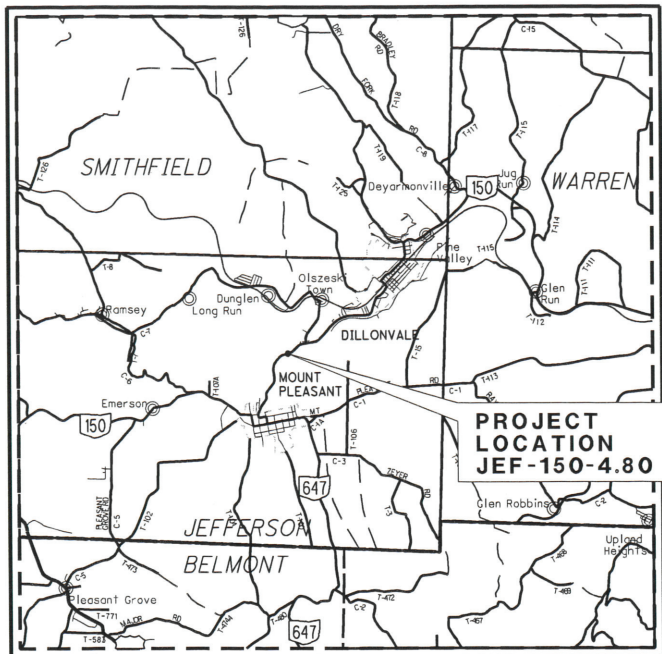


STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

# JEF-150-4.80

## MOUNT PLEASANT TOWNSHIP JEFFERSON COUNTY



LOCATION MAP

LATITUDE: 40°11'10" LONGITUDE: 80°47'50"

SCALE IN MILES



PORTION TO BE IMPROVED	-----	=====
INTERSTATE HIGHWAY	-----	=====
FEDERAL ROUTES	-----	=====
STATE ROUTES	-----	=====
COUNTY & TOWNSHIP ROADS	-----	=====
OTHER ROADS	-----	=====

### DESIGN DESIGNATION

CURRENT ADT (2022)	-----	1500
DESIGN YEAR ADT (2042)	-----	1800
DESIGN HOURLY VOLUME (2042)	-----	250
DIRECTIONAL DISTRIBUTION	-----	50.8%
TRUCKS (24 HOUR B&C)	-----	6%
DESIGN SPEED	-----	55 MPH
LEGAL SPEED	-----	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION:		
05 MAJOR COLLECTOR (RURAL)		
NHS PROJECT	-----	NO

DESIGN EXCEPTIONS NONE REQUIRED  
ADA DESIGN WAIVER NONE REQUIRED

### UNDERGROUND UTILITIES

Contact Two Working Days  
Before You Dig



OHIO811, 8-1-1, or 1-800-362-2764  
(Non-members must be called directly)

PLAN PREPARED BY:  
ODOT DISTRICT 11  
ENGINEERING DEPT.  
NEW PHILADELPHIA, OH

ENGINEERS SEAL:



SIGNED: *C. Notz*  
DATE: 12/28/21

### INDEX OF SHEETS:

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### PROJECT DESCRIPTION

IMPROVEMENT OF 0.06 MILES (340') OF S.R. 150 IN JEFFERSON COUNTY WITH THE CONSTRUCTION OF A 300' LONG DRILLED SHAFT WALL, NEW PAVEMENT, GUARDRAIL, AND CONDUIT REPLACEMENT.

### EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	0.25 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.10 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	N/A (NOI NOT REQUIRED)*

\*ROUTINE MAINTENANCE PROJECT

### 2019 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DE-TOURS WILL BE PROVIDED AS INDICATED ON SHEET 4.

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
BP-3.1	1/17/20	MT-96.11	4/16/21	TC-41.20	10/18/13	800-19	1/21/22
		MT-96.20	7/15/16	TC-41.30	10/18/13	832	10/19/18
DM-1.1	7/17/20	MT-96.26	1/18/19	TC-42.20	10/18/13		
DM-1.2	7/16/21	MT-97.10	1/18/19	TC-52.10	10/18/13		
DM-4.3	1/15/16	MT-101.60	1/17/20	TC-52.20	1/15/21		
DM-4.4	1/15/16	MT-101.75	1/17/20	TC-61.30	7/19/19		
		MT-101.75	1/17/20	TC-65.10	1/17/14		
CB-2-2A, 2-2B, 2-2C	7/16/21	MT-101.90	7/11/20	TC-65.11	7/21/17		
		MT-105.10	1/17/20				
MGS-1.1	7/16/21						
MGS-2.1	1/19/18						
MGS-4.3	1/18/13						
MGS-5.3	7/15/16						
RM-4.2	4/17/20						

APPROVED: *Thomas A. Gray*  
DATE: 01-04-2022 DISTRICT DEPUTY DIRECTOR

APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.  
**NON-FEDERAL**

PID NO.  
**115676**

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT  
**NONE**

**JEF-150-4.80**

1/11

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**ITEM 524 - DRILLED SHAFTS, MISC.: PLUG PILE, 30" DIAMETER, UNREINFORCED**

THESE SHAFTS ARE TO BE UNREINFORCED NON-STRUCTURAL "PLUG PILES" SERVING THE PURPOSE OF LAGGING.

THIS WORK SHALL BE AS PER ITEM 524 EXCEPT A REINFORCING CAGE WILL NOT BE USED IN THE SHAFT. EACH PLUG PILE SHALL BE OFFSET 17.75 FEET FROM ROADWAY CENTERLINE (OR AS SHOWN ON WALL DETAIL SHEET NO. 7) AND CENTERED BETWEEN EACH REINFORCED 30" DIAMETER DRILLED SHAFT. EACH PLUG PILE SHALL BE DRILLED TO A DEPTH OF 12 FEET BELOW THE PR. TOP OF WALL (OR TO TOP OF ROCK, WHICHEVER IS LESS) AND BACK FILLED WITH UNREINFORCED CLASS QC1 CONCRETE.

**SEQUENCE OF INSTALLATION:**

THE INSTALLATION SEQUENCE SHALL BE SUCH THAT NO PLUG PILE IS INSTALLED ADJACENT TO A DRILLED SHAFT IN WHICH THE CONCRETE HAS LESS THAN A 24 HOUR CURE TIME.

ANY WORK REQUIRED TO CONSTRUCT THE TOPS OF THE PLUG PILES SHALL BE INCLUDED IN PAYMENT FOR THIS ITEM.

PAYMENT FOR LABOR, EQUIPMENT AND MATERIALS FOR THE ABOVE SHALL BE INCLUDED IN THE FOOT CONTRACT PRICE FOR ITEM 524, DRILLED SHAFTS, MISC.: PLUG PILE, 30" DIAMETER, UNREINFORCED.

**ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN**

MAINTAIN A MINIMUM OF 1 LANE OF TRAFFIC AT ALL TIMES DURING CONSTRUCTION USING PORTABLE BARRIER AS PER STANDARD DRAWING MT-96.II, EXCEPT FOR A PERIOD NOT TO EXCEED 5 CONSECUTIVE CALENDAR DAYS WHEN TRAFFIC MAY BE DETOURED AS NOTED BELOW. A DISINCENTIVE OF \$600 PER HOUR SHALL BE ASSESSED FOR EACH HOUR THE ROADWAY REMAINS REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT. THE TEMPORARY SIGNAL TIMING FOR THE WORK ZONE SHALL BE DETERMINED BY THE ENGINEER AND BASED ON THE LENGTH BETWEEN WORK ZONE STOP BARS.

THERE IS CURRENTLY A ONE-LANE, TWO-WAY TRAFFIC ZONE IN PLACE WITH TEMPORARY SIGNALS. THE CONTRACTOR SHALL BECOME RESPONSIBLE FOR MAINTAINING TRAFFIC ONCE THERE IS A SIGNED CONSTRUCTION CONTRACT. AT THAT TIME, THE CONTRACTOR SHALL COORDINATE WITH TY JUSTICE (330-308-6580) AT ODOT'S JEFFERSON COUNTY GARAGE WHO WILL REMOVE THE EXISTING SIGNALS AND BARRELS. THE CONTRACTOR SHALL THEN SET A ZONE AS PER STANDARD DRAWING MT-96.II. A POWER DROP HAS BEEN INSTALLED BY AEP TO HELP POWER THE EXISTING SIGNALS. IF THE CONTRACTOR PLANS ON UTILIZING THIS DROP, THEY ARE RESPONSIBLE FOR CONTACTING AEP TO GET THE ACCOUNT TRANSFERRED ACCORDINGLY.

THE 5 DAY DETOUR SHALL BE UTILIZED TO INSTALL THE PAVEMENT FOR MAINTAINING TRAFFIC. ALL DETOUR SIGNAGE WILL BE INSTALLED AND MAINTAINED BY ODOT. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER OF THIS CLOSURE IN ACCORDANCE WITH THE "NOTIFICATION OF TRAFFIC RESTRICTIONS" PLAN NOTE. THE PROJECT ENGINEER WILL THEN COORDINATE THE INSTALLATION OF DETOUR SIGNAGE.

NOTICE OF CLOSURE SIGNS (W20-H13), SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW.

THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE.

**NOTICE OF CLOSURE SIGN TIME TABLE**

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD CLOSURE	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

**ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN (CONTINUED)**

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION.

SR 150 WILL BE  
CLOSED MMM-DD  
FOR 5 DAYS  
INFO: 330-339-6633

W20-H13-60

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCHES ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES, AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE PROJECT LIMITS DURING PERIODS IN WHICH THE ROAD IS CLOSED TO TRAFFIC.

THE MAINTENANCE OF TRAFFIC SHALL BE IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST REVISION; THE REFERENCED STANDARD CONSTRUCTION DRAWINGS INCLUDING DESIGNER NOTES; THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS); POLICY NO. 516-003(P) TRAFFIC MANAGEMENT IN WORK ZONES INTERSTATE AND OTHER FREEWAYS; ODOT LOCATION AND DESIGN MANUAL, VOLUME 1; ODOT TRAFFIC ENGINEERING MANUAL; AND ALL REQUIREMENTS DETAILED IN THESE PLANS.

DURING CONSTRUCTION OF THE PROPOSED CONDUIT, TRAFFIC MUST BE MAINTAINED USING FLAGGERS PER SCD MT-97.10. IF FLAGGERS ARE REQUIRED DUE TO LIMITED SPACE DURING DRILLING OPERATIONS, THIS WORK SHALL BE INCLUDED IN THIS ITEM.

PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS (EXCLUDING PORTABLE BARRIER, IMPACT ATTENUATORS, PAVEMENT FOR MAINTAINING TRAFFIC, AND WORK ZONE PAVEMENT MARKINGS) SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN.

**NOTIFICATION OF TRAFFIC RESTRICTIONS**

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MOT CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICER (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

**NOTIFICATION TIME TABLE**

ITEM	DURATION OF CLOSURE	NOTICE DUE TO OFFICE OF COMMUNICATIONS
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

**WORK ZONE MARKINGS**

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS PER THE REQUIREMENTS OF C&MS 614.04 AND 614.II.

ITEM 614 - WORK ZONE CENTER LINE, CLASS III, 642 PAINT = 0.10 MILE  
ITEM 614 - WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT = 0.10 MILE

**ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN**

FOLLOW CONSTRUCTION AND MATERIAL SPECIFICATION 615, EXCEPT PROVIDE ONLY FLEXIBLE PAVEMENT FOR MAINTAINING TRAFFIC. THE MAXIMUM ACCEPTABLE ELEVATION DIFFERENCE AT THE SAW CUT LINE BETWEEN THE EXISTING PAVEMENT AND THE PAVEMENT FOR MAINTAINING TRAFFIC SHALL BE 0.25".

SEE DETAIL ON SHEET NO. 2 FOR PORTIONS OF THIS PAVEMENT TO REMAIN IN PLACE. PAVEMENT SAWING AND PAVEMENT REMOVAL FOR THE PORTION OF THE PAVEMENT FOR MAINTAINING TRAFFIC NOT TO REMAIN IN PLACE SHALL BE PAID FOR UNDER THIS ITEM. ANY TEMPORARY EMBANKMENT NEEDED TO SUPPORT THE PAVEMENT FOR MAINTAINING TRAFFIC AND WORK REQUIRED TO RESTORE THE SHOULDER AND DITCH LINE TO ORIGINAL CONDITIONS SHALL BE PAID FOR UNDER THIS ITEM.

**PAVEMENT RESTORATION FOR DRAINAGE STRUCTURE INSTALLATIONS**

THE FOLLOWING QUANTITIES ARE PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 611, DRAINAGE STRUCTURES.

ITEM 441 - 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, (PG70-22M) 1 CU. YD.

ITEM 441 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448) 1 CU. YD.

ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22 1 CU. YD.

ITEM 304 - AGGREGATE BASE 1 CU. YD.

ITEM 407 - TACK COAT 1 GAL.

ITEM 204 - SUBGRADE COMPACTION 5 SQ. YD.

THE ABOVE QUANTITIES ARE BASED ON THE BUILDUP AS SHOWN IN THE TYPICAL SECTION AND A WIDTH OF TWO FEET AROUND THE PERIMETER OF THE DRAINAGE STRUCTURE.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

**ITEM 611 - PRECAST REINFORCED CONCRETE OUTLET, AS PER PLAN**

THE PRECAST REINFORCED CONCRETE OUTLET AS SHOWN IN SCD DM-1.1 SHALL BE INSTALLED WITHOUT THE TIED CONCRETE BLOCK MAT, TYPE 1.

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CALCULATED  
CCN  
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GENERAL NOTES

JEF-150-4.80



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**ITEM 614 - WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NONGATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS AND/OR STANDARD DRAWINGS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**DELINEATION OF PORTABLE BARRIER**

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614 - MAINTAINING TRAFFIC, AS PER PLAN, AND SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

**ESTIMATED QUANTITIES**

**PAVEMENT AND ROADWAY CALCULATIONS**

PAVEMENT CALCULATIONS BASED ON A LENGTH OF 340'

**ITEM 203 - EMBANKMENT**  
USE 40 CU. YD.

**ITEM 441 - 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, (PG70-22M)**  
11' AVG. WIDTH (CADD MEASURED) x 390' x 1.25" ÷ 12 ÷ 27 = 17 CU. YD.

**ITEM 441 - 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)**  
11' AVG. WIDTH (CADD MEASURED) x 390' x 1.75" ÷ 12 ÷ 27 = 24 CU. YD.

**ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22**  
11.33' AVG. WIDTH x 390' x 6" ÷ 12 ÷ 27 = 82 CU. YD.

**ITEM 304 - AGGREGATE BASE**  
11.83' AVG. WIDTH x 390' x 6" ÷ 12 ÷ 27 = 85.4 CU. YD. (FULL DEPTH)  
2.5' AVG. WIDTH x 390' x 8" ÷ 12 ÷ 27 = 24.1 CU. YD. (SHOULDER)  
10.0' AVG. WIDTH x 390' x 6" AVG. DEPTH ÷ 12 ÷ 27 = 72.2 CU. YD.  
(VOID FROM EX. PAVEMENT - SEE SHEET NO. 2)  
USE 182 CU. YD.

**ITEM 407 - TACK COAT**  
11.0' AVG. WIDTH x 390' x 3 LIFTS ÷ 9 x 0.055 = 79 GAL.

**ITEM 204 - SUBGRADE COMPACTION**  
12.5' AVG. WIDTH x 390' ÷ 9 = 542 SQ. YD.

**ITEM 202 - PAVEMENT REMOVED**  
11.0' AVG. WIDTH x 390' ÷ 9 = 477 SQ. YD.

**ITEM 202 - GUARDRAIL REMOVED**  
USE 325 FT.

**ITEM 408 - PRIME COAT, AS PER PLAN**  
2.5' AVG. WIDTH x 390' ÷ 9 x 0.4 = 44 GAL.

**ITEM 606 - GUARDRAIL, TYPE MGS HALF POST SPACING, AS PER PLAN**  
USE 325 FT.

**ITEM 621 - RPM**  
USE 5 EACH

**ITEM 621 - RAISED PAVEMENT MARKER REMOVED**  
USE 5 EACH

**ITEM 626 - BARRIER REFLECTOR, TYPE 2 (BI-DIRECTIONAL)**  
USE 4 EACH

**ITEM 646 - EDGE LINE, 6"**  
390' ÷ 5280 = 0.08 MILE

**ITEM 646 - CENTER LINE**  
390' ÷ 5280 = 0.08 MILE

**MAINTENANCE OF TRAFFIC CALCULATIONS**

**ITEM 614 - WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (BIDIRECTIONAL)**  
USE 2 EACH

**ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN**  
350' + 80' (TAPERS) x 4.5' ÷ 9 = 215 SQ. YD.

**ITEM 622 - PORTABLE BARRIER, UNANCHORED**  
USE 500 FT.

**DRAINAGE CALCULATIONS**

**ITEM 202 - PIPE REMOVED, 24" AND UNDER**  
USE 42 FT.

**ITEM 202 - CATCH BASIN REMOVED**  
USE 1 EACH

**ITEM 601 - ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC**  
4' WIDE x 5' LONG x 2' THICK ÷ 27 = 2 CU. YD.

**ITEM 605 - 4" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC**  
USE 390 FT.

**ITEM 611 - 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET**  
USE 12 FT.

**ITEM 611 - 24" CONDUIT, TYPE B, 706.02, 707.33, OR 707.01 ALUMINIZED**  
USE 40 FT.

**ITEM 611 - CATCH BASIN NO. 2-2B**  
USE 1 EACH

**ITEM 611 - PRECAST REINFORCED CONCRETE OUTLET, AS PER PLAN**  
USE 1 EACH

**RETAINING WALL CALCULATIONS**

WALL QUANTITIES BASED ON A TOTAL WALL LENGTH OF 300' (C/C SHAFTS)

**ITEM 507 - STEEL PILES MISC.: W16x50 STEEL BEAMS, FURNISHED**  
30' FURNISHED LENGTH x 76 BEAMS = 2,280 FT.

**ITEM 524 - DRILLED SHAFTS, 24" DIAMETER, ABOVE BEDROCK, AS PER PLAN**  
20'-6" ESTIMATED LENGTH x 76 SHAFTS = 1,558 FT.

**ITEM 524 - DRILLED SHAFTS, 24" DIAMETER, INTO BEDROCK, AS PER PLAN**  
8' x 76 SHAFTS = 608 FT.

**ITEM 524 - DRILLED SHAFTS, MISC.: PLUG PILE, 30" DIAMETER, UNREINFORCED**  
12' x 74 PLUGS + 4'-9" x 1 PLUG = 893 FT.

ALL QUANTITIES ARE CARRIED TO THE GENERAL SUMMARY

GENERAL NOTES AND ESTIMATED QUANTITIES

JEF-150-4.80