

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO	T-4030(16)	

3
42

LAKE COUNTY
LAK-2-(0.00-13.01)

GENERAL NOTES

DESCRIPTION

THIS WORK SHALL CONSIST OF APPLYING REFLECTIVE PAVEMENT MARKING MATERIALS IN ACCORDANCE WITH THE LINES AND DIMENSIONS SHOWN ON THE PLANS OR AS DESCRIBED HEREIN. THE CONTRACTOR SHALL FURNISH ALL SERVICES, *Materials*, LABOR AND EQUIPMENT NECESSARY FOR THE REQUIRED PAVEMENT PREPARATION AND APPLICATION. ALL PAVEMENT MARKINGS SHALL CONFORM IN GENERAL WITH THE REQUIREMENTS OF PART 3 AND MAINTENANCE OF TRAFFIC SHALL CONFORM IN GENERAL TO THE REQUIREMENTS OF PART 7, OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

MAINTAINING TRAFFIC

PLACEMENT OF PAVEMENT MARKINGS ON THE FREEWAY LANES AND FREEWAY RAMP GORE AREAS SHALL BE ACCOMPLISHED ON WEEKDAYS, (MONDAY THROUGH FRIDAY) DURING THE HOURS OF 9:00 A.M. AND 3:00 P.M. WITH A MAXIMUM OF ONE DIRECTIONAL FREEWAY LANE CLOSED AT ANY TIME. THE VEHICLE USED IN APPLYING PAVEMENT MARKINGS SHALL BE EQUIPPED WITH A SIDE MOUNTED APPLICATOR. STRADDLING OF LANES SHALL NOT BE PERMITTED. WORK CAN BE ACCOMPLISHED ON SATURDAYS AND SUNDAYS AT THE DISCRETION OF THE ENGINEER. NO WORK HOWEVER SHALL BE ACCOMPLISHED ON LEGAL HOLIDAYS.

THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES PLUS A POLICE CRUISER WITH FLASHER FOLLOWING THE PAVEMENT MARKING EQUIPMENT WHEN MARKINGS ARE PLACED IN ORDER TO PROVIDE ADVANCE WARNING TO MOTORISTS 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, FURNISHED BY THE CONTRACTOR, SHALL TRAVEL 500 TO 1000 FEET BEHIND THE REMOTE TRAILING VEHICLE.

ALL VEHICLES USED BY THE CONTRACTOR IN THE PERFORMANCE OF WORK ITEMS SHALL BE EQUIPPED WITH YELLOW ROTATING FLASHERS AND FLASHING ARROW SIGNS THAT ARE CAPABLE OF DIRECTING TRAFFIC LEFT, RIGHT OR BOTH DIRECTIONS. THE MINIMUM SIZE FOR THESE ARROW SIGNS SHALL BE 3' X 5'. THE ARROW SHALL CONSIST OF A MINIMUM OF EIGHT SEALED BEAM AMBER LIGHTS AT LEAST 5 INCHES IN DIAMETER AND 35 WATTS. THESE LIGHTS SHALL BE MOUNTED IN THE SHAPE OF AN ARROW ON A PANEL AND SHALL BE ELEVATED TO A MINIMUM HEIGHT OF SEVEN FEET ABOVE THE PAVEMENT. THE LIGHTS SHALL FLASH EITHER SEQUENTIALLY OR SIMULTANEOUSLY AND SHALL BE PLACED IN A LOCATION, AS DIRECTED BY THE ENGINEER, WHICH WILL ADEQUATELY WARN THE MOTORING PUBLIC OF THE UPCOMING MERGER. THE COST FOR ALL TRAFFIC CONTROL SHALL BE INCLUDED IN THE PRICE BID FOR TRAFFIC MAINTENANCE.

EACH TRAILING VEHICLE SHALL INCLUDE BLACK AND ORANGE WARNING SIGNS MOUNTED ON THE BACK FACING TRAFFIC WITH STANDARD TYPE MESSAGES ADVISING MOTORISTS OF THE WORK AHEAD AND ADVISORY WARNING SPEED.

WHEN MARKINGS ON RAMPS ARE PLACED, ONE FLAGMAN MAY BE SUBSTITUTED FOR ONE OF THE TRAILING VEHICLES WITH THE SAME DISTANCE INTERVALS TRAILING THE PAVEMENT MARKING EQUIPMENT.

WHEN STATIONARY PAVEMENT MARKING OPERATIONS ARE PERFORMED UNDER TRAFFIC SUCH AS PLACING STOP BARS, WORDS AND PAVEMENT ARROWS, THE WORK SITE MUST BE PROTECTED USING TRAFFIC CONES, BARRICADES AND ADVANCE WARNING SIGNS. A POLICE CRUISER AND OFFICER MUST BE USED TO DIRECT TRAFFIC AROUND THE WORK SITE.

COST OF ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS FOR MAINTAINING TRAFFIC SHALL BE INCLUDED IN THE COST OF THE VARIOUS THERMOPLASTIC PAVEMENT MARKING ITEMS.

IN THE EVENT OF AN EMERGENCY, THE HIGHWAY DEPARTMENT RESERVES THE RIGHT TO STOP WORK IN ORDER TO RELIEVE TRAFFIC CONGESTION.

THERMOPLASTIC PAVEMENT MARKING MATERIAL

THIS PAVEMENT MARKING MATERIAL SHALL BE OF TWO TYPES, EACH TO BE USED FOR A SPECIFIC TYPE OF LINE. THE TWO TYPES SHALL BE DIFFERENTIATED BY USE OF THE TERMS TYPE A AND TYPE B. TYPE A THERMOPLASTIC PAVEMENT MARKING MATERIAL SHALL BE USED FOR ALL LANE LINES, STOP BARS, WORDS, ARROWS, AND CHANNELIZING LINES, EXCLUDING 24" WIDE WHITE LINES WITHIN GORE AREAS.

TYPE B THERMOPLASTIC PAVEMENT MARKING MATERIAL SHALL BE USED FOR ALL PAVEMENT EDGE LINES AND FOR THE 24" WIDE WHITE LINES WITHIN GORE AREAS.

A THERMOPLASTIC PAVEMENT MARKING MATERIAL SHALL BE REFLECTORIZED "PERMALINE" THERMOPLASTIC COMPOUND AS MANUFACTURED BY PERMALINE CORPORATION OF AMERICA, OR REFLECTORIZED "PRISMO" THERMOPLASTIC COMPOUND AS MANUFACTURED BY PRISMO UNIVERSAL CORPORATION, OR APPROVED EQUAL. IN ADDITION, THE THERMOPLASTIC MATERIAL FURNISHED ON THIS CONTRACT SHALL MEET THE FOLLOWING SPECIFICATIONS:

GLASS BEADS MEETING OHIO SPECIFICATION NO. 712.05 SHALL BE UNIFORMLY MIXED THROUGHOUT THE MATERIAL AT THE RATE OF NOT LESS THAN 250 LBS. OF BEADS PER 1,000 LBS. OF THERMOPLASTIC MATERIAL. IMMEDIATE REFLECTORIZATION SHALL BE ACCOMPLISHED BY THE APPLICATION OF BEADS CONFORMING TO THE FOLLOWING GRADING:

SIEVE NO.	TOTAL PERCENT PASSING
20	90-100
35	0-10

BEADS SHALL BE APPLIED TO THE SURFACE OF THE COMPOUND AT THE TIME THE THERMOPLASTIC MATERIAL IS APPLIED TO THE PAVEMENT. A GLASS BEAD DISPENSER OF APPROVED DESIGN SHALL BE USED FOR A UNIFORM SURFACE APPLICATION OF BEADS AT A RATE OF NOT LESS THAN TWO (2) POUNDS OF BEADS PER 33 SQUARE FEET OF LINE.

THE MATERIAL SHALL WITHSTAND TEMPERATURE VARIATION FROM MINUS 20 DEGREES F. TO PLUS 120 DEGREES F., WITHOUT DEFORMATION OR DISCOLORATION, AND SHALL MAINTAIN ITS ORIGINAL DIMENSIONS AND PLACEMENT, FREE FROM TACK, CHIPPING, OR SPALLING. WHITE THERMOPLASTIC MATERIAL SHALL BE FREE OF DIRT OR TINT.

SAMPLES

THE CONTRACTOR SHALL FURNISH A TEN (10) POUND MATERIAL SAMPLE OF EACH OF THE TWO TYPES OF WHITE THERMOPLASTIC COMPOUNDS HE PROPOSES TO FURNISH AND ALSO WHITE TYPICAL SAMPLES OF LINE FOUR (4) INCHES WIDE BY TEN (10) INCHES LONG.

MATERIAL INSTALLED ON THE ROAD ON THIS CONTRACT IN ACCORDANCE WITH THE CONTRACTOR'S STANDARD PRACTICE SHALL BE COMPARED WITH THE ORIGINAL SAMPLES AT LEAST 90 DAYS AFTER CONSTRUCTION AND SHALL SHOW NO DARKENING OR DISCOLORATION. THE MATERIAL SHALL HARDEN SUFFICIENTLY WITHIN FIFTEEN (15) MINUTES AFTER APPLICATION TO ALLOW TRAFFIC OVER THE LINE WITHOUT PICKUP OR IMPRESSION.

CONSTRUCTION DETAILS

TYPE A THERMOPLASTIC MATERIAL SHALL BE APPLIED TO A MINIMUM UNIFORM THICKNESS OF 125 MILS TO THE WIDTH SPECIFIED. TYPE B THERMOPLASTIC MATERIAL SHALL BE APPLIED TO A MINIMUM UNIFORM THICKNESS OF 90 MILS TO THE WIDTH SPECIFIED. ALL LINES SHALL BE STRAIGHT AND TRUE AND AT THE LOCATION DESIGNATED BY THE ENGINEER. LINE WIDTHS SHALL BE ACHIEVED BY THE USE OF 4", 6", 8" AND 12" COMBINATION APPLICATORS. THE MINIMUM NUMBER OF PASSES SHALL BE USED, THAT IS, A 24" LINE SHOULD CONSIST OF TWO 12" PASSES. WHEN THE WIDTH OF A LINE REQUIRES MORE THAN ONE PASS, THE INDIVIDUAL LINES SHALL NOT OVERLAP. A 1/4" GAP WILL BE ACCEPTABLE BETWEEN LINES IN THIS CASE. **ALL MARKING SHALL BE EXTRUDED.**

ALL PAVEMENT MARKING SHALL BE APPLIED IN ACCORDANCE WITH THE STANDARD PAVEMENT MARKING SYMBOL, WORD OR LINE SPECIFICATIONS DIMENSION DRAWING GOVERNING THE TYPES OF SYMBOLS OR LINES SHOWN IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

ON ALL PAVEMENT SURFACES AND AT LOCATIONS WHERE A NEW THERMOPLASTIC LINE IS TO BE APPLIED OVER AN OLD PAINTED LINE, THE CONTRACTOR SHALL PREPARE THE SURFACE TO INSURE ADHESION. NO LINES SHALL BE APPLIED DIRECTLY LONGITUDINALLY OVER ANY CONSTRUCTION CRACK OR JOINT. ALL LANE LINES SHALL BE APPLIED TO THE LEFT OF THE PAVEMENT SEAM.

PLACEMENT OF ALL MARKINGS SHALL BE IN ACCORDANCE WITH THE PLANS, SUBJECT TO ANY ADJUSTMENTS AS DIRECTED BY THE ENGINEER.

THE AIR TEMPERATURE AT THE TIME OF APPLICATION SHALL BE NOT LESS THAN SIXTY (60) DEGREES F. THE WORK UNDER THIS PROJECT SHALL BE DONE ONLY ON CLEAN, DRY PAVEMENTS AND AT ROAD SURFACE TEMPERATURES ABOVE FIFTY (50) DEGREES F.

PAVEMENT MARKINGS WHICH ARE IMPROPERLY APPLIED OR IMPROPERLY LOCATED SHALL BE CORRECTED. IMPROPERLY APPLIED LINES MAY BE PROPERLY REAPPLIED OR SHALL BE SUBJECT TO ACCEPTANCE WITH A DEDUCTION. IMPROPERLY LOCATED LINES SHALL BE REMOVED, AND LINES SHALL BE APPLIED IN THE CORRECT LOCATIONS AT THE CONTRACTOR'S EXPENSE, INCLUDING THE FURNISHING OF APPROVED MATERIALS.

PAVEMENT PREPARATION

EDGE LINE

ALL PAVEMENT EDGES SHALL BE POWER BROOM CLEANED. THIS CLEANING SHALL BE ESSENTIALLY THE COMPLETE REMOVAL OF ALL FOREIGN MATTER WITHIN TWELVE (12) INCHES ADJACENT TO THE EDGE OF THE PAVEMENT, WHICH MAY IN ANY MANNER CONTAMINATE THE STRIPING MATERIAL OR INTERFERE WITH MATERIAL APPLICATION OR EQUIPMENT.

LANE LINE

PAVEMENT WHICH IS NOT FREE OF ALL FOREIGN MATTER SHALL BE BROOM CLEANED AS DIRECTED BY THE ENGINEER, PRIOR TO STRIPING LANE LINES.

CHANNELIZING LINES & STOP BARS

AREAS REQUIRING STOP BARS AND CHANNELIZING LINES, TO INCLUDE GORE AREAS SHALL BE BROOM CLEANED AS DIRECTED BY THE ENGINEER PRIOR TO APPLICATION OF THERMOPLASTIC MATERIAL.

THE CONTRACTOR MAY TAKE ANY OTHER STEPS DEEMED NECESSARY TO PREPARE THE PAVEMENT SURFACES FOR APPLICATION OF THERMOPLASTIC MATERIAL SO THAT THE CONDITIONS OF THE GUARANTEE WILL BE MET. THE COST OF ANY SUCH ADDITIONAL WORK SHALL BE BORNE BY THE CONTRACTOR.

THE EXACT LOCATION WHERE THERMOPLASTIC PAVEMENT MARKING MATERIAL IS TO BE APPLIED TO THE PAVEMENT WILL BE DETERMINED BY THE CONTRACTOR BY ANY METHOD SUITABLE TO BOTH THE CONTRACTOR AND THE ENGINEER.

THE CONTRACTOR, HOWEVER, SHALL BE RESPONSIBLE FOR THE CORRECT LOCATION OF ALL APPLIED THERMOPLASTIC PAVEMENT MARKING MATERIALS. THE PROJECT DRAWINGS AND PART 3 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS SHALL BE USED AS A GUIDE TO THE CONTRACTOR. WHERE CONFLICT OCCURS BETWEEN THESE PLANS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, THE MANUAL SHALL BE FOLLOWED. SITUATIONS NOT CLEARLY COVERED BY THE PLANS OR THE MANUAL SHALL BE DETERMINED BY THE ENGINEER.

SPECIAL EQUIPMENT

THE CONTRACTOR'S PAVEMENT MARKING VEHICLE SHALL BE EQUIPPED WITH AN ODOMETER GRADUATED TO 1/100 OF A MILE. THE ENGINEER SHALL DETERMINE THE DEGREE OF ACCURACY OF THE CONTRACTOR'S ODOMETER AND ESTABLISH AN ADJUSTMENT FACTOR AS MAY BE REQUIRED TO ACCURATELY DETERMINE THE PAY ITEM QUANTITIES. THE ENGINEER SHALL PERIODICALLY CHECK THE ODOMETER'S OPERATION TO ASSURE MAINTENANCE OF ACCURATE MEASUREMENTS.