84

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

LAKE COUNTY LAK-44-7.11	OHIO FHWA REGION 5	1 35
M-1A65( )	FEDERAL PROJECT	

LAK-44-7.11
CITY OF MENTOR
VILLAGE OF GRAND RIVER
PAINESVILLE TWP.
LAKE COUNTY

DESIGN DESIGNATION

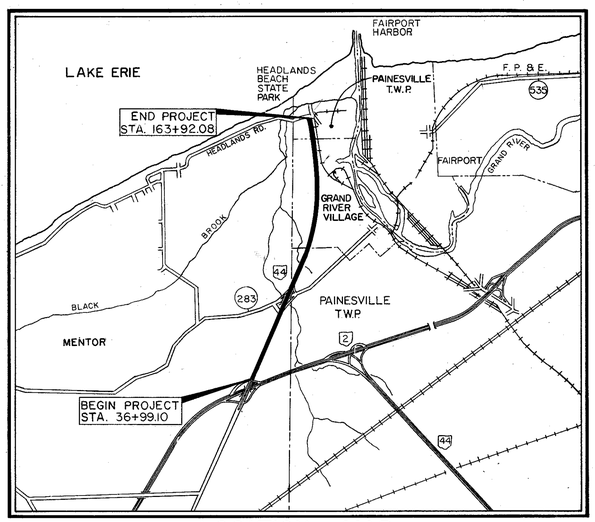
CURRENT ADT (1983)	=	5,090
DESIGN ADT (2003)	=	6,108
D.H.V. (DESIGN HOURLY VOLUME)	=	611
D (DIRECTIONAL DISTRIBUTION)	=	65-35
T (PERCENT B & C TRUCKS)	=	21%
V (DESIGN SPEED)	=	70 MPH

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) — x — x — (proposed) — x — x —
Center Line — 352 — 353 —
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light.

Limited Access (only) — LA —
Right of Way (only) — RW —
Limited Access & Right of Way — LA & RW —
Existing Right of Way
Property Line — ℄ — (in existing fence) — x — ℄ — x —
Railroad or
Guardrail (existing) (proposed)

INDEX OF SHEETS



LOCATION MAP

SCALE IN MILES
0 1000 FEET 1 2

Portion to be improved
State & Federal Routes
Other Roads

SCALES

Plan 0 50 100
Profile: Horizontal, Vertical
Cross Section: Horizontal 0 10 20, Vertical 0 10 20

LINE DATA

S.R. 44 PROJECT LIMITS

STA. 36+99.10 TO STA. 163+92.08 = 12,692.98 L.F. = 2.404 MILES
DEDUCT FOR STATION EQUATIONS = -15.86 L.F. = 0.003 MILES
SUB-TOTAL = 2.401 MILES

ADDITIONAL WORK

STA. 36+24.10 TO STA. 36+99.10 = 75 L.F. = 0.014 MILES
STA. 163+92.08 TO STA. 164+22.08 = 30 L.F. = 0.006 MILES
SUB-TOTAL 105 L.F. = 0.020 MILES

PROJECT LENGTH = 12,677.12 L.F. = 2.401 MILES
WORK LENGTH = 12,782.12 L.F. = 2.421 MILES

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

1983 SPECIFICATIONS

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

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

SUPPLEMENTAL SPECIFICATIONS		
803	5-27-83	
845	1-13-84	
847	10-17-83	
848	2-17-83	
921	12-4-72	
947	10-17-83	
953	8-21-80	
956	6-26-78	

Approved Martin A. Gabbe
Date 4/9/84 District Deputy Director of Transportation

Approved Walter J. Gestring
Date 5-10-84 Engineer, Bureau of Bridges and Structural Design.

Approved Wayne H. Kauble
Date 8-13-84 Chief Engineer, Planning and Design

Approved Warren T. Smith
Date 8-13-84 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS							
BP-3	12-6-76	GR-1	2-5-82	TC-35.10	10-5-77		
BP-4	7-16-81	GR-2B	2-5-82	TC-41.20	3-26-79		
BP-5	7-16-81						
BP-7	12-6-76	GR-3A	2-5-82	TC-42.10	8-19-77		
BP-11	1-30-84	GR-3B	2-5-82	TC-42.20	3-26-79		
		GR-4	2-5-82	TC-51.10	3-30-79		
		GR-4A	1-30-84	TC-51.11	4-3-79		
		GR-5	2-5-82	TC-52.20	4-3-79		
F-1	11-10-83	GR-6	2-5-82	TC-72.20	2-26-82		
F-2	5-1-76	LA-1	6-1-79				
F-5	5-1-76	MC-9A	5-1-81				
F-6	5-1-76	MC-4	7-26-76				
		MC-11	8-1-78				

Plan Prepared By:
O.D.O.T. DISTRICT 12
LOCATION & DESIGN

SEAL

03439
Project: LAK-44-7.11
Date of Letting ____ 19 ____, Contract No. ____

LD0300 Rev. 11-1-78

SCHEMATIC PLANS

FHWA REGION	STATE	PROJECT	
5	OHIO		

2/35

LAKE COUNTY
LAK-44-7.11

SCALE
0 100 200 400

BEGIN WORK
STA. 36+24.10

BEGIN PROJECT
STA. 36+99.10
S.L.M. 7.11

M-1A65(|)

EQUATION
P.I. STA. 36+99.10 BK. =
STA. 37+00.00 AH.

SR 2

40 50 60

BLACKBROOK RD.

SR 283

BRIDGE NO.
LAK-44-0784

STA. 81+76.46

80

MATCH LINE STA. 85+00

MENTOR CITY
PAINESVILLE TWP.

MATCH LINE STA. 85+00

90 100

PAINESVILLE TWP.
GRAND RIVER VILLAGE

STA. 101+95.50

TEMPLE AVE.

END WORK
STA. 164+22.08

END PROJECT
STA. 163+92.08
S.L.M. 9.53

M-1A65(|)

110 120 130 140

OLIVE ST.

EQUATION
ST. STA. 121+52.46 BK. =
STA. 121+67.42 AH.

MATCH LINE STA. 150+00

MATCH LINE STA. 150+00

160

GRAND RIVER VILLAGE
PAINESVILLE TWP.

STA. 156+31.90

FHWA REGION	STATE	PROJECT	
5	OHIO		

3
35

LAKE COUNTY
LAK-44-7.11

TYPICAL SECTIONS

TYPE 848

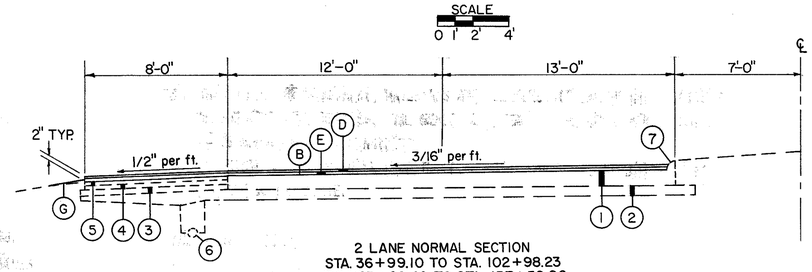
NOTES

TYPICAL SECTIONS ARE INTENDED TO SHOW THE GENERAL ROADWAY AND PAVEMENT FEATURES ONLY. FOR DETAILS, SEE THE PLAN SHEETS, DETAIL SHEETS AND CROSS SECTION SHEETS.

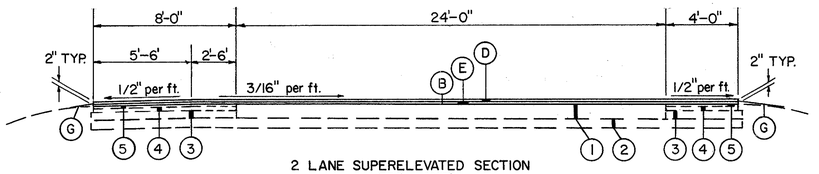
SPREADING EQUIPMENT: AN AUTOMATIC SCREED CONTROL HAVING A 40 FOOT SKI ARM SHALL BE USED FOR PLACING THE INTERMEDIATE COURSE (SEE PROPOSAL NOTE). FOR FULL WIDTH PAVING, THE WIDTH LAID SHALL NOT EXCEED THE PAVER'S RATED WIDTH AS RECOMMENDED BY THE PAVER MANUFACTURER.

LONGITUDINAL JOINTS: LONGITUDINAL JOINTS BETWEEN A PAVEMENT LANE AND ADJOINING BERM OR SPEED CHANGE LANE AND BETWEEN A SPEED CHANGE LANE AND THE ADJOINING BERM SHALL BE MADE THE SAME DAY. ALL LONGITUDINAL JOINTS SHALL BE HOT WITH THE EXCEPTION OF ONE COLD JOINT PER ROADWAY. LONGITUDINAL JOINT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER. EACH RAMP SHALL HAVE ONLY ONE LONGITUDINAL COLD JOINT LOCATED APPROXIMATELY HALFWAY ACROSS THE RAMP.

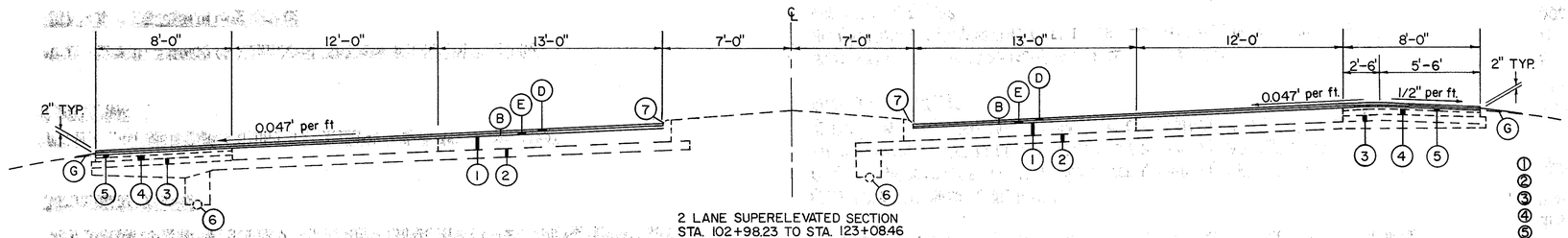
SCALE
0 1' 2' 4'



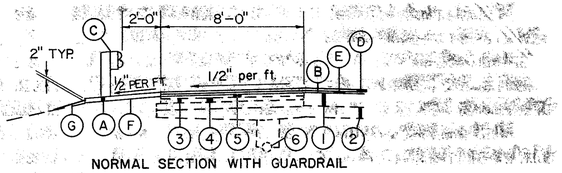
2 LANE NORMAL SECTION
STA. 36+99.10 TO STA. 102+98.23
STA. 123+08.46 TO STA. 157+50.00



2 LANE SUPERELEVATED SECTION
LEFT LANES
STA. 159+63 TO STA. 163 +75



2 LANE SUPERELEVATED SECTION
STA. 102+98.23 TO STA. 123+0846



NORMAL SECTION WITH GUARDRAIL

LEGEND

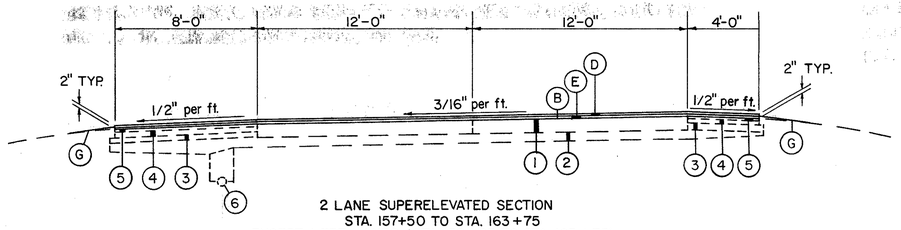
EXISTING

① 9" REINFORCED PORTLAND CEMENT CONCRETE
② SUBBASE
③ BITUMINOUS SURFACE TREATMENT
④ WATERPROOFED AGGREGATE BASE COURSE
⑤ BITUMINOUS SURFACE
⑥ UNDERDRAIN
⑦ CONCRETE CURB

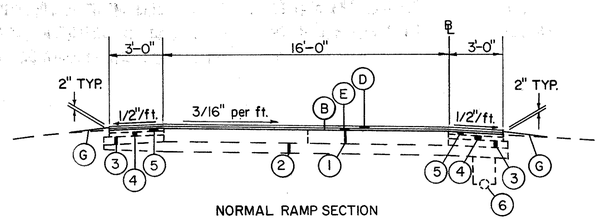
PROPOSED

Ⓐ	ITEM 301	3" BITUMINOUS AGGREGATE BASE, AS PER PLAN, AC-20, RT-11 OR RT-12
Ⓑ	ITEM 407	TACK COAT AND COVER AGGREGATE (SEE GENERAL NOTES)
Ⓒ	ITEM 606	GUARD RAIL, TYPE 5
Ⓓ	ITEM 848	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AS PER PLAN, AC-20
Ⓔ	ITEM 848 ★	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (1 3/4" AVG.), AC-20
Ⓕ	ITEM SPEC.	HERBICIDE FOR WEED CONTROL
Ⓖ	ITEM 203	LINEAR GRADING (TO BE USED ON ALL SHOULDERS)

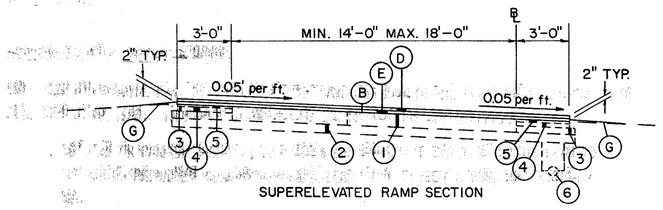
★ See Proposal Note



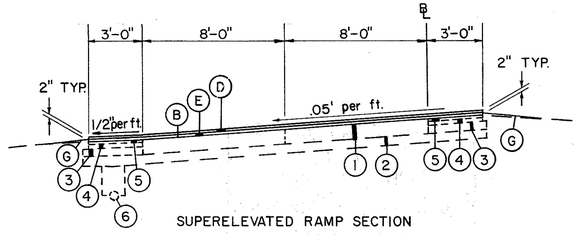
2 LANE SUPERELEVATED SECTION
STA. 157+50 TO STA. 163+75
EXCEPT LEFT LANES (STA. 159+63 TO STA. 163+75)



NORMAL RAMP SECTION



SUPERELEVATED RAMP SECTION



SUPERELEVATED RAMP SECTION

GENERAL NOTES

COMPUTED BY: N.A. 3-84
CHECKED BY

FISCAL YEARS	STATE	PROJECT	
5	OHIO		

4
35

LAKE COUNTY
LAK-44-7.11

GENERAL

ITEM 619 - FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 400 SQ. FT. OF FLOOR SPACE. PAYMENT SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 619 FIELD OFFICE.

CONTINGENCY QUANTITIES

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

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

ALL CORNERS SHALL BE ROUNDED (4' MINIMUM) EVEN THOUGH SHOWN OTHERWISE ON THESE PLANS.

RIGHT OF WAY

ALL WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY OR EASEMENTS.

EXISTING TYPICAL SECTIONS

EXISTING TYPICAL SECTIONS HAVE BEEN TAKEN FROM THE RECORDS AND ARE BELIEVED TO REPRESENT THE EXISTING PAVEMENT, BUT THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THE SAME.

FOR FURTHER INFORMATION IN REGARD TO THE EXISTING TYPICAL SECTIONS THE CONTRACTOR SHALL REFER TO THE PREVIOUS CONSTRUCTION PLANS. THESE PLANS MAY BE REVIEWED AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT TWELVE OFFICES, 10100 BROADWAY AVENUE, GARFIELD HEIGHTS, OHIO 44125.

ALTERNATE METHODS

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR.

EQUIPMENT AND MATERIAL STORAGE

IN ORDER TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC THE CONTRACTORS ATTENTION IS DIRECTED TO 614.03. IN ADDITION THE FOLLOWING PROVISIONS SHALL APPLY:

1. STORED OR PARKED VEHICLES, MATERIALS AND EQUIPMENT SHALL BE LOCATED BEHIND EXISTING PERMANENT GUARDRAIL OR NOT LESS THAN 30 FEET BEYOND THE TRAVELED WAY.
2. ANY REMOVED ITEMS SHALL NOT BE STORED ON THE RIGHT OF WAY FOR MORE THAN THIRTY DAYS.
3. THE STORAGE OF EQUIPMENT, MATERIALS AND VEHICLES WITHIN THE HIGHWAY RIGHT OF WAY WILL BE PERMITTED. THE NUMBER OF AREAS AND EXACT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER.
4. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE STATE.

COST PARTICIPATION I (PART I)

FEDERAL, STATE, AND CITY OF MENTOR PARTICIPATION

COST PARTICIPATION II (PART II)

FEDERAL AND STATE PARTICIPATION

COST PARTICIPATION III (PART III)
STATE AND LOCAL PARTICIPATION

UNDERGROUND UTILITIES

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

UTILITIES NOTIFICATION

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS.

THE OWNER OF THE UNDERGROUND UTILITY FACILITY SHALL, WITHIN FORTY-EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, AFTER NOTICE IS RECIEVED, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

CITY OF PAINESVILLE
7 RICHMOND STREET
PAINESVILLE, OHIO 44077
(216) 352-9301

OHIO WATER
8644 STATION STREET
MENTOR, OHIO 44060
(216) 225-3421

UNDERGROUND UTILITIES
48 HOURS
BEFORE YOU DIG
Call 800-362-2764 (Toll free)
OHIO UTILITIES
PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

ROADWAY

ITEM 202 - WEARING COURSE REMOVAL

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED FOR BUTT JOINTS AS DIRECTED BY THE ENGINEER.

ITEM 202 - WEARING COURSE REMOVED PART I 1460 PART II 500 S.Y.

PAVEMENT REMOVED, AS PER PLAN

THE EXISTING PAVEMENT SHALL BE REMOVED BY SAWING A NEAT LINE FOR THE FULL DEPTH REQUIRED BY THE PAVEMENT REPLACEMENT DETAILS, SHEET 26. IN ADDITION THE COST OF REMOVING THE SUBBASE MATERIAL FOR THE 305 REPLACEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PAVEMENT REMOVAL ITEM. ALL LOOSE AND BROKEN CONCRETE MUST BE REMOVED FROM THE JOINTS. ADEQUATE PROTECTION AGAINST DAMAGING THE ABUTTING PAVEMENT SHALL BE TAKEN. THE CONTRACTOR'S ATTENTION IS DIRECTED TO 107.12 OF THE SPECIFICATIONS. THE COST OF RESHAPING AND RECOMPACTING THE SUBBASE OR SUBGRADE DISTURBED DURING THE REMOVAL OPERATIONS, AND ANY ADDITIONAL EXCAVATION ALONG THE EXISTING PAVED BERM NECESSARY FOR THE PAVEMENT REPLACEMENT OPERATIONS, SHALL ALSO BE INCLUDED IN THE UNIT PRICE BID FOR THE PAVEMENT REMOVAL ITEM.

ITEM 203 - LINEAR GRADING

THIS ITEM SHALL BE PERFORMED ALONG THE OUTSIDE EDGE OF ALL PAVED SHOULDERS INCLUDING THOSE WHICH ARE TO BE SURFACED WITH ITEM 301 - BITUMINOUS AGGREGATE BASE FOR EROSION CONTROL (SEE REF. Ⓐ OF THE TYPICAL SECTION). THIS ITEM OF WORK SHALL INCLUDE ALL SITE RESTORATION, EXCAVATION AND EMBANKMENT OPERATIONS NECESSARY TO PROVIDE A 2 INCH DROP AT THE EDGE OF THE SHOULDER RESURFACING. THIS WORK SHALL ALSO INCLUDE REGRADING OF THE SHOULDER AREAS WHERE TRAFFIC AND WEATHER MAY HAVE BUILT A RIDGE OF EARTH AND DEBRIS. THE CONTRACTOR SHALL PROVIDE SMOOTH SHOULDER SLOPES (1/2 INCH PER FOOT MINIMUM, 1 INCH PER FOOT MAXIMUM) TO ASSURE POSITIVE SHOULDER DRAINAGE. ALL AREAS DISTURBED BY THIS ITEM OF WORK SHALL BE RESEEDED AS PER ITEM 659.

ALL COST FOR EXCAVATION, EMBANKMENT, GRADING AND SEEDING AND MULCHING SHALL BE INCLUDED UNDER THIS ITEM OF WORK.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

THIS ITEM SHALL BE USED TO REPAIR THE BRIDGE DECKS, ROADWAY SURFACE AND BERMS WHICH ARE DAMAGED DURING THE CLOSURE. THE CONTRACTOR SHALL USE THIS ITEM TO MAINTAIN THE HIGHWAY ACCORDING TO SEC. 614.02. THE CONTRACTOR SHALL PERFORM THE ABOVE WORK BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. AND SHALL NOT CLOSE MORE THAN ONE ADDITIONAL LANE TO DO THIS WORK. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR THE MAINTENANCE OF TRAFFIC AS OUTLINED ABOVE, TO BE USED AS DIRECTED BY THE ENGINEER ON ALL PARTS OF THIS PROJECT.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

PART I	PART II	
20	30	C.Y.

DUST CONTROL

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR DUST CONTROL:

	PART I	PART II	
ITEM 616 - WATER	8	12	M GAL.
ITEM 616 - CALCIUM CHLORIDE	.8	1.2	TONS

GENERAL NOTES

ROADWAY

TYPE 5 GUARDRAIL POST SPACING

WHEN THE OFFSET BETWEEN THE FACE OF GUARDRAIL AND BRIDGE PIERS OR OTHER FIXED OBJECTS IS LESS THAN 4 FEET THE GUARDRAIL SHALL BE STIFFENED BY PROVIDING 3 FT. 1½ INCH POST SPACING FROM 12.5 FEET IN ADVANCE OF THE OBSTRUCTION TO THE END OF THE OBSTRUCTION. COST INCLUDED IN THE TYPE 5 UNIT BID PRICE.

GUARDRAIL PROTECTION

NO SIGN SUPPORTS SHALL BE ERECTED BEFORE THE NECESSARY GUARDRAIL PROTECTION IS IN PLACE. SIMILARLY EXISTING GUARDRAIL WHICH PROTECTS AN OBSTRUCTION OR SLOPE WHICH IS TO BE UPGRADED TO ELIMINATE GUARDRAIL, SHALL NOT BE REMOVED UNTIL THAT WORK HAS BEEN COMPLETED. EXISTING GUARDRAIL WHICH IS SCHEDULED TO BE REPLACED WITH TYPE 5 GUARDRAIL, SHALL NOT BE REMOVED UNTIL THE NEW GUARDRAIL IS READY TO BE INSTALLED. UNDER NO CIRCUMSTANCES SHALL ANY HAZARD BE WITHOUT GUARDRAIL PROTECTION FOR MORE THAN 24 HOURS. (SEE SAFETY NOTE, SHEET 12)

LOCATIONS OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS,AS SHOWN IN THESE PLANS,ARE SUBJECT TO ADJUSTMENT *prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.*

SEQUENCE OF OPERATIONS FOR GUARDRAIL INSTALLATION

A. RAMP GUARDRAIL

GUARDRAIL WORK ALONG RAMPS MAY BE PERFORMED AT ANY TIME

B. GUARDRAIL ADJACENT TO OUTSIDE MAINLINE LANES

1. COMPLETE ALL ITEM 848 RESURFACING COURSES
2. REMOVE EXISTING GUARDRAIL (INSTALL TEMPORARY CONCRETE BARRIER AT HAZARDS - SEE PUBLIC SAFETY NOTE)
3. CONSTRUCT 4 FT. STRIP OF ITEM 301 - BITUMINOUS AGGREGATE BASE, AS PER PLAN ALONG OUTSIDE EDGE OF SHOULDER AS DETAILED ON SHEET NO. 24
4. INSTALL NEW GUARDRAIL

RESTORATION OF DISTURBED AREAS ASSOCIATED WITH WORK FOR GUARDRAIL AND FENCE ITEMS

THE CONTRACTOR SHALL RESTORE ALL SEEDED AND SODDED AREAS, PAVED SHOULDERS, AND ALL OTHER DISTURBED SURFACES TO A CONDITION AT LEAST EQUAL TO THAT EXISTING BEFORE THIS WORK WAS STARTED. ALL REPLACEMENTS SHALL BE DONE IN ACCORDANCE WITH THE PERTINENT SPECIFICATION ITEMS AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR ALL RESTORATION WORK, INCLUDING MATERIALS, EQUIPMENT, LABOR, INCIDENTALS AND DISPOSAL OF ALL SURPLUS MATERIALS, SHALL BE INCLUDED IN THE UNIT PRICES BID FOR VARIOUS 606 AND 607 ITEMS.

ITEM SPECIAL - DYNAFLECT TESTING OF EXISTING PAVEMENT

THIS ITEM OF WORK SHALL BE PERFORMED ON EACH PAVEMENT PANEL AND ON ALL TRANSVERSE PAVEMENT JOINTS AND DISTRESSED CRACKS. THE INFORMATION FROM THIS TESTING WILL BE ANALYZED BY THE ENGINEER TO DETERMINE ALL PAVEMENT PANEL AND JOINT REPAIR LOCATIONS, AND PAVEMENT SUBSEALING LOCATIONS.

THE DYNAFLECT IS A MOBILE ELECTROMECHANICAL DEVICE USED FOR INDUCING AND MEASURING PAVEMENT DEFLECTIONS. THE PAVEMENT DEFLECTIONS AT FIVE POINTS (W_1, W_2, W_3, W_4 AND W_5) ARE MEASURED SIMULTANEOUSLY AT EACH TEST LOCATION.

ON EACH AND EVERY LANE THE FOLLOWING TESTS AND DATA ANALYSIS IS REQUIRED:

1) MID SLAB TEST - THE UNIT SHALL BE POSITIONED APPROXIMATELY MIDWAY BETWEEN ORIGINAL TRANSVERSE JOINTS AND RELATIVELY MIDWAY BETWEEN ANY TRANSVERSE CRACKS IN THE PAVEMENT. THE DEFLECTION READINGS SHALL BE TAKEN AND THE FOLLOWING INFORMATION SHALL BE DETERMINED;

   A) SPREADABILITY = SPR = $\frac{W_1+W_2+W_3+W_4+W_5}{5W_1} \times 100$

   B) BASE INDICATOR = W_5

2) CRACK AND JOINT TESTS - THE UNIT SHALL BE POSITIONED SUCH THAT DEFLECTION SENSORS 1 AND 2 STRADDLE THE EXISTING TRANSVERSE PAVEMENT JOINT OR CRACK. THE DEFLECTION READINGS SHALL BE TAKEN AND THE FOLLOWING INFORMATION SHALL BE DETERMINED;

   A) SURFACE CURVATURE INDEX = SCI = $W_1 - W_2$ B) SPREADABILITY = SPR (SEE ABOVE)
   C) RELATIVE STRENGTH = RS = W_1 (TEST REQ'D ON BOTH SIDES OF THE JOINT)

AT EACH TEST LOCATION THE AFOREMENTIONED TEST INFORMATION SHALL BE PAINTED DIRECTLY ONTO THE PAVEMENT FOR EVALUATION BY THE ENGINEER. ("SPR, AND "W_5" FOR MIDSLAB TESTS, "SCI", "SPR" AND BOTH W_1 VALUES FOR FOR CRACK AND JOINT TESTS)
MAINLINE DYNAFLECT TESTING SHALL BE DONE BEHIND PERMANENT LANE CLOSURES. RAMPS MAY BE TESTED DURING PARTIAL LANE CLOSURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-MARKING ANY TEST DATA WHICH IS OBLITERATED BY TRAFFIC PRIOR TO JOINT EVALUATION.

ALL DYNAFLECT TESTS MUST BE PERFORMED WHEN THE PAVEMENT IS COOL. DURING SUMMER TESTS MUST BE PERFORMED DURING THE FIRST SEVERAL HOURS OF DAYLIGHT OR AT NIGHT. DURING SPRING OR FALL TESTS MAY ALSO BE PERFORMED DURING OVERCAST DAYTIME HOURS. OUTSIDE TEMPERATURES SHOULD BE BELOW 70° DURING TESTING. SUNLIGHT AND/OR HIGH TEMPERATURES CAUSE THE JOINTS TO "LOCK UP", SUBSEQUENTLY GIVING THE INDICATION OF A SOUND JOINT. TESTING SHALL BE SUSPENDED WHEN THIS OCCURS AND ANY QUESTIONABLE TEST AREA MUST BE RE-TESTED AFTER THE PAVEMENT RELEASES. PAVEMENT AREAS WHICH ARE SUBSEALED SHALL BE RE-TESTED TO DETERMINE THE EFFECTIVENESS OF THE SUBSEALING OPERATION.
PAYMENT FOR THIS ITEM OF WORK SHALL BE BASED ON THE NUMBER OF LANE-MILES TESTED. (SEE LANE MILE DEFINITION)

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE.

ITEM SPECIAL - DYNAFLECT TESTING OF EXISTING PAVEMENT	PART I	PART II
	4.71	6.69 LANE MILES

DITCH RESTORATION

THIS WORK SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF SILT, VEGETATION, TREES AND OTHER LOOSE OR UNSUITABLE MATERIAL FROM THE EXISTING DITCHES. THE ORIGINAL DITCH CROSS SECTION AND GRADE SHALL BE RE-ESTABLISHED TO THE SATISFACTION OF THE ENGINEER. THE DITCHES SHALL BE SEEDED AND MULCHED AS PER ITEM 659 INCLUDING FERTILIZING AND LIMING. AFTER THE CROSS SECTIONS AND GRADES HAVE BEEN RE-ESTABLISHED.

THE LOCATIONS OF THIS WORK SHALL BE AS DIRECTED BY THE ENGINEER. PAYMENT FOR ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN SHALL INCLUDE ALL COSTS OF REMOVAL, DISPOSAL AND RESTORATION WITH SEEDING AND MULCHING, FERTILIZING AND LIMING. MEASUREMENT WILL BE BY LOOSE VOLUME IN CARRIER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE UTILIZED AS OUTLINED ABOVE:

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN	PART I	PART II
	80	120 C.Y.

FHWA REGION	STATE	PROJECT	
5	OHIO		

6
35

LAKE COUNTY
LAK-44-7.11

GENERAL NOTES

PAVEMENT

PROFILE

THE PROFILE OF THE PROPOSED ASPHALT CONCRETE COURSE SHALL BE APPROXIMATELY 3 INCHES ABOVE THAT OF THE EXISTING PAVEMENT.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY OF BUILDING (PORTIONS OF) THIS PROJECT UNDER TRAFFIC AND CONSTRUCTING THE FULL PAVEMENT WIDTH IN STAGES, EXTREME CARE SHALL BE TAKEN TO PREVENT THE CONSTRUCTION OF A BUTT JOINT ON CENTERLINE IN THE BASE COURSES. LONGITUDINAL JOINTS SHALL BE LAPPED AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-5.

ITEM 301 BITUMINOUS AGGREGATE BASE, AS PER PLAN

THIS ITEM SHALL BE USED ON ALL BERMS PRIOR TO MOVING TRAFFIC ONTO THEM. IT SHALL BE USED TO REPAIR BADLY DAMAGED BERM AREAS AS DIRECTED BY THE ENGINEER. THIS WORK SHALL INCLUDE THE REMOVAL OF 6" OF THE EXISTING SHOULDER MATERIAL AND CONSTRUCTION OF A 6" COURSE OF ITEM 301 ON THE EXISTING SUBBASE OR NEW SUBBASE. THIS ITEM OF WORK SHALL BE PERFORMED FOR THE WIDTHS SHOWN ON THE PLAN SHEETS. ALL COST OF EXCAVATION AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 301 BITUMINOUS AGGREGATE BASE, AS PER PLAN. THE CONTRACTOR SHALL PERFORM THE ABOVE BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M.

THIS ITEM SHALL *ALSO* BE USED FOR EROSION CONTROL UNDER GUARDRAIL AS SHOWN ON THE TYPICAL SECTIONS. WHEN USED AS SUCH, THIS ITEM OF WORK SHALL INCLUDE ALL COSTS OF EXCAVATION AND EMBANKMENT OPERATIONS NECESSARY FOR THE PLACEMENT OF THIS ITEM IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 203. THE SITE RESTORATION WORK WILL BE INCLUDED UNDER ITEM 203 - LINEAR GRADING. (THIS ITEM SHALL BE PLACED BEFORE THE GUARDRAIL IS INSTALLED)

WHEN WORKING UNDER EXISTING GUARDRAIL THE COMPACTION METHOD SHALL BE AS APPROVED BY THE ENGINEER. BEFORE COMPLETION OF WORK ON THIS PROJECT BY THE CONTRACTOR, ANY DAMAGE TO THIS ITEM CAUSED BY THE INSTALLATION OF GUARDRAIL OR OTHER ITEMS OF WORK SHALL BE REPAIRED, AT NO ADDITIONAL COST TO THE STATE.

PAYMENT FOR THIS ITEM OF WORK WILL BE BASED ON PLAN DIMENSIONS OR WEIGHT CONVERSION TICKETS, WHICHEVER IS LOWER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE FOR THE RECONSTRUCTION OF PAVED SHOULDERS. (QUANTITY FOR USE FOR EROSION CONTROL CARRIED ELSEWHERE)

ITEM 301 - BITUMINOUS AGGREGATE BASE, AS PER PLAN

PART I	PART II	
23	27	C.Y.

ITEM 305 - 15" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN

ALL PATCHES ARE TO BE UNDERCUT A MINIMUM OF 6 INCHES BELOW THE BOTTOM OF THE EXISTING PAVEMENT AND SHALL EXTEND BACK UNDER THE EXISTING PAVEMENT 9 INCHES ALONG ALL SIDES. DOWELS ARE REQUIRED AT THE JOINTS. AS SHOWN ON SHEET Nº 26 , THE COST TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 305, 15" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN.

ITEM 305 - 9" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN

THIS ITEM OF WORK SHALL INVOLVE THE REPLACEMENT OF PAVEMENT SECTIONS AS DESIGNATED IN THE PLANS ON SHEET 26, REMOVAL OF PAVEMENT FULL DEPTH AND CUTTING OFF ALL PROTRUDING DOWEL BARS. BEFORE ANY SECTION IS REPLACED, THE EXISTING BASE SHALL BE EXAMINED AND DETERMINED IF SUITABLE BY THE ENGINEER. THE SURFACE SMOOTHNESS REQUIRED BY 451.12 SHALL BE WAIVED. DOWELS ARE REQUIRED AT THE TRANSVERSE JOINTS AND HOOK BOLTS, AS PER BP-3 AT 5 FOOT INTERVALS AT LONGITUDINAL JOINTS ABUTTING EXISTING PAVEMENT.

PAYMENT FOR ALL OPERATIONS AND MATERIAL NECESSARY TO PERFORM THE WORK SHALL BE AT THE UNIT PRICE BID PER SQUARE YARD OF ITEM 305, 9" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN.

DIMENSIONS FOR PAVEMENT REPLACEMENTS

THE DIMENSIONS FOR THE CONCRETE PAVEMENT REPLACEMENTS SHOWN IN THE PLANS ARE APPROXIMATE. THE FIELD DIMENSIONS FOR THE REPLACEMENTS MAY BE ADJUSTED BY THE ENGINEER AND FINAL PAYMENT QUANTITIES SHALL BE ACTUAL COMPLETED WORK DIMENSIONS.

UNSTABLE MATERIALS REMOVED AND REPLACED

THIS WORK SHALL CONSIST OF REMOVING OF UNSTABLE SUBBASE AND SUBGRADE MATERIALS AS ENCOUNTERED IN AREAS OF 305 PAVEMENT REPLACEMENT. WORK SHALL INCLUDE PREPARING A NEW SURFACE AS REQUIRED, FURNISHING, PLACING, AND COMPACTING SUBBASE, TYPE II, AS CLOSE AS POSSIBLE TO CONFORM WITH EXISTING CROSS-SECTIONS. ALL UNDER CUT AREAS ARE TO BE DRAINED TO EXISTING UNDERDRAIN, COST TO BE INCLUDED IN THIS ITEM. THIS WORK SHALL BE PERFORMED ONLY WHEN DEEMED NECESSARY AND IN SPECIFIC AREAS DETERMINED BY THE ENGINEER. THE SPECIFICATIONS FOR ITEM 310, EXCEPT AS NOTED IN THE PLANS, SHALL APPLY WHERE PERTINENT TO THE OPERATIONS BEING PERFORMED. OTHERWISE WORK SHALL BE AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY IS TO BE USED AS DIRECTED BY THE ENGINEER FOR REPLACING UNSUITABLE MATERIAL. PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE IN PLACE, SHALL BE MADE AT THE UNIT PRICE BID FOR:

ITEM 310 - SUBBASE, TYPE II, AS PER PLAN

PART I	PART II	
12	48	C.Y.

ITEM 310 - SUBBASE, TYPE I AS PER PLAN

THIS ITEM SHALL BE USED TO REPLACE EXISTING UNSUITABLE SUBBASE PRIOR TO THE PLACING OF SHOULDERS. ALL COSTS OF EXCAVATION AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 310 - SUBBASE, TYPE I AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 310 - SUBBASE, TYPE I AS PER PLAN

PART I	PART II	
18	22	C.Y.

ITEM 407 - TACK COAT

THE TACK COAT AND COVER AGGREGATE OPERATIONS SHALL BE AS DETERMINED AT A PRE-CONSTRUCTION CONFERENCE AS PER *SPEC.* 407.05. THE APPLICATION RATE SHALL NOT EXCEED 0.10 GAL. PER SQUARE YARD FOR TACK COAT AND 7 LBS. PER SQUARE YARD FOR COVER AGGREGATE.

ITEM 609 - ASPHALT CONCRETE CURB

THIS ITEM SHALL BE USED TO RE-DIRECT THE FLOW OF WATER AWAY FROM BRIDGE ABUTMENT(S) LOCATED AT THE DOWNGRADE SIDE OF EACH STRUCTURE.

TWENTY FIVE (25) FEET OF ASPHALT CURB SHALL BE USED AT EACH LOCATION. THE CURB SHALL BUTT CLOSELY TO THE WINGWALL AND BE LOCATED EITHER BEHIND OR UNDER THE GUARDRAIL.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 609 - ASPHALT CONCRETE CURB
AC-20, STANDARD TYPE I

PART I	
100	L.F.

PAVEMENT

ITEM 848- ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED TO REPAIR AND/OR PRELEVEL DAMAGED PAVED SHOULDERS DURING RESURFACING.

ITEM 848- ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2

PART I	PART II	
112	138	C.Y.

ITEM 848

ON THIS PROJECT, ITEM 848, TABLE 2-2, PROPERTIES OF MIXTURES SHALL BE FOR A MEDIUM TRAFFIC VOLUMES.

ASPHALT APPROACHES AT BRIDGES

THE FINAL GRADE OF THE ASPHALT OVERLAY ON THE APPROACH SLAB SHALL BE DETERMINED BY EXTENDING THE BRIDGE STRUCTURE GRADE ACROSS THE APPROACH SLAB. MAXIMUM VARIATION FROM SET GRADE SHALL NOT EXCEED± 1/4 INCH AT THE ROADWAY END OF THE APPROACH SLAB. TRANSITIONING FROM THAT POINT SHALL PROCEED AT A RATE OF 25 FEET PER INCH AS PER BP-5. THE CONTRACTOR SHALL ESTABLISH CONTROLS AT 25 FOOT INTERVALS, BOTH ACROSS THE APPROACH SLAB AND IN THE TRANSITION AREA. VARIATIONS FROM THE SET GRADE ACROSS THE APPROACH SLAB IN EXCESS OF 1/4 INCH SHALL DEEM THE WORK UNACCEPTABLE AT WHICH TIME A MINIMUM OF 1 INCH OF ASPHALT ON THE APPROACH SLAB SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE STATE.

STATION MARKINGS IN ASPHALT CONCRETE SURFACE COURSE

THE CONTRACTOR SHALL INSTALL AN INLAID THERMOPLASTIC MARKING EACH 100 FEET INTO THE WARM SURFACE BY THE USE OF A MECHANICAL ROLLER.

THE MARKINGS SHALL BE LOCATED SIX (6) INCHES IN FROM THE RIGHT EDGE OF THE PAVED SHOULDER AND SHALL BE SHAPED AS FOLLOWS:

1) ONE 4 INCH X 12 INCH RECTANGLE AT EACH 1000 FOOT STATIONS. (EXAMPLE: STA. 220+00)
2) TWO 4 INCH DOTS AT EACH 500 FOOT STATIONS. (EXAMPLE: STA. 225+00)
3) ONE 4 INCH DOT AT ALL REMAINING 100 FOOT STATIONS. (EXAMPLE: STA. 223+00)

ALL COSTS OF MATERIALS AND INSTALLATION SHALL BE INCLUDED IN THE PERTINENT ASPHALT CONCRETE SURFACE COURSE ITEM.

ITEM SPECIAL - PARTIAL DEPTH PAVEMENT REPAIR:

THIS ITEM OF WORK SHALL CONSIST OF PARTIAL DEPTH REMOVAL OF EXISTING PAVEMENTS IN AREAS EXHIBITING DETERIORATION AT THE SURFACE, APPLYING TACK COAT, AND PLACING AND COMPACTING ASPHALT CONCRETE.

THE ENGINEER WILL DESIGNATE THE LOCATION AND THE LIMITS OF THE AREAS TO BE REPAIRED. THE REPAIR AREAS WILL BE RECTANGULAR IN SHAPE WITH DIMENSIONS AS REQUIRED TO ENVELOP SURFACE DETERIORATION. UNLESS OTHERWISE SHOWN IN THE PLANS, OR DIRECTED BY THE ENGINEER, TYPICAL REPAIR AREAS WILL EXTEND THE FULL WIDTH OF A TRAFFIC LANE AT TRANSVERSE JOINTS AND ALONG PORTIONS OF LONGITUDINAL JOINTS AND THE DEPTH OF REMOVAL SHALL BE ONE TO THREE INCHES.

THE PAVEMENT SHALL BE REMOVED TO THE SPECIFIED DEPTH WITHIN THE DESIGNATED LIMITS BY A METHOD THAT WILL NOT LOOSEN OR OTHERWISE DAMAGE ADJACENT PAVEMENT. PAVEMENT SO REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH 203.05.

AFTER REMOVAL OF THE PAVEMENT, TACK COAT, IN ACCORDANCE WITH 407, SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY COAT THE EXPOSED SURFACE AND TO FILL CRACKS AND JOINT OPENINGS.

GENERAL NOTES

ASPHALT CONCRETE, IN ACCORDANCE WITH 402, SHALL THEN BE PLACED AND COMPACTED TO FINISH FLUSH WITH THE ADJACENT PAVEMENT SURFACE.

THE NUMBER OF SQUARE YARDS TO BE PAID FOR SHALL BE CALCULATED USING THE DIMENSIONS ESTABLISHED BY THE ENGINEER. PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THE WORK INCLUDING TACK COAT AND ASPHALT CONCRETE, PAYMENT WILL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE YARD	PARTIAL DEPTH PAVEMENT REPAIR

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

	PART I	PART II	
ITEM SPECIAL - PARTIAL DEPTH PAVEMENT REPAIR	100	400	S.Y.

CONTRACTION JOINTS IN BASE WIDENING

WHERE NEW CONCRETE BASE IS PLACED ADJACENT TO EXISTING CONCRETE PAVEMENT, CONTRACTION JOINTS SHALL BE PROVIDED IN THE NEW BASE SO AS TO FORM A CONTINUOUS JOINT WITH THAT IN THE EXISTING PAVEMENT.

THE MAXIMUM DISTANCE BETWEEN THE JOINTS IN NEW BASE SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-4. IF NECESSARY, ADDITIONAL JOINTS SHALL BE PROVIDED IN NEW BASE AT APPROXIMATELY EQUAL INTERVALS BETWEEN EXISTING JOINTS THAT EXCEED THE MAXIMUM SPACING.

ITEM SPECIAL, PAVEMENT SAWING

ALL REPAIR AREAS WILL BE LOCATED BY THE ENGINEER AND MARKED WITH PAINT PRIOR TO THE START OF PAVEMENT SAWING OPERATIONS.

THE EXISTING RIGID PAVEMENT SHALL BE SAWED FULL DEPTH AT THE LIMITS OF THE DESIGNATED AREAS. THE CONTRACTOR MAY ELECT TO MAKE ADDITIONAL CUTS TO FACILITATE THE REMOVAL OF THE PAVEMENT. HOWEVER, ONLY THE CUTS DESIGNATED BY THE ENGINEER WILL BE MEASURED FOR PAYMENT. PAVEMENT IN THE REPAIR AREA SHALL THEN BE REMOVED COMPLETELY IN ACCORDANCE WITH 202 AND IN A MANNER THAT WILL NOT DAMAGE OR UNDERMINE THE PAVEMENT THAT IS TO REMAIN IN PLACE.

THIS ITEM IS TO BE USED AT THE PAVEMENT REPAIR AREAS AS SHOWN ON SHEET 26.

ITEM SPECIAL - JOINT AND CRACK SEALING IN CONCRETE PAVEMENT

ALL JOINTS AND CRACKS IN THE EXISTING PORTLAND CEMENT CONCRETE PAVEMENT, INCLUDING THE LOGITUDINAL JOINT BETWEEN THE PAVEMENT AND PAVED SHOULDER, SHALL BE CLEANED, EXPOSED AS NECESSARY AND SEALED UNDER THIS ITEM OF WORK. THE WORDS JOINT AND CRACK ARE USED INTERCHANGEABLY AND REFERENCE TO EITHER SHALL APPLY TO BOTH.

ALL JOINTS SHALL BE PREPARED AS FOLLOWS:

CASE 1 - JOINTS LESS THAN 1/2 INCH WIDE.

THE JOINT SHALL BE ROUTED OPEN A MINIMUM OF 1/2 INCH WIDE BY 1 INCH DEEP.

CASE 2 - JOINTS 1/2 INCH TO 2 INCH WIDE.

THE JOINT SHALL BE GOUGED OR ROUTED CLEAN A MINIMUM OF 1 INCH DEEP.

CASE 3 - JOINTS WIDER THAN 2 INCHES.

ALL EXISTING PATCHING MATERIALS SHALL BE REMOVED AS NECESSARY TO EXPOSE A RELATIVELY VERTICAL JOINT BELOW. IF THE UNDERLYING JOINT IS LESS THAN 2 INCHES WIDE IT SHOULD BE TREATED AS PER THE APPROPRIATE CASE 1 OR 2 ABOVE. IF THE UNDERLYING JOINT IS GREATER THAN 2 INCHES IT SHALL BE GOUGED OR ROUTED CLEAN AN ADDITIONAL 1 INCH DEEP.

ALL JOINT PREPARATIONS LISTED ABOVE SHALL BE CONTINUED UNTIL THE JOINT IS FREE OF OLD SEALING MATERIALS, DUST, DIRT, WATER, ICE OR OTHER FOREIGN MATERIALS. SANDBLASTING AND/OR AIR BLASTING AS NECESSARY TO CLEAN THE JOINT WILL ALSO BE REQUIRED. PRIOR TO PLACING ANY SEALING MATERIAL THE JOINT PREPARATION SHALL BE APPROVED BY THE ENGINEER.

THE JOINT SEAL MATERIAL SHALL BE A HOT APPLIED JOINT SEALER MEETING THE REQUIREMENTS OF ASTM D 3405. THE MATERIAL SHALL MEET THE -20° F BOND TEST AS DESCRIBED IN SECTION 4.4 OF D 3405.

ALL JOINTS SHALL BE SEALED AS FOLLOWS:

CASE 1 AND CASE 2

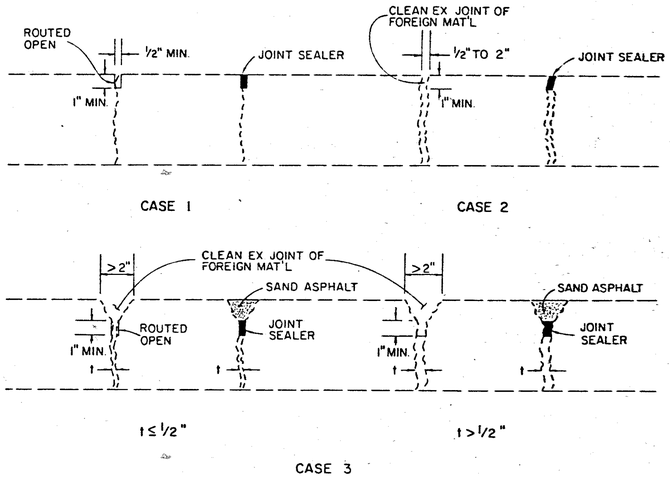
THE PREPARED JOINT SHALL BE FILLED FLUSH WITH JOINT SEAL MATERIAL. IF THE BOTTOM OF THE JOINT IS OPEN THE CONTRACTOR MAY, AT HIS OPTION, FILL THE BOTTOM OF THE JOINT USING ROPE CAULKING, INSULATING FOAM OR OTHER SIMILAR COMPRESSIBLE MATERIAL. THE TOP 1 INCH OF THE JOINT MUST REMAIN OPEN TO ACCEPT THE JOINT SEAL MATERIAL.

CASE 3

THE PREPARED VERTICAL PORTION OF THE JOINT SHALL BE TOTALLY FILLED WITH JOINT SEAL MATERIAL. THE REMAINING VOID SHALL BE FILLED FLUSH WITH SAND ASPHALT. IF THE BOTTOM OF THE JOINT IS OPEN THE CONTRACTOR MAY FILL THE JOINT BOTTOM TO CONTAIN THE JOINT SEAL MATERIAL AS DESCRIBED IN CASE 1 AND CASE 2.

ANY HEIGHT VARIATIONS ACROSS THE JOINTS GREATER THAN 1/2 INCH (ESPECIALLY ALONG THE PAVED SHOULDER) SHALL BE TRANSITIONED WITH SAND ASPHALT AT THE RATE OF 1 INCH PER FOOT.

TYPICAL APPLICATIONS:



THIS ITEM OF WORK SHALL INCLUDE ALL EQUIPMENT, LABOR AND MATERIALS NECESSARY TO SEAL ALL JOINTS AND CRACKS AS OUTLINED ABOVE.

THE METHOD OF MEASUREMENT SHALL BE THE ACTUAL NUMBER OF LANE MILES PREPARED AND SEALED. (SEE LANE MILE DEFINITION).

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE.

ITEM SPECIAL - JOINT AND CRACK SEALING IN CONCRETE PAVEMENT

PART I	PART II	
4.71	6.69	LANE MILES

LANE MILE DEFINITION (PORTLAND CEMENT CONCRETE PAVEMENT ONLY)

MAINLINE - ONE LANE PER 12 FT. WIDTH ANY FRACTIONAL PORTION OF A LANE SHALL BE CONSIDERED A FULL LANE (I.E. 0.1' to 12.0' IS ONE LANE)

RAMP - TYPICALLY 1 LANE IS 16 FT. WIDE (18 FT. WIDE AT GORES). WHEN THE PAVEMENT WIDTH EXCEEDS THE SINGLE LANE WIDTH A SECOND LANE IS COUNTED (UP TO 24 FT. WIDE) THEREAFTER MULTIPLES OF 12 FT. DEFINE EACH LANE AS IN THE MAINLINE DEFINITION.

A LANE MILE IS ONE LANE, AS DEFINED ABOVE, ONE MILE LONG.

GENERAL NOTES

FHWA REGION	STATE	PROJECT		8
5	OHIO			35

LAKE COUNTY
LAK-44- 7.11

PAVEMENT

ITEM SPECIAL - SUBSEALING EXISTING CONCRETE PAVEMENT

1.1) DESCRIPTION

THIS ITEM OF WORK SHALL CONSIST OF SEALING VOIDS UNDER THE EXISTING CONCRETE PAVEMENT.

2.1) SUBSEALING LOCATIONS

THE LOCATIONS FOR SUBSEALING SHALL BE AS DIRECTED BY THE ENGINEER AND SHALL BE BASED UPON THE RESULTS OF THE DYNAFLECT TESTING.

3.1) MIX DESIGN

THE MIX DESIGN FOR SUBSEALING IS AS FOLLOWS:

1 PART (BY VOLUME) PORTLAND CEMENT TYPE 1 OR 11

3 PARTS (BY VOLUME) POZZOLAN (NATURAL OR ARTIFICIAL)

WATER TO ACHIEVE REQUIRED FLUIDITY

Admixture (ASTM C-494 Type F) to achieve required strength

IF AMBIENT TEMPERATURES ARE BELOW 55°F. AN ACCELERATOR WILL BE USED SUBJECT TO APPROVAL OF THE ENGINEER.

3.2) PORTLAND CEMENT

PORTLAND CEMENT SHALL MEET THE REQUIREMENTS. PORTLAND CEMENT TYPE 1, 11 OR 111 AS PER ASTM C-150.

3.3) POZZOLANS

POZZOLANS SHALL MEET THE REQUIREMENTS OF ASTM C-618, EXCEPT THAT THE CONTRACTOR MAY USE OTHER POZZOLANS IF HE CAN SHOW TEST DATA MEETING REQUIREMENTS OUTLINED IN THIS SECTION AND PREVIOUS USE OF THE MATERIAL FOR THIS PURPOSE ON OTHER PUBLIC WORKS PROJECTS.

3.4 FLOW CONE

FLUIDITY OF THE GROUT SLURRY SHALL BE MEASURED BY THE CORPS OF ENGINEERS FLOW CONE METHOD AS PER THEIR SPECIFICATION CRD-C 79-77. TIME OF EFFLUX FOR POZZOLANIC GROUTS SHALL RANGE FROM 16 TO 22 SECONDS. THESE MEASUREMENTS SHALL BE MADE TWO TIMES ON EACH SHIFT.

3.5 MATERIAL SUBMISSION

THE CONTRACTOR SHALL SUBMIT IN ADVANCE A PROPOSAL FOR MATERIALS AND ADDITIVES MEETING THE REQUIREMENTS OF SECTION 3.1 ABOVE. SUBMITTALS SHALL INCLUDE MILL CERTIFICATIONS FOR THE CEMENT, PHYSICAL AND CHEMICAL ANALYSIS FOR THE POZZOLANS AND INDEPENDENT LABORATORY TESTING OF THE GROUT SLURRY SHOWING ONE DAY, THREE DAY, AND SEVEN DAY STRENGTHS, FLOW CONE TIMES, SHRINKAGE AND EXPANSION OBSERVED AND TIME OF INITIAL SET. THE SEVEN DAY STRENGTH SHALL NOT BE LESS THAN 800 PSI.

4.1 EQUIPMENT

THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT NECESSARY OR INCIDENTAL TO THE ADEQUATE PERMANCE FOR OF THIS WORK AS FOLLOWS:

4.2 GROUT PLANT

THE GROUT PLANT SHALL CONSIST OF A PROGRESSIVE CAVITY CEMENT INJECTION PUMP HAVING A VARIABLE SPEED CONTROL AND A continuously agitated mixing and holding tank. The mixing machine shall be capable of providing a homogenous mixture. THE PUMP SHALL CONSIST OF A ROTOR OPERATING IN CLOSE PROXIMITY TO A STATOR THUS CREATING A HIGH SHEARING ACTION. THE PUMPING SYSTEM SHALL CONTAIN A BYPASS RETURN LINE ACTING AS A PRESSURE RELEASE.

THE DRY MATERIALS SHALL BE ACCURATELY MEASURED BY WEIGHT IF IN BULK OR SHALL BE PACKAGED IN UNIFORM VOLUME SACKS AND THE WATER SHALL BE BATCHED THROUGH A METER OR SCALE WITH A TOTALIZER FOR THE DAY'S CONSUMPTION.

4.3 WATER TANKER

WATER SHALL BE SUPPLIED FROM A WATER TRUCK WITH ADEQUATE CAPACITY AND PRESSURE FOR DELIVERY TO THE GROUT PLANT.

4.4 DRILLING

AN AIR COMPRESSOR AND ROCK DRILLS OR OTHER DEVICE CAPABLE OF DRILLING THE GROUT INJECTION HOLES THROUGH THE PAVEMENT AND BASE MATERIAL. THE EQUIPMENT SHALL BE IN GOOD CONDITION AND OPERATED IN SUCH A MANNER THAT THE HOLES ARE VERTICAL AND NOT "OUT-OF-ROUND". THE ROCK DRILL SHALL NOT BE HEAVIER THAN SIXTY POUNDS AND THE DOWNFEED PRESSURE WHETHER BY HAND OR MECHANICAL MEANS SHALL NOT EXCEED 200 POUNDS.

4.5 TRANSPORT

NECESSARY MATERIAL TRANSPORT AND HANDLING EQUIPMENT.

4.6 MISCELLANEOUS

ALL NECESSARY HOSES, VALVING AND VALVE MANIFOLDS AND POSITIVE CUT-OFF AND BYPASS PROVISIONS TO CONTROL PRESSURE AND VOLUME, PRESSURE GAUGES WITH GAUGE PROTECTORS, EXPANDING PACKERS OR HOSE FOR POSITIVE SEAL DURING GROUT INJECTION, WOOD PLUGS, HOLE WASHING TOOLS, DRILL STEEL AND BITS.

4.7 VERTICAL MOVEMENT TESTING

THE CONTRACTOR SHALL SUPPLY EQUIPMENT TO MEASURE SLAB LIFT WHICH SHALL BE CAPABLE OF DETECTING SIMULTANEOUSLY THE LIFT OF THE PAVEMENT EDGE OR OF ANY TWO OUTSIDE CORNER SLABS ADJACENT TO A JOINT AND THE ADJOINING SHOULDER. THE EQUIPMENT SHALL HAVE THE CAPABILITY OF MAKING SUCH MEASUREMENTS TO 0.001 INCH. THESE DEVICES TO MAKE LIFT MEASUREMENTS AGAINST A STABLE REFERENCE POINT SHALL BE OF A DESIGN SATISFACTORY TO THE ENGINEER.

6.1 DRILLING HOLES

GROUT INJECTION HOLES WILL BE DRILLED IN A PATTERN DETERMINED BY THE ENGINEER IN CONSULTATION WITH THE CONTRACTOR. THEY SHALL NOT BE LARGER THAN 2 INCHES IN DIAMETER, DRILLED VERTICALLY AND ROUND, AND TO A DEPTH SUFFICIENT TO PENETRATE ANY STABILIZED BASE.

6.2 WASHING HOLES

SUBJECT TO THE ENGINEER'S APPROVAL, HOLES MAY BE WASHED OR BLOWN TO CREATE A SMALL CAVITY, TO BETTER INTERCEPT THE VOID STRUCTURE.

6.3 SUBSEALING

DURING THE SUBSEALING OPERATION, A POSITIVE MEANS OF MONITORING LIFT SHALL BE USED AS DESCRIBED IN SECTION 4.7. THE UPWARD MOVEMENT OF THE PAVEMENT IN NO EVENT SHALL BE GREATER THAN 0.05 INCH. AN EXPANDING RUBBER PACKER OR HOSE CONNECTED TO THE DISCHARGE FROM THE PLANT SHALL BE LOWERED INTO THE HOLE. THE DISCHARGE END OF THE PACKER OR HOSE SHALL NOT EXTEND BELOW THE LOWER SURFACE OF THE CONCRETE PAVEMENT. EACH HOLE SHALL BE PUMPED UNTIL MAXIMUM PRESSURE IS BUILT UP OR MATERIAL IS OBSERVED FLOWING FROM HOLE TO HOLE. MAXIMUM ALLOWABLE PRESSURE SHALL NOT BE ALLOWED TO EXCEED 100 POUNDS PER SQUARE INCH OR OTHER VALUES SPECIFIED BY THE ENGINEER TO MINIMIZE SLAB RAISING. THE PRESSURE SHALL BE MONITORED BY AN ACCURATE PRESSURE GAUGE IN THE GROUT LINE THAT IS PROTECTED FROM THE GROUT SLURRY. WATER DISPLACED FROM THE VOID STRUCTURE BY THE GROUT SHALL BE ALLOWED TO FLOW OUT FREELY. EXCESSIVE LOSS OF THE GROUT THROUGH CRACKS, JOINTS, OR FROM BACKPRESSURE IN THE HOSE OR IN THE SHOULDER AREA SHALL NOT BE TOLERATED. PAY QUANTITIES WILL BE REDUCED BY THE ENGINEER ACCORDINGLY.

6.4 CORRECTING PANEL DISPLACEMENT

PAVEMENT WHICH HAS BEEN RAISED IN EXCESS OF THE 0.05 INCH ALLOWABLE TOLERANCE SHALL BE DEEMED UNACCEPTABLE, NO PAYMENT FOR ANY SUBSEALING MATERIAL AT THE SUBJECT LOCATION SHALL BE MADE WHEN THIS TOLERANCE IS EXCEEDED.

6.5 RADIAL CRACKS

CRACKS EMANATING RADIALLY FROM THE GROUT INJECTION HOLES WILL BE PRESUMED TO HAVE BEEN CAUSED BY IMPROPER INJECTION TECHNIQUES BY THE CONTRACTOR. FOR EACH 5 LINEAL FEET OF SUCH CRACK MEASURED, THE CONTRACTOR'S PAY QUANTITY SHALL BE REDUCED BY ONE CUBIC FOOT OF GROUT.

6.6 TRANSVERSE CRACKS

IN THE EVENT THAT TRANSVERSE CRACKS DEVELOP BETWEEN ADJACENT GROUT INJECTION HOLES, THE CONTRACTOR WILL BE REQUIRED TO REPAIR THESE CRACKS BY THE EPOXY INJECTION METHOD TO THE SATISFACTION OF THE ENGINEER OR AT THE DISCRETION OF THE ENGINEER, HE MAY REQUIRE REPLACEMENT OF THE ENTIRE PANEL OR A PORTION THEREOF.

6.7 HOLE PATCHING

UPON COMPLETION OF THE SUBSEALING, ALL DRILL HOLES WILL BE SEALED FLUSH WITH THE SURFACE OF THE PAVEMENT WITH A FAST SETTING SAND/CEMENT MATERIAL TO BE APPROVED BY THE ENGINEER.

6.8 WEATHER CONDITIONS

GROUT SUBSEALING SHALL NOT BE PERFORMED WHEN DAY TIME TEMPERATURES ARE BELOW 35°F. OR IF THE SUBGRADE AND/OR BASE COURSE MATERIAL IS FROZEN.

6.9 UNANTICIPATED CONDITIONS

IN THE EVENT THE ENGINEER DETERMINES THAT CONTINUED GROUT INJECTION AT ANY SPECIFIC LOCATION DUE TO MAJOR VOIDS IS NO LONGER ECONOMICALLY FEASIBLE, HE MAY DIRECT THE CONTRACTOR TO CEASE GROUT INJECTION AT THAT LOCATION. THE CONTRACTOR WILL BE PAID AT THE UNIT PRICE FOR THE MATERIAL USED UP TO THAT POINT.

7.1 OPERATIONAL LIMITS

THIS WORK SHALL BE PERFORMED AS PER THE MAINTENANCE OF TRAFFIC REQUIREMENTS.

8.1 MEASUREMENT

THE QUANTITIES TO BE PAID FOR WILL BE MEASURED AS FOLLOWS:

8.1.1 HOLES

HOLES DRILLED THROUGH THE EXISTING CONCRETE SLABS, AT THE LOCATION AND TO THE DEPTH SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER WILL BE MEASURED PER EACH. HOLES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH. SUCH PAYMENT WILL BE FULL COMPENSATION FOR DRILLING, PLUGGING, AND SEALING THE HOLE AFTER THE SUBSEALING IS COMPLETED.

8.1.2 SUBSEAL MATERIAL

THE SUBSEAL MATERIAL SHALL BE PAID FOR ON THE BASIS PER CUBIC FOOT (DRY MEASURE) OF MATERIAL INCORPORATED INTO THE PAVEMENT STRUCTURE.

THE UNIT CONTRACT PRICE PER CUBIC FOOT (DRY MATERIAL) SHALL BE FULL COMPENSATION FOR THE FURNISHING OF ALL LABOR, MATERIALS, INCLUDING WATER AND ADDITIVES, EQUIPMENT AND TOOLS, AND ALL OTHER COSTS NECESSARY AND INCIDENTAL TO ACCOMPLISH THE SUBSEALING OF THE PAVEMENT AT THE DESIGNATED LOCATIONS IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE DETAILS ON THE PLANS.

8.2 DEDUCTIONS

8.2.1 MIXED MATERIAL MAY NOT BE HELD IN THE MIXER OR INJECTION PUMP SUMP FOR MORE THAN ONE HOUR AFTER MIXING. ANY MATERIAL HELD FOR LONGER TIMES SHALL BE WASTED AND WILL NOT BE PAID FOR.

8.2.2 MATERIAL WASTED BY UNCONTROLLED FLOW AS DESCRIBED IN SECTION 6.3 WILL NOT BE PAID FOR AND WILL BE DEDUCTED FROM THE PAY QUANTITIES BY THE ENGINEER.

9.1 QUANTITIES

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE.

	PART I	PART II	
ITEM SPECIAL - HOLE FOR SUBSEALING	185	740	EACH
ITEM SPECIAL - SUBSEAL MATERIAL	185	740	C.F.

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GENERAL NOTES

DRAINAGE

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTIONS SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE-MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PERTINENT 603 CONDUIT ITEMS OF THE CONTRACT.

UNDERDRAIN OUTLETS IN EARTHWORK AREAS

EXISTING UNDERDRAIN OUTLETS WHICH ARE ENCOUNTERED IN THE EARTHWORK OR CULVERT EXTENSION AREAS SHALL BE EXTENDED AS DIRECTED BY THE ENGINEER USING 6 INCH CONDUIT, TYPE F. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 603 - 6" CONDUIT, TYPE F

PART I	PART II	
22	28	L.F.

ITEM 605 - AGGREGATE DRAIN

THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO BE USED WHERE AND AS DIRECTED BY THE ENGINEER TO DRAIN SUBBASE MATERIAL WHICH HAS BECOME SATURATED:

ITEM 605 - AGGREGATE DRAIN

PART I	PART II	
20	80	L.F.

LOCATION AND FLOW LINE ELEVATIONS OF EXISTING SEWERS AND EXISTING UNDERDRAINS

FLOW LINE ELEVATIONS AND LOCATIONS OF EXISTING SEWERS AND EXISTING UNDERDRAINS HAVE BEEN OBTAINED FROM THE EXISTING DESIGN PLANS.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THE EXISTING SEWERS AND EXISTING UNDERDRAINS BOTH AS TO LINE AND GRADE, BEFORE CONNECTING THE PIPES TO THE PROPOSED MEDIAN INLETS.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 604 STRUCTURE ITEM.

SEEDING AREAS (REGRADING AREAS)

QUANTITIES FOR SEEDING ARE CALCULATED FROM THE PAVED SHOULDER TO TWO(2) FEET BEYOND THE CONSTRUCTION LIMITS SHOWN ON THE CROSS SECTION.

FLUSHING AND REPAIR OF UNDERDRAINS:

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

1. ITEM SPECIAL - UNDERDRAIN OPENING - (EACH). THIS ITEM SHALL CONSIST OF EXPOSING THE FIRST TILE AT THE UPPER END OF AN UNDERDRAIN LINE OR A SUBSEQUENT INTERMEDIATE UNDERDRAIN OPENING AS PROVIDED HEREIN. EACH OPENING SHALL INCLUDE THE TRENCH EXCAVATION LENGTHWISE OVER THE EXISTING TILE, REPLACING THE 6" TILE BROKEN IN MAKING THE OPENING AND THE FULL DEPTH BACKFILL WITH NO. 8 AGGREGATE, ALL IN ACCORDANCE WITH SPECIFICATION SECTION 605. PAYMENT FOR THE OPERATIONS DESCRIBED ABOVE SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS INCIDENTAL TO COMPLETING THE ITEM INCLUDING A MAXIMUM OF 6 LIN. FT. OF 6" TILE AND SHALL BE MADE FOR "EACH" - - ITEM SPECIAL - - UNDER DRAIN OPENING.

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

   IN THE EVENT THE LINE IS FOUND TO BE PLUGGED OR FLOW RESTRICTED, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE RESTRICTION BY RODDING OR OTHER SIMILAR METHOD APPROVED BY THE ENGINEER. AN INTERMEDIATE UNDERDRAIN OPENING WILL BE PERMITTED AND PAID FOR PROVIDING IT IS NO CLOSER THAN 500 FT. TO THE INITIAL OPENING OR AT THE MID POINT OF THE LINE. THE COST OF RODDING THE LINE IS TO BE INCLUDED IN THE UNIT BID PRICE FOR WATER.

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

3. WHERE A SECTION OF TILE IS FOUND TO BE PLUGGED OR BROKEN, IT IS TO BE ISOLATED AS NOTED ABOVE BY RODDING.

   THIS SECTION SHALL THEN BE REPLACED AT APPROXIMATELY THE SAME LINE AND GRADE USING 6" TILE IN ACCORDANCE WITH SPECIFICATION SECTION 605.03. THE COST OF REMOVAL OF THE EXISTING TILE IS CONSIDERED TO BE INCIDENTAL TO THIS WORK AND EXTREME CARE IS TO BE EXERCISED IN NOT DAMAGING OR REMOVING ANY MORE TILE THAN IS NECESSARY. MEASUREMENT AND PAYMENT FOR THIS WORK WILL BE AS PER SECTION 605.06 AND 605.07 RESPECTIVELY.

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

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

	PART III	100% Stole	
ITEM SPECIAL - UNDERDRAIN OPENING	18	23	EACH
ITEM SPECIAL - WATER	20	26	M.GAL
ITEM 603 - 6" CONDUIT, TYPE F	40	60	L.F.
ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS	112	138	L.F.

ITEM SPECIAL - HERBICIDES FOR WEED CONTROL

PRIOR TO PLACING THE ITEM 301 BITUMINOUS AGGREGATE, AN APPLICATION OF PRINCEP 80W, OR AMISINE OR AN APPROVED EQUAL SHALL BE APPLIED TO THE SHOULDER BED. THE RATE AND METHOD OF APPLICATION FOR AMISINE OR OF AN APPROVED EQUAL SHALL BE IN STRICT CONFORMANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER SQUARE YARD, "ITEM SPECIAL-HERBICIDES FOR WEED CONTROL," WHICH PRICE SHALL CONSTITUTE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPTMENT AND WATER REQUIRED TO COMPLETE THIS ITEM OF WORK.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

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

	PART I	PART II	
ITEM 207 - TEMPORARY SEEDING AND MULCHING	72	2318	S.Y.
ITEM 207 - STRAW OR HAY BALES	2	54	EACH
ITEM 659 - COMMERCIAL FERTILIZER		.11	TONS
ITEM 659 - REPAIR SEEDING AND MULCHING	18	582	S.Y.
ITEM 659 - WATER	1	5	M. GAL.

WATERING PERMANENT SEEDED AREAS

The following estimated quantity is to be used as directed by the Engineer to promote growth and to care for the permanent seeded areas, as per 659.09:

	PART I	PART II	
Item 659 Water	1	12	M Gal.

GENERAL NOTES

STRUCTURES

ITEM SPECIAL - PATCHING CONCRETE STRUCTURES WITH MAGNESIUM PHOSPHATE CONCRETE

A. DESCRIPTION: THIS ITEM CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, PREPARATION OF THE SURFACE, AND FORMING, MIXING, PLACING, FINISHING AND CURING OF THE MAGNESIUM PHOSPHATE CONCRETE PATCHES, AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PERFORMED ON EXPOSED COMPONENTS OF BRIDGE LAK-44-0784 AS LISTED BELOW.

1. CURBS, SIDEWALKS AND PARAPETS (ROADWAY AND TOP FACES ONLY).

B. MATERIALS

PATCHING MATERIAL SHALL BE TINTED TO CURE TO THE COLOR OF THE CONCRETE BEING REPAIRED. PATCHING MATERIAL SHALL BE MADE USING A BLEND OF MAGNESIA AND SELECTED AGGREGATE WITH AN ACTIVATOR. THESE MATERIALS SHALL BE MIXED AND PLACED PER MANUFACTURER'S RECOMMENDATIONS. THE PATCHING MATERIAL SHALL BE HORN 240 CONCRETE, FAST CRETE, BOSTIK 276, SET 45 OR AN APPROVED EQUAL.

C. REMOVAL OF CONCRETE: THE ENGINEER SHALL SOUND THE STRUCTURE AND OUTLINE THE AREAS TO BE REMOVED. ALL LOOSE, SOFT, HONEY-COMBED, AND DISINTEGRATED CONCRETE PLUS ONE-FOURTH INCH DEPTH OF SOUND CONCRETE SHALL BE REMOVED. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE-HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM THREE-FOURTH INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICAL. AFTER COMPLETION OF THE SECONDARY REMOVAL OPERATION, THE ENGINEER WILL RESOUND THE AREAS TO INSURE THAT ONLY SOLID CONCRETE REMAINS. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT DAMAGE OR SHATTER THE CONCRETE THAT IS TO REMAIN AND WILL NOT CUT, ELONGATE OR DAMAGE THE REINFORCING STEEL IN ANY WAY. THE PATCHING DEPTH SHALL NOT BE LESS THAN ONE-HALF INCH. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 35 POUND CLASS. WHERE EXISTING REINFORCING BARS WOULD BE LESS THAN ONE INCH FROM THE PROPOSED FINISHED SURFACE OF CONCRETE, THEY SHALL, IF PRACTICAL, BE DRIVEN BACK INTO RECESSES CUT IN THE MASONRY TO OBTAIN THAT COVERAGE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

D. SURFACE PREPARATION: CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY SANDBLASTING FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO INSURE THE REMOVAL OF CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND. FOR PATCHES WHICH DO NOT USE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE DRY. FOR PATCHES WHICH REQUIRE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE LEFT IN THE CONDITION AS RECOMMENDED BY THE MANUFACTURER. ANY ADDITIONAL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE PATCHING MATERIAL WHICH IS USED. ALL UNCHIPPED SURFACES THAT WILL RECEIVE NEW CONCRETE SHALL BE MECHANICALLY ROUGHENED.

E. FORMS: FORMS, WHEN REQUIRED TO RESTORE VERTICAL SURFACES IN AN ACCEPTABLE MANNER, SHALL BE ERECTED FLUSH WITH THE FACES OF REPAIR AREAS TO INSURE THAT THE CONCRETE DOES NOT ESCAPE FROM THE PATCH AREA.

F. PATCHING: THE MIXING, PROPORTIONING, PLACING AND CURING PROCEDURES, TOOLS, EQUIPMENT, LABOR AND MATERIALS SHALL BE ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS EXCEPT THAT NO ADDITIONAL AGGREGATE SHALL BE USED. WHEN FORMS ARE USED CONCRETE SHALL BE PLACED THROUGH AT LEAST ONE HOLE AT THE HIGHEST POINT OF THE AREA TO BE PATCHED. THE FORMS SHALL BE TAPPED TO VIBRATE THE CONCRETE AND INSURE THAT IT REACHES THE LOWEST REGIONS OF THE PATCH AREA. THE SURFACE OF THE REPAIR AREA SHALL BE FLUSH WITH THE SURROUNDING AREA.

G. CURING: PATCHES SHALL BE CURED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.

H. METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE FEET OF THE EXPOSED SURFACE OF ALL COMPLETED PATCHES, IRRESPECTIVE OF DEPTH OR THICKNESS OF THE PATCH COMPLETE IN PLACE AND ACCEPTED. IF THE PATCH INCLUDES CORNERS OR EDGES OF MEMBERS ALL OF THE EXPOSED SURFACES SHALL BE INCLUDED, OR IF A PATCH EXTENDS COMPLETELY THROUGH A MEMBER BOTH EXPOSED SURFACES SHALL BE INCLUDED.

I. BASIS OF PAYMENT: PAYMENT WILL BE MADE AT CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. FT.	PATCHING CONCRETE STRUCTURES WITH MAGNESIUM PHOSPHATE CONCRETE

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK, BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

PLANS OF EXISTING BRIDGES

CONSTRUCTION PLANS FOR THE EXISTING BRIDGES ARE ON FILE AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 12 OFFICE, 10100 BROADWAY AVENUE, GARFIELD HEIGHTS, OHIO, AND ARE AVAILABLE FOR VIEWING.

ITEM SPECIAL – SEALING OF CONCRETE SURFACES

SPECIFIED CONCRETE SURFACES SHALL BE SEALED USING EITHER SILANE OR EPOXY SEALER. SEE THE PROPOSAL FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS, AND APPLICATION RATES AND PROCEDURES.

1. CURBS, SIDEWALKS, AND PARAPETS (ALL FACES).
2. CONCRETE MEDIAN (ALL FACES).
3. DECK EDGES AND THE UNDERSIDE IN ANY BAY LOCATED BENEATH AN OPEN OR SEALED JOINT OR AN UNDERSIDE EXTENDING BEYOND THE EXTERIOR BEAMS.
4. PIERS INCLUDING CAPS AND COLUMNS.
5. ABUTMENTS INCLUDING BACKWALLS AND WINGWALLS.

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COMPUTED BY: N.A 3-84
CHECKED BY .

GENERAL NOTES

TRAFFIC MAINTENANCE

For alternate methods info see sheet 4.

TRAFFIC CONTROL MATERIALS

A. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES, SHALL BE AS PROVIDED IN THE "MANUAL", OR IN SIGN DESIGN DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT.

ALL SIGNS SHALL HAVE A REFLECTORIZED BACKGROUND OF REFLECTIVE MATERIAL AS DESCRIBED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

B. SIGN SUPPORTS

SUPPORTS SHALL BE ADEQUATE IN MASS AND STABILITY TO PREVENT THE SIGNS BEING BLOWN OVER BY WIND OR VEHICULAR GENERATED AIR TURBULENCE.

C. DRUMS

DRUMS SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL COSTS FOR INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL OF SAID DRUMS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

D. SMALL BARRICADES

TYPE II BARRICADES SHALL BE USED TO CLOSE LANES WHERE REQUIRED FOR RESURFACING. THESE SHALL BE AT LEAST 36" HIGH AND 12" WIDE. NEAR THE TOP OF THE BARRICADE THERE SHALL BE A PANEL WITH ALTERNATE ORANGE AND REFLECTORIZED WHITE 6" WIDE STRIPES. THIS PANEL SHALL BE AT LEAST 12" WIDE AND 24" HIGH. STEADY BURN WARNING LIGHTS MAY BE LOCATED AT THE TOP OF THE BARRICADE AT THE END NEAREST TO TRAFFIC DURING TWILIGHT OR DARKNESS HOURS ONLY. THE FLASH SHALL FACE ONCOMING TRAFFIC. THE BARRICADES SHALL BE OF SUFFICIENT STABILITY SO THAT WIND OR TRAFFIC AIR TURBULANCE WILL NOT UPSET THEM. BARRICADES SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

E. LIGHTING DEVICES

FLASHERS SHALL BE 12 VOLT BATTERY-OPERATED MODELS WITH 8 INCH DIAMETER YELLOW LENSES ILLUMINATED BY RAPID INTERMITTENT FLASHES OF SHORT DURATION AND SHALL BE PLACED ON ALL SIGNS AT ALL TIMES.

CONTINUOUS BURN LIGHTS SHALL BE 12 VOLT BATTERY-OPERATED MODELS WITH MINIMUM 8 INCH DIAMETER YELLOW LENSES, THEY SHALL BE PLACED ABOVE THE GROUND ON THE TOPS OF BARRELS OR BARRICADES AND SPACED AT 50 FT. INTERVALS.

CONTINUOUS BURN LIGHTS AS DESCRIBED ABOVE SHALL BE REQUIRED WHENEVER ANY PORTION OF THE TRAVELED SURFACE IS CLOSED DURING TWILIGHT OR NIGHTTIME HOURS.

F. FLASHING ARROW BARRICADE

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORIST SHALL BE WARNED AND DIVERTED BY THE CONTRACTOR THROUGH THE USE OF ONE FLASHING ARROW BARRICADE FOR EACH LANE CLOSED. THE CONTRACTOR SHALL REFER TO 35.10, AND THE PROVISION SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, FOR ALL INFORMATION REGARDING FURNISHING, MAINTAINING, AND USE OF FLASHING ARROW BARRICADES. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

G. ITEM 614 - TEMPORARY PAVEMENT MARKINGS (LANE SHIFTS)

TEMPORARY PAVEMENT MARKINGS SHALL BE REQUIRED AT ALL WORK AREAS AS DETAILED ON SHEET 35. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED FOR LANE SHIFTS.

	PART I	PART II		LOCATIONS
ITEM 614 - TEMPORARY EDGE LINE, CLASS I, TYPE R TAPE	1.45	2.05	MI.	VARIOUS

H. ITEM 614 - TEMPORARY PAVEMENT MARKINGS (RESURFACING OR LANE SHIFT REMOVAL)

TEMPORARY MARKINGS SHALL BE PLACED AT THE JOINTS AS SHOWN ON THE TYPICAL SECTIONS. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AFTER RESURFACING OR AFTER LANE SHIFT REMOVALS:

	PART I	PART II		LOCATIONS
ITEM 614 - TEMPORARY STOP LINES, CLASS I	210	250	FT.	(STA. 164+10, RAMPS B and C, OLIVE ST., BLACKBROOK RD., TEMPLE AVE.)
ITEM 614 - TEMPORARY LANE LINES, CLASS II	4.3	6.1	MI.	VARIOUS
ITEM 614 - TEMPORARY EDGE LINES, CLASS I	9.42	13.38	MI.	VARIOUS
ITEM 614 - TEMPORARY GORE MARKINGS, CLASS II	450	450	FT.	(RAMPS B and C)

I. ITEM 622 - TEMPORARY CONCRETE BARRIER

THE BARRIER SECTIONS SHALL BE KEYED TOGETHER OR BOLTED TOGETHER WITH STEEL CONNECTORS AS PER STANDARD CONSTRUCTION DRAWING MC-9A. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS SHOWN ON TRAFFIC SHEET FOR LAK-44-0784. IT SHOULD BE NOTED THAT 740 LIN.FT. OF BARRIER IS ALL THAT IS REQUIRED TO PERFORM THE WORK. THE EXTRA LENGTH IS TO COMPENSATE THE CONTRACTOR FOR MOVING BARRIERS FROM PHASE I TO PHASE II.

ITEM 622 - TEMPORARY CONCRETE BARRIER PART I 1400 L.F

K. REPLACEMENT DRUMS

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENT OF THE PLANS, SPECIFICATION AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER AND PAID FOR UNDER ITEM SPECIAL REPLACEMENT DRUMS. PAYMENT FOR EACH NEW DRUM SHALL INCLUDE (1) THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM AND (2) PROVIDING, MAINTAINING AND REMOVING NEW DRUMS IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUMS. (REPLACEMENT LIGHTS SHALL NOT BE PAID FOR SEPARATELY BUT CONSIDERED INCIDENTAL TO THIS ITEM OR ITEM 614 MAINTAINING TRAFFIC) AN ESTIMATED QUANTITY OF ITEM SPECIAL, REPLACEMENT DRUMS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - REPLACEMENT DRUMS

PART I	PART II	
80	120	EACH

L. LAW ENFORCEMENT OFFICER WITH PATROL CAR

THE CONTRACTOR SHALL PROVIDE AND PAY ALL COST FOR THE SERVICES OF LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR THE EXCLUSIVE PURPOSE OF CONTROLLING TRAFFIC WHENEVER A CHANGE IN THE TRAFFIC PATTERN TAKES PLACE. THE NUMBER OF OFFICERS AND CARS REQUIRED FOR THIS PURPOSE SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE OFFICERS SHALL MOVE THEIR PATROL CARS AS NECESSARY TO INSURE THEIR CONSTANT PRESENCE AT THE POINT(S) OF SLOWDOWN, STOPPAGE OR BACK-UP. PAYMENT FOR THE ABOVE WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL, LAW ENFORCEMENT OFFICER WITH PATROL CAR.

THE FOLLOWING PAY ITEM AND QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY;

ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR

PART I	PART II	
40	10	HOURS

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ARRANGEMENTS REGARDING SCHEDULING AND PAYMENT OF LAW ENFORCEMENT OFFICER WITH PATROL CAR.

TRAFFIC CONTROL TIMING AND SEQUENCE OF OPERATIONS FOR ASPHALT CONCRETE WORK (ITEM 448 COURSES)

ALL ASPHALT CONCRETE OPERATIONS SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE HIGHWAY USERS. *THE RAMPS SHALL ONLY BE PAVED DURING DAYLIGHT HOURS AND THE PAVING SHALL BE TERMINATED AT THE NOSE TO ELIMINATE ANY LONGITUDINAL DISCONTINUTY IN ELEVATION BETWEEN THE SPEED CHANGE LANES AND THE MAIN LINE.*

IN EITHER TRAVELED DIRECTION, ALL OF THE INTERMEDIATE LEVELING COURSE SHALL BE PLACED BEFORE WORK IS BEGUN ON THE SURFACE COURSE. THE PROCEDURE FOR INSTALLATION OF ANY ASPHALT LAYER SHALL BE SUCH THAT NO DISCONTINUITY IN THE ELEVATION OF THE TRAVELED SURFACE SHALL EXIST AT ANY TIME OTHER THAN DURING THE PERMITTED WORKING HOURS AND THEN ONLY WHEN SUCH PROPER TRAFFIC CONTROL DEVICES ARE IN PLACE AS WILL PREVENT SUCH A DISCONTINUITY BEING A DANGER TO HIGHWAY USERS.

TRAFFIC MUST BE MAINTAINED AT ALL TIMES IN BOTH DIRECTIONS: HOWEVER, EITHER THE RIGHT OR LEFT LANE IN EITHER DIRECTION MAY BE CLOSED ONLY DURING THE PERMITTED WORK HOURS TO ALLOW THE LAYING OF ASPHALT CONCRETE. TRAFFIC CONTROL FOR SUCH LANE CLOSING SHALL BE IMPLEMENTED USING TYPE II BARRICADES WITH STEADY BURN WARNING LIGHTS (50' ON CENTERS), ANY LANE CLOSURES SHALL BE IMPLEMENTED AT A 55:1 MAXIMUM TAPER RATE, ADVANCE WARNING SIGNS SHALL BE AS SHOWN ON SHEET NO. 35.

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORISTS SHALL BE WARNED AND DIVERTED BY THE CONTRACTOR THROUGH THE USE OF A FLASHING ARROW, IN ADDITION TO THOSE PROVISIONS SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

AN ACCEPTABLE METHOD OF ACCOMPLISHING THE PLACEMENT OF ANY LAYER OF ASPHALT CONCRETE WOULD BE FOR THE CONTRACTOR TO CLOSE THE LEFT LANE IN EITHER DIRECTION AT THE BEGINNING OF THE PERMITTED DAILY WORK PERIOD AND TO PLACE ONE LAYER OF ASPHALT CONCRETE AN EQUAL DISTANCE IN EACH OF THE CLOSED LANES DURING THE FIRST HALF OF THE DAILY WORK PERIOD. THE RIGHT LANE WOULD THEN BE CLOSED AND, DURING THE SECOND HALF OF THE SAME SINGLE DAILY WORK PERIOD, THE CORRESPONDING LAYER OF ASPHALT CONCRETE WOULD BE PLACED IN THE RIGHT LANE FOR THE SAME DISTANCE AND ADJACENT TO THE AREA IN WHICH IT WAS PLACED IN THE LEFT LANE. ANY OTHER METHOD THE CONTRACTOR DESIRES TO USE MUST BE APPROVED BY THE ENGINEER BEFORE ANY WORK BEGINS.

THIS NOTE DOES NOT APPLY TO ITEM 301 WORK.

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GENERAL NOTES

TRAFFIC MAINTENANCE

PARAPET RECONSTRUCTION - GENERAL

WHENEVER ANY WORK IS BEING DONE DIRECTLY OVER A TRAVELLED LANE OR SHOULDER THE CONTRACTOR SHALL SUPPLY SUFFICIENT SAFETY EQUIPMENT AS APPROVED BY THE ENGINEER TO PROTECT THE TRAVELING PUBLIC FROM ANY CONSTRUCTION DEBRIS.

PUBLIC SAFETY

THE PERIOD OF TIME THAT A HAZARD IS LEFT UNPROTECTED BY THE REMOVAL OF GUARDRAIL SHALL BE HELD TO AN ABSOLUTE MINIMUM AND IN NO CASE SHALL SUCH PERIOD BE LONGER THAN ONE WORKING DAY. IF, AFTER ONE DAY, THE ENTIRE RUN OF GUARDRAIL CONSTRUCTION IS NOT COMPLETED, THE FOLLOWING SHALL APPLY:

A. IN AREAS WHERE EXISTING GUARDRAIL HAS BEEN REMOVED OR THE GUARDRAIL IS IN A PARTIAL STAGE OF COMPLETION THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TYPE II BARRICADES WITH TYPE C (STEADY BURNING) WARNING LIGHTS WITHIN THE LIMITS OF THE UNPROTECTED AREA. THE BARRICADES SHALL BE PLACED AT 50' INTERVALS AND OFFSET AT LEAST TWO FEET FROM THE EDGE OF TRAVELED ROADWAY AND IN CLOSE PROXIMITY TO THE CONSTRUCTION. THE APPROACH END OF A PARTIALLY COMPLETED RUN OF GUARDRAIL SHALL BE FASTENED AT GROUND LEVEL TO A STEEL DRUM.

B. IF THE EXISTING GUARDRAIL IS FOR THE PROTECTION OF AN OBSTACLE (I.E. SIGN SUPPORT, BRIDGE PARAPET, ETC.) THE CONTRACTOR SHALL ERECT TEMPORARY CONCRETE BARRIER FOR A MINIMUM LENGTH OF 50 FEET PRECEEDING THE OBSTACLE IN THE DIRECTION OF TRAFFIC *AND PLACED BETWEEN THE OBJECT AND THE ADJACENT LANE. THE REQUIREMENTS OF PAR. I (A) SHALL APPLY TO THE REMAINING GUARDRAIL WITHIN THE RUN.* TEMPORARY BARRIER SHALL BE FLARED AT A 5:1 TAPER RATE, AND SHALL INCLUDE A TEMPORARY END TERMINAL AS PER MC-9A, (EACH PIER IS CONSIDERED AN INDIVIDUAL OBSTACLE).

C. THE REQUIREMENTS STATED IN (A) AND (B) SHALL APPLY AT ALL TIMES INCLUDING WHEN THE ADJACENT LANE IS CLOSED. WHEN THE ADJACENT LANE IS OPENED (OR RE-OPENED) AND THE CONSTRUCTION OF ANY RUN OR GUARDRAIL OR CONCRETE BARRIER IS NOT COMPLETED WITHIN ONE WEEK, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY CONCRETE BARRIER IN THE INTERIM TIME IT TAKES TO COMPLETE THE WORK. THE APPROACH END OF THE CONCRETE BARRIER SHALL BE FLARED 10 FT. (SEE SHEET NO. 34) AND SHALL INCLUDE A TEMPORARY END TERMINAL AS PER MC-9A. IN ADDITION, A TYPE II BARRICADE WITH TYPE B (HIGH INTENSITY FLASHER) WARNING LIGHT SHALL BE PLACED IN FRONT OF THE INITIAL BARRIER SECTION.

THE TERM "GUARDRAIL" AS USED HEREIN SHALL BE UNDERSTOOD TO COVER ALL TYPES OF GUARDRAIL, EXISTING OR PROPOSED FOR THE PROJECT INCLUDING BARRIER DESIGN GUARDRAIL.

THE COST OF COMPLYING WITH THESE SAFETY PROCEDURES SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614, MAINTAINING TRAFFIC.

GENERAL CONSTRUCTION SEQUENCE

THE CONTRACTOR IS REMINDED THAT, IN THE CONDUCT OF THIS PROJECT, HIS SEQUENCE OF OPERATIONS SHALL BE PLANNED AND EXECUTED IN SUCH A WAY AS TO MINIMIZE THE NUMBER OF LANE REDUCTIONS AND/OR LANE WIDTH REDUCTIONS REQUIRED TO MAINTAIN TRAFFIC THROUGH THE PROJECT. IN THIS REGARD, WHEN A TRAFFIC LANE IS CLOSED, ALL OPERATIONS TO THAT LANE (EXCEPT THE FINAL PAVEMENT MARKINGS) SHALL BE PERFORMED IN AN ORDERLY SEQUENCE SUCH THAT IT WILL NOT BE NECESSARY TO AGAIN CLOSE THAT LANE UNTIL THE PAVEMENT MARKING OPERATIONS BEGIN.

IT IS THE INTENT OF THIS PROJECT TO MAINTAIN A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION ON THE MAINLINE PAVEMENT UNLESS OTHERWISE NOTED. ALSO, THE CONTRACTOR IS REMINDED THAT THE FLOW OF TRAFFIC SHALL NOT BE "SPLIT" WHEN BEING DIVERTED AROUND A WORK AREA UNLESS THE WORK IS BEING DONE IN THE GORE AREAS OF AN EXIT RAMP.

IN ADDITION TO THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SPECIFIC PROVISIONS ARE MANDATORY.

MAINTAINING VEHICULAR TRAFFIC

GENERAL PROVISIONS

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE SCHEDULE OF ONE LANE IN BOTH DIRECTIONS AS DESCRIBED IN THESE PLANS. THE CONTRACTOR SHALL SET UP AND OPERATE HIS EQUIPMENT IN SUCH A MANNER AS TO MINIMIZE ENCROACHMENT UPON THE TRAVELED WIDTH OF PAVEMENT.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE RESPONSIBLE LAW ENFORCEMENT AGENCY NOT LESS THAN TWENTY-FOUR (24) HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC.
3. NO STOPPAGE OF TRAFFIC OR ESTABLISHMENT OF LANE RESTRICTIONS SHALL OCCUR WITHOUT LAW ENFORCEMENT PERSONNEL AT EACH LOCATION TO DIRECT TRAFFIC.
4. DURING OVERHEAD CONSTRUCTION THE CONTRACTOR SHALL PROVIDE, IF DEEMED NECESSARY BY THE ENGINEER, SAFETY NETS AND/OR OTHER SAFETY DEVICES UNDER THE STRUCTURES TO PROTECT TRAFFIC IN THE AREA OF CONSTRUCTION.
5. DURING NON-WORKING PERIODS, OPEN UNDERDRAIN EXCAVATIONS SHALL BE COVERED WITH STEEL PLATES AND DELINEATED WITH WARNING FLASHERS AND/OR OTHER APPROVED DEVICES AS DEEMED APPROPRIATE BY THE ENGINEER. STEEL PLATES SHALL BE ANCHORED AS DIRECTED BY THE ENGINEER.
6. EXISTING SIGNS LOCATED WITHIN THE ROAD WORK AREAS WHICH ARE NECESSARY FOR INTERIM OR PERMANENT TRAFFIC CONTROL SHALL BE REMOVED AND REERECTED IN LOCATIONS AS APPROVED BY THE ENGINEER.
7. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NEW WARNING AND INFORMATION SIGNS NECESSARY FOR MAINTAINING TRAFFIC. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER TWO (2) WEEKS IN ADVANCE OF HIS DETAILED PLANS. (SEE *"Sheet 35 and drawing AS TK-4 by the Bureau of Traffic for minimum signing application."*)
8. TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION, AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH SPECIAL CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE IMMEDIATELY REMOVED THEREAFTER. WHERE OPERATIONS ARE PERFORMED IN STAGES, THERE SHALL BE IN PLACE ONLY THOSE DEVICES THAT APPLY TO THE CONDITION PRESENT DURING THE STAGE IN PROGRESS. ALL SIGNS WITH MESSAGES WHICH DO NOT APPLY DURING A CERTAIN PERIOD SHALL BE COVERED OR SET ASIDE OUT OF THE VIEW OF TRAFFIC.
9. PAVEMENT REPAIR EXCAVATIONS SHALL BE PROTECTED WITH WARNING FLASHERS AND FOUR 55 GALLON WATER DRUMS IN ADVANCE OF THE EXCAVATIONS. THE DRUMS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER.
10. PLACEMENT OF FINAL ROADWAY PAVEMENT MARKINGS SHALL BE ACCOMPLISHED ONLY MONDAY THRU FRIDAY BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. WITH A MAXIMUM OF ONE LANE EACH DIRECTION CLOSED AT ANY ONE TIME.

    THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES PLUS A POLICE CRUISER WITH FLASHING BEACON FOLLOWING THE PAVEMENT MARKING EQUIPMENT WHEN MARKINGS ARE PLACED IN ORDER TO PROVIDE ADVANCE WARNING TO THE MOTORIST OF THE TEMPORARY LANE CLOSURE AND CONSTRUCTION. THE TWO (2) TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USABLE SHOULDER IS AVAILABLE. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT. THE POLICE CRUISER SHALL TRAVEL 500 TO 1000 FEET BEHIND THE REMOTE TRAILING VEHICLE.

    EACH TRAILING VEHICLE SHALL HAVE YELLOW FLASHING BEACONS PLUS ORANGE AND BLACK CONSTRUCTION WARNING SIGNS MOUNTED ON THE BACK FACING TRAFFIC WITH STANDARD TYPE MESSAGES ADVISING MOTORISTS OF THE WORK AHEAD, ADVISORY WARNING SPEED, AND WHICH LANE IS CLOSED.

11. THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO MAINTAIN TRAFFIC IN ACCORDANCE WITH THE PRECEEDING REQUIREMENTS.
12. ALL LABOR, MATERIALS, EQUIPMENT AND ANY INCIDENTALS REQUIRED TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC, EXCEPT THAT PAYMENT FOR THE 6" ITEM 301 CONSTRUCTED FOR TRAFFIC MAINTENANCE SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 301 BITUMINOUS AGGREGATE BASE, AS PER PLAN.

MAJOR WORK ITEMS

THE FOLLOWING MAJOR WORK ITEMS WILL REQUIRE TRAFFIC MAINTENANCE PROCEDURES WHICH SHALL BE INCORPORATED INTO THE CONTRACTOR'S SEQUENCE OF OPERATIONS:

REPAIR OF PAVEMENT JOINTS AND PANELS
REPAIR OF BRIDGE PARAPETS
ASPHALT CONCRETE OVERLAY
PAVEMENT MARKING

ADVANCE WARNING SIGNS

	DISTANCE	SIGN	SIZE	DESCRIPTION
LEFT LANE CLOSED	500'	OW-123 MOD	48" X 48"	LEFT LANE CLOSED 500 FT.
		OW-143	30" X 30"	35 MPH
	1000'	OW-123 MOD	48" X 48"	LEFT LANE CLOSED 1000 FT.
	2000'	OW-123 MOD	48" X 48"	LEFT LANE CLOSED 2000 FT.
	3000'	OW-134	48"X 48"	ROAD WORK AHEAD
RIGHT LANE CLOSED	500'	OW-122 MOD	48" X 48"	RIGHT LANE CLOSED 500 FT.
		OW-143	30" X 30"	35 MPH
	1000'	OW-122 MOD	48" X 48"	RIGHT LANE CLOSED 1000 FT.
	2000'	OW-122 MOD	48" X 48"	RIGHT LANE CLOSED 2000 FT.
	3000'	OW-134	48" X 48"	ROAD WORK AHEAD
EXIT RAMP ACROSS CLOSED LANE	GORE	OW-SPEC.	48"X48"	EXIT RAMP
	500'	OW-SPEC	48"X48"	EXIT RAMP 500 FT.
	1000'	OW-SPEC	48"X48"	EXIT RAMP 1000 FT.

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

13/35

LAKE COUNTY
LAK-44-7.11

ITEM 614 - TEMPORARY PAVEMENT MARKINGS

GENERAL

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

THE MARKINGS SHALL BE MAINTAINED IN GOOD CONDITION DURING THE REQUIRED SERVICE PERIOD TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISIBILITY AND/OR REFLECTIVITY AT NO ADDITIONAL COST TO THE STATE.

MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE OF PAINT, PAVEMENT MARKING TAPE OR REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE).

A. PAINT
PAINT SHALL COMPLY WITH 708.14 AND SHALL BE APPLIED IN ACCORDANCE WITH 621 EXCEPT AS MODIFIED HEREIN.

B. PAVEMENT MARKING TAPE
FLEXIBLE RETROREFLECTIVE PREFORMED PRESSURE SENSITIVE TAPE SHALL HAVE STRAIGHT EDGES AND BE FREE OF CRACKS. THE TAPE SHALL CONSIST OF PIGMENT AND FILLERS WITH SUFFICIENT BINDER AND PLASTICIZER TO RETAIN GLASS BEADS HAVING A REFRACTIVE INDEX MEETING THE MINIMUM REFLECTIVE INTENSITY STANDARD STATED IN THE MANUFACTURERS INFORMATION. THE TAPE SHALL BE FLEXOLITE "WET REFLECTIVE", 3M "SCOTCHLANE" OR AN APPROVED EQUAL.

THE GLASS BEADS SHALL BE DISTRIBUTED UNIFORMLY THROUGHOUT THE TAPE WITH SUFFICIENT SURFACE BEADS TO PROVIDE OPTIMUM REFLECTORIZATION AT ALL TIMES.

PAVEMENT MARKING TAPE SHALL COMPLY WITH THE COLOR REQUIREMENTS OF 708.14

THE TAPE SHALL HAVE A PRECOATED ADHESIVE LAYER FOR PAVEMENT APPLICATION WITHOUT THE USE OF HEAT, SOLVENTS OR ADDITONAL ADHESIVES. THE ADHESIVE SHALL BE SUFFICIENT TO RETAIN COMPLETE MARKINGS ON THE PAVEMENT SURFACE THROUGHOUT THE USEFUL LIFE OF THE MARKINGS.

IN ADDITION TO THE FOREGOING, ALL TEMPERATURE APPLICATION REQUIREMENTS AND OTHER APPLICABLE MANUFACTURERS MATERIAL AND APPLICATION INSTRUCTIONS SHALL BE FOLLOWED.

WHEN APPROVED BY THE ENGINEER THE CONTRACTOR MAY USE REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE), IN LIEU OF THAT DESCRIBED ABOVE, TO FACILITATE REMOVAL OF MARKINGS.

C. REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE)
THE MARKING MATERIAL SHALL BE A MIXTURE OF POLYMERIC MATERIALS, PIGMENTS, REINFORCING MEDIUM TO FACILITATE REMOVAL, GLASS BEADS THROUGHOUT THE PIGMENTED PORTION AND A RETROREFLECTIVE LAYER OF GLASS BEADS BONDED TO THE TOP SURFACE.

THE TAPE SHALL BE PROTECTED WITH A PRESSURE SENSITIVE ADHESIVE CAPABLE OF TEMPORARILY BONDING TO ASPHALT CONCRETE OR PORTLAND CEMENT CONCRETE PAVEMENT AT AN AMBIENT TEMPERATURE OF NOT LESS THAN 50°F AND RISING, AT A PAVEMENT TEMPERATURE OF NOT LESS THAN 50°F NOR MORE THAN 150°F, WITHOUT THE USE OF HEAT, SOLVENTS AND ADDITIONAL ADHESIVES OR ACTIVATORS.

MATERIALS SHALL CONFORM TO THE COLOR REQUIREMENTS OF 708.14.

THE TAPE SHALL BE REMOVABLE FROM ASPHALT AND PORTLAND CEMENT CONCRETE INTACT OR IN LARGE PIECES AT TEMPERATURES ABOVE 40°F WITHOUT USE OF HEAT, SOLVENTS, GRINDING OR SANDBLASTING REMOVAL SHALL NOT RESULT IN DAMAGE TO OR OBJECTIONABLE STAINING OF THE PAVEMENT.

GLASS BEADS SHALL BE PROVIDED IN A PROPER SIZE, QUANTITY AND DISTRIBUTION TO ASSURE OPTIMUM RETROREFLECTIVITY AS THE FILM WEARS. THE FOLLOWING INITIAL AVERAGE REFLECTIVE VALUES AT 86.0° ENTRANCE ANGLE AS MEASURED IN ACCORDANCE WITH THE TESTING PROCEDURES OF FEDERAL TEST METHOD 370 SHALL BE CERTIFIED:

	WHITE		YELLOW	
OBSERVATION ANGLE	0.2	0.5	0.2	0.5
SPECIFIC LUMINANCE (MCD/FT^2)/FC	1770	1270	1310	810

THE TAPE SHALL BE 3-M COMPANY'S "STAMARK, DETOUR GRADE (SERIES 5710, 5711, 6270, 6211)" OR AN APPROVED EQUAL.

THE CONTRACTOR SHALL FURNISH TO THE ENGINEER CERTIFICATION THAT THE MATERIAL SUPPLIED MEETS THE PROPERTIES SPECIFIED HEREIN.

LAYOUT

THE TEMPORARY MARKINGS SHALL BE ACCURATELY LAID OUT IN CONFORMANCE WITH 621.051 AND SHALL BE LOCATED IN A TRUE LINE ON THE CENTER LINE, LANE LINE, EDGE LINE OR CHANNELIZING LINE WHERE PERMANENT MARKINGS WOULD LIE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

PLACEMENT

TEMPORARY MARKINGS SHALL BE PLACED IN ACCORDANCE WITH LAYOUTS ON SHEETS 35 AND THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS ARE NO LONGER NEEDED, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134 AND NECESSARY PAVEMENT MARKINGS INSTALLED BEFORE THE FLOW OF TRAFFIC IS CHANGED TO THE NEXT PHASE OR RETURNED TO ITS NORMAL CHANNEL.

WHERE PERMANENT PAVEMENT MARKINGS ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL FURNISH AND PLACE THE PERMANENT MARKINGS WITHIN 30 CALENDAR DAYS FOLLOWING COMPLETION OF ALL SURFACE COURSES IN A SINGLE ROADWAY OR PRIOR TO THE END OF THE CONSTRUCTION SEASON, WHICHEVER COMES FIRST. PERMANENT MARKINGS SHALL NOT BE PLACED OVER ANY TAPE MARKINGS.

A. CLASS I MARKINGS
CLASS I MARKINGS SHALL BE AS DEFINED IN 621, EXCEPT AS FOLLOWS:

1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

GORE MARKINGS SHALL CONSIST OF TWO CHANNELIZING LINES PLACED AT THE THEORETICAL OR TEMPORARY GORE OF RAMPS AND DIVERGING OR CONVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR SOLID 4-INCH LINES, 24 GALLONS PER MILE FOR SOLID 6-INCH LINES, 48 GALLONS PER MILE FOR SOLID 12-INCH LINES AND 4 GALLONS PER MILE FOR 4-INCH DASHED LINES.

B. CLASS II MARKINGS
CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

CHANNELIZING LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 20-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 50-FOOT BY 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR GORE MARKINGS, 0.8 GALLONS PER MILE FOR CHANNELIZING LINE AND 0.4 GALLONS PER MILE FOR LANE LINE AND CENTER LINE.

CONFLICTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL EXISTING CONFLICTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL IN THE UNITS DESIGNATED. DASHED LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE INCLUDING GAPS, INTERSECTIONS AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED IN ACCORDANCE WITH 621.15.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS WHEN REQUIRED.

BASIS OF PAYMENT

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 NECESSARY REMOVAL OF THE MARKINGS.

ITEM	UNIT	DESCRIPTION
614	MILES	TEMPORARY LANE LINES, CLASS II, (PAINT, TAPE OR TYPE R TAPE)
614	LIN FT	TEMPORARY STOP LINE, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	MILES	TEMPORARY EDGE LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	LIN FT	TEMPORARY GORE MARKINGS, CLASS II, (PAINT, TAPE OR TYPE R TAPE)

MAY 13, 1982

FHWA REGION	STATE	PROJECT	
5	OHIO		

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LAK-44-7.11
LAKE COUNTY

ITEM 848 - RESURFACING QUANTITIES

Stations From	Stations To	Side	End Widths (Ft.)	Surface Area (Sq. Yds.)	1-3/4" SURFACE (C.Y.) INTERMEDIATE	1-1/4" SURFACE (C.Y.)
PART I						
36 + 24.10	54 + 18	NB	33	6577.6	319.75	228.4
54 + 18	56 + 13	NB	33 - 34	834.16	40.54	28.96
56 + 13	57 + 06	NB	VARIES	538.89	26.19	18.71
57 + 06	64 + 07	NB	33	2570.33	124.95	89.25
64 + 07	65 + 08	NB	33 - 45	437.67	21.28	15.20
65 + 08	67 + 51	NB	45	1215.00	59.06	42.18
67 + 51	70 + 07.72	NB	37	1055.4	51.30	36.65
70 + 07.72	71 + 08	NB	45	501.4	24.37	17.41
71 + 08	81 + 76.46	NB	33	3917.69	190.44	136.03
36 + 24.10	36 + 50	SB	VARIES	80.58	3.92	2.80
36 + 50	56 + 13	SB	33	7192.11	349.62	249.73
56 + 13	57 + 06	SB	VARIES	447.22	21.74	15.53
57 + 06	59 + 00	SB	44 - 36	862.22	41.91	29.94
59 + 00	60 + 06	SB	36 - 40	447.56	21.76	15.54
60 + 06	61 + 75	SB	40 - 44	788.67	38.34	27.38
61 + 75	65 + 00	SB	44 - 46	1625.00	78.99	56.42
65 + 00	66 + 77.5	SB	46 - 56	1005.83	48.89	34.92
66 + 77.5	67 + 17.5	SB	30 - 40	155.60	7.56	5.40
67 + 17.5	80 + 68	SB	33	4951.83	240.71	171.94
80 + 68	81 + 76.46	SB	44 - 45	536.27	26.07	18.62
6 + 76.56	8 + 00	RAMP A	22	281.17	13.67	9.76
8 + 00	13A + 68	RAMP A	22	1388.44	67.49	48.21
10 + 15	11 + 38	RAMP A	VARIES	179.89	8.74	6.25
11 + 38	13 + 07	RAMP A	22	413.11	20.08	14.34
13 + 07	13 + 75	RAMP A	VARIES	77.78	3.78	2.70
7 + 48.27	10 + 04.99	RAMP C	VARIES	335.57	16.31	11.63
10 + 04.99	17 + 60	RAMP C	22	1845.58	89.72	64.08
17 + 60	17 + 88	RAMP C	VARIES	127.78	6.21	4.44
3 + 48	3 + 89	RAMP B	VARIES	138.89	6.75	4.82
3 + 89	11 + 70.01	RAMP B	22	1909.14	92.81	66.29
11 + 70.01	12 + 75	RAMP B	VARIES	49.46	2.40	1.72
7+54("D" SPUR)	8+50("D" SPUR)	RAMP D	VARIES	205.00	9.97	7.12
7 + 54	9 + 24	RAMP D	22	415.56	20.20	14.43
PART II						
81 + 76.46	98 + 64	NB	33	6187.65	300.79	214.85
98 + 64	99 + 85	NB	VARIES	680.55	33.08	23.63
99 + 85	119 + 75	NB	33	7296.57	354.70	253.36
119 + 75	121+52.46 BK	NB	VARIES	801.72	38.97	27.84
121+52A6AHD	157 + 50	NB	33	13,136.13	638.56	456.12
157 + 50	163 + 75	NB	36	2500.00	121.53	86.81
163 + 75	164 + 21	NB	VARIES	194.44	9.45	6.75
81 + 76.46	86 + 66	SB	44 - 45	2420.50	117.66	84.05
86 + 66	87 + 70	SB	44 - 33	450.67	21.91	15.65
87 + 70	99 + 85	SB	33	4455.0	216.56	154.69
99 + 85	101 + 97	SB	44 - 33	906.89	44.08	31.49
101 + 97	119 + 75	SB	33	6519.33	316.91	226.37
119 + 75	121+52.46 Bk	SB	VARIES	657.19	31.95	22.82
121+52.46AHD	122 +90	SB	44 - 33	524.37	25.49	18.21
122 + 90	157 + 50	SB	33	12686.67	616.71	440.51
157 + 50	163 + 75	SB	36	2500.00	121.53	86.81
163 + 75	164 + 21	SB	VARIES	188.89	9.18	6.56
12 + 75	14 + 00	RAMP B	VARIES	58.89	2.86	2.04
9 + 24	12 + 75	RAMP D	22	858.00	41.71	29.79
12 + 75	13 + 68	RAMP D	20	206.67	10.05	7.18
13 + 68	14 + 73.44	RAMP D	18	210.88	10.25	7.32
14 + 73.44	17 + 01	RAMP D	16 - 8	505.69	24.58	17.56
17 + 01	20 + 01	RAMP D	8 - 6	233.33	11.34	8.10
20 + 01	23 + 22.94	RAMP D	VARIES	214.63	10.43	7.45
			TOTAL PART I		2095.52	1496.80
			TOTAL PART II		3130.28	2235.96
			GRAND TOTAL		5225.80	3732.76

ITEM 203 - LINEAR GRADING

Stations From	Stations To	Side	LEFT (Ft.)	RIGHT (F.T.)
PART I				
36 + 24.10	56 + 45	NB	0	2021
56 + 70	67 + 51	NB	0	1081
70 + 07.72	81 + 76.46	NB	0	1168.74
36 + 24.10	56 + 49	SB	2024.9	0
56 + 73	81 + 76.46	SB	2503.46	0
6 + 76.56	13 + 75	RAMP A	698.44	0
6 + 76.56	13A + 80	RAMP A	0	703.44
11A + 44	13A + 65	RAMP A	221	0
11 + 38	13 + 10	RAMP A	0	172
3 + 48	11 + 70.01	RAMP B	822.01	822.01
7 + 48.27	10 + 04.99	RAMP C	0	256.72
10 + 04.99	17 + 94	RAMP C	789.01	789.01
7 + 55	9 + 24	RAMP D	169.0	169.0
	TOTAL	PART I	7227.82	7182.92
PART II				
81 + 76.46	99 + 07	NB	0	1730.54
99 + 42	120 + 12	NB	0	2070.0
120 + 36	121+52.46 BK	NB	0	116.46
121+67.42 AHD	164 + 21	NB	0	4253.58
81 + 76.46	121 + 52.46	SB	3976.0	0
121 + 67.42	164 + 21	SB	4253.58	0
9 + 24	14 + 73.44	RAMP D	549.44	549.44
	TOTAL PART II:		8779.02	8720.02
	TOTAL PART I		7227.82	7182.92
	TOTAL PART II		8779.02	8720.02
	GRAND TOTAL:		16,006.84	15,902.94

=31,909.79 L.F. 320 STA.

ITEM 606 - GUARDRAIL QUANTITIES

STATION FROM	STATION TO	SIDE	GUARDRAIL REMOVED	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE A	ANCHOR ASSEMBLY TYPE T	BRIDGE TERMINAL ASSEMBLY TYPE E	BRIDGE TERMINAL ASSEMBLY TYPE J	REFERENCE NO.
			L.F	L.F	EACH	EACH	EACH	EACH	
PART I									
10+50 RAMP C	15+50 (RAMP C)	RT	475	462.5	1	1			1-G
12+00"A" SPUR	28+53 "A" SPUR	LT	250	100		1	1		2-G
27+46	7+50	LT	387.5	350	1	1			3-G
28+80	29+42.5	LT	62.5	50		1		1	4-G
74+50	77+00	LT	200	212.5	1	1			5-G
74+20	76+82.5	RT	200	225	1	1			6-G
31+19	31+94	RT	75	62.5		1		1	7-G
31+83	10+75	RT	400	100		1	1		8-G
	TOTAL	PART I:	2050	1562.5	4	8	2	2	
PART II									
90+00	92+37.5	RT	237.5	200	1	1			9-G
91+34	92+96.5	LT	150	125	1	1			10-G
100+60	102+60	LT	150	162.5	1	1			11-G
112+00	115+00	LT	300	262.5	1	1			12-G
110+50	114+12.5	RT	212.5	325	1	1			13-G
122+00	134+50	LT	1250	125	1	1			14-G
125+00	134+00	RT	900	112.5	1	1			15-G
145+32	147+62.5	RT	237.5						16-G
146+87.5	149+25	LT	237.5						17-G
	TOTAL PART	II:	3675	1312.50	7	7			
	TOTAL PART I		2050	1562.5	4	8	2	2	
	TOTAL PART II		3675	1312.50	7	7			
	GRAND TOTAL		5725	2875	11	15	2	2	

TRAFFIC CONTROL GROUND MOUNTED SIGNS

STATION	SIZE	CODE	630 EXTRU SHEET S.F.	630 FLAT SHEET S.F.	630 NO. 4 POST L.F.	630 REMOVAL OF GROUND MOUNTED SIGNS EACH	630 REMOVAL OF GROUND MOUNTED POST SUPPORTS EACH
PART I							
36 + 27.10	3' x 4'	R-37R-36		12	2(13.5)		
51 + 23.50	2' x 10'	D-4D	20		2(11.5)	1	1
56 + 15	3' x 4'	R-37R-36		12	2(13.5)		
57 + 09	3' x 4'	R-37R-36		12	2(13.5)		
62 + 00	2' x 10'	D-4D	20		2(11.5)	1	1
PART II							
98 + 85	3' x 4'	R-37R-36		12	2(13.5)	1	1
99 + 88	3' x 4'	R-37R-36		12	2(13.5)		
119 + 75	3' x 4'	R-37R-36		12	2(13.5)		
120 + 85	3' x 4'	R-37R-36		12	2(13.5)		
TOTAL PART I			40	36	127	2	2
TOTAL PART II			-	48	108	1	1
GRAND TOTAL			40	84	235	3	3

STATIONS FROM	STATIONS TO	SIDE	END WIDTH (FT.)	

FHWA REGION	STATE	PROJECT	
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LAKE COUNTY

FENCE REPLACEMENT

FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	202 FENCE REMOVED (L.F)	607 FENCE TYPE CL (L.F)	607 FENCE TYPE 47 (L.F.)
PART I						
37 + 13.92	88' RT.	41 + 60	88' RT.	446'	446'	
41 + 60	88' RT.	41 + 90.2	78' RT.	30'	30'	
41 + 90.2	78' RT.	51 + 28	78' RT.	938'	938'	
51 + 28	78' RT.	54 + 28	71' RT.	300'	300'	
54 + 28	71' RT.	56 + 10	78' RT.	190'	190'	
57 + 05	78' RT.	64 + 00	78' RT.	695'	695'	
64 + 00	78' RT.	67 + 02	101' RT.	303'	303'	
67 + 02	101' RT.	68 + 12	101' RT.	110'	110'	
68 + 12	101' RT.	71 + 35	148' RT.	326'	326	
71 + 35	148' RT.	77 + 20	195' RT.	97'	97'	
72 + 50	211' RT.	74 + 45	320' RT.	223'	223'	
74 + 45	320' RT.	76 + 24	293' RT.	182'	182'	
36 + 94	98' LT.	39 + 14	78' LT.	221'	221'	
39 + 14	78' LT.	54 + 15	78' LT.	1501'	1501'	
54 + 15	78' LT.	54 + 15	70' LT.	8'	8'	
54 + 15	70' LT.	56 + 25	70' LT.	211'	211'	
56 + 90	80' LT.	58 + 11	80' LT.	121'	121'	
58 + 11	80' LT.	61 + 50	95' LT.	339'	339'	
61 + 50	95' LT.	66 + 50	90' LT.	500'	500'	
66 + 50	90' LT.	70 + 05	150' LT.	360'	360'	
70 + 05	150' LT.	70 + 12	162' LT.	14'	14'	
70 + 12	162' LT.	71 + 06	177.5' LT.	95'	95'	
71 + 06	177.5' LT.	71 + 42	240' LT.	72'	72'	
71 + 42	240' LT.	71 + 52	302' LT.	63'	63'	
71 + 52	302' LT.	71 + 32.55	340.9' LT.	43'	43'	
74 + 05	264' LT.	75 + 00	327' LT.	114'	114'	
75 + 00	327' LT.	75 + 30	305' LT.	37'	37'	
75 + 30	305' LT.	75 + 65	352' LT.	59'	59'	
75 + 65	352' LT.	77 + 34	307' LT.	175'	175'	
77 + 34	307' LT.	78 + 30	233' LT.	121'	121'	
78 + 30	233' LT.	81 + 00	148' LT.	283'	283'	
81 + 00	148' LT.	83 + 00	123' LT.	202'	202'	
83 + 00	123' LT.	84 + 17	120' LT.	108'	108'	
PART II						
76 + 24	293' RT.	76 + 55	288' RT.	30'	30'	
76 + 55	288' RT.	77 + 41	253' RT.	93'	93'	
78 + 80	208' RT.	79 + 08	179' RT.	40'	40'	
79 + 08	179' RT.	84 + 00	115' RT.	496'	496'	
84 + 00	115' RT.	98 + 50	101' RT.	1450'		1450
99 + 70	100' RT.	105 + 00	105' RT.	530'		530
105 + 00	105' RT.	108 + 00	105' RT.	300'		300
108 + 00	105' RT.	111 + 50	99.5' RT.	350'		350
111 + 50	99.5' RT.	113 + 88.5	98.6' RT.	239'		239
113 + 88.5	98.6' RT.	115 + 82.34	98' RT.	197'		197
115 + 82.34	98' RT.	118 + 60.01	103' RT.	278'		278
118 + 60.01	103' RT.	119 + 73	98' RT.	113'		113
120 + 67	97' RT.	147 + 30	100' RT.	2663'		2663
147 + 50	100' RT.	158 + 51	96' RT.	1101'		1101
158 + 51	96' RT.	163 + 70	117' RT.	519'		519
84 + 17	120' LT.	91 + 00	103' LT.	692'		692
91 + 00	103' LT.	147 + 35	98' LT.	- **		5635
147 + 35	98' LT.	163 + 70	115' LT.	1635'		1635
			TOTAL PART I	8,487'	8,487'	
			TOTAL PART II	10,726'	659	15,702
			GRAND TOTAL	19,213'	9,146	15,702

** NO EXIST. FENCE

EARTHWORK RECAP

SHEET NO.	203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	203 EMBANKMENT	659 SEEDING AND MULCHING
	CU. YDS.	CU. YDS.	SQ. YDS.
PART I			
33	104	14	361
PART II			
33	-	38	350
28	49	488	1339
29	128	992	2651
30	157	1242	3012
31	125	1236	2882
32	44	512	1128
TOTAL PART I	104	14	361
TOTAL PART II	503	4508	11,362
GRAND TOTAL	607	4522	11,723

ITEM 659 - COMMERCIAL FERTILIZER

PART I: 11,362 x 9 S.F./S.Y. x 20 LBS./1000 S.F. x 1 TON/2000 LBS. = 1.03 TONS

PART II: 361 x 9 S.F./S.Y. x 20 LBS./1000 S.F. x 1 TON/2000 LBS. = 0.03 TONS

TOTAL = 1.06 TONS

ITEM 659 - AGRICULTURAL LIMING

PART I: 11,362 x 9 S.F./S.Y. x 100 LBS./1000 S.F. x 1 TON/2000 LBS. = 5.11 TONS

PART II: 361 x 9 S.F./S.Y. x 100 LBS./1000 S.F. x 1 TON/2000 LBS. = 0.17 TONS

TOTAL = 5.28 TONS

PRESSURE RELIEF JOINTS

LOCATION	APPROX. JOINT SPACING	SPECIAL PRESSURE RELIEF JOINT TYPE C	605 AGGREGATE DRAINS
		LIN. FT.	LIN. FT.
PART I			
MAINLINE	1,000	432	468
RAMPS	MIDPOINT	64	120
PART II			
MAINLINE	1,000	232	252
TOTAL PART I		496	588
TOTAL PART II		232	252
GRAND TOTAL		728	840

ITEM 202 - WEARING COURSE REMOVED

STATIONS FROM	STATIONS TO	SIDE	END WIDTH (FT.)	SURFACE AREA (S.Y.)
113+34	114+18	SB	25	233
132+03	132+21	SB	25	50
142+96	143+14	SB	25	50
83+42	83+52	NB	12.5	14
110+48	110+58	NB	12.5	14
112+30	112+44	NB	12.5	19
113+63	114+00	NB	25	103
123+76	123+86	NB	25	28
143+01	143+09	NB	25	22
143+59	143+70	NB	12.5	15
TOTAL PART II				548

* THIS ITEM IS SUBJECT TO NONPERFORMANCE IF NOT TO BE REQUIRED.

STRUCTURES

BRIDGE Nº	202 WEARING COARSE REMOVED 2 ½"± S.Y.	202 VERTICAL EXTENSION OF STRUCT. EXPANSION JOINTS REMOVED L.F.	516 VERTICAL EXTENSION OF STRUCT. EXPANSION JOINTS AS PER PLAN L.F.	845 LATEX MODIFIED CONCRETE OVERLAY 1 ¼" S.Y.	845 LATEX MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) C.Y.	845 * FULL DEPTH REPAIR CY.	SPECIAL SEALING OF CONCRETE SURFACES S.Y.	SPECIAL PATCHING CONCRETE STRUCT. W/ MAGNESIUM PHOSPHATE CONCRETE S.F.
LAK-44-0784	1483	184	184	1483	111	2	1150	60 (I)
								60 (III)
TOTAL	1483	184	184	1483	111	2	1150	120

ITEM 301 - BITUMINOUS AGGREGATE BASE, (A.P.P.), (UNDER G.R.)

PART I

AREA = 4' x 1812.5 = 7250.0 S.F.

VOLUME = 7250.0 x 3" x 1 FT./12 IN. x 1 C.Y./27 C.F. = 67 C.Y.

PART II

AREA = 4' x 1575.0 = 6300.0 S.F.

VOLUME = 6300.0 x 3" x 1 FT./12 IN. x 1 C.Y./27 C.F. = 58 C.Y.

TOTAL AREA = 13550.0 S.F.

VOLUME = 125 C.Y.

ITEM SPECIAL - HERBICIDE FOR WEED CONTROL

PART I
FROM ABOVE 7250.0 (ITEM 301 AREA) ÷ 9 = 806 S.Y.

PART II
FROM ABOVE 6300.0 (ITEM 301 AREA) ÷ 9 = 700 S.Y.

TOTAL AREA = 1506 S.Y.

ITEM 407 - TACK COAT

PART I: 1,497 C.Y. x 36"/YD./1.25"/YD. = 43,114 S.Y. 43,114 S.Y. x 0.10 GAL/S.Y. = 4,311.4 GAL.

PART II: 2,236 C.Y. x 36"/YD./1.25"/YD. = 64,397 S.Y. 64,397 S.Y. x 0.10 GAL./S.Y. = 6,439.7 GAL.

TOTAL = 10,751.1 GAL.

ITEM 407 - COVER AGGREGATE

PART I: 43,114 S.Y. x 7 LBS./1 S.Y. x 1 TON/2000 LBS. = 150.90 TONS

PART II: 64,397 S.Y. x 7 LBS./S.Y. x 1 TON/2000 LBS. = 225.39 TONS

TOTAL = 376.29 TONS

TRAFFIC CONTROL QUANTITIES

CALCULATIONS
MADE BY N.A. DATE 3-84
CHECKED _____ DATE _____

FHWA	STATE	PROJECT	
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LAKE COUNTY
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PAVEMENT MARKINGS

ROADWAY	SIDE	STATION FROM	STATION TO	EDGE LINE (WHITE)	EDGE LINE (YELLOW)	4" LANE LINE	DOTTED LINE (WHITE)					8" CHANNEL. LINE (WHITE)		24" STOP LINE	24" TRANSVERSE LINE (WHITE)						
				LIN. FT	LIN. FT.	LIN. FT.	LIN. FT.					LIN. FT.		LIN. FT.	LIN. FT.						
LAK-44	NB	36+24.10	54 + 15	1790.9	1790.9	1790.9															
	NB	54 + 15	56 + 15	200	200	200	200														
	NB	56 + 15	66 + 88	1073	1073	1073															
	NB	66 + 88	68 + 70	182	182	364															
	NB	68 + 70	71 + 07		237	237						237			124						
	NB	71 + 07	85 + 93	1486	1486	1486															
	NB	85 + 93	87 + 82	189	189	378															
	NB	87 + 82	164 + 34	7652	7652	7652															
SUBTOTAL	NB			12572.9	12809.9	13180.9	200					237			124						
RAMP C		8 + 67	11 + 05	238								238									
		11 + 05	18 + 19	714	714									30							
RAMP D SPUR		WB 283 34+03	RAMP D 8 + 79	130	71																
RAMP D		7 + 32	12 + 73	541	541																
		12 + 73	14 + 73	200	200																
		14 + 73	15 + 94	121								121									
SUBTOTAL	NB RAMPS			1944	1526							359		30							
LAK-44	SB	36 + 24.10	57 + 00	2075.9	2075.9	2075.9															
	SB	57 + 00	59 + 00	200	200	200	200														
	SB	59 + 00	63 + 19	419	419	419															
	SB	63 + 19	64 + 61	142	142	284															
	SB	64 + 61	66 + 77.5	216.5	216.5	216.5															
	SB	66 + 77.5	80 + 67	1389.5	1389.5	1389.5															
	SB	80 + 67	81 + 67		100	100						100									
	SB	81 + 67	83 + 49		182	182						182			164						
	SB	83 + 49	85 + 08	159	159	318															
	SB	85 + 08	99 + 88	1480	1480	1480															
	SB	99 + 88	101 + 88	200	200	200	200														
	SB	101 + 88	120 + 73	1885	1885	1885															
	SB	120 + 73	122 + 73	200	200	200	200														
121+52 BK=121+67 AH	SB	122 + 73	164 + 34	4161	4161	4161								70							
SUBTOTAL	SB			12527.9	12809.9	13110.9	600					282		70	164						
RAMP A		4 + 50	6 + 76.5	216.5								216.5									
		6 + 76.5	10 + 45	368.5	368.5																
		10 + 45	11 + 15	70	70	70															
		11 + 15	11 + 36	21								21									
		11 + 36	13 + 98	262	262																
RAMP A SPUR		11 + 15	14 + 11	296	296																
RAMP B		3 + 32	11 + 70	838	838									25							
		11 + 70	13 + 52	182								182									
SUBTOTAL	SB RAMPS			2254	1834.5	70						419.5		25							
TOTAL SR 44				29298.8	28980.3	26361.8	800					1297.5		125	288						
S.R. 283				702	702	702															
BLACKBROOK RD.														50							
TEMPLE AVE.														30							
OLIVE ST.														25							
PART I				13,011.8	10,958.8	10,130.8	400					475		105	124						
PART II				16,989	18,723.5	16,933	400					822.5		125	164						
TOTAL				5.7 MI.	5.6 MI.	5.13 MI.	800					1297.5		230	288						

PAVEMENT MARKING QUANTITIES

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
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LAKE COUNTY
LAK-44-7.11

For participation see Sh. No. 4

ITEM	SHEET NUMBER 4 I	4 II	5 I	5 II	6 I	6 II	7 I	7 II	8 I	8 II	9 I	9 II	11 I	11 II	14 I	14 II	15 I	15 II	24 I	24 II	26 I	26 II	SUB TOTAL PARTICIPATION I	SUB TOTAL PARTICIPATION III	SUB TOTAL PARTICIPATION II	ITEM	QUANT.	UNIT	DESCRIPTION
																													ROADWAY
201																							LUMP		LUMP	201	LUMP		CLEARING AND GRUBBING
202																			257	597			257		597	202	854	L.F.	CURB REMOVED, AS PER PLAN
202																	8487	10,726					8487		10,726	202	19,213	L.F.	FENCE REMOVED
202		1460	500														1483	548					2,943		1,048	202	3,991	S.Y.	WEARING COURSE REMOVED
202															2050	3675							2050		3,675	202	5,725	L.F.	GUARDRAIL REMOVED
203																	14	4508					14		4,508	203	4,522	C.Y.	EMBANKMENT
203																	104	503					104		503	203	607	C.Y.	EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION
203															144	176							144		176	203	320	STA.	LINEAR GRADING
404		20	30																				20		30	404	50	C.Y.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
606															1562	1313							1,562		1,313	606	2,875	L.F.	GUARDRAIL, TYPE 5
606															4	7							4		7	606	11	EACH	ANCHOR ASSEMBLY, STANDARD TYPE A
606															8	7							8		7	606	15	EACH	ANCHOR ASSEMBLY, STANDARD TYPE T
606															2								2			606	2	EACH	BRIDGE TERMINAL ASSEMBLY, STANDARD TYPE E
606															2								2			606	2	EACH	BRIDGE TERMINAL ASSEMBLY, STANDARD TYPE J
607																	8487	659					8487		659	607	9,146	L.F.	FENCE, TYPE CL
607																		15,702							15,702	607	15,702	L.F.	FENCE, TYPE 47
614													1.45	2.05									1.45		2.05	614	3.5	MI.	TEMPORARY EDGE LINES, CLASS I, TYPE R TAPE
614																													
614													9.42	13.38									9.42		13.38	614	22.8	MI.	TEMPORARY EDGE LINES, CLASS I
614													4.3	6.1									4.3		6.1	614	10.4	MI.	TEMPORARY LANE LINES, CLASS II
614																													
614													450	450									450		450	614	900	L.F.	TEMPORARY GORE MARKINGS, CLASS II
616		8	12																				8		12	616	20	M GAL.	WATER
616		.8	1.2																				0.8		1.2	616	2	TONS	CALCIUM CHLORIDE
SPEC.				4.71	6.69																		4.71		6.69	SPECIAL	11.4	LN. MI.	DYNAFLECT TESTING OF EXISTING PAVEMENT
203				80	120																		80		120	203	200	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN
622													1400										1,400			622	1,400	L.F.	TEMPORARY CONCRETE BARRIER
SPEC.													80	120									80		120	SPECIAL	200	EACH	REPLACEMENT DRUMS
202																					1220	4880	1,220		4,880	202	6,100	S.Y.	PAVEMENT REMOVED, AS PER PLAN
614													210	250									210		250	614	460	L.F.	TEMPORARY STOP LINES, CLASS I
202																	184						184			202	184	L.F.	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS REMOVED
																													EROSION CONTROL
659																	361	11,362					361		11,362	659	11,723	S.Y.	SEEDING AND MULCHING
659																	5.11	.17					5.11		0.17	659	5.28	TONS	AGRICULTURAL LIMING
659																	1.03	.03					1.03		0.14	659	1.17	TONS	COMMERCIAL FERTILIZER
														.11															
SPEC.																	806	700					806		700	SPECIAL	1,506	S.Y.	HERBICIDES FOR WEED CONTROL
207												72	2318										72		2,318	207	2,390	S.Y.	TEMPORARY SEEDING AND MULCHING
207												2	54										2		54	207	56	EACH	STRAW OR HAY BALES
659												18	582										18		582	659	600	S.Y.	REPAIR SEEDING AND MULCHING
659												2	17										2		17	659	19	M GAL.	WATER
																													PAVEMENT
301					23	27											67	58					90		85	301	175	CY.	BITUMINOUS AGGREGATE BASE: AC-20, RT-11 or RT-12, as per plan
305																					1100	4400	1,100		4,400	305	5,500	S.Y.	9" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN
305																					120	480	120		480	305	600	S.Y.	15" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN
310					12	48																	12		48	310	60	C.Y.	SUBBASE, TYPE II, AS PER PLAN
310					18	22																	18		22	310	40	C.Y.	SUBBASE, TYPE I, AS PER PLAN
407																	4311	6440					4,311		6440	407	10,751	GALS.	TACK COAT
407																	151	225					151		225	407	376	TONS	COVER AGGREGATE
609					100																		100			609	100	L.F.	ASPHALT CONCRETE CURB, AC-20, STANDARD TYPE I
848															1497	2236							1,497		2,236	848	3733	C.Y.	ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, AC-20
848							112	138							2096	3130							2,208		3,268	848	5476	C.Y.	ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 2, AC-20
SPEC.							4.71	6.69															4.71		6.69	SPECIAL	11.4	LN. MI.	JOINT AND CRACK SEALING IN CONCRETE PAVEMENT
SPEC.							100	400															100		400	SPECIAL	500	S.Y.	PARTIAL DEPTH PAVEMENT REPAIR
SPEC.																					1830	7320	1,830		7,320	SPECIAL	9,150	L.F.	PAVEMENT SAWING
SPEC.									185	740													185		740	SPECIAL	925	EACH	HOLE FOR SUBSEALING
SPEC.									185	740													185		740	SPECIAL	925	C.F	SUBSEAL MATERIAL
SPEC.																	496	232					496		232	SPECIAL	728	L.F.	PRESURE RELIEF JOINTS, Standard Type C
609																			57	397			57		397	609	454	LIN. FT.	CURB, STANDARD TYPE 2-A MODIFIED AS PER PLAN

GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
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LAKE COUNTY

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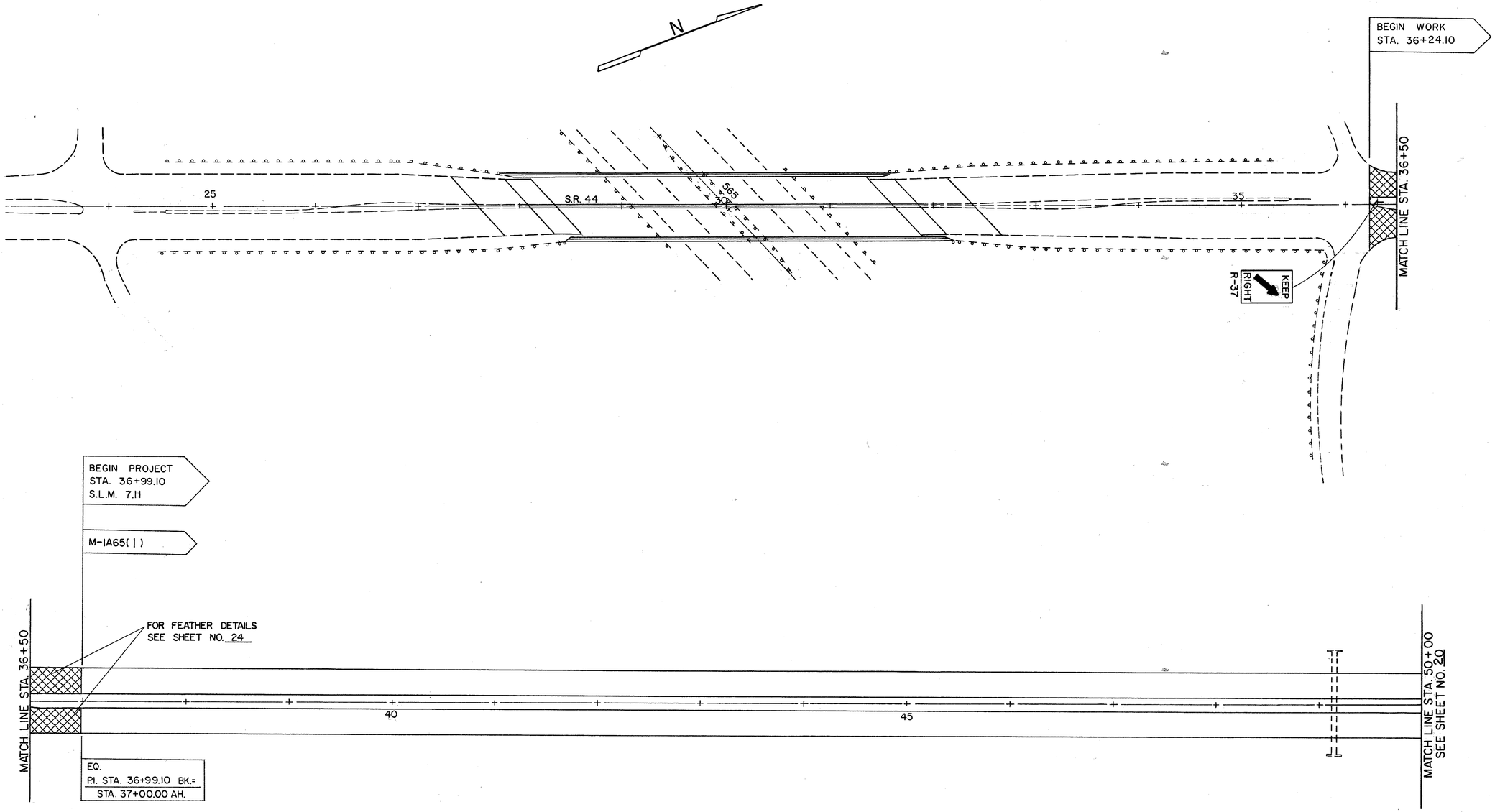
ITEM	SHEET NUMBER																		SUB TOTAL				ITEM	QUANT.	UNIT	DESCRIPTION
	//		9				14		15		16		22		24		27		100% State	PARTICIPATION I	PARTICIPATION III	PARTICIPATION II				
	I	II	I	II	III	100% State	I	II	I	II	I	II	I	II	I	II	I	II								
																										TRAFFIC CONTROL
630							40													40			630	40	S.F.	SIGNS, EXTRU SHEET
630							36	48												36		48	630	84	S.F.	SIGNS, FLAT SHEET
630							127	108												127		108	630	235	L.F.	GROUND MOUNTED SUPPORT, NO. 4 POST
630							2	1												2		1	630	3	EACH	REMOVAL OF GROUND MOUNTED SIGNS
847											4.54	6.76								4.54		6.76	847	11.3	MILES	EDGE LINES, 947.02
847											1.92	3.21								1.92		3.21	847	5.13	MILES	LANE LINES, 4-INCH, 947.02
847											475	823								475		823	847	1,298	L.F.	CHANNELIZING LINES, 947.02
847											105	125								105		125	847	230	L.F.	STOP LINES, 947.02
847											124	164								124		164	847	288	L.F.	TRANSVERSE LINE 947.02
847											400	400								400		400	847	800	L.F.	DOTTED LINES, 4-INCH, 947.02
630							2	1												2		1	630	3	EACH	REMOVAL OF GROUND MOUNTED POST SIGN SUPPORTS
																										DRAINAGE
603					62	88													88		62		603	150	L.F.	6" CONDUIT, TYPE F
605			20	80					588	252										608		332	605	940	L.F.	AGGREGATE DRAINS
605					112	138													138		112		605	250	L.F.	6" UNCLASSIFIED PIPE UNDERDRAINS
605																	1830	7320		1,830		7,320	605	9,150	L.F.	AGGREGATE DRAIN, AS PER PLAN, USING NO. 8 AGGREGATE
SPEC.					18	23													23		18		SPECIAL	41	EACH	UNDERDRAIN OPENINGS
SPEC.					20	26													26		20		SPECIAL	46	M. GAL.	WATER
604															1	1				1		1	604	2	EACH	CATCH BASIN ADJUSTED TO GRADE
																										STRUCTURES
516									184											184			516	184	L.F.	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, AS PER PLAN
845									1483											1,483			845	1,483	S.Y.	LATEX MODIFIED CONCRETE OVERLAY, 1 1/2" THICKNESS
845									111											111			845	111	C.Y.	LATEX MODIFIED CONCRETE OVERLAY, (VARIABLE THICKNESS)
845									2											2			845	2	C.Y.	FULL DEPTH REPAIR
SPEC.									1150											1,150			SPECIAL	1,150	S.Y.	SEALING OF CONCRETE SURFACES
SPEC.									120											60	60		SPECIAL	120	S.F.	PATCHING CONCRETE STRUCTURES WITH MAGNESIUM PHOSPHATE CONCRETE
																										GENERAL
Spec.	40	10																		40		10	Special	50	Hours	Law Enforcement Officer With Patrol Car
619																				LUMP		LUMP	619	LUMP		FIELD OFFICE
623																				LUMP		LUMP	623	LUMP		CONSTRUCTION LAYOUT STAKES
624																				LUMP		LUMP	624	LUMP		MOBILIZATION
614																				LUMP		LUMP	614	LUMP		Maintaining Traffic

FHWA REGION	STATE	PROJECT	
5	OHIO		

19
35

LAKE COUNTY
LAK-44-7.11



STA. 36+24.10 TO STA. 50+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

LAKE COUNTY
LAK-44-7.11

N

STA. 56+59.43 ℄ S.R. 44 =
STA. 00+00.00 BLACKBROOK RD.

MATCH LINE STA. 50+00

℄ SR 44

BLACKBROOK RD. D-4D

KEEP RIGHT R-37R

FOR FEATHER DETAILS SEE SHEET NO. 24

BLACKBROOK RD. D-4D

6" WATER MAIN STA. 62+90

MATCH LINE STA. 65+00

▨ – AREA TO BE REGRADED

NOSE STA. 66+77.50 SR 44
STA. 6+76.56 RAMP A

REMOVE CURB, SEE SHEET NO. 24 FOR DETAILS.

STA. 8+76.56 RAMP A

RAMP A

SR 283

FOR FEATHER DETAILS SEE SHEET NO. 24

RAMP B

MATCH LINE STA. 65+00

℄ SR 44

NOSE STA. 70 07.72 ℄ SR 44
STA. 10+ 4.99 RAMP C

RAMP C

FOR FEATHER DETAILS SEE SHEET NO. 25

FOR FEATHER DETAILS SEE SHEET NO. 25

FOR FEATHER DETAILS SEE SHEET NO. 24

RAMP D

16" WATER MAIN STA. 77+30

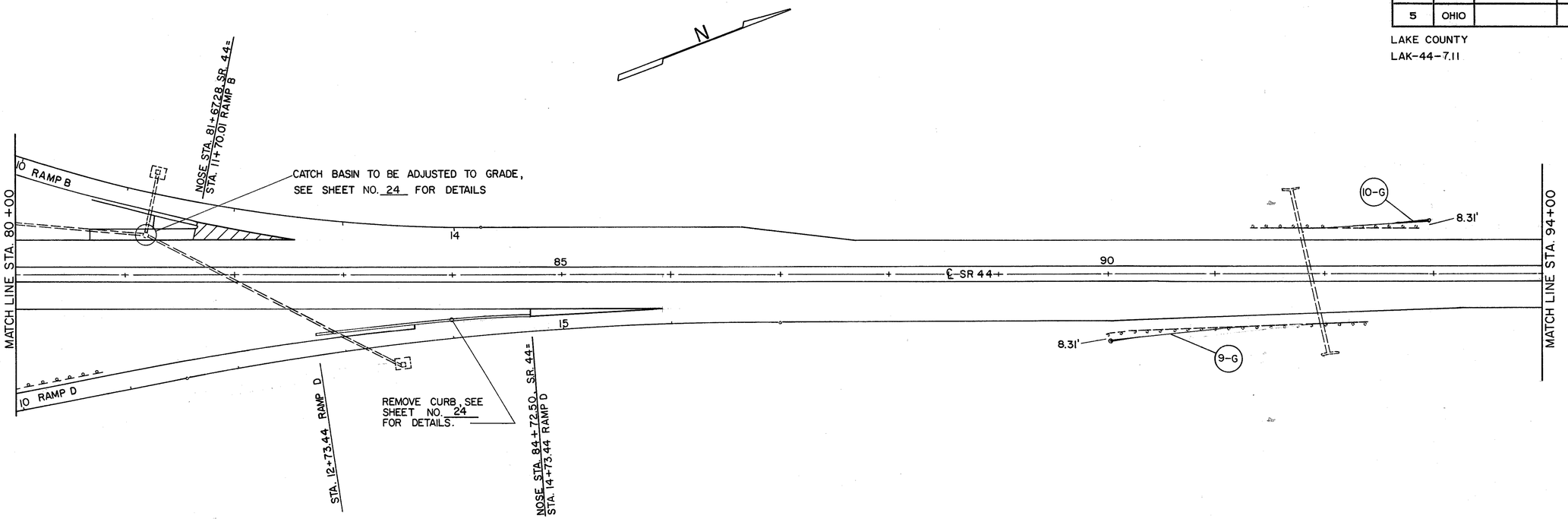
MATCH LINE STA. 80+00
SEE SHEET NO. 21

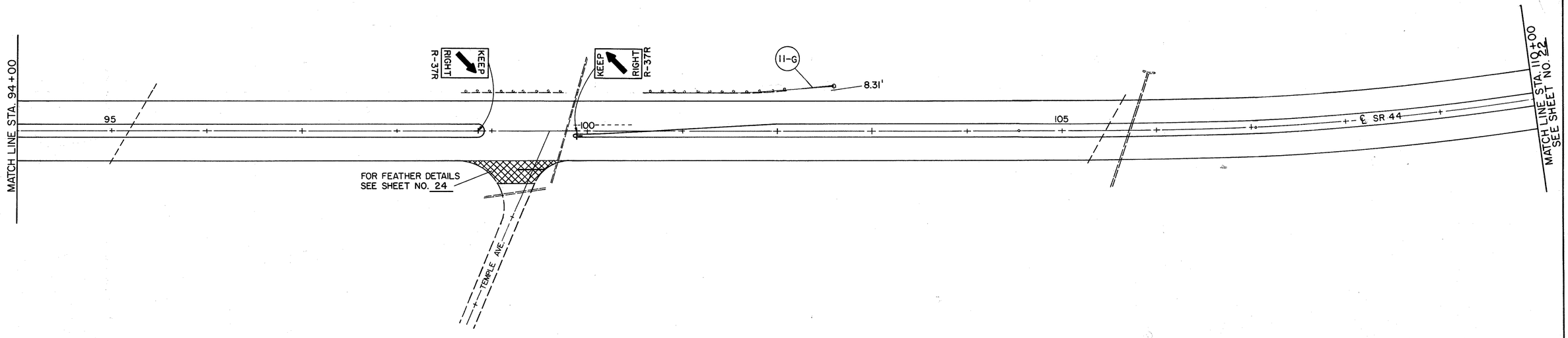
STA. 50+00 TO STA. 80+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

21
35

LAKE COUNTY
LAK-44-7.11

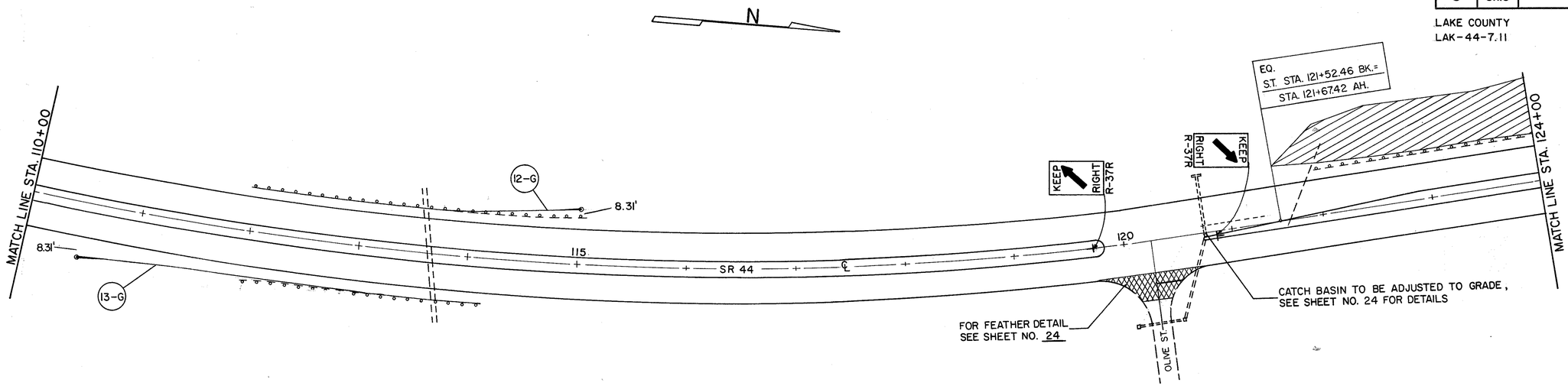


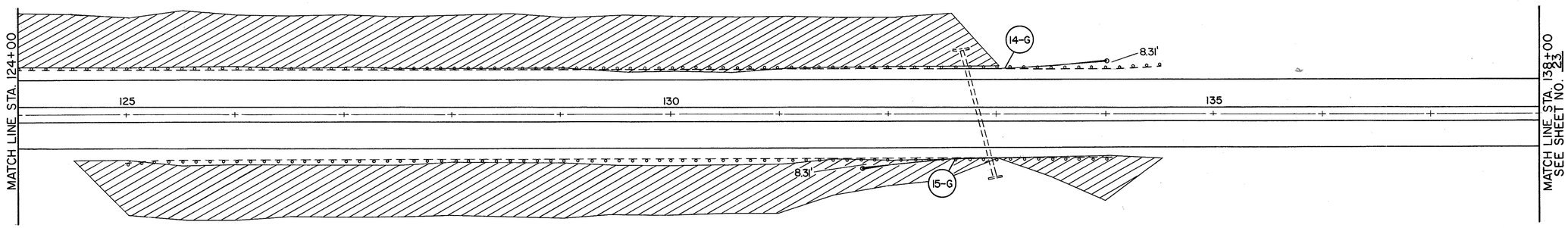


STA. 80+00 TO STA. 110+00

FHWA REGION	STATE	PROJECT	
5	OHIO		

LAKE COUNTY
LAK-44-7.11



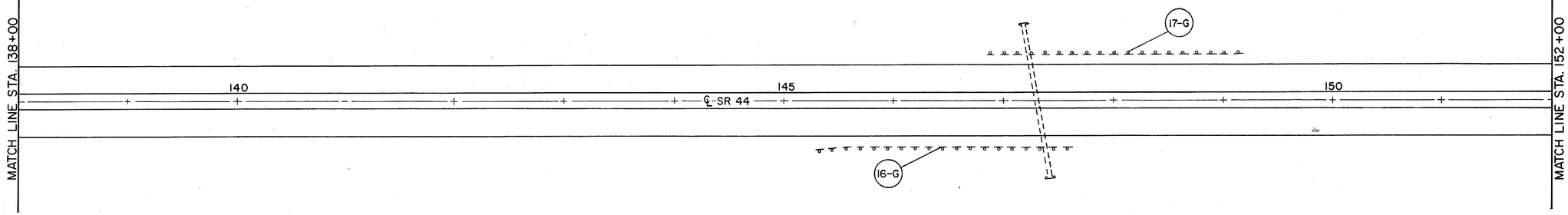


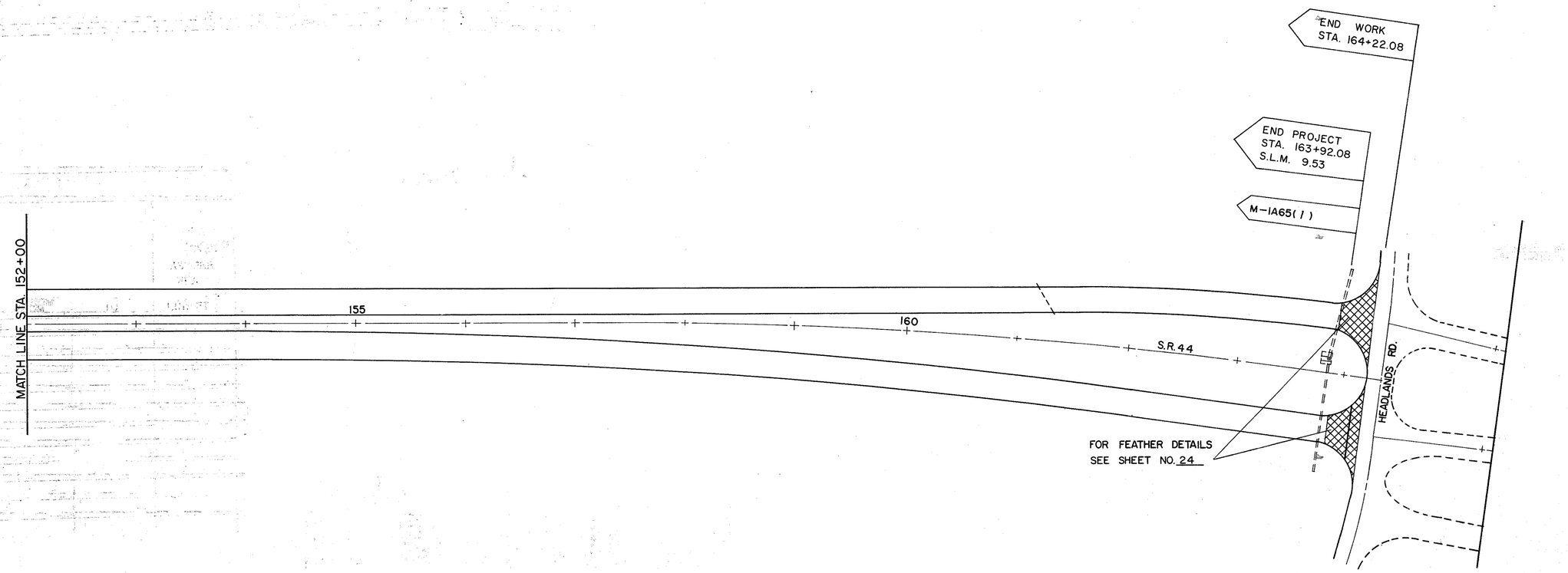
STA. 110+00 TO STA. 138+00

FHWA REGION	STATE	PROJECT		
5	OHIO			

23
35

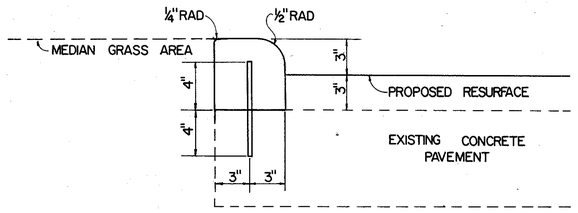
LAKE COUNTY
LAK-44-7.11





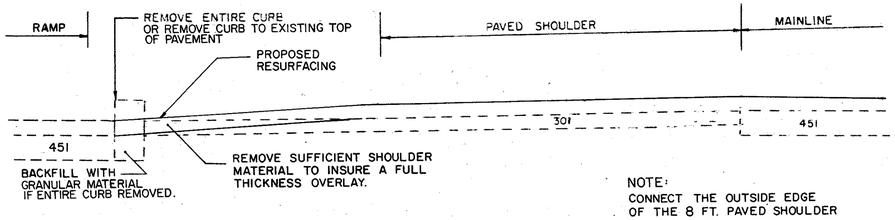
STA. 138+00 TO STA. 164+22.08

CURB TYPE 2-A
MODIFIED AS PER PLAN

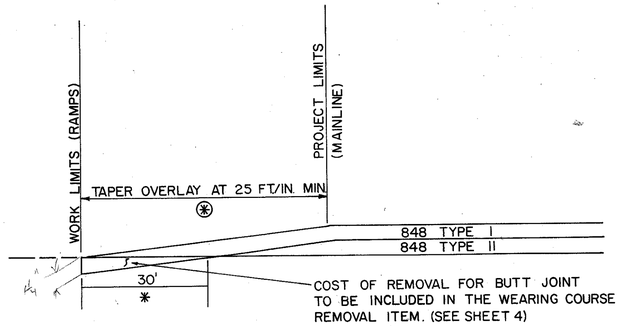


NOTES:
THE NEW CONCRETE CURB (TYPE 2-A, MODIFIED AS PER PLAN) SHALL BE CONNECTED TO THE EXISTING CONCRETE PAVEMENT WITH NO.4 DOWEL BARS SPACED AT 18" CENTERS. INSTALLATION OF THE DOWEL BARS SHALL BE IN ACCORDANCE WITH ITEM 510. THE FULL COST OF DOWEL HOLES, BARS, FORMS, MORTAR AND EXPANSION JOINTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 609, CURB TYPE 2-A, MODIFIED AS PER PLAN. RESTORE DISTURBED AREA IN CONFORMANCE WITH ITEM 659.

ITEM 202 - CURB REMOVED, AS PER PLAN
THE FOLLOWING DETAILS AND SPECIFICATIONS SHALL APPLY TO THIS ITEM OF WORK.



NOTE:
CONNECT THE OUTSIDE EDGE OF THE 8 FT. PAVED SHOULDER AND THE CURB GUTTER LINE WITH A STRAIGHT GRADE.



FEATHER DETAIL ADJACENT TO NON-OVERLAID STRUCTURE OR ROADWAY
(NO SCALE)

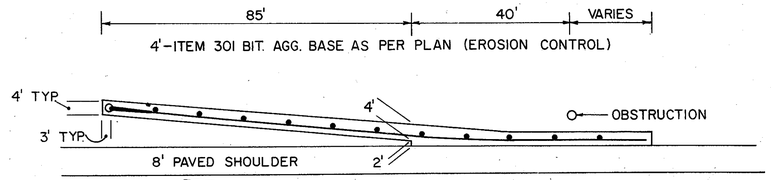
⊛ - 10 FT/IN RAMPS, INTERSECTION
* - 12.5' RAMPS

ESTIMATED QUANTITIES

SIDE	PART	LOCATION FROM	LOCATION TO	202 CURB REMOVED AS PER PLAN LIN. FT.	609 CURB TYPE 2-A, MODIFIED A.P.P. LIN. FT.
NOSE	I	56+07	56+15	10	10
NB	II	83+42	83+52	10	10
NB	II	97+24	97+36	12	12
NOSE	II	98+68	98+78	10	10
NB	II	112+30	112+44	14	14
NB	II	113+68	114+05	37	37
NB	II	123+76	123+86	20	20
NB	II	143+01	143+09	8	8
NB	II	143+59	143+70	11	11
SB	I	43+76	43+86	10	10
SB	I	44+10	44+14	4	4
SB	I	44+76	44+86	10	10

ESTIMATED QUANTITIES

SIDE	PART	LOCATION FROM	LOCATION TO	202 CURB REMOVED AS PER PLAN LIN. FT.	609 CURB TYPE 2-A, MODIFIED A.P.P. LIN. FT.	604 CATCH BASIN ADJUSTED TO GRADE
SB	I	70+74	70+84	10	10	
SB	I	79+76	79+89	13	13	
SB	II	84+06	84+22	16	16	
SB	II	95+94	97+38	144	144	
SB	II	113+39	114+18	79	79	
SB	II	132+03	132+21	18	18	
SB	II	142+96	143+14	18	18	
RAMP A	I	6+76.56	8+76.56	200		
RAMP D	II	12+73.44	14+73.44	200		
SB	I	81+20				1
SB	II	120+75				1
PART I				257	57	1
PART II				597	397	1
TOTAL				854	454	2

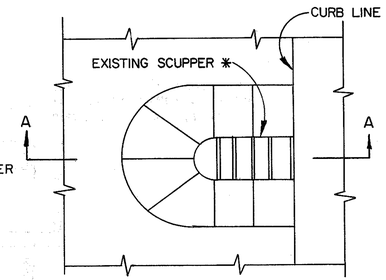


ITEM 301 FOR EROSION CONTROL WITH 8.30' GUARDRAIL FLARE

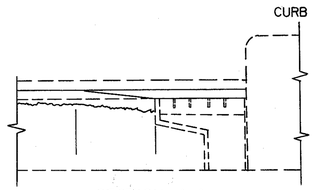
SCALE
0 5' 10' 20'

FHWA REGION	STATE	PROJECT	
5	OHIO		

LAKE COUNTY
LAK-44-7.11



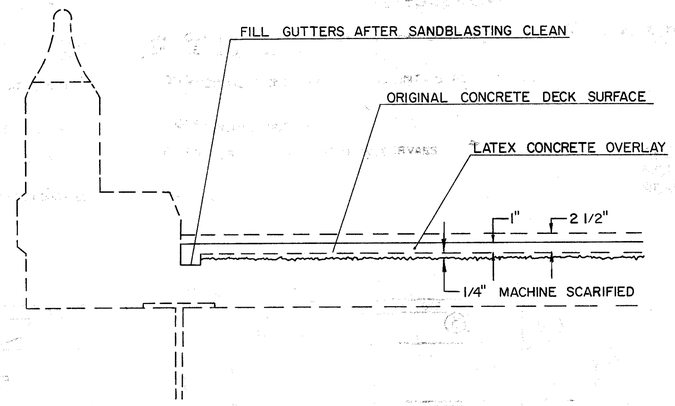
PLAN VIEW



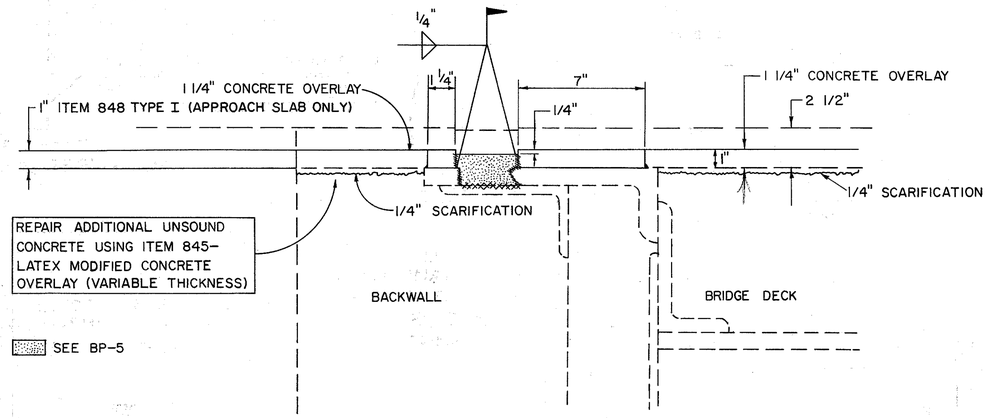
SECTION A-A

* SCUPPERS AS FOUND MAY BE REVERSED 180° OR OF ANOTHER TYPE THAN THAT SHOWN.

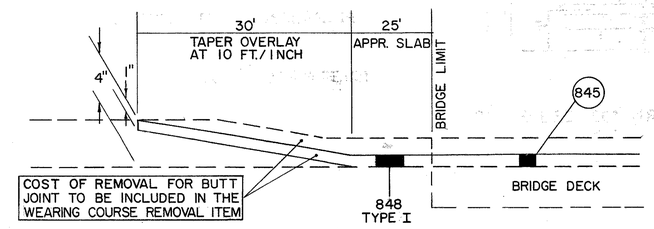
TYPICAL OVERLAY DETAIL AT SCUPPERS



PROPOSED TYPICAL SECTION
NO SCALE

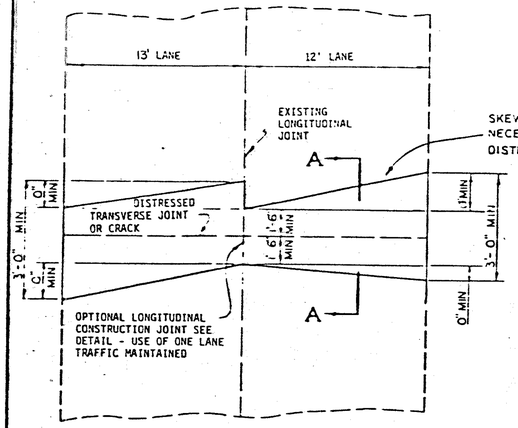


VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, AS PER PLAN

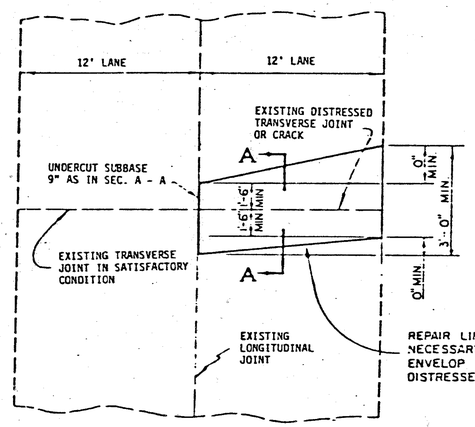


FEATHER DETAIL ADJACENT TO LAK-283-14.34
NO SCALE

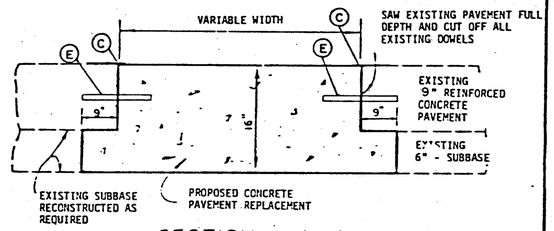
305 PAVEMENT REPLACEMENT DETAILS (PAVEMENT JOINTS OR CRACKS)



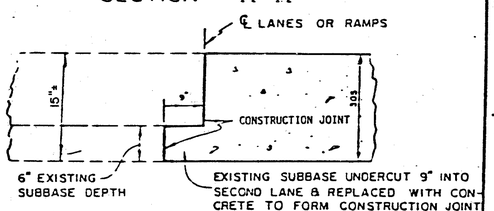
TWO LANE REPLACEMENT



SINGLE LANE REPLACEMENT



SECTION A-A



OPTIONAL LONGITUDINAL CONSTRUCTION JOINT FOR FULL WIDTH REPLACEMENT WHERE ONE LANE OF TRAFFIC MAINTAINED

SEE SHEET No 6 FOR GENERAL NOTES PERTAINING TO PAVEMENT REMOVAL AND REPLACEMENT

NOTE:

THIS WORK IS FOR THE REPAIRING OF DETERIORATED TRANSVERSE PAVEMENT JOINTS AND OTHER SMALL DETERIORATED AREAS. THE LOCATION AND SIZES OF THE REPAIRS SHALL BE AT THE DIRECTION OF THE ENGINEER.

THE COST OF RESHAPING, RECONSTRUCTING AND RECOMPACTING OF THE EXISTING SUBBASE AS NECESSARY SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 305, 15" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN.

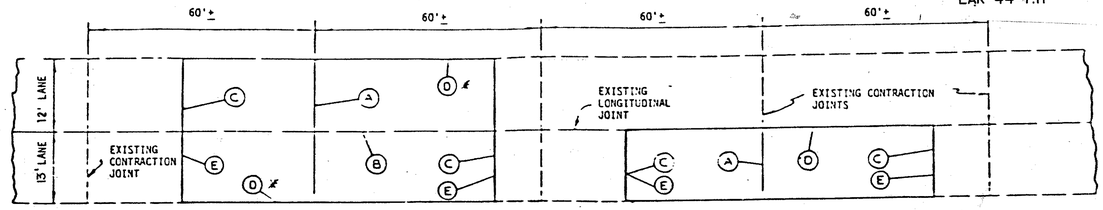
THIS DETAIL ALSO APPLIES TO THE REPAIR OF EXISTING 9" REINFORCED CONCRETE.
PAYMENT SHALL BE FOR 15" - ITEM 305 FOR EITHER THICKNESS.

305 PAVEMENT REPLACEMENT DETAILS (PAVEMENT PANELS)

FHWA REGION	STATE	PROJECT	
5	OHIO		

LAKE COUNTY
LAK-44-7.11

26
35



* REQUIRED IF PAVEMENT REPLACEMENT IS ADJACENT TO EXISTING PAVEMENT

TYPICAL TWO LANE REPLACEMENT

TYPICAL ONE LANE REPLACEMENT

Ⓐ STANDARD CONTRACTION JOINT AS PER STD DRWG BP-4 – LOCATE ON STRAIGHT LINE EXTENSION OF EXISTING JOINT FOR SINGLE LANE PAVEMENT

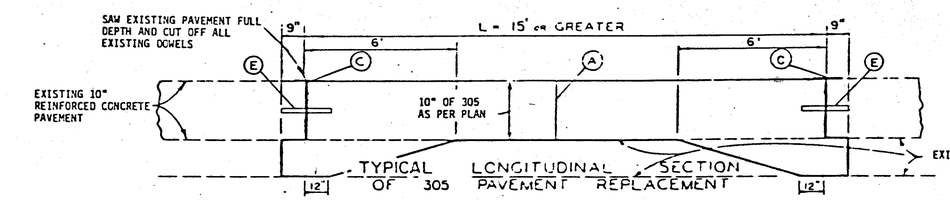
Ⓑ LONGITUDINAL JOINT – LONGITUDINAL CONSTRUCTION JOINT AS PER BP-3

Ⓒ JOINT AND CRACK SEALING (SEE GENERAL NOTES)

Ⓓ EXPANSION BOLT JOINT AS PER BP-3, AT 5'-0" INTERVALS

Ⓔ DOWELLED CONSTRUCTION JOINT, SEE DETAIL

SEE SHEET No 8 FOR GENERAL NOTES PERTAINING TO PAVEMENT REMOVAL AND REPLACEMENT



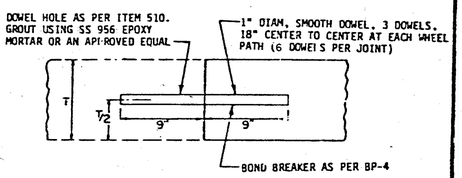
TYPICAL LONGITUDINAL SECTION OF 305 PAVEMENT REPLACEMENT

NOTE:

THIS WORK IS FOR THE REPAIRING OF THE LARGER SIZE DETERIORATED PAVEMENT AREAS OF EITHER SINGLE OR TWO LANE WIDTHS. THE LOCATIONS AND SIZES OF THESE REPAIRS SHALL BE AT THE DIRECTION OF THE ENGINEER.

THE COST OF RESHAPING, RECONSTRUCTING AND RECOMPACTING OF THE EXISTING SUBBASE AS NECESSARY SHALL BE INCLUDED IN THE UNIT PRICE BID FOR 305 9" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN.

THIS DETAIL ALSO APPLIES TO THE REPAIR OF 9" REINFORCED CONCRETE.
PAYMENT SHALL BE FOR 9" - ITEM 305 FOR EITHER THICKNESS.



DOWELLED CONSTRUCTION JOINT

ESTIMATED QUANTITIES

ITEM 305 – 15" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN I 120 II 480 S.Y.	ITEM 305 – 9" PORTLAND CEMENT CONCRETE BASE, AS PER PLAN I 1100 II 4400 S.Y.
ITEM 202 – PAVEMENT REMOVED, AS PER PLAN I 1220 II 4880 S.Y.	
ITEM SPEC – PAVEMENT SAWING I 1830 II 7320 L.F.	

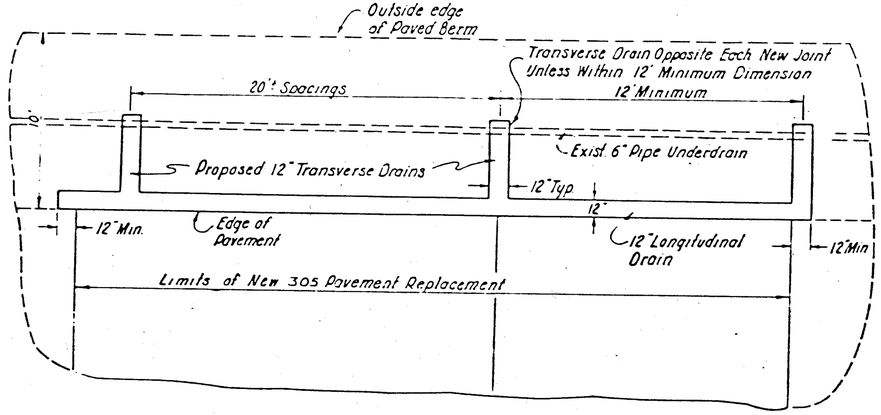
LONGITUDINAL & TRANSVERSE AGGREGATE DRAIN DETAILS

FHWA REGION	STATE	PROJECT	
5	OHIO		

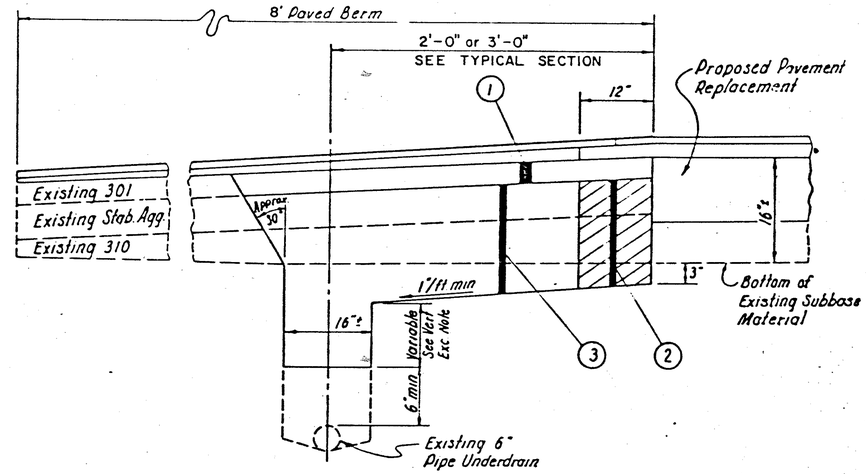
LAKE COUNTY

LAK-44-7.11

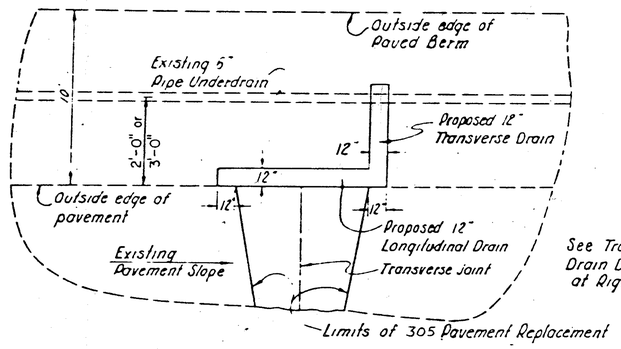
For Full Width 305 Replacement, the Spacing of the Transverse Drains on the Inside Berm shall be the same as for the Outside Berm



TYPICAL LONGITUDINAL AND TRANSVERSE AGGREGATE DRAIN DETAILS WITH 305 PAVEMENT REPLACEMENTS

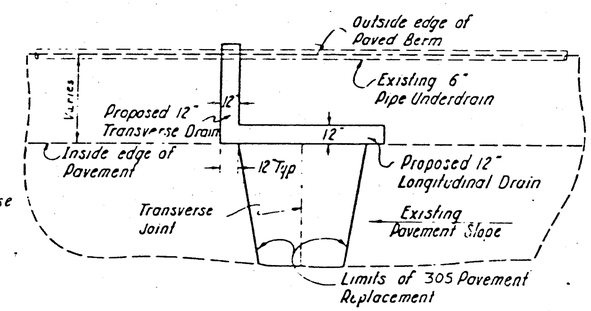


TRANSVERSE DRAIN DETAIL FOR OUTSIDE BERM



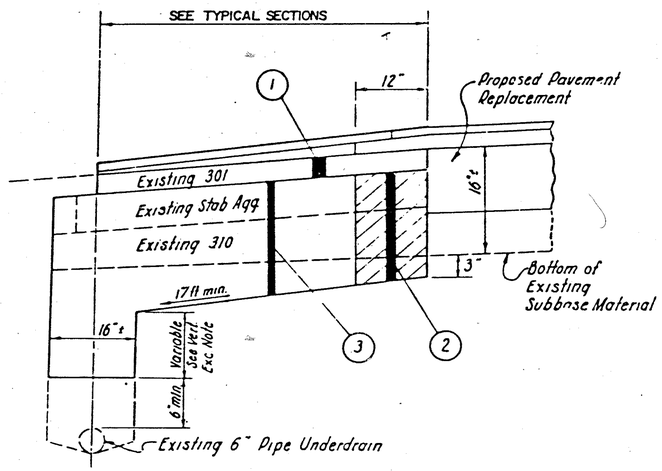
OUTSIDE PAVEMENT EDGE

See Transverse Drain Details at Right



INSIDE PAVEMENT EDGE

TYPICAL LONGITUDINAL AND TRANSVERSE AGGREGATE DRAIN DETAILS WITH 305 PAVEMENT REPLACEMENTS



TRANSVERSE DRAIN DETAIL FOR MEDIAN BERM

NOTES

LONGITUDINAL AGGREGATE DRAINS SHALL BE CONSTRUCTED CONTINUOUSLY ALONG THE PAVEMENT EDGES FOR THE FULL LENGTH OF 305 PAVEMENT REPLACEMENTS (SEE SHEET 26 FOR DETAILS). TRANSVERSE AGGREGATE DRAINS SHALL BE CONSTRUCTED AT 20 FEET MAXIMUM SPACING ALONG THE LENGTH OF THE PAVEMENT REPLACEMENTS OR AS DIRECTED BY THE ENGINEER.

THE VERTICAL LIMIT OF THE EXCAVATION SHALL BE TO SIX (6) INCHES ABOVE THE TOP OF THE EXISTING PIPE UNDERDRAIN OR TO THE TOP OF VERTICAL LIMIT OF THE EXISTING AGGREGATE UNDERDRAIN TRENCH BACKFILL. POSITIVE DRAINAGE MUST BE SECURED. ANY TILE BROKEN OR DAMAGED AS A RESULT OF THIS OPERATION SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

THE UNIT PRICE BID FOR ITEMS 605 AGGREGATE DRAINS USING NO. 8 AGGREGATE, AS PER PLAN, SHALL INCLUDE THE REMOVING AND DISPOSING OF EXISTING BERM MATERIALS. THE FURNISHING, PLACING AND COMPACTING OF THE NO. 8 AGGREGATE, FURNISHING, PLACING AND COMPACTING OF THE ASPHALT CONCRETE AND ALL INCIDENTAL REQUIREMENTS NECESSARY TO COMPLETE THESE ITEMS.

THE ASPHALT CONCRETE SHALL BE PLACED AND COMPACTED ON THE BERMS AS DIRECTED BY THE ENGINEER FOR THE AGGREGATE DRAIN ESTIMATED QUANTITIES.

ESTIMATED QUANTITIES
QUANTITY CALCULATIONS LONGITUDINAL DRAINS — APPROXIMATELY 1 L.F/S.Y. OF PAV'T. REPLACEMENT TRANSVERSE DRAINS — APPROXIMATELY 1/2 L.F/S.Y. OF PAV'T. REPLACEMENT
COMBINED AGGREGATE DRAIN QUANTITY = 1.5 L.F/S.Y.
ITEM 605, AGGREGATE DRAIN, AS PER PLAN USING Nº 8 AGGREGATE. I 1830 II 7320 L.F.

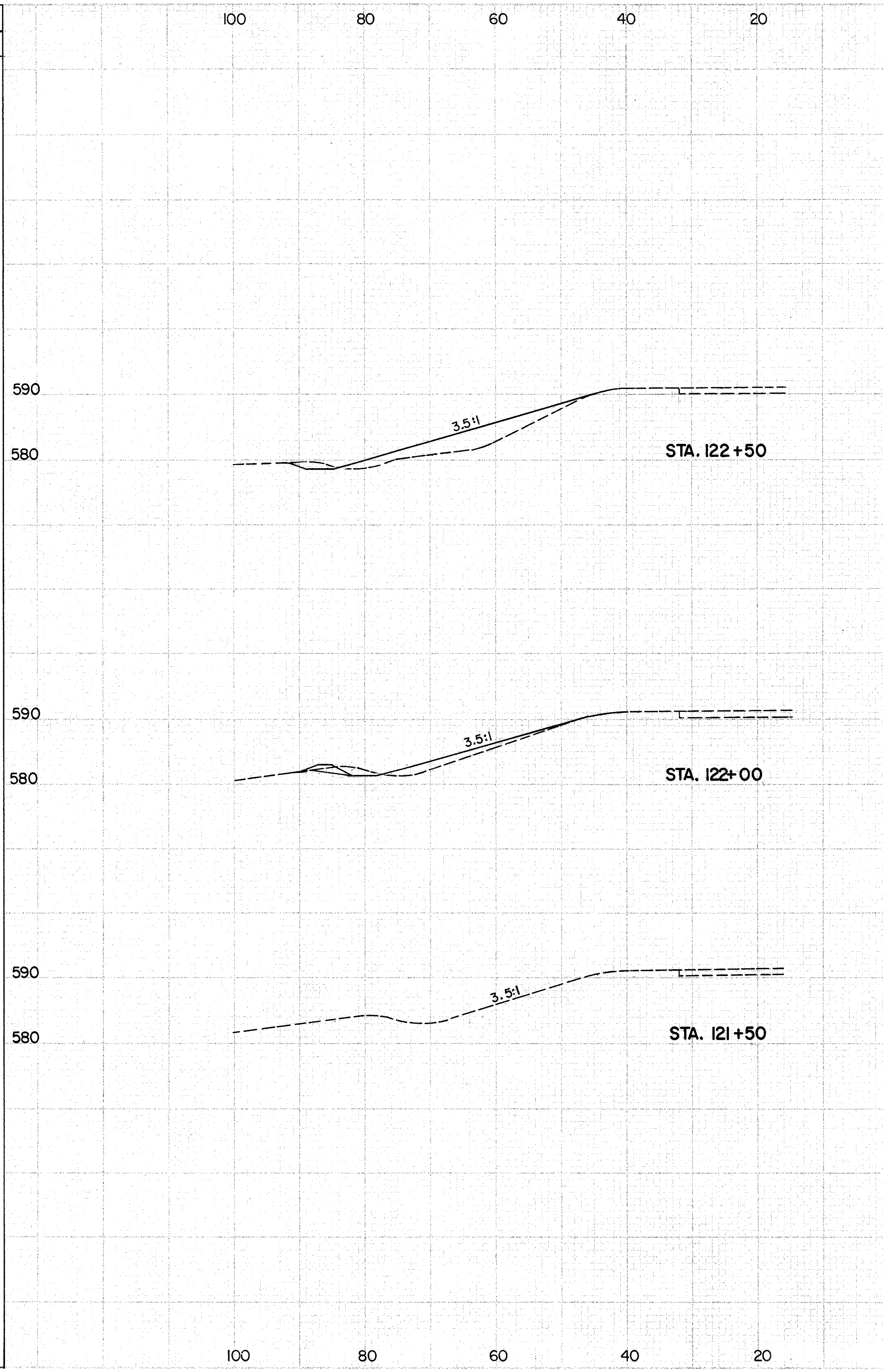
(1) 3" Min. Asphalt Concrete AC-20 (Item 402 or 848) Match Ex. Thickness

(2) 605 Longitudinal Aggregate Drain, As Per Plan, Using No. 8 Aggregate

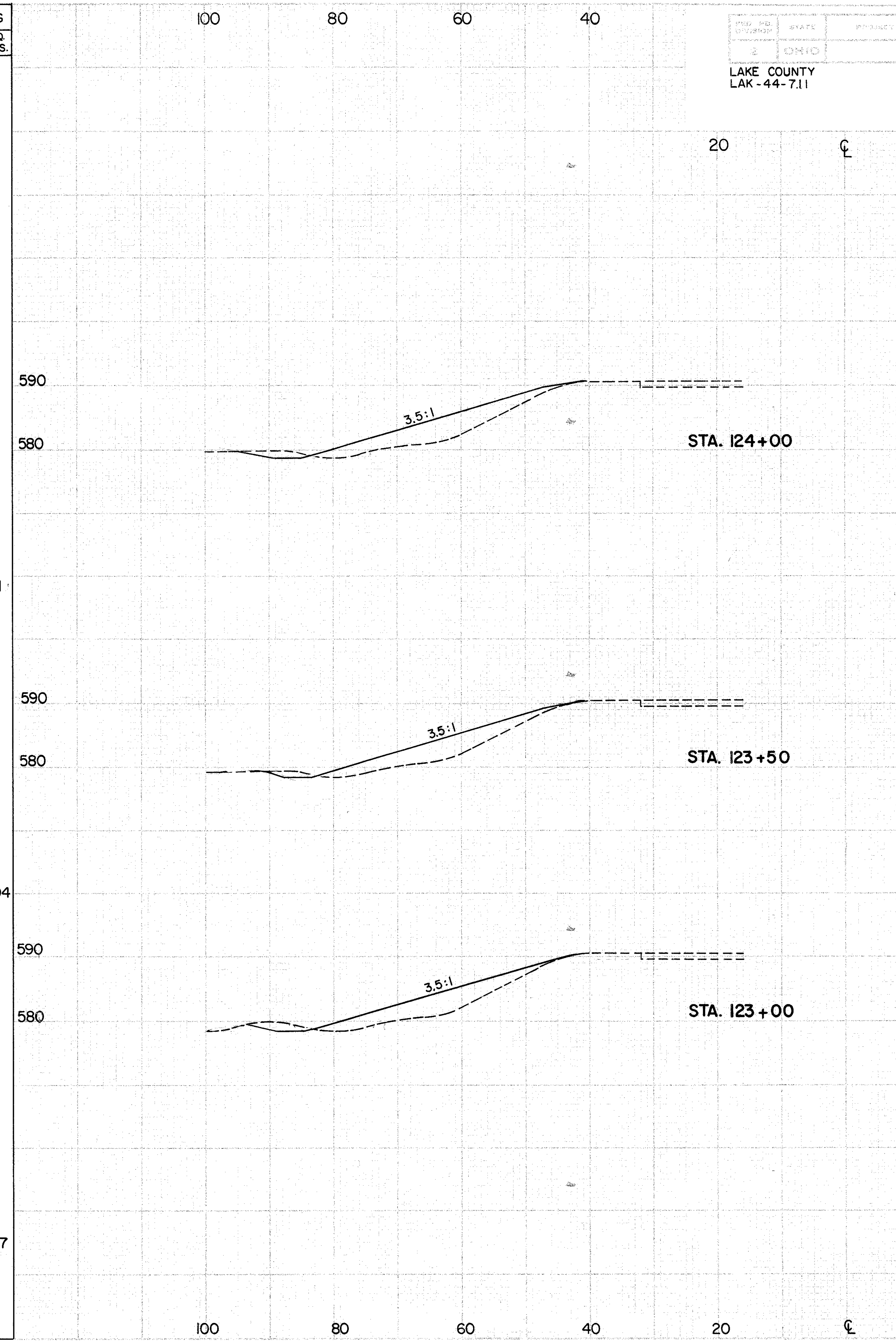
(3) 605 Transverse Aggregate Drain, As Per Plan, Using No. 8 Aggregate

AGGREGATE DRAIN DETAILS

SEEDING	
END WIDTH	SQ. YDS.
53	
	292
52	
	145
0	

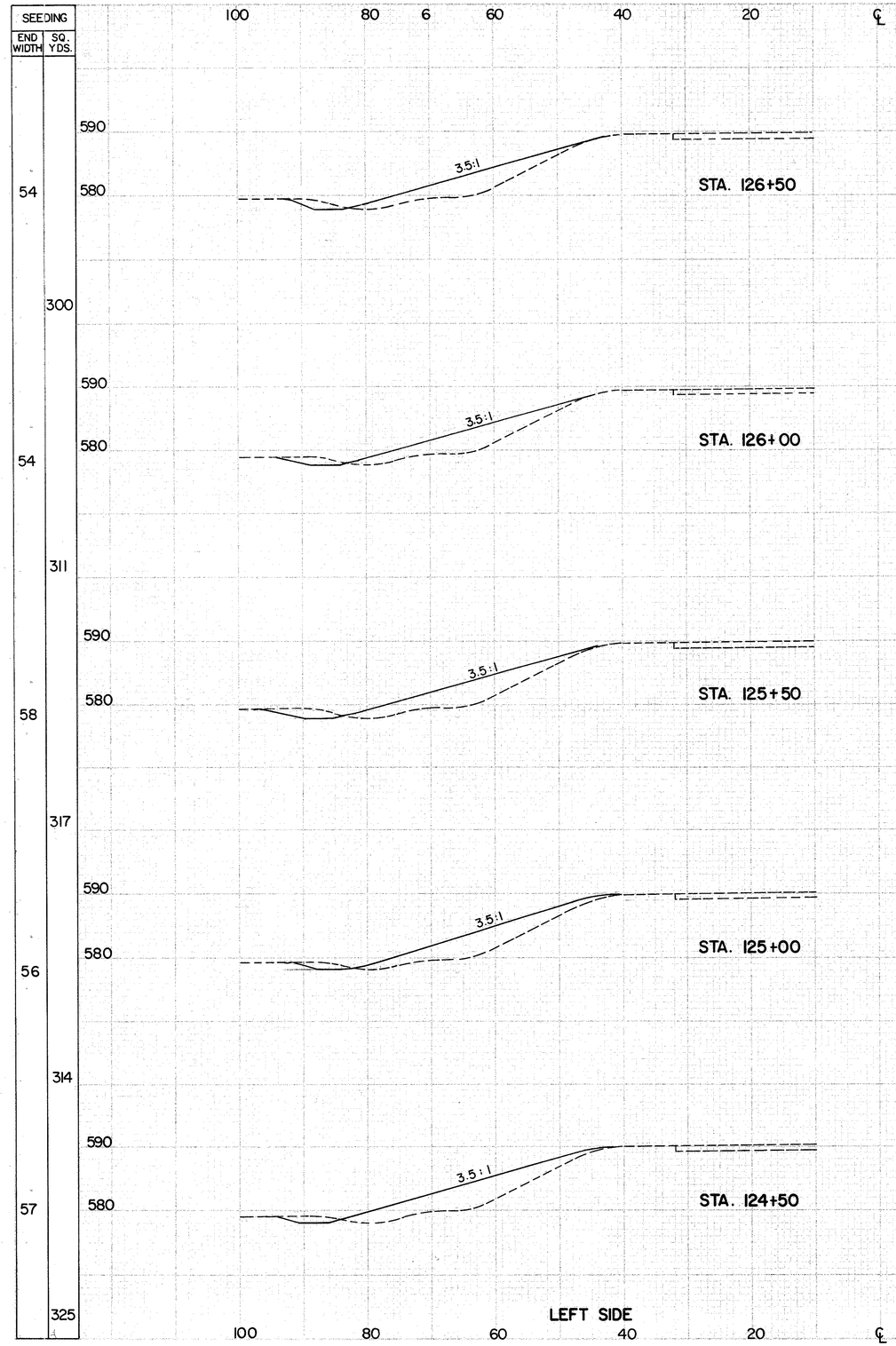


END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
5	64			60	
		11	81		311
7	23			52	
		6	21		294
0	0			54	
					297

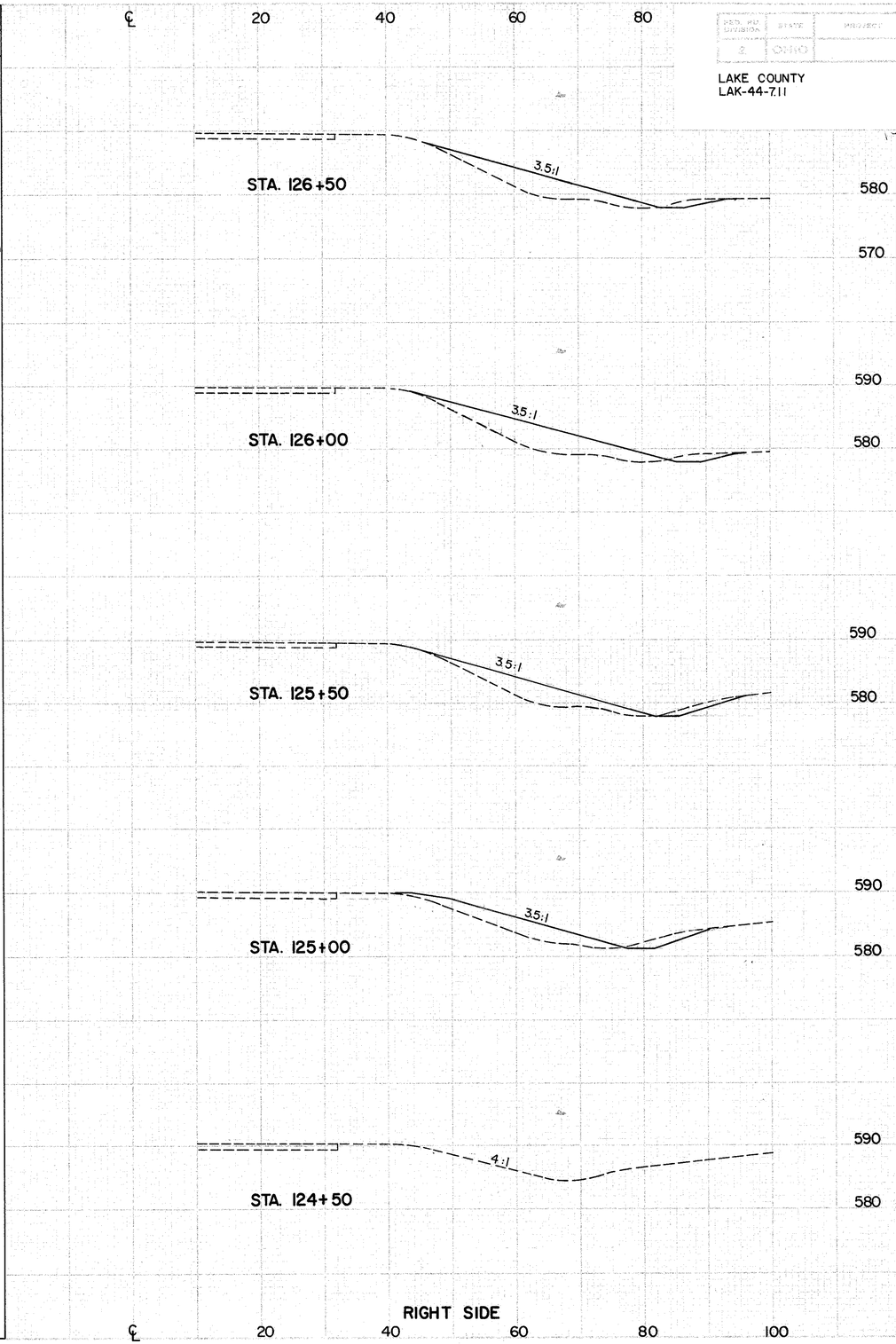


END AREA		VOLUME	
CUT	FILL	CUT	FILL
8	83		
		11	137
4	65		
		10	125
7	70		
		11	124

SEEDING	
END WIDTH	SQ. YDS.
54	
	300
54	
	311
58	
	317
56	
	314
57	
	325



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
6	57			52	
		15	108		300
10	60			56	
		19	130		314
11	80			57	
		19	142		314
9	73			56	
		15	149		156
7	88			0	
		14	158		



END WIDTH		VOLUME	
CUT	FILL	CUT	FILL
8	61		
		17	132
10	82		
		19	127
11	55		
		10	46
0	0		

FED. AID DIVISION	STATE	PROJECT	
5	OHIO		

29
35

LAKE COUNTY
LAK-44-7.11

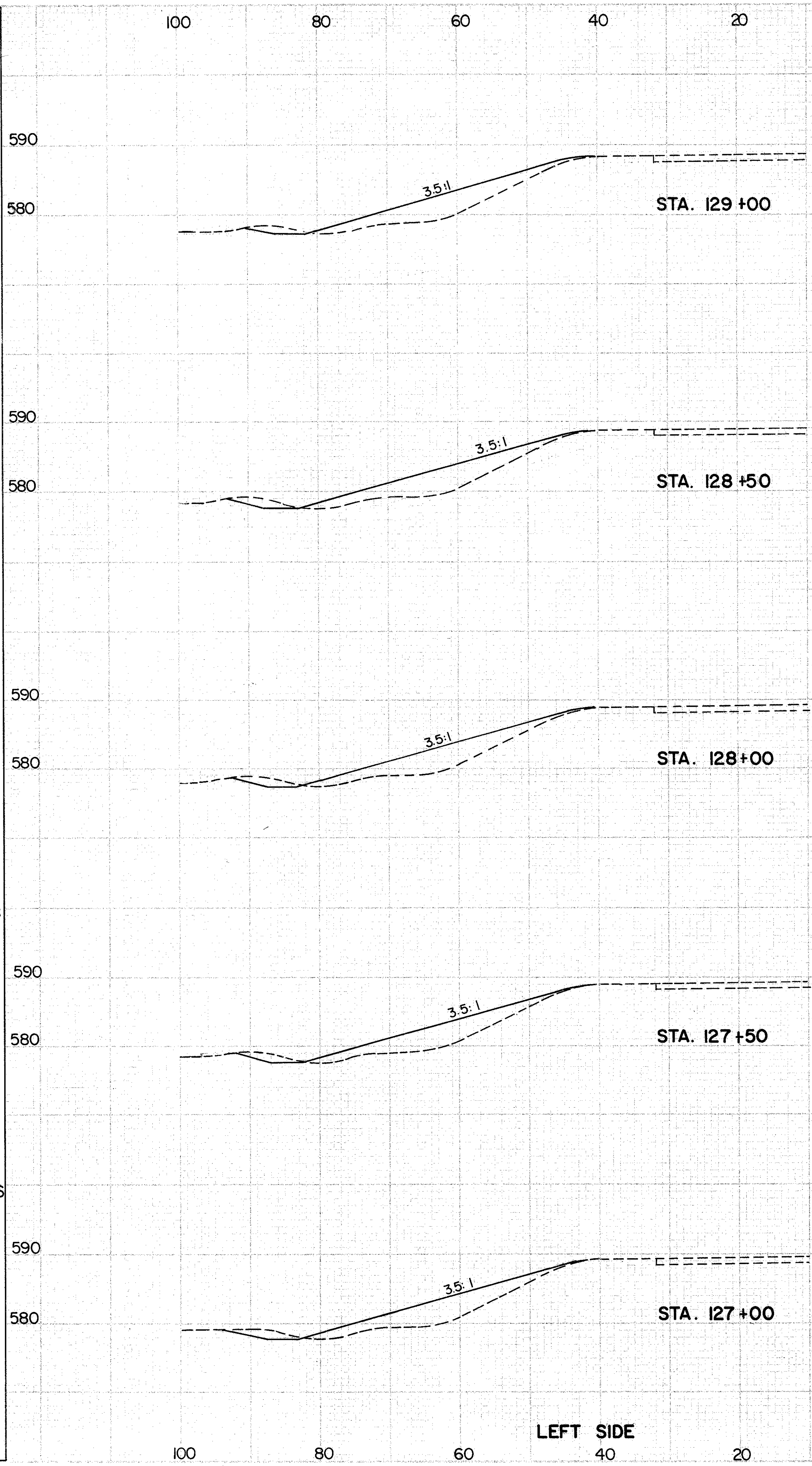
STA. 124+50 TO STA. 126+50

LAKE COUNTY
LAK-44-7.11

OHIO

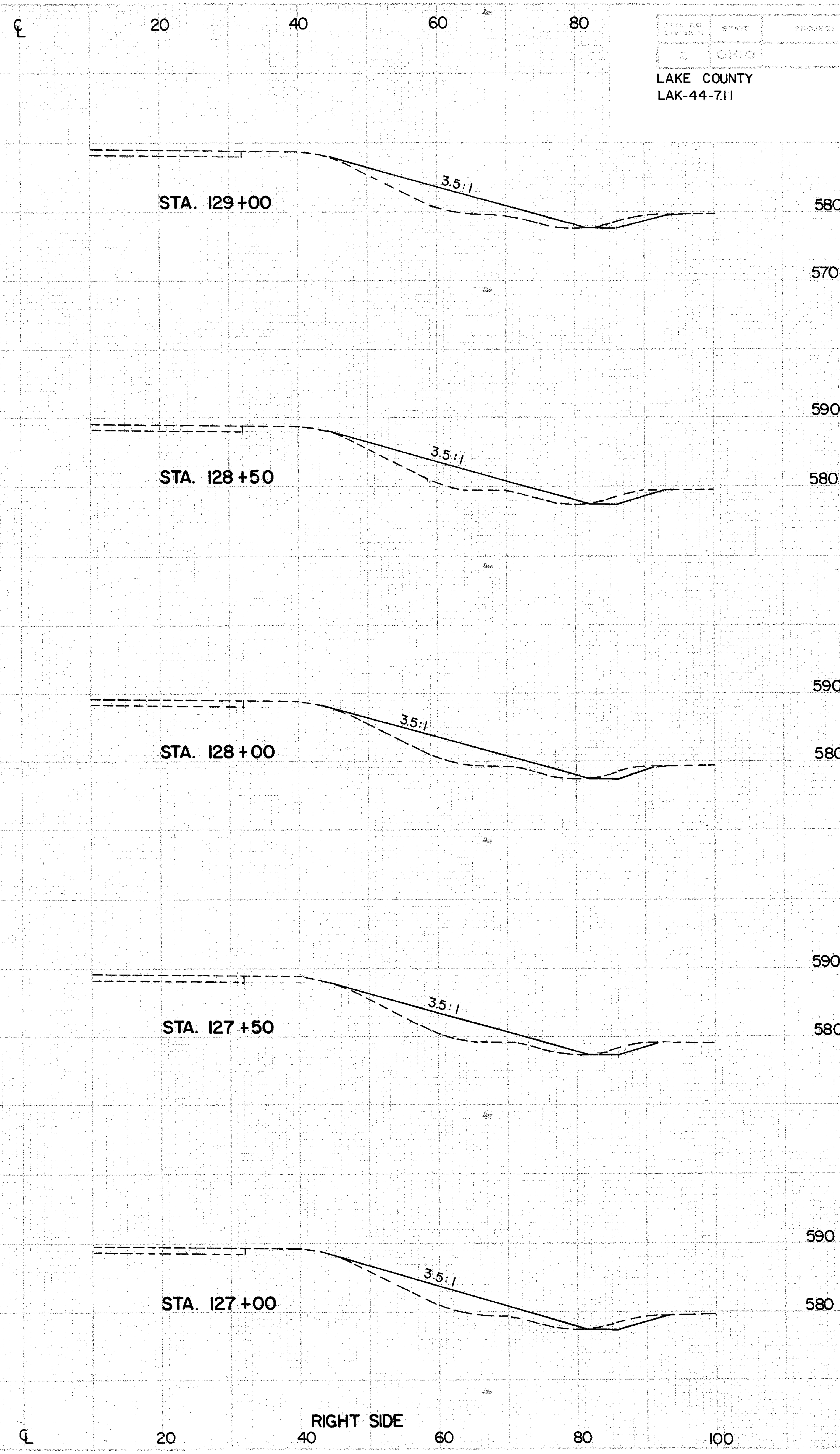
LEFT SIDE

Station	SEEDING END WIDTH	SEEDING SQ. YDS.
STA. 129+00	52	
		306
STA. 128+50	58	
		317
STA. 128+00	56	
		308
STA. 127+50	55	
		306
STA. 127+00	55	
		303



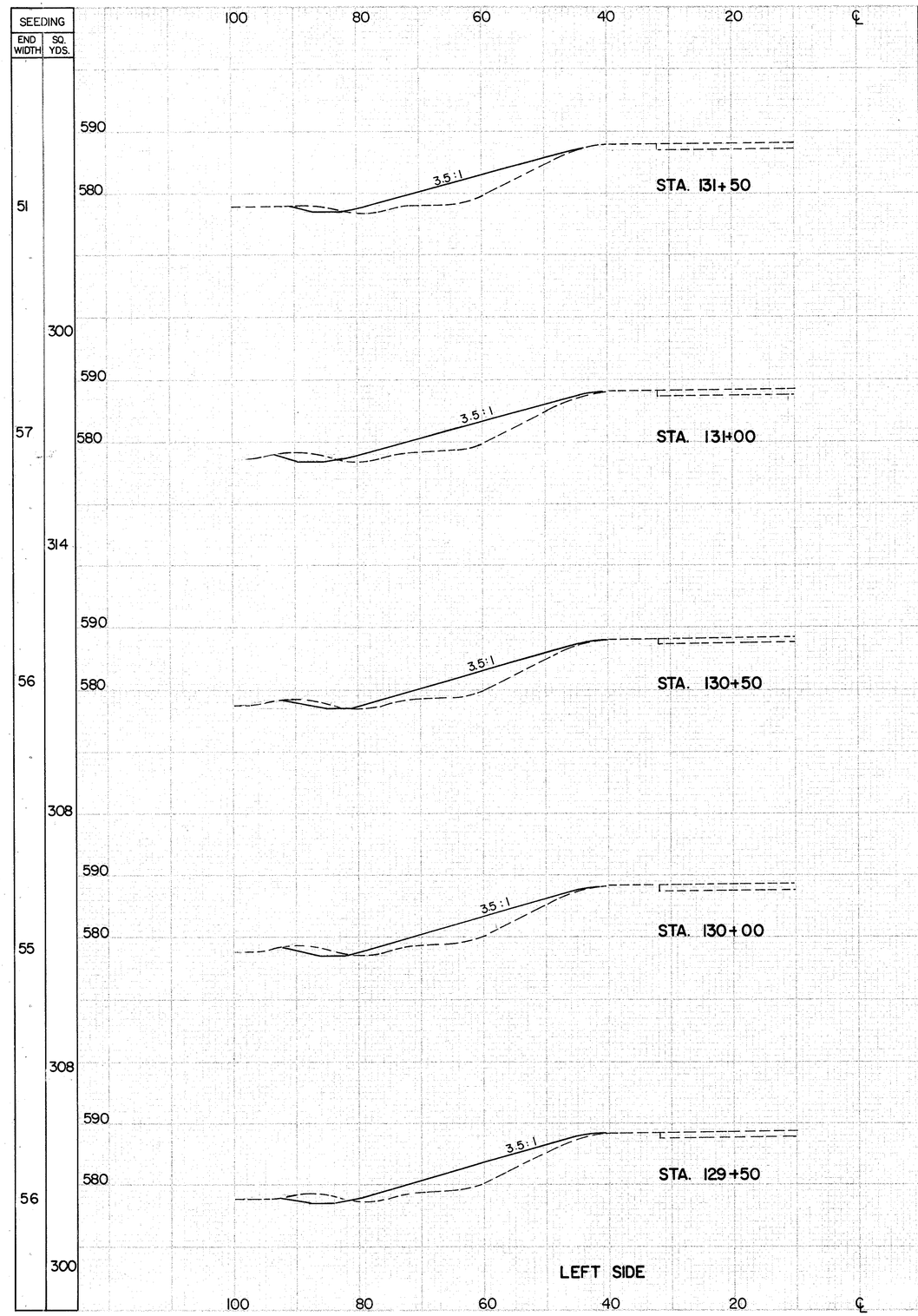
Station	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL	SEEDING END WIDTH	SEEDING SQ. YDS.
STA. 129+00	7	68			54	
			13	137		300
STA. 128+50	7	80			54	
			16	141		303
STA. 128+00	10	72			55	
			16	131		294
STA. 127+50	7	70			51	
			14	130		286
STA. 127+00	8	70			52	
			13	121		289

RIGHT SIDE



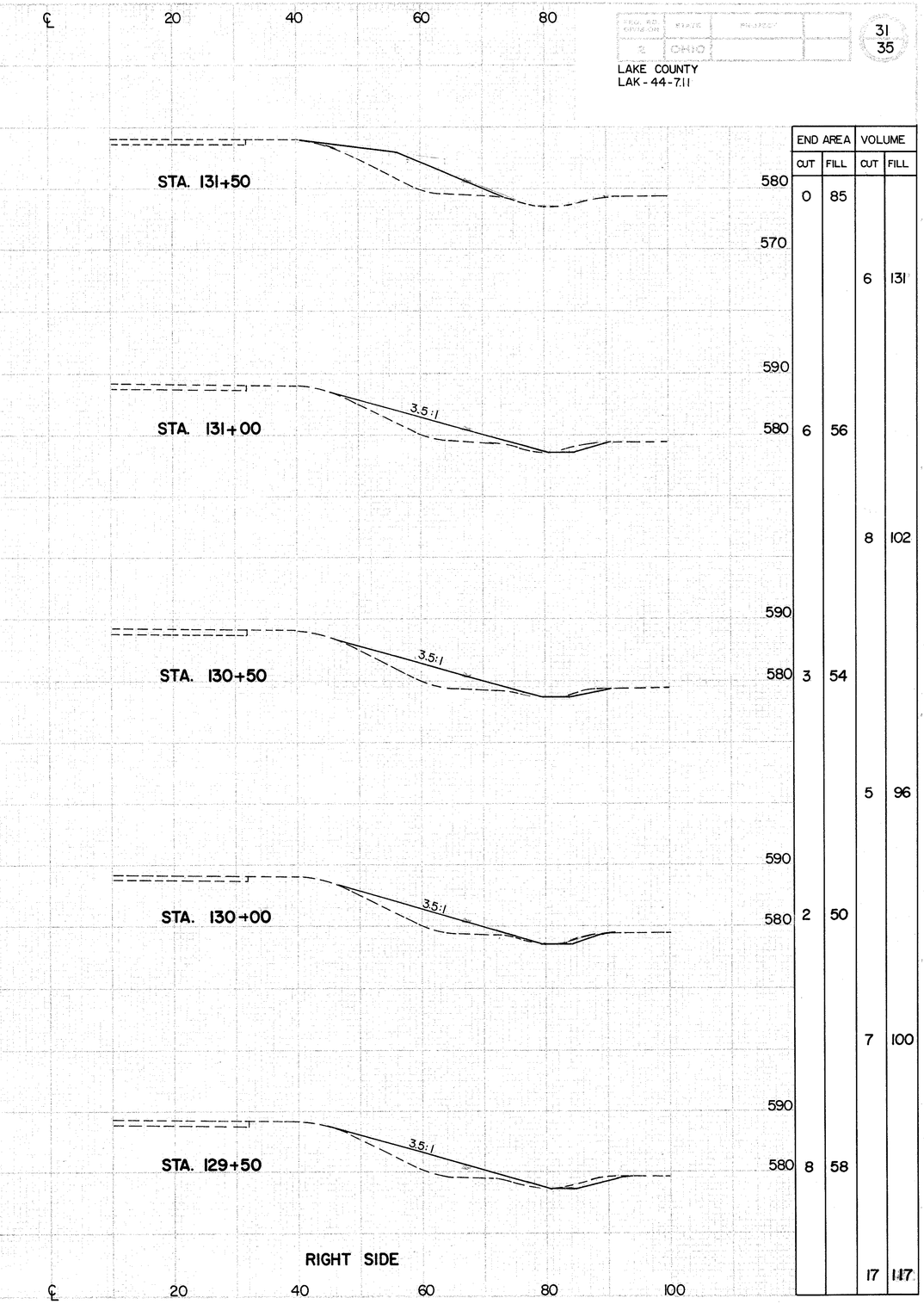
Station	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
STA. 129+00	10	68		
			19	123
STA. 128+50	10	65		
			17	120
STA. 128+00	8	65		
			15	116
STA. 127+50	8	60		
			17	111
STA. 127+00	10	60		
			17	112

SEEDING	
END WIDTH	SQ. YDS.
51	300
57	314
56	308
55	308
56	300



END AREA		VOLUME	
CUT	FILL	CUT	FILL
6	79		
		14	146
9	79		
		16	138
8	70		
		17	130
10	70		
		19	139
10	80		
		16	137

SEEDING	
END WIDTH	SQ. YDS.
35	
	233
49	
	272
49	
	269
48	
	281
53	
	297



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	85		
		6	131
6	56		
		8	102
3	54		
		5	96
2	50		
		7	100
8	58		
		17	147

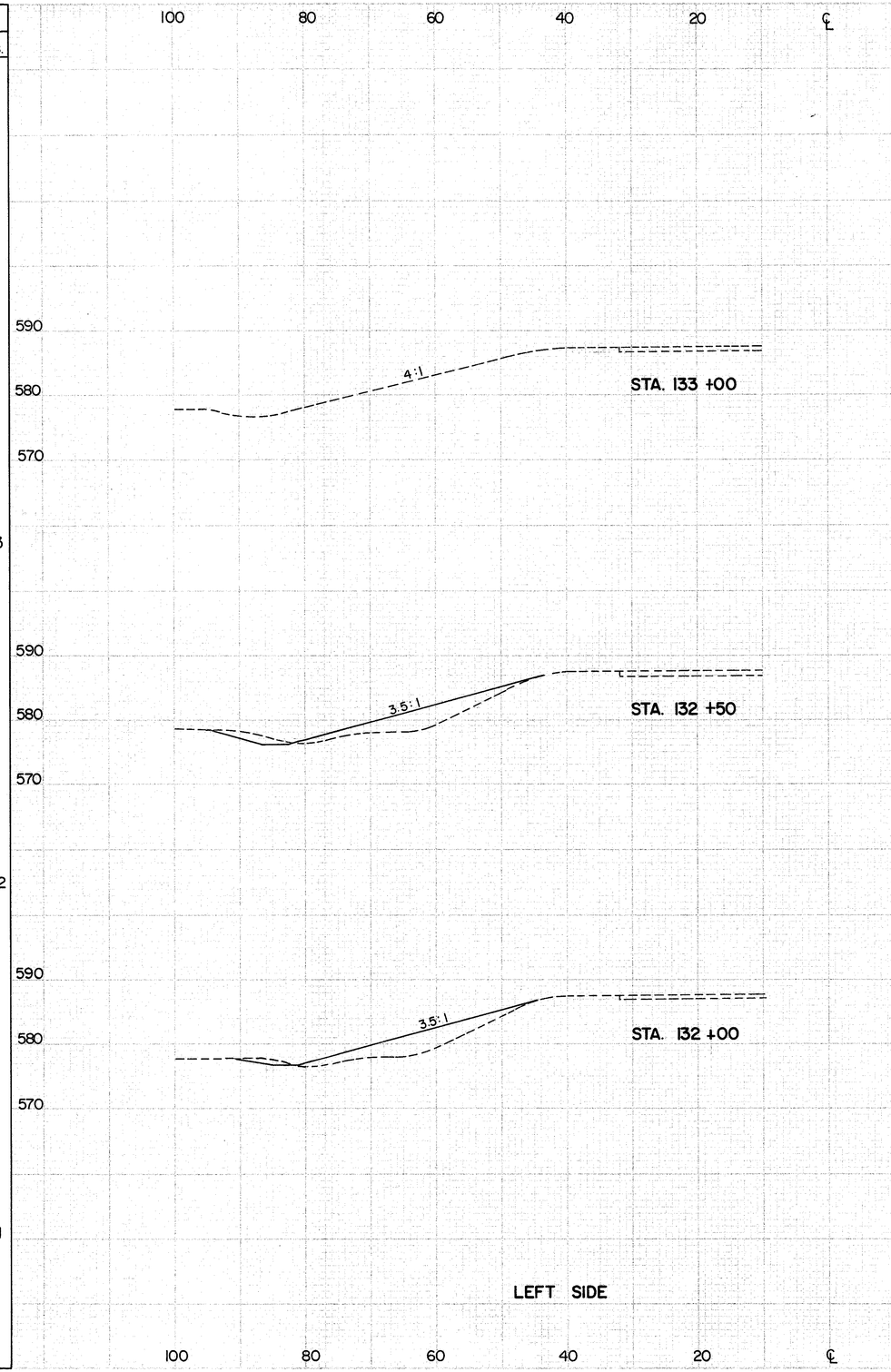
FED. ROAD DIVISION	STATE	PROJECT	
2	OHIO		

31
35

LAKE COUNTY
LAK - 44 - 7.11

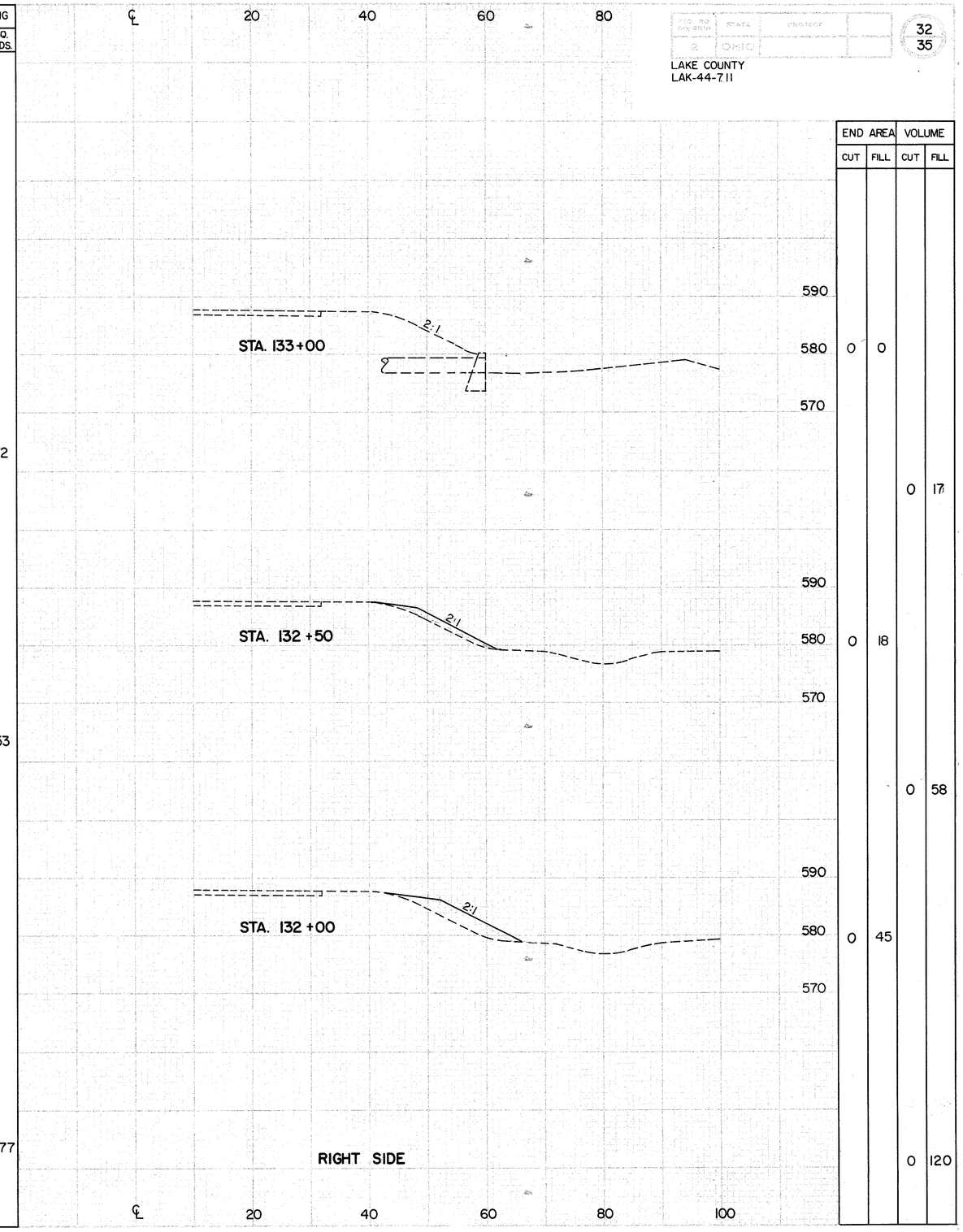
STA. 129+50 TO STA. 131+50

SEEDING	
END WIDTH	SQ. YDS.
0	
	153
55	
	292
50	
	281



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		13	57
14	62		
		19	122
7	70		
		12	138

SEEDING	
END WIDTH	SQ. YDS.
0	
	72
26	
	153
29	
	177



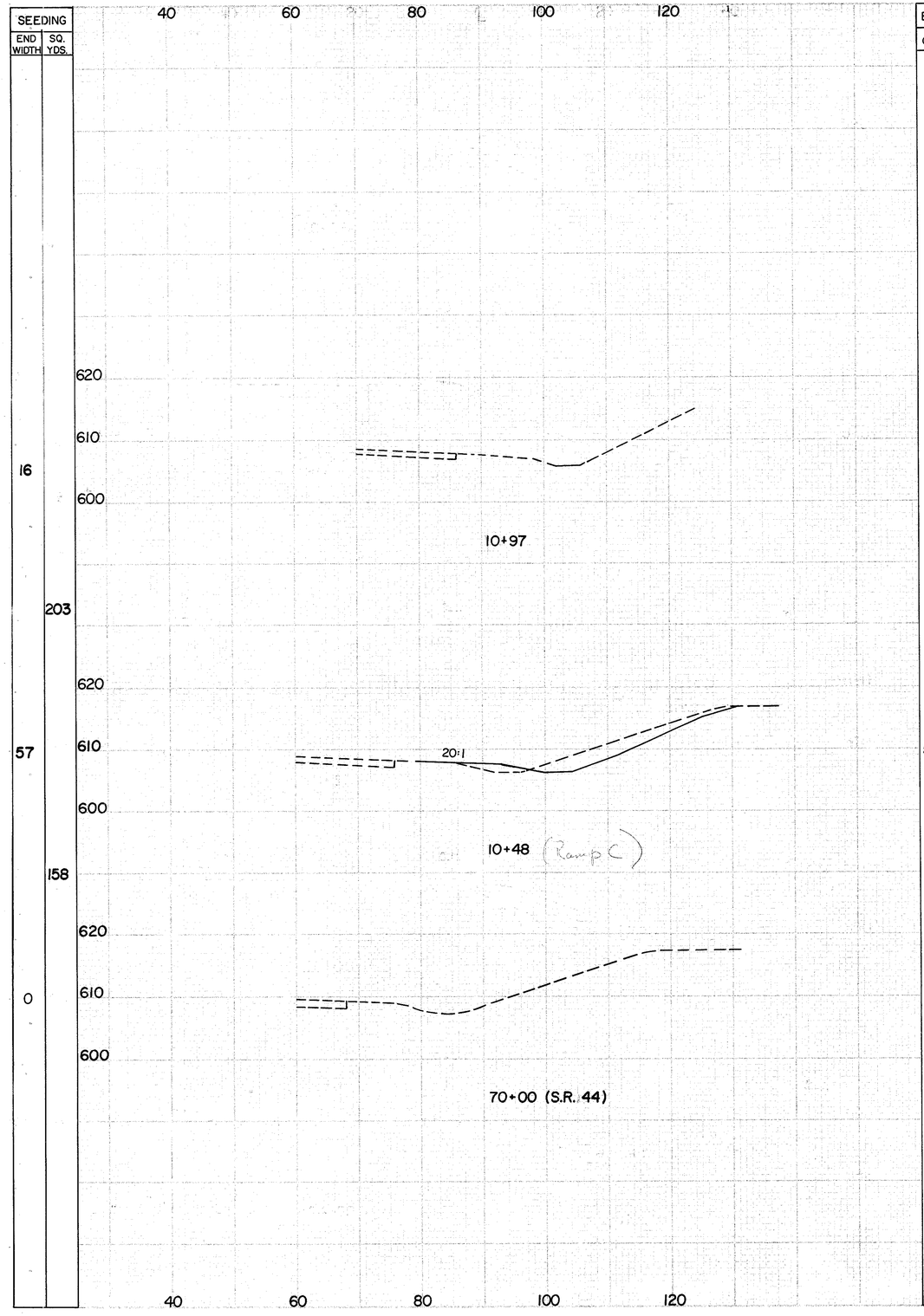
END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		0	17
0	18		
		0	58
0	45		
		0	120

LAKE COUNTY
LAK-44-7.11

32
35

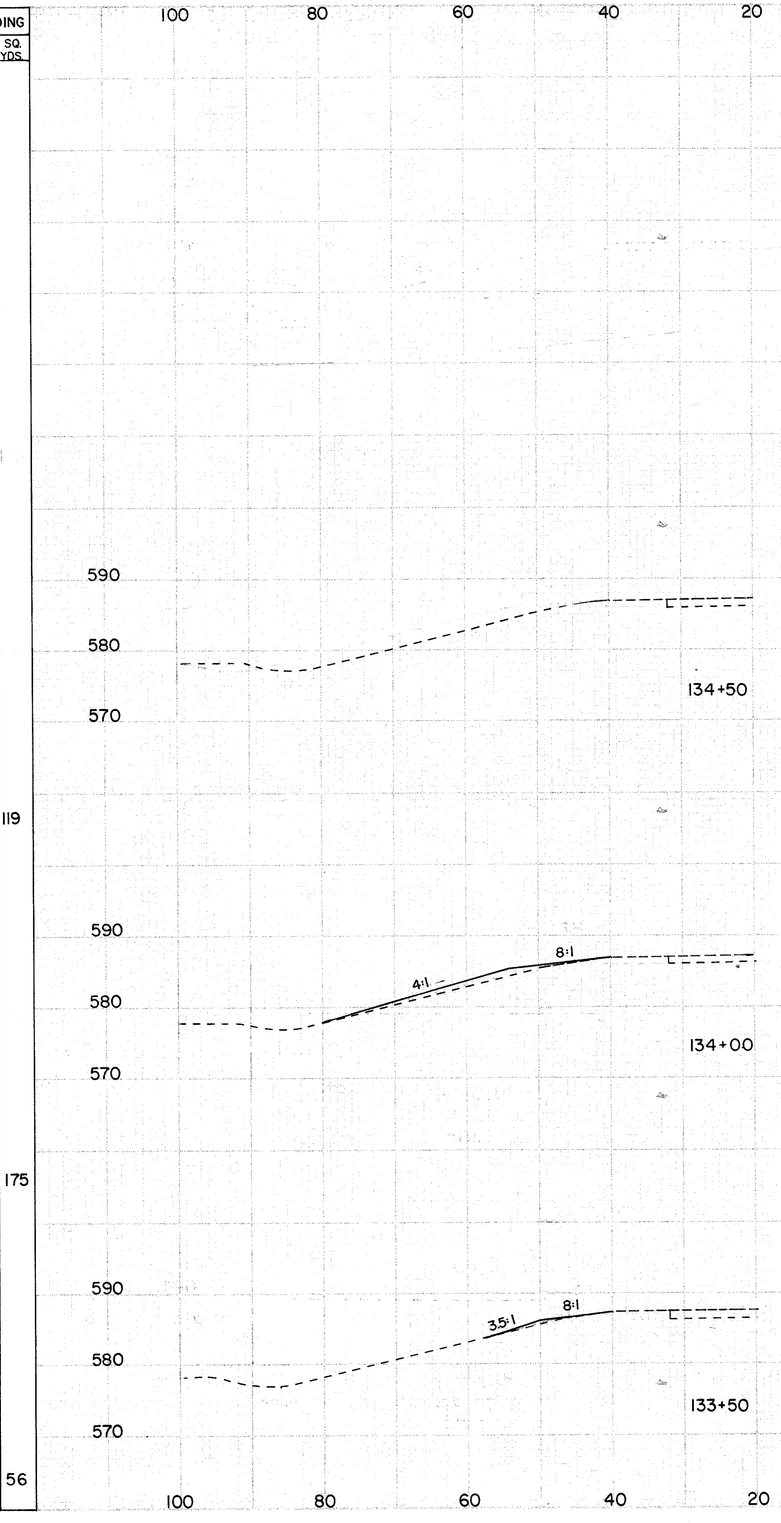
STA. 132+00 TO STA. 133+00

SEEDING	
END WIDTH	SQ. YDS.
16	
	203
57	
	158
0	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		52	7
56	8		
		52	7
0	0		

SEEDING	
END WIDTH	SQ. YDS.
0	
	119
43	
	175
20	
	56



FED. ROAD SYSTEM | STATE | PROJECT
2 | OHIO |

33
35

LAKE COUNTY
LAK-44-7.11

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		0	17
0	18		
		0	19
0	2		
		0	2

℄

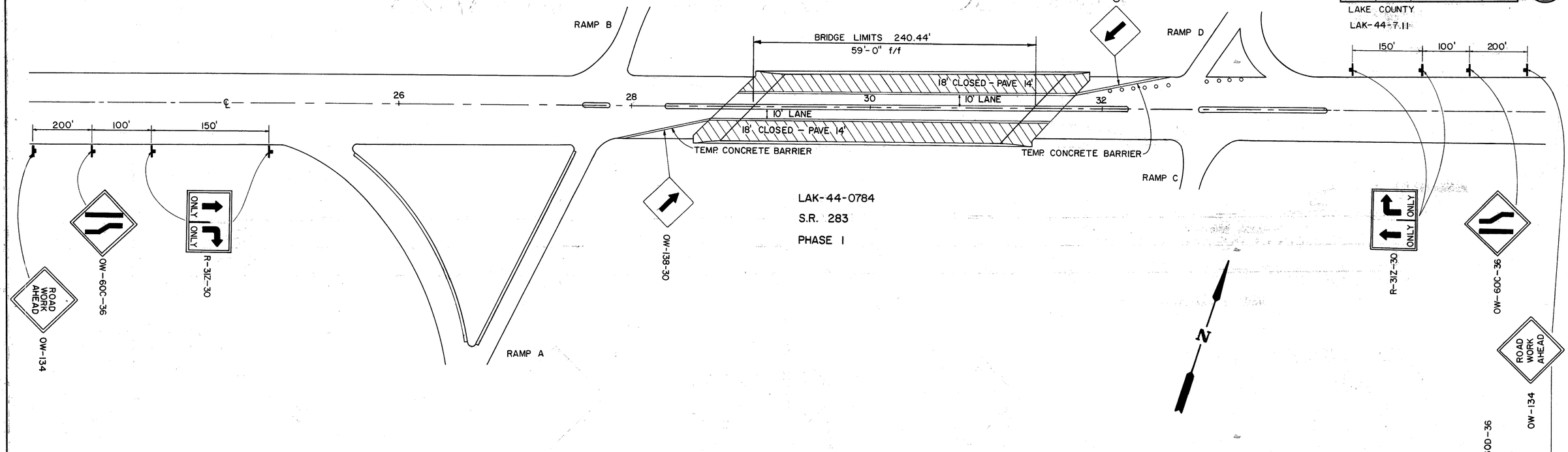
STA. 133+50 TO STA. 135+00

TRAFFIC CONTROL

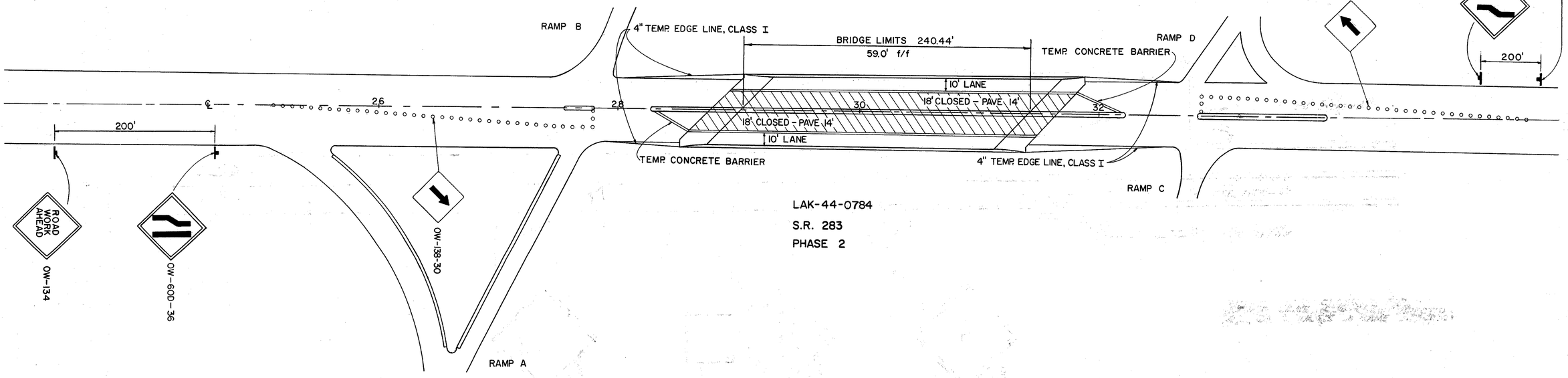
FHWA REGION	STATE	PROJECT	
5	OHIO		

34
35

LAKE COUNTY
LAK-44-7.11



LAK-44-0784
S.R. 283
PHASE 1



LAK-44-0784
S.R. 283
PHASE 2

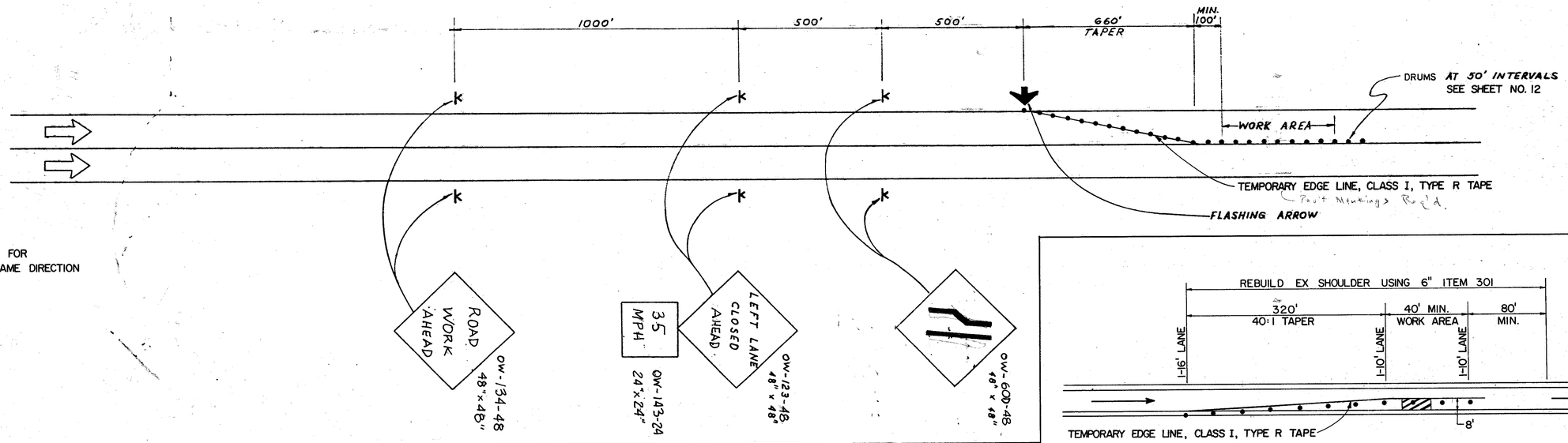
SOP - MA.1-48

FHWA REGION	STATE	PROJECT	
5	OHIO		

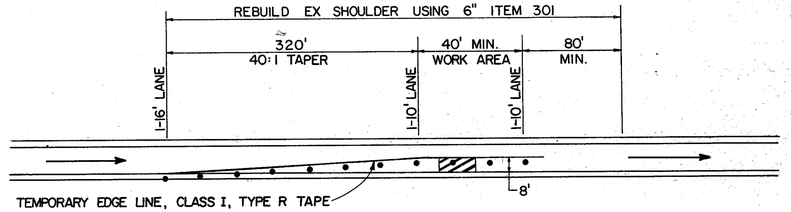
35
36

LAKE COUNTY
LAK-44- 7.11

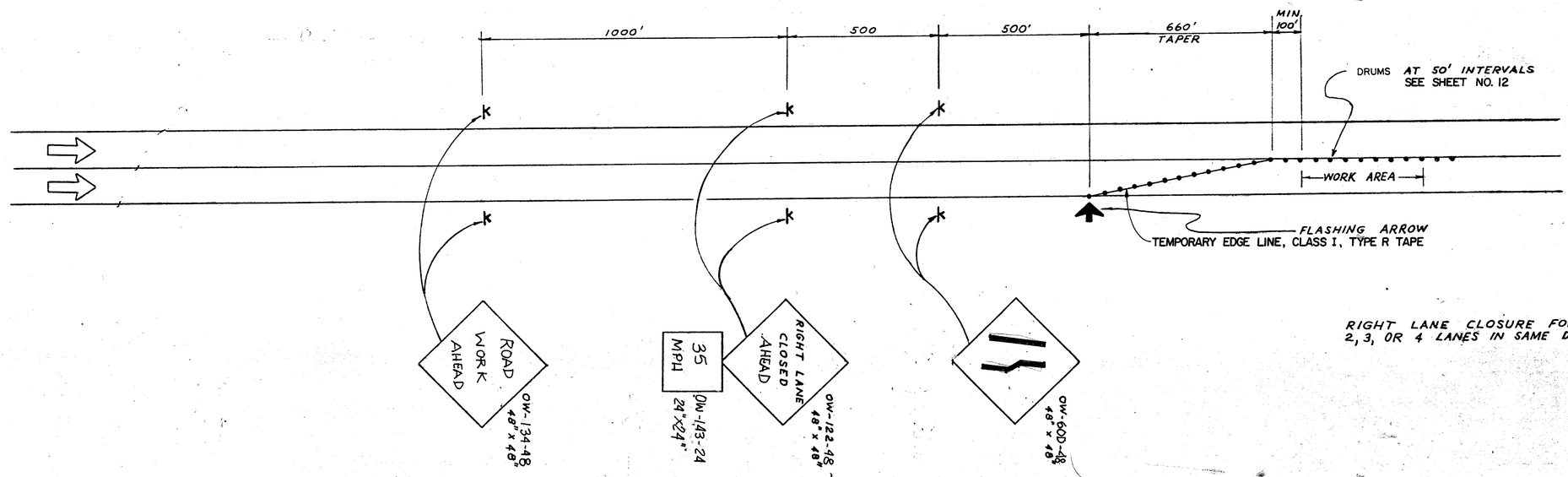
TRAFFIC CONTROL DETAILS



LEFT LANE CLOSURE FOR
2,3,OR4 LANES IN SAME DIRECTION



REPAIR OF I LANE RAMP
LEFT SHOULDER SHIFT SHOWN, REVERSE FOR RIGHT SHOULDER SHIFT



RIGHT LANE CLOSURE FOR
2, 3, OR 4 LANES IN SAME DIRECTION