

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BRF - 1(127)

SCI-52-2.77
NILE TOWNSHIP
SCIOTO COUNTY

DESIGN DESIGNATION

Current A.D.T. (1988)	=	2,930
Design Year A.D.T. (2008)	=	4,220
D.H.V.	=	422
D.	=	60%
T.	=	10%
Design Speed	=	55 mph
Legal Speed	=	55 mph
Functional Classification	=	Rural Arterial
Design Exception		Approval Date
Bridge Width		6 - 10-87

CONVENTIONAL SIGNS

County Line _____
Township Line _____
Section Line _____
Corporation Line _____ or _____
Fence Line (existing) + + + + (proposed) + + + +
Center Line _____
Trees ☉, Stumps A, (to be removed) ☒
Utility Poles: Telephone ⓧ, Power ⓧ, Light ⓧ
Limited Access (only) _____ L/A _____
Right of Way (only) _____ R/W _____
Limited Access & Right of Way _____ L/A & R/W _____
Existing Right of Way _____
Property Line — R — (in existing fence) — + R +
Railroad + + + + + or + + + + +
Guardrail (existing) a a a a a (proposed)

INDEX OF SHEETS

Title Sheet	1
Typical Section	2
General Notes	3
Maintenance of Traffic Notes	4-5A, 5B, 6
Sub-Summary	7
Calculations	8-9
General Summary	10
Temporary Road Plan and Profile	11-12
Plan and Profile	13
Cross Sections	14-22
Structure over 20'	23-30
Right-of-Way	31-36

LINE DATA

Begin Project	Sta.14+27.19
End Project	Sta. 17+40.00
Length of Project	312.8 L.F. or 0.059 Mi.
Begin Work	Sta. 8+00
End Work	Sta. 21+50.40
Length of Work	1350.4 L.F. or 0.256 Mi.

UNDERGROUND UTILITIES

2 WORKING DAYS

BEFORE YOU DIG

CALL 800-362-2764 (Toll Free)
OHIO UTILITIES PROTECTION SERVICE

NON-MEMBERS
MUST BE CALLED DIRECTLY

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

GR-1	1-11-85	AS-1-81	11-27-81	CPP-2-73	4-10-73
GR-2B	2-5-82	DBR-2-73	4-10-73		
GR-3	1-21-85	PSBD-1-81	9-18-81		
GR-4	2-5-82				
		MT99.10	11-14-86		
MC-1	6-13-69	MC-11	8-1-78		
BP-5	10-01-87	TC-41.20	3-26-79		
		TC-42.20	3-26-79		
		TC-52.10	4-3-79		
		LA-1	6-1-79		

SUPPLEMENTAL SPECIFICATIONS

836	11-12-85
847	10-17-83
947	10-17-83
824	10-8-82
802	5-4-88

F. TRANSPORTATION
G. AIR ADMINISTRATION

Approved:

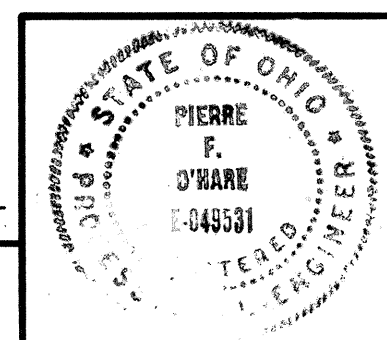
Division Administrator

Date _____



Plan Prepared By:

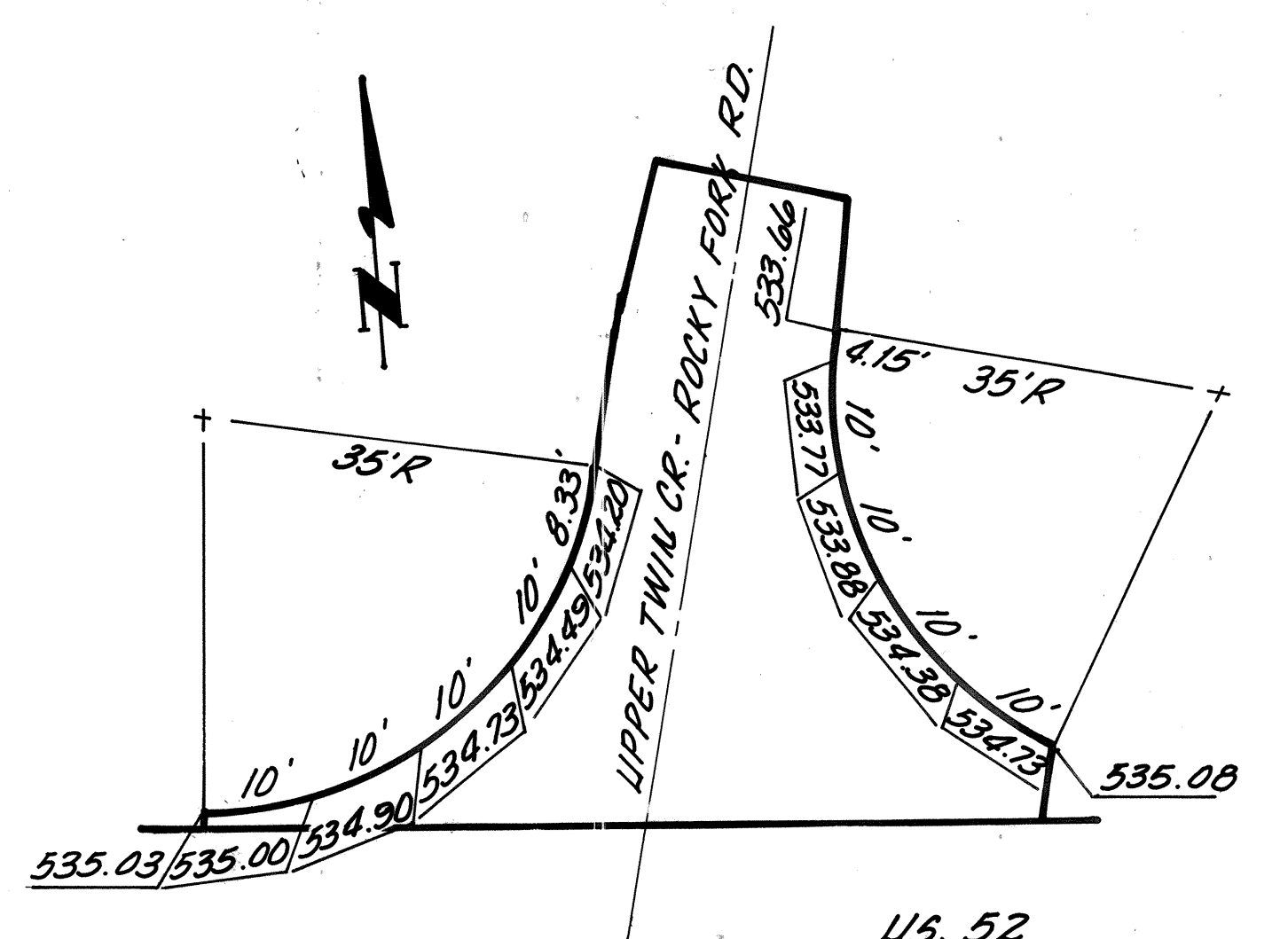
**WOOLPERT
CONSULTANTS**
5825 Westbourne Avenue
Columbus, Ohio 43213-1459



Project SCI-52-2.77
Date of Letting _____ 19____, Contract No. _____

TYPICAL SECTIONS

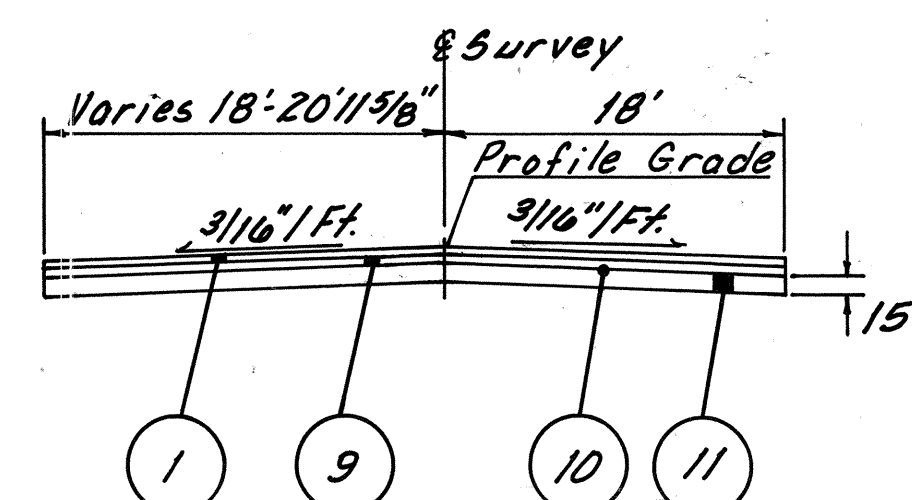
TYPE 404 ON 301



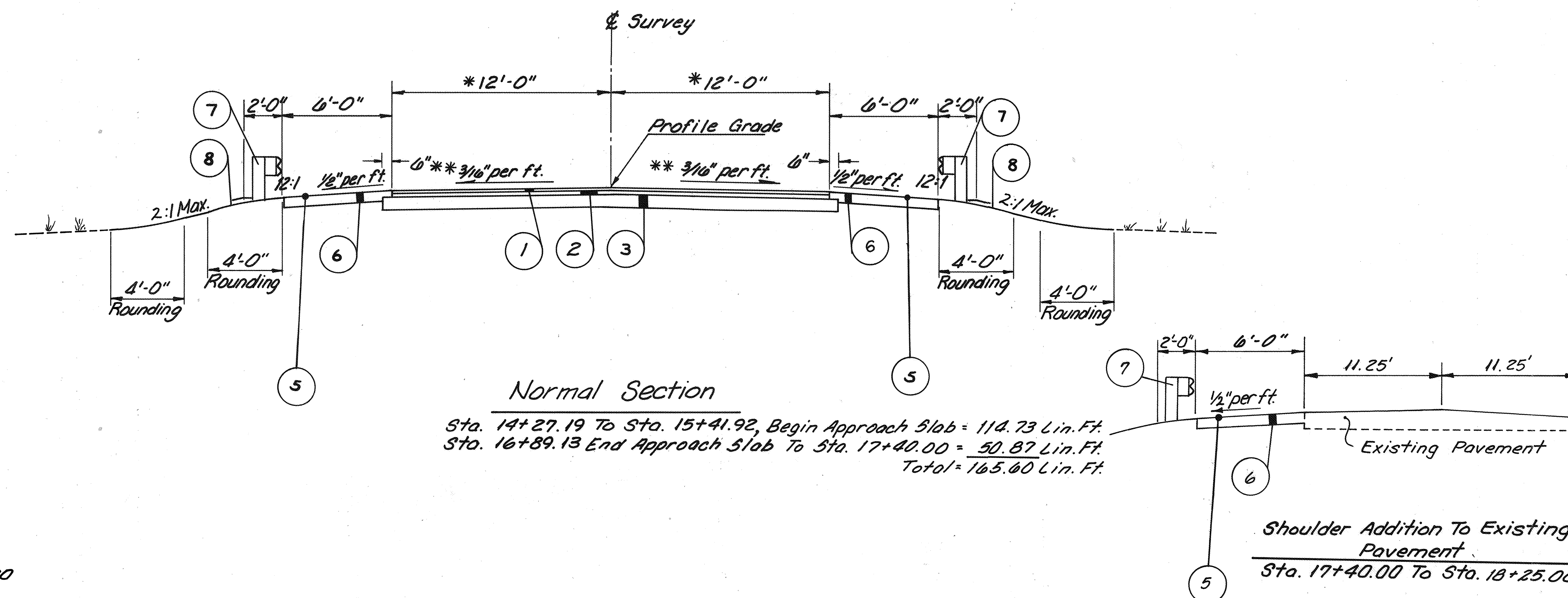
INTERSECTION DETAIL
U.S. 52 and Upper Twin Cr. Rocky Fork Rd.

LEGEND

- 1 404 1 1/2" Asphalt Concrete, AC-20
- 2 402 2 1/2" Asphalt Concrete, AC-20
- 3 301 8" Bituminous Aggregate Base, AC-20
- 5 409 Seal Coat-Using 0.008 Cu. Yd. of no. 8 Cover aggregate per Sq. Yd. and 0.30 gal. of bituminous material.
- 6 301 6" Bituminous Aggregate Base
- 7 606 Guardrail , Type 5
- 8 659 Seeding and Mulching (See General Notes)
- 9 402 Variable Depth Asphalt Concrete, AC-20
- 10 407 Tack Coat, As Per Plan
- 11 611 Reinforced Concrete Approach Slab (T=15")



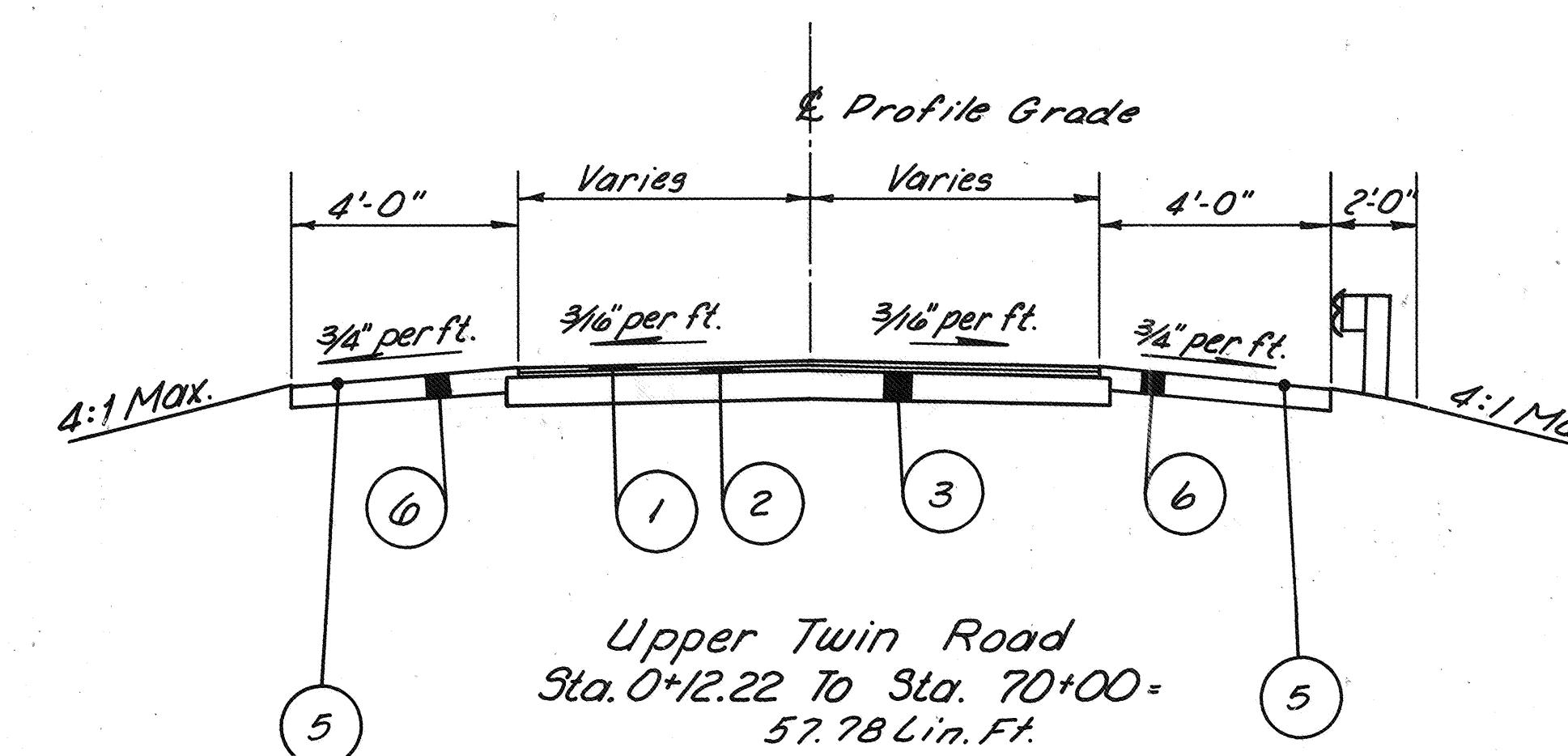
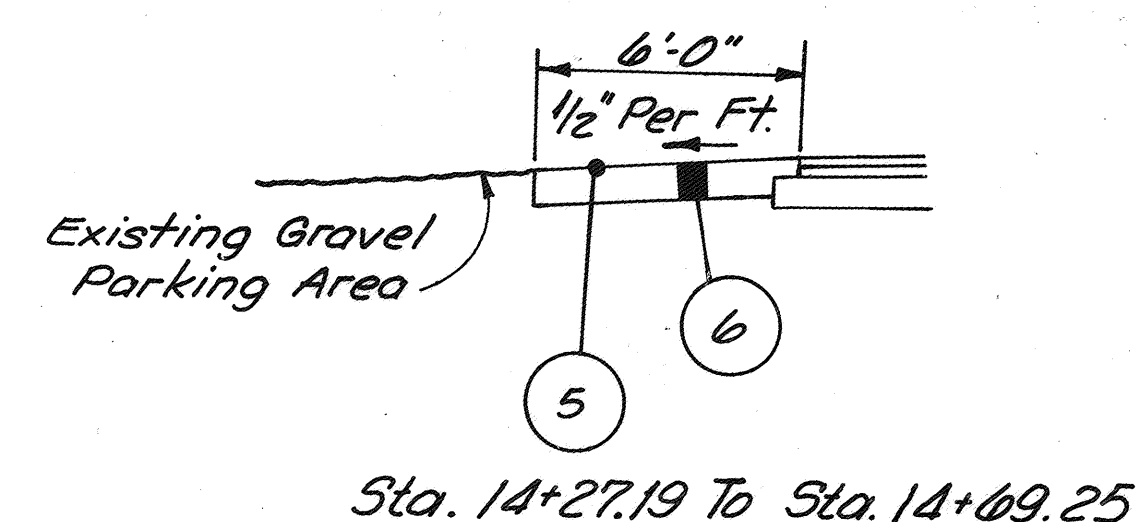
SECTION THRU APPROACH SLAB
Sta. 15+41.92 to Sta. 15+64.92 = 23 Lin. Ft.
Sta. 16+64.13 to Sta. 16+89.13 = 25 Lin. Ft.
Total = 50 Lin. Ft.



Lane Width Tapers From 11.5' To 12' From Sta. 14+27.19 To Sta. 14+69.25
Lane Width Tapers From 12' To 11.25' From Sta. 16+89.13 To Sta. 17+40.00

Right Lane Slope Varies From 3/8"/Ft. To 3/16"/Ft. From Sta. 14+27.19 To Sta. 14+69.25
Right Lane Slope Varies From 3/16"/Ft. To 1/2"/Ft. From Sta. 16+89.13 To Sta. 17+40.00

Left Lane Slope Varies From 1/8"/Ft. To 3/16"/Ft. From Sta. 14+27.19 To Sta. 14+69.25
Left Lane Slope Varies From 3/16"/Ft. To 3/8"/Ft. From Sta. 16+89.13 To Sta. 17+40.00



GENERAL NOTES

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQ. FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619, FIELD OFFICE.

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

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

UNDERGROUND UTILITIES

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

UTILITY OWNERSHIP

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

TELEPHONE: GENERAL TELEPHONE COMPANY
1315 ALBERT ST.
PO. BOX 511
PORTSMOUTH, OHIO 45662-511

ELECTRIC: COLUMBUS & SOUTHERN OHIO ELECTRIC COMPANY
215 NORTH FRONT STREET
COLUMBUS, OHIO 43215
(614) 464-7911

CONTINGENCY QUANTITIES

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

REMOVAL OF TREES OR STUMPS

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

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

SIZE	NO. TREES	NO. STUMPS	TOTAL
18"	5	0	5
30"	6	0	6

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

MONUMENTS

MONUMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-1. FOR LOCATIONS SEE SHEET NO. 31.

LOCATION OF GUARDRAIL

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

REMOVAL OF JUNK CARS

THE EXISTING JUNK CARS (APPROXIMATELY 6) 100 FT. RIGHT OF STA. 16+30 SHALL BE REMOVED AND DISPOSED OF OFF THE SITE. PAYMENT SHALL BE INCLUDED IN ITEM 202 - JUNK CARS REMOVED.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN 10 FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINE, IF SUCH LINE IS LESS THAN 10 FEET FROM THE WORK LIMITS.

WATERING PERMANENT SEEDED AREAS

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

659 WATER 10 M.-GAL.

ITEM 407 TACK COAT, AS PER PLAN

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. WHEN COVER AGGREGATE IS NEEDED ON THIS PROJECT, IT SHALL BE USED AS DIRECTED BY THE ENGINEER, AND IT SHALL BECOME INCIDENTAL TO AND INCLUDED FOR PAYMENT IN, ITEM 407 TACK COAT, AS PER PLAN. PLAN QUANTITIES INDICATE AVERAGE APPLICATION RATES OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

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

207 TEMPORARY SEEDING AND MULCHING	2987 SQ. YD.
207 STRAW OR HAY BALES	50 EA.
659 COMMERCIAL FERTILIZER	0.27 TON
659 REPAIR SEEDING AND MULCHING	747 SQ. YD.
659 WATER	7 M.-GAL.

WATER FOR DUST CONTROL

MATERIALS FOR DUST CONTROL, TO BE USED AS DIRECTED BY THE ENGINEER, ARE PROVIDED AS FOLLOWS:

616 WATER	50 M.-GAL.
616 CALCIUM CHLORIDE	0.12 TON

TEMPORARY FILL LIMITS

THE CONTRACTOR SHALL NOT PLACE ANY TEMPORARY FILL FOR THE TEMPORARY ROAD BELOW ELEV. 525.00.

TRAFFIC CONTROL

THE CONTRACTOR SHALL FURNISH AND INSTALL A STOP SIGN AT THE UPPER TWIN CREEK - ROCKY FORK ROAD INTERSECTION AS SHOWN ON SHEET 13.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 957, 958, AND 961 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 630, 631, 633, 730, 731, AND 733.

MAINTENANCE OF TRAFFIC NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

4
36

SCIOTO COUNTY
SCI-52-2.77

614 WORK ZONE PAVEMENT MARKINGS GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND WHEN NECESSARY, REMOVE WORK ZONE RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE EVALUATED BY THE ENGINEER IN ACCORDANCE WITH THE THREE PERFORMANCE PARAMETERS CONTAINED IN SUPPLEMENT 1047. THE MARKINGS SHALL BE REPAIRED OR REPLACED WHEN THE NUMERICAL RATING OF A PARAMETER IS (a) SIX OR LOWER FOR DURABILITY, (b) FOUR OR LOWER FOR VISUAL EFFECTIVENESS AND (c) FOUR OR LOWER FOR NIGHT VISIBILITY. THE CONTRACTOR SHALL REPAIR OR REPLACE UNSATISFACTORY MARKINGS IMMEDIATELY AND AT NO ADDITIONAL COST TO THE STATE.

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMUTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167-36) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168-36) SIGN OR BOTH AS MAY BE APPROPRIATE. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL ALSO BE ERECTED ON EACH ENTRANCE RAMP, AT INTERSECTIONS OF THROUGH ROADS TO WARN ENTERING OR TURNING TRAFFIC OF THE CONDITION AND AT LEAST ONCE EVERY TWO MILES ALONG THE ROADWAY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY.

614 WORK ZONE MARKING SIGNS

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE WORK ZONE MARKING SIGNS (OW-167 AND OW-168) WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT DEPARTMENT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19. WORK ZONE MARKING SIGNS SHALL BE PROVIDED WITH SUITABLE YIELDING SUPPORTS OF SUFFICIENT STRENGTH AND STABILITY.

WORK ZONE MARKINGS SIGNS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. ALL OTHER WORK ZONE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND REMOVAL OF THE SIGNS.

ITEM	UNIT	DESCRIPTION
614	EACH	WORK ZONE MARKING SIGNS

A QUANTITY OF 6 EACH WORK ZONE MARKING SIGNS (2 EACH "NO EDGE LINES" OW-167 AND 4 EACH "UNMARKED NO PASSING ZONES" OW-168) ARE CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ALL SIGNS, DEVICES, PAVEMENT MARKINGS, AND OPERATIONS USED FOR THE TEMPORARY MAINTENANCE AND CONTROL OF TRAFFIC DURING CONSTRUCTION SHALL BE SUBJECT TO THE DIRECTION AND CONTROL OF THE ENGINEER IN RESPECT TO THEIR CONDITIONS, LOCATIONS, AND TIME OF APPLICATION. VISIBLE SIGNS, DEVICES, AND PAVEMENT MARKINGS SHALL, AT ALL TIMES, REFLECT THE CONDITIONS ACTUALLY EXISTING. INAPPROPRIATE SIGNS OR DEVICES SHALL BE REMOVED OR COVERED. INAPPROPRIATE PAVEMENT MARKINGS SHALL BE REMOVED.

TWO-WAY THROUGH TRAFFIC SHALL BE MAINTAINED AT ALL TIMES EXCEPT THAT LANE CLOSURES, CONTROLLED BY FLAGGERS IN ACCORDANCE WITH FIG. C-18 OR THE OHIO MANUAL AND RESULTING IN MINIMAL DELAY TO THE PUBLIC, MAY BE MADE AS NECESSARY TO THE PROGRESS OF THE WORK, BUT ONLY DURING DAYLIGHT HOURS. THROUGH TRAFFIC SHALL BE MAINTAINED BY MEANS OF A DETOUR ON A TEMPORARY ROADWAY HAVING A 30 FOOT EFFECTIVE WIDTH AND SURFACED 24 FEET WIDE WITH 615 TEMPORARY PAVEMENT, AS PER PLAN, WHILE THE PROPOSED PAVEMENT AND STRUCTURES ARE CONSTRUCTED. SEE SHEETS 11 & 12 FOR THE ALIGNMENT AND PROFILE AND THE ROADWAY CROSS-SECTIONS FOR THE CROSS-SECTIONS OF THIS TEMPORARY ROAD.

THE OW-128 AND OC-8 SIGNS SHOWN ON THE TEMPORARY ROAD DETAILS SHALL REMAIN IN THE INDICATED LOCATIONS THROUGHOUT THE LIFE OF THE PROJECT.

IN ADDITION TO THE TEMPORARY SIGNING SHOWN ON SHEETS 11 & 12 VERTICAL PANELS IN ACCORDANCE WITH FIG. C-24 OF THE OHIO MANUAL SHALL BE USED TO DELINEATE THE TEMPORARY ROADWAY.

IT IS INTENDED THAT THE TEMPORARY ROAD BE USED TO THE MINIMUM EXTENT PRACTICABLE AND THAT TWO-WAY TRAFFIC BE MAINTAINED ON THE EXISTING AND/OR PROPOSED PAVEMENTS PRIOR AND SUBSEQUENT TO THE PROPOSED PAVEMENT AND STRUCTURE CONSTRUCTION.

LOCAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, USING THE 410 AND 615 MATERIALS PROVIDED

IN ADDITION TO THE TEMPORARY SIGNING AND PAVEMENT MARKINGS FOR THROUGH TRAFFIC; TEMPORARY STOP LINES, CLASS I; TEMPORARY STOP SIGNS; AND OW-128 SIGNS SHALL BE PROVIDED FOR UPPER TWIN ROAD. THE EXISTING STOP SIGNS, IF IN ACCEPTABLE CONDITION, MAY BE RELOCATED ON TEMPORARY SUPPORTS WHILE THE DETOUR IS IN EFFECT.

ANY PAVEMENT OPENED TO TWO-WAY TRAFFIC SHALL HAVE CENTER LINES IN PLACE. DOUBLE, SOLID, TEMPORARY CENTER LINE, CLASS I, AND TEMPORARY, WHITE, EDGE LINES, CLASS I, SHALL BE PROVIDED THROUGHOUT THE DETOUR, ON THE TEMPORARY PAVEMENT WHICH WILL BE REMOVED.

WHEN THE PROPOSED PAVEMENT IS OPENED TO TRAFFIC, IF THE PERMANENT PAVEMENT MARKINGS ARE NOT IN PLACE, TEMPORARY CENTER LINE, CLASS II, AND WORK ZONE MARKING SIGNS SHALL BE IN PLACE. WHEN REQUIRED, OW-167 SIGNS SHALL BE PROVIDED IN BOTH APPROACHES TO THE WORK AREA AND OW-168 SIGNS SHALL BE PROVIDED ON U.S. 52 ON THE APPROACHES TO THE UPPER TWIN ROAD INTERSECTION. SEE OTHER NOTES CONCERNING 614 WORK ZONE PAVEMENT MARKING AND WORK ZONE MARKING SIGNS FOR REQUIREMENTS OF FURNISHING, APPLYING, AND REMOVING THESE ITEMS. SEE SHEETS XX AND XX FOR REQUIREMENTS OF FURNISHING, APPLYING AND REMOVING GAURDRAIL AND A SUB-SUMMARY OF THE ESTIMATED QUANTITIES PROVIDED FOR THEM.

TEMPORARY GUARDRAIL WILL BE REQUIRED AND WILL BE IN ACCORDANCE WITH 615.04 OF THE CMS THE FACE OF THE GUARDRAIL SHALL BE 3 FEET FROM THE EDGE OF THE TEMPORARY ROADWAY SURFACE COURSE. ALL COATS OF FURNISHING, MAINTAINING, AND REMOVING THIS GUARDRAIL SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 615 TEMPORARY ROAD. TEMPORARY GUARDRAIL LOCATIONS ARE SHOWN ON THE TEMPORARY ROADWAY DETAILS AND APPROXIMATE QUANTITIES ARE PROVIDED BELOW HOWEVER, ACTUAL LOCATIONS AND QUANTITIES ARE SUBJECT TO MODIFICATION AT THE DIRECTION OF THE ENGINEER TO MEET CONDITIONS ENCOUNTERED IN THE FIELD.

615 TEMPORARY PAVEMENT, AS PER PLAN, SHALL CONFORM TO ALL REQUIREMENTS OF 615, INCLUDING PERMISSIBLE SUBSTITUTION OF 402 MATERIALS FOR 404 AND/OR 301 MATERIALS; HOWEVER, THE NOMINAL COURSE MAKE-UP SHALL BE AS FOLLOWS:

1-1/2"	404 ASPHALT CONCRETE
8-1/2"	301 BITUMINOUS AGGREGATE BASE

EXCEPT FOR THE QUANTITIES SEPARATELY ENUMERATED BELOW, PAYMENT FOR ALL LABOR, MATERIALS, AND INCIDENTALS NECESSARY TO ACCOMPLISH THE ABOVE WORK SHALL BE MADE UNDER THE LUMP SUM PRICE BID FOR 614 MAINTAINING TRAFFIC. ESTIMATED QUANTITIES IN ADDITION TO 614 MAINTAINING TRAFFIC ARE AS FOLLOWS:

404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	10 C.Y.
410 TRAFFIC COMPACTED SURFACE, TYPE A OR B	100 C.Y.
502 TEMPORARY STRUCTURE	LUMP
614 TEMPORARY CENTER LINES, CLASS I	0.27 MILE
614 TEMPORARY EDGE LINES, CLASS I	0.54 MILE
614 TEMPORARY CENTER LINES, CLASS II	0.27 MILE
614 TEMPORARY STOP LINES, CLASS I, 947.03, TYPE C	16 L.F.
614 WORK ZONE MARKING SIGNS	6 EACH
615 TEMPORARY ROADS	LUMP
615 TEMPORARY PAVEMENT, AS PER PLAN	2659 S.Y.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TRAFFIC CONTROL AND TRAFFIC CONTROL DEVICES REQUIRED BY THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" LATEST EDITION, SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

TEMPORARY PAVEMENT MARKINGS

SEE STANDARD DRAWINGS MT99.10 DATED 11/14/86

GUARDRAIL REFLECTORS

THIS ITEM OR MORE SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING AND SUBSEQUENTLY REMOVING GUARDRAIL REFLECTORS TO TEMPORARILY GUIDE TRAFFIC THROUGH CONSTRUCTION AREAS AND TO IMPROVE THE NIGHT VISIBILITY OF THE GUARDRAIL.

MATERIAL

REFLECTORS SHALL PROVIDE A WHITE (COLORLESS) OR YELLOW RETROREFLECTIVE SURFACE WHICH IS HELD APPROXIMATELY PERPENDICULAR TO APPROACHING TRAFFIC. THE RETROREFLECTIVE SURFACE SHALL BE A MINIMUM OF 7.0 SQUARE INCHES OF HIGH INTENSITY REFLECTIVE SHEETING (730.19). OTHER RETROREFLECTIVE MATERIALS SUCH AS PRISMATIC REFLECTORS OR REFLECTIVE SHEETING MAY BE USED, PROVIDED:

- 1) THE SURFACE IS SMOOTH AND SELF CLEANING
- 2) THE TOTAL REFLECTIVE BRIGHTNESS IS EQUIVALENT TO THE ABOVE WHEN CONSIDERING REFLECTIVE INTENSITY OF THE SURFACE AND SURFACE AREA.

GUARDRAIL REFLECTORS SHALL BE DESIGNED TO FIT COMPLETELY WITHIN THE CONCAVE SURFACE OF DEEP BEAM GUARDRAIL.

INSTALLATION

GUARDRAIL REFLECTORS SHALL BE INSTALLED WITHIN THE CONCAVE SURFACE OF GUARDRAIL. ATTACHMENT MAY BE BY A BRACKET WHICH FITS UNDER THE HEAD OF THE CENTER GUARDRAIL BOLT OR BY A HIGH QUALITY CONSTRUCTION ADHESIVE APPLIED TO THOROUGHLY CLEAN AND DRY SURFACES. THE ADHESIVE SHALL BE COMPATIBLE WITH THE REFLECTOR BASE AND THE GUARDRAIL SURFACE.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE ANY REFLECTOR WHICH BECOMES DAMAGED OR DISLODGED DUE TO NORMAL ACTIVITY OR WEATHER. THE CONTRACTOR SHALL IMMEDIATELY CLEAN ANY REFLECTOR IF ITS PERFORMANCE IS DEGRADED BY DIRT OR OTHER COATING.

APPLICATION

THE UNITS SHALL BE SPACED AT 50 FOOT INTERVALS FOR TRAFFIC MAINTAINED SITUATIONS ON TANGENT. WHERE CURVES EXCEED 5 DEGREES, SPACING SHALL BE REDUCED TO 25 FEET. WHERE THE ALIGNMENT OF GUARDRAIL IS SHIFTED (TAPERS) TOWARD THE EDGE OF PAVEMENT, AS AT AN APPROACH TO A BRIDGE PARAPET, OR TO PROTECTED BRIDGE PIERS, SPACING SHALL BE REDUCED TO 25 FEET OR LESS IN THE TAPERED SECTION TO ASSURE THAT AT LEAST 3 UNITS ARE APPLIED TO THE TAPERED SECTION.

WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROACHING TRAFFIC AND YELLOW ON THE LEFT.

REMOVAL

UNITS APPLIED TO TEMPORARY GUARDRAIL WILL NORMALLY BE REMOVED WITH THE GUARDRAIL. OLD UNITS STILL ATTACHED TO THE GUARDRAIL MAY BE REUSED PROVIDED THEY ARE IN THE PROPER POSITION AND LOCATION, ARE THE PROPER COLOR, ARE UNDAMAGED AND ARE THOROUGHLY CLEANED. IN CASES WHERE GUARDRAIL WILL REMAIN FOR A PERMANENT CONDITION, THE UNITS SHALL REMAIN IN PLACE UNLESS THE ENGINEER ORDERS REMOVAL OF ALL OR A PORTION OF THEM.

PAYMENT

BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR EACH REFLECTOR AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT OR CLEANING OF ANY REFLECTORS UNDER THE CONDITIONS DESCRIBED IN INSTALLATION ABOVE.

614 TEMPORARY RAISED PAVEMENT MARKERS

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

MATERIAL

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

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

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

	<u>SPECIFIC INTENSITY</u>	
	<u>TYPE A</u>	
<u>INCIDENCE</u> <u>ANGLE</u> <u>(DEGREES)</u>	<u>WHITE</u>	<u>YELLOW</u>
0	1.0	0.6
20	0.4	0.24
45	-	-

	<u>TYPE B</u>	
	<u>WHITE</u>	<u>YELLOW</u>
0	3.0	1.8
20	1.2	0.72
45	0.3	0.2

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

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

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

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

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

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

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

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

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

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

APPLICATION

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

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

* CENTERED IN GAP

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

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

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

REMOVAL

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

PAYMENT

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

ITEM	UNIT	DESCRIPTION
614	EACH	TEMPORARY RAISED PAVEMENT MARKERS

STATIONING (FROM-TO) (SIDE)	SPACING	TYPE A				TYPE B			REMARKS
		W	Y	Y/Y		W	Y	Y/Y	(LINE TYPE)
B+00 to 23+60.23 Lt.	20' %c	78							Edge Line
B+00 to 23+60.23 Rt.	20' %c	78							Edge Line
B+00 to 23+60.23 C	20' %c			156					Center Line (Double/Solid)
B+00 to 23+60.23	20' %c	4		4					Replacement @ 5.0%
TOTALS									
		160	160						

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

614 TEMPORARY RAISED
PAVEMENT MARKERS

DESIGNED	DRAWN	CHECKED	DATE	REVISED
			5-12-87	

614 BARRIER REFLECTORS

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING BARRIER REFLECTORS (TYPE A) ON GALVANIZED STEEL GUARDRAIL AND/OR BARRIER REFLECTORS (TYPE B) ON CONCRETE BARRIERS IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.

MATERIAL

THE BARRIER REFLECTOR SHALL BE AS MANUFACTURED BY STIMSONITE, REFLEXITE OR AN APPROVED FUNCTIONAL EQUIVALENT AS DESCRIBED BELOW:

STIMSONITE- MODEL 965 (WHITE & YELLOW) OR
REFLEXITE- MODEL 650 (WHITE & YELLOW)

THE ADHESIVE SHALL BE FRANKLIN PANEL AND METAL FRAMING ADHESIVE AS MANUFACTURED BY FRANKLIN CHEMICAL INDUSTRIES, PR-365 AS MANUFACTURED BY PRODUCTS RESEARCH AND CHEMICAL CORPORATION OR AN APPROVED EQUAL.

ALL ADHESIVES SHALL HAVE A SHELF LIFE OF 6 MONTHS AT 75 DEGREES F STORAGE
MINIMUM GUARANTEED.

LAYOUT

THE CONTRACTOR SHALL LAYOUT ALL LOCATIONS TO ASSURE PROPER PLACEMENT. THE LAYOUT SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATIONS ARE STARTED. THE LAYOUT SHALL BE INCIDENTAL TO THE INSTALLATION OPERATION.

INSTALLATION

1) ON CONCRETE BARRIERS THE HEIGHT OF THE TOP OF THE REFLECTOR SHALL BE 26 INCHES ABOVE THE NEAR EDGE OF PAVEMENT, BUT IN NO CASE SHALL THE TOP OF THE REFLECTOR BE LESS THAN 3 INCHES BELOW THE TOP OF THE CONCRETE BARRIER. ATTACHMENT SHALL BE BY THE ABOVE REFERENCED ADHESIVE AND APPLIED PER MANUFACTURER'S RECOMMENDATION.

2) GUARDRAIL REFLECTORS SHALL BE INSTALLED WITHIN THE CONCAVE SURFACE OF THE GUARDRAIL. ATTACHMENT MAY BE BY BRACKET WHICH FITS UNDER THE HEAD OF THE CENTER GUARDRAIL BOLT OR BY THE ABOVE REFERENCED ADHESIVE AND APPLIED PER MANUFACTURER'S RECOMMENDATION.

3) THE ABOVE REFERENCED ADHESIVE SHALL BE FLASHED WHEN APPLIED TO ACHIEVE MAXIMUM BONDING STRENGTH.

4) WHEN MOUNTED ON A FLAT SURFACE, THE REFLECTOR SHOULD BE TILTED UPWARD FROM THE VERTICAL OR PLUMB POSITION 2-3 DEGREES TO FACILITATE "RAIN WASHING" OF THE REFLECTOR FACE.

5) TWO-LANE HIGHWAY - WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROACHING TRAFFIC.

FOUR-LANE DIVIDED HIGHWAY - WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROACHING TRAFFIC AND YELLOW ON THE LEFT.

Basis of Payment

BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR EACH REFLECTOR AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK.

<u>ITEM</u>	<u>UNIT</u>	<u>DESCRIPTION</u>
614	EACH	BARRIER REFLECTOR, TYPE A
614	EACH	BARRIER REFLECTOR, TYPE B

A: BARR-REF

614 BARRIER REFLECTORS

THESE REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING SHALL BE AS SHOWN IN THE SUB-SUMMARY TABLE.

[illegible]

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

614 BARRIER
REFLECTORS

DESIGNED	DRAWN	CHECKED	DATE	REVISED
			5-12-87	

DESCRIPTION	QTY	UNIT	PRICE	TOTAL
1000	1000	1000	1000	1000

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING BARRIER REFLECTORS ON GALVANIZED STEEL GUARD RAIL, CONCRETE BARRIER, RETAINING WALL AND/OR BRIDGE PARAPETS IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

MATERIAL

THE BARRIER REFLECTOR SHALL BE AS MANUFACTURED BY
STIMSONITE, REFLEXITE OR AN APPROVED FUNCTIONAL EQUIVALENT.

STIMSONITE - MODEL 965 (WHITE & YELLOW) OR
REFLEXITE - MODEL 650 (WHITE & YELLOW)

THE REFLECTORS MAY BE ATTACHED BY ADHESIVE /OR OTHER
ACCEPTABLE METHOD.

THE ADHESIVE SHALL BE FRANKLIN PANEL AND METAL FRAMING
ADHESIVE AS MANUFACTURED BY FRANKLIN CHEMICAL INDUSTRIES,
PR-365 AS MANUFACTURED BY PRODUCTS RESEARCH AND CHEMICAL
CORPORATION, OR AN APPROVED EQUAL.

ALL MOUNTING HARDWARE UTILIZED IN ANY ACCEPTABLE ALTERNATE ATTACHMENT METHOD SHALL BE STAINLESS STEEL.

LAYOUT

THE CONTRACTOR SHALL LAYOUT ALL LOCATIONS TO ASSURE PROPER PLACEMENT. THE LAYOUT SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION OF THE REFLECTORS.

ALL BARRIERS SHALL HAVE A REFLECTOR AT THE BEGINNING AND THE END OF THE RUN AND AT LEAST ONE EVENLY SPACED BETWEEN THE TERMINI. THE REQUIRED NUMBER OF REFLECTORS (N) PER RUN FOR EACH LENGTH (L) OF RUN SHALL BE DETERMINED AS FOLLOWS:

~~N = L/100 + 1 (FOR TANGENTS AND CURVES LESS THAN 5°)
N = L/50 + 1 (FOR CURVES WITH DEGREE OF CURVATURE
OF 5° OR GREATER).
ROUND N TO NEXT WHOLE NUMBER WITH A MINIMUM OF 3.~~

THE SPACING ON TANGENTS AND CURVES LESS THAN 5° MAY VARY FROM 75' TO 100' IN THE FINAL 250' TO ASSURE APPROXIMATELY EVEN SPACING OF THE REFLECTORS.

INSTALLATION

1. ON CONCRETE BARRIERS, RETAINING WALLS AND BRIDGE PARAPETS THE HEIGHT OF THE TOP OF THE REFLECTOR SHALL BE 26 INCHES ABOVE THE NEAR EDGE OF PAVEMENT, BUT IN NO CASE SHALL THE TOP OF THE REFLECTOR BE LESS THAN 3 INCHES BELOW THE TOP OF THE CONCRETE BARRIER.
2. GUARDRAIL REFLECTORS SHALL BE INSTALLED WITHIN THE CONCAVE SURFACE OF THE GUARDRAIL. ATTACHMENT MAY BE BY BRACKET WHICH FITS UNDER THE HEAD OF THE POST BOLT, BY THE ABOVE REFERENCED ADHESIVE APPLIED PER MANUFACTURER'S RECOMMENDATION, OR OTHER ACCEPTABLE METHOD.
3. THE ABOVE REFERENCED ADHESIVE SHALL BE FLASHED WHEN APPLIED TO ACHIEVE MAXIMUM BONDING STRENGTH.
4. WHEN MOUNTED ON A FLAT SURFACE, THE TOP OF THE REFLECTOR SHALL BE TILTED FORWARD FROM THE VERTICAL OR PLUMB POSITION 2-3 DEGREES TO FACILITATE 'RAIN WASHING' OF THE REFLECTOR FACE.
5. ON TWO-LANE HIGHWAYS, WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROCHING TRAFFIC. BIDIRECTIONAL WHITE REFLECTORS SHALL BE USED ON THE OUTSIDE OF CURVES.

6. ON DIVIDED HIGHWAYS, DIRECTIONAL ROADWAYS AND RAMPS,
WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF
APPROACHING TRAFFIC AND YELLOW ON THE LEFT.

METHOD OF MEASUREMENT

THE NUMBER OF BARRIER REFLECTORS OF EACH TYPE SHALL BE THE ACTUAL NUMBER IN PLACE, COMPLETED AND ACCEPTED. REFLECTORS MOUNTED ON GUARDRAIL SHALL BE MEASURED AS TYPE A. REFLECTORS MOUNTED ON CONCRETE BARRIER, RETAINING WALL OR BRIDGE PARAPETS SHALL BE MEASURED AS TYPE B. BIDIRECTIONAL REFLECTORS SHALL BE MEASURED AS TYPE A2 OR TYPE B2 AS APPROPRIATE. A BIDIRECTIONAL REFLECTOR MAY ACTUALLY CONSIST OF TWO 1-WAY REFLECTORS MOUNTED BACK-TO-BACK; HOWEVER, BOTH WILL BE INCLUDED IN THE UNIT PRICE FOR FOR A BIDIRECTIONAL REFLECTOR.

BASIS OF PAYMENT

~~BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR EACH REFLECTOR AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE, AND INCIDENTALS REQUIRED TO PERFORM THE WORK.~~

ITEM	UNIT	DESCRIPTION
620	EACH	BARRIER REFLECTOR, TYPE A AS PER PLAN
620	EACH	BARRIER REFLECTOR, TYPE B AS PER PLAN
620	EACH	BARRIER REFLECTOR, TYPE A2 AS PER PLAN
620	EACH	BARRIER REFLECTOR, TYPE B2 AS PER PLAN

[illegible]

SC1-52-2.77

$$\frac{5B}{36}$$

BUREAU OF DESIGN SERVICES
DIVISION OF HIGHWAYS
OHIO DEPARTMENT OF TRANSPORTATION

802 BARRIER REFLECTORS

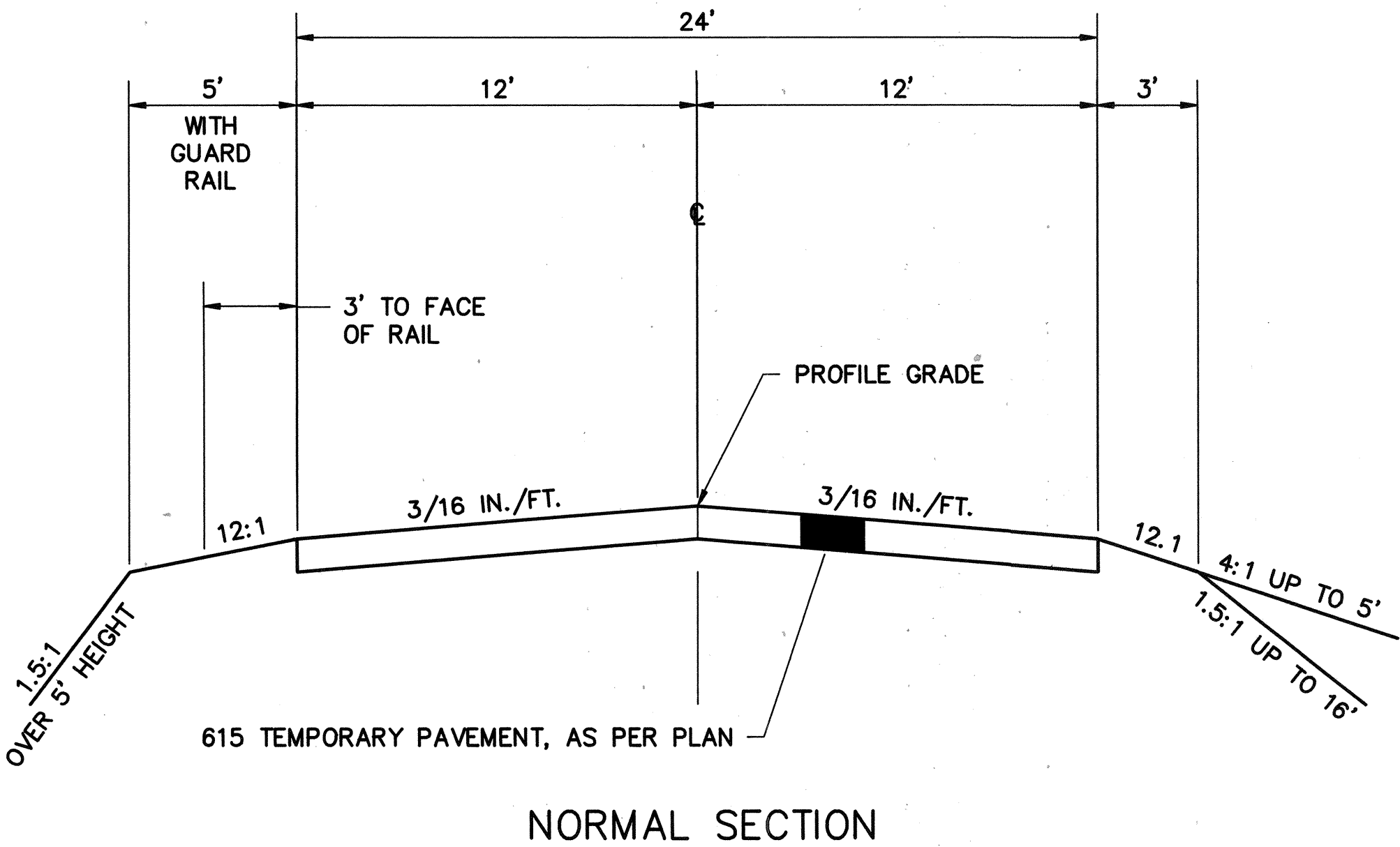
PLAN INSERT SHEET

DATE
28-88

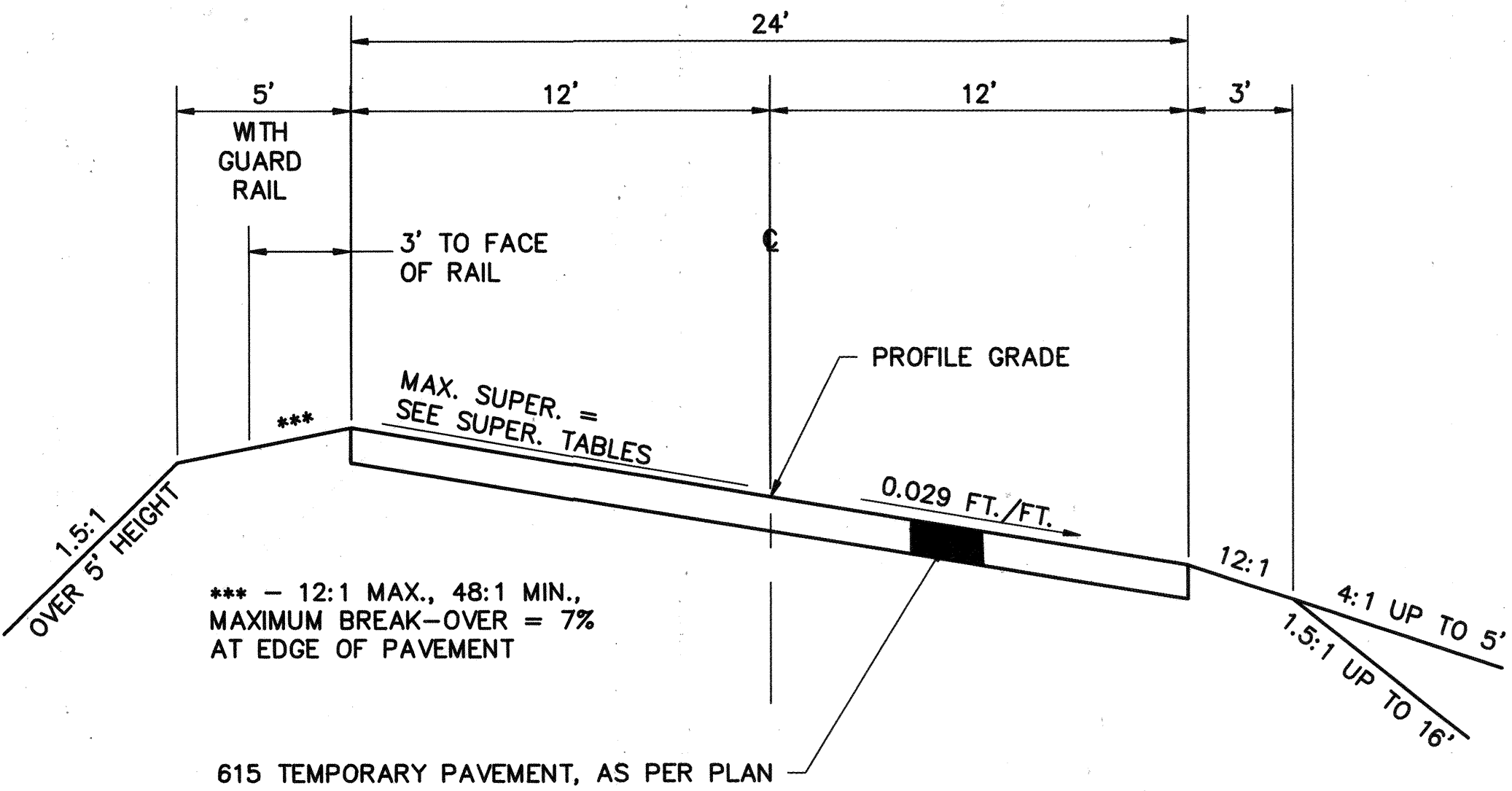
MAINTENANCE OF TRAFFIC NOTES

*-MEET EXISTING
TEMPORARY ROAD
SUPERELEVATION TABLES

ELEV. LT.EDGE	WIDTH	SUPER ELEV.	STATION	CENTER ELEV.	SUPER ELEV.	WIDTH	ELEV. RT.EDGE	ELEV. LT.EDGE	WIDTH	SUPER ELEV.	STATION	CENTER ELEV.	SUPER ELEV.	WIDTH	ELEV. RT.EDGE
*	*	*	10+00	*	*	*	*	*	12'	-19	19+25	538.95	-19	12'	538.76
*	12'	*	+25	*547.98	-25	12'	547.73	539.47			+50	539.66			539.47
*		*	+50	*546.86	-32		546.54	540.18			+75	540.37			540.18
*		*	+75	*545.81	-31		545.50	540.74			+94.56	540.93			540.74
*		*	11+00	*544.76	-30		544.46	540.89			20+00	541.08			540.89
*		*	+25	*543.70	-29		543.41	541.58			+25	541.77			541.58
*		*	+50	*542.63	-29		542.34	542.33			+50	542.43			542.24
*		*	+75	541.56	-25		541.31	543.06			+75	543.06			542.87
*		*	+86.76	541.06	-23		540.83	543.36			+85.23	543.32	-19		543.13
540.57		*+07	12+00	540.50	-21		540.29	*543.76		*+09	21+00	543.67	-21		543.46
539.57		+06	+25	539.51	-17		539.34	*		*	+25	544.24	-25		543.99
538.62		+04	+50	538.58	-13		538.45	*		*	+44.56	544.67	-27		544.40
537.75		+03	+75	537.72	-09		537.63	*		*	+50	544.78	-28		544.50
536.95		+02	13+00	536.93	-05		536.88	*		*	+75	*545.32	-32		545.00
536.22		+01	+25	536.21	-01		536.20	*		*	22+00	*545.60	-32		545.28
535.50		-06	+50	535.56	+06		535.62	*		*	+25	*546.14	-36		545.78
534.83		-14	+75	534.97	+14		535.11	*		*	+50	*546.68	-36		546.32
534.63		-17	+83.33	534.80	+17		534.97	*		*	+75	*547.22	-36		546.86
534.22		-23	14+00	534.45	+23		534.68	*		*	23+00	*547.85	-36		547.49
533.69		-31	+25	534.00	+31		534.31	*		*	+25	*548.59	-36		548.23
533.27		-35	+50	533.62	+35		533.97	*	12'	*	+50	*548.86	-36	12'	548.50
532.96			+75	533.31			533.66	*	*	*	+60.23	*549.07	*	*	*
532.72			15+00	533.07			533.42								
532.54			+25	532.89			533.24								
532.44			+50	532.79			533.14								
532.40			+75	532.75			533.10								
532.43			16+00	532.78			533.13								
532.53			+25	532.88			533.23								
532.69			+50	533.04			533.39								
532.93		-35	+75	533.28	+35		533.63								
533.20		-30	+93.82	533.50	+30		533.80								
533.30		-28	17+00	533.58	+28		533.86								
533.76		-19	+25	533.95	+19		534.14								
533.87			+31.39	534.06	+17		534.23								
534.20			+50	534.39	+11		534.50								
534.70			+75	534.89	+02		534.91								
535.28			18+00	535.47	-07		535.40								
535.93			+25	536.12	-16		535.96								
536.25			+36.76	536.44	-19		536.25								
536.63			+50	536.82	-19		536.63								
537.34			+75	537.53	-19		537.34								
538.05	12'	-19	19+00	538.24	-19	12'	538.05								



TYPICAL SECTIONS
TEMPORARY ROADWAY



SUPERELEVATED SECTION

SUB - SUMMARIES

ROADWAY

[illegible]

PAVEMENT

[illegible]

* ~ See General Notes

CALCULATIONS

CALCULATED BY: J.D.W. DATE: 10/87
CHECKED BY: D.K.T. DATE: 11/87

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-2.77

STA. 14+27.19 TO STA. 14+69.25 LT.

202 ~ Pavement Removed
11.5' x 42.06' x 1/9 = 53.74 S.Y.
203 ~ Subgrade Compaction

$$\left[\left(\frac{11.5' + 12'}{2} \right) + 7.5' \right] \times 42.06' \times 1/9 = 89.96 \text{ S.Y.}$$

$$301 \sim \left[\left(\frac{12' + 12.5'}{2} \right) \times 8/12 + \left(5.5' \times 4/12 \right) + \left(4/12 \times 4/12 \right) \right] \times 42.06' \times 1/27 = 17.26 \text{ C.Y.}$$

$$402 \sim \left(\frac{11.5' + 12'}{2} \right) \times 42.06' \times 2.5/12 \times 1/27 = 3.81 \text{ C.Y.}$$

$$404 \sim \left(\frac{11.5' + 12'}{2} \right) \times 42.06' \times 1.5/12 \times 1/27 = 2.29 \text{ C.Y.}$$

~~408 ~ 6.00' x 42.06' x 1/9 x 0.40 = 11.22 Gal.~~

409 ~ 6.00' x 42.06' x 1/9 x 0.30 = 8.41 Gal.

409 ~ 6.00' x 42.06' x 1/9 x 0.008 = 0.22 C.Y.

STA. 14+27.19 TO STA. 14+69.25 RT.

202 ~ Pavement Removed
11.5' x 42.06' x 1/9 = 53.74 S.Y.
203 ~ Subgrade Compaction

$$\left[\left(\frac{11.5' + 12'}{2} \right) + 7.5' \right] \times 42.06' \times 1/9 = 89.96 \text{ S.Y.}$$

$$301 \sim \left[\left(\frac{12' + 12.5'}{2} \right) \times 8/12 + \left(5.5' \times 4/12 \right) + \left(4/12 \times 4/12 \right) \right] \times 42.06' \times 1/27 = 17.26 \text{ C.Y.}$$

$$402 \sim \left(\frac{11.5' + 12'}{2} \right) \times 42.06' \times 2.5/12 \times 1/27 = 3.81 \text{ C.Y.}$$

$$404 \sim \left(\frac{11.5' + 12'}{2} \right) \times 42.06' \times 1.5/12 \times 1/27 = 2.29 \text{ C.Y.}$$

~~408 ~ 6' x 42.06' x 1/9 x 0.40 = 11.22 Gal.~~

409 ~ 6' x 42.06' x 1/9 x 0.30 = 8.41 Gal.

409 ~ 6' x 42.06' x 1/9 x 0.008 = 0.22 C.Y.

STA. 14+69.25 TO STA. 15+43.61 LT.

202 ~ Pavement Removed
11.5' x 74.36' x 1/9 = 95.02
203 ~ Subgrade Compaction
12' x 74.36' x 1/9 = 99.15 S.Y.

$$301 \sim 12' \times 8/12 \times 74.36' \times 1/27 = 22.03 \text{ C.Y.}$$

$$402 \sim 12' \times 2.5/12 \times 74.36' \times 1/27 = 6.89 \text{ C.Y.}$$

$$404 \sim 12' \times 1.5/12 \times 74.36' \times 1/27 = 4.13 \text{ C.Y.}$$

STA. 14+69.25 TO STA. 15+40.23 RT.

202 ~ Pavement Removed
11.5' x 70.98' x 1/9 = 90.70 S.Y.
203 ~ Subgrade Compaction

$$\left[12' + 7.5' \right] \times 70.98' \times 1/9 = 153.79 \text{ S.Y.}$$

$$301 \sim \left[\left(12.5' \times 8/12 + 5.5' \right) \times 4/12 + \left(4/12 \times 4/12 \right) \right] \times 70.98' \times 1/27 = 29.57 \text{ C.Y.}$$

$$402 \sim 12' \times 70.98' \times 2.5/12 \times 1/27 = 6.57 \text{ C.Y.}$$

$$404 \sim 12' \times 70.98' \times 1.5/12 \times 1/27 = 3.94 \text{ C.Y.}$$

~~408 ~ 6.00' x 70.98' x 1/9 x 0.40 = 18.93 Gal.~~

409 ~ 6.00' x 70.98' x 1/9 x 0.30 = 14.20 Gal.

409 ~ 6.00' x 70.98' x 1/9 x 0.008 = 0.38 C.Y.

STA. 15+43.61 TO STA. 15+68.61 LT.

202 ~ Pavement Removed
11.5' x 25' x 1/9 = 31.94 S.Y.
203 ~ Subgrade Compaction

$$\left[\left(\frac{22.5' + 19.5'}{2} \right) \times 16.67' + (19.5' \times (25' - 16.67')) \right] \times 1/9 = 56.95 \text{ S.Y.}$$

$$402 \sim \left[\left(\frac{21' + 18'}{2} \right) \times 16.67' + (18' \times (25' - 16.67')) \right] \times \left(\frac{1.0 + 1.88}{2 \times 12} \right) \times 1/27 = 2.11 \text{ C.Y.}$$

$$404 \sim \left[\left(\frac{21' + 18'}{2} \right) \times 16.67' + (18' \times (25' - 16.67')) \right] \times 1.5/12 \times 1/27 = 2.20 \text{ C.Y.}$$

$$407 \sim \left[\left(\frac{21' + 18'}{2} \right) \times 16.67' + (18' \times (25' - 16.67')) \right] \times 1/9 \times 0.10 = 5.28 \text{ Gal.}$$

$$611 \sim \left[(25' \times 18') + \left(\frac{1}{2} \times 3 \right) \times 16.67' \right] \times 1/9 = 52.78 \text{ S.Y.}$$

STA. 15+40.23 TO STA. 15+65.23 RT.

202 ~ Pavement Removed
11.5' x 25' x 1/9 = 31.94 S.Y.
203 ~ Subgrade Compaction
19.5' x 25' x 1/9 = 54.17 S.Y.

$$402 \sim 18' \times 25' \times \left(\frac{1.0 + 1.88}{2 \times 12} \right) \times 1/27 = 2.00 \text{ C.Y.}$$

$$404 \sim 18' \times 25' \times 1.5/12 \times 1/27 = 2.08 \text{ C.Y.}$$

$$407 \sim 18' \times 25' \times 1/9 \times 0.10 = 5.0 \text{ Gal.}$$

$$611 \sim 18' \times 25' \times 1/9 = 50.0 \text{ S.Y.}$$

STA. 16+64.13 TO STA. 16+89.13

202 ~ Pavement Removed
22.5' x 25' x 1/9 = 62.50 S.Y.
203 ~ Subgrade Compaction
39' x 25' x 1/9 = 108.33 C.Y.

$$402 \sim 36' \times 25' \times \left(\frac{1.08 + 1.00}{2 \times 12} \right) \times 1/27 = 4.00 \text{ C.Y.}$$

$$404 \sim 36' \times 25' \times 1.5/12 \times 1/27 = 4.17 \text{ C.Y.}$$

$$407 \sim 36' \times 25' \times 1/9 \times 0.10 \text{ Gal.} = 10 \text{ gal.}$$

$$611 \sim 36' \times 25' \times 1/9 = 100.00 \text{ S.Y.}$$

STA. 16+89.13 TO STA. 17+40.00

202 ~ Pavement Removed
22.5' x 50.87' x 1/9 = 127.18 S.Y.
203 ~ Subgrade Compaction

$$39' \times 50.87' \times 1/9 = 220.44 \text{ S.Y.}$$

$$301 \sim \left[\left(\frac{25' + 23.5'}{2} \right) \times 8/12 + \left(5.50' \times 4/12 \right) 2 + \left(4/12 \times 4/12 \right) 2 \right] \times 50.87' \times 1/27 = 41.45 \text{ C.Y.}$$

$$402 \sim \left(\frac{24' + 22.5'}{2} \right) \times 2.5/12 \times 50.87' \times 1/27 = 9.13 \text{ C.Y.}$$

$$404 \sim \left(\frac{24' + 22.5'}{2} \right) \times 1.5/12 \times 50.87' \times 1/27 = 5.48 \text{ C.Y.}$$

~~408 ~ 12.00' x 50.87' x 1/9 x 0.40 = 27.73 Gal.~~

409 ~ 12.00' x 50.87' x 1/9 x 0.30 = 20.35 Gal.

409 ~ 12.00' x 50.87' x 1/9 x 0.008 = 0.54 C.Y.

$$409 \sim 12.00' \times 50.87' \times 1/9 \times 0.30 = 20.35 \text{ Gal.}$$

$$409 \sim 12.00' \times 50.87' \times 1/9 \times 0.008 = 0.54 \text{ C.Y.}$$

STA. 17+40.00 TO STA. 18+25.00 LT.

203 ~ Subgrade Compaction
7.50' x 40' x 1/9 = 33.33 S.Y.

$$301 \sim 6.00' \times 4/12 \times 40' \times 1/27 = 4.44 \text{ C.Y.}$$

~~408 ~ 6.00' x 40' x 1/9 x 0.40 = 10.67 Gal.~~

409 ~ 6.00' x 40' x 1/9 x 0.30 = 8.00 Gal.

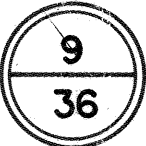
409 ~ 6.00' x 40' x 1/9 x 0.008 = 0.21 C.Y.

CALCULATIONS

CALCULATED BY: T.D.W. DATE: 10/87
CHECKED BY: D.K.T. DATE: 11/87

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-2.77



UPPER TWIN ROAD

STA.0+12.22 TO STA.0+42.13 LT.

203~ Subgrade Compaction

$5.5' \times 48.33' \times \frac{1}{9} = 29.54 \text{ S.Y.}$

Area from Planimeter, $474.81 \times \frac{1}{9} = 52.76 \text{ S.Y.}$
Total = 82.30 S.Y.

$301 \sim \left[3.5' \times \frac{4}{12} + \left(\frac{4}{12} \times \frac{4}{12} \right) \right] \times 48.33' \times \frac{1}{27} = 3.43 \text{ C.Y.}$

$474.81 \text{ S.F.} \times \frac{8}{12} \times \frac{1}{27} = 11.72 \text{ C.Y.}$
Total = 15.15 C.Y.

$403 \sim 474.81 \text{ S.F.} \times \frac{2.5}{12} \times \frac{1}{27} = 3.66 \text{ C.Y.}$

$404 \sim 474.81 \text{ S.F.} \times \frac{1.5}{12} \times \frac{1}{27} = 2.20 \text{ C.Y.}$

~~$408 \sim 4' \times 48.33' \times \frac{1}{9} \times 0.40 = 0.59 \text{ Gal.}$~~

$409 \sim 4' \times 48.33' \times \frac{1}{9} \times 0.30 = 0.64 \text{ Gal.}$

$409 \sim 4' \times 48.33' \times \frac{1}{9} \times 0.008 = 0.17 \text{ C.Y.}$

STA.0+12.22 TO STA.0+57.54 RT.

203~ Subgrade Compaction

$5.5' \times 44.15' \times \frac{1}{9} = 26.98 \text{ S.Y.}$

Area from Planimeter, $840.00 \text{ S.F.} \times \frac{1}{9} = 93.33 \text{ S.Y.}$
Total = 120.31 S.Y.

$301 \sim \left[3.5' \times \frac{4}{12} + \left(\frac{4}{12} \times \frac{4}{12} \right) \right] \times 44.15' + (840 \text{ S.F.} \times \frac{8}{12}) \times \frac{1}{27} = 23.87 \text{ C.Y.}$

$403 \sim 840.00 \text{ S.F.} \times \frac{2.5}{12} \times \frac{1}{27} = 6.48 \text{ C.Y.}$

$404 \sim 840.00 \text{ S.F.} \times \frac{1.5}{12} \times \frac{1}{27} = 3.89 \text{ C.Y.}$

~~$408 \sim 4' \times 44.15' \times \frac{1}{9} \times 0.40 = 7.85 \text{ C.Y.}$~~

$409 \sim 4' \times 44.15' \times \frac{1}{9} \times 0.30 = 5.89 \text{ Gal.}$

$409 \sim 4' \times 44.15' \times \frac{1}{9} \times 0.008 = 0.16 \text{ C.Y.}$

STA.0+42.13 TO STA.0+70.00 LT.

203~ Subgrade Compaction

$\left[10' \times 15.41' + \left(\frac{10' \times 9'}{2} \right) \times 12.46' \right] + (5.5' \times 27.87') \times \frac{1}{9} = 47.31 \text{ S.Y.}$

$301 \sim \left[(3.5' \times \frac{4}{12}) + \left(\frac{4}{12} \times \frac{4}{12} \right) \right] \times 27.87' + \left[(10.5' \times 15.41') + \left(\frac{10.5' \times 9.5'}{2} \right) \times 12.46' \right] \times \frac{8}{12} \times \frac{1}{27} = 9.05 \text{ C.Y.}$

$403 \sim \left[(10' \times 15.41') + \left(\frac{10' \times 9'}{2} \right) \times 12.46' \right] \times \frac{2.5}{12} \times \frac{1}{27} = 2.10 \text{ C.Y.}$

$404 \sim \left[(10' \times 15.41') + \left(\frac{10' \times 9'}{2} \right) \times 12.46' \right] \times \frac{1.5}{12} \times \frac{1}{27} = 1.26 \text{ C.Y.}$

~~$408 \sim 4' \times 27.87' \times \frac{1}{9} \times 0.40 = 4.96 \text{ Gal.}$~~

$409 \sim 4' \times 27.87' \times \frac{1}{9} \times 0.30 = 3.72 \text{ Gal.}$

$409 \sim 4' \times 27.87' \times \frac{1}{9} \times 0.008 = 0.10 \text{ C.Y.}$

STA.0+57.54 TO STA.0+70.00 RT.

203~ Subgrade Compaction

$\left[\left(\frac{10' \times 9'}{2} \right) + 5.5' \right] \times 12.46' \times \frac{1}{9} = 20.77 \text{ S.Y.}$

$301 \sim \left[\left(\frac{10.5' \times 9.5'}{2} \right) \times \frac{8}{12} + (3.5' \times \frac{4}{12}) + \left(\frac{4}{12} \times \frac{4}{12} \right) \right] \times 12.46' \times \frac{1}{27} = 3.96 \text{ C.Y.}$

$403 \sim \left(\frac{10' \times 9'}{2} \right) \times 12.46' \times \frac{2.5}{12} \times \frac{1}{27} = 0.91 \text{ C.Y.}$

$404 \sim \left(\frac{10' \times 9'}{2} \right) \times 12.46' \times \frac{1.5}{12} \times \frac{1}{27} = 0.55 \text{ C.Y.}$

~~$408 \sim 4' \times 12.46' \times \frac{1}{9} \times 0.40 = 2.22 \text{ Gal.}$~~

$409 \sim 4' \times 12.46' \times \frac{1}{9} \times 0.30 = 1.66 \text{ Gal.}$

$409 \sim 4' \times 12.46' \times \frac{1}{9} \times 0.008 = 0.04 \text{ C.Y.}$

Item 659~ Commercial Fertilizer
@ 20 lbs./1000 S.F.

$\frac{9530 \text{ S.Y.} \times 9}{1000} \times \frac{20}{2000} = 0.86 \text{ Tons}$

GENERAL SUMMARY

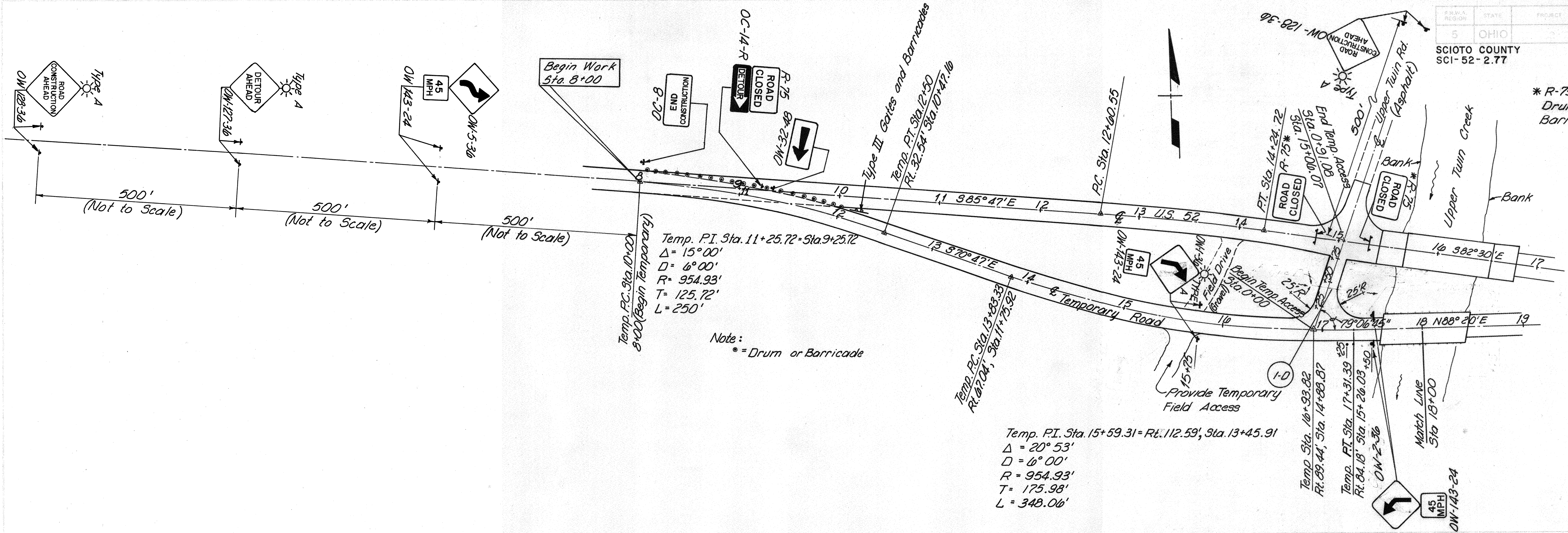
COMPUTED BY T.D.W. DATE 10/87
CHECKED BY D.K.T. DATE 11/87

FHWA REGION	STATE	PROJECT
5	OHIO	

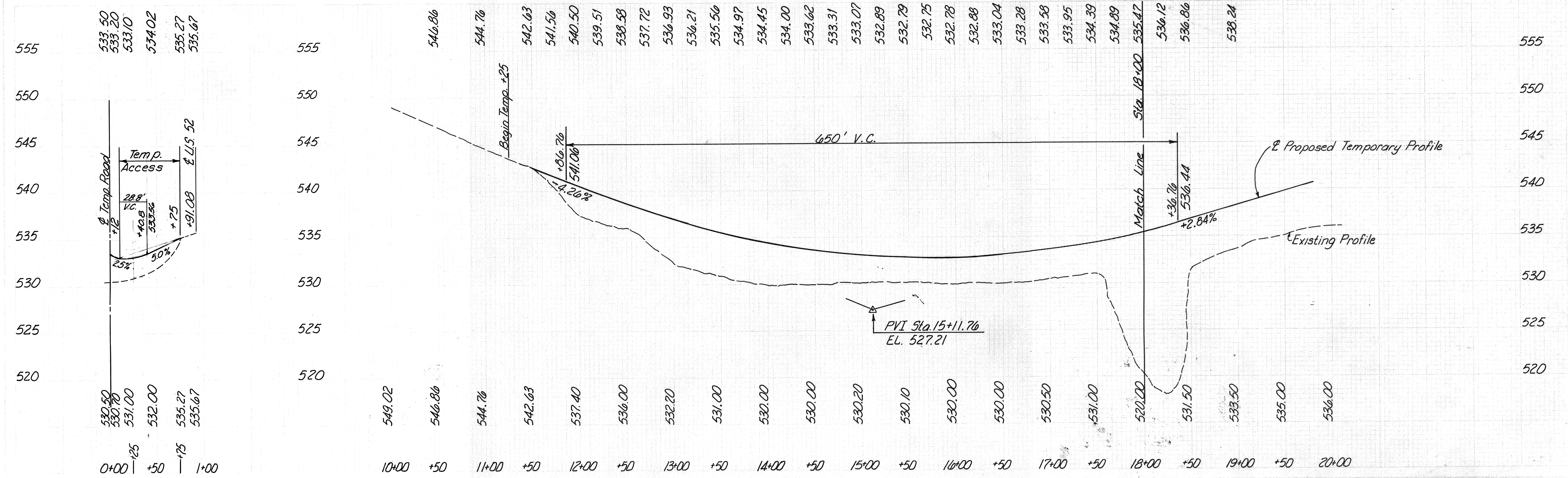
10
36

SCIOTO COUNTY
SCI-52-2.77

ITEM	FROM SHEET NUMBER																ITEM	TOTAL	UNIT	DESCRIPTION
	3	4	5	7	9	5A	5B	13	22	31										
																				~ROADWAY~
201																	201	Lump		Clearing and Grubbing
202								Lump									202	Lump		Parcel has. 3WD-Removal of (one) 1-6"x6' Concrete Black Water Gauging Station.
202				525													202	525	Lin.Ft.	Guardrail Removed for Storage
202	Lump																202	Lump		Junk Cars Removed
202				547													202	547	Sq.Yd.	Pavement Removed
203								1103									203	1103	Cu.Yd.	Excavation not Including Embankment Construction.
203								431									203	431	Cu.Yd.	Embankment
203				1177													203	1177	Sq.Yd.	Subgrade Compaction
410		100															410	100	Cu.Yd.	Traffic Compacted Surface, Type A or B
404		10															404	10	Cu.Yd.	Bituminous Concrete for Maintaining Traffic
502		Lump															502	Lump		Temporary Structure
604										10							604	10	Each	Reference Monuments
606				362.50													606	362.50	Lin.Ft.	Guardrail, Type 5
606				4													606	4	Each	Anchor Assembly, Type A
606				4													606	4	Each	Bridge Terminal Assembly, Type B
614		16															614	16	Lin.Ft.	Temporary Stop Lines, Class I 94703, Type C
614		0.27															614	0.27	Mile	Temporary Center Lines, Class I
614		0.27															614	0.27	Mile	Temporary Center Lines, Class II
614		0.54															614	0.54	Mile	Temporary Edge Lines, Class I
614		6															614	6	Each	Work Zone Marking Signs
614						9											614	9	Each	Barrier Reflectors, Type A
614			320														614	320	Each	Temporary Raised Pavement Markers
615		2659															615	2659	Sq.Yd.	Temporary Pavement, As Per Plan
							12										802	12	Each	Barrier Reflectors, Type A
615		Lump															615	Lump		Temporary Roads
616	50																616	50	M.Gal.	Water
616	0.12																616	0.12	Ton	Calcium Chloride
																				~TRAFFIC CONTROL~
621								0.06									621	0.06	Mile	Center Lines
621								0.12									621	0.12	Mile	Edge Lines
621								15									621	15	Lin.Ft.	Stop Lines
630	6																630	6	Sq.Ft.	Signs, Flat Sheet, Type G
630	10																630	10	Lin.Ft.	Ground-mounted Supports no. 3 Post.
																				~EROSION CONTROL~
207	2987																207	2987	Sq.Yd.	Temporary Seeding and Mulching
207	50																207	50	Each	Straw or Hay Bales
601									725								601	725	Cu.Yd.	Rock Channel Protection, Type A with Filter
659	17																659	17	M.Gal.	Water
659								9530									659	9530	Sq.Yd.	Seeding and Mulching
659	747																659	747	Sq.Yd.	Repair Seeding and Mulching
659	0.27					0.86											659	1.13	Ton	Commercial Fertilizer
																				~PAVEMENT~
301				184													301	184	Cu.Yd.	Bituminous Aggregate Base, AC-20
402				52													402	52	Cu.Yd.	Asphalt Concrete, AC-20
404				35													404	35	Cu.Yd.	Asphalt Concrete, AC-20
407				20													407	20	Gal.	Tack Coat, As Per Plan
409				77													409	77	Gal.	Seal Coat Bituminous Material
409				2													409	2	Cu.Yd.	Seal Coat Cover Aggregate, No. 8
611				203													611	203	Sq.Yd.	Reinforced Concrete Approach Slab (T-15")
																				~STRUCTURE OVER 20' SPAN~
																				For Quantities of Bridge No. SCI-52-280, See Sheet 24
																				~MISCELLANEOUS~
614		Lump															614	Lump		Maintaining Traffic
619	Lump																619	Lump		Field Office
623																	623	Lump		Construction Layout Stakes
624																	624	Lump		Mobilization



* R-75 Mounted on Drums or Barricades.



STA. 10+00 TO STA. 18+00 TEMPORARY ROAD

NOV 27 1982

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	BRF-1(127)

13
36

SCIOTO COUNTY
SCI-52-2.77

EXISTING CURVE #1 DATA

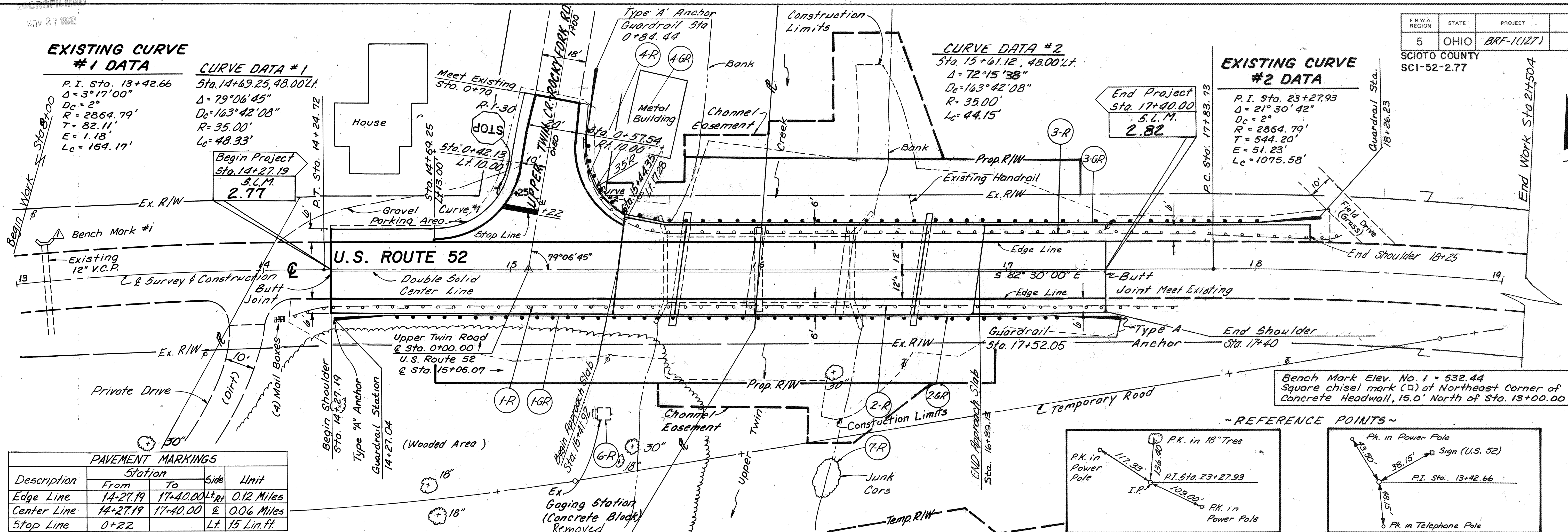
P.I. Sta. 13+42.66
 $\Delta = 3^\circ 17' 00''$
 $D_c = 2'$
 $R = 2864.79'$
 $T = 82.11'$
 $E = 1.13'$
 $L_c = 164.17'$

CURVE DATA #1
Sta. 14+69.25, 48.00' L.T.
 $\Delta = 79^\circ 06' 45''$
 $D_c = 163^\circ 42' 08''$
 $R = 35.00'$
 $L_c = 48.33'$

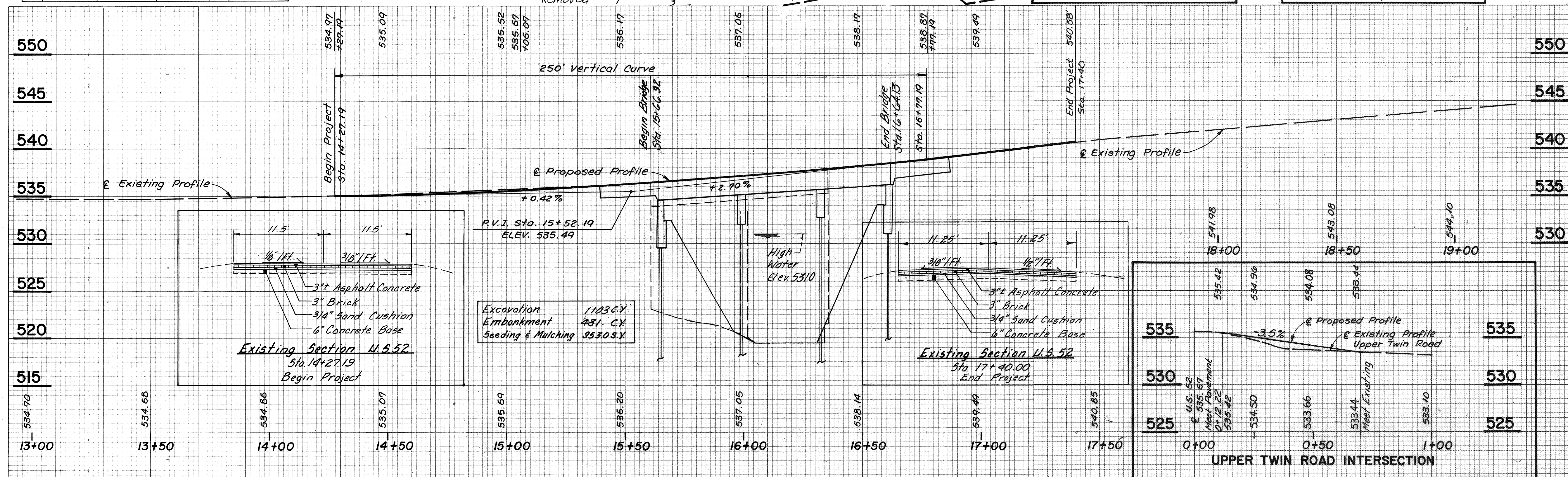
CURVE DATA #2
Sta. 15+61.12, 48.00' L.T.
 $\Delta = 72^\circ 15' 38''$
 $D_c = 163^\circ 42' 08''$
 $R = 35.00'$
 $L_c = 44.15'$

EXISTING CURVE #2 DATA

P.I. Sta. 23+27.93
 $\Delta = 21^\circ 30' 42''$
 $D_c = 2'$
 $R = 2864.79'$
 $T = 544.20'$
 $E = 51.23'$
 $L_c = 1075.58'$



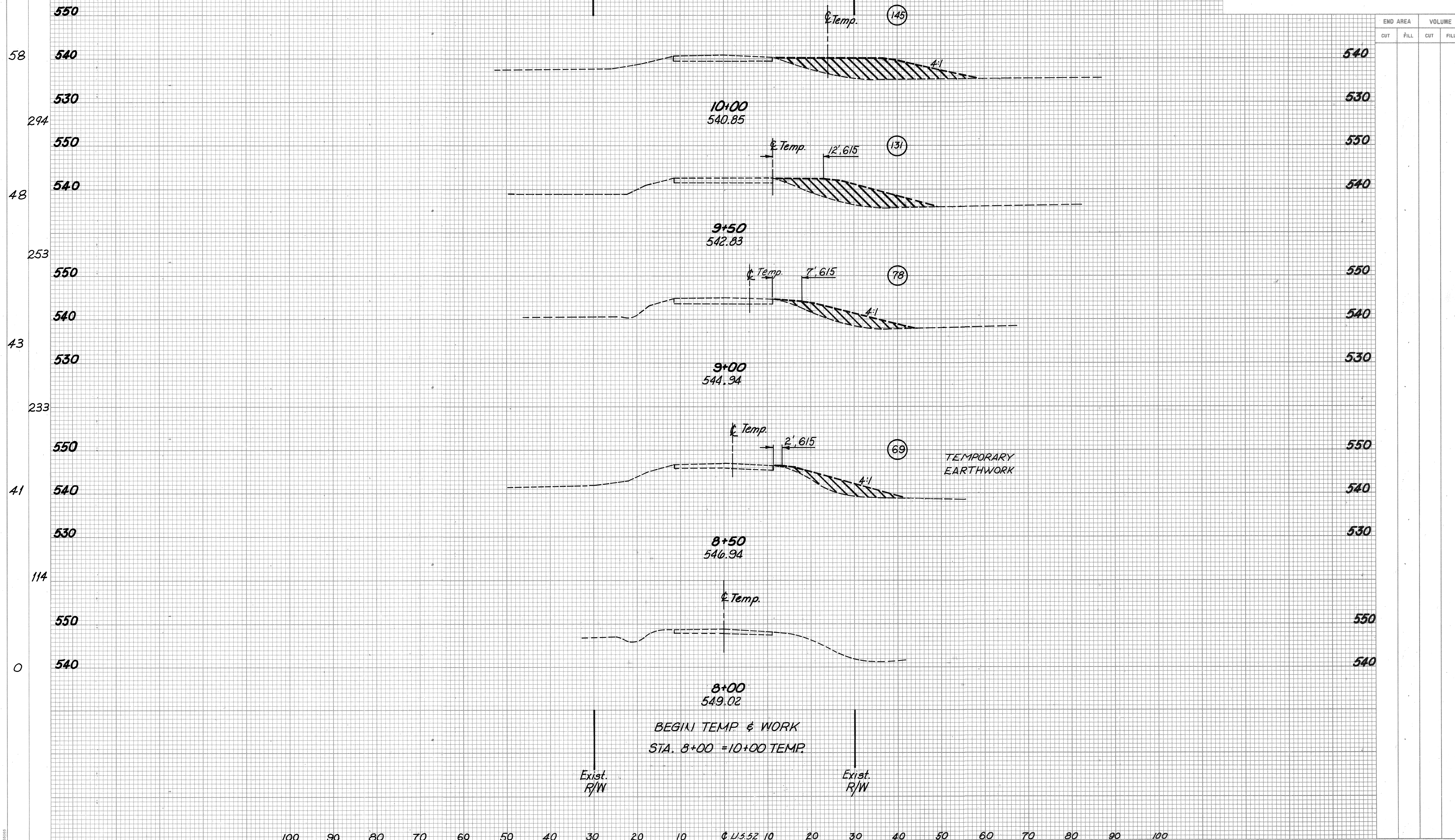
PAVEMENT MARKINGS				
Description	From	To	Side	Unit
Edge Line	14+27.19	17+40.00	Left	0.12 Miles
Center Line	14+27.19	17+40.00	Left	0.06 Miles
Stop Line	0+22		Left	15 Lin. Ft.



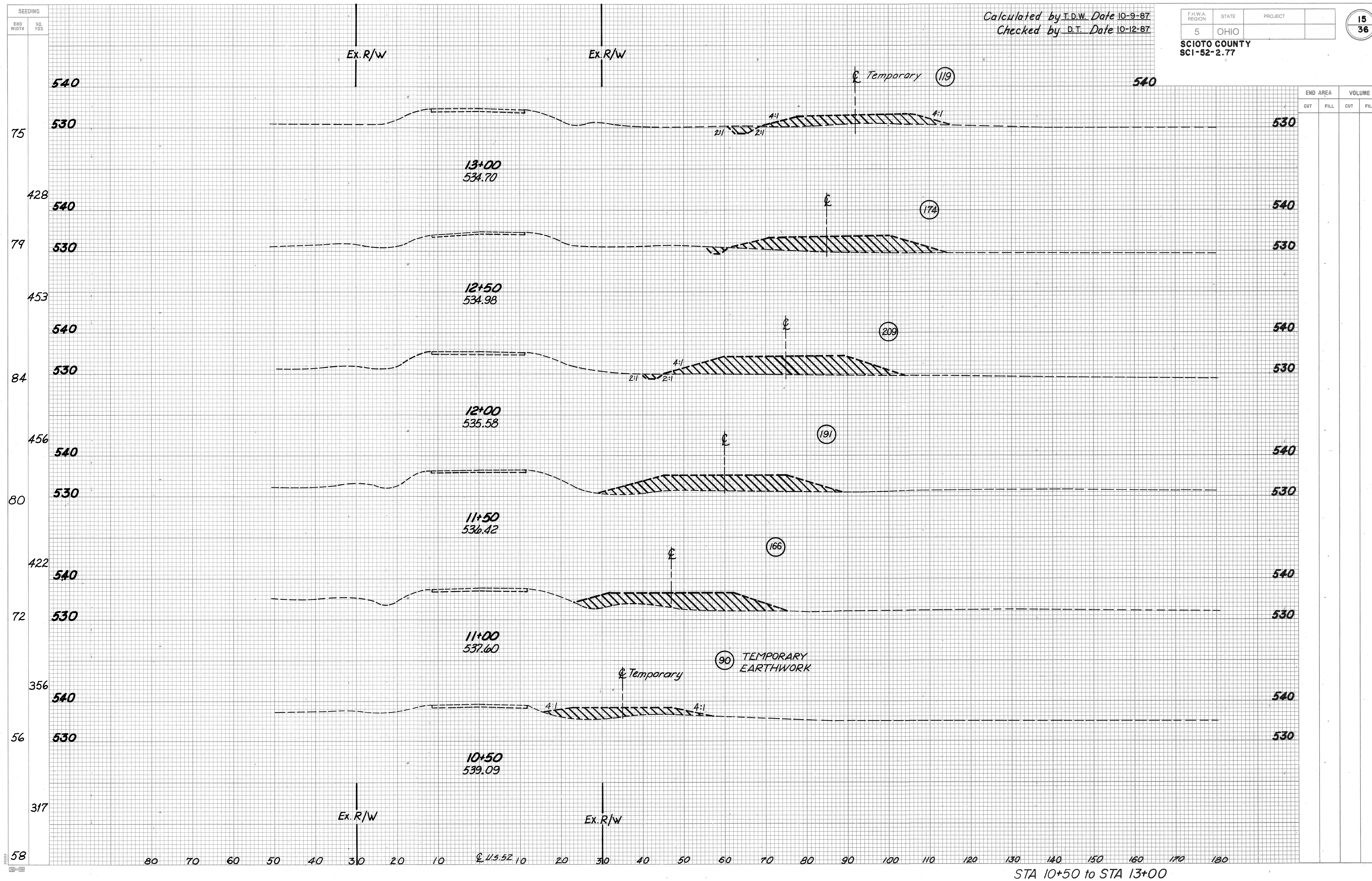
Calculated by T.D.W. Date 10-9-87
Checked by D.T. Date 10-12-87

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-2.77



STA. 8+00 to STA. 10+00



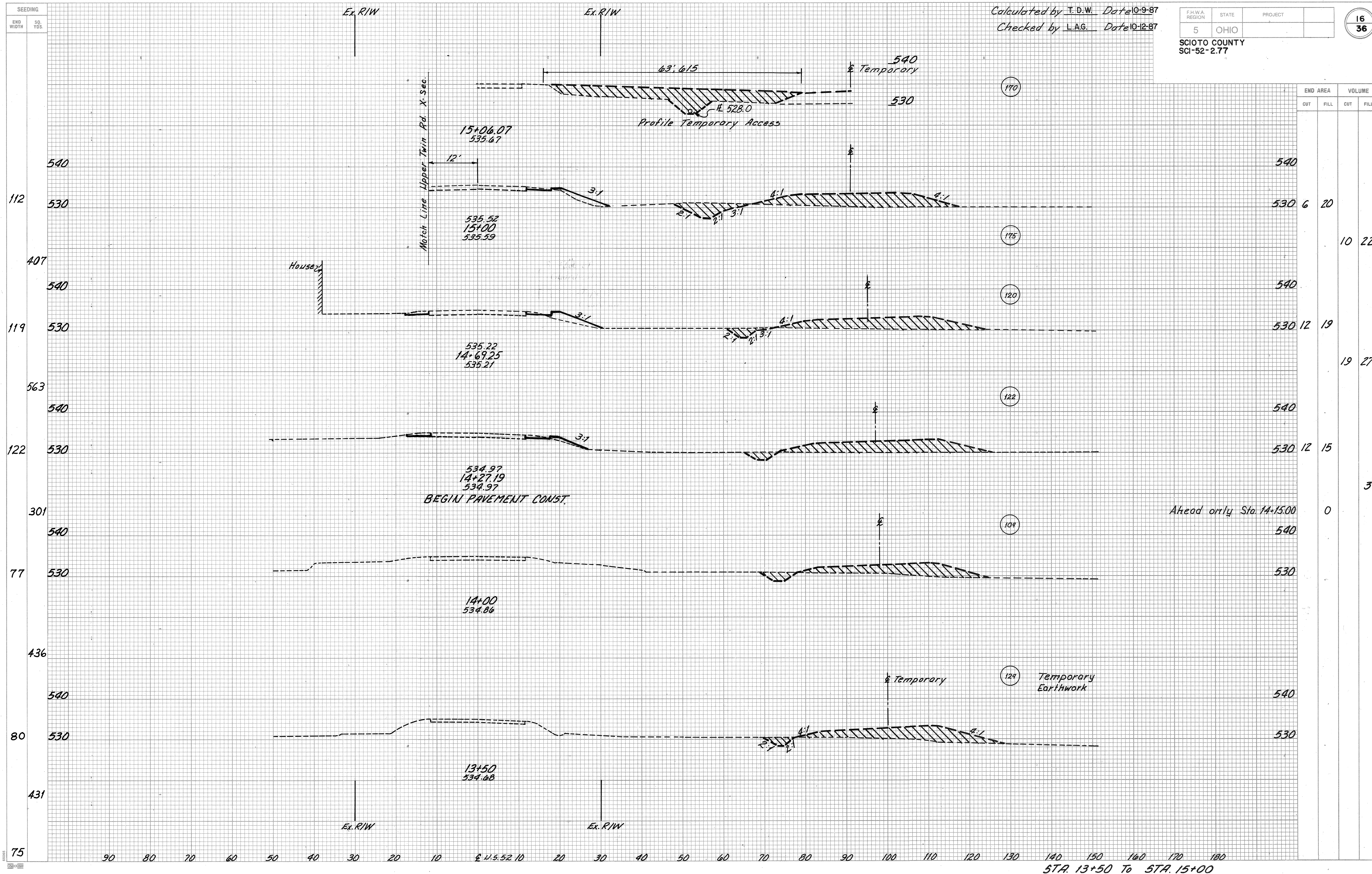
Ex. R/W

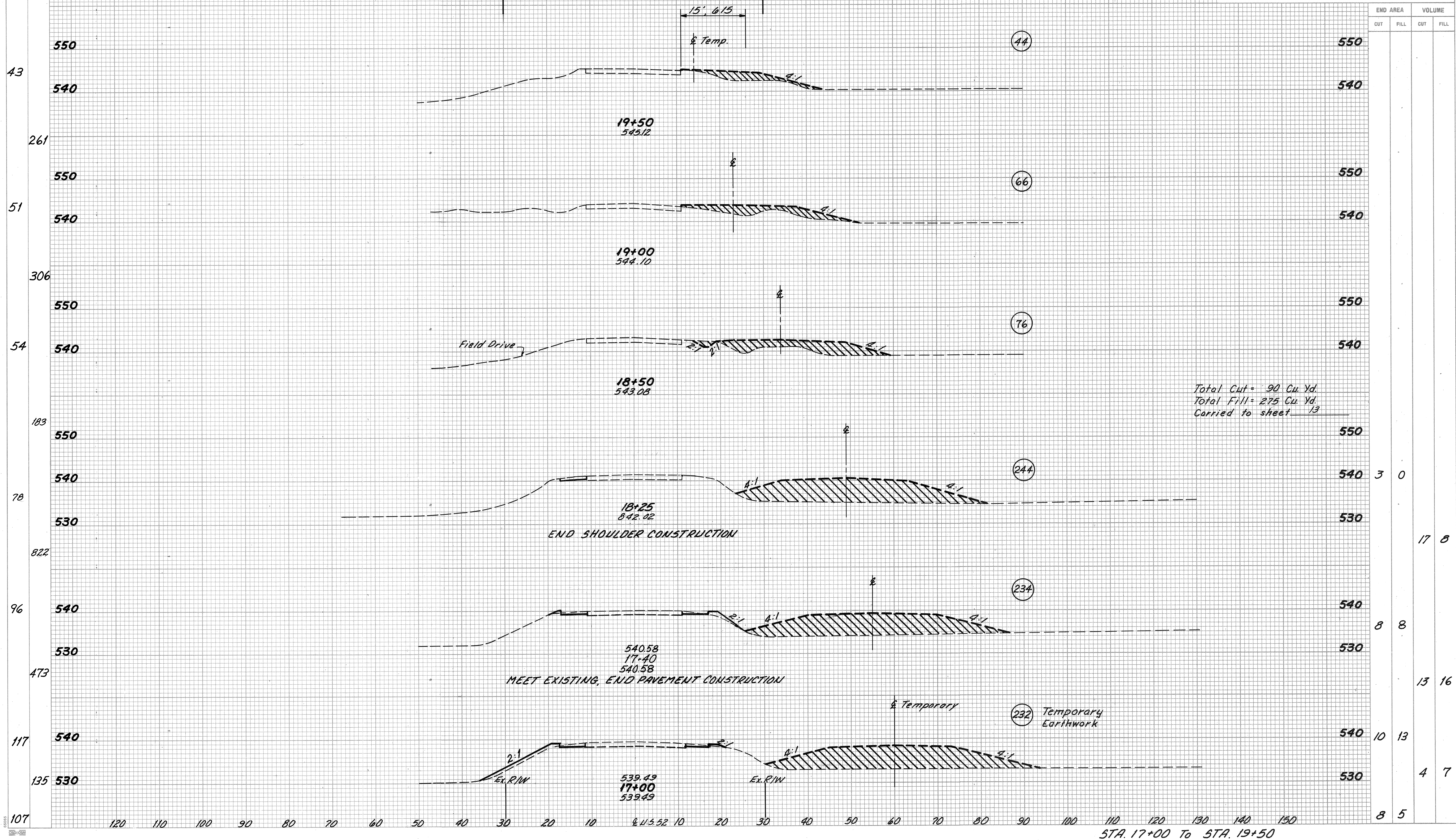
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Checked by L.A.G. Date 10-12-87

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

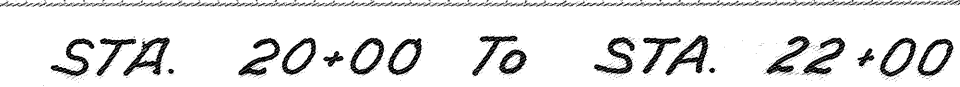
SCIOTO COUNTY
SCI-52-2.77

16
36





19
36

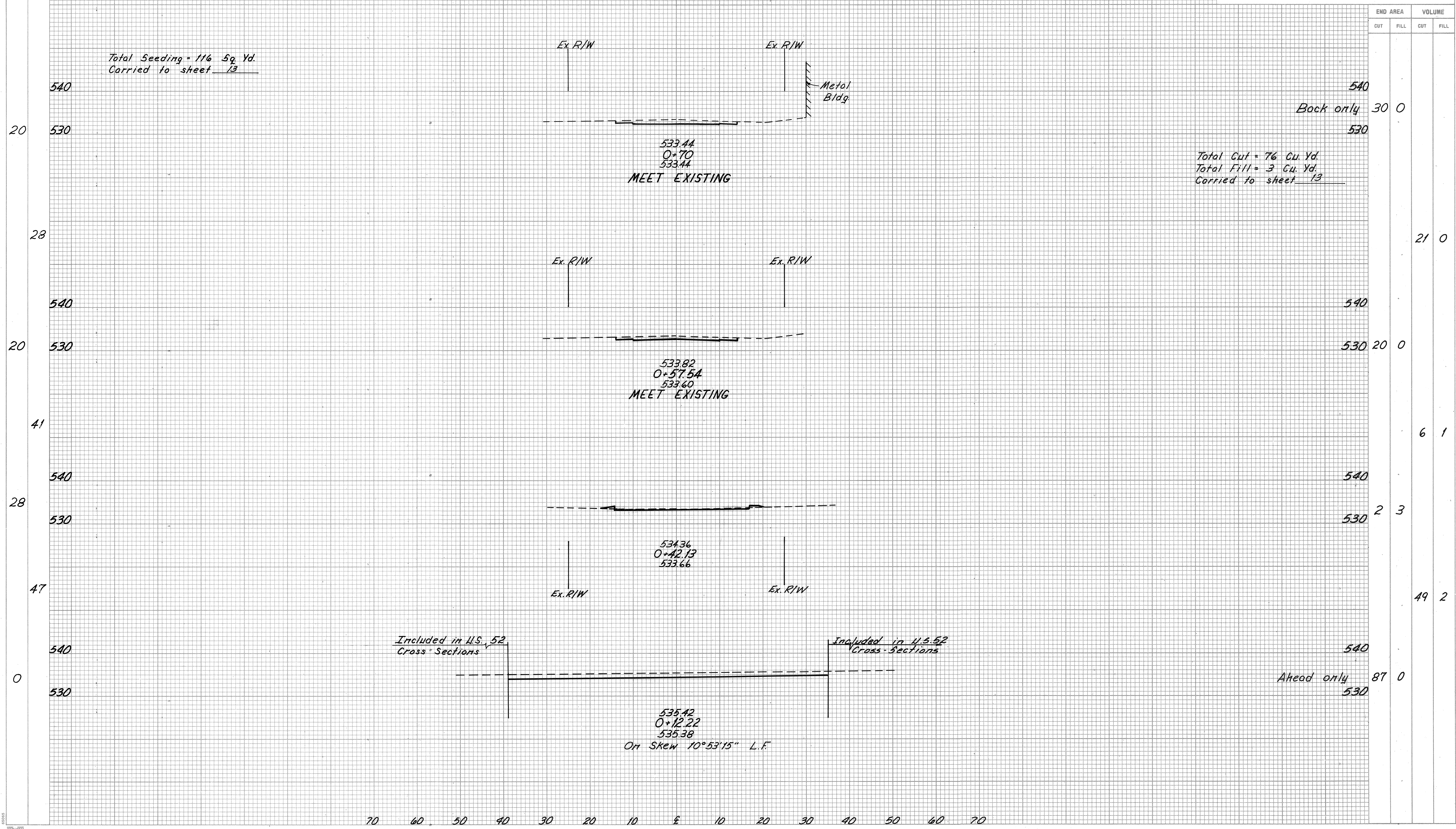


SEEDING
END WIDTH
SQ. YDS.

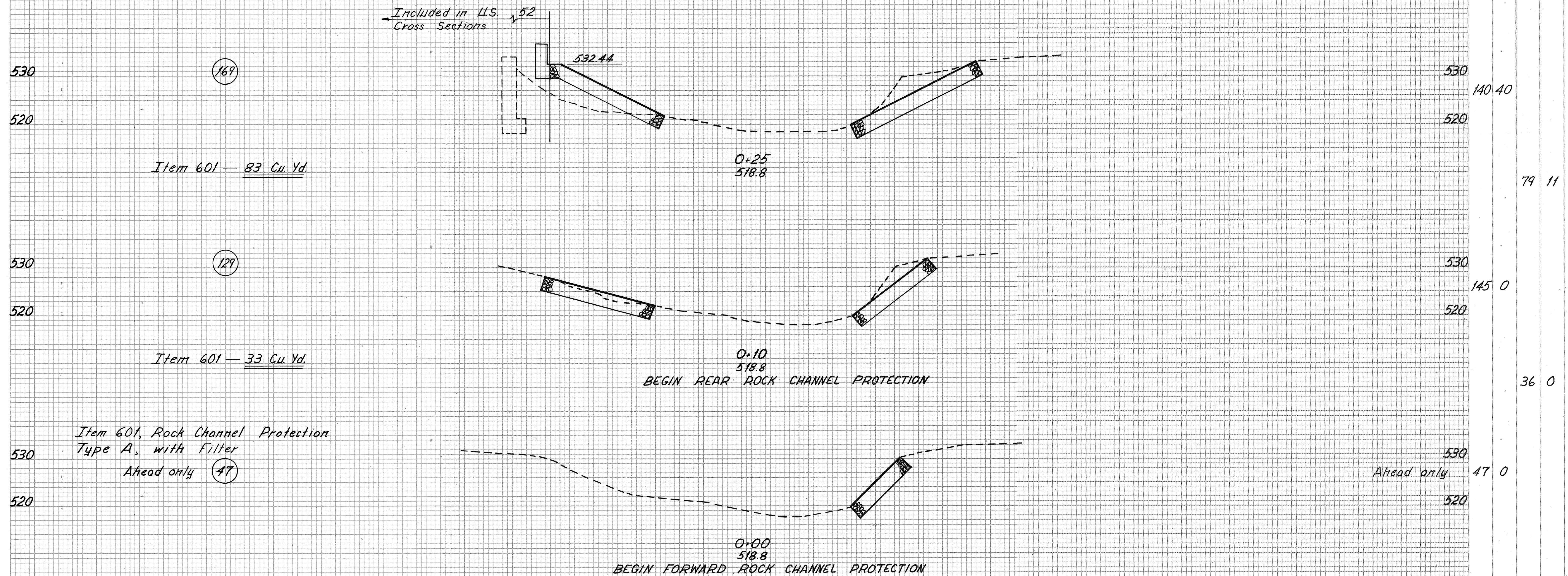
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Checked by L.A.G. Date 10-12-87

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	
SCIOTO COUNTY SCI-52-2.77		

20
36



X-SECTIONS, STA. 0+25 To STA. 0+70- UPPER TWIN ROAD



SEEDING
END WIDTH
SO. YDS.

Calculated by I.D.W. Date 10-14-87
Checked by L.A.G. Date 10-15-87

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	
SCIOTO COUNTY SCI-52-2.77		

22
36

530 Back only (30)

520 Total Item 601 - 725 Cu Yd.
Carried to sheet 10

Item 601 - 110 Cu Yd.

530 (118)

520

Item 601 - 150 Cu Yd.

530 (205)

520

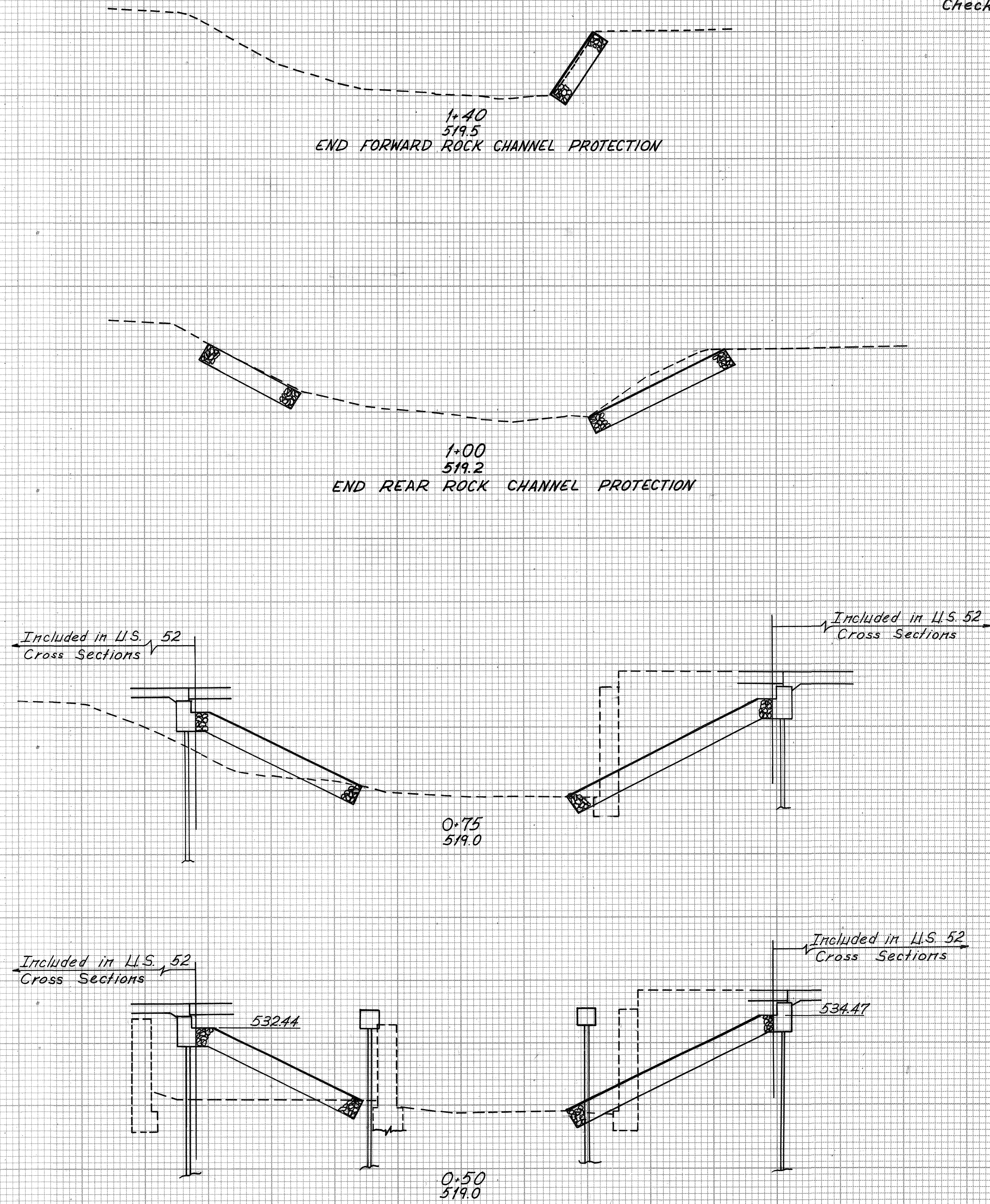
Item 601 - 183 Cu Yd.

530 Item 601, Rock Channel Protection
Type A, with Filter (190)

520

510 Item 601 - 166 Cu Yd.

(169)



Back only 29 0

Total Cut - 937 Cu Yd.
Total Fill - 153 Cu Yd.
Carried to sheet 13

END AREA		VOLUME	
CUT	FILL	CUT	FILL
29	0		
		132	0
		225	20
		337	43
		278	62
		264	90
		187	60
		140	40

X-SECTIONS, STA. 0+50 To STA. 1+40 - LIPPER TWIN CREEK

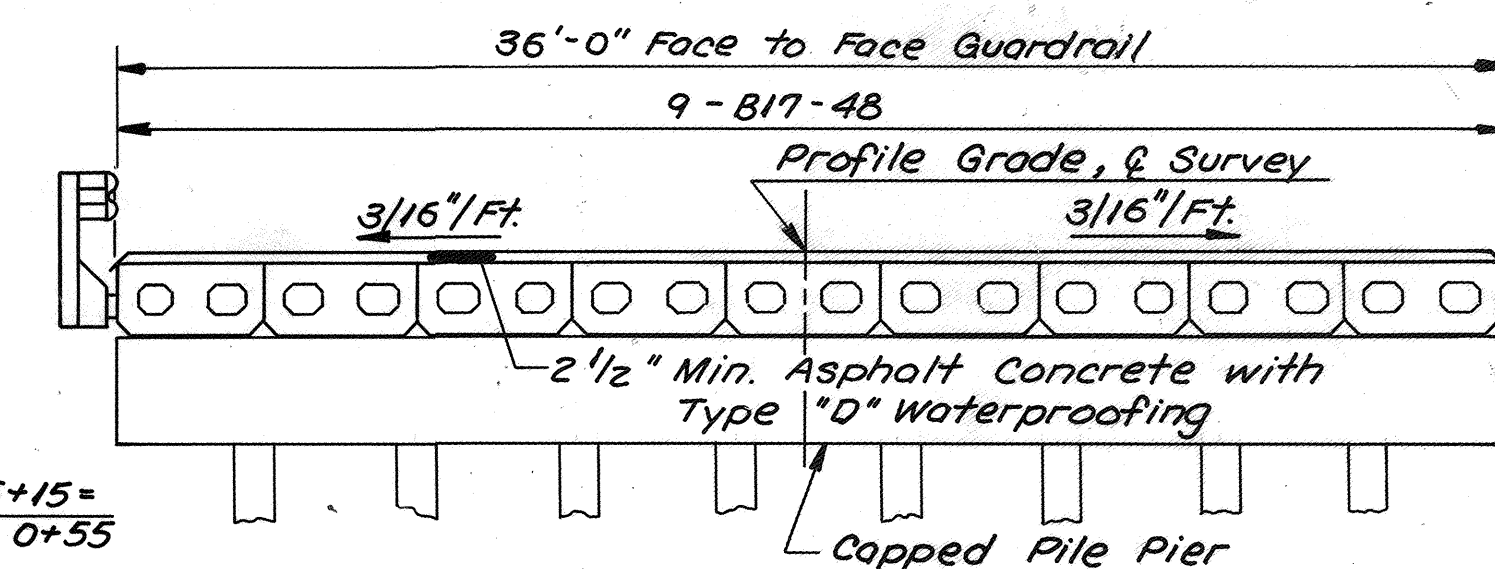
EXISTING CURVE #1 DATA

P.I. Sta. 13+42.66
Δ = 3° 17' 00"
Dc = 2°
R = 2864.79'
T = 82.11'
E = 1.18'
Lc = 164.17'

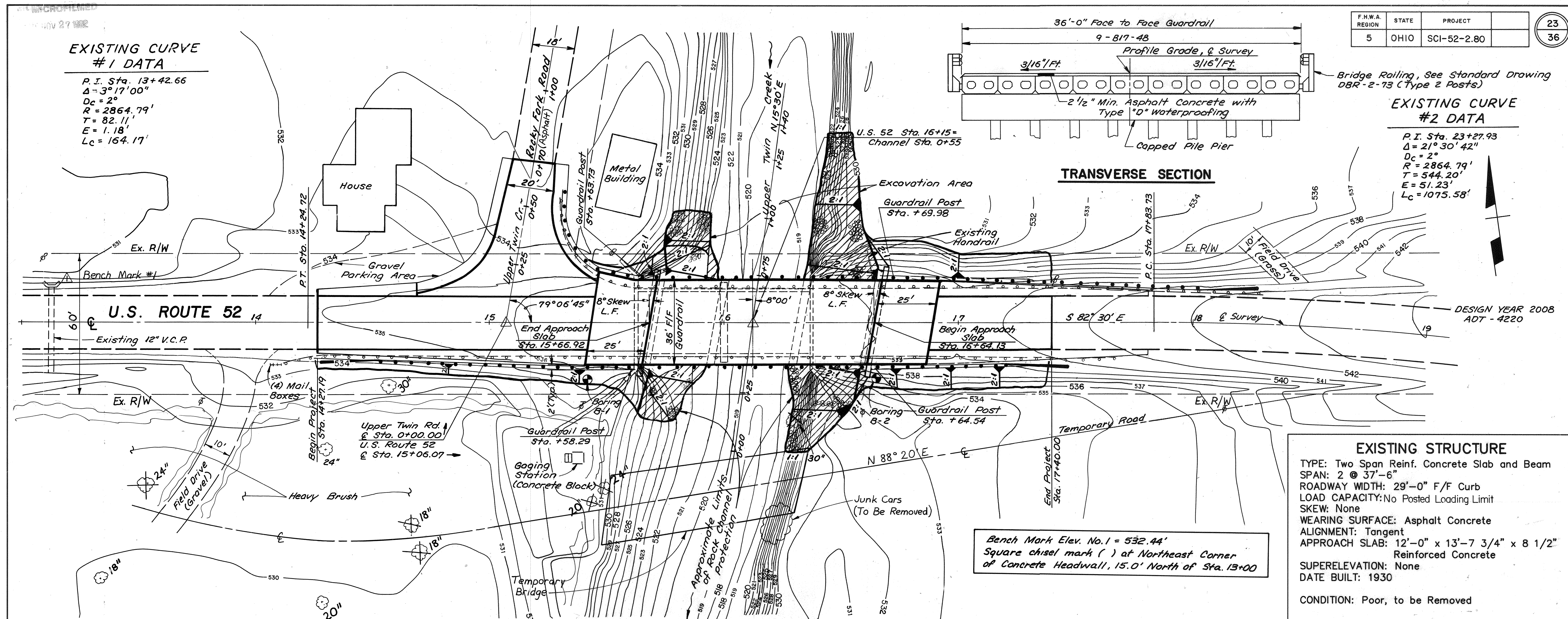
EXISTING CURVE #2 DATA

P.I. Sta. 23+27.93
Δ = 21° 30' 42"
Dc = 2°
R = 2864.79'
T = 544.20'
E = 51.23'
Lc = 1075.58'

TRANSVERSE SECTION



Bridge Railing, See Standard Drawing DBR-2-73 (Type 2 Posts)



Bench Mark Elev. No. 1 = 532.44'
Square chisel mark () at Northeast Corner of Concrete Headwall, 15.0' North of Sta. 13+00

EXISTING STRUCTURE

TYPE: Two Span Reinf. Concrete Slab and Beam
SPAN: 2 @ 37'-6"
ROADWAY WIDTH: 29'-0" F/F Curb
LOAD CAPACITY: No Posted Loading Limit
SKEW: None
WEARING SURFACE: Asphalt Concrete
ALIGNMENT: Tangent
APPROACH SLAB: 12'-0" x 13'-7 3/4" x 8 1/2" Reinforced Concrete
SUPERELEVATION: None
DATE BUILT: 1930

CONDITION: Poor, to be Removed

PROPOSED STRUCTURE

TYPE: Three Span Prestressed Concrete Box Beam w/Capped Pile Abutments and Piers
SPAN: 29'-0" - 35'-0" - 29'-0" C/C Bearings
ROADWAY WIDTH: 36'-0" F/F of Guardrail
LOADING: HS20-44 and Alt. Military Loading
SKEW: 8°-0" L.F.
WEARING SURFACE: Asphalt Concrete (2 1/2" Min.)
ALIGNMENT: Tangent
SUPERELEVATION: None
APPROACH SLAB: Type AS-1-81 Length 25 Feet

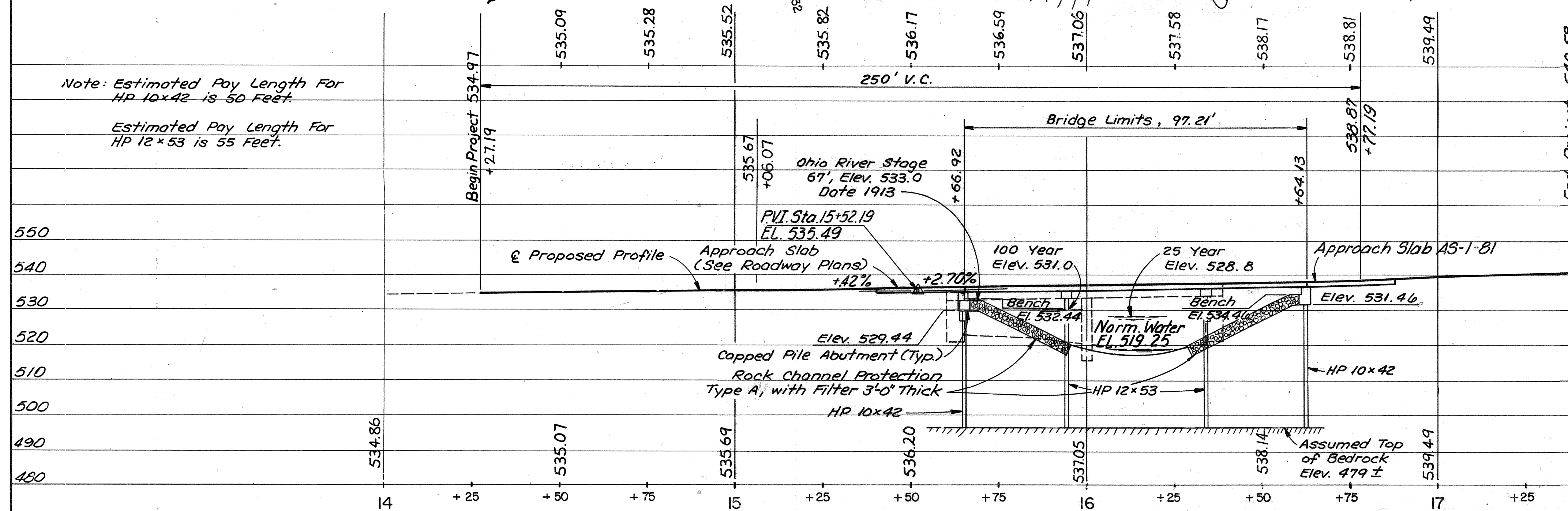
NOTE:
Earthwork limits are approximate.
Actual slope shall conform to plan cross sections.

NOTE:
Entire Substructure and Superstructure to be Removed.

HYDRAULIC DESIGN DATA

DRAINAGE AREA = 12.72 MI²
Q₂₅ = 3558 CFS
V₂₅ = 9.2 FPS
Q₁₀₀ = 5185 CFS
V₁₀₀ = 10.0 FPS

PROFILE ON & SURVEY



WOOLPERT CONSULTANTS
5825 Westbourne Avenue
Columbus, Ohio 43213-1459

SITE PLAN

BRIDGE NO. SCI-52-0280
OVER UPPER TWIN CREEK

SCIOTO COUNTY
FROM STA. 15+66.92
TO STA. 16+64.13

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISD
T.D.W.	J.C.D.	K.T.T.	P.F.O.		1/18/08	

REVIEWED BY BURGESS & NIPLE, LIMITED
R.K.M. 1-27-88

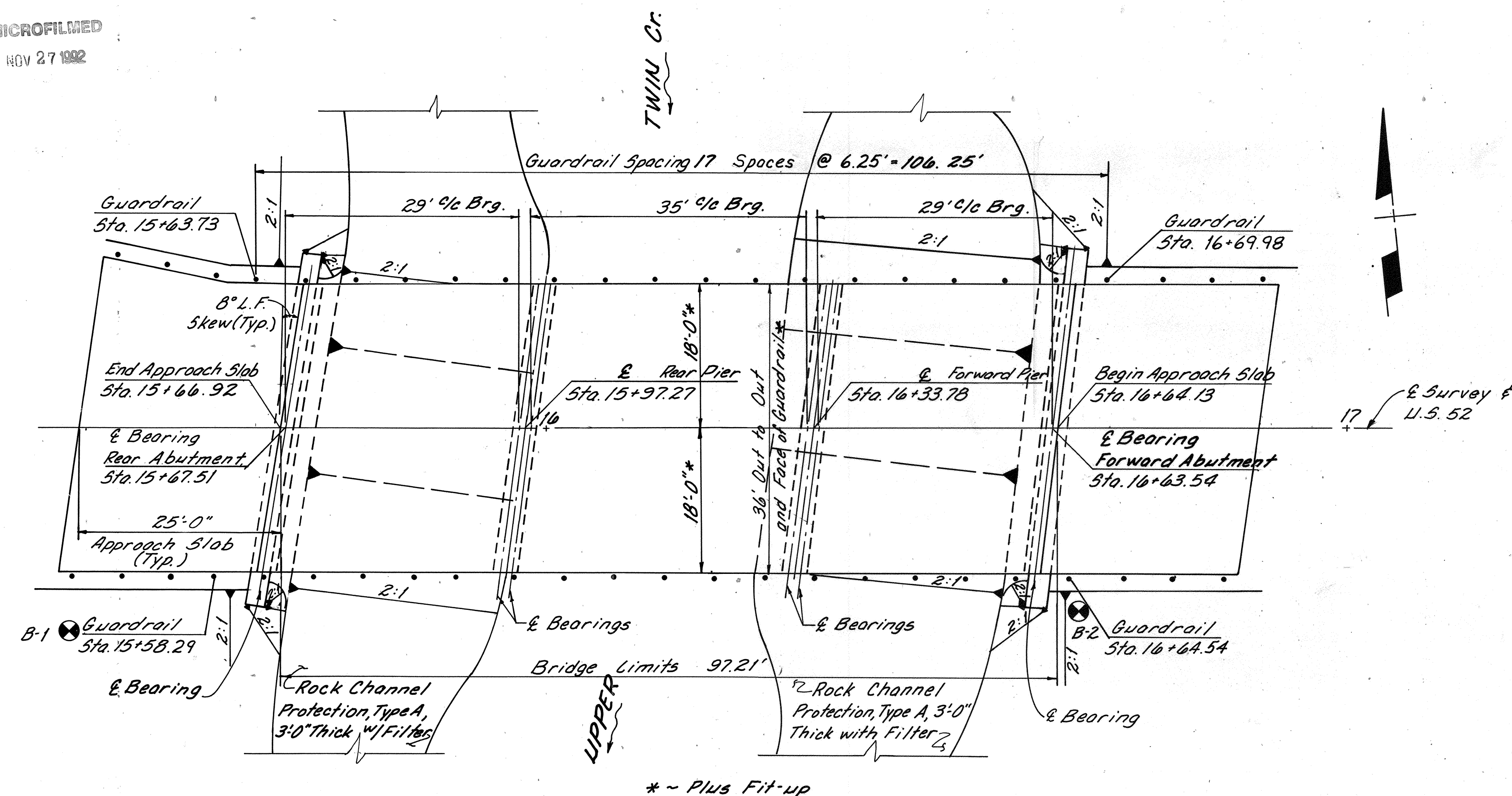
SCIOTO COUNTY
SCI-52-2.80

Calculated By T.D.W. Date 10/2/87 Checked By J.C.T. Date 10/10/87

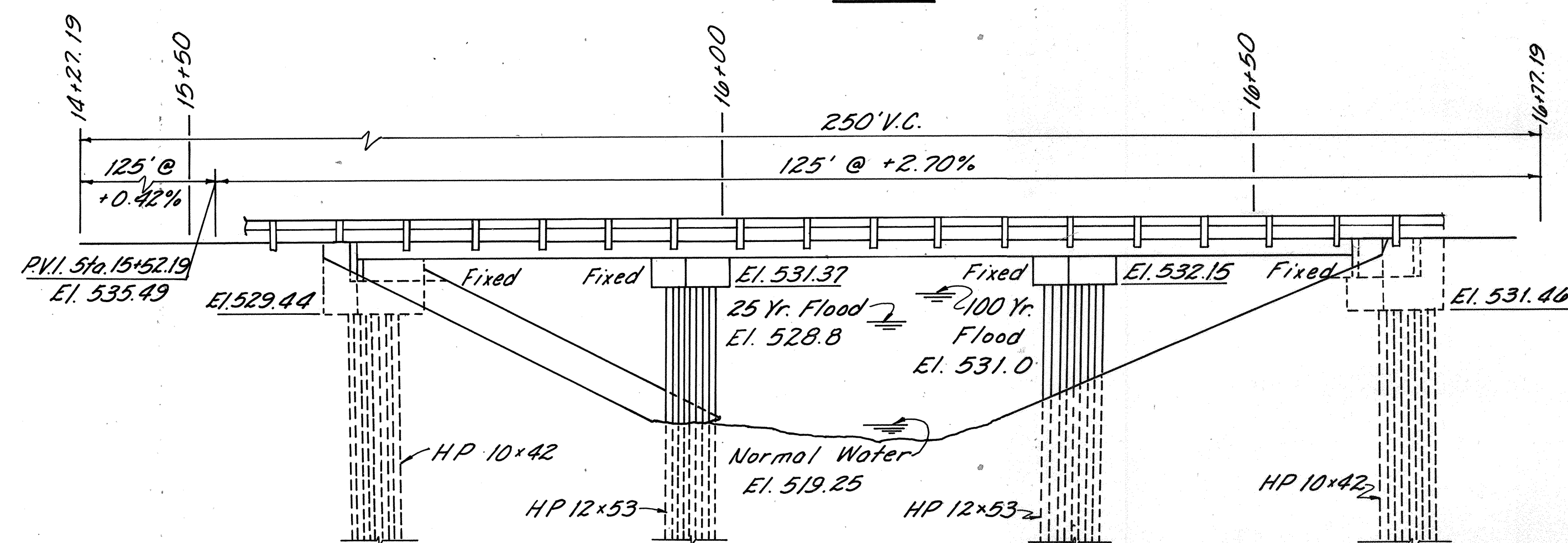
ESTIMATED QUANTITIES

[illegible]

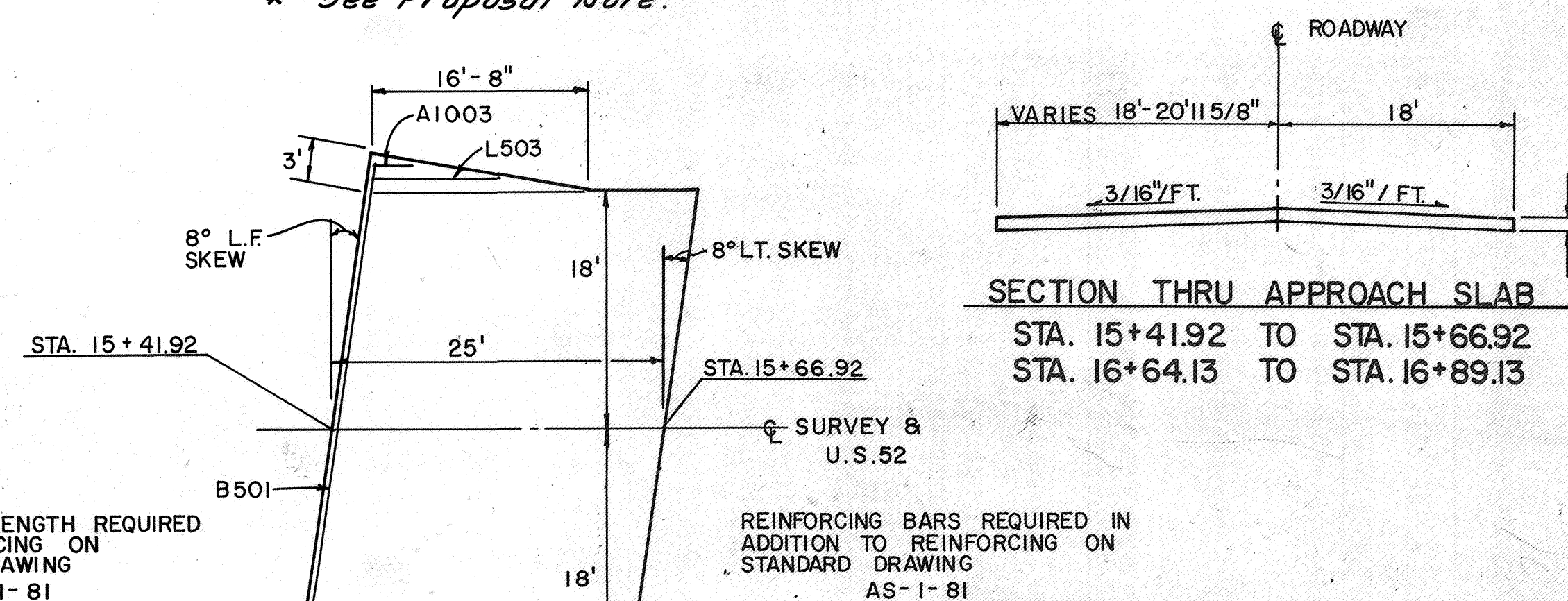
* - See Proposal Note.



PLAN



ELEVATION



SECTION THRU APPROACH SLAB

STA. 15+41.92	TO	STA. 15+66.92
STA. 16+64.13	TO	STA. 16+89.13

ADDITIONAL LENGTH REQUIRED
FOR REINFORCING ON
STANDARD DRAWING
AS-1-81

REINFORCING BARS REQUIRED IN
ADDITION TO REINFORCING ON
STANDARD DRAWING
AS-1-81

23 - B501 (BOTTOM)

LENGTH

FROM 38'-6"
TO 35'- 6"
INCREMENTED @ 1 1/2"

10-B501 (TOP)

LENGTH
FROM 38'-4"
TO 35'-8"
INCREMENTED @ 3 9/16"

4 - A1003

LENGTH

FROM 13'-0"
TO 3'-6"
INCREMENTED @ 3'-2"

1- C503

LENGTH
7'-10"

REINFORCED CONCRETE APPROACH SLAB
AT REAR ABUTMENT - DETAIL

	WOOLPERT CONSULTANTS 5625 WESTBURNE AVENUE COLUMBUS, OHIO 43213-1459				2 / 8	
	GENERAL PLAN, ELEVATION, & ESTIMATED QUANTITIES BRIDGE NO. SCI-52-0280 OVER UPPER TWIN CREEK					
DESIGNED T.D.W.	DRAWN T.D.W.	TRACED D.K.T.	CHECKED P.F.O.	REVIEWED P.O. 1/18/80	DATE 1/18/80	REVISED

GENERAL NOTES

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983, INCLUDING THE 1984, 1985 & 1986 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:
 DESIGN LOADING - HS 20-44 AND THE ALTERNATE MILITARY LOADING
 CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI
 CONCRETE CLASS S - COMPRESSIVE STRENGTH 1500 PSI
 REINFORCING STEEL - ASTM A615, A616, A617; GRADE 60 MIN. ABUTMENTS AND PIERS
 REINFORCING STEEL IN PRESTRESSED BEAMS - GRADE 40 MIN. 20,000 PSI
 CONCRETE FOR PRESTRESSED BEAMS - UNIT STRESS 2,200 PSI; COMPRESSION / 444 PSI; TENSION
 PRESTRESSING STRANDS - ASTM A416; FS = 270,000 PSI YIELD, INITIAL STRESS = 0.70FS = 189,000 PSI

PILE DESIGN LOAD AT ABUTMENTS - 48 TONS PER PILE
 PILE DESIGN LOAD AT PIERS - 58 TONS PER PILE
 PILE BENDING STRESS MAY APPROACH, REACH OR EXCEED YIELD STRESS
 DECK PROTECTION METHOD: TYPE D WATERPROOFING ASPHALT OVERLAY, SEALING OF CONCRETE SURFACES AND STEEL DRIP STRIP

EMBANKMENT CONSTRUCTION: THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 100 FEET BACK OF ABUTMENTS. EXCAVATION FOR THE ABUTMENTS MAY THEN BE MADE, AND PILES DRIVEN

POROUS BACKFILL: SHALL EXTEND UPWARD TO THE PLANE OF THE SUBGRADE AND Laterally TO THE SURFACE OF THE EMBANKMENT SLOPES.

BRIDGE SEAT REINFORCEMENT: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF THE ANCHOR HOLES.

STEEL DRIP STRIP: AFTER APPLYING CONCRETE SEALER TO SIDES OF BEAMS AND 6" ON BOTTOM OF BEAM AND PRIOR TO PLACING WATERPROOFING TO REST OF DECK, A BENT STEEL DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES AS SHOWN ON SHEET NO. 7/8. THE STRIPS SHALL BE FASTENED AT 1'-6" C/C, MAX. WITH 1-1/4" X 5/32" X 1/4" FLATHEAD DRIVE PIN AND WASHER (LENGTH X SHANK DIA. X HEAD DIA.) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO THE APPROVAL BY THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE ABUTMENT WINGWALL. WHERE SPLICES ARE REQUIRED, A 3" MIN. LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" X .105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GAUGE ASTM A167, TYPE 304, MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID FOR SPECIAL ITEM, SQ. FT., STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, AS DETERMINED BY THE ENGINEER, THE EXISTING STRUCTURE SHALL BE REMOVED. ABUTMENTS, WINGWALLS, AND PIER SHALL BE REMOVED TO A MINIMUM OF TWO (2) FEET BELOW PROPOSED GRADE.

EXISTING CONCRETE: CONCRETE FROM THE EXISTING STRUCTURE MAY BE USED AS ROCK CHANNEL PROTECTION PROVIDING THAT ALL PERTINENT REQUIREMENTS OF ITEM 601 ARE SATISFIED. ALL OTHER PORTIONS OF THE EXISTING STRUCTURE SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.

UTILITY LINES: ALL EXPENSES INCURRED IN RELOCATING THE EXISTING AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

BEAM WIDTH: THE FABRICATOR OF THE PRESTRESSED BOX BEAMS MAY CHANGE THE BEAM WIDTH IF THERE IS SOME ADVANTAGE IN DOING SO. HOWEVER, THE BRIDGE WIDTH MUST REMAIN THE SAME AS SHOWN ON THE PLANS. A PROFESSIONAL ENGINEER MUST REDESIGN THE BEARINGS IF THE BEAM WIDTH IS CHANGED. THE REVISED PLANS MUST BE SUBMITTED FOR APPROVAL TO THE DIRECTOR OF TRANSPORTATION. ANY CHANGES WILL BE AT NO ADDITIONAL COST TO THE STATE.

PILES: PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED ATTAINED BY PENETRATING SOFT BEDROCK WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH, OR AFTER PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS. THE ESTIMATED LENGTH OF ABUTMENT PILES IS 50 FEET AND OF PIER PILES IS 55 FEET.

"ITEM SPECIAL", SEALING OF CONCRETE SURFACES: A CONCRETE SEALER, SHALL BE APPLIED TO THE SURFACES SHOWN ON SHEETS 4/8 AND 7/8. SEE THE PROPOSAL FOR PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

NON-SHRINKING MORTAR: MORTAR OR GROUT FOR KEYWAYS BETWEEN PRESTRESSED CONCRETE BOX BEAMS, FOR THE ROD RECESSES AND FOR ANCHOR DOWEL HOLES SHALL BE A NON-SHRINKING NON-METALLIC MORTAR HAVING A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 5,000 PSI ACCORDING TO THE CORPS OF ENGINEERS SPECIFICATION CRD-C621-83 WHEN PREPARED TO A MODERATE FLUIDITY (124-145% FLOW TABLE FLOW). THE MORTAR OR GROUT SHALL ALSO MEET ALL OTHER REQUIREMENTS OF SPECIFICATION CRD-C621-83. THE MORTAR SHALL BE PREPARED, PLACED AND CURED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AGAINST SURFACES AS SPECIFIED BELOW.

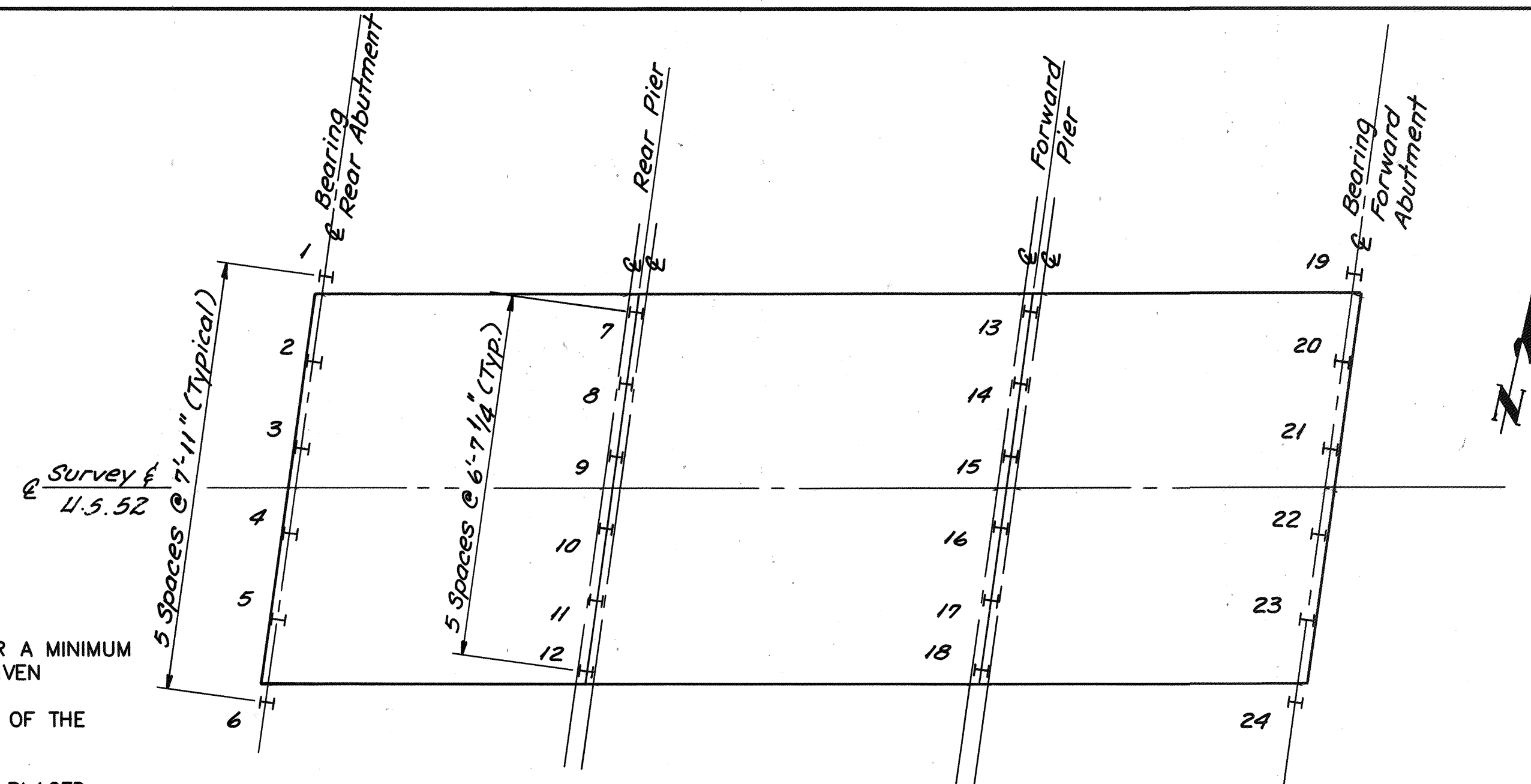
PREPARATION OF CONCRETE SURFACES IN CONTACT WITH NON-SHRINKING MORTAR: THE KEYWAYS SURFACE SHALL BE GIVEN A MEDIUM SANDBLAST AT THE PLANT WITHIN FOUR DAYS BEFORE THE BEAMS LEAVE THE PLANT. BEFORE MORTARING, THE KEYWAYS SHALL BE THOROUGHLY CLEAN OF ALL DIRT, DUST AND OTHER FOREIGN MATTER. THE KEYWAY SURFACES SHALL BE WETTED, BUT NO FREE WATER SHALL BE ALLOWED TO REMAIN IN THE KEYWAYS.

REFERENCES SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 DATED 11/27/81
 DBR-2-73 DATED 4/10/73
 GR-1 DATED 1/11/85
 PSBD-1-81 DATED 9/18/81
 CPP-2-73 DATED 4/10/73

AND TO SUPPLEMENTAL SPECIFICATIONS:

824 DATED 10/8/82
 836 DATED 11/12/85



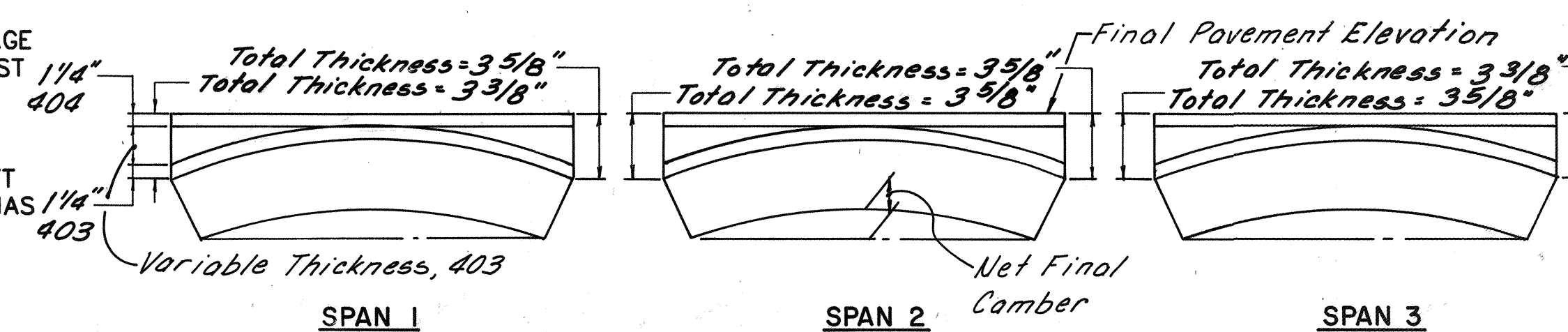
PILE NUMBERING PLAN

Maintenance of Traffic:

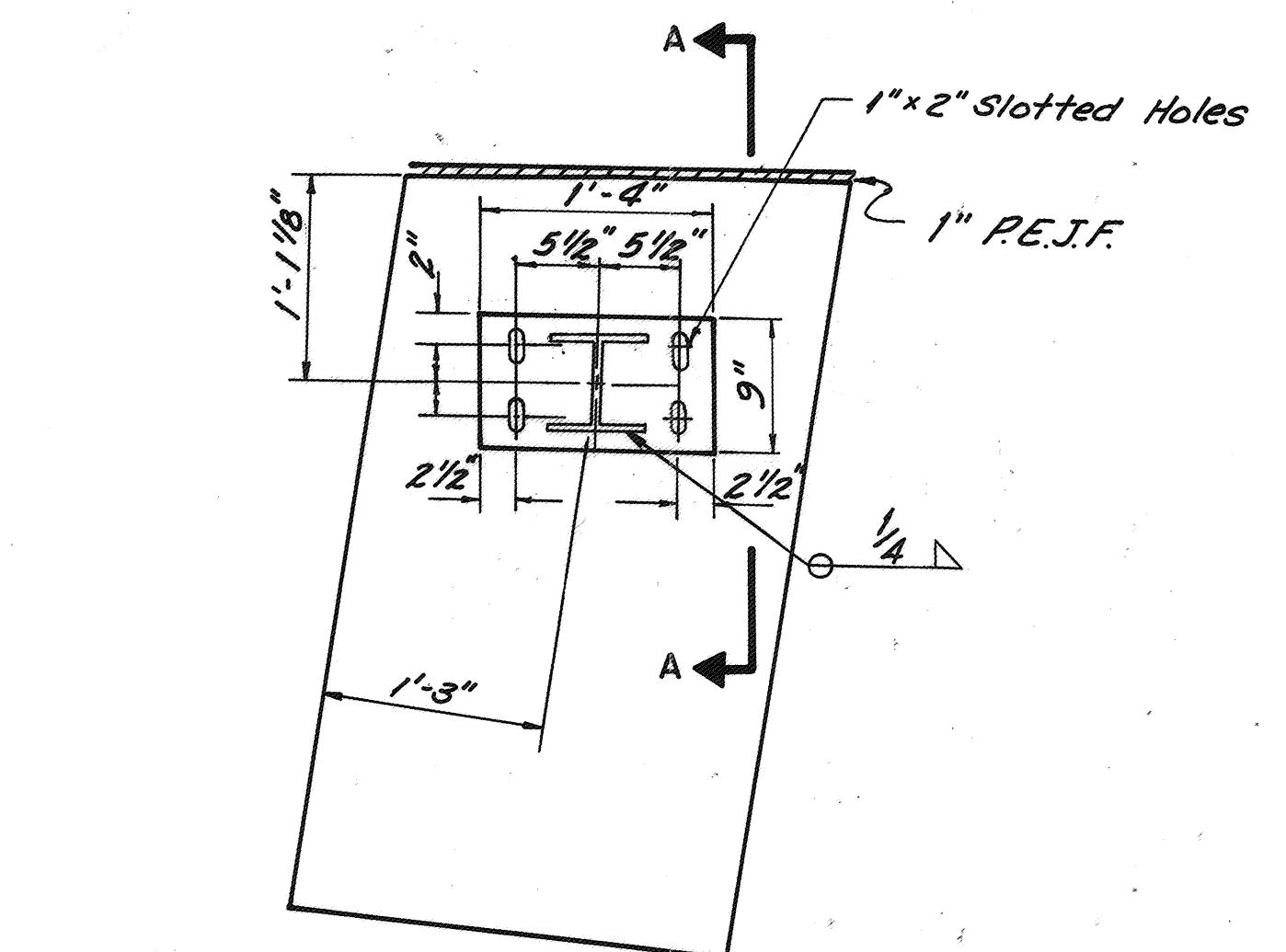
See Sheets 4 Thru 8 of the Roadway Plans

Item Special, Sawing and Sealing Bituminous Concrete Joints:
See Sheet 5/8

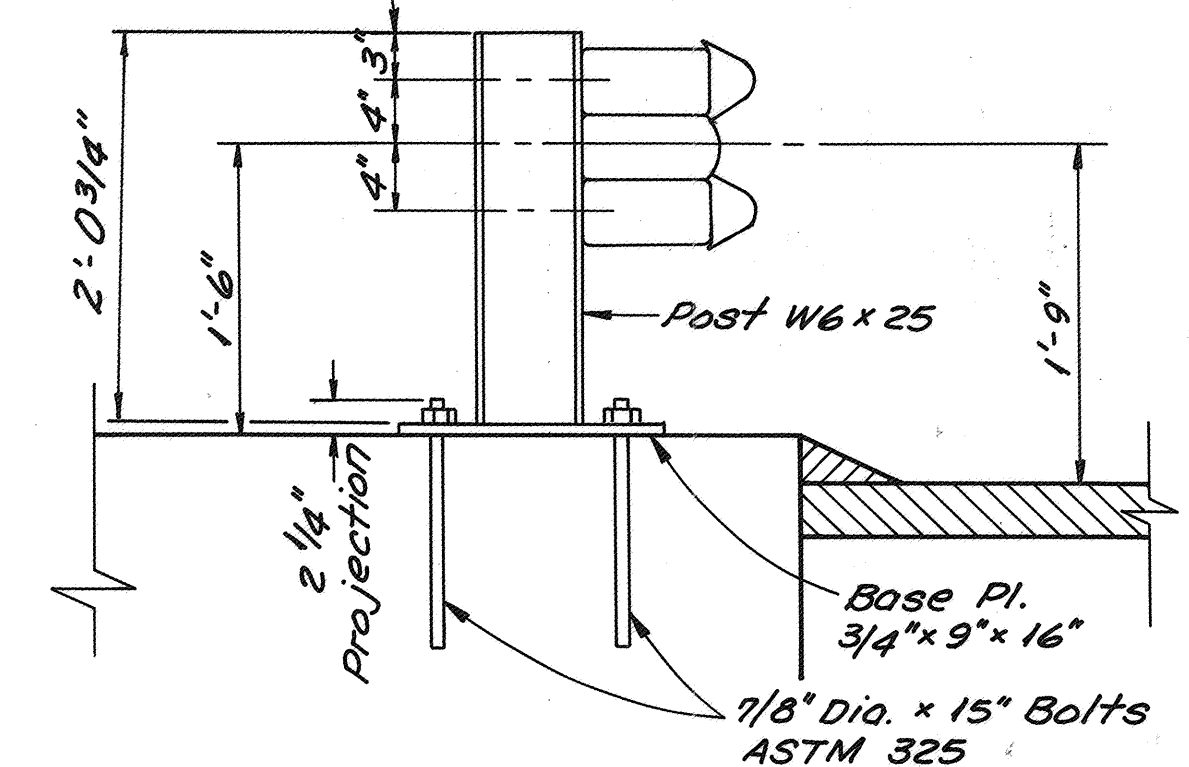
Item Special, 2" Deep Joint Sealer, As Per Plan:
See Sheet 5/8



ASPHALT THICKNESS DIAGRAM

GUARDRAIL POST MOUNTED ON
REAR ABUTMENT WINGWALLS DETAIL
(TYPICAL BOTH WINGWALLS)
SOUTH WINGWALL SHOWN

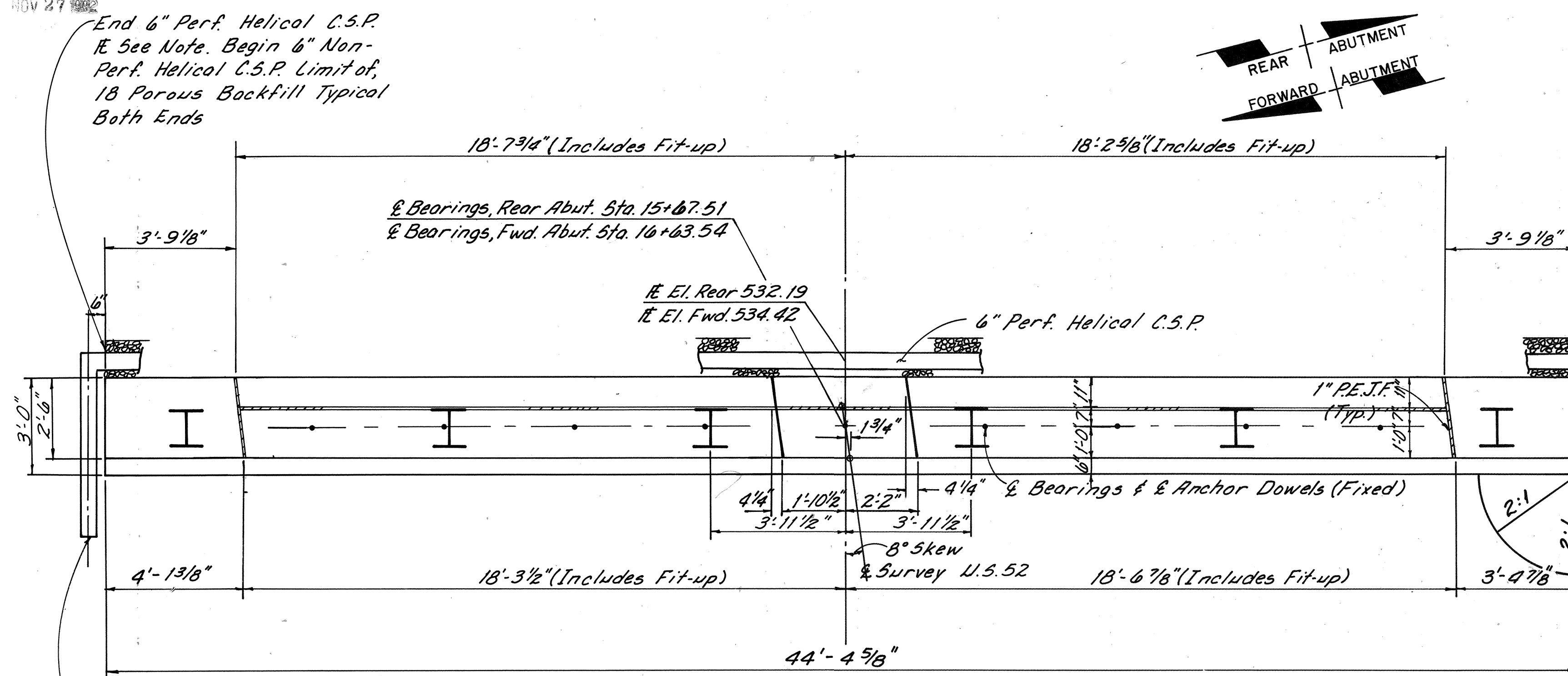
*Hole in post, near
flange only. Width
13/16" x Height 1 13/16"*



SECTION A-A

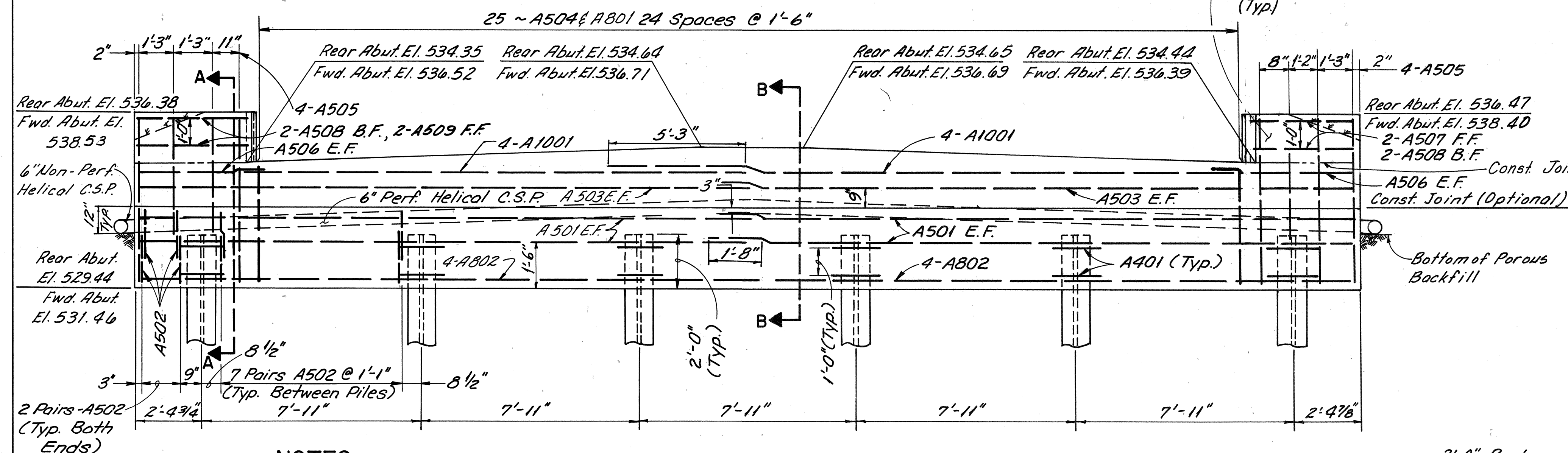
*Note: See Standard Drawings
 DBR-2-73 and GR-1 for information not
 shown.*

WOOLPERT CONSULTANTS 5825 WESTBOURNE AVENUE COLUMBUS, OHIO 43213-1459		3 / 8
GENERAL NOTES & DETAILS BRIDGE NO. SCI-52-0280 OVER UPPER TWIN CREEK		
DESIGNED T.D.W.	DRAWN T.D.W.	TRACED J.C.D.
CHECKED P.F.O.	REVIEWED A.H. 11/14/80	DATE 11/14/80
REVISED		



PLAN ABUTMENT

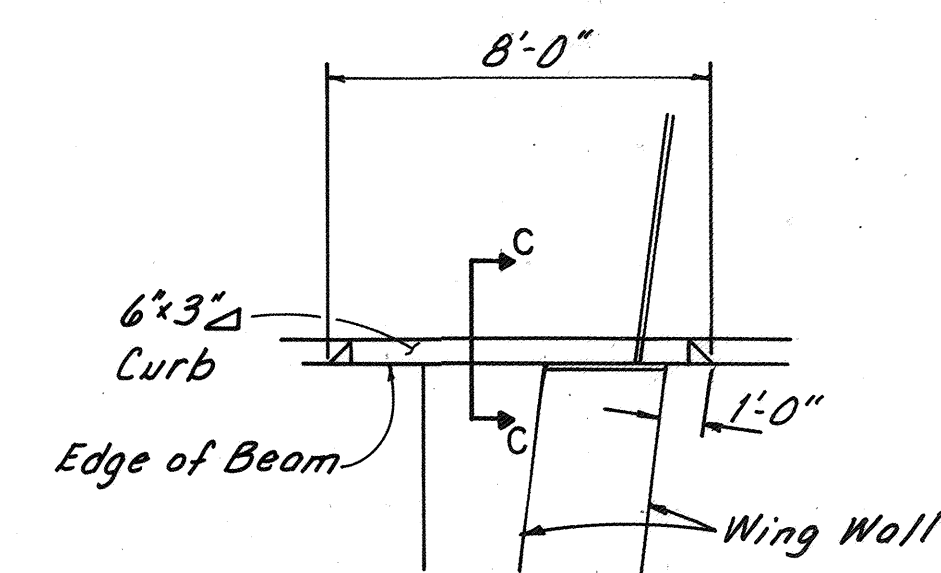
Note: End of 6" Perf. Helical C.S.P.
Rear E Elev. = 531.44
Fwd. E Elev. = 533.67
Outlet 6" Non-Perf. Helical C.S.P.
Rear E Elev. = 531.19
Fwd. E Elev. = 533.42



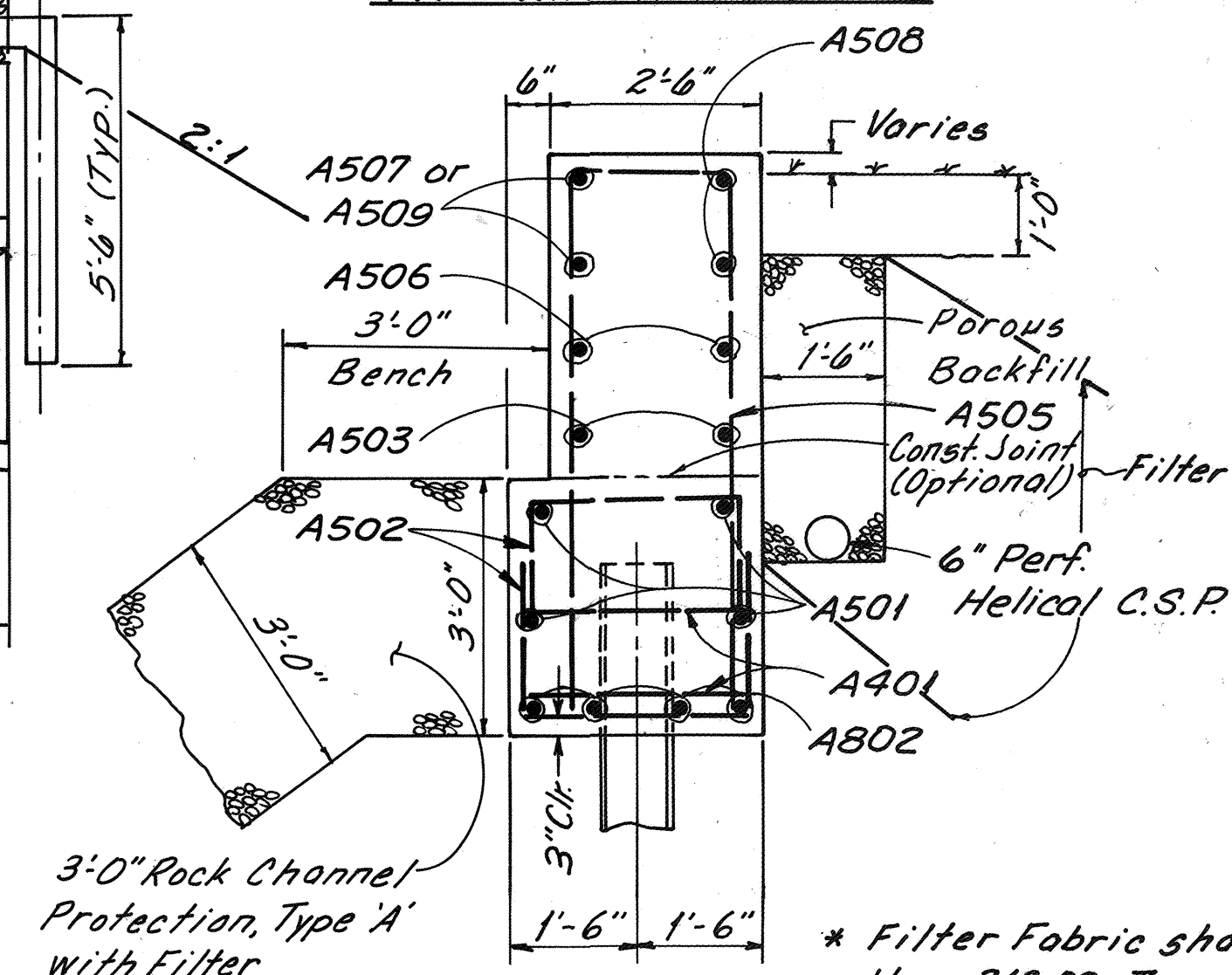
NOTES

- Clearance from all faces of concrete to reinforcing steel shall be 2" unless otherwise noted.
- Seat Elevations shown are at E Bearing
- B.F. Denotes Back Face
- F.F. Denotes Front Face
- E.F. Denotes Each Face
- For Pile Numbering Plan see sheet 3/8
- For Reinforcing Steel List see sheet 8/8

ELEVATION ABUTMENT



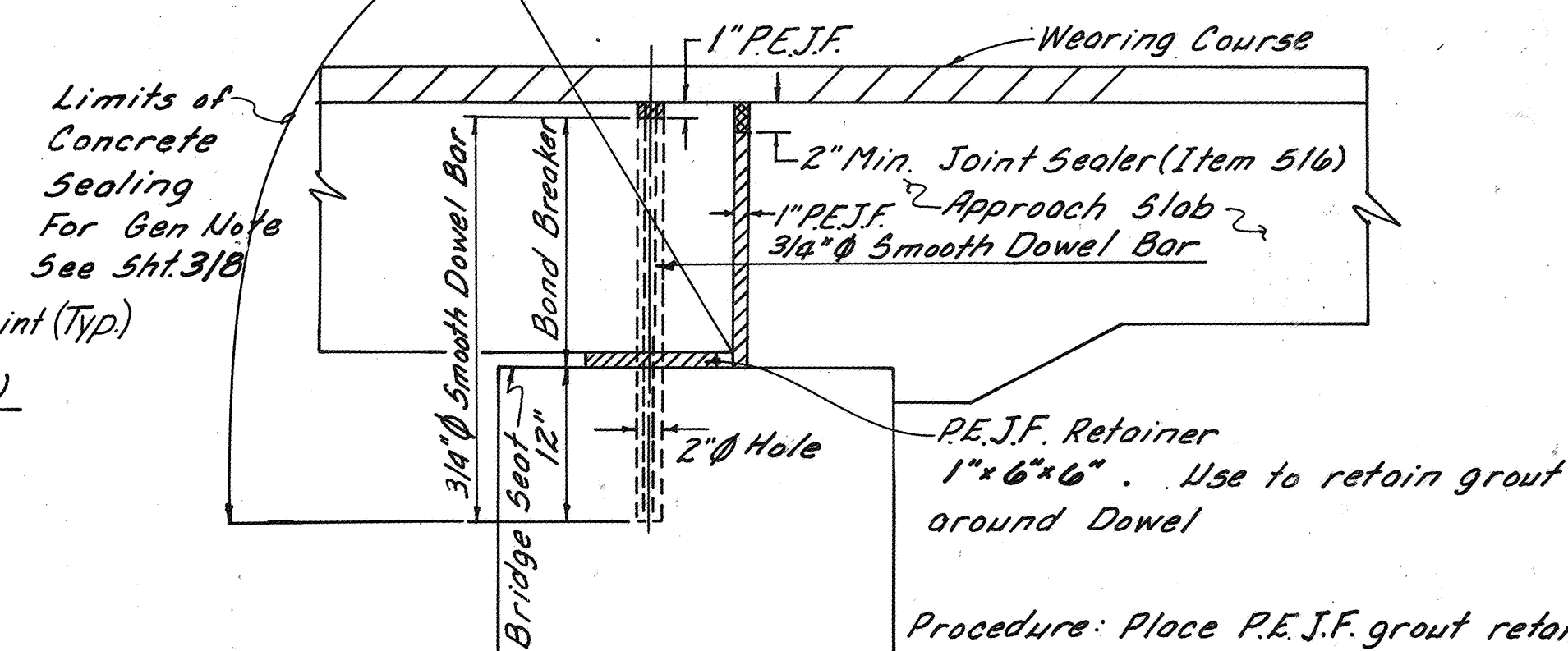
ASPHALT CURB DETAIL AT WINGWALL (TYP.)



* Filter Fabric shall conform to Item 712.09, Type A and shall be included with porous backfill for Payment.

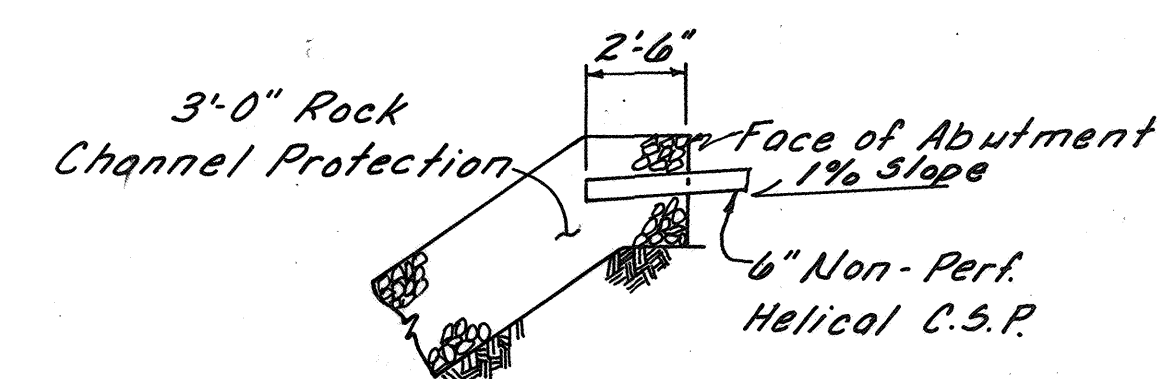
SECTION A-A

Limits of Concrete Sealing For Gen Note See Sht. 3/8



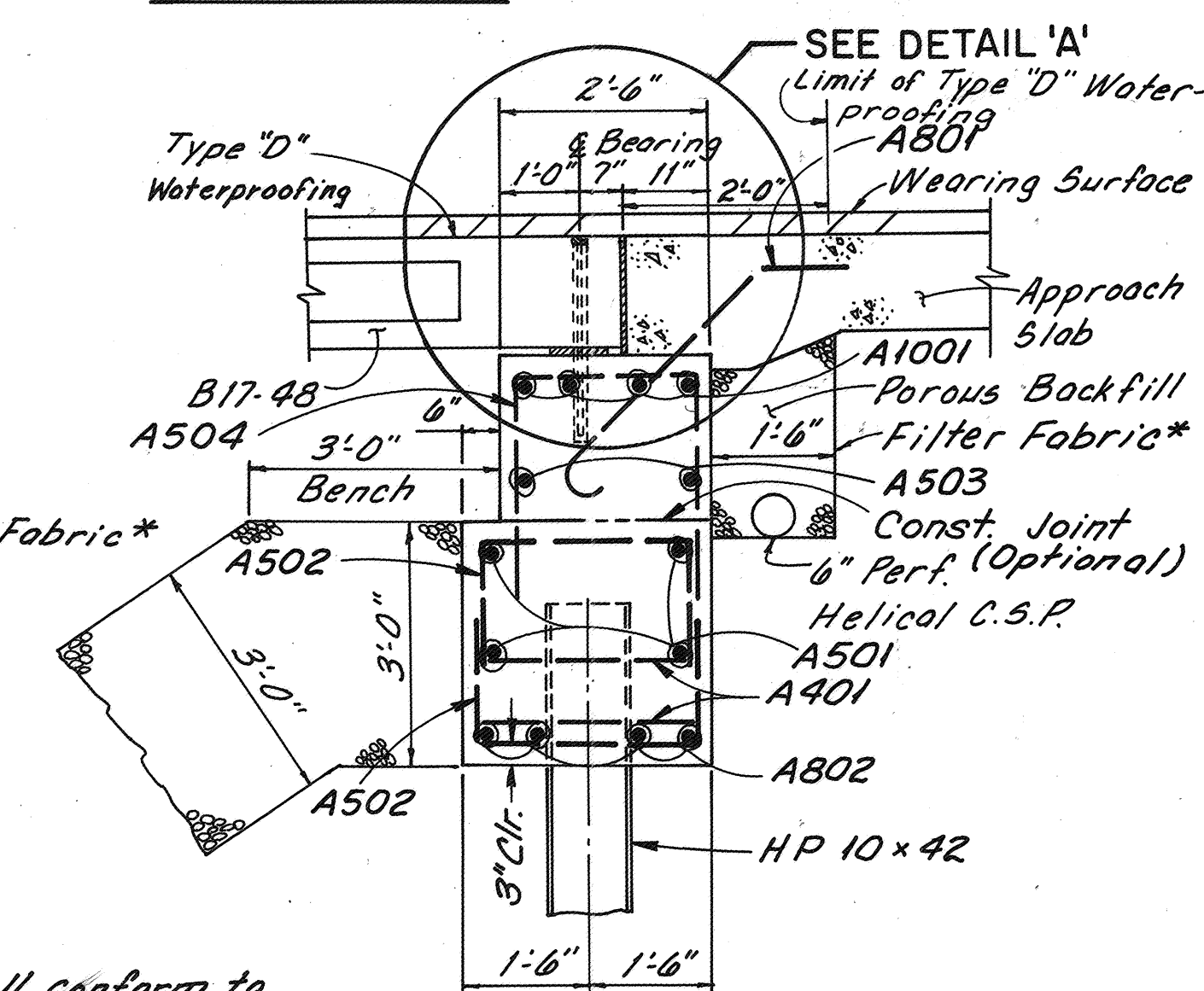
DETAIL 'A'

FIXED ANCHOR DOWEL



OUTLET DETAIL

SECTION C-C



SECTION B-B

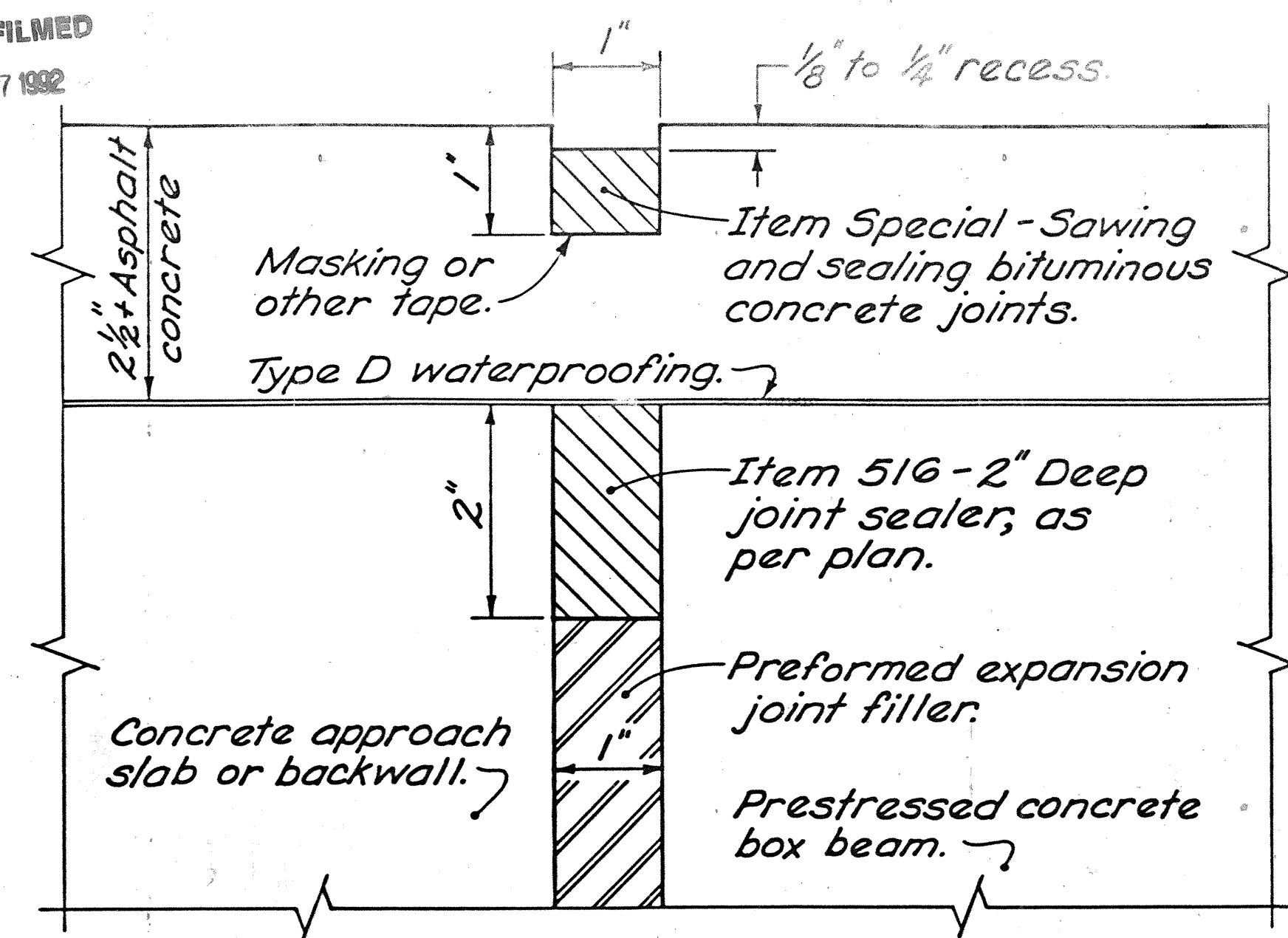
WOOLPERT CONSULTANTS
5825 WESTBOURNE AVENUE
COLUMBUS, OHIO 43213-1459

4 / 8

ABUTMENTS

BRIDGE NO. SCI-52-0280
OVER UPPER TWIN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
T.D.W.	T.D.W.	D.K.T.	P.F.O.	J.M.H.	4/4/80	



SEALING OF JOINTS AT ABUTMENTS

ITEM SPECIAL - SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

1) Description:

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

2) Materials:

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

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

3) Construction Details:

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

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

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

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

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

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

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

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

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

4) Method of Measurement:

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

5) Basis of Payment:

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

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

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

FEDERAL REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-2.80

REVISIONS 2-8-84 3-10-87 4-14-87 6-16-87	STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN				5 / 8
	ABUTMENT JOINTS IN BITUMINOUS CONCRETE, BOX BEAM BRIDGES BRIDGE NO. SCI-52-0280				
	DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED
	JEB	MJB		WTF	WJJ 2-2-84



Technical drawing of a rectangular structure, likely a pier or pile foundation, showing dimensions and labels:

- Overall width: 3'-0"
- Overall height: 2'-0"
- Internal width segments: 1'-6" (left) and 1'-6" (right)
- Internal height segments: 12" (top) and 6" (bottom)
- Labels for components:
 - P501 (top left corner)
 - P1001 (top right corner)
 - P502 (middle right corner)
 - P401 (middle left corner)
 - P801 (bottom left corner)
- Labels for structural elements:
 - 3" Clr. (3 inch clearance)
 - G Pier & Piles (Ground Pier and Piles)

5'-0" P501 @ 1'-3 1/4" 9" 9" Rear Pier El. 534.97 Fwd. Pier El. 535.76

5'-0" P501 @ 1'-2 3/4" 9 1/4" 11 1/4" Rear Pier El. 535.18 Fwd. Pier El. 535.96

5'-11 1/4" P501 @ 1'-2 1/4" 1'-1" 11 1/4" 9" Rear Pier El. 535.17 Fwd. Pier El. 535.95

5'-0" P501 @ 1'-3 1/4" 9 1/4" 9" Rear Pier El. 539.87 Fwd. Pier El. 535.65

P501 (Typ) P502 (Typ) P401 (Typ) 4-P801 4-P1001 P503 3'-6" (Min.) HP 12x53 (Typ) 1'-6 1/2" 5 Spaces @ 6'-7 1/4" = 33'-0 1/4" 1'-11 1/2" A-A

Note:
Pile Encasement: Exposed steel piles and pile casing in capped pile piers shall have pile encasement similar to that shown on Standard Drawing CPP-2-73. The encasement shall consist of Class C Concrete placed within a shell of extra-strength vitrified clay pipe, galvanized corrugated steel pipe, or plain or corrugated plastic pipe all having a minimum inside diameter of approximately 18 inches for HP12x53 piles. Encasement shall extend approximately 4 feet below and 4 feet above the flowline or ground line. Cost of encasement shall be included with the piles for payment.

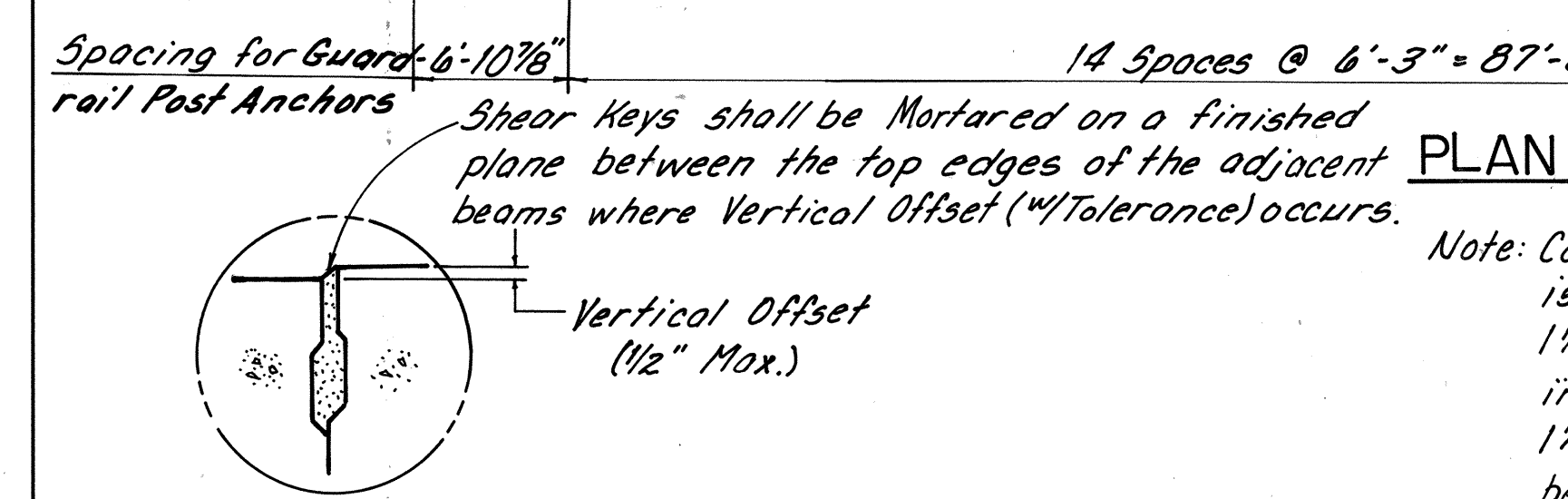
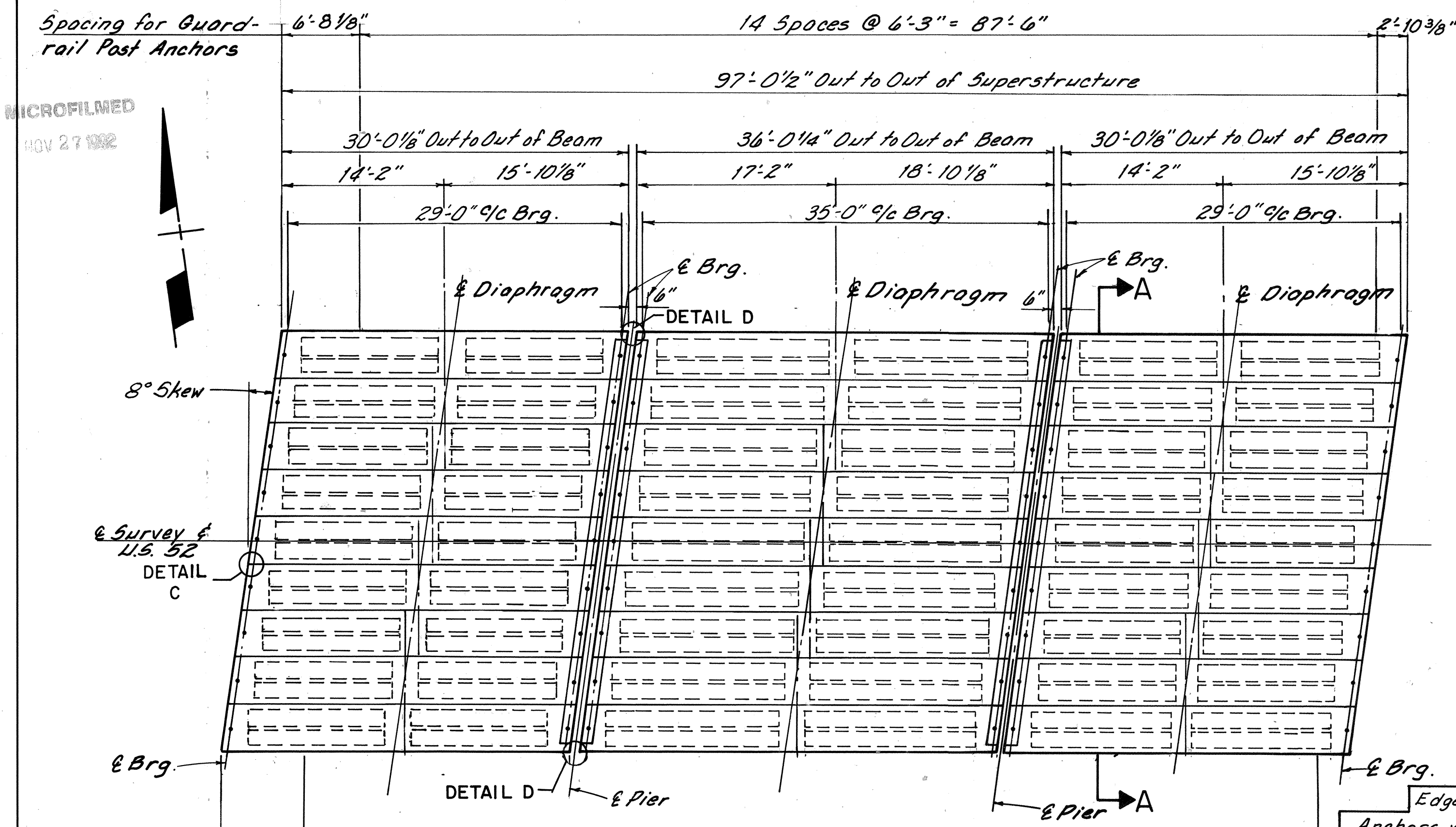
- Clearance from all faces of concrete to reinforcing steel shall be 2" unless otherwise noted.
- For Reinforcing Steel List see sheet 8/8
- E.F. denotes Each Face
- See Super Structure sheet 6/7 for bearing pad placement
- Seat elevations given at @ Pier

 WOOLPERT	WOOLPERT CONSULTANTS 5825 WESTBOURNE AVENUE COLUMBUS, OHIO 43213-1459	6 / 8
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PIERS

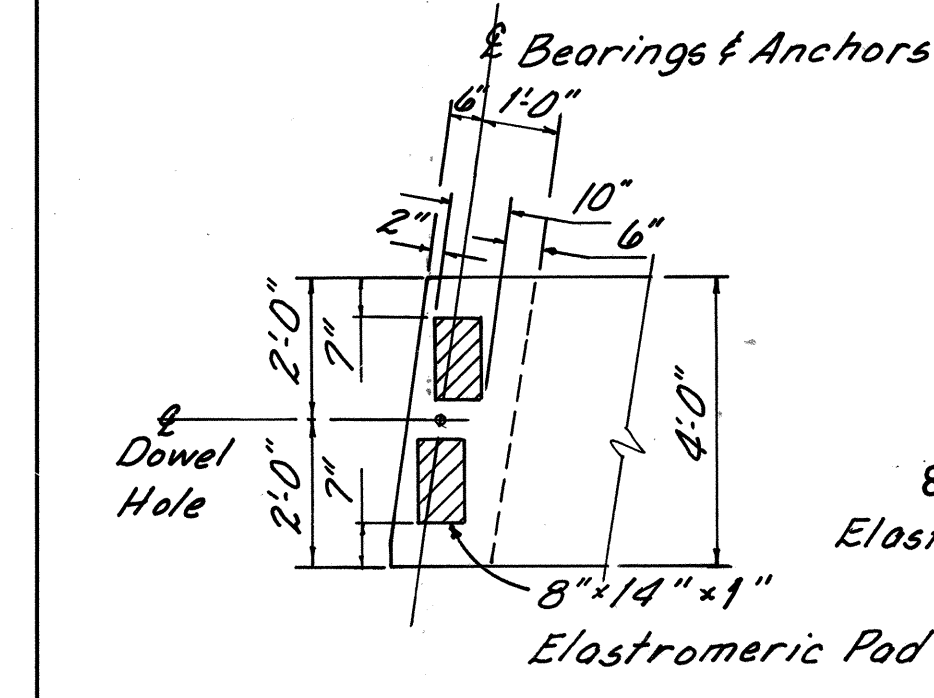
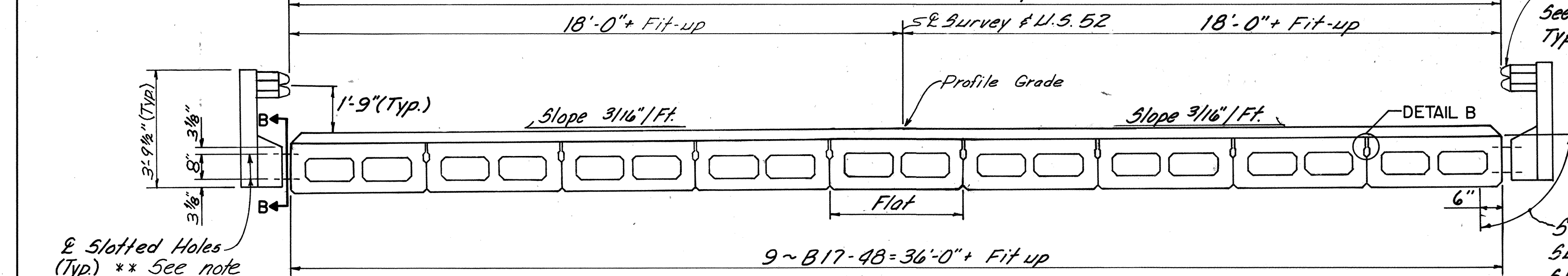
BRIDGE NO. SCI-52-0280
OVER UPPER TWIN CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
T.D.W.	T.D.W.		P.F.O.	<i>[Signature]</i>	<i>11/2/80</i>	

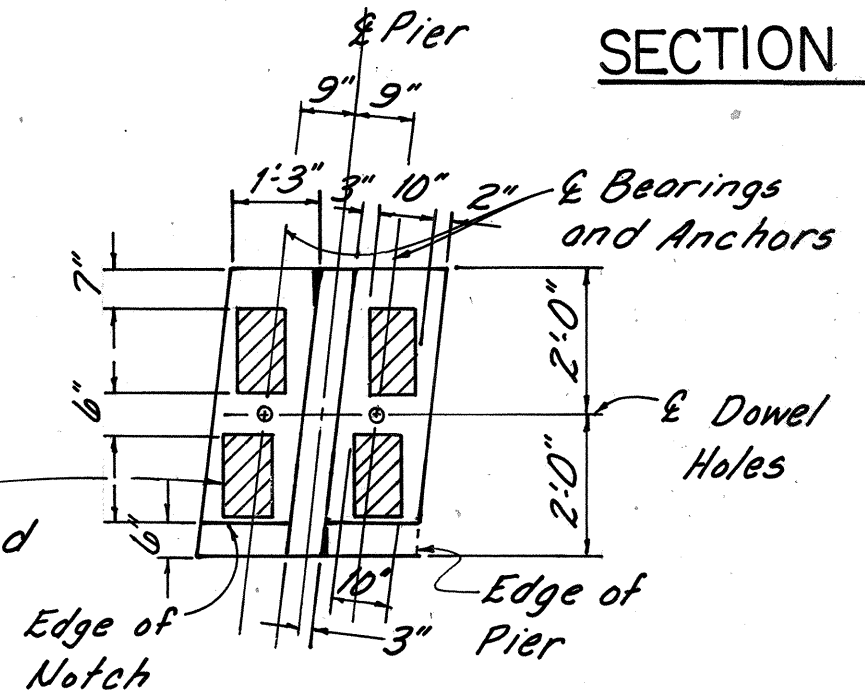


DETAIL B

Note: Calculated camber at time of paving, including allowance for camber growth due to creep, is 1" for Spans 1 & 3 and 1 1/4" for Span 2. This shall be compensated for by thickening the 1 1/4" 403 leveling course of the abutments and piers. The 403 leveling course shall be placed in as many operations as needed with a maximum thickness of any single course of 1 1/2" and the last leveling course shall be feathered to place the surface parallel to and 1/4" below final pavement surface elevation. See asphalt thickness diagram for total asphalt thickness. Beam seat elevations on abutment and pier plans and asphalt thickness have been adjusted for Vertical Curve, and Deck & Railing Weights.

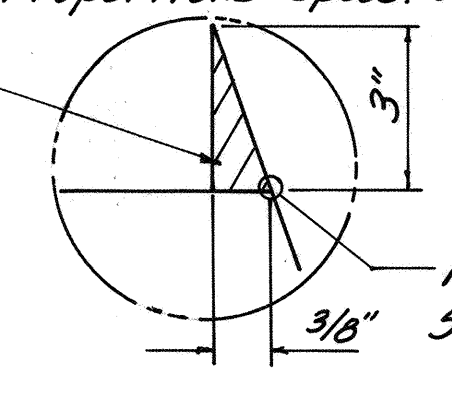


**TYPICAL BEARING PAD DETAIL
PLACEMENT AT ABUTMENT**

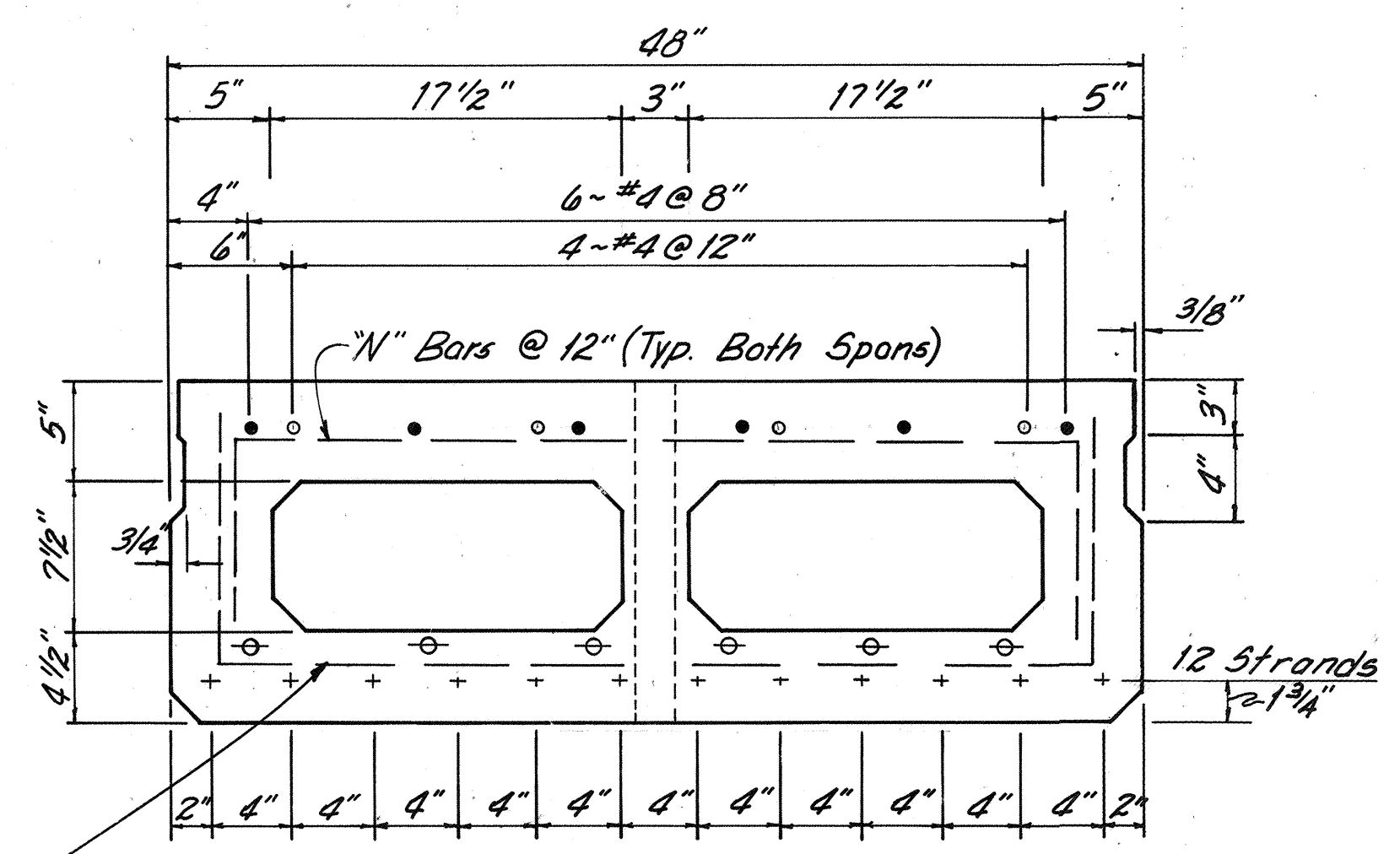


**TYPICAL BEARING PAD DETAIL
PLACEMENT AT PIERS**

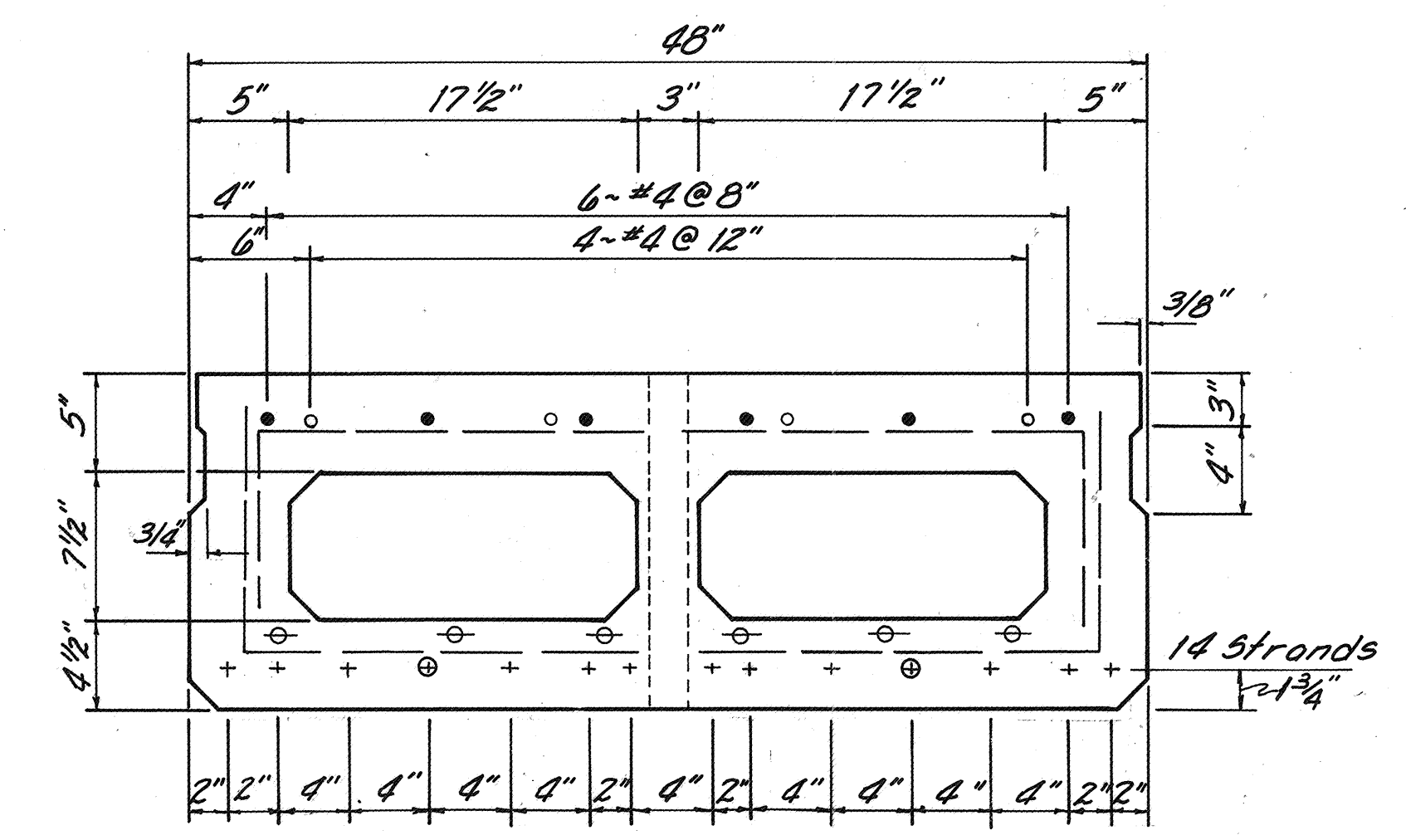
Fill Triangular spaces with non-shrink Mortar See General Note Sheet 3 For Material & Proportions Specs. of Mortar.



DETAIL C



**SECTION THRU BEAMS (B17-48)
SPANS 1 & 3**



**SECTION THRU BEAMS (B17-48)
SPAN 2**

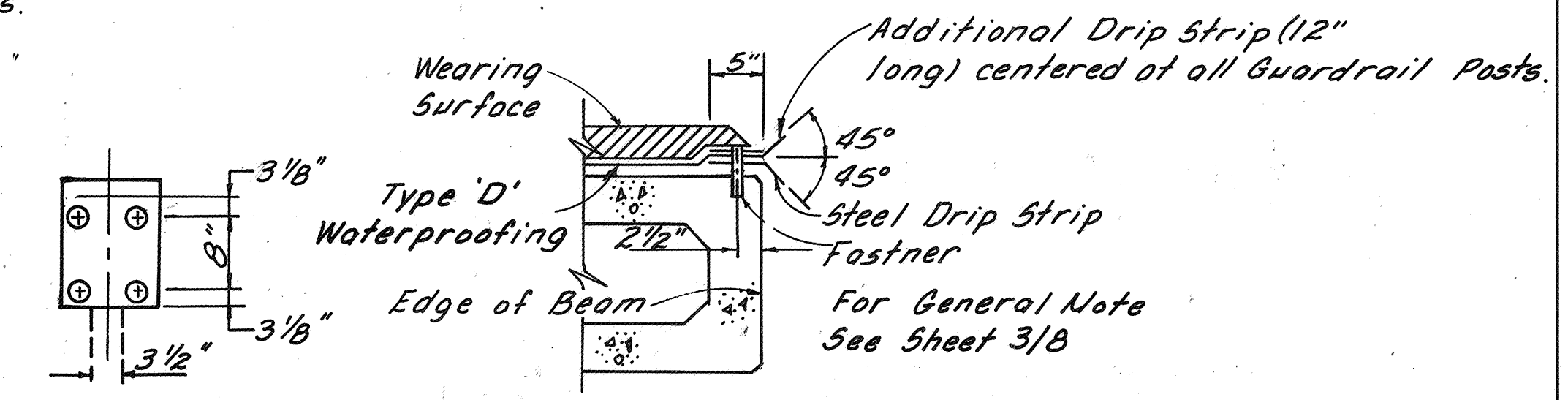
SHOWING STRAND LOCATIONS BEAM DIMENSIONS & REINFORCEMENT

- Indicates strand debonded 1'-6"
- Indicates full length reinforcing bars (No. 4)
- Indicates No. 4 bars: 7'-0" long, to be added at both ends of beams in Spans 1 & 3
- Indicates No. 4 bars: 8'-0" long, to be added at both ends of beams in Span 2
- Indicates No. 6 bars, 4'-0" long, to be added at Pier ends of beams (See Elev. of Pier Detail)
- Indicates 1/2" dia., ASTM A416 Grade 270, seven wire, uncoated, stress relieved strand. As = 153 sq. in. Initial Tension = 28,900 lbs. per strand. Tension at release 26,000 lbs. per strand (Assumed) Final Tension = 23,000 lbs. per strand after all losses (Assumed).
- Concrete Stresses Min. Concrete Strength at 28 days $f_c = 5,500$ psi. Min. Concrete Strength at initial prestress $f_c = 4,000$ psi.
- Fabricators Shop Drawings shall show complete details of the beams including reinforcing steel. The following Details and Notes from Standard Drawing PSBD-1-81 shall apply.
- Sheet 1 of 4 ~ Details: Beam Lifting Inserts, Anchor Dowels, Details and Reinforcement of Beam Ends, Wall thickening at Guardrail Anchors. Notes: Transverse Tie Rods, Galvanizing, Anchor Dowels
- Sheet 2 of 4 ~ All Details applicable to beam size, skew, etc. shown on project plans.
- Sheet 3 of 4 ~ 48" wide Non-composite Beams
- Sheet 4 of 4 ~ Details: Beam Connection over Piers. Notes: All applicable notes regarding 48" wide beams.

Deep Beam Guardrail See Std. Dwg. DBR-2-73 Type 2 Post

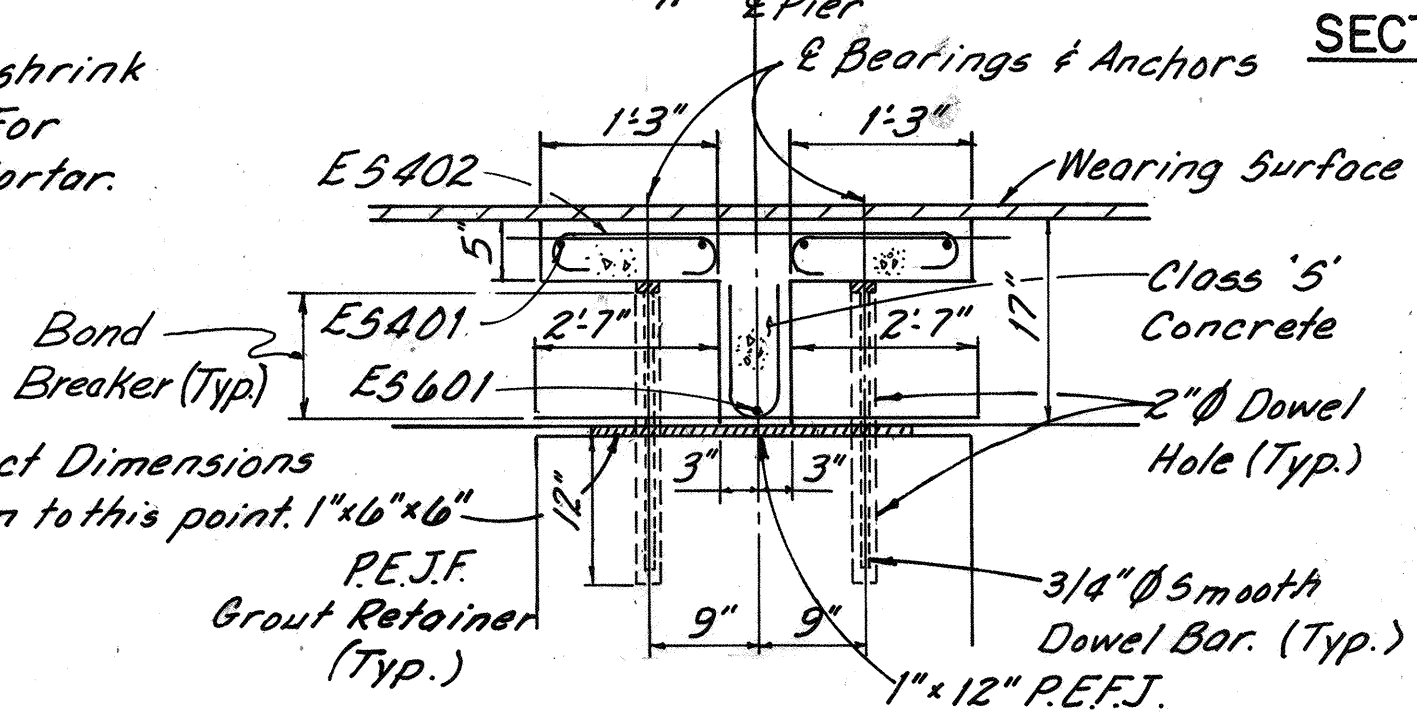
**Note: Provide slotted holes 1 1/2" x 2 3/4" in railing post anchorage for vertical adjustment

Sealing of Concrete Surfaces, See Note Sheet 3 of 7 (Typ.)



SECTION B-B

DRIP STRIP DETAIL

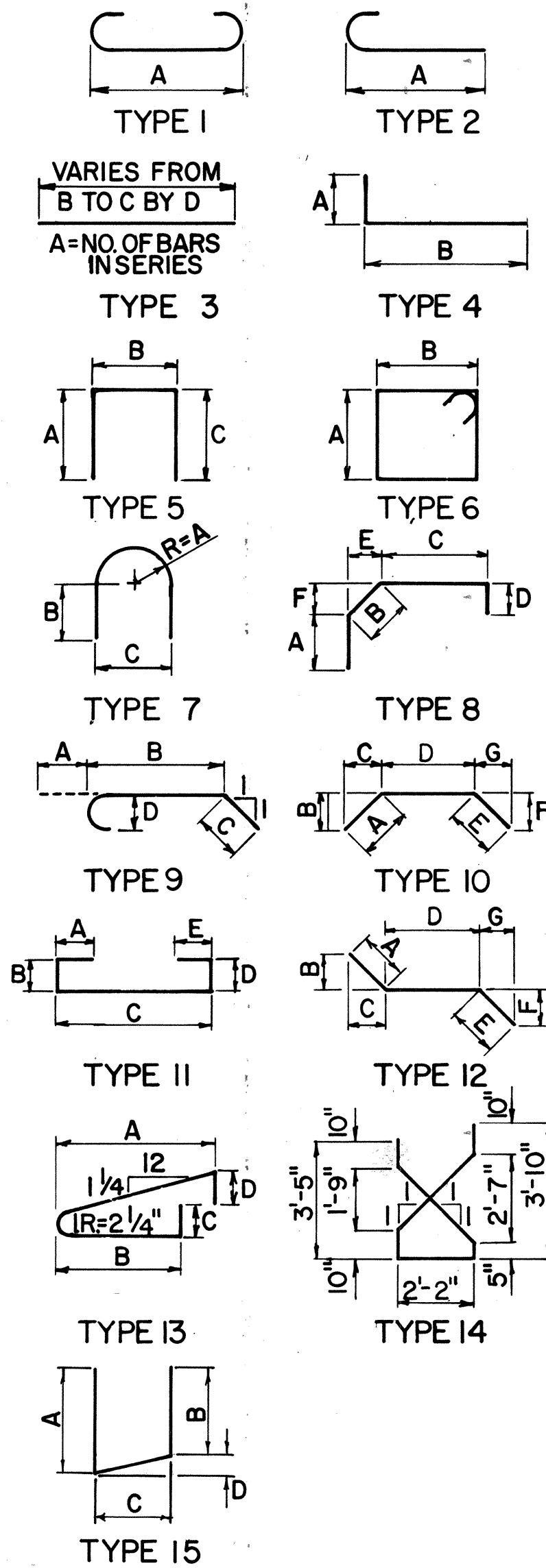


SECTION AT PIERS

Procedure: Place PEJF grout retainer. Drill and clean dowel holes. Then place non-shrink grout, dowel and 1" min. thickness PEJF plug.

WOOLPERT CONSULTANTS 5825 WESTBOURNE AVENUE COLUMBUS, OHIO 43213-1459		7 / 8
SUPERSTRUCTURE BRIDGE NO. SCI-52-0280 OVER UPPER TWIN CREEK		
DESIGNED	DRAWN	TRACED
T.D.W.	D.K.T.	D.K.T.
CHECKED	REVIEWED	DATE
P.F.O.		10/1/80
REVISIONS 1. 10/1/80		

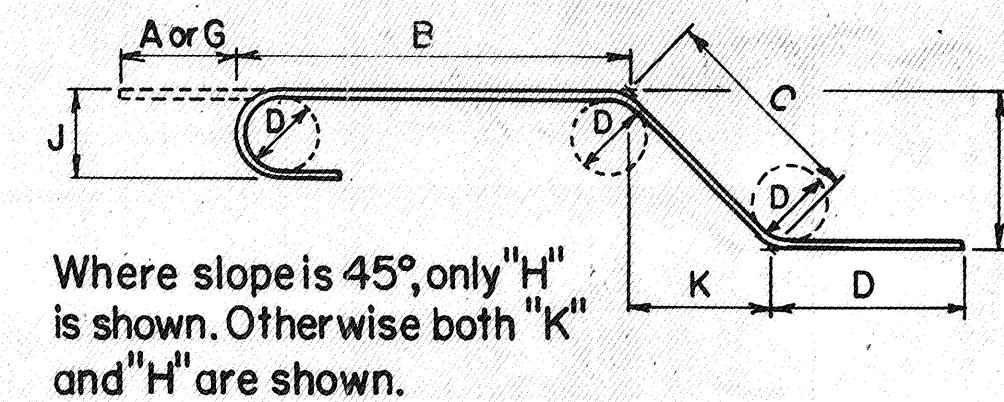
BAR TYPE DIAGRAM



MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F	G	MARK	NO.	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F	G
ABUTMENTS																							
A401	24	9'-3"	108	6	1'-9"	2'-7"																	
A501	16	22'-10"	381	Str.																			
A502	156	6'-7"	1071	5	2'-1"	2'-8"	2'-1"																
A503	8	22'-10"	191	Str.																			
A504	50	10'-5"	543	5	4'-3"	2'-2"	4'-3"																
A505	16	15'-1"	254	5	6'-7"	2'-2"	6'-7"																
A506	8	5'-0"	42	Str.																			
A507	4	3'-0"	13	Str.																			
A508	8	3'-5"	29	Str.																			
A509	4	3'-9"	16	Str.																			
A801	50	5'-4"	712	9	11"	3'-0"	1'-5"	8"															
A802	16	23'-7"	1007	Str.																			
A1001	16	21'-3"	1463	Str.																			
		Sub Total	5868																				
PIERS																							
P401	24	9'-3"	146	6	1'-9"	2'-7"																	
P501	54	11'-11"	671	6	3'-1"	2'-8"																	
P502	4	36'-2"	151	Str.																			
P503	12	8'-5"	105	15	3'-0"	3'-0"	2'-8"	5"															
P801	8	36'-2"	773	Str.																			
P1001	8	36'-2"	1245	Str.																			
		Sub Total	3091																				
Super Structure																							
ES401	8	35'-2"	188	Str.																			
ES402	180	3'-9"	451	1	2'-9"																		
ES601	2	36'-3"	109	Str.																			
		Sub Total	748																				
Total	Non Epoxy		8959																				
Total	Epoxy		748																				

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO	SCI-52-2.80	

30
36



Where slope is 45°, only "H" is shown. Otherwise both "K" and "H" are shown.

TYPICAL BAR BENDING DETAILS

NOTES

- Bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four digits are used indicate the bar size numbers. For example, A-601 is a No. 6 size bar and a P-1004 is a No. 10 size bar.
- All dimensions are out to out of bar.
- Radius dimension "R" is to outside of bar. Radius dimension "I.R." is to inside of bar.
- The length of bent bars is measured along the centerline.
- For standard hook dimensions, see Section 509.05 of the specifications.
- Dimension on hooks is shown only where necessary to restrict hooksize.
- Epoxy coated reinforcing steel is indicated by the letter "E" in the bar mark prefix.
- Reinforcing Steel Samples Refer to CMS Sections 106.03, 700, 709.01 thru 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

WOOLPERT CONSULTANTS 5825 WESTBOURNE AVENUE COLUMBUS, OHIO 43213-1459		8 / 8
REINFORCING STEEL LIST		
BRIDGE NO. SCI-52-0280 OVER UPPER TWIN CREEK		
DESIGNED T.D.W.	DRAWN T.D.W.	TRACED D.K.T.
CHECKED P.F.O.	REVIEWED DATE	REVISED

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SCI-52-2.77
NILE TOWNSHIP
SCIOTO COUNTY

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-2.77
R/W PLANS

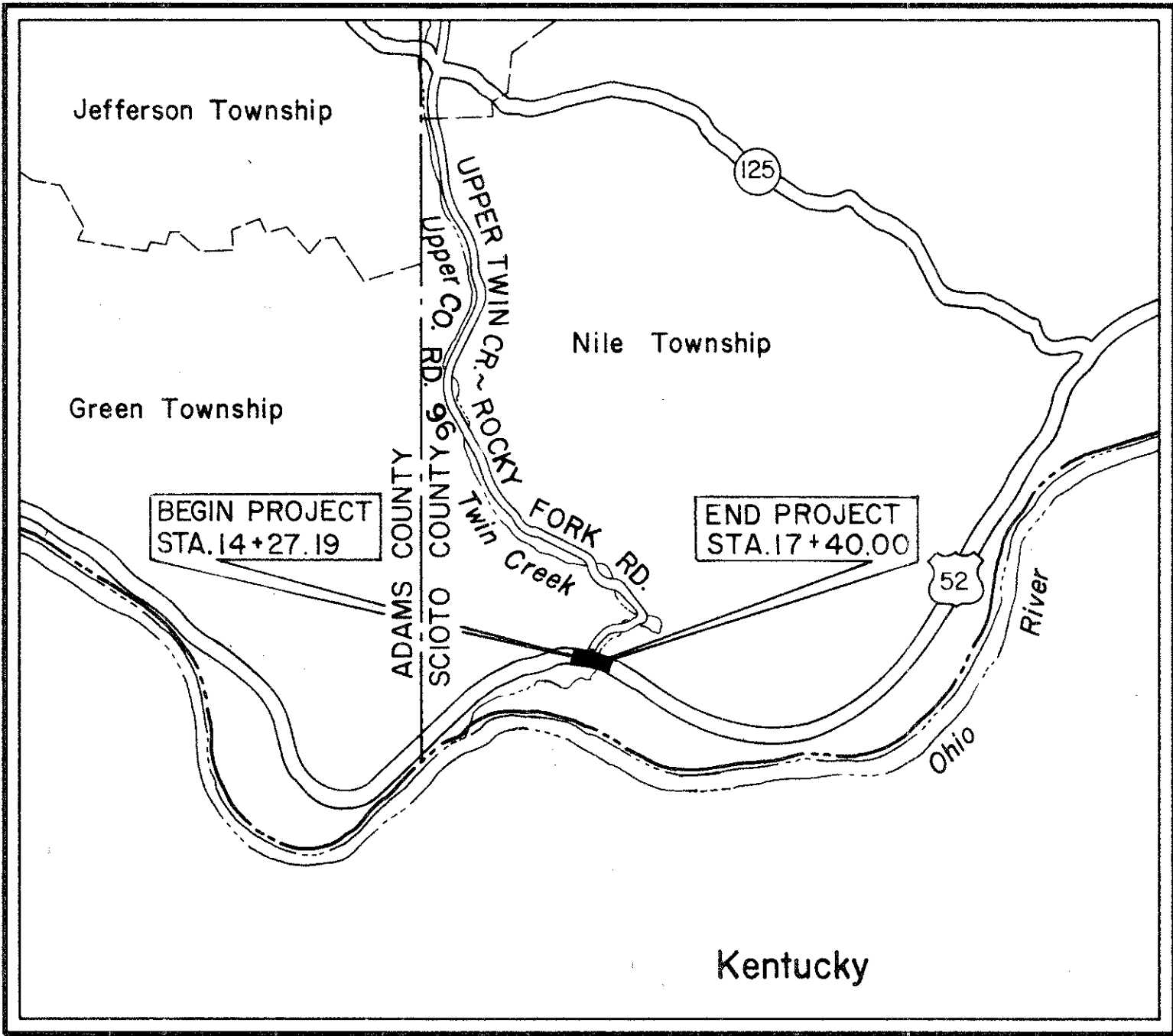
RW ONLY SCI-52-2.77

CONVENTIONAL SIGNS

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

INDEX OF SHEETS

Centerline Survey Plat ———— 1
Property Map ———— 2
Summary of Additional Right of Way ———— 3
Right of Way Plan Sheets ———— 4-6

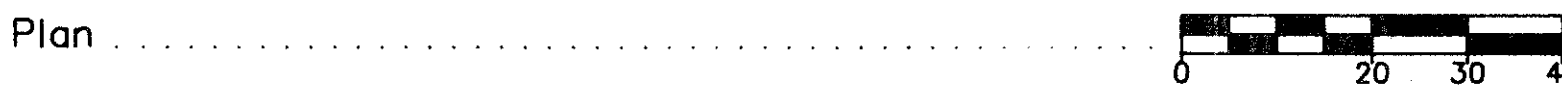


LOCATION MAP
SCALE IN MILES



Portion to be improved ————
State & Federal Routes ————
Other Roads ————

SCALES IN FEET



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

ACQUIRING AGENCY

The Right of Way for this improvement shall be provided by the State of Ohio

Approved _____
Date _____ Assistant Deputy Director for Real Estate

Approved _____
Date _____ Director, Department of Transportation

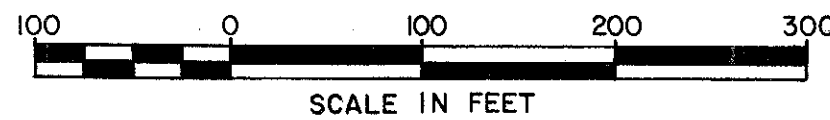
Plan Prepared By:
WOOLPERT
CONSULTANTS
5825 Westbourne Avenue
Columbus, Ohio 43213-1459

Project SCI-52-2.77
Date of Letting _____ 19____ Contract No. _____

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
Approved:
Division Administrator _____ Date _____

CENTERLINE SURVEY PLAT
SCI-52-2.77

V.M.S. 2459/2558
NILE TOWNSHIP
SCIOTO COUNTY

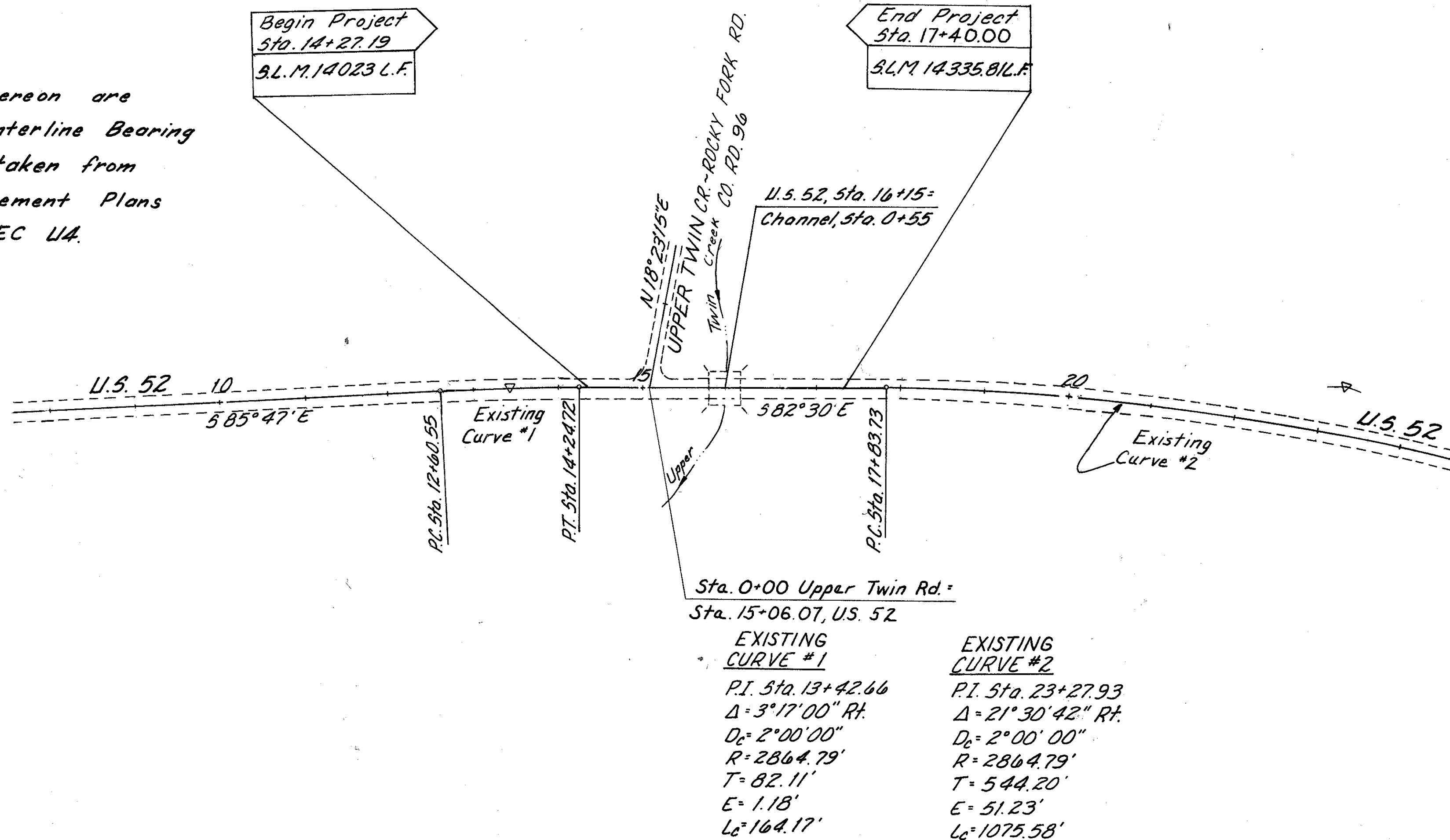


F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-2.77
R/W PLANS

31 36
1 6

Bearings shown hereon are
based on the Centerline Bearing
(S 82° 30' 00" E) taken from
O.D.O.T. Improvement Plans
SH I.C.H 7 SEC 14.

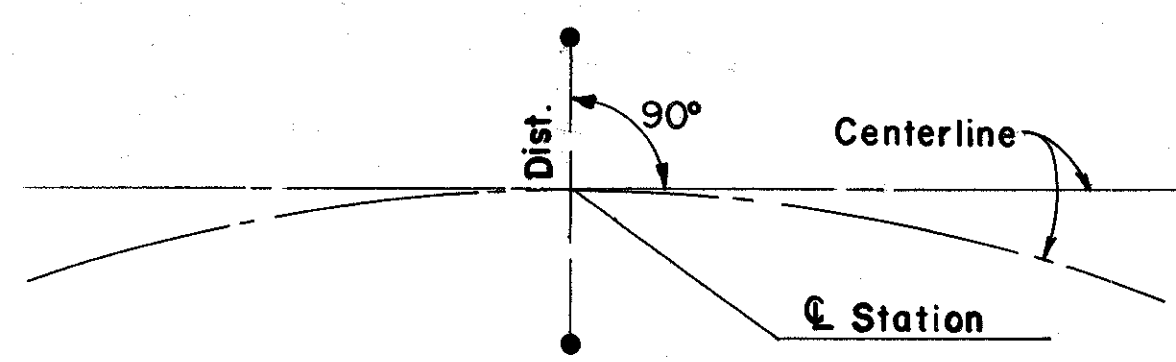


U. S. 52			
MONUMENTS TO BE SET AFTER CONSTRUCTION			
STATION	LEFT		RIGHT
10+00	30.00'		30.00'
12+60.55	30.00'		30.00'
14+24.72	30.00'		30.00'
17+83.73	30.00'		30.00'
20+00	30.00'		30.00'
TOTAL MONUMENTS TO BE SET = 10			

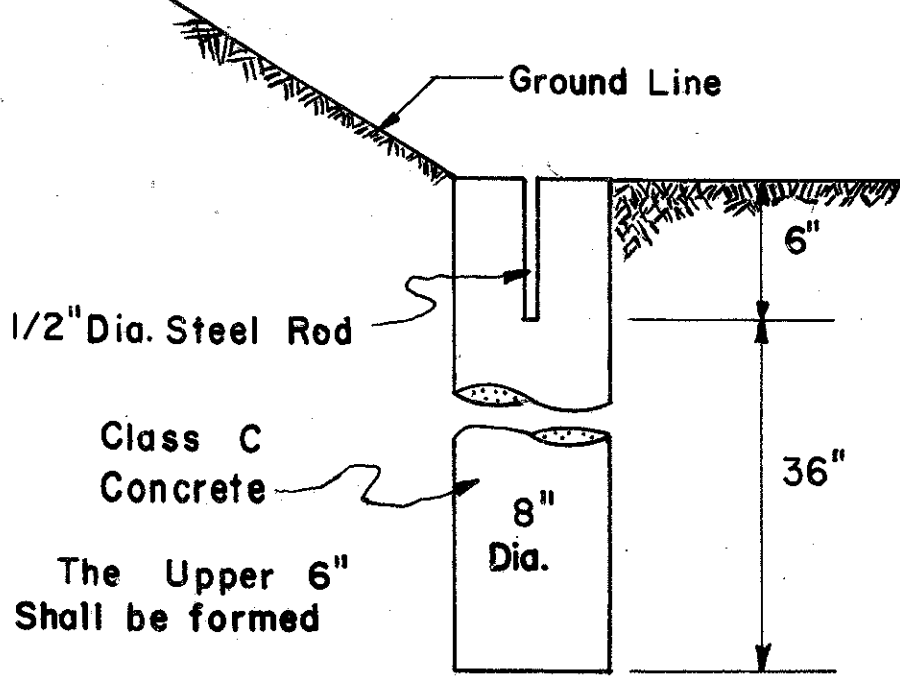
Sta. 0+00 Upper Twin Rd. Sta. 15+06.07, U.S. 52	
EXISTING CURVE #1	EXISTING CURVE #2
P.I. Sta. 13+42.66	P.I. Sta. 23+27.93
Δ = 3° 17' 00" Rt.	Δ = 21° 30' 42" Rt.
D _c = 2° 00' 00"	D _c = 2° 00' 00"
R = 2864.79'	R = 2864.79'
T = 82.11'	T = 544.20'
E = 1.18'	E = 51.23'
L _c = 164.17'	L _c = 1075.58'

Approved Keith C. Sweeney
Date 4-8-88 District Deputy Director of Transportation

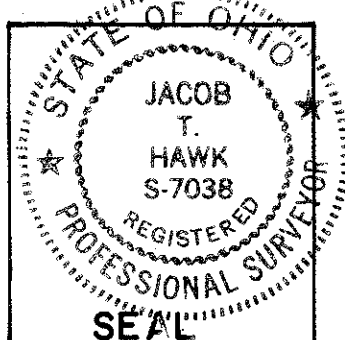
REFERENCE MONUMENTS TO BE SET AFTER CONSTRUCTION



MONUMENT SETTING DETAIL



REFERENCE MONUMENT DETAIL



Recorded in the Scioto County Record of
Plats; Book 5 Page 636
Date 4-12-88
I hereby certify that this plat is a true
delineation of a survey made by Woolpert
Consultants.
Date Jan. 26, 1988 Registered Surveyor Jacob T. Hawk
P.S. No. 7038

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-2.77
R/W PLANS

32
36

2
6

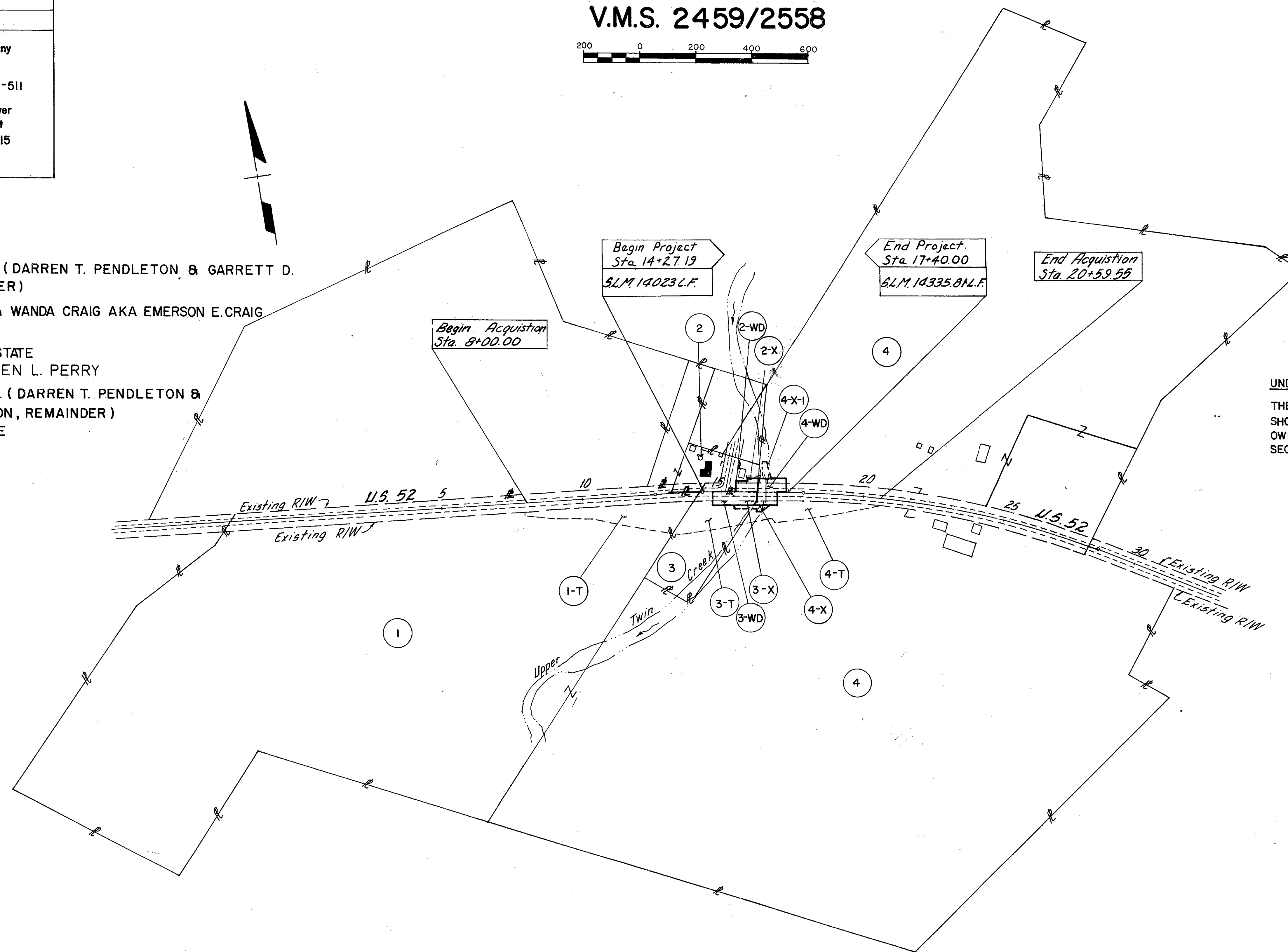
UTILITY OWNERS	
TYPE	NAME & ADDRESS
Telephone	General Telephone Company 1315 Albert St. P.O. Box 511 Portsmouth, Ohio 45662-511 (614) 354-8821
Electric	Columbus Southern Power 215 North Front Street Columbus, Ohio 43215

PROPERTY MAP NILE TOWNSHIP V.M.S. 2459/2558



PROPERTY OWNERS

- 1 GARY PENDLETON, L.E. (DARREN T. PENDLETON & GARRETT D. PENDLETON, REMAINDER)
- 2 EMERSON E. CRAIG SR. & WANDA CRAIG AKA EMERSON E. CRAIG
- 3 CHARLIE PENDLETON, ESTATE
GARY PENDLETON, HELEN L. PERRY
- 4 GARY PENDLETON, L.E. (DARREN T. PENDLETON & GARRETT D. PENDLETON, REMAINDER)
GARY PENDLETON, FEE



UNDERGROUND UTILITIES

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

LEGEND

- ~ Residences
- ~ Out Buildings

Completion Date 3/03/88		
JM	4-8-88	ADDED OWNER TO PARCEL #3
Rev.	Date	Description

TOTAL NUMBER OF _ _ _
4 OWNERSHIPS
0 TOTAL TAKES
1 OWNERSHIPS WITH STRUCTURES INVOLVED
0 OWNERSHIPS WITH "P" ITEMS

SUMMARY OF ADDITIONAL RIGHT OF WAY

CALC BY DT DATE 1/22/88	SCIOTO COUNTY SCI-52-2.77 R/W PLANS	OHIO F.H.W.A. 5 REGION	33 36
CHKD BY TN DATE 1/26/88	FEDERAL PROJECT	STATE PROJECT 09884 (0)	3 6

PARCEL NO.	OWNER	SHEET NO.	RECORDED		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. INTAKE	NET TAKE	STRUC TURE	NET RESIDUE		TYPE FUND	REMARKS & PERSONALITY	AS ACQUIRED	
			BOOK	PAGE							LEFT	RIGHT			BOOK	PAGE
1-T	Gary Pendleton, L.E. (Darren T. Pendleton & Garrett D. Pendleton, Remainder)	445	725	279	30.75Ac.		0.723		0.723Ac.				State	Temporary Run-around		
2-WD	Emerson E. Craig SR. & Wanda Craig AKA Emerson E. Craig	5	772	38	2.0 Ac.	0.328	0.059	0.044	0.015Ac.		1.657		State	Take from Auditor Parcel No. 15-0255.000		
2-X		5	735	574			0.008		0.008Ac.							
3-WD	Charlie Pendleton, Estate	5	382	537	1.74 Ac.	0.143	0.130	0.089	0.041Ac.			1.556	State	Take from Auditor Parcel No. 15-0882.000		
3-X	Gary Pendleton, HELEN L. PERRY		741	613			0.005		0.005Ac.							
3-T			796	854			0.466		0.466Ac.	Yes				Temporary Run-around		
			804	388												
4-WD	Gary Pendleton, L.E. (Darren T. Pendleton & Garrett D. Pendleton, Remainder)	546	726	31	154.76Ac.	2.572	0.235	0.155	0.080Ac.		97.622	54.486	State	Take from Auditor Parcel No. 15-0879.000		
4-X	Gary Pendleton, Fee		739	475			0.029		0.029Ac.							
4-X-1			741	410			0.049		0.049Ac.							
4-T			741	613			0.534		0.534Ac.					Temporary Run-around		
			796	854												

Completion Date 3/03/88		
JM	4-8-88	Added Owner, Vol. & Page To Par. #3 WD
REV.	DATE	DESCRIPTION

SCIOTO COUNTY
NILE TOWNSHIP
V.M.S. 2459/2558

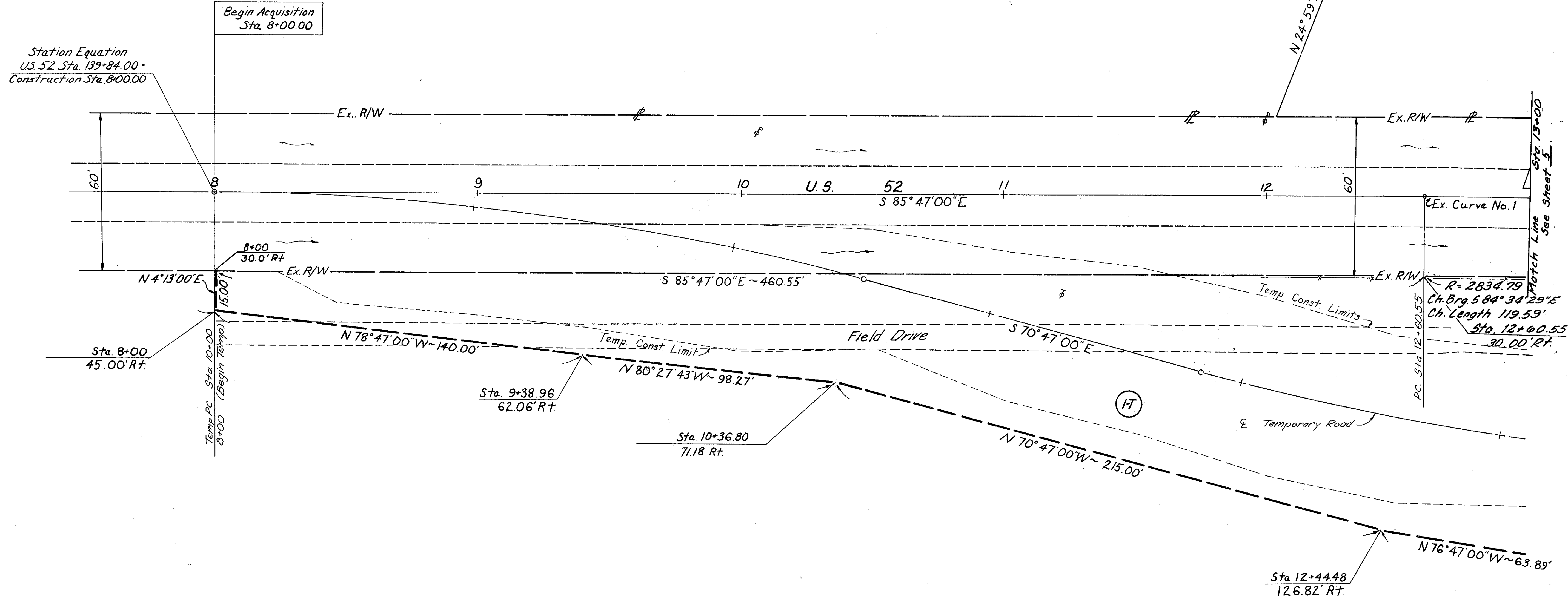
F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

SCIOTO COUNTY
SCI-52-277
R/W PLANS

34
36

4
6

STATE OF OHIO
(No Take)



Existing Curve Data No. 1

P.I. Sta. 13+42.66
 $\Delta = 3^\circ 17' 00''$ Rt.
Dc = 2° 00'
R = 2864.79'
T = 82.11'
E = 1.18'
Lc = 164.17'

Gary Pendleton, L.E.
(Darren T. Pendleton And Garrett D. Pendleton, Remainder)

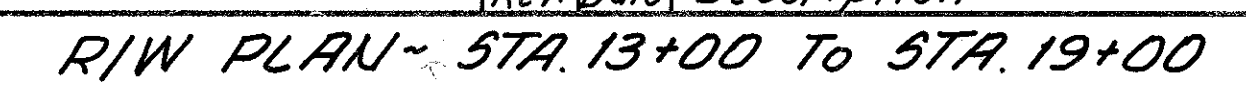
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Completion Date: 3/03/08

Rev. Date Description

R/W PLAN- STA. 8+00 TO STA. 13+00

35
36



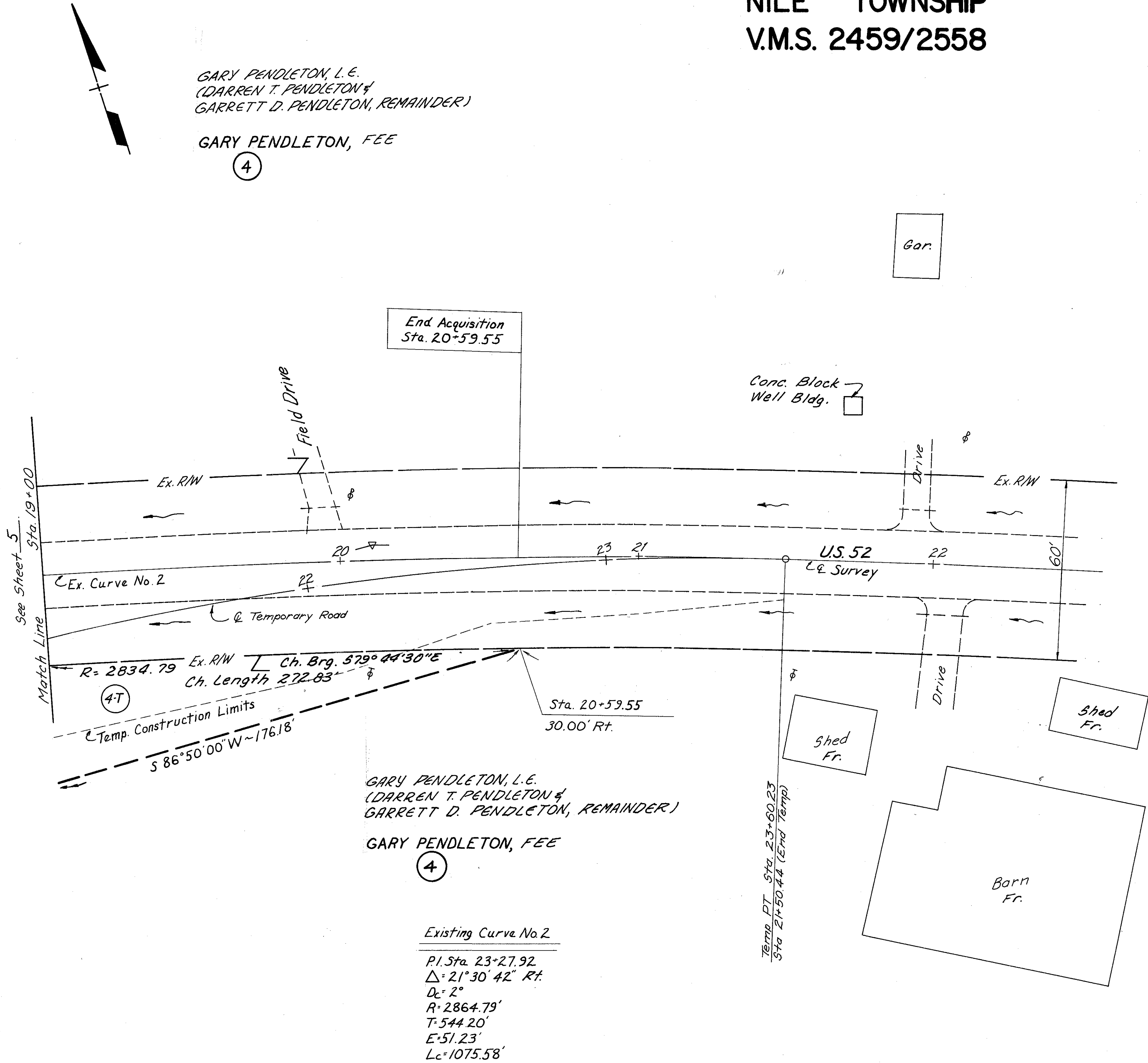
SCIOTO COUNTY
NILE TOWNSHIP
V.M.S. 2459/2558

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

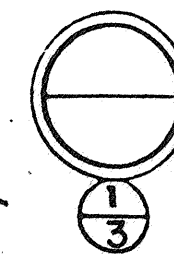
SCIOTO COUNTY
SCI-52-2.77
R/W PLANS

36
36

6
6



Completion Date: 3/03/88		
Rev.	Date	Description



GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE HIGHLY DISSECTED UNGLACIATED PORTION OF THE ALLEGHENY PLATEAU REGION, ON THE BROAD TERRACED FLOODPLAIN OF THE OHIO RIVER AND OVER UPPER TWIN CREEK, IN AN AREA WHERE EXTREMELY DEEP VALLEY AND ALLUVIAL DEPOSITS OVERLIE SHALE BEDROCK, OF DEVONIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF TWO DRIVE SAMPLE BORINGS MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM ROTARY AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON JUNE 16 AND 17, 1986.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE TEST BORINGS DISCLOSED THAT INTERVALS OF EXTREMELY LOOSE TO EXTREMELY DENSE UNSTRATIFIED SILTS AND GRAVEL MODIFIED WITH CLAYS, SAND AND VARYING PERCENTAGES OF EACH OTHER THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH OVERLIE BEDROCK SURFACE. TEST BORING NO. B-1 (MADE IN THE GENERAL VICINITY OF THE REAR ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 60.0-FOOT DEPTH, ELEVATION 476.2 FEET AND CONTINUED TO ADVANCE TO A TOTAL DEPTH OF 61.5 FEET, ELEVATION 474.7 FEET WHERE THE BORING WAS TERMINATED AFTER HAVING PENETRATED 1.5 FEET BELOW BEDROCK SURFACE. TEST BORING NO. B-2 (MADE IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) PENETRATED TO A DEPTH OF 56.5 FEET, ELEVATION 481.6 FEET AND WAS TERMINATED AT THAT POINT AFTER HAVING PENETRATED IN EXCESS OF 11.5 FEET OF MATERIAL REQUIRING IN EXCESS OF 30 BLOWS PER FOOT IN THE STANDARD PENETRATION TEST IMMEDIATELY PRIOR TO TERMINATION. BEDROCK SURFACE WAS NOT ENCOUNTERED IN TEST BORING NO. B-2. ORGANIC MATERIAL WAS ENCOUNTERED IN TEST BORING NO. B-1 AT 17.5-FOOT DEPTH, ELEVATION 518.7 FEET AND IN TEST BORING NO. B-2 AT 20.0-FOOT DEPTH, ELEVATION 518.1 FEET.

FREE WATER WAS OBSERVED AND MEASURED IN TEST BORING NO. B-1 AT 12.0-FOOT DEPTH, ELEVATION 524.2 FEET AND IN TEST BORING NO. B-2 AT 14.0-FOOT DEPTH, ELEVATION 524.1 FEET DURING DRILLING OPERATIONS.

LEGEND

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

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

SYMBOLS OF ROCK TYPES

- | | | | |
|--|---------------------------------|--|---------------------|
| | Coal | | Weathered Sandstone |
| | Weathered Mudstone or Claystone | | Sandstone |
| | Mudstone or Claystone | | Leached Dolomite |
| | Weathered Shale | | Dolomite |
| | Shale | | Leached Limestone |
| | Weathered Siltstone | | Limestone |
| | Siltstone | | Boulders or Cobbles |

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

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

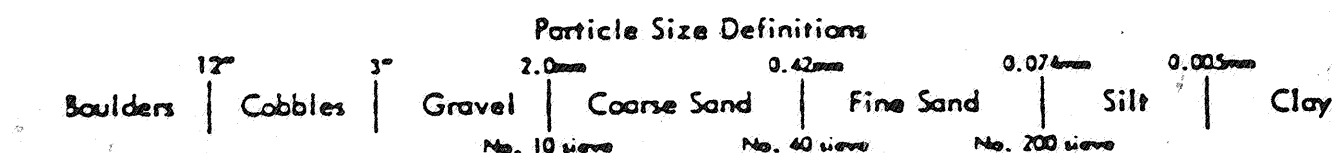
Drive Sample Borings - Drive-Press Sample Borings

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

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

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

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



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

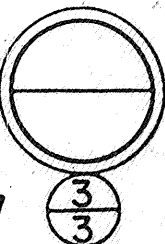
Revised 1/11/88

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

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SCI-52-0280
OVER UPPER TWIN CREEK
SEC. SCI-52-2.80

CHECKED BY L.N.L.	REVIEWED BY R.D.R.	DATE 7/22/86
----------------------	-----------------------	-----------------



SCI-29-30
BINDER

LOG OF BORING															
Date Started 6/16/86			Sampler Type SS			Dia 1 3/8"			Water Elev 524.2'						
Date Completed 6/17/86			Casing Length			Dia									
Boring No. B-1			Station & Offset 15+39.9' RT. (REAR ABUTMENT)						Surface Elev 536.2'						
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Sil.	% Clay	L.L.	P.I.	W.C.	SHTL Class.
536.2	0														
535.4	0.8				ASPHALT, BRICK BATS AND CONCRETE										VISUAL
533.7	2.5														
531.2	4.0	6/3/5			BROWN GRAVELLY SANDY SILT	1	15	19	14	40	12	NP	NP	10	A-4a
528.7	6.0	4/5/7			BROWN GRAVELLY SANDY SILT	2	23	12	13	40	12	NP	NP	13	A-4a
526.2	8.0	5/6/8			BROWN SILTY SANDY GRAVEL	3	35	14	12	31	8	NP	NP	11	A-4a
523.7	10.0	3/3/7			BROWN SANDY GRAVELLY SILT	4	28	11	13	37	11	NP	NP	19	A-4a
521.2	12.0	6/7/7			BROWN GRAVELLY SANDY SILT	5	18	9	12	51	10	NP	NP	11	A-4b
518.7	14.0	3/2/1			BROWN SANDY GRAVELLY SILT	6	25	8	12	42	13	NP	NP	29	A-4a
516.2	16.0	1/3/1			DARK-GRAY ORGANIC SANDY SILT	7	2	2	17	57	22	24	6	25	A-4b
	18.0	2/2/11			BROWN SANDY GRAVELLY SILT	8	22	4	14	52	8	NP	NP	19	A-4b
511.2	20.0														
	22.0	3/6/8			GRAY SILT AND CLAY	9	0	0	1	33	66	36	14	24	A-6a
506.2	24.0														
	26.0	2/7/8			GRAY SILT	10	0	0	1	79	20	NP	NP	25	A-4b
501.2	28.0														
	30.0	3/9/15			GRAY SILT	11	5	2	4	75	14	NP	NP	24	A-4b
496.2	32.0														
	34.0	4/7/10			GRAY CLAYEY SILT	12	6	5	6	43	40	28	9	27	A-4a
491.2	36.0														
	38.0	7/13/13			GRAY SILT	13	6	4	8	52	30	21	4	22	A-4b
486.2	40.0														
	42.0	14/18/25			BROWN AND GRAY GRAVELLY SANDY SILT	14	18	8	13	49	12	NP	NP	15	A-4a
481.2	44.0														
	46.0	6/11/12			BROWN AND GRAY SANDY GRAVELLY SILT	15	28	9	9	42	12	NP	NP	14	A-4a
476.2	48.0														
	50.0				TOP OF ROCK										
474.7	52.0	8/26/27			GRAY WEATHERED CLAY SHALE	16	-	-	-	-	-	-	-	-	14 VISUAL
	54.0														
	56.0														
	58.0														
	60.0														
	62.0														
					BOTTOM OF BORING										

LOG OF BORING															
Date Started 6/16/86			Sampler Type SS			Dia 1 3/8"			Water Elev. 524.1'						
Date Completed 6/17/86			Casing Length			Dia									
Boring No. B-2			Station & Offset 16+60.8' RT. (FORWARD ABUTMENT)			Surface Elev. 538.1'									
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description	Sample No.	% Agg.	% C.S.	% F.S.	% Sil.	% Clay	L.L.	P.I.	W.C.	SHTL Class.
538.1	0														
537.1	1	AUGERED			ASPHALT AND CONCRETE										VISUAL
	2														
	4														
533.1	6														
	8	3/6/9			BROWN SILTY SANDY GRAVEL	1	56	9	8	23	4	NP	NP	11	A-2-4
530.6	10														
	12	6/9/9			BROWN SILTY SANDY GRAVEL	2	43	11	11	30	5	NP	NP	11	A-2-4
528.1	14														
	16	9/20/16			BROWN SILTY SANDY GRAVEL	3	42	15	11	25	7	NP	NP	11	A-2-4
525.6	18														
	20	7/10/10			BROWN SILTY SANDY GRAVEL	4	48	14	8	22	8	NP	NP	10	A-2-4
523.1	22														
	24	5/11/15			BROWN SILTY SANDY GRAVEL	5	55	7	8	24	6	NP	NP	11	A-2-4
520.6	26														
	28	22/11/8			GRAY SANDY SILT	6	13	5	13	51	18	NP	NP	29	A-4b
518.1	30														
	32	3/7/12			DARK-GRAY ORGANIC GRAVELLY SILT	7	27	4	6	48	15	NP	NP	26	A-4a
515.6	34														
	36	10/11/10			GRAY SILT	8	0	0	2	66	32	NP	NP	22	A-4b
513.1	38														
	40	7/8/15			GRAY SILT	9	0	0	0	55	45	26	6	23	A-4b
508.1	42														
	44	6/10/15			GRAY SILT	10	0	0	4	80	16	NP	NP	30	A-4b
503.1	46														
	48	6/8/7			GRAY SILT	11	0	1	5	72	22	NP	NP	24	A-4b
498.1	50														
	52	5/7/11			GRAY SILT	12	3	3	5	62	27	NP	NP	22	A-4b
493.1	54														
	56	22/30/43			GRAY GRAVELLY SILT	13	15	4	7	42	32	25	6	26	A-4a
488.1	58														
	60	12/16/22			GRAY SILT	14	7	2	4	62	25	NP	NP	23	A-4b
483.1	62														
	64	15/32/40			GRAY GRAVELLY SILT	15	26	6	8	45	15	NP	NP	24	A-4a
481.6	66														
	68				BOTTOM OF BORING										

Revised 1/11/88

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

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. SCI-52-0280
OVER UPPER TWIN CREEK
SCI-52-2.80

BORING DATA
TYPED BY S.M.G. CHECKED BY L.N.L. REVIEWED BY R.D.R. DATE 7/22/86