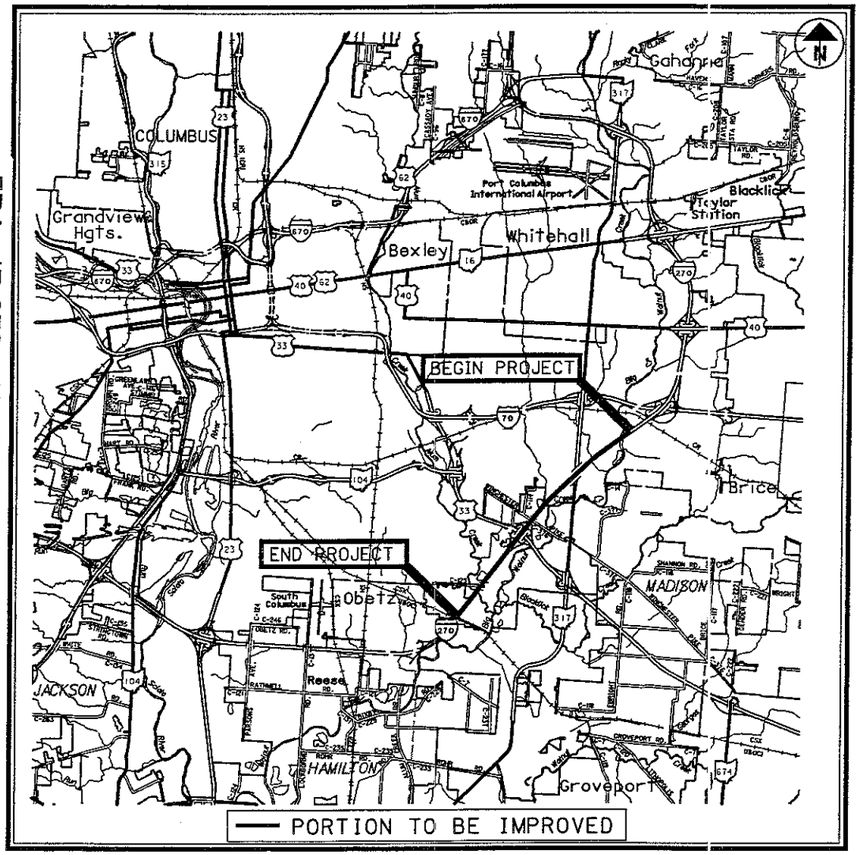
OHIO DEPARTMENT OF TRANSPORTATION



LAT: 39°53' 00" LONG: 82°54'00"

PART	COUNTY	ROUTE	SECTIONS	PROJECT TERMINII		NET LENGTH MI	CITY/TOWNSHIP
				BEGIN	END		
1	FRA	270	(43.45 - 47.34)	43.45	47.81	4.36	COLUMBUS/MADISON

INDEX OF SHEETS:

PROJECT DESCRIPTION

REHABILITATION OF 4.36 MILES OF IR-270 (INCLUDING IR-270 AND US-33 INTERCHANGE) BY MEANS OF PLANING AND RESURFACING. REPAIRING BRIDGE DECKS AND INSTALLATION OF RUMBLE STRIPS SHALL ALSO BE INCLUDED AS PART OF THIS PROJECT.

1997 SPECIFICATIONS

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THESE IMPROVEMENTS 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.

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS PROJECT.

DESIGN DESIGNATION

CURRENT ADT (2001)	*66,900*
DESIGN YEAR ADT (2013)	*76,540*
DESIGN HOURLY VOLUME (2013)	*7,654*
DIRECTIONAL DISTRIBUTION	*60%*
TRUCKS (24 HOUR B&C)	*18%*
DESIGN SPEED	*70 MPH*
LEGAL SPEED	*65 MPH*

DESIGN FUNCTIONAL CLASSIFICATION - URBAN INTERSTATE

DESIGN EXCEPTIONS:

DESIGN FEATURE	APPROVAL DATES
SHOULDER WIDTH	10/12/01
SUPERELEVATION	10/12/01

ENGINEERS SEAL

STATE OF OHIO
DAVID P. POLING
56872
REGISTERED PROFESSIONAL ENGINEER

SIGNED David P. Poling
DATE 1-8-02

STANDARD DRAWINGS				SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	7/28/00	MT-35.10	04/20/01	SS-806	09/09/97
BP-9.1	7/28/00	MT-95.30M	04/25/94	SS-858	11/07/00
TC-65.10	10/19/01	MT-98.12M	06/24/93	SS-906	05/05/98
TC-65.11	10/19/01	MT-98.13M	06/24/93	SS-908	11/07/00
TC-65.12	10/19/01	MT-98.14M	06/24/93	SS-842	01/06/99
TC-71.10M	09/01/93	MT-98.15M	06/24/93	SS-899	10/21/98
TC-72.20	01/19/01	MT-98.16M	06/24/93	905	4-1-98
		MT-98.17M	04/25/94	907	10-21-98
		MT-98.18M	04/25/94		
		MT-98.19M	03/01/96		
		MT-99.20M	01/30/95		
		MT-102.20M	01/30/95		
		MT-105.10M	04/25/94		
		MT-105.11M	04/25/94		

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:
O.D.O.T.
DISTRICT SIX
IN-HOUSE DESIGN

PLANS CERTIFIED BY:
NAME: [illegible] DATE: 1/7/02
DISTRICT 6
OHIO DEPT. OF TRANSPORTATION

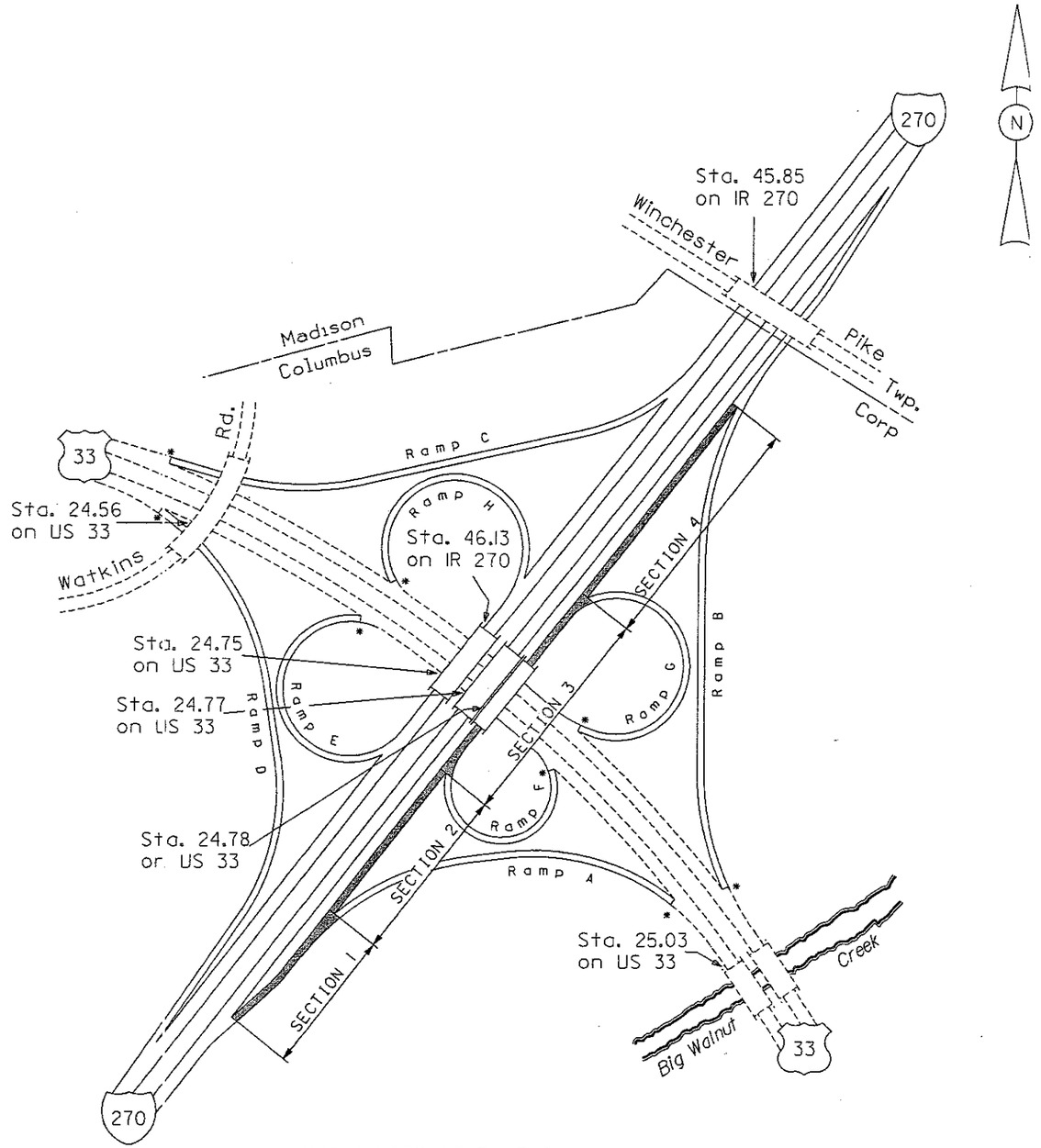
Approved Jack R Marchbanks
Date 1/8/02 District Deputy Director of Transportation

Approved Gordon Proctor
Date 2-8-02 Director, Department of Transportation

FEDERAL PROJECT NO. NON-FEDERAL
PID NO. 22531
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
FRA-270-43.45
1/17

FRA - IR 270 - 43.45 (City of Columbus)
020187 PID - 22531
Dist 6 4/10/2002

I:\Projects\fra\270\4345.002\dgn\gt101.dgn 03-JAN-2002 7:58AM gunterra



* SUSPEND WORK AT PAVEMENT BREAK

FOR MOT ON CD ROAD, SEE SHEET 6

INTERCHANGE

IR 270 & US 33

i:\Projects\fra\270\4345.002\dgn\gal0interchg.dgn 19-DEC-2001 9:25AM gunterre

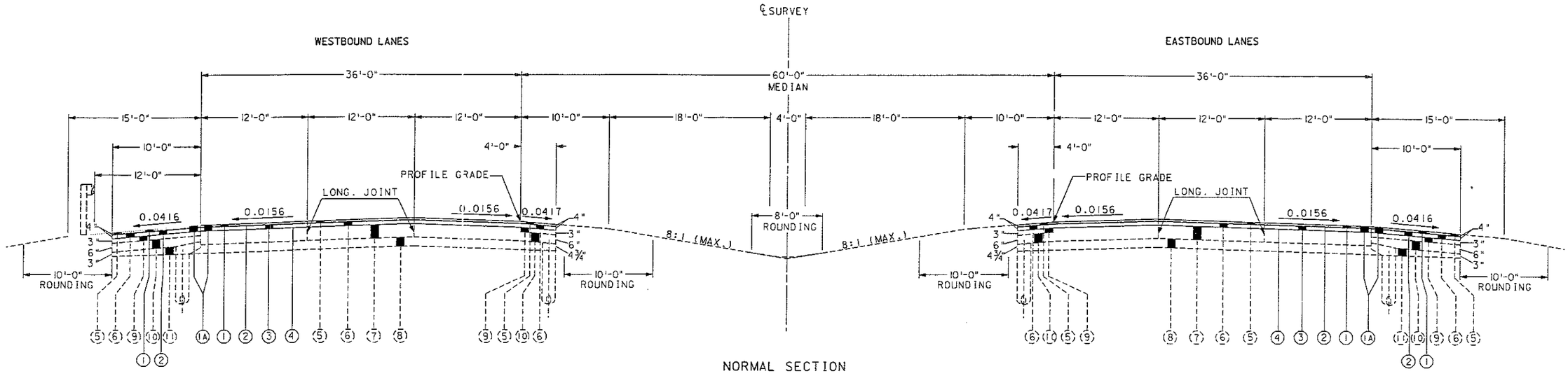
CALCULATED | CHECKED

IR 270 & US 33 INTERCHANGE DETAILS

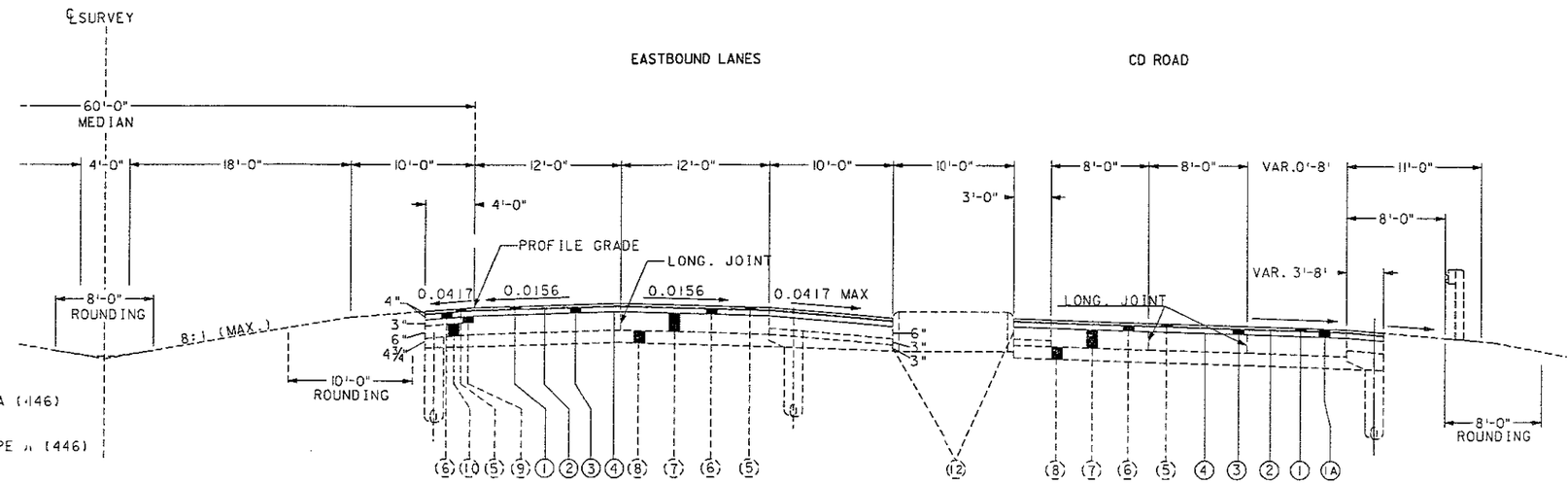
FRA-270-43.45

2
17

TYPICAL SECTIONS



NORMAL SECTION
(EXCULDES CD ROAD SECTION)



CD ROAD SECTION

LEGEND

PROPOSED PAVEMENT:

- (1A) ITEM 254 4" PAVEMENT PLANING
- (1) ITEM 858 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 mm, TYPE A (446)
- (2) ITEM 407 TACK COAT
- (3) ITEM 858 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 mm, TYPE A (446)
- (4) ITEM 407 TACK COAT

EXISTING PAVEMENT :

- (5) ITEM 846 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
- (6) ITEM 846 2¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
- (7) ITEM 451 9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT
- (8) ITEM 310 6" SUBBASE
- (9) ITEM 301 BITUMINOUS AGGREGATE BASE
- (10) ITEM 304 AGGREGATE BASE
- (11) ITEM 310 SUBBASE, THICKNESS VARIES
- (12) ITEM 609 CURB TYPE 6

HORIZONTAL TO VERTICAL SCALE = 1:2

CALCULATED | CHECKED

TYPICAL SECTIONS

FRA-270-43.45

CONSTRUCTION INITIATION:

THE CONTRACTOR SHALL ADVISE THE DISTRICT OFFICE OF COMMUNICATIONS AT 614-644-8309 OR BY FAX AT 614-466-1768 AND THE DISTRICT TRAFFIC MANAGEMENT ENGINEER AT 740-363-1251, EXT. 323, FOURTEEN (14) DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL IMMEDIATELY INFORM THE DISTRICT OFFICE OF COMMUNICATIONS AND THE DISTRICT TRAFFIC MANAGEMENT ENGINEER OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION PROJECT. THE PROJECT ENGINEER WILL PROVIDE CLARIFICATION FOR ANY QUESTIONS ABOUT THIS NOTIFICATION REQUIREMENT.

GENERAL:

THE CONTRACTOR SHALL SUBMIT IN WRITING A SCHEDULE OF OPERATIONS TO THE ENGINEER (SEE 101.18) AND RECEIVE APPROVAL IN WRITING BEFORE WORK IS STARTED ON THIS PROJECT. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

UNDERGROUND UTILITIES:

IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ANY UNDERGROUND UTILITIES MARKED.

OHIO UTILITY PROTECTION SERVICE 1-800-362-2764
NON-MEMBERS MUST BE CALLED DIRECTLY.

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.

CONTRACTORS EQUIPMENT - OPERATION AND STORAGE:

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC WHERE PRACTICAL. EQUIPMENT SHALL HAVE AT LEAST ONE AMBER FLASHING LIGHT. WHEN PARKED ALONG THE HIGHWAY, THE EQUIPMENT SHALL BE LOCATED EITHER A MINIMUM OF THIRTY FEET FROM THE EDGE OF PAVEMENT OR SIX FEET BEHIND GUARDRAIL WITH A MINIMUM OF 125 FEET OF GUARDRAIL PRECEDING THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT AN APPROVED CONTRACTOR'S STORAGE AREA.

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 109.011 OF THE 1997 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.

CONTINGENCY QUANTITIES:

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK 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 FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

COORDINATION WITH O.D.O.T.'S CENTRAL OHIO TRAFFIC MANAGEMENT PROGRAM (COTMP):

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES ON A WEEKLY BASIS. WHEN DETOURS ARE PLANNED, THIS NOTIFICATION SHALL BE AT THE PRE-CONSTRUCTION MEETING OR 30 DAYS IN ADVANCE ONCE CONSTRUCTION HAS BEGUN. LANE AND RAMP CLOSURES FOR 2 OR MORE WEEKS SHALL BE REPORTED 2 WEEKS IN ADVANCE OF CLOSURE. LANE AND RAMP CLOSURES OF LESS THAN 2 WEEKS DURATION AND MORE THAN 2 DAYS SHALL BE REPORTED AT LEAST 3 WORKING DAYS IN ADVANCE. FOR SHORT TERM LANE OR RAMP CLOSURES (2 DAYS OR LESS) NOTIFICATION SHALL BE MADE AT LEAST 1 WORKING DAY IN ADVANCE. INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO ALL CONSTRUCTION ACTIVITIES THAT IMPACT TRAFFIC AT PRESENT AND IN THE NEXT 30 DAYS. THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL WHO WILL BE RESPONSIBLE FOR PREPARING THIS REPORT AT THE PRE-CONSTRUCTION MEETING. ANY UNFORESEEN IMPACTS TO TRAFFIC SHALL BE REPORTED TO THE PROJECT ENGINEER AS SOON AS POSSIBLE. THE PROJECT ENGINEER SHALL PROVIDE THIS INFORMATION TO COTMP. ALL CONSTRUCTION ACTIVITIES THAT INTERFERE WITH TRAFFIC SHALL BE REPORTED TO COTMP. THIS INFORMATION SHALL BE PROVIDED TO COTMP AT (614) 644-8309 OR BY FAX AT (614) 466-1768.

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR:

THIS ITEM SHALL BE USED WHERE DIRECTED. THE DEPTH OF REPAIRS SHALL BE APPROXIMATELY 4". THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR ESTIMATING PURPOSES ONLY:

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR = 25 CY

ITEM 254 - PAVEMENT PLANING, BITUMINOUS:

THE CONTRACTOR SHALL BE TOTALLY RESPONSIBLE FOR ANY AND ALL DAMAGE THAT MAY RESULT FROM THE PLANING OPERATION, INCLUDING CASTINGS. THE DEPTH OF PLANING CLOSE TO THE CASTINGS SHALL BE AS DIRECTED, TO ACHIEVE A SMOOTH RIDING FINISHED PAVEMENT.

PLANED PAVEMENT AS PART OF THIS ITEM SHALL NOT BE EXPOSED TO TRAFFIC. ALL PLANED PAVEMENT SHALL BE RESURFACED WITH ITEM 858 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19 mm, TYPE A BEFORE BEING OPENED TO TRAFFIC. AT NO TIME DURING PLANING AND PAVING OPERATIONS SHALL THERE BE MORE PAVEMENT PLANED THAN CAN BE RESURFACED THE SAME NIGHT.

ITEM 407 - 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 0.075 GALLONS PER SQUARE YARD.

ITEM 858 -ASPHALT CONCRETE SURFACE COURSE, 12.5mm, TYPE A:

AN ADDITIONAL QUANTITY OF THIS ITEM HAS BEEN PROVIDED TO BE USED AS DIRECTED BY THE ENGINEER.

10% X 11,548 CY = 1,155 CY
ITEM 858 - ASPHALT CONCRETE SURFACE COURSE, 12.5mm, TYPE A = 1,155 CY

ITEM 618 - RUMBLE STRIPS, TYPE 2 (ASPHALT):

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED:

SLM 43.45 - SLM 47.81 = 23,021 LF
TOTAL LENGTH OF PAVING 23,021 LF X 4 SIDES = 92,084 LF
ITEM 618 - RUMBLE STRIPS, TYPE 2 (ASPHALT) = 92,084 LF

ITEM 621 - RAISED PAVEMENT MARKER, INSTALL ONLY:

MATERIALS SUPPLIED BY THE DEPARTMENT:
ALL MATERIALS ARE TO BE CONTRACTOR FURNISHED, EXCEPT THAT THE DEPARTMENT SHALL SUPPLY RPM MATERIALS IN THE QUANTITIES SHOWN HEREIN TO THE CONTRACTOR. PAY ITEMS FOR THE DEPARTMENT SUPPLIED MATERIALS SHALL BE INDICATED AS "INSTALLATION ONLY". THE QUANTITY AND TYPE OF DEPARTMENT SUPPLIED MATERIALS ARE SHOWN ON THE RAISED PAVEMENT MARKER SUB-SUMMARY SHEET OF THIS PLAN.

THE CONTRACTOR SHALL PICK UP THE DEPARTMENT SUPPLIED RPM MATERIALS AT THE OPI WAREHOUSE, 315 PHILLIPI ROAD, COLUMBUS, OHIO 43228. FOR SOME PROJECTS HAVING QUANTITIES OF LESS THAN 20 RPMS, THE CONTRACTOR MAY PICK UP RPM MATERIALS AT THE DISTRICT OFFICES. QUANTITIES OVER 20 RPMS WILL BE PICKED UP AT THE RECYCLER'S WAREHOUSE OR AS ARRANGED WITH THE DISTRICT. THE CONTRACTOR SHALL PICK UP DEPARTMENT SUPPLIED RPM MATERIALS AT THE SPECIFIED LOCATION(S) FOR TRANSPORT TO THE WORK SITE OR TO THE CONTRACTOR'S STORAGE FACILITY. THE RECYCLED RAISED PAVEMENT MARKER (RPM) AUTHORIZATION FORM IS TO BE SIGNED BY THE DISTRICT CONSTRUCTION ENGINEER PRIOR TO PICK UP OF THE RPMS. THE CONTRACTOR SHALL NOTIFY THE DISTRICT AND/OR THE PARTIES LISTED ON THE AUTHORIZATION FORM IN WRITING AT LEAST FIVE (5) CALENDAR DAYS PRIOR TO PICK UP OF THE DEPARTMENT SUPPLIED MATERIALS. THE CONTRACTOR SHALL STORE THE RPMS WITHOUT DAMAGE OR CONTAMINATION WITH FOREIGN MATTER. A DEDUCTION IN THE AMOUNT OF THE ACTUAL COST TO THE DEPARTMENT SHALL BE MADE FOR MATERIALS DAMAGED BY THE CONTRACTOR OR FOR CASTINGS RECEIVED BY THE CONTRACTOR WHICH WERE NOT INSTALLED AND WERE NOT RETURNED TO THE DEPARTMENT.

RETURN OF NON-PERFORMED RAISED PAVEMENT MARKER MATERIALS SUPPLIED BY THE DEPARTMENT:
RAISED PAVEMENT MARKER MATERIALS SUPPLIED BY THE DEPARTMENT, THAT ARE NON-PERFORMED SHALL BE CAREFULLY REPACKED OR PACKED IN THE BOXES IN THE SAME STYLE AND QUANTITY AS ORIGINALLY RECEIVED FROM THE DEPARTMENT. CASTING STYLES SHALL NOT BE MIXED WITHIN ANY ONE CONTAINER. THE CONTRACTOR SHALL CLEARLY MARK ON THE OUTSIDE OF EACH CONTAINER, THE COLOR OF THE PRISMATIC RETRO-REFLECTOR, THE STYLE OF CASTING. BOXES SHALL BE PLACED ON SKIDS OR PALLETS IN THE SAME STYLE (LOW PROFILE OR CONVENTIONAL, REFLECTORISED OR NON REFLECTORISED) AND NO MORE THAN 420 RPMS (OR 21 BOXES) ON ONE SKID.

CALCULATED | CHECKED

GENERAL NOTES

FRA-270-43.45

4
17

ONLY USE THE BOXES SUPPLIED BY THE RAISED PAVEMENT MARKER RECYCLER. BOXES MUST BE MARKED WITH THE RECYCLER'S PART OR CATALOG NUMBER AND THE PROJECT NUMBER. THE RECYCLER'S CATALOG OR PART NUMBERS MAY BE OBTAINED FROM THE OFFICE OF TRAFFIC ENGINEERING IN COLUMBUS, OHIO OR FROM THE RECYCLER. BOXES NOT MARKED WITH THE PROPER RECYCLER'S CATALOG OR PART NUMBERS, AND THE DEPARTMENT'S PROJECT NUMBER WILL NOT BE ACCEPTED AT THE RECYCLER'S WAREHOUSE.

NON-PERFORMED MATERIALS WILL BE RETURNED TO THE LOCATION AS SPECIFIED BY THE DISTRICT CONSTRUCTION ENGINEER WITHIN 30 DAYS OF THE COMPLETION OF THE PROJECT.

THE ABOVE WORK INCLUDING ALL LABOR, EQUIPMENT AND MATERIAL NEEDED TO PERFORM THE WORK, SHALL BE CONSIDERED INCIDENTAL TO THE RESPECTIVE PAY ITEM.

IF THE DEPARTMENT HAS TO REPACKAGE THE RPMS CORRECTLY, THE CONTRACTOR WILL BE ASSESSED THE ACTUAL COST FOR REPACKAGING THE MATERIALS BY THE DEPARTMENT'S FORCES.

LOADING OF MATERIALS SUPPLIED BY THE DEPARTMENT AT THE RECYCLER'S WAREHOUSE:
TRUCKS SHALL HAVE A LOADING HEIGHT OF 48 INCHES AND BE ABLE TO BACK UP FLUSH TO THE LOADING DOCK.

TRUCKS SHALL NOT HAVE ANY OBSTRUCTIONS OR PROTRUSIONS THAT PREVENT THE LOADING BY A STANDARD FORKLIFT OR LIFT TRUCK.

SEMI TRUCKS OR 20 FOOT COMMERCIAL TRUCKS ARE THE MOST APPROPRIATE TRUCKS FOR LOADS IN EXCESS OF 4 PALLETS (ONE PALLET = 21 BOXES = 2100 LBS).

STAKE BODY TRUCKS ARE APPROPRIATE TO LOAD LESS THAN 4 PALLETS, PROVIDED THE TRUCK IS RATED FOR THE LOAD AND THE LOAD CAN BE SAFELY SECURED FOR TRANSPORT BY CHAINING OR STRAPPING DOWN AS NEEDED.

PICKUP TRUCKS ARE APPROPRIATE FOR LOADS OF APPROXIMATELY ONE PALLET, PROVIDED THE PICKUP TRUCK IS RATED FOR THE LOAD AND THE LOAD CAN BE SAFELY SECURED FOR TRANSPORT.

DUMP TRUCKS, TILT BED TRUCKS, AND NON-COMMERCIAL MOVING VANS WILL NOT BE LOADED BY THE RECYCLER'S WAREHOUSE.

THE WAREHOUSE SUPERVISOR WILL REFUSE TO LOAD ANY TRUCK THAT IS UNSAFE TO LOAD OR UNSUITABLE FOR THE LOAD BEING PLACED ON THE TRUCK.

ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN:
THIS ITEM SHALL CONSIST OF STATIONING USING 3 FT LATH STAKES. THE STAKES SHALL BE SPACED AT 100 FT INTERVALS AND SHALL EXTEND THROUGHOUT THE LENGTH OF THE PROJECT AND THROUGHOUT THE LENGTH OF ALL RAMPS. PLACEMENT OF THE STAKES SHALL BE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY DAMAGED OR MISSING STAKES.

CONSTRUCTION LAYOUT STAKES, AS PER PLAN WILL BE PAID FOR AT THE CONTRACT LUMP SUM BID, WHICH PRICE SHALL BE FULL COMPENSATION FOR ALL SERVICES, MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS, INCLUDING THE REMOVAL, NECESSARY TO COMPLETE THIS ITEM.

ITEM 644 - THERMOPLASTIC PAVEMENT MARKING:
THE LOCATIONS, SIZES AND SHAPES OF PROPOSED PAVEMENT MARKINGS WILL BE THE SAME AS EXISTING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTE THE LOCATION, SIZE AND SHAPE OF EXISTING PAVEMENT MARKINGS BEFORE THEY ARE OBLITERATED BY THE PAVEMENT PLANING AND RESURFACING.

ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECKS, TYPE B:
THIS ITEM OF WORK SHALL BE PERFORMED ON THE DECKS OF THE STRUCTURES LISTED ON SHEET 17. THE LOCATION AND SIZE OF AREAS TO BE PATCHED SHALL BE DETERMINED BY THE ENGINEER. THE QUANTITIES SHOWN ON SHEET 17 ARE FOR ESTIMATING PURPOSES ONLY AND MAY NOT REFLECT THE ACTUAL AMOUNTS OF PATCHING REQUIRED.

ITEM 690 - SPECIAL-IMPACT ATTENUATOR (SAND BARREL ARRAY):
THIS ITEM SHALL INCLUDE ALL WORK, EQUIPMENT, AND MATERIALS NECESSARY FOR THE REMOVAL AND REPLACEMENT OF THE EXISTING IMPACT ATTENUATOR (SAND BARREL ARRAY) DESIGNED BY AN ODOT APPROVED MANUFACTURER IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE LOCATION SHALL BE AT THE EASTBOUND MEDIAN BETWEEN THE CD ROAD AND THE MAINLINE AT IR-270 AND US-33 INTERCHANGE (MILE MARKER 46.33).
ITEM 690 - SPECIAL - IMPACT ATTENUATOR
(SAND BARREL ARRAY) = 1 EACH

ITEM 806 - FIELD OFFICE, TYPE B, AS PER PLAN:
UNDER THIS ITEM, THE CONTRACTOR SHALL PROVIDE A FIELD OFFICE MEETING ALL REQUIREMENTS OF ITEM 806 - FIELD OFFICE, TYPE B, WITH THE FOLLOWING MODIFICATION. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO SEPARATE PHONE LINES FOR THE FIELD OFFICE ON THIS PROJECT. THE FOLLOWING QUANTITY HAS BEEN PROVIDED:
ITEM 806 - FIELD OFFICE, TYPE B, AS PER PLAN = 3 MONTHS

CALCULATED
CHECKED

GENERAL NOTES

FRA-270-43.45

5
17

ITEM 614 - MAINTAINING TRAFFIC:

GENERAL:

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING AND COMPLETED PAVEMENT. WORK ZONES SHALL BE LIMITED IN LENGTH TO THE AMOUNT OF WORK THAT CAN BE PERFORMED THAT EVENING. PLANED PAVEMENT SHALL NOT BE EXPOSED TO TRAFFIC. ALL PLANED PAVEMENT SHALL BE RESURFACED WITH ITEM 858 - ASPHALT CONCRETE INTERMEDIATE COURSE, 19 mm, TYPE A BEFORE BEING OPENED TO TRAFFIC. AT NO TIME DURING PLANING AND PAVING OPERATIONS SHALL THERE BE MORE PAVEMENT PLANED THAN CAN BE RESURFACED THE SAME NIGHT. THE MAXIMUM DROP OFF SHALL BE NO MORE THAN 1 ½".

LANE RESTRICTIONS SHALL ONLY BE PERMITTED BETWEEN THE HOURS OF:

# LANES CLOSED	DAYS	HOURS
1	MON.- THURS.	9:00 PM - 6:00 AM
2	MON.- THURS.	10:00 PM - 6:00 AM
1	FRI.- MON.	10:00 PM FRI. - 6:00 AM MON.
2	SAT.	12:00 AM - 8:00 AM
2	SUN.	10:00 PM SAT. - 10:00 AM SUN.

THE CONTRACTOR SHALL ONLY CLOSE TWO LANES OF TRAFFIC WHEN RESURFACING THE MIDDLE LANE (THE SECOND LANE FROM THE MEDIAN).

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL TRAFFIC CONTROL DEVISES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC AS PER PLAN, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

CD ROAD RESTRICTIONS:

THE WORK MUST BE DONE DURING NIGHTTIME OR WEEKEND HOURS. WHEN DOING WORK ON CD ROAD, KEEP ALL LANES ON THE MAINLINE OPEN.

THE WORK FOR CD ROAD WILL BE DIVIDED AS DESCRIBED BELOW. THE INTENT IS TO WORK ON SECTIONS (SEE SHEET 2) OF THE CD ROAD TO COMPLETE THE WORK AND THEN MOVE TO THE NEXT SECTION INSTEAD OF CLOSING THE ENTIRE LENGTH OF THE CD ROAD AT A TIME. THE FOLLOWING SECTIONS ARE APPROXIMATE AND CAN BE ADJUSTED AT THE APPROVAL OF THE ENGINEER. IN GENERAL, WHENEVER TRAFFIC IS BEING SHIFTED, THE EXISTING MARKINGS WILL BE REMOVED AND REPLACED WITH TEMPORARY MARKINGS. THE SHIFT WILL BE ACCOMPLISHED IN ACCORDANCE WITH MT-102.20M. A 10.5 FT MINIMUM LANE WIDTH SHALL BE MAINTAINED. LANE CLOSURES SHALL BE ACCOMPLISHED IN ACCORDANCE WITH MT-95.30M.

SECTION 1 (SEE SHEET 2):
KEEP RAMP A, RAMP F, RAMP G, AND RAMP B OPEN TO TRAFFIC. CONSTRUCT THE CD ROAD USING PART WIDTH CONSTRUCTION. KEEP A MINIMUM OF ONE LANE OPEN TO TRAFFIC AT ALL TIMES ON THE CD ROAD.

SECTIONS 2:
CLOSE THIS SECTION OF THE CD ROAD AND CLOSE RAMP G. KEEP RAMP A, RAMP F, AND RAMP B OPEN TO TRAFFIC. CONSTRUCT THE ENTIRE WIDTH OF THIS SECTION OF THE CD ROAD.

SECTION 3:
KEEP RAMP A, RAMP F, RAMP G, AND RAMP B OPEN TO TRAFFIC. CONSTRUCT THE CD ROAD USING PART WIDTH CONSTRUCTION. KEEP A MINIMUM OF ONE LANE OPEN TO TRAFFIC AT ALL TIMES ON THE CD ROAD.

SECTION 4:
CLOSE THIS SECTION OF THE CD ROAD AND CLOSE RAMP F. KEEP RAMP A, RAMP G, AND RAMP B OPEN TO TRAFFIC. CONSTRUCT THE ENTIRE WIDTH OF THIS SECTION OF THE CD ROAD.

RAMP RESURFACING RESTRICTIONS:

UNLESS OTHERWISE NOTED IN THESE PLANS, ALL RAMPS SHALL BE OPEN TO TRAFFIC EXCEPT THAT NIGHT TIME CLOSURE OF RAMPS ARE PERMITTED BETWEEN THE HOURS OF 9:00PM AND 6:00AM FOR PAVEMENT WORK ONLY. MULTIPLE RAMPS MAY BE CLOSED EXCEPT WHERE IT RESTRICTS MOTORISTS FROM MAKING A MOVEMENT REQUIRED BY CLOSING ANOTHER RAMP. NO RAMP SHALL BE CLOSED FOR MORE THAN 3 CONSECUTIVE NIGHTS.

48 HOURS PRIOR TO ANY RAMP CLOSURE, A PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE PLACED 1 MILE IN ADVANCE OF THE RAMP, OR AS DIRECTED BY THE ENGINEER, TO WARN MOTORISTS OF THE IMPENDING CLOSURE. DURING THE CLOSURE, THE SAME PCMS SHALL BE USED TO ALERT TRAFFIC TO THE CLOSURE AND PROVIDE AN ALTERNATE ROUTE.

ALL PLANED PAVEMENT SHALL BE RESURFACED ALONG WITH PLACEMENT OF ALL TEMPORARY PAVEMENT MARKINGS PRIOR TO RAMP BEING OPENED TO TRAFFIC.

HOLIDAYS:

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

EASTER
MEMORIAL DAY
INDEPENDENCE DAY
LABOR DAY
THANKSGIVING DAY

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THE PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12 NOON FRIDAY THRU 12 NOON MONDAY
MONDAY	12 NOON FRIDAY THRU 12 NOON TUESDAY
TUESDAY	12 NOON MONDAY THRU 12 NOON WEDNESDAY
WEDNESDAY	12 NOON TUESDAY THRU 12 NOON THURSDAY
THURSDAY	12 NOON WEDNESDAY THRU 12 NOON MONDAY
FRIDAY	12 NOON THURSDAY THRU 12 NOON MONDAY
SATURDAY	12 NOON FRIDAY THRU 12 NOON MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH LIQUIDATED DAMAGES NOTE.

LENGTH AND DURATION OF LANE CLOSURES:

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NIGHTTIME WORK SITE LIGHTING:

FLOODLIGHTING FOR THE WORK SITE FOR NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE HIGHWAY. TO INSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IN IS PLACE AND OPERATIVE AND PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDS SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, TO THE DISTRICT SIX MAINTENANCE OF TRAFFIC COORDINATOR, THE CONTRACTOR'S MAINTENANCE OF TRAFFIC PLAN WITH CONSTRUCTION PHASING DESCRIPTIONS, PRIOR TO BEGINNING WORK.

DRUM SPACING:

SPACING OF DRUMS SHALL NOT BE GREATER THAN 40 FEET FOR TYPICAL SECTIONS, AND SHALL NOT BE GREATER THAN 20 FEET IN TAPER SECTIONS.

LIQUIDATED DAMAGES:

FAILURE TO COMPLY WITH ANY OF THE REQUIREMENTS MENTIONED SHALL RESULT IN THE CONTRACTOR BEING ASSESSED LIQUIDATED DAMAGES. THE AMOUNT OF THE LIQUIDATED DAMAGES SHALL BE AS FOLLOWS:

2 LANES CLOSED:

TIME	DAY	$ AMOUNT
6 AM - 7 AM	MON.- FRI.	$240/MIN.
7 AM - 8 AM	MON.- FRI.	$650/MIN.
8 AM - 9 AM	SAT.	$75/MIN.
10 AM - 11 AM	SUN.	$60/MIN.

1 LANE CLOSED:

TIME	DAY	$ AMOUNT
6 AM - 7 AM	MON.- FRI.	$1200/HR
7 AM - 8 AM	MON.- FRI.	$245/MIN.

IN ORDER TO MEET THESE REQUIREMENTS IT IS ANTICIPATED THAT THE CONTRACTOR MAY NEED TO UTILIZE ADDITIONAL CREWS AND MATERIAL SOURCES AND OTHER PERMISSIBLE MEANS AVAILABLE.

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC NOTES

FRA-270-43.45

6
17

ITEM 614 - WORK ZONE MARKING SIGN:
THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED:
OW-167-36 "NO EDGE LINES": = 16 EACH
ITEM 614 - WORK ZONE MARKING SIGN = 16 EACH
TOTAL CARRIED TO THE GENERAL SUMMARY SHEET.

ITEM 614 - TEMPORARY LANE LINE, CLASS II
THE FOLLOWING QUANTITY HAS BEEN PROVIDED:
17.0 MI (FROM SHEET 12 OF ITEM 644)
X 2 APPLICATIONS = 34.0 MI
ITEM 614 - TEMPORARY LANE LINE, CLASS II = 34.0 MI

ITEM 614 - TEMPORARY EDGE LINE, CLASS I
THE FOLLOWING QUANTITY HAS BEEN PROVIDED TO BE USED FOR TRAFFIC SHIFTS ON CD-ROAD ONLY:
0.37 MI X 2 (WHITE & YELLOW) X 2 APPLICATIONS = 1.48 MI
ITEM 614 - TEMPORARY EDGE LINE, CLASS I = 1.48 MI

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR:
IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP AND TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICIAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED THE OHIO REVISED CODE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:
THE OHIO HIGHWAY PATROL: 614-466-2660

LAW ENFORCEMENT OFFICERS WITH PATROL CAR REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE HOURLY BASIS UNDER ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED:
8 HOURS/DAY X 90 DAYS = 720 HOURS
ITEM SPECIAL - L.E.O. WITH PATROL CAR = 720 HOURS

IF THE CONTRACTOR WISHES TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, THE CONTRACTOR MAY DO SO AT THE CONTRACTOR'S OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN:
THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE WHEN NO LONGER NEEDED, CHANGEABLE MESSAGE SIGNS, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. ONLY CLASS I OR II SIGNS WILL BE PERMITTED.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TEMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLE SHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY.

PLACEMENT OF THE PCMS'S SHALL BE AS FOLLOWS, OR AS DIRECTED BY THE ENGINEER:
1. EB IR-270 1 MILE WEST OF THE PROJECT LIMITS
2. WB IR-270 1 MILE EAST OF THE PROJECT LIMITS
3. NB US 33 1/2 MILE SOUTH OF THE INTERCHANGE
4. SB US 33 1/2 MILE NORTH OF THE INTERCHANGE
5. AS DIRECTED BY THE ENGINEER AND FOR RAMP CLOSURES

SIGN ACTIVATION SHALL BE 7 DAYS PRIOR TO CONSTRUCTION INITIATION OR AS DIRECTED BY THE ENGINEER. OPERATION AND MAINTENANCE OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF, FACING AWAY FROM ALL TRAFFIC, AND SHALL DISPLAY ONE OR MORE HIGH INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9 INCHES BY 15 INCHES MINIMUM, FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLE SHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NEEDED.
THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHOULD BE SUPPORTED, BUT NORMALLY, NOT MORE THAT TWO MESSAGE PHASES SHOULD BE EMPLOYED, ALTHOUGH THREE PHASES MAY BE USED IN UNUSUAL CONDITIONS. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED, OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614.03. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF A FAILURE. ANY FAILURE SHALL NOT RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC AND THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON THE CONTRACT.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATIONS AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN, AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF ITS RESPONSIBILITIES AS OUTLINED IN 104.04.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT BID PRICE PER MONTH FOR EACH ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE, AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED:
5 SIGNS X 3 MONTHS = 15 SIGN MONTHS
ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN,
AS PER PLAN = 15 SIGN MONTHS

COOPERATION BETWEEN CONTRACTORS:

THE CONTRACTOR SHALL BE ADVISED THAT PROJECT FRA-270-48.47 PID 16670 IS ON GOING AND ADJACENT TO THE PROJECT LIMITS OF THIS PROJECT. THE CONTRACTOR SHALL SCHEDULE HIS WORK SO AS TO CAUSE A MINIMUM OF DELAY OR CONFLICT WITH FRA-270-48.47. IN ACCORDANCE WITH 105.07, THE CONTRACTOR SHALL ARRANGE WITH OTHER CONTRACTORS A MUTUALLY ACCEPTABLE WORK SCHEDULE SUBJECT TO THE APPROVAL OF THE ENGINEER.THE CONTRACTOR SHALL RECEIVE DAILY APPROVAL FROM THE ENGINEER PRIOR TO COMMENCING ANY OPERATIONS. ANY CONFLICT BETWEEN CONTRACTORS INVOLVING WORK SCHEDULES, WORK AREAS, OR COOPERATION SHALL BE RESOLVED BY THE ENGINEER. COMPENSATION FOR THE ABOVE COOPERATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS INCLUDED WITHIN THIS PROJECT.

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC NOTES

FRA-270-43.45

SHEET NUMBER										ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4-5	6-7	9	10	11	12	13	17								
						1346				202	54100	1346	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE	
		1								203	60501	1	MILE	LINEAR GRADING, AS PER PLAN	9
1										690	10000	1	EACH	SPECIAL - IMPACT ATTENUATOR (SAND BARREL ARRAY)	5
25										251	01002	25	CY	PARTIAL DEPTH PAVEMENT REPAIR	4
		179,239	76,106	21,868						254	01000	277,213	SY	PAVEMENT PLANING, BITUMINOUS	4
		8,962	3,805	1,094			140			407	14000	14,002	GAL	TACK COAT FOR INTERMEDIATE COURSE	
		13,443	5,164	119			208			407	10000	18,934	GAL	TACK COAT	
		26,886								413	14000	26,886	LF	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS	
1,155		7,468	3,169	911			116			858	10000	12,819	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 mm, TYPE A (446)	
		12,447	4,782	109			116			858	10100	17,454	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 mm, TYPE A (446)	
	16									614	12460	16	EACH	WORK ZONE MARKING SIGN	
	15									614	18601	15	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	7
	34.00									614	20400	34.00	MILE	TEMPORARY LANE LINE, CLASS II	
	1.48									614	22000	1.48	MILE	TEMPORARY EDGE LINE, CLASS I	
		50		102						617	10100	152	CY	COMPACTED AGGREGATE, TYPE A	
92084										617	25000	5	MGAL	WATER	
						1112				618	40100	92084	LF	RUMBLE STRIPS, TYPE 2 (ASPHALT)	
					23.04					621	00200	1112	EACH	RAISED PAVEMENT MARKER, INSTALLATION ONLY	
					17.00					644	00100	23.04	MILE	EDGE LINE	
					4145					644	00200	17.00	MILE	LANE LINE	
					800					644	00400	4145	LF	CHANNELIZING LINE	
										644	00700	800	LF	TRANSVERSE LINE	
							2016			SPECIAL	51912300	2016	SY	PATCHING CONCRETE BRIDGE DECK - TYPE B	
							408			SPECIAL	51631200	408	LF	SAWING AND SEALING BITUMINOUS CONCRETE JOINTS	16
	720									614	11000	LUMP		MAINTAINING TRAFFIC	
										614	11100	720	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
										623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	5
3										624	10000	LUMP		MOBILIZATION	
										806	16011	3	MNTH	FIELD OFFICE, TYPE B, AS PER PLAN	5

GENERAL SUMMARY

FRA-270-43.45

8
17

CALCULATED

CHECKED

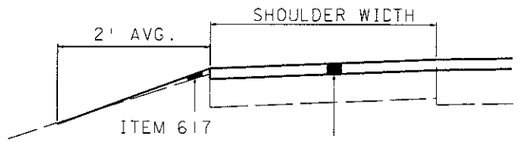
quinterre

16-JAN-2002 2:28PM

I:\Projects\fra\270\4345.002\dgn\ggl01.dgn

TYPICAL I

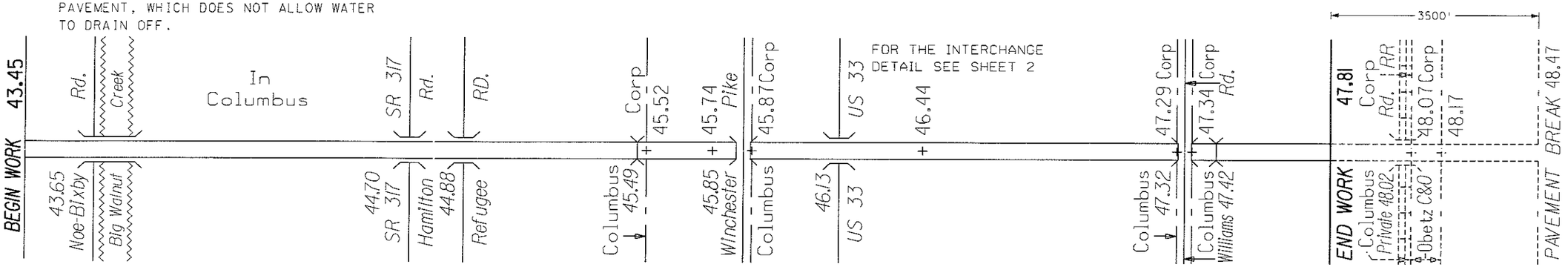
SHOULDER DETAIL



ITEM 254 - PAVEMENT PLANING,
ITEM 858 - INTERMEDIATE COURSE, 19 mm, TYPE A, AND
ITEM 858 - SURFACE COURSE, 12.5 mm, TPYE A

NOTE: ① NO CONCRETE BASE SHALL BE MILLED UNLESS DIRECTED BY THE ENGINEER.

② THE ESTIMATED QUANTITY HAS BEEN PROVIDED FOR THE AREAS ADJACENT TO THE SHOULDER WHERE THE SHOULDER IS HIGHER THAN THE PAVEMENT, WHICH DOES NOT ALLOW WATER TO DRAIN OFF.



LOCATION

PART	COUNTY	ROUTE	LOG BEG	LOG END	LENGTH MI	LENGTH LF	TYPICAL
1	FRA	IR-270	43.45	45.74	2.29	12091	1
1	FRA	IR-270	45.74	46.44	0.70	3696	1
1	FRA	IR-270	46.44	47.81	1.37	7234	1
1	FRA	IR-270	VAR.	VAR.			
TOTALS CARRIED TO GENERAL SUMMARY:							

PAVEMENT DATA

AVERAGE PAVEMENT WIDTHS A FT	B FT	C FT	D FT	E FT	F FT	AREA SY	254 PAVEMENT PLANING, BITUM ① AVG DEP IN	254 SY	407 TACK COAT 0.075 GAL/SQ Y GAL	858 INTERMED. COURSE, 19 mm, TYPE A(446) AVG THK IN	858 CY	407 TACK COAT 0.05 GAL/SQ Y GAL	858 SURFACE COURSE, 12.5 mm, TYPE A(446) AVG THK IN	858 CY	617 COMPACT AGG TYPE A AVG THK IN	617 CY	413 SAWING & SEALING ASPHALT CONCRETE JOINTS LF	203 LINEAR GRADING ② MILE
	36			36		96730	4	96730	7255	2.5	6717	4837	1.5	4030			14509	
	24			36		24640	4	24640	1848	2.5	1711	1232	1.5	1027			3696	
	36			36		57869	4	57869	4340	2.5	4019	2894	1.5	2411			8680	
															2	50		1
								179239	13443		12447	8962		7468		50	26886	1

REMARKS

BEGIN MILL AND FILL AT PAVEMENT BREAK
MILL AND FILL
END MILL & FILL AT 3500' FROM PAVEMENT BREAK AT SLM 48.47
VAR. LOCATIONS, AS DIRECTED BY THE ENGINEER

CALCULATED / CHECKED

PAVEMENT SUBSUMMARY AND DETAILS

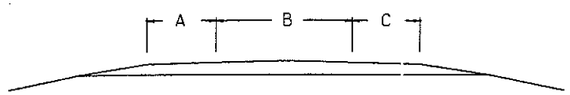
FRA-270-43.45

9
17

N:\Projects\fra\270\4345.002\dgn\gal01.dgn 03-JAN-2002 9:02AM gunterre

TYPICAL 1

TYPICAL 2



② 11510 LIN. FT.
LESS 459' FOR STRUCTURE #4365
LESS 245' FOR STRUCTURE #4470
LESS 217' FOR STRUCTURE #4488
LESS 92' FOR STRUCTURE #4549
=10495 LIN. FT.

③ 686 LIN. FT.
LESS 284' FOR STRUCTURE #4613
= 402 LIN. FT.

④ 6178 LIN. FT.
LESS 213' FOR STRUCTURE #4742
= 5965 LIN. FT.

LOCATION / PAVED SHOULDER DATA

PART	ROUTE	DESCRIPTION	LOG BEG	LOG END	LENGTH MI	LENGTH LF	SIDE	AVERAGE PAVED SHOULDER WIDTHS A FT	C FT	D FT	F FT	AREA SY	254 PAVEMENT PLANNING, BITUM AVG DEP IN	254 SY	407 TACK COAT 0.075 GAL/SQ Y GAL	858 INTERMEDIATE COURSE, 19 mm TYPE A (446) AVG THK IN	858 CY	407 TACK COAT 0.05 GAL/SQ Y GAL	858 SURFACE COURSE, 12.5 mm TYPE A (446) AVG THK IN	858 CY
1	270	MAINLINE	43.45	45.63	2.18	10495 ②	1	10	4	4	10	32651	4	32651	2449	2.5	2267	1633	1.5	1360
		MAINLINE	45.63	45.74	0.11	581	1	8	4	4	10	1678	4	1678	126	2.5	117	84	1.5	70
		MAINLINE	45.74	45.78	0.04	211	1	10	4	4	10	657	4	657	49	2.5	46	33	1.5	27
		C-D ROAD	45.74	45.87	0.13	686	2	8	3			839	4	839	63	2.5	58	42	1.5	35
		MAINLINE	45.78	45.87	0.09	475	1	10	4	4	8	1373	4	1373	103	2.5	95	69	1.5	57
		MAINLINE	45.87	46.10	0.23	1214	1	10	4	4	10	3778	4	3778	283	2.5	262	189	1.5	157
		C-D ROAD	45.87	46.13	0.26	1373	2	3	3			915	4	915	69	2.5	64	46	1.5	38
		MAINLINE	46.10	46.23	0.13	402 ③	1	10	4	4	3	938	4	938	70	2.5	65	47	1.5	39
		C-D ROAD	46.19	46.31	0.12	634	2	3	3			422	4	422	32	2.5	29	21	1.5	18
		MAINLINE	46.23	46.44	0.21	1109	1	10	4	4	10	3450	4	3450	259	2.5	240	173	1.5	144
		C-D ROAD	46.31	46.43	0.12	634	2	8	3			774	4	774	58	2.5	54	39	1.5	32
		MAINLINE	46.44	46.64	0.20	1056	1	8	4	4	8	2816	4	2816	211	2.5	196	141	1.5	117
		MAINLINE	46.64	47.81	1.17	5965 ④	1	10	4	4	10	18558	4	18558	1392	2.5	1289	928	1.5	773
		RAMP B				1830	2	3	3			1220	1.5	1220				61	1.5	51
		RAMP C				1700	2	3	3			1133	1.5	1133				57	1.5	47
		RAMP G				956	2	3	3			637	1.5	637				32	1.5	27
		RAMP H				962	2	3	3			641	1.5	641				32	1.5	27
		RAMP F				800	2	3	3			533	1.5	533				27	1.5	22
		RAMP E				915	2	3	3			610	1.5	610				31	1.5	25
		RAMP A				1235	2	3	3			823	1.5	823				41	1.5	34
		RAMP D				1623	2	3	3			1082	1.5	1082				54	1.5	45
		RAMP D				400	2	5	8			578	1.5	578				29	1.5	24
TOTALS CARRIED TO GENERAL SUMMARY:														76106	5164		4782	3806		3169

CALCULATED / CHECKED

PAVED SHOULDER TREATMENTS

FRA-270-43.45

10
17

i:\Projects\fra\270\4345.002\dgn\gal01SH.dgn 13-DEC-2001 10:25AM qunterre

EXTRA AREAS AND DEDUCTIONS

CALCULATED | CHECKED

LOCATION						PAVEMENT DATA												
								254		407	858		407	858		617		
PART	ROUTE	DESCRIPTION	LOG BEG	LENGTH	SIDE	AVERAGE PAVEMENT WIDTHS	AREA	PAVEMENT PLANNING, BITUM		TACK COAT 0.075 GAL/SQ Y	INTERMEDIATE COURSE, 19 mm, TYPE A		TACK COAT 0.05 GAL/SQ Y	SURFACE COURSE, 12.5 mm, TYPE A		COMPACT AGG. TYPE A	
								AVG DEP			AVG THK			AVG THK		AVG THK	
				LF		FT	SY	IN	SY	GAL	IN	CY	GAL	IN	CY	IN	CY
1	270	EXTRA WIDTH TAPER	43.45	1000		15 - 0	833	4	833	63	2.5	58	42	1.5	35		
1	270	MEDIAN CROSSOVER (GRAVEL)	43.47				300									2	17
1	270	MEDIAN CROSSOVER (GRAVEL)	43.59				300									2	17
1	270	DEDUCT FOR STRUCTURES L & R	43.65	459		36 / 36	-3672	4	-3672	-275	2.5	-255	-184	1.5	-153		
1	170	MEDIAN CROSSOVER (GRAVEL)	43.78				300									2	17
1	270	DEDUCT FOR STRUCTURES L& R *	44.70	245		36 / 36	-1960	4	-1960	-147	2.5	-136	-98	1.5	-82		
1	270	MEDIAN CROSSOVER (GRAVEL)	44.35				300									2	17
1	270	MEDIAN CROSSOVER (GRAVEL)	44.59				300									2	17
1	270	DEDUCT FOR STRUCTURES L & R	44.88	217		36 / 36	-1736	4	-1736	-130	2.5	-121	-87	1.5	-72		
1	270	MEDIAN CROSSOVER (ASPHALT)	45.40				400	1.5	400				20	1.5	17		
1	270	DEDUCT FOR STRUCTURES L & R	45.49	92		36 / 36	-736	4	-736	-55	2.5	-51	-37	1.5	-31		
1	270	CD ROAD ACCEL. TAPER	45.62	624		0 -12.5	433	4	433	33	2.5	30	22	1.5	18		
1	270	CD ROAD & RAMP B TAPER	45.74	702		14 - 33	1833	4	1833	138	2.5	127	92	1.5	76		
1	270	RAMP C DECEL. LANE	45.77	295		12	393	4	393	30	2.5	27	20	1.5	16		
1	270	RAMP C DECEL. LANE	45.83	178		12 - 16	277	4	277	21	2.5	19	14	1.5	12		
1	270	CD ROAD	45.87	1014		16	1803	4	1803	135	2.5	125	90	1.5	75		
1	270	RAMP B	45.87	1823		16	3241	1.5	3241				162	1.5	135		
1	270	RAMP C DECEL. TAPER	45.87	280		16 - 40	871	4	871	65	2.5	60	44	1.5	36		
1	270	RAMP C	45.92	1738		16	3090	1.5	3090				155	1.5	129		
1	270	CD ROAD	46.06	378		24	848	4	848	64	2.5	59	42	1.5	35		
1	270	RAMP G	46.08	1020		16	1813	1.5	1813				91	1.5	76		
1	270	RAMP H	46.13	1114		16	1980	1.5	1980				99	1.5	83		
1	270	DEDUCT FOR STRUCTURES L & R	46.13	284		24 / 36	-1893	4	-1893	-142	2.5	-131	-95	1.5	-79		
1	270	CD ROAD	46.19	146		24	389	4	389	29	2.5	27	20	1.5	16		
1	270	TAPER AT RAMP E	46.19	858		15 - 0	715	4	715	54	2.5	50	36	1.5	30		
1	270	CD ROAD	46.21	1135		16	2107	4	2107	158	2.5	146	105	1.5	88		
1	270	RAMP F	46.21	815		16	1449	1.5	1449				73	1.5	60		
1	270	RAMP E	46.22	975		16	1733	1.5	1733				87	1.5	72		
1	270	RAMP A	46.36	1450		16	2578	1.5	2578				129	1.5	107		
1	270	CD ROAD	46.43	786		27 - 0	1179	4	1179	88	2.5	82	59	1.5	49		
1	270	RAMP D	46.45	2023		16	3596	1.5	3596				180	1.5	150		
1	270	RAMP D ACCEL. TAPER	46.45	1200		24 - 0	1600	4	1600	120	2.5	111	80	1.5	67		
1	270	MEDIAN CROSSOVER (GRAVEL)	46.58				300									2	17
1	270	MEDIAN CROSSOVER (ASPHALT)	46.80				400	1.5	400				20	1.5	17		
1	270	DEDUCT FOR STRUCTURES L & R	47.42	212		36 / 36	-1696	4	-1696	-127	2.5	-118	-85	1.5	-71		
		TOTALS CARRIED TO GENERAL SUMMARY:							21868	119		109	1094		911		102

* SEE SHEET 17 FOR BRIDGE WORK

FRA-270-43.45

PAVEMENT MARKING SUBSUMMARY

CALCULATED | CHECKED

LOCATION						LONG LINES 644						AUXILIARY MARKINGS 644								
PART	ROUTE	DESCRIPTION	LOG BEG	LOG END	HIGHWAY MILES	EDGE LINE				LANE LINE		TRANSVERSE LINE		CHANNELIZING LINE	STOP LINE	LT	LT/ STR	STR	RT STR	RT	WORD ON PAVE
						WHT		YEL				WHT	YEL								
					LF	MI	LF	MI	LF	MI	LF	MI	LF	LF	LF	LF	EACH	EACH	EACH	EACH	EACH	EACH
1	270	MAINLINE	43.45	47.81		4.36		8.72		8.72		16.74	800		4145							
1	270	RAMP AND TAPERS	45.87	46.44				2.10		2.10		0.26										
1	270	C-D ROAD	45.74	46.44		0.70		0.70		0.70												
TOTALS CARRIED TO GENERAL SUMMARY:								11.52		11.52		17.00	800		4145							

FRA-270-43.45

12/17

DETAIL		DETAIL	
1	MAINLINE UNDIVIDED TYPICAL SPACING	7	APPROACH C-D ROAD
2	TAPERED ACCELERATION LANE	8	STOP APPROACH
3	DECELERATION LANE	9	TWO WAY LEFT TURN LANE
4	4 LANE DIVIDED TO 2 LANE TRANSITION	10	APPROACH W/LEFT TURN LANE
5	4 LANE UNIDIVIDED TO 2 LANE TRANSITION	11	HORIZONTAL CURVE W/RADIUS LESS THAN 1250'
6	MULTILANE DIVIDED / EXPRESSWAY	12	HORIZONTAL CURVE W/RADIUS LESS THAN 820'

LOCATION						REFLECTOR TYPE														TOTAL		
						ONE-WAY									TWO-WAY					202	621	621
						WHITE							YELLOW		WHITE RED				YELLOW RED	RAISED PVMT MARKER RMVD FOR STORAGE	RAISED PVMT MARKER INSTALL ONLY	PRIS-MATIC RETRO-REFLECT
						RIGHT EDGE LINE		LEFT EDGE LINE		CHANNELIZING LINE		LANE LINE	LEFT EDGE LINE		LEFT EDGE LINE	CHANNELIZING LINE		LANE LINE	LEFT EDGE LINE			
COUNTY	ROUTE	DESCRPITION	STATION FROM	STATION TO	DETAIL	40'	80'	40'	80'	40'	80'	120'	40'	80'	40'	40'	80'	80'	80'	EACH	EACH	EACH
1	270	MAINLINE	43.45	47.81	6							741					56				797	
		C-D ROAD AND GORES (EB)	45.74	46.44	7											37			38		75	
		RAMP A AND GORES			2, 3											16			11		27	
		RAMP B AND GORES			2, 3											13			21		34	
		RAMP C AND GORES			2, 3											26			21		47	
		RAMP D AND GORES			2, 3											15			21		36	
		RAMP E AND GORES			2, 3											12			14		26	
		RAMP F AND GORES			2, 3											9			12		21	
		RAMP G AND GORES			2, 3											10			17		27	
		RAMP H AND GORES			2, 3											9			13		22	
		REMOVE EXISTING	43.45	47.81																1346		
TOTALS CARRIED TO GENERAL SUMMARY:																				1346	1112	

RAISED PAVEMENT MARKERS

FRA-270-43.45

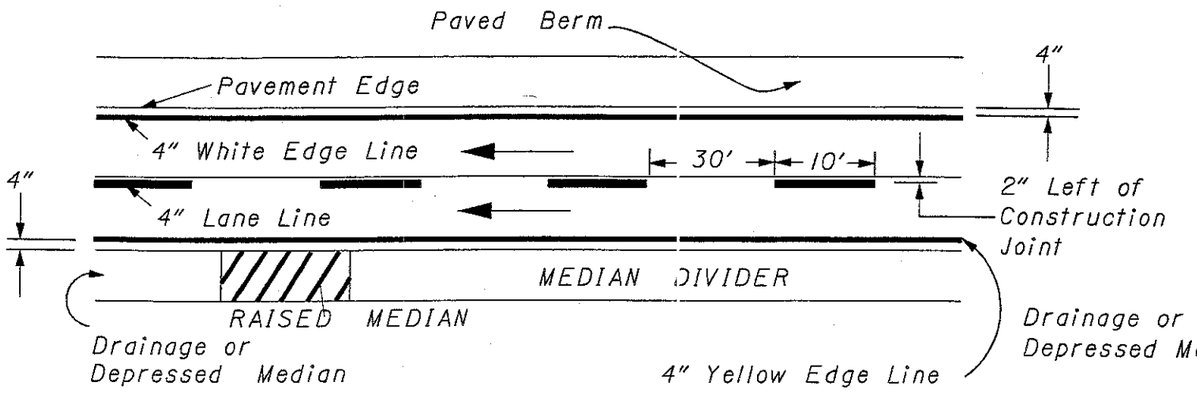
13
17

CALCULATED

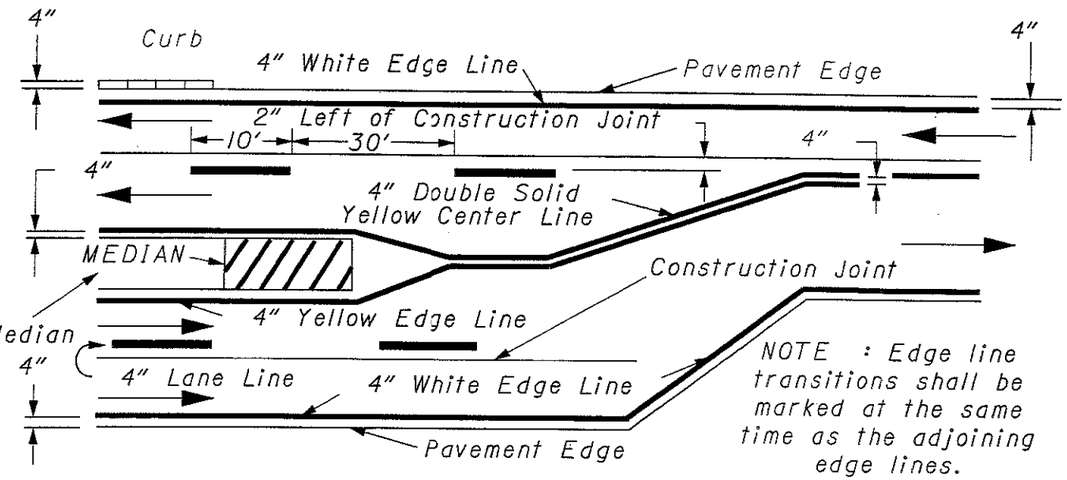
CHECKED

I:\Projects\fra\270\4345.002\dgn\tsi03A.dgn 07-JAN-2002 3:48PM gunterre

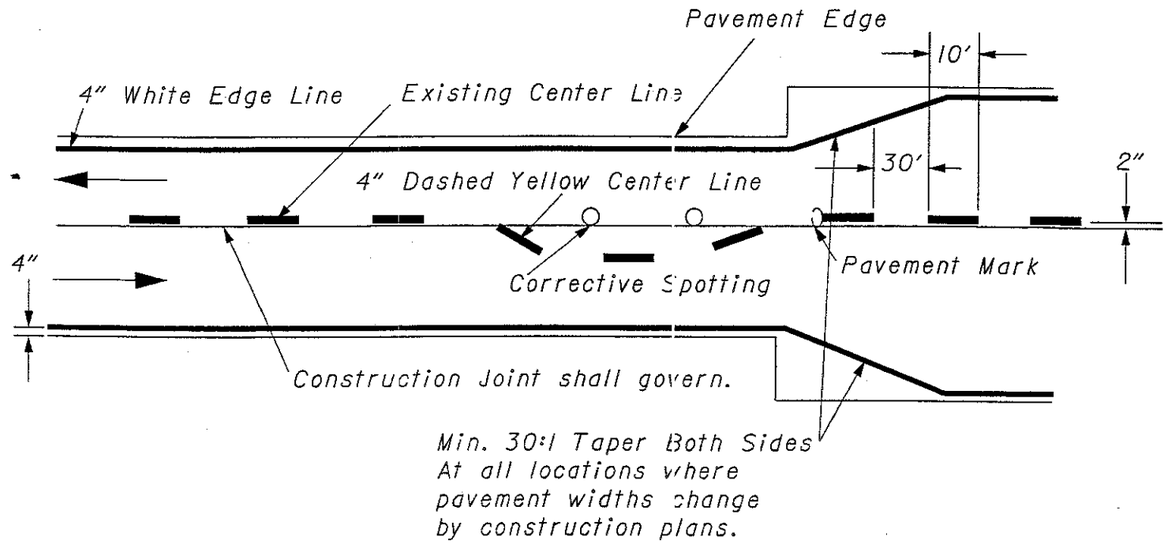
FREEWAY & EXPRESSWAY MAINLINE MARKINGS



MULTILANE DIVIDED & UNDIVIDED HIGHWAY MARKINGS



TWO LANE MARKINGS



NOTES :

1. The distance from the pavement edge to the nearside edge of the edgeline may be increased with the approval of the engineer in order to maintain uniform lane width.
2. See TC-72.20M for entrance and exit ramp markings.
3. The cycle length for dashed lines shall be 10 feet plus or minus 6". The minimum length of dash shall be sufficiently long to maintain a 3:1 ratio between length of gap and length of dash.

CALCULATED | CHECKED

PLAN NO.

PAVEMENT MARKING TYPICAL DETAILS

FRA-270-43.45

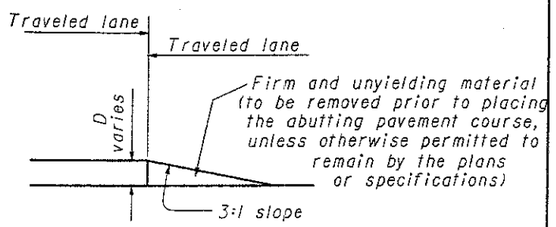
14
17

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-15I (Low Shoulder) signs or OW-17I (Uneven Lanes) and OWP-17I 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-17I and OWP-17I signs required.

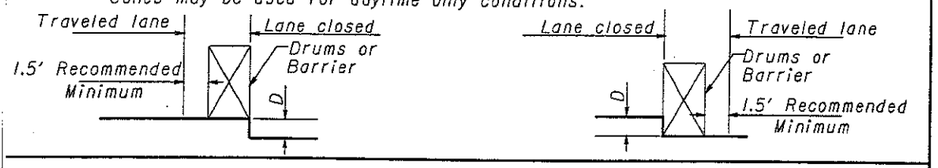


CONDITION I
DROPOFFS BETWEEN TRAVELED LANES

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

D (In.)	Treatment
≤1½	Erect OW-17I and OWP-17I 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.

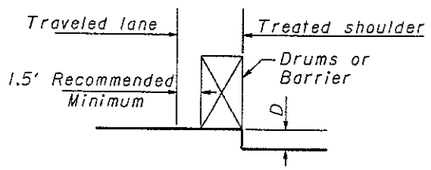


CONDITION II
DROPOFFS WITHIN GRADED SHOULDER AREA

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 concrete). For the purposes herein, its maximum width shall be considered to be twelve (12) feet.

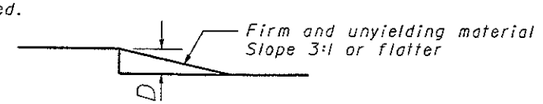
D (In.)	Treatment
≤1½	1) If edgelines are present, no treatment necessary OR 2) Erect OW-17I and OWP-17I signs.
>1½-5	1) If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums 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 longitudnal joint per 40I.15 is required.
2. OW-15I signs required.

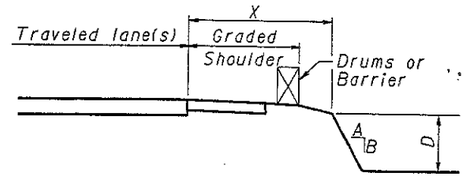


CONDITION III
DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

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.

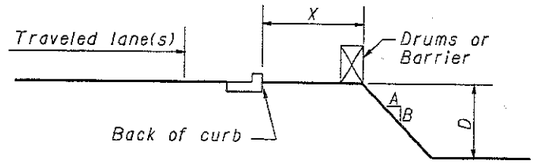


X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	≤3	Steeper than 3:1	None	None
4-12	>3-≤12	Steeper than 3:1	Drums	Drums
4-12	>12	Steeper than 3:1	Drums	Barrier
>12-20	≤12	Steeper than 3:1	None	None
>12-20	>12-≤24	Steeper than 3:1	Drums	Drums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

CALCULATED
CHECKED

DROPOFFS IN WORK ZONES

FRA-270-43.45

15
17

ITEM SPECIAL - SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

1) DESCRIPTION:

THIS WORK SHALL CONSIST OF CUTTING AND SEALING TRANSVERSE JOINTS IN THE NEW BITUMINOUS CONCRETE OVERLAY OF BRIDGES. BITUMINOUS CONCRETE JOINTS SHALL BE CONSTRUCTED DIRECTLY OVER, AND IN LINE WITH, THE EXISTING UNDERLYING TRANSVERSE ABUTMENT AND APPROACH SLAB JOINTS.

2) MATERIALS:

THE JOINT SEALANT SHALL MEET THE REQUIREMENTS OF ITEM 705.04, JOINT SEALANTS, HOT-POURED, FOR CONCRETE AND ASPHALT PAVEMENTS. ACCEPTABLE ALTERNATE MATERIALS ARE:

A SILICONE SEALANT MEETING FEDERAL SPECIFICATIONS TT-S-001543A CLASS A (ONE-PART SILICONE SEALANTS) AND TT-S-00230C CLASS A (ONE-COMPONENT SEALANTS), SUCH AS THOSE MANUFACTURED BY GENERAL ELECTRIC, SILICONE PRODUCTS DIVISION, 4015 EXECUTIVE PARK DRIVE, CINCINNATI, OHIO 45242 (513-243-1953)OR DOW CORNING, 400 TECHNE CENTER SUITE 103, MILFORD, OHIO 45150 (513-831-3586); OR SOF-SEAL, A COLD-APPLIED, LOW-MODULUS, TWO-COMPONENT POLYMERIC COMPOUND HORIZONTAL SEALANT AS MANUFACTURED BY W.R.MEADOWS, INC., P.O. BOX 543,ELGIN,ILLINOIS 60121 (800-342-5976).

3) CONSTRUCTION DETAILS:

A) GENERAL: THE CONTRACTOR SHALL CONDUCT HIS OPERATION SO THAT THE CUTTING, CLEANING AND SEALING OF TRANSVERSE JOINTS IS A CONTINUOUS OPERATION THAT WILL BE PERFORMED AS SOON AS PRACTICAL AFTER THE PAVING, BUT NO LATER THAN FOUR (4) DAYS AFTER PLACEMENT OF THE ASPHALT CONCRETE SURFACE COURSE. TRAFFIC SHALL NOT BE ALLOWED TO KNEAD TOGETHER OR DAMAGE JOINT CUT PRIOR TO SEALING.

B) CUTTING OF TRANSVERSE JOINTS: THE CONTRACTOR SHALL SAW OR ROUT TRANSVERSE JOINTS TO THE DIMENSIONS SHOWN IN THE DETAILS ON THIS SHEET. THE CUT JOINTS SHALL LIE DIRECTLY ABOVE EACH TRANSVERSE JOINT.

THE BLADE OR BLADES SHALL BE OF SUCH SIZE THAT THE FUIL WIDTH AND DEPTH OF THE CUT CAN BE MADE WITH ONE PASS. DRY OR WET CUTTING WILL BE ALLOWED. JOINTS SHALL EXTEND THE FULL WIDTH OF THE BRIDGE.

C) CLEANING JOINTS: DRY SAWED JOINTS SHALL BE THOROUGHLY CLEANED WITH A SUFFICIENT AMOUNT OF COMPRESSED AIR TO REMOVE ANY DIRT, DUST, OR DELETERIOUS MATTER. WET SAWED JOINTS SHALL BE WASHED CLEAN OF ALL CUTTINGS BY FLUSHING WITH A JET OF WATER AND WITH OTHER TOOLS AS NECESSARY. AFTER FLUSHING, THE JOINT SHALL BE BLOWN OUT WITH COMPRESSED AIR. WHEN THE SURFACES ARE THOROUGHLY CLEAN AND DRY, AND JUST PRIOR TO PLACING THE JOINT SEALER, COMPRESSED AIR HAVING A PRESSURE OF AT LEAST 90 PSI SHALL BE USED TO BLOW OUT THE JOINT AND REMOVE ALL TRACES OF DUST.

IN THE EVENT FRESHLY CUT JOINTS BECOME CONTAMINATED BEFORE THEY ARE SEALED, THEY SHALL BE RE-CLEANED OF ALL FOREIGN MATERIAL BY HIGH PRESSURE WATER JET.

D) SEALING JOINTS: THE JOINT SHALL BE THOROUGHLY DRY WHEN THE SEALANT IS PLACED. AFTER CLEANING AND DRYING, A BOND-BREAKER MATERIAL SHALL BE APPLIED TO THE BOTTOM OF THE GROOVE.

HOT-POURED JOINT SEALANT MATERIAL SHALL BE HEATED IN A KETTLE OR MELTER CONSTRUCTED AS A DOUBLE BOILER, WITH THE SPACE BETWEEN THE INNER AND OUTER SHELLS FILLED WITH OIL OR OTHER HEAT TRANSFER MEDIUM. POSITIVE TEMPERATURE CONTROL AND MECHANICAL AGITATION SHALL BE PROVIDED. HEATING MUST BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. JOINT SEALER MATERIAL SHALL NEVER BE KEPT HEATED AT THE POURING TEMPERATURE FOR MORE THAN FOUR (4) HOURS AND SHALL NEVER BE REHEATED. SEALER LEFT IN THE APPLICATOR AT THE END OF A DAY'S WORK SHALL NOT BE USED.

HOT-POURED SEALANT SHALL BE APPLIED IMMEDIATELY THROUGH A NOZZLE, WHICH MUST PROJECT INTO THE SAWED JOINT, FILLING FROM THE BOTTOM UP, THE SEALANT SHALL COMPLETELY FILL THE JOINT IN SUCH A MANNER THAT, AFTER COOLING, THE LEVEL OF THE SEALANT WILL NOT BE HIGHER THAN 1/8" BELOW THE PAVEMENT SURFACE. ANY DEPRESSION IN THE COOLED SEAL GREATER THAN 1/4" SHALL BE BROUGHT UP TO THE SPECIFIED LIMIT BY FURTHER ADDITION OF HOT-POURED SEALANT. CARE SHALL BE TAKEN IN THE SEALING OF THE JOINTS SO THAT THE FINAL APPEARANCE WILL PRESENT A NEAT FINE LINE.

THE COLD APPLIED SEALANT MATERIALS (POLYURETHANE, SILICONE, AND POLYMERIC COMPOUMDS) SHALL BE INSTALLED AS PER MANUFACTURERS' RECOMMENDATIONS, EXCEPT AS MODIFIED BY THIS DRAWING. THE SEALANT SHALL BE INSTALLED WHEN THE AMBIENT TEMPERATURE IS 40 DEGREES F OR HIGHER. TRAFFIC SHALL NOT BE ALLOWED ON THE JOINT FOR ONE HOUR AFTER APPLICATION OF THE SEALANT.

4) METHOD OF MEASUREMENT:

THE QUANTITY TO BE PAID FOR UNDER THIS ITEM WILL BE THE NUMBER OF LINEAR FEET OF JOINTS SAWED AND SEALED AS PER THE ABOVE REQUIREMENTS.

5) BASIS OF PAYMENT:

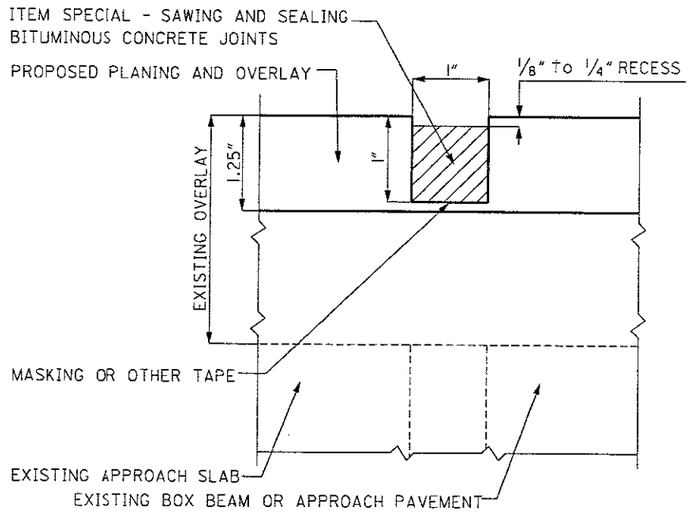
THE UNIT PRICE PER LINEAR FOOT FOR ITEM SPECIAL - "SAWING AND SEALING BITUMINOUS CONCRETE JOINTS" SHALL INCLUDE THE COST OF ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK, INCLUDING THE FURNISHING AND PLACING OF THE JOINT SEALER MATERIAL.

ITEM SPECIAL - SAWING AND SEALING BITUMINOUS CONCRETE JOINTS:
THE FOLLOWING QUANTITIES HAVE BEEN PROVIDED FOR:

BRIDGE NO. FRA-270-45.49 L/R
51' (JOINT LENGTH) x 2 (JOINTS) x 2 (L&R) = 204 LIN FT

BRIDGE NO. FRA-270-44.70 L/R
51' (JOINT LENGTH) x 2 (JOINTS) x 2 (L&R) = 204 LIN FT

TOTAL CARRIED TO SHEET 17 = 408 LIN FT



CALCULATED
CHECKED

SAWING AND SEALING BITUMINOUS CONCRETE JOINTS

FRA-270-43.45

16
17

I:\Projects\fra\270\4345.002\dgn\sawseal.dgn 31-DEC-2001 3:04PM quinterre

ESTIMATED QUANTITIES

LOCATION			BRIDGE TREATMENTS						REMARKS
PART	STRUCTURE	DESCRIPTION	DECK WIDTH	SPECIAL * PATCHING CONCRETE BRIDGE DECK, TYPE B	SPECIAL SAWING & SEALING BITUMINOUS CONCRETE JOINTS	407 TACK COAT 0.075 GAL/SQ Y	858 1.5" INTERMED. COURSE, 19 mm, TYPE A (446)	407 TACK COAT 0.05 GAL/SQ Y	858 1.5" SURFACE COURSE, 19 mm, TYPE A (446)	
			FT	SY/SY	LIN. FT	GAL	CY	GAL	CY	
1	FRA-270-43.65 L	459' STEEL BEAM OVER NOE BIXBY & BIG WALNUT CREEK	45							NO TREATMENT NECESSARY
1	FRA-270-43.65 R	459' STEEL BEAM OVER NOE BIXBY & BIG WALNUT CREEK	45							NO TREATMENT NECESSARY
1	FRA-270-44.70 L	245' STEEL BEAM OVER SR 317	51	456	102	104	58	70	58	PATCH & PAVE DECK / SAW & SEAL JOINTS
1	FRA-270-44.70 R	245' STEEL BEAM OVER SR 317	51	900	102	104	58	70	58	PATCH & PAVE DECK / SAW & SEAL JOINTS
1	FRA-270-44.88 L	217' STEEL BEAM OVER REFUGEE ROAD	51	60						PATCH THE DECK
1	FRA-270-44.88 R	217' STEEL BEAM OVER REFUGEE ROAD	51	60						PATCH THE DECK
1	FRA-270-45.49 L	92' CONCRETE SLAB OVER MASON RUN	51	60	102					PATCH THE DECK & SAW & SEAL JOINTS
1	FRA-270-45.49 R	92' CONCRETE SLAB OVER MASON RUN	51	60	102					PATCH THE DECK & SAW & SEAL JOINTS
1	FRA-270-45.85	316' STEEL BEAM UNDER WINCHESTER PIKE								MAINTAIN EXISTING VERTICAL CLEARANCE
1	FRA-270-46.13 L	284' STEEL BEAM OVER US 33	33	60						PATCH THE DECK
1	FRA-270-46.13 R	284' STEEL BEAM OVER US 33	54	60						PATCH THE DECK
1	FRA-270-46.13 RAMP A	284' STEEL BEAM OVER US 33	33	60						PATCH THE DECK
1	FRA-270-47.32	325' STEEL BEAM UNDER WILLIAMS ROAD								MAINTAIN EXISTING VERTICAL CLEARANCE
1	FRA-270-47.42 L	212' STEEL BEAM OVER ALUM CREEK	51	60						PATCH THE DECK
1	FRA-270-47.42 R	212' STEEL BEAM OVER ALUM CREEK	51	60						PATCH THE DECK
1	FRA-270-48.02 L	178' STEEL BEAM OVER CSX RAILROAD	51	60						PATCH THE DECK **
1	FRA-270-48.02 R	178' STEEL BEAM OVER CSX RAILROAD	51	60						PATCH THE DECK **
TOTALS CARRIED TO GENERAL SUMMARY:				2016	408	208	116	140	116	

* PATCH EXISTING CONCRETE DECKS WITH QUICK SETTING CONCRETE, TYPE B

** THE BRIDGES ARE OUTSIDE OF THE PROJECT LIMIT. PATCHING OF EXISTING BRIDGE DECKS IS INCLUDED IN THIS PROJECT. SEE SHEET 7 NOTES FOR COOPERATION BETWEEN CONTRACTORS

CALCULATED

BRIDGE ESTIMATED QUANTITIES

FRA-270-43.45

17
17