OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PART	COUNTY	ROUTE	SECTIONS	PROJECT TERMINII BEGIN	PROJECT TERMINII END	NET LENGTH MILES	TOWNSHIP	CITY	VILLAGE
1	PER	SR 13	(20.38 - 26.12)	20.38	27.44	7.06			

RESURFACING

PLAN NO. 49

The Standard 19 81 Specifications of the State of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the plans and proposal shall govern these improvements.

I hereby approve these plans and declare that the making of these improvements will require the closing of the highways to traffic on Parts No. None and that detours will be provided by State forces. The closing to traffic of the highways will not be required on Parts No. 1 and provisions for the maintenance and safety of traffic will be as indicated in the proposal.

Approved Date 11-20-81 — District Deputy Director of Transportation

Approved Date _____ — Engineer of Bridges

Approved Date _____ — Engineer of Maintenance

Approved Date 12-7-81 — Chief Engineer, Operations

Approved Date _____ — Assistant Deputy Director, Program Development

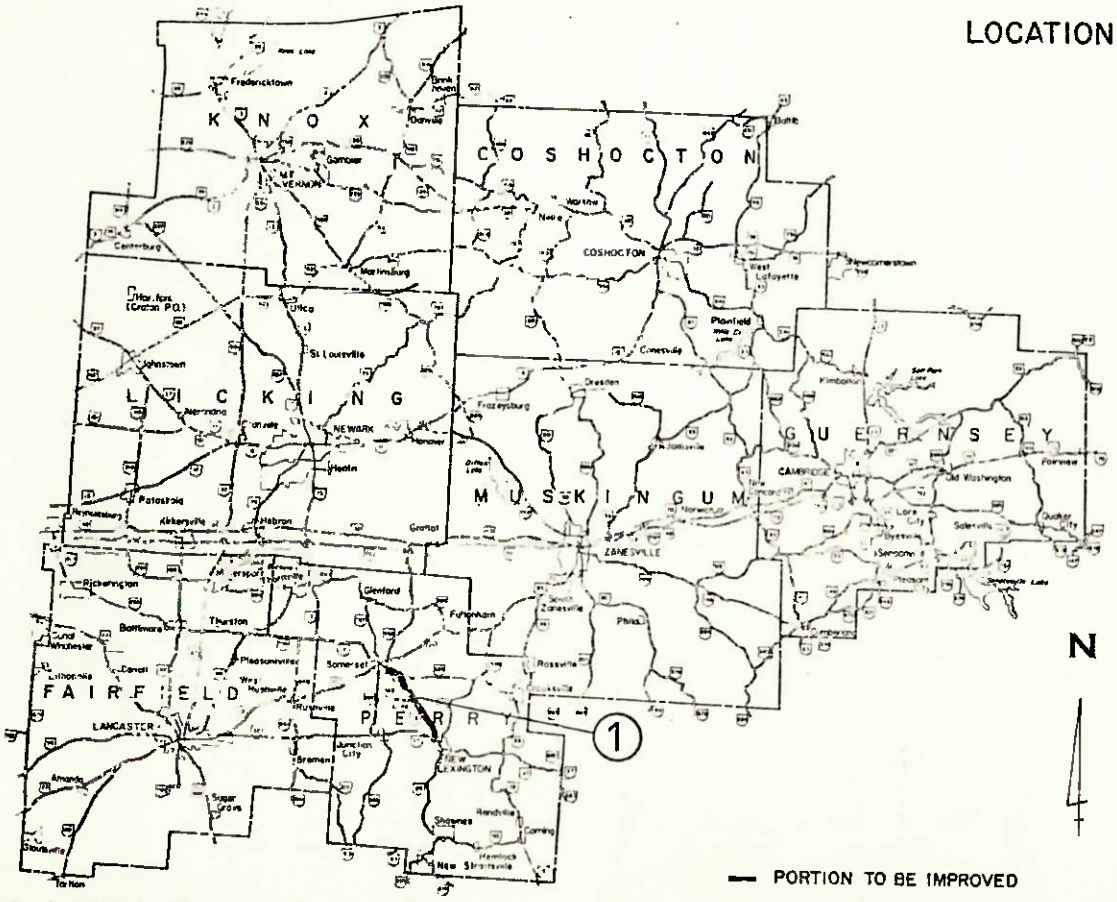
Approved Date _____ — Chief Engineer, Construction

Approved Date _____ — Chief Engineer, Design

Approved Date _____ — Assistant Director, Department of Transportation

Approved Date 12-7-81 — Director, Department of Transportation

LOCATION MAP



— PORTION TO BE IMPROVED

STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
BP-5	7-16-81		

BN

M & R 695

2/8

PLAN NO. 47

GENERAL NOTES

ITEM SPECIAL - (Grading, Shaping, berming and Ditching)Grader Rental

A minimum grader size of 23,000 lbs. shall be required.

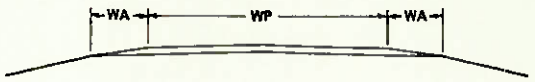
The quantity to be paid for shall be the actual number of hours of accepted equipment work. The accepted quantity will be paid for at the contract price per unit and shall include all equipment, labor, fuel and incidental items.

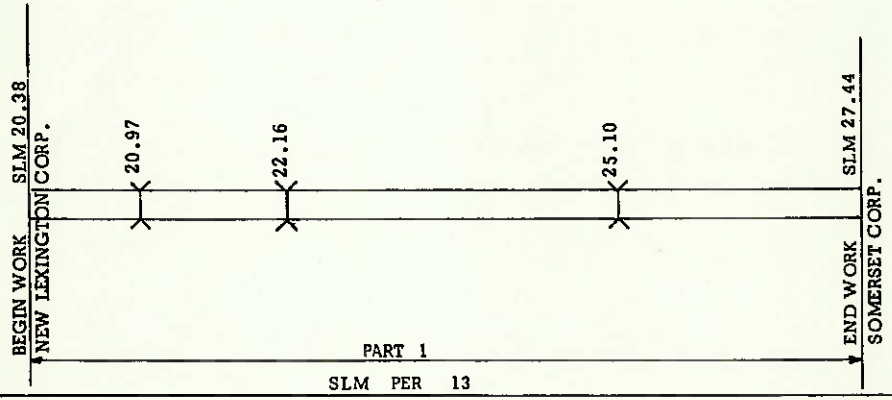
M & R 590 REV. 9-1-74

ASPHALT CONCRETE

PLAN NO. 49 — 3/8

TYPICAL 1



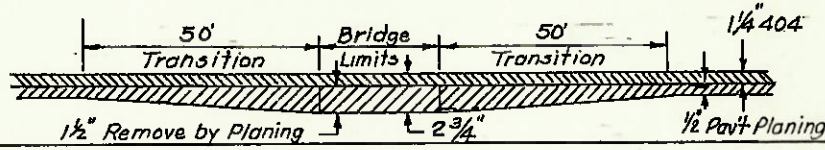


TYPICAL 2

BRIDGE TREATMENT

PER - 13 - 20 97 - 25'-0" - 29'-1"
PER - 13 - 22 16 - 25'-8" - 24'-10"
PER - 13 - 25 10 - 42'-0" - 29'-9"

All bridges shall have 1 1/2" of wearing course removed by planing and be covered full width with 2 3/4" of 404 Asphalt Concrete.



PAVEMENT DATA *Bridge Length x Pavement Width

PART	ROUTE	LOG POINT TO LOG POINT	LENGTH MILES	LENGTH LIN. FT.	WP FEET	TYPICAL	EXISTING TYPE PAVEMENT	PAVEMENT AREA SQ. YDS.	PROPOSED PAVEMENT 407 TACK COAT @ 0.05 gal./s.y. GALS.	407 COVER AGGR. @ .1 lbs./s.y. TONS	ASPHALT CONCRETE ITEM ____ THICK INCHES	ITEM ____ CU. YDS.	ITEM 404 THICK INCHES	ITEM 404 CU. YDS.	ITEM ____ THICK INCHES	ITEM ____ CU. YDS.	SPECIAL Pavement Planing without Heat ½" Avg. Sq.Yds.	SPECIAL GRADER RENTAL HOURS	404 Transition Areas at Bridges Cu.Yds	614 Temporary Center-lines MILES	614 Temporary Edge-lines MILES
1	SR 13	20.38-26.12	5.74	30307	20	1	404	67349									67349				
		26.12-27.44	1.32	6970	24	1	404	18587									18586				
* Deduct for Bridges								206									206				
	TOTALS	PART 1	7.06	37277				85730	4287	43			1 1/4	2977			85730	21	14	14.12	14.12
			Extra 407 Tack Coat for Longitudinal Joint						108												
								TOTAL	4,395												

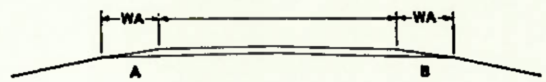
REV. 12-29-81 JDP

M & R 684 REV. 9-1-79

PLAN NO. 49 (4/8)

PAVED SHOULDERS

TYPICAL 1



TYPICAL 2

ITEM 411 - STABILIZED CRUSHED AGGREGATE: Whenever 411 stabilized crushed aggregate is stipulated, the first paragraph of 411.03 is waived and subgrade compaction shall be to the satisfaction of the Engineer.

** One station equals 100 lin. ft. Stations shall be measured along each edge of pavement.

*NOTES

1. ITEM 203 LINEAR GRADING: This work shall consist of preparing a subgrade for the shoulder paving by excavating the existing shoulder material to the depth shown in the plan, or as directed by the Engineer to remove any unstable material and by shaping and compacting the subgrade. The unsound or broken edge of bituminous pavements shall first be trimmed to a line established by the Engineer. The existing shoulder then shall be excavated and the subgrade shaped and compacted. Compaction shall be carried out to the satisfaction of the Engineer by means of a trench roller, 401.11. Areas graded in excess of depths specified or directed by the Engineer shall be backfilled to desired grade using 617 Compacted Aggregate at the contractor's expense. Excavated material shall be disposed of as indicated in the plan.

☐ a. Used to back up shoulders where required; the balance to be disposed of as directed by the Engineer.

☐ b. Disposed of by the Contractor at his own responsibility outside the limits of the right-of way.

☐ c. Wasted adjacent to the pavement and within the right-of-way as directed by the Engineer.

2. ITEM 402 ASPHALT CONCRETE: Prior to placing a bituminous mixture for shoulder paving, the edge of the existing pavement, for the full depth of the trench, shall be coated with bituminous material in accordance with 401.12.

3. ITEM 301 BITUMINOUS AGGREGATE BASE may be used in lieu of Item 402 Asphalt Concrete.

4. ITEM 617 COMPACTED AGGREGATE: A quantity of Item 617 Compacted Aggregate has been provided for areas where the shoulders were low prior to grading and/or low areas caused by removal of unsuitable material.

5. ITEM 408 BITUMINOUS PRIME COAT: After application of the Prime Coat, no further treatment shall be performed until so directed by the Engineer.

6. SHIELD: The contractor shall provide a shield to prevent the spraying or drifting of liquid bituminous material onto the edge of the pavement or edgelines. The attention of the contractor is directed to 107.12 of the Specifications.

PAVED SHOULDER DATA

* To back up paved berms

PART	ROUTE	LOG POINT TO LOG POINT	LENGTH		TYPICAL	PROPOSED WIDTH (FT.)				SHOULDER AREA SQ. YDS.	203 LINEAR GRADING		404 ASPHALT CONCRETE		411 STABILIZED CRUSHED AGGREGATE		408 PRIME	409 SEAL		617 COMPACTED AGGREGATE	605 AGGREGATE DRAINS	407 Tack Coat @0.10 gal/S.Y.		* NOTES
			MILES	LIN. FT.		A	B	C	D		DEPTH INCHES	**STA.	AVG. THICK INCHES	CU. YDS.	AVG. THICK INCHES	CU. YDS.	Bit. Matl. .... @....... gal./s.y. GALS.	Bit. Matl. .... @....... gal./s.y. GALS.	Aggr. .... @....... c.y./s.y. CU. YDS.	1' wide 2" Ave. Thickness * CU. YDS.	LIN. FT.			
1	SR 13	20.38 - 27.44	7.06	37277	1	2	2			16568			2"	920						460		1657		

M&R 679 9-1-77

BRIDGE DECK TREATMENT

PLAN NO. 49 (5/8)

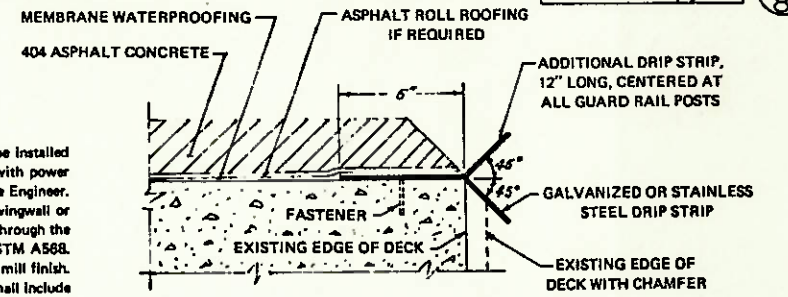
PROTECTIVE COURSE FOR MEMBRANE WATERPROOFING

MEMBRANE WATERPROOFING, Sheet Type 1: A minimum of 1-1/2 inches of 404 Asphalt Concrete shall be placed over the membrane.

MEMBRANE WATERPROOFING: A minimum of 2-1/2 inches of 404 Asphalt Concrete shall be placed over the membrane.

DRIP STRIP: Prior to applying deck membrane waterproofing, a bent drip strip shall be installed along the edges of the deck as shown. The strips shall be fastened at 1'-6" c/c maximum with power driven pins or no. 10 galvanized screws and expansion anchors, subject to the approval of the Engineer. The strips shall be placed the full length of the deck, ending at the face of the abutment wingwall or steel end dam angle. Where splices are required a 3" (Min.) lap shall be used with a fastener through the lap. Steel for galvanized strips shall be 8" X 0.105" and shall meet the requirements of ASTM A568. Galvanizing shall be in accordance with 711.02. Stainless steel shall be 20 gauge ASTM * , mill finish. Payment shall be at the contract price bid for item Special Sq. Ft. Steel Drip Strip, which shall include all materials, labor, tools and incidentals necessary to complete item.

*A167, Type 304



TYP. SEC. DRIP STRIP

BRIDGE DECK DATA

PART	COUNTY, ROUTE, BRIDGE NO.	LENGTH (BRIDGE LIMITS)	WIDTH	BRIDGE DECK AREA	202 WEARING COURSE REMOVED DEPTH 1 1/2"	BRIDGE DECK REPAIR ☐ SS-845 LATEX MODIFIED CONCRETE ☐ SS-850 DENSE CONCRETE			PATCHING		SPECIAL STEEL DRIP STRIP	SPECIAL DECK WATERPROOFING MEMBRANE WATERPROOFING SHEET TYPE 1	SPECIAL DECK WATERPROOFING MEMBRANE WATERPROOFING	516 VERT. EXT. OF STR. EXP. JOINTS	ASPHALT CONCRETE THICK INS.	ASPHALT CONCRETE 404	
						____" THICK OVERLAY	VARIABLE THICKNESS OVERLAY	FULL-DEPTH REPAIR	TYPE	S.Y.						
		L.F.	L.F.	S.Y.	S.Y.	S.Y.	C.Y.	C.Y.		S.Y.	S.F.	S.Y.	S.Y.	L.F.		C.Y.	
1	PER-13-2097	25.0	29.08	81	81										2 3/4	6.17	
	PER-13-2216	25.67	24.88	71	71										2 3/4	5.42	
	PER-13-2510	42.0	29.75	139	139										2 3/4	10.60	
																	22.20 yd³
	TOTAL			291	291										2 3/4	22.23	

M & R 693 REV. 9-1-81

PLAN NO. 49 (6/8)

GENERAL SUMMARY

ITEM	PART 1		GRAND TOTAL PART 1	UNIT	DESCRIPTION
407	6,052		6,052	Gals.	Tack Coat
407	43		43	Tons	Cover Aggregate
403				Cu. Yds.	Asphalt Concrete AC-20
404	3933		3933	Cu. Yds.	Asphalt Concrete AC-20
SPECIAL	85730		85730	Sq.Yds.	Pavement Planing, Bituminous, without Heat
614	14.12		14.12	Miles	Temporary Center Lines
614	14.12		14.12	Miles	Temporary Edge Lines
SPECIAL	21		21	Hours	Grader Rental, as per plan
624	LUMP		Lump	Lump	Mobilization
617				Sq. Yds.	Shoulder Preparation
617	460		460	Cu. Yds.	Compacted Aggregate
614	LUMP		Lump	Lump	Maintaining Traffic

GENERAL NOTES

TRAFFIC:
Traffic shall be maintained at all times. The length of restricted traffic zones shall be kept to a minimum consistent with the specification requirements for protection of completed courses.

RAILROAD CROSSINGS:
The new surface course shall be feathered or butt jointed to meet the rail grades as specified.

ALIGNMENT AND PROFILE:
The work proposed by this project is for the resurfacing of the existing pavement. The alignment of the existing pavement will not be changed, and the profile of the proposed surface will be similar to that of the existing pavement except that it will be raised an amount equal to the thickness of the resurfacing course or courses specified in these plans.

INTERMEDIATE COURSE, SPOT LEVELING AND PATCHING:
This material shall be placed in a separate operation where and as directed by the engineer.

TACK COAT:
The tack coat operation shall be as determined at a pre-construction conference as per 407.05, and application rates shall not exceed 0.10 gal. per sq. yd.

COVER AGGREGATE:
Cover aggregate shall conform to 703.06.

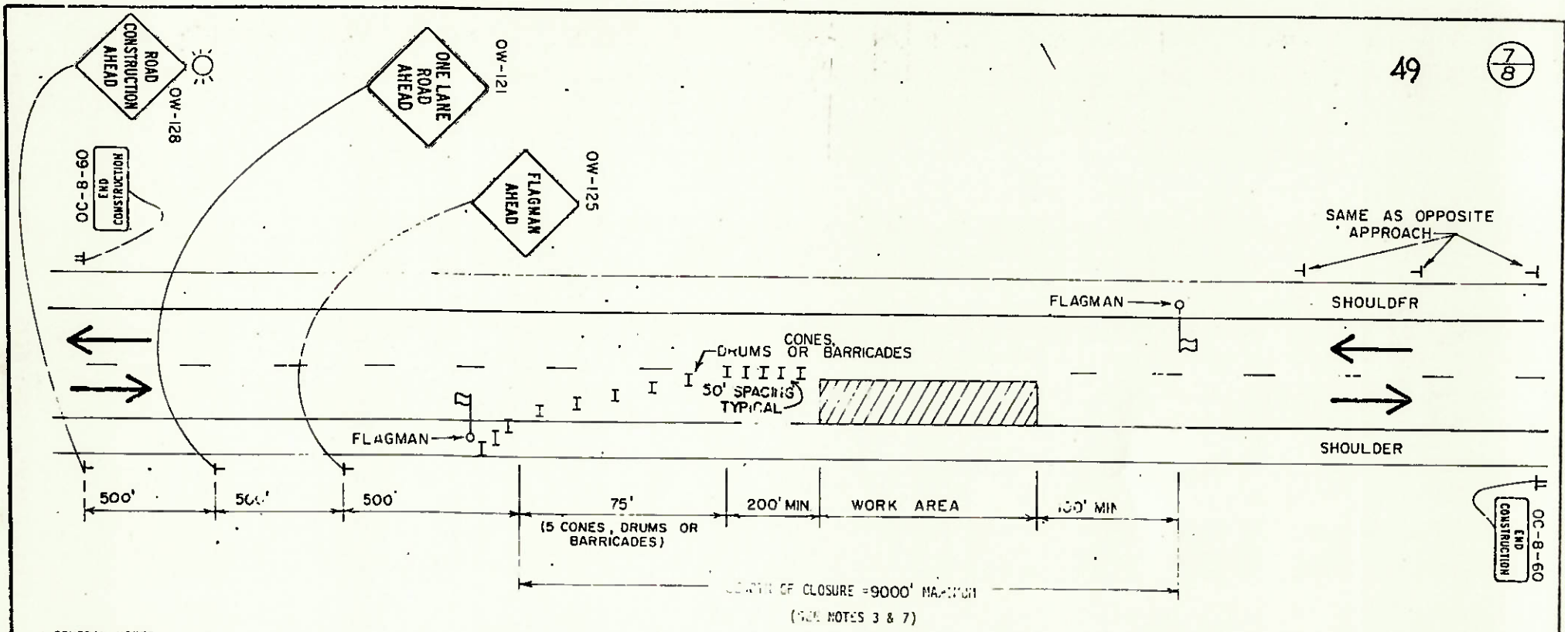
TACK COAT (Continued)
In addition to the requirements of 407.05 the tack coat shall be applied immediately ahead of the paving operations or as otherwise determined by the Project Engineer.

CONTROL OF ONE WAY TRAFFIC:
In addition to the requirements of the Ohio Manual of Uniform Traffic Control Devices and Materials Specifications, the following requirements shall apply.

When flagmen stations are located such that there is no visual contact between flagmen, communications shall be by two way radio.

Payment for the above shall be included in Item 614, Maintaining Traffic.

REV. 12-29-81 JDP



GENERAL NOTES

1. FLAGMEN SHALL BE USED TO CONTROL TRAFFIC CONTINUOUSLY FOR AS LONG AS ONE LANE OPERATION IS IN EFFECT. FLAGMEN SHALL BE ABLE TO COMMUNICATE WITH EACH OTHER AT ALL TIMES EITHER VERBALLY OR BY MEANS OF RADIO OR FIELD TELEPHONES. FLAGMAN STATIONS SHALL BE ADEQUATELY ILLUMINATED FOR NIGHT TIME OPERATIONS BY USE OF A 175 WATT MINIMUM LUMINAIRE.

2. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.

3. WHEN THE AMBIENT TEMPERATURE EXCEEDS 80 DEGREES F, THE ENGINEER MAY INCREASE THE LENGTH OF CLOSURE TO ALLOW FOR SUFFICIENT COOLING OF THE NEW PAVEMENT.

   THE ENGINEER MAY SHORTEN THE MAXIMUM ALLOWABLE LENGTH OF CLOSURE TO RELIEVE EXCESSIVE TRAFFIC BACKUPS.

   ALL TRAFFIC CONTROL SIGNS, CHANNELIZING DEVICES, AND FLAGMEN SHALL BE MOVED FORWARD BEFORE THE CLOSURE REACHES THE MAXIMUM ALLOWABLE LENGTH. ONLY ONE SIDE OF THE ROAD SHALL BE CLOSED AT ANY TIME IN A WORK AREA.

4. THE TYPE B HIGH INTENSITY BARRICADE WARNING LIGHT SHOWN ON THE ROAD CONSTRUCTION AHEAD SIGN IS REQUIRED WHENEVER NIGHT LANE CLOSURE IS NECESSARY.

5. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES.

6. THE ADVANCE WARNING SIGNS "OW-128" "OW-121" AND "OW-125" SHALL BE MOVED BACK AS REQUIRED BY THE QUEUING OF STOPPED VEHICLES.

7. WITHIN THE LENGTH OF CLOSURE, PROVISION SHALL BE MADE TO CONTROL TRAFFIC ENTERING FROM INTERSECTING STREETS AND MAJOR DRIVES AS NECESSARY TO PREVENT WRONG WAY MOVEMENTS AND TO KEEP VEHICLES OFF OF NEW PAVEMENT NOT READY FOR TRAFFIC.

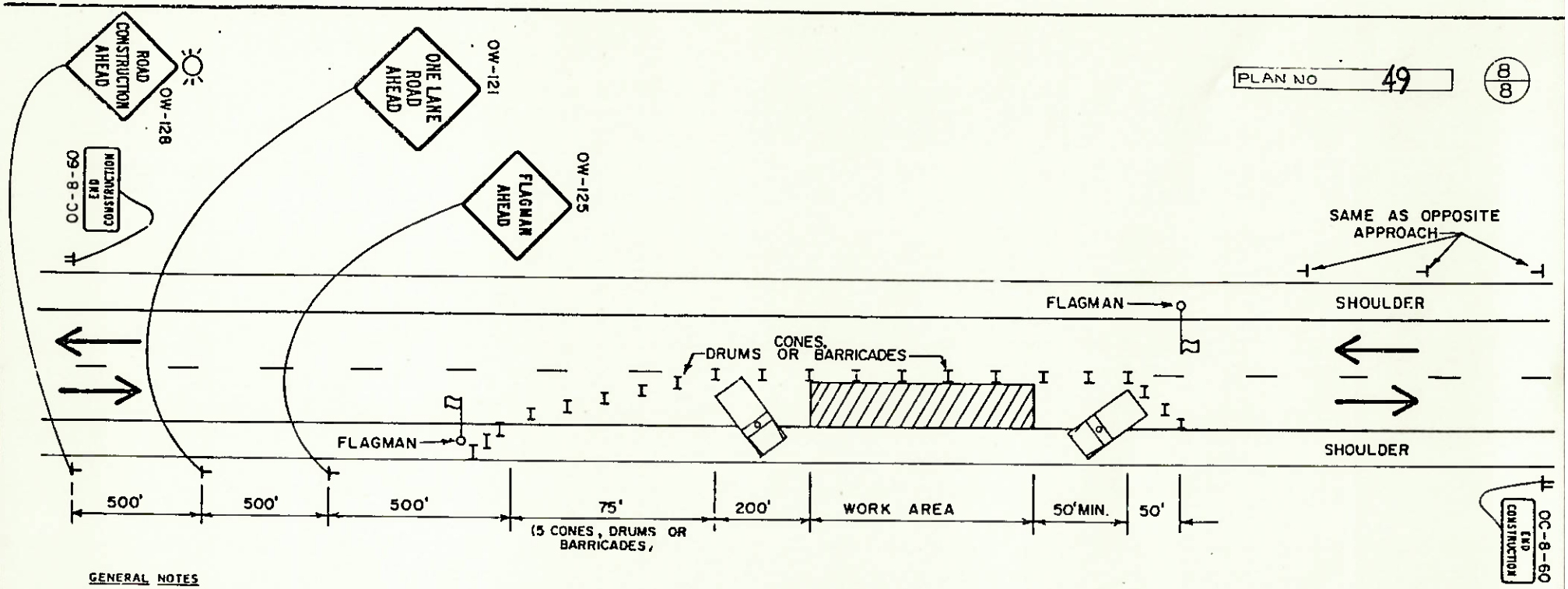
OHIO DEPARTMENT OF TRANSPORTATION

FLAGMEN CLOSING 1 LANE OF A 2 LANE HIGHWAY

DATE 2/0

PAVING OPERATIONS

PLAN NO 49



GENERAL NOTES

1. FLAGMEN SHALL BE USED TO CONTROL TRAFFIC CONTINUOUSLY FOR AS LONG AS ONE LANE OPERATION IS IN EFFECT. FLAGMAN SHALL COMMUNICATE WITH EACH OTHER AT ALL TIMES AS DESCRIBED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES IN THE SECTION "FLAGMAN CONTROL". FLAGMEN STATIONS SHALL BE ADEQUATELY ILLUMINATED FOR NIGHT-TIME OPERATIONS BY USE OF A 175 WATT MINIMUM LUMINAIRE.

2. CONES, DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS FOR THE FIRST 1000 FEET OF THE WORK AREA AND AT A MAXIMUM OF 100 FEET FOR THE BALANCE OF THE WORK AREA. CONES MAY BE SUBSTITUTED FOR BARRICADES OR STEEL DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.

3. SEVERAL SMALL WORK SITES CLOSE TOGETHER SHALL BE COMBINED INTO ONE WORK AREA TO MAKE A CLOSURE NOT MORE THAN 2000 FEET LONG INCLUDING TAPERS. CLOSURES MORE THAN 2000 FEET MAY BE APPROVED BY THE ENGINEER. THE MINIMUM LENGTH BETWEEN CLOSURES SHALL BE 2000 FEET. ONLY ONE SIDE OF THE ROAD SHALL BE CLOSED IN ANY ONE WORK AREA.

4. THE WORK TRUCKS SHOWN AT EACH END OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THESE TRUCKS SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCKS SHOWN WHEN APPROVED BY THE ENGINEER.

5. THE TYPE B HIGH INTENSITY BARRICADE WARNING LIGHT SHOWN ON THE ROAD CONSTRUCTION AHEAD SIGN, IS REQUIRED WHENEVER NIGHT LANE CLOSURE IS NECESSARY.

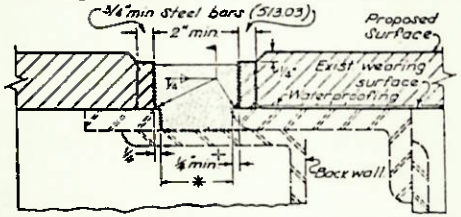
6. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE WORK AREA.

OHIO DEPARTMENT OF TRANSPORTATION

FLAGMEN CLOSING I LANE OF A 2 LANE HIGHWAY	DATE 4/77
DRGBD CKRLB	

RESURFACING

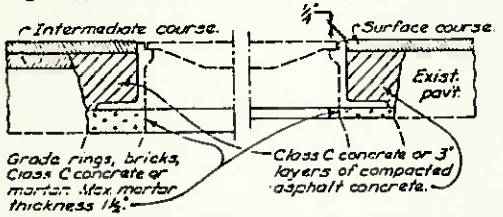
† Increase as necessary to maintain 2" min. opening.
* Vertical extension of joints found to be closed to ½" or less may be non-performed as directed by the Engineer.



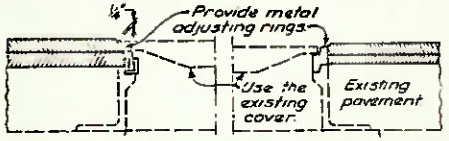
□ As a part of item 516, seal joint with a hot-applied bridge deck waterproofing material which also meets the requirements of 705.01. Sandblast vertical surfaces (‖) and wipe clean. Seal joint before rust forms. If rust forms, re-sandblast. Use bond breaker on the horizontal surface (------).

MAINTENANCE OF TRAFFIC: Generally the bars shall be welded while the lane is closed for waterproofing or resurfacing. However, if traffic is routed over the bars before resurfacing, temporary ramps shall be constructed to the tops of the bars using 402 or 404 feathering at a max slope of 6%/in. The ramps shall be removed prior to resurfacing. Payment for placing and removing the ramps shall be included in the lump sum bid for Item 614.

VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS

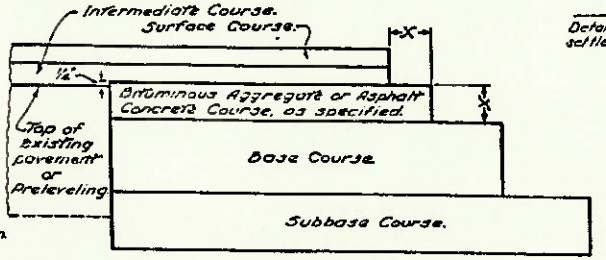


USING CONCRETE OR MORTAR



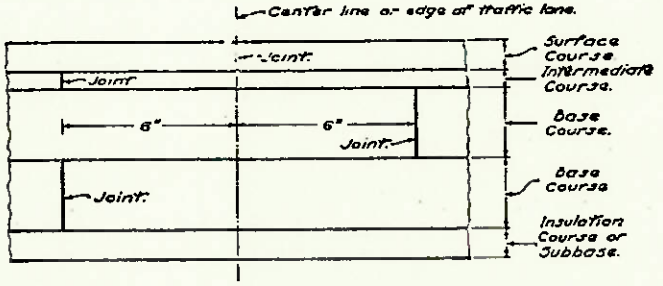
Metal adjusting rings shall fasten or tighten securely in the existing frame, or be welded permanently to the frame and be one piece or fabricated into one piece. Any installation unacceptable to the Engineer, including a poorly seated cover, shall be replaced by the Contractor at his expense.

USING METAL ADJUSTING RINGS
MANHOLES ADJUSTED TO GRADE

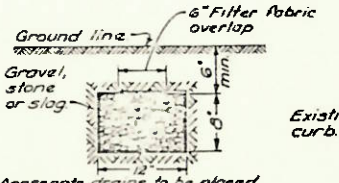


The Bituminous Aggregate in the upper part of the base widening shall finish approximately ½" above the edge of the existing pavement where no preleveling is used. Where a preleveling (using intermediate course material) is specified, it shall be placed prior to excavation of the widening trench and the upper course of the base widening shall finish approximately ¼" above the preleveling.

COURSE DETAIL FOR WIDENING

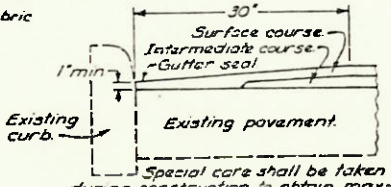


LAPPING LONGITUDINAL JOINTS



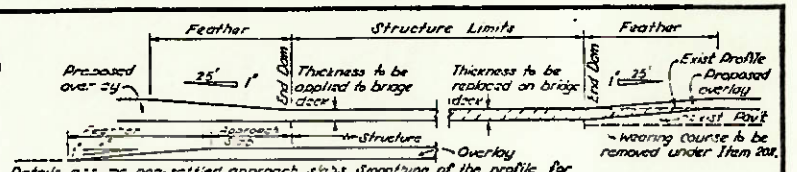
Aggregate drains to be placed where and as directed by Engineer. Provide filter fabric when specified as a separate pay item.

AGGREGATE DRAIN



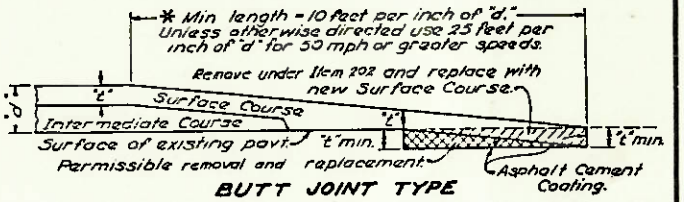
Special care shall be taken during construction to obtain maximum compaction of bituminous concrete in gutters.

GUTTER FINISH

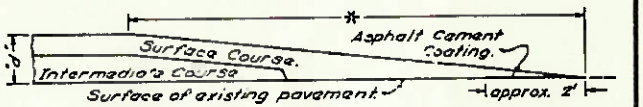


Details assume a non-settled approach slab. Smoothing of the profile for settlement is required per plan grades or as directed by the Engineer.

FEATHERING AT STRUCTURES



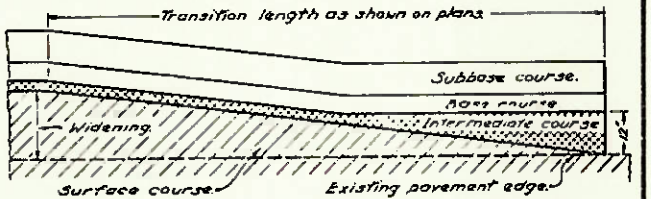
BUTT JOINT TYPE



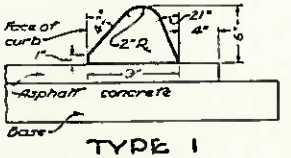
FEATHER EDGE TYPE

NOTE: Either butt or feather type may be used unless type is specified by the plan.

PLACING FEATHERED AREAS



MERGING EDGE OF PAVEMENT WIDENING WITH EDGE OF EXISTING PAVEMENT



TYPE 1 ASPHALT CONCRETE CURB

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

RESURFACING

STANDARD CONSTRUCTION DRAWING

BP-5

DATE
10-1-65
1-1-71
6-1-75
5-11-79
4-16-79
7-16-81

APPROVED _____ ENGR. L.D.