

MICROFILMED  
OCT 29 1984

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION

## RIC-13-10.82

### RICHLAND COUNTY WASHINGTON TOWNSHIP CITY OF MANSFIELD

RIC-13-10.82	OHIO	I
	FHWA REGION 5	51
FR. <del>X</del> -34(5) ROS-34(6)	FEDERAL PROJECT	

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AUG 23 1987

FR-~~X~~-34(5)  
ROS-34(6)

REFERENCE TO FED. NO. F-34(5)  
ALL REFERENCE TO FED. NO. F-34(5) APPEARING IN THESE PLANS SHALL BE CONSIDERED TO READ FED. NO. FR-34(5).

#### 1979 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 the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: *A. J. ...*  
Date 1-24-79 District Deputy Director of Transportation

Approved: *Robert B. Pfeifer*  
Date 2-27-79 Engineer, Bureau of Bridges and Structural Design

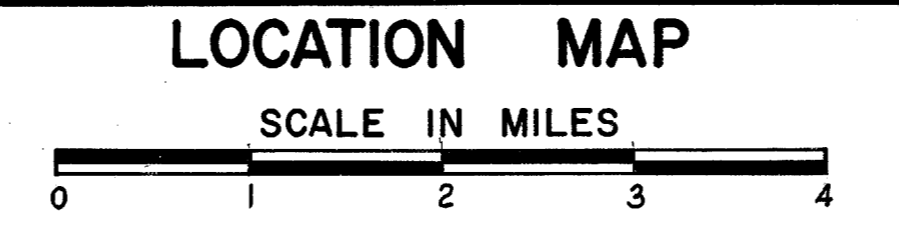
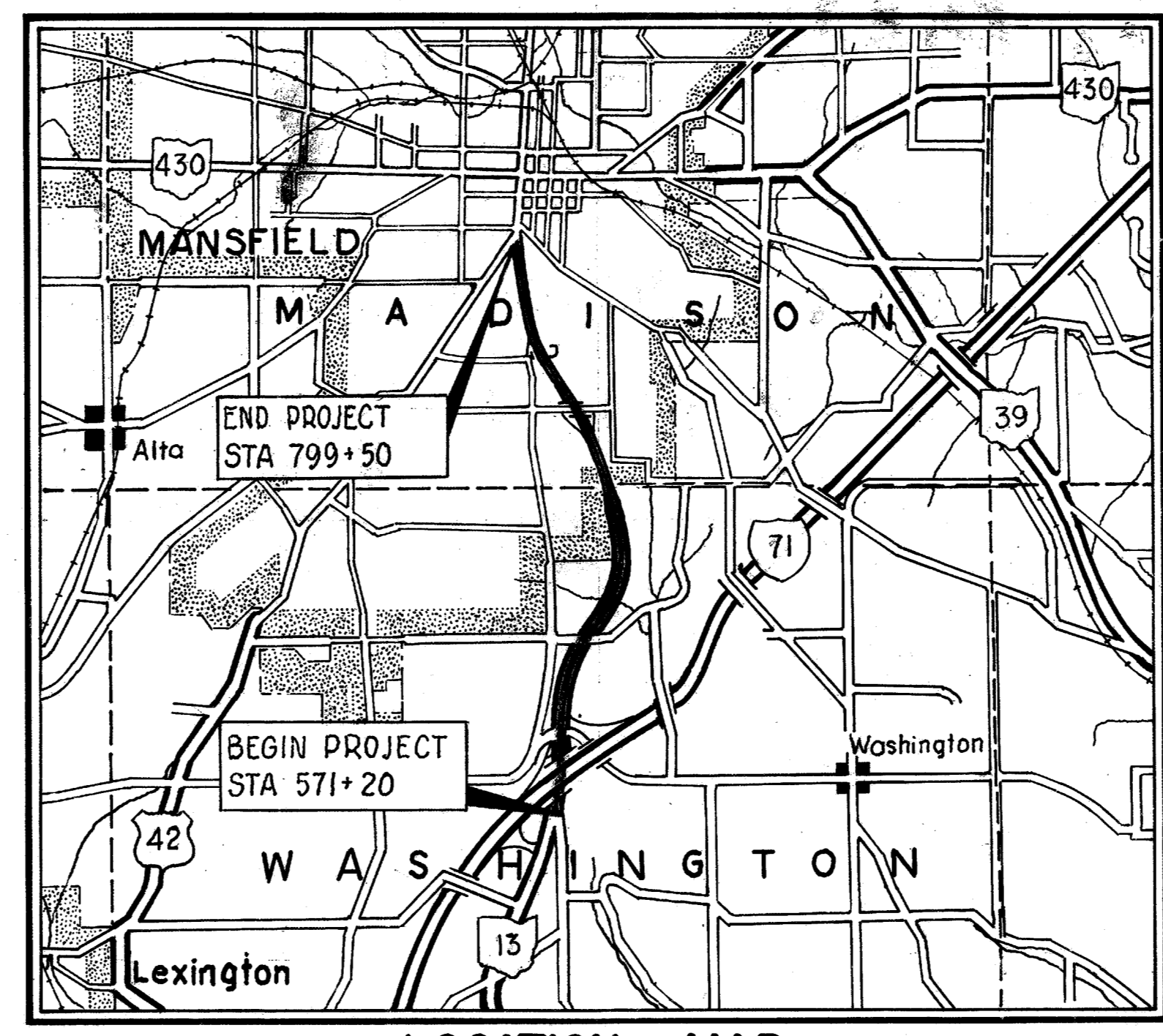
#### CONVENTIONAL SIGNS

County Line	Limited Access (only)  LA	
Township Line	Right of Way (only)  RW	
Section Line	Limited Access & Right of Way  LA & RW	
Corporation Line	Existing Right of Way	
Fence Line (existing)  (proposed)	Property Line  (in existing fence)	
Center Line	Railroad	
Trees, Stumps  (to be removed)	Guardrail (existing)  (proposed)	
Utility Poles: Telephone , Power , Light		

#### INDEX OF SHEETS

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SHEETS 1, 11 & 12 REVISED  
10-1-79, S.M.K.



#### LINE DATA

	PROJECT	WORK
BEGIN	STA 571+20	STA 558+25
END	STA 799+50	STA 799+50
GROSS LENGTH	22,830.00 LIN.FT.	24,125.00 LIN.FT.
ADD FOR STATION EQUATIONS	+ 23.75 LIN.FT.	+ 23.75 LIN.FT.
ADD WORK ON COOK ROAD		+ 1,230.00 LIN.FT.
NET LENGTH	22,853.75 LIN.FT. OR 4.328 MILES	25,378.75 LIN.FT. OR 4.806 MILES

#### SCALES

Portion to be improved

State & Federal Routes

Other Roads

Plan

Profile: Horizontal , Vertical

Cross Section: Horizontal , Vertical

#### SUPPLEMENTAL SPECIFICATIONS

1001	1-3-77	953	3-8-79
921	12-4-72		
		814	1-1-69
845	6-27-77		
850	6-27-77		
852	5-5-78	844	11-8-74
		847	4-3-76
848	2-23-78	839	11-25-70

Approved: *R. E. ...*  
Date 4-11-79 Chief Engineer, Planning and Design

#### SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-5	8-11-75	GR-6	1-1-71	TC-71.10	12-1-75	TC-7.65	10-1-74	HL-1	9-6-73
BP-7	12-6-76	HW-4	1-1-70	TC-35.10	10-5-77	TC-21.10	10-1-74	HL-2	7-27-73
BP-11	1-3-75	MC-3	6-1-73			TC-22.10	10-1-74	HL-3	7-27-73
CB-4	9-1-69	MC-4	7-26-76			TC-22.20	8-19-77	HL-6	3-22-77
CB-5	9-1-69	MC-5	6-12-75	TC-32.10	8-27-76	TC-31.10	8-27-76	HL-7	1-21-76
CB-458A	6-6-68			TC-32.11	8-27-76	TC-31.21	8-27-76	HL-8	1-21-76
GR-1	12-6-76			TC-72.20	8-29-77	TC-41.10	8-19-77	HL-9	3-22-77
GR-2B	12-6-76			TC-83.10	9-5-75	TC-41.20	4-1-77	HL-10	1-21-76
GR-3A	12-6-76			TC-51.10	6-2-75	TC-41.50	4-1-77	HL-11	4-6-73
GR-3B	12-6-76			TC-51.11	6-2-75	TC-42.10	8-19-77	HL-12	4-6-73
GR-4	12-6-76					TC-42.20	4-1-77	HL-15	1-21-76
GR-4A	7-26-76					TC-52.10	4-1-77	HL-16	4-6-73
GR-5	1-1-71					TC-52.20	4-1-77		

Approved: *David L. ...*  
Date 4-11-79 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

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

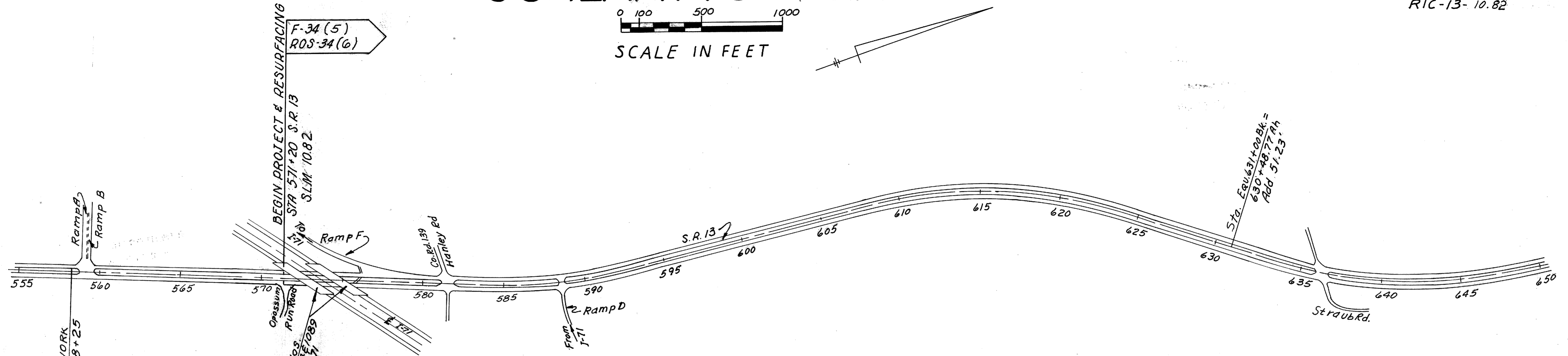
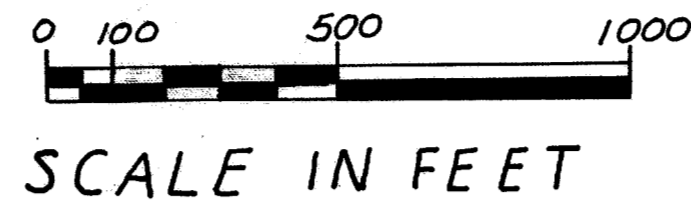
DIVISION ADMINISTRATOR

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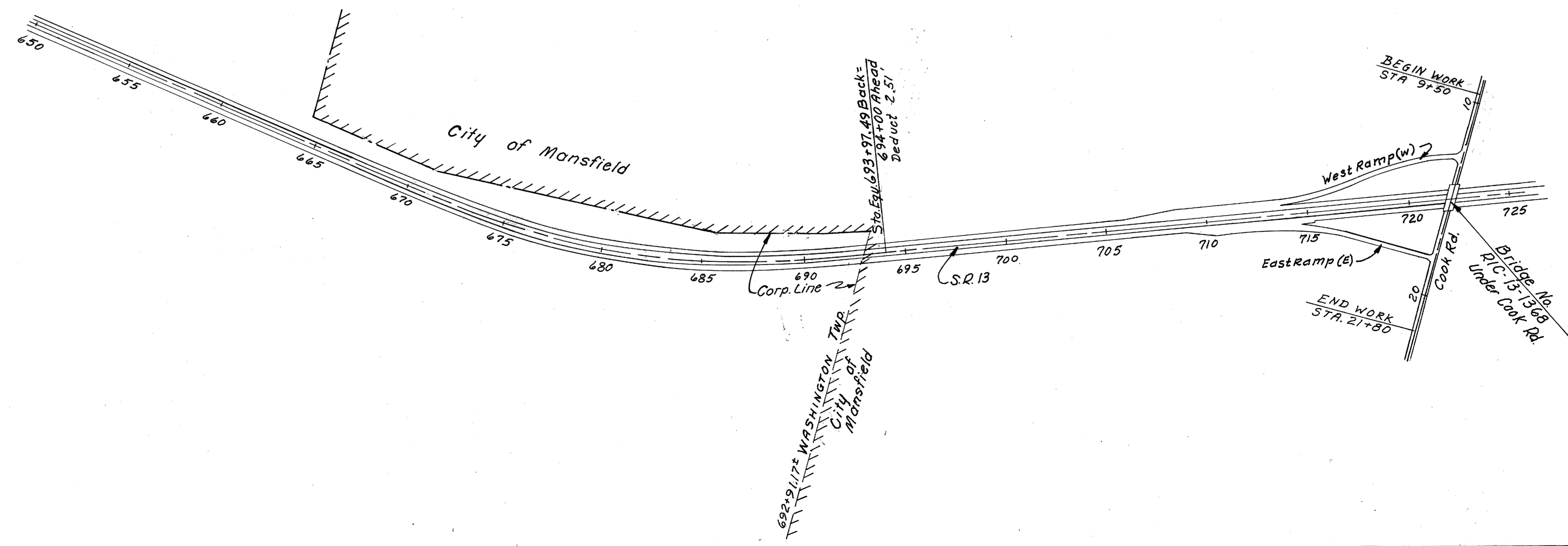
# SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT
5	OHIO	

RIC-13-10.82



DESIGN	DESIGNATION
1978 ADT	= 9,000
1988 ADT	= 12,000
DHY	= 1,200
D	= 55%/45%
T	= 5%
V	= 60 MPH



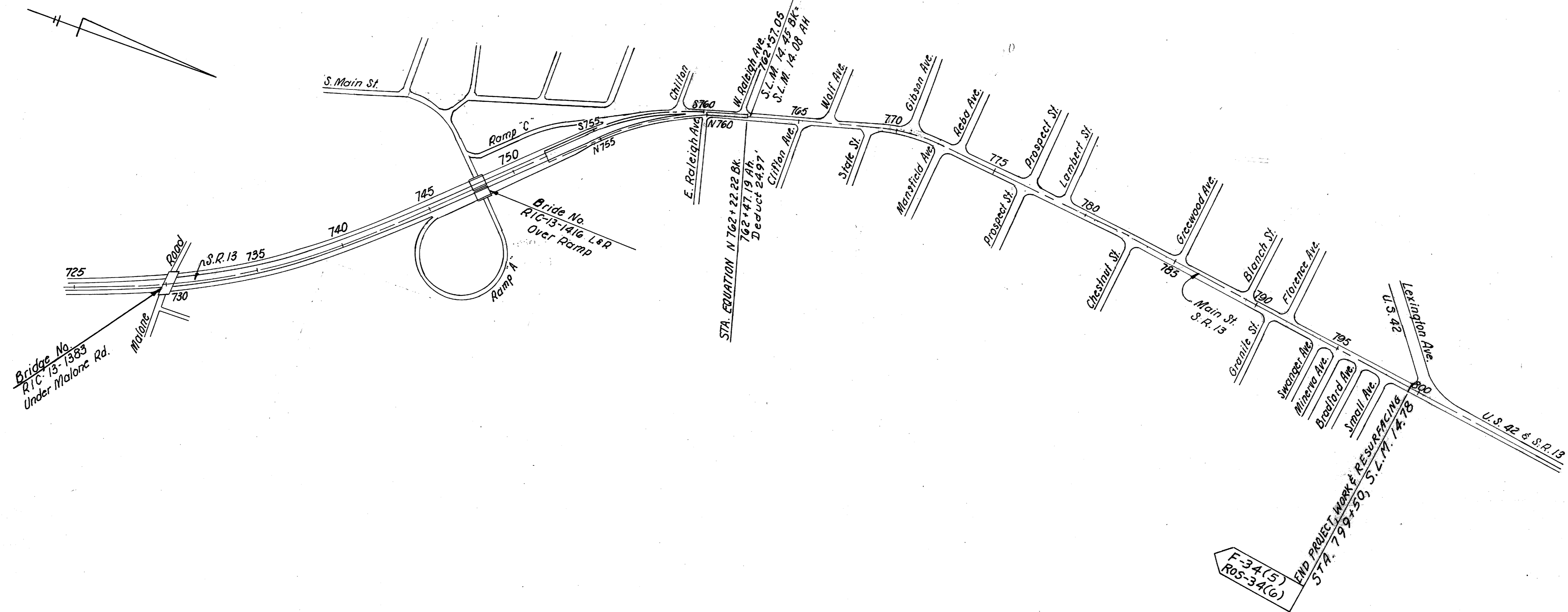
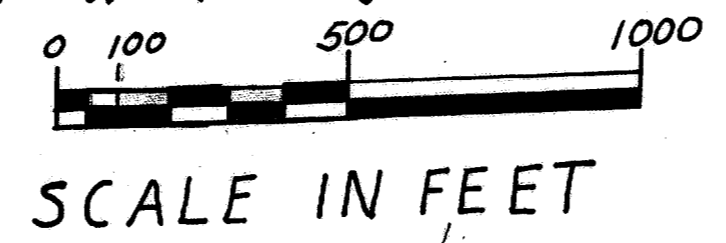
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# SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT
5	OHIO	

RIC-13-10-82

3  
51

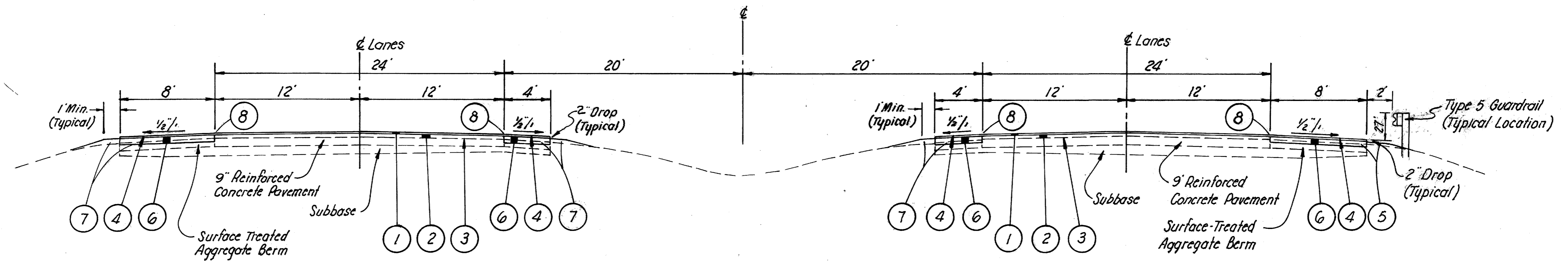


F-34(5)  
R05-34(G)  
END PROJECT WORK & RESURFACING  
STA. 799+50, S.L.M. 74.78



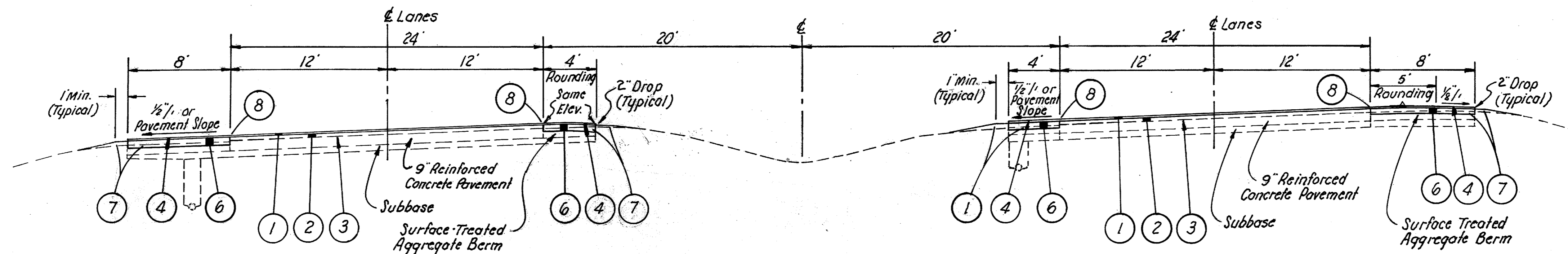
# TYPICAL SECTIONS

## TYPE 848



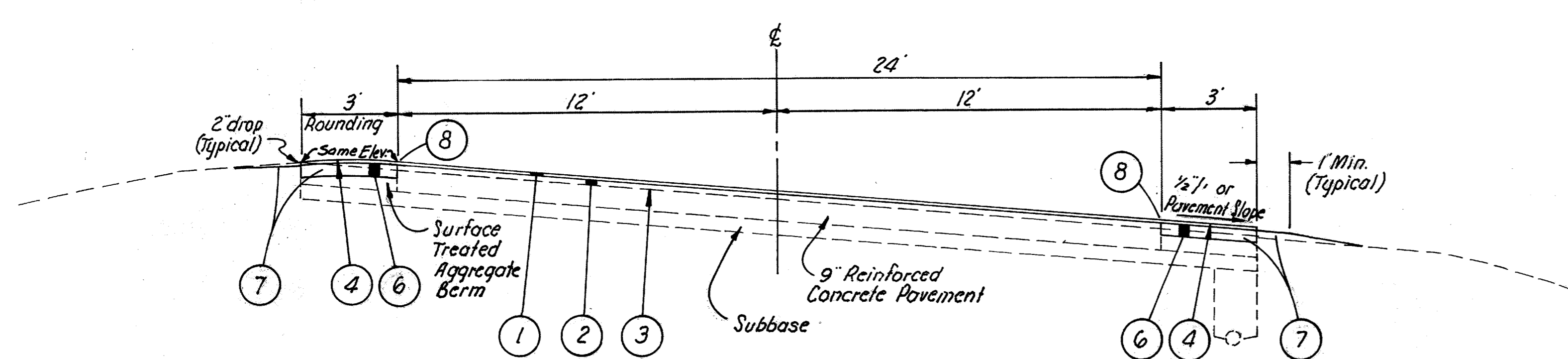
TYPICAL "D" NORMAL 4 LANE W/NEW BERMS

See Sheet 4 for Item Legend

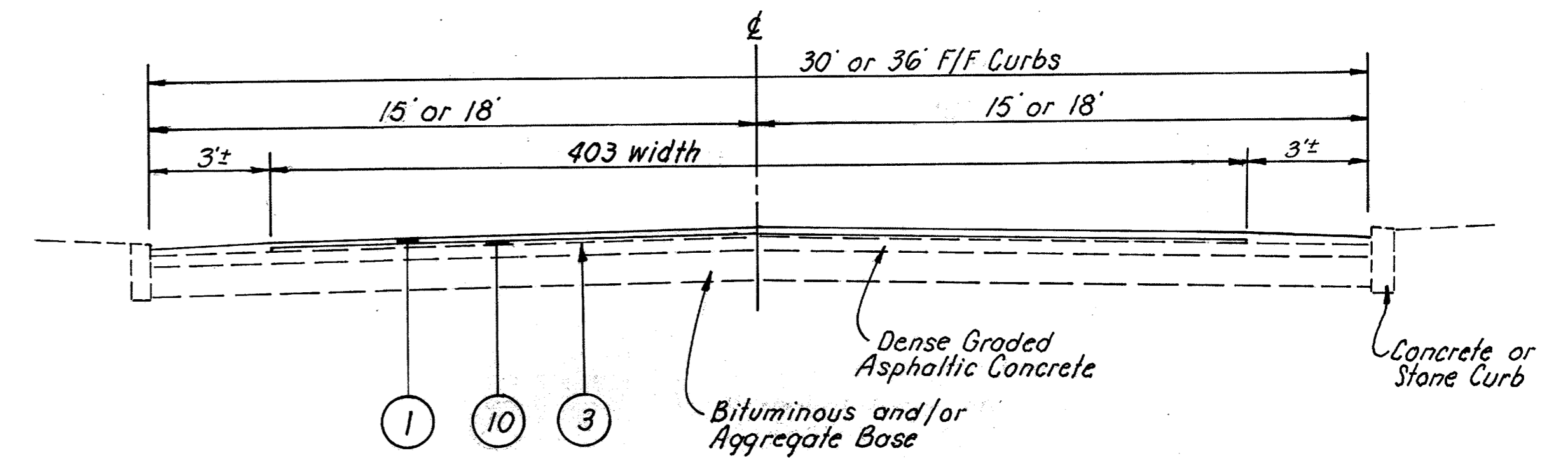


TYPICAL "E" SUPERELEVATED 4 LANE W/NEW BERMS

NOTE:  
See Sheet 18 for Station Limits and Calculations for Each Typical.



TYPICAL "F" TWO-WAY RAMP

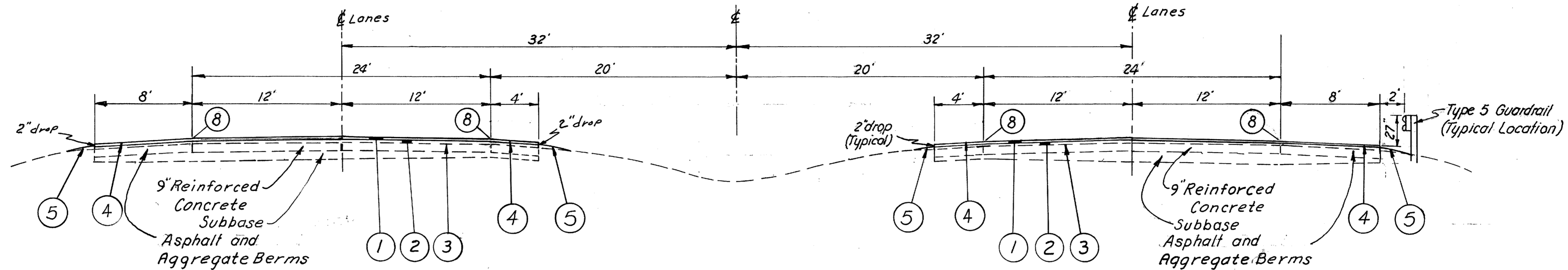


TYPICAL "G" CURBED SECTIONS (2 LANE)

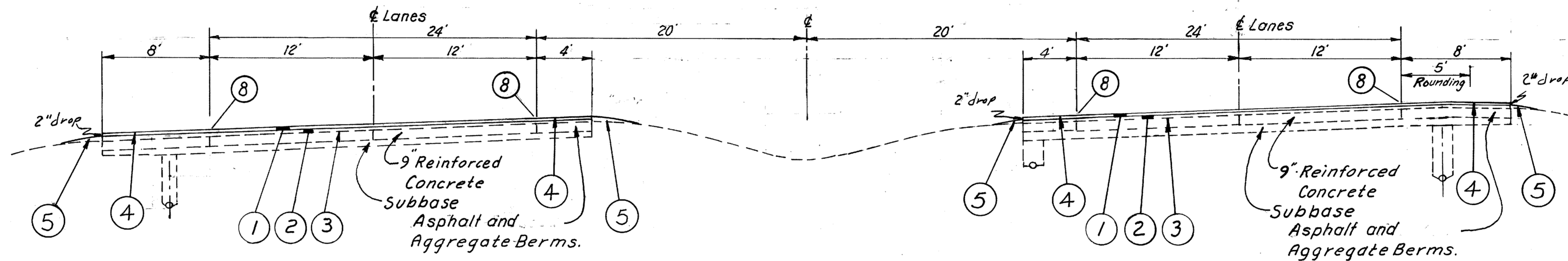


# TYPICAL SECTIONS

## TYPE 848

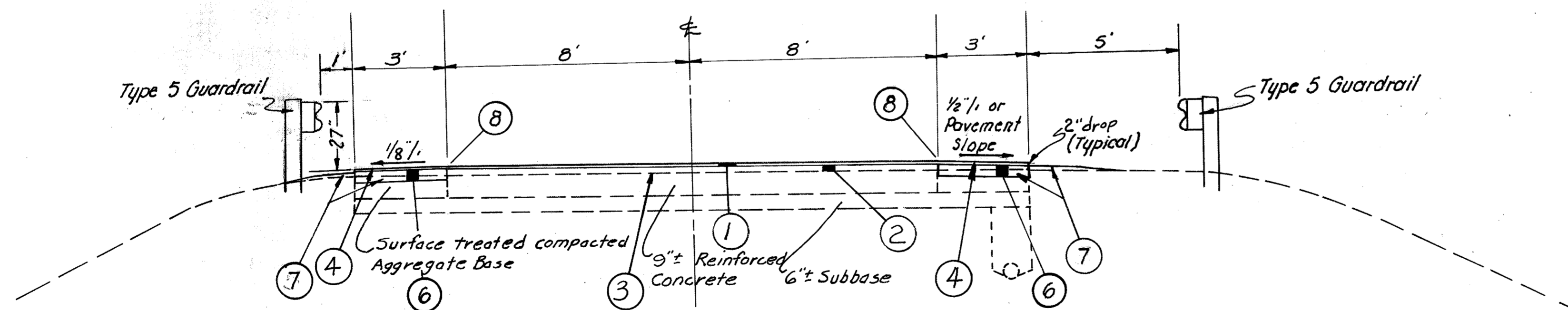


TYPICAL "A"-NORMAL 4 LANE W/RESURFACED BERMS



TYPICAL "B"-SUPERELEVATED 4 LANE W/RESURFACED BERMS

NOTE:  
See Sheet 18 for Station Limits and Calculations for Each Typical.



TYPICAL "C" ONE-WAY RAMP (In direction of Travel)  
(Cook Road and Main Street Interchanges)

### LEGEND

- ① 1" 848 Asphalt Concrete Surface Course, Type 1 AC-20
- ② 1 1/2" Min. 848 Asphalt Concrete Intermediate Course, Type 2 AC-20
- ③ 407 Tack Coat: SS-1, SS-1h, MS-2, RS-1 or RC-250 and Cover Aggregate (Applied to existing pavement and asphalt berm surfaces.)
- ④ 409 Seal Coat Bituminous Material: RT-9, RT-10, MC-800, MC-3000, RS-1, RS-2, CRS-1, CRS-2 or CBAE-800 Applied at the Rate of 0.3 Gal./Sq. Yd. and Cover Aggregate No. 8 Applied at the Rate of 0.008 Cu. Yd./Sq. Yd.
- ⑤ 617 Compacted Aggregate
- ⑥ 3" 301 Bituminous Aggregate Base: AC-20, RT-11 or RT-12
- ⑦ 203 Linear Grading, As Per Plan (See General Note)
- ⑧ Hot Longitudinal Joint
- ⑩ 0" Min. 848 Asphalt Concrete Intermediate Course, Type 1 AC-20.



# GENERAL NOTES

FHWA REGION	STATE	PROJECT
5	OHIO	

RIC-13- 10.82

### FIELD OFFICE:

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 400 SQ. FT. OF FLOOR SPACE.

### PAVEMENT AND FINISH:

THE WORK PROPOSED BY THIS PROJECT IS FOR THE RESURFACING OF THE EXISTING PAVEMENT. THE THICKNESS OF THE EXISTING PAVEMENT WILL NOT BE CHANGED, AND THE PROFILE OF THE PROPOSED SURFACE WILL BE SIMILAR TO THAT OF THE EXISTING PAVEMENT EXCEPT THAT IT WILL BE RAISED AN AMOUNT EQUAL TO THE THICKNESS OF THE REMAINING COURSES SPECIFIED IN THESE PLANS.

### TACK COAT:

THE TACK COAT OPERATION SHALL BE AS DETERMINED AT A PRE-CONSTRUCTION CONFERENCE AS PER 607.05. APPLICATION RATES SHALL NOT EXCEED 0.10 GAL. PER SQ. YD.

### 404 ASPHALT CONCRETE, AS PER PLAN:

THE COURSE SPECIFIED FOR THE 404 SURFACE COURSE SHALL BE CRUSHED CARBONACEOUS STONE + 1/2" MAX. AIR-COOLED SLAG.

### FINISH SURFACE:

THE FINISH TYPE OF FEATHER SHALL BE USED WHERE FEATHER IS ON EXISTING PAVEMENT.

### REINFORCED CONCRETE:

SPECIFIC NUMBER AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED INDICATED BY THE ENGINEER SHALL BE MADE A MATTER OF RECORD BY DOCUMENTATION FROM THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT. ESTIMATED QUANTITIES OF MATERIALS SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS APPROVED BY THE ENGINEER.

### TRAFFIC DIVIDERS:

THE INSTALLATION OF TRAFFIC DIVIDERS AT VARIOUS LOCATIONS ON THE PROJECT SHALL BE AS SHOWN ON THE PLANS. THE EXISTING HOLES SHALL BE REPAIRED WITH ASPHALT CONCRETE AS PER 401.12 AND THEN FILLED WITH 404 ASPHALT CONCRETE AND COMPACTED PRIOR TO THE PLACING OF THE RESURFACING COURSE. THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202. EXISTING TRAFFIC DIVIDERS TO BE REMOVED, AS PER PLAN.

### REPAIRS OF MANHOLES AND DRIVES:

REPAIRS OF MANHOLES AS DIRECTED BY THE ENGINEER TO ELIMINATE WATER POOLS. REPAIRS AT MANHOLE INTERSECTIONS TO BACK OF RADIUS UNLESS OTHERWISE SHOWN ON THE PLANS AS DIRECTED BY THE ENGINEER.

### PAVEMENT JOINTS:

A JOINT SHALL BE MADE BETWEEN THE OUTSIDE PAVEMENT LANE AND SHOULDER AS SHOWN ON THE TYPICAL SECTIONS. ITEM 8. ALL OTHER TRANSVERSE JOINTS BETWEEN PAVEMENT LANES AND CENTERLINE SHALL BE CONSTRUCTION JOINTS WITH ASPHALT CEMENT. THE JOINT BETWEEN ADJACENT PAVEMENT LANES IN THE SAME TRAVEL DIRECTION SHALL BE MADE NO LATER THAN THE FOLLOWING WORK DAY.

### TRENCH FOR PAVED BERM AND TEMPORARY PAVEMENT CONSTRUCTION:

TRENCH EXCAVATION FOR PAVED BERM AND TEMPORARY PAVEMENT WORK SHALL BE PERFORMED ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED AT ALL TIMES WITH BARRICADES AND/OR DRUMS WITH STEADY BURN AMBER LIGHTS ATTACHED. PLACEMENT OF THE PROPOSED 301 MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND THE EXCAVATION OPERATIONS. THE LENGTH OF TRENCH OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

### SEEDING AND MULCHING AS PER PLAN:

ALL DISTURBED AREAS, EXCEPT AS NOTED IN GUARDRAIL REMOVAL NOTES, SHALL BE SEEDED. SEEDING IS CALCULATED FOR THE SOIL AREAS BETWEEN THE WORK LIMITS.

AREAS TO BE SEEDED SHALL BE FERTILIZED AS PER 659.08 WITH A COMMERCIAL FERTILIZER HAVING A FORMULA OF 12-12-12.

ALL AREAS SHALL BE SEEDED WITH THE FOLLOWING MIXTURE, IN LIEU OF THE MIXTURE LISTED IN 659.09:

- 30% KENTUCKY BLUEGRASS
- 60% KENTUCKY 31 FESCUE
- 10% PERENNIAL RYEGRASS

### ITEM SPECIAL - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT:

DETERIORATED CONTRACTION JOINTS IN THE REINFORCED CONCRETE PAVEMENT SHALL BE REPAIRED WITH FULL DEPTH FLEXIBLE REPLACEMENT AS PER THE DETAILS ON SHEET NO. 17, AND PROPOSAL NOTE.

THE REINFORCED CONCRETE JOINTS, TO BE REMOVED IN ACCORDANCE WITH ITEM 202 OF THE SPECIFICATIONS, SHALL BE SAWED A MINIMUM OF 1/4" DEEP, TO SUFFICIENT DEPTH TO CUT THROUGH ALL DOWELS AND WIRE MESH AND THEN BROKEN OUT WITH A PAVEMENT BREAKER AS APPROVED BY THE ENGINEER. ALL LOOSE AND BROKEN MATERIAL SHALL BE REMOVED. ADEQUATE PROTECTION SHALL BE TAKEN NOT TO DAMAGE ADJUTING PAVEMENT.

THE SUBGRADE SHALL BE SHAPED AND RE-COMPACTED AS DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER PRIOR TO PLACING ITEM 301, COSTS INCLUDED IN THE UNIT PRICE BID FOR FULL DEPTH REMOVAL AND FLEXIBLE REPLACEMENT.

PLACEMENT OF 301 SHALL FOLLOW AS CLOSELY AS POSSIBLE THE REMOVAL OPERATIONS FOR TRAFFIC MAINTENANCE PURPOSES. THE PAVEMENT PATCHES SHALL BE CONSTRUCTED BY PLACING AND COMPACTING THE ITEM 301 IN THREE LIFTS AS A CONTINUOUS OPERATION PERMITTING THE REQUIRED ROLLING, USING THE PNEUMATIC TIRE ROLLER FOR FINAL ROLLING, TO BE COMPLETED WHILE THE MIXTURE IS STILL WORKABLE THROUGHOUT THE DEPTH OF THE PATCH.

THE FIRST TWO LIFTS SHALL BE COMPACTED USING SUITABLE PATCH TAMPING EQUIPMENT WHICH SHALL BE OPERATED OVER THE ENTIRE AREA OF THE PATCH UNTIL THE LIFT IS COMPACTED THOROUGHLY AND UNIFORMLY, AS APPROVED BY THE ENGINEER.

THE THIRD LIFT SHALL BE COMPACTED USING A PNEUMATIC TIRE ROLLER, 401.11 TO THE SATISFACTION OF THE ENGINEER. AS ROLLING PROGRESSES, ITEM 301 MAY BE ADDED AS NECESSARY TO PRODUCE A SMOOTH SURFACE WITHIN THE ALLOWABLE TOLERANCE.

THE PAVEMENT PATCHES SHALL BE AT LEAST FLUSH BUT NOT MORE THAN 1/4" THICK ABOVE THE SURFACE OF THE EXISTING PAVEMENT. VARIATION IN EXCESS OF THIS TOLERANCE SHALL BE CORRECTED BY ADDING AND COMPACTING OR BY REMOVING MATERIAL IN A MANNER SATISFACTORY TO THE ENGINEER.

THE SURFACE OF THE COMPLETED PATCH SHALL BE SEALED, IF NECESSARY TO PREVENT RAVELING, USING ITEM 407 TACK COAT MATERIAL AND SAID, THE COST OF SEALING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR FULL DEPTH REMOVAL AND FLEXIBLE REPLACEMENT.

THE ACCEPTED QUANTITY OF FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD OF REMOVAL AREA AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL PAVEMENT REMOVAL, SUBBASE CORRECTION, FLEXIBLE REPLACEMENT AND RESTORATION OF BERMS.

BASIS OF PAYMENT: PAYMENT WILL BE MADE AT THE CONTRACT PRICE FOR ITEM SPECIAL, FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT. SEE SHT. 17 FOR QUANTITIES.

ITEM SPECIAL - PARTIAL DEPTH CONCRETE PAVEMENT REPAIR WITH ASPHALT CONCRETE; SEE PROPOSAL NOTE.

THIS ITEM IS FOR THE REPAIRING OF SMALL AREAS SUCH AS BROKEN CORNERS, AND SECTIONS OF DETERIORATED JOINTS. THIS WORK INCLUDES PARTIAL DEPTH REMOVAL OF BROKEN AND DISINTEGRATED CONCRETE BY CHIPPING HAMMERS AND/OR POINTED TOOLS, CLEANING THE REMOVAL AREAS WITH COMPRESSED AIR, TACKING THE AREAS WITH AC-20, AND REFILLING WITH 404 ASPHALT CONCRETE MATERIAL. THIS WORK IS TO BE PERFORMED AT THE DIRECTION OF THE ENGINEER, AT LOCATIONS DESIGNATED BY HIM.

ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID AND THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER ON THE PARTS OF THIS PROJECT:

- ITEM SPECIAL - PARTIAL DEPTH CONCRETE PAVEMENT REPAIR WITH ASPHALT CONCRETE 5000 SQ. FT. (F-Funds)

### CASTINGS ADJUSTED TO GRADE:

The following estimated number of castings shall be adjusted to Grade as per the specifications and Standard Drawing BP-5, prior to the placement of the 404 Surface Course:

- 604 Storm Manholes, Adjusted to Grade 10 Each
- 604 Sanitary Manholes, Adjusted to Grade 15 Each (F-Funds)
- 814 Water Valve Boxes, Adjusted to Grade 20 Each

Private utility castings will be adjusted to grade by their respective owners. Any unit of this item may be non-performed as directed by the Engineer and the surface course feathered to meet the casting in a manner acceptable to the Engineer.

### EROSION CONTROL:

All permanent erosion control items shall be placed immediately after the earthwork, catch basin adjustment or culvert extension work at each location is completed.

### 848, ASPHALT CONCRETE

Subsequent to the completion of plans, the asphalt concrete used on this project has been revised from items 402, 403 & 404 to supplemental specification 848. All reference to 402, 403 and 404 appearing on the plans shall be considered to read as follows: 402 becomes 848 Asphalt Concrete Intermediate Course, Type 2 AC-20

- 403 becomes 848 Asphalt Concrete Intermediate Course, Type 1 AC-20
- 404 becomes 848 Asphalt Concrete Surface Course, Type 1 AC-20

On this project, Item 848, table 2-2, properties of mixtures shall be for medium traffic volumes.

### FINAL PAVEMENT MARKINGS (PAINT):

LANE, CENTER AND EDGE LINE MARKINGS MUST BE COMPLETED WITHIN TWO (2) WEEKS AFTER FINAL RESURFACING IS COMPLETED ON THE DIRECTIONAL LANES.

SEE TEMPORARY PAVEMENT SPOTTING OF THE SURFACE COURSE UNDER MAINTAINING TRAFFIC NOTE.

OTHER PAVEMENT MARKING SHALL BE COMPLETED WITHIN A REASONABLE PERIOD OF TIME AS DIRECTED BY THE ENGINEER.

### PAVEMENT FINISHES:



# GENERAL NOTES

FED. RD. DIVISION	STATE	PROJECT	
	OHIO		

RIC-13-10.82

ITEM SPECIAL - CRACK SEALING:

ALL OPEN CRACKS IN THE EXISTING ASPHALT OR CONCRETE PAVEMENT SHALL BE CLEANED AND SEALED. THIS WORK SHALL COMMENCE JUST PRIOR TO APPLICATION OF THE TACK COAT RESURFACING.

THE CRACKS SHALL BE CLEANED BY FORCED AIR USING A MINIMUM OF 100 PSI AIR PRESSURE AND WITH A HOOKING DEVICE TO REMOVE ALL LOOSE MATERIAL FROM THE CRACKS. IMMEDIATELY AFTER CLEANING, THE CRACKS SHALL BE SEALED USING ONE OF THE FOLLOWING MATERIALS: MC-800; RS-2; CBAE-800; AC-20 FOR SEALING ASPHALT PAVEMENTS AND HOT APPLIED JOINT SEALER. 705.01 FOR SEALING CONCRETE PAVEMENTS. THE CRACK SEALER SHALL BE PROTECTED FROM TRAFFIC BY METHODS APPROVED BY THE ENGINEER, COST INCLUDED IN THIS PAY ITEM. A 2<sup>ND</sup> APPLICATION SHALL BE APPLIED, IF NECESSARY, TO COMPLETELY FILL CRACKS.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID PER GALLON (ASPHALT PAVEMENTS) AND PER POUND (CONCRETE PAVEMENTS) FOR ITEM SPECIAL, CRACK SEALING. THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED IN THE SUMMARY TO BE USED WHERE DIRECTED BY THE ENGINEER ON THE PROJECT:

ITEM SPECIAL - CRACK SEALING ASPHALT PAVEMENTS 1,200 GALS.  
ITEM SPECIAL - CRACK SEALING CONCRETE PAVEMENTS 15,000 LBS.

WATERING PERMANENT SEEDED AREAS:

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER TO PROMOTE GROWTH OF PERMANENT SEEDED AREAS AS PER 659.09: 659 WATER 30 M-GAL.

FLUSHING AND REPAIR OF UNDERDRAINS:

ALL EXISTING UNDERDRAINS SHALL BE FLUSHED WITH WATER TO DETERMINE IF THEY ARE FUNCTIONING PROPERLY AND IF NOT THE OBSTRUCTIONS ARE TO BE LOCATED AND REPAIRED. THE FOLLOWING PROCEDURES AND METHODS OF PAYMENT ARE PROVIDED FOR THIS PURPOSE. A COPY OF THE ORIGINAL CONSTRUCTION PLANS SHOWING THE LOCATION OF THE UNDERDRAINS AND OUTLETS WILL BE ON FILE IN THE PROJECT OFFICE.

1) ITEM SPECIAL - UNDERDRAIN OPENING - (EACH). THIS ITEM SHALL CONSIST OF EXPOSING THE FIRST TILE AT THE UPPER END OF AN UNDERDRAIN LINE OR A SUBSEQUENT INTERMEDIATE UNDERDRAIN OPENING AS PROVIDED HEREIN. EACH OPENING SHALL INCLUDE THE TRENCH EXCAVATION LENGTHWISE OVER THE EXISTING TILE, REPLACING THE 6" TILE BROKEN IN MAKING THE OPENING AND THE FULL DEPTH BACKFILL WITH NO. 8 AGGREGATE, ALL IN ACCORDANCE WITH SPECIFICATION SECTION 305. PAYMENT FOR THE OPERATIONS DESCRIBED ABOVE SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS INCIDENTAL TO COMPLETING THE ITEM INCLUDING A MAXIMUM OF 6 LIN. FT. OF 6" U.D. AND SHALL BE MADE FOR "EACH"--ITEM SPECIAL--UNDERDRAIN OPENING.

2) ITEM SPECIAL - WATER - (M-GALS.). AFTER THE UNDERDRAIN OPENING HAS BEEN MADE AND THE EXPOSED TILE REMOVED, THE LINE SHALL BE FLUSHED WITH WATER USING A MINIMUM SIZE HOSE OF 2" AND A MAXIMUM VOLUME OF WATER CALCULATED AT 1 1/2 GALLONS PER LIN. FT. OF UNDERDRAIN LINE. THE FLUSHING OPERATION MAY BE STOPPED AT ANY TIME BY THE ENGINEER IF FIELD OBSERVATIONS SHOW THE LINE TO BE EITHER PLUGGED OR OPERATING EFFICIENTLY.

IN THE EVENT THE LINE IS FOUND TO BE PLUGGED OR FLOW RESTRICTED, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE RESTRICTION BY RODDING OR OTHER SIMILAR METHOD APPROVED BY THE ENGINEER. AN INTERMEDIATE UNDERDRAIN OPENING WILL BE PERMITTED AND PAID FOR, PROVIDING IT IS NO CLOSER THAN 750 FT. TO THE INITIAL OPENING OR AT THE MID POINT OF THE LINE. THE COST OF RODDING THE LINE IS TO BE INCLUDED IN THE UNIT BID PRICE FOR WATER.

THE METHOD OF MEASUREMENT FOR THE ITEM SPECIAL--WATER WILL BE IN ACCORDANCE WITH SPECIFICATION-SECTION 616.03 AND PAYMENT WILL BE PER THOUSAND GALLONS (M-GAL.) USED.

3) WHERE A SECTION OF TILE IS FOUND TO BE PLUGGED OR BROKEN, IT IS TO BE ISOLATED AS NOTED ABOVE BY RODDING, THIS SECTION SHALL BE REPLACED AT APPROXIMATELY THE LINE AND GRADE IN ITS ENTIRETY WITH 6" PIPE UNDERDRAINS. THE COST OF REMOVAL OF THE EXISTING TILE IS CONSIDERED TO BE INCIDENTAL TO THIS WORK AND EXTREME CARE IS TO BE EXERCISED IN NOT DAMAGING OR REMOVING ANY MORE TILE THAN IS NECESSARY. MEASUREMENT AND PAYMENT FOR THIS WORK WILL BE AS PER SECTION 605.06 AND 605.07 RESPECTIVELY.

4) AFTER ALL REPAIRS HAVE BEEN MADE TO A LINE, A FINAL FLUSHING WILL BE PERFORMED TO ASCERTAIN THE LINE IS FUNCTIONING PROPERLY AFTER WHICH THE CLOSING OF THE INITIAL OPENING WILL BE PERMITTED.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED IN THE SUMMARY FOR THIS WORK ON THIS PROJECT:

ITEM SPECIAL - UNDERDRAIN OPENING 69 EACH  
ITEM SPECIAL - WATER 46 M-GALS.  
ITEM 605 - 6" PIPE UNDERDRAINS, AS PER PLAN 150 LIN. FT.

LOCATION OF GUARDRAIL:

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THE PLANS, ARE SUBJECT TO ADJUSTMENT IN THE FIELD TO ASSURE THAT THE PLANNED INSTALLATIONS WILL AFFORD THE MAXIMUM PROTECTION FOR TRAFFIC.

PUBLIC SAFETY:

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE, GRADE AND REINSTALL GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. BERM RESHAPING AND GUARDRAIL REMOVAL OR CONSTRUCTION SHALL NOT PROCEED SIMULTANEOUSLY ON BOTH SHOULDERS OF THE SAME ROADWAY. THE EXPOSED END OF THE FINAL SECTION OF AN INCOMPLETE GUARDRAIL RUN SHALL BE DROPPED TO THE GROUND UNTIL THE INSTALLATION IS COMPLETED. WHEN A GAP EXISTS IN A GUARDRAIL RUN DUE TO SPANNING OF A CULVERT OR SIMILAR SITUATION, THE RAIL SHALL BE BOLTED TOGETHER TO ELIMINATE EXPOSED ENDS UNTIL THE INSTALLATION IS COMPLETE. FAILURE TO COMPLY WITH THESE REQUIREMENTS SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED ON THIS PROJECT UNTIL SUCH TIME THAT THE ENGINEER IS ASSURED OF SAID COMPLIANCE.

202 GUARDRAIL REMOVED:

THE DAMAGED GALVANIZED TYPE 4 GUARD RAIL DESIGNATED FOR REMOVAL SHALL BE COMPLETELY REMOVED AND ALL RAIL ELEMENTS, POST, BOLTS AND OTHER HARDWARE SHALL BE DISPOSED OF BY THE CONTRACTOR. ALL POST HOLES SHALL BE CAREFULLY FILLED AND TAMPED AND THE SITE CLEANED AND RESTORED.

SITE RESTORATION WILL INCLUDE GRADING OF THE SHOULDER IN THE AREA OF THE GUARDRAIL REMOVAL TO PROVIDE PROPER SHOULDER DRAINAGE AND SMOOTH SHOULDER SLOPES WHERE TRAFFIC OR WEATHER MAY HAVE BUILT A RIDGE OF EARTH OR DEBRIS UNDER THE GUARDRAIL. THE GRADED OR DISTURBED AREA SHALL BE RE-SEEDED EXCEPT, WHERE NEW GUARDRAIL IS TO BE CONSTRUCTED, AN AREA UNDER THE NEW RAIL 3' WIDE, MEASURED FROM ONE FOOT IN FRONT OF RAIL SHALL NOT BE SEEDED.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID FOR 202 GUARDRAIL REMOVED, MEASURED BY THE LINEAR FOOT CENTER TO CENTER OF TERMINAL POST.

202 GUARD RAIL REMOVED FOR RE-USE OR STORAGE:

GALVANIZED GUARD RAIL DESIGNATED FOR REMOVAL FOR RE-USE SHALL BE CAREFULLY DISMANTLED AND THE RAIL ELEMENTS STORED FOR EITHER RE-USE ELSEWHERE ON THE PROJECT OR REMOVED BY STATE OR CITY FORCES. ALL POST, BLOCKS BOLTS AND OTHER MATERIAL NOT CONSIDERED SALVAGEABLE SHALL BE DISPOSED OF AS DIRECTED. ALL POST HOLES SHALL BE CAREFULLY FILLED AND TAMPED AND THE SITE CLEANED AND RESTORED AS PER THE NOTE ABOVE.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID FOR 202 GUARD RAIL REMOVED FOR RE-USE OR STORAGE OR 202 GUARD RAIL, BARRIED DESIGN, REMOVED FOR RE-USE OR STORAGE, MEASURED BY THE LINEAR FOOT CENTER TO CENTER OF TERMINAL POST OR CENTER OF BRIDGE CONNECTION SPLICES.

GUARD RAIL, TYPE 5, AS PER PLAN:

GALVANIZED RAIL ELEMENTS SALVAGED UNDER 202 ON THIS PROJECT MAY BE USED IN LIEU OF FURNISHING NEW RAIL ELEMENTS FOR 606 GUARD RAIL. IF SALVAGED RAIL IS USED, IT MUST BE RENOVATED PRIOR TO INSTALLATION AND NEW SPLICE BOLTS FURNISHED.

THE EXISTING GALVANIZED RAIL ELEMENTS SHALL BE CLEANED OF RUST, DIRT AND OTHER FOREIGN MATERIALS. INTERMEDIATE POST BOLT SLOTS 3/4" X 2-1/2" SHALL BE FIELD PUNCHED OR DRILLED IF NECESSARY. AREAS ON WHICH THE SPLICER COATING HAS BEEN DAMAGED AND INTERMEDIATE HOLES SHALL BE REPAIRED OR REGALVANIZED IN ACCORDANCE WITH AASTO SPECIFICATION M 36-731 SECTION 23 OR THEY MAY BE REPAIRED UNDER THE DIRECTION OF THE ENGINEER WITH STICK-FORM GALVANIZING REPAIR COMPOUND MEETING THE REQUIREMENTS OF FSS 0-0-93.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 606 GUARD RAIL, TYPE 5, AS PER PLAN OR 606 GUARD RAIL, TYPE 5, BARRIER DESIGN, AS PER PLAN.

BRIDGE TERMINAL ASSEMBLIES MODIFIED AS PER PLAN:

ON THIS PROJECT, THE ALTERNATE SELF-DRILLING ANCHORS AS PER STANDARD DRAWINGS GR-3A AND GR-3B SHALL NOT BE SUBSTITUTED FOR THE 1" AND 3/8" BOLTS ON THE BRIDGE TERMINAL ASSEMBLIES.

LOCATION OF GUARD RAIL:

THE LOCATION OF GUARD RAIL RUNS AS SHOWN IN THE PLANS, ARE SUBJECT TO ADJUSTMENT IN THE FIELD TO ASSURE THAT THE PLANNED INSTALLATIONS WILL AFFORD THE MAXIMUM PROTECTION FOR TRAFFIC.

GUARD RAIL OVER PIER FOOTINGS AND CULVERTS:

WHEN SUFFICIENT POST DEPTH IS NOT AVAILABLE DUE TO PIER FOOTINGS, CULVERTS OR OTHER OBSTRUCTION, THE GUARD RAIL POST DIRECTLY OVER THE OBSTRUCTION SHALL NOT BE DRIVEN BUT SET IN HOLES. IF THE DISTANCE BETWEEN THE GROUND LINE AND THE TOP OF THE OBSTRUCTION IS LESS THAN THREE (3) FEET, THE POST SHALL BE ENCASED IN A MINIMUM OF 4" THICKNESS OF CLASS C CONCRETE FOR THE FULL DEPTH OF THE POST.

PAYMENT FOR ALL THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 606, GUARD RAIL, TYPE 5.

ITEM 202, WEARING COURSE REMOVED AND DISPOSED OF:

SURFACE REMOVAL OF THE EXISTING ASPHALTIC CONCRETE IS TO BE PERFORMED AS DIRECTED AND IN AREAS DESIGNATED BY THE ENGINEER. REMOVAL OF THE EXISTING SURFACE MAY BE REQUIRED TO ELIMINATE ADVERSE SURFACE DISTORTIONS WHICH IN THE JUDGEMENT OF THE ENGINEER CANNOT BE SATISFACTORILY CORRECTED IN THE PAVING COURSES.

THESE AREAS MAY INCLUDE MATERIAL DISPLACED BY RUTTING OR SHOIVING, SURFACE PATCHES AND TRANSVERSE BUMPS.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 202 WEARING COURSE REMOVED AND DISPOSED OF 300 SQ. YDS.

THIS ITEM MAY BE USED ADJACENT TO CATCH BASIN GRATES TO AID IN FEATHERING THE SURFACE COURSE TO MEET THE GRATES.

EROSION CONTROL:

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

ITEM SPECIAL - FLEXIBLE BASE REPAIR:

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF THE EXISTING ASPHALT PAVEMENT AND BASE MATERIAL IN AREAS EXHIBITING PAVEMENT FAILURE.

THE ENGINEER SHALL DESIGNATE THE LOCATIONS AND LIMITS OF THE REPAIR AREAS. THE REPAIR AREAS SHALL BE ROUGHLY RECTANGULAR IN SHAPE. THE PAVEMENT SHALL BE REMOVED WITHIN THE DESIGNATED AREAS BY METHODS WHICH WILL NOT DAMAGE THE ADJACENT PAVEMENT. THE DEPTH OF REMOVAL SHALL BE SUFFICIENT TO REMOVE ALL DAMAGED PAVEMENT BUT TO A MINIMUM DEPTH OF 8" WITHIN THE REPAIR AREA. ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH 203.05.

AFTER REMOVAL, ITEM 407 TACK COAT SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY COAT ALL EXPOSED SURFACES AND FILL CRACKS. ITEM 301 OR 402 SHALL THEN BE PLACED AND COMPACTED AS UNDER FULL DEPTH RIGID PAVEMENT-REMOVAL AND FLEXIBLE REPLACEMENT NOTE, SEE SHEET NO. 6. THIS ITEM SHALL BE COMPLETED PRIOR TO THE APPLICATION OF THE 403 LEVELING COURSE.

THE NUMBER OF SQUARE YARDS TO BE PAID SHALL BE CALCULATED USING THE DIMENSIONS ESTABLISHED BY THE ENGINEER. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK, INCLUDING THE 407, 301 OR 402. THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM SPECIAL FLEXIBLE BASE REPAIR 300 SQ. YDS.

ITEM 605 PIPE UNDERDRAIN, AS PER PLAN:

IF 707.15 MATERIAL IS USED FOR THE 4" AND 6" PIPE UNDERDRAINS, THE CERTIFICATION REQUIREMENTS SHALL BE WAIVED.



# GENERAL NOTES

## SIGNING

### 844 REMOVAL OF GROUND MOUNTED SIGNS:

GROUND MOUNTED SIGNS SHALL BE CAREFULLY REMOVED WHERE INDICATED ON THE PLANS. THE SIGNS SHALL BE RE-ERECTED ELSEWHERE ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY STATE FORCES.

TO ASSURE MAINTENANCE OF ADEQUATE TRAFFIC CONTROL AT ALL TIMES, NO SIGNS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

RE-ERECTION MAY REQUIRE FIELD DRILLING AND ANY NECESSARY HARDWARE SHALL BE FURNISHED.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH SIGN REMOVED AND STORED OR RE-ERECTED, CATEGORIZED AS MAJOR SIGNS (40 SQUARE FEET OR LARGER) OR OTHER SIGNS.

- 844 EACH REMOVAL OF GROUND MOUNTED MAJOR SIGN AND RE-ERECTION
- 844 EACH REMOVAL OF GROUND MOUNTED SIGN AND STORAGE
- 844 EACH REMOVAL OF GROUND MOUNTED SIGN AND RE-ERECTION

### 844 REMOVAL OF GROUND MOUNTED SIGN SUPPORTS:

GROUND MOUNTED SIGN SUPPORTS SHALL BE CAREFULLY REMOVED WHERE INDICATED ON THE PLANS AND STORED ON THE PROJECT FOR SALVAGE BY STATE FORCES. SUPPORTS SHALL BE REMOVED WITH CARE TO AVOID DAMAGING. FOUNDATIONS FOR SUPPORTS SHALL BE REMOVED TO AT LEAST ONE FOOT BELOW GROUNDLINE WITH BACKFILLING, RESTORATION OF SURFACES AND DISPOSAL OF SURPLUS MATERIAL IN ACCORDANCE WITH 603.09.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH SUPPORT REMOVED AND STORED, CATEGORIZED AS BEAM OR POST (NO. 8 AND SMALLER).

- 844 EACH REMOVAL OF GROUND MOUNTED BEAM SUPPORT
- 844 EACH REMOVAL OF GROUND MOUNTED POST SUPPORT

### 844 REMOVAL OF OVERHEAD MOUNTED SIGNS:

OVERHEAD MOUNTED SIGNS SHALL BE CAREFULLY REMOVED WHERE INDICATED ON THE PLANS. THE SIGNS SHALL BE RE-ERECTED ELSEWHERE ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY STATE FORCES.

TO ASSURE MAINTENANCE OF ADEQUATE TRAFFIC CONTROL AT ALL TIMES, NO SIGNS SHALL BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

SIGNS TO BE RE-ERECTED MAY REQUIRE NEW HARDWARE AND SIGN BRACKETS SHALL BE REDRILLED WHEN NECESSARY.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH SIGN REMOVED AND CATEGORIZED AS STORED OR RE-ERECTED.

- 844 EACH REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE
- 844 EACH REMOVAL OF OVERHEAD MOUNTED SIGN AND RE-ERECTED

### 844 REMOVAL OF OVERHEAD SIGN SUPPORTS, BY TYPE:

OVERHEAD SIGN SUPPORTS SHALL BE REMOVED WHERE INDICATED ON THE PLANS. SUPPORTS SHALL BE CAREFULLY DISMANTLED, REMOVED, AND STORED ON THE PROJECT FOR SALVAGE BY STATE FORCES. SUPPORT FOUNDATIONS SHALL BE REMOVED TO AT LEAST ONE FOOT BELOW GROUNDLINE WITH BACKFILLING, RESTORATION OF SURFACES AND DISPOSAL OF SURPLUS MATERIAL IN ACCORDANCE WITH 603.09.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH SUPPORT REMOVED BY TYPE.

- 844 EACH REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, BY TYPE

### 844 SIGNS, BY TYPE:

REFLECTIVE SHEETING FOR SIGN FACES SHALL BE TYPE F IN ACCORDANCE WITH 844.03:

### 844 SIGN SUPPORT ALTERNATE DESIGNS:

ALTERNATE DESIGNS FOR SIGN SUPPORTS SUCH AS DIFFERING ENGINEERING DESIGNS OR DIFFERENT STRUCTURAL MATERIALS MAY BE SUBMITTED BY A BIDDING CONTRACTOR TO THE DEPARTMENT FOR ACCEPTANCE. ALTERNATE DESIGNS SHALL BE SUBMITTED TO THE DEPARTMENT AT LEAST 21 DAYS IN ADVANCE OF THE BID OPENING DATE AND SUBMISSION SHALL BE TO THE FOLLOWING ADDRESS:

OHIO DEPARTMENT OF TRANSPORTATION  
BUREAU OF DESIGN SERVICES  
25 SOUTH FRONT STREET  
COLUMBUS, OHIO 43215

NOTIFICATION OF THE ACCEPTANCE OR REJECTION OF THE ALTERNATE DESIGN WILL BE GIVEN BY THE DEPARTMENT TO THE BIDDING CONTRACTOR AT LEAST 7 DAYS IN ADVANCE OF THE BID OPENING DATE.

### 844 GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN:

SPECIAL POSTS INCORPORATING A SQUARE TUBULAR TOP EXTENSION FOR MOUNTING SIGNS AT RIGHT ANGLES TO OTHER SIGNS ON THE POST SHALL BE FURNISHED, ASSEMBLED AND ERECTED IN ACCORDANCE WITH TC-41.50 AND THE PLANS.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT OF SUPPORT OVERALL LENGTH, FURNISHED AND IN PLACE.

- 844 L.F. GROUND MOUNTED SUPPORT, NO. 4 POST, AS PER PLAN

### 844 ENCLOSURE PADLOCKS:

DISCONNECT SWITCH ENCLOSURES FURNISHED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 844.10(4) SHALL INCLUDE A PADLOCK EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNON 660, WITH LOCK BODY OF BRONZE OR BRASS, AND KEYING IN ACCORDANCE WITH THE FOREGOING SPECIFICATION.

### 844 BALLAST:

IN ADDITION TO THE PROVISIONS OF SUPPLEMENTAL SPECIFICATION 844.10, BALLAST FOR MERCURY VAPOR LUMINAIRES SHALL BE LOCATED WITHIN THE LUMINAIRE HOUSING OR IN A WEATHERPROOF HOUSING CONTIGUOUS TO THE LUMINAIRE HOUSING.

### ITEM SPECIAL-CABLE SPLICING KIT

*THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING AN APPROVED CABLE SPLICING KIT AS DESCRIBED IN PARAGRAPH 5 OF SECTION 713.15 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE COST OF ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH "ITEM SPECIAL-CABLE SPLICING KIT."*

## LIGHTING

### COOPERATION WITH OHIO EDISON COMPANY:

THE CONTRACTOR IS ADVISED THAT THE EXISTING LIGHTING SYSTEM AT I-71 AND SR-13 IS THE PROPERTY OF THE OHIO EDISON COMPANY AND WILL BE REMOVED BY THEIR FORCES. THE CONTRACTOR SHALL COOPERATE WITH AND ARRANGE SUITABLE WORK SCHEDULES, SUBJECT TO THE APPROVAL OF THE ENGINEER, TO PERMIT OHIO EDISON TO REMOVE ANY OF THE EXISTING LIGHTING EQUIPMENT THAT CONFLICTS WITH THE NEW LIGHTING SYSTEM.

THE CONTRACTOR SHALL ARRANGE HIS WORK SCHEDULE SUCH THAT THE INTERRUPTION TO THE LIGHTING SYSTEMS SHALL BE HELD TO A MINIMUM AND IN NO CASE SHALL THE NEW OR EXISTING SYSTEM BE INOPERATIVE FOR MORE THAN TWO CONSECUTIVE WEEKS.

COMPENSATION FOR THE ABOVE SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS INCLUDED IN THIS PROJECT. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH OHIO EDISON THROUGH THE DISTRICT'S UTILITY SUPERVISOR.

### SPECIFICATIONS:

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

REFERENCE SHALL BE MADE TO STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET OF THESE PLANS.

### 625.03 - GENERAL:

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

OHIO EDISON COMPANY  
174 PARK AVENUE WEST  
MANSFIELD, OHIO 44902

THE PROJECT HAS BEEN DESIGNED ON THE BASIS OF 5% VOLTAGE DROP PERMISSIBLE ON BRANCH CIRCUITS. THE PROJECT WILL RECEIVE 480 VOLT TWO-WIRE SECONDARY SERVICE ONE SIDE GROUNDED FROM OHIO EDISON COMPANY.

THE PROJECT HAS BEEN DESIGNED ON THE BASIS OF PARTIAL LIGHTING WITH ULTIMATE POTENTIAL OF 1.2 FOOT CANDLE INITIAL, WITH A MAXIMUM UNIFORMITY RATIO OF 4.0 TO 1.

### 625.07 - 713.11 LUMINAIRES:

STYLE B LUMINAIRES, DESIGNED FOR USE WITH 200 WATT HPS LAMPS; SHALL HAVE SINGLE RATED 480 VOLT, 200 WATT INTEGRAL REGULATOR BALLASTS. STYLE B LUMINAIRES SHALL BE GENERAL ELECTRIC M-400, WESTINGHOUSE 0V-25, ITT AMERICAN 400 OR EQUAL APPROVED BY THE ENGINEER.

STYLE C LUMINAIRES, DESIGNED FOR USE WITH 310 WATT HPS LAMPS; SHALL HAVE SINGLE RATED 480 VOLT, 310 WATT INTEGRAL REGULATOR BALLASTS. STYLE C LUMINAIRES SHALL BE GENERAL ELECTRIC M-1000, WESTINGHOUSE 0V-50, ITT AMERICAN 1000, OR EQUAL APPROVED BY THE ENGINEER.

### 625.07 - 713.13 UNDERPASS LUMINAIRES:

UNDERPASS LUMINAIRES SHALL BE HOLOPHANE "UNDERPASS WALLPACK", WESTINGHOUSE, OR GENERAL ELECTRIC WL-250 UNDERPASS UNIT OR EQUAL APPROVED BY THE ENGINEER, AND SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSE. THE INTEGRAL BALLAST SHALL BE OF A REGULATOR TYPE, SINGLE RATED 480 VOLTS, AND DESIGNED FOR USE WITH A-100 WATT HPS LAMP.



# GENERAL NOTES

## LIGHTING (Cont'd)

625 CONDUIT JACKED UNDER PAVEMENT, AS PER PLAN;  
THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING CONDUIT OF THE  
SPECIFIED SIZE UNDER EXISTING PAVEMENT AND CONTIGUOUS SHOULDERS  
BY AN APPROVED METHOD SUCH AS "DRILLING" OR "JACKING".

THE CONTRACTOR SHALL PLACE THE CONDUIT WITH THE LEAST AMOUNT OF  
DISTURBANCE TO THE EXISTING PAVEMENT, SUBBASE, BERM PAVEMENT, OR  
SHOULDERS OF THE ROADWAY. ALL PUSH PITS OR ANY NECESSARY EXCAVATIONS  
SHALL BE BACKFILLED AND RESTORED IN ACCORDANCE WITH 625.01.

MEASUREMENT OF THE CONDUIT SHALL BE THE ACTUAL AMOUNT OF LINEAL  
FEET INSTALLED UNDER PAVEMENT AND SHOULDERS, MEASURED IN PLACE, AS  
ACCEPTED BY THE ENGINEER. THE UNIT PRICE BID FOR ITEM 625 "CONDUIT  
JACKED UNDER PAVEMENT, AS PER PLAN" SHALL BE FULL COMPENSATION FOR  
EXCAVATION, DRILLING OR JACKING, BACKFILLING, COMPACTION, RESTORATION,  
AND ALL LABOR, MATERIAL, EQUIPMENT AND INCIDENTALS NECESSARY TO COM-  
PLETE THE WORK AS SPECIFIED.

### 839 HIGH VOLTAGE DIRECT CURRENT TEST:

A HIGH VOLTAGE DIRECT CURRENT TEST, AS DESCRIBED IN SUPPLEMENTAL  
SPECIFICATION 839, SHALL BE PERFORMED ON ALL DISTRIBUTION CABLE AND DUCT  
CABLE SYSTEMS TO BE INSTALLED ON THIS PROJECT. THE TEST SHALL NOT BE  
PERFORMED UNTIL AFTER ALL NEW CONSTRUCTION, SUCH AS GUARDRAIL, FENCE,  
MULTI-PHASE POSTS, SIGN SUPPORTS, ETC., IN THE IMMEDIATE VICINITY OF THE  
LOCATION OF THE CABLE NOW BEING TESTED, HAS BEEN COMPLETED.

### 841 SERVICE TO UNDERPASS LIGHTING

THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL SERVICE,  
EXCEPT FOR LUMINAIRES AND STRUCTURE GROUNDING, FOR AN UNDERPASS  
LIGHTING SYSTEM ON BRIDGE NOS. RIC-71-1068 L & R OVER SR-13. THE INSTAL-  
LATION WORK SHALL INCLUDE CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTINGS,  
ILLUMINATION DEVICES, CABLES, AND ALL INCIDENTALS NECESSARY TO COMPLETE, READY  
FOR USE, THE SERVICE AS DETAILED ON STD. DRAWING HL-11. THE LUMP SUM PRICE  
FOR THIS SERVICE TO UNDERPASS LIGHTING SHALL INCLUDE  
EQUIPMENT FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE  
WORK AS SPECIFIED. COMPONENT PARTS NOT SPECIFICALLY MENTIONED BUT REQUIRED  
FOR SATISFACTORY OPERATION OF THIS ITEM SHALL BE FURNISHED AND CONSIDERED  
PAID FOR AS PART OF THE ITEM.

AN ESTIMATED QUANTITY OF 120 LIN. FT. OF 605, 4-INCH PIPE UNDERDRAINS  
IS PROVIDED IN THE SUMMARY FOR USE AS DIRECTED  
BY THE ENGINEER IN PROVIDING POSITIVE DRAINAGE FOR PULL BOXES IN FILL  
AREAS. IT IS INTENDED THAT ALL PULL BOXES IN THESE AREAS BE PROVIDED WITH  
SUCH DRAINAGE, PROVIDED THE LENGTH OF UNDERDRAIN NECESSARY TO OBTAIN A  
SATISFACTORY OUTFALL DOES NOT EXCEED 20 FEET APPROXIMATELY. A PERFORATED  
PIPE OR CONDUIT MATERIAL APPROVED BY THE ENGINEER MAY BE USED IN THE  
CONSTRUCTION OF THIS ITEM.

### CONNECTOR KITS

AT THE OPTION OF THE CONTRACTOR, TYPE II CABLE CONNECTIONS MAY  
BE SUBSTITUTED WHERE TYPE II OR TYPE III CABLE CONNECTIONS  
ARE SPECIFIED IN HAND HOLES OR TRANSFORMER BASES OF LIGHT  
POLES.

### ALUMINUM TRANSFORMER BASES

TRANSFORMER BASES SHALL BE PERMANENTLY MARKED OR LABELED  
TO IDENTIFY THAT THEY MEET THE REQUIREMENTS OF FHWA NOTICE  
N50-40.20.

### 844 REMOVAL OF SIGN LIGHTING APPURTENANCES:

THE DISCONNECT SWITCH WITH ENCLOSURE SHALL BE CAREFULLY REMOVED  
FROM THE EXISTING OVERHEAD SIGN STRUCTURE WHERE INDICATED ON THE PLANS  
AND STORED ON THE PROJECT FOR SALVAGE BY STATE FORCES.

CARE SHOULD BE EXERCISED NOT TO CHANGE THE EXISTING WIRING AS IT  
WILL BE SALVAGED FOR CONNECTION TO THE NEW DISCONNECT SWITCH WITH  
ENCLOSURE, WHICH WILL BE PAID FOR SEPARATELY.

THE EXISTING PHOTOELECTRIC CONTROL SHALL ALSO BE DISCONNECTED AND  
REMOVED FROM THE INSTALLATION FOR SALVAGE BY STATE FORCES.

TO ASSURE ADEQUATE LIGHTING OF THE EXISTING SIGNS, NO DISCONNECT  
SWITCH OR OTHER LIGHTING APPURTENANCES SHALL BE REMOVED WITHOUT THE AP-  
PROVAL OF THE ENGINEER.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH, REMOVAL OF  
SIGN LIGHTING APPURTENANCES, WHICH SHALL INCLUDE THE REMOVAL OF THE  
DISCONNECT SWITCH WITH ENCLOSURE, THE REMOVAL OF THE PHOTOELECTRIC CONTROL  
AND THE REWIRING OF THE NEW DISCONNECT SWITCH WITH ENCLOSURE AND ANY  
OTHER LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO MAKE A COMPLETE WORK-  
ABLE INSTALLATION.

### 844 SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY:

SWITCH ENCLOSURES MOUNTED ON EXISTING OVERHEAD SIGN SUPPORTS SHALL  
BE ATTACHED BY AN ASSEMBLY AS DETAILED ON TC-32.11, CONSISTING OF ALL  
PARTS NECESSARY FOR MOUNTING THE ENCLOSURE. BRACKET ASSEMBLIES SHALL  
INCLUDE TWO BRACKETS, NECESSARY FIELD DRILLING AND HARDWARE.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH BRACKET ASSEMBLY  
FURNISHED AND IN PLACE.

844 EACH SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY

### STANDARD CONSTRUCTION DRAWING HL-3:

POLE BASE DETAILS SHOWN ON THIS DRAWING ARE ESSENTIALLY FOR GALVANIZED  
STEEL POLES. FOR ALUMINUM DESIGNS, OR OTHER PERMITTED STEEL MATERIAL  
DESIGNS, VARIATIONS FROM THESE DETAILS WILL BE ACCEPTABLE, AS APPROVED BY  
THE ENGINEER.

### PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO  
MASTER NO. 48KA OR WILSON BOHANNAN 660A, AND SHALL BE KEYED  
IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 844.10(A),  
PARAGRAPH 3. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE  
ITEM(S) BEING LOCKED.

DESIGN NUMBER	FOUNDATION ANCHOR BOLTS		TRANSFORMER BASE STYLE
	SIZE DIAMETER X LENGTH	BOLT CIRCLE DIAMETER	
AT15B41.7	1" X 40"	15"	AT-A
AT12B34.2	1" X 40"	15"	AT-A

### 202 REMOVE EXISTING MERCURY LUMINAIRE:

THIS WORK SHALL CONSIST OF REMOVING THE EXISTING LAMP AND LUMINAIRE  
COMPONENTS AS SHOWN ON SHEET NO. 19420. THE EXISTING LUMINAIRES AND  
LAMPS WHICH HAVE BEEN REMOVED SHALL BE STORED ON THE PROJECT FOR REMOVAL  
BY STATE FORCES.

PAYMENT FOR ALL THE ABOVE WORK, INCLUDING ALL LABOR, MATERIAL AND  
EQUIPMENT TO REMOVE THE EXISTING LAMP & LUMINAIRE SHALL BE INCLUDED IN THE  
UNIT PRICE BID PER EACH FOR ITEM 202 REMOVE EXISTING MERCURY LUMINAIRE.

### SPECIAL REMOVE AND RE-ERECT SERVICE POLE:

THE EXISTING SERVICE POLES SHALL BE REMOVED AND  
RELOCATED AS SHOWN ON SHEET NO. 19. THE SERVICE POLE SHALL BE REMOVED  
IN SUCH A MANNER AS NOT TO DAMAGE IT FOR REUSE. BACKFILLING, RESTORATION  
OF SURFACES AND DISPOSAL OF SURPLUS MATERIAL SHALL BE IN ACCORDANCE WITH  
603.09. ANY EXISTING APPURTENANCES ATTACHED TO THE POLE THAT ARE NOT  
NECESSARY FOR THE FINAL INSTALLATION SHALL BE REMOVED AND STORED ON THE  
PROJECT FOR REMOVAL BY STATE FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE CONTRACT UNIT PRICE BID  
FOR EACH EXISTING SERVICE POLE REMOVED AND RE-ERECTED.

SPECIAL EACH REMOVE AND RE-ERECT SERVICE POLE

CONTROL CENTER DATA							
CONTROL CENTER	CONNECTED LOAD KVA	SERVICE ENTRANCE CONDUCTOR SIZE - AWG.	ENCLOSURE RATING AMPS.	CIRCUIT NUMBER	CIRCUIT LOAD AMPS.	CIRCUIT FUSE SIZE AMPS.	REMARKS
A	1.3	4	30	AA	2.65	15	
B	7.2	4	30	BA BB	8.00 6.97	15 15	

FOR CONTROL CENTER WIRING DIAGRAMS REFER TO "SINGLE UNIT 480 VOLT,  
2-WIRE GROUND NEUTRAL" DETAIL ON STD. DWG. HL-16

### Lighting Legend

- Δ Service pole and Control Center
- ⊕ Existing Service Pole
- Pull Box
- ⌚ Light Pole

Note: Light Poles, Conduit and  
Cables identified Separately



# GENERAL NOTES

**614 MAINTAINING TRAFFIC:**

A. GENERAL - THROUGH TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES ON S.R. 13, ON ALL INTERCHANGE RAMP AND ON ALL SIDE ROADS. TRAFFIC CONTROL SHALL BE MAINTAINED AS PER THE SPECIFICATIONS, PLAN DETAILS, AS OUTLINED IN THE CONSTRUCTION AND MAINTENANCE OPERATIONS SECTION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION WITH THE LATEST REVISIONS. IN ADDITION, THE FOLLOWING REQUIREMENTS SHALL APPLY:

- 1) THE CONTRACTOR SHALL SUBMIT, IN WRITING, A SCHEDULE OF OPERATIONS TO THE DIRECTOR AND RECEIVE APPROVAL BEFORE WORK IS STARTED ON THE PROJECT.
- 2) A WATCHMAN SHALL BE ON THE PROJECT AFTER WORKING HOURS DURING THE TIMES TRAFFIC IS DIVERTED FROM ITS NORMAL TRAFFIC LANES TO INSURE THE PROPER FUNCTIONING OF THE VARIOUS TRAFFIC CONTROL DEVICES.

B. TRAFFIC CONTROL--2-LANE UNDIVIDED SECTIONS - THROUGH TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES, EXCEPT FOR MINIMUM PERIODS OF TIME DURING PAVEMENT REPAIR AND PAVING OPERATIONS, ONE-WAY TRAFFIC WILL BE PERMITTED. NO ONE-WAY TRAFFIC WILL BE PERMITTED AFTER WORKING HOURS. SEE SHEET NO. 51 FOR ADDITIONAL DETAILS.

C. TRAFFIC CONTROL--4-LANE SECTIONS - A MINIMUM OF ONE LANE OF THROUGH TRAFFIC SHALL BE MAINTAINED IN EACH DIRECTION AT ALL TIMES DURING WORKING HOURS, EXCEPT AS NOTED BELOW FOR ERECTION OF OVERHEAD SIGN SUPPORTS. ALL TRAFFIC SHALL BE RETURNED TO ITS NORMAL PATTERN AFTER THE COMPLETION OF EACH WORK DAY, EXCEPT DURING THE REQUIRED PERIODS FOR THE REPAIR AND OVERLAY OF THE VARIOUS BRIDGE DECKS ON THE PROJECT (SEE DETAILS, SHEETS 47449 IN PLAN).

IN ALL CASES, TRAFFIC SHALL BE SEPARATED FROM THE WORK AREA BY DRUMS, BARRICADES OR CONES SPACED AS PER THE PLAN DETAILS. THE LENGTH OF ALL RESTRICTED TRAFFIC ZONES SHALL BE KEPT TO A MINIMUM AS DIRECTED BY THE ENGINEER. DURING THE ERECTION OF OVERHEAD SIGN SUPPORTS, IT MAY BE NECESSARY TO STOP ALL DIRECTIONAL TRAFFIC LANES. THIS WORK SHALL BE ARRANGED SO THAT THE STOPPAGE IS LESS THAN TEN (10) MINUTES IN ANY THIRTY (30) MINUTE PERIOD. THE CONTRACTOR SHALL PROVIDE SERVICES OF ONE (1) SPECIAL DUTY STATE HIGHWAY PATROLMAN WITH PATROL CAR AT EACH LOCATION WHERE A TRAFFIC STOPPAGE OCCURS. THE PATROLMAN SHALL ASSIST IN CONTROLLING THE TRAFFIC AND INFORMING THE DRIVERS AS TO THE NATURE OF THE DELAY.

INFORMATION REGARDING ARRANGEMENTS AND PAYMENTS BY THE CONTRACTOR FOR THE SPECIAL DUTY PATROL SERVICES MAY BE OBTAINED BY CONTACTING OHIO HIGHWAY PATROL, 660 EAST MAIN STREET, COLUMBUS, OHIO - TELEPHONE 614-466-2300.

IF, AFTER CONTACTING THE OHIO HIGHWAY PATROL, IT IS DETERMINED THAT THEY CANNOT SUPPLY THE SPECIAL DUTY PATROLMAN, THEN AN AUTHORIZED MUNICIPAL OR COUNTY POLICE OFFICER EQUIPPED WITH A MARKED AND FLASHER-LIGHT EQUIPPED POLICE OR PATROL CAR SHALL BE PROVIDED.

D. TRAFFIC CONTROL--RAMPS - TRAFFIC SHALL BE MAINTAINED AT ALL TIMES TO ALL RAMPS. SPECIAL PROVISIONS SHALL BE MADE TO WARN TRAFFIC ENTERING A ONE-LANE TRAFFIC ZONE FROM A RAMP.

AT EACH RAMP, THERE SHALL BE AN AREA OF 175± FEET IN LENGTH IN THE OUTSIDE DIRECTIONAL LANE WHICH SHALL BE RESURFACED AT THE SAME TIME AS THE MEDIUM DIRECTIONAL LANE OR SHALL BE OMITTED DURING THE TIME THE OUTSIDE DIRECTIONAL LANE IS BEING RESURFACED TO MAINTAIN ACCESS TO AND FROM RAMPS AT INTERCHANGES. THESE AREAS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROVIDE SAFE FLOW OF TRAFFIC ENTERING AND LEAVING THE RAMPS WHILE THE OUTSIDE DIRECTIONAL LANE IS BEING RESURFACED. THE SPEED CHANGE LANES ADJACENT TO THE 175± AREAS SHALL BE USED TO PROVIDE ONE-LANE TRAFFIC WHILE THE MEDIUM LANE IS BEING RESURFACED.

E. TRAFFIC CONTROL--SIDE ROADS - TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON ALL INTERSECTING SIDE ROADS, EXCEPT THAT ONE-WAY TRAFFIC WILL BE PERMITTED FOR MINIMUM PERIODS OF TIME CONSISTENT WITH THE REQUIREMENTS FOR PROTECTION OF COMPLETED ASPHALT CONCRETE COURSES. *Continued below.*

F. TEMPORARY PAVEMENT SPOTTING (LEVELING AND SURFACE COURSE) - THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN TEMPORARY PAVEMENT SPOTTINGS ON THE RESURFACING COURSES. THE SPOTTINGS SHALL BE PLACED ON THE INITIAL PASS OF EACH COURSE OF ASPHALT CONCRETE OF MAINLINE PAVEMENT BEFORE THE END OF EACH WORKING DAY. THE TEMPORARY SPOTTINGS SHALL BE PLACED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS AND COLORS, UNLESS OTHERWISE SPECIFIED:

TYPE OF MARKINGS	SIZE	SPACING	COLOR
LANE LINES	12"x4" TAPE	20' C/C	WHITE
CENTER LINES	12"x4" TAPE	40' C/C	YELLOW
CHANNELIZING LINES	12"x4" TAPE	20' C/C	WHITE
GORE AREAS	2-50'x6" TAPE	CONTINUOUS	WHITE (EXITS) YELLOW (TRANSITIONS)

THE MARKINGS SHALL BE ACCURATELY LOCATED IN A TRUE LINE ON THE CENTER-LINE, LANE LINE, OR CHANNELIZING LINE WHERE NORMAL PAVEMENT MARKINGS WOULD LIE, UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE TEMPORARY SPOTTINGS SHALL BE PLACED BY ROLLING THE MATERIAL INTO THE SURFACE AS DIRECTED BY THE ENGINEER.

THE MATERIAL, REFLECTORIZATION, AND ADHESION REQUIREMENTS SHALL BE AS PER THE PROPOSAL NOTE.

COSTS FOR ALL TEMPORARY SPOTTINGS INCLUDING ALL LABOR, EQUIPMENT AND INCIDENTALS RELATED THERETO, SHALL BE INCLUDED IN ITEM 614, MAINTAINING TRAFFIC.

G) QUANTITIES FOR MAINTAINING TRAFFIC - THE FOLLOWING QUANTITY, IN ADDITION TO ITEM 614, IS INCLUDED IN THE GENERAL SUMMARY FOR MAINTAINING TRAFFIC, AS OUTLINED ABOVE, TO BE USED AS DIRECTED BY THE ENGINEER ON THIS PROJECT:

404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC 200 CU. YDS. (F-Funds)

**E. TRAFFIC CONTROL - SIDE ROADS (CONTINUED FROM ABOVE)**

ONE-WAY TRAFFIC SHALL BE MAINTAINED ON THE COOK ROAD BRIDGE OVERPASS DURING THE REPAIR AND OVERLAY OF THE DECK. SEE SHEET 48 FOR DETAILS AND TIME LIMITATIONS.

MALONE ROAD SHALL BE CLOSED TO TRAFFIC DURING THE BRIDGE DECK OVERLAY OPERATIONS. THE CITY OF MANSFIELD SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL DEVICES FOR THE DETOUR AT THE POINTS WHERE THE TRAFFIC IS DETOURED. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AT LEAST 7 DAYS BEFORE COMMENCING WORK ON THE MALONE ROAD BRIDGE. THE DETOUR SHALL BE LIMITED TO A MAXIMUM OF 3 WEEKS DURATION.

DURING THE TIME TRAFFIC IS DETOURED ON MALONE ROAD, THE CONTRACTOR SHALL NOT DO ANY WORK ON COOK ROAD WHICH WILL RESTRICT THE TRAFFIC FLOW.

ITEM SPECIAL - CLEANOUT OF 54" CULVERT:  
THE FOOTAGE OF CLEANOUT SHALL BE THE NUMBER OF LINEAR FEET CLEARED AS DESCRIBED ABOVE, AND SHALL BE PAID FOR AS ITEM SPECIAL, CLEANOUT OF 54" CULVERT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM.











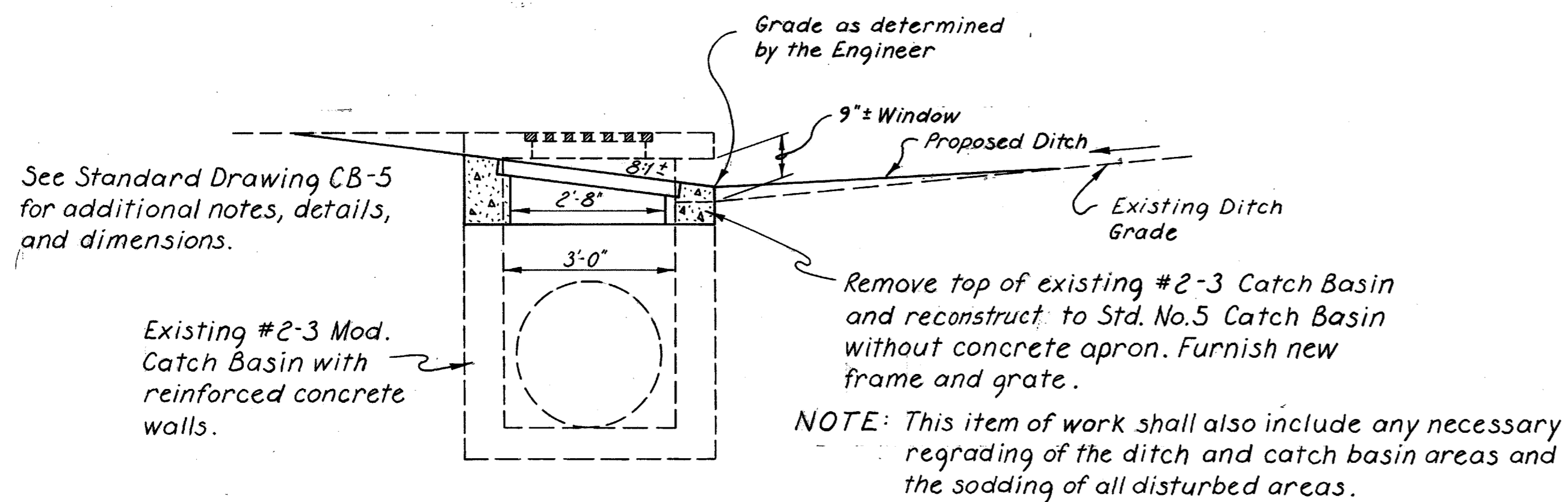








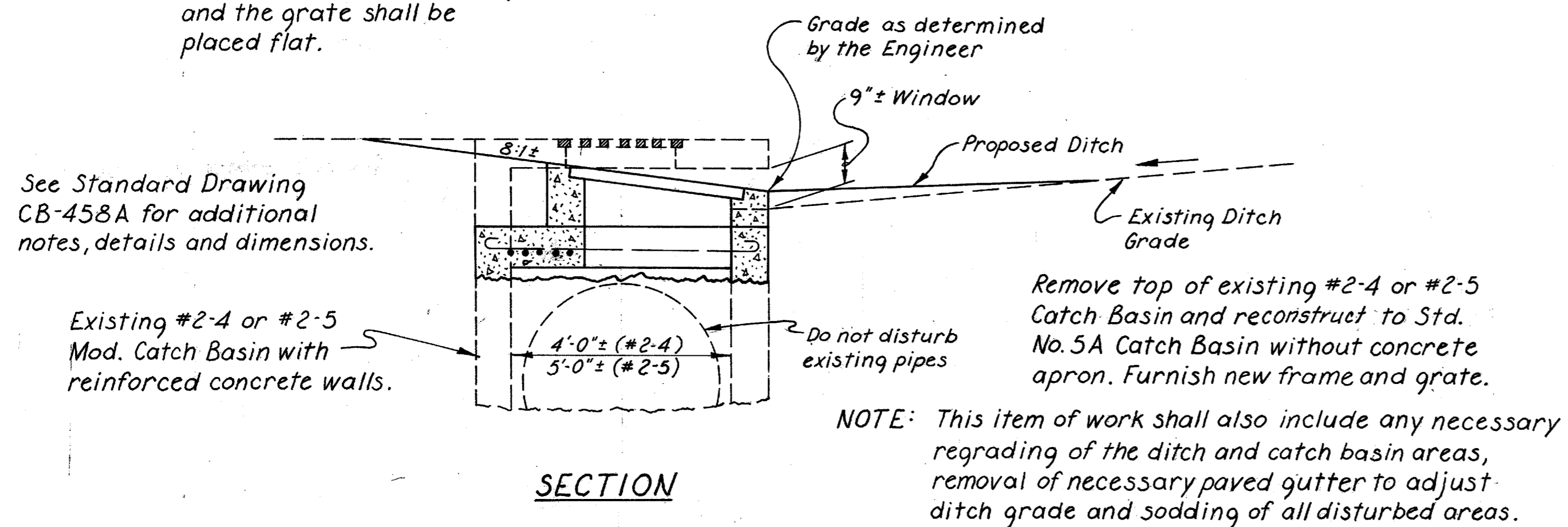




SECTION

DETAIL FOR ITEM 604, CATCH BASIN RECONSTRUCTED TO STANDARD NO. 5, AS PER PLAN  
STA. 676 + 57 ±, LT.

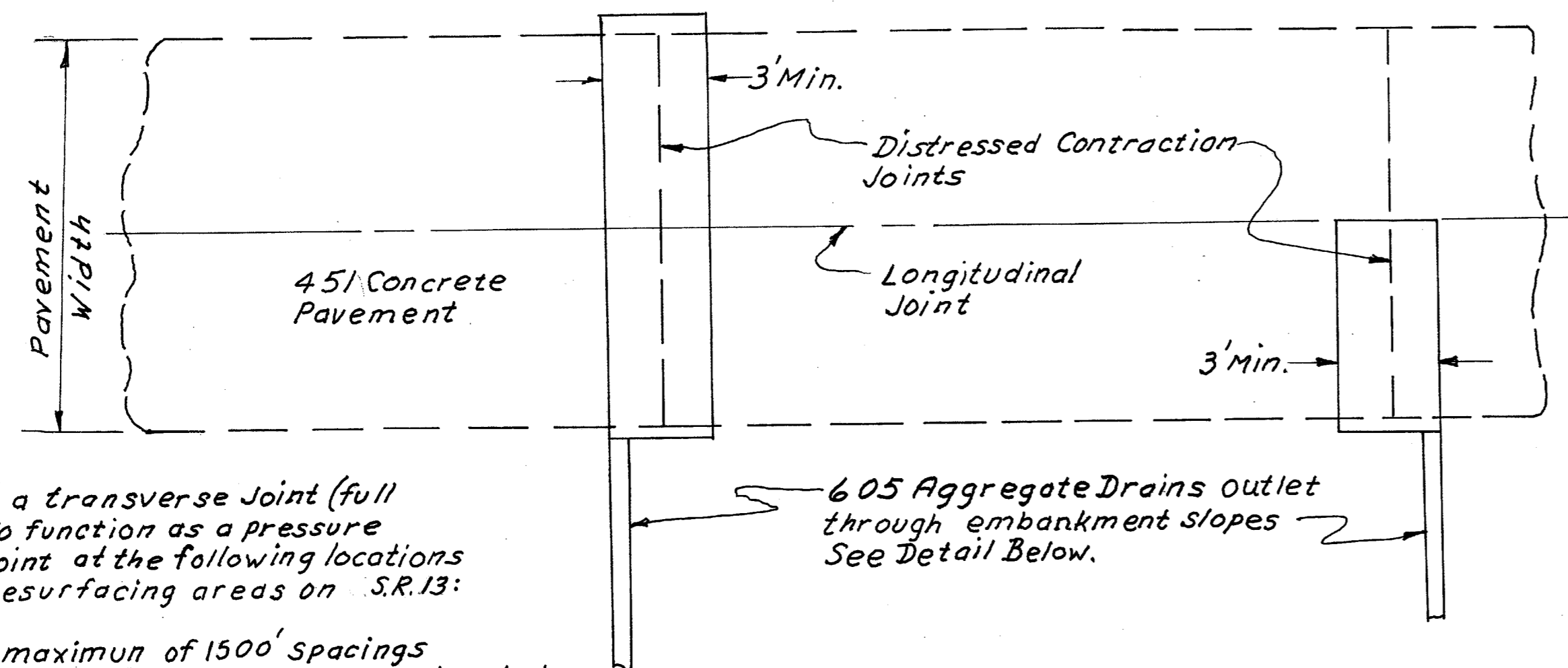
NOTE: Some locations are in a sag and the grate shall be placed flat.



SECTION

DETAIL FOR ITEM 604, CATCH BASIN RECONSTRUCTED TO STANDARD NO. 5A, AS PER PLAN  
STA. 608 + 37 ±, LT.      STA. 655 + 39 ±, LT.  
STA. 614 + 90 ±, LT.      STA. 668 + 54 ±, LT.





NOTE: Replace a transverse joint (full width) to function as a pressure relief joint at the following locations in the resurfacing areas on S.R.13:

- (1) At a maximum of 1500' spacings each direction where no deteriorated joints need replaced.
- (2) At the first joint beyond the bridge approach slabs.

PLAN

See General Note for description of work required

**CALCULATIONS**

**659 COMMERCIAL FERTILIZER:**

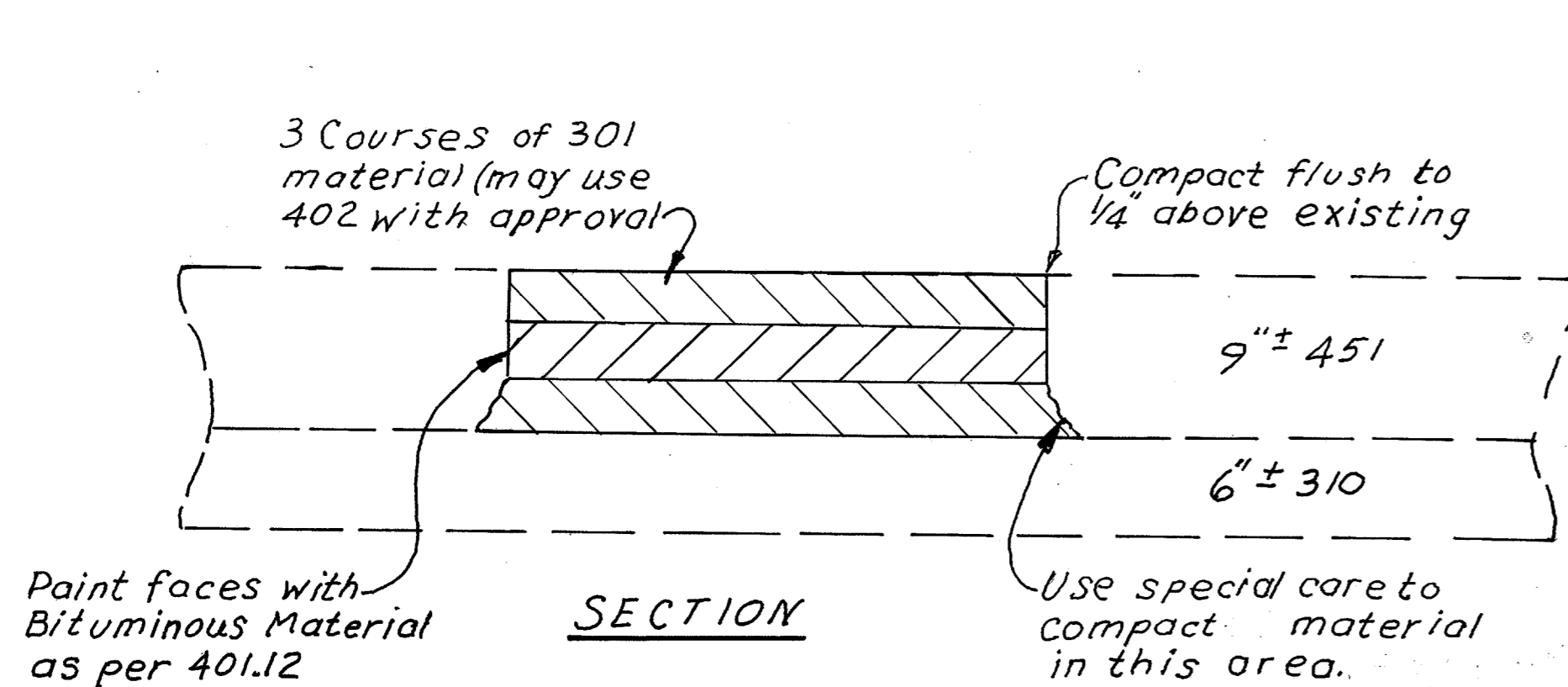
F-Funds:  
659 Seeding Total from Sub-Summary = 15,263 Sq. Yds.  
Commercial Fertilizer =  $\frac{15,263 \times 9 \times 20}{1000 \times 2000} = 1.37 \text{ Tons}$

RDS-Funds:  
659 Seeding & 660 Sodding Totals from Sub-Summary = 12,678 + 347 = 13,025 Sq. Yds.

Commercial Fertilizer =  $\frac{13,025 \times 9 \times 20}{1000 \times 2000} = 1.17 \text{ Tons}$

**617 WATER:**

617 Compacted Aggregate from Sub-Summary = 1487 Cu. Yds.  
Water =  $\frac{1487 \text{ Cu. Yds.} \times 40 \text{ Gal./cu. Yd.}}{1000} = 60 \text{ M-Gal. (F-Funds)}$

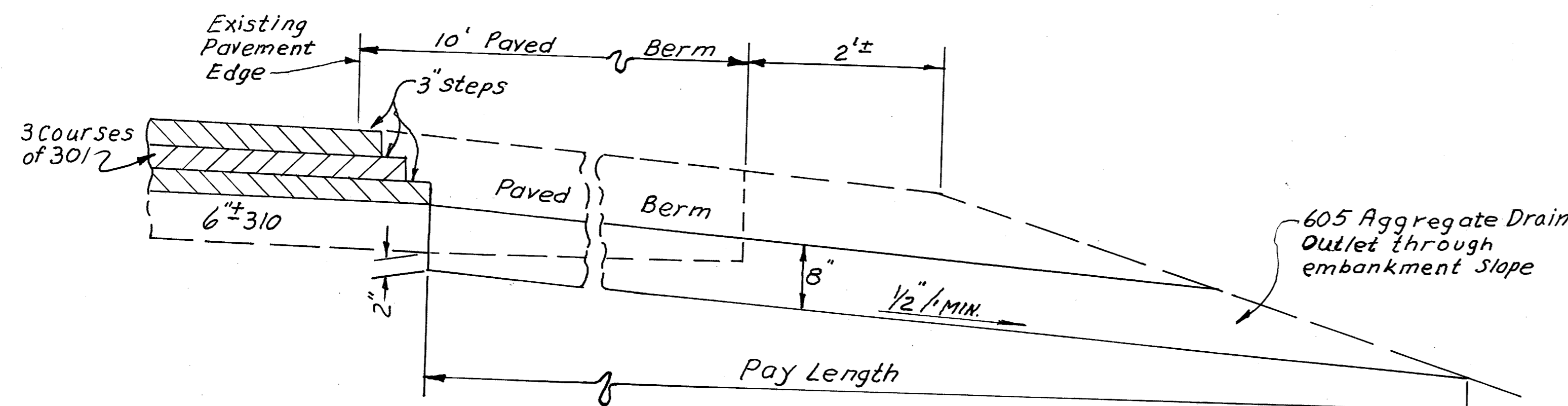


SECTION

This type pavement repair shall be used for distressed contraction joint repairs on the various sections of concrete pavements. The location of the repairs shall be at the direction of the engineer.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR THIS PAVEMENT REPAIR WORK:

ITEM SPECIAL- Full depth rigid pavement removal And flexible replacement	2400 SQ. YDS.
ITEM 605 Aggregate drains	3900 LIN. FT. (F-Funds)
ITEM 605 6" pipe underdrains, as per plan	500 LIN. FT.



AGGREGATE DRAIN DETAIL

NOTE: If an aggregate drain outlet is not available through the side slope, outlet into the existing underdrain trench or a 6" pipe underdrain with aggregate backfill shall be provided and extended to a suitable outlet.

CONCRETE JOINT REPAIR DETAILS USING FLEXIBLE REPLACEMENT



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# RESURFACING CALCULATIONS

FHWA REGION	STATE	PROJECT	
5	OHIO		

18  
51

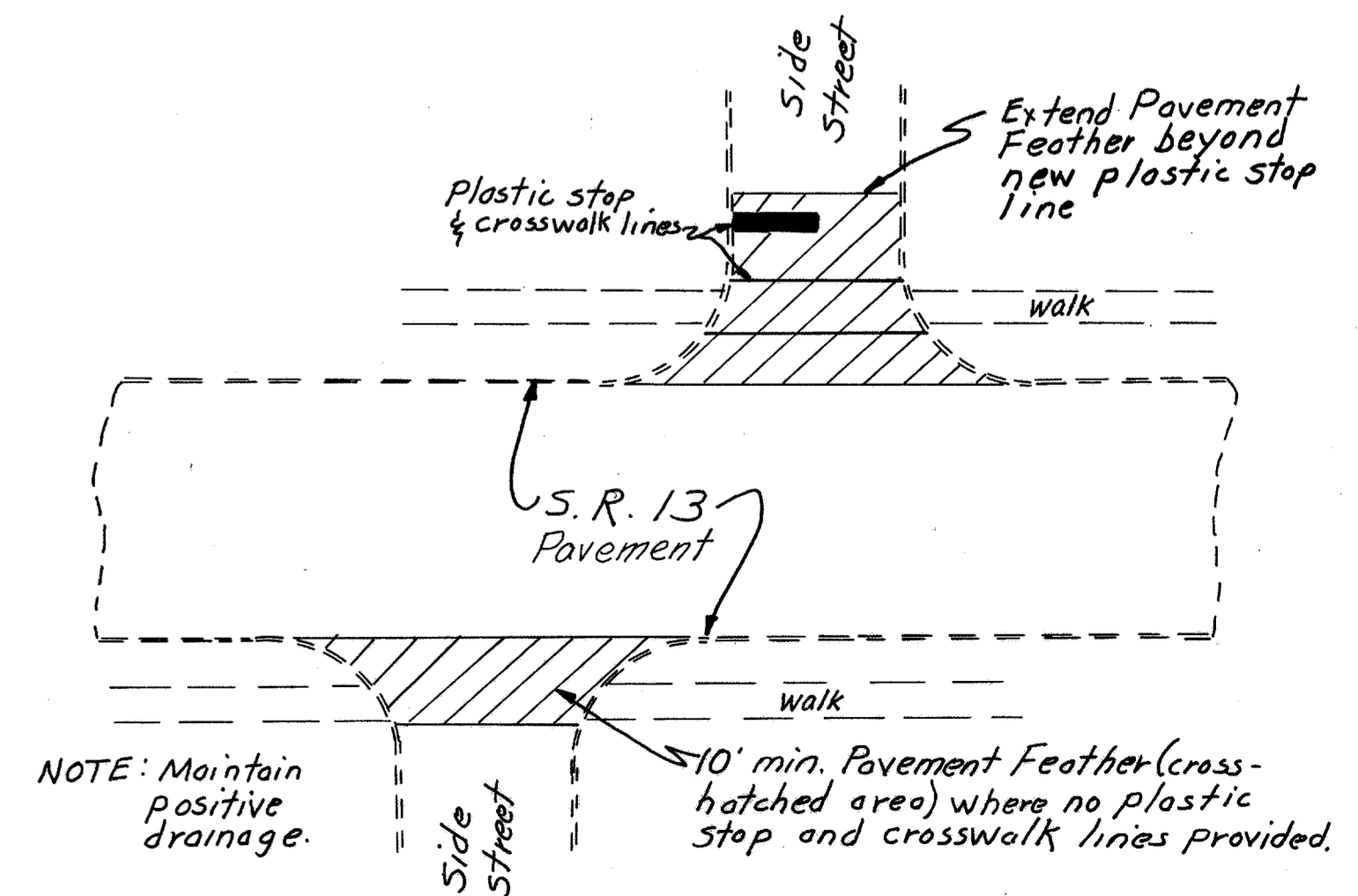
RIC-13-10.82

Calc. by BOY 1/78  
Chkd by 101 1/79

STATION LIMITS	SIDE	LENGTH LIM.FT.	TYPICAL SECTION	PAVEMENT DATA										BERM DATA										SHOULDER DATA				
				Pavement Width FT.	Pavement Area Sq. Yd.	407		404 ASPHALT CONCRETE		402 ASPHALT CONCRETE		403 ASPHALT CONCRETE		Berm Width FT.	Berm Area Sq. Yd.	407		404 ASPHALT CONCRETE		402 ASPHALT CONCRETE		301 BITUMINOUS AGGREGATE BASE		409 SEAL COAT		617 Compacted Aggregate Cu. Yd.	203 Linear Grading As Per Plan Sta.	659 Seeding and Mulching As Per Plan Sq. Yd.
						Tack Coat @ 0.1 Gal. Per Sq. Yd.	Cover Aggregate @ 2.5 lbs. Per Sq. Yd.	Thickness In.	Quantity Cu. Yds.	Thickness In.	Quantity Cu. Yds.	Thickness In.	Quantity Cu. Yds.			Thickness In.	Quantity Cu. Yds.	Tack Coat @ 0.1 Gal. Per Sq. Yd.	Cover Aggregate @ 2.5 lbs. Per Sq. Yd.	Thickness In.	Quantity Cu. Yds.	Thickness In.	Quantity Cu. Yds.	Thickness In.	Quantity Cu. Yds.			
571+20 to 631+00 BK.	N.B. & S.B.	5980'	A&B	2@24'	31,893	3189	111.6	1"	885.9	1/2"	1328.9		2@8' 2@4'	15,947	1595	55.8	1"	443.0	1/2"	664.5			4784	1276	738			
630+48.77 Ah. to 692+91.17	N.B. & S.B.	6240.40'	A&B	2@24'	33,282	3328	116.5	1"	924.5	1/2"	1386.8		2@8' 2@4'	16,641	1664	58.2	1"	462.3	1/2"	693.4			4992	133.1	770			
692+91.17 to 693+97.49 BK	N.B. & S.B.	106.32'	D&E	2@24'	567	57	2.0	1"	15.8	1/2"	23.6		2@8' 2@4'	284			1"	7.9			3"	23.7	85	2.3	4.3	190		
694+00 Ah. to 747+41.2 (Unit)	N.B. & S.B.	5341.2'	D&E	2@24'	28,486	2849	99.7	1"	791.3	1/2"	1186.9		2@8' 2@4'	14,243			1"	395.6			3"	1186.9	4273	113.9	213.6	9495		
748+58.7 (Unit) to 752+00	N.B. & S.B.	3413'	D&E	2@24'	1820	182	6.4	1"	50.6	1/2"	75.8		2@8' 2@4'	910			1"	25.3			3"	75.8	273	7.3	13.7	605		
5752+00 to 5759+05±	S.B.	705'	D&E	24'	1880	188	6.6	1"	52.2	1/2"	78.3		1@8' 1@4'	940			1"	26.1			3"	78.3	282	7.5	14.1	625		
N752+00 to N758+91±	N.B.	691'	D&E	24'	1843	184	6.4	1"	51.2	1/2"	76.8		1@8' 1@4'	921			1"	25.6			3"	76.7	276	7.4	13.8	615		
5759+05± to 5760+00±		95'	E	54' 50'	549	55	1.9	1"	15.3	1/2"	22.9		1@8'	84			1"	2.3			3"	7.0	25	0.7	1.0	40		
Ramp W (Cook Road) W1+93± to W12+92±		1099'	C	16'	1954	195	6.8	1"	54.3	1/2"	81.4		2@3'	733			1"	20.4			3"	61.1	220	5.9	22.0	975		
Ramp E (Cook Road) E2+57± to E8+99±		642'	C	16'	1141	114	4.0	1"	31.7	1/2"	47.5		2@3'	428			1"	11.9			3"	35.7	128	3.4	12.8	570		
Ramp A (Main St.) A10+00 to A11+35±		135'	F	24'	360	36	1.3	1"	10.0	1/2"	15.0		2@3'	90			1"	2.5			3"	7.5	27	0.7	2.7	120		
Ramp A (Main St.) A11+35± to A27+00		1565'	C	16'	2782	278	9.7	1"	77.3	1/2"	115.9		2@3'	1043			1"	29.0			3"	86.9	313	8.3	31.3	1390		
Ramp C (Main St.) C0+53± to C7+60±		707'	C	16'	1257	126	4.4	1"	34.9	1/2"	52.4		2@3'	471			1"	13.1			3"	39.2	141	3.7	14.1	628		
Extra Areas @ Interchanges and Intersections (From Table @ right)					9064	906	31.7	1"	251.8	1/2"	377.7			-487	-49	-1.7	1"	-13.5	1/2"	-20.3			-146	-3.9	-21			
					610	61	2.1	1/2ave	25.4																			
5760+00± to 762+40.1 BK.		240.1'	G	50' 38'	1067 (404)	107	3.7	1"	29.6		1/2ave	12.6																
762+47.2 Ah. to 782+55±		2007.8	G	30'	6693 (404)	669	23.4	1"	185.9		1/2ave	74.4																
782+55± to 782+95±		40'	G	30' 36'	147 (404)	15	0.5	1"	4.1		1/2ave	1.7																
782+95± to 798+25±		1530'	G	36'	6120 (404)	612	21.4	1"	170.0		1/2ave	70.8																
798+25± to 799+50		125'	G	36' 44'	556 (404)	56	1.9	1"	15.4		1/2ave	6.6																
Add for Pavement Feathers on Side Street Intersections with Typical G - See Detail @ Rt.					981	98	3.4	1ave	27.3																			
<b>TOTALS (F-34 Funds)</b>					13,305	465.4	3704.5		4869.9		166.1		3210	112.3	1451.5	1337.6	1678.8	15673	417.9	1487	3434	15253						

### EXTRA PAVEMENT AREAS AND BERM ADJUSTMENTS FOR INTERSECTIONS & INTERCHANGES (TYPICALS "A" TO "F")

LOCATION	SIDE	ADDITIONAL CONCRETE PAVEMENT AREA SQ. YDS.	BERM DEDUCTIONS		PAVEMENT FEATHERS SQ. YDS.
			Resurf.	NEW 301	
			SQ. YDS.	SQ. YDS.	
O'Possum Run Road	Med. Rt.	801	-13		165
I-71 Ramp F Decel. Lane and Median Left Turn	Lt.	803			
Hanley Road	Med. Lt. & Rt.	618	-60		134
		1138	-141		
I-71 Exit Ramp	Rt.	489			
		160	-39		122
Straub Road	Med. Lt. & Rt.	1297	-82		
		424	-152		100
N.B. Deceleration Lane to Cook Road	Rt.	798			
S.B. Acceleration Lane from Cook Road	Lt.	951			
N.B. Acceleration Lane from Main St.	Rt.	1072			
S.B. Deceleration Lane to Main St.	Lt.	350			
Nose Area - Merge Ramp C to Ramp A		40			
Chilton Ave	Lt.	123			89
<b>TOTALS</b>		9064	-487	-	610

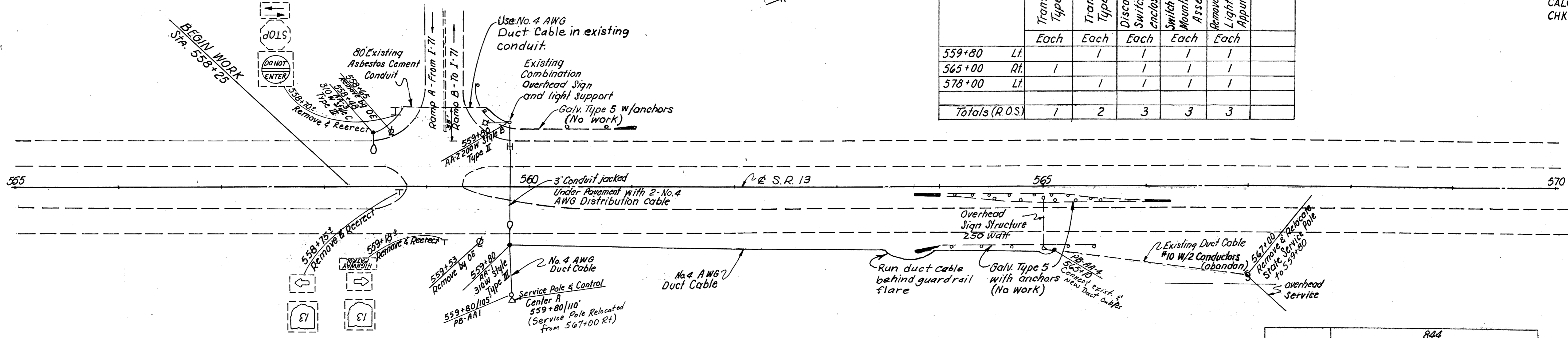


NOTE: Maintain positive drainage.  
10' min. Pavement Feather (cross-hatched area) where no plastic stop and crosswalk lines provided.

TYPICAL PAVEMENT FEATHERS AT SIDE STREETS W/ TYPICAL "G"



Station	844				
	Transformer, Type II	Transformer, Type III	Disconnect Switch with enclosure, Type Y	Switch Enclosure Mounting Bracket Assembly	Removal of Sign Lighting Apparatus
559+80 Lt.	1	1	1	1	1
565+00 Rt.	1	1	1	1	1
578+00 Lt.	1	1	1	1	1
Totals (ROS)	1	2	3	3	3

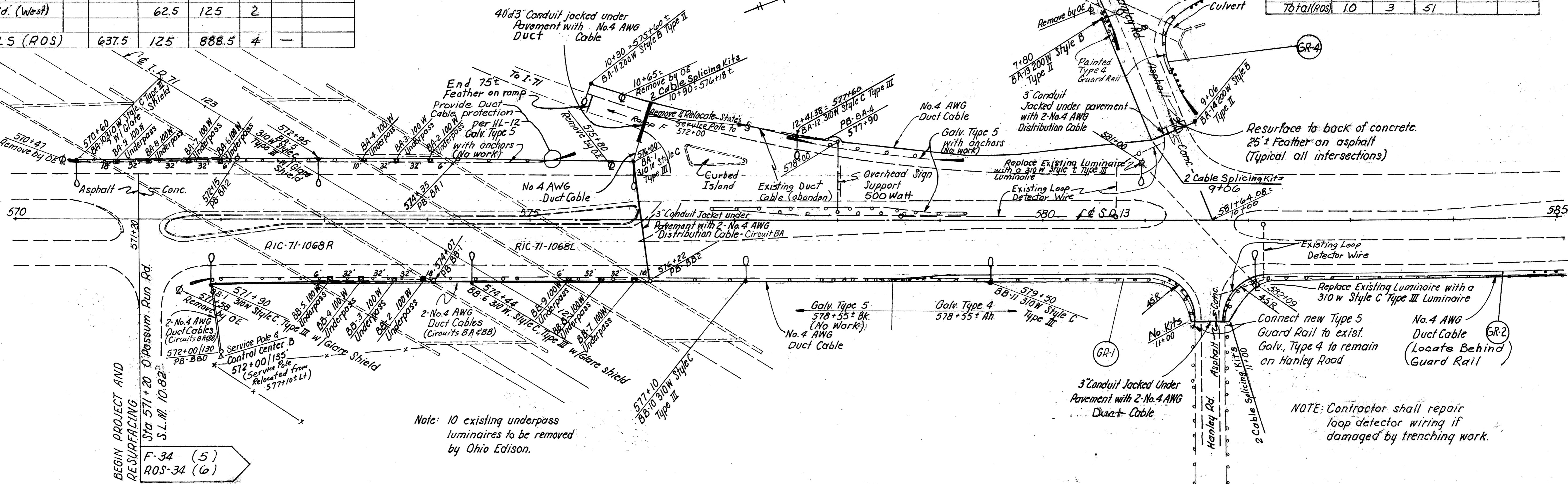


Ref. No.	Stations	Side	202		606	
			Guard Rail Removed for Re-use or Storage (Galv.)	Guard Rail Removed (Galvanized)	Anchor Assembly Type A	Anchor Assembly Type T
GR-1	578+55 to Hanley Rd.	Rt.	312.5	12.5	325	
GR-2	Hanley Rd. to 585+00	Rt.	325		351	
GR-3	Hanley Rd. (West)			50	87.5	2
GR-4	Hanley Rd. (West)			62.5	125	2
TOTALS (ROS)			637.5	125	888.5	4

Note: Other existing signs, which require no safety upgrading work, are not shown.  
See General Note on Cooperation with Ohio Edison, Sheet 8.

For Lighting Quantities see Sheet No. 36  
For Lighting Legend See Sheet No. 9

Station	844		
	Removal of Ground Mounted Sign and Reerection	Removal of Ground Mounted Post Support	Ground Mounted Support, #4 Post, Driven
558+70 Lt.	3	1	15
558+75 Med.	3	1	18
559+18 Rt.	4	1	18
Totals (ROS)	10	3	51



Note: 10 existing underpass luminaires to be removed by Ohio Edison.

NOTE: Contractor shall repair loop detector wiring if damaged by trenching work.

BEGIN PROJECT AND RESURFACING  
Sta. 571+20 to Passum Run Rd.  
S.L.M. 10.82  
F-34 (5)  
ROS-34 (6)



For Lighting Legend  
See Sheet 9

For Lighting Quantities,  
See Sheet 36.

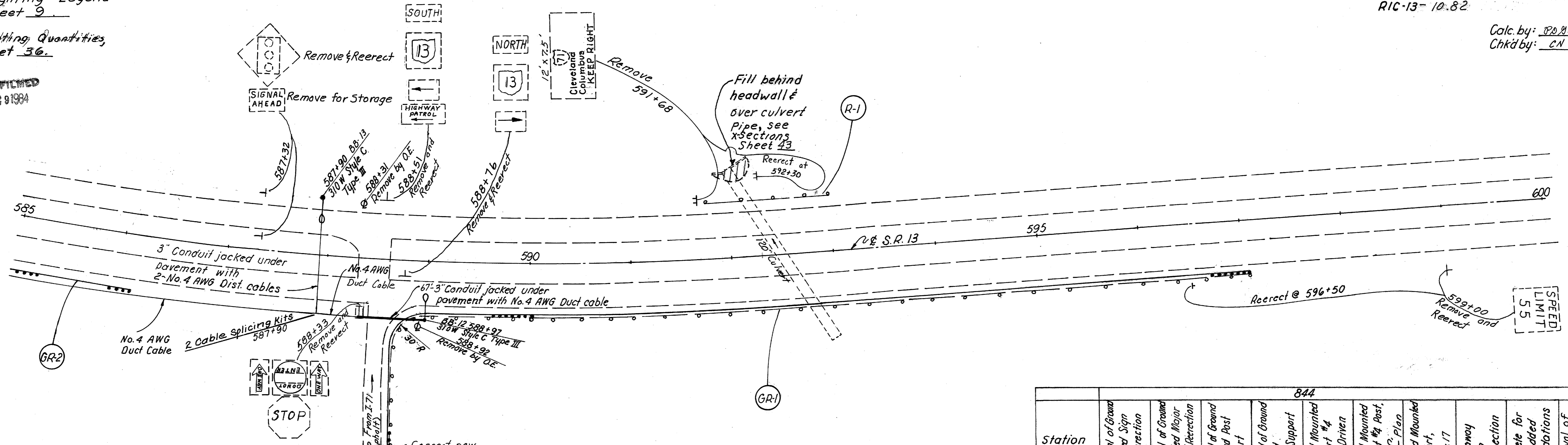
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Note: Other existing signs, which  
require no safety upgrading  
work, are not shown.

FHWA REGION	STATE	PROJECT	20 51
5	OHIO		

RIC-13-10-82

Calc. by: P.D. 12/78  
Chkd by: CN 1/79

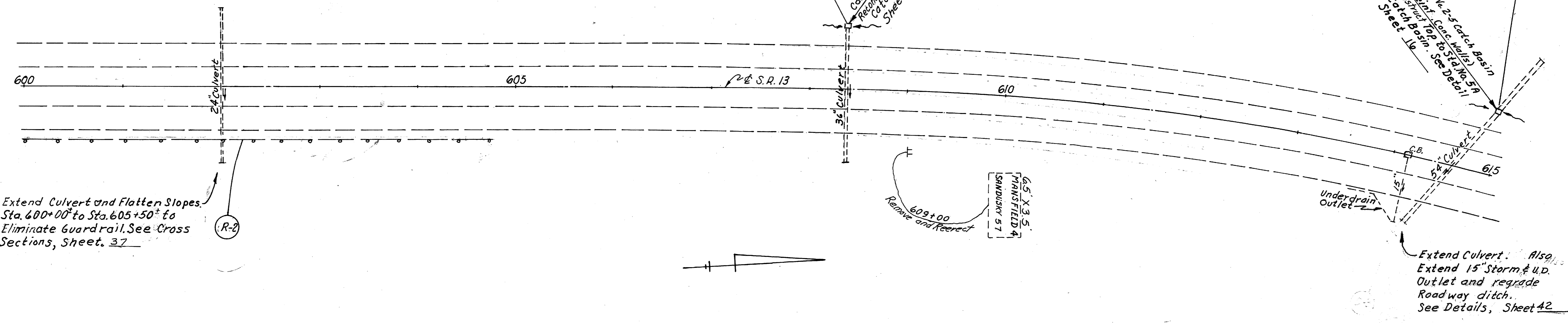


Ref. No.	Stations	Side	202		606	
			Guard Rail Removed for Re-use or Storage (Bolt)	Guard Rail Removed (Damaged Bolt)	Guard Rail Type 5 As Per Plan	Anchor Assembly Type A Type T
			Lin. Ft.	Lin. Ft.	Lin. Ft.	Each
GR-1	I-71 Ramp to 597+06+NB	Rt.	887.5	87.5	962.5	1
GR-2	585+00 to 586+12.5 NB	Rt.			99.0	1
R-1	591+75 to 593+00 SB	Lt.	125			
R-2	600+04 to 604+79 NB	Rt.	475			
	Totals (ROS)		1,487.5	87.5	1061.5	2

Ref. No.	STATIONS	Catch Basin Reconstructed to Standard No. SA As Per Plan
D-1	608+37 <sup>±</sup> Lt	1
D-2	614+90 <sup>±</sup> Lt	1
	TOTALS (ROS)	2

Station	844									
	Removal of Ground Mounted Sign and Reerection	Removal of Ground Mounted Major Sign and Reerection	Removal of Ground Mounted Post Support	Removal of Ground Mounted Beam Support	Ground Mounted Support #4 Post, Driven As Per Plan	Ground Mounted Support, w/ 8x17	Breakaway Beam Connection	Concrete for Embedded Foundations	Removal of Ground Mounted Sign & Storage	
	Each	Each	Each	Each	Lin. Ft.	Lin. Ft.	Each	Cu. Yds.	Each	
587+32 Lt. Med	2		2		16.5/16.5				2	
588+33 Rt.	4		1			16				
588+51 Lt.	4		1		18					
588+76 Med.	3		1		18					
591+68 Lt.				2						
599+00 Rt.	1		1		15					
609+00 Rt.	1		2		15.5/16					
592+30 Lt *		1				24/26	2	2.20		
Totals (ROS)	15	1	8	2	115.5	16	50	2.20	2	

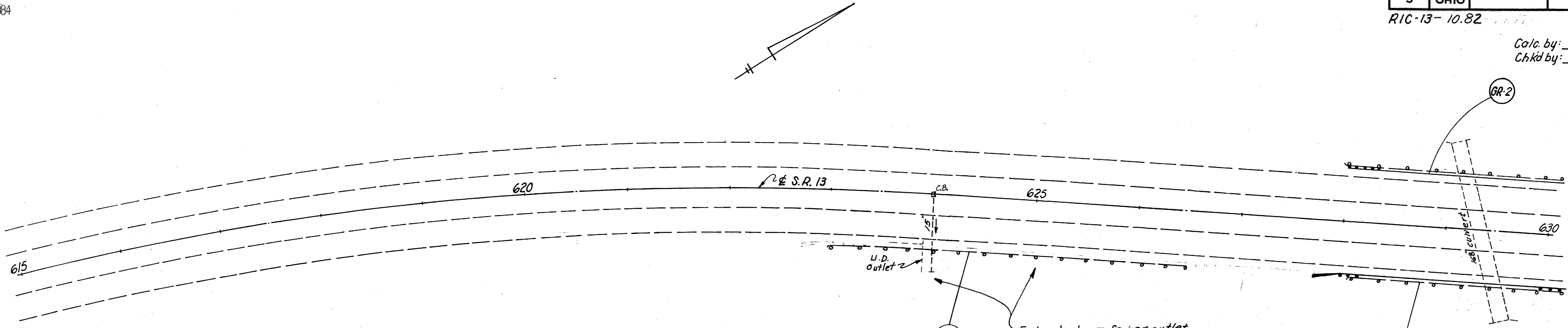
\* See Sheet 35





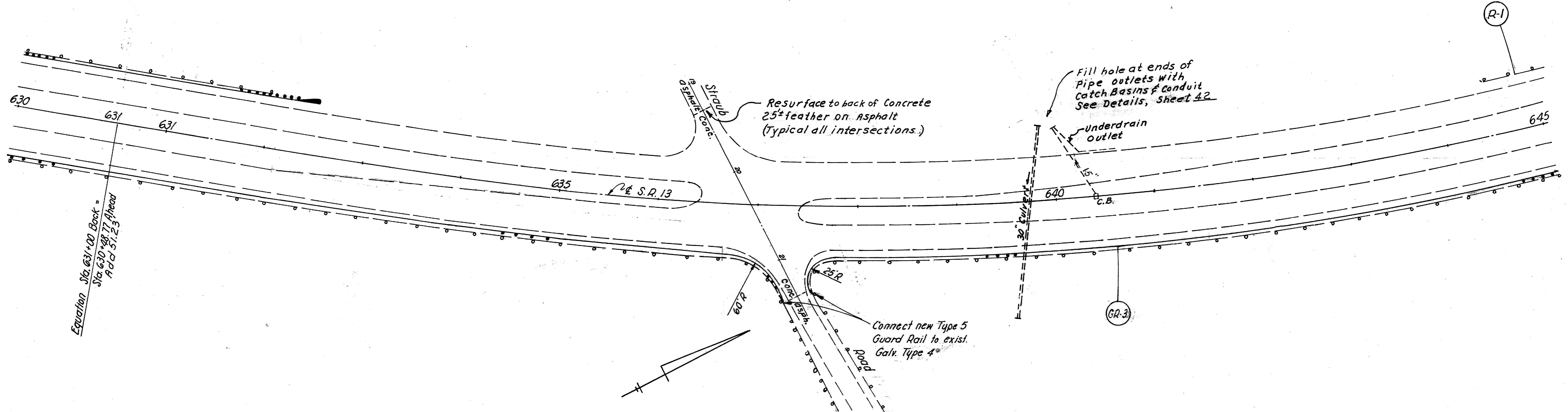
MICROFILMED  
OCT 29 1984

Calc. by: P.D.M. 12/78  
Chkd by: C.M. 1/79



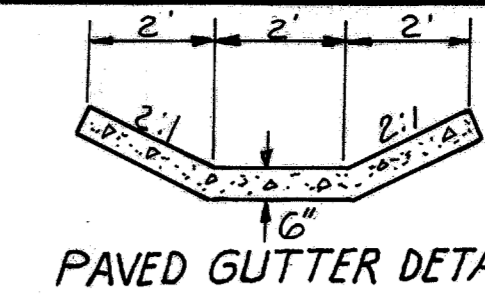
REF NO.	STATIONS	Side	202		606		Anchor Assembly	
			Guard Rail Removed For Re-use or Storage (Galv.) Lin. Ft.	Guard Rail Removed (Damaged Galv.) Lin. Ft.	Guard Rail Type 5 As Per Plan Lin. Ft.	Type A Each	Type T Each	
GR-1	627+72± to 21+41± <i>Strab Road</i>	Rt.	962.5	50	1025	1		
GR-2	628+00± to 632+47±	Lt.	425	25	462.5	1	1	
GR-3	21+41± to 645+00	Rt.	710	75	785			
R-1	644+58± to 645+00	Lt.	42					
R-2	623+00± to 626+50±	Rt.	312.5	37.5				
TOTALS (ROS)			2452.0	187.5	2272.5	2	1	

Note: Existing Signs Which Require No Safety Upgrading Work, Are Not Shown.





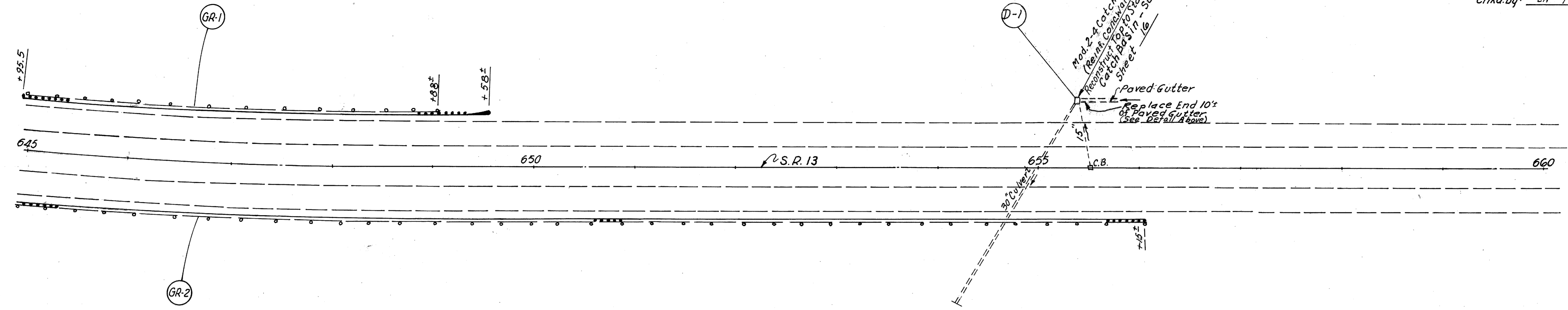
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OCT 29 1984



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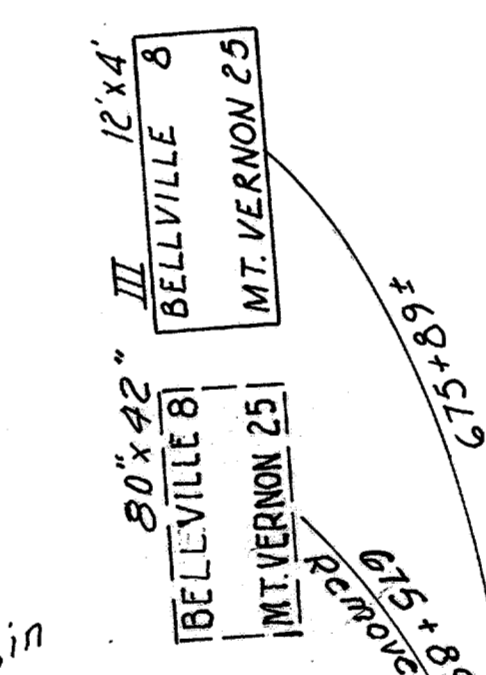
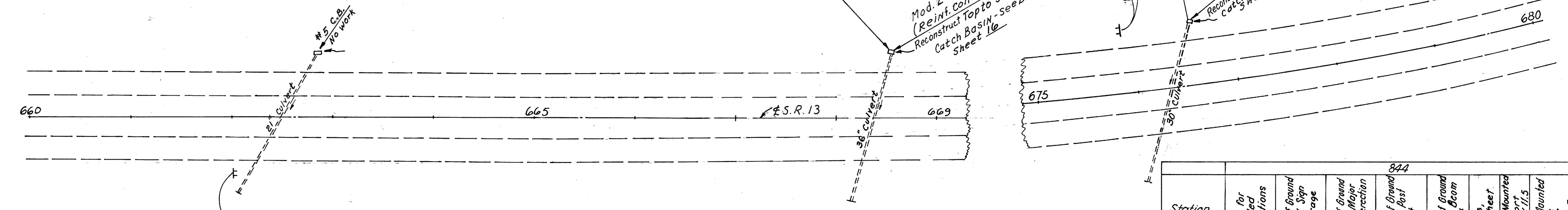
RIC-13-10.82

Calc. by: P.D.B. 12/78  
Chkd. by: C.N. 1/79



Ref. No.	Stations	Side	202		606		604		601		
			Guard Rail Removed For Re-use or Storage (Conc.)	Guard Rail Removed (Damaged Conc.)	Guard Rail Type 5 As Per Plan	Anchor Assembly	Catch Basin, Reconstructed to Std. No. 5 1/2 Apron As Per Plan	Paved Gutter, Mod. As Per Plan	Catch Basin, Reconstructed to Std. No. 5 1/2 Apron As Per Plan	Catch Basin, Reconstructed to Std. No. 5 1/2 Apron As Per Plan	
			Lin. Ft.	Lin. Ft.	Lin. Ft.	Type A	Type T	Each	Each	Each	Lin. Ft.
GR-1	644+95± to 649+38± SB	Lt.	370.5	37.5	425	1	1				
GR-2	645+00 to 655+11± NB	Rt.	111.5		1102.5		1				
D-1	655+39±	Lt.						1		10	
D-2	668+54±	Lt.						1			
D-3	676+57±	Lt.							1		
Totals (ROS)			1485.5	37.5	1527.5	1	2	-2	1	10	

NOTE: Other existing signs, which require no safety upgrading work, are not shown.



Station	Concrete for Embedded Foundations	Removal of Ground Mounted Sign and Storage	Removal of Ground Mounted Major Sign & Recreation	Removal of Ground Mounted Post Support	Removal of Ground Mounted Beam Support	844		Breakaway Beam Connection
						Signs, Extrusheef	Ground Mounted Support	
	Cu. Yd.	Each	Each	Each	Each	Sq. Ft.	Lin. Ft.	Each
662+00 Rt.	0.66		1		2		195/20	2
675+89 Lt.	2.20	1	1	2	2	48*	140.5	2
Totals (ROS)	2.86	1	1	2	2	48	36.5	4
Totals (F)								

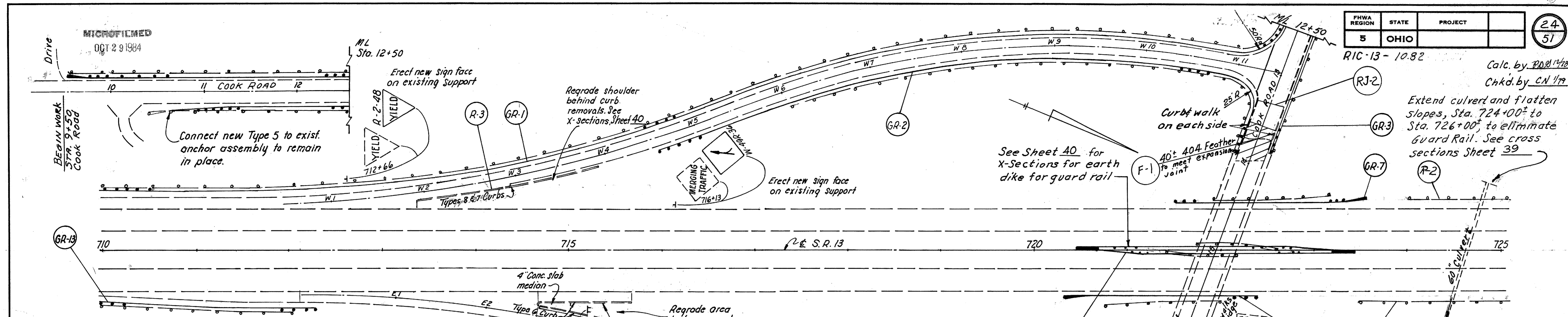
\* F Funds



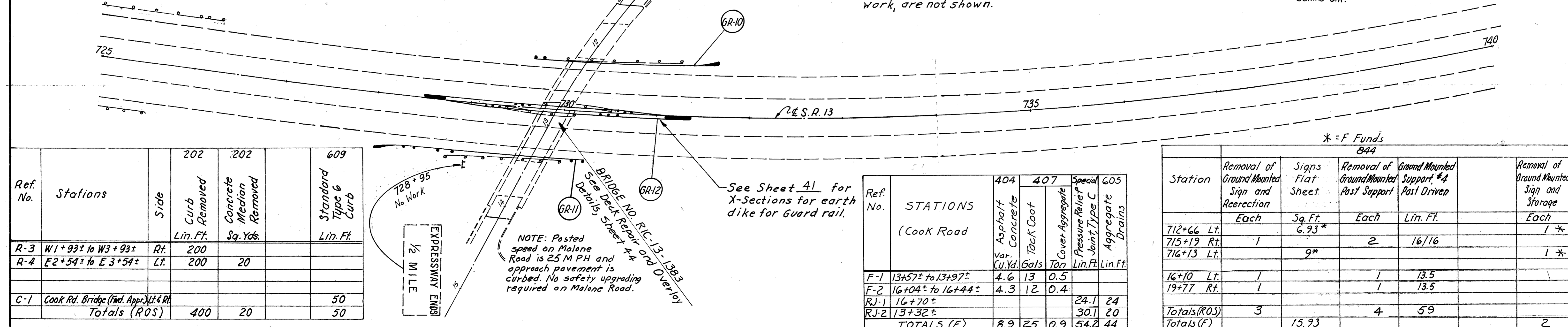




RIC-13-10.82  
 Calc. by P.D. 1/78  
 Chkd. by CN 1/79



REF NO.	STATIONS	SIDE	202			606				Guard Rail Type 5 As Per Plan
			Guard Rail Removed For Re-use or Storage (Galvanized)	Guard Rail (Damaged) Galvanized	Barrier Guard Rail Removed For Re-use or Storage (Galvanized)	ANCHOR ASSEMBLIES		BRIDGE TERMINAL ASSEMBLIES		
						Type A	Type T	Type J	Type J	
LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	EACH	LIN. FT.			
GR-1	710+00 to 10+60 Cook Rd.	Lt.	1457.5	37.5					1495	
GR-2	W4+50 to 14+50 Cook Rd.	Rt.	550	25		1	1		712.5	
GR-3	9+55 Cook Rd. to 13+30	Lt.	450		1			1	425	
GR-4	E4+75 to 16+20 Cook	Lt.	500	37.5	1			1	537.5	
GR-5	E4+75 to 21+75 Cook	Rt.	537.5	62.5	2				700	
GR-6	16+10 Cook Rd. to 19+75	Lt.	287.5		1			1	357.5	
GR-7	721+57 to 723+57	Lt.	112.5	12.5	1	1			162.5	
GR-8	720+27 to 722+27	Rt.	125		1	1			162.5	
GR-9	720+45 to 723+45	Med.	100			2			500	
GR-10	724+62.5 to 731+62.5	Lt.	125		1	1			162.5	
GR-11	728+00 to 730+25	Rt.	125		1	1			187.5	
GR-12	728+50 to 731+37.5	Med.	100			2			475	
GR-13	710+00 to 712+37.5	Rt.	200			1			212.5	
R-1	723+46 to 725+65	Rt.	212.5	12.5						
R-2	724+07 to 726+32	Lt.	200	25						
Totals (ROS)			5082.5	212.5	100	9	4	6	4	6090.0



Ref. No.	Stations	Side	202 Curb Removed	202 Concrete Median Removed	609 Standard Type 6 Curb
			Lin. Ft.	Sq. Yds.	Lin. Ft.
R-3	W1+93 to W3+93	Rt.	200		
R-4	E2+54 to E3+54	Lt.	200	20	
C-1	Cook Rd. Bridge (Med. Appr.) Lt. & Rt.				50
Totals (ROS)			400	20	50

Ref. No.	STATIONS (Cook Road)	404 Asphalt Concrete Var. CU. Yd.	407 Tack Coat Gals	Special Cover-Aggregate Ton	605 Pressure Relief Joint, Type C Lin. Ft.	605 Aggregate Drains Lin. Ft.
F-1	13+57 to 13+97	4.6	13	0.5		
F-2	16+04 to 16+44	4.3	12	0.4		
RJ-1	16+70				24.1	24
RJ-2	13+32				30.1	20
TOTALS (F)		8.9	25	0.9	54.2	44

Station	Removal of Ground Mounted Sign and Reerection	Signs Flat Sheet	Removal of Ground Mounted Post Support	Ground Mounted Post Driven	Removal of Ground Mounted Sign and Storage
	Each	Sq. Ft.	Each	Lin. Ft.	Each
712+66 Lt.		6.93*			1*
715+19 Rt.	1		2	16/16	
716+13 Lt.		9*			1*
16+10 Lt.	1		1	13.5	
19+77 Rt.	1		1	13.5	
Totals (ROS)		3		4	59
Totals (F)			15.93		2



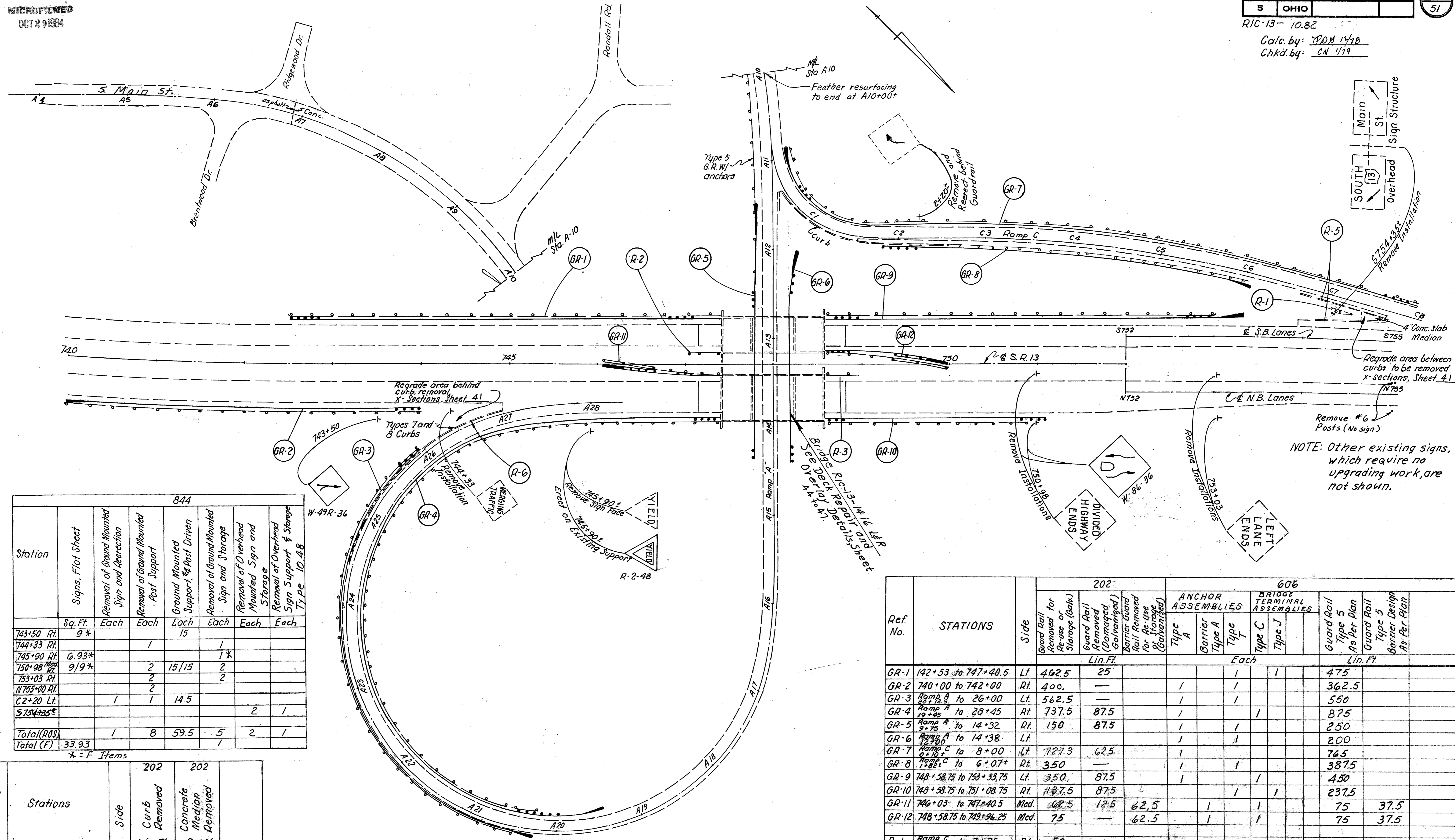
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FHWA REGION	STATE	PROJECT
5	OHIO	

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RIC-13-10.82

Calc. by: SDM 1/78  
Chkd. by: CN 1/79



Station	Signs, Flat Sheet	844					
		Removal of Ground Mounted Sign and Reerection	Removal of Ground Mounted Post Support	Ground Mounted Support, Post Driven	Removal of Ground Mounted Sign and Storage	Removal of Overhead Mounted Sign and Storage	Removal of Overhead Sign Support & Storage Type 10.48
	Sq. Ft.	Each	Each	Each	Each	Each	Each
743+50 RT	9*			15			
744+33 RT			1			1	
745+90 RT	0.93*					1*	
750+98 RT	9/9*		2	15/15		2	
753+03 RT			2			2	
N755+00 RT			2				
C2+20 LT		1	1	14.5			
S754+35±						2	1
Total (ROS)		1	8	59.5	5	2	1
Total (F)	33.93						

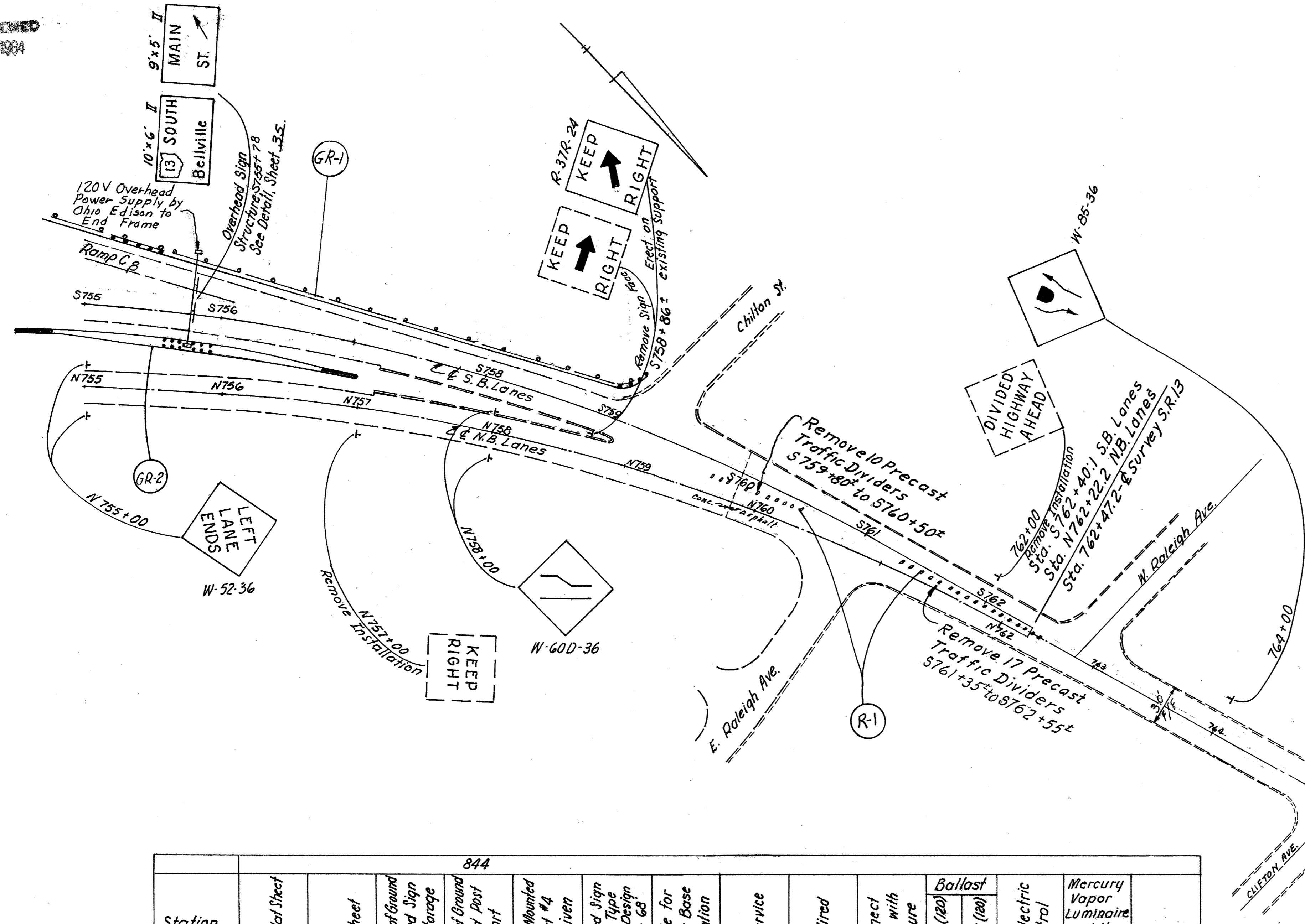
\* = F Items

Ref. No.	Stations	Side	202	
			Curb Removed	Concrete Median Removed
			Lin. Ft.	Sq. Yds.
R-5	S753+90 to S754+90	Lt.	203	17
R-6	A 24+45 to A 27+00	Lt.	255	
Totals (ROS)			458	17

Ref. No.	STATIONS	Side	202		ANCHOR ASSEMBLIES				BRIDGE TERMINAL ASSEMBLIES		Guard Rail		
			Guard Rail Removed for Re-use or Storage (Galv.)	Guard Rail Removed (Damaged) (Galvanized)	Barrier Guard Rail Removed for Re-use (Galvanized)	Type A	Type C	Type J	Type K	Type 5	Type 5	Barrier Design	
													Lin. Ft.
GR-1	142+53 to 747+40.5	Lt.	462.5	25								475	
GR-2	740+00 to 742+00	Rt.	400.									362.5	
GR-3	Ramp A to 26+00	Lt.	562.5									550	
GR-4	Ramp A to 28+45	Rt.	737.5	87.5								875	
GR-5	Ramp A to 14+32	Rt.	150	87.5								250	
GR-6	Ramp A to 14+38	Lt.										200	
GR-7	Ramp C to 8+00	Lt.	727.3	62.5								765	
GR-8	Ramp C to 6+07±	Rt.	350									387.5	
GR-9	748+58.75 to 753+33.75	Lt.	350.	87.5								450	
GR-10	748+58.75 to 751+08.75	Rt.	137.5	87.5								237.5	
GR-11	746+03 to 747+40.5	Med.	62.5	12.5								75	
GR-12	748+58.75 to 749+96.25	Med.	75									75	
R-1	Ramp C to 7+25	Rt.	50										
R-2	147+03 to 747+40.5	Med.	37.5										
R-3	748+58.75 to 749+96.25	Med.	37.5										
Totals (ROS)			4140	425	125	8	2	7	4	2		4702.5	75

MICROFILMED  
OCT 29 1984

Calc. by POD 12/78  
Chkd. by CN 1/79

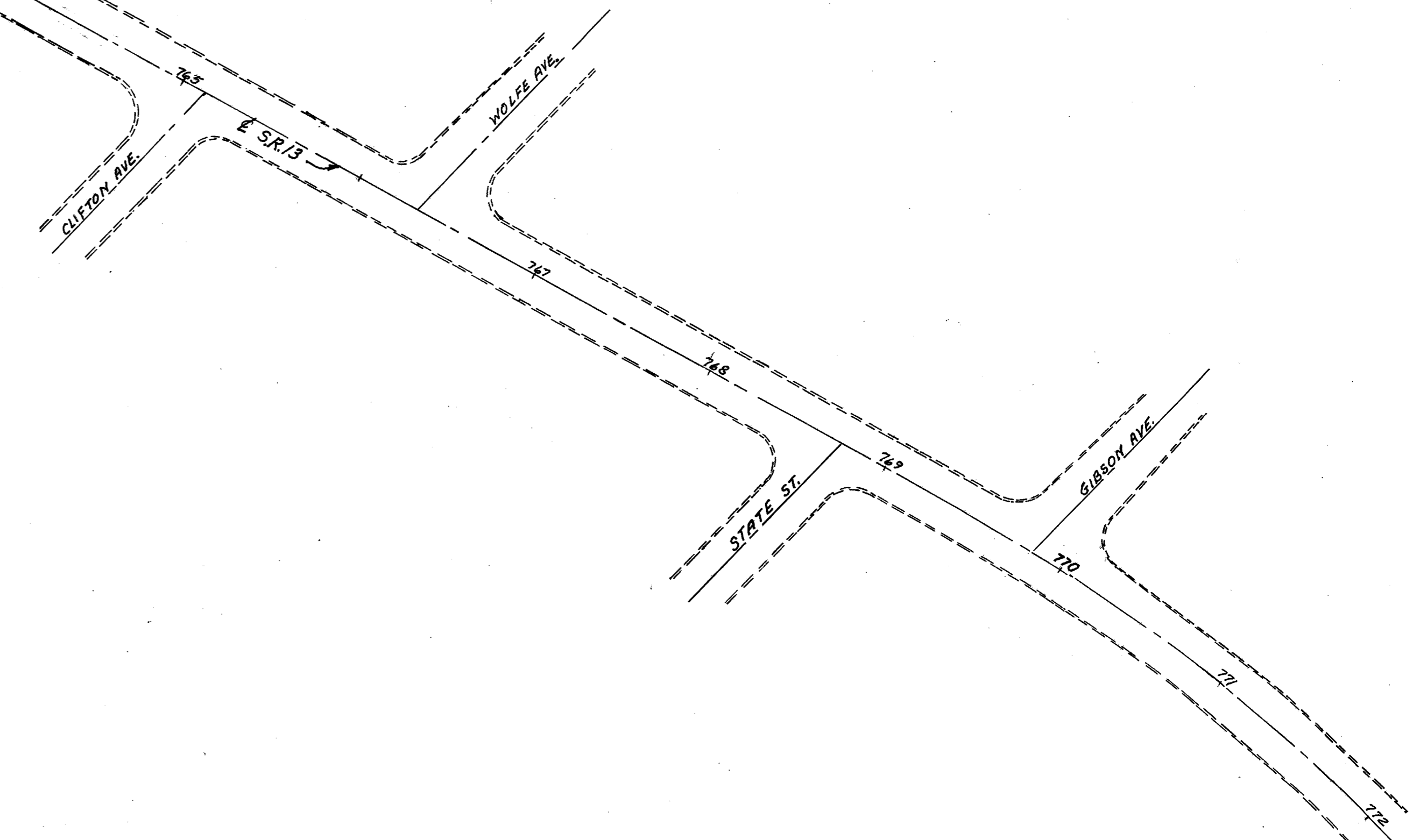


Ref. No.	STATIONS	Side	202		606		202
			Guard Rail Removed for Reuse or Storage (bank)	Guard Rail Removed (Damaged Go/No Go)	Guard Rail Type 5 As Per Plan	Anchor Assemblies Barrier Type A Type T	Precast Traffic Dividers Removed As Per Plan
			LIN. FT	LIN. FT	Each	Each	Each
GR-1	Ramp C 8+00 to S759+10±	Lt.	335	25	360	1	
GR-2	S754+53± to S759+03±	Med.			400	2	
R-1	S759+80± to S762+55±						27*
TOTALS (ROS)			335	25	760	2	1
TOTALS (F)							27

\* = F Items

Station	844													
	Signs, Flat Sheet Sq. Ft.	Signs, Extrusheef Sq. Ft.	Removal of Ground Mounted Sign and Storage Each	Removal of Ground Mounted Post Support Each	Ground Mounted Support #4 Post Driven Each	Overhead Sign Support Type TC-7.65, Design 6, Span 68 Each	Concrete for Anchor Base Foundation Cu. Yd.	Sign Service Each	Sign Wired Each	Disconnect Switch with Enclosure Each	Ballast CMR1 100 (20) Each	Ballast CMR2 175 (20) Each	Photoelectric Control Each	Mercury Vapor Luminaire With 100 W Lamp 175 W Lamp Each
N 755+00 Med 40'	9/9*				15/15									
N 757+00 Rf.			1	1	15/15									
N 758+00 Med 40'	9/9*				15/15									
S 758+86± Med.	5*		1											
S 762+00 Lt.			1	1										
764+00 Lt.	9*				15									
S 755+78		65/49.5*				1	9.1	1	2	1	1	1	1	1
Total (ROS)			3	2	75	1	9.1	1	2	1	1	1	1	1
Total (F)	50	114.5												

\* = F Items





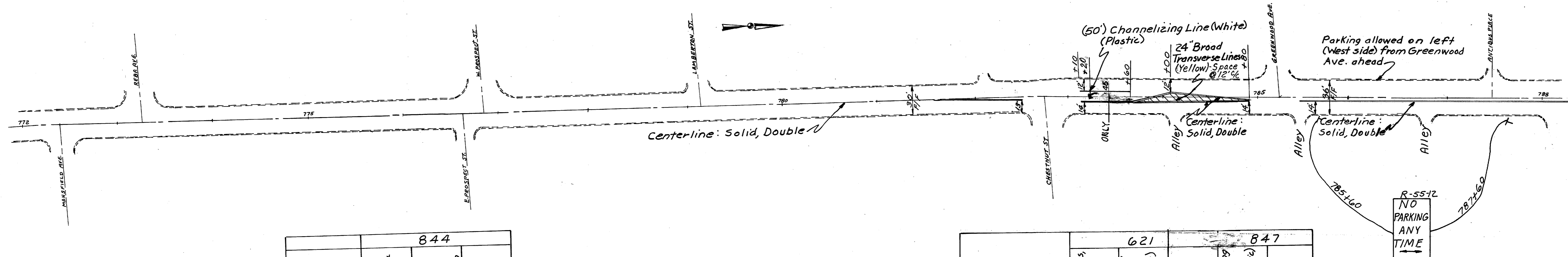
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RIC-13-10.82

Calc. by *ROD* 12/78  
Chkd. by *ROD* 1/79

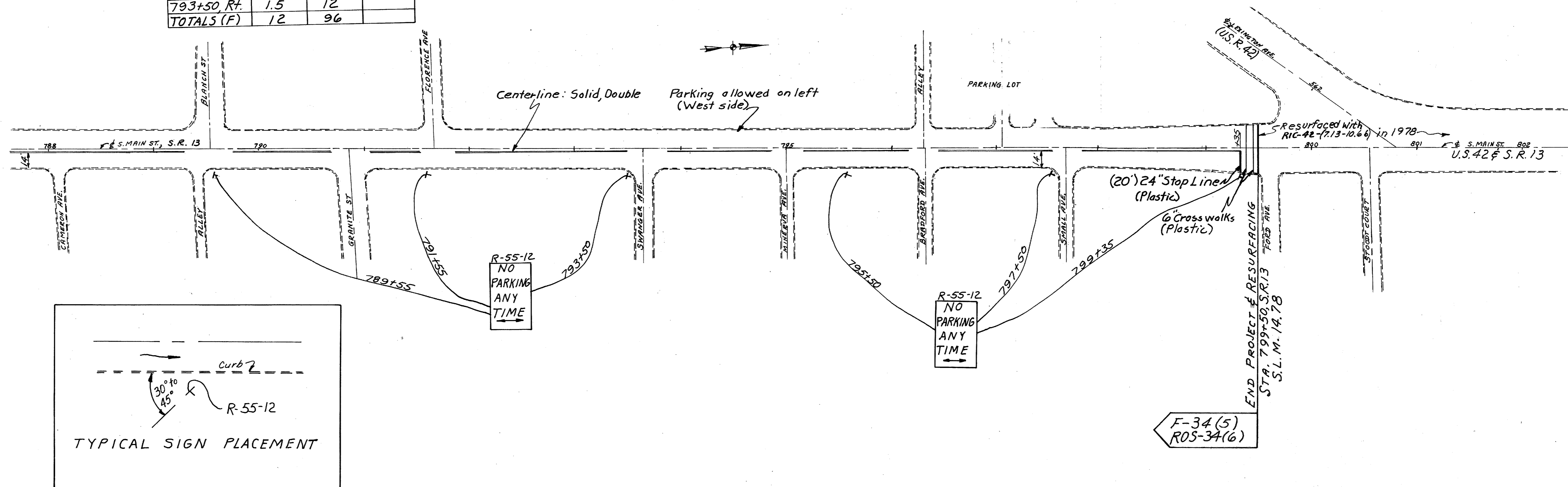


STATION	844	
	Sq. Ft.	Lin. Ft.
785+60, Rt.	1.5	12
787+60, Rt.	1.5	12
789+55, Rt.	1.5	12
791+55, Rt.	1.5	12
795+50, Rt.	1.5	12
797+50, Rt.	1.5	12
799+35, Rt.	1.5	12
793+50, Rt.	1.5	12
TOTALS (F)	12	96

NOTE: Field adjust sign if location is not satisfactory

STATION	621		847	
	Centerlines, Solid, Double Lin. Ft.	24" Broad Transverse Lines (Yellow) Lin. Ft.	WORD ONLY (Plastic) Channelizing Lines (White Plastic) Lin. Ft.	Lane Arrow (Plastic) Each
783+10 to 783+60			1	1
783+60 to 784+80	240	85		
TOTALS (F)	240	85	1	1

Quantities for crosswalk and stop lines at side streets and remainder of centerlines on Sheet 31.



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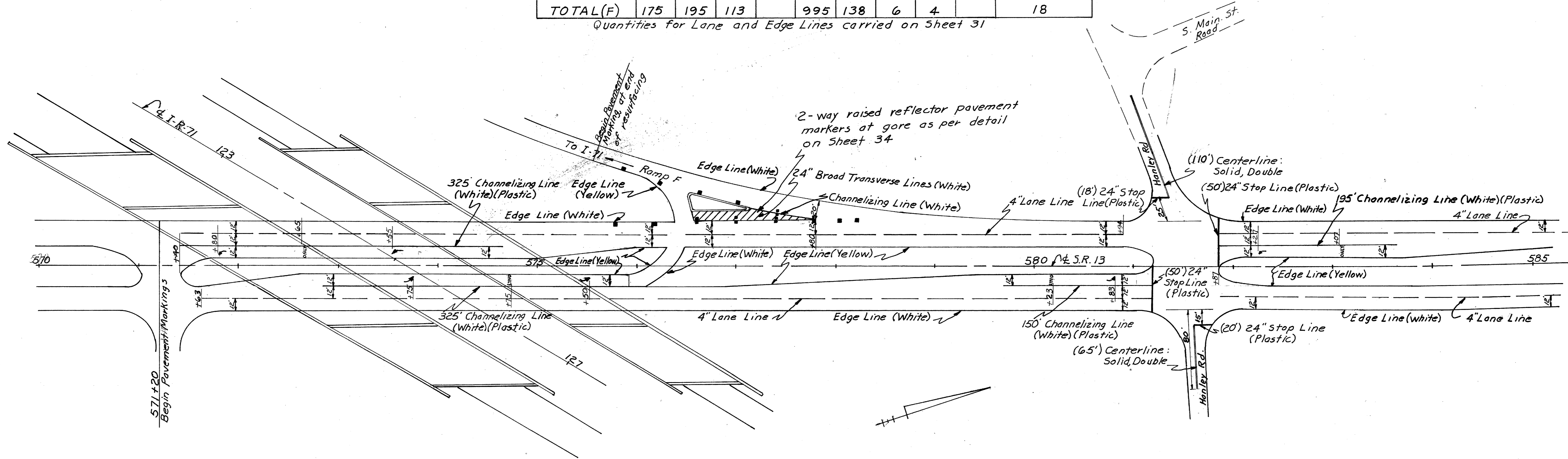
Calc. by *RL* 12/78  
Chkd. by *POM* 1/79

Ramp A From I-71  
Ramp B To I-71

555 560 565 570  
S.R. 13

STATION	621			847				Special	
	Centerline: Solid, Double	Channelizing Lines (White)	24" Broad Transverse Lines (White)	Channelizing Lines (White) (Plastic)	24" Stop Line (Plastic)	Lane Arrow (Plastic)	Word ONLY on Pavement (Plastic)	Two-way Flowable Prismatic Reflector Type Pavement Marker	
	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	White	Yellow/Red
571+40 to 576+46				325/325		4	2		
576+46 to 581+23		195	113	150	50	1	1	14	4
Hanley Rd. (East)	65				20				
Hanley Rd. (West)	110				18				
581+87 to 585+00				195	50	1	1		
<b>TOTAL (F)</b>	<b>175</b>	<b>195</b>	<b>113</b>	<b>995</b>	<b>138</b>	<b>6</b>	<b>4</b>	<b>18</b>	

Quantities for Lane and Edge Lines carried on Sheet 31

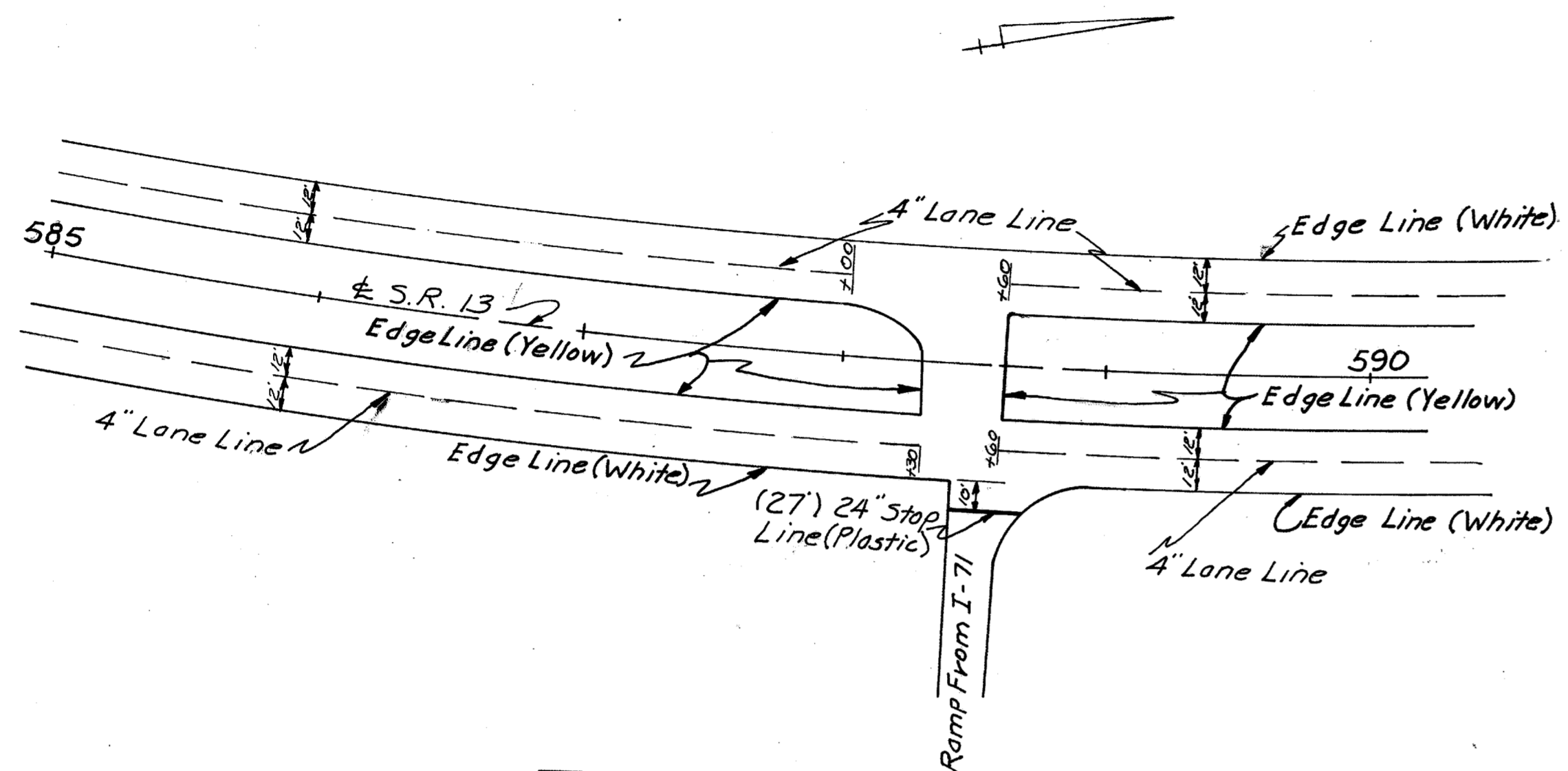




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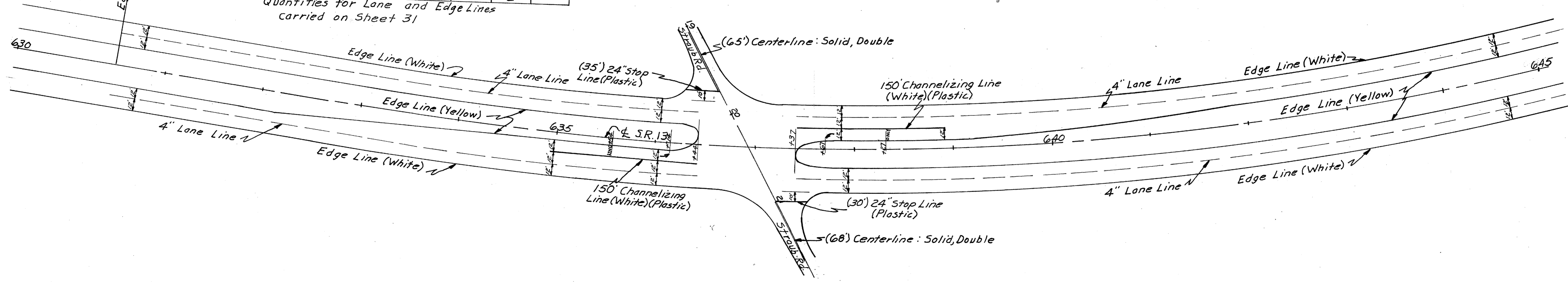
RIC-13-10.82

Calc. by TCJ 12/78  
Chkd. by RDJ '79



STATION	621		847		
	Center-line: Solid, Double Lin. Ft.	Channelizing Lines (White) (Plastic) Lin. Ft.	24" Stop Lines (Plastic) Lin. Ft.	Lane Arrow (Plastic) Each	Word "ONLY" on Pavement (Plastic) Each
Ramp from I-71			27		
634+00 to 639+00		150/150		2	2
Straub Rd. (East)	68		30		
Straub Rd. (West)	65		35		
TOTALS (F)	133	300	92	2	2

Quantities for Lane and Edge Lines  
carried on Sheet 31



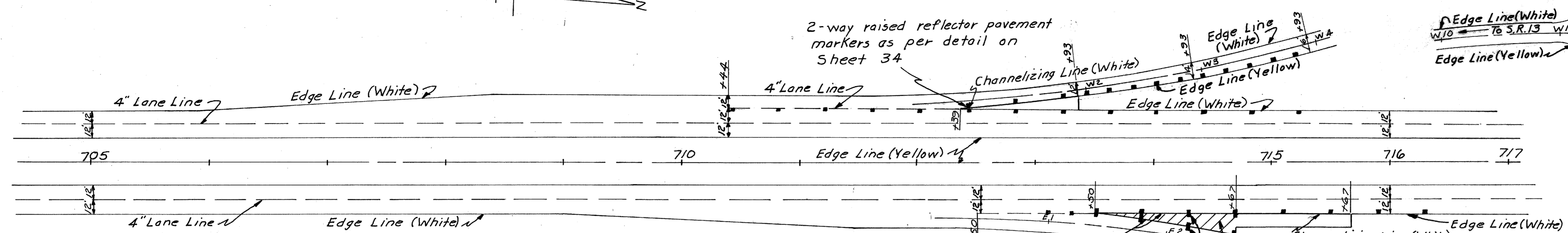
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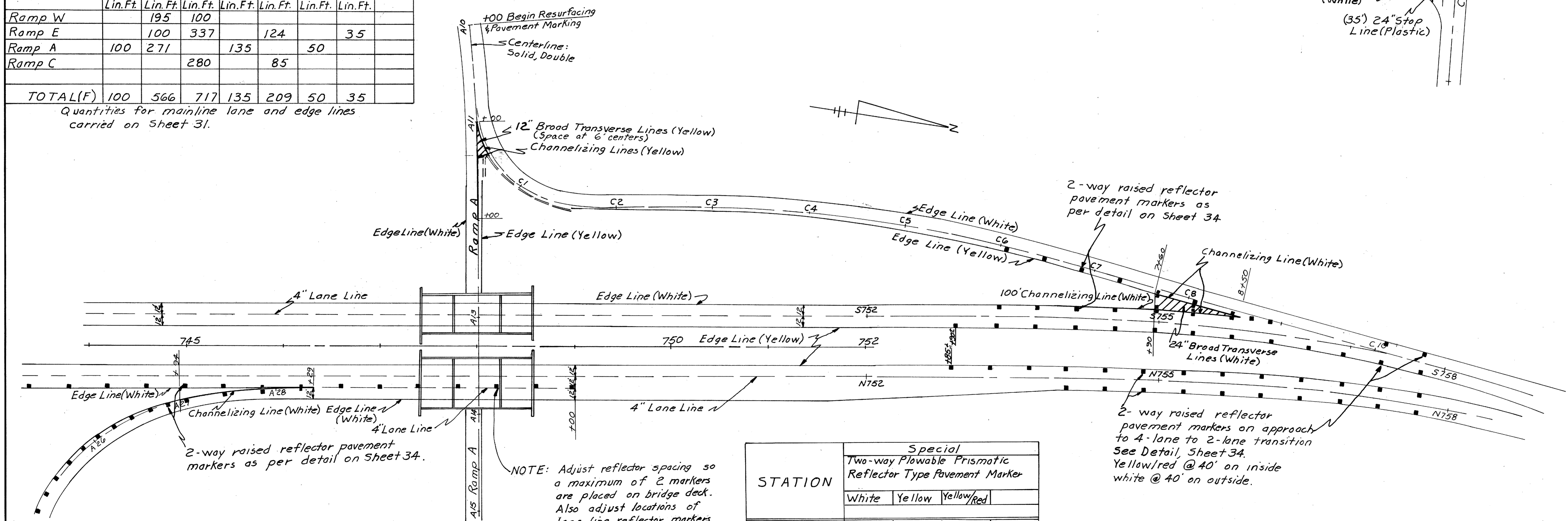
RIC-13-10.82

Calc. by *ALL* 12/78  
Chkd. by *DDM* 1/79



STATION	621					847	
	Centerlines: Solid, Double	4" Lane Lines	Channelizing Lines (White)	Channelizing Lines (Yellow)	24" Broad Transverse Lines (White)	12" Broad Transverse Lines (Yellow)	24" Stop Lines (Plastic)
	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.
Ramp W		195	100				
Ramp E		100	337		124		35
Ramp A	100	271		135		50	
Ramp C			280		85		
TOTAL (F)	100	566	717	135	209	50	35

Quantities for mainline lane and edge lines carried on Sheet 31.



NOTE: Adjust reflector spacing so a maximum of 2 markers are placed on bridge deck. Also adjust locations of lane line reflector markers to keep the number on the bridge to a minimum.

STATION	Special Two-way Plowable Prismatic Reflector Type Pavement Marker		
	White	Yellow	Yellow/Red
Ramp W	16	10	
Ramp E	20		4
Ramp A	19	10	
Ramp C	16		4
N752+85± to N757+65±	10		13
S752+90 to S757+70±	2		13
TOTAL (F)		137	

2-way raised reflector pavement markers on approach to 4-lane to 2-lane transition. See Detail, Sheet 34. Yellow/red @ 40' on inside white @ 40' on outside.



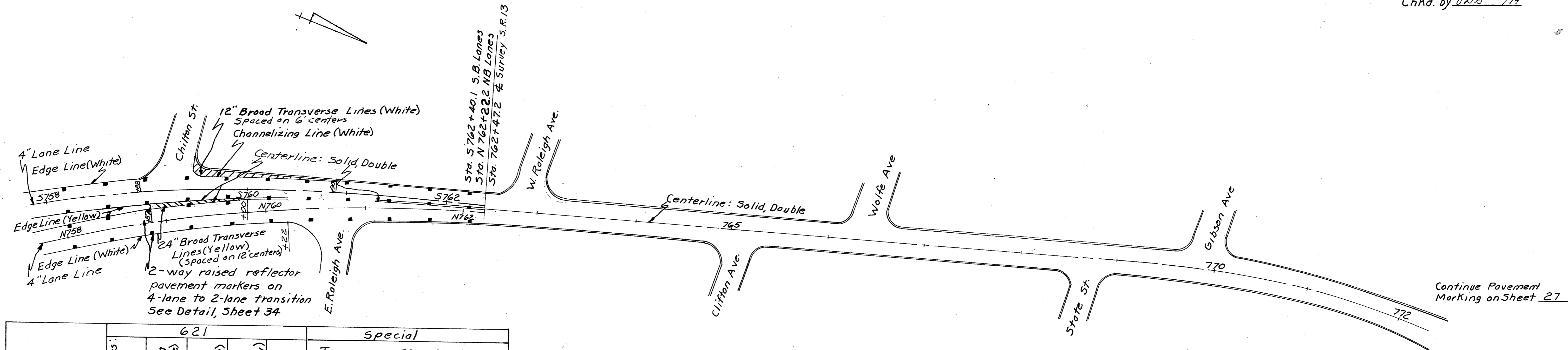
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FHWA REGION	STATE	PROJECT
5	OHIO	

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RIC-13-10.82

Calc. by *RLD* 12/28  
Chkd. by *POB* 1/99



STATION	621				Special			
	Centerlines: Solid, Double	Channelizing Lines (White)	12" Broad Transverse Lines (White)	24" Broad Transverse Lines (Yellow)	Two-way Plowable Prismatic Reflector Type Pavement Marker			
	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	White	Yellow/Red	Yellow/Yellow	White/White
N758+87 to N760+00	226			40				
5759+45 to 5760+00		165	180					
758+00 to 762+05±					6	6	10	16
TOTALS (F-34)	226	165	180	40				38

**S.R. 13 PAVEMENT MARKING QUANTITIES**

EDGE LINE (WHITE)	
Sta. 571+20 to 631+00 BK SB & NB	= 11,960 L.F.
Sta. 630+48.77 to 693+97.49 BK SB & NB	= 12,698 L.F.
Sta. 694+00 Ah. to 712+12.70 NB	= 1813 L.F.
Sta. 694+00 Ah. to 711+46.10 S.B.	= 1746 L.F.
Sta. 715+67 to N 760+22 N.B.	= 4455 L.F.
Sta. 712+39 to 5 753+90 S.B.	= 4151 L.F.
Sta. 5 758+00 to 5 758+88 S.B.	= 88 L.F.
Add for Ramp F @ I-71 & Med. Crossover	= 132 L.F.
W 0+00 to W 11+30 Ramp W	= 1130 L.F.
E 0+00 to E +95 Ramp E	= 895 L.F.
10+00 to 10+80 Ramp A 0+00 Ramp C to 10+75.85 Ramp C	= 1156 L.F.
10+00 Ramp A to 28+35	= 1835 L.F.
<b>TOTAL</b>	<b>= 42,059 L.F. = 7.97 Mi. (F-34)</b>

EDGE LINE (YELLOW)	
Sta. 571+40 to 631+00 BK NB & SB	= 11,920 L.F.
Sta. 630+48.77 to 693+97.8K NB & SB	= 12,696 L.F.
Sta. 694+00 Ah. to N 758+87 NB	= 6487 L.F.
Sta. 694+00 Ah. to 5 759+05 S.B.	= 6505 L.F.
Add for Ramp F @ I-71 (Scaled)	= 110 L.F.
Sta. 1+93 to 11+30 Ramp W	= 937 L.F.
Sta. 2+60 to 8+95 Ramp E	= 635 L.F.
Sta. 0+55 to 7+60 Ramp C	= 705 L.F.
Sta. 12+00 to 27+00	= 1500 L.F.
Deduct for Intersections	= -186 L.F.
<b>TOTAL</b>	<b>= 41,309 L.F. = 7.82 Mi. (F-34)</b>

4" Lane Line	
Sta. 571+40 to 631+00 BK. N.B. & S.B.	= 11,920 L.F.
Sta. 630+48.77 Ah. to 693+97 BK NB & SB	= 12,696 L.F.
Sta. 694+00 Ah. to 758+87 N.B. & S.B.	= 12,974 L.F.
Deductions for Intersections	= -456 L.F.
<b>TOTAL</b>	<b>= 37,134 L.F. = 7.03 Mi. (F-34)</b>

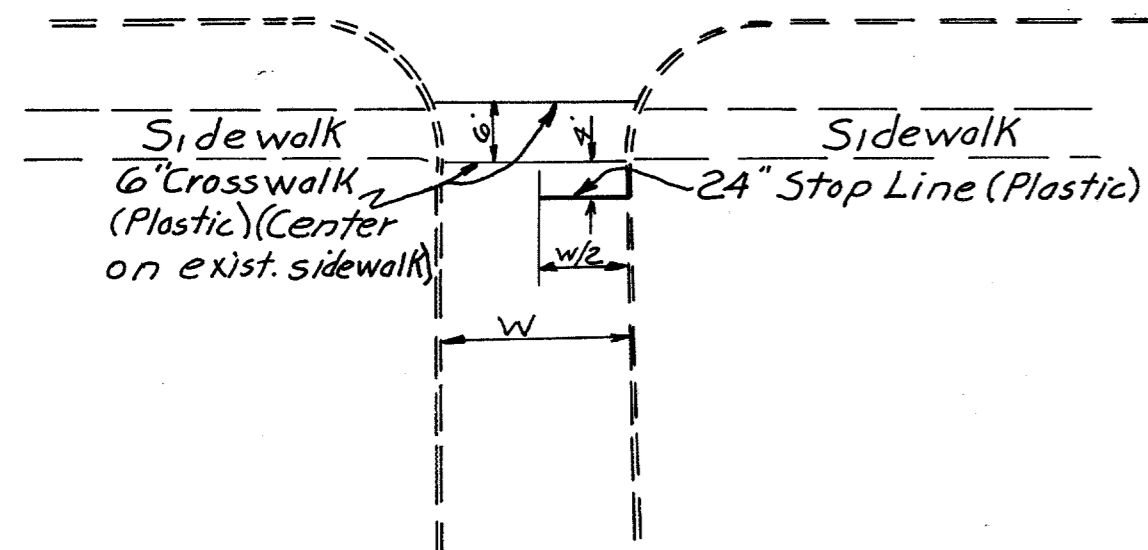
CENTERLINES: SOLID, DOUBLE	
Sta. 5 760+00 to 5 762+40.1 BK	= 240 L.F.
Sta. 762+47.2 Ah. to 783+60	= 2113 L.F.
Sta. 784+80 to 799+35	= 1455 L.F.
Deduct for Intersections	= -960 L.F.
<b>TOTAL</b>	<b>= 2848 L.F. = 0.54 Mi. (F-34)</b>

Item Special - Two-way Plowable Prismatic Reflector Type Pavement Markers (White/Red on lane line as per detail, Sheet 34):  
 Sta. 571+40 to Sta. 631+00 BK NB & SB = 11,920 L.F.  
 Sta. 630+48.77 Ah. to Sta. 693+97.8K NB & SB = 12,696 L.F.  
 Sta. 694+00 Ah. to Sta. 758+87 NB & SB = 12,974 L.F.  
**TOTAL = 37,590 L.F.**

Markers @ 80' % :  $\frac{37,590}{2 \times 80} = 235$  spaces each side  
 Use 236 each side x 2 = 472 Markers (F-34)

LOCATION	SIDE	847	
		24" Stop Line (Plastic)	6" Crosswalk Lines (Plastic)
		Lin.Ft.	Lin.Ft.
Chilton St.	Lt.	20	80
W. Raleigh Ave.	Lt.	15	60
Wolfe Ave.	Lt.	17	68
Gibson Ave.	Lt.	17	68
Rego Ave.	Lt.	16	64
E. Prospect St.	Rt.	9	36
W. Prospect St.	Lt.	17	68
19935 Main St.	Lt.	20	90
TOTALS (F-34)		131	534

Centerline: Solid, Double  
(End at Side Street Radius)



TYPICAL INTERSECTION DETAIL  
(Pavement Marking)



## TWO-WAY PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS

### DESCRIPTION OF WORK:

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING THE PLOWABLE PRISMATIC REFLECTOR PAVEMENT MARKERS AS SPECIFIED BELOW AND THE PLACEMENT OF THE MARKERS IN ACCORDANCE WITH THE LINES, SYMBOLS, AND DIMENSIONS SHOWN ON THE PLANS OR AS DESCRIBED HEREIN.

### MATERIALS:

TWO-WAY PLOWABLE PRISMATIC REFLECTOR PAVEMENT MARKERS SHALL CONSIST OF AN IRON CASTING TO WHICH IS ATTACHED A REPLACEABLE PRISMATIC RETROREFLECTOR FOR REFLECTING LIGHT LONGITUDINALLY ALONG THE PAVEMENT FROM A SINGLE OR OPPOSITE DIRECTIONS.

FASTENING TO THE PAVEMENT SURFACE IS TO BE ACCOMPLISHED BY THE USE OF EPOXY ADHESIVE.

I. **CASTING** - BOTH ENDS OF THE CASTING ARE SHAPED TO DEFLECT A SNOWPLOW BLADE UPWARD THUS PREVENTING DAMAGE TO THE RETROREFLECTOR. THE BOTTOM OF THE CASTING SHALL INCORPORATE TWO PARALLEL KEELS AND AN ARCUATELY SHAPED WEB DESIGNED TO FIT INTO A GROOVED SLOT IN THE PAVEMENT SURFACE.

- DIMENSIONS** - OVERALL DIMENSIONS SHALL BE APPROXIMATELY 9.25" LONG BY 5.87" WIDE AND 1.74" HIGH. INSTALLED HEIGHT SHALL BE APPROXIMATELY .41" ABOVE THE ROAD SURFACE.
- MATERIAL** - NODULAR IRON, CONFORMING TO THE SPECIFICATION ASTM-A-536-65T HARDENED TO 51-55 Rc.
- SURFACE** - SURFACE OF THE CASTING SHALL BE FREE OF SCALE, DIRT, RUST, OIL, GREASE OR ANY OTHER CONTAMINANT WHICH MAY REDUCE ITS BOND TO THE EPOXY ADHESIVE OR ADHESIVE PRIMER.
- WEIGHT** - 4.5 POUNDS, PLUS OR MINUS TEN (10) PERCENT.
- IDENTIFICATION** - CASTING SHALL BE MARKED WITH MANUFACTURER'S NAME AND MODEL NUMBER.

II. **PRISMATIC REFLECTOR** - REFLECTORS SHALL CONSIST OF AN ACRYLIC PLASTIC SHELL FILLED WITH TIGHTLY ADHERENT POTTING COMPOUND. THE SHELL SHALL CONTAIN ONE OR TWO PRISMATIC REFLECTIVE FACES TO REFLECT INCIDENT LIGHT LONGITUDINALLY ALONG THE PAVEMENT FROM A SINGLE OR OPPOSITE DIRECTIONS. THE REFLECTOR SHALL BE IN THE SHAPE OF A SHALLOW FRUSTUM OF A PYRAMID. THE BOTTOM OF THE REFLECTOR SHALL BE EQUIPPED WITH PRESSURE-SENSITIVE ADHESIVE TO PERMIT ITS ATTACHMENT TO THE PRIMED SURFACE OF THE CASTING.

- DESIGN AND FABRICATION** - (1) CONSTRUCTION DETAILS - DIMENSIONS, 4"x2"x.460" (NOMINAL). SLOPE OF REFLECTING SURFACE, 30°. AREA OF EACH REFLECTING SURFACE, 1.7 SQUARE INCHES. THE OUTER SURFACE OF THE SHELL SHALL BE SMOOTH EXCEPT FOR PURPOSES OF IDENTIFICATION. (2) MATERIAL - SHELL SHALL BE MOLDED OF METHYL METHACRYLATE CONFORMING TO FEDERAL SPECIFICATION L-P-380A, TYPE 1, CLASS 3. FILLER SHALL BE A POTTING COMPOUND SELECTED FOR STRENGTH, RESILIENCE AND ADHESION ADEQUATE TO PASS THE NECESSARY PHYSICAL REQUIREMENTS. THE SURFACE OF EACH LENS SHALL BE PROTECTED WITH A HARD, ABRASION-RESISTANT COATING SUFFICIENT TO PASS THE STEEL WOOL ABRASION PROCEDURE AND SUBSEQUENT REFLECTIVE INTENSITY REQUIREMENT. THE ADHESIVE SHALL BE PRESSURE-SENSITIVE, 100% SOLIDS, .040" THICK WITH CLOSED CELL RELEASE PAPER ON THE BOTTOM. PRESSURE-SENSITIVE ADHESIVE SHALL POSSESS ADHESION AND PHYSICAL QUALITIES NECESSARY TO PASS TEST REQUIREMENTS AS SPECIFIED UNDER "STRENGTH REQUIREMENTS--PRESSURE SENSITIVE ADHESIVE".
- OPTICAL REQUIREMENTS** - (1) DEFINITIONS - HORIZONTAL INCIDENCE ANGLE SHALL MEAN THE ANGLE IN THE HORIZONTAL PLANE BETWEEN THE DIRECTION OF INCIDENT LIGHT AND THE NORMAL TO THE LEADING EDGE OF THE REFLECTOR. DIVERGENCE ANGLE SHALL MEAN THE ANGLE AT THE REFLECTOR BETWEEN OBSERVER'S LINE OF SIGHT AND THE DIRECTION OF THE LIGHT INCIDENT ON THE REFLECTOR.

REFLECTIVE INTENSITY SHALL MEAN CANDLEPOWER OF THE RETURNED LIGHT AT THE CHOSEN DIVERGENCE ANGLE FOR EACH FOOT CANDLE OF ILLUMINATION AT THE REFLECTOR ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT.

- OPTICAL PERFORMANCE** - (a) STEEL WOOL ABRASION PROCEDURE - FORM A 1" DIAMETER FLAT PAD USING #3 COARSE STEEL WOOL PER FEDERAL SPECIFICATION FF-W-1825. PLACE THE STEEL WOOL PAD ON THE REFLECTOR LENS. APPLY A LOAD OF 50 POUNDS AND RUB THE ENTIRE LENS SURFACE 100 TIMES. (b) REFLECTIVE INTENSITY - AFTER ABRADING THE LENS SURFACE, USING THE FOREGOING STEEL WOOL ABRASION PROCEDURE, THE REFLECTIVE INTENSITY OF EACH CRYSTAL (WHITE) REFLECTING SURFACE AT 0.2° DIVERGENCE ANGLE SHALL BE NOT LESS THAN THE FOLLOWING WHEN THE INCIDENT LIGHT IS PARALLEL TO THE BASE OF THE REFLECTOR.

HORIZONTAL INCIDENCE ANGLE	REFLECTIVE INTENSITY CANDLEPOWER/FT. C
0°	3.0
20°	1.2

FOR YELLOW REFLECTORS, THE REFLECTIVE INTENSITY SHALL BE 60% OF THE VALUE FOR CRYSTAL (WHITE). FOR RED REFLECTORS, THE REFLECTIVE INTENSITY SHALL BE 25% OF THE VALUE FOR CRYSTAL (WHITE). (c) OPTICAL TESTING PROCEDURE - A RANDOM LOT OF REFLECTORS SHALL BE TESTED. THE REFLECTOR TO BE TESTED SHALL BE LOCATED WITH THE CENTER OF THE REFLECTING FACE AT A DISTANCE OF FIVE (5) FEET FROM A UNIFORMLY BRIGHT LIGHT SOURCE HAVING AN EFFECTIVE DIAMETER OF 0.28 INCHES. THE PHOTOCCELL WIDTH SHALL BE AN ANNULAR RING .37" I.D. - .47" O.D. IT SHALL BE SHIELDED TO ELIMINATE STRAY LIGHT. THE DISTANCE FROM LIGHT SOURCE CENTER TO THE PHOTOCCELL CENTER SHALL BE 0.21 INCHES. IF A TEST DISTANCE OF OTHER THAN FIVE (5) FEET IS USED, THE SOURCE AND RECEIVER DIMENSIONS AND THE DISTANCE BETWEEN SOURCE AND RECEIVER SHALL BE MODIFIED IN PROPORTION TO THE TEST DISTANCE. FAILURE OF MORE THAN 4% OF THE REFLECTING FACES SHALL BE CAUSE FOR REJECTION OF THE LOT.

- STRENGTH REQUIREMENTS--PRESSURE-SENSITIVE ADHESIVE** - PRESSURE-SENSITIVE ADHESIVE, WHEN APPLIED WITH MINIMUM APPLICATION PRESSURE OF 60 PSI, MUST POSSESS A MINIMUM TENSILE OR SHEAR STRENGTH OF 15 PSI AT 70° F AMBIENT. (1) STRENGTH TESTING PROCEDURE - "A STANDARD 4"x2"x.46" REFLECTOR WITH PRESSURE-SENSITIVE ADHESIVE, ON THE BOTTOM, SHALL BE ADHERED TO APPROPRIATE FLAT .12" CARBON STEEL TEST PLATE, PROPERLY PRIMED, WITH 60 PSI (480 POUNDS) MINIMUM APPLICATION PRESSURE. BOTH TOP OF THE REFLECTOR AND BOTTOM OF THE FLAT PLATE SHALL HAVE FASTENED TO IT AN APPROPRIATE COUPLING DEVICE TO ENSURE COMPATIBILITY WITH THE TENSILE TESTING DEVICE. THE TEST SAMPLE SHALL THEN BE TESTED IN THE TENSILE MODE AT 2"/MINUTE PULL RATE. MINIMUM LOAD TO PRODUCE FAILURE SHALL BE 125 POUNDS AT 70° F. ANY FIGURE BELOW 125 POUNDS CONSTITUTES A SYSTEM FAILURE."

III. **ADHESIVE PRIMER** - THE ADHESIVE PRIMER SHALL BE BLACK IN COLOR AND SHOW A DEFINITE CHANGE FROM A GLOSS (WET) TO A FLAT APPEARANCE UPON DRYING. THE ADHESIVE PRIMER SHALL BE APPROVED FOR USE BY THE MANUFACTURER OF THE PRISMATIC REFLECTOR.

- PHYSICAL PROPERTIES** - (1) COLOR - BLACK. (2) VISCOSITY - 120 TO 220 CENTIPOISE (CPS). (3) DRYING TIME - THREE MINUTES MAXIMUM (0.003" COATING ON CARBON STEEL TEST PLATE AT 72° F + 3° F).
- STRENGTH REQUIREMENTS** - THE PRIMER SHALL PROMOTE OPTIMUM ADHESION BETWEEN THE CASTING AND PRESSURE-SENSITIVE ADHESIVE.
- STRENGTH TESTING PROCEDURE** - PRIME TEST PLATES WITH PRIMER AND ALLOW TO DRY. APPLY PRESSURE-SENSITIVE ADHESIVE BETWEEN PRIMED TEST PLATES WITH 60 PSI APPLICATION FORCE. THE PRIMER SHALL BE JUDGED AS ACCEPTABLE IF AFTER SUBJECTING SPECIMEN TO TENSILE LOADING AT 70° F AMBIENT TEMPERATURE, THE FAILURE IS COHESIVE.

THE ADHESIVE USED TO BOND THE PAVEMENT MARKER TO THE PAVEMENT SHALL BE A TWO-COMPONENT STANDARD SET EPOXY AVAILABLE FROM THE AMERACE CORPORATION (SIGNAL PRODUCTS DIVISION, 7542 NORTH NATCHEZ AVENUE, NILES, ILLINOIS), OR AN EQUIVALENT MADE WITH THE FOLLOWING FORMULATION:

COMPONENT A	PARTS BY WEIGHT
EPOXY RESIN (EPON 828 OR EQUAL)	100.00
TITANIUM DIOXIDE	7.68
# 13 TALC	36.64
COMPONENT B	
N - AMINOETHYL PIPERAZINE (JEFFERSON OR EQUAL)	25.10
NONYL PHENOL	50.03
TALC (FIBERINE C-400, SIERRA OR EQUAL)	69.28
MOLACCO BLACK	0.23

THE CONTRACTOR SHALL FURNISH TO THE ENGINEER A CERTIFICATE OF ANALYSIS CONTAINING THE CERTIFIED FORMULATION AND CERTIFIED TEST DATA TO BE OBTAINED IN THE FOLLOWING MANNER:

THE CERTIFIED FORMULATION SHALL BE FOR EACH OF THE COMPONENT PARTS, THE ACTUAL PERCENT BY WEIGHT, THE NAME OF THE PRODUCER AND BRAND NAME OF THE MATERIAL, AND THE PRODUCER'S CODE NUMBER. CERTIFIED TEST DATA FOR THE PROPERTIES OF THE COMPONENT PARTS, COMPONENTS A (EPOXY) AND B (HARDENER) AND THE CURED SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE METHODS OF TEST OF AASHTO M-237-73.

THE RESPECTIVE PROPERTIES OF THE COMPONENT PARTS TO BE TESTED ARE NOTED IN SECTIONS 2.3.1 TO 2.3.3 AND 2.3.5 TO 2.3.7. THE PROPERTIES OF BOTH COMPONENTS A AND B TO BE TESTED ARE NOTED IN SECTION 3.1.

THE PROPERTIES OF THE CURED SYSTEM TO BE TESTED ARE LISTED IN TABLE 7. CERTIFIED TEST DATA FOR THE COMPONENT PARTS MAY BE PERFORMED BY THE RESPECTIVE MANUFACTURERS. CERTIFIED TEST DATA FOR COMPONENTS A AND B AND THE CURED SYSTEM MAY BE PERFORMED BY EITHER THE EPOXY ADHESIVE PRODUCER OR AN INDEPENDENT TESTING LABORATORY.

FOR SAMPLING PURPOSES, A BATCH SHALL CONSIST OF A SINGLE CHARGE OF ALL COMPONENTS INTO A MIXING CHAMBER.

A CERTIFIED FORMULATION WILL BE REQUIRED FOR EACH BATCH OF COMPONENTS A AND B. CERTIFIED TEST DATA WILL BE REQUIRED FOR EACH 1000 GALLONS OR FRACTION THEREOF OF MATERIAL. BATCHES OF LESS THAN 1000 GALLONS SHALL BE COMBINED IN PROPORTION TO THEIR SIZE IN ORDER TO FORM A COMPOSITE SAMPLE REPRESENTATIVE OF NO MORE THAN 1250 GALLONS. THIS COMPOSITE SAMPLE SHALL BE THOROUGHLY MIXED AND SHALL SERVE TO REPRESENT THE MATERIAL TO BE TESTED. THE CONTRACTOR SHALL ALSO FURNISH TO THE ENGINEER A 1 PINT SAMPLE OF EACH COMPONENT FROM THE INITIAL BATCH OF EPOXY ADHESIVE TO BE USED ON THE PROJECT AND FROM ANY SUBSEQUENT BATCHES WHEN REQUIRED BY THE ENGINEER.

THE EPOXY ADHESIVE SHALL BE MIXED BY COMBINING COMPONENTS A AND B IN A RATIO OF 1:1 BY VOLUME. THE EPOXY ADHESIVE REQUIRES THAT THE MIXING OPERATION AND PLACING OF THE PAVEMENT MARKERS BE DONE RAPIDLY. ANY MIXED BATCH THAT BECOMES SO VISCOUS THAT IT CANNOT BE READILY EXTRUDED FROM UNDER THE MARKER UNDER LIGHT PRESSURE SHALL NOT BE USED. THE ADHESIVE SHALL BE MAINTAINED AT 60°-F TO 80°-F BEFORE MIXING. ANY HEATING OF THE EPOXY SHALL BE BY THE APPLICATION OF INDIRECT HEAT. THE ADHESIVE SHALL NOT BE HEATED ABOVE 120°-F.

### PAVEMENT PREPARATION:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND PREPARING THE PAVEMENT TO WHICH THE PAVEMENT MARKER IS TO BE BONDED, TO THE SATISFACTION OF THE ENGINEER, SUCH THAT AT THE TIME OF MARKER INSTALLATION THE PAVEMENT SHALL BE FREE OF DIRT, DUST, OIL, GREASE, MOISTURE, CURING COMPOUND, LOOSE OR UNSOUND LAYERS OR ANY OTHER MATERIAL WHICH WOULD INTERFERE WITH PROPER BONDING OF THE MARKER TO THE PAVEMENT. SAID BLASTING SHALL BE USED WHEN DIRECTED.

### INSTALLATION OF PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS:

AT THE TIME OF INSTALLATION, THE PAVEMENT MARKER CASTING SHALL BE FREE OF DIRT, DUST, OIL, GREASE, RUST, MOISTURE OR ANY FOREIGN MATTER WHICH WILL IMPAIR ADHESION TO THE PAVEMENT. IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO CLEAN EACH CONTAMINATED CASTING BY SAID BLASTING OR OTHER ACCEPTABLE PROCEDURE TO REMOVE ALL SUCH FOREIGN MATTER PRIOR TO INSTALLATION.

BEFORE BEGINNING PAVEMENT MARKER APPLICATION, THE CONTRACTOR SHALL ACCURATELY AND ADEQUATELY LAY OUT, BY REFERENCE POINTS, THE LOCATION OF ALL PAVEMENT MARKERS, TO ASSURE THEIR PROPER PLACEMENT.

PAVEMENT MARKERS SHALL NOT BE PLACED ON PAVEMENT SURFACES THAT SHOW VISIBLE EVIDENCE OF CRACKING, CHECKING, SPALLING, OR FAILURE OF UNDERLYING BASE MATERIAL.

IF, DURING THE PRE-INSTALLATION LAYOUT OPERATION, IT IS DETERMINED THAT A MARKER WOULD BE PLACED AT A POINT WITH ONE OF THE AFOREMENTIONED PAVEMENT SURFACE DEFECTS OR AT A PAVEMENT CONSTRUCTION JOINT OR WITHIN THE INTERSECTION OF A DRIVEWAY OR PUBLIC STREET AS THE RESULT OF TYPICAL MARKING SPACING, THE AFFECTED MARKER SHALL BE RELOCATED LONGITUDINALLY A SUFFICIENT DISTANCE TO A POINT APPROVED BY THE ENGINEER. THE DISTANCE THE MARKER MAY BE RELOCATED SHALL NOT EXCEED 10% OF THE TYPICAL MARKER SPACING. WHERE IT WOULD BE NECESSARY TO RELOCATE THE MARKER A DISTANCE GREATER THAN 10% OF THE TYPICAL MARKER SPACING, THE AFFECTED MARKER SHALL BE DELETED.

THE PAVEMENT SURFACE TEMPERATURE AT THE TIME OF APPLICATION SHALL BE NOT LESS THAN 50°-F. THE AMBIENT AIR TEMPERATURE SHALL BE NOT LESS THAN 50°-F. NO MARKERS SHALL BE INSTALLED IF THE PAVEMENT SURFACE IS NOT DRY.

PLOWABLE PAVEMENT MARKERS SHALL BE INSTALLED BY INSERTING THE TWO KEELS ON THE CASTING INTO PARALLEL SLOTS CUT INTO THE PAVEMENT IN ACCORDANCE WITH THE DETAILS ON SHEET 49A. WITHIN SEVEN (7) DAYS AFTER THE SLOTS ARE CUT INTO THE PAVEMENT, THE MARKER CASTINGS SHALL BE INSTALLED.

BEFORE APPLYING THE EPOXY ADHESIVE, THE SLOTS SHALL BE BRUSHED OR BLOWN CLEAN OF LOOSE MATERIAL AND SHALL BE DRY. THE CLEANED SLOTS SHALL BE FILLED WITH EPOXY ADHESIVE. SUFFICIENT EPOXY SHALL BE PLACED IN AND BETWEEN THE SLOTS TO INSURE THAT ALL VOIDS BENEATH AND AROUND THE CASTING ARE FILLED SO AS TO CREATE A WATERTIGHT SEAL AROUND THE CASTING. THE KEELS OF THE PAVEMENT MARKER CASTING SHALL BE HAND PLACED INTO THE SLOTS IN SUCH A MANNER AS TO ASSURE THAT THE TIPS OF THE MARKER'S SNOWPLOW DEFLECTING SURFACE(S) ARE BELOW THE PAVEMENT SURFACE. ALSO, THE FLAT UNDER-SURFACE OF THE WEB BETWEEN THE KEELS ON THE ONE-WAY PLOWABLE CASTING AND THE FOUR LUGS ON THE KEELS OF THE TWO-WAY PLOWABLE CASTING SHALL BE IN CONTACT WITH THE PAVEMENT.

THE CONTRACTOR MAY ATTACH THE PRISMATIC REFLECTOR TO THE CASTING IN THE FIELD OR IN A SHOP. WHERE THE CONTRACTOR PERFORMS REFLECTOR ATTACHMENT IN THE FIELD, THE PRISMATIC REFLECTOR SHALL BE ATTACHED TO THE CASTING UNTIL AFTER THE ADHESIVE IN THE PAVEMENT SLOTS HAS PROPERLY HARDENED. IN EITHER OPERATION, THE FOLLOWING REFLECTOR ATTACHMENT PROCEDURE SHALL BE USED. ANY RUST OR FOREIGN MATTER SHALL BE REMOVED FROM THE SURFACE OF THE CASTING ON WHICH THE REFLECTOR IS TO BE ATTACHED. THE RECESSED ATTACHMENT AREA SHALL THEN BE PAINTED WITH ADHESIVE PRIMER AS SPECIFIED UNDER MATERIALS ABOVE. THE RELEASE PAPER SHALL THEN BE PEELED FROM THE BUTYL ADHESIVE BOTTOM OF THE REFLECTOR AND THE REFLECTOR SHALL BE INSERTED INTO THE RECESSED ATTACHMENT AREA AND PRESSED INTO PLACE UNTIL A FIRM BOND HAS BEEN MADE WITH THE CASTING. THE CONTRACTOR SHALL PRESS THE REFLECTOR INTO PLACE BY THE APPLICATION OF 1000 TO 2500 POUND LOAD FOR THREE SECONDS OR BY A PROCEDURE ACCEPTABLE TO THE ENGINEER.



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## TWO-WAY PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS

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### CHANNELIZING LINES:

TWO-WAY PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS WHICH ARE USED IN CHANNELIZING LINE APPLICATION SHALL HAVE ONE-WAY PRISMATIC REFLECTORS FACING TRAFFIC WHICH SHALL BE CRYSTAL WHITE IN COLOR TO MATCH THE CHANNELIZING LINE COLOR. PLACEMENT OF THE PAVEMENT MARKERS RELATIVE TO THE PAINTED CHANNELIZING LINE AND MARKER SPACING SHALL BE AS SHOWN ON THE DETAILS IN THIS PLAN.

### LANE LINES:

TWO-WAY PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS WHICH ARE USED IN LANE LINE APPLICATION SHALL HAVE TWO-WAY PRISMATIC REFLECTORS, CRYSTAL WHITE FACING TRAFFIC AND RED FACING THE OPPOSITE DIRECTION. PLACEMENT OF THE PAVEMENT MARKERS RELATIVE TO THE PAINTED LANE LINE AND MARKER SPACING SHALL BE AS SHOWN ON THE DETAILS IN THIS PLAN.

### EDGE LINES:

TWO-WAY PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS WHICH ARE USED IN EDGE LINE APPLICATION SHALL HAVE PRISMATIC REFLECTORS WHICH MATCH THE EDGE LINE COLOR (CRYSTAL WHITE FACING TRAFFIC FOR RIGHT EDGE LINES; YELLOW FACING TRAFFIC FOR LEFT EDGE LINES).

THE NUMBER OF REFLECTIVE FACES REQUIRED, THE PLACEMENT RELATIVE TO THE PAINTED EDGE LINE, AND THE MARKER SPACING SHALL BE AS SHOWN ON THE DETAILS IN THIS PLAN.

### CENTER LINES:

TWO-WAY PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS WHICH ARE USED IN CENTER LINE APPLICATION SHALL HAVE TWO-WAY PRISMATIC REFLECTORS, BOTH OF WHICH SHALL BE YELLOW TO MATCH THE CENTER LINE COLOR. PLACEMENT OF THE PAVEMENT MARKERS RELATIVE TO THE PAINTED CENTER LINE AND MARKER SPACING SHALL BE AS SHOWN ON THE DETAILS IN THIS PLAN.

NOTE: NO REFLECTOR TYPE PAVEMENT MARKERS SHALL BE PLACED ADJACENT TO BERMS UNTIL AFTER THE SEAL COAT OPERATIONS HAVE BEEN COMPLETED.

### ITEM 614 MAINTAINING TRAFFIC:

THE CONTRACTOR SHALL PROVIDE, PLACE AND SUBSEQUENTLY REMOVE ALL NECESSARY WARNING SIGNS AND CHANNELIZING DEVICES TO KEEP TRAFFIC OFF NEWLY INSTALLED PAVEMENT MARKERS FOR THE MINIMUM PERIOD SPECIFIED IN THE FOLLOWING TABLE.

<u>AMBIENT AIR TEMPERATURE °F</u>	<u>MINIMUM PERIOD (MINUTES) PROTECTED FROM TRAFFIC</u>
100	15
90	20
80	25
70	30
60	35
50 (NO APPLICATION BELOW 50°-F)	45

DURING PERIODS OF HIGH AMBIENT RELATIVE HUMIDITY, EPOXY MAY REQUIRE SLIGHTLY LONGER DRYING TIME THAN INDICATED ABOVE.

### METHOD OF MEASUREMENT:

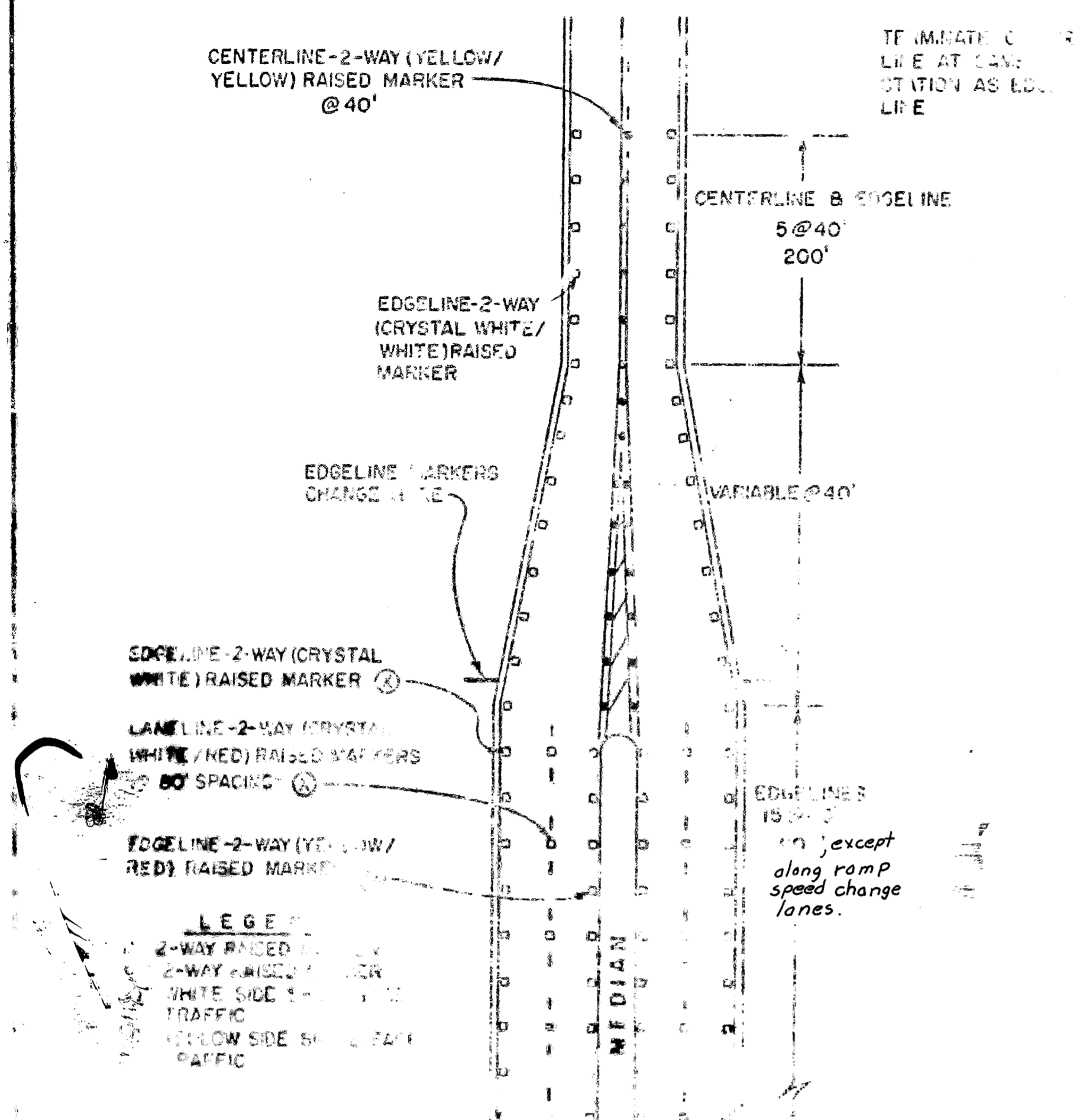
THE NUMBER OF PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKERS WILL BE THE ACTUAL NUMBER, COMPLETE, IN PLACE, AND ACCEPTED, AND WILL BE MEASURED BY THE UNIT FOR EACH TYPE OF CASTING. LAYOUT AND PREMARKING OF THE PAVEMENT MARKER LOCATIONS AND SURFACE PREPARATION WILL BE INCIDENTAL TO THE INSTALLATION OF THE PAVEMENT MARKERS.

### BASIS OF PAYMENT:

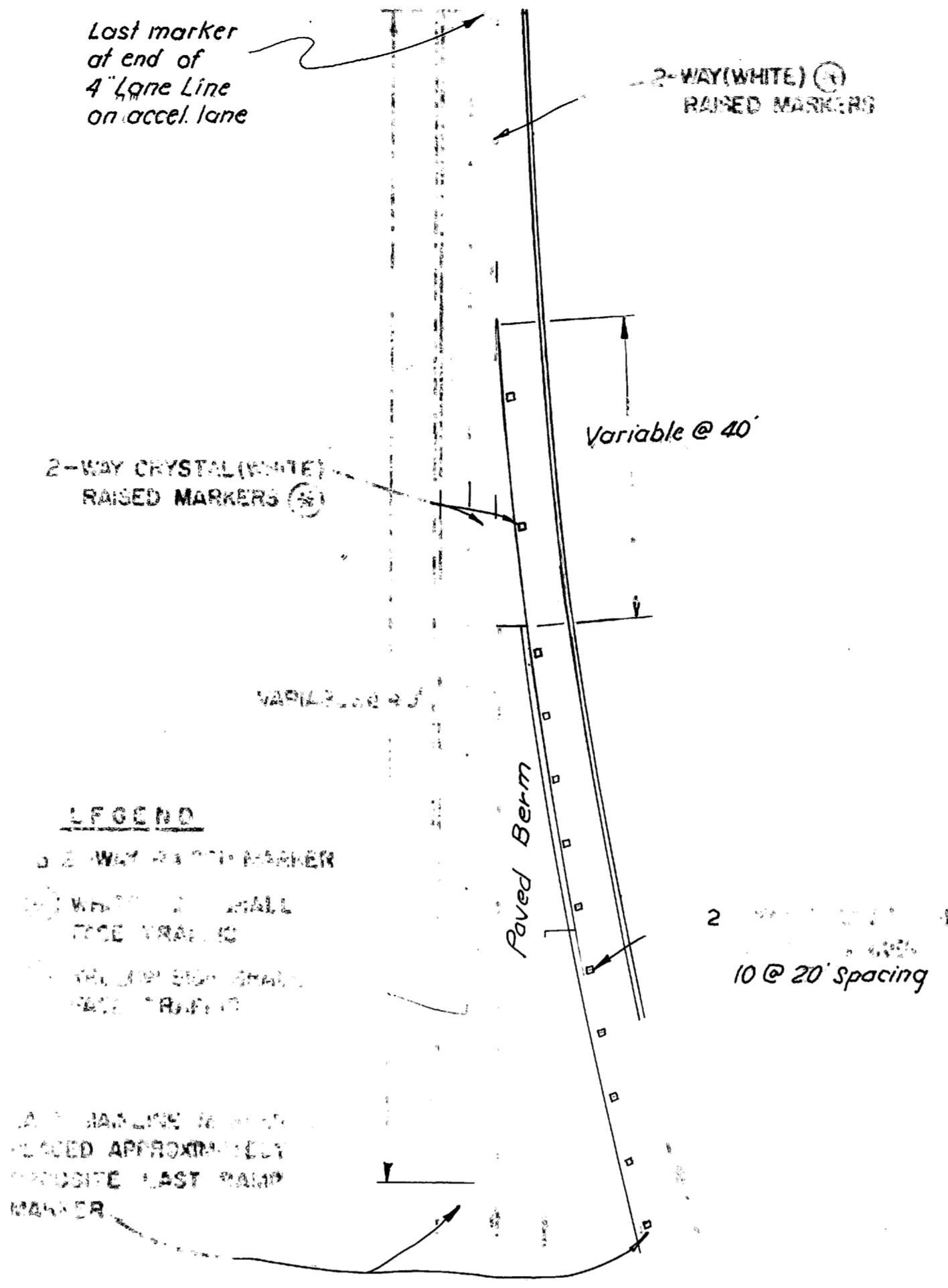
PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM SPECIAL TWO-WAY PLOWABLE PRISMATIC REFLECTOR TYPE PAVEMENT MARKER. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS, AND EQUIPMENT.

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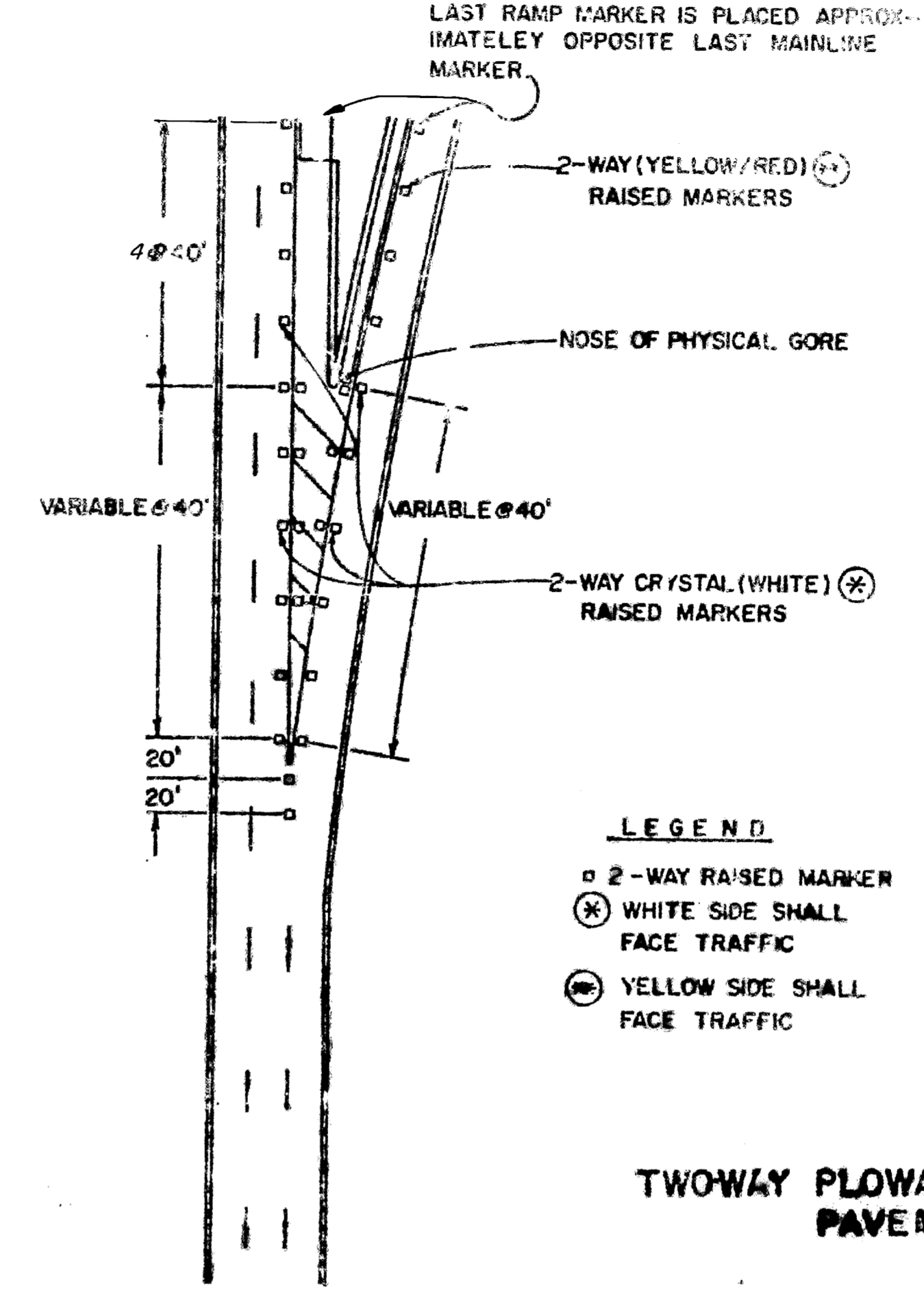
APPLICATION OF PLOWABLE PRISMATIC REFLECTOR  
TYPE PAVEMENT MARKERS AT A 4-LANE DIVIDED  
TO 2-LANE PAVEMENT TRANSITION



APPLICATION OF PLOWABLE PRISMATIC REFLECTOR  
TYPE PAVEMENT MARKERS FOR AN ACCELERATION LANE

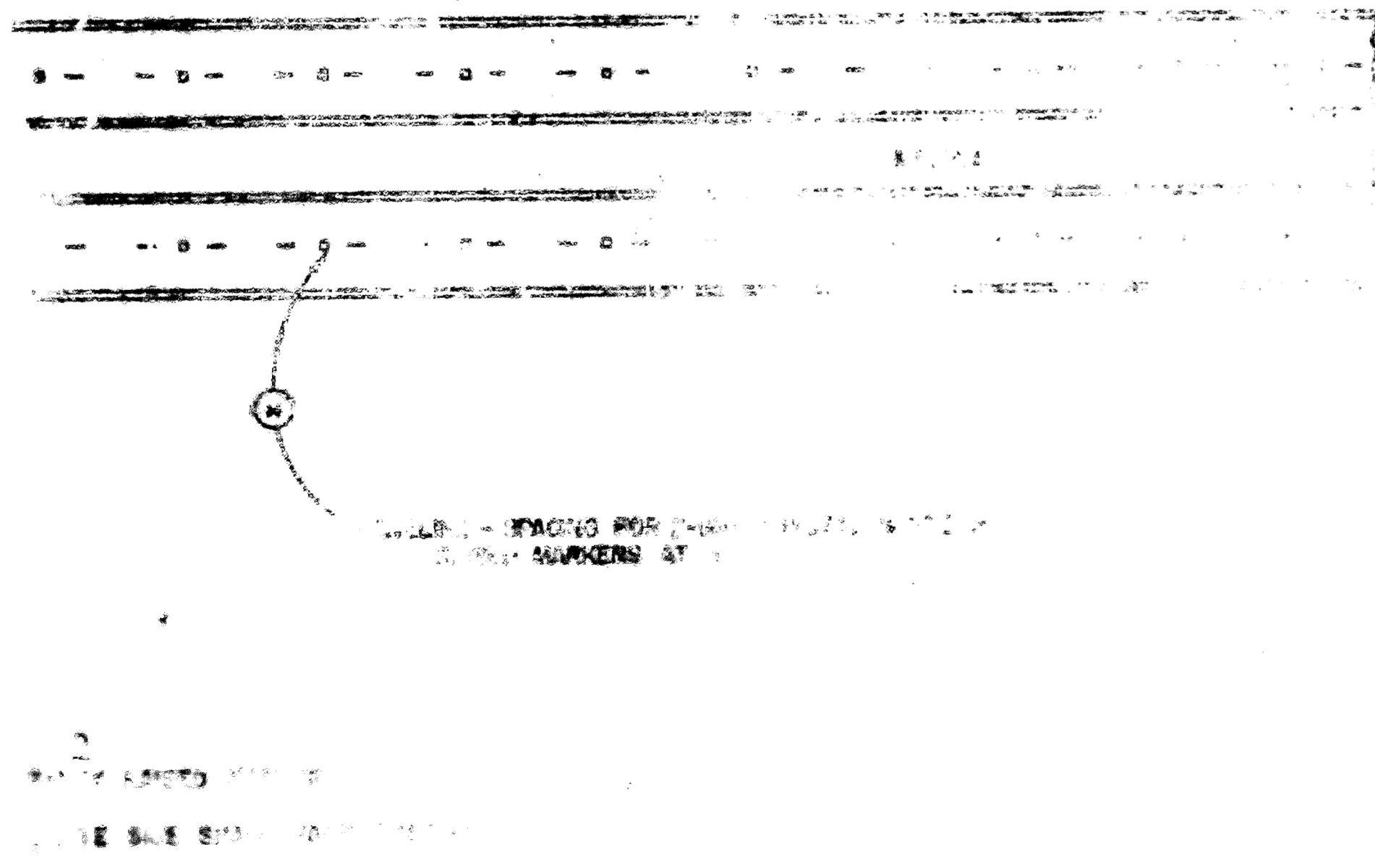


APPLICATION OF PLOWABLE PRISMATIC REFLECTOR  
TYPE PAVEMENT MARKERS FOR A DECELERATION LANE

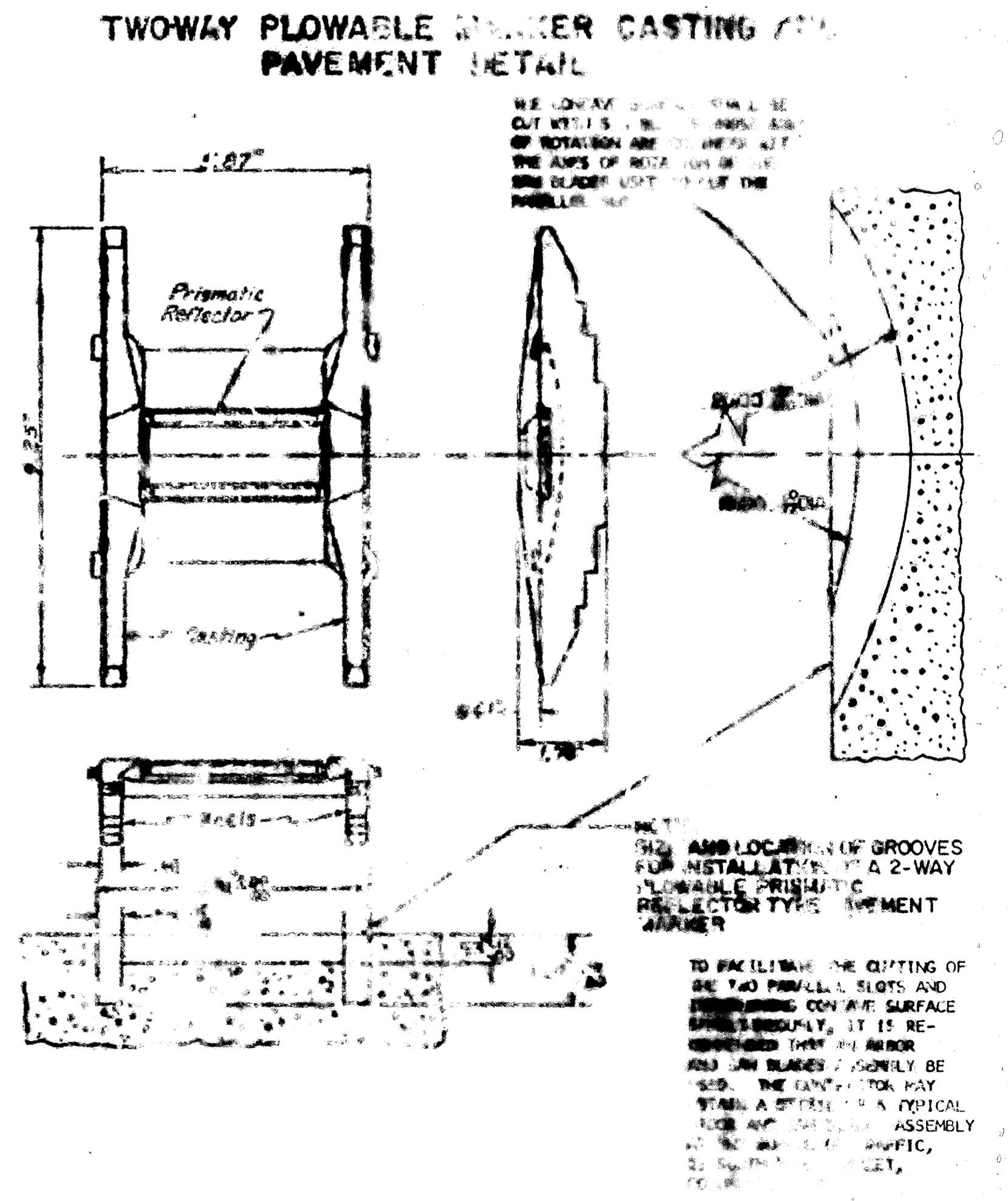


NOTE: MARKERS INSTALLED AT THE DOUBLE YELLOW CENTER LINE SHALL BE PLACED BETWEEN THE TWO PAINTED LINES. MARKERS INSTALLED ALONG AN EDGE, LANE, OR CHANNELIZING LINE SHALL BE PLACED SO THE NEAR EDGE OF THE MARKER CASTING IS NO MORE THAN 1/4 INCH FROM THE NEAR EDGE OF THE PAINTED LINE. PRISMATIC REFLECTORS SHALL NOT BE PLACED WITHIN THE LIMITS OF THE PAINTED LINES WHERE LINES DEVELOP FROM THEIR CORRECT ALIGNMENT AND THEN ONLY WITH THE APPROVAL OF THE ENGINEER.

APPLICATION OF PLOWABLE PRISMATIC REFLECTOR  
TYPE PAVEMENT MARKERS FOR A 4-LANE DIVIDED HIGHWAY



SEE SPECIFICATION AND INSTALLATION  
REQUIREMENTS SHEETS 32 & 33



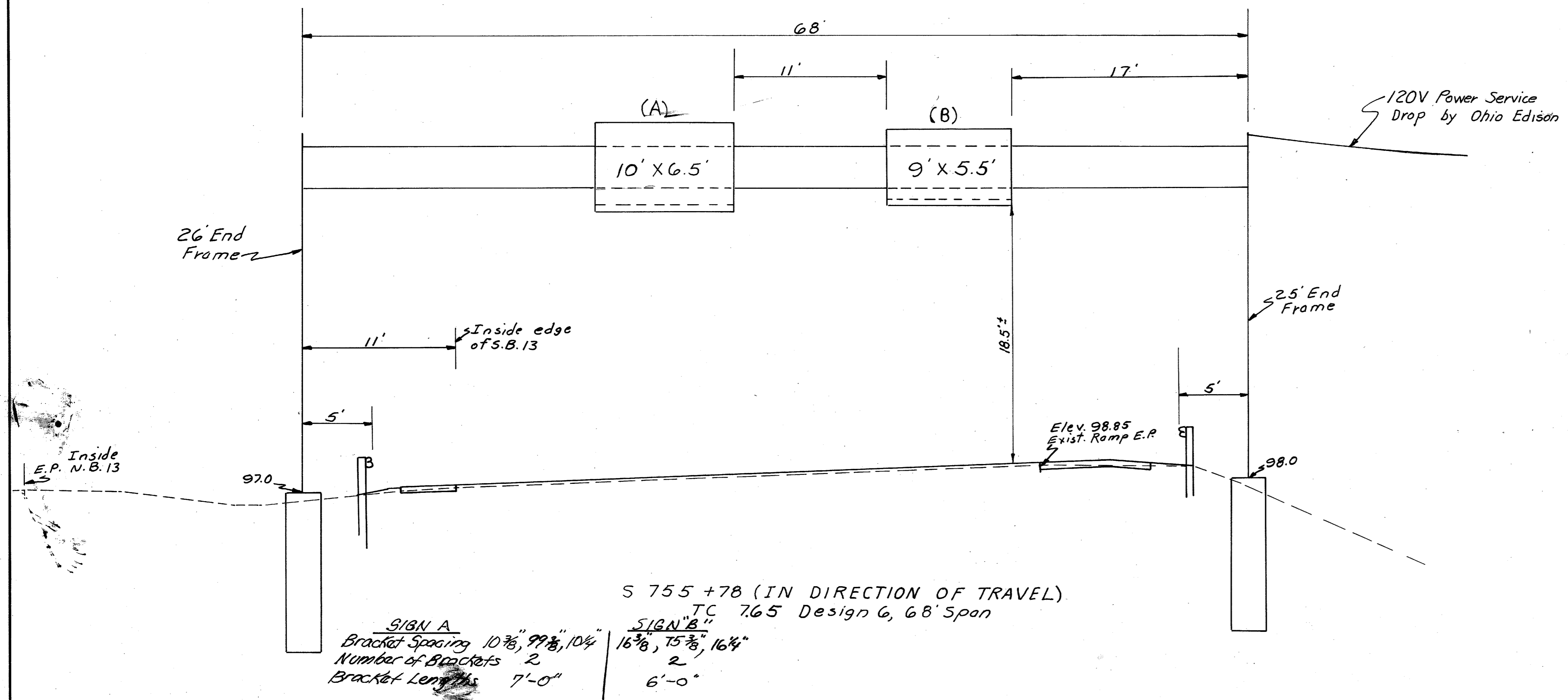


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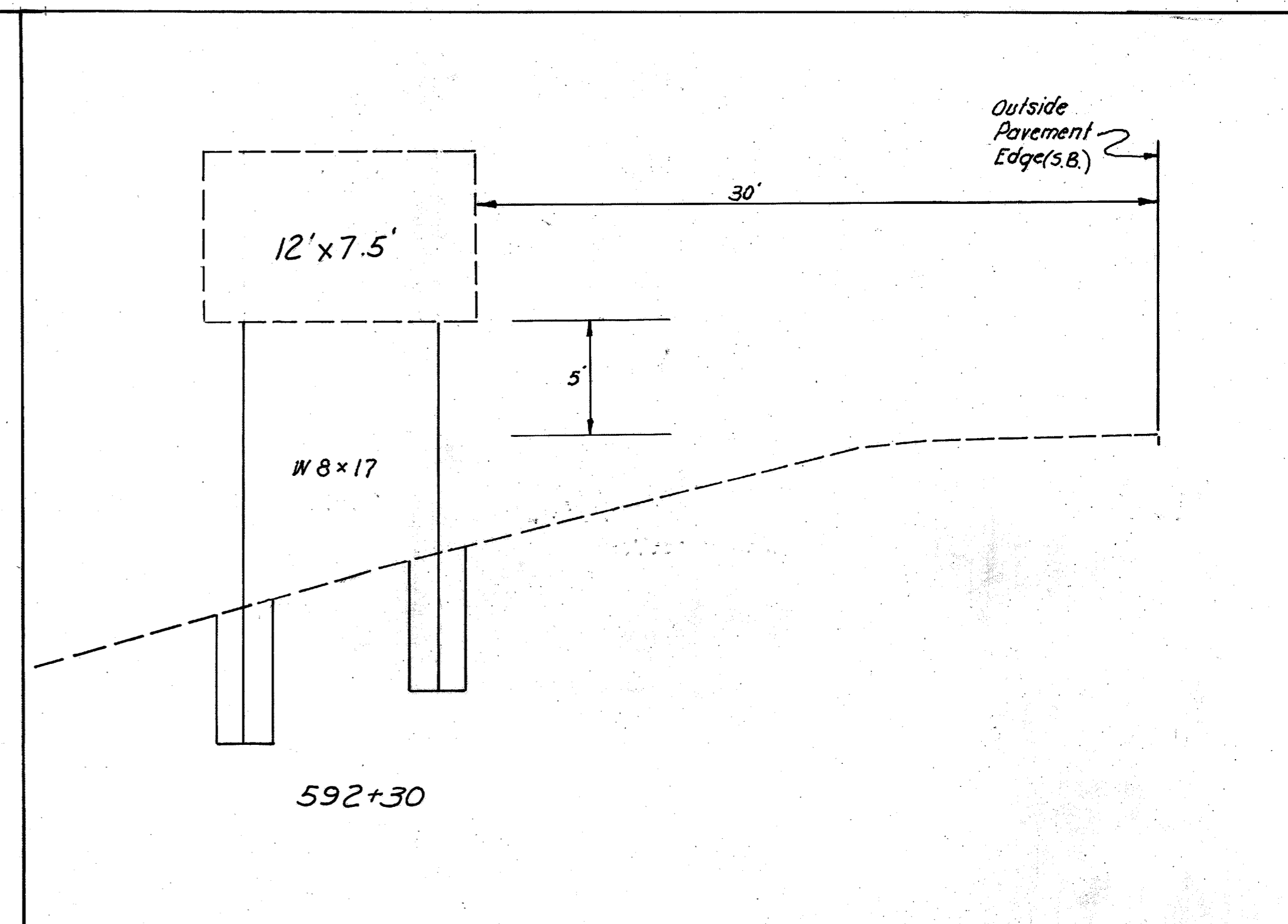
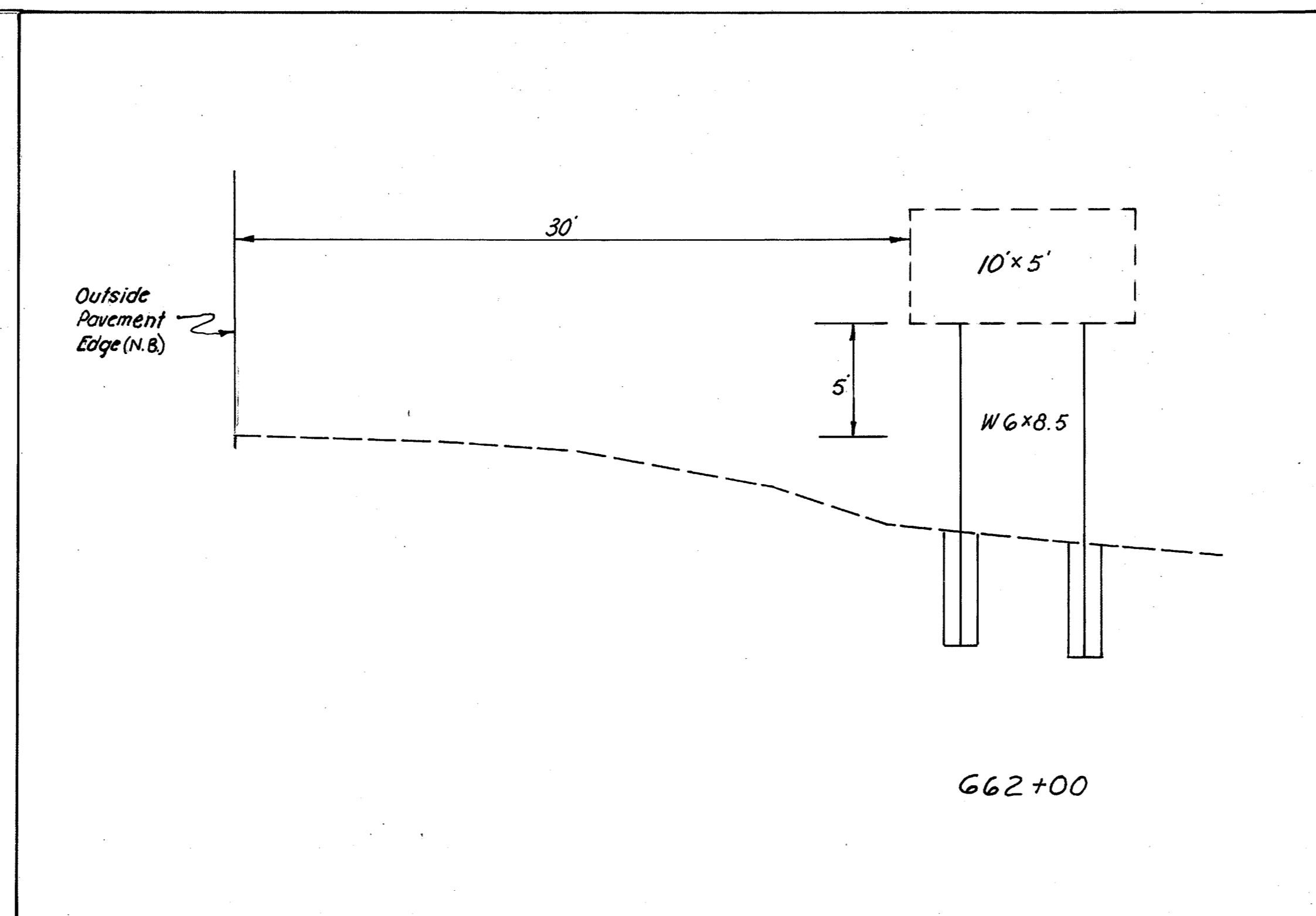
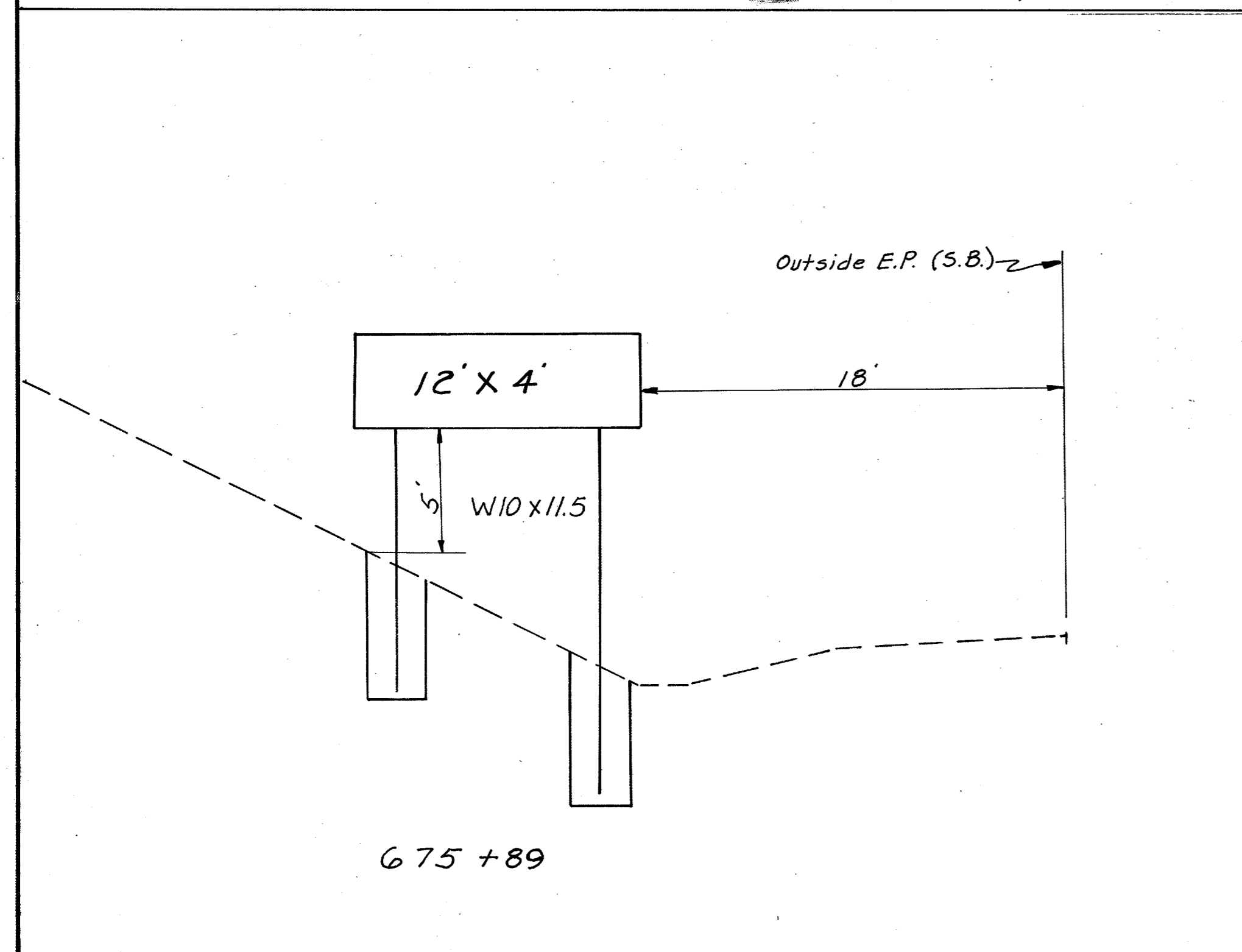
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S 755 +78 (IN DIRECTION OF TRAVEL)  
TC 7.65 Design G, 68' Span

<u>SIGN A</u>	<u>SIGN B</u>
Bracket Spacing 10 <sup>3</sup> / <sub>8</sub> , 9 <sup>1</sup> / <sub>8</sub> , 10 <sup>1</sup> / <sub>4</sub>	16 <sup>3</sup> / <sub>8</sub> , 15 <sup>3</sup> / <sub>8</sub> , 16 <sup>1</sup> / <sub>4</sub>
Number of Brackets 2	2
Bracket Lengths 7'-0"	6'-0"



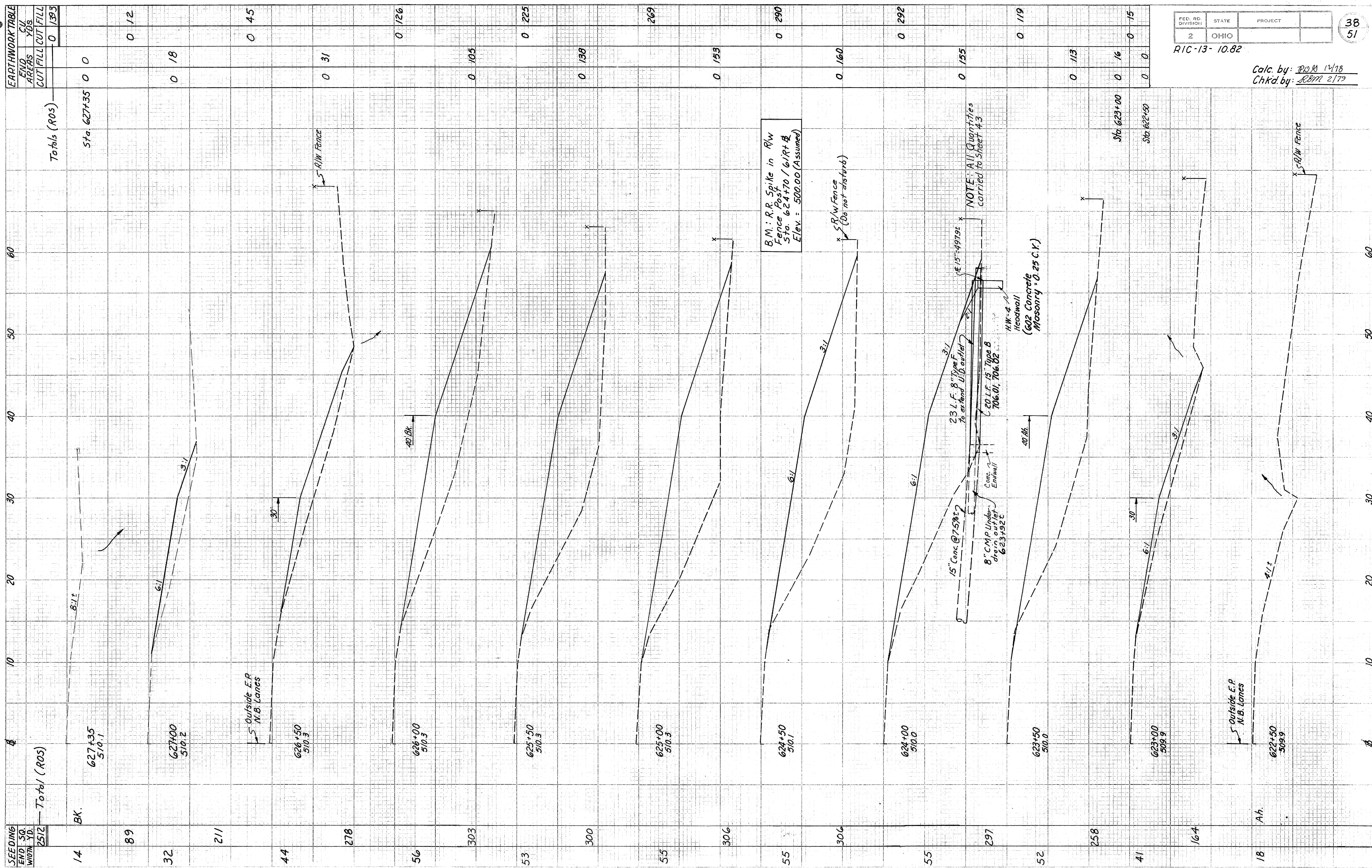
SIGN ELEVATIONS











EARTHWORK TABLE	
END STA.	CUT YDS.
627+35	0
627+00	0
626+50	0
626+00	0
625+50	0
625+00	0
624+50	0
624+00	0
623+50	0
623+00	0
622+50	0
<b>Totals (R.O.s)</b>	<b>0 1393</b>

SEEDING	END STA.	WIDTH YD.	Total (R.O.s)
14	627+35	510.1	0 0
89	627+00	510.2	0 12
32	626+50	510.3	0 18
211	626+00	510.3	0 45
44	625+50	510.3	0 126
278	625+00	510.3	0 225
56	624+50	510.1	0 138
303	624+00	510.0	0 153
300	623+50	510.0	0 160
55	623+00	509.9	0 292
306	622+50	509.9	0 119
55	622+50	509.9	0 113
306	622+50	509.9	0 16
55	622+50	509.9	0 0







SEEDING TABLE

STATION	END WIDTH	SQ. YD.
714+68.2 Ah	3	25
715+00	11	50
715+30	19	72
715+68	15	10
715+75.8 Ah	10	10
Totals (ROS)		157

SEEDING TABLE

STATION	END WIDTH	SQ. YD.
715+50	5	13
715+35	11	66
715+00	23	97
714+50	12	67
714+00 Ah	12	67
Totals (ROS)		243

EARTHWORK TABLE

STATION	END AREA	CUT	CU. YDS.
715+50	0	1	1
715+35	3	10	10
715+00	12	14	14
714+50	3	4	4
714+00 Ah	1		
Totals (ROS)			29

EARTHWORK TABLE

STATION	END AREA	CUT	CU. YDS.
714+68.2	0	1	1
715+00 Ah	2	5	8
715+30	9	8	8
715+68	2	1	1
715+75.8	0		
Totals (ROS)			18

CURB REMOVAL AT SB ENTRANCE RAMP (COOK RD)

CURB REMOVALS AT NB EXIT RAMP (COOK RD)

CURB REMOVALS AT NB EXIT RAMP (COOK RD)

659 Seeding - Sta. 720+10± to Sta. 723+80±  
370' x 32' wide = 1316 Sq. Yds.

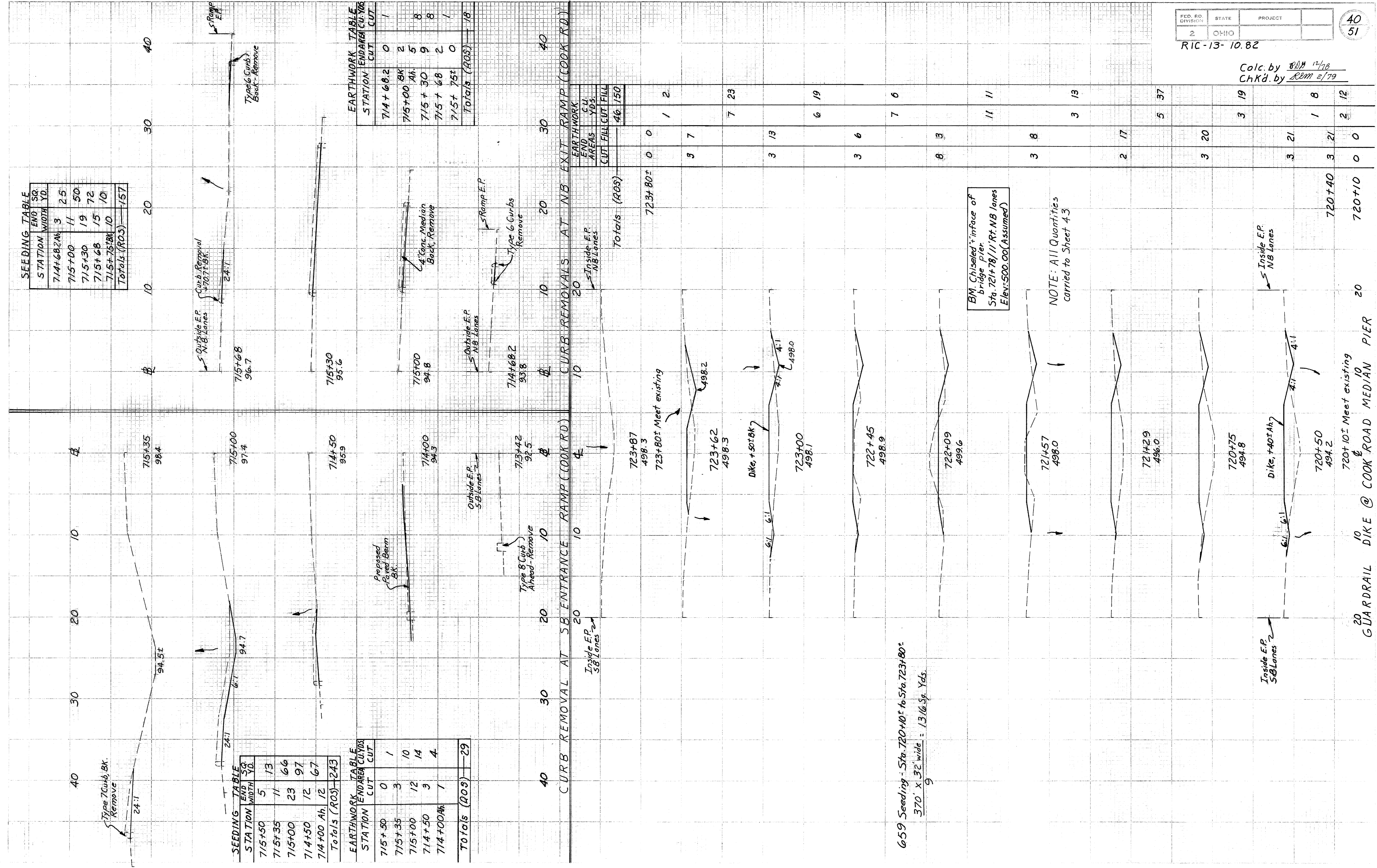
BM Chiseled + in face of bridge pier.  
Sta. 721+78.11 RT NB Lanes  
Elev. = 500.00 (Assumed)

NOTE: All Quantities carried to Sheet 43

Inside E.P. SB Lanes

Inside E.P. NB Lanes

GUARDRAIL DIKE @ COOK ROAD MEDIAN PIER



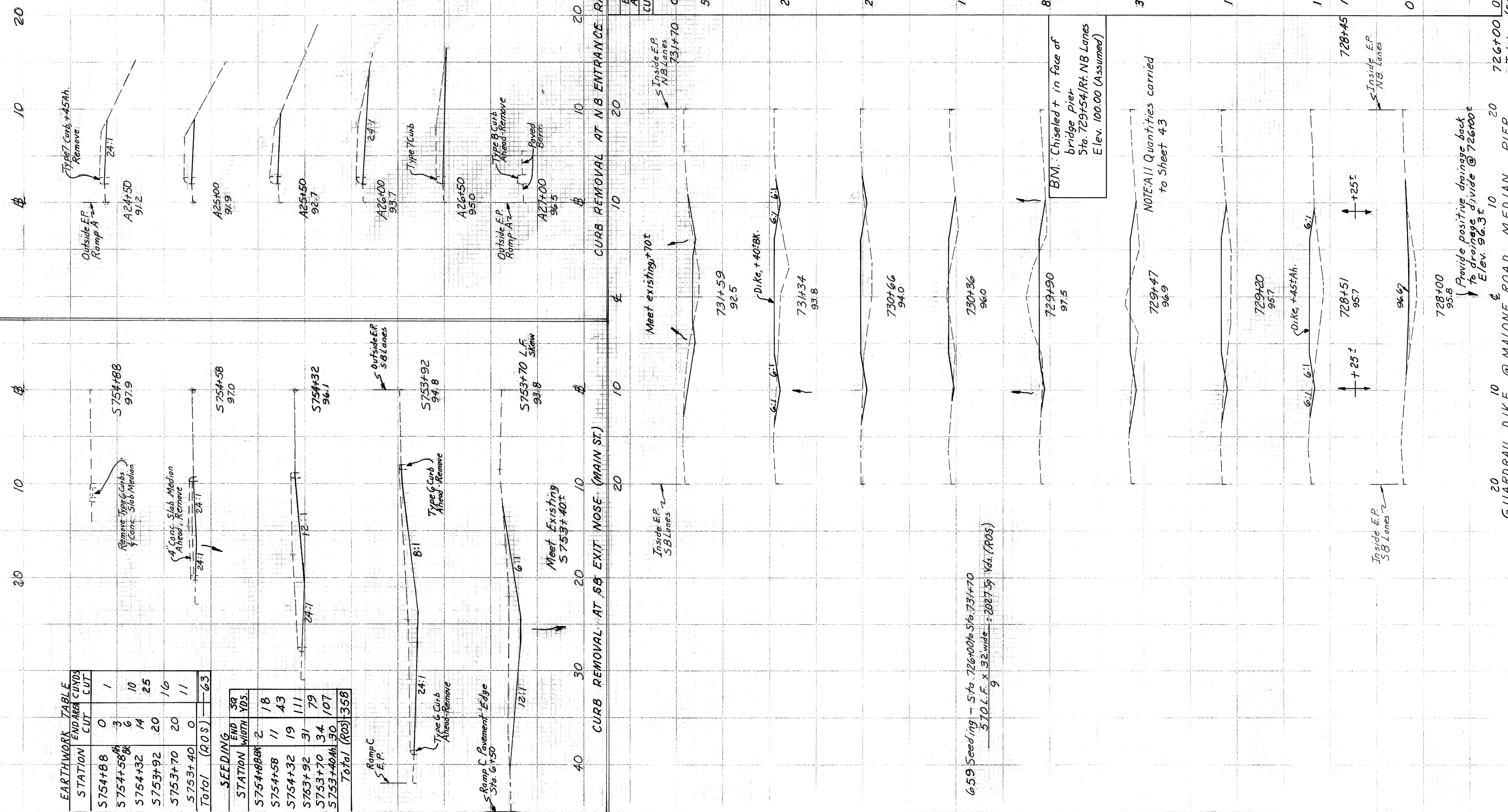


STATION	END AREA CUT	CUT
S754+88	0	1
S754+88BK	3	10
S754+32	14	25
S753+92	20	16
S753+70	20	11
S753+40	0	11
Total (ROS)		63

STATION	END SQ. WIDTH	SP. YDS.
S754+88BK	2	18
S754+58	11	43
S754+32	19	111
S753+92	31	79
S753+70	34	107
S753+40BK	30	107
Total (ROS)		358

STATION	END SQ. WIDTH	SP. YDS.
A24+40BK	7	9
A24+50	9	50
A25+00	9	53
A25+50	10	67
A26+00	14	86
A26+50	17	23
A26+65BK	10	
Total (ROS)		288

STATION	END AREA CUT	CUT
A24+40±	0	1
A24+45	3	1
A24+50	3	7
A25+00	5	8
A25+50	4	10
A26+00	7	14
A26+50	8	3
A26+70±	0	
Total (ROS)		44



6.59 Seeding - Sta. 726+00 to Sta. 731+70  
570 L.F. x 32 wide = 20275 Yds. (ROS)

NOTE: All Quantities carried to Sheet 43

Provide positive drainage back to drainage divide @ 726+00 Elev. 96.3±

STATION	END AREA CUT	CUT	END AREA CUT	CUT
40	30	20	20	20
30	20	20	20	20
20	20	20	20	20
10	20	20	20	20
0	20	20	20	20
Totals (ROS)				34162



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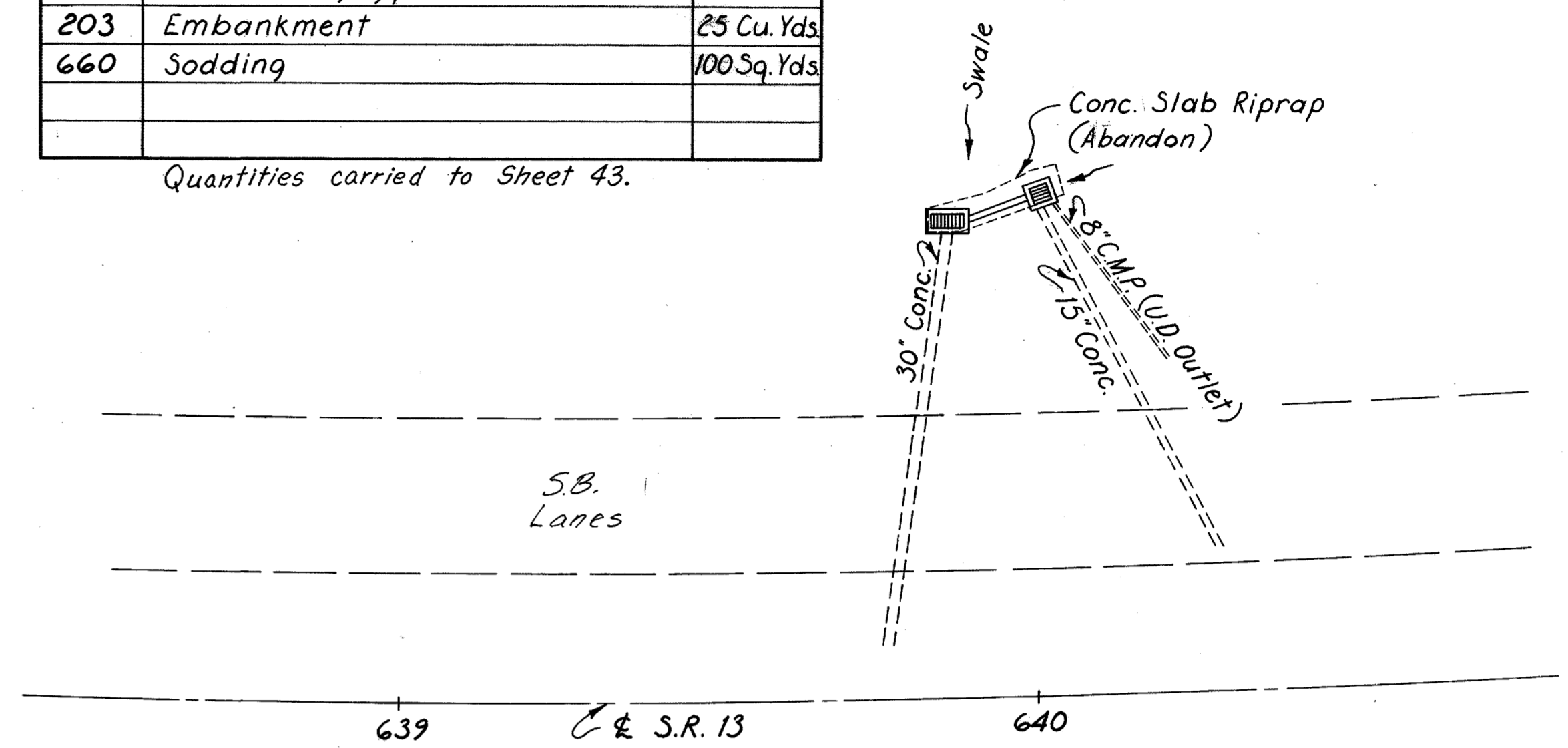
RIC-13-10.82

Calc. by P.D.B. 12/18  
Chkd by J.C.M. 2/79

ESTIMATED QUANTITIES (ROS)

604	Standard No. 4 Catch Basin	1 Each
604	Standard No. 5 Catch Basin	1 Each
603	18" Conduit, Type C	15 Lin. Ft.
203	Embankment	25 Cu. Yds.
660	Sodding	100 Sq. Yds.

Quantities carried to Sheet 43.



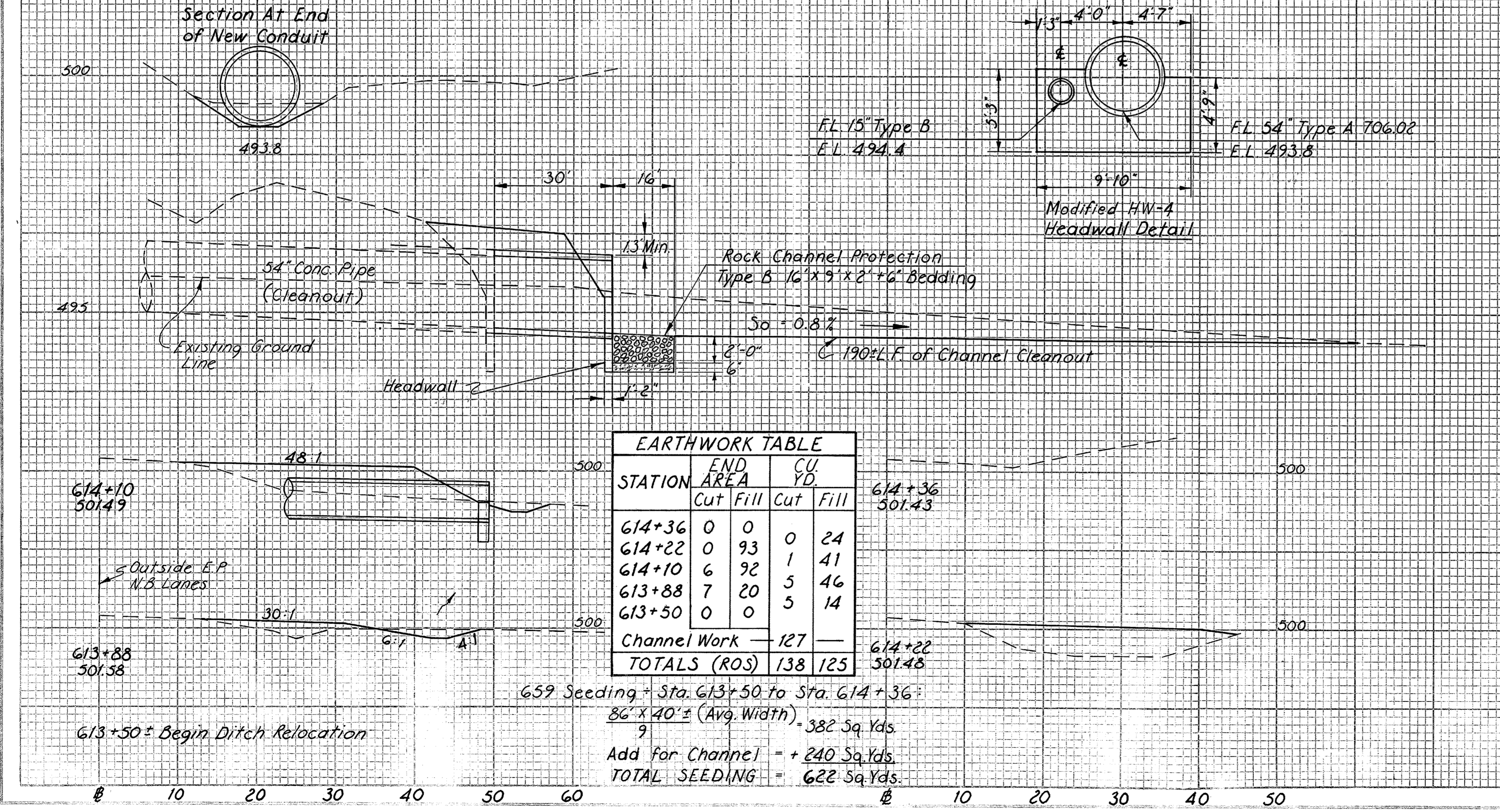
STA. 614+22 RT.  
ESTIMATED QUANTITIES (ROS)

ITEM	QUANT.	UNIT	DESCRIPTION
203	138	C.Y.	Excavation Not Including Embankment Const.
203	125	C.Y.	Embankment
601	13	C.Y.	Rock Channel Protection, Type B With Bedding
602	145	C.Y.	Concrete Masonry
603	30	L.F.	54" Conduit Type A 706.02
603	26	L.F.	15" Conduit Type B 706.01, 706.02
603	35	L.F.	8" Conduit Type F
659	622	S.Y.	Seeding And Mulching
Special	146	L.F.	Cleanout of 54" Culvert (See Gen. Notes)

Quantities carried to sheet 43.

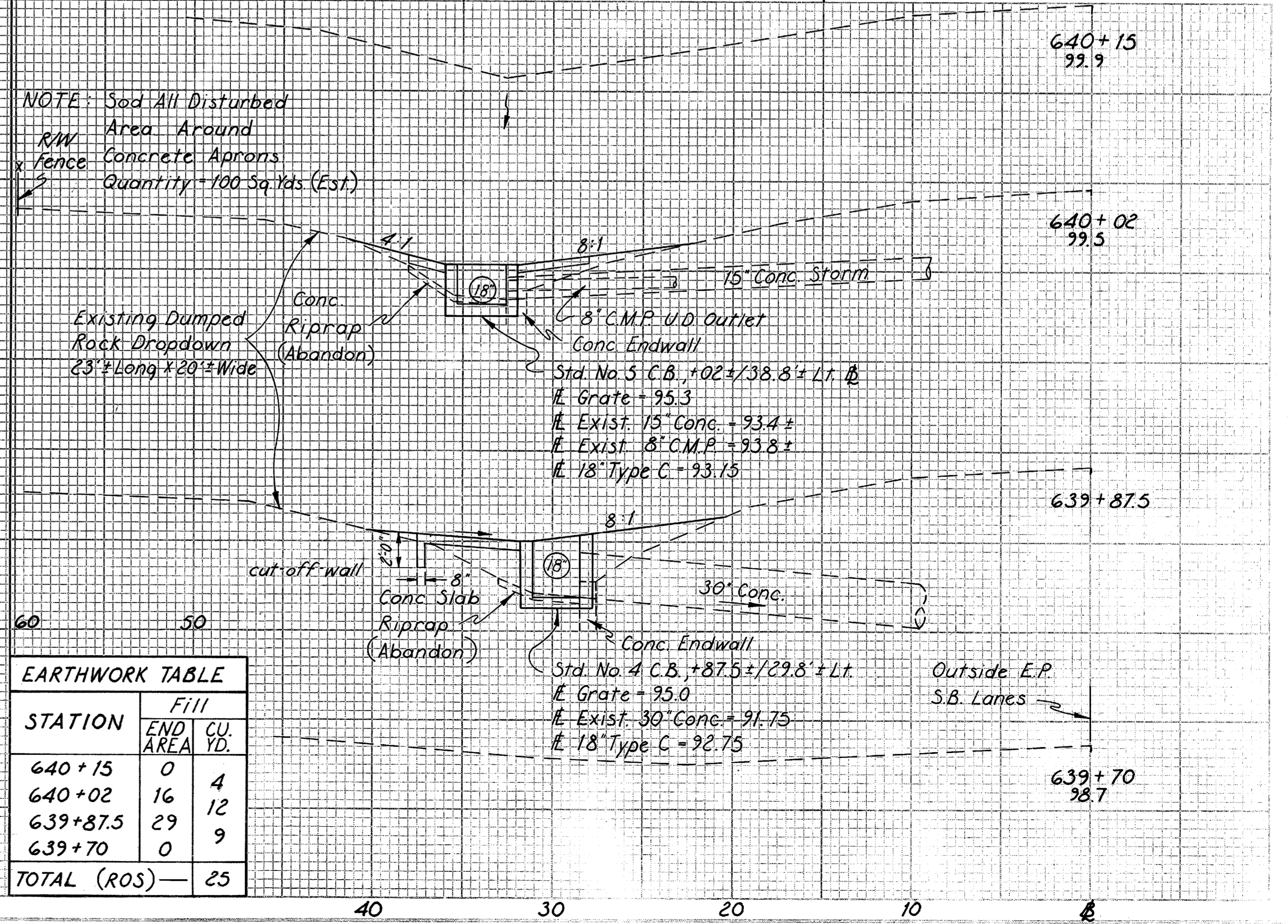
B.M.: R.R. Spike in R/W Fence Post  
Sta. 613+88 / 65' Rt. (N.B. E.P.)  
Elev. = 500.00 (Assumed)

B.M.: R.R. Spike in R/W Fence Post  
Sta. 640+08 / 60' Left (N.B. E.P.)  
Elev. = 100.0 (Assumed)



STATION	END AREA		CU YD.	
	Cut	Fill	Cut	Fill
614+36	0	0	0	24
614+22	0	93	1	41
614+10	6	92	5	46
613+88	7	20	5	14
613+50	0	0	5	14
Channel Work		127		
TOTALS (ROS)		138	125	

659 Seeding + Sta. 613+50 to Sta. 614+36  
86' x 40' ± (Avg. Width) = 382 Sq. Yds.  
Add for Channel = + 240 Sq. Yds.  
TOTAL SEEDING = 622 Sq. Yds.



STATION	Fill	
	END AREA	CU. YD.
640+15	0	4
640+02	16	12
639+87.5	29	9
639+70	0	9
TOTAL (ROS)		25



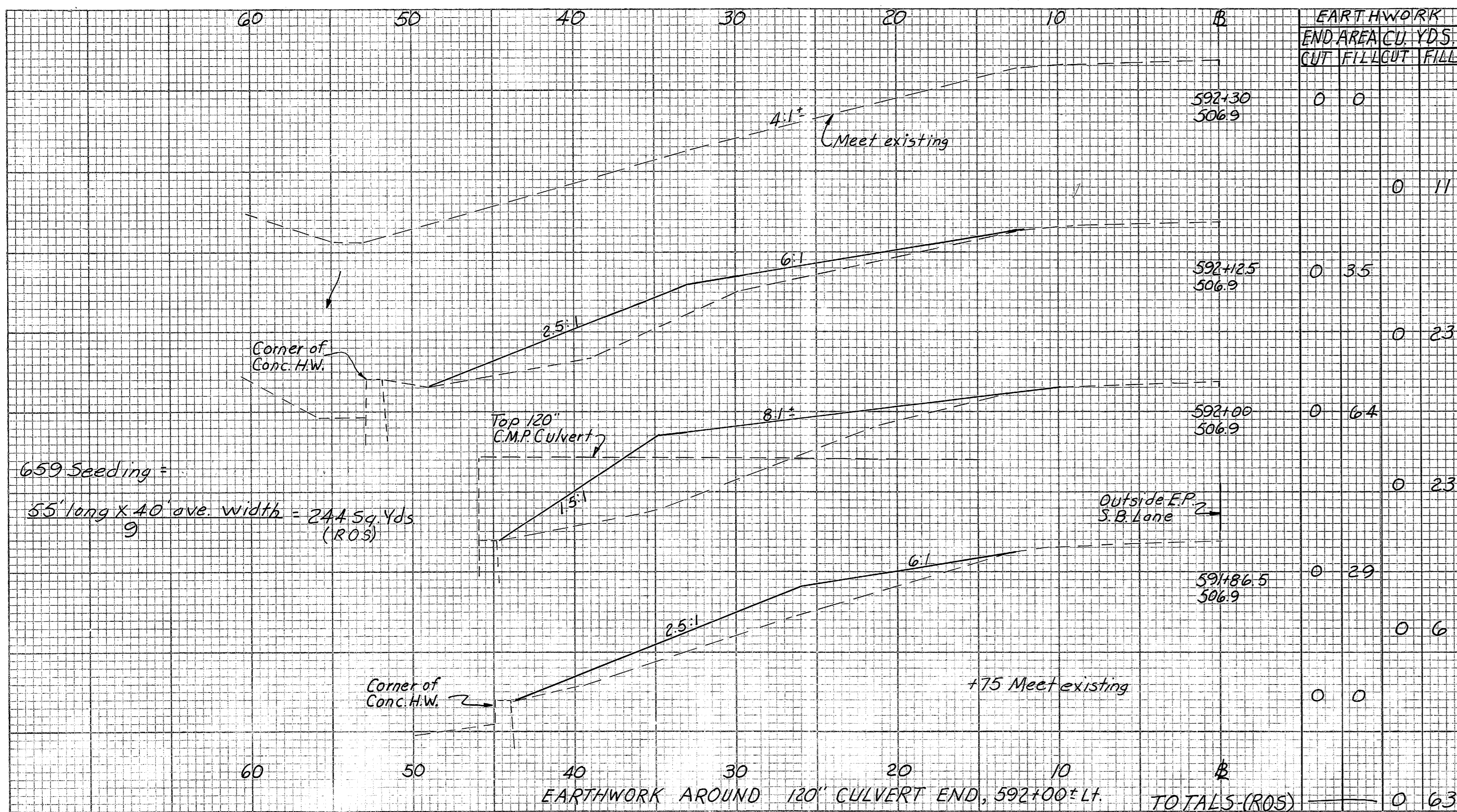
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FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

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RIC-13-10.82

Calc. by ROD 12/8  
Chkd. by 100 1/79



SUMMARY OF GRADING AND CULVERT EXTENSION WORK

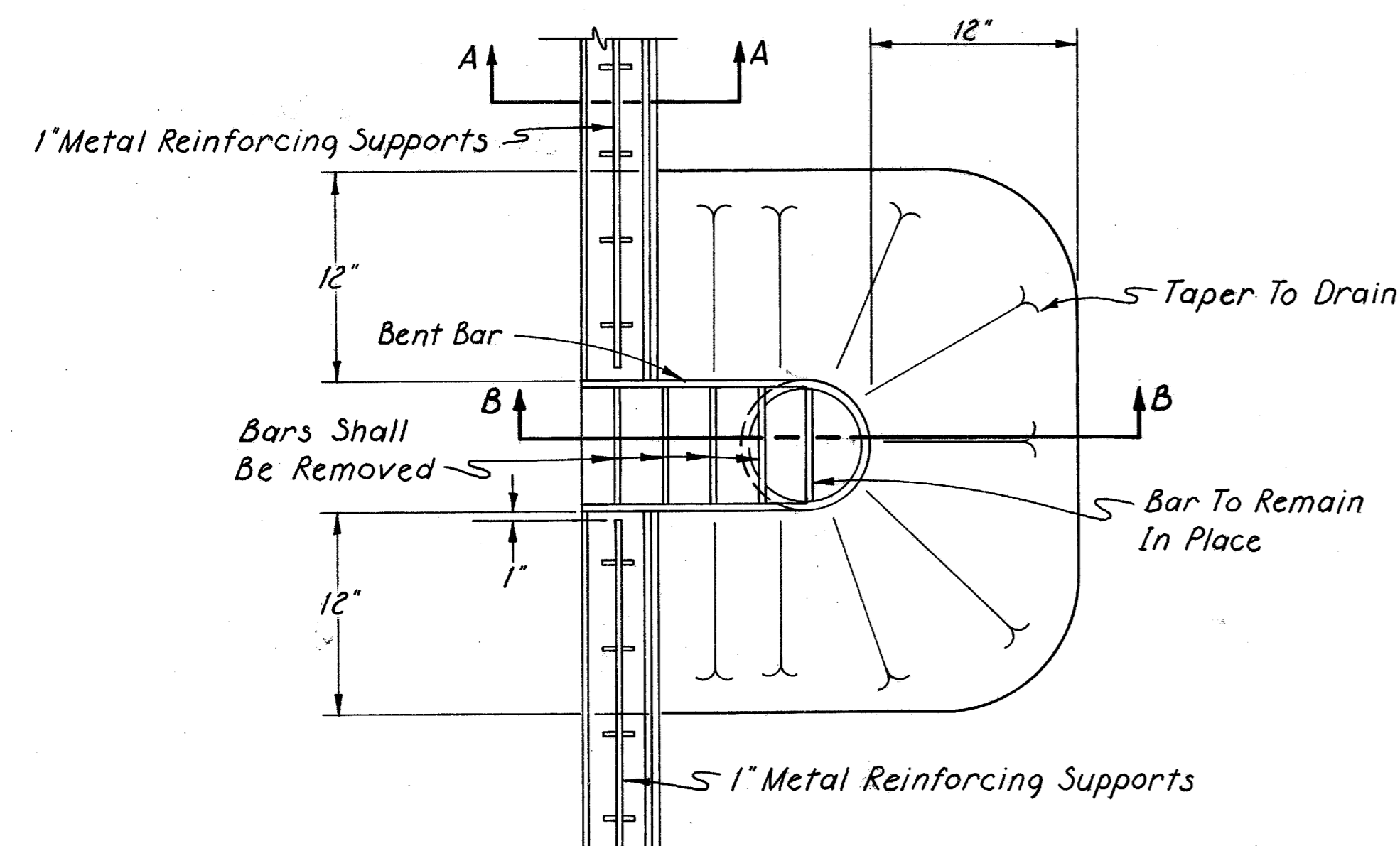
LOCATION AND TYPE OF WORK	Details on Sheet No.	203		602	603 Conduit					Special	601	604		659	660
		Excavation	Embankment	Concrete Masonry	24" Type A, 706.02	54" Type A, 706.02	60" Type A, 706.02	15" Type B, 706.01	18" Type C	8" Type F	Cleanup of 54" Culvert	Rock Channel Protection, Type B with Bedding	Standard No. 4 Catch Basin	Standard No. 5 Catch Basin	Seeding and Mulching
		Cu. Yds.	Cu. Yds.		Lin. Ft.					Lin. Ft.	Cu. Yds.	Each	Sq. Yd.	Sq. Yd.	
Sta. 591+75 to Sta. 592+30 SB Lt. Fill around end of 120' Culvert	43	-	63												244
Sta. 599+75 to Sta. 605+50 NB Rt. Flatten Side Slopes & Extend Culvert	37	3	1659	0.43	16					4	1.8				2840
Sta. 622+50 to Sta. 627+35 NB Rt. Flatten side slope, & Extend Storm Sewer	38	-	1393	0.25			20			23					2512
Cook Road Interchange Ramp Noses Remove Curbs and Regrade	40	18 1/2	-												157 1/2
Cook Road Median Bridge Pier New Dike for Median Guardrail	40	46	150												1316
Sta. 723+50 to Sta. 726+00 NB Rt. Flatten Side slopes & Extend Culvert	39	18	568	1.93			20				9				1042 109
Sta. 723+75 to Sta. 726+50 SB Lt. Flatten Side Slopes & Extend Culvert	39	40	435	1.93			20								1029 138
Malone Road Median Bridge Pier New Dike for Median Guardrail	41	34	162												2027
Main St. Interchange Ramp Noses Remove Curbs and Regrade	41	44 1/3	-												288 1/3
Sta. 613+50 to Sta. 614+36 NB Rt. Extend Culvert & Side Slopes	42	138	125	1.45	30	26			35	146	13				622 -
Sta. 639+70 to Sta. 640+55 B Lt. Fill hole @ end of culvert & St. Sewer	42	-	25					15				1	1		- 100
<b>TOTALS (ROS)</b>		<b>433</b>	<b>4580</b>	<b>5.99</b>	<b>16</b>	<b>30</b>	<b>40</b>	<b>46</b>	<b>15</b>	<b>62</b>	<b>146</b>	<b>23.8</b>	<b>1</b>	<b>1</b>	<b>12,678</b> <b>347</b>



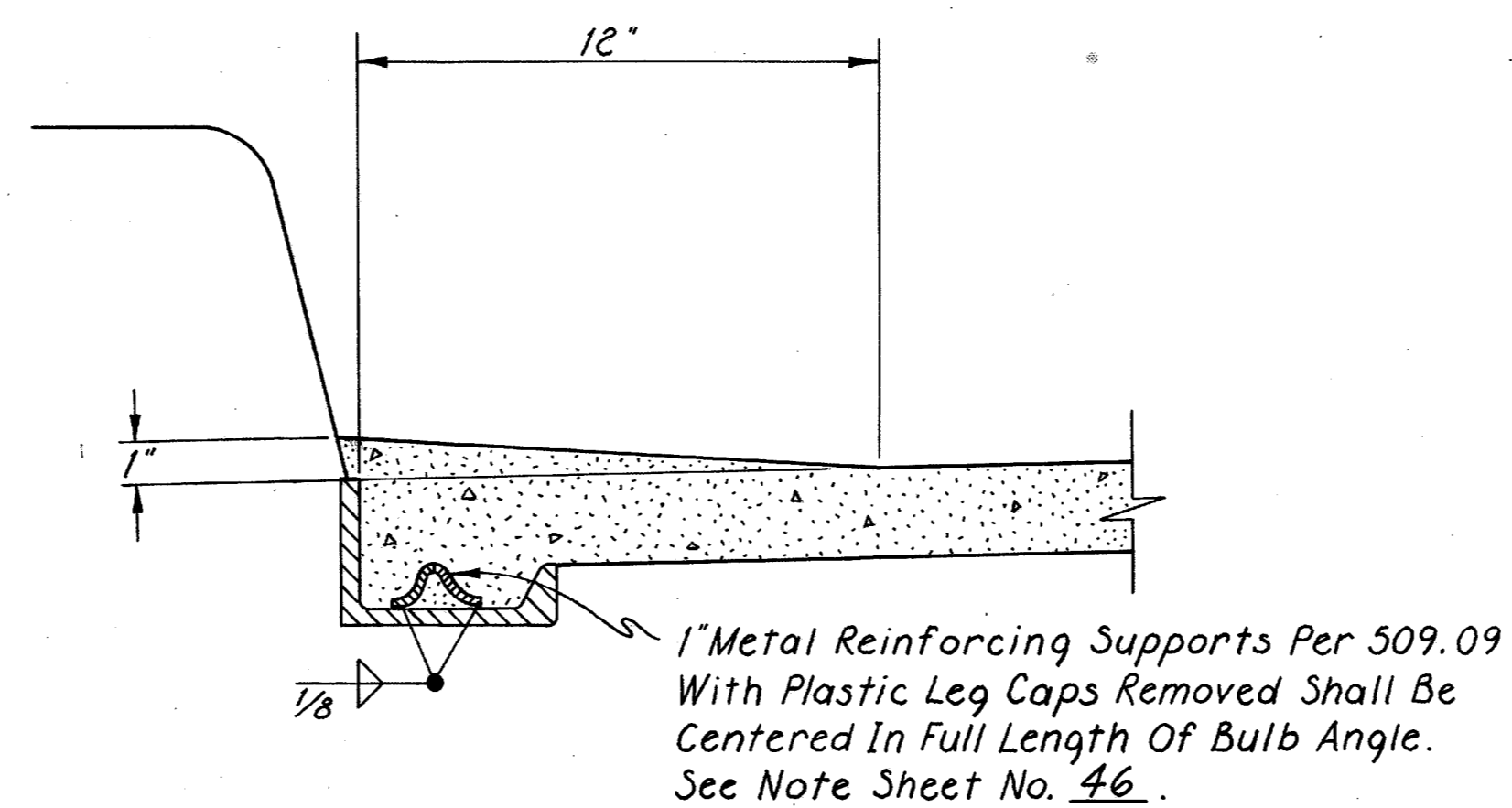
# DECK OVERLAY QUANTITIES

Bridge Number	Skew	Length Lin. Ft.	Width (Face to Face Curbs) Lin. Ft.	Bridge Deck Area Sq. Yd.	516 Vertical Extension of Structural Expansion Joint, Type Seal, As Per Plan Lin. Ft.	852 Penetrating Epoxy Sealing Treatment Sq. Yds.	Special Scupper Extension and Bar Removal Each	Alternate Design A			Alternate Design B		
								845			850		
								Latex Modified Concrete Overlay (1 1/4" Thick) Sq. Yd.	Latex Modified Concrete Overlay (Variable Thickness) Cu. Yd.	Full Depth Repair Cu. Yd.	Dense Concrete Overlay (1 3/4" Thick) Sq. Yd.	Dense Concrete Overlay (Variable Thickness) Cu. Yd.	Full Depth Repair Cu. Yd.
RIC-13-1368 (Cook Road)	20° 38'	208.7	30	689	Fwd. - 40.5 Rear - 40.5	537	16	689	30	2	689	29	2
RIC-13-1416 L	0°	115.5	37.7	484	Fwd. - 40.3 Rear - 40.3	116	12	484	5	2	484	4	2
RIC-13-1416 R	0°	115.5	47.2	612	Fwd. - 50.3 Rear - 50.3	116	12	612	6	2	612	5	2
RIC-13-13.83 (Malone Road)	24° 36'	210.0	24	560	Fwd. - 35.3 Rear - 39.0	358	17	560	10	2	560	9	2
<b>TOTALS (F-34 Funds)</b>					336.5	1127	57	2345	51	8	2345	47	8

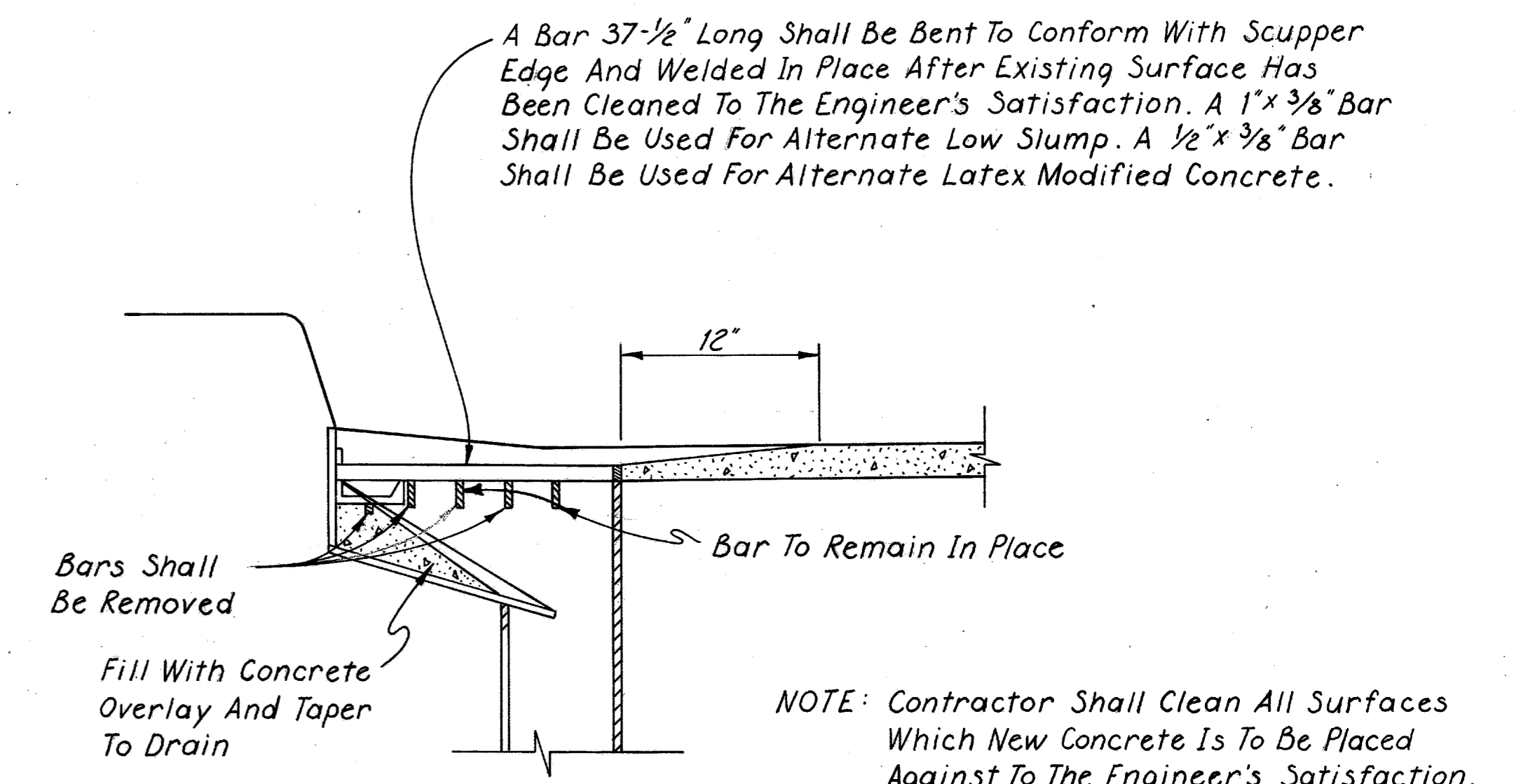
See G14 Maintaining Traffic Note, Sheet 10 and Traffic Maintenance Details, Sheets 47 & 48 for time limitations for the various deck overlays.



**SCUPPER EXTENSION AND BAR REMOVAL**



**SECTION A-A**



**SECTION B-B**



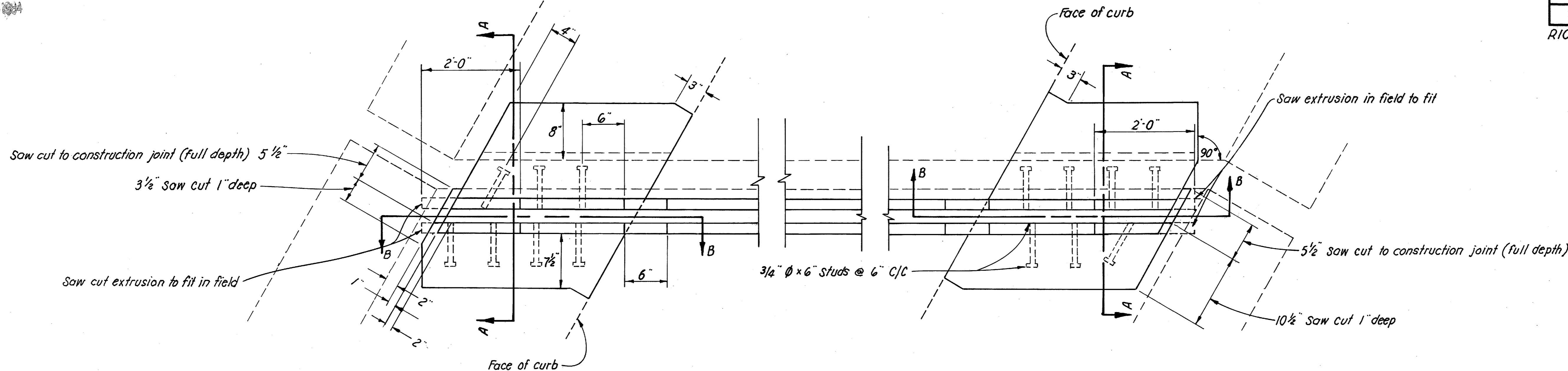
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NOTE: All areas to be removed shall be saw cut 1" deep prior to removal except where noted

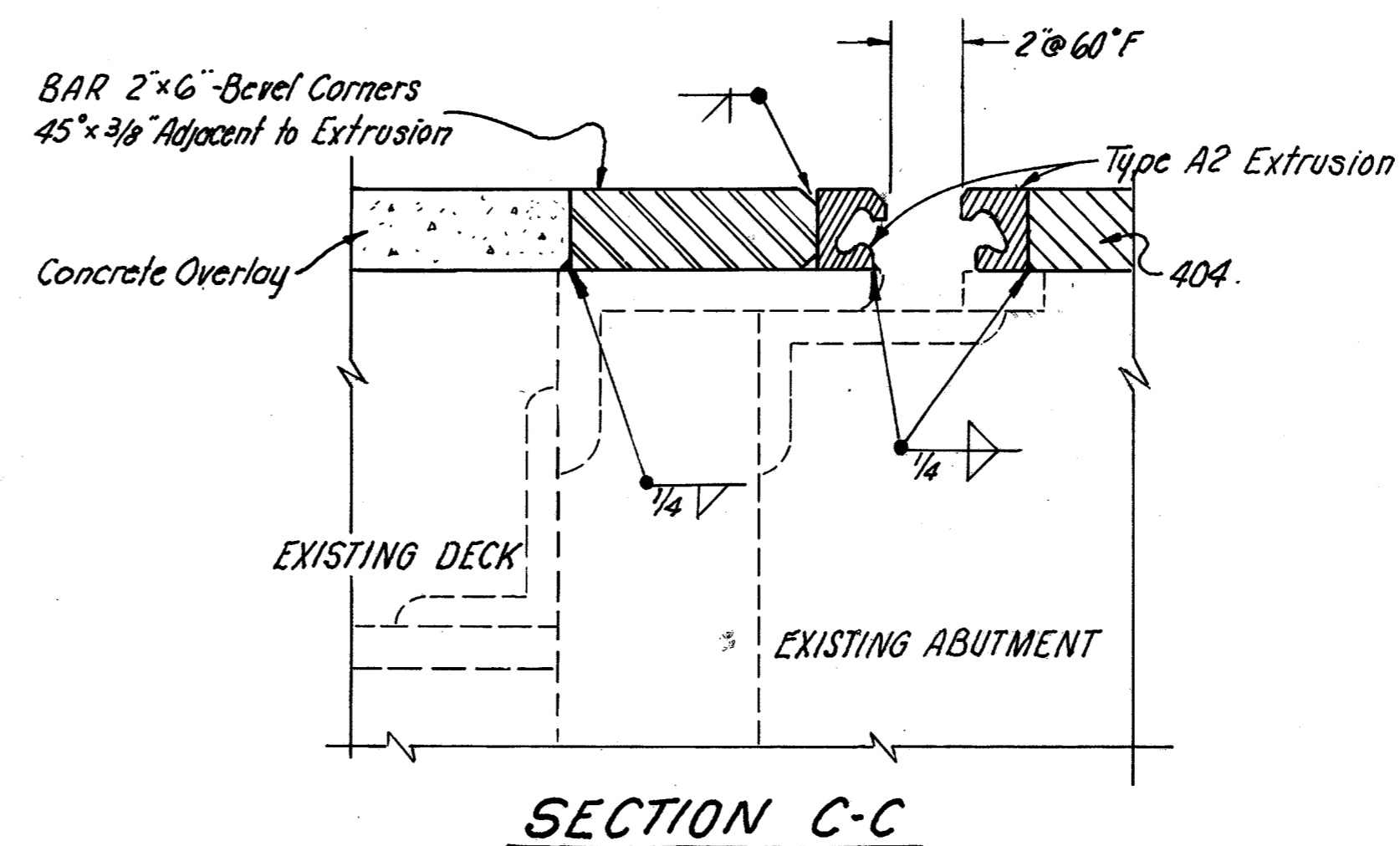
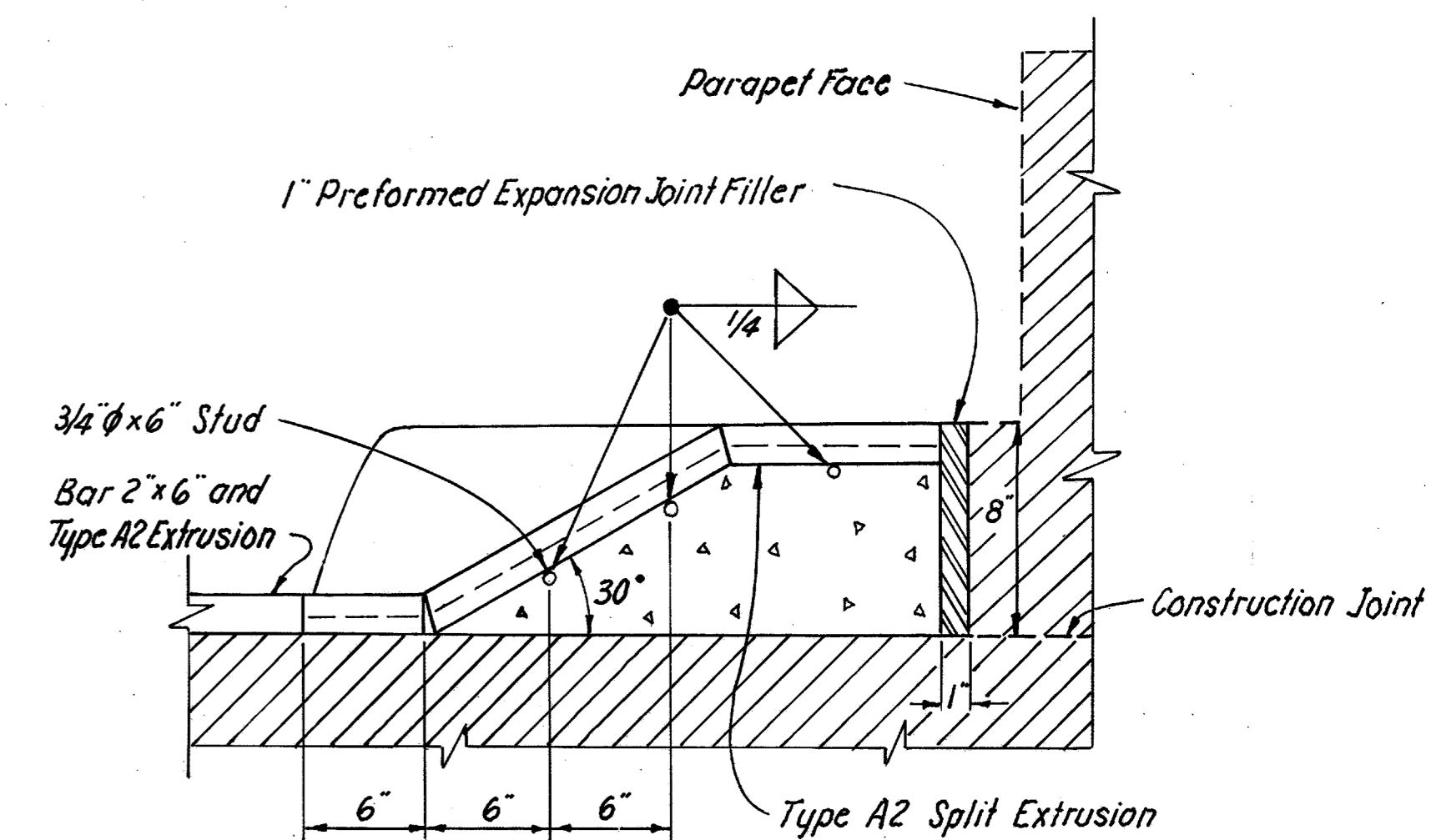
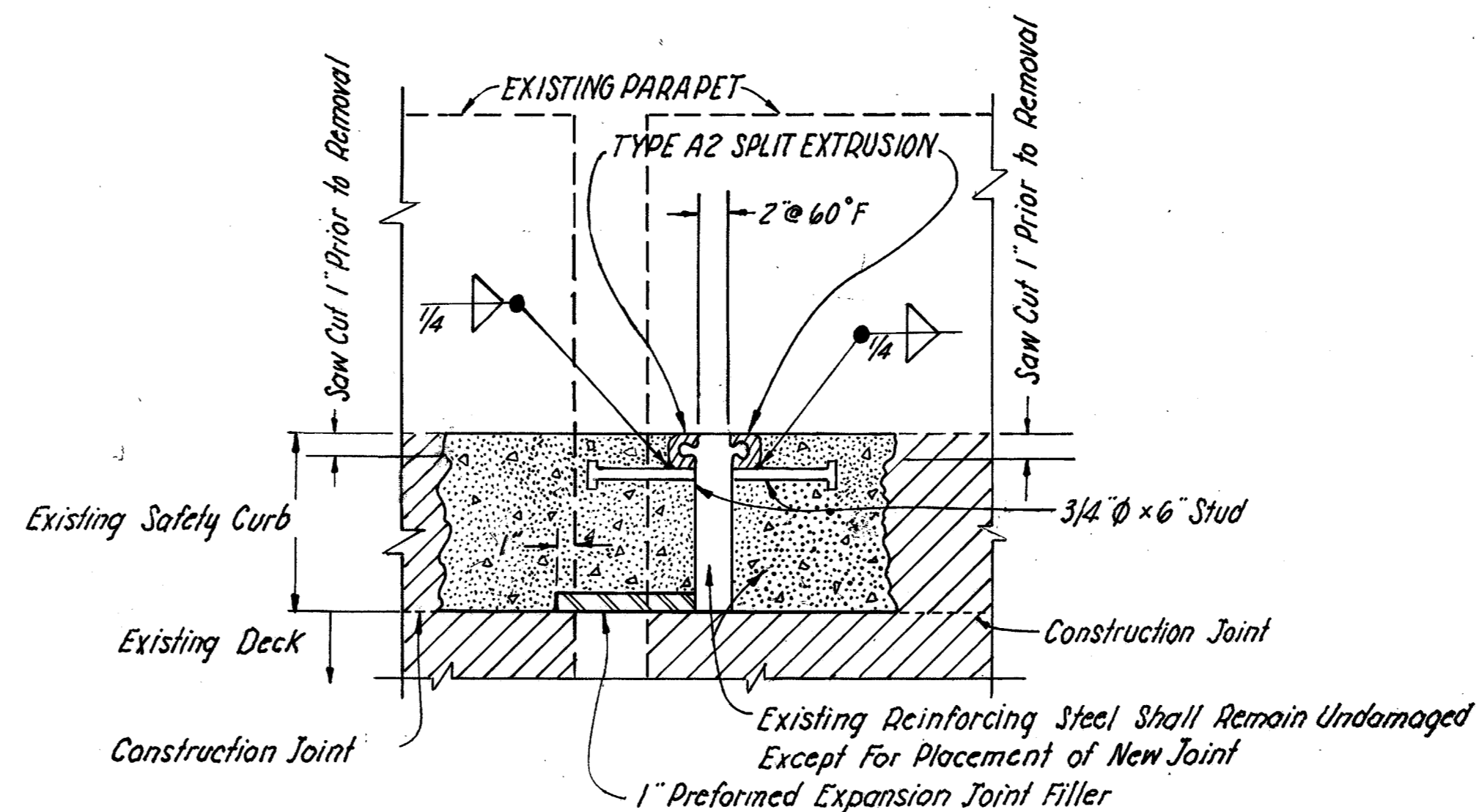
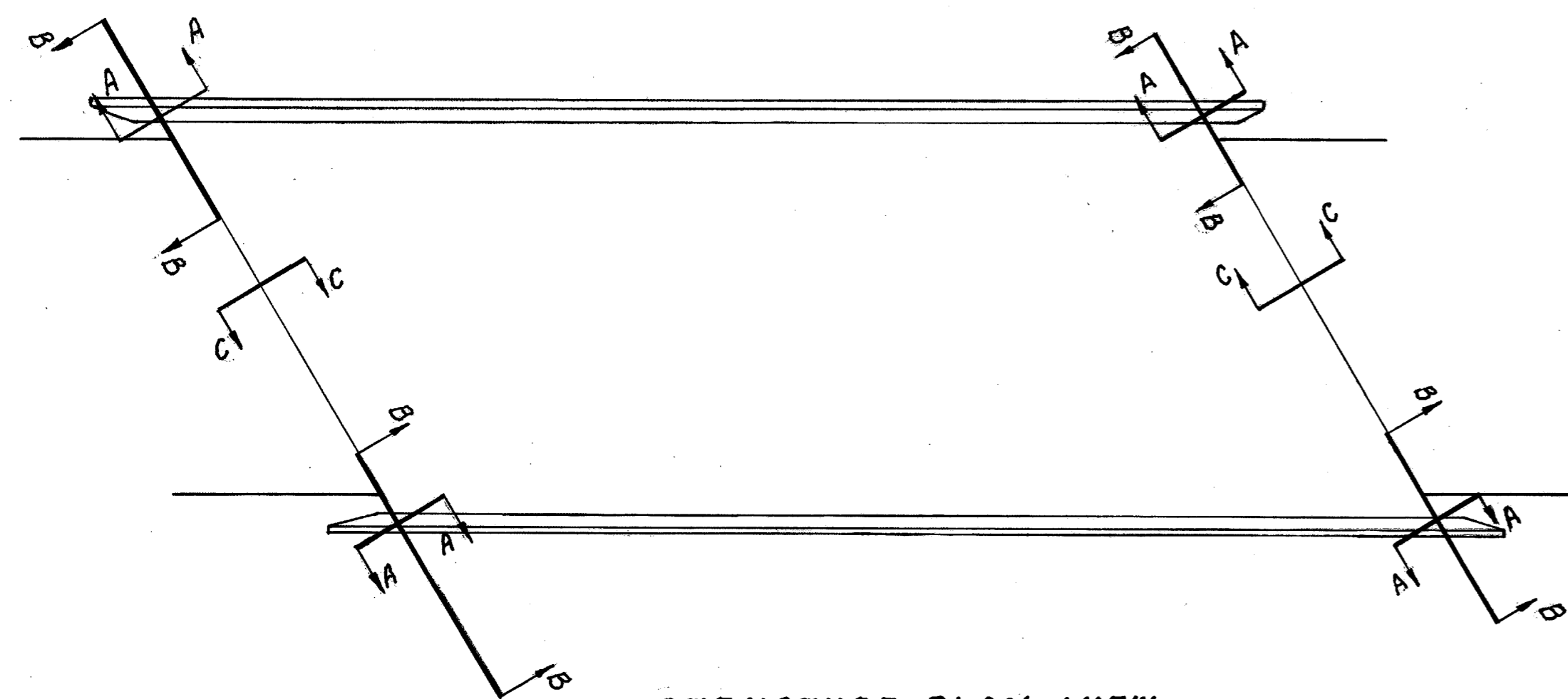
FHWA REGION	STATE	PROJECT
5	OHIO	

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**EXPANSION AND CONTRACTION JOINT SEAL**





# GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

### ITEM 516 VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, TYPE SEAL, AS PER PLAN:

THIS ITEM SHALL INCLUDE ALL WORK REQUIRED TO REMOVE PORTIONS OF STRUCTURE CURBS, TRIM EXISTING ANGLES, PROVIDE ALL ANCHORS, STUDS, STEEL EXTRUSION, NEOPRENE EXTRUSION, PERFORMED EXPANSION JOINT FILLER AND REPLACEMENT CONCRETE IN ACCORDANCE WITH DETAILS ON SHEET NO. 45.

THE STEEL EXTRUSION SHALL BE TYPE A-2 OR B WITH S300 NEOPRENE EXTRUSION AS MANUFACTURED BY WATSON BOWMAN ASSOCIATES, INC., 1280 NIAGRA STREET, BUFFALO, NEW YORK 14213.

THE STEEL EXTRUSION SHALL BE PROVIDED IN MAXIMUM LENGTHS POSSIBLE TO ALLOW FOR TRAFFIC MAINTENANCE AND SHALL BE WELDED TOGETHER TO FORM A WATER-TIGHT JOINT. THE NEOPRENE EXTRUSION SHALL BE ONE CONTINUOUS PIECE. THE NEOPRENE SHALL NOT BE INSTALLED UNTIL ALL OTHER WORK IS COMPLETE UPON THE STRUCTURE. AN ADHESIVE SHALL BE USED TO FACILITATE PLACEMENT OF THE NEOPRENE EXTRUSION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.

#### PHYSICAL PROPERTIES -

- A. THE STEEL EXTRUSION SHALL CONFORM TO ASTM A 242.
- B. ADHESIVES SHALL BE ONE-PART MOISTURE CURING POLYURETHANE AND HYDROCARBON MIXTURES AS DISTRIBUTED UNDER THE TRADE NAME BON-LASTIC BY WATSON BOWMAN, INC., OF BUFFALO, NEW YORK, PRIMA LUBE BY ACME HIGHWAY PRODUCTS CORPORATION OF BUFFALO, NEW YORK, OR AN APPROVED EQUIVALENT.
- C. THE NEOPRENE EXTRUSION SHALL CONFORM TO THE PHYSICAL PROPERTIES SPECIFIED FOR AASHO M220 EXCEPT FOR THE RECOVERY TEST.

ALTERNATE DESIGN - THESE DETAILS AND PROVISIONS ARE BASED ON WABO-MAURER STRIP SEAL BY WATSON BOWMAN ASSOCIATES, INC., OF BUFFALO, NEW YORK. ACME TYPE A EXTRUSION WITH AS-300 SEAL BY ACME HIGHWAY PRODUCTS, INC., 33 CHANDLER STREET, BUFFALO, NEW YORK WILL BE ACCEPTED AS AN ALTERNATE. THE CONTRACTOR SHALL FURNISH MATERIAL SPECIFICATIONS, CERTIFIED MATERIAL TEST RESULTS, CERTIFICATION THAT THE PRODUCT MEETS SPECIFICATION, APPROPRIATE INSTALLATION PROCEDURES NECESSARY TO ACCOMMODATE THE ALTERNATE DESIGN.

THE APPROVAL OF AN ALTERNATE JOINT SEAL DESIGN AND THE ISSUANCE OF REVISED PROJECT PLANS SHALL BE BASED ON THE UNDERSTANDING THAT SUCH PROJECT MODIFICATIONS WILL BE DONE WITHOUT COST TO THE STATE.

PAYMENT SHALL BE AT THE UNIT PRICE BID PER LINEAL FOOT FOR ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, TYPE SEAL, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE THE ABOVE.

#### APPROACH FEATHERS:

TEMPORARY APPROACH FEATHERS, USING 404, SHALL BE PROVIDED TO MAINTAIN TRAFFIC OVER THE VERTICAL EXTENSIONS OF THE EXPANSION JOINTS. THE FEATHER RATE SHALL BE 5 FOOT MINIMUM PER INCH, IN LIEU OF THE RATE ON STD. DRWG. BP-5. COST OF PLACING AND REMOVING THE FEATHER SHALL BE INCLUDED IN ITEM 516.

#### ALTERNATES LATEX (DESIGN A) OR LOW SLUMP (DESIGN B):

THE CONTRACTOR SHALL SUBMIT A BID FOR ONE ALTERNATE ONLY. PLACEMENT OF THE OVERLAY SHALL BE COMPLETED DURING THE NIGHT BETWEEN OFFICIAL SUNSET AND SUNRISE. THE CONTRACTOR SHALL SUBMIT A PLAN FOR PROVIDING ADEQUATE LIGHTING FOR THE WORK AREA AT LEAST 15 CALENDAR DAYS IN ADVANCE, AND RECEIVE WRITTEN APPROVAL FROM THE DIRECTOR, BEFORE PLACING THE CONCRETE. THE LIGHTS SHALL BE SO DIRECTED THAT THEY DO NOT AFFECT OR DISTRIBUTE APPROACHING TRAFFIC. IN EARLY SPRING OR FALL THE OVERLAYS MAY BE <sup>PLACED</sup> DURING DAYLIGHT HOURS BY PERMISSION OF THE ENGINEER, IF ALL THE FOLLOWING CONDITIONS ARE MET AND DOCUMENTED BY THE PROJECT ENGINEER ON THE SITE:

WIND SPEED	10 MPH OR LESS
RELATIVE HUMIDITY	40% OR GREATER
CONCRETE TEMPERATURE	70°F. OR LESS
AIR TEMPERATURE	70°F. OR LESS

ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY FOR THE LIGHTING SHALL BE INCLUDED IN ITEM 850, DENSE CONCRETE OVERLAY (1 3/4" THICK) OR ITEM 845 LATEX MODIFIED CONCRETE OVERLAY (1 1/4" THICK).

A CONTINGENT QUANTITY OF 2 CUBIC YARDS FULL DEPTH REPAIR IS PROVIDED FOR EACH STRUCTURE FOR BOTH ALTERNATES. IF THIS ITEM IS NOT REQUIRED IT SHALL BE NON-PERFORMED.

ONE INCH METAL REINFORCING SUPPORTS PER 509.09 WITH PLASTIC LEG CAPS REMOVED SHALL BE PLACED IN THE GUTTER AS SHOWN IN THE DETAILS. ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO PLACE THE ONE INCH SUPPORTS SHALL BE INCLUDED IN ITEM 850, DENSE CONCRETE OVERLAY (1 3/4" THICK), OR ITEM 845 LATEX MODIFIED CONCRETE OVERLAY (1 1/4" THICK).

THE CONCRETE OVERLAY SHALL BE FEATHERED FROM EXPANSION JOINTS DOWN TO THE REQUIRED HEIGHT WHERE REQUIRED AT THE RATE OF ONE INCH PER 25 FOOT. THE ADDITIONAL QUANTITIES REQUIRED ARE INCLUDED IN ITEMS 845 LATEX MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) AND ITEM 850 DENSE CONCRETE OVERLAY (VARIABLE THICKNESS). IN ALL CASES THE FEATHERS SHALL BE GRADED SO THAT THEY DO NOT CREATE WATER POCKETS.

SPALLED TOPS OF BACKWALLS SHALL BE REPAIRED WITH ITEM 850, DENSE CONCRETE OVERLAY (VARIABLE THICKNESS) OR ITEM 845, LATEX MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS).

LONGITUDINAL JOINTS IN BOTH ALTERNATES ARE PERMITTED BUT ONLY TO THE EXTENT NECESSARY TO ACCOMMODATE THE WIDTH OF THE FINISHING MACHINE, TO FACILITATE CHANGES IN ROADWAY CROWN, AND TO PERMIT MAINTENANCE OR VEHICULAR TRAFFIC, EXCEPT AS APPROVED BY THE DIRECTOR. JOINTS SHALL NOT BE USED ADJACENT TO RAISED CURBS, BARRIERS, OR EDGES OF DECKS.

WATER BLAST CLEANING SHALL NOT BE USED.

ALL REQUIRED CHARACTERISTICS (AIR, SLUMP, ETC.) OF THE MIX SHALL BE ADJUSTED BEFORE PLACEMENT ON THE DECK STARTS.

PRIOR TO THE SCARIFICATION OF THE DECK SURFACE THE CONTRACTOR SHALL ESTABLISH PERMANENT BENCH MARKS FOR THE EXISTING SURFACE ON THE CURBS, PARAPETS OR RAILINGS. SUPPORT RAILS FOR THE FINISHING SHALL BE SET WITH REFERENCE TO THESE BENCH MARKS SO THAT THE FINISHED DENSE CONCRETE SURFACE GENERALLY WILL BE 1/2" (A TOLERANCE OF 0" TO +1/8") ABOVE THE ORIGINAL DECK SURFACE EXCEPT WHERE LOW SPOTS OCCUR AND THE DENSE CONCRETE OVERLAY GENERALLY WILL BE NOT LESS THAN 1 3/4" (A TOLERANCE OF 0" TO +1/8") THICK, OR LATEX CONCRETE SURFACE WILL BE 1" (A TOLERANCE OF 0" TO +1/8") ABOVE THE ORIGINAL DECK SURFACE EXCEPT WHERE LOW SPOTS OCCUR, AND THE LATEX CONCRETE SURFACE WILL BE NOT LESS THAN 1 1/4" (A TOLERANCE OF 0" TO +1/8") THICK.

AFTER THE SCREED RAILS HAVE BEEN SET TO PROPER PROFILE AND PRIOR TO PLACING THE OVERLAY, THE FINISHING MACHINE WITH 1/8" THICK FILLER BLOCKS ATTACHED TO THE BOTTOM OF THE SCREED SHALL BE PASSED OVER THE ENTIRE AREA OF THE DECK TO BE OVERLAID. EXCEPT WHERE SURFACE PROFILE ADJUSTMENTS HAVE BEEN MADE, THE FILLER BLOCKS SHOULD GENERALLY CLEAR THE SCARIFIED DECK SURFACE BY NOT MORE THAN 1/8". CONCRETE WHICH DOES NOT CLEAR THE FILLER BLOCKS SHALL BE REMOVED.

NO CONCRETE DECK PREPARATIONS SHALL BE STARTED AFTER OCTOBER 15. ANY CONCRETE DECK OVERLAYS STARTED BEFORE OCTOBER 15 SHALL BE COMPLETED BEFORE OCTOBER 20. NO CONCRETE DECK OVERLAYS SHALL BE PLACED BEFORE APRIL 15.

ALL PROVISIONS OF ITEM 511 OF CONSTRUCTION AND MATERIALS SPECIFICATIONS SHALL APPLY EXCEPT WHEN IN CONFLICT WITH SUPPLEMENTAL SPECIFICATIONS 845 OR 850, OR WHEN IN CONFLICT WITH THESE NOTES.

#### SELECTIVE USE OF LATEX MODIFIED CONCRETE:

IF THE CONTRACTOR BIDS THE DENSE CONCRETE OPTION, HE MAY, AT HIS ADDITIONAL OPTION, USE LATEX MODIFIED CONCRETE (LMC) ON ANY OF THE BRIDGES OVERLAID ON THIS PROJECT. ON ANY SUCH BRIDGES THE LMC WORK SHALL BE AS SPECIFIED HEREON FOR THE LMC OPTION. THE THICKNESS SHALL BE AS SPECIFIED FOR LMC. PAYMENT FOR THE LMC ITEMS SHALL BE MADE AT THE UNIT PRICES BID FOR THE RESPECTIVE DENSE CONCRETE ITEMS: ITEM 850, DENSE CONCRETE OVERLAY (1 3/4 INCHES THICK) AND ITEM 850, DENSE CONCRETE OVERLAY (VARIABLE THICKNESS). QUANTITIES OF AFFECTED APPROACH ROADWAY ITEMS SHALL BE ADJUSTED AT THE TIME OF CONSTRUCTION.

#### ITEM 852 PENETRATING EPOXY SEALING TREATMENT:

THE PENETRATING EPOXY SEALER SHALL BE APPLIED TO ALL CURBS, SIDEWALKS, INSIDE AND TOP OF PARAPET WALLS AFTER ALL OTHER DECK REPAIR AND OVERLAY WORK IS COMPLETED ON THE STRUCTURE.

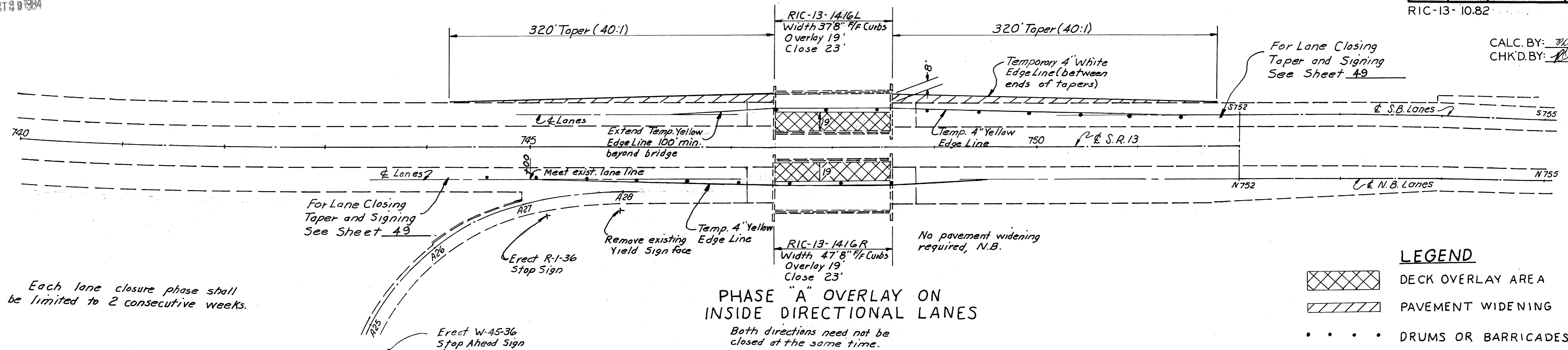
#### ITEM SPECIAL - SCUPPER EXTENSION AND BAR REMOVAL

THIS ITEM SHALL INCLUDE RAISING THE EDGE AND REMOVAL OF THE BARS AS SHOWN ON SHEET NO. 44. PAYMENT SHALL BE AT THE UNIT PRICE BID FOR ITEM SPECIAL, SCUPPER EXTENSION AND BAR REMOVAL, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.



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CALC. BY: *W.D. 12/78*  
CHK'D BY: *W.D. 1/79*



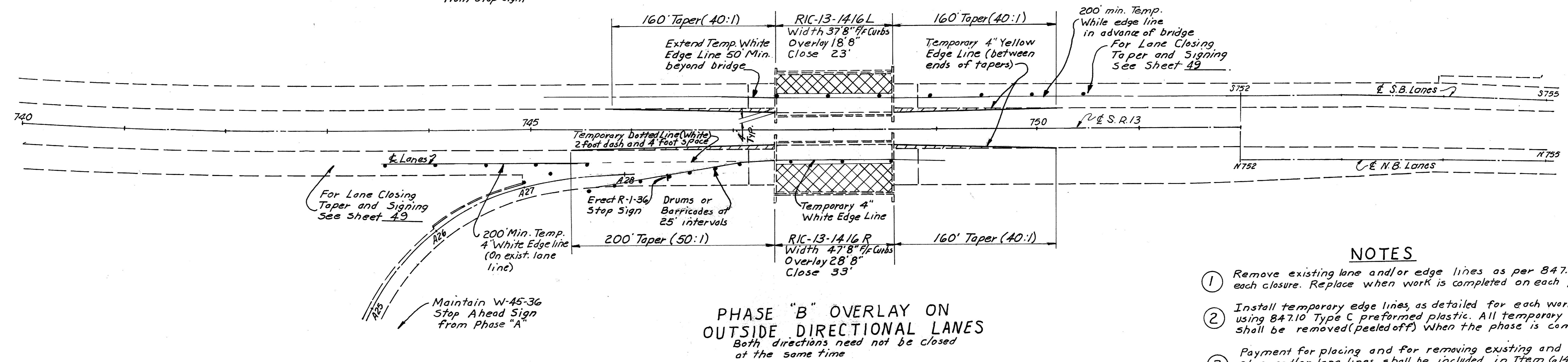
**PHASE "A" OVERLAY ON INSIDE DIRECTIONAL LANES**

Both directions need not be closed at the same time.

Each lane closure phase shall be limited to 2 consecutive weeks.

**LEGEND**

- DECK OVERLAY AREA
- PAVEMENT WIDENING
- DRUMS OR BARRICADES

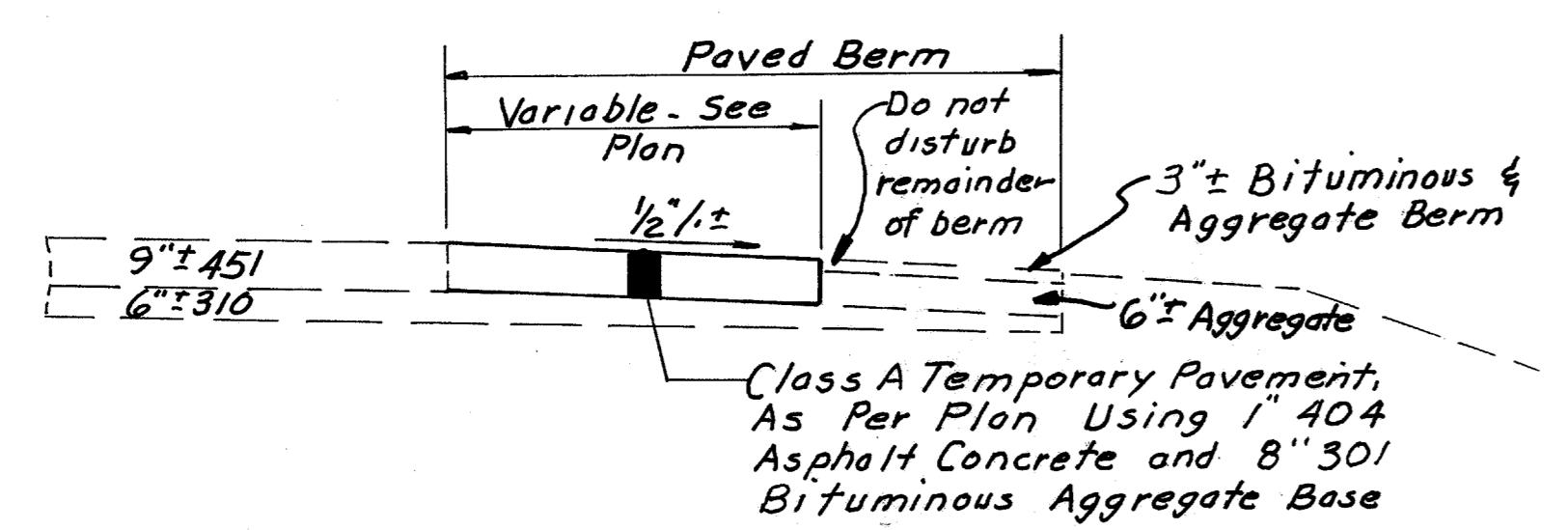


**PHASE "B" OVERLAY ON OUTSIDE DIRECTIONAL LANES**

Both directions need not be closed at the same time.

**NOTES**

- ① Remove existing lane and/or edge lines as per 847.17 during each closure. Replace when work is completed on each phase.
- ② Install temporary edge lines, as detailed for each work phase, using 847.10 Type C preformed plastic. All temporary markings shall be removed (peeled off) when the phase is completed.
- ③ Payment for placing and for removing existing and temporary edge and/or lane lines shall be included in Item 614. Payment for providing and maintaining pavement widening included in Item 615. The temporary pavement shall be left in place as paved berm.



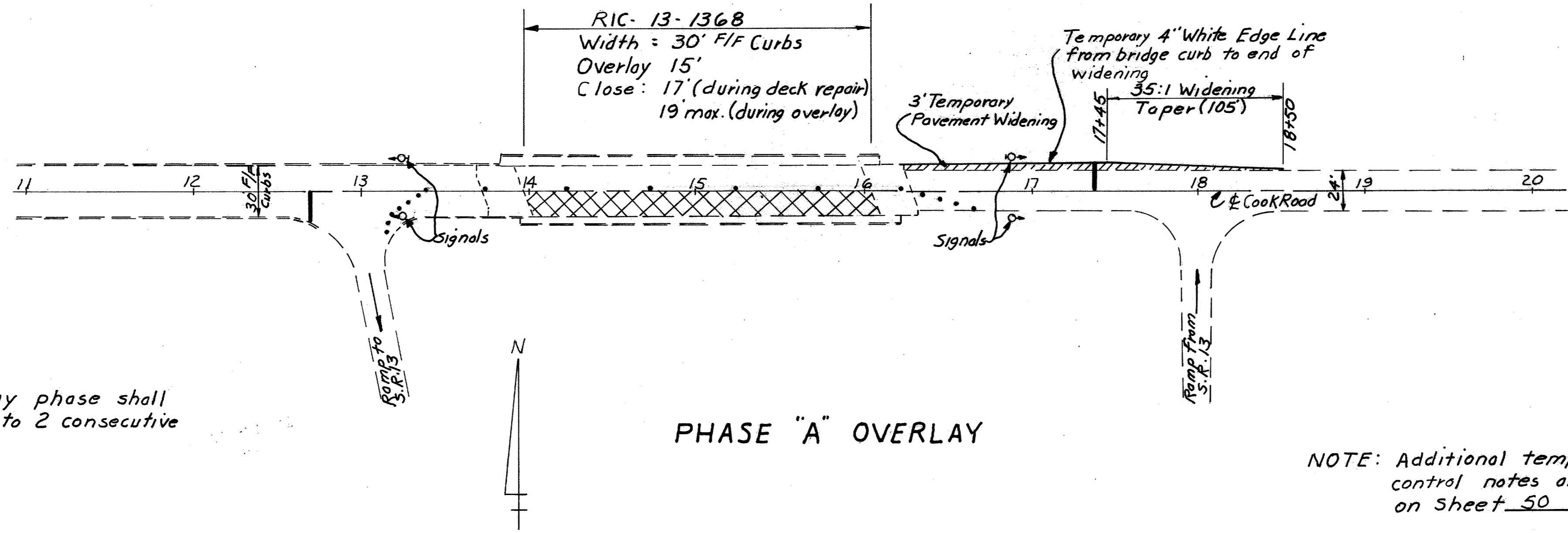
TYPICAL SECTION FOR TEMPORARY PAVEMENT, S.R. 13

**ESTIMATED QUANTITIES (F-34 Funds)**

615 Temporary Pavement, Class A, As Per Plan      436 Sq. Yds. (F-34)  
(For both N.B. & S.B. Lanes)

See Typical at left





NOTE: Each overlay phase shall be limited to 2 consecutive weeks.

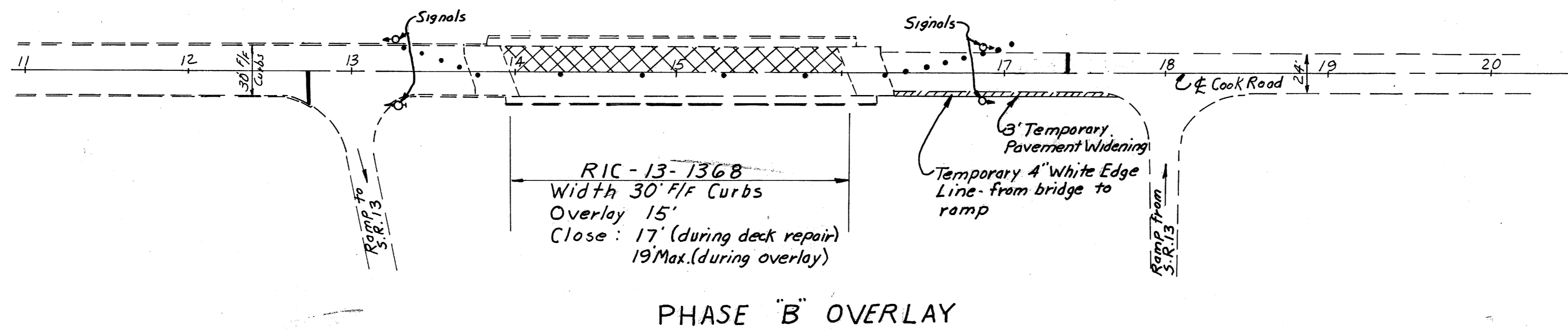
PHASE "A" OVERLAY

NOTE: Additional temporary traffic control notes and details on Sheet 50.

- LEGEND**
- DECK OVERLAY AREA
  - PAVEMENT WIDENING SEE TYPICAL BELOW
  - DRUMS OR BARRICADES

**NOTES**

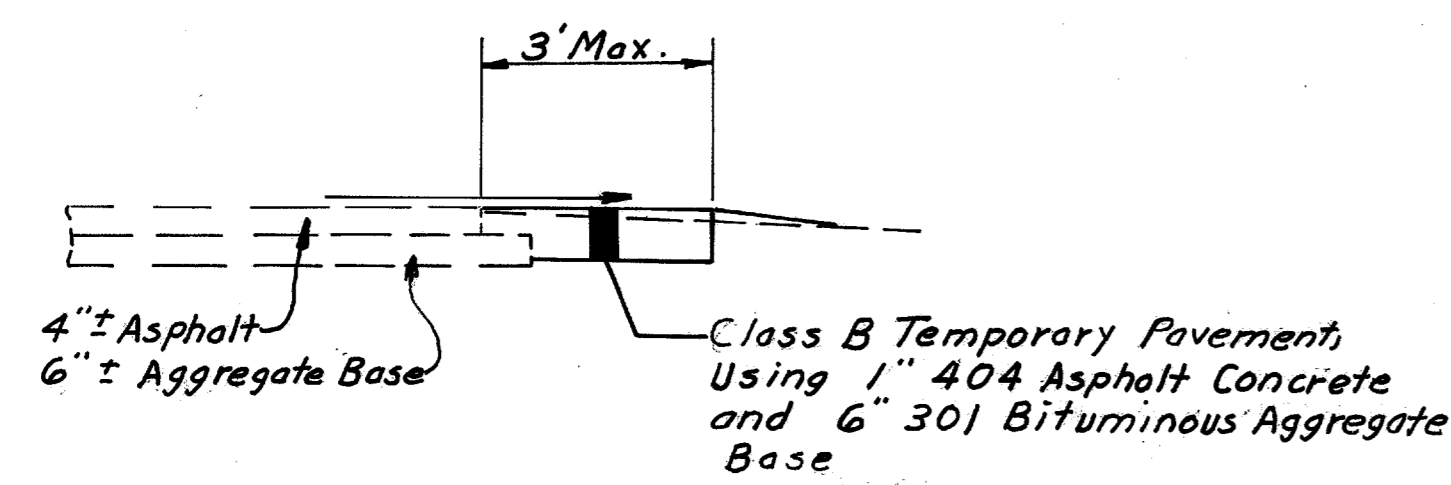
- ① Remove existing center and edge lines as per 847.17 during each phase. Replace when work is completed on each phase.
- ② Install all temporary pavement marking as detailed using 847.10 Type C preformed plastic. All temporary markings shall be removed (peeled off) when the phase is completed.
- ③ Payment for placing and for removing existing and temporary pavement markings and the replacing of the existing markings shall be included in Item 614. Payment for providing and maintaining pavement widening included in Item 615. The temporary pavement shall be left in place as paved berm.



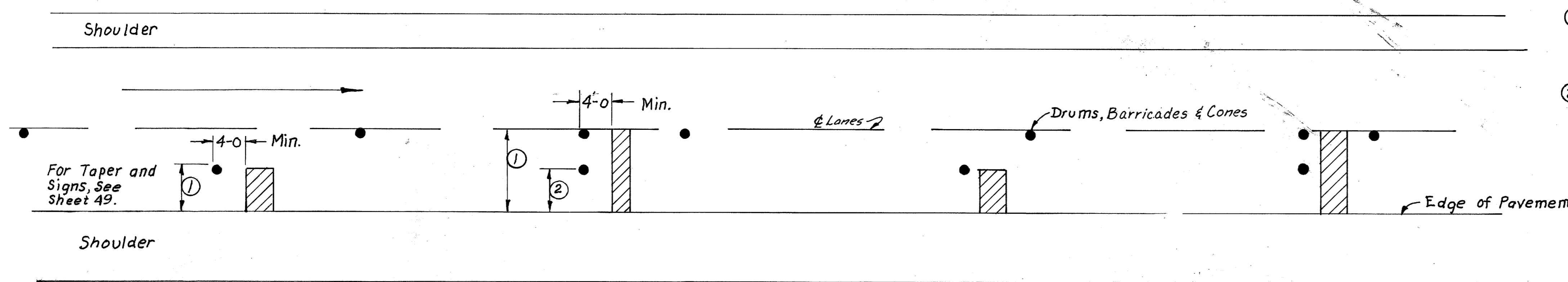
PHASE "B" OVERLAY

**ESTIMATED QUANTITIES (F-34 Funds)**

615 Temporary Pavement Class B, As Per Plan	103 Sq. Yds. (F-34) (Total for both phases)
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TYPICAL SECTION FOR COOK ROAD TEMPORARY PAVEMENT

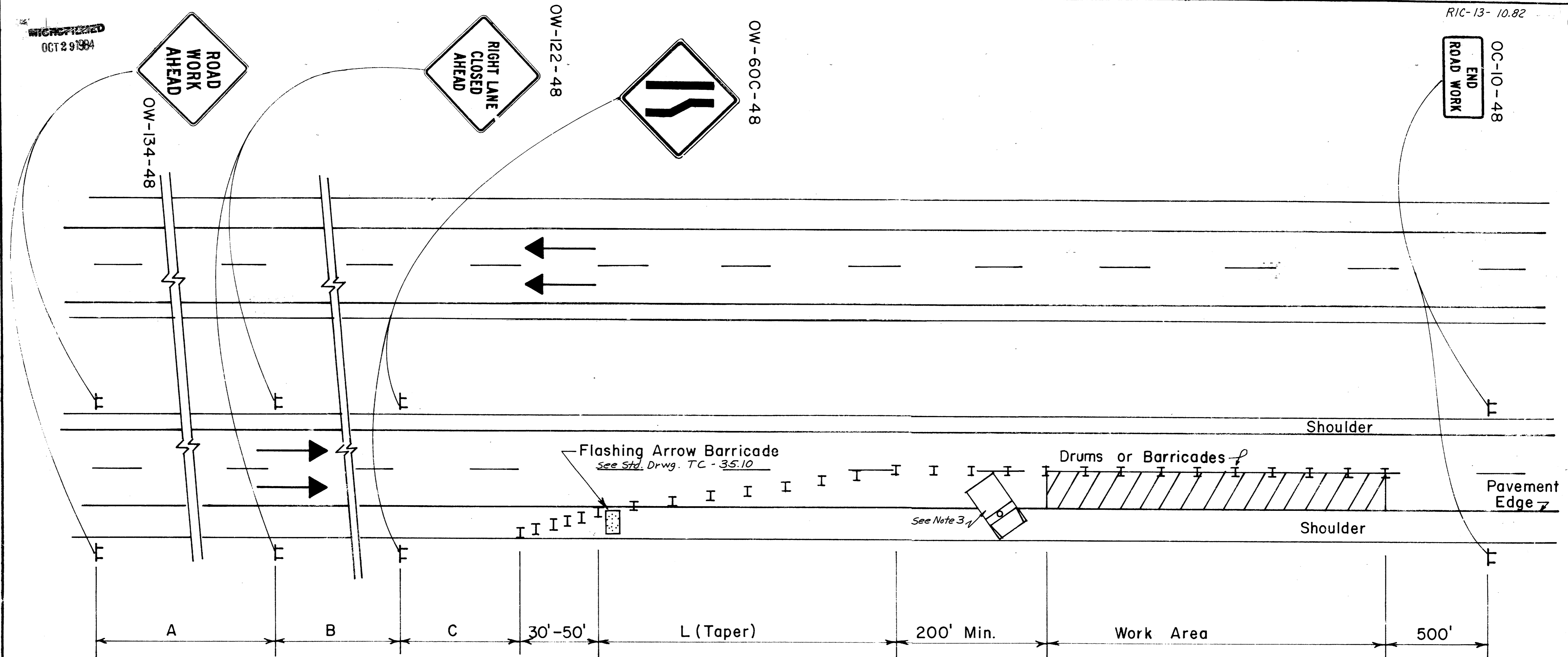


DETAIL FOR LANE CLOSURE FOR PAVEMENT REPAIR

- ① The Contractor shall place an additional drum at each pavement removal. The face of this drum shall be even with the outside edge of the removal. The drum shall remain in place until traffic is returned to this lane of pavement.
  - ② If pavement removal is more than 6'-0" long an additional drum shall be placed one half the distance from the edge of the removal to the edge of pavement. The drum shall remain in place until traffic is returned to this lane of pavement.
- Lane Closures shall not be more than 1 mile long unless authorized by the Engineer. The Contractor shall restrict the sawing operation to only the removal and replacement areas which can be completed in one week or as directed by the Engineer.



REPRODUCTION  
OCT 29 1984



**GENERAL NOTES**

- THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. CONES (30' MIN. HIGH), DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS FOR THE FIRST 1000 FEET OF THE WORK AREA AND AT A MAXIMUM OF 100 FEET FOR THE BALANCE OF THE WORK AREA. CONES MAY BE SUBSTITUTED FOR THE BARRICADES OR STEEL DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.
- WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, "OW-123-48" SIGNS SHALL BE SUBSTITUTED FOR "OW-122-48" SIGNS AND THE OW-60D SIGNS SHALL BE SUBSTITUTED FOR THE OW-60C SIGNS.

- THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER.
- TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

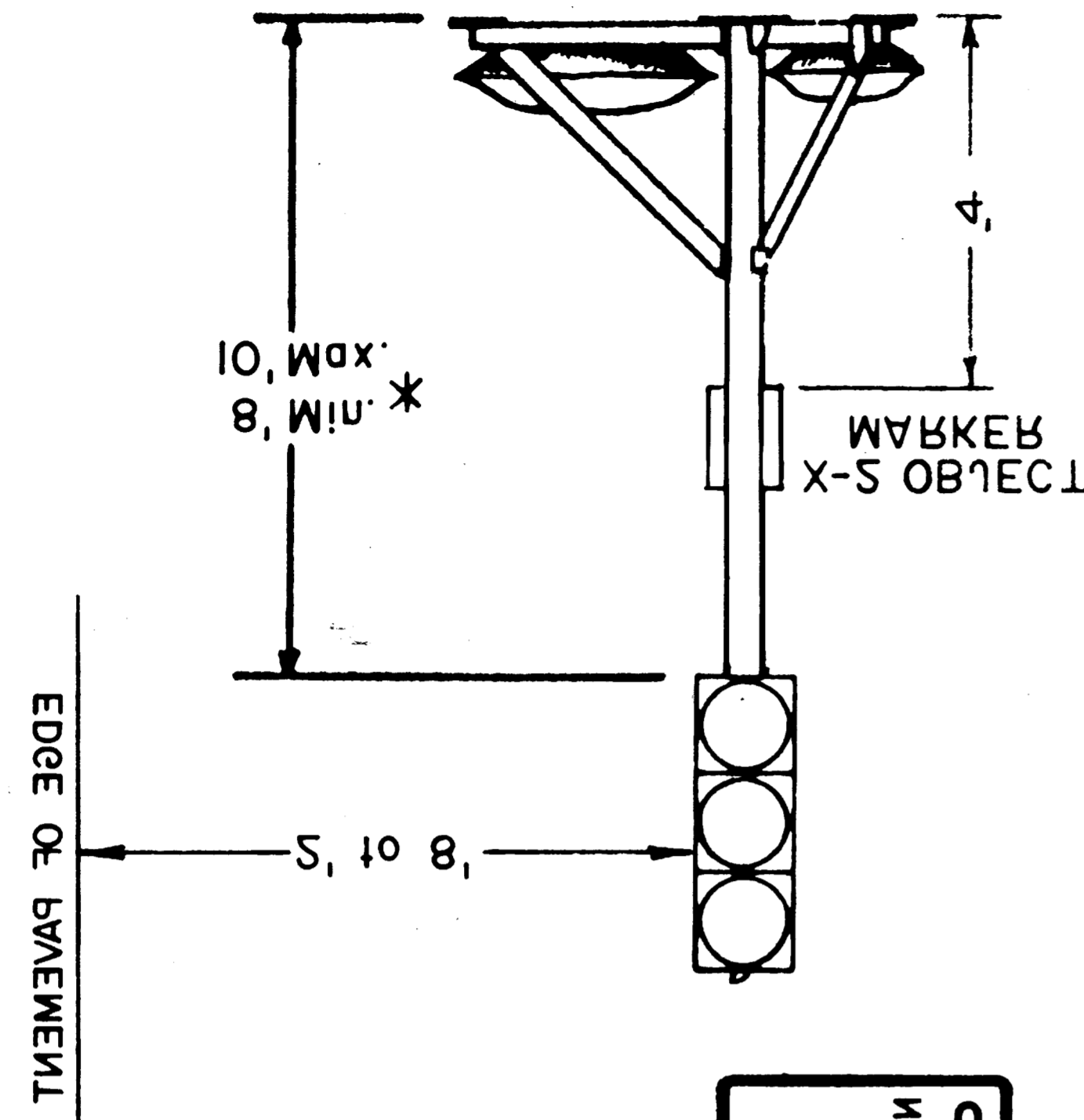
DISTANCE	A	B	C	L
URBAN	200	200	200	425
MAJOR STANDARD	500	500	500	600
FREEWAY AND EXPRESSWAY	2600	1600	1000	720

OHIO DEPARTMENT OF TRANSPORTATION	
CLOSING ONE LANE OF A FOUR LANE DIVIDED HIGHWAY	DATE 4/77
DR. GRD CK. RLB.	



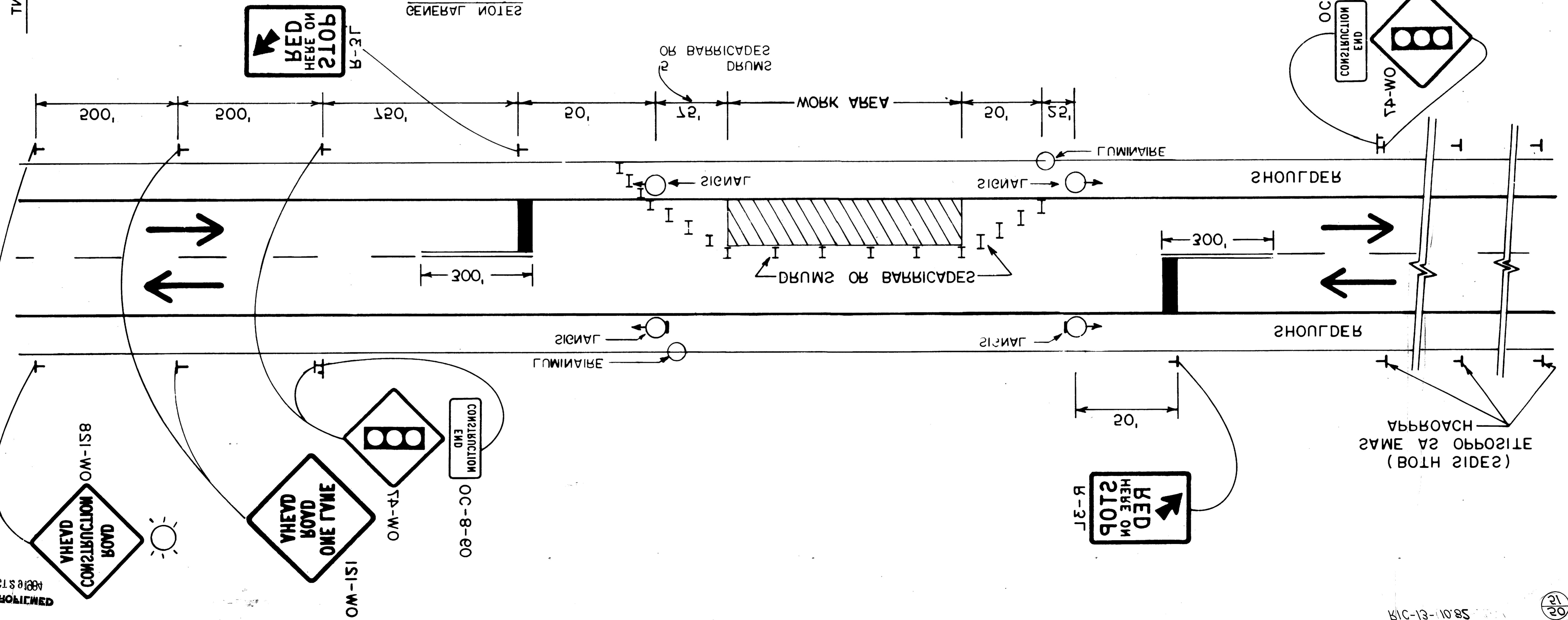
\* Above grade of roadway centerline

**SUPPORTED SIGNAL  
TYPICAL POLE**



- AS SHOWN ABOVE.  
TO ONE SIGNAL FOR EACH DIRECTION OF TRAFFIC  
ITS MAX MINIMUM LUMINAIRE LOCATED ADJACENT  
AT NIGHT SHALL BE PROVIDED BY USE OF A  
IDENTIFY THE BEGINNING OF THE TRANSITION  
ADEQUATE AREA ILLUMINATION TO CLEARLY
- AT 20 FOOT CENTERS WITHIN THE WORK AREA.  
DRUMS OR BARRICADES SHALL BE SPACED
- TRAFFIC CONTROL DEVICES.  
PART 8 OF THE OHIO MANUAL OF UNIFORM  
IN ACCORDANCE WITH THE REQUIREMENTS OF
- SIGNALS SHALL BE INSTALLED AND OPERATED  
SHALL BE APPROVED BY THE ENGINEER.  
LENGTH IS 100 FEET. SIGNAL TIMING  
PEAK HOUR DEMAND. PRACTICAL MAXIMUM  
BY THE CAPACITY REQUIRED TO HANDLE THE  
MAX TRAFFIC SIGNAL CONTROL IS DETERMINED
1. THE MAXIMUM LENGTH OF WORK AREA FOR ONE

**GENERAL NOTES**



DR: GBD	CK: BFB
HIGHWAY 1 LANE OR 2 LANE SIGNALIZED CLOSING	
OHIO DEPARTMENT OF TRANSPORTATION	

- WORK AREA.  
AND 100, CENTER TO CENTER WITHIN THE  
CENTER IN ADVANCE OF THE WORK AREA  
MAXIMUM SPACING SHALL BE 20, CENTER TO  
BARRICADES FOR NIGHT LANE CLOSURES.  
LIGHTS SHALL BE ERECTED ON DRUMS OR  
TYPE C STEADY BURNING BARRICADE MARKING
- WHENEVER NIGHT LANE CLOSURE IS NECESSARY.  
CONSTRUCTION AHEAD, SIGN IS REQUIRED  
MARKING LIGHT SHOWN ON THE "NO D  
THE TYPE B HIGH INTENSITY BARRICADE  
COLEBED.  
AND THE STOP LINES SHALL BE REMOVED OR  
PAVEMENT MARKING BETWEEN THE WORK AREA  
LINES SHALL BE INSTALLED. EXISTING  
TEMPORARY NO PASSING LINES AND STOP

MICHIGAN  
OCT 2 1988

88-01-13-1085



