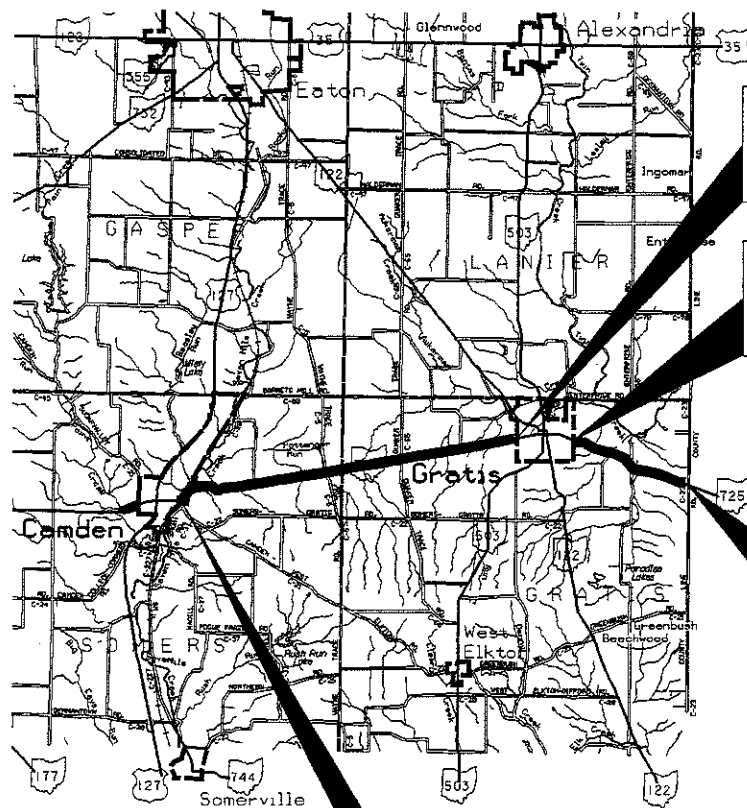


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OHIO DEPARTMENT OF TRANSPORTATION

LOCATION MAP



SUSPEND PROJECT
PRE-725-15.17

RESUME PROJECT
PRE-725-16.18

END PROJECT
PRE-725-18.37

BEGIN PROJECT
PRE-725-9.22

PREBLE COUNTY

PORTION TO BE IMPROVED

PROJECT DESCRIPTION

PLANE 1" AND PAVE WITH 1" OF INTERMEDIATE COURSE AND 1" OF SURFACE COURSE.
PERFORM PAVEMENT REPAIRS AND STRIPE ROADWAY.

PROJECT EDA= N/A (MAINTENANCE PROJECT)
ESTIMATED CONTRACTOR EDA= N/A (MAINTENANCE PROJECT)
NOTICE OF INTENT EDA= N/A (MAINTENANCE PROJECT)

PART	COUNTY	ROUTE	SECTIONS	PROJECT TERMINII		NET LENGTH MILES	VILLAGE	CITY
				BEGIN	END			
I	PRE	SR-725	9.22-15.17	9.22	15.17	5.95		
	PRE	SR-725	16.18-18.37	16.81	18.37	1.56		

INDEX OF SHEETS:

TITLE	1
SCHEMATIC	2
ASPHALT CONCRETE	3
EXTRA AREAS AND DEDUCTIONS	4
PAVED SHOULDERS	5
GENERAL NOTES	6-7
MAINTENANCE OF TRAFFIC NOTES	8
PAVEMENT MARKING	9
RAISED PAVEMENT MARKER	10
DROPOFFS IN WORKZONES	11
GENERAL SUMMARY	12

2002 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 will be as set forth on plans and estimates.

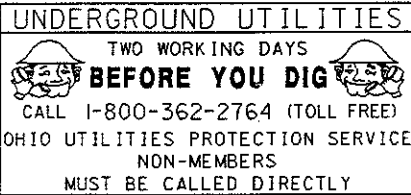
ENGINEERS SEAL:



SIGNED:

DATE:

J.P. Pietch
11/4/03



PLAN PREPARED BY:

DISTRICT 8
PRODUCTION

STANDARD DRAWINGS		STANDARD DRAWINGS		STANDARD DRAWINGS	
BP-3.1	07-28-00	TC-41.20	01-19-01		
BP-4.1	07-28-00	TC-52.10	04-20-01		
MT-97.10	04-19-02	TC-52.20	04-20-01		
MT-97.11	04-19-02	TC-65.10	10-19-01		
MT-99.20M	01-30-95	TC-65.12	10-19-01		
MT-105.10	10-18-02	TC-71.10	04-19-02	SUPPLEMENTAL SPECIFICATIONS	
MT-105.11	10-18-02				
				832	02-12-03
				833	02-12-03
				908	04-18-03

Approved *[Signature]*
Date *11/3/03* District Deputy Director of Transportation

Approved *[Signature]*
Date *11-29-03* Director, Department of Transportation

FEDERAL PROJECT NO.
E040246)

PID NO.
17364

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

PRE-725-9.22

1
12

BEGIN PROJECT
SLM 9.22

CAMDEN WEST ELKON RD.
9.25

RESUME PROJECT

GRATIS E. CORP 16.18

UPPER SOMERS RD.
10.60

WAYNE TRACE RD.
11.85

JOHNSON RD.
16.83

PLEASANT VALLEY RD.
17.36

PLEASANT VALLEY RD.
17.33

QUAKER TRACE RD.
13.13

QUAKER TRACE RD.
13.13

PREBLE CO. LINE RD.
18.37

PREBLE CO. LINE RD.
18.37

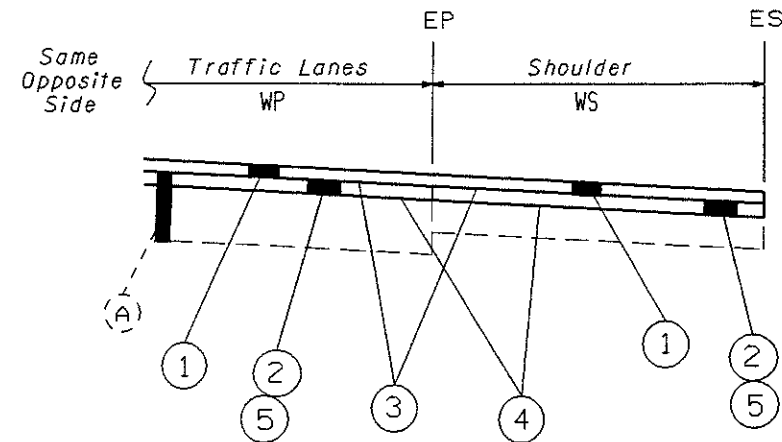
END PROJECT
MONTGOMERY CO.
SLM 18.37

SUSPEND PROJECT
SLM 15.17
GRATIS W. CORP

NOT TO SCALE

PREBLE SR 725

Pavement Detail
Typical 1



- (A) Existing Pavement
- (1) Item 448 - 1" Asphalt Concrete Surface Course, Type I, PG64-22
 - (2) Item 448 - 1" Asphalt Concrete Intermediate Course, Type I, PG64-22
 - (3) Item 407 - Tack Coat For Intermediate Course
 - (4) Item 407 - Tack Coat
 - (5) Item 254 - 1" Pavement Planing, Asphalt Concrete

QUANTITIES CARRIED TO THE GENERAL SUMMARY

								PAVEMENT DATA										
PART	ROUTE	LOG POINT TO LOG POINT (MILES)	LENGTH		WP FEET AVG.	TYPICAL	EXISTING TYPE PAVEMENT	PAVEMENT AREA SQ. YDS.	407		448						254	
			MILES	LIN. FT.					TACK COAT FOR INTERMEDIATE COURSE @ 0.050 GAL./S.Y. GAL.	TACK COAT @ 0.075 GAL./S.Y. GAL.	INTERMEDIATE COURSE,TYPE I PG64-22		SURFACE COURSE TYPE I, PG64-22				PAVEMENT PLANING ASPHALT CONCRETE	PATCHING PLANED SURFACE
												CU. YD.	THICK INCHES	CU. YD.		DEPTH IN.		
I	SR-725	9.22 - 15.17	5.95	31416	20	I	ASPHALT	69813	3491	5236	1.00	1939	1.00	1939		1.00	69813	3491
		16.18 - 17.05	0.87	4594	19	I	ASPHALT	9698	485	727	1.00	269	1.00	269		1.00	9698	485
		17.05 - 17.82	0.77	4066	22	I	ASPHALT	9939	497	745	1.00	276	1.00	276		1.00	9939	497
		17.82 - 18.37	0.55	2904	19	I	ASPHALT	6131	307	460	1.00	170	1.00	170		1.00	6131	307

ESTIMATED QUANTITIES ITEM SPECIAL-PAVEMENT REPAIR

PART 2

SIZE (FT.)	AREA (SQ.FT.)
5 X 12	60
11 X 101	1,111
11 X 81	891
11.5 X 125	1,437.5
11.5 X 63	724.5
11 X 195	2,145
11 X 50	550
12 X 85	1,020
12 X 106	1,272
11 X 13	143
11.5 X 17	195.5
4 X 37	148
10.5 X 15	157.5
8 X 11.5	92
4 X 11.5	46
8 X 10.5	84
11 X 40	440

PART 2

SIZE (FT.)	AREA (SQ.FT.)
11.5 X 375	4,312.5
11.5 X 125	1,437.5
11 X 220	2,420
11 X 80	880
11 X 117	1,287
11 X 56	616
11 X 450	4,950
11 X 27	297
11 X 52	572
11.5 X 17	195.5
11 X 18	198
10 X 16	160
8 X 11.5	92
4 X 11.5	46
8 X 10.5	84
5 X 19	95
11 X 24	264

PART 2

SIZE (FT.)	AREA (SQ.FT.)
6 X 200	1,200
6 X 30	180
4 X 70	280
4.5 X 15	67.5
7 X 97	679
4.5 X 84	378
5 X 63	315
4.5 X 44	198
5.5 X 65	357.5
4 X 62	248
5 X 152	760
4.5 X 75	337.5
4 X 35	140
6.5 X 38	247
5.5 X 210	1,155
5.5 X 67	368.5
6.5 X 54	351

PART 2

SIZE (FT.)	AREA (SQ.FT.)
6.5 X 130	845
6 X 130	780
4 X 80	320
4 X 107	428
7 X 390	2,730
6 X 115	690
7 X 85	595
3 X 141	423
6 X 170	1,020
6 X 345	2,070
7 X 32	224
7 X 75	525
4.5 X 19	85.5
7 X 30	210
7 X 140	980
6 X 176	1,056
4.5 X 112	504

PART 2

SIZE (FT.)	AREA (SQ.FT.)
4 X 246	984
3 X 44	132
6 X 72	432
6 X 125	750
5.5 X 35	192.5
5.5 X 75	412.5
5 X 30	150
7 X 126	882
5 X 50	250

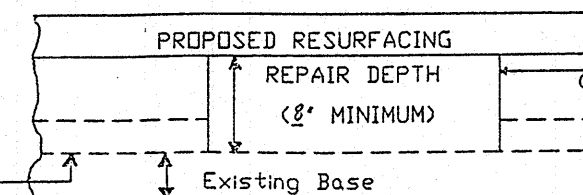
53,356 SQ.FT.
5,928 SQ.YD.
+ 10% 593 SQ.YD.
6,521 SQ.YD.

@ AVG. 8" THICK = 1,449 CU. YD.

* COMPACTION

REPAIR THICKNESS	NO. OF LIFTS
7-10"	3
> 10"	4

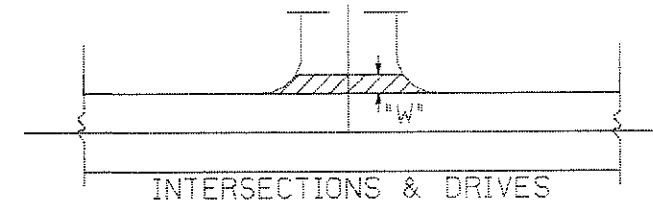
Subbase shall be prepared by leveling, compacting and adding 304.02 if necessary to meet this line.



Existing deteriorated asphalt concrete pavement shall be removed to a minimum depth of 8" and replaced with Item 301, Bit. Agg. Base. The 301 shall be compacted as per 401.14 and compacted in * approx. equal layers. The location and size of the repair shall be at the direction of the Engineer.

EXTRA AREA AND DEDUCTIONS

QUANTITIES CARRIED TO GENERAL SUMMARY

[illegible]

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CONTINGENCY QUANTITIES

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

R.A.P. IDENTIFICATION FOR 441 ASPHALT DESIGNS

FOR THE PURPOSES OF ASPHALT DESIGNS UTILIZING RECYCLED ASPHALT PAVEMENT, (R.A.P.), THE EXISTING ASPHALT WAS PLACED UNDER PROJECTS 748(88) AND 309(89). THE CONTRACTOR SHALL FURNISH THIS INFORMATION WITH THE REQUIRED DESIGN PACKET TO THE BITUMINOUS CONCRETE SECTION IN COLUMBUS.

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

PRIOR TO THE START OF ROADWAY OPERATIONS, THE CONTRACTOR SHALL REFERENCE THE LENGTH OF THE PROJECT ON BOTH SIDES OF THE ROADWAY, IN A MANNER SATISFACTORY TO THE ENGINEER. THE PAVEMENT SHALL BE REFERENCED IN 500 FEET INCREMENTS, OR IN INCREMENTS ACCEPTABLE TO THE ENGINEER, IN A SEMIPERMANENT CONDITION.

ITEM 407 - TACK COAT

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT, AS DIRECTED BY THE ENGINEER. FOR ESTIMATING PURPOSES ONLY, THE PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF:

0.075 GALLONS PER SQUARE YARD OF TACK COAT.

0.050 GALLONS PER SQUARE YARD OF TACK COAT FOR INTERMEDIATE COURSE.

CONSTRUCTION NOTIFICATION

THE CONTRACTOR WILL ADVISE THE PROJECT ENGINEER A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR FOURTEEN (14) DAYS PRIOR TO ANY RAMP CLOSURES OR ROAD CLOSURES. THE PROJECT ENGINEER WILL FORWARD THE INFORMATION TO THE DISTRICT PUBLIC INFORMATION OFFICER BY FAX 513-933-6611 OR EMAIL Ron.Moser@dot.state.oh.us.

ITEM 614 - WORK ZONE PAVEMENT MARKINGS

TEMPORARY PAVEMENT MARKINGS SHALL BE PLACED AS FOLLOWS: THE CONTRACTOR SHALL APPLY ALL OF THE FOLLOWING MARKINGS, AFTER PAVEMENT PLANING, AFTER APPLICATION OF THE INTERMEDIATE COURSE AND AFTER APPLICATION OF THE SURFACE COURSE.

24.42	MILE	ITEM 614	WORK ZONE CENTER LINE, CLASS I
48.84	MILE	ITEM 614	WORK ZONE EDGE LINE, CLASS I
30	FEET	ITEM 614	WORK ZONE STOP LINE, CLASS I
3	EACH	ITEM 614	WORK ZONE RAILROAD SYMBOL MARKING, CLASS I

ITEM 614 - WORK ZONE MARKING SIGNS

A QUANTITY OF 15 EACH WORK ZONE MARKING SIGNS, 15 EACH "NO EDGE LINES" OW-167 HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE PROJECT ENGINEER.

CONVERSION OF METRIC STANDARD DRAWINGS

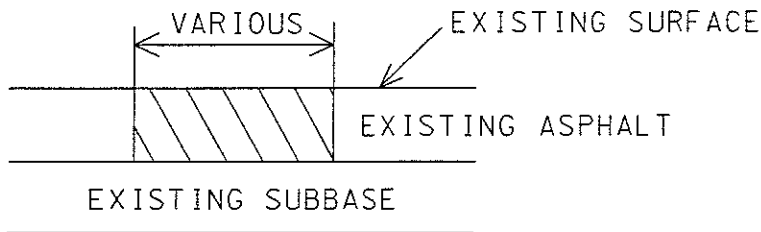
THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.02 OF THE 2002 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E 380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

INTERIM COMPLETION DATE

AN INTERIM DATE OF COMPLETION FOR THIS CONTRACT IS SET 30 DAYS PRIOR TO THE FINAL COMPLETION DATE. ALL CONTRACT ITEMS OF WORK MUST BE COMPLETED BY THE INTERIM COMPLETION DATE. THE INTERIM DATE WILL BE SUBJECT TO LIQUIDATED DAMAGES AS INDICATED BY SECTION 108.07 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS BOOK. REQUEST FOR TIME EXTENSIONS TO THE INTERIM COMPLETION DATE WILL BE PROCESSED AS PER SECTION 108.06 OF THE SPECIFICATIONS BOOK. THE PERIOD OF TIME BETWEEN THE INTERIM COMPLETION DATE AND THE FINAL COMPLETION DATE IS STRICTLY TO ALLOW FOR COMPLETION OF THE "PUNCH LIST" ITEMS AND REMOVAL OF THE PROJECT FIELD OFFICES. FAILURE TO COMPLETE THE "PUNCH LIST" AND REMOVE THE FIELD OFFICES BY THE FINAL COMPLETION DATE WILL RESULT IN ASSESSMENT OF LIQUIDATED DAMAGES AS PER SECTION 108.07 OF THE SPECIFICATIONS BOOK. A GRANTED TIME EXTENSION TO THE INTERIM COMPLETION DATE WILL NOT INCLUDE A CORRESPONDING EXTENSION TO THE FINAL COMPLETION DATE. EXTENSIONS OF TIME TO THE FINAL COMPLETION DATE WILL ONLY BE GRANTED IF IT CAN BE JUSTIFIED THAT NOT ENOUGH TIME EXIST TO COMPLETE "PUNCH LIST" ITEMS AND REMOVE THE PROJECT FIELD OFFICES PRIOR TO THE FINAL COMPLETION DATE.

ITEM 253 - PAVEMENT REPAIRS

AN ESTIMATED QUANTITY OF 1100 CU. YDS. OF ITEM 253 - PAVEMENT REPAIR HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. THIS OPERATION SHALL BE PERFORMED BEFORE PAVEMENT PLANING OF ROADWAY.



EXISTING DETERIORATED ASPHALT SHALL BE REMOVED TO A MINIMUM DEPTH OF 6" OR AS DIRECTED BY THE ENGINEER AND REPLACED WITH ITEM 301, ASPHALT CONCRETE BASE. THE 301 SHALL BE COMPACTED AS PER 401.14 AND IN APPROXIMATELY EQUAL LAYERS. THE LOCATION AND SIZE OF REPAIRS SHALL BE DETERMINED BY THE ENGINEER.

THESE QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

SUBBASE FAILURES

IF, AFTER REMOVAL OF THE ASPHALT MATERIAL THE PROJECT ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH COMPACTED 304 AGGREGATE BASE AS NECESSARY. PAYMENT FOR THIS WORK WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM 203
EXCAVATION

CU. YDS.

85

ITEM 304
AGGREGATE BASE

CU. YDS.

85

THESE QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

PERMANENT PAVEMENT MARKINGS

THE CONTRACTOR SHALL REFERENCE ALL PAVEMENT MARKINGS INCLUDING AUXILIARY PAVEMENT MARKINGS BEFORE THE START OF THE PLANING OPERATION. THIS WILL BE NECESSARY TO ASSURE CORRECT PLACEMENT OF MARKINGS IN ORIGINAL LOCATIONS. PAY FOR THIS OPERATION SHALL BE INCLUDED WITH EACH RESPECTIVE PAVEMENT MARKING ITEM.

UTILITY OWNERSHIP

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

TIME WARNER CABLE - CABLE T.V.
4195 N. BARRON STREET
EATON, OHIO 45320
937-477-7621

THE DAYTON POWER & LIGHT CO. - ELECTRIC
1900 DRYDEN ROAD
DAYTON, OHIO 45439
937-331-4924

VECTREN - GAS
1335 E. DAYTON YELLOW SPRINGS ROAD
FAIRBORN, OHIO 45324
937-440-1918

AMERITECH - TELEPHONE
3233 WOODMAN DRIVE
DAYTON, OHIO 45420
937-296-3555

VERIZON - TELEPHONE
6464 WESTBROOK ROAD
CLAYTON, OHIO 45315
937-382-4224

THE VILLAGE OF CAMDEN - WATER
P.O. BOX 1
56 N. MAIN STREET
CAMDEN, OHIO 45311
937-452-0037

THE CITY OF GRATIS - WATER
P.O. BOX 574
GRATIS, OHIO 45330
937-787-4513

ITEM 614-MAINTAINING TRAFFIC

IT IS THE INTENTION OF THESE PLANS TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO AND THE MAXIMUM SAFETY OF, THE CONTRACTOR AND THE TRAVELING PUBLIC. THE REQUIREMENTS FOR MAINTAINING TRAFFIC SHALL BE AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION. THE PROPOSAL, THE SPECIFICATIONS AND THE PLANS. ANY VARIANCE FROM THESE REQUIREMENTS SHALL BE APPROVED BY THE DIRECTOR IN WRITING.

- A. BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THESE PERSONS SHALL BE RESPONSIBLE FOR PLACING OR REPLACING NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN THE TRAVELED PAVEMENT SAFELY.
- B. TRAFFIC SHALL BE MAINTAINED AT ALL INTERSECTIONS AND DRIVES AT ALL TIMES AND SHALL BE CONTROLLED WITH FLAGGERS AND TRAFFIC CONTROL DEVICES AS REQUIRED AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
- C. ON TWO LANE ROADS, AT LEAST ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES WORK IS BEING PERFORMED. TRAFFIC SHALL BE CONTROLLED USING FLAGGERS AND TRAFFIC CONTROL DEVICES AS REQUIRED.
- D. DURING NON-WORKING HOURS, TRAFFIC SHALL BE RESTORED TO THE FULL WIDTH OF EXISTING PAVEMENT.
- E. PAYMENT FOR ALL THE ABOVE WORK SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614-MAINTAINING TRAFFIC.

grudd@D08CD113 - pre725 - 09:16:56 AM EST 10/29/03

ALL QUANTITIES CARRIED TO GENERAL SUMMARY																			
PART	COUNTY	ROUTE	FROM MILE MARKER	TO MILE MARKER	642 QUANTITIES				642 CENTER LINE										
					CENTER LINE MILES														
					TOTAL	DASHED	SOLID		REMARKS										
I	PRE	725	9.22	15.17	5.95	4.01	5.84												
			16.18	18.37	2.19	0.48	3.78												
CENTER LINE TOTAL					8.14	4.49	9.62												
PART	COUNTY	ROUTE	FROM MILE MARKER	TO MILE MARKER	642 EDGE LINE				EDGE LINE QUANTITIES										
					TOTAL MILES	HWY. MILES	RAMP MILES	PART.	WHITE	YELLOW									
I	PRE	725	9.22	15.17	11.90	11.90			11.90										
			16.18	18.37	4.38	4.38			4.38										
EDGE LINE TOTAL					16.28				16.28										
PART	COUNTY	ROUTE	FROM MILE MARKER	TO MILE MARKER	642 QUANTITIES			PARTICIPATION	REMARKS										
					LANE LINE, MILES														
					TOTAL	DASHED													
LANE LINE TOTAL																			
AUXILIARY MARKING										644									
PART	CO.	ROUTE	S.L.M.		24" TRANSVERSE LINES		STOP LINES	12" CROSS-WALK	WORD ON PAVEMENT		RAILROAD SYMBOL MARKING		LANE ARROWS			ISLAND MARKING	8" CHANNELIZING LINE	REMARKS	
					WHITE	YELLOW			ONLY	ONLY			TURN		THRU				COMB.
			FROM	TO	FEET	FEET	FEET	FEET	72"	96"	EACH	EACH	EACH	EACH	EACH	EACH	SQ.FT.		FEET
I	PRE	725		9.24			10												
				9.26							I								
AUXILIARY MARKING TOTALS						10					I								

Detail	

PART	LOCATION				D E T A I L	621			PRISMATIC RETRO-REFLECTOR COLORS					REMARKS
	COUNTY	ROUTE	S.L.M. SECTION (MILES)			RPM INSTALLATION ONLY			ONE-WAY		TWO-WAY			
			FROM	TO					WHITE	YELLOW	WHITE/ WHITE	YELLOW/ YELLOW	WHITE/ RED	
I	PRE	725	9.22	15.17	1/3	514						514		
			16.18	18.37	1/3	215						215		
			9.22	9.24	2	6						6		
TOTAL THIS SHEET						735						735		

ITEM 202-RAISED PAVEMENT MARKERS REMOVED FOR STORAGE, APP
AN ESTIMATED QUANTITY OF 1086 EACH ITEM 202-RAISED PAVEMENT MARKERS REMOVED FOR STORAGE, AS PER PLAN,
HAS BEEN PROVIDED. THE CONTRACTOR SHALL REMOVE ALL RAISED PAVEMENT MARKERS WITHIN THE LIMITS
OF WORK AND DELIVER THEM TO THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT EIGHT, LEBANON,
OHIO, IN A RELATIVELY CLEAN CONDITION (NO MUD OR DEBRIS MIXED IN). THE DEPRESSIONS LEFT BY
THEIR REMOVAL SHALL BE TACKED WITH ITEM 407 MATERIAL AND THEN ITEM 448 MATERIAL SHALL BE
PLACED AND COMPACTED. THE COST FOR THIS ITEM SHALL INCLUDE ALL OF THE MATERIALS, EQUIPMENT
AND LABOR DESCRIBED ABOVE. EXISTING RAISED PAVEMENT MARKERS SHALL NOT BE REMOVED UNLESS
THEY WILL BE REPLACED IN THE SAME CONSTRUCTION SEASON.

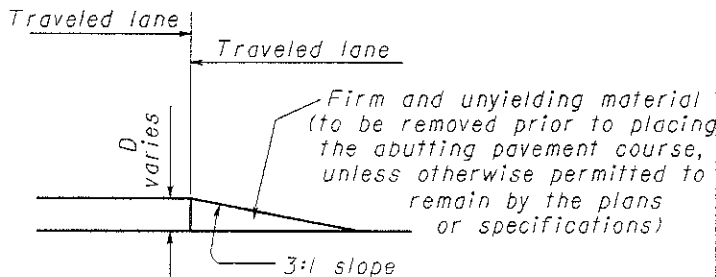
QUANTITIES CARRIED TO THE GENERAL SUMMARY

GENERAL NOTES

1. It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid for Item 614 - Maintaining Traffic.
2. While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.
3. In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.
4. The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
5. Where concrete barrier is specified, it shall be in accordance with Standard Construction Drawing MC-9.2 and Item 622.
6. When drums are specified for a dropoff condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.
7. When OW-151 (Low Shoulder) signs or OW-171 (Uneven Lanes) and OWP-171 signs are required, they shall be placed 750' in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all intersecting roadways within the limits of the condition. When the dropoff condition extends more than one-half mile, additional signs should be erected at intervals of one mile or less.
8. For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate any difference in elevation between pavements, a 3:1 slope treatment similar to the Optional Wedge Treatment shall be provided.
9. Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10', drums may be placed on the opposite level from that of traffic provided the dropoff depth does not exceed 5" and approval is granted by the Project Engineer.
10. Pavement Repairs (or similar work):
 - a. Lengths greater than 60 feet - utilize appropriate treatment from Condition I.
 - b. Lengths of 60 feet or less - repairs shall be effected in accordance with 255.08. Drums may be used as a separator adjacent to the traveled lane.

OPTIONAL WEDGE TREATMENT
(MILLING OR RESURFACING)

1. This treatment may be used when permitted for Condition I only.
2. OW-171 and OWP-171 signs required.



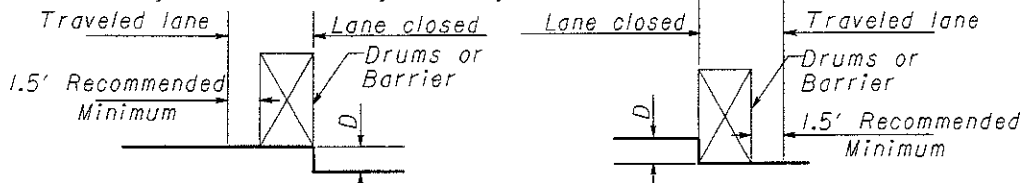
CONDITION I

DROPOFFS BETWEEN TRAVELED LANES

1. These treatments are to be used for resurfacing, pavement planing, excavation, etc. between or within traveled lanes.

D (In.)	Treatment
≤1½	Erect OW-171 and OWP-171 signs.
>1½-3	1) Lane closure utilizing drums* as shown below OR 2) Optional Wedge Treatment
>3-5	Lane closure utilizing drums as shown below.
>5	Lane closure utilizing portable concrete barrier as shown below.

*Cones may be used for daytime only conditions.



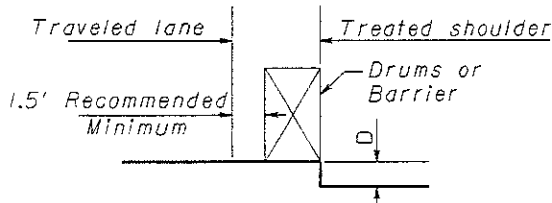
CONDITION II

DROPOFFS WITHIN GRADED SHOULDER AREA

1. The treatments indicated below are for use in conjunction with resurfacing, planing or excavations within the graded shoulder area.
2. The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials, or concreted). For the purposes herein, its maximum width shall be considered to be twelve (12) feet.

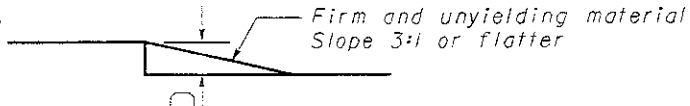
D (In.)	Treatment
≤1½	1) If edgelines are present, no treatment necessary OR 2) Erect OW-171 and OWP-171 signs.
>1½-5	1) If min. lane width requirements can be met, maintain lanes utilizing drums as shown below OR 2) If min. lane width requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
>5-12 Daylight only	If min. lane width requirements can be met, maintain lanes utilizing drums as shown below.
>5-24	1) If min. lane width requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If min. lane width requirements cannot be met, close adjacent lane utilizing drums.
>24	Lane closure utilizing portable concrete barrier as shown below.

* Minimum lane widths shall be 10' unless otherwise specified in the plans.



OPTIONAL SHOULDER TREATMENT

1. This treatment may not be used within a bituminous shoulder where a hot longitudinal joint per 401.15 is required.
2. OW-151 signs required.



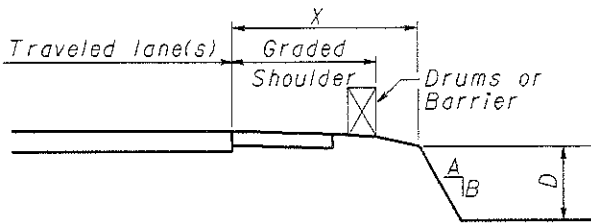
CONDITION III

DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

1. See Note 2 under Condition II.
2. Use Chart A or B below, as applicable.

CHART A

- USE FOR:
1. Uncurbed Facilities.
 2. Curbed Facilities, where:
 - a. Curbs are less than 6" in height.
 - b. Curbs are 6" or greater in height and the legal speed is greater than 40 mph.

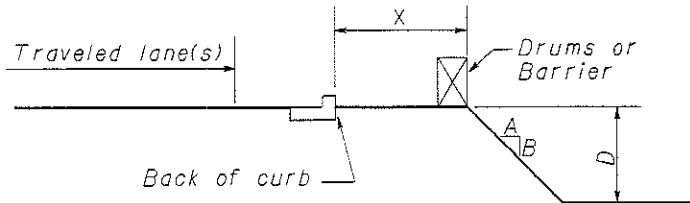


X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	<3	Steeper than 3:1	None	None
4-12	>3-<12	Steeper than 3:1	Drums	Drums
4-12	>12	Steeper than 3:1	Drums	Barrier
>12-20	<12	Steeper than 3:1	None	None
>12-20	>12-<24	Steeper than 3:1	Drums	Drums
>12-20	>24	Steeper than 3:1	Drums	Barrier
>20-30	<24	Steeper than 3:1	None	Drums
>20-30	>24	Steeper than 3:1	Drums	Barrier
>30	Any	Any	None	None

(a) Use treatment specified under Condition II.

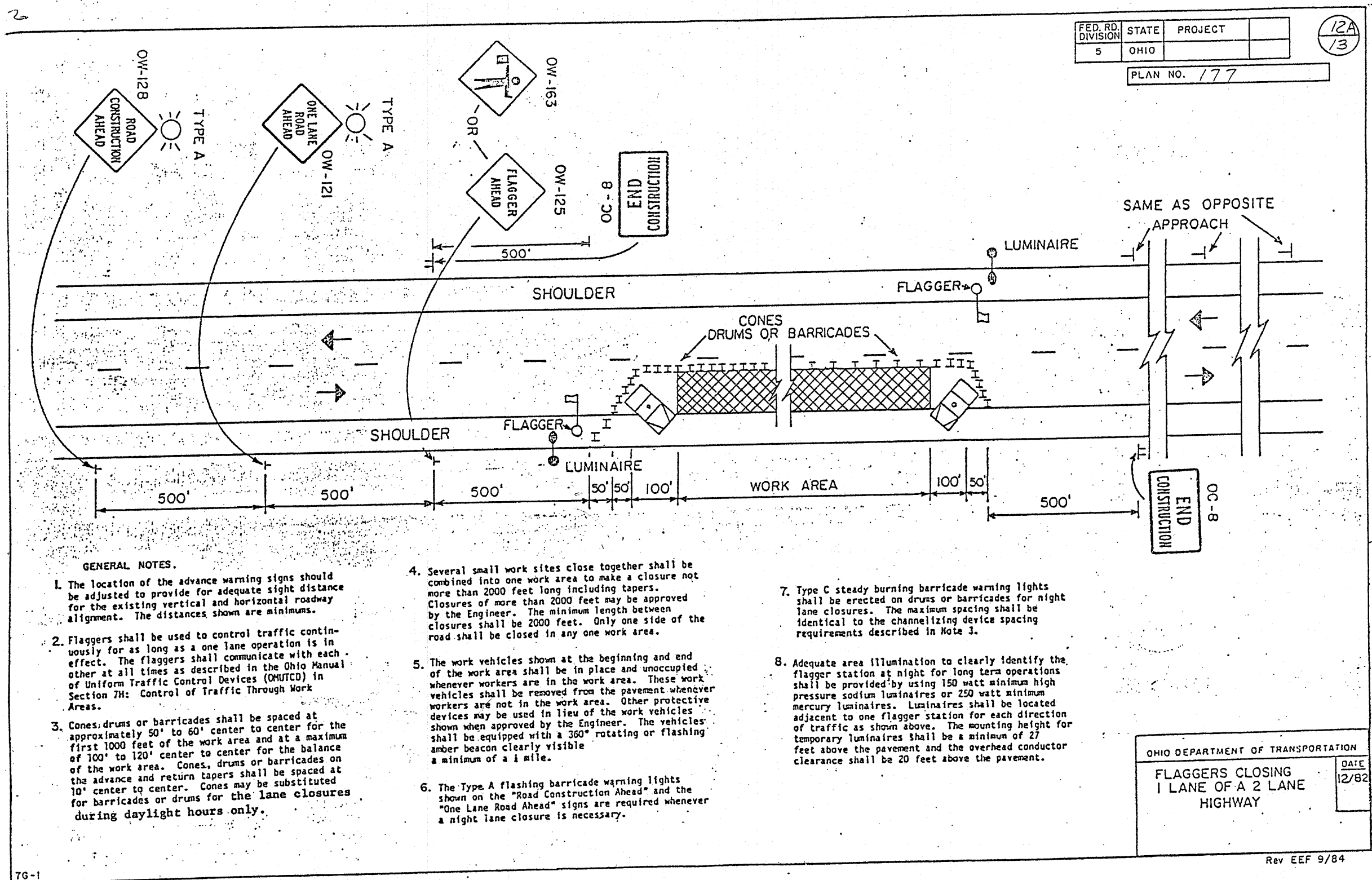
CHART B

- USE FOR: Curbed facilities, where the curb is 6" or greater in height and the legal speed is 40 mph or less.



X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-10	<12	Any	None	Drums
0-10	>12	Any	Drums	Drums
>10	Any	Any	None	None

[illegible]



GENERAL NOTES.

- The location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment. The distances shown are minimums.
- Flaggers shall be used to control traffic continuously for as long as a one lane operation is in effect. The flaggers shall communicate with each other at all times as described in the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) in Section 7H: Control of Traffic Through Work Areas.
- Cones, drums or barricades shall be spaced at approximately 50' to 60' center to center for the first 1000 feet of the work area and at a maximum of 100' to 120' center to center for the balance of the work area. Cones, drums or barricades on the advance and return tapers shall be spaced at 10' center to center. Cones may be substituted for barricades or drums for the lane closures during daylight hours only.
- 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 of 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.
- The work vehicles shown at the beginning and end of the work area shall be in place and unoccupied whenever workers are in the work area. These work vehicles shall be removed from the pavement whenever workers are not in the work area. Other protective devices may be used in lieu of the work vehicles shown when approved by the Engineer. The vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of a 1 mile.
- The Type A flashing barricade warning lights shown on the "Road Construction Ahead" and the "One Lane Road Ahead" signs are required whenever a night lane closure is necessary.
- Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 3.
- Adequate area illumination to clearly identify the flagger station at night for long term operations shall be provided by using 150 watt minimum high pressure sodium luminaires or 250 watt minimum mercury luminaires. Luminaires shall be located adjacent to one flagger station for each direction of traffic as shown above. The mounting height for temporary luminaires shall be a minimum of 27 feet above the pavement and the overhead conductor clearance shall be 20 feet above the pavement.

OHIO DEPARTMENT OF TRANSPORTATION	
FLAGGERS CLOSING 1 LANE OF A 2 LANE HIGHWAY	DATE 12/82

DEPARTMENT OF TRANSPORTATION
M & R 710 REV. 9-1-83
725GS2
SHEET 1

PLAN NO.
177

13
13

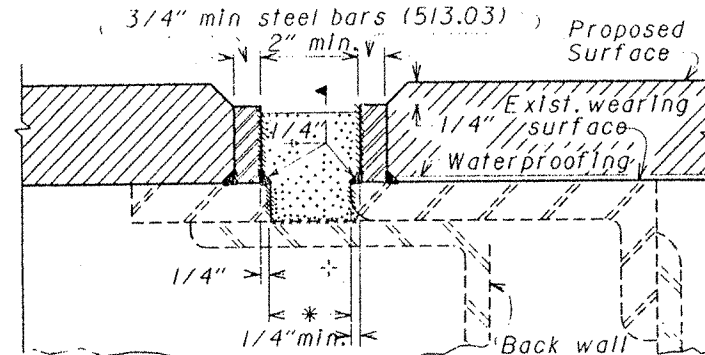
GENERAL SUMMARY

ITEM	PART 1	PART 2							GRAND TOTAL PARTS 1-2	UNIT	DESCRIPTION
									67	SQ.YD.	WEARING COURSE REMOVED
202		67							175	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
203	100	75							0.2	MILE	LINEAR GRADING
203	0.2								175	CU.YD.	AGGREGATE BASE
304	100	75							3,951	CU.YD.	ASPHALT CONCRETE, AC-20
403	1,551	2,400							250	CU.YD.	ASPHALT CONCRETE, AC-20, SPOT LEVELING
403	75	175							3,951	CU.YD.	ASPHALT CONCRETE, AC-20
404	1,551	2,400							10,098	GAL.	TACK COAT, AS PER PLAN
407	3,621	6,477							4,381	GAL	BITUMINOUS PRIME COAT
408	3,931	450							7,542	GAL	SEAL COAT BITUMINOUS MATERIAL
409	2,647	4,895							181	CU.YD.	SEAL COAT COVER AGGREGATE, NO. 8
409	64	117							2	EACH	MANHOLE ADJUSTED TO GRADE
604	2								3,450	LIN.FT.	AGGREGATE DRAIN
605	1,850	1,600							18.74	MILE	TEMPORARY CENTER LINES, CLASS II
614	6.72	12.02							14	EACH	WORK ZONE MARKING SIGNS
614	8	6							18,636	SQ.YD.	SHOULDER PREPARATION, AS PER PLAN
617	11,343	7,293							908	CU.YD.	COMPACTED AGGREGATE, TYPE A
617	320	588							18.0	M.GAL.	WATER
617	6.3	11.7							LUMP	LUMP	FIELD OFFICE
619	LUMP	LUMP							10	LIN.FT.	STOP LINES
621		10							9.22	MILE	CENTER LINES
621	3.26	5.96							18.44	MILE	EDGE LINES, AS PER PLAN
621	6.52	11.92									
									2626	CU.YD.	PAVEMENT REPAIR
SPECIAL	1177	1449							35,000	POUND	CRACK SEALING, HOT APPLIED, 705.04, WITH ROUTING
SPECIAL	10,000	25,000									
									LUMP	LUMP	MAINTAINING TRAFFIC
614	LUMP	LUMP									
									LUMP	LUMP	MOBILIZATION
624	LUMP	LUMP									

GENERAL SUMMARY

RESURFACING

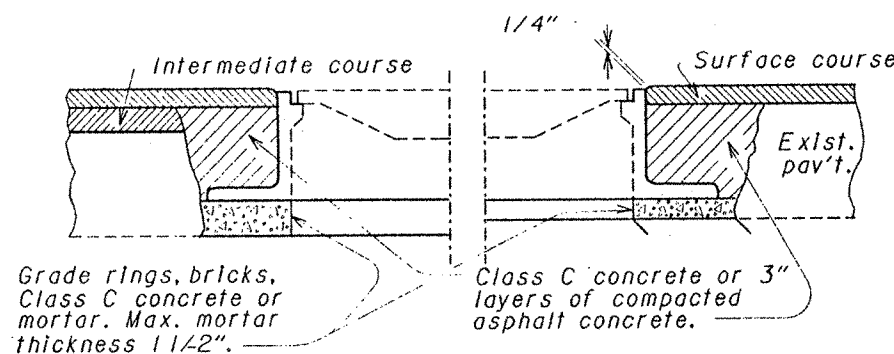
- * Increase as necessary to maintain 2" min. opening
- * Vertical extension of joints found to be closed to 1/2" or less may be non-performed as directed by the Engineer.



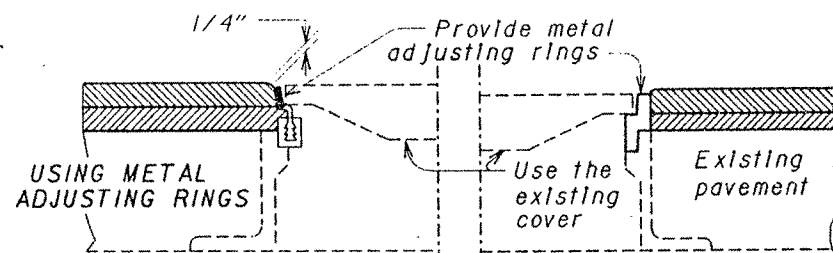
As a part of Item 516, seal joint with a hot-applied bridge deck waterproofing material which also meets the requirements of 705.04. Sandblast vertical surfaces (*) and wipe clean. Seal joint before rust forms. If rust forms, re-sandblast. Use bond breaker on the horizontal surface (**).

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 feathering at a max. slope of 6 ft/in. The ramps shall be removed prior to resurfacing. Payment for placing and removing the ramps shall be included in the lump sum bld for Item 614.

VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS

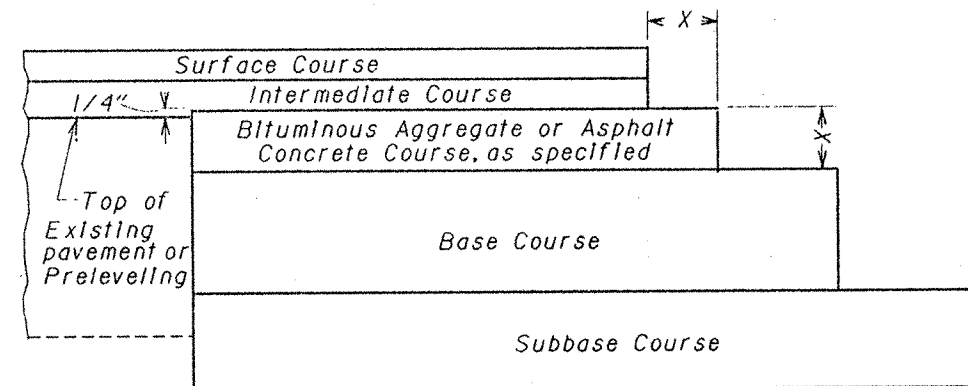


USING CONCRETE OR MORTAR



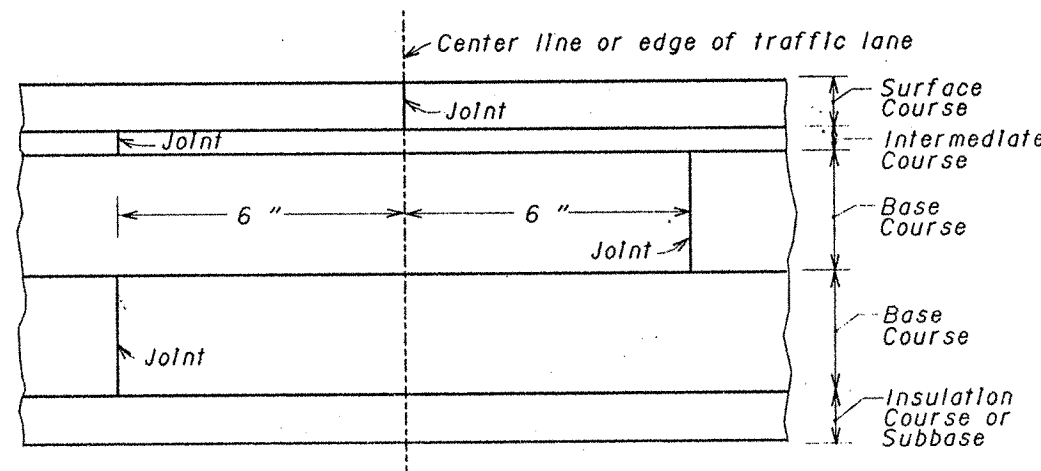
Metal adjusting rings shall: (a) attach securely to the existing frame by welding or mechanical devices; (b) consist either of cast metal having an integral rim and seat, or be fabricated metal with a sturdy connection between the seat and rim; and (c) provide an even seat for the manhole cover. In addition, the adjusting ring type shall be a design acceptable to the local governmental agency responsible for street and sewer maintenance. Any installation unacceptable to the Engineer shall be replaced by the Contractor at his expense.

MANHOLES ADJUSTED TO GRADE

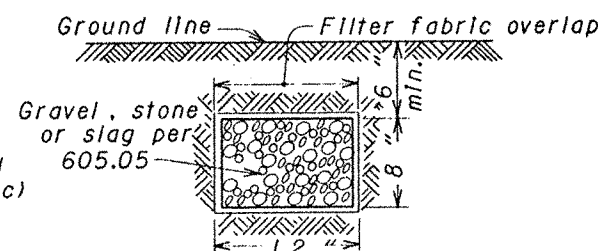


The Bituminous Aggregate in the upper part of the base widening shall finish approximately 1/4" above the edge of the existing pavement where no prelevelling is used. Where a prelevelling (using intermediate course material) is specified it shall be placed prior to excavation of the widening trench and the upper course of the base widening shall finish approximately 1/4" above the prelevelling.

COURSE DETAIL FOR WIDENING

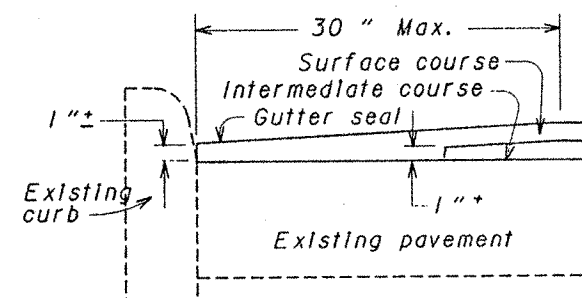


LAPPING LONGITUDINAL JOINTS



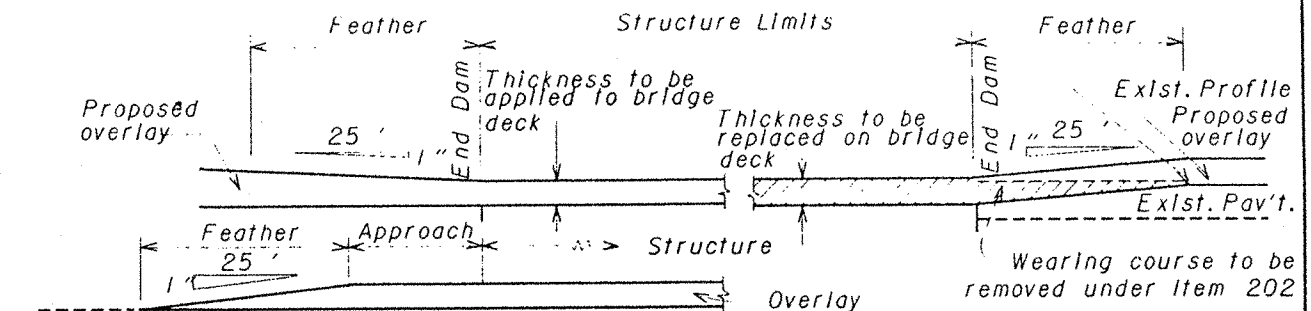
Aggregate drains to be placed where and as directed by Engineer. Provide filter fabric when specified as a separate pay item

AGGREGATE DRAIN



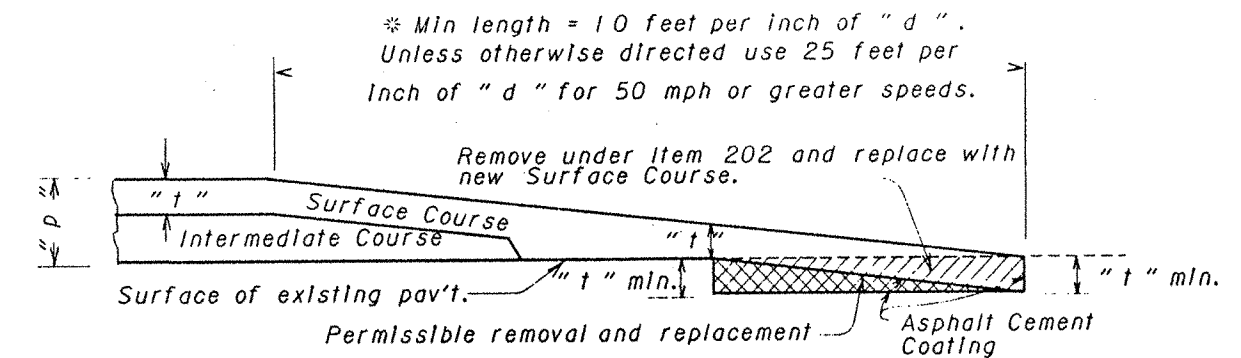
Special care shall be taken during construction to obtain maximum compaction of bituminous concrete in gutters.

GUTTER FINISH

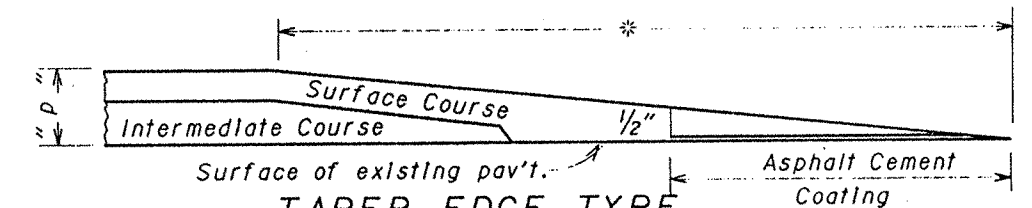


Details assume non-settled approach slabs. Smoothing of the profile for settlement is required per plan grades or as directed by the Engineer.

FEATHERING AT STRUCTURES



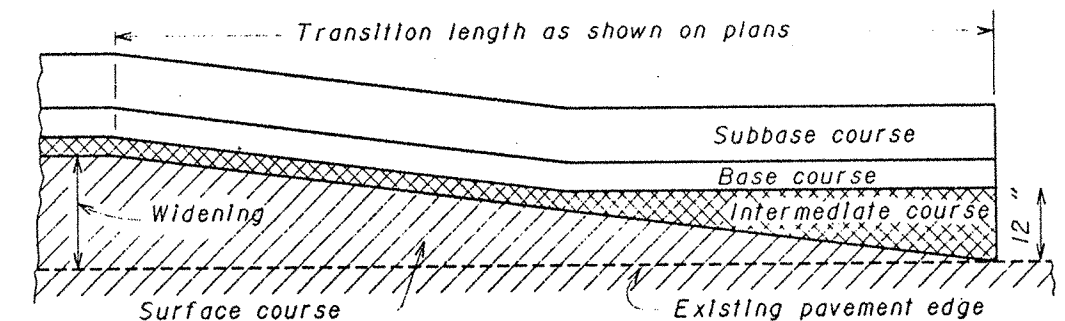
BUTT JOINT TYPE



TAPER EDGE TYPE

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

PLACING FEATHERED AREAS



MERGING EDGE OF PAVEMENT WIDENING WITH EDGE OF EXISTING PAVEMENT

BUREAU OF LOCATION AND DESIGN OHIO DEPARTMENT OF TRANSPORTATION	
RESURFACING	
STANDARD CONSTRUCTION DRAWING	BP-5
APPROVED <i>A. J. Quittman</i>	ENGR., L&D

DATE
6-1-65
1-1-71
6-1-72
8-11-75
4-16-79
7-16-81
1-11-85
10-1-87

WORK ZONE PAVEMENT MARKINGS AND SIGNS

614 WORK ZONE PAVEMENT MARKINGS

GENERAL

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

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

TEMPORARY PAVEMENT MARKING MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE EITHER 621.02 PAINT OR 947.03 TYPE B OR TYPE C PREFORMED MATERIAL.

PAINT

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT (a) PARAGRAPH 621.14 SHALL NOT APPLY, (b) WHERE THE MARKINGS ARE NOT LIABLE TO BE TRACKED, EITHER CONVENTIONAL OR FAST DRY PAINT MAY BE USED FOR 621.02, AND (c) WHEN APPLIED TO NEW ASPHALT PAVEMENT SURFACES OR PLANED ASPHALT PAVEMENT SURFACES, THE SPECIFIED APPLICATION RATE SHALL BE AS FOLLOWS:

GALLONS PER MILE OF LINE					
WIDTH OF LINE, IN.	4	6	8	12	24
SOLID LINE	24	36	48	72	144
DASHED LINE	6	9	-	-	-
DOTTED LINE	8	12	-	-	-

TYPE B AND TYPE C PREFORMED MATERIAL

PREFORMED MATERIAL SHALL COMPLY WITH 947.03 EXCEPT THAT NO PREFORMED MATERIAL CONTAINING METAL SHALL BE PLACED ON ANY SURFACE UNLESS IT WILL BE REMOVED LATER BY THE CONTRACTOR. TEMPORARY PAVEMENT MARKINGS OF 947.03 PREFORMED MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF 621 OR 847 SURFACE COURSE MARKINGS AT THAT LOCATION. PREFORMED MATERIAL SHALL BE APPLIED IN ACCORDANCE WITH 847 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT, INCLUDING RAMPS, PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS CONFLICT WITH THE TRAFFIC PATTERN, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134.

LINE PLACEMENT TOLERANCE FOR FINAL SURFACES SHALL BE IN ACCORDANCE WITH 621.052. ON SURFACES OTHER THAN THE FINAL, THE TOLERANCE PERMITTED SHALL BE TWICE THAT IN 621.052. LAYOUT AND PREMARKING SHALL BE IN ACCORDANCE WITH 621.051.

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

CLASS I MARKINGS SHALL BE APPLIED TO THE FULL DIMENSIONS AS DEFINED IN 621 WITH THE FOLLOWING ADDITIONS OR EXCEPTIONS:

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

TEMPORARY MARKING CLASSES (CONTINUED)

CLASS II MARKINGS

CLASS II MARKINGS (ABBREVIATED) SHALL BE DEFINED AS FOLLOWS:

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

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

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 2.4 GALLONS PER MILE FOR LANE LINE AND CENTER LINE AND 24 GALLONS PER MILE FOR GORE MARKINGS.

CONFLICTING EXISTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING 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 INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SPECIFICALLY ITEMIZED.

THE CONTRACTOR SHALL ALSO REMOVE THE PRISMATIC RETRO-REFLECTOR WITHIN ANY RAISED PAVEMENT MARKER (RPM) WHICH IS IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. WHEN THE TEMPORARY PAVEMENT MARKINGS ARE REMOVED AND THE RPM IS NO LONGER IN CONFLICT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE RECESSED REFLECTOR ATTACHMENT AREA OF THE CASTING AND INSTALL A NEW PRISMATIC RETRO-REFLECTOR OF THE SAME KIND AND COLOR. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

INTERIM MARKINGS

WITHIN 21 CALENDAR DAYS AFTER OPENING ANY LENGTH OF PAVEMENT TO TRAFFIC, THE 621 OR 847 PAVEMENT MARKINGS CALLED FOR IN THE PLANS SHALL BE APPLIED. EQUIVALENT 614 CLASS I, PAINT MARKINGS MAY BE USED IN LIEU OF FINAL MARKINGS. IN THIS EVENT, THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I PAINT MARKINGS AS PART OF THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC.

FOR EACH CALENDAR DAY BEYOND 21 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE SUM OF \$200 PER CALENDAR DAY WILL BE DEDUCTED FROM ANY MONEY DUE THE CONTRACTOR, NOT AS A PENALTY BUT AS LIQUIDATED DAMAGES.

METHOD OF MEASUREMENT

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

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 MARKINGS.

BASIS OF PAYMENT (CONTINUED)

ITEM	UNIT	DESCRIPTION
614	MILES	TEMPORARY LANE LINES, CLASS I, . . .
614	MILES	TEMPORARY CENTER LINES, CLASS I, . . .
614	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, . . .
614	MILES	TEMPORARY EDGE LINES, CLASS I, . . .
614	LIN. FT.	TEMPORARY GORE MARKINGS, CLASS II, . . .
614	LIN. FT.	TEMPORARY STOP LINES, CLASS I, . . .
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, . . .
614	EACH	TEMPORARY LANE ARROWS, CLASS I, . . .
614	EACH	TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I, . . .
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72 INCH, CLASS I, . . .
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, . . .
614	LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, . . .

* TYPE MATERIAL (621 PAINT, 947.03 TYPE B OR 947.03 TYPE C OR LEFT BLANK TO PERMIT ANY OF THE THREE)

614 WORK ZONE MARKING SIGNS

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

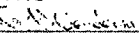
THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMUTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO-EDGE LINES" (OW-167-36) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168-36) SIGN OR BOTH AS MAY BE APPROPRIATE. ON FREEWAYS AND EXPRESSWAYS AN OW-167-48 SIGN SHALL BE USED. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL ALSO BE ERECTED ON EACH ENTRANCE RAMP, AT INTERSECTIONS OF THROUGH ROADS TO WARN ENTERING OR TURNING TRAFFIC OF THE CONDITION AND AT LEAST ONCE EVERY TWO MILES ALONG THE ROADWAY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY.

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

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

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

ITEM	UNIT	DESCRIPTION
614	EACH	WORK ZONE MARKING SIGNS

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
MAINTENANCE OF TRAFFIC	DATE 11/14/86
WORK ZONE PAVEMENT MARKINGS AND SIGNS	
STANDARD CONSTRUCTION DRAWING	MT-99.10
APPROVED  ENGR. OF DESIGN SERVICES	

GENERAL

IN ADDITION TO 614, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE PURPOSE OF THE FOLLOWING REQUIREMENTS FOR TRAFFIC CONTROL FOR PAVEMENT MARKING OPERATIONS IS TO PROVIDE SAFETY FOR HIGHWAY USERS, WORKERS AND EQUIPMENT AND TO PROTECT THE MARKINGS FROM DAMAGE DURING APPLICATION. THESE REQUIREMENTS ARE THE REQUIRED MINIMUMS. IF AT ANY TIME DURING THE APPLICATION OF MARKINGS IT IS FOUND BY THE ENGINEER THAT THESE MINIMUM TRAFFIC CONTROL REQUIREMENTS ARE NOT ACHIEVING THE NECESSARY SAFETY AND MARKING PROTECTION, ADDITIONAL TRAFFIC CONTROL SHALL BE IMPLEMENTED IN ACCORDANCE WITH ITEM 104.02.

THE ENGINEER MAY SUSPEND WORK IN ORDER TO RELIEVE TRAFFIC CONGESTION AT ANY TIME. NO WORK SHALL BE DONE DURING PEAK HOURS, AS DETERMINED BY THE ENGINEER.

VEHICLES TRANSPORTING FLAMMABLE PAVEMENT MARKING MATERIALS (MATERIAL SUPPLY VEHICLES) SHALL NOT BE UTILIZED FOR LEAD OR TRAIL VEHICLES OR FOR POWER BROOM EQUIPMENT. ALL PAVEMENT MARKING APPLICATION, PROTECTION AND SUPPORT EQUIPMENT FOLLOWING THE LINE MARKING MACHINE SHALL HAVE THE TRAFFIC CONTROL EQUIPMENT OF A TRAIL VEHICLE.

LINE MARKING MACHINES SHALL NOT BE USED FOR SIGN AND CONE PLACEMENT.

LEAD VEHICLE

A LEAD VEHICLE IS TO BE USED TO WARN OPPOSING TRAFFIC OF THE APPROACH OF CENTER LINE AND OTHER MARKING EQUIPMENT WHEN THIS EQUIPMENT EXTENDS INTO THE ADJACENT OPPOSING TRAFFIC LANE. THE LEAD VEHICLE SHALL PRECEDE THE "LEFT OF CENTER" MARKING EQUIPMENT A DISTANCE THAT WILL PROVIDE ADVANCE SAFE WARNING TO APPROACHING TRAFFIC. THE OPERATOR OF THIS UNIT SHALL DRIVE AHEAD OF THE CREST OF A VERTICAL CURVE OR AROUND A HORIZONTAL CURVE AND WAIT UNTIL THE "LEFT OF CENTER" MARKING EQUIPMENT NEARS AND THEN PROCEED, MAINTAINING AN ADVANCE LOCATION OF 400' TO 600'.

A LEAD VEHICLE SHALL BE EQUIPPED AND OPERATED WITH THE FOLLOWING TRAFFIC CONTROL DEVICES:

1. A 360° ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE IN ALL DIRECTIONS A MINIMUM OF ONE-QUARTER MILE.
2. LIGHTED HEADLIGHTS AND TAILLIGHTS, AND
3. A KEEP RIGHT SIGN (OC-31R-48) AND WET PAINT SIGN (OC-52-48) MOUNTED A MINIMUM OF 5' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE SIGN, AND VISIBLE TO OPPOSING TRAFFIC.

POWER BROOM EQUIPMENT

POWER BROOM EQUIPMENT SHALL BE EQUIPPED AND OPERATED DURING PAVEMENT PREPARATIONS WITH THE FOLLOWING TRAFFIC CONTROL DEVICES:

1. A 360° ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE IN ALL DIRECTIONS A MINIMUM OF ONE-QUARTER MILE.
2. LIGHTED HEADLIGHTS AND TAILLIGHTS, AND
- * 3. A FLASHING ARROW PANEL 54" X 30" (TYPE B) VISIBLE TO THE REAR MOUNTED A MINIMUM OF 7' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE PANEL, AND USED ONLY ON MULTI-LANE HIGHWAYS.

LINE MARKING MACHINE

ALL TRAFFIC LINE MARKING MACHINES SHALL BE EQUIPPED AND OPERATED WITH THE FOLLOWING TRAFFIC CONTROL EQUIPMENT:

1. THREE 360° ROTATING OR FLASHING AMBER BEACONS CLEARLY VISIBLE IN ALL DIRECTIONS A MINIMUM OF ONE-QUARTER MILE MOUNTED A MINIMUM OF 7' ABOVE THE ROAD SURFACE, ONE FORWARD, ONE ON THE RIGHT REAR AND ONE ON THE LEFT REAR OF THE VEHICLE.
- * 2. (A) A FLASHING ARROW PANEL 54" X 30" (TYPE B) DISPLAYED TO THE REAR MOUNTED A MINIMUM OF 7' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE PANEL, AND USED ONLY ON MULTI-LANE HIGHWAYS, OR (B) A DO NOT PASS SIGN (R-33A-48) VISIBLE TO THE REAR DURING CENTER LINE MARKING ON TWO-LANE, TWO-WAY ROADWAYS AND MOUNTED A MINIMUM OF 7' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE SIGN. THIS SIGN MAY BE USED TO COVER THE ARROW PANEL, WHICH SHALL NOT BE USED ON TWO-LANE, TWO-WAY ROADWAYS.
3. A WET PAINT WITH ARROW SIGN (OC-50-24 OR OC-51-48) SHALL FACE THE REAR. THE SIGN SHALL BE POSITIONED WITH THE ARROW POINTING TO THE WET LINE. WHEN USED, OC-50-24 SHALL BE MOUNTED ON THE SIDE OF THE VEHICLE NEAREST THE WET MARKING MATERIAL. OC-50-24 AND OC-51-48 SIGNS SHALL BE MOUNTED A MINIMUM OF 1' ABOVE THE ROAD SURFACE.
4. A KEEP RIGHT SIGN (OC-31R-48) AND WET PAINT SIGN (OC-52-48) MOUNTED A MINIMUM OF 5' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE SIGN, AND FACING OPPOSING TRAFFIC WHEN THIS UNIT EXTENDS INTO THE ADJACENT OPPOSING TRAFFIC LANE.
5. THE GUIDE AND SIDE MOUNTED MARKING CARRIAGES SHALL EACH BE EQUIPPED WITH A CLEAN RED FLAG NOT LESS THAN 16" SQUARE AND FASTENED TO A STAFF OF SUFFICIENT LENGTH SO AS TO PERMIT THE FLAG TO MOVE FREELY OF ANY OBSTRUCTION.

TRAIL VEHICLE

WHEN REQUIRED, A TRAIL VEHICLE SHALL BE POSITIONED AT THE TRACK FREE END OF THE WET LINE.

TRAIL VEHICLES SHALL BE EQUIPPED AND OPERATED WITH THE FOLLOWING TRAFFIC CONTROL EQUIPMENT:

1. A 360° ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE IN ALL DIRECTIONS A MINIMUM OF ONE-QUARTER MILE.
- * 2. (A) A FLASHING ARROW PANEL 54" X 30" (TYPE B) VISIBLE TO THE REAR MOUNTED AT A MINIMUM HEIGHT OF 7' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE PANEL, AND USED ONLY ON MULTI-LANE HIGHWAYS, OR (B) A DO NOT PASS SIGN (R-33A-48) VISIBLE TO THE REAR DURING CENTER LINE MARKING ON TWO-LANE, TWO-WAY ROADWAYS AND MOUNTED A MINIMUM OF 7' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE SIGN. THIS SIGN MAY BE USED TO COVER THE ARROW PANEL, WHICH SHALL NOT BE USED ON TWO-LANE, TWO-WAY ROADWAYS.
3. A WET PAINT WITH ARROW SIGN (OC-50-24 OR OC-51-48) SHALL FACE THE REAR. THE SIGN SHALL BE POSITIONED WITH THE ARROW POINTING TO THE WET LINE. WHEN USED, OC-50-24 SHALL BE MOUNTED ON THE SIDE OF THE VEHICLE NEAREST THE WET MARKING MATERIAL. OC-50-24 SHALL BE MOUNTED A MINIMUM OF 4'6" ABOVE THE ROAD SURFACE AND OC-51-48 SHALL BE MOUNTED A MINIMUM OF 5'0" ABOVE THE ROAD SURFACE, BOTH MEASURED TO THE BOTTOM OF THE SIGN.

WHEN A VEHICLE IS OPERATING ON A TWO-LANE TWO-WAY ROADWAY THE FLASHING ARROW PANEL SHALL BE TILTED HORIZONTALLY OR COVERED.

CONES AND WET PAINT-KEEP OFF SIGNS

CONES AND WET PAINT-KEEP OFF SIGNS (R-87-24) SHALL BE PLACED TO PROTECT THE LINE WHENEVER THE TRACK FREE TIME EXCEEDS 2 MINUTES. THESE DEVICES SHALL NOT BE REMOVED UNTIL THE LINE HAS DRIED TO A TRACK FREE CONDITION. RETRIEVAL EQUIPMENT SHALL HAVE THE TRAFFIC CONTROL EQUIPMENT OF A TRAIL VEHICLE. CONES SHALL HAVE A MINIMUM HEIGHT OF 18". THEY SHALL BE SPACED TO PROTECT THE WET LINE, NORMALLY BETWEEN 120' AND 200'. IN AREAS OF TRAFFIC CONGESTION, ON CURVES AND AT OTHER LOCATIONS WHERE TRACKING OF THE WET LINE IS EXPECTED SPACINGS AS CLOSE AS 20' MAY BE REQUIRED. THE WET PAINT-KEEP OFF SIGNS (R-87-24) SHALL BE PLACED FACING TRAFFIC AT:

- A. THE BEGINNING AND END OF LINE APPLICATION.
- B. ALL SIDE AND CROSS ROADS.
- C. MAXIMUM INTERVALS OF ONE MILE.

WHEN LANE LINE MARKINGS REQUIRE GREATER THAN A TWO MINUTE DRYING TIME, THE LANE FROM WHICH THE LINE MARKING MACHINE APPLIES LANE LINE MARKINGS SHALL BE CLOSED UNTIL THE LINE HAS DRIED TO A TOTALLY TRACK FREE CONDITION.

IMMOBILE OPERATIONS

WHEN LOADING MATERIAL, CLEANING OR PERFORMING OTHER OPERATIONS IN THE FIELD, EVERY EFFORT SHALL BE MADE TO HAVE ALL EQUIPMENT COMPLETELY OFF OF THE TRAVELED WAY. WHEN IT BECOMES NECESSARY TO ENTER UPON PRIVATE PROPERTY, PERMISSION SHALL BE OBTAINED IN ADVANCE. WHEN THE CONTRACTOR CANNOT REMOVE HIS EQUIPMENT FROM THE TRAVELED WAY ALL TRAFFIC CONTROL DEVICES ON THE VEHICLES SHALL BE IN OPERATION AND FLAGGERS AND VEHICLES SHALL BE STATIONED TO PROTECT THE WORK SITE AND THE TRAVELING PUBLIC.

TWO-WAY TRAFFIC SHALL BE MAINTAINED. FLAGGERS SHALL BE EQUIPPED IN ACCORDANCE WITH ITEM 614.03.

AUXILIARY MARKINGS

PAVEMENT PREPARATION AND PLACING OF AUXILIARY MARKINGS (SEE ③) ARE CONSIDERED TO BE STATIONARY OPERATIONS AND TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH PLAN DETAILS, STANDARD CONSTRUCTION DRAWINGS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).

LAYOUT AND PREMARKING

THE VEHICLE USED IN LAYOUT AND PREMARKING SHALL BE EQUIPPED AND OPERATED WITH THE FOLLOWING EQUIPMENT:

1. A 360° ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE IN ALL DIRECTIONS A MINIMUM OF ONE-QUARTER MILE.
2. LIGHTED HEADLIGHTS AND TAILLIGHTS, AND
3. A KEEP RIGHT SIGN (OC-31R-48) MOUNTED A MINIMUM OF 5' ABOVE THE ROAD SURFACE, MEASURED TO THE BOTTOM OF THE SIGN, AND VISIBLE TO OPPOSING TRAFFIC.

NIGHTTIME OPERATION

NIGHTTIME OPERATION IS DEFINED TO INCLUDE THE TIME FROM ONE-HALF HOUR AFTER SUNSET TO ONE-HALF HOUR BEFORE SUNRISE, AND AT ANY OTHER TIME WHEN THERE ARE UNFAVORABLE ATMOSPHERIC CONDITIONS OR WHEN THERE IS NOT SUFFICIENT NATURAL LIGHT TO RENDER DISCERNIBLE PERSONS, VEHICLES, AND SUBSTANTIAL OBJECTS ON THE HIGHWAY AT A DISTANCE OF 1000'.

DURING NIGHTTIME CONDITIONS THE FOLLOWING TRAFFIC CONTROL SHALL BE PROVIDED:

1. CONES SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY (SEE 7F-5, OMUTCD), AND
2. THE GUIDE AND SIDE-MOUNTED CARRIAGES SHALL BE ILLUMINATED.

THE PRESENCE OF HIGHWAY LIGHTING DOES NOT WAIVE THESE REQUIREMENTS.

MINIMUM PAVEMENT MARKING TRAFFIC CONTROL EQUIPMENT REQUIREMENTS

THIS TABLE INDICATES THE TRAFFIC CONTROL EQUIPMENT WHICH SHALL BE FURNISHED FOR EACH TYPE OF LONG LINE PAVEMENT MARKING OPERATION. IN ADDITION, THE TYPE OF TRAFFIC CONTROL EQUIPMENT WHICH SHALL BE FURNISHED WHEN DIRECTED BY THE ENGINEER IS INDICATED.

EQUIPMENT	PAVEMENT MARKING LINE TYPE ①					
	CENTER LINE		EDGE LINE		LANE LINE ②	
	LONGER THAN 2 MIN. DRY	2 MIN. OR LESS DRY	LONGER THAN 2 MIN. DRY	2 MIN. OR LESS DRY	LONGER THAN 2 MIN. DRY	2 MIN. OR LESS DRY
LEAD VEHICLE	A	A	C	C	C	C
POWER BROOM EQUIPMENT	B	B	A	A	B	B
LINE MARKING MACHINE	A	A	A	A	A	A
TRAIL VEHICLE	D	A	D	A	LANE CLOSURE REQUIRED (28" CONES REQUIRED)	A
TRAIL VEHICLE (ADDITIONAL)	C	B	C	B		A
TRAIL VEHICLE (SIGN & CONE RETRIEVAL)	A	C	A	C		C
TRAIL VEHICLE (SHADOW FOR RETRIEVAL)	A	C	A	C		C

① FOR EQUIPMENT REQUIREMENTS FOR AUXILIARY MARKING OPERATIONS SEE THE PLANS AND PART 7, OMUTCD.

② INCLUDES BOTH DASHED AND SOLID LANE LINES.

③ CHANNELIZING LINE SEGMENTS OF 200 FEET OR LESS SHALL BE CONSIDERED AUXILIARY MARKINGS, EXCEPT WHEN APPLIED AS COMPONENTS OF GORE MARKINGS SPRAYED IN MOVING OPERATIONS SEPARATE FROM THE APPLICATION OF TRANSVERSE LINES.

A	REQUIRED EQUIPMENT
B	EQUIPMENT REQUIRED WHEN DIRECTED BY THE ENGINEER
C	NOT REQUIRED
D	REQUIRED EQUIPMENT FOR SIGN & CONE PLACEMENT

BUREAU OF DESIGN SERVICES DIVISION OF HIGHWAYS OHIO DEPARTMENT OF TRANSPORTATION	
MAINTENANCE OF TRAFFIC	DATE 11/14/86 04/29/88
TRAFFIC CONTROL FOR LONG LINE PAVEMENT MARKING OPERATIONS	
STANDARD CONSTRUCTION DRAWING	MT-99.20
APPROVED _____ ENGR. OF DESIGN SERVICES	