ITEM 630 - SIGNING MISC.: OVERHEAD MOUNTED SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON

1. RRFB INDICATIONS

A. EACH RRFB INDICATION LENS SHALL BE A MINIMUM SIZE OF APPROXIMATELY 5" WIDE X 2" HIGH.
B. THE RRFB INDICATIONS SHALL BE ALIGNED HORIZONTALLY, WITH THE LONGER DIMENSION OF THE INDICATION HORIZONTAL. THERE SHALL BE ONE LED LIGHT INDICATOR FACING THE TRAVEL DIRECTION FOR THE POLE MOUNTED RRFB, AND THERE SHALL BE TWO LED LIGHT INDICATORS, ONE FACING EACH DIRECTION, FOR THE MAST ARM LED LIGHT INDICATOR.
C. EACH RRFB SHALL BE SUPPLIED WITH ALL REQUIRED HARDWARE TO INSTALL ASSEMBLY. ALL EXPOSED HARDWARE SHALL BE ANTI-VANDAL.
D. EACH POLE MOUNTED RRFB LED LIGHT INDICATOR SHALL BE LOCATED BETWEEN THE BOTTOM OF THE CROSSING WARNING SIGN AND THE TOP OF THE SUPPLEMENTAL DOWNWARD DIAGONAL ARROW PLAQUE, AS SHOWN ON THE DETAIL.
E. EACH OVERHEAD MOUNTED RRFB LED LIGHT INDICATOR SHALL BE LOCATED BELOW THE BOTTOM OF THE CROSSING WARNING SIGN, AS SHOWN ON THE DETAIL.
F. THE LIGHT INTENSITY OF THE YELLOW INDICATIONS SHALL MEET THE MINIMUM CLASS 1 SPECIFICATIONS OF SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) STANDARD J595 (DIRECTIONAL FLASHING OPTICAL WARNING DEVICES FOR AUTHORIZED EMERGENCY, MAINTENANCE, AND SERVICE VEHICLES) DATED JANUARY, 2005.
G. TO MINIMIZE EXCESSIVE GLARE DURING NIGHTTIME CONDITIONS, AN AUTOMATIC SIGNAL DIMMING DEVICE SHALL BE USED TO REDUCE THE BRILLIANCE OF THE RRFB INDICATIONS.
H. THE PUSHBUTTON INTERGRAL TO THE RRFB SHALL BE INTERNALLY ILLUMINATED.

2. SIGNS

A. ALL SIGN ASSEMBLIES SHALL USE ANTI-VANDAL FASTENERS TO MOUNT COMPONENTS TO SIGN AND SIGN TO FIXTURE.
B. PEDESTRIAN PUSHBUTTONS SIGNS SHALL BE PROVIDED AND INCLUDE THE LEGEND "PUSH BUTTON TO TURN ON WARNING LIGHTS", SIGNS SHOULD BE MOUNTED ABOVE EACH PEDESTRIAN PUSHBUTTON.
C. TWO SETS OF R1-9 SIGNS SHALL BE REQUIRED PER UNIT FOR VIEW FROM EACH APPROACH.
D. ASSURE SIGN MEETS THE REQUIREMENTS OF C&MS 630.

3. CONTROL CIRCUIT

A. THE CONTROL CIRCUIT SHALL HAVE THE CAPABILITY OF INDEPENDENTLY FLASHING UP TO TWO INDEPENDENT OUTPUTS. THE LED LIGHT OUTPUTS AND FLASH PATTERN SHALL BE COMPLETELY PROGRAMMABLE.
B. THE CONTROL CIRCUIT SHALL BE SEALED WATERTIGHT TO ELIMINATE DIRT CONTAMINATION AND ALLOW FOR SAFE HANDLING IN ALL WEATHER CONDITIONS.
C. THE LEDS SHALL BE SEALED AGAINST DUST AND MOISTURE INTRUSION AS PER THE REQUIREMENTS OF NEMA STANDARD 250-1991 FOR TYPE 4 ENCLOSURE AND TO PROTECT ALL INTERNAL LED AND ELECTRICAL COMPONENTS.

ITEM 630 - SIGNING MISC.: OVERHEAD MOUNTED SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON SIGN ASSEMBLY. CONTINUED

4. BATTERY AND SOLAR PANELS

A. BATTERY UNIT SHALL BE A 12VDC, 35 AHR MINIMUM, SEALED GEL OR AGM LEAD ACID BATTERY. BATTERIES SHALL HAVE A WRITTEN TWO YEAR FULL REPLACEMENT WARRANTY.
B. THE SOLAR PANEL SHALL PROVIDE A MINIMUM OF 40 WATTS PEAK TOTAL OUTPUT.
C. THE SOLAR PANEL SHALL BE MOUNTED TO AN ALUMINUM PLATE AND BRACKET AT AN ANGLE OF 45 DEGREES- 60 DEGREES TO PROVIDE MAXIMUM OUTPUT.
D. ALL FASTENERS USED SHALL BE ANTI-VANDAL.

5. WIRELESS RADIO

A. RADIO CONTROL SHALL OPERATE ON A 900 MHZ FREQUENCY HOPPING SPREAD SPECTRUM NETWORK, WI-FI OR APPROVED EQUAL.
B. RADIO SHALL INTEGRATE COMMUNICATION OF RRFB CONTROL CIRCUIT TO ACTIVATE SIGN FROM PUSHBUTTON INPUT.
C. THE RADIO SHALL BE SYNCHRONIZED SO ALL OF THE REMOTE RRFB LIGHT INDICATIONS WILL TURN ON WITHIN 120 MSEC OF EACH OTHER AND REMAIN SYNCHRONIZED THROUGH-OUT THE DURATION OF THE FLASHING CYCLE.

6. PUSHBUTTON

A. THE PUSHBUTTON SHALL BE CAPABLE OF CONTINUOUS OPERATION OVER A TEMPERATURE RANGE OF -30 DEGREES F TO +165 DEGREES F.

B. PUSHBUTTON SHALL BE ADA COMPLIANT

7. OVERHEAD SUPPORT

A. MOUNT ON A STANDARD TC-16.21 DESIGN 5 SINGLE ARM OVERHEAD SUPPORT WITH A 21 FOOT ARM. FOUNDATION SHALL BE A STANDARD TC-21.20 FOR A STANDARD TC-16.21 DESIGN 5 SUPPORT.

CONSTRUCTION

THE RRFB SHALL BE ASSEMBLED AND CONSTRUCTED BY THE CONTRACTOR AS SHOWN AND SPECIFIED ON THE PLANS.

WARRANTY

WARRANTY SHALL BE TWO YEARS FROM THE DATE OF FINAL ACCEPTANCE.

MEASUREMENT

THE DEPARTMENT WILL MEASURE THE ITEM COMPLETE IN PLACE, INCLUDING ALL MATERIALS, TESTING, LABOR AND SOFTWARE FOR A FULLY FUNCTIONAL UNIT.

PAYMENT

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 630 - SIGNING MISC.: OVERHEAD MOUNTED SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON SIGN ASSEMBLY FOR ALL OF THE ITEMS LISTED IN THIS NOTE. THE R1-9 SIGNS AND THE 2 RIGID OVERHEAD SIGN SUPPORT FOUNDATIONS ARE PAID SEPARATELY FROM THIS PAY ITEM.

ITEM 632 - REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: PEDESTRIAN HEADS, PUSHBUTTONS AND WIRING

THE REMOVAL AND DISPOSAL OF THESE ITEMS SHALL INCLUDE THE REMOVAL FROM THE EXISTING SIGNAL POLE ALONG THE NORTHWEST CORNER OF COLERAIN AVENUE AND EARL AVENUE 2 PEDESTRIAN HEADS AND ONE PUSH BUTTON. THE REMOVAL FROM THE EXISTING SIGNAL POLE ALONG THE SOUTHWEST CORNER OF COLERAIN AVENE AND EARL AVENUE, ONE PEDESTRIAN HEAD AND ONE PUSH BUTTON. THE REMOVAL FROM THE EXISTING SIGNAL POLE ALONG TH NORTHEASTERN CORNER OF COLERAIN AVENUE AND BYRNESIDE DRIVE, ONE PEDESTRIAN HEAD AND ONE PUSHBUTTION. THIS ITEM ALSO INCLUDES THE REMOVAL OF THE RUNS OF SIGNAL CABLE FROM THE 4 PEDESTRIAN HEADS TO THE CONTROLLER CABINET. ANY HOLES LEFT IN THE EXISTING SIGNAL POLES SHALL BE PLUGGED.

PAYMENT

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 632 - REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: PEDESTRIAN HEADS, PUSHBUTTONS AND WIRING.

4 PEDESTRIAN HEADS
3 PUSH BUTTONS
1 WIRING
8 ITEMS

ITEM 632 - MESSENGER WIRE MISC.: UNLASH AND RELASH

THE EXISTING MESSENGER WIRE AND ASSOCIATED WIRING ON THE NORTHEAST AND NORTHWEST CORNERS OF COLERAIN AVENUE AND BYRNESIDE/ EARL INTERSECTION SHALL BE UNLASHED AND RELASED FOR THE INSTALLATION OF THE NEW CONDUCTOR.

PAYMENT

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER FOOT FOR ITEM 632 - MESSENGER WIRE MISC.: UNLASH AND RELASH

ITEM 659 - 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 246 CU. YD.

659, SEEDING AND MULCHING 2230 SQ. YD.

659, REPAIR SEEDING AND MULCHING 111 SQ. YD.

659, INTER-SEEDING 111 SQ. YD.

659, COMMERCIAL FERTILIZER 0.3 TON

659, LIME 0.5 ACRES

659, WATER 12 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.

CALCULATED CDS CHECKED CFD

GENERAL NOTES

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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	6	10	11	12	13	14	15	38	67		01/SAF/OT	02/SAF/OT						
																		ROADWAY	
												LS		201	11000	LS		CLEARING AND GRUBBING	
					1							1		202	20010	1	EACH	HEADWALL REMOVED	
					907							907		202	23000	907	SY	PAVEMENT REMOVED	
					296							296		202	32000	296	FT	CURB REMOVED	
					259							259		202	35100	259	FT	PIPE REMOVED, 24" AND UNDER	
					1							1		202	58000	1	EACH	MANHOLE REMOVED	
					4							4		202	58100	4	EACH	CATCH BASIN REMOVED	
									940	11		940	11	203	10000	951	CY	EXCAVATION	
									218			218		203	20000	218	CY	EMBANKMENT	
										5			5	203	35130	5	CY	GRANULAR MATERIAL, TYPE D	
			883	363								1,243		204	10000	1,246	SY	SUBGRADE COMPACTION	
			4,242	1,619								5,861		608	10000	5,861	SF	4" CONCRETE WALK	
			755	223								978		608	52000	978	SF	CURB RAMP	
												LS		878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	
																		EROSION CONTROL	
		2										2		659	00100	2	EACH	SOIL ANALYSIS TEST	
		246										246		659	00300	246	CY	TOPSOIL	
		2,230										2,230		659	10000	2,230	SY	SEEDING AND MULCHING	
		111										111		659	14000	111	SY	REPAIR SEEDING AND MULCHING	
		111										111		659	15000	111	SY	INTER-SEEDING	
		0.3										0.3		659	20000	0.3	TON	COMMERCIAL FERTILIZER	
		0.5										0.5		659	31000	0.5	ACRE	LIME	
		12										12		659	35000	12	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	
												20,000		832	30000	10,000	EACH	EROSION CONTROL	
																		DRAINAGE	
						4						4		602	20000	4	CY	CONCRETE MASONRY	
						914						914		605	06000	914	FT	4" BASE PIPE UNDERDRAINS	
						45						45		611	00410	45	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	
						16						16		611	04400	16	FT	12" CONDUIT, TYPE B	
						94						94		611	04600	94	FT	12" CONDUIT, TYPE C	
						12						12		611	06100	12	FT	15" CONDUIT, TYPE C	
						184						184		611	07400	184	FT	18" CONDUIT, TYPE B	
						47						47		611	07600	47	FT	18" CONDUIT, TYPE C	
						4						4		611	98180	4	EACH	CATCH BASIN, NO. 3A	
						1						1		611	98410	1	EACH	CATCH BASIN, NO. 8	
						2						2		611	98451	2	EACH	CATCH BASIN, NO. 2-2A, AS PER PLAN	5
						5						5		611	98470	5	EACH	CATCH BASIN, NO. 2-2B	
						2						2		611	98630	2	EACH	CATCH BASIN ADJUSTED TO GRADE	
						2						2		611	98690	2	EACH	CATCH BASIN, MISC.: EX. CATCH BASIN: ABANDON AND CONNECT THROUGH	5
						2						2		611	99574	2	EACH	MANHOLE, NO. 3	
																		PAVEMENT	
			1,700	29								1,715		252	01500	1,729	FT	FULL DEPTH PAVEMENT SAWING	
										21			21	254	01000	21	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 1"	
			105	31						3		135	3	301	46000	139	CY	ASPHALT CONCRETE BASE, PG64-22	
			110	47								156		304	20000	157	CY	AGGREGATE BASE	
			231	59								290		305	12010	290	SY	8" CONCRETE BASE, CLASS QC 1P	
			27	1						2		28	2	407	10000	30	GAL	TACK COAT	
										1			1	441	10000	1	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), PG64-22	
			24	12								36		441	50000	36	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
			699	426								1,125		609	12000	1,125	FT	COMBINATION CURB AND GUTTER, TYPE 2	
			463	40								503		609	26000	503	FT	CURB, TYPE 6	
			10									10		609	54000	10	SY	6" CONCRETE TRAFFIC ISLAND	

CALCULATED CDS CHECKED CFD

GENERAL SUMMARY

HAM-27-10.39

SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	5	6	10	11	12	13	14	15	38	67		01/SAF/OT	02/SAF/OT						
																		WATER WORK	
										2			2	SPECIAL	638E20760	2	EACH	SPECIAL-FIRE HYDRANT REMOVED AND DISPOSED OF (CIN. 1114)	
										63			63	SPECIAL	638E20766	63	FT	SPECIAL-3/4" COPPER WATER SERVICE LINE (CIN. 1126)	67
										1			1	SPECIAL	638E98000	1	EACH	WATER WORK, MISC.:FURNISHING AND INSTALLING CURB AND ROADWAY BOX (RENEW) (CIN. 1131)	67
										3			3	SPECIAL	638E20762	3	EACH	SPECIAL-FIRE HYDRANT SERVICE LINE EXTENDED AND ADJUSTED TO GRADE) (CIN. 1115)	67
																			67
										2			2	SPECIAL	638E20498	2	EACH	SPECIAL-VALVE BOX (CIN. 1116)	67
										2			2	SPECIAL	638E20748	2	EACH	SPECIAL-4" FIRE HYDRANT (CIN. 1112)	67
										1			1	SPECIAL	638E98000	1	EACH	WATER WORK, MISC.:RELOCATING EXISTING 5/8" FROST-PROOF METER SETTING (CIN. 1134)	67
										57			57	SPECIAL	638E20040	57	FT	SPECIAL - 6" WATER MAIN DIP CLASS 52 MECHANICAL JOINTS AND FITTINGS (CIN. 1101)	67
																		OTHER UTILITIES	
	4											4		SPECIAL	61199700	4	EACH	GAS VALVE BOX ADJUSTED TO GRADE	5
																		TRAFFIC CONTROL	
							70					70		630	03100	70	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
							2					2		630	79500	2	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
							107					107		630	80100	107	SF	SIGN, FLAT SHEET	
							2					2		630	84510	2	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
							1					1		630	84900	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
							1					1		630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
	LS											LS		630	95000	LS		SIGNING, MISC.: OVERHEAD MOUNTED SOLAR POWERED RRFB ASSEMBLY	5
	LS											LS		630	95000	LS		SIGNING, MISC.: POLE MOUNTED SOLAR POWERED RRFB ASSEMBLY	5
							840					840		642	30000	840	FT	REMOVAL OF PAVEMENT MARKING	
							2					2		642	30020	2	EACH	REMOVAL OF PAVEMENT MARKING	
							0.02					0.02		644	00300	0.02	MILE	CENTER LINE	
							57					57		644	00404	57	FT	CHANNELIZING LINE, 12"	
							56					56		644	00500	56	FT	STOP LINE	
							1,083					1,083		644	00600	1,083	FT	CROSSWALK LINE	
							281					281		644	00700	281	FT	TRANSVERSE/DIAGONAL LINE	
							1					1		644	01300	1	EACH	LANE ARROW	
							96					96		644	20800	96	FT	YIELD LINE	
								30				30		625	25400	30	FT	TRAFFIC SIGNALS CONDUIT, 2", 725.04	
								30				30		625	29000	30	FT	TRENCH	
								2				2		625	32000	2	EACH	GROUND ROD	
								30				30		625	36000	30	FT	PLASTIC CAUTION TAPE	
								3				3		632	20720	3	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2	
								2				2		632	20750	2	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON	
								3				3		632	25010	3	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
								166				166		632	30500	166	FT	MESSENGER WIRE, MISC.: UNLASH AND RELASH	6
								256				256		632	40300	256	FT	SIGNAL CABLE, 3 CONDUCTOR, NO. 14 AWG	
								256				256		632	40500	256	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
								6				6		632	64020	6	EACH	PEDESTAL FOUNDATION	
								2				2		632	89900	2	EACH	PEDESTAL, 8', TRANSFORMER BASE	
								8				8		632	90020	8	EACH	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: PEDESTRIAN HEAD, PUSHBUTTON, AND WIRING	6
																		MISCELLANEOUS STRUCTURE	
LS												LS		202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	4
1												1		608	98200	1	EACH	WALKWAY, MISC.: 4" CONCRETE WALK	4
																		INCIDENTALS	
												LS	LS	614	11000	LS	LS	MAINTAINING TRAFFIC	
												LS	LS	623	10000	LS	LS	CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LS	LS	624	10000	LS	LS	MOBILIZATION	

CALCULATED CDS
CHECKED CFD

GENERAL SUMMARY

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GENERAL PROVISIONS

The Contractor is advised that there are several changes to the most recent edition of the City of Cincinnati Supplement dated January 1, 2013. These General Provisions include these changes. The Supplement and a Summary of Changes can be purchased or downloaded from the City's website: http://www.cincinnati-oh.gov/dote/assets/File/2013%20CITY%20SUPPLEMENT-FINAL.pdf

Water main items are to be constructed in accordance with the provisions of the State of Ohio, Department of Transportation, Construction and Material Specifications, dated January 1, 2013, and modified by the City of Cincinnati Supplement to said State of Ohio Specifications, effective January 1, 2013, and any supplements or changes thereto. Copies of the State specifications are on file at the Office of Contract Sales of the State of Ohio, Department of Transportation, 25 South Front Street, Columbus, Ohio, and at the offices of the City Engineer of Cincinnati, Ohio. Submittal of a bid for this project implies that the Contractor has taken all provisions of the Supplement into account.

The Greater Cincinnati Water Works (GCWW) understands that differing site conditions results in extra work/change orders to the project. Change orders on GCWW contracts will be done in strict accordance with Item 109.05 C of the State of Ohio Department of Transportation Construction and Material Specifications dated January 1, 2013 or most recent edition and as modified in this City of Cincinnati Supplement. GCWW limits the mark up on wages and fringe benefits as described in 109.05 C. 2. "Labor" to 30%. It is expressly understood that regardless of the nature of the claim, or change in scope of work, the Contractor is not entitled to compensation for loss of anticipated profit or production.

As defined in the City of Cincinnati Supplement, sections 107.07 and 107.071, the Contractor is required to submit, at the time of the pre-construction meeting, a Site Safety Plan. Furthermore, the Contractor shall have an authorized and competent safety representative assigned to the project site.

The Contractor is advised that he has certain responsibilities under Section 153.64 of The Ohio Revised Code. For all underground utilities, contact the Ohio Utilities Protection Service at 1-800-362-2764 (toll free) 48 hours in advance of work. The Contractor is advised that all utility information has been shown on the contract plans from information provided by the owner of each utility in compliance with Sec. 153.64 of the Ohio Revised Code. In cases where utility information is incorrect and it results in a change in the contract plans the Contractor shall first notify the owner of the utility to determine the necessary course of action. The Contractor shall submit any subsequent claims as a result of downtime or additional work to the owner of the conflicting utility. The GCWW will not accept claims for any utility other than those as a result of incorrect water main and related appurtenance information.

The Contractor must locate or "pot hole" all utilities within the alignment of the proposed main a minimum of 50 feet ahead of pipe laying. Test holes must be dug, or trench excavated, a minimum of 50 feet (15.2 m) in advance of pipe laying, to assure proper clearance between the water main and any utility crossing, or underground structure. All utilities and structures shall be suitably braced and supported. The Contractor shall understand that any obstructions encountered in the installation of the main, due to the failure of having 50 feet (15.2m) of trench excavated ahead of laying operations, may require removal and relaying of the pipe at the contractors expense. The GCWW will not accept a claim for different utility conditions encountered when test holes are not performed as required.

Item 1120, "Exploratory Excavation", shall not include excavations within the limits of the proposed trench as defined in 1101.04 and 1101.05. Test holes are required on all utilities within 50 feet of the last laid pipe. Test holes within the alignment of the proposed trench are included in the Contractor's unit bid for Item 1101. Locations to be explored will vary from areas within the roadway to areas outside of the roadway.

It is the nature of construction that unmarked utilities or utilities not shown on the plans may be encountered within the excavation for the proposed work. The Contractor is responsible to identify and remove any abandoned utilities encountered in the excavation. No extra payment will be made to the Contractor for the identification and removal of the abandoned utility. All costs shall be included in the contractor's unit price bid for the appropriate Item 1101-Furnishing & Laying Pipe and Fittings."

Street pavement or sidewalk should not be disturbed for a distance of more than 200 Feet (61.0 m) ahead of the last laid pipe. Backfill shall be completed within 50 feet (15.2 m) of the last laid pipe. Temporary or permanent surface restoration must be installed within a distance of 200 feet (61.0 m) of the laid pipe, including those areas where main installations occur within a closed lane or closed street condition. Roadway plates may be used as a temporary measure for a period not to exceed 24 hours without the approval of the GCWW.

Any undermined pavement of more than 6 inches horizontal must be removed prior to starting trench backfill. If undermining of pavement occurs more than 1 foot, then pavement must be shored to protect traffic, or arrangements made for additional lane closures must be made. If problems continue to occur regarding trenching integrity, sheeting and bracing can be required by the City Engineer or the City Engineer's representative, at the contractor's expense. If any tunneling is necessary, adequate information shown in both plan and profile and tunneling procedures must be submitted to the City Engineer's Office prior to commencement of work.

The GCWW has made every effort to depict the pipe sewers and lateral information on the plans. The Contractor is advised that sewer laterals are shown in plan view only. The Contractor shall determine the elevation of the sewer laterals in advance of laying the water main at these crossings. If the sewer laterals require changing in order to avoid conflict with the water main, or if the Contractor encounters a pipe sewer or lateral in the excavation that was not shown on the plans and requires a change of grade or alignment due to the installation of the water main, the Contractor shall furnish all necessary labor, material, tools, and equipment required to change the grade or alignment of pipe sewers and laterals of various sizes, allowing installation of water mains and appurtenances as shown on the plans, or as directed by the GCWW Inspector. This work shall include all necessary excavation, backfill, and restoration. The Contractor will be compensated under Item 1123, "Changing Pipe Sewers 8 Inch and Under". When crossing sanitary and combination sewers, a vertical clearance of 18" must be maintained.

The Contractor is responsible for all pipe sewers disturbed in the completion of this project. In the event it becomes necessary to repair or replace existing pipe sewers, the Contractor must notify Sewer Maintenance, (513)244-1369, before proceeding with the work.

The Contractor is advised that his unit bid prices for the appropriate Item 1101, "Furnish & Install Pipe and Fittings", includes final restoration of all disturbed surfaces. The GCWW will not make full compensation under Item 1101 until final restoration is complete.

Final restoration shall be done in accordance with the restoration detail drawing as shown on Sheet 1.

The Contractor is advised that due to the alignment of the proposed water main, it may be necessary to install a temporary valve box over an existing chambered valve that must remain in service during the water main installation as directed by the GCWW Inspector. The chamber shall be abandoned, a valve box (furnished by the contractor) placed over the valve, and upon project completion, the valve box must be removed. The contractor will not receive additional compensation for this work, but should include the cost of this work in his unit bid price for Item 1101, "Furnishing & Laying Ductile Iron Pipe and Fittings".

It is the Contractor's responsibility to provide adequate water supply for domestic and fire fighting purposes. In order to accomplish the water main connections with a minimum amount of inconvenience to the consumers, it may be necessary to do the work at other than normal working hours or as may be scheduled by the GCWW.

The Contractor is advised that the operating pressure of the existing water main within the limits of the subject project is approximately 81-93 P.S.I.

In order to minimize the inconvenience of the consumers, the number of shutdowns required to do the proposed water main work shall be limited. Only one shutdown, limited to 8 hours, will be allowed during a 24 hour period.

All water service branches have a minimum cover of 3.0 feet.

The Contractor is advised that it shall be necessary to install temporary Plug/caps on the existing and proposed water mains in order to maintain service during testing and water main and branch connections. These temporary Plug shall be furnished by the contractor. He is responsible for their proper installation. The cost for this work shall be included in the Contractor's unit bid price for the appropriate Item 1101,"Furnishing & Laying Ductile iron Pipe and Fittings".

The Contractor is required to excavate and expose the existing utilities and existing water mains along the line of the proposed water main and all proposed connection points to verify location, diameter, line and grade. Also, if the removal of the bulkhead or plug is required all excavation and temporary/permanent restoration shall be compensated under the Contractor's unit bid price for Item 1101, "Furnishing & Laying Ductile Iron Pipe and Fittings".

The Contractor is advised that all C.J. Plug are to be restrained with a Field Lok Gasket and all M.J. caps are to be restrained using a Megalug Assembly. This includes temporary Plug and caps for testing purposes. When a temporary plug is used, the contractor is permitted to remove the plug by cutting the section of pipe containing the plug and using a solid sleeve at that point to complete the tie-in. In the event that a cap is used, the contractor shall remove the Megalug Assembly and cap before completing the tie-in.

The Contractor is advised that on any fire hydrant required to be relocated with this project, all bolt assemblies shall be replaced. The cost for this work shall be included in the unit bid price for Item 1113 "Relocating Existing Fire Hydrants".

No part of any fire hydrant setting shall be installed closer than five feet to any driveway, inlet, utility pole or guy wire anchor.

Item 1111, "Water Works Valve Chambers", shall also cover the furnishing and installing of Precast Reinforced Concrete Chambers in accordance with O.D.O.T. Specification 706.13. All pertinent provisions of this item and GCWW Standard Drawing No. 104-1A shall apply. Precast chambers shall be used in all locations where space permits and as directed by the GCWW.

Air cocks may be necessary for the proper operation of the water system. The Air Release Assembly, which may not be shown on the drawing, will be furnished and installed by the Contractor per the detail on these plans, if required by the GCWW.

It shall be the Contractor's responsibility to arrange for the removal and replacement of any poles and guye necessary for the installation of the proposed water mains, and any cost connected thereto shall be at his expense.

All pipe and specials shall be in accordance with City of Cincinnati Specification 40-110-12.

All procured water main and appurtenance materials, other than those furnished through the GCWW must be properly certified; certified for GCWW Inspection: or already inspected by the GCWW. Pipe, fittings, valves and fire hydrants must be GCWW inspected and stamped materials.

The Contractor should be advised that all Fittings (Bends, Offset Bends, Tees, Crosses, Sleeves, Caps and Plug) supplied for this job may be either ANSI/AWWA C-110 Full-body Ductile Iron, Cement Lined Fittings or ANSI/AWWA C-153 Compact Ductile Iron, Fusion Bonded Epoxy Coated Fittings in accordance with City of Cincinnati, Department of Purchasing, Standard Specification No. 40-110-12 for Pipe and Fittings Water, Ductile Iron 3" to 60". All fittings are subject to inspection and approval by appropriate GCWW Inspection personnel. Minor pinholes and abrasions to epoxy coated valves and fittings are to be repaired using 3M Hot Melt Patch Compounds (H.M.P.C.) in the stick form. Repair procedures shall be in accordance with the General Application Steps identified for the H.M.P.C. All repairs to epoxy coated fittings are subject to inspection and approval by appropriate GCWW inspection personnel.

All rejected material, including pipe and fittings, shall be removed from the project site immediately.

The Contractor must maintain access to sidewalks at all times. Storage of any materials within the public Right of Way, including sidewalks, is not permitted unless approved by GCWW, the Project Engineer, or as indicated on the approved plans.

All copper tubing shall be type "K" of a standard nominal size: 3/4", 1", 1-1/2" and 2". All fittings will have copper flare type connections and shall be in accordance with City of Cincinnati Specification No. 40-113-05.

The contractor shall furnish the necessary certifications for branch material.

All proposed water mains will be hydrostatically tested for leakage in accordance with 1101.054,'Hydrostatic Test for Leakage', of the appropriate Item 1101, "Furnishing & Laying Ductile Iron Pipe and Fittings".

The Contractor will be responsible for filling, flushing, and pressure testing new water mains, 20" or smaller. The contractor will provide all labor, material and equipment (including the necessary pumps to apply the pressure test). The Water Works will provide the necessary meter and gauge. All costs for this work shall be included in the contractor's unit bid price for Item 1101, "Furnishing & Laying Ductile Iron Pipe and Fittings". Once the filling ana pressure testing are completed, the Contractor will be responsible for flushing the proposed water main and the CGWW will be responsible for bacteria sampling. The GCWW will be responsible for filling, pressure testing and flushing new water mains greater than 20".

CAUTION UNDERGROUND UTILITIES
2 WORKING DAYS
BEFORE YOU DIG
OHIO UTILITIES PROTECTION SERVICE
CALL 1-800-362-2764 (TOLL FREE)
(IT'S THE LAW)

OhioEPA
Ohio Environmental Protection Agency
"Self-Certification" letter required prior to the start of construction.

[X] OEPA CERTIFICATION EXEMPT

Supervising Engineer - Design

SUGGESTED BILL OF MATERIAL
(Furnished By Contractor)

THE FOLLOWING BILL OF MATERIALS IS NOT INTENDED TO BE A LIST OF BID ITEMS FOR THE PROJECT. SEE GENERAL SUMMARY FOR BID ITEMS.

3	Each	6" Ductile Iron Pipe, C.J., Th. Cl. 55, 20' Length
4	Each	16" Wide Polyethylene Flattened Tube, 4 Mil Thickness,Cross Laminate,20' Length
1	Each	1 1/2" Wide Polyethylene Tape with Adhesive
2	Each	6" Plug, M.J. (Temporary)
4	Each	6" Solid Sleeve, D.P.
2	Each	6" x 6" Tee, 2 M.J. x Flg.
2	Each	6" Flange Tyte Rubber Gasket
12	Each	6" Megalug Assembly
1	Each	6" Field Lok Gasket
2	Each	6" Valve, Flg. x M.J.**
2	Each	6" Fire Hydrant Extension, (6" Long)
2	Each	Valve Box Complete, Iron
2	Each	Valve Box Frost Plug
2	Each	BOXLOK Valve Box Alignment Device

SERVICE BRANCH MATERIAL

63	Lin. Ft.	- 3/4" Copper Service Pipe w/ Aqua Shield
1	EACH	- 3/4" Ferrule (Note 2)
1	EACH	- 3/4" Insulating Coupling (Note 2)
1	EACH	- 3/4" Stop Cock (Note 2)
1	EACH	- Curb Box
2	Each	6" Fire Hydrant, (Kennedy K81-A)

RESTORATION QUANTITIES CARRIED TO GENERAL SUMMARY

ITEM	203	203	254	301	407	441
STATION	GRANULAR MATERIAL, TYPE D	EXCAVATION	PAVEMENT PLANING, ASPHALT CONCRETE	ASPHALT CONCRETE BASE COURSE	TACK COAT	ASPHALT CONCRETE SURFACE COURSE
	CY	CY	SY	CY	SY	CY
532+24	2.0	3.5	9.3	1.1	0.7	0.35
536+94	2.7	7.1	11.6	1.5	0.9	0.48
TOTAL	5	11	21	3	2	1

The materials listed are only suggested for use during the water main and branch relocation work as proposed on the drawings. The contractor shall furnish additional material where needed. No allowance will be made for unused material nor will any extra payment be made for additional specials required to complete the water main work. The contractor is responsible for making his own field measurements before ordering. Before ordering material the contractor is responsible for making his own field measurements and for field verifying the O.D. of existing water mains where sleeves and pipe couplings are involved.

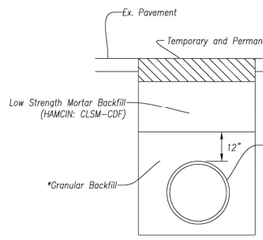
Note 1:
Valves furnished by the contractor shall be; American Resilient Wedge Gate Valve Series 2500, U.S. Pipe Metroseal Gate Valve, Kennedy Valve Ken Seal II Resilient Gate Valve, Clow F-6100 Series Resilient Wedge Gate Valve, Mueller 2360 Resilient Wedge Gate Valve.

Note 2:
Low-Lead Brass Material Requirements:
All components in contact with water shall be fabricated from Sebiloy II or Federalloy I-836 alloys or a material approved by the Engineer. All components that do not come in contact with water shall comply with the requirements of ASTM B 62 Copper Alloy Number. Coated or washed metals are not acceptable if their lead levels exceed .25% by weight prior to the coating or washing process. All service fittings and materials shall be certified as suitable for contact with drinking water by an accredited certification organization in accordance with ANSI/NSF Standard 61, Drinking Water Systems Components - Health Effects. All service fittings shall either be stamped or embossed with the letter "NL", to indicate "No-Lead", or marked to indicate that the product is manufactured from the low-lead alloys.

Certification of compliance is required to be submitted to the Cincinnati Water Works prior to use.

"All valve boxes shall be domestically manufactured. All valve boxes for 1-inch air release assemblies and gate valves 12-inch and smaller shall be Tyler Union Series 6850, East Jordan Iron Works Series 8550, or a domestically manufactured approved equal. The approved equal will be determined by the City of Cincinnati Greater Cincinnati Water Works. A valve box frost plug shall also be included. All valve boxes for gate valves 12-inch and smaller shall include the BOXLOK valve box alignment device from EMMA Sales, LLC. All costs associated with adherence to this requirement shall be included in the Contractor's unit bid price for Item 1116 - Furnishing and Installing Valve Box Complete"

RESTORATION DETAIL
(See Notes on Sheet 1)



HORIZONTAL & VERTICAL SCALE IN FEET
0 10 20 40

**Temporary and Permanent Restoration shall be done in accordance with the Contract specifications and/or project plan typical sections.

In areas where the pavement; base and/or sub-base is to be replaced as part of the roadway contract, the cost for permanent pavement restoration shall be included under the appropriate pavement bid items. Cost for temporary pavement restoration in these areas shall be included in the Contractor's appropriate Unit Bid Price for Item 1101 or Item 1126.

Unless otherwise noted on the plans, areas where the existing pavement, base and/or sub-base are not to be disturbed, the cost for temporary and permanent pavement restoration shall be included in the Contractor's appropriate Unit Bid Price for Item 1101 or Item 1126.

*Backfill of the water main and branch trench shall be done in accordance with G.C.W.W. specifications. All water mains and branches installed outside of the pavement area shall utilize Granular Backfill in lieu of the Control Density Fill. All costs for backfill shall be included under Item 1101, "Furnishing and Installing Ductile Iron Pipe and Fittings".

Please note that the G.C.W.W. requirement is in addition to HAMCIN specifications for flowable fill products. A copy of the G.C.W.W. requirement is available at the G.C.W.W. Engineering Office located at 4747 Spring Grove Avenue. Contact the Supervisor of Inspection at 591-7870.

Prior to the start of construction, the Contractor shall submit the necessary Controlled Density Fill compliance documentation for review and approval by the G.C.W.W.

GCWW Note:
All field layout of water main pipe and specials shall be the responsibility of the Contractor and shall be performed by a licensed surveyor.

Controlled Density Fill must meet both HAMCIN: CLSM-CDF performance specification and O.D.O.T. specification. All flowable fill products shall meet requirements of the current HAMCIN CLSM-CDF Backfill Specification (dated March 2015). Copies of the HAMCIN CLSM-CDF Backfill Specification are made available at the GCWW Engineering Offices at 4747 Spring Grove Avenue, Cincinnati Department of Transportation & Engineering at 801 Plum Street, or their website **http://www.cincinnati-oh.gov/dote/manuals-permits-supplements/**. Also, the Contractor shall submit, prior to the start of construction, the necessary documentation for review and approval by the GCWW.

HAM 27-10.39
Street Improvement

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SCALE: 1" = 20'

APPROVED:

SUPERVISING ENGINEER - DESIGN

PRINCIPAL ENGINEER - SYSTEM FACILITIES

CHIEF ENGINEER

GREATER CINCINNATI WATER WORKS
ENGINEERING DIVISION
SEPTEMBER 2019

CALCULATED CWW CHECKED CWW

CALCULATED MJC CHECKED MS

REVISIONS

GREATER CINCINNATI WATER WORKS
ENGINEERING DIVISION / DESIGN SECTION
4747 Spring Grove Avenue, Cincinnati, Ohio 45232

HAM 27-10.39
GENERAL PROVISIONS

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HAM-27-10.39

CINCINNATI WATER WORKS NOTES AND QUANTITIES

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