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SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED	NUL	CHECKED	MSL
10	11	13	34	35	36	37	98	99	110	116	OFFICE CALCS	01/STR/OT										
												DRAINAGE (CONTINUED)										
					95							95		611	07400	95	FT	18" CONDUIT, TYPE B				
					448							448		611	07600	448	FT	18" CONDUIT, TYPE C				
					62							62		611	08900	62	FT	21" CONDUIT, TYPE B				
					278							278		611	16400	278	FT	36" CONDUIT, TYPE B				
					44							44		611	16600	44	FT	36" CONDUIT, TYPE C				
100												100		611	97400	100	FT	CONDUIT, MISC.: TYPE B FOR DRAINAGE DISCHARGE CONTINUANCE				
100												100		611	97400	100	FT	CONDUIT, MISC.: TYPE C FOR DRAINAGE DISCHARGE CONTINUANCE				
100												100		611	97400	100	FT	CONDUIT, MISC.: TYPE F FOR DRAINAGE DISCHARGE CONTINUANCE				
					11							11		611	98180	11	EACH	CATCH BASIN, NO. 3A				
					1							1		611	98370	1	EACH	CATCH BASIN, NO. 6				
					8							8		611	98470	8	EACH	CATCH BASIN, NO. 2-2B				
					1							1		611	98634	1	EACH	CATCH BASIN RECONSTRUCTED TO GRADE				
					2							2		611	99660	2	EACH	MANHOLE RECONSTRUCTED TO GRADE				
4						2						6		611	99710	6	EACH	PRECAST REINFORCED CONCRETE OUTLET				
5						5						5		611	99720	5	EACH	INSPECTION WELL				
					8							8		611	99574	8	EACH	MANHOLE, NO. 3				
					1							1		611	99586	1	EACH	MANHOLE, NO. 3 WITH 108" BASE I.D. AND 12" WEIR				
					1							1		895	10040	1	EACH	MANUFACTURED WATER QUALITY STRUCTURE, TYPE 4				
												PAVEMENT										
												1271	1271	302	46000	1271	CY	ASPHALT CONCRETE BASE, PG64-22				
	72											1,825	1,897	304	20000	1,897	CY	AGGREGATE BASE				
												762	762	407	20000	762	GAL	NON-TRACKING TACK COAT				
	22											22		441	50000	22	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22				
												317	317	442	20000	317	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448)				
												423	423	442	20200	423	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448)				
	615											615		452	10010	615	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1				
												493		452	11010	493	SY	7" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1				
			2,504	657								3,161		609	12000	3,161	FT	COMBINATION CURB AND GUTTER, TYPE 2				
			513									513		609	26000	513	FT	CURB, TYPE 6				
			352									352		609	31000	352	FT	COMBINATION CURB AND GUTTER, TYPE 9				
			243									243		609	31001	243	FT	COMBINATION CURB AND GUTTER, TYPE 9, AS PER PLAN				11
			1,159	96								1,255		609	72001	1,255	SY	CONCRETE MEDIAN, AS PER PLAN				11
		LS										LS		SPECIAL	69098400	LS		CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTION				13
												LIGHTING										
										26		26		625	00450	26	EACH	CONNECTION, FUSED PULL APART				
										13		13		625	00460	13	EACH	CONNECTION, UNFUSED PULL APART				
										45		45		625	00480	45	EACH	CONNECTION, UNFUSED PERMANENT				
										13		13		625	10490	13	EACH	LIGHT POLE, CONVENTIONAL, AT6B32.5				
										13		13		625	14000	13	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP				
										573		573		625	23200	573	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE				
										1,482		1,482		625	23400	1,482	FT	NO. 10 AWG POLE AND BRACKET CABLE				
										1,691		1,691		625	24320	1,691	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES				
										191		191		625	25900	191	FT	CONDUIT, JACKED OR DRILLED, 3"				
										13		13		625	26251	13	EACH	LUMINAIRE, CONVENTIONAL, AS PER PLAN, SOLID STATE (LED)				109
										1,653		1,653		625	29002	1,653	FT	TRENCH, 24" DEEP				
										8		8		625	30700	8	EACH	PULL BOX, 725.08, 18"				
										14		14		625	32000	14	EACH	GROUND ROD				
										1		1		625	34001	1	EACH	POWER SERVICE, AS PER PLAN				109
										1		1		625	34450	1	EACH	CONTROL CENTER CABINET, COMPLETE				
										1,653		1,653		625	36000	1,653	FT	PLASTIC CAUTION TAPE				
										1		1		632	70200	1	EACH	CONDUIT RISER, 1" DIAMETER				
												TRAFFIC CONTROL										
										63		63		621	00100	63	EACH	RPM				
										28		28		621	54000	28	EACH	RAISED PAVEMENT MARKER REMOVED				
										337		337		630	03100	337	FT	GROUND MOUNTED SUPPORT, NO. 3 POST				
										91		91		630	03101	91	FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN				
										6		6		630	08600	6	EACH	SIGN POST REFLECTOR				
										1		1		630	79500	1	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED				
										233		233		630	80100	233	SF	SIGN, FLAT SHEET				
										22		22		630	84900	22	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL				
										4		4		630	85100	4	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION				

GENERAL SUMMARY

BUT - 73 - 13.05



625, LUMINAIRE, CONVENTIONAL, AS PER PLAN, SOLID STATE (LED)

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING PROVIDE A SOLID STATE (LED) LUMINAIRE WITH A B-U-G UP-LIGHTING RATING OF U2 OR LESS. THE LUMINAIRE IS INTENDED FOR EXTERNAL ON/OFF CONTROL AND SHALL NOT INCLUDE A PHOTOCCELL SOCKET. ASSURE THE LUMINAIRE HAS A NOMINAL COLOR TEMPERATURE OF 3000K. UNITS SHALL HAVE AN IES TYPE III DISTRIBUTION AND BE 120 VOLTS.

SUPPLY ONE OF THE FOLLOWING LUMINAIRES:

AMERICAN ELECTRIC "AUTOBAHN" SERIES WITH PHOTOMETRIC DISTRIBUTION:

~~ATBM F20 MVOL T120 R3 3K WITH INPUT WATTAGE OF 94W.~~

GENERAL ELECTRIC "EVOLVE" WITH PHOTOMETRIC DISTRIBUTION ERL1-0120-10-C3-30, WITH INPUT WATTAGE OF 97W.

OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS.

ITEM 625, "LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625, POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

BUTLER RURAL ELECTRIC COOPERATIVE, LLC  
3888 STILLWELL BECKETT ROAD  
OXFORD, OH 45056  
(513)867-4438  
ATTN: BILL HUMBERT

THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE MAINTAINING AGENCY NOTED IN THE PLANS. THIS SHALL BE DONE NOT ONLY FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT BUT ALSO FOR EACH EXISTING POWER SERVICE, SINCE THERE MAY BE A REASSIGNMENT OF THE RESPONSIBILITY FOR AN EXISTING SERVICE AS A RESULT OF THE WORK PERFORMED BY THIS PROJECT. THE PROPOSED POWER SERVICE SHALL BE 240V.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND SHALL BE KEYED IN ACCORDANCE WITH C&MS 631.06. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

625, LIGHT POLE CONVENTIONAL, AT6B32.5

THIS ITEM SHALL MEET ALL THE REQUIREMENTS OF ITEM 625, LIGHT POLE CONVENTIONAL.

LIGHT POLES FOR THIS PROJECT SHALL HAVE A SUPPORT HEIGHT OF 32.5 FT AND A 6 FT BRACKET ARM. THEY SHALL BE SUPPLIED WITH BREAKWAY TRANSFORMER BASES.

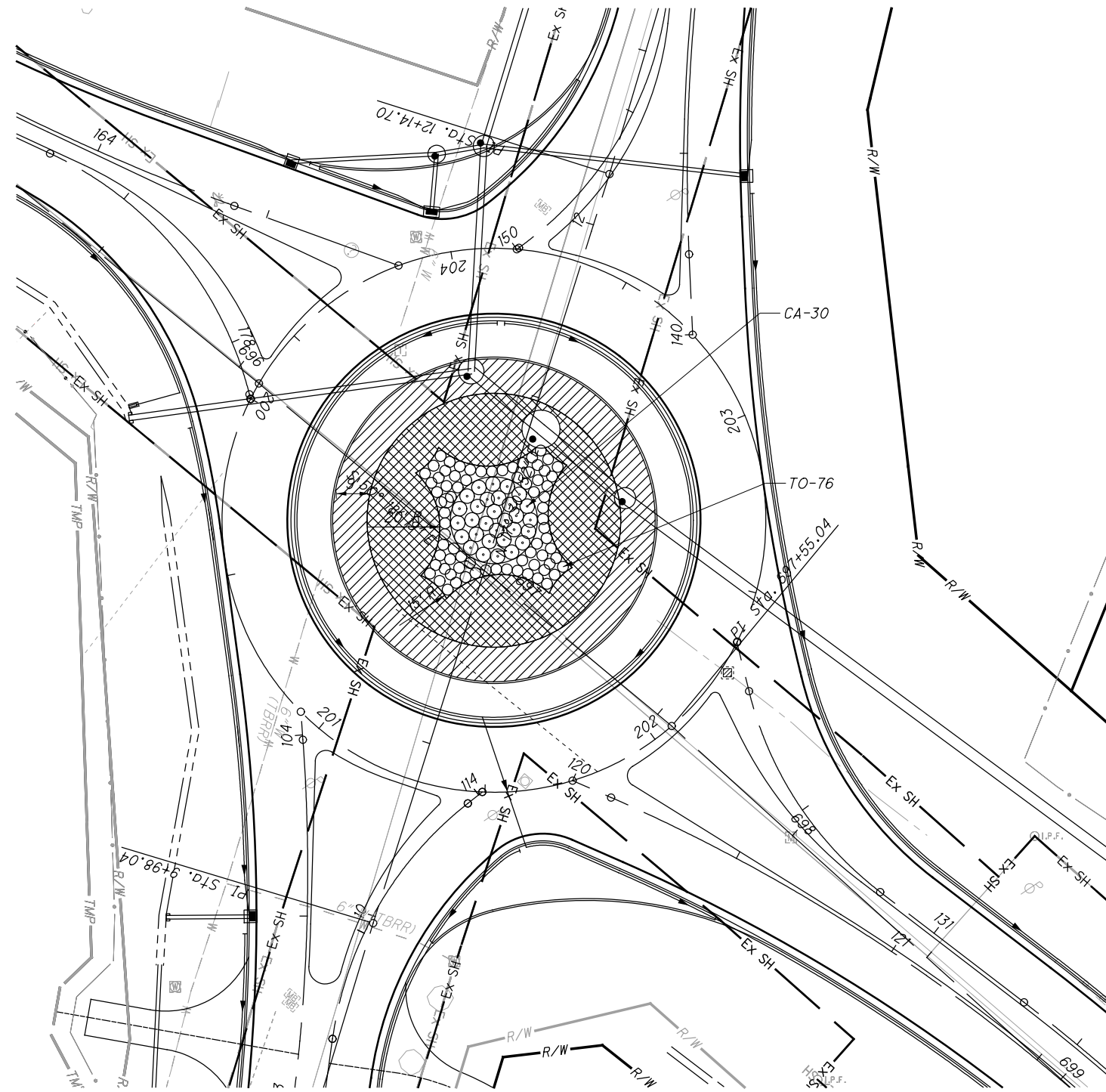
PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH, ITEM 625, "LIGHT POLE CONVENTIONAL" AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

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LIGHTING NOTES

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**PLANT MATERIAL GUARANTEE**

1. THE PERIOD OF ESTABLISHMENT BEGINS IMMEDIATELY UPON COMPLETION OF THE PLANTING OPERATIONS.
2. DURING THE PERIOD OF ESTABLISHMENT, FOLLOW STANDARD HORTICULTURAL PRACTICES TO ENSURE THE VIGOR AND GROWTH OF THE PLANTINGS.
3. WATER, REMULCH, AND CULTIVATE PLANTS AS NECESSARY.
4. PERFORM AT LEAST TWO WEEDINGS OF SUCH INTENSITY AS TO COMPLETELY RID THE PLANTED AND MULCHED AREAS OF WEEDS AND GRASSES.
5. PRIOR TO FINAL ACCEPTANCE ANY PLANTS THAT ARE IN A DEAD OR, IN THE OPINION OF THE ENGINEER, IS IN ANY UNHEALTHY OR UNSIGHTLY CONDITION, AND/OR HAS LOST ITS NATURAL SHAPE DUE TO DEAD BRANCHES, EXCESSIVE PRUNING, INADEQUATE OR IMPROPER MAINTENANCE, SHALL BE REPLACED IN THE NEXT PLANTING SEASON.
6. ALL PLANTS SUBJECT TO THIS CONTRACT SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF INSTALLATION.

**NOTES:**

1. CONTRACTOR SHALL IDENTIFY ANY UNDERGROUND IMPEDIMENTS PRIOR TO BEGINNING PLANTING OPERATIONS BY CONTACTING (OUPS) AT 800-362-2764. DO NOT PROCEED WITH CONSTRUCTION AS DESIGNED WHEN UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. FINAL LOCATION OF ALL PLANT MATERIALS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
3. SECURE PLANT MATERIAL AS SPECIFIED FROM AVAILABLE SOURCES. ALL PLANTS WILL BE NURSERY GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR A MINIMUM OF 2 YEARS. IN THE EVENT THAT PLANT MATERIALS ARE NOT AVAILABLE, CONTACT THE ENGINEER FOR APPROVED SUBSTITUTIONS. NO SUBSTITUTIONS FOR PLANT MATERIALS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER.
4. ALL PLANT MATERIAL SHALL BE APPROVED BY THE ENGINEER UPON DELIVERY TO THE SITE. PRIOR TO INSTALLATION LABEL ALL PLANT SPECIMENS WITH BOTANICAL GENUS AND SPECIES NAMES.
5. SEE PLANTING DETAILS FOR PLANTING SOIL MIX AND BACKFILL REQUIREMENTS.
6. SHRUB AND GROUND COVER BEDS SHALL BE EXCAVATED IN FULL WIDTHS AS INDICATED ON PLANTING DETAILS.
7. ALL WORK TO BE PERFORMED BY LICENSED CONTRACTORS AND EXPERIENCED WORKERS.
8. ALL PLANT MATERIALS SHALL MATCH SPECIFICATIONS FOR SPECIES AND SHALL COMPLY WITH ANSI Z60.1 "STANDARDS FOR THE NURSERY STOCK"
9. ALL PLANTED AREAS (EXCLUDING TURF) ARE TO BE MULCHED WITH A 4" DEEP LAYER OF SHREDDED BARK MULCH.
10. PROTECT ALL EXISTING TREES AND LANDSCAPING DESIGNATED TO REMAIN. PROVIDE TEMPORARY FENCING, BARRICADES OR OTHER SUITABLE GUARDS OUTSIDE DRIP LINE (OUTER PERIMETER OF BRANCHES) TO PROTECT FROM DAMAGE OF TREES TO REMAIN. DO NOT PERMIT VEHICLES WITHIN DRIP LINE. RESTRICT FOOT TRAFFIC WITHIN DRIP LINE TO AVOID EXCESSIVE SOIL COMPACTION.
11. SUPPLY SAMPLE (APPOX. ONE GALLON) OF PLANTING SOIL MIX AND MULCH 15 DAYS PRIOR TO PLANTING.
12. CONTRACTOR SHALL MAKE CERTAIN THAT PROPOSED PLANTS ARE PROPERLY MAINTAINED AND WATERED DURING TRANSPORTATION AND STORAGE.
13. PLANTING OPERATIONS SHALL STOP WHEN SOIL IS FROZEN OR WHEN TOPSOIL IS MUDDY.
14. THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY.
15. FOR LANDSCAPE DETAILS, SEE SHEET 113.

**NOTES:**

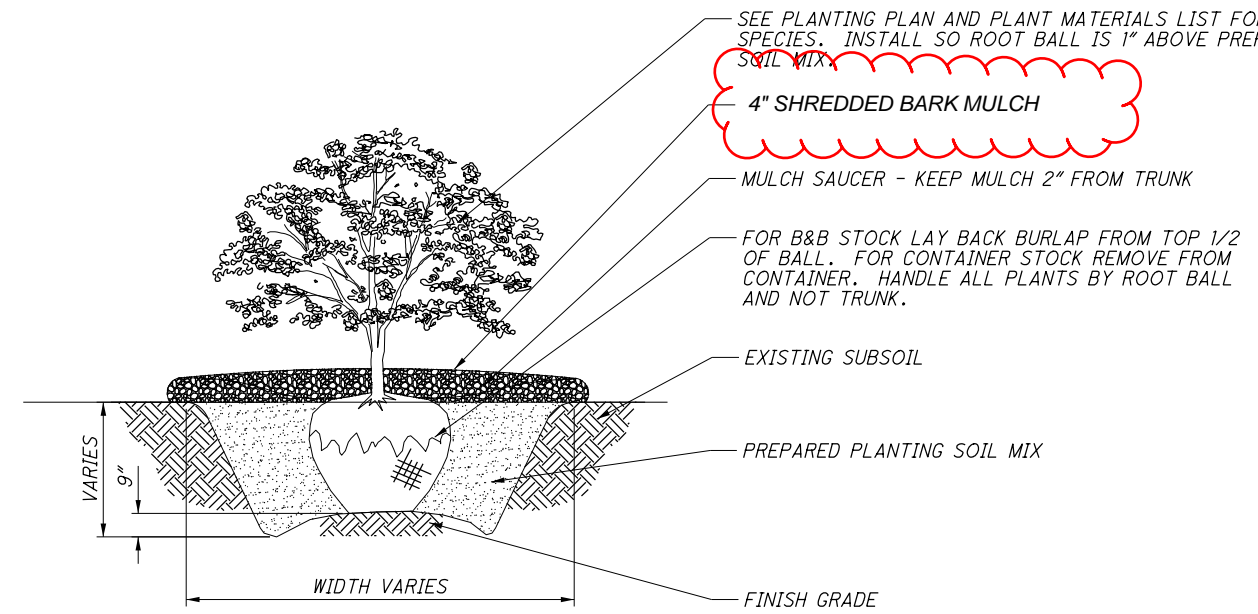


ITEM	KEY	DESCRIPTION: BOTANICAL NAME - COMMON NAME	SIZE	COND.	QTY.
661	⊙ CA	DECIDUOUS SHRUB, 30" HEIGHT	30" HEIGHT	30" HEIGHT	30 EACH
661	○ TO	CORNUS ALBA 'CHBLZAM' - CHBLZAM SIBERIAN DOGWOOD	18" HEIGHT	18" HEIGHT	76 EACH
661	⊗	EVERGREEN SHRUB, 18" HEIGHT	2 1/4" P.P.	2 1/4" P.P.	2988 EACH
661	⊗	THUJA OCCIDENTALIS 'AUREA' - GOLDEN GLOBE ARBORVITAE	2 1/4" P.P.		76 CY
661	⊗	MULCH, AS PER PLAN			424 GAL
662	⊗	SHREDDED BARK, 4" THICKNESS			
		LANDSCAPE WATERING			

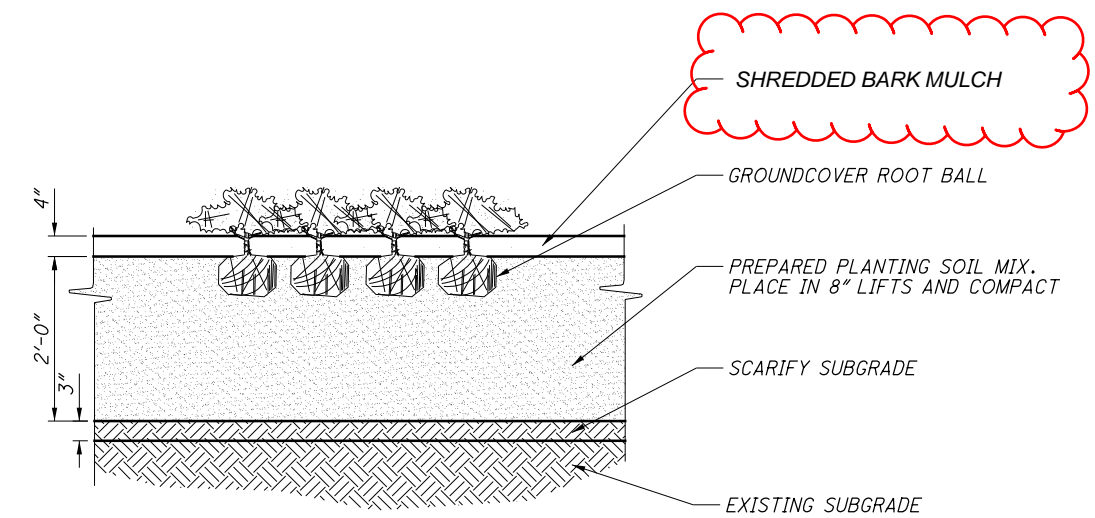
**LANDSCAPE PLAN**

**BUT - 73 - 13.05**



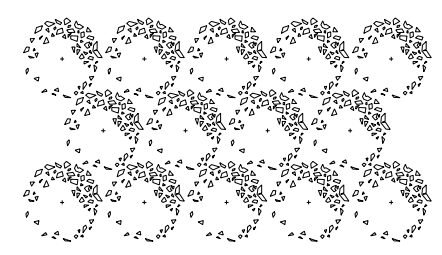


① SHRUB PLANTING  
SCALE: NTS

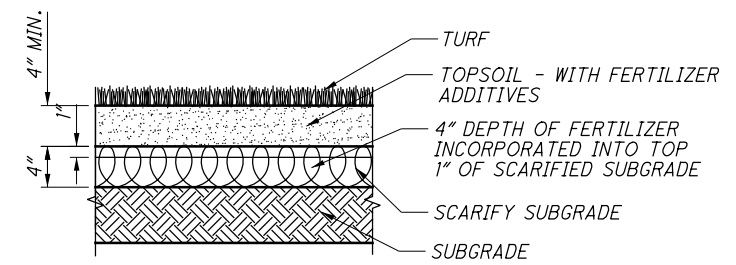


② GROUNDCOVER PLANTING DETAIL  
SCALE: NTS

NOTE:  
UNLESS OTHERWISE INDICATED ON THE LANDSCAPE  
PLAN ALL GROUNDCOVER PLANTINGS SHALL USE  
A TRIANGULAR SPACING.



③ GROUNDCOVER PLANT SPACING  
SCALE: NTS



④ TURFGRASS PLANTING  
SCALE: NTS

NOTES:

1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION OF PLANTS.
2. PLANTING PITS TO BE EXCAVATED A MINIMUM OF TWO TIMES (2X) THE WIDTH OF THE ROOT BALL AND BACKFILLED WITH PLANT SOIL MIX.
3. SET PLANTS PLUMB IN PLANTING PIT.
4. EACH PLANTING PIT SHALL BE EXAMINED FOR PROPER DRAINAGE PRIOR TO INSTALLATION OF PLANT. DRAINAGE SUMP TO BE PROVIDED IF DRAINAGE IS NOT FOUND TO BE ACCEPTABLE.
5. PREPARED PLANT SOIL MIX SHALL CONSIST OF 2/3 CUBIC YARD OF TOPSOIL, 1/3 CUBIC YARD OF PEAT MOSS, AND 20 CUPS OF FERTILIZER.
6. LIFT PROPOSED PLANTS ONLY FROM THE BOTTOM OF ROOT BALL OR CONTAINERS.
7. PRUNE OFF ANY SECONDARY/ADVENTITIOUS, GIRDLING, AND POTENTIAL GIRDLING ROOTS WITH CLEAN, SHARP PRUNING TOOLS.
8. DO NOT USE PLANTING SOIL MIX THAT IS MUDDY OR FROZEN.
9. AFTER THE SOIL AROUND THE ROOT BALL HAS BEEN TAMPED INTO PLACE, ALL EXCESS SOIL SHALL BE REMOVED.
10. PLANTS SHALL BE WATERED IMMEDIATELY AFTER PLANTING WITH A SLOW, SATURATING WATERING EQUAL TO ONE INCH.
11. CONTRACTOR SHALL REPAIR ANY DAMAGE TO SURROUNDING AREA, INCLUDING SEEDING OF GRASS AREAS.
12. ALL TAGS, ETC. SHALL BE REMOVED FROM THE PLANTS PRIOR TO THE END OF THE PLANT GUARANTEE PERIOD.
13. CONTRACTOR SHALL ENSURE PLANTS ARE PROPERLY MAINTAINED AND WATERED THROUGHOUT THE PLANT GUARANTEE PERIOD. IN ORDER TO KEEP EACH PLANT IN HEALTHY GROWING CONDITION THE MAINTENANCE SHALL INCLUDE THE FOLLOWING:
  - A. PROVIDE SUPPLEMENTAL IRRIGATION IN THE FIRST SEVERAL MONTHS AFTER PLANTING FOR PLANTS INSTALLED IN THE SPRING AND/OR DURING EXTREME WEATHER CONDITIONS (HOT, WINDY, OR DRY).
  - B. WEED CONTROL IN MULCHED AREAS SHALL BE PROVIDED DURING PLANT GUARANTEE PERIOD.

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**STRUCTURE GENERAL NOTES**

**DESIGN SPECIFICATIONS:**

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017, AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

**DESIGN LOADING:**

HL-93, FUTURE WEARING SURFACE (FWS) OF 0.060 KSF.

**DESIGN DATA:**

CONCRETE CLASS QC1 -  
COMPRESSIVE STRENGTH 4 KSI (SUBSTRUCTURE)  
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

**FOUNDATION BEARING RESISTANCE:**

FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 1.67 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 2.37 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 5.00 KIPS PER SQUARE FOOT.

**ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN:**

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING REINFORCING STEEL TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

**CUT LINE CONSTRUCTION JOINT PREPARATION:**

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH, BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

**FORESLOPE WALL ANCHOR DOWELS:**

ANCHOR PER ODOT CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO ODOT CMS 705.20 AND TO AN EMBEDMENT DEPTH OF 6". PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ODOT ITEM 511. AS AN ALTERNATIVE TO RESIN BONDING, THREADED INSERTS OR NONPROTRUDING MECHANICAL CONNECTORS CAST INTO THE CULVERT BY THE MANUFACTURER MAY BE USED PROVIDED THEY CAN RESIST AN ULTIMATE PULL-OUT STRENGTH OF 12 KIPS AND MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB. MECHANICAL CONNECTORS MUST PROVIDE AN "L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS SHALL BE INCLUDED WITH ODOT ITEM 611.

**POROUS BACKFILL WITH GEOTEXTILE FABRIC:**

POROUS BACKFILL WITH GEOTEXTILE FABRIC 2'-0" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" UP THE WALL. WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL BE SPACED AS SHOWN IN PLANS.

**PREFORMED EXPANSION JOINT FILLER:**

PREFORMED EXPANSION JOINT FILLER (PEJF) CONFORMING TO ODOT CMS 705.03, 1 INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERTS AND THE ENDS OF THE WINGWALLS. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER.

**WATERPROOFING:**

TYPE 2 WATERPROOFING, PER ODOT CMS 512.08 AND 711.25 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERTS IN CONTACT WITH THE BACKFILL. SEE SHEET 6/12 FOR ADDITIONAL DETAILS. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

**SEALING OF FORESLOPE WALL AND WINGWALLS:**

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS ON THIS SHEET. THE FINISH COAT COLOR SHALL BE FEDERAL COLOR NO. 595B-17778, LIGHT NEUTRAL. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.

**ITEM 503, COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN:**

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING. NO ADDITIONAL PAYMENT WILL BE MADE FOR PROVIDING AN ALTERNATE DESIGN.

**ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN**

DRILL DOWEL HOLES WHERE SHOWN IN THE PLANS. INSTALL REINFORCING STEEL ACCORDING TO ITEM 510 USING EPOXY GROUT, 705.20. PRIOR TO DRILLING DOWEL HOLES, LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER). IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR.

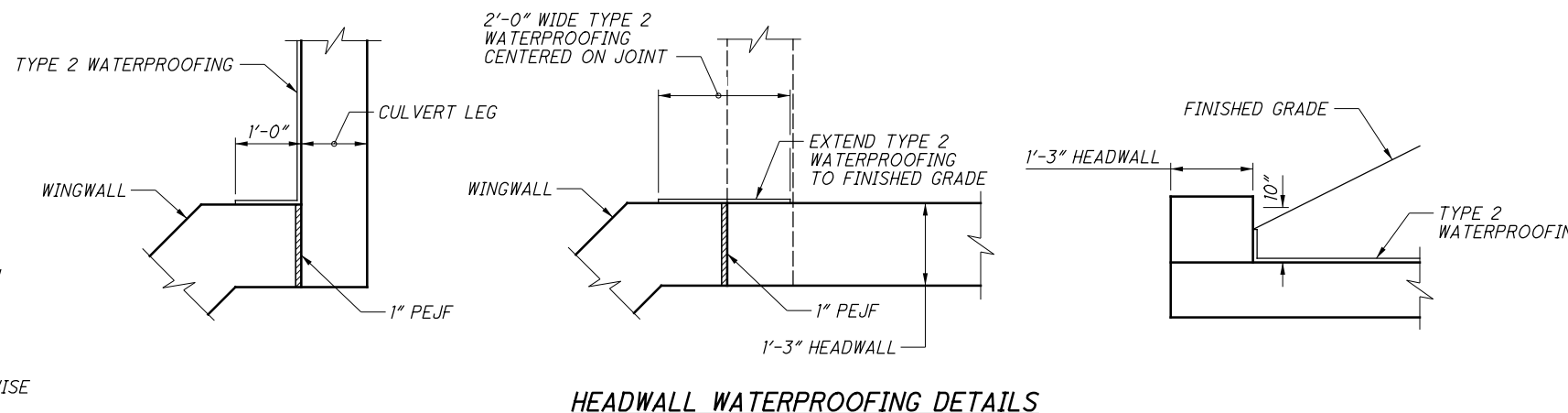
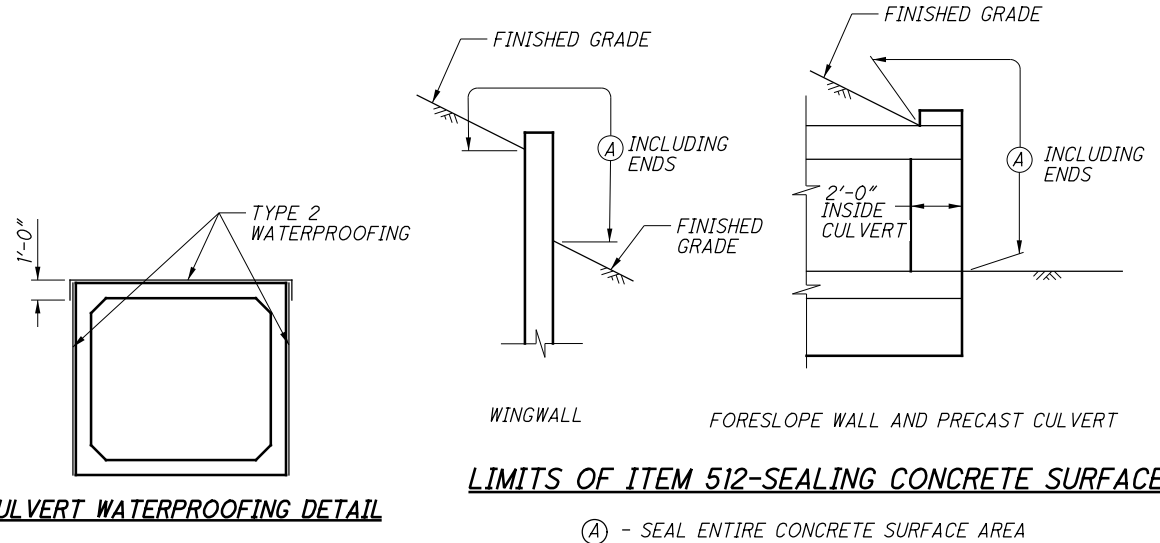
**ITEM 511 - CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN:**

THE DEPARTMENT WILL PERMIT THE USE OF PRECAST CONCRETE IN LIEU OF CAST-IN-PLACE CONCRETE FOR HEADWALLS AND WINGWALLS IN ACCORDANCE WITH C&MS 602.03. THE DEPARTMENT WILL PAY FOR THE WINGWALL AND HEADWALL CONCRETE IN SQUARE YARD AS DETERMINED FROM PLAN DIMENSIONS USING THE WALL HEIGHTS ABOVE THE FOOTING AND LENGTH ALONG THE EXTERIOR FACES OF THE WALLS. THE DEPARTMENT WILL CONSIDER THE REINFORCING STEEL IN THE WINGWALLS AND HEADWALLS, INCLUDING THE REINFORCEMENT THAT EXTENDS INTO THE FOOTINGS, AS INCIDENTAL TO THE RETAINING/WINGWALL CONCRETE. THE TOTAL QUANTITY OF CAST-IN-PLACE WINGWALL AND HEADWALL CONCRETE IS 29 CU.YD. THE TOTAL QUANTITY OF CAST-IN-PLACE WINGWALL AND HEADWALL REINFORCING STEEL IS 3661 LBS.

**LEGEND:**

- B.F. BACK FACE
- (BTM.) BOTTOM
- CLR. CLEAR
- DIA. DIAMETER
- E.F. EACH FACE
- F.F. FRONT FACE
- MAX. MAXIMUM
- MIN. MINIMUM
- PEJF PREFORMED EXPANSION JOINT FILLER
- SER. SERIES
- STR. STRAIGHT
- (TYP.) TYPICAL
- INC. INCREMENT
- UNO UNLESS NOTED OTHERWISE

ESTIMATED QUANTITIES					
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	2/12
503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	2/12
503	21300	LS		UNCLASSIFIED EXCAVATION	
509	10000	6929	LB	EPOXY COATED REINFORCING STEEL	
510	10001	18	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	2/12
511	46001	68	SY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING, AS PER PLAN	2/12
511	46513	77	CY	CLASS QC1 CONCRETE WITH QC/QA, FOOTING, AS PER PLAN	6/12
512	10100	75	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	195	SY	TYPE 2 WATERPROOFING	
516	13600	60	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
601	11000	19	SY	RIPRAP, TYPE D	
601	32004	66	CY	ROCK CHANNEL PROTECTION, TYPE A WITH GEOTEXTILE FABRIC	
601	34200	17	CY	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER	
611	95521	40	FT	10' X 9' CONDUIT, TYPE A, 706.05, AS PER PLAN (DESIGN EARTH COVER 7')	6/12
613	41200	21	CY	LOW STRENGTH MORTAR BACKFILL	



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DESIGN AGENCY: **BURGESS & NIPLE**  
 5085 Reed Road  
 Columbus, Ohio 43220

DATE: 12/18/18  
 REVISIONS: XAC  
 STRUCTURE FILE NUMBER: 0901253

DESIGNED: BCS  
 CHECKED: MAB

GENERAL NOTES AND QUANTITIES  
 BRIDGE NO. BUT-073-1326  
 SR 73 OVER TRIBUTARY OF FOUR MILE CREEK

BUT-73-13.05  
 PID No. 102059

2 / 12  
 119  
 154