

**ITEM SPECIAL - MAILBOX SUPPORT**

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4 INCHES BY 4 INCHES SQUARE OR 4.5 INCHES DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 INCHES I.D., AND CONFORM TO AASHTO M 181.

ALL HARDWARE INCLUDING BUT NOT LIMITED TO PLATES, SCREWS, BOLTS, AND ETC. SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM:  
SPECIAL, MAILBOX SUPPORT SYSTEM, SINGLE 4 EACH  
SPECIAL, MAILBOX SUPPORT SYSTEM, DOUBLE 1 EACH

**DRAINAGE DISCHARGE CONTINUANCE**

FURNISH A DRAINAGE DISCHARGE CONTINUANCE FOR ANY DRAINAGE DISCHARGE DISTURBED BY THE WORK AND NOT SHOWN IN THE PLANS. THE LOCATION, TYPE (CONDUIT OR SWALE), SIZE AND GRADE OF THE DRAINAGE DISCHARGE CONTINUANCE WILL BE AGREED TO BY THE ENGINEER

FURNISH AN INSPECTION WELL AT THE RIGHT OF WAY LINE IN ACCORDANCE WITH SCD DM-3.1 FOR EACH DRAINAGE DISCHARGE THAT OUTLETS THROUGH A CURB OPENING, OR INTO A STORM SEWER OR DRAINAGE STRUCTURE. THE COST IS INCLUDED IN ITEM 611, INSPECTION WELL.

FURNISH A WELL GRADED TRANSITION BETWEEN THE DITCH AND THE SWALE WHEN OUTLETTING A SWALE TO A DITCH. THE COST FOR THE GRADED TRANSITION IS INCLUDED IN ITEM 203, EMBANKMENT AS PER PLAN

FURNISH AN EROSION CONTROL PAD AS SHOWN IN SCD DM-1.1 WHEN OUTLETTING A CONDUIT TO A DITCH. THE COST FOR THE EROSION CONTROL PAD IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE - FOR DRAINAGE DISCHARGE CONTINUANCE.

FURNISH A DRILLED HOLE OR A CURB SECTION WITH A HOLE WHEN OUTLETTING A CONDUIT THROUGH A CURB OPENING. THE COST OF DRILLING, OR FURNISHING THE CURB SECTION WITH HOLE IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE - FOR DRAINAGE DISCHARGE CONTINUANCE.

FURNISH A DRILLED CORE HOLE WHEN OUTLETTING INTO A STORM SEWER OR DRAINAGE STRUCTURE. THE COST OF THE DRILLED CORE HOLE IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE - FOR DRAINAGE DISCHARGE CONTINUANCE.

**DOCUMENTATION**

THE CONTRACTOR SHALL FURNISH WRITTEN DOCUMENTATION TO THE ENGINEER AND TO THE DISTRICT R/W PERMIT OFFICE. THE DOCUMENTATION INCLUDES THE CONSTRUCTION PROJECT NUMBER, PID, COUNTY, ROUTE, SECTION, LATITUDE AND LONGITUDE OF THE DRAINAGE DISCHARGE AT THE R/W, THE NAME OF PROPERTY OWNER WITH ADDRESS, THE DATE THE DRAINAGE DISCHARGE CONTINUANCE WAS FURNISHED, A DETAILED DESCRIPTION OF THE WORK AND PICTURES OF THE DRAINAGE DISCHARGE CONTINUANCE (IN PDF OR JPEG FORMAT). THE DOCUMENTATION IS INCLUDED IN ITEM 611, CONDUIT, MISC TYPE - FOR DRAINAGE DISCHARGE CONTINUANCE OR ITEM 203, EMBANKMENT AS PER PLAN

**DRAINAGE DISCHARGE CONTINUANCE REMOVAL**  
THE ENGINEER MAY REQUIRE THE NEWLY INSTALLED DRAINAGE DISCHARGE CONTINUANCE TO BE REMOVED.

REMOVE THE NEWLY INSTALLED CONDUIT AND ANY EXISTING CONDUIT TO THE RIGHT OF WAY LINE. FOR CONDUIT THAT OUTLETS THROUGH THE CURB RESTORE THE CURB BY FILLING THE HOLE WITH CLASS QC 1 CONCRETE OR REPLACE THE CURB SECTION. FOR CONDUIT THAT OUTLETS TO A STORM SEWER OR DRAINAGE STRUCTURE LEAVE 6 INCHES PROTRUDING OUTSIDE OF THE CONDUIT. PLUG THE PROTRUDING CONDUIT WITH EITHER A MANUFACTURED CAP OR CLASS QC 1 CONCRETE. FOR CONDUIT THAT OUTLETS TO THE DITCH REMOVE THE EROSION CONTROL PAD. RESTORE ALL AREAS AS REQUIRED. PLUG THE EXISTING CONDUIT REGARDLESS OF SIZE AT THE RIGHT OF WAY LINE WITH CLASS QC 1 CONCRETE AND RESTORE ALL AREAS AS REQUIRED. ALL COSTS ARE INCLUDED IN ITEM 202, REMOVAL MISC. CONDUIT.

DAM THE SWALE THAT OUTLETS TO THE DITCH AT THE R/W AS DIRECTED BY THE ENGINEER. ALL COSTS ARE INCLUDED IN ITEM 203, EMBANKMENT AS PER PLAN

REMOVE THE INSPECTION WELL AND RESTORE ALL AREAS AS REQUIRED. THE COST IS INCLUDED IN ITEM 202, REMOVAL MISC. INSPECTION WELL.

**CONDUIT MATERIAL TYPES**

THE FOLLOWING CONDUIT MATERIAL TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, AND 707.52 SDR35.

**PAY ITEMS**

EACH OF THE PAY ITEMS LISTED BELOW FOR CONDUIT MISCELLANEOUS TYPES B, C, E AND F FOR DRAINAGE DISCHARGE CONTINUANCE INCLUDE CONDUIT SIZES 2 INCH TO 10 INCH. THERE IS NO COST DIFFERENTIATION FOR SIZE IN THESE PAY ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER IN MAKING THE ABOVE DRAINAGE DISCHARGE CONTINUANCE:

- ITEM 611, 1 EACH INSPECTION WELL
- ITEM 611, 5 FT.CONDUIT, MISC TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 611, 5 FT.CONDUIT, MISC TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 611, 5 FT.CONDUIT, MISC TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 611, 5 FT.CONDUIT, MISC TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE
- ITEM 202, 5 FT. REMOVAL MISC CONDUIT
- ITEM 202, 1 EACH REMOVAL MISC INSPECTION WELL
- ITEM 203, 50 CUBIC YARD EMBANKMENT AS PER PLAN

**FARM DRAINS**

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE (RIGHT OF WAY) (CONSTRUCTION) LIMITS BY ITEM 611 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 611 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 611, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

- 611, 6" CONDUIT, TYPE B 20 FT.
- 611, 6" CONDUIT, TYPE E 20 FT.
- 611, 6" CONDUIT, TYPE F 20 FT.
- 601 ROCK CHANNEL PROTECTION TYPE C WITH FILTER 5 CU. YD.

**ITEM 304 - AGGREGATE BASE (FOR PAVEMENT REPAIR)**

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED AND SHALL BE USED AS DIRECTED BY THE ENGINEER TO BACKFILL AREAS WHICH WERE EXCAVATED UNDER ITEM 203 EXCAVATION (FOR PAVEMENT REPAIR). THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:  
304, AGGREGATE BASE (FOR PAVEMENT REPAIR) 38 CU YD

**EXISTING SUBSURFACE DRAINAGE**

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:  
611, 6" CONDUIT, TYPE F 20 FT.  
605, 6" UNCLASSIFIED PIPE UNDERDRAINS 20 FT.

**ITEM 623 - MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN**

**ITEM 638 - VALVE BOX ADJUSTED TO GRADE, AS PER PLAN**  
IN ADDITION TO THE REQUIREMENTS OF CMS 623.05 FOR MONUMENT BOXES, OR 638.18 FOR VALVE BOXES, THE CONTRACTOR WILL MAKE A CLEAN CIRCULAR CUT AROUND THE CASTING (A MINIMUM OF 1'-0" OUTSIDE OF THE CASTING) AND ADJUST THE CASTING TO GRADE (ACCORDING TO THE TOLERANCES AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1) AFTER THE PAVEMENT SURFACE COURSE HAS BEEN PLACED.

CMS 499 CLASS QCMS CONCRETE (DYE THE CONCRETE SUCH THAT ITS COLOR CLOSELY MATCHES THE COLOR OF THE SURROUNDING PAVEMENT) WILL BE USED FOR BACKFILLING THE FULL PAVEMENT SECTION AND THE JOINT BETWEEN THE ASPHALT AND CONCRETE WILL BE SEALED WITH CMS 702.01 PG BINDER. EPOXY COATED REBAR SHALL BE PLACED IN THE CONCRETE AT 6" MAXIMUM ON CENTER AND A MINIMUM OF 3.5" CLEARANCE FROM THE TOP, BOTTOM AND SIDES. THE CONCRETE WILL BE VIBRATED SUFFICIENTLY TO ELIMINATE AIR POCKETS UNDER THE FRAME.

PAYMENT WILL INCLUDE REMOVAL OF THE EXISTING MATERIAL, INSTALLATION AND FURNISHING OF A NEW CASTING, AND ALL LABOR AND MATERIALS REQUIRED TO COMPLETE THIS ITEM OF WORK AS DESCRIBED.

- 623, MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN 1 EACH
- 638, VALVE BOX ADJUSTED TO GRADE, AS PER PLAN 5 EACH

**ITEM 638 - VALVE BOX ADJUSTED TO GRADE**

THIS ITEM OF WORK IS PROVIDED TO ADJUST VALVE BOXES OUTSIDE OF PAVEMENT AREAS.  
638, VALVE BOX ADJUSTED TO GRADE 10 EACH

**ITEM 611 - CATCH BASIN ADJUSTED TO GRADE**

THIS ITEM OF WORK IS PROVIDED TO ADJUST CATCH BASINS TO GRADE THAT ARE OUTSIDE OF PAVEMENT AREAS.  
611, CATCH BASIN ADJUSTED TO GRADE 2 EACH

**MANHOLES, CATCH BASINS AND INLETS REMOVED OR ABANDONED**

ALL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHT OF WAY FOR SALVAGE BY STATE FORCES.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 202 ITEM.

**ITEM 203 - EXCAVATION (FOR PAVEMENT REPAIR)**

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AND DISPOSING OF ALL UNSUITABLE MATERIAL BY EXCAVATING THE EXISTING SUBGRADE AND SUBBASE TO AN AVERAGE DEPTH OF 6 INCHES OR AS DIRECTED BY THE ENGINEER. EXACT LIMITS OF REMOVAL SHALL BE DETERMINED BY THE ENGINEER. ALL EQUIPMENT, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203 EXCAVATION (FOR PAVEMENT REPAIR). THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:  
203, EXCAVATION (FOR PAVEMENT REPAIR) 38 CU YD

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**ITEM SPECIAL - REINFORCEMENT MESH FOR LONGITUDINAL JOINTS**  
DESCRIPTION:

THIS WORK CONSISTS OF PLACEMENT OF A SELF ADHESIVE GLASS FIBER MESH OVER JOINTS DESIGNATED IN THE PLAN AND/OR BY THE ENGINEER PRIOR TO PLACEMENT OF ASPHALT CONCRETE.

**MATERIAL:**

WHERE REINFORCEMENT IS PLACED BETWEEN SURFACE AND INTERMEDIATED COURSES, FURNISH GLASGRID FIBERGLASS REINFORCEMENT WITH MODIFIED POLYMER COATING AND PRESSURE-SENSITIVE ADHESIVE BACKING MEETING THE FOLLOWING PROPERTIES:

PROPERTIES	GlasGrid 8502
Material Width	5 ft.
Material - Self Adhesive fiberglass strand coated with elastomeric polymer ASTM D6637	25% minimum dry pickup
Tensile Strength ASTM D6637	655 x 1230 ± 85 lbs/in
Tensile Elongation ASTM D6637	2.5 ± 0.5%
Melting Point ASTM D276	>450°F
Mass/Unit Area ASTM D5261	18 oz/sq yd
Grid pattern	0.5 in x 0.5 in

WHERE REINFORCEMENT IS PLACED BETWEEN SURFACE COURSE AND A PLANED SURFACE, FURNISH GLASGRID FIBERGLASS REINFORCEMENT WITH MODIFIED POLYMER COATING AND PRESSURE-SENSITIVE ADHESIVE BACKING BONDED TO A NONWOVEN POLYPROPYLENE MEETING THE FOLLOWING PROPERTIES:

PROPERTIES	GlasGrid CG200
Material Width	5 ft.
Material - Self Adhesive fiberglass strand coated with elastomeric polymer ASTM D4595	25% minimum dry pickup
Tensile Strength ASTM D4595	655 x 1230 ± 85 lbs/in
Tensile Elongation ASTM D4595	2.5 ± 0.5%
Melting Point ASTM D276	>450°F
Mass/Unit Area ASTM D5261	22 oz/sq yd
Grid pattern	1.0 in x 0.75 in

BEFORE INSTALLATION SUBMIT A LETTER TO THE PROJECT ENGINEER WITH A STATEMENT CERTIFYING MATERIAL RECEIVED MEETS THE ABOVE PROPERTIES. SUBMIT TO THE PROJECT ENGINEER ACTUAL DATED (SALES FLYER DATA NOT ACCEPTABLE) TEST DATA WITH THE CERTIFICATION LETTER.

**CONSTRUCTION:**

PERFORM ALL REQUIRED REPAIRS PRIOR TO PLACING MESH.

ENSURE ALL AREAS WHERE MESH IS TO BE PLACED ARE FREE OF ALL DIRT AND OTHER LOOSE MATERIALS BY SWEEPING OR OTHER APPROVED METHOD. PLACE NON-TRACKING TACK COAT AT RATE SPECIFIED IN CMS AND WAIT 2 HOURS BEFORE PLACING THE MESH ON A PAVEMENT SURFACE THAT IS BETWEEN 40° F AND 140° F.

PLACE MESH UNDER TENSION TO PREVENT RIPPLING. REMOVE RIPPLES BY PULLING, OR IF NECESSARY (IN CURVES FOR EXAMPLE), BY CUTTING AND FLATTENING THE MESH. OVERLAP TRANSVERSE JOINTS OF THE MESH 3 TO 6 INCHES. OVERLAP LONGITUDINAL JOINTS OF THE MESH BY 1 INCH MINIMUM. ROLL THE MESH SURFACE 2 PASSES WITH A RUBBER COATED DRUM ROLLER, RUBBER TIRED ROLLER OR OTHER METHOD ACCEPTABLE TO THE MANUFACTURER. CLEAN RUBBER ROLLER IF BUILDUP ON THE RUBBER SURFACE INTERFERES WITH MESH PLACEMENT. DO NOT USE A STEEL DRUM ROLLER. PLACED MESH WILL HANDLE SPEED CONTROLLED EMERGENCY OR CONSTRUCTION TRAFFIC BUT DAMAGED SECTIONS

MUST BE REMOVED AND/ OR REPAIRED, AT THE CONTRACTOR'S EXPENSE. DO NOT ALLOW MUD OR OTHER MATERIAL TO COLLECT ON THE MESH PRIOR TO ASPHALT CONCRETE PLACEMENT. COVER MESH WITH ASPHALT CONCRETE THE SAME DAY UNLESS WEATHER BECOMES UNSUITABLE.

**MEASUREMENT:**

MEASURE MESH PLACEMENT BY THE LINEAL FEET OF JOINT COVERED. DO NOT ALLOW FOR MESH OVERLAP.

**PAYMENT:**

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES, COMPLETED IN PLACE, AT THE CONTRACT PRICES, AS DESCRIBED ABOVE, AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
SPECIAL	FT.	REINFORCEMENT MESH FOR LONGITUDINAL JOINTS

**ITEM 204, EXCAVATION OF SUBGRADE**

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

204, EXCAVATION OF SUBGRADE	757 CU. YD.
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**ITEM 204 - GEOTEXTILE FABRIC, AS PER PLAN**

GEOTEXTILE FABRIC, AS PER PLAN SHALL BE MIRAFI H2R1 FROM TENCATE GEOSYNTHETICS OR AN APPROVED EQUAL.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

204, GEOTEXTILE FABRIC, AS PER PLAN	2162 SQ. YD.
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**ITEM 304 - AGGREGATE BASE, AS PER PLAN**

PLACEMENT OF 18" AGGREGATE BASE SHALL BE COMPLETED WITHIN 72 HOURS AFTER INSTALLATION OF PLAN SPECIFIED GEOTEXTILE FABRIC, AS PER PLAN. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

304, AGGREGATE BASE, AS PER PLAN	757 CU. YD.
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**ITEM SPECIAL - SURVEY CONTROL VERIFICATION**

THE CONTRACTOR SHALL PERFORM THIS WORK TO VERIFY THE PROVIDED SURVEY CONTROL. THE CONTRACTOR WILL PERFORM THE VERIFICATION USING ONE OF THE TWO METHODS BELOW DEPENDENT UPON THE CONTRACTOR'S CHOSEN MEANS OF SURVEY CONTROL TO BE USED ON THE PROJECT. THE WORK SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF AN OHIO LICENSED SURVEYOR.

- IF USING GPS DEVICES TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL
  - LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.
  - PERFORM A SITE CALIBRATION UTILIZING THE AVAILABLE HORIZONTAL AND VERTICAL CONTROL POINTS PROVIDED IN THE PLAN.
  - PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.
- IF USING CONVENTIONAL SURVEY INSTRUMENTATION TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL
  - LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.
  - LOCATE AND OBSERVE ANGLE AND DISTANCE TO ALL AVAILABLE HORIZONTAL CONTROL POINTS PROVIDED IN THE PLAN
  - PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID ITEM.

**PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS**

QUANTITIES HAVE BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION AND/OR REMOVAL OF PIPES.

QUANTITIES ARE BASED ON A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH.

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

**RESURFACING AFTER PIPE INSTALLATION**

QUANTITIES HAVE BEEN PROVIDED TO RESURFACE THE ROADWAY AFTER THE COMPLETION OF THE CULVERT OR STRUCTURE PLACEMENT AT THESE LOCATIONS (SR 45 STA. 1020+79) AND (SR 45 STA. 1024+02). THIS WORK DOES NOT HAVE TO BE COMPLETE DURING CULVERT INSTALLATION.

THE QUANTITIES ARE BASED ON A RESURFACING WIDTH OF THE PAVEMENT AND SHOULDERS AND A LENGTH OF 50' ON EACH SIDE OF THE REQUIRED TRENCH WIDTH FOR INSTALLATION AND/OR REMOVAL.

**PAVEMENT MARKINGS**

ALL PAVEMENT MARKINGS THAT ARE REMOVED DURING THE CULVERT PLACEMENTS AT THESE LOCATIONS (SR 45 STA. 1020+79) AND (SR 45 STA. 1024+02). WILL BE REPLACED WITH ITEM 642 - TRAFFIC PAINT. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

621, RPM	4 EA
642, EDGE LINE, 6", TYPE 1	0.09 MI
642, CENTER LINE, TYPE 1	0.05 MI

**SEEDING AND MULCHING**

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	652 CU. YD.
659, SEEDING AND MULCHING	5877 SQ. YD.
659, REPAIR SEEDING AND MULCHING	294 SQ. YD.
659, COMMERCIAL FERTILIZER	0.79 TON
659, LIME	1.21 ACRES
659, WATER	32 M. GAL.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

**ITEM 202 - REMOVALS**

MISCELLANEOUS ITEMS, ITEMIZED AS RIGHT OF WAY ENCROACHMENTS, SHALL BE REMOVED AS PART OF THIS PROJECT. EACH OF THE FOLLOWING SHALL BE CARRIED AS A REMOVAL MISC. ITEM TO THE GENERAL SUMMARY.

ROCK	8 EACH
SIGN (CLAY STREET GRILL)	1 EACH

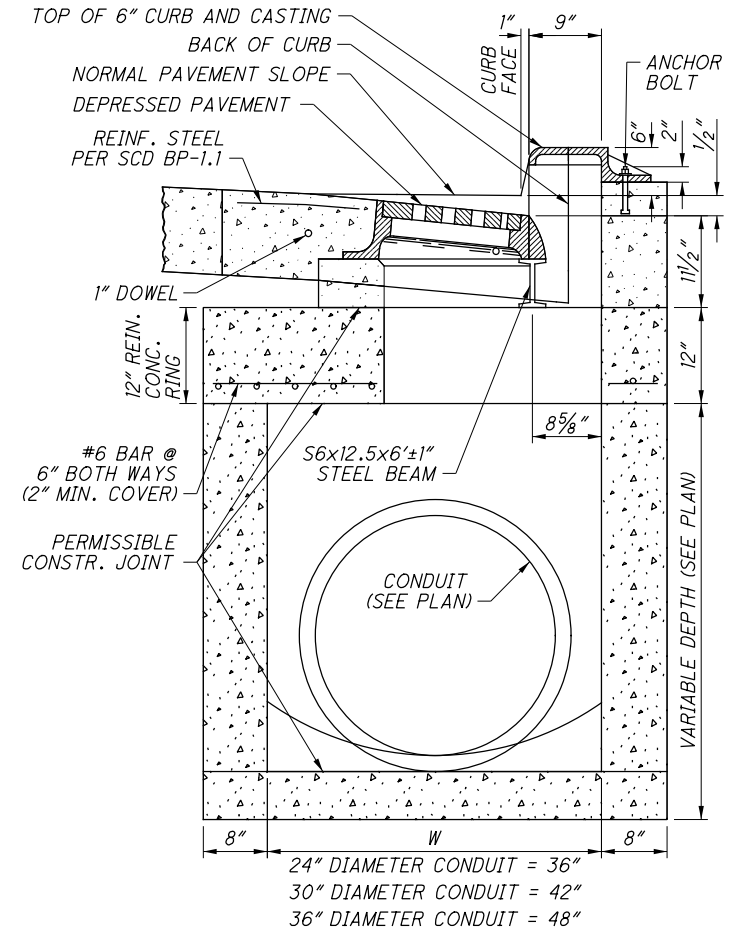
**ITEM 253 - PAVEMENT REPAIR**

A QUANTITY OF THIS ITEM SHALL BE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER TO REPAIR SHOULDER. THIS ITEM SHALL CONSIST OF CUTTING AND REMOVING DETERIORATED PAVEMENT FULL DEPTH AND PLACING 12"± 301 ASPHALT CONCRETE BASE, PG64-22. THE MAXIMUM COMPACTED DEPTH OF ANY ONE LAYER SHALL BE 6 INCHES. THE ENGINEER SHALL DETERMINE WHICH AREAS ARE TO BE REPAIRED. PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REMOVED AND REPLACED TO THE LIMITS DESIGNATED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

253, PAVEMENT REPAIR	225 SQ. YD.
255, SAW CUT	1000 FT.

**ITEM 611 - CATCH BASIN, NO. 3 OR 3A, AS PER PLAN**

CATCH BASIN NO. 3 OR 3A, AS PER PLAN SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 611 AND ACCORDING TO STANDARD CONSTRUCTION DRAWING CB-2.1, EXCEPT THAT SECTION B-B OF THE AFOREMENTIONED STANDARD DRAWING SHALL BE MODIFIED AS SHOWN AND THAT NO BRICK OR CONCRETE BLOCK CONSTRUCTION SHALL BE PERMITTED.



SIDE VIEW, CATCH BASIN NO. 3 OR 3A, AS PER PLAN

**ITEM 408 - PRIME COAT, AS PER PLAN**

APPLY "MC-70" AT A RATE OF 0.4 GALLONS PER SQUARE YARD, OR AS DETERMINED BY THE ENGINEER, TO THE COMPLETED COMPACTED AGGREGATE SHOULDER.

**ITEM 617 - COMPACTED AGGREGATE, AS PER PLAN**

IN LOW SHOULDER AREAS EXCEEDING 1", AND ADJACENT TO THE SAFETY EDGE, OR AS DIRECTED BY THE ENGINEER, RECYCLED ASPHALT PAVEMENT (RAP) SHALL BE USED IN AREAS ADJACENT TO THE PAVED BERM. THE RAP SHALL HAVE A MINIMUM PG CONTENT OF 4.5% AND MEET THE FOLLOWING GRADATION. ONCE THE STOCKPILE MEETS THE GRADATION, THE PG CONTENT OF THE RAP SHALL BE DETERMINED PER 441.03. THE RAP ANALYSIS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL 2 WEEKS PRIOR TO USE. METHOD OF MEASUREMENT SHALL BE AS PER 617.06. PLACEMENT AND COMPACTION SHALL MEET THE REQUIREMENTS OF ITEM 617. ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 617 COMPACTED AGGREGATE, AS PER PLAN.

MODIFIED GRADATION SHALL APPLY:	
SIEVE	TOTAL PERCENT PASSING
1-1/2"	100
3/4"	50-100
NO. 4	35-70
NO. 30	9-33
NO. 200	0-13

CALCULATED  
RCB  
CHECKED  
MAC

GENERAL NOTES

ATB-45-19.28

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SHEET NUM.												PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	6	13	14	15	16	24-37	40	01/SAF/P V	EXT	TOTAL	EXT	TOTAL					
												LS	201	11000	LS		<b>ROADWAY</b>	
						1,001		533	1,533	202	23000	1,534	SY	CLEARING AND GRUBBING				
					20				20	202	32000	20	FT	PAVEMENT REMOVED				
					1,453				1,453	202	35100	1,453	FT	CURB REMOVED				
					28				28	202	35200	28	FT	PIPE REMOVED, 24" AND UNDER				
					1				1	202	58000	1	EACH	PIPE REMOVED, OVER 24"				
					8				8	202	58100	8	EACH	MANHOLE REMOVED				
					409				409	SPECIAL	20270000	409	FT	CATCH BASIN REMOVED				
1									1	202	98100	1	EACH	FILL AND PLUG EXISTING CONDUIT, 12"	3			
	8								8	202	98100	8	EACH	REMOVAL MISC.: INSPECTION WELL	4			
									8	202	98100	8	EACH	REMOVAL MISC.: ROCK	5			
									1	202	98100	1	EACH	REMOVAL MISC.: SIGN (CLAY STREET GRILL)	5			
5									5	202	98200	5	FT	REMOVAL MISC.: CONDUIT	4			
							740		740	203	10000	740	CY	EXCAVATION				
38									38	203	10000	38	CY	EXCAVATION (FOR PAVEMENT REPAIR)				
							915		915	203	20000	915	CY	EMBANKMENT				
									50	203	20001	50	CY	EMBANKMENT, AS PER PLAN	4			
								2,589	378	204	10000	2,967	SY	SUBGRADE COMPACTION				
										204	13000	757	CY	EXCAVATION OF SUBGRADE (12" UNDERCUT)				
							2		1	204	45000	3	hour	PROOF ROLLING				
										204	50001	2,162	SY	GEOTEXTILE FABRIC, AS PER PLAN	5			
										204	50001	2,162	SY	GEOTEXTILE FABRIC, AS PER PLAN	5			
									1	623	39501	1	EACH	MONUMENT BOX ADJUSTED TO GRADE, AS PER PLAN	4			
									4	SPECIAL	69050100	4	EACH	MAILBOX SUPPORT SYSTEM, SINGLE	4			
									1	SPECIAL	69050200	1	EACH	MAILBOX SUPPORT SYSTEM, DOUBLE	4			
									2,173	SPECIAL	69098100	2,173	FT	REINFORCEMENT MESH FOR LONGITUDINAL JOINTS	5			
									LS	SPECIAL	69098400	LS		SURVEY CONTROL VERIFICATION	5			
												<b>EROSION CONTROL</b>						
								8	8	601	32110	8	CY	ROCK CHANNEL PROTECTION, TYPE B WITH AGGREGATE FILTER				
									5	601	32200	5	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER				
									2	659	00100	2	EACH	SOIL ANALYSIS TEST				
									652	659	00300	652	CY	TOPSOIL				
									5,877	659	10000	5,877	SY	SEEDING AND MULCHING				
									294	659	14000	294	SY	REPAIR SEEDING AND MULCHING				
									0.79	659	20000	0.79	TON	COMMERCIAL FERTILIZER				
									1.21	659	31000	1.21	ACRE	LIME				
									32	659	35000	32	MGAL	WATER				
									LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN				
									LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS				
									LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE				
									43,000	832	30000	43,000	EACH	EROSION CONTROL				
												<b>DRAINAGE</b>						
									3	602	20000	3	CY	CONCRETE MASONRY				
									20	605	13300	215	FT	6" UNCLASSIFIED PIPE UNDERDRAINS				
									2,026	605	14020	2,026	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC				
									5	611	00406	5	FT	4" CONDUIT, TYPE F				
									70	611	00510	70	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS				
									20	611	00900	20	FT	6" CONDUIT, TYPE B				
									20	611	01400	20	FT	6" CONDUIT, TYPE E				
									40	611	01500	40	FT	6" CONDUIT, TYPE F				
									217	611	04400	217	FT	12" CONDUIT, TYPE B, 706.01, 707.33, (707.01 or 707.02) ALUMINIZED				
									200	611	04600	474	FT	12" CONDUIT, TYPE C				
									105	611	05900	105	FT	15" CONDUIT, TYPE B, 706.01, 707.33, (707.01 or 707.02) ALUMINIZED				
									5	611	06100	49	FT	15" CONDUIT, TYPE C				
									83	611	10400	83	FT	24" CONDUIT, TYPE B, 706.01, 707.33, (707.01 or 707.02) ALUMINIZED				
									29	611	10600	29	FT	24" CONDUIT, TYPE C				
									517	611	11900	517	FT	27" CONDUIT, TYPE B, 706.01, 707.33, (707.01 or 707.02) ALUMINIZED				

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SHEET NUM.												PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	14	15	16	40	43	47	01/SAF/P V	EXT	TOTAL								
<b>DRAINAGE</b>																		
		444						444	611	13400	444	FT	30" CONDUIT, TYPE B, 706.01, 707.33, (707.01 or 707.02) ALUMINIZED					
		13						13	611	13600	13	FT	30" CONDUIT, TYPE C					
		33						33	611	16400	33	FT	36" CONDUIT, TYPE B, 706.01, 707.33, (707.01 or 707.02) ALUMINIZED					
		953						953	611	16600	953	FT	36" CONDUIT, TYPE C					
		122						122	611	21100	122	FT	48" CONDUIT, TYPE C					
	5							5	611	97400	5	FT	CONDUIT, MISC.: TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE					
	5							5	611	97400	5	FT	CONDUIT, MISC.: TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE					
	5							5	611	97400	5	FT	CONDUIT, MISC.: TYPE E FOR DRAINAGE DISCHARGE CONTINUANCE					
	5							5	611	97400	5	FT	CONDUIT, MISC.: TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE					
			3					3	611	98150	3	EACH	CATCH BASIN, NO. 3					
			2					2	611	98151	2	EACH	CATCH BASIN, NO. 3, AS PER PLAN					
			2					2	611	98180	2	EACH	CATCH BASIN, NO. 3A					
			6					6	611	98181	6	EACH	CATCH BASIN, NO. 3A, AS PER PLAN					
			4					4	611	98300	4	EACH	CATCH BASIN, NO. 5					
			9					9	611	98470	9	EACH	CATCH BASIN, NO. 2-2B					
			1					1	611	98510	1	EACH	CATCH BASIN, NO. 2-3					
	2							2	611	98630	2	EACH	CATCH BASIN ADJUSTED TO GRADE					
			9					9	611	99574	9	EACH	MANHOLE, NO. 3					
	1							1	611	99720	1	EACH	INSPECTION WELL					
			1					1	895	10040	1	EACH	MANUFACTURED WATER QUALITY STRUCTURE, TYPE 4					
<b>PAVEMENT</b>																		
		225						225	253	01000	225	SY	PAVEMENT REPAIR					
				4,369				4,369	254	01000	4,369	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1.5"					
		1,000		3,131	247			4,378	255	20000	4,378	FT	FULL DEPTH PAVEMENT SAWING					
				324	41			363	301	46000	365	CY	ASPHALT CONCRETE BASE, PG64-22					
	38							38	304	20000	38	CY	AGGREGATE BASE (FOR PAVEMENT REPAIR)					
		757		365				1,122	304	20001	1,122	CY	AGGREGATE BASE, AS PER PLAN					
				471	20			491	407	20000	491	GAL	NON-TRACKING TACK COAT					
				213				213	408	10001	213	GAL	PRIME COAT, AS PER PLAN					
				274				274	441	50101	274	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), AS PER PLAN, PG70-22M					
				1	12			13	441	50401	13	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS), AS PER PLAN, PG64-22					
						47		47	452	12050	47	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS					
				2,265				2,265	609	12000	2,265	FT	COMBINATION CURB AND GUTTER, TYPE 2					
				20				20	609	26000	20	FT	CURB, TYPE 6					
				30				30	617	10101	30	CY	COMPACTED AGGREGATE, AS PER PLAN					
<b>WATER WORK</b>																		
	10							10	638	10800	10	EACH	VALVE BOX ADJUSTED TO GRADE					
	5							5	638	10801	5	EACH	VALVE BOX ADJUSTED TO GRADE, AS PER PLAN					
<b>TRAFFIC CONTROL</b>																		
		4				72		33	621	00100	76	EACH	RPM					
						36		36	621	54000	36	EACH	RAISED PAVEMENT MARKER REMOVED					
						110		110	630	03100	110	FT	GROUND MOUNTED SUPPORT, NO. 3 POST					
						35		35	630	80100	35	SF	SIGN, FLAT SHEET					
						4		4	630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION					
						4		4	630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL					
		0.09						0.09	642	00104	0.09	MILE	EDGE LINE, 6", TYPE 1					
		0.05						0.05	642	00300	0.05	MILE	CENTER LINE, TYPE 1					
						0.24		0.24	646	10010	0.24	MILE	EDGE LINE, 6"					
						0.65		0.65	646	10200	0.65	MILE	CENTER LINE					
						396		396	646	10310	396	FT	CHANNELIZING LINE, 12"					
						97		97	646	10400	97	FT	STOP LINE					
						11		11	646	20300	11	EACH	LANE ARROW					
<b>TRAFFIC SIGNALS</b>																		
						5		5	625	31510	5	EACH	PULL BOX REMOVED					
						8		8	632	05006	8	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK					
						8		8	632	25000	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD					
						132		132	632	30200	132	FT	MESSANGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES					
						132		132	632	30600	132	FT	TETHER WIRE, WITH ACCESSORIES					

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