHITECTS - ENGINEERS - PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

MI

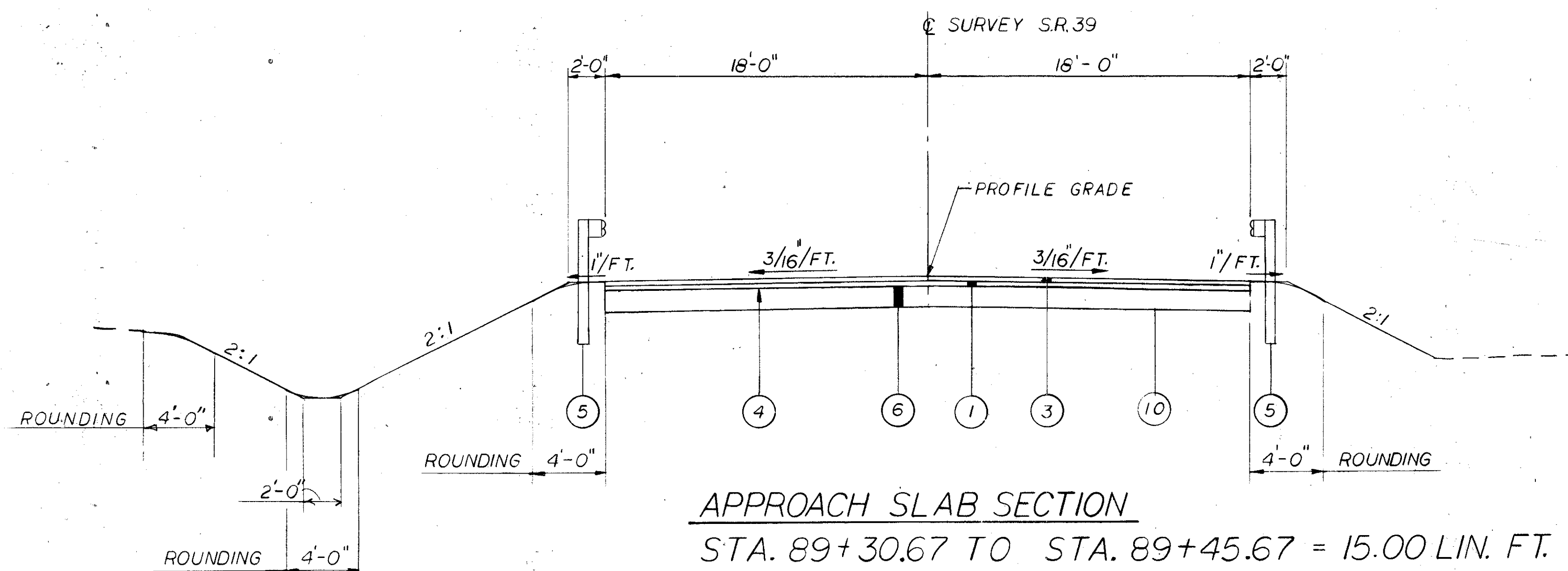
FILE NO.	CAR-39-12.56
DATE OF LETTING	
CONTRACT NO.	

TYPICAL SECTIONS TYPE 404



APPROACH FEATHER SECTION

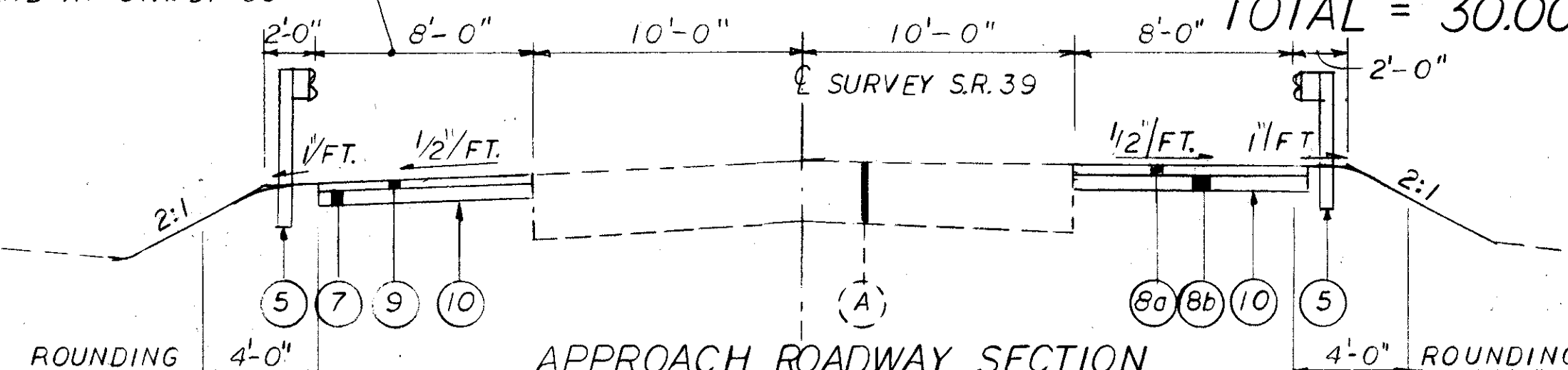
STA. 88+90.00 TO 89+30.67 = 40.67 LIN. FT.
STA. 90+05.33 TO 90+50.00 = 44.67 LIN. FT.
TOTAL = 85.34 LIN. FT.



APPROACH SLAB SECTION

STA. 89+30.67 TO STA. 89+45.67 = 15.00 LIN. FT.
STA. 89+90.33 TO STA. 90+05.33 = 15.00 LIN. FT.
TOTAL = 30.00 LIN. FT.

LEFT SHOULDER
END AT STA. 91+00

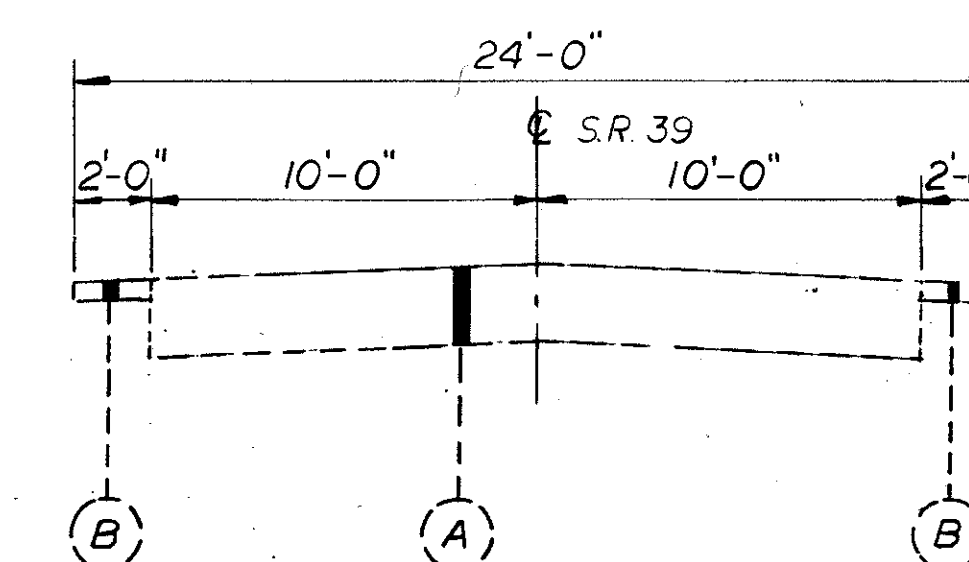


APPROACH ROADWAY SECTION

STA. 88+18.00 TO STA. 88+90.00 = 72.00 LIN. FT.
STA. 90+50.00 TO STA. 91+18.00 = 68.00 LIN. FT.
TOTAL = 140.00 LIN. FT.

LEGEND

- ① ITEM 403 VARIABLE THICKNESS ASPHALT CONCRETE, AC-20, (1 1/4" MINIMUM)
- ② ITEM 404 VARIABLE THICKNESS ASPHALT CONCRETE, AC-20 (1 1/4" MINIMUM)
- ③ ITEM 404 1 1/4" ASPHALT CONCRETE, AC-20
- ④ ITEM 407 TACK COAT
- ⑤ ITEM 606 GUARDRAIL, TYPE 5
- ⑥ ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=12"), AS PER PLAN (SEE SHEET 15)
- ⑦ ITEM 301 5" BITUMINOUS AGGREGATE BASE: AC-20
- ⑧ ITEM 615 TEMPORARY PAVEMENT AS PER PLAN COURSE MAKE UP:
 - ⑧a 404 1 3/4" ASPHALT CONCRETE
 - ⑧b 301 5" BITUMINOUS AGGREGATE BASE
- ⑨ ITEM 404 1 3/4" ASPHALT CONCRETE, AC-20
- ⑩ ITEM 203 SUBGRADE COMPACTION
- (A) EXISTING FLEXIBLE PAVEMENT
- (B) EXISTING FLEXIBLE PAVED SHOULDER



EXISTING TYPICAL SECTION

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GENERAL NOTES

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.

LOCATION OF GUARDRAIL:

THE LOCATIONS 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 HAVE MAXIMUM PROTECTION FOR TRAFFIC.

CONTINGENCY QUANTITIES:

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEERS DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

DATUM:

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

U.S.G.S. STAMPED 151 LLB 1958

THE CONTRACTOR WILL BE REQUIRED TO NOTIFY DISTRICT 11 OFFICE OF ODOT, 5 (FIVE) WORKING DAYS PRIOR TO ANY ACTIVITY THAT WOULD DISTURB THE LOCATION OR ELEVATION OF THE BENCHMARK MONUMENT.

THE DISTRICT OFFICE WILL FURNISH THE CONTRACTOR WITH A REPLACEMENT DISC MONUMENT, WHICH THE CONTRACTOR WILL PLACE IN AN ACCESSIBLE AND PREFERABLY HORIZONTAL LOCATION ON THE STRUCTURE, AS DIRECTED BY THE ENGINEER, AT THE TIME OF CONSTRUCTION. THE EXISTING DISC MONUMENT SHALL BE SALVAGED AND RETURNED TO DISTRICT 11 OFFICE.

PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 623 CONSTRUCTION LAYOUT STAKES, *AS PER PLAN.*

UTILITY OWNERSHIP:

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

OHIO POWER COMPANY
301 CLEVELAND AVE. SW

CANTON, OHIO 44701
(216) 438-7040

GTE MTO, INC.
6223 NORWALK RD.
MEDINA, OHIO 44256
(216) 722-9591

CLEARING AND GRUBBING:

ALTHOUGH THERE ARE NO TREES AND/OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THIS PROJECT, A LUMP SUM QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

EROSION CONTROL

ITEM 601, IS PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY 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.

MAINTAINING TRAFFIC:

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIFICATION 614 AND THE CONSTRUCTION SEQUENCE SHOWN ON SHEET NO. 18. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, PORTIONS OF THE EXISTING AND NEW BRIDGES AND ITEM 615 TEMPORARY PAVEMENT AS PER PLAN.

ALTERNATING ONE-WAY TRAFFIC SHALL BE MAINTAINED DURING PHASE I AND II BY USE OF TEMPORARY SIGNALS AS SHOWN ON SHEETS 4 AND 5. TRAFFIC SHALL BE SEPARATED FROM THE WORK AREA BY MEANS OF ITEM 622 ~~PORTABLE~~ CONCRETE BARRIER.

PAYMENT FOR ALL OF THE ABOVE EXCEPT ITEMS 615 AND 622 SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

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 AVERAGE APPLICATION RATES OF 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN

THE EXISTING DEEP BEAM BRIDGE RAILING WITH TUBULAR BACKUP AND POSTS SHALL BE SALVAGED AND STORED ON SITE FOR REMOVAL BY STATE FORCES. AN ESTIMATED QUANTITY OF 75 L.F. OF ITEM 202 BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 615 - TEMPORARY PAVEMENT, AS PER PLAN A AND B

TEMPORARY PAVEMENT COURSE MAKEUP FOR THIS PROJECT SHALL CONSIST OF THE FOLLOWING:

- 1 3/4" - 404 ASPHALT CONCRETE
- 5" - 301 BITUMINOUS AGGREGATE BASE

TEMPORARY PAVEMENT SHALL BE CONSTRUCTED AS SHOWN ON SHEET 4 & 5.

THE TEMPORARY PAVEMENT AS PER PLAN A ON THE RIGHT SIDE FROM STA. 88 + 18 TO 91 + 18 SHALL REMAIN IN PLACE AND BECOME PART OF THE NEW PERMANENT SHOULDER. TEMPORARY PAVEMENT AS PER PLAN B SHALL BE PLACED ON LEFT SIDE FROM STA. 88 + 30 TO STA. 90 + 95 AND WILL BE REMOVED AFTER PHASE I IS COMPLETED.

ITEM 614 - BARRIER REFLECTORS

THESE REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING SHALL BE AS SHOWN ON STANDARD DRAWING MT 96.11.

TEMPORARY STREAM CROSSING FORDS:

WHERE STREAM CROSSING FORDS ARE REQUIRED FOR EQUIPMENT CROSSINGS THE FOLLOWING SHALL APPLY TO THE CONTRACTORS OPERATIONS:

THE CROSSING SHALL CONSIST OF CLEAN NON-TOXIC GRANULAR OR ROCK MATERIAL, PROPERLY MAINTAINED TO PREVENT EROSION WITH PROVISIONS FOR CONVEYANCE OF ANTICIPATED HIGH FLOWS. FURTHERMORE, IT SHALL FOLLOW PART 330.5 SPECIFIC CATEGORIES OF DISCHARGES NATIONALLY PERMITTED, PARAGRAPH, (A) (14) MINOR ROAD CROSSING FILLS - OF THE FEDERAL REGISTRAR - CORPS OF ENGINEERS FINAL REGULATIONS PUBLISHED NOV. 13, 1986.

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.

ITEM 207 STRAW OR HAY BALES 100 EACH

SEEDING:

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

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 2 M. GAL.

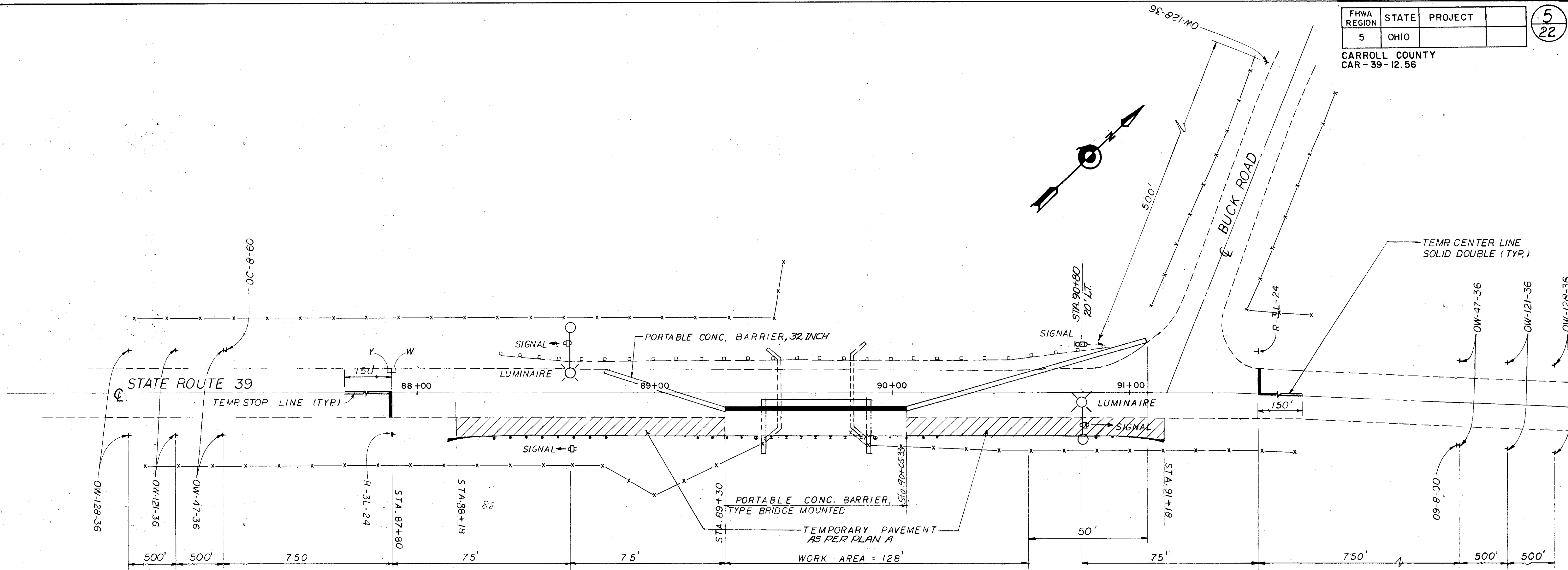
ITEM 622 PORTABLE CONCRETE BARRIER, 32 INCH AND ITEM 622 PORTABLE CONCRETE BARRIER, BRIDGE MOUNTED

THIS ITEM SHALL INCLUDE FURNISHING, PLACING, MAINTAINING, RELOCATING AND SUBSEQUENTLY REMOVING PORTABLE CONCRETE BARRIER IN ACCORDANCE WITH STANDARD DRAWING MC-9.2 AND CONSTRUCTION SEQUENCE DETAILS SHOWN ON SHEET NO.'s 4, 5 AND 18.

MOVEMENT OF THE BARRIER BETWEEN PHASES SHALL BE ACCOMPLISHED IN ONE (1) WORKING DAY. FLAGGERS SHALL BE UTILIZED FOR THE PROTECTION OF VEHICULAR TRAFFIC UNTIL MOVEMENT OF THE PORTABLE BARRIER AND OTHER TRAFFIC CONTROL DEVICES IS COMPLETE AND TRAFFIC IS MAINTAINED AS PER PHASE II.

THE METHOD OF MEASUREMENT FOR PORTABLE CONCRETE BARRIER SHALL INCLUDE THE TOTAL COMBINED LENGTHS REQUIRED DURING EACH PHASE OF CONSTRUCTION REGARDLESS OF WHETHER THE SAME SECTIONS OF BARRIER ARE RE-USED DURING SUBSEQUENT PHASES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622 PORTABLE CONCRETE BARRIER, 32 INCH AND ITEM 622 PORTABLE CONCRETE BARRIER, BRIDGE MOUNTED.



STAGE II

NOTES:
FOR DETAILS NOT SHOWN SEE STANDARD CONSTRUCTION
DRAWINGS MT-96.11, MT-96.20, MT-96.25 AND MT-99.10
ITEM 802 BARRIER REFLECTORS TYPE 'A2' ARE TO BE INSTALLED
ON GUARDRAIL AND BRIDGE RAILING PRIOR TO STAGE II CONSTRUCTION.

QUANTITIES CARRIED TO GENERAL SUMMARY SHEET NO. 7

ITEM	TOTAL	UNIT	DESCRIPTION
614	0.02	MILES	TEMPORARY EDGE LINE, CLASS I
614	18	EACH	BARRIER REFLECTOR, TYPE-B2 FOR STAGE II STA.88+18 TO STA.91+08
615	200	SQ. YD.	TEMPORARY PAVEMENT, AS PER PLAN-A
622	150	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"
622	75	LIN. FT.	PORTABLE CONCRETE BARRIER, TYPE BRIDGE MOUNTED

614 TEMPORARY RAISED PAVEMENT MARKERS

FHWA REGION	STATE	PROJECT	
5	OHIO		

CARROLL COUNTY
CAR-39-12.56

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THIS ITEM OF WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY RAISED PAVEMENT MARKERS (TRPM'S). THE TRPM'S SHALL BE YELLOW OR WHITE, AS DESCRIBED IN THE PLAN.

MATERIAL

ALL UNITS SHALL BE OF SUFFICIENT STRENGTH AND PROPERLY SHAPED SO AS NOT TO BE DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR DAMAGED BY IMPACTS FROM VEHICLES TIRES, INCLUDING THOSE OF HIGH PRESSURE TRUCK TIRES LOADED TO 4500 POUNDS.

RETROREFLECTORS SHALL BE PROVIDED IN ONE OR TWO DIRECTIONS ON EACH UNIT AS REQUIRED BY THE USAGE AND SHALL RETURN WHITE OR YELLOW LIGHT AS IS APPROPRIATED FOR THE APPLICATION.

THE REFLECTOR SHALL HAVE AN EFFECTIVE AREA OF 0.35 SQUARE INCH FOR TYPE A OR 3.0 SQUARE INCH FOR TYPE B. ITS BRIGHTNESS OR SPECIFIC INTENSITY (WHEN TESTED AT 0.2 DEGREE ANGLE OF OBSERVATION AND THE FOLLOWING ANGLES OF INCIDENCE) SHALL MEET OR EXCEED THE FOLLOWING:

<u>SPECIFIC INTENSITY</u>		
<u>TYPE A</u>		
<u>INCIDENCE</u> <u>ANGLE</u> <u>(DEGREES)</u>	<u>WHITE</u>	<u>YELLOW</u>
0	1.0	0.6
20	0.4	0.24
45	-	-
<u>TYPE B</u>		
	<u>WHITE</u>	<u>YELLOW</u>
0	3.0	1.8
20	1.2	0.72
45	0.3	0.2

ANGLE OF INCIDENCE FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE NORMAL TO THE LEADING EDGE OF THE MARKER FACE (ALSO HORIZONTAL ENTRANCE ANGLE).

ANGLE OF OBSERVATION FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE RETURNED RAY FROM THE MARKER TO THE MEASURING RECEPTOR.

SPECIFIC INTENSITY IS THE MEAN CANDLEPOWER OF THE REFLECTED LIGHT (AT GIVEN INCIDENCE AND DIVERGENCE ANGLES) FOR EACH FOOT-CANDLE AT THE REFLECTOR (ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT).

TYPE A UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY BOTH AT NIGHT AND DURING DAYLIGHT. THEIR DAY TIME VISIBILITY SHALL BE ASSURED BY SIZE, SHAPE AND COLOR AS FOLLOWS:

- 1) THE UNITS SHALL BE A HIGH VISIBILITY YELLOW OR WHITE COLOR WHICH WILL NOT DEGRADE SUBSTANTIALLY DUE TO TRAFFIC WEAR AND WHICH WILL MATCH THE COLOR OF THE REFLECTOR.
- 2) WHEN VIEWED FROM ABOVE, THE UNITS SHALL HAVE A VISIBLE AREA OF NOT LESS THAN 14 SQUARE INCHES.
- 3) WHEN VIEWED FROM THE FRONT, PARALLEL TO THE PAVEMENT, AS FROM APPROACHING TRAFFIC, THE UNIT SHALL HAVE A WIDTH OF APPROXIMATELY 4 INCHES AND A VISIBLE AREA OF NOT LESS THAN 1.5 SQUARE INCHES.

TYPE B UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY AT NIGHT BY RETRO-REFLECTING AUTOMOTIVE HEADLIGHT BACK TO THE DRIVER.

INSTALLATION: THEY SHALL BE ATTACHED TO CLEAN, DRY PAVEMENT BY A BUTYL ADHESIVE PAD, A BITUMINOUS ADHESIVE OR OTHER CONSTRUCTION GRADE ADHESIVES (SUCH AS FRANKLIN PANEL AND METAL ADHESIVE) SUITABLE TO ANCHOR THE UNIT UNDER THE ABOVE CONDITIONS. WHEN IT IS NECESSARY TO ATTACH UNITS TO NEW CONCRETE WITH CURING COMPOUND REMAINING, THE CURING COMPOUND MEMBRANE SHALL BE REMOVED BY SANDBLASTING OR OTHER MECHANICAL CLEANING METHOD. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE, AT HIS COST, ANY UNITS WHICH FAIL (BROKEN HOUSING, HOUSING WORN TO THE EXTENT THAT DAYTIME VISIBILITY IS SIGNIFICANTLY DIMINISHED OR OF AN UNACCEPTABLE COLOR, DETACHED OR BROKEN REFLECTOR, HOUSING DETACHED FROM ADHESIVE).

TRPM'S ARE LIKELY TO BE REMOVED BY SNOW PLOWING OPERATIONS, THUS THEY ARE NOT CONSIDERED SUITABLE FOR USE DURING THE PERIOD FROM OCTOBER 15 UNTIL APRIL 30. THE CONTRACTOR IS ADVISED TO SCHEDULE HIS WORK AND/OR THE USE OF THESE DEVICES TO AVOID THIS PERIOD. SHOULD THE CONTRACTOR CHOOSE TO USE TRPM'S DURING THIS PERIOD AND THEY ARE SUBSEQUENTLY REMOVED OR DESTROYED BY SNOW AND ICE CONTROL ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY, AT HIS COST, PROVIDE A SUBSTITUTE TRAFFIC GUIDANCE SYSTEM EFFECTIVE DURING LIGHT AND DARK AND WHICH IS ACCEPTABLE TO THE ENGINEER.

THE UNITS SHALL BE PLACED ACCURATELY TO DEPICT STRAIGHT OR UNIFORMLY CURVING LINES. WHEN USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS, THEY MAY BE PLACED ON OR IMMEDIATELY ADJACENT TO THE PAVEMENT MARKING. LOCATIONS SHALL BE ADJUSTED UP TO ONE FOOT LONGITUDINALLY OR SIX INCHES laterally TO AVOID PLACEMENT ON JOINTS, CRACKED OR DETERIORATED PAVEMENT. THEY SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS IF THIS WILL DETRACT FROM THEIR ABILITY TO REMAIN ATTACHED TO THE PAVEMENT.

APPLICATION

1) WHEN REQUIRED TO SUPPLEMENT PAVEMENT MARKING; THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A OR B	20' C/C
LANE LINE	A OR B	40' C/C*
CENTER LINE (SINGLE/BROKEN)	A OR B	40' C/C *
CENTER LINE (DOUBLE/SOLID)	A OR B	2 UNITS SIDE BY SIDE 4 INCHES APART 20' C/C
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A OR B	10' C/C

* CENTERED IN GAP

2) WHEN USED TO SIMULATE (REPLACE) PAVEMENT MARKING THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A	5' C/C
LANE LINE	A	4@3.33' C/C 30' GAP (40' CYCLE)
CENTER LINE (DOUBLE SOLID)	A	2 UNITS SIDE BY SIDE 5' C/C
CENTER LINE (SINGLE BROKEN)	A	4@3.33' C/C 30' GAP (40' CYCLE)
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A	5' C/C
EDGE LINE (TWO COLOR) (WHITE/YELLOW)	A	BACK TO BACK 5' C/C

YELLOW TRPM'S USED TO SEPARATE OPPOSITE FLOWS OF TRAFFIC (CENTER LINES) SHALL INCLUDE REFLECTIONS FOR BOTH DIRECTIONS. ALL OTHER YELLOW TRPM'S AND WHITE TRPM'S SHALL PROVIDE RETROREFLECTIVITY FOR ONE DIRECTION.

REMOVAL

REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT LITTLE OR NONE OF THE ADHESIVE REMAINS ON THE PAVEMENT AND PERMANENT PAVEMENT SURFACES SHALL NOT BE SCARRED, BROKEN OR ROUGHENED SIGNIFICANTLY.

PAYMENT

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH TRPM AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT AT NO ADDITIONAL COST OF ALL TRPM'S WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAIL FOR ANY REASON, EXCEPT DUE TO FAILURE OF THE PAVEMENT TO WHICH THEY ARE ATTACHED.

ITEM	UNIT	DESCRIPTION
614	EACH	TEMPORARY RAISED PAVEMENT MARKERS

STATIONING (FROM-TO) (SIDE)	SPACING	TYPE A			TYPE B			REMARK (LINE TYPE)
		W	Y	Y/Y	W	Y	Y/Y	
89 + 30 TO 90 + 05	5'	16	16					CL STAGE I
89 + 30 TO 90 + 05	5'	16	16					CL STAGE II
87 + 80 TO 90 + 05	5'	46	46					EL STAGE I
90 + 05 TO 91 + 55	5'	31						EL STAGE I
87 + 80 TO 89 + 30	5'	31						EL STAGE II
89 + 30 TO 91 + 55	5'	46	46					EL STAGE II
TOTALS		186	124					
		310						

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

614 TEMPORARY RAISED
PAVEMENT MARKERS

DESIGNED	DRAWN	CHECKED	DATE	PLAUSED
			5-12-87	

CALCULATIONS

ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=12") AS PER PLAN.

$$\begin{aligned} \text{STA. 89+30.67 TO 89+45.67} &= 15.0 \\ \text{STA. 89+90.33 TO 90+05.33} &= 15.0 \\ &30.0 \text{ LIN.FT.} \end{aligned}$$

$$30.0 \times 36 \div 9 = 120.0 \text{ SQ.YD.} \quad 120.0 \text{ SQ.YD.}$$

FEATHERING

$$\begin{aligned} \text{STA. 88+90 TO 89+30.67} &= 40.67 \text{ LIN.FT.} \\ \text{STA. 90+05.33 TO 90+50} &= 44.67 \text{ LIN.FT.} \\ &85.34 \text{ LIN.FT.} \end{aligned}$$

ITEM 404 - ASPHALT CONCRETE AC-20

$$\begin{aligned} 30 \times 36 (1\frac{1}{4} \div 12) \div 27 &= 4.17 \\ (30.27 + 31.03) \times 28 (1\frac{1}{4} \div 12) \div 27 &= 6.62 \\ (10.4 \times 0.12 \text{ Avg} + 13.64 \times 0.13 \text{ Avg}) \times 28 \div 27 &= 3.13 \\ &13.92 \text{ CU.YD.} \quad 14.0 \text{ CU.YD.} \end{aligned}$$

ITEM 403 - ASPHALT CONCRETE AC-20

$$30 \times 36 (3\frac{5}{8} + 1\frac{1}{4}) \div 12 \div 27 = 8.13 \text{ CU.YD.} \quad 8.0 \text{ CU.YD.}$$

ITEM 407 - TACK COAT

$$\begin{aligned} 30 \times 36 \times 0.075 \div 9 &= 9.0 \\ 85.34 \times 28 \times 0.075 \div 9 &= 19.91 \\ &28.91 \text{ GAL.} \quad 29.0 \text{ GAL.} \end{aligned}$$

ITEM 203 - SUBGRADE COMPACTION

$$\begin{aligned} \text{TEMPORARY PAVEMENT AREA} - 225.34 \times 8 \div 9 &= 200.30 \\ \text{PAVED SHOULDER AREA} - 207.34 \times 8 \div 9 &= 184.30 \\ \text{APPROACH SLAB AREA} - 36 \times 30 \div 9 &= 120.00 \end{aligned}$$

$$504.60 \text{ SQ.YD.} \quad 505.0 \text{ SQ.YD.}$$

ITEM 615 - TEMPORARY PAVEMENT, AS PER PLAN (SEE SHT.#5)

STAGE II CONSTRUCTION - RIGHT

$$\begin{aligned} \text{STA. 88+18 TO 89+30.67} &= 112.67 \\ \text{STA. 90+05.33 TO 91+18} &= 112.67 \\ &225.34 \text{ LIN.FT.} \end{aligned}$$

$$225.34 \times 8 \div 9 = 200.30 \text{ SQ.YD.} \quad 200.0 \text{ SQ.YD.}$$

ITEM - 301 BITUMINOUS AGGREGATE BASE, AC-20

PAVED SHOULDER - LEFT

$$\begin{aligned} \text{STA. 88+18 TO 89+30.67} &= 112.67 \\ \text{STA. 90+05.33 TO 91+00} &= 94.67 \end{aligned}$$

$$\begin{aligned} &207.34 \text{ LIN.FT.} \\ 207.34 \times 8 \times 5 / 12 \div 27 &= 25.60 \text{ CU.YD.} \quad 26.0 \text{ CU.YD.} \end{aligned}$$

ITEM - 404 ASPHALT CONCRETE AC-20

$$207.34 \times (1.75 \div 12) \times 8 \div 27 = 8.96 \text{ CU.YD.} \quad 9.0 \text{ CU.YD.}$$

ITEM - 202 WEARING COURSE REMOVED

$$\begin{aligned} \text{STA. 88+90 TO 89+20.27} &= 30.27 \\ \text{STA. 90+18.97 TO 90+50} &= 31.03 \end{aligned}$$

$$\begin{aligned} &61.30 \text{ LIN.FT.} \\ 61.30 \times 28 \div 9 &= 190.71 \text{ SQ.YD.} \quad 191.0 \text{ SQ.YD.} \end{aligned}$$

ITEM - 659 COMMERCIAL FERTILIZER

$$\begin{aligned} 20 \text{ LBS PER 1000 SQ.FT.} \\ (20 \times 1058 \text{ SQ.YD.} \times 9 \div 1000) \div 2000 &= 0.0952 \text{ TON} \quad 0.10 \text{ TON} \end{aligned}$$

ITEM - 659 AGRICULTURAL LIMING

$$1058 \text{ S.Y.} \times 0.00045 \text{ TON/SQ.YD.} = 0.4761 \text{ TON} \quad 0.48 \text{ TON}$$

GENERAL SUMMARY

SHEET NUMBER										PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
3	4	5	6	7	8	9	10									ROADWAY
LUMP				191	425							201	11000	LUMP		CLEARING AND GRUBBING
												202	23500	191	SQ.YD.	WEARING COURSE REMOVED
												202	38000	425	LIN.FT.	GUARDRAIL REMOVED
7.5							132	206				202	38601	75	LIN.FT.	BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN
							194	29				203	12000	338	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
				505								203	20000	223	CU.YD.	EMBANKMENT
												203	50000	505	SQ.YD.	SUBGRADE COMPACTION
					375							606	13000	375	LIN.FT.	GUARDRAIL, TYPE 5
					4							606	25000	4	EACH	ANCHOR ASSEMBLY, TYPE A
					4							606	30500	4	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE B
																EROSION CONTROL
100												207	70000	100	EACH	STRAW OR HAY BALES
					218							601	34200	218	CU.YD.	ROCK CHANNEL PROTECTION, TYPE-C WITHOUT FILTER
								1058				659	10000	1058	SQ.YD.	SEEDING & MULCHING
					0.10							659	20000	0.10	TON	COMMERCIAL FERTILIZER
					0.48							659	30000	0.48	TON	AGRICULTURAL LIMING
2												659	35000	2	M.GAL	WATER
																PAVEMENT
				26								301	10002	26	CU.YD.	BITUMINOUS AGGREGATE BASE, AC 20
					8							403	20000	8	CU.YD.	ASPHALT CONCRETE, AC-20
					23							404	20000	23	CU.YD.	ASPHALT CONCRETE, AC-20
					29							407	10000	29	GAL.	TACK COAT
				120								611	10001	120	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=12"), AS PER PLAN.
																MAINTENANCE OF TRAFFIC
												614	12800	310	EACH	TEMPORARY RAISED PAVEMENT MARKERS
												614	13302	36	EACH	BARRIER REFLECTOR TYPE-B2
												614	21300	0.06	MILES	TEMPORARY CENTER LINES, CLASS I, 740.05, TYPE-C
												614	21400	0.06	MILES	TEMPORARY CENTER LINES, CLASS II
												614	22000	0.04	MILES	TEMPORARY EDGE LINES, CLASS I
												614	26600	20	LIN.FT.	TEMPORARY STOP LINES, CLASS I, 740.05, TYPE-C
												615	35001	200	SQ.YD.	TEMPORARY PAVEMENT, AS PER PLAN A
												615	35001	70	SQ.YD.	TEMPORARY PAVEMENT, AS PER PLAN B
												622	40020	340	LIN.FT.	PORTABLE CONCRETE BARRIER, 32"
												622	40040	115	LIN.FT.	PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED
																TRAFFIC CONTROL
												642	00090	0.14	MILES	EDGE LINES
												642	00290	0.07	MILES	CENTER LINES
												802	00100	4	EACH	BARRIER REFLECTOR, TYPE-A
												802	00300	6	EACH	BARRIER REFLECTOR, TYPE-A2
																FOR STRUCTURE 20' AND OVER GENERAL SUMMARY - SEE SHEET-13
												614	11000	LUMP		MAINTAINING TRAFFIC
												619	15000	LUMP		FIELD OFFICE, TYPE A
												623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN
												624	10000	LUMP		MOBILIZATION

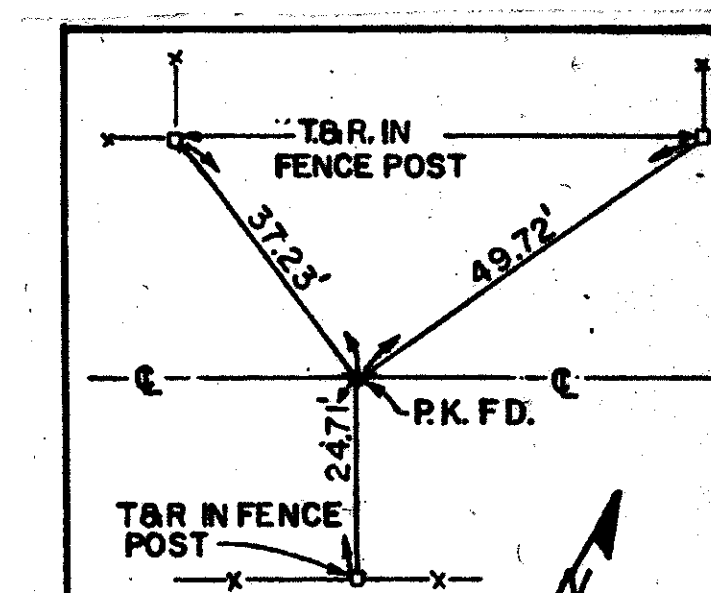
Cal. By J M P Date 10/90
Check By K P Date 10/90

FHWA REGION	STATE	PROJECT	
5	OHIO		

CARROLL COUNTY
CAR-39-12.567
22

FHWA REGION	STATE	PROJECT	
5	OHIO		822

CARROLL COUNTY
CAR - 39 - 12.56



TEMPORARY BENCHMARK
STA. 91+05.25 (L)
N.E. CORNER OF CULVERT
ELEV. 963.23

BENCHMARK
U.S.C.S. STA. 89+83.4
OFFSET 14' (L)
N.E. CORNER OF
WINGWALL
ELEV. 966.84
STAMPED 151 LLB 1958

ITEM 601 ROCK CHANNEL PROTECTION TYPE C T=24"				
STATION	FROM	TO	SIDE	AREA
89+47.00	89+47.00	89+53.80	UNDER	55 X 7.6 X 2.0
89+47.00	89+47.00	89+53.80	LEFT	70 X 7 avg X 2.0
89+47.00	89+47.00	89+53.80	RIGHT	57 X 7 avg X 2.0
89+81.40	89+81.40	89+89.00	UNDER	67 X 7.6 X 2.0
89+81.40	89+81.40	89+89.00	LEFT	65 X 7.5 avg X 2.0
89+81.40	89+81.40	89+89.00	RIGHT	70 X 9.0 avg X 2.0
TOTAL				218

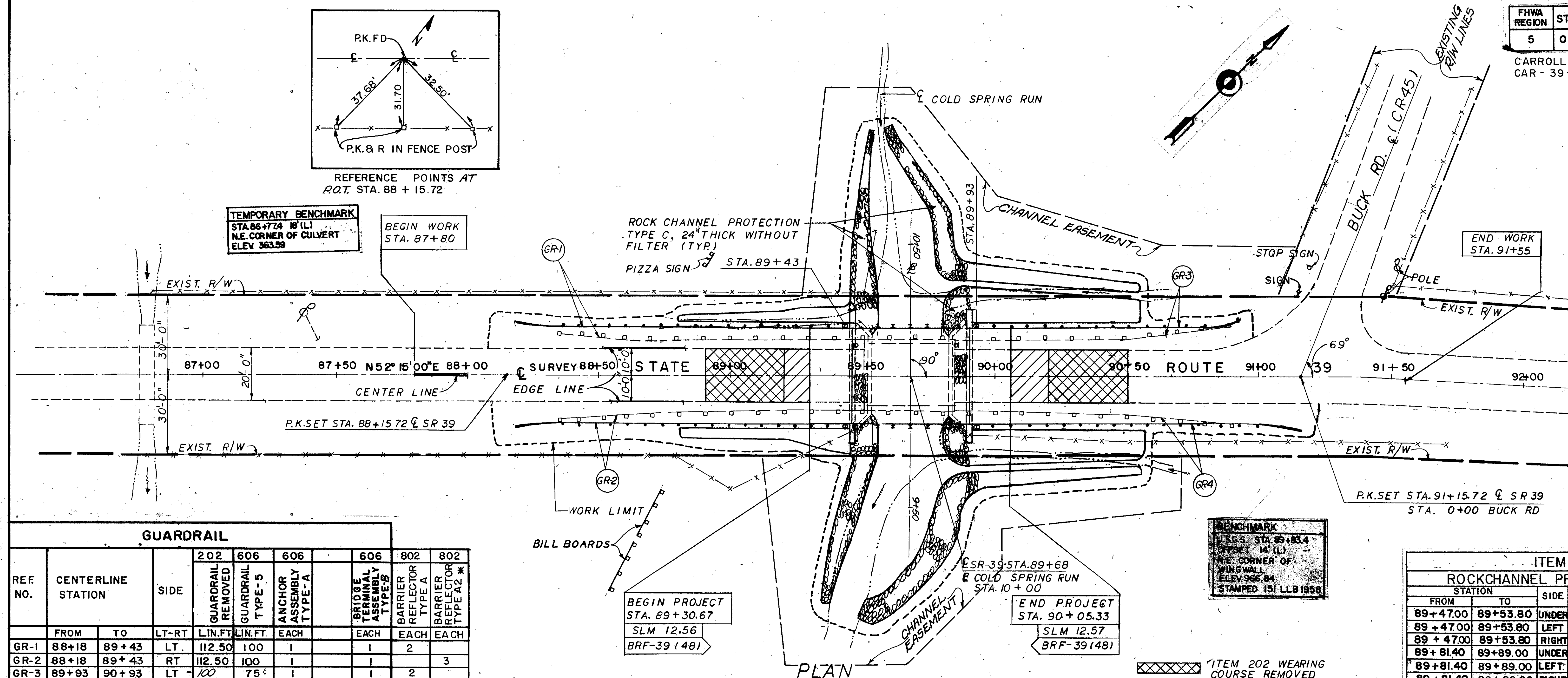
EXISTING BRIDGE DATA

TYPE: SIMPLE SPAN CONCRETE BEAM
SPAN: 30'-0" SPAN
ROADWAY: 23'-8" FACE TO FACE CURB
ALIGNMENT: TANGENT
SKEW: NONE
APPROACH SLAB: NONE
WEARING SURFACE: ASPHALT CONCRETE
STRUCTURE FILE NO. 1000365

PROPOSED BRIDGE DATA

TYPE: SINGLE SPAN PRESTRESSED PRECAST CONCRETE BOX BEAM ON CAPPED PILE ABUTMENTS
SPAN: 43'-6" C/C BEARINGS
ROADWAY: 36'-0" FACE TO FACE GUARDRAIL
ALIGNMENT: TANGENT
SKEW: NONE
APPROACH SLAB: AS-1-81 (15'-0" LONG)
LOADING: HS-20-44 & ALTERNATE MILITARY LOADING
WEARING SURFACE: ASPHALT CONCRETE (2 1/2" MIN)
CROWN: 3/16" / FT.

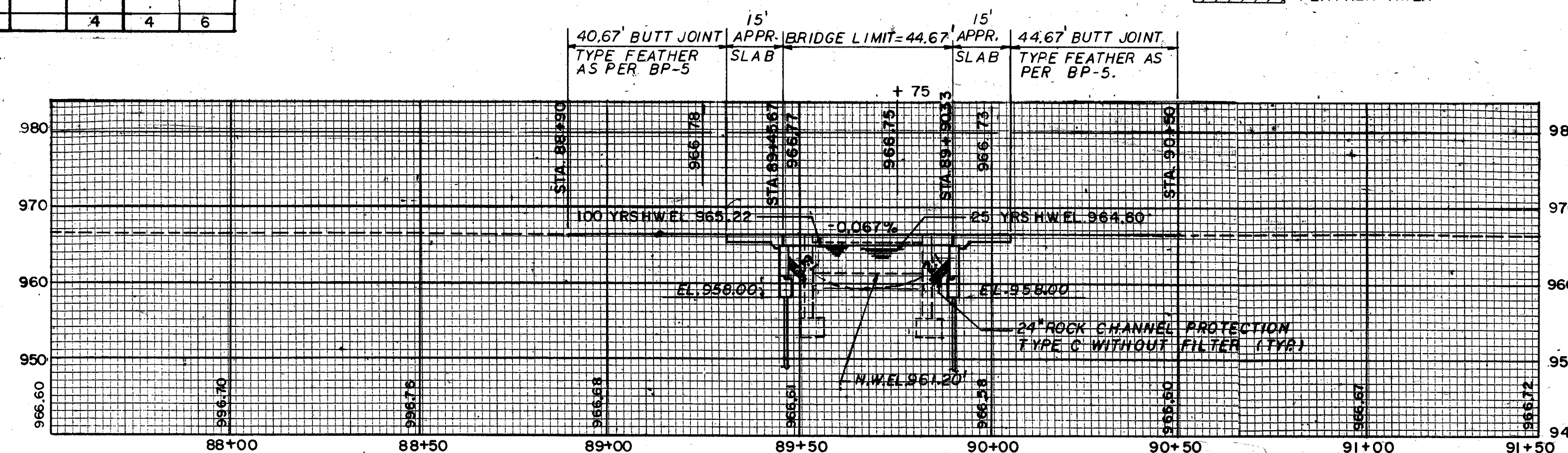
PLAN AND PROFILE



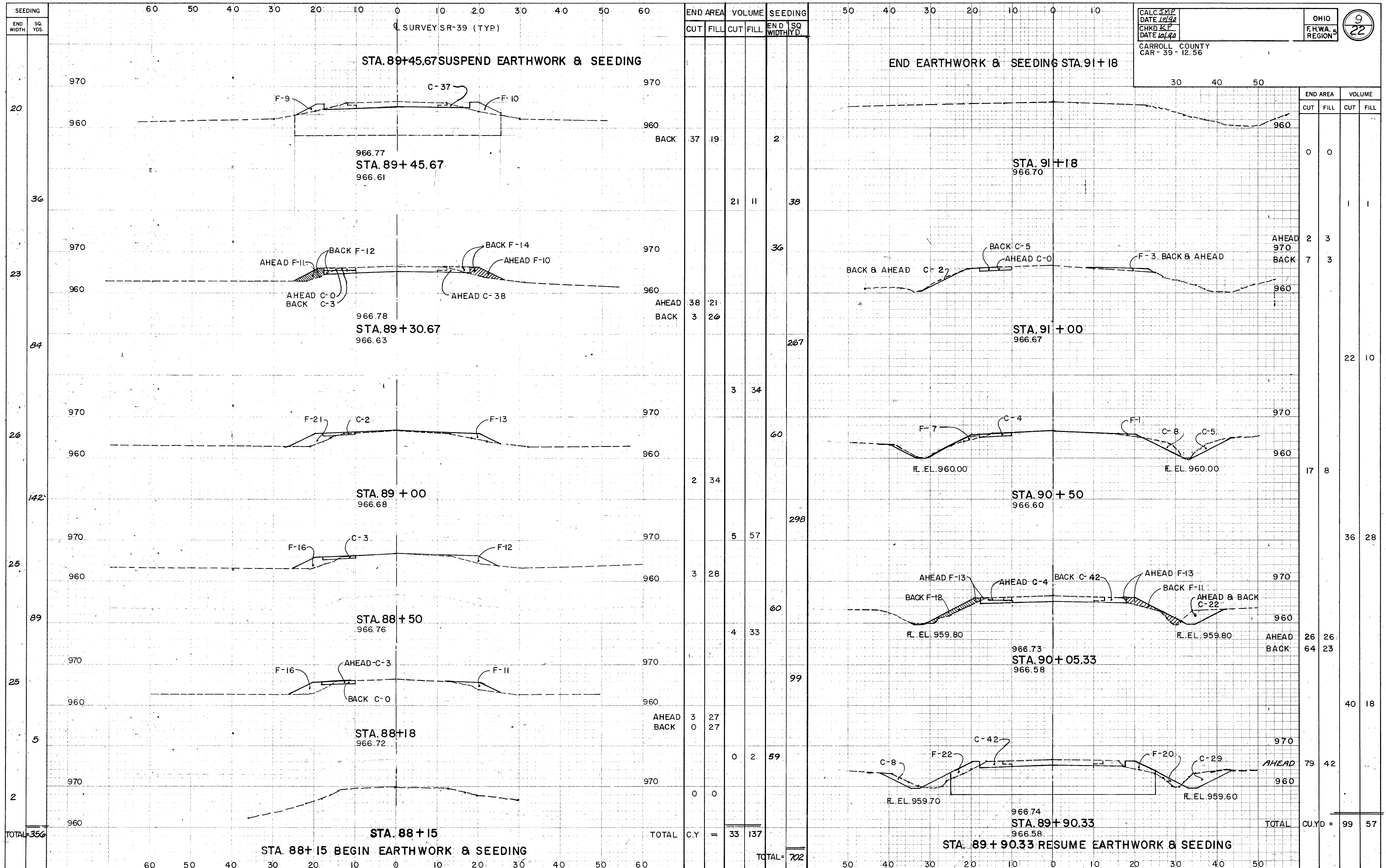
GUARDRAIL									
REF. NO.	CENTERLINE STATION	SIDE	202 GUARDRAIL REMOVED	606 GUARDRAIL TYPE-5	606 ANCHOR ASSEMBLY TYPE-A	606 BRIDGE TERMINAL ASSEMBLY TYPE-B	802 BARRIER REFLECTOR TYPE-A	802 BARRIER REFLECTOR TYPE-A2 *	
	FROM	TO	LT-RT	LIN. FT.	LIN. FT.	EACH	EACH	EACH	
GR-1	88+18	89+43	LT	112.50	100	1	1	2	3
GR-2	88+18	89+43	RT	112.50	100	1	1	2	3
GR-3	89+93	90+93	LT	100	75	1	1	2	3
GR-4	89+93	91+18	RT	100	100	1	1	2	3
TOTAL				425	375	4	4	4	6

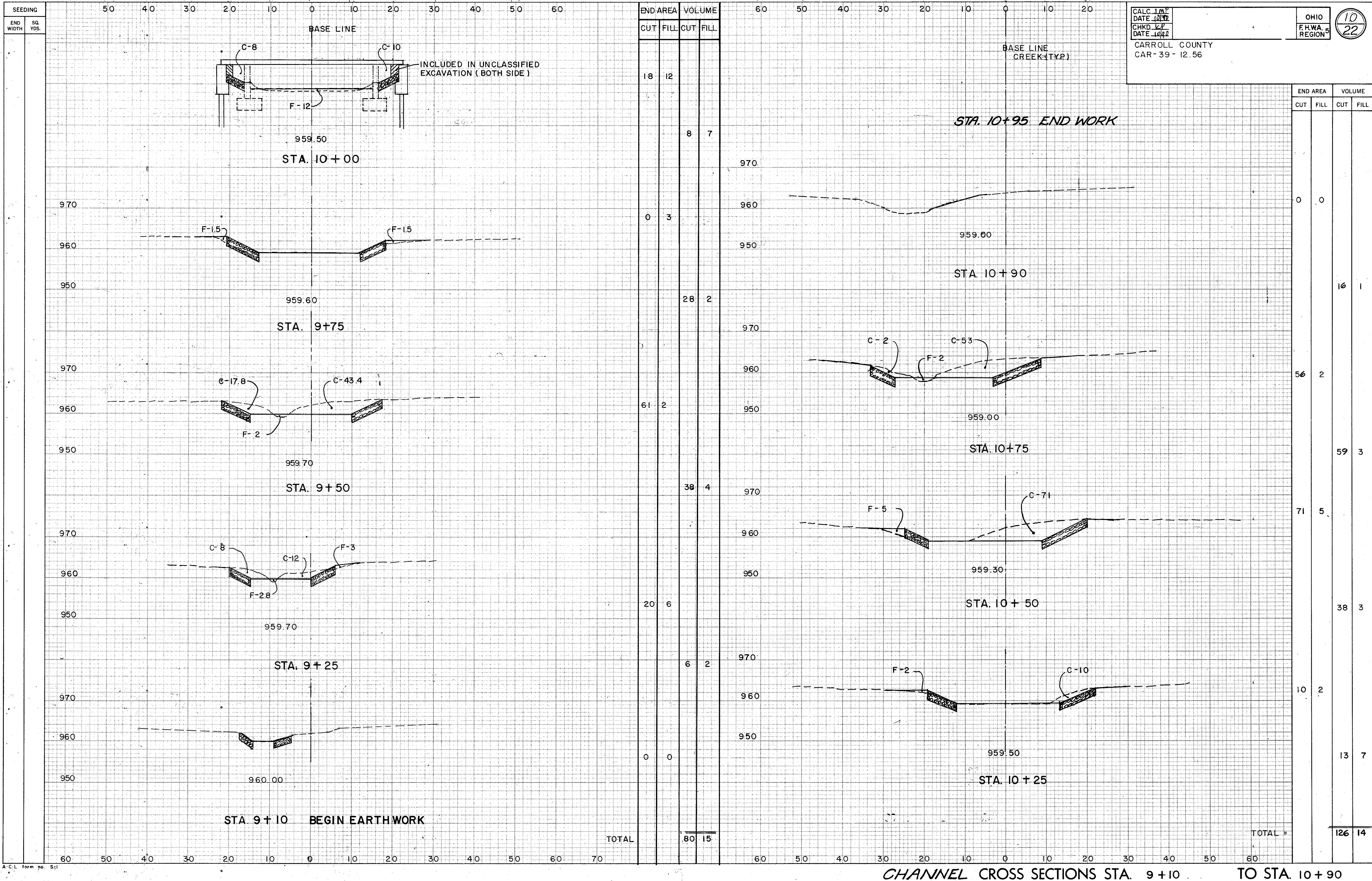
* SEE NOTE ON SHEET NO. 5 TRAFFIC DETAILS.

PAVEMENT MARKINGS				
CENTERLINE STATION	SIDE	642 CENTER LINE	642 EDGE LINE	
FROM	TO	LT/RT	MILES	MILES
87+80	91+55		0.07	0.14
TOTAL			0.07	0.14

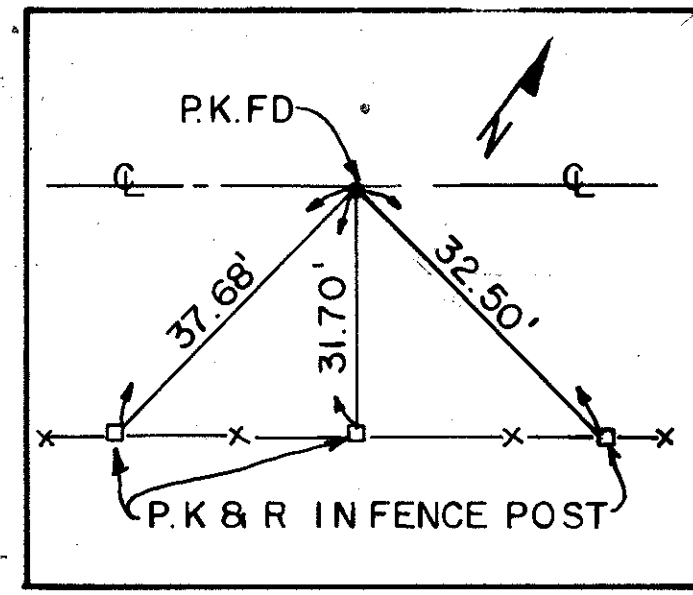


PROFILE ALONG CENTERLINE S.R. 39

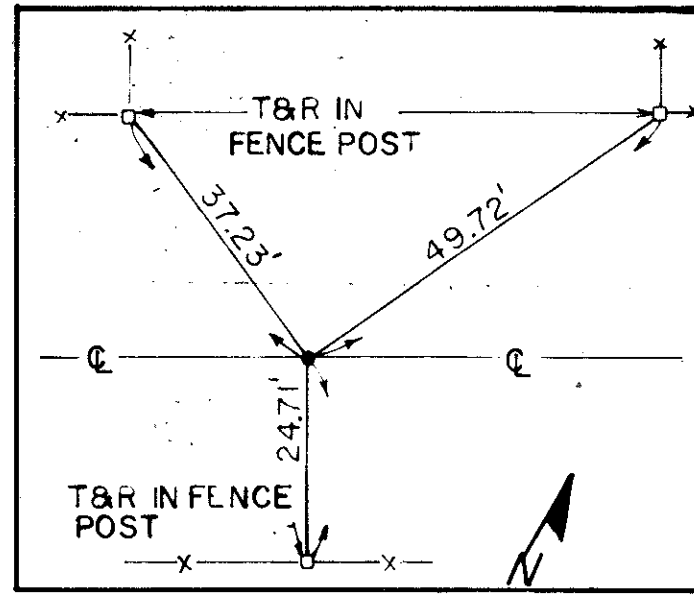




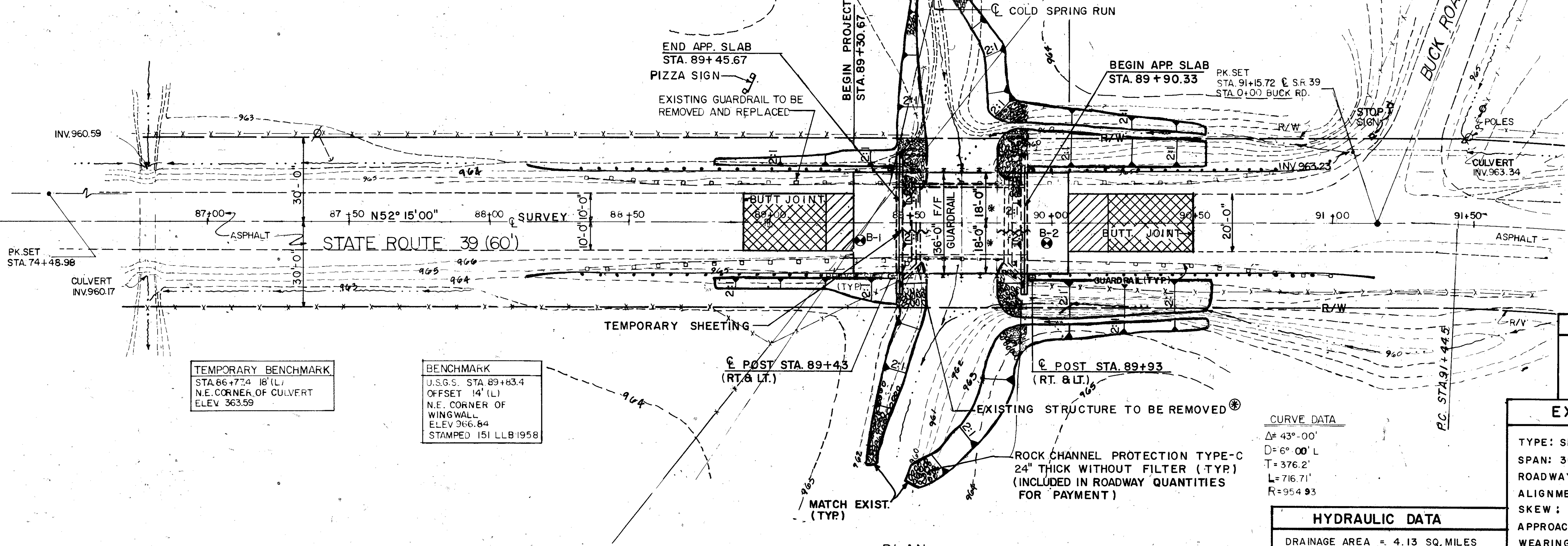
NOTE
T&R = TACK & RIBBON



REFERENCE POINTS
AT STA. 88 + 15.72



REFERENCE POINTS
AT STA. 91 + 15.72



EARTHWORK LIMITS SHOWN ARE APPROXIMATE ACTUAL SLOPE SHALL CONFORM TO PLAN CROSS SECTIONS
⊗ THE ABUTMENT SHALL BE REMOVED ABOVE ELEVATIONS 960.90 (SEE PROFILE BELOW)

TEMPORARY BENCHMARK
STA. 91 + 09.25 (L)
N.E. CORNER OF CULVERT
ELEV. 963.23'

TEMPORARY BENCHMARK
STA. 86 + 72.4 18' (L)
N.E. CORNER OF CULVERT
ELEV. 963.59

BENCHMARK
U.S.G.S. STA. 89 + 83.4
OFFSET 14' (L)
N.E. CORNER OF WINGWALL
ELEV. 966.84
STAMPED 151 LLB 1958

DESIGN DESIGNATION

CURRENT (1989) ADT = 2640 VEHICLES
DESIGN YEAR (2009) ADT = 5124 VEHICLES

EXISTING BRIDGE DATA

TYPE: SIMPLE SPAN CONCRETE BEAM
SPAN: 30'-0" SPAN
ROADWAY: 23'-8" FACE TO FACE CURB
ALIGNMENT: TANGENT
SKEW: NONE
APPROACH SLAB: NONE
WEARING SURFACE: ASPHALT CONCRETE
STRUCTURE FILE NO. 1000365

PROPOSED BRIDGE DATA

TYPE: SINGLE SPAN PRESTRESSED PRECAST CONCRETE BOX BEAM ON CAPPED PILE ABUTMENTS
SPAN: 43'-6" C/C BEARINGS
ROADWAY: 36'-0" FACE TO FACE OF GUARDRAIL
ALIGNMENT: TANGENT
SKEW: NONE
APPROACH SLAB: AS-1-B1 (15'-0" LONG)
LOADING: HS-20-44 & ALTERNATE MILITARY LOADING
WEARING SURFACE: ASPHALT CONCRETE (2 1/2" MIN.)
CROWN: 3/16" / FT.

CURVE DATA
Δ = 43°-00'
D = 6°-00' L
T = 376.2'
L = 716.71'
R = 954.93

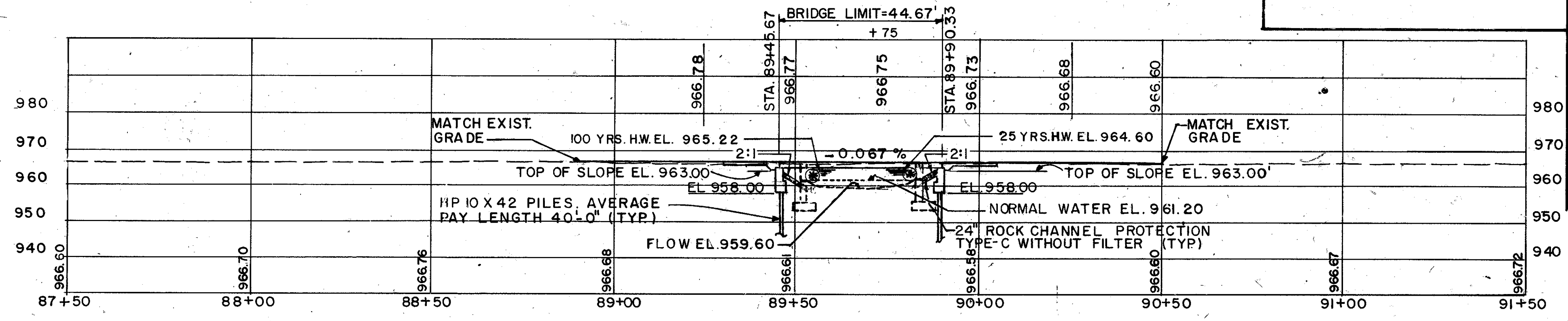
HYDRAULIC DATA

DRAINAGE AREA = 4.13 SQ. MILES
Q₁₀₀ = 1261 CFS Q₂₅ = 919 CFS
V₁₀₀ = 6.49 FT/SEC. V₂₅ = 5.30 FT/SEC
HWD₁₀₀ = 965.22 HWD₂₅ = 964.60

PLAN

* PLUS FIT-UP
⊗ SOIL BORING LOCATION

REVIEWED BY BURGESS & NIPLE, LTD.
JCS 11/20/90



PROFILE ALONG CENTERLINE S.R. 39

R. P. MADISON INTERNATIONAL
ARCHITECTS-ENGINEERS-PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

SITE PLAN

BRIDGE NO. CAR-39-1256

OVER

COLD SPRING RUN

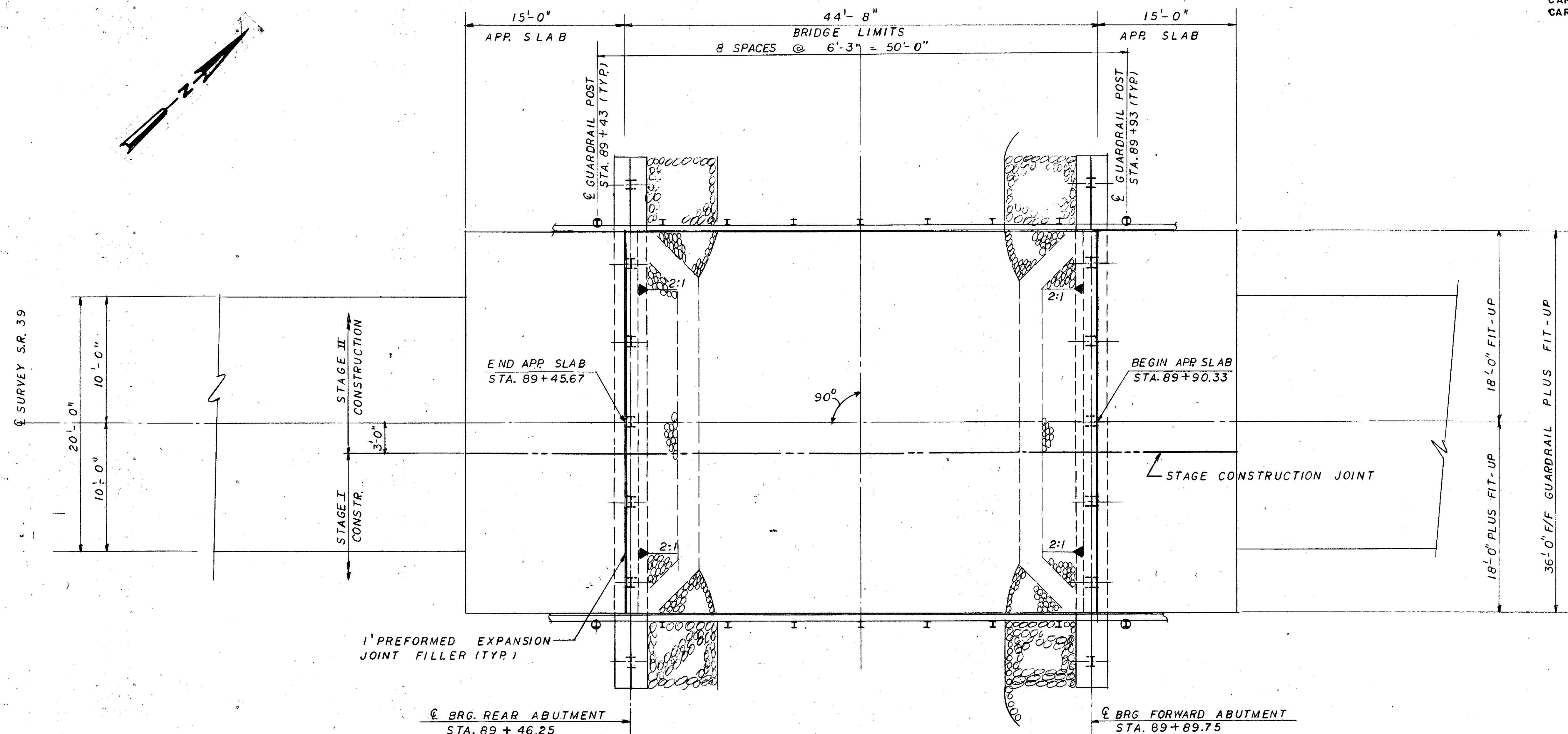
CARROLL COUNTY, STA. 89+45.67 TO 89+90.33

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
M.P.	J.M.P.	RCW	Pharma		

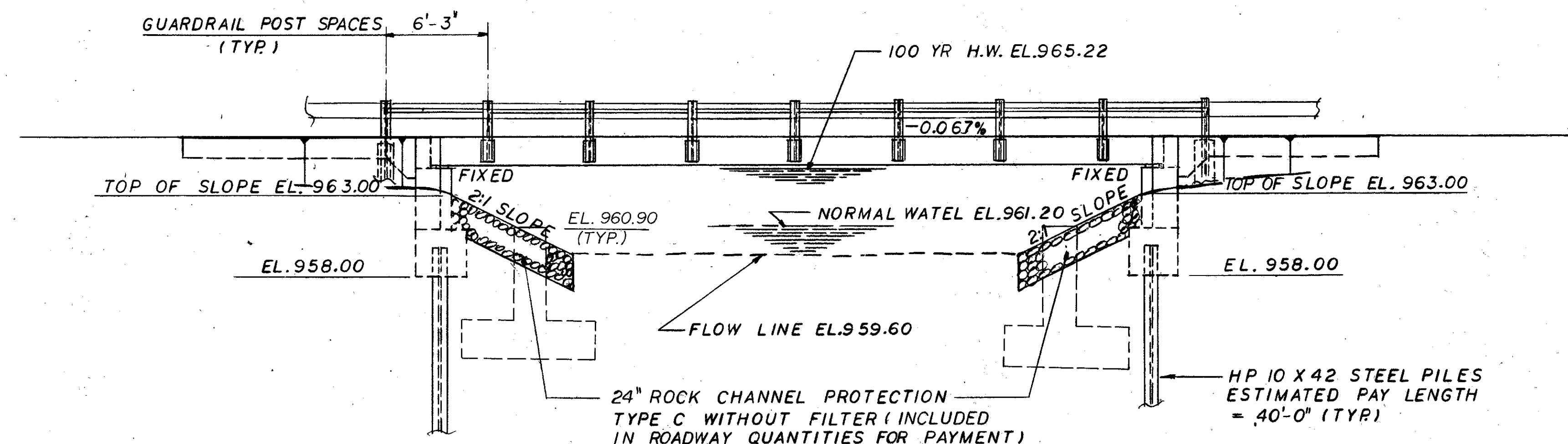
FHWA REGION	STATE	PROJECT
5	OHIO	BRS-59(3)

12
22

CARROLL COUNTY
CAR-39-1256



PLAN



ELEVATION

R.R. MADISON INTERNATIONAL
ARCHITECTS-ENGINEERS-PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

GENERAL PLAN
BRIDGE NO. CAR-39-1256
OVER
COLD SPRING RUN

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	INITIALS
K.P.	J.P.	M.P.	L.J.		

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

13
22

CARROLL COUNTY
CAR-39-12.56

QUANTITIES CALCULATED BY: J.M.P.
QUANTITIES CHECKED BY: K.P.

REFERENCE SHALL BE MADE TO THE FOLLOWING:

STANDARD DRAWINGS:

AS-1-81 DATED 11-27-81
DBR-2-73 DATED 4-10-73
PSBD-1-81 DATED 6-20-89 (REVISED)
(SHEETS 1 & 2 & 3)
DESIGN SPECIFICATIONS:

SUPPLEMENTAL SPECIFICATIONS:

836 DATED 11-12-85

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

DESIGN DATA:

DESIGN LOADING: HS20-44 AND ALTERNATE MILITARY LOADING.

CONCRETE CLASS C: COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL ASTM A615, A616 OR 617 GRADE 60 MINIMUM YIELD STRENGTH = 60,000 P.S.I. PRESTRESSED BOX BEAMS MAY BE GRADE 40 MINIMUM YIELD STRENGTH = 40,000 P.S.I.

CONCRETE FOR PRESTRESSED BEAMS: UNIT STRESS 2,200 PSI COMPRESSION, 444 PSI TENSION

PRESTRESSING STRAND ASTM A416 F's = 270,000 PSI, 1/2" ϕ , SEVEN WIRE, UNCOATED STRESS RELIEVED STRAND.
INITIAL STRESS - 0.70 F's
DECK PROTECTION METHOD

TYPE D WATERPROOFING, ASPHALT CONCRETE OVERLAY, STEEL DRIP STRIP AND SEALING OF CONCRETE SURFACES.

REMOVAL OF EXISTING STRUCTURE

AS SHOWN IN STAGE CONSTRUCTION DRAWING, SHEET 8/9 AND TO THE LIMIT SHOWN ON SHEET 17/9.

PILE DESIGN LOADS:

THE DESIGN LOAD FOR THE ABUTMENT PILES IS 40 TONS PER PILE.

REINFORCING STEEL SPLICES:

UNLESS INDICATED ON THE DRAWINGS, REINFORCING BARS SHALL BE SPLICED AS FOLLOWS:

BAR SIZE	TOP BARS(*)	OTHER BARS
#4	1'-10"	1'-4"
#5	2'-5"	1'-8"
#6	2'-10"	2'-0"
#7	3'-7"	2'-7"
#8	4'-9"	3'-5"
#9	6'-0"	4'-3"
#10	7'-8"	5'-6"

(*) HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

MAINTENANCE OF TRAFFIC: SEE SHEET 4, 5 & 6 OF ROADWAY PLANS.

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR REFUSAL SHALL BE CONSIDERED AS ATTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES:

A CONCRETE SEALER SHALL BE APPLIED TO THE FOLLOWING CONCRETE SURFACES:

- ABUTMENT BRIDGE SEATS AND EXTENDING FROM THE LEVEL OF THE BRIDGE SEAT TO THE LINE OF ROCK CHANNEL PROTECTION AT THE FACE OF BREAST WALL, EPOXY SEALER
- WINGWALL TOP AND EXTENDING IN THE FRONT FACE TO THE LINE OF ROCK CHANNEL PROTECTION, EPOXY SEALER.
- BOX BEAM FASCIA AND SIX (6) INCHES UNDER DECK RETURN, SEALER. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

UTILITY LINE

ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND OWNER(S) ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

PILE POINTS

STEEL PILE POINTS SHALL BE USED TO PROTECT THE TIPS OF THE PROPOSED PILING. THE STEEL POINTS SHALL BE FURNISHED BY ASSOCIATED PILE AND FITTING CORPORATION, 262 RUTHERFORD BOULEVARD, CLIFTON, NEW JERSEY 07014; INTERNATIONAL CONSTRUCTION EQUIPMENT, INC., 301 WAREHOUSE DRIVE, MATTHEWS, NORTH CAROLINA 28015; DOUGHERTY FOUNDATION PRODUCTS, INC., P.O. BOX 688, FRANKLIN LAKES, NEW JERSEY 07417; VERSA STEEL INC., 3601 N.W. YEON AVENUE, P.O. BOX 10559, PORTLAND, OREGON 97210 OR BY A MANUFACTURER THAT CAN FURNISH A STEEL POINT THAT IS ACCEPTABLE TO THE DIRECTOR.

EMBANKMENT CONSTRUCTION:

THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS AND PILES DRIVEN.

MECHANICAL CONNECTORS:

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE INCLUDED WITH THE CONNECTOR SHALL BE AS GIVEN BY THE DIMENSION "L" SHOWN ON THE PLANS.

CONNECTORS AND DOWEL BARS USED WITH EPOXY COATED BARS SHALL BE EPOXY COATED, COATING FOR BOTH CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATING WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY AND UNIFORMITY MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

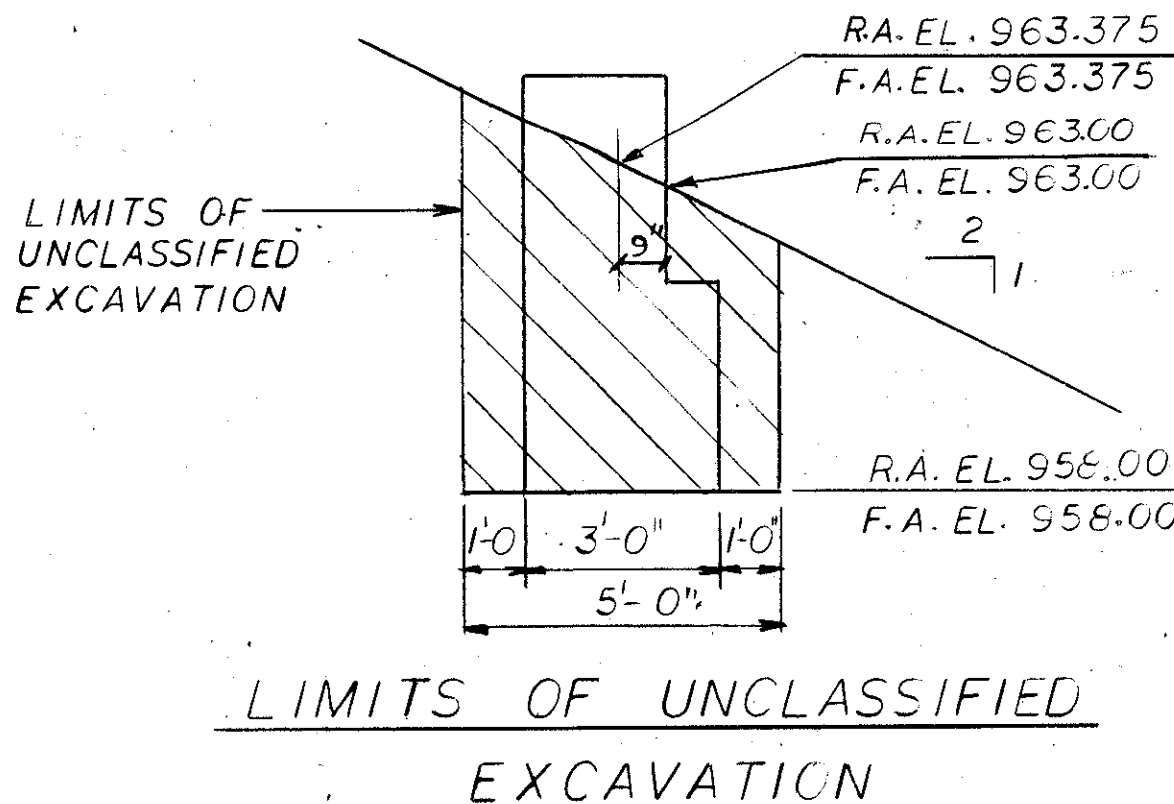
CONNECTORS AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509 AND BE INCLUDED IN THE BID PRICE PER POUND FOR ITEM 509.

ELASTOMERIC TEST PAD

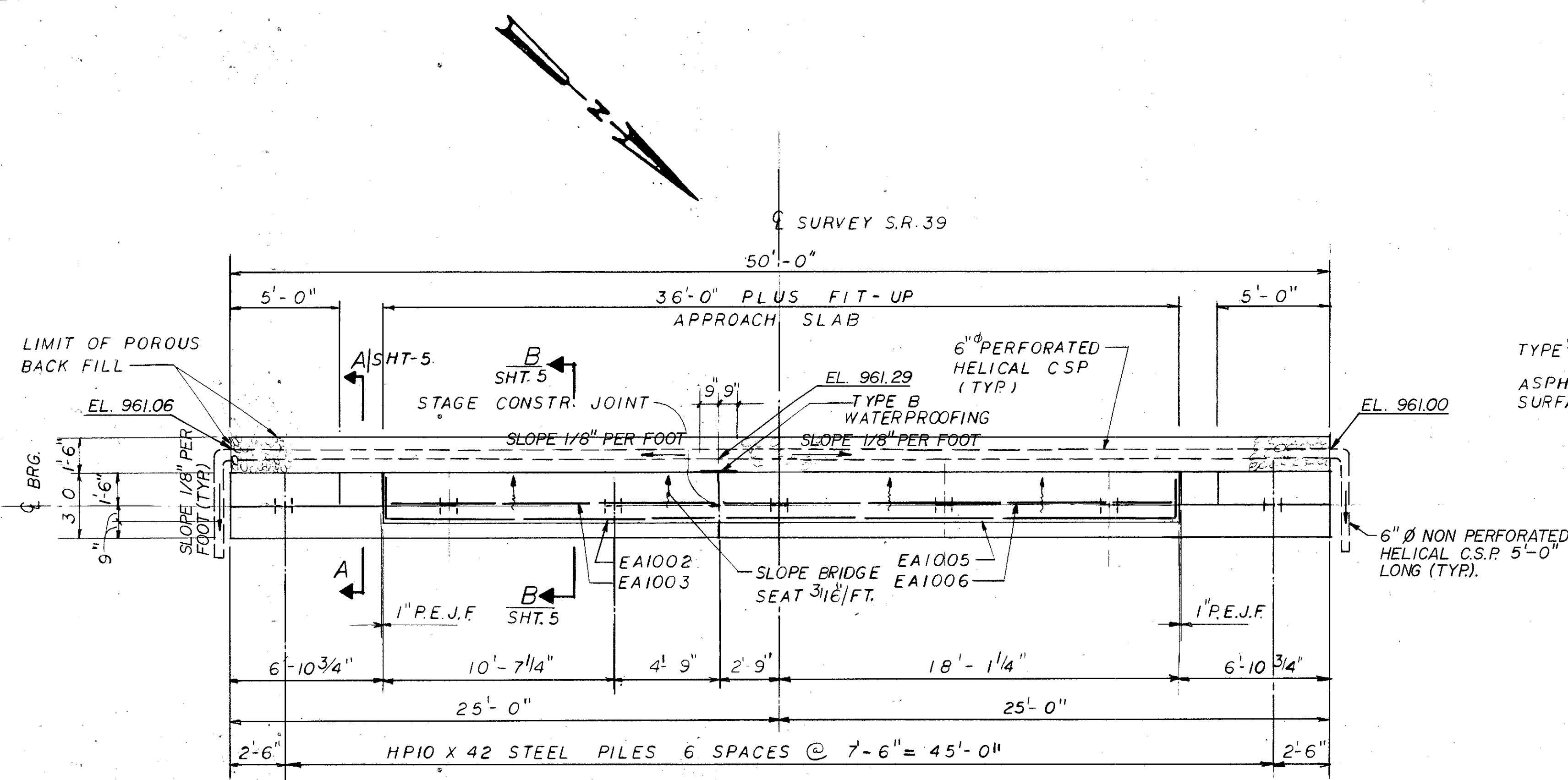
THE ELASTOMERIC BEARING MANUFACTURER SHALL SUPPLY A PLAIN ELASTOMERIC PAD FOR TESTING PURPOSES. THE PAD SHALL BE FURNISHED FROM THE SAME BATCH OF NEOPRENE THAT IS USED IN THE FABRICATION OF THE LAMINATED ELASTOMERIC BEARINGS AND THE FABRICATOR SHALL CERTIFY THE IDENTIFY OF THE ELASTOMER. THE PAD SHALL 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.

ESTIMATED STRUCTURE QUANTITIES

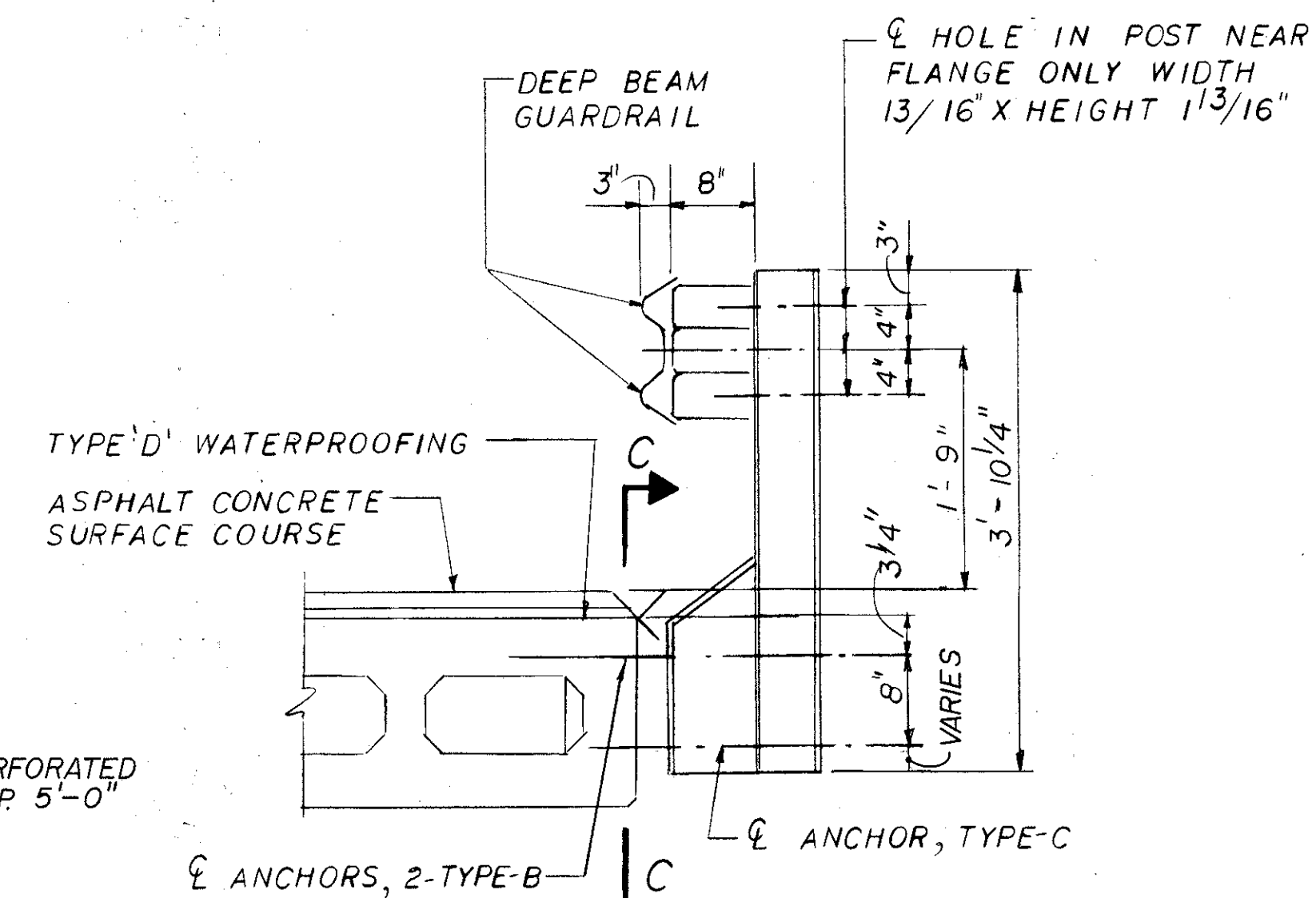
ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	ABUTMENT	SUPER-STRUCT.	GENERAL
202	11002	LUMP		STRUCTURE REMOVED, OVER 20' SPAN.			LUMP
403	20000	12	CU.YD.	ASPHALT CONCRETE, AC-20		12	
404	20000	6	CU.YD.	ASPHALT CONCRETE, AC-20		6	
503	11100	LUMP		COFFERDAMS, CRIB AND SHEETING			LUMP
503	21100	104	CU.YD.	UNCLASSIFIED EXCAVATION	104		
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION			LUMP
507	11100	560	LIN.FT.	STEEL PILES, HP10X42 (LESS THAN 1000 L.F. TOTAL)	560		
507	93300	14	EACH	STEEL POINT (OR SHOE)	14		
509	11400	3219	POUND	REINFORCING STEEL, GRADE-60 (LESS THAN 5000 TOTAL LBS)	3219		
509	15800	3248	POUND	EPOXY COATED REINFORCING STEEL, GRADE 60	3248		
511	44000	63	CU.YD.	CLASS C CONCRETE, ABUTMENT INCLUDING FOOTING (SPILL THRU TYPE WITHOUT BACKWALL)	63		
512	44400	2	SQ.YD.	TYPE B WATERPROOFING	2		
512	55800	198	SQ.YD.	TYPE D WATERPROOFING		198	
SPECIAL	51267500	19	SQ.YD.	SEALING OF CONCRETE SURFACE (SEE PROPOSAL NOTE)		19	
SPECIAL	51267502	38	SQ.YD.	SEALING OF CONCRETE SURFACE (EPOXY) (SEE PROPOSAL NOTE)		38	
515	50700	4	EACH	PRESTRESSED CONCRETE BOX BEAM (40-50' LENGTH B17-36, B21-36, B27-36) (SEE PROPOSAL NOTE)		4	
515	53900	6	EACH	PRESTRESSED CONCRETE BOX BEAM (40-52' LENGTH B17-48, B21-48, B27-48) (SEE PROPOSAL NOTE)		6	
516	13600	99	SQ.FT.	1" PREFORMED EXPANSION JOINT FILLER		99	
516	31011	73	LIN.FT.	2" DEEP JOINT SEALER, AS PER PLAN		73	
SPECIAL	51631200	73	LIN.FT.	SAWING AND SEALING BITUMINOUS CONCRETE JOINTS		73	
516	43100	40	EACH	ELASTOMERIC BEARING PAD WITH INTERNAL LAMINATES ONLY (NEOPRENE LESS THAN 2" THICK)		40	
517	72300	100	LIN.FT.	RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP TYPE 2 STEEL POSTS AND ANCHOR BOLTS)		100	
518	21200	21	CU.YD.	POROUS BACKFILL WITH FILTER FABRIC	21		
SPECIAL	51822200	69	SQ.FT.	STEEL DRIP STRIP		69	
518	41100	100	LIN.FT.	6" PERFORATED HELICAL CORRUGATED STEEL PIPE 707.01	100		
518	41200	20	LIN.FT.	6" NON-PERFORATED HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01	20		



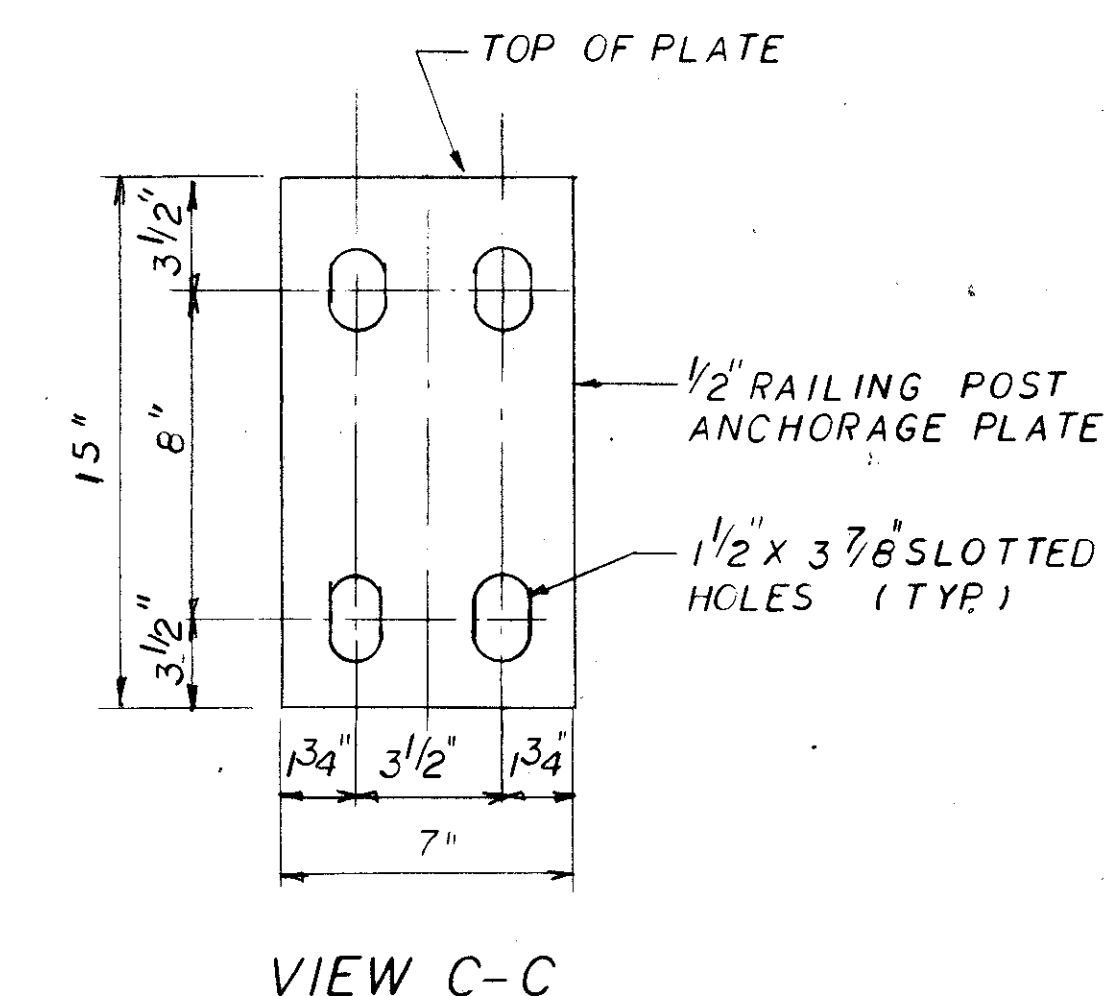
R. P. MADISON INTERNATIONAL ARCHITECTS - ENGINEERS - PLANNERS 2930 EUCLID AVENUE CLEVELAND, OHIO 44115				3/9
GENERAL NOTES & ESTIMATED QUANTITIES				
BRIDGE NO. CAR-39-12.56 OVER COLD SPRING RUN				
CARROLL COUNTY STA. 89+45.67 TO 89+90.33				
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
M.P.	J.M.P.	K.P.	L.J.	



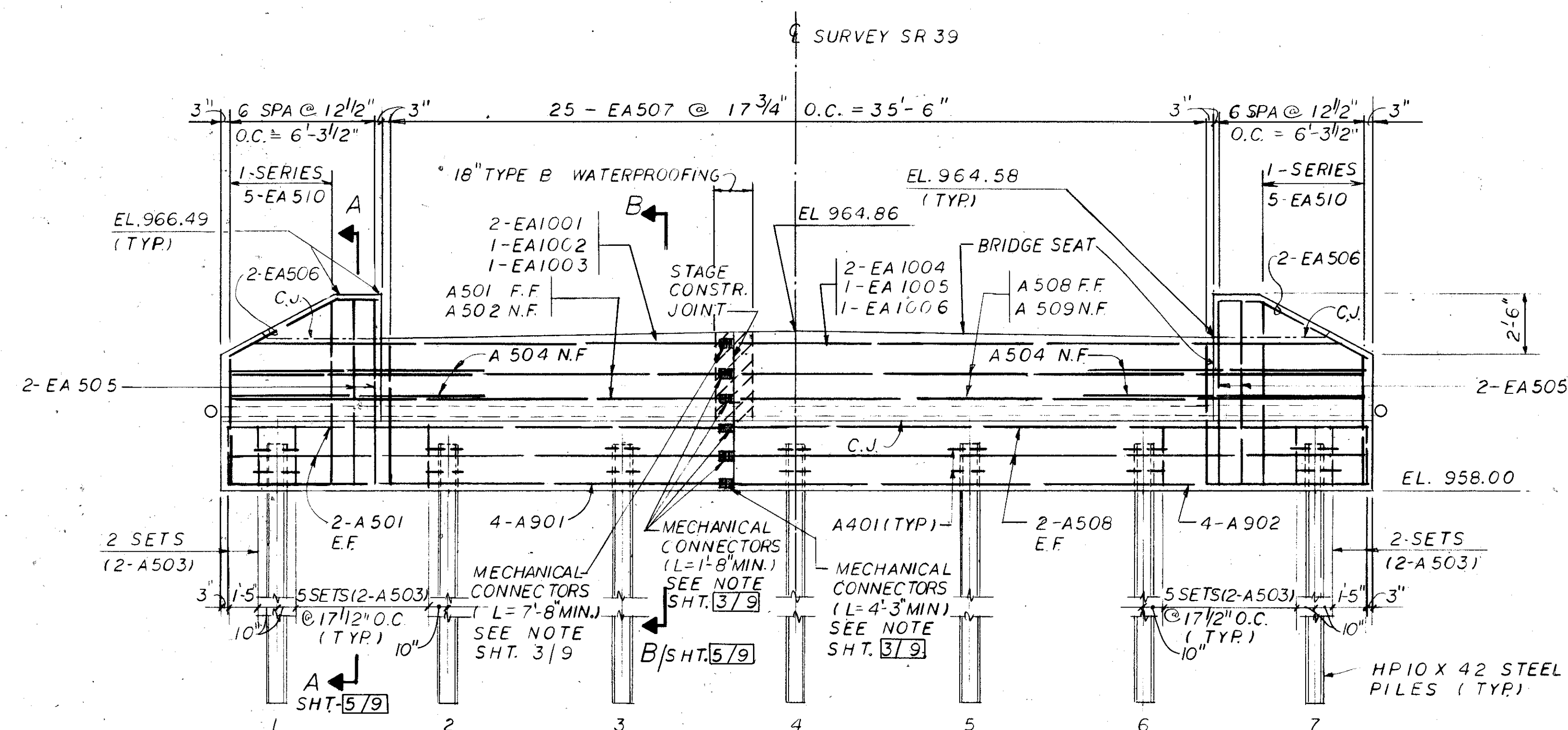
PLAN REAR ABUTMENT



DETAIL - B
(DEEP BEAM GUARDRAIL)



VIEW C-C



ELEVATION

LEGEND

E.F.=EACH FACE
F.F.=FAR FACE
N.F.=NEAR FACE
C.J.=CONSTRUCTION JOINT
O.C.=ON CENTER

R.P. MADISON INTERNATIONAL
ARCHITECTS-ENGINEERS-PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

REAR ABUTMENT
BRIDGE NO. CAR-39-1256
OVER
COLD SPRING RUN

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
MP	JMP	KP	LJ		

NOTES

1. BEAM MANUFACTURER WILL TAKE EXTRA CARE IN STORING BEAMS PRIOR TO SHIPMENT TO SITE. THEY SHALL BE STORED IN THE POSITION WHICH SHALL CORRESPOND WITH THEIR ERECTED POSITION.
2. FABRICATOR'S SHOP DRAWING SHALL SHOW COMPLETE DETAILS OF THE REINFORCING. THE TOP STIRRUPS SHALL BE DETAILED TO FURNISH 2" CLEARANCE.
3. COST OF DOWEL HOLES AND ANCHOR DOWELS, INCLUDING INSTALLATION SHALL BE INCLUDED WITH ITEM 515, PRESTRESSED CONCRETE MEMBERS FOR PAYMENT.

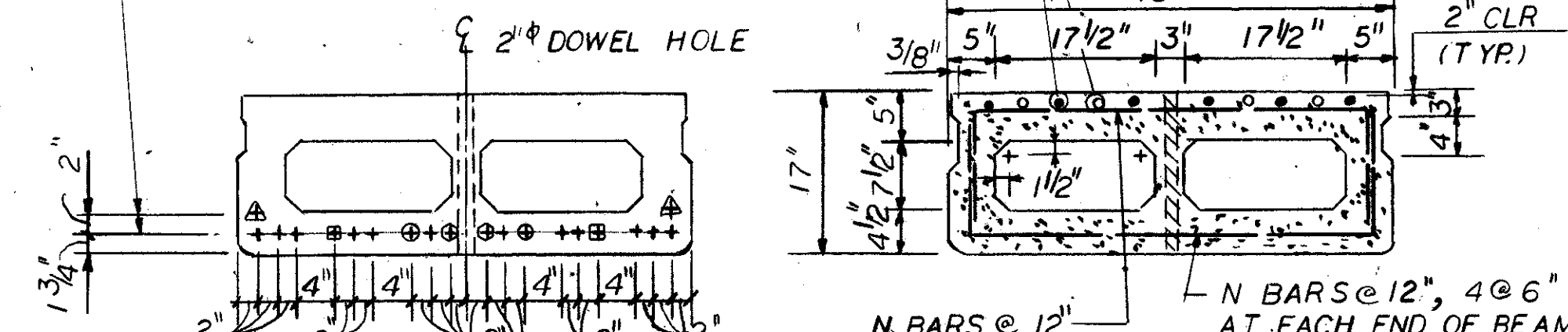
DETAIL-A (SHEAR KEY)

20-1/2" DIA. 270K PRESTRESSING STRANDS
INITIAL TENSION 28900 LBS PER STRANDS

NOTES

- ⊕ DEBONDED 1'-6" LENGTH AT EITHER END OF BEAM.
- ⊕ DEBONDED 2'-6" LENGTH AT EITHER END OF BEAM.
- ⊕ DEBONDED 3'-6" LENGTH AT EITHER END OF BEAM.
- ⊕ DEBONDED 7'-6" LENGTH AT EITHER END OF BEAM.

6-#4 BARS FULL LENGTH EQUALLY SPACED. PROVIDE ADDITIONAL 4-#4 BARS 10'-0" LONG AT EACH END.



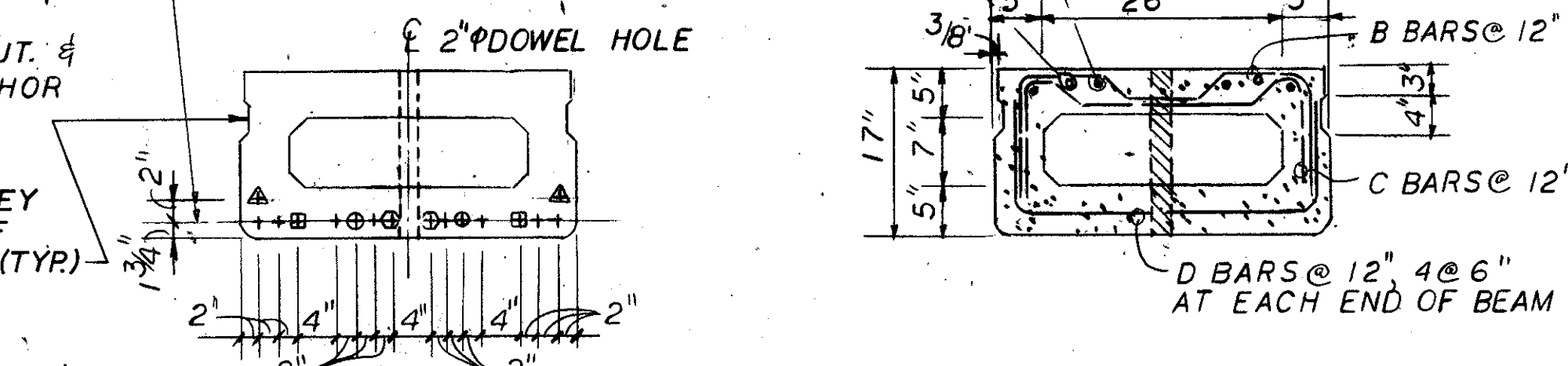
B17X48 BEAM CROSS SECTIONS

(SEE PSBD-1-81 FOR REMAINDER OF REINF.)

16-1/2" DIA. 270K PRESTRESSING STRANDS
INITIAL TENSION 28900 LBS PER STRANDS

PROVIDE ADDITIONAL 2-#4 BARS 10'-0" LONG AT EACH END.

4-#5 BARS FULL LENGTH EQUALLY SPACED.

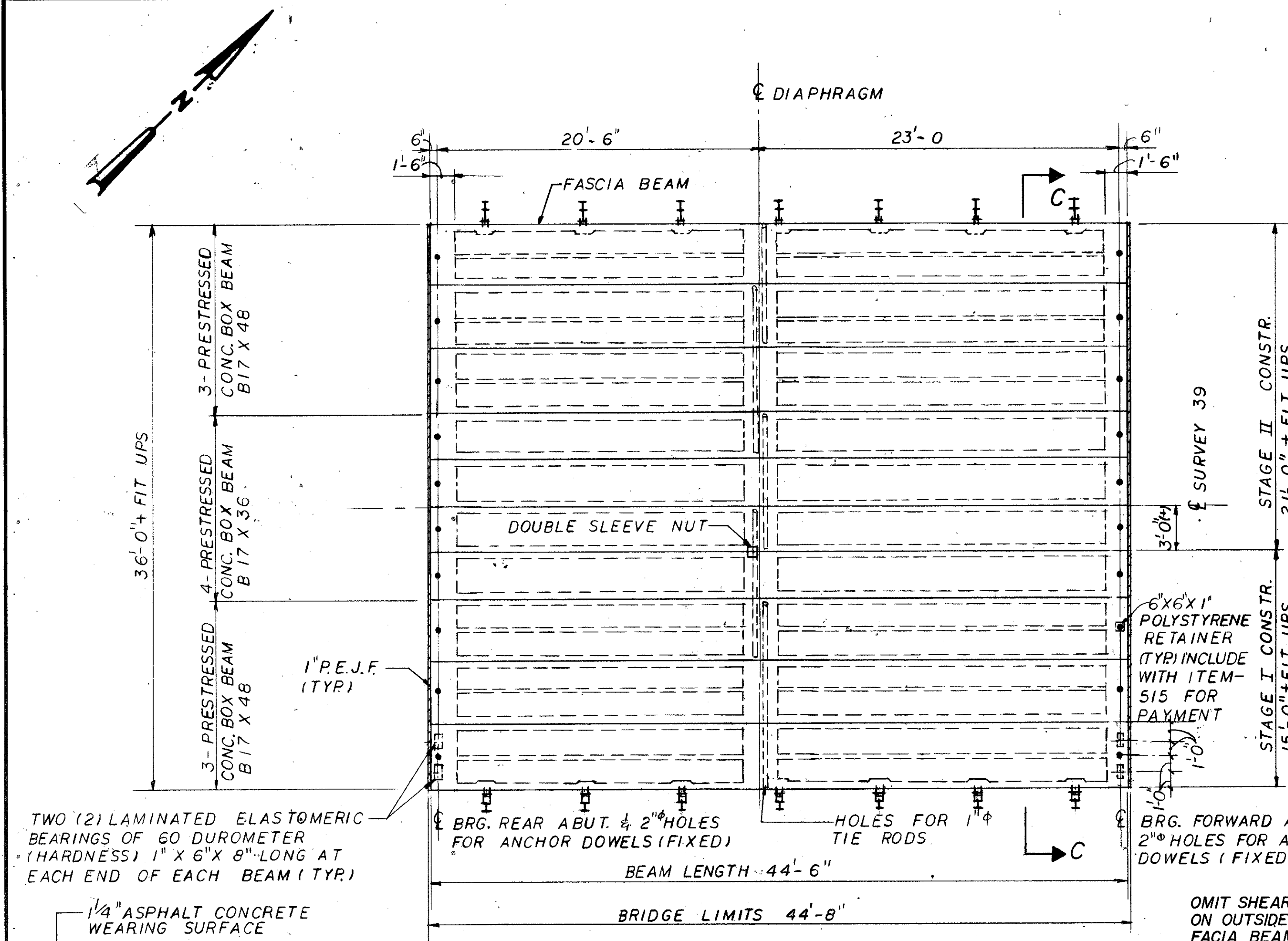


B17X36 BEAM CROSS SECTIONS

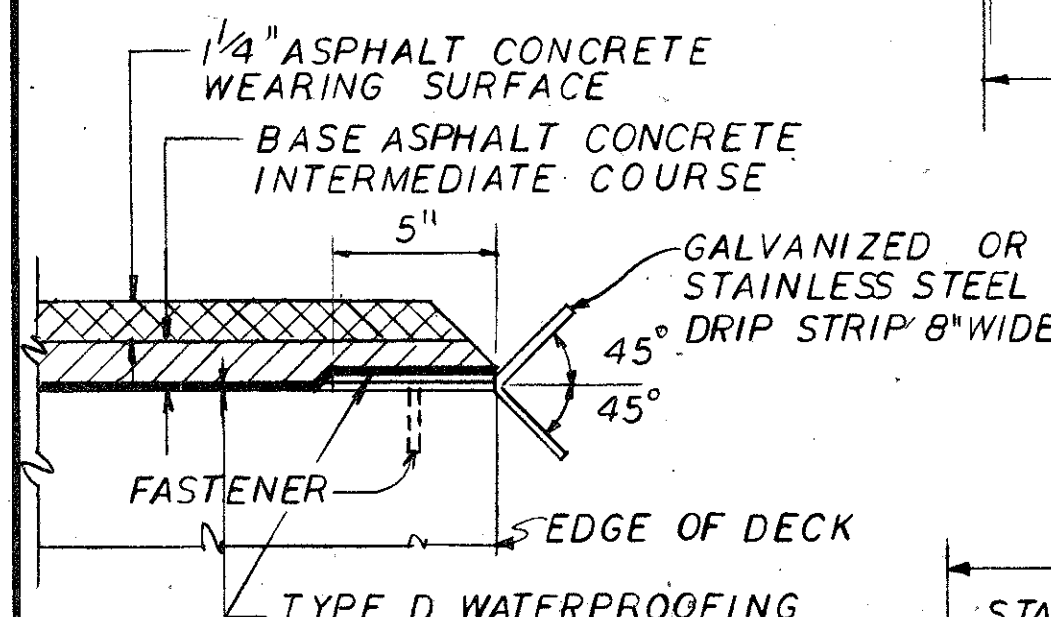
(SEE PSBD-1-81 FOR REMAINDER OF REINF.)

CALCULATED CAMBER: AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 2 1/2" CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS 1/8" NET FINAL CAMBER OF BEAMS IS 2 3/8". THIS IS 2 3/8" IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE FROM 1 1/4" AT CENTER OF SPANS TO 3 3/8" AT ENDS OF SPANS.

DRIP STRIP: PRIOR TO APPLYING TYPE D WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGE OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1' 6" C/C. MAX. WITH 1/4" X 5/32" X 1/4" FLATHEAD DRIVE PIN AND WASHER (LENGTH X SHANK DIA X HEAD DIA) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK ENDING AT THE FACE OF THE ABUTMENT WINGWALL WHERE SPLICES ARE REQUIRED, A 3" (MIN) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" X 0.0105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GAGE ASTM-A167, TYPE-304, MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR ITEM SPECIAL, SQ. FT. STEEL DRIP STRIP WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

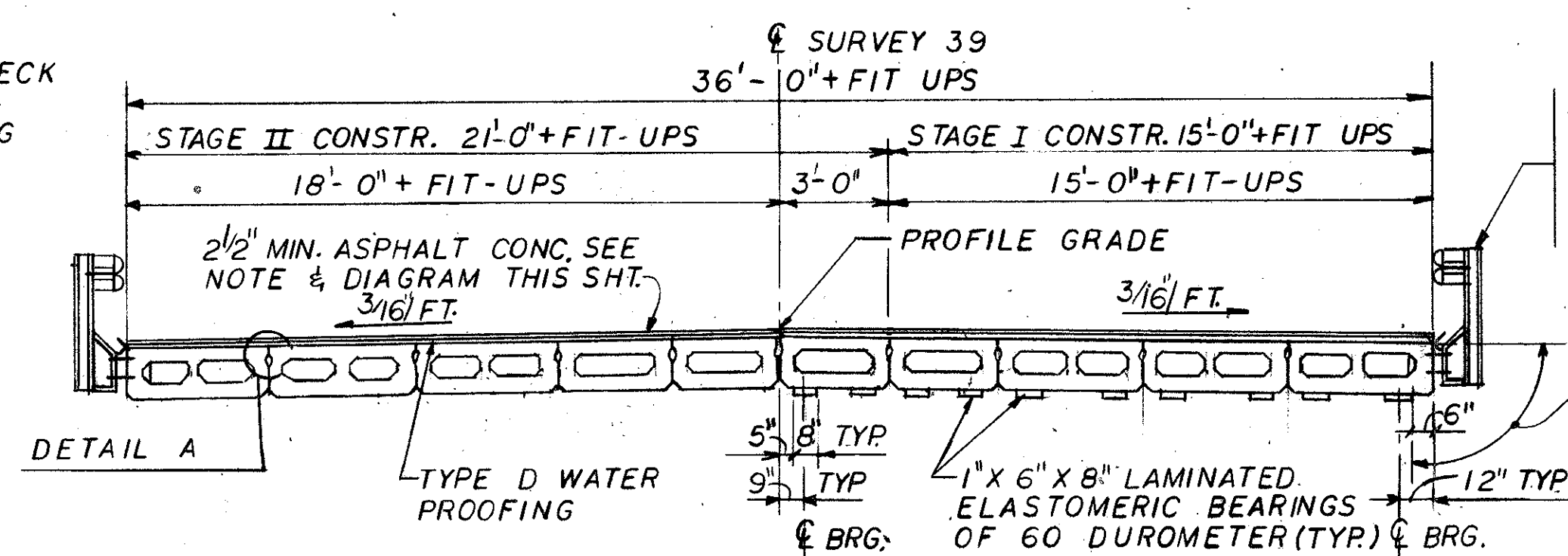


PLAN - PRESTRESSED BEAM



DRIP STRIP DETAIL

ADDITIONAL DRIP STRIP 12" LONG CENTERED AT GUARDRAIL POST.

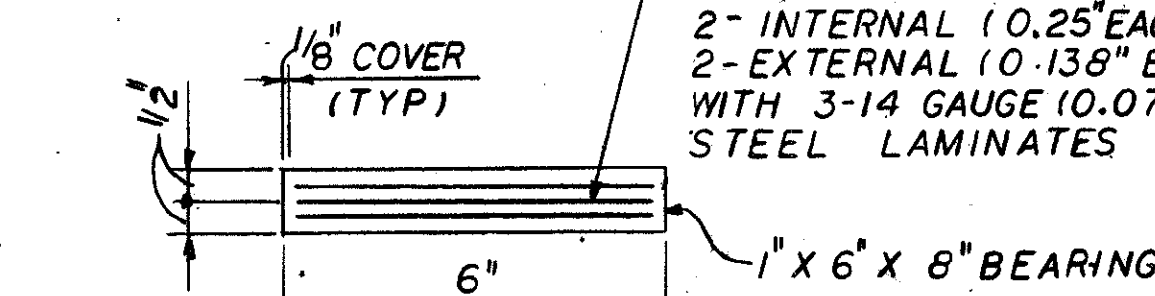


TRANSVERSE SECTION-C C

DEEP BEAM GUARDRAIL WITH TUBULAR BACKUP AND TYPE-2 POST (TYP) SEE STD. DWG. DBR-2-73 SEE DETAIL-B ON SHT. 4/9

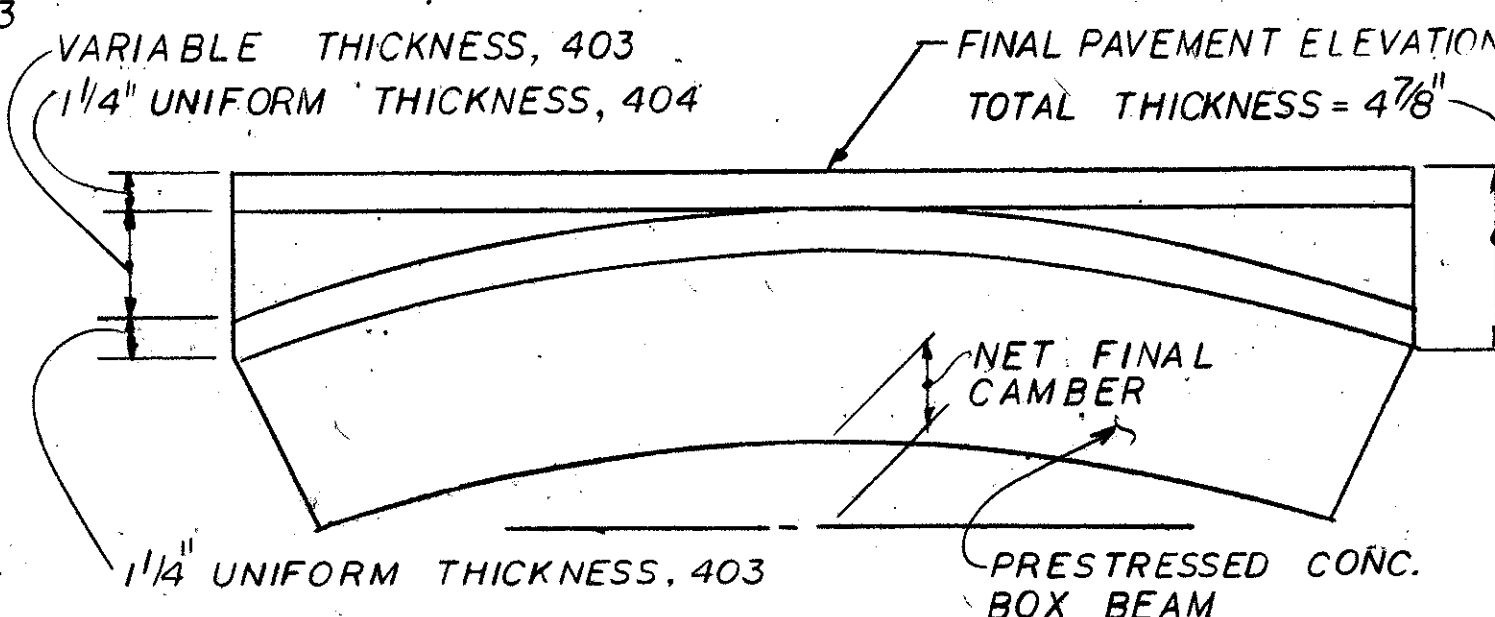
CONCRETE SEALER (TYP) SEE GENERAL NOTES ON SHEET 3/9

LAMINATED PADS OF 2" INTERNAL (0.25" EACH) LAYERS 2" EXTERNAL (0.136" EACH) LAYERS WITH 3-14 GAUGE (0.075" EACH) STEEL LAMINATES



LAMINATED ELASTOMERIC BEARING*

(60 DUROMETER NEOPRENE) MAX. BEARING DESIGN LOAD = 18.65K DEAD LOAD REACTION = 9.45K LIVE LOAD W/O IMPACT = 9.20K SEE SHEET 3/9 FOR ELASTOMERIC TEST PAD NOTE.



ASPHALT THICKNESS DIAGRAM

NOTE:

ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND A 1 1/4" THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF 1 1/4" UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1 1/4" BELOW FINAL PAVEMENT SURFACE ELEVATION.

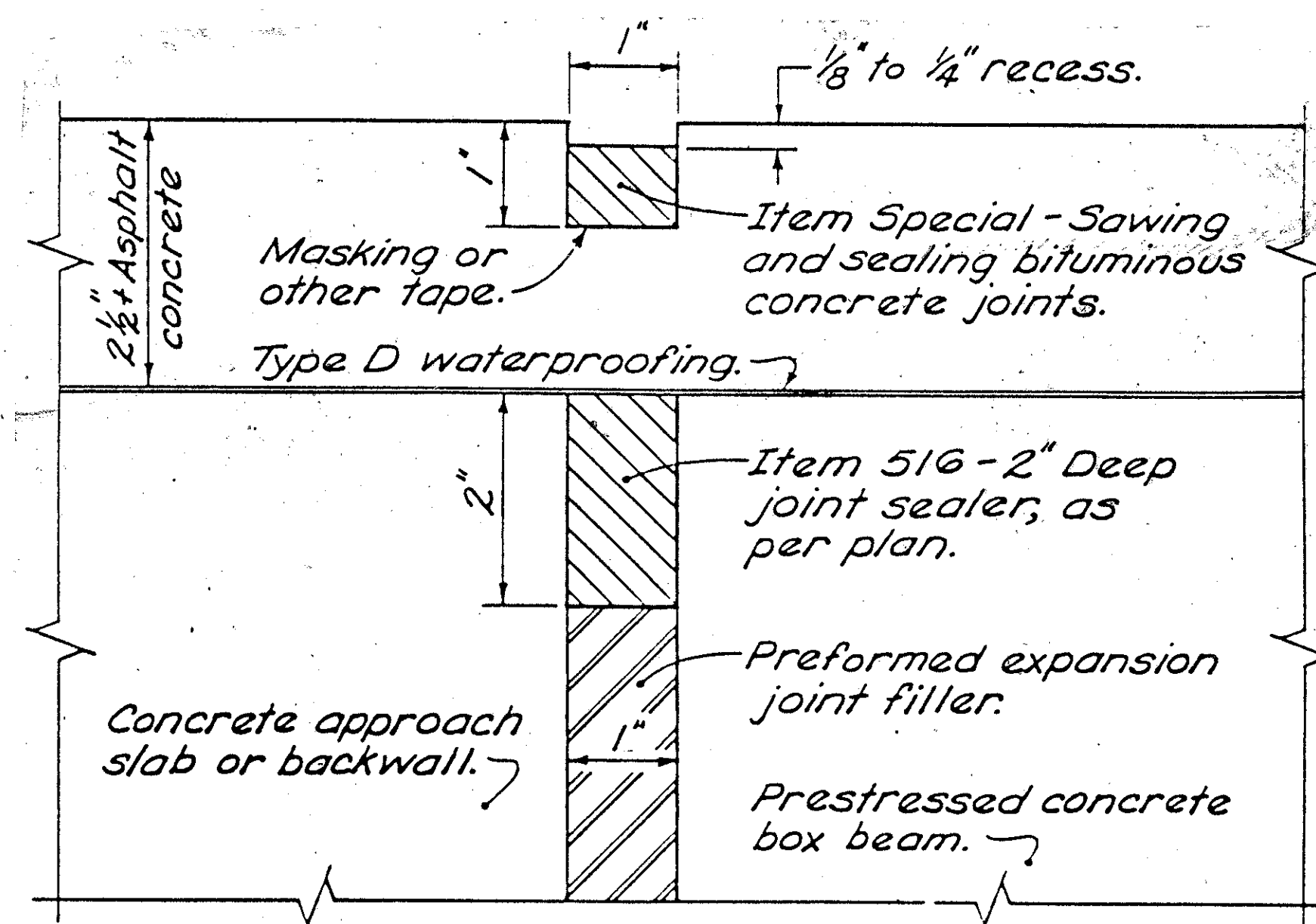
TOLERANCES

INDIVIDUAL ELASTOMER LAYER THICKNESS: ± 20% OF DESIGN VALUE (NOT TO EXCEED ± 1/8")

PLAN DIMENSIONS - 0. + 1/4"

DESIGN THICKNESS ≤ 1 1/4" - 0. + 1/8"

BASIS OF PAYMENT: THE UNIT BID PRICE SHALL INCLUDE ALL MATERIALS LABOR & INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS EITHER FIXED OR EXPANSION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 516. EACH LAMINATED ELASTOMERIC BEARINGS (1" X 6" X 8")



SEALING OF JOINTS AT ABUTMENTS

ITEM SPECIAL - SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

1) Description:

This work shall consist of cutting and sealing transverse joints on the new bituminous concrete overlay of box beam bridges. Bituminous concrete joints shall be constructed directly over, and in line with, the existing underlying transverse abutment joint of the box beams.

2) Materials:

The joint sealant shall meet the requirements of ASTM Specification D3405, Joint sealants, Hot-poured, For Concrete and Asphalt Pavements. Acceptable alternate materials are:

Roof-Flex 176, polyurethane, as produced by the Carboline Company, 350 Hanley Industrial Court, St. Louis, Missouri 63144 (Roger Zubal, 614-877-3406); a silicone sealant meeting Federal Specifications TT-S-001543A Class A (one-part silicone sealants) and TT-S-00230C Class A (one-component sealants), such as those manufactured by General Electric, Silicone Products Division, 6155 Rockside Rd., Rockside Square 1, Independence, Ohio 44131 (John Fromholtz, 216-447-1750) or Dow Corning, 3737 Park East, Beachwood, Ohio 44122 (Robert Ruppel, 216-464-2330); or Sof-Seal, a cold-applied, low-modulus, two-component polymeric compound horizontal sealant as manufactured by W. R. Meadows, Inc., P.O. Box 543, Elgin, Illinois 60121 (Robert Cameron, 312-683-4500). Sealant will be accepted on the basis of the manufacturer's certification that it conforms to the requirements of these specifications.

3) Construction Details:

A) General: The contractor shall conduct his operation so that the cutting, cleaning and sealing of transverse joints is a continuous operation that will be performed as soon as practical after the paving, but no later than four (4) days after placement of the asphalt concrete surface course. Traffic shall not be allowed to knead together or damage the joint cut prior to sealing.

B) Cutting of Transverse Joints: The contractor shall saw or rout transverse joints to the dimensions shown in the details on this sheet. The cut joints shall lie directly above each box beam abutment joint. The joint location shall be marked on the new asphalt surface with a chalk line, or by some other acceptable method, before cutting. Details of the method for locating and accurately marking the proposed cuts shall be subject to the approval of the Engineer prior to starting any surfacing or paving operations.

The blade or blades shall be of such size that the full width and depth of the cut can be made with one pass. Dry or wet cutting will be allowed. Joints shall extend the full width of the bridge.

C) Cleaning Joints: Dry sawed joints shall be thoroughly cleaned with a sufficient amount of compressed air to remove any dirt, dust, or deleterious matter. Wet sawed joints shall be washed clean of all cuttings by flushing with a jet of water and with other tools as necessary. After flushing, the joint shall be blown out with compressed air. When the surfaces are thoroughly clean and dry, and just prior to placing the joint sealer, compressed air having a pressure of at least 90 p.s.i. shall be used to blow out the joint and remove all traces of dust.

In the event freshly cut joints become contaminated before they are sealed, they shall be recleaned of all foreign material by high pressure water jet.

D) Sealing Joints: The joint shall be thoroughly dried before the sealant is placed. After cleaning and drying, a bond-breaker (tape) shall be applied to the bottom of the groove.

Hot-poured joint sealant material shall be heated in a kettle or melter constructed as a double boiler, with the space between the inner and outer shells filled with oil or other heat transfer medium. Positive temperature control and mechanical agitation shall be provided. Heating must be in strict accordance with the manufacturer's recommendation. Joint sealer material shall never be kept heated at the pouring temperature for more than four (4) hours and shall never be reheated. Sealer left in the applicator at the end of a day's work shall be removed and discarded.

Hot-poured sealant shall be applied immediately through a nozzle, which must project into the sawed joint, filling from the bottom up. The seal shall completely fill the joint in such a manner that, after cooling, the level of the sealer will not be higher than 1/8" below the pavement surface. Any depression in the cooled seal greater than 3/16" shall be brought up to the specified limit by further addition of hot-poured sealant. Care shall be taken in the sealing of the joints so that the final appearance will present a neat fine line.

The cold applied sealant materials (polyurethane, silicone, and polymeric compounds) shall be installed as per manufacturers' recommendations, or as directed by the Engineer. The sealant shall be installed when the ambient temperature is 40 degrees F or higher. Traffic shall not be allowed on the joint for one hour after application of the sealant.

4) Method of Measurement:

The quantity to be paid for under this item will be the number of linear feet of joints sawed and sealed as per the above requirements.

5) Basis of Payment:

The unit price per linear foot for Item Special - "Sawing and sealing bituminous concrete joints" shall include the cost of all labor, materials, and equipment necessary to complete the work, including the furnishing and placing of the joint sealer material.

ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN

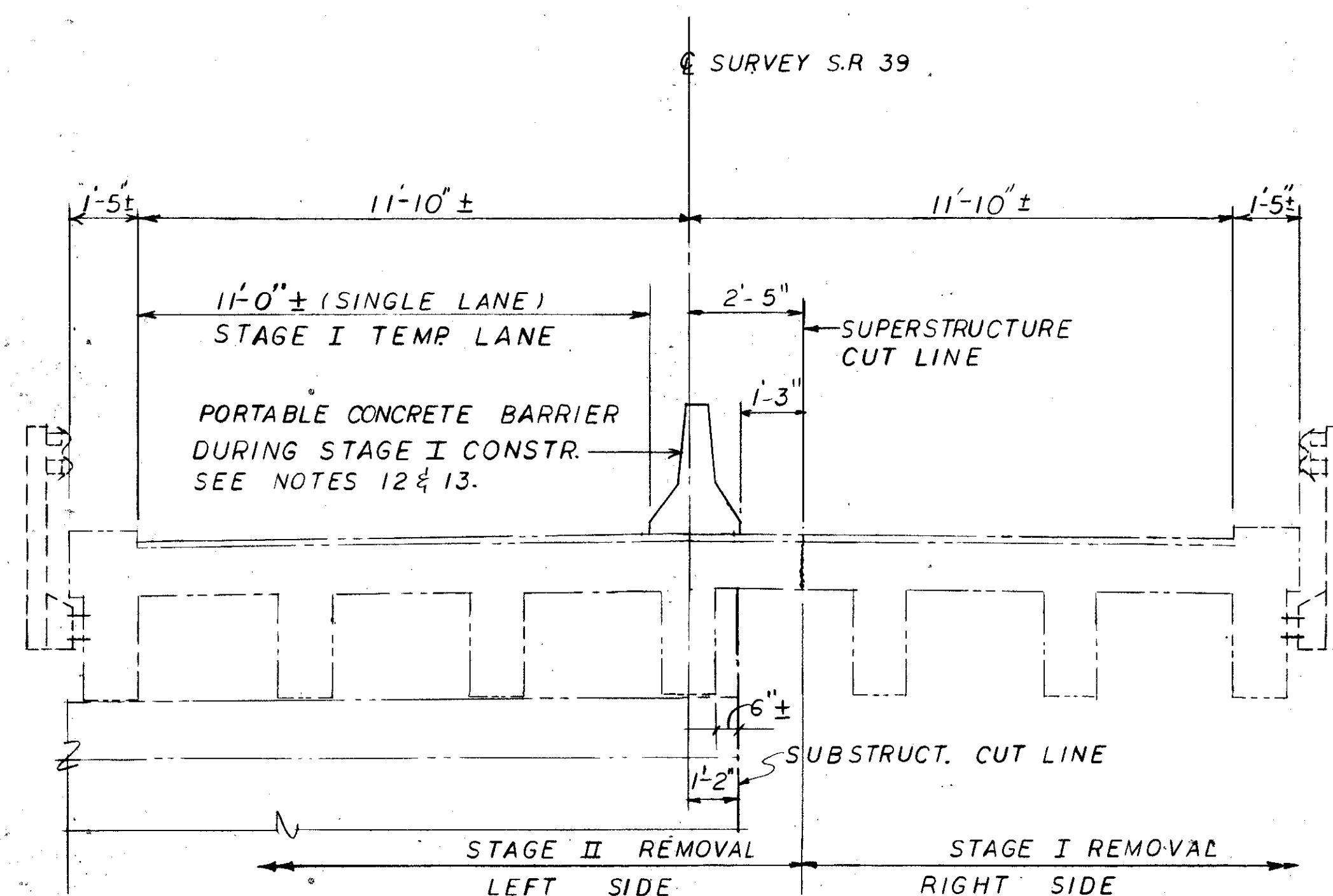
This item shall meet the material (para. 2) and sealing (para. 3D) specifications of Item Special - Sawing and sealing bituminous concrete joints.

REVISIONS 2-9-84 3-10-87 4-14-87 6-16-87	STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN				
	7/9				
	ABUTMENT JOINTS IN BITUMINOUS CONCRETE, BOX BEAM BRIDGES BRIDGE NO. CAR-39-12.56 OVER COLD SPRING RUN				
	DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE
	JEB	MJB		WTF	WJJ 2-2-84

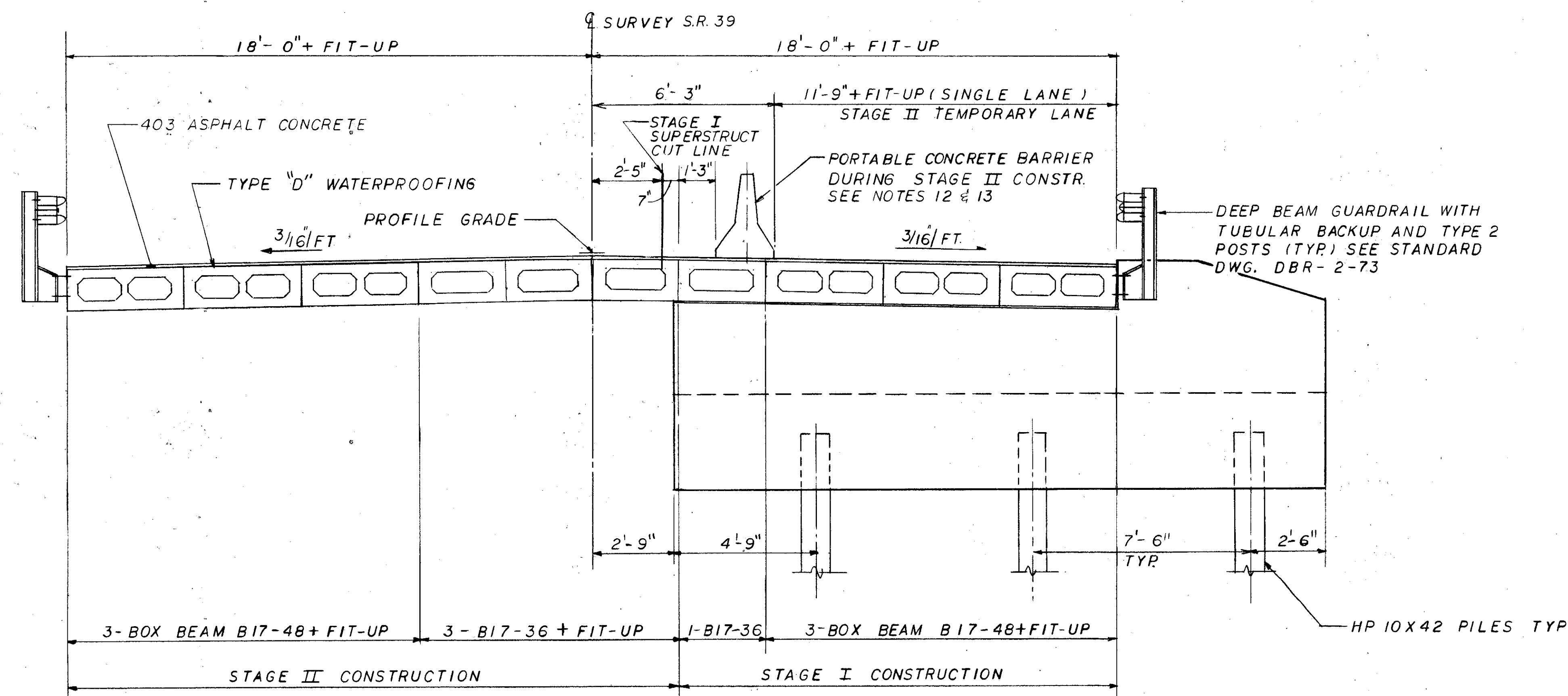
FHWA REGION	STATE	PROJECT	
5	OHIO		

CARROLL COUNTY
CAR - 39 - 12.56

18
22



STAGE REMOVAL—EXISTING STRUCTURE



STAGE CONSTRUCTION

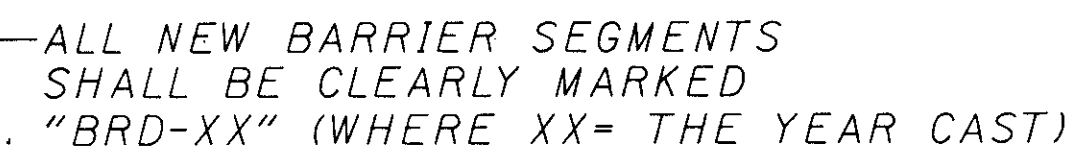
CONSTRUCTION PROCEDURE NOTES:

1. MAINTAIN THE TRAFFIC.
2. PROVIDE PORTABLE CONCRETE BARRIER FOR STAGE I CONSTR.
3. TRANSFER TRAFFIC TO LEFT SIDE.
4. PROVIDE TEMPORARY SHEETING TO PERMIT REMOVAL & CONSTRUCTION.
5. REMOVE RIGHT SIDE (SHOWN AS STAGE I REMOVAL)
6. CONSTRUCT STAGE I COMPLETE INCLUDING 403 ASPHALT CONCRETE LEVELING COURSE.
7. PROVIDE PORTABLE CONCRETE BARRIER ON STAGE I CONSTRUCTION.
8. REMOVE REMAINDER OF EXISTING STRUCTURE (SHOWN AS STAGE II REMOVAL)
9. CONSTRUCT STAGE II COMPLETE INCLUDING 403 ASPHALT CONCRETE LEVELING COURSE
10. APPLY 404 ASPHALT CONCRETE WEARING COURSE FOR FULL WIDTH OF ROADWAY.
11. OPEN BRIDGE TO TRAFFIC.
12. FOR PORTABLE CONCRETE BARRIER SEE SHEET NO. 20 AND STANDARD UWG. MC-92.
13. ITEM 622- PORTABLE CONCRETE BARRIER, AS PER PLAN IS CARRIED IN THE ROADWAY QUANTITIES FOR PAYMENT. SEE SHT. 4 AND 5 OF 20

R.P. MADISON INTERNATIONAL
ARCHITECTS-ENGINEERS-PLANNERS
2930 EUCLID AVE. CLEVELAND, OHIO 44115

STAGE CONSTRUCTION
BRIDGE NO. CAR-39-1256
OVER
COLD SPRING RUN

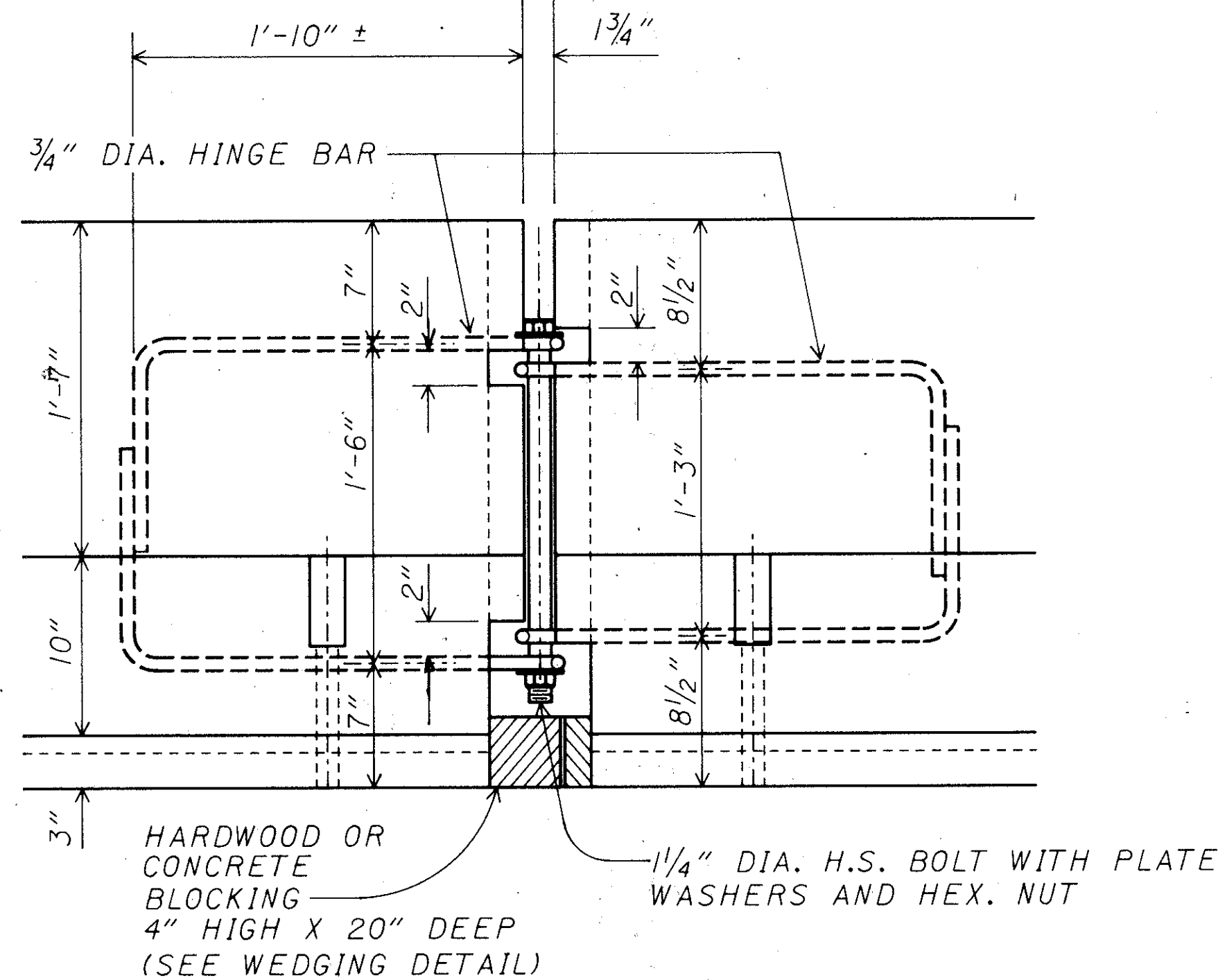
DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
M.P.	J.M.P.	RCW	LJ	11/4/11



1'-0" C/C = 7'-0"



1. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. AND SHALL CONTAIN A CALCIUM NITRITE CORROSION INHIBITING ADMIXTURE. THE ADMIXTURE SHALL BE ADDED TO THE CONCRETE AT THE RATE OF 4.0 GALLONS PER CUBIC YARD OF CONCRETE AND SHALL BE ADDED AS AN AQUEOUS SOLUTION, SUCH AS W.R. GRACE'S DCI CORROSION INHIBITOR (30% SOLIDS) OR APPROVED EQUAL. THE WATER IN SUCH SOLUTION SHALL BE COUNTED AS MIXING WATER FOR THE PURPOSE OF DETERMINING THE WATER TO CEMENT RATIO OF THE CONCRETE. THE CALCIUM NITRITE MUST BE ADDED TO THE MIX IMMEDIATELY AFTER THE AIR-ENTRAINING AND RETARDING ADMIXTURES HAVE BEEN INTRODUCED TO THE BATCH.
2. ALL REINFORCING STEEL AND STEEL ROD CONNECTING LOOPS SHALL BE GRADE 60 REINFORCING STEEL WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.



DETAIL AT HINGED CONNECTION



Technical drawing of a hinge assembly. The drawing shows a cross-section of a hinge with a central pin. Dimensions and components are labeled as follows:

- $1\frac{1}{4}"$ DIA. H.S. BOLT (pointing to the central pin)
- $\frac{3}{4}"$ DIA. HINGE BAR (pointing to the central pin)
- $2\frac{1}{4}"$ (dimension across the top of the hinge)
- $1\frac{3}{4}"$ (dimension across the bottom of the hinge)
- $1\frac{3}{4}"$ (dimension across the central pin)
- $2"$ RAD. (radius of the hinge)
- MAX. GAP (dimension across the bottom of the hinge)

FINAL JOINT

BARRIER JOINTS MUST BE FULLY OPEN BEFORE NUT IS TIGHTENED ON TO BOLT AND OPENING IS BLOCKED WITH CONCRETE OR HARDWOOD.

ALL TEMPORARY CONCRETE BARRIERS ON STRUCTURES

1. THE BRIDGE DECK SURFACE AREA ON WHICH THE PRECAST CONCRETE BARRIER SEGMENTS WILL REST SHALL BE CLEARED OF ALL LOOSE SAND, GRAVEL, DIRT AND DEBRIS.
2. ANY IRREGULARITIES IN THE BRIDGE DECK AREA, UNLESS JUDGED BY THE ENGINEER TO BE INCONSEQUENTIAL, SHALL BE LEVELED WITH GROUT AND/OR ASPHALT.
3. ASPHALT ROLL ROOFING SHALL BE PLACED ON THOSE BRIDGE DECK AREAS, AS JUDGED BY THE ENGINEER, TO HAVE A SURFACE ROUGHNESS WHICH WOULD INHIBIT FRICTION CONTACT BETWEEN BARRIER SEGMENTS AND DECK.

4. WHEN STANDARD MC-9.2 BARRIER SECTIONS OR TYPE BRD BARRIER SECTIONS ARE USED ON STRUCTURES, THEY SHALL BE BOLTED TOGETHER AND BLOCKED AS SHOWN ABOVE (BOLTING AND BLOCKING DIMENSIONS FOR MC-9.2 BARRIER MAY VARY FROM THOSE SHOWN).

CONCRETE BARRIER, TYPE BRIDGE MOUNTED

ALL ANCHORS SHALL BE 1" DIAMETER, HIGH STRENGTH, THRU BOLTS OR APPROVED RESIN ANCHORS. WHEN RESIN ANCHORS ARE USED, THEY MUST BE EMBEDDED A MINIMUM OF 6" INTO FIRM CONCRETE. THE NUMBER OF ANCHORS SHALL BE AS SHOWN BELOW AND SHALL BE PLACED SYMMETRICALLY ABOUT THE TRANSVERSE C OF BARRIER SECTION ON THE ROADWAY SIDE OF THE BARRIER.

BRIDGE NO.	TRAFFIC CONTROL PHASE	NO. ANCHORS / 10' SECTION

ZFA2:[200005]BRDBARI.DGN;I

PROPERTY MAP
CENTER TOWNSHIP

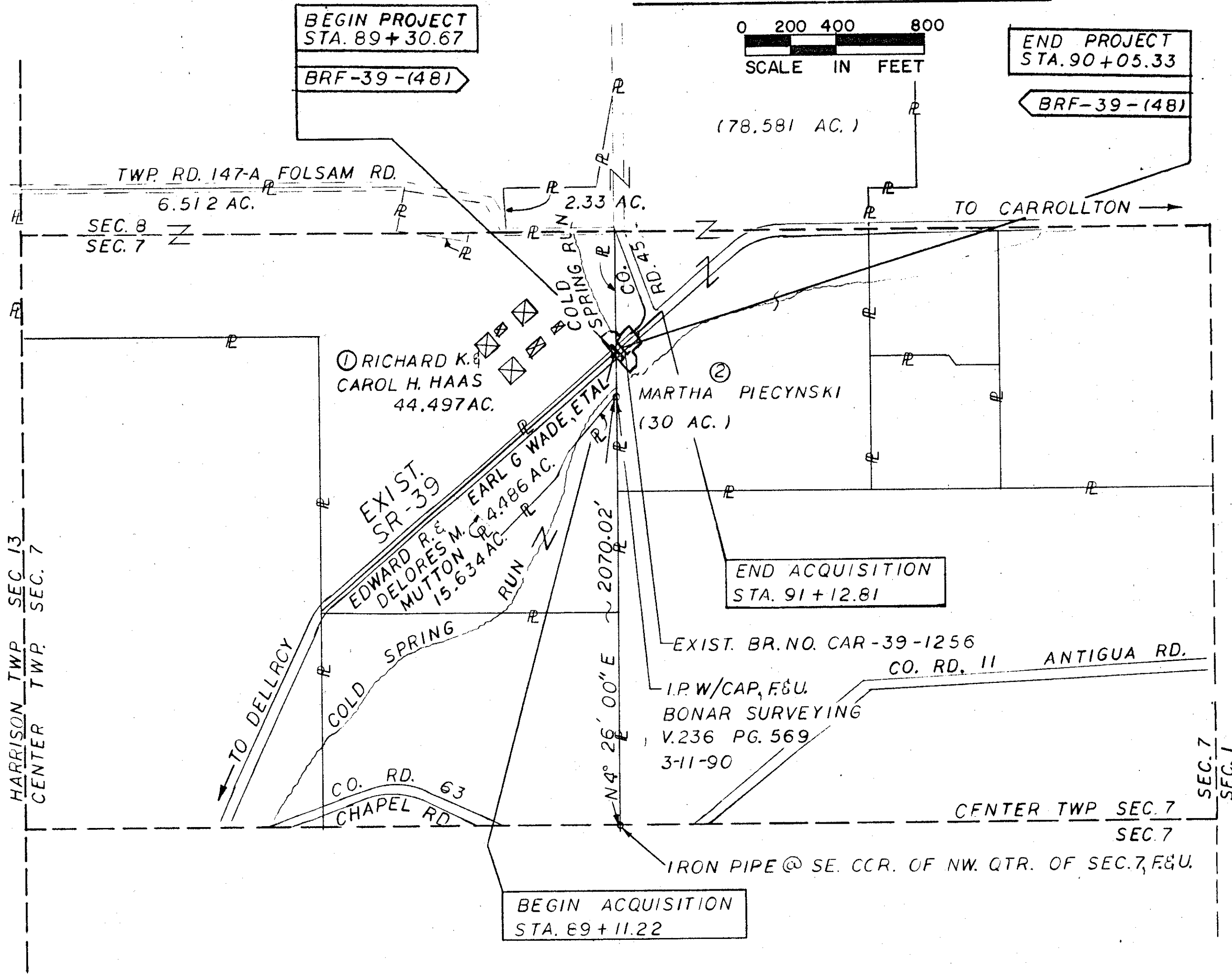
FHWA REGION	STATE	PROJECT
5	OHIO	

CARROLL COUNTY
CAR - 39 - 1256

21
22

RIGHT OF WAY PLAN

1
2



INDEX OF OWNERS

- 1) RICHARD K. AND CAROL H. HAAS
2) MARTHA PIECYNski

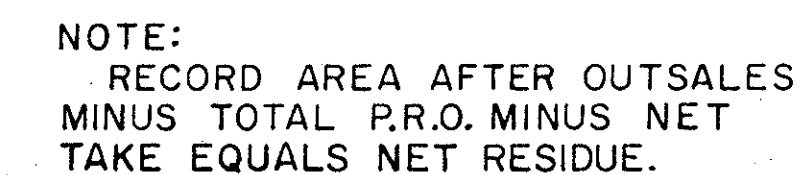
CARROLL COUNTY
R-6 T-15 SEC. 7 (NORTH HALF)

(TRACT ACREAGE)

UTILITY OWNERS		
SYMBOL	TYPE	NAME & ADDRESS
E	ELECTRIC	OHIO POWER COMPANY 301 CLEVELAND AVE. S.W. BOX 400 CANTON, OHIO 44701 PH (216) 438-7040
T	TELEPHONE	G.T.E. TELEPHONE OPERATIONS- NORTH AREA 6223 NORWALK ROAD MEDINA, OHIO 44256 PH. (216) 722-9591

PLAN COMPLETED 2-6-91

REV.	DATE	DESCRIPTION



<i>Dist. 11</i>	<i>4-10-91</i>	<i>Revised location of Billboards</i>
REV.	DATE	DESCRIPTION

* DUE TO THE EXTENSIVE CONTIGUOUS OWNERSHIP OF THIS
PROPERTY OWNER, ONLY THE 30.00 AC. TRACT IS BEING
CONSIDERED FOR APPRAISAL PURPOSES.



GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED PORTION OF THE FLUSHING ESCARPMENT, ON THE RELATIVELY NARROW FLOOD-PLAIN OF AND OVER COLD SPRING RUN, IN AN AREA WHERE RELATIVELY DEEP VALLEY AND ALLUVIAL DEPOSITS OVERLIE SHALE AND SILTSTONE AND BEDROCK, OF PENNSYLVANIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF ONE DRIVE SAMPLE BORING AND ONE DRIVE SAMPLE-CORE BORING MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM ROTARY AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON JULY 11 AND 12, 1988.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE TEST BORINGS DISCLOSED THAT INTERVALS OF EXTREMELY LOOSE TO MEDIUM-DENSE UNSTRATIFIED BASIC SILTS AND SAND VARYING PERCENTAGES OF EACH OTHER THAT FLUCTUATE ERRATICALLY IN DENSITY WITH INCREASE IN DEPTH OVERLIE GENTLY SLOPING BEDROCK SURFACE. TEST BORING B-1 (MADE IN THE GENERAL VICINITY OF THE REAR ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 47.0 FOOT DEPTH, ELEVATION 919.8 FEET AND WAS ADVANCED TO 48.0 FOOT DEPTH, ELEVATION 918.7 FEET WHERE THE BORING WAS TERMINATED AFTER HAVING PENETRATED 1.0 FEET BELOW BEDROCK SURFACE. TEST BORING B-2 (MADE IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 43.0 FOOT DEPTH, ELEVATION 923.8 FEET AND WAS ADVANCED TO 48.0 FOOT DEPTH, ELEVATION 918.8 FEET WHERE THE BORING WAS TERMINATED AFTER HAVING PENETRATED 5.0 FEET BELOW BEDROCK SURFACE.

FREE WATER WAS OBSERVED AND MEASURED IN TEST BORING B-1 AT 6.0' FOOT DEPTH, ELEVATION 960.8 FEET.

- 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.
- Indicates Final Measurement of Penetration, in Inches.
- 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 120-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.

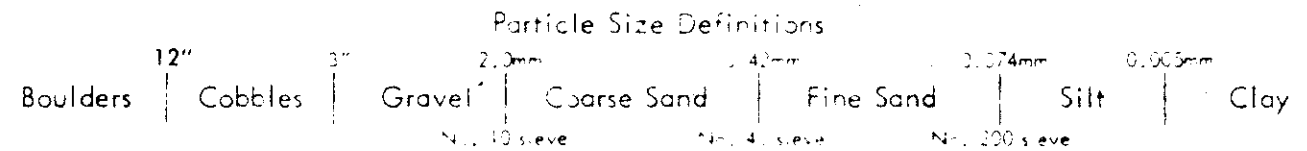
Drive Sample Borings - Drive-Press Sample Borings

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 (sand, silt, clay, 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 5/7/90

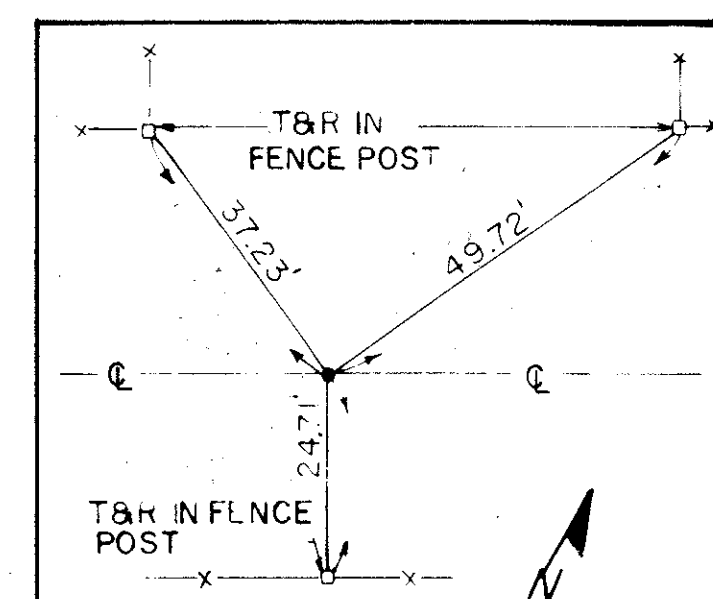
Information shown by this subsurface investigation was obtained solely for the use in evaluating design contracts for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

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

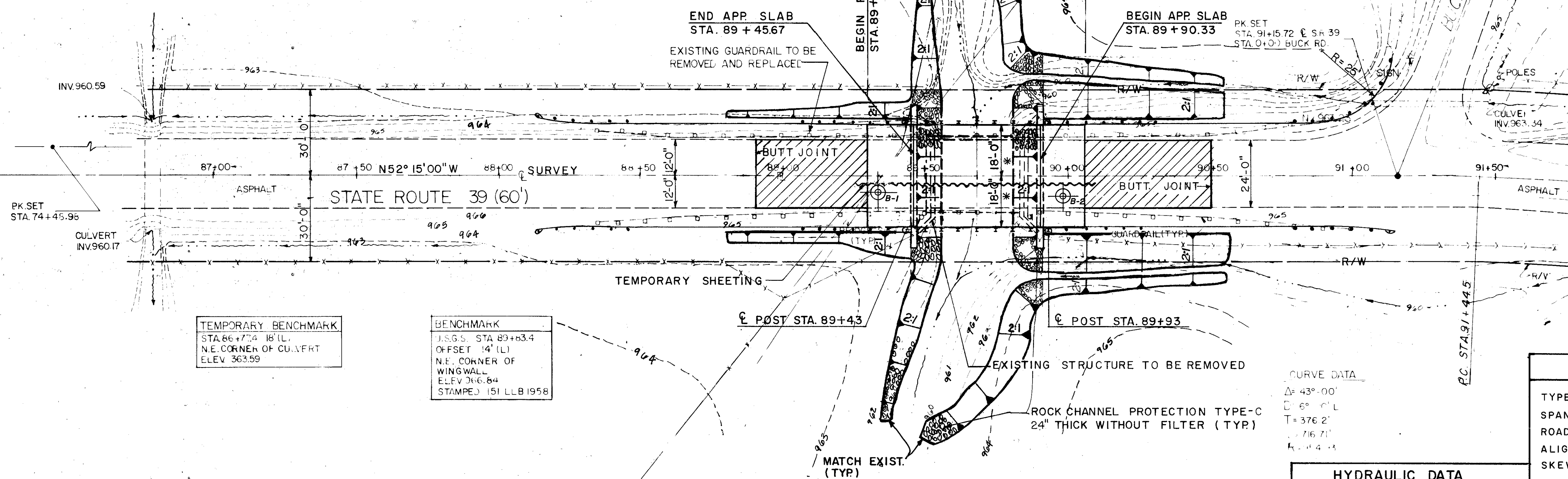
STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. CAR-39-1256
OVER COLD SPRING RUN
SEC. CAR-39-12.56

CHECKED BY A.F.	REVIEWED BY R.D.R.	DATE 8/10/88
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NOTE
DR = TACK BRIDGON



REFERENCE POINTS
AT STA 91+15.72



EARTHWORK LIMITS SHOWN ARE
APPROXIMATE ACTUAL SLOPE
SHALL CONFORM TO PLAN
CROSS SECTIONS

TEMPORARY BENCHMARK
STA. 91+09.25' (L)
N.E. CORNER OF CULVERT
ELEV. 963.23'

TEMPORARY BENCHMARK
STA. 86+77.4' (L)
N.E. CORNER OF CULVERT
ELEV. 963.59

BENCHMARK
J.S.G.S. STA. 89+63.4
OFFSET 14' (L)
N.E. CORNER OF
WINGWALL
ELEV. 966.84
STAMPED 151 LLB 1958

DESIGN DESIGNATION

CURRENT (1989) ADT = 2640 VEHICLES
DESIGN YEAR (2009) ADT = 5124 VEHICLES

EXISTING BRIDGE DATA

TYPE: SIMPLE SPAN CONCRETE BEAM
SPAN: 30'-0" SPAN
ROADWAY: 20'-0" PAVEMENT
ALIGNMENT: TANGENT
SKEW: NONE
APPROACH SLAB: NONE
WEARING SURFACE: ASPHALT CONCRETE
STRUCTURE FILE NO: 1000365

PROPOSED BRIDGE DATA

TYPE: SINGLE SPAN PRESTRESSED PRECAST CONCRETE
BOX BEAM ON CAPPED PILE ABUTMENTS
SPAN: 43'-6" C/C BEARINGS
ROADWAY: 36'-0" FACE TO FACE GUARDRAIL
ALIGNMENT: TANGENT
SKEW: NONE
APPROACH SLAB: AS-1-81 (15'-0" LONG)
LOADING: HS-20-44 & ALTERNATE MILITARY LOADING
WEARING SURFACE: ASPHALT CONCRETE (2 1/2" MIN.)
CROWN: 3/16" / FT.

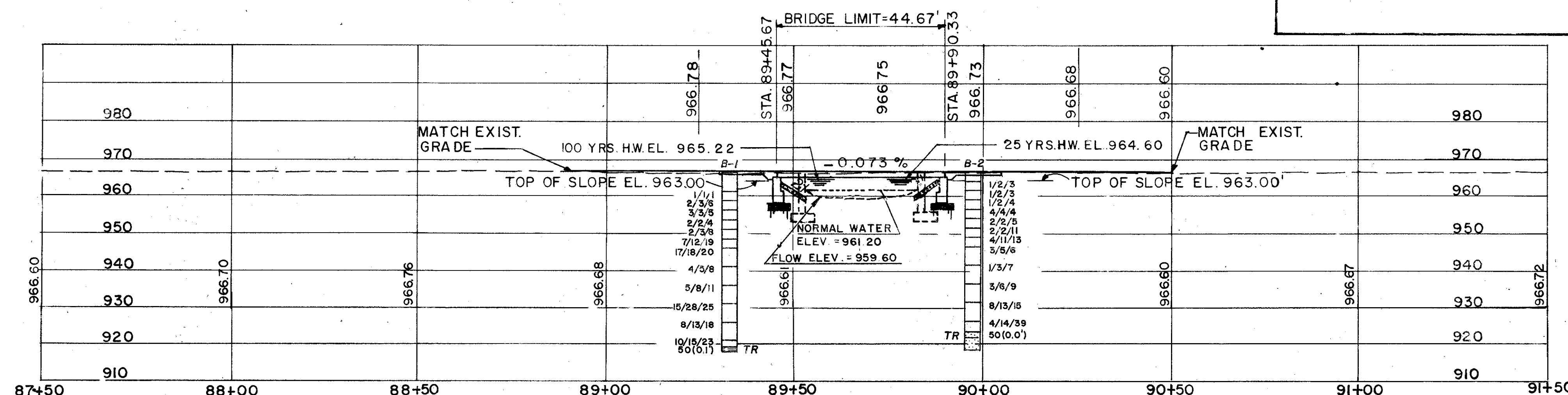
CURVE DATA
Δ = 43°-00'
D = 6°-00'
T = 376.2'
L = 716.71'
K = 4.4

HYDRAULIC DATA

DRAINAGE AREA = 4.13 SQ. MILES
Q₁₀₀ = 1261 CFS Q₂₅ = 919 CFS
V₁₀₀ = 6.49 FT/SEC. V₂₅ = 5.30 FT/SEC
HWD₁₀₀ = 965.22 HWD₂₅ = 964.60

PLAN

* PLUS FIT-UP



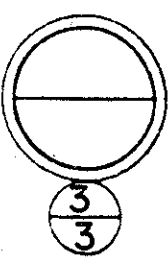
Revised 5/7/90

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. CAR-39-1256
OVER COLD SPRING RUN
SEC. CAR-39-12.56

PLAN AND PROFILE

DRAWN BY W.L.C.H.	CHECKED BY A.F.	REVIEWED BY R.D.R.	DATE 8/10/88
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LOG OF BORING																
Date Started <u>7/11/88</u>			Sampler Type <u>SS</u> Dia. <u>1 3/8"</u>			Water Elev. <u>960.8'</u>										
Date Completed <u>7/12/88</u>			Casing Length <u> </u> Dia. <u> </u>													
Boring No. <u>B-1</u>			Station & Offset <u>89+33, 6' RT. (REAR ABUTMENT)</u>						Surface Elev. <u>966.8'</u>							
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.		
966.8	0	AUGERED														
966.3		AUGERED			ASPHALT										VISUAL	
964.8	2				SUBBASE										VISUAL	
	4	AUGERED														
961.8			GRAY SANDY GRAVELLY SILT		DRILLER'S DESCRIPTION										VISUAL	
	6															
959.3		1/1/1	GRAY SANDY SILT			1	2	7	32	41	17	25	6	24	A-4A	
	8															
956.8		2/3/6	GRAYISH BROWN SILTY SAND			2	1	9	56	27	7	NP	NP	29	A-3A	
	10															
954.3		3/3/5	BROWN SANDY SILT			3	4	11	23	45	17	NP	NP	25	A-4A	
	12															
951.8		2/2/4	GRAY SILT			4	0	1	9	66	24	NP	NP	23	A-4A	
	14															
949.3		2/3/8	GRAY SANDY SILT			5	7	19	31	35	8	NP	NP	18	A-4A	
	16															
946.8		7/12/19	GRAY AND BROWN SILTY SAND			6	10	20	38	24	8	NP	NP	14	A-3A	
	18															
941.8		17/18/20	GRAY SILTY SAND			7	12	20	32	28	8	NP	NP	14	A-4A	
	20															
	22															
	24															
936.8		4/5/8	GRAY SANDY SILT			8	2	5	24	49	20	NP	NP	17	A-4A	
	26															
	28															
931.8		5/8/11	GRAY SILT			9	0	1	6	58	35	NP	NP	27	A-4B	
	30															
	32															
	34															
926.8		15/28/25	GRAYISH BROWN SANDY SILT WITH COAL BLOSSOM			10	5	10	43	22	20	NP	NP	24	A-4A	
	36															
	38															
	40															
	42	8/13/18	GRAY SANDY SILT WITH COAL BLOSSOM			11	5	8	29	34	24	NP	NP	14	A-4A	
	44															
921.8																
	46															
919.8		10/15/23	GRAY SANDY SILT			12	4	8	23	42	23	NP	NP	12	A-4A	
918.8		50 (0.1)	GRAY ARENACEOUS SHALE			13	-	-	-	-	-	-	-	-	VISUAL	
918.7																
	50															
BOTTOM OF BORING																

LOG OF BORING																
Date Started 7/11/88			Sampler Type SS Dia. 1 3/8"			Water Elev. - - -										
Date Completed 7/12/88			Casing Length Dia.													
Boring No. B-2			Station & Offset 89+98, 7' RT. (FORWARD ABUTMENT)			Surface Elev. 966.8'										
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.		
966.8	0				ASPHALT	-	-	-	-	-	-	-	-	-	VISUAL	
966.3	0	AUGERED			SUBBASE	-	-	-	-	-	-	-	-	-	VISUAL	
964.8	2	AUGERED														
964.3																
	4	1/2/3			GRAY SANDY SILT	1	2	3	18	51	26	28	7	26	A-4B	
961.8																
	6	1/2/3			GRAY SILT	2	0	0	8	63	29	NP	NP	29	A-4B	
959.3																
	8	1/2/4			GRAY AND BROWN SILTY SAND W/WOOD FRAGMENTS	3	4	13	49	22	12	NP	NP	28	A-3A	
956.8																
	10	4/4/4			GRAY AND BROWN SILTY SAND	4	10	24	34	26	6	NP	NP	20	A-4A	
956.3																
	12	2/2/5			GRAY SILT	5	0	1	5	63	31	NP	NP	26	A-4B	
951.8																
	14	2/5/11			GRAY SANDY SILT	6	4	7	23	47	19	NP	NP	12	A-4A	
949.3																
	16	4/11/13			GRAY SILTY SAND	7	11	26	31	26	6	NP	NP	12	A-3A	
946.8																
	18	3/5/6			GRAY SANDY SILT	8	3	6	16	46	29	26	5	20	A-4A	
	20															
	22															
	24															
941.8																
	26	1/3/7			GRAY SANDY SILT	9	0	6	18	49	27	NP	NP	24	A-4A	
	28															
936.8																
	30	3/6/9			GRAY SILT	10	0	1	11	56	32	NP	NP	22	A-4B	
	32															
	34															
931.8																
	36	8/13/15			GRAY SANDY SILT	11	7	7	19	39	28	27	7	20	A-4A	
	38															
926.8																
	40	4/14/39			GRAY SILTY GRAVELLY SAND	12	16	19	27	27	11	NP	NP	13	A-4A	
923.8		50(0.0)			NO PENETRATION	-	-	-	-	-	-	-	-	-		
	44															
	46		5.0	0.0	SILTSTONE, GRAY, HARD, DENSE WITH SCATTERED THIN CLAY SEAMS, BROKEN AND JOINTED. NO CORE LOSS.											
918.8																
	48															
	50															
BOTTOM OF BORING																

Revised 5/7/90

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BORING DATA

TYPED BY L. A. S.	CHECKED BY A. F.	REVIEWED BY R. D. R.	DATE 8/10/88
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55632 CAR