

O:\Projects\Ann Arbor\NER\2914\200-12914-18002\CAD\02942.LUC-20-13.70\Design\Roadway\Sheets\02942\_GN001.dgn Sheet 11/4/2021 7:37:25 PM Dave.Cherville

**UTILITIES**

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

AT&T TOLEDO EDISON  
130 N. ERIE STREET, ROOM 705 6099 ANGOLA RD  
TOLEDO, OH 43604 HOLLAND, OH 43528  
419-245-7304 419-249-5218

COLUMBIA GAS OF OHIO, INC. TELESYSTEMS/BUCKEYE  
2901 E. MANHATTAN BLVD. BROADBAND  
TOLEDO, OH 43611 2700 OREGON ROAD  
419-539-6066 NORTHWOOD, OH 44619  
419-724-3713

CITY OF TOLEDO CENTURYLINK  
401 S. ERIE STREET 175 ASHLAND RD.  
TOLEDO, OH 43602 MANSFIELD, OH 44902  
419-936-2820 419-755-7183

**UTILITIES**

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

**UTILITY LINES**

THE UTILITIES SHALL BEAR ALL EXPENSE INVOLVED IN THE RELOCATION OF THE AFFECTED UTILITY LINES. THE CONTRACTOR AND THE UTILITIES ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

**EXISTING PLANS**

EXISTING PLANS ENTITLED LUC-20-1374 MAY BE INSPECTED IN THE ODOT DISTRICT 2 OFFICE IN BOWLING GREEN.

**SURVEYING PARAMETERS**

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

**VERTICAL POSITIONING**

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: GEOID12A

**HORIZONTAL POSITIONING**

REFERENCE FRAME: NAD83  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONFORMAL CONIC  
COORDINATE SYSTEM: OHIO STATE PLANE NORTH  
COMBINED SCALE FACTOR: 1.00000000 (PROJECT IS IN GRID)  
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

**WORK LIMITS**

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

**CLEARING AND GRUBBING**

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

**SEEDING AND MULCHING**

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

- 659, TOPSOIL 211 CU. YD.
- 659, SEEDING AND MULCHING 1900 SQ. YD.
- 659, REPAIR SEEDING AND MULCHING 95 SQ. YD.
- 659, INTER-SEEDING 95 SQ. YD.
- 659, COMMERCIAL FERTILIZER 0.28 TON
- 659, WATER 11 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.

**CHANNEL EMBANKMENTS**

FILL AND SLOPE PORTIONS OF THE EXISTING CHANNEL TO DRAIN AS SHOWN IN THESE PLANS. IN CHANNEL EMBANKMENT AREAS WHICH WILL NOT SUPPORT ANY PORTION OF THE NEW ROAD BED OR STRUCTURAL EMBANKMENTS, THE CONTRACTOR MAY UTILIZE EMBANKMENT METHODS MEETING THE FOLLOWING REQUIREMENTS:

CLEAR ALL WEEDS AND BRUSH IN AREAS WHERE CHANNEL EMBANKMENTS ARE TO BE PLACED. THE REQUIREMENTS FOR MOISTURE, DENSITY CONTROL, BENCHING AND SUITABLE MATERIALS IS WAIVED. PLACE THE MATERIAL IN 8-INCH LOOSE LIFTS. THE ENGINEER MAY INCREASE THE LIFT THICKNESS IN ORDER TO BRIDGE THE SOFT OR WET FOUNDATIONS DEPENDING ON THE STABILITY OF THE FOUNDATION. THE ENGINEER MAY INCREASE THE LIFT THICKNESS UP TO 24 INCHES TO OBTAIN STABILITY AT THE TOP OF THE LIFT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 203, EMBANKMENT.

**CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES**

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

**REVIEW OF DRAINAGE FACILITIES**

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

**ITEM 611 - CONDUIT, AS PER PLAN**

FURNISH CONDUIT CONSISTING OF ONE OF THE FOLLOWING PIPE MATERIALS:

- 706.02 REINFORCED CONCRETE CIRCULAR PIPE, ASTM C-433
- 706.04 REINFORCED CONCRETE ELLIPTICAL PIPE, ASTM C-990, ASTM C-877
- 706.08 VITRIFIED CLAY PIPE (EXTRA STRENGTH ONLY), ASTM C-425
- 707.45 POLYVINYL CHLORIDE SOLID WALL PIPE (CELL CLASS 12454-B), ASTM D-3212
- 707.45 POLYVINYL CHLORIDE SOLID WALL PIPE (>15") (PS115, CELL CLASS 12454-B), ASTM D-3212

**ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING**

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.
- PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.
2. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.
3. PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.
4. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE FOLLOWING QUANTITIES FOR REMEDIATION OF UNSTABLE SUBGRADE HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

- ITEM 204 - PROOF ROLLING 1 HR
- ITEM 204 - EXCAVATION OF SUBGRADE 450 CYD
- ITEM 204 - GRANULAR MATERIAL, TYPE B 450 CYD
- ITEM 204 - GEOGRID 1350 SYD

**ITEM 442, ASPHALT CONCRETE, AS PER PLAN, PG76-22M**

ITEM 442, ASPHALT CONCRETE SURFACE COURSE, 9.5MM, TYPE A (448), AS PER PLAN, PG76-22M SHALL FOLLOW THE SPECIFICATIONS FOR THE 442 ITEM EXCEPT FOR SECTION 442.04 ASPHALT BINDER. THE BINDER SHALL BE PG76-22M AND A MAXIMUM OF 10% OF RAP BY DRY WEIGHT OF MIX CAN BE USED IN THE SURFACE COURSE AND A MAXIMUM OF 20% OF RAP BY DRY WEIGHT OF MIX CAN BE USED IN THE INTERMEDIATE COURSE.

**ITEM 609 - CURB MISC.: CITY OF TOLEDO CONCRETE CURB AND GUTTER, TYPE B**

CONSTRUCT CONCRETE CURB AND GUTTER IN ACCORDANCE WITH ODOT CMS 609 AND THE 2021 CITY OF TOLEDO CONSTRUCTION STANDARD NO. 21, CONCRETE CURBS TYPES A, B, C, AND D.

**ITEM 625 - PULLBOX MISC.: CITY OF TOLEDO TYPE S**

FURNISH AND INSTALL A CITY OF TOLEDO TYPE S PULLBOX IN ACCORDANCE WITH ODOT CMS 625 AND THE 2021 CITY OF TOLEDO CONSTRUCTION STANDARD NO. 54, PULLBOX WITH NEW OR EXISTING CONDUIT.

CALCULATED  
TLR  
CHECKED  
DTC

GENERAL NOTES

LUC-20-13.70

O:\Projects\Ann Arbor\IER\2914\200-12914-18002\CAD\02942\_LUC-20-13.70\Design\Roadway\Sheets\02942\_GN002.dgn Sheet 11/9/2021 8:00:09 AM TRAVIS.RHOADES

**ITEM 202 BUILDING DEMOLISHED, AS PER PLAN**

THIS ITEM SHALL CONSIST OF THE DEMOLITION, FOUNDATION REMOVAL, DEBRIS REMOVAL, CLEARING, AND BACKFILING ON THE PARCEL SITE OF THE ACQUIRED STRUCTURES, INCLUDING APPURTENANCES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE DISCONNECTION OF ALL UTILITIES ON THE PARCELS.

THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE LOCATION OF EXISTING WATER SERVICE LINE AND SANITARY LATERAL BETWEEN THE EXISTING RIGHT OF WAY AND THE EXISTING BUILDING.

THE CONTRACTOR IS TO REMOVE THE EXISTING SANITARY SEWER LATERAL FROM THE STRUCTURE TO THE EXISTING RIGHT OF WAY LINE. THE LATERAL IS TO BE CAPPED AND PLUGGED AT THE EXISTING RIGHT OF WAY LINE. REMOVAL OF THE PIPE AND BACKFILL OF THE TRENCH IS TO BE IN ACCORDANCE WITH ODOT SECTIONS 202.04 AND 202.02, AND TO THE SATISFACTION OF THE CITY OF TOLEDO.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING SURE EXISTING GAS METER HAS BEEN DISCONNECTED AND REMOVED.

THE CONTRACTOR IS TO COORDINATE WATER SERVICE SHUT OFF WITH THE CITY OF TOLEDO WATER DISTRIBUTION. WATER "KILLS" WILL BE PERFORMED BY THE CITY OF TOLEDO WATER DISTRIBUTION.

PRIOR TO BEGINNING BACKFILL OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE DISTRICT CONSTRUCTION ENGINEER, WHO WILL PROVIDE AN INSPECTOR FOR PRELIMINARY INSPECTION OF THE SITE AND APPROVAL TO PROCEED WITH BACKFILL OPERATIONS. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR PROCEED OR CONTINUE WITH BACKFILL OPERATIONS UNLESS THE TRANSPORTATION DEPARTMENT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT. UPON COMPLETION OF THE BUILDING DEMOLITION, BACKFILLING OPERATION SHALL PROCEED WITHIN 48 HOURS AND SHALL BE COMPLETED WITHIN 72 HOURS OF THE BUILDING DEMOLITION. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE THE NECESSARY ITEM 203 EMBANKMENT MATERIAL TO MEET THESE TIME CONSTRAINTS. SEEDING AND MULCHING OF DISTURBED AREAS, PER ITEM 659, SHALL BE COMPLETED WITHIN SEVEN (7) DAYS OF THE BUILDING DEMOLITION.

IN ACCORDANCE WITH THE NATIONAL EMISSIONS STANDARD FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) SECTION 61.415(B) THE CONTRACTOR SHALL NOTIFY THE OEPA REGIONAL OFFICE AT 347 NORTH DUNBRIDGE ROAD IN BOWLING GREEN, OHIO AND THE CITY OF TOLEDO ENVIRONMENTAL SERVICES DIVISION AT 248 SOUTH ERIE STREET IN TOLEDO OHIO FOR ALL DEMOLITION OF STRUCTURES. THE NOTIFICATION OF THE DEMOLITION OPERATION MUST BE RECEIVED TEN (10) WORKING DAYS PRIOR TO THE START DATE OF THE DEMOLITION. NOTIFICATION MUST BE MAILED OR HAND DELIVERED. TELEFAXED NOTIFICATIONS ARE NOT ACCEPTABLE.

IN ADDITION TO FILING THE NOTIFICATION, THE CONTRACTOR SHALL HAVE AN INDIVIDUAL TRAINED IN THE PROVISION OF THE NESHAPS (40CRF PART 61, SUBPART M) ON SITE DURING THE DEMOLITION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THE PERSON SHALL BE AVAILABLE DURING NORMAL BUSINESS HOURS.

ANY HAZARDOUS MATERIAL THAT IS ENCOUNTERED, IS TO BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ODOT SECTION 202.

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

WALK REMOVED (CONCRETE PAD)	82 SF
BUILDING DEMOLISHED, AS PER PLAN:	
PARCEL 20-14641, 1 STY WOOD FRAME (GARAGE)	LUMP
BUILDING DEMOLISHED, AS PER PLAN:	
PARCEL 20-14644, 1 STY WOOD FRAME (HOUSE)	LUMP

**ITEM SPECIAL - STRUCTURES - VIBRATION MONITORING**

MONITOR GROUND VIBRATIONS CAUSED BY USING HOE RAMS OR OTHER HYDRAULIC DEMOLITION HAMMERS, AND INSTALLING OR REMOVING EXCAVATION BRACING TO MINIMIZE THE POTENTIAL DAMAGE TO EXISTING ADJACENT STRUCTURES.

RETAIN AN EXPERIENCED VIBRATION SPECIALIST TO ESTABLISH THE ACCEPTABLE VIBRATION LIMITS AND TO PERFORM THE VIBRATION MONITORING. USE A VIBRATION SPECIALIST THAT IS AN EXPERT IN THE INTERPRETATION OF VIBRATION DATA, AND WHO MEETS ONE OF THE FOLLOWING CRITERIA: 1) IS A REGISTERED ENGINEER WITH AT LEAST TWO YEARS OF PROVEN EXPERIENCE IN MONITORING VIBRATIONS ON SIMILAR CONSTRUCTION PROJECTS, OR 2) HAS AT LEAST FIVE YEARS OF PROVEN EXPERIENCE IN MONITORING VIBRATIONS ON SIMILAR CONSTRUCTION PROJECTS. DO NOT USE A VIBRATION SPECIALIST THAT IS AN EMPLOYEE OF THE CONTRACTOR.

SUBMIT A RESUME OF THE CREDENTIALS OF THE PROPOSED VIBRATION SPECIALIST AT OR BEFORE THE PRECONSTRUCTION MEETING. INCLUDE IN THE RESUME A LIST OF CONSTRUCTION PROJECTS ON WHICH THE VIBRATION SPECIALIST WAS RESPONSIBLY IN CHARGE OF MONITORING THE VIBRATIONS. LIST A DESCRIPTION OF THE PROJECTS, WITH DETAILS OF THE VIBRATION INTERPRETATIONS MADE ON THE PROJECT. LIST THE NAMES AND TELEPHONE NUMBERS OF PROJECT OWNERS WITH SUFFICIENT KNOWLEDGE OF THE PROJECTS TO VERIFY THE SUBMITTED INFORMATION. OBTAIN THE ENGINEER'S ACCEPTANCE OF THE VIBRATION SPECIALIST BEFORE BEGINNING ANY STRUCTURE REMOVAL OR EXCAVATION BRACING WORK. ALLOW 30 DAYS FOR THE REVIEW OF THIS DOCUMENTATION.

USE SEISMOGRAPHS CAPABLE OF CONTINUOUSLY RECORDING THE PEAK PARTICLE VELOCITY FOR THREE MUTUALLY PERPENDICULAR COMPONENTS OF VIBRATION, AND OF PROVIDING A PERMANENT RECORD OF THE ENTIRE VIBRATION EVENT. USE A SUFFICIENT NUMBER OF SEISMOGRAPHS TO PROVIDE REDUNDANCY IN CASE ONE DEVICE SHOULD FAIL. SUBMIT A PLAN OF THE PROPOSED SEISMOGRAPH LOCATIONS TO THE ENGINEER FOR REVIEW.

THE VIBRATION SPECIALIST SHALL PERFORM THE FOLLOWING:

1. MEASURE THE AMBIENT GROUND VIBRATIONS NEAR EXISTING ADJACENT STRUCTURES BEFORE CONSTRUCTION ACTIVITIES DESCRIBED ABOVE BEGIN.
2. ESTABLISH VIBRATION LIMITS TO MINIMIZE POTENTIAL DAMAGE TO EXISTING STRUCTURES AND EXPLAIN WHY THEY ARE BEING USED TO THE ENGINEER BEFORE USING HOE RAMS OR OTHER HYDRAULIC DEMOLITION HAMMERS, AND INSTALLING OR REMOVING EXCAVATION BRACING NEAR EXISTING ADJACENT STRUCTURES.
3. MONITOR GROUND VIBRATIONS DURING USE OF HOE RAMS OR OTHER HYDRAULIC DEMOLITION HAMMERS, AND INSTALLING OR REMOVING EXCAVATION BRACING.
4. IMMEDIATELY INFORM THE CONTRACTOR AND ENGINEER IF THE VIBRATION LIMITS ARE REACHED OR EXCEEDED.

5. FURNISH THE DATA RECORDED AND INCLUDE THE FOLLOWING:

- A. IDENTIFICATION OF SEISMOGRAPH.
- B. DISTANCE AND DIRECTION OF SEISMOGRAPH FROM ACTIVITIES USING HOE RAMS OR OTHER HYDRAULIC DEMOLITION HAMMERS, AND INSTALLING OR REMOVING EXCAVATION BRACING.
- C. START TIME AND DURATION OF USE OF HOE RAMS OR OTHER HYDRAULIC DEMOLITION HAMMERS, AND INSTALLING OR REMOVING EXCAVATION BRACING.
- D. LIST OF CONSTRUCTION ACTIVITIES DURING EACH MONITORING INTERVAL.

IMMEDIATELY SUSPEND ALL USE OF HOE RAMS OR OTHER HYDRAULIC DEMOLITION HAMMERS, AND INSTALLING OR REMOVING EXCAVATION BRACING IF THE VIBRATION LIMITS ARE REACHED OR EXCEEDED. EVALUATE ALTERNATIVE CONSTRUCTION PROCEDURES, TO REDUCE THE VIBRATIONS.

SUBMIT THREE COPIES OF THE FINAL REPORT WHICH CONTAINS ALL MEASUREMENTS, INTERPRETATIONS, AND RECOMMENDATIONS TO THE ENGINEER.

THE DEPARTMENT WILL PAY FOR THIS ITEM AT THE CONTRACT LUMP SUM PRICE FOR ITEM SPECIAL - STRUCTURES - VIBRATION MONITORING. THE DEPARTMENT WILL PAY THE FINAL TWENTY PERCENT AFTER THE ENGINEER RECEIVES THE FINAL REPORT.

THE DEPARTMENT WILL PAY ACCORDING TO C&MS 109.05 FOR ALTERNATIVE CONSTRUCTION PROCEDURES THAT THE ENGINEER DETERMINES ARE NECESSARY TO REDUCE VIBRATIONS.

**ITEM SPECIAL - STRUCTURES - PRECONSTRUCTION CONDITION SURVEY**

BEFORE USE OF HOE RAMS OR OTHER HYDRAULIC DEMOLITION HAMMERS, AND INSTALLING OR REMOVING EXCAVATION BRACING BEGINS, CONDUCT A CONDITION SURVEY OF ALL EXISTING BUILDINGS, STRUCTURES, AND UTILITIES WITHIN 200-FT OF THE WORK. THE PURPOSE OF THE SURVEY IS TO DOCUMENT THE CONDITION OF THE BUILDINGS, STRUCTURES, OR UTILITIES PRIOR TO CONSTRUCTION ACTIVITIES, SO THAT CLAIMS OF DAMAGE CAUSED BY THE CONSTRUCTION ACTIVITIES CAN BE VERIFIED.

RETAIN AN EXPERIENCED VIBRATION SPECIALIST TO PERFORM OR SUPERVISE THE CONDITION SURVEY. USE A VIBRATION SPECIALIST THAT MEETS THE QUALIFICATION REQUIREMENTS FOR VIBRATION MONITORING.

RECORD THE CONDITION OF EXISTING STRUCTURES AND BUILDING MATERIALS, USING WRITTEN TEXT, PHOTOGRAPHS, AND VIDEO RECORDINGS. INSPECT INTERIOR WALLS, CEILINGS, AND FLOORS THAT ARE ACCESSIBLE. INSPECT THE EXTERIOR OF THE BUILDING THAT IS VISIBLE FROM GROUND LEVEL. ALSO RECORD THE LOCATION, SIZE, AND TYPE OF ALL CRACKS AND OTHER STRUCTURAL DEFICIENCIES.

IF OWNERS OR OCCUPANTS FAIL TO ALLOW ACCESS TO THE PROPERTY FOR THE PRECONSTRUCTION CONDITION SURVEY, SEND A CERTIFIED LETTER TO THE OWNER OR OCCUPANT. DOCUMENT THE NOTIFICATION EFFORT AND THE CERTIFIED LETTER IN THE REPORT.

SUBMIT THREE COPIES OF A REPORT TO THE ENGINEER THAT SUMMARIZES THE PRECONSTRUCTION CONDITION OF THE

BUILDINGS, STRUCTURES, AND UTILITIES, AND THAT IDENTIFIES AREAS OF CONCERN.

**ITEM 202 SPECIAL - ASBESTOS ABATEMENT**

ASBESTOS INSPECTIONS OF THE BUILDING STRUCTURES SCHEDULED FOR DEMOLITION AND THE BRIDGE SCHEDULED FOR REMOVAL WERE CONDUCTED BY A LICENSED ASBESTOS HAZARD EVALUATION SPECIALIST. THE ASBESTOS INSPECTION DETERMINED THAT ASBESTOS IS PRESENT IN THE BUILDING STRUCTURES AND ON THE BRIDGE IN EXCESS OF THE ALLOWABLE REGULATORY LIMITS AND WHICH WILL REQUIRE ABATEMENT. THE QUANTITIES AND LOCATIONS OF THE ASBESTOS CONTAINING MATERIALS ARE PRESENTED WITHIN THE ASBESTOS INSPECTION REPORTS THAT WILL BE PART OF THE STRUCTURE RELEASE PACKAGE.

THE CONTRACTOR SHALL ENSURE THAT THE ABATEMENT, TRANSPORT AND DISPOSAL OF ASBESTOS CONTAINING MATERIAL IS CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS. THE CONTRACTOR SHALL ENSURE THAT ALL DOCUMENTATION RELATED TO THE ABATEMENT, TRANSPORT, AND DISPOSAL OF ASBESTOS CONTAINING MATERIAL IS SUBMITTED TO THE PROJECT ENGINEER OR DISTRICT ENVIRONMENTAL COORDINATOR FOR RECORD KEEPING.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, PARTIALLY COMPLETE, ARE INCLUDED IN THE ASBESTOS SPECIAL PROVISIONS ATTACHED TO THIS PLAN SET. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO ADDRESS ON THE FORM OR ONLINE AT EBIZ.EPA.OHIO.GOV AT LEAST TEN (10) WORKING DAYS (14 DAYS TOTAL) PRIOR TO THE START OF ANY DEMOLITION.

BASIS OF PAYMENT: THE CONTRACTOR SHALL FURNISH ALL THE LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROPERLY ABATE, TRANSPORT, AND DISPOSE OF ASBESTOS CONTAINING MATERIALS IN A LANDFILL LICENSED BY THE LOCAL HEALTH DEPARTMENT AND PERMITTED BY THE OEPA - DIVISION OF AIR POLLUTION CONTROL TO ACCEPT ASBESTOS CONTAINING MATERIAL. PAYMENT FOR THIS WORK SHALL BE MADE AT THE BID PRICE.

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

SPECIAL, ASBESTOS ABATEMENT:	
BLACK FLOOR MASTIC (HOUSE)	340 SF
SPECIAL, ASBESTOS ABATEMENT:	
CHIMNEY/PIPE FLASHING TAR (HOUSE)	12 SF
SPECIAL, ASBESTOS ABATEMENT:	
WALL TILE GROUT (HOUSE)	30 SF

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE BRIDGE ESTIMATED QUANTITIES FOR THE WORK NOTED ABOVE:

SPECIAL, ASBESTOS ABATEMENT:	
PERFORMED WINGWALL PAD (BRIDGE)	17 SF

O:\Projects\Ann Arbor\IER\2914\200-12914-18002\CAD\02942\LUC-20-13.70\Design\Roadway\Sheets\02942\_GG001.dgn Sheet 11/9/2021 10:01:54 PM Dave.Charrville

SHEET NUM.									PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED	TSR	CHECKED	DTC
5	6	7	8	14	15	23	27		01/NHS/B R	EXT	TOTAL								
														ROADWAY					
					1,969				1,969	202	23000	1,969	SY	PAVEMENT REMOVED					
				2,344					2,344	202	30000	2,344	SF	WALK REMOVED					
					567				567	202	32500	567	FT	CURB AND GUTTER REMOVED					
				483					483	202	34900	483	FT	PIPE REMOVED					
				46					46	202	38000	46	FT	GUARDRAIL REMOVED					
				1					1	202	58100	1	EACH	CATCH BASIN REMOVED					
				234		33			267	203	10000	267	CY	EXCAVATION					
				376					376	203	20000	376	CY	EMBANKMENT					
					1,503	190			1,693	204	10000	1,693	SY	SUBGRADE COMPACTION					
450									450	204	13000	450	CY	EXCAVATION OF SUBGRADE					
450									450	204	30010	450	CY	GRANULAR MATERIAL, TYPE B					
1									1	204	45000	1	HOUR	PROOF ROLLING					
1,350									1,350	204	51000	1,350	SY	GEOTRID					
									LS	SPECIAL	53000200	LS		STRUCTURES - VIBRATION MONITORING					6
									LS	SPECIAL	53000200	LS		STRUCTURES - PRECONSTRUCTION CONDITION SURVEY					6
				2,074					2,074	608	10000	2,074	SF	4" CONCRETE WALK					
				270					270	608	15000	270	SF	8" CONCRETE WALK, DRIVEWAY					
				362					362	625	25500	362	FT	CONDUIT, 3", 725.04					
				2					2	625	31510	2	EACH	PULL BOX REMOVED					
				1					1	625	31600	1	EACH	PULL BOX, MISC.:CITY OF TOLEDO TYPE S					5
														EROSION CONTROL					
211									211	659	00300	211	CY	TOPSOIL					
1,900									1,900	659	10000	1,900	SY	SEEDING AND MULCHING					
95									95	659	14000	95	SY	REPAIR SEEDING AND MULCHING					
95									95	659	15000	95	SY	INTER-SEEDING					
0.28									0.28	659	20000	0.28	TON	COMMERCIAL FERTILIZER					
									11	659	35000	11	MGAL	WATER					
									3,000	832	30000	3,000	EACH	EROSION CONTROL					
														DRAINAGE					
				144					144	605	13410	144	FT	6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31					
				310					310	605	14020	310	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, 707.31					
				79					79	611	00510	79	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS					
				15					15	611	04401	15	FT	12" CONDUIT, TYPE B, AS PER PLAN					5
				17					17	611	07401	17	FT	18" CONDUIT, TYPE B, AS PER PLAN					5
				89					89	611	10401	89	FT	24" CONDUIT, TYPE B, AS PER PLAN					5
				1					1	611	98470	1	EACH	CATCH BASIN, NO. 2-2B					
				3					3	611	98630	3	EACH	CATCH BASIN ADJUSTED TO GRADE					
														PAVEMENT					
				372					372	301	46000	372	CY	ASPHALT CONCRETE BASE, PG64-22					
				332	22				354	304	20000	354	CY	AGGREGATE BASE					
				174					174	407	20000	174	GAL	NON-TRACKING TACK COAT					
					4				4	441	50400	4	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), (DRIVEWAYS)					
					6				6	441	50500	6	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (DRIVEWAYS)					
				154					154	442	10501	154	CY	ASPHALT CONCRETE SURFACE COURSE, 9.5 MM, TYPE A (448), AS PER PLAN, PG76-22M					5
					50				50	452	12010	50	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC IP, DRIVEWAYS					
				567					567	609	98000	567	FT	CURB, MISC.: CITY OF TOLEDO CONCRETE CURB AND GUTTER, TYPE B					5
														WATER WORK					
							1		1	202	58700	1	EACH	MANHOLE ABANDONED					27
							2		2	611	99690	2	EACH	MANHOLE, MISC.: CITY OF TOLEDO WATER VALVE MANHOLE, 4' DIAMETER					25
							128		128	638	01201	128	FT	8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER PLAN, DIRECTIONALLY DRILLED					25, 27
							56		56	638	01201	56	FT	8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER PLAN, OPEN CUT					25
							2		2	638	07491	2	EACH	8" GATE VALVE, AS PER PLAN					25
							328		328	611	97400	328	FT	CONDUIT, MISC.: CURED IN PLACE PIPE LINING, 8" DIAMETER					25-26

GENERAL SUMMARY

LUC-20-13.70

O:\Projects\Ann Arbor\NER\2914\200-12914-18002\CAD\02942\_LLUC-20-13.70\Design\Roadway\Sheets\02942\_GG002.dgn Sheet 11/10/2021 8:10:01 AM Dave.Chorville

SHEET NUM.									PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED	VHP	CHECKED	DTC
5	6	7	8	14	15	23	27		01/NHS/B R	EXT	TOTAL								
														TRAFFIC CONTROL					
				8					8	630	03100	8	FT	GROUND MOUNTED SUPPORT, NO. 3 POST					
				1					1	630	80100	1	SF	SIGN, FLAT SHEET					
				0.32					0.32	642	00204	0.32	MILE	LANE LINE, 6", TYPE 1					
				0.12					0.12	642	00300	0.12	MILE	CENTER LINE, TYPE 1					
				2					2	644	01300	2	EACH	LANE ARROW					
														BUILDING DEMOLITION					
	82								82	202	30000	82	SF	WALK REMOVED (CONCRETE PAD)					
	LS								LS	202	56001	LS		BUILDING DEMOLISHED, AS PER PLAN: PARCEL 20-14641, 1 STY WOOD FRAME (GARAGE)					6
	LS								LS	202	56001	LS		BUILDING DEMOLISHED, AS PER PLAN: PARCEL 20-14644, 1 STY WOOD FRAME (HOUSE)					6
	340								340	SPECIAL	69070100	340	SF	ASBESTOS ABATEMENT: BLACK FLOOR MASTIC (HOUSE)					6
	12								12	SPECIAL	69070100	12	SF	ASBESTOS ABATEMENT: CHIMNEY/PIPE FLASHING TAR (HOUSE)					6
	30								30	SPECIAL	69070100	30	SF	ASBESTOS ABATEMENT: WALL TILE GROUT (HOUSE)					6
														STRUCTURES OVER 20 FOOT SPAN					
														FOR LUC-20-1370 ESTIMATED QUANTITIES					30
														MAINTENANCE OF TRAFFIC					
		10							10	410	12000	10	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B					
			100						100	614	11110	100	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE					
		2							2	614	12380	2	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (UNIDIRECTIONAL)					
									LS	614	12420	LS		DETOUR SIGNING					
		5							5	614	12500	5	EACH	REPLACEMENT SIGN					
		5							5	614	12600	5	EACH	REPLACEMENT DRUM					
		15							15	614	13000	15	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC					
			24						24	614	18601	24	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN					8
		0.28							0.28	614	22000	0.28	MILE	WORK ZONE EDGE LINE, CLASS I, 4"					
		420							420	614	24000	420	FT	WORK ZONE DOTTED LINE, CLASS I					
			1						1	614	40051	1	EACH	BUSINESS ENTRANCE SIGN, AS PER PLAN					8
		5							5	616	10000	5	MGAL	WATER					
		250							250	622	41100	250	FT	PORTABLE BARRIER, UNANCHORED					
														INCIDENTALS					
									LS	108	30000	LS		CPM PROGRESS SCHEDULE SHORT DURATION PROJECTS					
									LS	614	11000	LS		MAINTAINING TRAFFIC					
									LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING					
									LS	624	10000	LS		MOBILIZATION					

**GENERAL SUMMARY**

**LUC-20-13.70**

STREETS AND HIGHWAYS", AND AS SUPPLEMENTED BY THE CITY OF TOLEDO'S MANUAL WHICH MAY BE OBTAINED AT THE DIVISION OF TRANSPORTATION.

**PART 4: SPECIAL PROVISIONS**

**4.01 PAYMENT**

A) PAYMENT FOR CURED IN PLACE PIPE SHALL BE MADE PER LINEAL FOOT OF ACCEPTED PIPE LINING AND WILL BE MEASURED AS THE CENTER OF MANHOLE TO CENTER OF MANHOLE, DISTANCE MEASURED. MISCELLANEOUS WORK ITEMS INCLUDING REOPENING AND TRIMMING PROTRUDING LATERAL TAPS SHALL BE INCLUDED IN COST OF THE LINING THE PIPE.

B) PAYMENT WILL BE MADE AFTER THE PIPE IS INSTALLED, ALL LATERALS ARE OPENED, FINAL INSPECTION VIDEO IS RECEIVED, REVIEWED AND PIPE IS ACCEPTED BY ODOT AND THE CITY OF TOLEDO.

**4.02 WATER USED**

A) THE CONTRACTOR IS RESPONSIBLE FOR PAYING FOR ALL WATER USED. THE CONTRACTOR SHALL RENT A WATER METER(S) FROM THE CITY OF TOLEDO'S WATER DIVISION, 401 SOUTH ERIE, TOLEDO, OHIO. THE CONTRACTOR WILL BE BILLED FOR WATER USED AT THE CURRENT CITY RATES. IF WATER IS TAKEN FROM HYDRANTS DURING COLD WEATHER, THE CONTRACTOR SHALL HAND PUMP ALL REMAINING WATER FROM THE HYDRANT BODY AFTER EACH USE.

B) HYDRANTS SHALL BE OPENED AND CLOSED SLOWLY TO AVOID ANY UNNECESSARY SURGES IN THE WATER LINE.

**WATER PERMIT FEES**

THE FOLLOWING TABLE LISTS THE WATER WORK ITEMS TO BE PERFORMED BY THE CITY OF TOLEDO DIVISION OF WATER DISTRIBUTION FOR THIS PROJECT. THE CITY OF TOLEDO WATER PERMIT FEES FOR THIS WORK ARE AT THE CONTRACTOR'S EXPENSE AND INCLUDED FOR PAYMENT IN THE PRICE BID FOR ITEM 638 - 8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER PLAN, OPEN CUT. THE FOLLOWING TABLE IS FOR INFORMATIONAL PURPOSES ONLY:

QTY	UNIT	DESCRIPTION	UNIT FEE	TOTAL FEE
2	EACH	CONNECTION TO 8" WATER MAIN	\$3,000	\$6,000
1	EACH	RETAP 1" WATER SERVICE	\$1,250	\$1,250
1	EACH	RETAP 1.5" WATER SERVICE	\$1,600	\$1,600
TOTAL				\$8,850

**MANHOLE, MISC.: CITY OF TOLEDO WATER VALVE MANHOLE, 4' DIAMETER**

FURNISH AND INSTALL A WATER VALVE MANHOLE IN ACCORDANCE WITH CMS 611 AND THE CITY OF TOLEDO CONSTRUCTION STANDARD 10, WATER VALVE MANHOLES (4' & 5' DIAMETER) AND WATER MANHOLES GENERAL NOTES.

SHEET NO.	REF NO.	STATION TO STATION			SIDE	202	611	611	638	638	638
						MANHOLE ABANDONED	CONDUIT, MISC.: CURED IN PLACE PIPE LINING, 8" DIAMETER	MANHOLE, MISC.: CITY OF TOLEDO WATER VALVE MANHOLE, 4' DIAMETER	8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER PLAN, OPEN CUT	8" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, PUSH-ON JOINTS AND FITTINGS, AS PER PLAN, DIRECTIONALLY DRILLED	8" GATE VALVE, AS PER PLAN
					EACH	FT	EACH	FT	FT	EACH	
28	SN-1	721+77	TO	725+05	LT		328				
28	WM-1	722+17	TO	723+88	LT			2	56	128	2
28	WM-2	723+50			LT	1					
TOTALS CARRIED TO GENERAL SUMMARY						1	328	2	56	128	2

O:\Projects\Ann Arbor\NER\2914\200-12914-18002\CAD\02942.LUC-20-13.70\Design\Utilities\Sheets\02942\_UN003.dgn\_Sheet 11/9/2021 4:32:06 PM Dave.Chorville

CALCULATED VHP CHECKED DTC  
**WATER MAIN AND SANITARY GENERAL NOTES & SUBSUMMARY**

O:\Projects\Ann Arbor\IER\2914\200-12914-18002\CAD\102942\_LUC-20-1370\Design\Structures\LUC020\_1370C\_Sheets\020\_1370C\_SNOOL.dgn\_Sheet 11/9/2021 10:56:41AM TRAVIS.RHOADES

**STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS**

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

HW-1.1 DATED (REVISED) 07-20-18

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

800 DATED 07-16-21  
832 DATED 10-19-18  
940 DATED 4-17-15

**DESIGN SPECIFICATIONS**

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 8TH EDITION, INCLUDING THE MAY 2018 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

**DESIGN LOADING**

DESIGN LOADING: HL-93 - CULVERT CONDUIT

FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ.FT.

**DESIGN DATA**

THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION ( $\phi$ ) = 30 DEGREES  
COEFFICIENT OF FRICTION ( $\mu$ ) = 0.30  
UNIT WEIGHT OF SOIL = 0.120 KCF  
UNIT WEIGHT OF CONCRETE = 0.150 KCF  
SLOPE OF BACKFILL = 2:1 (MAXIMUM)  
HEIGHT OF LIVE LOAD SURCHARGE = 2 FT  
MAXIMUM FOUNDATION BEARING PRESSURE = 2 KSF

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI  
(FOOTING, WINGWALL AND FORESLOPE WALL)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

**STRUCTURE REMOVED, OVER 20 FOOT SPAN**

WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR MAY LEAVE THE EXISTING ABUTMENT AND PIER FOUNDATIONS IN PLACE WITHIN THE LIMITS OF THE 3 FOOT UNDERCUT EXCAVATION FOR THE FOUNDATION SOILS FOR THE PROPOSED CULVERT AND WINGWALLS IF DOING SO DOES NOT INTERFERE WITH THE PLACEMENT OF THE PROPOSED STRUCTURE.

THE EXISTING STRUCTURE MAIN REINFORCEMENT FOR THE SLAB IS ORIENTED PERPENDICULAR TO THE ABUTMENT. THIS SHOULD BE CONSIDERED WHEN DEVELOPING DEMOLITION PLANS FOR THE EXISTING STRUCTURE. THE DECK SHOULD BE INSPECTED IN THE FIELD TO MAKE A VISUAL VERIFICATION OF THE REINFORCING STEEL DIRECTION PRIOR TO DEMOLITION.

EXISTING PLANS ENTITLED "LUC-20-1374" MAY BE INSPECTED IN THE ODOT DISTRICT 2 OFFICE IN BOWLING GREEN.

**FORESLOPE WALL ANCHOR DOWELS**

ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH SPECIFIED ON SHEET 5/7. PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

**FORESLOPE WALL ANCHOR DOWELS (CONTINUED)**

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 ITEM 611.

**BACKFILL LIMITATION**

WHEN THE DESIGN HEIGHT IS GREATER THAN 10 FT, THE BACKFILL BEHIND THE WINGWALLS SHALL NOT BE PLACED HIGHER THAN THE ELEVATION OF THE SOIL ABOVE THE TOE. WHEN THE SOIL ABOVE THE TOE IS AT ITS FINISHED ELEVATION, THE REMAINDER OF THE BACKFILL MAY BE PLACED.

**POROUS BACKFILL WITH GEOTEXTILE FABRIC**

1'-6" 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" ABOVE THE TOP ELEVATION OF THE WEEP HOLE.

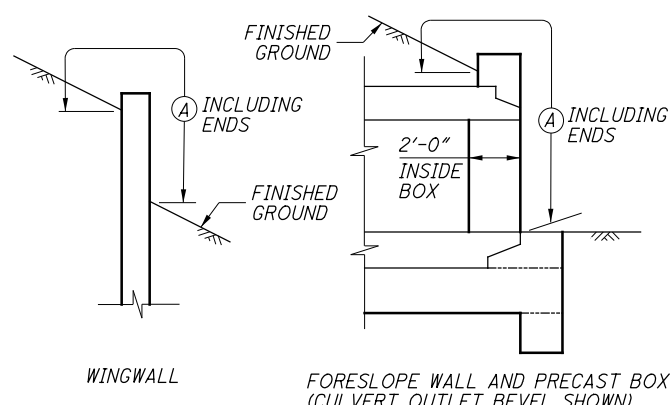
WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE. A MINIMUM OF TWO WEEPHOLES SHALL BE PROVIDED PER WINGWALL.

**SEALING OF FORESLOPE WALL AND WINGWALLS**

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH NON-EPOXY SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE NON-EPOXY SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.

**PREFORMED EXPANSION JOINT FILLER**

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



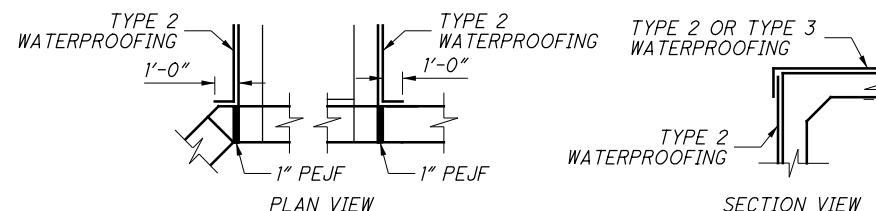
LIMITS OF ITEM 512-SEALING CONCRETE SURFACES  
(A) - SEAL ENTIRE CONCRETE SURFACE AREA

**WATERPROOFING**

TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

WHERE PAVEMENT IS NOT PLACED DIRECTLY ON TOP OF THE CULVERT, TYPE 2 WATERPROOFING, PER CMS 512.09 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 CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

WHERE PAVEMENT IS TO BE USED DIRECTLY ON TOP OF THE CULVERT, TYPE 3 WATERPROOFING, PER CMS 512.10 AND 711.29 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 CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 3 WATERPROOFING.



BASIS OF PAYMENT: ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL, WINGWALLS AND FORESLOPE WALL SHALL BE INCLUDED WITH ITEM 511 - CLASS C CONCRETE (RET-WALL/WINGWALL - INCLUDING FOOTING). PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

ESTIMATED QUANTITIES					
ITEM	EXT	TOTAL	UNIT	DESCRIPTION	SHEET
202	11002	LUMP		STRUCTURE REMOVED, OVER 20 FOOT SPAN	
203	10000	573	CY	EXCAVATION	
203	35110	191	CY	GRANULAR MATERIAL, TYPE B	
203	35130	287	CY	GRANULAR MATERIAL, TYPE D	
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	
503	21300	LUMP		UNCLASSIFIED EXCAVATION	
509	100000	14458	LB	EPOXY COATED REINFORCING STEEL	
511	46012	40	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46510	101	CY	CLASS QC1 CONCRETE, FOOTING	
511	46610	6	CY	CLASS QC1 CONCRETE, HEADWALL	
512	10050	51	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
512	33000	287	SY	TYPE 2 WATERPROOFING	
512	33010	220	SY	TYPE 3 WATERPROOFING	
516	13600	63	SF	1" PREFORMED EXPANSION JOINT FILLER	
518	21250	LUMP		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
601	34200	271	CY	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER	
607	98000	61	FT	FENCE, MISC.: WOOD FENCE, AS PER PLAN	2
611	96499	192	FT	20' X 8' CONDUIT, TYPE A, 706.05, AS PER PLAN, DESIGN COVER 2 FT	2
SPECIAL	69070100	17	SF	ASBESTOS ABATEMENT: PREFORMED WINGWALL PAD (BRIDGE)	6 OF 43

**FOUNDATION EXCAVATION**

FOUNDATION SOILS FOR THE PROPOSED CULVERT AND WINGWALLS SHALL BE UNDERCUT TO A DEPTH 3 FEET BELOW THE BOTTOM OF THE FOOTING AND BACKFILLED WITH 1.5 FEET OF GRANULAR MATERIAL, TYPE D, 1.0 FOOT OF GRANULAR MATERIAL, TYPE B, AND THEN 6 INCHES OF BEDDING MATERIAL PER C&MS 611.06.

PAYMENT FOR THIS EXCAVATION AND BACKFILL SHALL BE AT THE CONTRACT PRICE BID PER CUBIC YARD FOR ITEM 203 EXCAVATION, ITEM 203 GRANULAR MATERIAL, TYPE B, AND ITEM 203 GRANULAR MATERIAL TYPE D. PAYMENT FOR BEDDING MATERIAL SHALL BE INCLUDED IN THE CONTRACT PRICE BID PER FOOT OF ITEM 611 20' X 8' CONDUIT, TYPE A, 706.05.

**ITEM 607, FENCE, MISC: WOOD FENCE, AS PER PLAN**

THE WOOD FENCE INSTALLED PER THIS ITEM SHALL BE PER STD. CONST. DWG. RM-5.2 EXCEPT AS SHOWN IN THESE PLANS.

DESIGN AGENCY: **TETRA TECH**  
 420 MADISON AVENUE, SUITE 1001  
 TOLEDO, OH 43604  
 DATE: 1/21/2021  
 DTC: 1/21/2021  
 STRUCTURE FILE NUMBER: 4800700  
 DRAWN: TSR  
 CHECKED: TLR  
 DESIGNED: TSR  
 REVIEWED: DTC  
 GENERAL NOTES: LUC-20-1370 (REYNOLDS ROAD) OVER HELDMAN DITCH  
 LUC-20-13.70  
 PID No. 102942  
 2 / 7  
 30  
 43