

CITY OF MANSFIELD

RIC-3RD ST-00.31

RICHLAND COUNTY, OHIO

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DESIGN EXC	CEPTIONS
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DESIGN FUNCTIONAL CLASSIFICATION: 07 LOCAL (URBAN)

NONE

ADA DESIGN WAIVERS

NONE REQUIRED



LEGAL SPEED _____ 25

NHS PROJECT _____ NO

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ENGINEERS SEAL:											
STATE OF OHO											
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DATE: 4/28/2021					TC-52.10	10/18/13			843	10/18/19	
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PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF PARTIAL REPLACEMENT AND REHABILITATION OF THE EXISTING 1,700 FT CULVERT STRUCTURE CONVEYING RITTER'S RUN BENEATH E. 3RD STREET, INCLUDING INSTALLATION OF EXCAVATION BRACING, REPLACEMENT OF GUARDRAIL AND PEDESTRIAN RAILING, PROPOSED STORM FACILITIES, WATER LINE RELOCATIONS, SANITARY SEWER REPLACEMENT, FULL DEPTH PAVEMENT REPLACEMENT AND WALK, RESURFACING, PAVEMENT MARKING AND SIGNAGE. 9

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EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 1.06 ACRES * ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 0.25 ACRES * NOTICE OF INTENT EARTH DISTURBED AREA: 1.31 ACRES * * MAINTENANCE PROJECT

2019 SPECIFICATIONS

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

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING OF THE ROADWAY TO TRAFFIC, AS NOTED WITHIN. PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED		
DA TE	CITY ENGINEER,	CITY OF MANSFIELD

APPROVED ______ FIR

___ FIRE CHIEF, CITY OF MANSFILED





EXISTING LEGEND

(\widehat{A})	EX ±5" ASPHALT PAVEMENT
(B)	EX ±8″ BRICK
(\widehat{c})	EX ASPHALT PAVEMENT VARIABLE DEPTH
(\widehat{D})	EX CULVERT
(\widehat{E})	EX CURB
(\widehat{F})	EX CONCRETE PARKING LOT
$(\widehat{\mathbb{H}})$	EX ASPHALT PARKING LOT

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UTILITIES

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

COMMUNICATION ELECTRIC

LUMEN (FKA CENTURYLINK) THOMAS RENOY RENOY.THOMAS@LUMEN.COM ANNSFIELD, OH 44905 TRAVIS BALLOG (419)-521-6214 BALLOGT@FIRSTENERGYCORP.COM

GAS

SPRINT 11370 ENTERPRISE PARK DR SHARONVILLE, OH 45241 STEVEN HUGHES (513) 459-5796 STEVEN.HUGHES@SPRINT.COM

CITY OF MANSFIELDCOLUMBIA GAS OF OHIO30 N DIAMOND ST1021 NORTH MAIN STMANSFIELD, OH 44902MANSFIELD, OH 44903ROBERT BIANCHIANDREW MILBURN(419) 755-9702AMILBURN@NISOURCE.COMRBIANCHI@CI.MANSFIELD.OH.USS

SEWER

CITY

MANSFIELD SEWER 30 N DIAMOND ST MANSFIELD, OH 44902 ADAM HILL-WARREN (419) 755-9809 AHILL-WARREN@CI.MANSFIELD.OH.US

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.

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

REMOVE ALL SHRUBS, TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	NO. TREES	NO. STUMPS	TOTAL
18″	1	0	1
30″	1	0	1

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES DURING TIMES ACCORDING TO LOCAL ORDINANCES.

FENCE LENGTHS

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

CONTRACTION AND/OR EXPANSION JOINTS

THERE IS AN EXISTING CONCRETE PARKING LOT FROM APPROXIMATELY STATION 111+36 TO STATION 112+00 RT THAT WILL BE REPLACED DUE TO THE REMOVAL OF THE EXISTING CULVERT. THIS PARKING LOT SHALL BE REPLACED WITH ITEM 452 - 8" NON-REINFORCED CONCRETE PAVEMENT AND ALL NECESSARY JOINT TYPES AND SPACING SHALL BE PROVIDED AND INCLUDED WITH THIS ITEM TO MATCH THE EXISTING CONDITION.

SEEDING AND MULCHING

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

ITEM	659	-	SOIL ANALYSIS TEST	2	EACH
ITEM	659	-	TOPSOIL	120	СҮ
ITEM	659	-	SEEDING AND MULCHING	1085	SY
ITEM	659	-	REPAIR SEEDING AND MULCHING	54	SY
ITEM	659	-	COMMERCIAL FERTILIZER	0.15	TON
ITEM	659	-	LIME	0.22	ACRES
ITEM	659	-	WATER	6	MGAL

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.

SURVEYING PARAMETERS

SEE THIS SHEET FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

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

PROJECT CONTROL

POSITIONING METHOD:	OHIO DEPARTMENT OF
TRANSPC	RTATION VIRTUAL REFERENCE SYSTEM
MONUMENT TYPE:	REBAR AND MAGNETIC NAILS

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM:	NA VD88
GEOID:	GEOID12B

HORIZONTAL CONTROL

POINTS	NORTHING (GROUND)	EASTING (GROUND)	ELEVATION	STATION	OFFSET	FULL DESCRIPTION
3	398101.4630	1965852.7280	1162.43	10+48.56	59.15′ RT	1157 TOPO IRSw/cap
4	398144.9410	1965875.5460	1160.24	10+69.10	14.55′ RT	1165 TOPO MAGS
5	398128.3090	1966243.1180	1155.08	14+37.04	12.15′ RT	1165 TOPO MAGS
6	398099.8670	1966645.2780	1149.76	48+40.13	19.75′ RT	1165 TOPO MAGS
7	398086.5250	1967033.9580	1141.06	22+28.98	12.97′ RT	1165 TOPO MAGS
8	398063.5210	1967294.2200	1136.63	24+90.08	22.48′ RT	1165 TOPO MAGS
9	398073.2610	1967430.7420	1136.43	OUTSIDE OF CEN	ITERLINE LIMITS	1157 TOPO IRSw/cap
10	398124.0260	1967586.3500	1136.49	OUTSIDE OF CENTERLINE LIMITS		1157 TOPO IRSw/cap
11	398115.2860	1967554.2310	1144.12	OUTSIDE OF CENTERLINE LIMITS		1157 VRS IRSw/cap
12	398184.3037	1966037.7480	1165.14	12+29.04	33.15′ LT	1157 #12 IRSw/cap
13	398087.9403	1966550.6050	1158.28	17+46.20	36.56′ RT	1157 #13 IRSw/cap
14	398121.3900	1967185.9560	1147.39	23+78.97	29.71′ LT	1157 #14 IRSw/cap
50	398092.3880	1967020.8750	1150.71	22+15.61	7.79′ RT	1165 #50 MAGS
51	398058.6890	1967380.7910	1144.50	25+76.79	22.83′ RT	1165 VRS MAGS
52	398242.2320	1967679.5670	1143.02	OUTSIDE OF CEN	ITERLINE LIMITS	1165 VRS MAGS
53	398141.6410	1965681.6070	1170.31	OUTSIDE OF CEN	ITERLINE LIMITS	1165 VRS MAGS
54	397876.2970	1965687.7290	1173.65	8+95.43	292.55′ RT	1165 VRS MAGS
201	398149.5590	1965894.3500	1167.32	10+87.64	8.96′ RT	1165 VRS MAGS
202	398113.3070	1966267.9730	1162.24	14+62.63	25.84′ RT	1165 VRS MAGS

VERTICAL CONTROL

<u>BENCH MARK</u>	<u>ELEVATION</u>	<u>STATION</u>	<u>OFFSET</u>	
BM#1	1170.69	9+89.63	21.78′ LT	CHISELED "X" ON THE NORTH SIDE OF E. 3R
BM#51	1145.78	BENCHMARK LO LIMITS OF E. CENTERLIN	CATED OUTSIDE 3RD STREET IE OF R/W	RAILROAD SPIKE IN TH NORTHWEST CORNER C (U.S.42).

STATION AND OFFSET ARE FROM EX. CENTERLINE R/W OF E. 3RD STREET.

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HORIZONTAL POSITIONING

REFERENCE FRAME: ELLIPSOID: MAP PROJECTION: COORDINATE SYSTEM: COMBINED SCALE FACTOR: ORIGIN OF COORDINATE SYSTEM: NAD_83(2011)(EPOCH:2010.0000) GRS80 LAMBERT CONFORMAL CONIC OHIO STATE PLANE NORTH ZONE 1.00009689615654 (GRID TO GROUND)

N:398149.559, E:1965894.350

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.

DESCRIPTION

SOUTH FLANGE BOLT OF A FIRE HYDRANT LOCATED ON THE RD STREET, 60 FEET EAST OF MICAH PLACE.

HE SOUTH SIDE OF A WOODEN UTILITY POLE LOCATED AT THE OF THE INTERSECTION OF E. 3RD STREET AND ASHLAND ROAD RAL NOTE

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EARTHWORK FOR SIDEWALKS

ALL ADDITIONAL EXCAVATION AND EMBANKMENT, BEYOND WHAT IS REQUIRED TO EXCAVATE AND BACKFILL THE CULVERT, REQUIRED TO BRING THE PROPOSED SIDEWALK TO FINAL GRADE SHALL BE INCLUDED IN THE UNIT COST FOR ITEM 608.

NORFOLK SOUTHERN RIGHT-OF-WAY

CONTRACTOR SHALL NOT FOUL NORFOLK SOUTHERN RIGHT-OF-WAY. THE POTENTIAL TO FOUL IS DEFINED AS:

A. ANY ACTIVITY WHERE ACCESS ONTO RAILROAD PROPERTY IS REQUIRED.

B. ANY ACTIVITY WHERE WORK IS BEING PERFORMED ON RAILROAD ROW.

C. ANY EXCAVATION WORK ADJACENT TO RAILROAD TRACKS OR FACILITIES, WITHIN THE THEORETICAL RAILROAD LIVE LOAD INFLUENCE ZONE, OR WHERE THE ACTIVE EARTH PRESSURE ZONE EXTENDS WITHIN THE RAILROAD PROPERTY LIMITS.

D. THE USE OF ANY EQUIPMENT WHERE, IF TIPPED AND LAID FLAT IN ANY DIRECTION (360 DEGREES) ABOUT ITS CENTER PIN, CAN ENCROACH WITHIN TWENTY FIVE FEET (25'-0") OF THE NEAREST TRACK CENTERLINE.

E. ANY OTHER WORK WHICH POSES THE POTENTIAL TO DISRUPT RAIL OPERATIONS, THREATEN THE SAFETY OF RAILROAD EMPLOYEES, OR OTHERWISE NEGATIVELY IMPACT RAILROAD PROPERTY, AS DETERMINED BY RAILROAD.

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.

ITEM 202 - PAVEMENT REMOVED, AS PER PLAN

THE EXISTING PAVEMENT SHALL BE REMOVED TO THE BOTTOM OF THE BASE (APPROXIMATELY 13") WITHIN THE LIMITS PROVIDED IN THE PLAN. BASED ON FIELD OBSERVATIONS, THE EXISTING PAVEMENT IS 8" OF BRICK BASE WITH VARYING DEPTH OF ASPHALT ON TOP. THE CONTRACTOR SHALL CONFIRM SOUND EDGE AT THE LOCATION OF THE SAWCUT BEFORE PLACING NEW PAVEMENT. THE CONTRACTOR SHALL REMOVE ALL CONCRETE AND ASPHALT ENCOUNTERED IN THE REMOVAL OF THE EXITING PAVEMENT. ANY ADDITIONAL MATERIALS, EQUIPMENT OR LABOR REQUIRED TO PERFORM THIS WORK SHALL BE PAID FOR BY THIS ITEM.

ITEM 202 - REMOVAL MISC.: CONCRETE BLOCKOUT

THE EXISTING CONCRETE BLOCKOUT AROUND THE CATCH BASIN AT STA 114+50.44, 18.3' LT SHALL BE REMOVED. THE COST OF ALL MATERIALS, EQUIPMENT OR LABOR REQUIRED TO PERFORM THIS WORK SHALL BE PAID FOR BY THIS ITEM.

ITEM 202 - SPECIAL - PARKING BLOCK REMOVED AND RESET

THE COST OF ALL MATERIALS, EQUIPMENT OR LABOR REQUIRED TO PERFORM THIS WORK SHALL BE PAID FOR BY THIS ITEM.

ITEM 203 - EMBANKMENT AND EXCAVATION

EXCAVATION AND EMBANKMENT ITEMS ARE INCIDENTAL TO THE CULVERT REPLACEMENT AND WILL BE PAID FOR BY ITEM 611 - 16' X 6' CONDUIT, TYPE A, 706.05, AS PER PLAN

ITEM 204 SUBGRADE COMPACTION, AS PER PLAN

ITEM 204 SUBGRADE COMPACTION, AS PER PLAN THERE ARE NUMEROUS UNDERGROUND UTILITIES THAT ARE TO REMAIN IN PLACE DURING CONSTRUCTION OF THE STORM SEWER, REPAIR PAVEMENT, CURB RAMPS, SIDEWALKS, AND DRIVEWAYS THAT WILL BE DIRECTLY BENEATH THE PROPOSED WORK. DUE TO THIS ONLY A STATIC ROLLER SHALL BE USED FOR THE COMPACTION OF ALL NORMAL AND STABILIZED SUBGRADES. ANY DAMAGE CAUSED TO EXISTING UNDERGROUND UTILITIES DUE TO THE USE OF UNAPPROVED COMPACTION PROCEDURES WILL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEET NO. 2 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING 1 HOUR.

ITEM 609 - CURB, MISC.: DROP CURB

DIMENSIONS OF THE CURB AND GUTTER SHALL BE CONSTRUCTRED PER THE TYPICAL SECTIONS DROP CURB DETAIL

ITEM 611 - CATCH BASIN MISC.: CONCRETE BLOCKOUT

THE CONTRACTOR SHALL CONSTRUCT A CONCRETE BLOCKOUT AROUND THE CATCH BASIN AT STA 114+50.44, 18.3' LT. THE PROPOSED CONCRETE BLOCKOUT SHALL CONFORM TO ODOT CMS ITEM 611 AND ODOT SCD CB 2.1 EXCEPT THAT THE THICKNESS AND DIMENSIONS OF THE CONCRETE BLOCKOUT SHALL MATCH THE THICKNESS AND DIMENSIONS OF THE EXISTING CONCRETE BLOCKOUT BEING REMOVED. THE COST OF ALL MATERIALS, EQUIPMENT OR LABOR REQUIRED TO PERFORM THIS WORK SHALL BE PAID FOR BY THIS ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY, REPRESENTATIVES OF THE CITY 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 CITY.

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 CITY.

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.

EXISTING SUBSURFACE DRAINAGE

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

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

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

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

605 6″ UNCLASSIFIED PIPE UNDERDRAINS	100	FT
611 6" CONDUIT, TYPE F	20	FT

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SEQUENCE OF CONSTRUCTION

CONSTRUCTION ACTIVITIES SHALL BE COMPLETED UTILIZING A ROAD CLOSURE AS DETAILED WITHIN AND PER ODOT SCD MT-101.60.

ACCESS SHALL BE MAINTAINED TO ALL PROPERTIES AT ALL TIMES. IMPACTS TO ACCESS SHALL BE COORDINATED WITH PROPERTY OWNERS A MINIMUM OF 7 DAYS PRIOR TO WORK.

ITEM 614, MAINTAINING TRAFFIC

NOTICE OF CLOSURE SIGNS (W2O-HI3) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

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

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-HI3 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE CITY OF MANSFIELD RATHER THAN THE GENERAL SWITCHBOARD NUMBER.



THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE LOCATIONS DETAILED WITHIN DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS DETAILED WITHIN. ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

- * DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- * DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

* FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES. ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 16 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 607, FENCE, MISC.: TEMPORARY ORANGE CONSTRUCTION FENCE

TEMPORARY ORANGE PLASTIC/NYLON CONSTRUCTION FENCE SHALL BE PLACED PRIOR TO AND ADJACENT ALL SITE EXCAVATIONS AND TEMPORARY SHORING, OR AS DIRECTED BY THE ENGINEER TO PROVIDE AN ADVANCED VISIBLE WARNING FOR PEDESTRIAN AND VEHICULAR TRAFFIC FROM CONSTRUCTION OPERATIONS. THE FENCING MATERIAL SHALL BE SECURELY FASTENED TO EITHER WOOD, OR METAL POSTS WITH A MAXIMUM SPACING NOT TO EXCEED 6 FEET. THE FENCING MATERIAL SHALL HAVE A NOMINAL HEIGHT OF 42 INCHES, AND THE TOP EDGE OF THE FENCING SHALL NOT BE PERMITTED TO SAG BELOW 30 INCHES. THE CONTRACTOR SHALL ENSURE THE FENCE IS IN GOOD CONDITION, PROPERLY PLACED AN MAINTAINED AT ALL TIMES.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 607 - FENCE, MISC.: TEMPORARY ORANGE PLASTIC CONSTRUCTION FENCE - 1723 FT

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OFFICE CALCS	4	5	33												EXT	TOTAL		
	10													201	11000			
070	LS													201	77000	L3 072	cv	CLEARING AND GRUBBING
2 178											-			202	23000	2 178	ST SV	PAVEMENT REMOVED
2,110 185														202	30000	2,110	ST SE	WALK REMOVED
48														202	32000	48	FT	CURB REMOVED
10														202	52000	10	11	
515														202	35100	515	FT	PIPE REMOVED. 24" AND UNDER
18														202	35200	18	FT	PIPE REMOVED, OVER 24"
1														SPECIAL	20253010	1	EACH	PARKING BLOCK REMOVED AND RESET
2														202	58000	2	EACH	MANHOLE REMOVED
5														202	58100	5	EACH	CATCH BASIN REMOVED
1														202	98100	1	EACH	REMOVAL MISC.: CONCRETE BLOCKOUT
2,248														204	10000	2,248	SY	SUBGRADE COMPACTION
		/												204	45000	/	HOUR	PROOF ROLLING
071														607	98000	1,723	F1	FENCE, MISC.: TEMPORARY ORANGE PLAST
277														608	10000	2/1	SF	4" CONCRETE WALK
458					+			<u> </u>	-			+		608	15000	7 150	CE	8" CONCRETE WALK
,7JO 82					+			<u> </u>	-			+		600	52000	1,400		CURB RAMP
37					1							1		600	26000	37	FT	CURB TYPE 6
811					+			<u> </u>			1	+		60.9	98000	811	FT	CURB, MISC.: DROP CURB
				1	1						1	1				0,1		
	2		1	1	1	1		1	1	1	1	1	1	659	00100	2	EACH	SOIL ANALYSIS TEST
	101													659	00300	101	СҮ	TOPSOIL
	910													659	10000	910	SY	SEEDING AND MULCHING
	46													659	14000	46	SY	REPAIR SEEDING AND MULCHING
	0.12													659	20000	0.12	TON	COMMERCIAL FERTILIZER
	0.19													659	31000	0.19	ACRE	LIME
	5													659	35000	5	MGAL	WATER
,000														832	30000	10,000	EACH	EROSION CONTROL
		100												COE	17700	10.0	<i>LT</i>	
270		100												605	13300	930		6 UNCLASSIFIED PIPE UNDERDRAINS
19		20												611	00510	38		
10		20												611	00000	10	FT	6" CONDUIT, THE F FOR ONDERDRAIN OF
55														611	01800	55	FT	8" CONDUIT TYPE B
														011	01000	00	11	
15														611	03100	15	FT	10" CONDUIT. TYPE B
55														611	04400	55	FT	12" CONDUIT, TYPE B
5														611	04600	5	FT	12" CONDUIT, TYPE C
6														611	07400	6	FT	18" CONDUIT, TYPE B
15														611	13400	15	FT	30" CONDUIT, TYPE B
2														611	98370	2	EACH	CATCH BASIN, NO. 6
1														611	98450	1	EACH	CATCH BASIN, NO. 2-2A
1														611	98520	1	EACH	CATCH BASIN, NO. 2-3 WITH BICYCLE SA
1											ļ			611	98690	1	EACH	CATCH BASIN, MISC.: CONCRETE BLOCKO
1,469														254	01000	1,469	SY	PAVEMENT PLANING, ASPHALT CONCRETE
5/5					+							+		301	46000	5/5		ASPHALI LUNUREIE BASE, PG64-22
041 110														304	20000	541		AGGREGATE BASE
157					+			<u> </u>	-			+		401 11	50000	410	CAL CV	ASPHALT CONCRETE SUBEACE COURSE T
IJJ					+	-						+		441	50000	100		AJI MALI CONURETE SURFALE COURSE, T
14.3														441	50300	143	CY	ASPHALT CONCRETE INTERMEDIATE COUR
356			<u> </u>	1	1			1			1	1	1	452	12010	.356	SY	8" NON-REINFORCED CONCRETE PAVEMEN
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216			1	1	1			1	1	1	1	1		611	01800	216	FT	8" CONDUIT, TYPE B
			LS	1	1	1	1	1	1	1	1	1	1	SPECIAL	61197910	LS		TEMPORARY SANITARY SEWER SERVICE
3			1		1		1	1	1	1	1	1	1	611	99574	3	EACH	MANHOLE, NO. 3
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DESCRIPTION	SEE Sheet No.	CALCULATED GGW CHECKED MJR
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PE 1, (448), PG64-22		S
E, TYPE 2, (448)		
CLASS QC IP		38
SANITARY SEWER		
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OFFICE CALCS	6	53											ЕХТ	TOTAL	UNII	DESCRIPTION	NO.	CALCU GC CHEC
																WATER WORK		1
56												638	06200	56	FT	POLYETHYLENE ENCASEMENT, 3" HDPE	35	4
33				-	-	-			-			638	07302	33	FI	18" STEEL PIPE ENCASEMENT, BORED OR JACKED	35	-
2								_				638	98000	2	EACH	WATER WORK, MISC.: W-2: 6 INCH GATE VALVE AND VALVE BOX	35	-
5												638	98000	5	EACH	WATER WORK, MISC.: W-2: 8 INCH GATE VALVE AND VALVE BOX	35	-
2												0.00	38000	2	EAUN	WATER WORK, MISC. W-S. O INCH HIDRANT ASSEMDLT, TIFE A SETTING		-
4												638	98000	4	FACH	WATER WORK, MISC.: W-6: 3/4" CURB STOP AND CURB BOX	35	-
1												638	98000	1	EACH	WATER WORK, MISC : W-6: 1" CURB STOP AND CURB BOX	35	-
4												638	98000	4	EACH	WATER WORK, MISC.: W-7: 3/4 INCH CORPORATION STOP	35	1
1												638	98000	1	EACH	WATER WORK, MISC.: W-7: 1 INCH CORPORATION STOP	35	1
2												638	98600	2	FT	WATER WORK, MISC.: W-1: 4 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTIRE IRON PIPE.	35	
																		_
33												638	98600	33	FT	WATER WORK, MISC.: W-1: 6 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTIRE IRON PIPE.	35	4
835												638	98600	835	F1	WATER WORK, MISC.: W-I: 8 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTIRE IRON PIPE.	35	-
200												638	98600	200	F1	WATER WORK, MISC.: W-10: 374 INCH COPPER SERVICE BRANCH	35	-
50												638	98600	50	FI	WATER WORK, MISC.: W-10: I INCH COPPER SERVICE BRANCH		-
																TRAFFIC CONTROL		≻
1												630	08600	1	EACH	SIGN POST REFLECTOR		1 🗠
6.25												630	80100	6.25	SF	SIGN, FLAT SHEET		1 ₹
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1												630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL		_ Σ
1												630	97700	1	EACH	SIGNING, MISC.: SIGN SUPPORT ASSEMBLY, CULVERT MOUNTED	42	」 ⊃
0.15				_	_			_	_		 	644	00700	0.15				ຼ່ິ
33												644	00500	0.15	MILE ET			1.
127												644	00600	127	FT	CROSSWALK INF		∣₹
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																STRUCTURE 20 FOOT SPAN AND UNDER (SFN 7060697)		1 🔟
		LS										202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	50] z
		87										203	35120	87	СҮ	GRANULAR MATERIAL, TYPE C		ш
		1										411	10000	1	СҮ	STABILIZED CRUSHED AGGREGATE		_ 0
		LS		_	_				_			503	11101	LS		COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	50	4
		10,748			-							509	10000	10,748	LB	EPOXY COATED REINFORCING STEEL		-
		100										509	20001	100	I R	REINFORCING STEEL REPLACEMENT OF EXISTING REINFORCING STEEL AS PER PLAN	51	-
		14										510	10000	100	FACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT		-
		6										511	46010	6	CY	CLASS QCI CONCRETE. RETAINING/WINGWALL NOT INCLUDING FOOTING		-
		24										511	46510	24	СҮ	CLASS QCI CONCRETE, FOOTING		1
		35										511	53010	35	CY	CLASS QCI CONCRETE, MISC .: CAST-IN-PLACE JUNCTION CHAMBER		1
		37										512	10050	37	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)		_
		1,568										512	33000	1,568	SY	TYPE 2 WATERPROOFING		_
		1,897									 	512	33010	1,897	SY	TYPE 3 WATERPROOFING		-
		11										512	10600	//	F 1	LONCRETE REPAIR BT EPOXT INJECTION		-
		115										516	13600	115	SE	1" PREFORMED EXPANSION JOINT FILLER		1
		63										517	70001	63	FT	RAILING (TWIN STEEL TUBE). AS PER PLAN	51	1
		8										518	21200	8	СҮ	POROUS BACKFILL WITH GEOTEXTILE FABRIC		-
		1,700										518	40000	1,700	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		1
		200										518	40012	200	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE		<u> </u>
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		892								-	 	519	11101	892	SF	PAILHING LUNUKETE STRUCTURE, AS PER PLAN	51	1 2
		57			+					-	 	607	27000	57	SI FT			1 2
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		22										613	41200	22	CY	I OW STRENGTH MORTAR BACKFILI		1 ⊢
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		200										SPECIAL	69065016	200	TON	WORK INVOLVING PETROLEUM CONTAMINATED SOIL	50	1
		19										SPECIAL	69098000	19	EACH	SPECIAL - RESEALING INFILTRATING JOINTS WITH HYDROPHOBIC GROUT	51	_ _
		LS						1				SPECIAL	69098400	LS		SPECIAL - STRUCTURE: VIBRATION MONITORING	52	
		LS				I		1			 	SPECIAL	69098400	LS		SPECIAL - STRUCTURE MISC.: PRECONSTRUCTION CONDITION SURVEY	52	ျက္
		1,275								-	 	843	50000	1,275	SF	PAICHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	51	
										-	 					MAINTENANCE OF TRAFFIC		∣ ≚
	16			1	1			1	1			614	11110	16	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE		1 °
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LS													623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURV
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PLAN, OWNERSHIP, DEVELOPER AND SITE CONTACT INFORMATION

<u>SITE CONTACT</u> CITY OF MANSFIELD ROBERT BIANCHI, PE

CITY ENGINEER 30 NORTH DIAMOND ST MANSFIELD, OHIO 44902 PHONE (419) 755–9628

<u>PLAN ENGINEERS</u>	OWNER/DEVELOPER
EMH&T INC.	CITY OF MANSFIELD
5500 NEW ALBANY ROAD	30 NORTH DIAMOND ST
COLUMBUS, OH 43054	MANSFIELD, OHIO 44902
CRAIG SCHRADER, PE	
PHONE (614)775-4500	
FAX (614) 775-4800	

SEDIMENT AND EROSION CONTROL GENERAL NOTES

CONTRACTOR'S RESPONSIBILITIES

CONTRACTOR SECONDICITIES. PRIOR TO CONSTRUCTION OPERATIONS IN A PARTICULAR AREA, ALL SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN PLACE. FIELD ADJUSTMENTS WITH RESPECT TO LOCATIONS AND DIMENSIONS MAY BE MADE BY THE ENGINEER OR THE CITY OF MANSFIELD.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT NO SOLID OR LIQUID WASTE IS DISCHARGED INTO STORMMATER RUNOFF. UNTREATED SEDIMENT-LADEN RUNOFF SHALL NOT FLOW OFF OF SITE WITHOUT BEING DIRECTED THROUGH A CONTROL FEATURE. CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE INTO OR ALONGSIDE RIVERS, STREAMS, OR CREEKS OR INTO NATURAL OR MAANDE CHANNELS OR SWALES LEADING THERETO. CONCRETE WASH WASTE AND SURPLUS CONCRETE SHALL BE CONTINED TO APPROVED AREAS; AFTER SOLIDIFYING, THESE WASTE MATERIALS SHALL BE REMOVED FROM THE SITE.

THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS UPON PERMANENT STABILIZATION OF THE SITE.

IT MAY BECOME NECESSARY TO REMOVE PORTIONS OF THE SEDIMENTATION AND EROSION CONTROL FEATURES DURING CONSTRUCTION TO FACILITATE THE GRADING OPERATIONS IN CERTAIN AREAS. HOWEVER, THE SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN PLACE IN THE EVENING OR DURING ANY INCLEMENT WEATHER.

TEMPORARY AND PERMANENT SEEDING SHALL BE COMPLETED USING THE REQUIREMENTS INDICATED UNDER ITEM 659.

MAINTENANCE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SEDIMENT CONTROL FEATURES USED ON THIS PROJECT. THE SITE SHALL BE INSPECTED PERIODICALLY AND AFTER SIGNIFICANT RAINFALL. ANY SEDIMENT OR DEBRIS WHICH HAS REDUCED THE EFFICIENCY OF A STRUCTURE SHALL BE REMOVED IMMEDIATELY. SHOULD A STRUCTURE OR FEATURE BECOME DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE AT NO ADDITIONAL COST TO THE CITY.

THE CONTRACTOR SHALL MONITOR THE RATE AT WHICH RUNDEE DRAINS THROUGH THE INLET PROTECTION DEVICES DURING AND FOLLOWING RAIN EVENTS. IF THE USE OF INLET PROTECTION CAUSES PONDING TO OCCUR WITHIN ACTIVE LANES OF TRAFFIC, THE CONTRACTOR SHALL REMOVE INLET PROTECTION TO ALLOW THE ROADWAY TO DRAIN.

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:	THIS PROJECT CONSISTS OF THE PARTIALREPLACEMENT AND REHABILITATION OF THE EXISTING 1,700 FT CULVERT STRUCTURE CONVEYING RITTER'S RUN BENEATH E. 3RD STREET, INCLDUING INSTALLATIO OF EXCAVATION BRACING, REPLACEMENT OF GUARDPAIL AND PEDESTRIAN RAILING, PROPOSED STORM FACILITITES, WATER LINE RELOCATIONS, SANITARY SEWER REPLACEMENT, FULL DEFTH PAVEMENT REPLACEMENT AND WALK, RESURFACING, PAVEMENT MARKING AND SIGNAGE.
XISTING SITE CONDITION	5: THE SITE CURRENTLY CONSISTS OF EXISTING ROADWAY, SIDEWALKS, AND CULVERT BENEATH THE ROADWAY.
PECEIVING STREAM:	STORMWATER RUNOFF IS TRIBUTARY TO THE RITTER'S RUN.
NSTURBED AREA:	THE CALCULATED DISTURBED AREA IS 1.31 ACRES
ROSION AND SEDIMENT	EROSION AND SEDIMENT WILL BE CONTROLLED BY THE USE OF INLET PROTECTION.
PERMANENT STABILIZATIO	ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED OR PAVED.
MAINTENANCE:	ALL EROSION CONTROL DEVICES ARE TO BE INSPECTED FREOUENTLY. ANY DAMAGED FACILITIES ARE TO BE REPLACED/REPAIRED IMMEDIATELY AS MAY BE NECESSARY.
CONSTRUCTION SEQUENCE:	 THE CONTRACTOR SHALL PLACE THE REQUIRED INLET PROTECTION ON EXISTING STRUCTURES AND ALL OTHER EROSION CONTROL MEASURES NOTED HEREON PRIOR TO ANY CONSTRUCTION ACTIVITY IN ACCORDANCE WITH THE PLAN DETAILS. INSTALL COMPOST FILTER SOCKS AROUND THE BUILDING THAT IS TO BE REMOVED. DEMO THE EXISTING BUILDING AND PAVEMENT. SEED AND STABILIZE THE AREA PER ITEM 659. BEGIN REMOVAL OF THE EXISTING CULVERT. UTILIZE THE STREAM BY-PASS PUMPING DETAIL FOR THE PUMPING OF CLEAN WATER AROUD THE WORK AREA AND A DEWATERING FILTER BAG FOR THE MUDY WATER IN THE WORK AREA. ALL CLEAN PUMPED WATER SHALL BE PUMPED INTO THE EXISITING CULVERT THAT IS DOWNSTREAM OF THE WORK AREA. REPALCE EXISITING INLETS AND RE-INSTALL INLET PROTECTION. COMMENCE WITH REPAVEMENT OF THE ROADWAY AND SIDEWALKS. SEED ALL REAMINING DISTURBED AREAS. ONCE VEGETATION HAS BECOME ESTABLISHED, REMOVE THE TEMPORARY EROSION AND SEDIMENT CONTROL BMPS.

BE CONSIDERED A MINIMUM. ADDITIONAL OR ALTERNATE DETAILS MAY BE FOUND IN OHIO'S RAINWATER AND LAND DEVELOPMENT MANUAL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING NECESSARY AND ADEQUATE MEASURES FOR PROPER CONTROL OF EROSION AND SEDIMENT RUNOFF FROM THE SITE ALONG WITH PROPER MAINTENANCE AND INSPECTION.



INSTALLATION: THE CONTRACTOR SHALL PUMP MUDDY WATER ENCOUNTERED WITHIN EXCAVATED AREAS THAT ARE NOT TRIBUTARY TO SEDIMENT BASINS INTO A FILTER FABRIC BAG. THE BAG SHALL BE PLACED WITHIN A LEVEL UNDISTURBED AREA AS FAR AWAY FROM THE STORMWATER OUTFALL AS POSSIBLE. THE BAG SHALL BE PLACED ON TOP OF A AGGREGATE FAD. ADDITIONALLY, A PERIMETER AGGREGATE BERM SHALL BE CONSTRUCTED AROUND THE BAG. PERIMETER CONTROLS SUCH AS STRAW BALE BARRIERS OR SEDIMENT FENCES SHALL BE UTILIZED ALONG THE DOWNSTREAM SDE OF THE BAG. THE PERIMETER CONTROLS SHALL BE INSTALLED TO ENSURE THAT THE WATER FLOWING OUT OF THE BAG DOES NOT FLOW AROUND THE BAG. PERIMETER CONTROLS UPON COMPLETION, THE BAG SHALL BE REMOVED TO AN AREA AWAY FROM THE STORMWATER OUTFALL AND OPENED. THE ACCUMULATED SEDIMENT SHALL BE SPREAD OUT TO ALLOW TO DRY AND MIX WITH ONSITE TOPSOIL STOCKPILE. FILTERBAG SHALL BE JMD ENVIRO-PROTECTION FILTER BAG, SIZE IS 15'X15' OR EQUAL.

MAINTENACE: THE FILTER BAG SHALL BE REPLACED WHEN THE BAG IS HALF FILLED WITH SEDIMENT.

AS AN ALTERNATIVE, CONTRACTOR SHALL USE A ROLL OFF BOX WITH

CONCRETE WASHOUT AREA

NOT TO SCALE

CONCRETE WASHOUT

LINER.

THE CONTRACTOR SHALL CONTACT THE OWNER/ENGINEER FOR CONSULTATIVE SERVICES IF DEWATERING ACTIVITIES OVERWHELM THE FILTER BAG AND PERIMETER CONTROLS.

TABLE 1 - DISTURBED AREA STA	BILIZATION TIMEFRAME REQUIREMENTS
AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROL
ANY AREAS THAT WILL LIE DORMENT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROL
AREA REQUIRING TEMPORARY STABILIZATION ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	TIME FRAME TO APPLY EROSION CONTROL WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
AREA REQUIRING TEMPORARY STABILIZATION ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	TIME FRAME TO APPLY EROSION CONTROL WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA





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STAND GRATE ON END. PLACE DANDY BAG OVER GRATE. ROLL GRATE OVER SO THAT OPEN END IS UP. PULL UP SLACK. TUCK FLAP IN. BE SURE END OF GRATE IS COMPLETELY COVERED BY FLAP OR DANDY BAG WILL NOT FIT PROPERLY. HOLDING HANDLES, CAREFULLY PLACE DANDY BAG WITH GRATE INSERTED INTO CATCH BASIN FRAME SO THAT RED DOT ON THE TOP OF THE DANDY BAG IS VISIBLE. MAINTENANCE:

WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL REMOVE SILT & OTHER DEBRIS OFF SURFACE AFTER EACH EVENT.

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SANITARY NOTES:

ALL SANITARY SEWERS AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO THE "RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES" (COMMONLY REFERRED TO AS THE "TEN STATE STANDARDS"), LATEST EDITION.

NO ADDITIONS, DELETIONS, OR REVISIONS TO THE SANITARY SEWER AND/OR WATER FACILITIES ARE TO BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE CITY OF MANSFIELD.

NO CONSTRUCTION SHALL COMMENCE UNTIL ALL NECESSARY EPA AND CITY OF MANSFIELD SANITARY SEWER PERMITS HAVE BEEN ISSUED AND TWO (2) WORKING DAYS NOTICE HAS BEEN GIVEN TO THE CITY OF MANSFIELD AND ALL UTILITY COMPANIES.

STORM WATER AND EXTRANEOUS FLOWS ARE PROHIBITED FROM ENTERING THE SYSTEM DURING CONSTRUCTION. NO OPEN TRENCHES WILL BE ALLOWED TO REMAIN OPEN OVERNIGHT. STORM DRAINS, DIVERSION DITCHES, PUMPS, ETC., SHALL BE USED AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE SYSTEM AT ALL TIMES.

ROOF DRAINS, FOUNDATION DRAINS, AND OTHER STORM WATER CONNECTIONS TO THE SANITARY SYSTEM ARE PROHIBITED.

SANITARY SEWER PIPE AND FITTINGS SHALL BE PVC. PVC PIPE AND FITTINGS SHALL MEET AND/OR EXCEED ALL THE REQUIREMENTS OF ASTM D-3034, SDR35, AND HAVE A MINIMUM PIPE STIFFNESS OF 46 PSI.

SANITARY SEWER PIPE JOINTS SHALL CONFORM TO ASTM D-3212 (ELASTOMERICALLY GASKETED).

SANITARY SEWER LATERALS SHALL BE CONSTRUCTED OF SDR 35 PVC PIPE PER ASTM D-3034.

SANITARY MANHOLES SHALL BE PRE-CAST CONFORMING TO ASTM C-478, OR MONOLITHIC CONSTRUCTED OF CLASS "A" 4200 PSI CONCRETE. JOINTS BETWEEN PRE-CAST SANITARY MANHOLE SECTIONS SHALL CONFORM TO ASTM C-443. CHIMNEY SEALS SHALL BE PROVIDED BETWEEN THE CASTING AND CONE SECTION. ECCENTRIC CONES SHALL BE USED.

SANITARY MANHOLE BOTTOMS SHALL BE CHANNELIZED.

ALL PVC PIPE MUST BE TESTED FOR A MAXIMUM DEFLECTION OF FIVE PERCENT (5%) UNDER THE SUPERVISION OF THE CITY OF MANSFIELD NOT LESS THAN 60 DAYS AFTER COMPLETION OF CONSTRUCTION. THE TESTING SHALL BE PERFORMED USING A MANDREL THAT IS EITHER FULL CIRCLE OR 9-ARM THAT IS HAND PULLED ONLY. ANY SEWERS WHICH FAIL THE TEST MUST BE REPAIRED AND RETESTED UNTIL THEY ARE WITHIN THE REQUIRED TOLERANCES.

UPON COMPLETION OF CONSTRUCTION. THE ENTIRE SANITARY SEWER SYSTEM MUST BE LOW PRESSURE AIR TESTED IN ACCORDANCE ASTM F 1417.

AT THE TIME THE SANITARY SEWER IS TESTED, AS DESCRIBED ABOVE, THE SEWER MUST BE TELEVISED WITH A DIGITAL RECORD PROVIDED TO THE CITY OF MANSFIELD. IF A PROBLEM IS IDENTIFIED, THE NECESSARY REPAIRS MUST BE MADE AND SEWER MUST THEN BE RE-TELEVISED. ALL NEW MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH ASTM C 1244. A VACUUM OF 10" OF MERCURY SHALL BE DRAWN ON THE MANHOLE. A FOUR FOOT (4.0') DIAMETER MANHOLE, LESS THAN 20' DEEP, SHALL HOLD NINE INCHES (9") OF MERCURY FOR AT LEAST ONE MINUTE.

MAINTAIN EIGHTEEN (18) INCHES VERTICAL SEPARATION AND TEN (10) FEET HORIZONTAL SEPARATION BETWEEN ANY SANITARY OR STORM SEWER PIPING AND SEWER STRUCTURES AND ALL WATER MAINS.

WHERE NEW SANITARY SEWER PIPE IS PROPOSED TO CROSS AN EXISTING WATER MAIN OR WATER SERVICE, A MINIMUM OF 18-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE SANITARY SEWER PIPE AND THE WATER MAIN OR SERVICE. A MINIMUM OF 3-FEET OF HORIZONTAL CLEARANCE (OUT-TO-OUT) IS REQUIRED AT LOCATIONS WHERE UTILITY CONDUIT IS PARALLEL TO THE SANITARY SEWER PIPE AND AT SANITARY MANHOLE LOCATIONS.

A MINIMUM OF 3-FEET OF HORIZONTAL CLEARANCE (OUT-TO-OUT) SHALL BE MAINTAINED BETWEEN ALL EXISTING FOUNDATIONS FOR POLES, PULL BOXES, PUSH BUTTON PEDESTALS, AND ANY OTHER MISCELLANEOUS ELECTRICAL STRUCTURES AND THE PROPOSED SANITARY SEWER PIPE.

THE CONTRACTOR SHALL ENSURE THERE IS A SURVEYOR'S LEVEL AND ROD ON THE PROJECT FOR USE IN PERFORMING GRADE CHECKS WHENEVER SEWER STRUCTURES OR PIPE ARE BEING INSTALLED. THE CONTRACTOR SHALL MAKE THIS EQUIPMENT AVAILABLE FOR THE USE OF, AND ASSIST, THE CITY INSPECTOR IN PERFORMING GRADE CHECKS WHEN REQUESTED BY THE INSPECTOR. THE INSPECTOR WILL MAKE ALL REASONABLE ATTEMPTS TO CONFINE REQUESTS FOR ASSISTANCE IN PERFORMING GRADE CHECKS TO A TIME CONVENIENT TO THE CONTRACTOR.

THESE CHECKS WILL BE PERFORMED TO ENSURE THE FOLLOWING:

A.PROPER PLACEMENT OF EACH STRUCTURE.

B.PROPER INSTALLATION OF INITIAL RUNS OF PIPE FROM A STRUCTURE.

C.GRADE, AFTER AN OVERNIGHT OR LONGER SHUTDOWN.

D.GRADE, AT ANY OTHER TIME THE INSPECTOR HAS REASON TO QUESTION GRADE OF INSTALLATION.

A GRADE CHECK PERFORMED BY THE CITY INSPECTOR IN NO WAY RELIEVES THE CONTRACTOR FROM THE ULTIMATE RESPONSIBILITY TO ENSURE CONSTRUCTION TO THE PLAN GRADE.

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

IF IT IS DETERMINED THAT THE PROPOSED SEWER WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE DESIGN ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED SEWER WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY. GRADES AND ELEVATIONS SHOWN ON THE PLANS SHALL NOT BE REVISED UNDER ANY CIRCUMSTANCES WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE CITY.

THE CONTRACTOR SHALL FIELD VERIFY THE TOP OF CASTING ELEVATION OF ALL PROPOSED MANHOLES. IF PRECAST STRUCTURES ARE UTILIZED, A MINIMUM OF THE TOP 6" AND A MAXIMUM OF 12" SHALL BE FIELD PLACED EITHER WITH GRADE RINGS OR BRICK AND MORTAR TO ALLOW FOR FIELD ADJUSTMENT.

THE CONTRACTOR SHALL INSTALL A TEMPORARY BULKHEAD, WHERE DIRECTED ON THE PLANS, PRIOR TO CONSTRUCTION OF THE PROPOSED SEWERS AND SHALL MAINTAIN SAME UNTIL SAID SEWERS ARE ACCEPTED BY THE CITY.

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TRENCHING

EXCAVATING AND BACKFILLING FOR SANITARY SEWERS SHALL COMPLY WITH ODOT CMS ITEM 611. THE CONTRACTOR SHALL EXCAVATE ALL MATERIAL OF WHATEVER NATURE ENCOUNTERED, INCLUDING ROCK, AND REMOVE EXCESS MATERIAL FROM THE SITE. NO ADDITIONAL PAYMENT WILL BE MADE FOR ROCK EXCAVATION. BLASTING IS NOT PERMITTED.

ANY EXCAVATION PERFORMED BEYOND THE STANDARD TRENCH WIDTH, AS DEFINED ON THE PLAN DETAILS DUE TO SITE CONDITIONS OR THE CONTRACTOR'S METHODS ARE DONE SO SOLELY AT THE CONTRACTOR'S EXPENSE. NO EXTRA PAYMENT WILL BE MADE FOR UNAUTHORIZED EXCAVATION.

TRENCH BACKFILL

TRENCHES WITHIN A 1(H):1(V) INFLUENCE ZONE OF THE ROADWAY AND/OR PAVEMENT INCLUDING ALL POINTS WITHIN 5-FEET BEHIND THE CURB OR EDGE OF PAVEMENT, SHALL BE FILLED WITH ODOT CMS ITEM 703.11.A STRUCTURAL BACKFILL, TYPE 1 AND COMPACTED PER ODOT CMS ITEM 611. ALL OTHER TRENCHES SHALL BE FILLED AND COMPACTED AS PER ODOT CMS ITEM 611.06 BEDDING AND BACKFILL AT A MINIMUM, OR AS OTHERWISE INDICATED WITHIN THESE PLANS. ALL COSTS FOR BACKFILL SHALL BE INCLUDED IN THE PRICE BID. NO SEPARATE PAYMENT SHALL BE MADE.

THE EXCAVATED TRENCH WIDTH 12-INCHES ABOVE THE CONDUIT MAY BE INCREASED WITHOUT EXTRA COMPENSATION. THE MINIMUM TRENCH WIDTH SHALL BE 3-FEET TO ALLOW ROOM FOR MECHANICAL EQUIPMENT (HOE TAMPS, JUMPING JACKS, ETC.).

PROVIDE COMPACTION EQUIPMENT THAT COMPACTS THE MATERIAL UNDER THE HAUNCH OF THE PIPE. USE SHOVEL SLICING AND SPUD BARS IN CONJUNCTION WITH THE COMPACTION OPERATIONS TO COMPACT THE MATERIAL AND TO MANIPULATE THE MATERIAL UNDER THE HAUNCH OF THE PIPE.

WHERE THE NEW STORM SEWER, WATERLINE, OR SANITARY SEWER CROSSES UNDER AN EXISTING UTILITY LINE, NO. 57 STONE OR ODOT CMS ITEM 703.11.A STRUCTURAL BACKFILL, TYPE 3 SHALL BE USED VERTICALLY FROM THE BOTTOM OF THE NEW TRENCH TO 6-INCHES ABOVE THE TOP OF THE EXISTING UTILITY AND HORIZONTALLY 5-FEET ON EACH SIDE OF THE EXISTING UTILITY. THE GRANULAR BACKFILL SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH ODOT CMS ITEM 611.

ALL PAVEMENT TRENCH CUTS COVERED WITH STEEL TRAFFIC PLATES SHALL BE SHEETED/SHORED OR TRENCH BOXED. NO PLATES SHALL SPAN HOLLOW TRENCHES LOWER THAN 12-INCHES BELOW PAVEMENT SURFACE. ALL PLATES SHALL BE PINNED SECURELY IN PLACE AND WEDGED WITH COLD PATCH MATERIAL IN THE DIRECTION OF TRAFFIC FLOW. BETWEEN DECEMBER 1 AND APRIL 1 TRENCHES SHALL BE BACKFILLED WITH ODOT CMS 703.11.A TYPE 1 FLUSH WITH PAVEMENT AND COVERED WITH STEEL PLATES. PLATE SIGNS SHALL BE PLACED FOR BOTH DIRECTIONS OF TRAFFIC.

ANY LOSS OF EXISTING PAVEMENT SUB-BASE DUE TO TRENCHING OPERATION AND THE UNDERMINED PAVEMENT ABOVE SUCH AREA SHALL BE SAWCUT AND REPAIRED TO THE SATISFACTION OF THE CITY OF MANSFIELD AT NO COST TO THE CITY. RIC-3RD ST-00.31

NOTE: LID SHALL HAVE THE WORDS "SANITARY SEWER" OR "SAN. SEWER" CAST IN RAISED LETTERS. THE FLOW CHANNEL SHALL HAVE A SMOOTH AND CONTINUOUS SLOPE THROUGH THE MANHOLE.





 PIPE BEDDING AND INITIAL BACKFILL PER ODOT 703.11.A, STRUCTURAL BACKFILL, TYPE 3
 COMPACTED IN ACCORDANCE WITH ODOT CMS 611.06 WITH A 95% MAXIMUM DRY DENSITY (STANDARD PROCTOR)

NOTES:

GRANULAR MATERIAL USED FOR BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL CONFORM TO ODOT ITEM 703.11.A STRUCTURAL BACKFILL, TYPE 3.

TYPICAL TRENCH & PIPE BEDDING FOR PVC PIPE

STANDARD SANITARY SEWER MANHOLE

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CALCULATED RSH CHECKED MJR
SANITARY SEWER - DETAILS
RIC-3RD ST-00.31



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WATERWORK NOTES

ALL WATERWORK, INCLUDING RECONNECTION OF WATER SERVICES, ADVANCED NOTIFICATION REQUIREMENTS, COORDINATING THE WORKING OF VALVES FOR SHUTOFFS, AND ALL OTHER ITEMS PERTAINING TO THE WATER MAIN, SHALL BE FULLY COORDINATED WITH THE CITY OF MANSFIELD WATER DEPARTMENT AND ENGINEERING DEPARTMENT. ONLY CITY OF MANSFIELD WATER DEPARTMENT PERSONNEL SHALL OPERATE PUBLIC WATER MAIN VALVES.

ALL WATER MAIN MATERIAL SHALL CONFORM TO THE FOLLOWING STANDARDS AND CITY SPECIFICATIONS: ITEM STANDARD WATERMAIN AWWA/ANSI C151/A21.51 W-1 JOINTS AWWA/ANSI C111/A21.1 W-1 CEMENT MORTAR LINING AWWA/ANSI C104/A21.4 W-1 FITTINGS AWWA/ANSI C153/A21.53 W-1 TAPPING SLEEVES AWWA C223 W-9 GATE VALVES/BOXES AWWA C509 W-2 COMBINATION AIR VALVES AWWA C512 W-8 HYDRANTS AWWA C502 DISINFECTION AWWA C651 W-1HYDROSTATIC TESTING AWWA C600 W-1 SERVICE BRANCHES ASTM B 88 W-10 CORPORATION STOPS AWWA C800 W-7CURB STOPS/BOXES AWWA C800 W-6 INSTALLATION AWWA C600 AS PER ITEM

ALL WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 4.5 FEET OF GROUND COVER, AS MEASURED FROM THE TOP OF THE PIPE TO FINISHED GRADE.

THE NORMAL WORKING PRESSURE OF ALL WATER MAINS SHALL BE NO LESS THAN 35 P.S.I.

A TEN (10) FOOT HORIZONTAL SEPARATION MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE SHALL BE MAINTAINED BETWEEN ANY EXISTING OR PROPOSED WATER MAINS AND SANITARY SEWERS AND STORM SEWERS.

WATER MAINS CROSSING EITHER ABOVE OR BELOW A SEWER SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES (MEASURED FROM OUTSIDE EDGE TO OUTSIDE EDGE). AT CROSSINGS, ONE FULL LENGTH OF WATER MAIN SHALL BE INSTALLED SUCH THAT BOTH JOINTS ARE LOCATED AS FAR FROM THE SEWER AS POSSIBLE. STRUCTURAL SUPPORTS FOR THE WATER MAIN AND/OR SEWER PIPE WILL BE REQUIRED TO MAKE THE COMPLETE INSTALLATION FIRM AND WELL SUPPORTED.

NO WATER MAINS OR APPURTENANCES TO THE POTABLE WATER SYSTEM SHALL BE ALLOWED TO DIRECTLY ENTER OR CONTACT A SANITARY OR STORM SEWER OR MANHOLE. A SUITABLE AIR-GAP SHALL BE PROVIDED WHERE ITEMS SUCH AS TANK DRAINS, ETC. MUST BE INSTALLED.

THE CONTRACTOR SHALL INCLUDE IN THE UNIT BID PRICE FOR ITEM W-1, 4" INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE, ITEM W-1 6" INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE OR ITEM W-1, 8" INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTILE IRON PIPE, THE COST FOR ABANDONING AND/OR REMOVING EXISTING WATER MAINS, VALVES AND HYDRANTS AS SHOWS ON THE PLANS AS WELL AS ANY COST ASSOCIATED WITH THRUST BLOCKS, CAPS OR OTHER APPURTENANT FITTINGS NECESSARY FOR THE ABANDOMENT AND/OR REMOVAL.

WATER MAIN NOTES

SHUT-OFFS

HUTOFFS, ANDNO SHUT-OFFS ARE PERMITTED TO OCCUR ONE (1) BUSINESSAIN, SHALLDAY BEFORE A FEDERAL HOLIDAY, UNLESS OTHERWISESFIELD WATERAPPROVED BY THE CITY ENGINEER. ALL WATER LINE WORK,NLY CITY OFSUCH AS CONNECTING TO EXISTING WATER LINES, WHICHLL OPERATEREQUIRE THE SHUT-DOWN OF EXISTING WATER MAINS SHALLBE FULLY COORDINATED WITH THE CITY OF MANSFIELDENGINEERING DEPARTMENT AND WATER DEPARTMENT. ALLTHE FOLLOWINGWORK SHALL BE SCHEDULED AND PERFORMED IN SUCH AMANNER AS TO RESULT IN A MINIMUM AMOUNT OF SHUT-DOWNCITY SPECIFICATIONTIME FOR EXISTING WATER LINES.

WATER MAIN & SERVICES PROTECTION NOTE

W-1THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TOW-9PROTECT THE EXISTING WATER LINES AND WATER SERVICES,W-2WITHIN THE LIMITS OF THIS IMPROVEMENT, FROM DAMAGE DUEW-8TO MINIMAL COVER. THE CONTRACTOR SHALL BEW-3, W-4, W-5RESPONSIBLE TO ENSURE PROPER FINAL COVER ON ALLW-1WATER LINES (48-IN MIN.) AND WATER SERVICES (42-IN MIN.)W-1WITHIN THE LIMITS OF THIS IMPROVEMENT. THE CONTRACTORW-10SHALL BE RESPONSIBLE FOR THE COST AND THE REPAIR OFW-7ANY DAMAGES CAUSED BY NOT FOLLOWING THISW-6REQUIREMENT. ALL PROTECTIVE MEASURES MUST BEAS PER ITEMAPPROVED BY THE DESIGN ENGINEER.

LOCATION OF APPURTENANCES

ALL VALVE BOXES, SERVICE BOXES, AND FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY.

HORIZONTAL & VERTICAL SEPARATION

MAINTAIN EIGHTEEN (18) INCHES VERTICAL SEPARATION AND TEN (10) FEET HORIZONTAL SEPARATION BETWEEN ANY SANITARY OR STORM SEWER PIPING AND SEWER STRUCTURES AND ALL PROPOSED WATER MAINS.

THE PROPOSED WATER MAIN SHALL BE LOCATED A MINIMUM DISTANCE OF TWENTY (20) FEET AWAY FROM ANY BUILDING STRUCTURE, OVERHANG, OR FOOTER.

WHERE NEW CONDUIT IS PROPOSED TO CROSS AN EXISTING OR PROPOSED WATER MAIN OR WATER SERVICE, A MINIMUM OF 18-INCHES OF VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE CONDUIT AND THE WATER MAIN OR SERVICE. A MINIMUM OF 3-FEET OF HORIZONTAL CLEARANCE (OUT-TO-OUT) IS REQUIRED AT LOCATIONS WHERE THE CONDUIT IS PARALLEL TO THE WATER MAIN AND AT LOCATIONS OF WATER LINE THRUST BLOCKS.

A MINIMUM OF 3-FEET OF HORIZONTAL CLEARANCE (OUT-TO-OUT) SHALL BE MAINTAINED BETWEEN ALL EXISTING WATER MAINS AND FOUNDATIONS FOR POLES, PULL BOXES, PUSH BUTTON PEDESTALS, AND ANY OTHER MISCELLANEOUS ELECTRICAL STRUCTURES.

HEAVY DUTY VALVE BOX

EXISTING OR PROPOSED VALVES LOCATED WITHIN EXISTING OR PROPOSED PAVEMENT, DRIVEWAY, OR OTHER TRAVELED AREAS, SHALL BE PROVIDED WITH A HEAVY DUTY VALVE BOX IN ACCORDANCE WITH THE DETAIL SHOWN ON THESE PLANS.

THE COST OF ALL HEAVY DUTY VALVE BOXES FOR PROPOSED VALVES SHALL BE INCLUDED WITHIN THE COST OF THE PROPOSED VALVE. NO SEPARATE PAYMENT SHALL BE MADE.

FIRE HYDRANTS

NO TWO (2) ADJACENT FIRE HYDRANTS SHALL BE TAKEN OUT OF SERVICE CONCURRENTLY. RELOCATED FIRE HYDRANTS SHALL BE PUT BACK INTO SERVICE AS SOON AS POSSIBLE.

WATER SERVICES

THE CONTRACTOR SHALL GIVE WRITTEN NOTICE TO ALL AFFECTED PROPERTY OWNERS AT LEAST 24 HOURS, BUT NOT MORE THAN 72 HOURS PRIOR TO ANY TEMPORARY INTERRUPTION OF WATER SERVICE. INTERRUPTION OF WATER SERVICE SHALL BE HELD TO A MINIMUM AND SHALL BY APPROVED BY THE CITY ENGINEER.

THE CONTRACTOR SHALL COORDINATE THEIR WORK SUCH THAT NO WATER CUSTOMER WILL HAVE THEIR SERVICE DISRUPTED MORE THAN TWO (2) TIMES THROUGHOUT THE DURATION OF THIS PROJECT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING REPAIRS TO EXISTING WATER SERVICE LINES WHERE EXISTING WATER SERVICES ARE DAMAGED DURING CONSTRUCTION. REPAIRS SHALL BE MADE USING APPROVED PIPE, UNION, AND COUPLERS AND SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF MANSFIELD WATER DEPARTMENT. THE COST FOR REPAIRING EXISTING WATER SERVICE LINES, INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY TO COMPLETE THE REPAIRS SHALL BE INCLUDED IN THE VARIOUS BID PRICES. NO SEPARATE PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL PROVIDE ALL WORK NECESSARY TO INSTALL WATER SERVICE LINES, WHERE SHOWN ON THE PLANS OR OTHERWISE REQUIRED AND IN ACCORDANCE WITH THESE SPECIFICATIONS. WHERE SERVICE LINES ARE SHOWN TO CROSS THE STREET THE CONTRACTOR SHALL PERFORM ALL WORK UTILIZING TRENCHLESS METHODS.

CLEANING & FLUSHING

ALL WATER MAINS SHALL BE CLEANED AND FLUSHED.

PRESSURE TESTING

ALL WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH SECTION 638.09 OF THE ODOT CMS, WITH THE FOLLOWING EXCEPTION: 150 PSI OF PRESSURE SHALL BE MAINTAINED FOR AT LEAST TWO HOURS IN ANY TESTED SECTION. PRESSURE TEST SHALL BE PERFORMED ON THE MAIN, INCLUDING APPURTENANCES, SERVICE LINES, CORP STOPS, ETC. UP TO RESIDENTIAL SERVICE METERS. THE CITY MAY NOT APPROVE ANY TEST LASTING LESS THAN TWO HOURS REGARDLESS OF THE AMOUNT OF LEAKAGE.

DISINFECTION

ALL WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH SECTION 638.10 OF THE ODOT CMS. SPECIAL ATTENTION IS DIRECTED TO APPLICABLE SECTIONS OF A.W.W.A. C-651. WHEN THE WATER MAINS ARE READY FOR DISINFECTION, THE INSPECTOR SHALL SUBMIT TO THE CITY:

*LETTER STATING THAT THE WATER MAINS HAVE BEEN PRESSURE TESTED AND NEED TO BE DISINFECTED

*SIZE AND LENGTH OF EACH WATER LINE TO BE CHLORINATED.

*BEGINNING AND ENDING STATION OF EACH WATER LINE TO BE CHLORINATED.

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DISINFECTION (CONT.)	ALCULA RSH MJR MJR
<i>*DISTANCE OF BEGINNING OF WATER LINE FROM THE NEAREST INTERSECTION OR REFERENCE POINT</i>	C
<i>*DISTANCE OF THE END OF WATER LINE FROM THE NEAREST INTERSECTION OR REFERENCE POINT</i>	
*NAME, ADDRESS, EMAIL, AND PHONE NUMBER OF THE CONTRACTOR	
*NAME, ADDRESS, EMAIL, AND PHONE NUMBER OF THE INSPECTOR	
*PRESSURE TEST RESULTS THAT INCLUDE INITIAL AND FINAL PRESSURE (INCLUDING IN-LINE VALVES), LENGTH AND SIZE OF PIPE SECTION TESTED (INCLUDING IN-LINE VALVE), LEAKAGE IN GALLONS, AND DURATION OF TEST	ORKS
*THREE (3) SETS OF "AS-BUILT" PLANS (FULL SIZE SHEETS ONLY)	≥
*ONE (1) COPY OF THE AS-BUILT SURVEY COORDINATES	<u>"</u>
*ONE (1) COPY OF THE WATER SERVICE REPORTS	L A
*THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE DISINFECTION OF ALL WATER MAINS CONSTRUCTED UNDER THIS PLAN.	× ×
HAND SWABBING	Ш
THE CONTRACTOR SHALL HAND SWAB ALL PIPES AND FITTINGS THAT ARE NOT OTHERWISE DISINFECTED. THE AMOUNT OF CHLORINE TO BE USED DURING HAND SWABBING OPERATIONS WILL BE DETERMINED BY THE CITY ENGINEER.	L NOT
LEAD SERVICE LINE	R A
IN THE EVENT A LEAD SERVICE LINE IS DETECTED THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER. ALL WORK PERFORMED ON SERVICES LINES DETERMINED TO BE LEAD SHALL BE AT THE DIRECTION OF THE OWNER OR OWNER'S ENGINEERING REPRESENTATIVE.	GENE
MECHANICAL JOINTS	
CONTRACTOR SHALL RESTRAIN ALL MECHANICAL JOINTS WITH A WEDGE ACTION TYPE JOINT RESTRAINT WITH TWIST-OFF NUTS.	
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SUPPLEMENTAL ITEM NOTES:

ITEM 638 - WATER WORK, MISC: W-1: 4 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTIRE IRON PIPE.

ITEM 638 - WATER WORK, MISC: W-1: 6 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTIRE IRON PIPE.

ITEM 638 - WATER WORKS MISC: W-1: 8 INCH WATER MAIN AND FITTINGS, CLASS 53 DUCTIRE IRON PIPE.

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO FURNISH AND INSTALL NEW WATER MAINS AT THE LOCATIONS SHOWN ON THE PLANS. THE ITEM SHALL INCLUDE ALL EXCAVATION, FURNISHING AND INSTALLING THE NEW WATER MAIN COMPLETE WITH ALL FITTINGS, APPROVED POLYETHYLENE WRAP, BACKFILLING AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS.

ITEM 638 - WATER WORK, MISC: W-2: 6 INCH GATE VALVE AND VALVE BOX

ITEM 638 - WATER WORK, MISC: W-2:8 INCH GATE VALVE AND VALVE BOX

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL NEW VALVES AT THE LOCATIONS SHOWN ON THE PLANS. THE ITEM SHALL INCLUDE ALL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS

ITEM 638 - WATER WORK, MISC: W-3: 6 INCH HYDRANT ASSEMBLY, TYPE A SETTING

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO FURNISH AND INSTALL NEW FIRE HYDRANTS AT THE LOCATIONS SHOWN ON THE PLANS. THE ITEM SHALL INCLUDE ALL EXCAVATION, FURNISHING AND INSTALLING THE NEW FIRE HYDRANT COMPLETE WITH ALL FITTINGS, APPROVED POLYETHYLENE WRAP, BACKFILLING AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS.

ITEM 638 - WATER WORK, MISC: W-6: 3/4" CURB STOP AND CURB BOX

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO INSTALL CURB STOPS AND CURB BOXES AT THE LOCATIONS SHOWN ON THE PLANS. THE ITEM SHALL INCLUDE ALL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS

ITEM 638 - WATER WORK, MISC: W-6: 1" CURB STOP AND CURB BOX

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO INSTALL CURB STOPS AND CURB BOXES AT THE LOCATIONS SHOWN ON THE PLANS. THE ITEM SHALL INCLUDE ALL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS

ITEM 638 - WATER WORK, MISC.: W-7: ¥INCH CORPORATION STOP

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO INSTALL CORPORATION STOPS AT THE LOCATIONS SHOWN ON THE PLANS. THE ITEM SHALL INCLUDE ALL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS

ITEM 638 - WATER WORK, MISC.: W-7: 1 INCH CORPORATION STOP

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO INSTALL CORPORATION STOPS AT THE LOCATIONS SHOWN ON THE PLANS. THE ITEM SHALL INCLUDE ALL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS

ITEM 638 - WATER WORK, MISC.: W-10: 34 INCH COPPER SERVICE BRANCH

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO TRANSFER WATER SERVICES AT THE LOCATIONS SHOWN ON THE PLANS. ALL EXCAVATION, FURNISHING AND INSTALLING THE WATER SERVICE COMPLETE WITH ALL FITTINGS, BACKFILLING AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS.

ITEM 638 - WATER WORK, MISC.: W-10: 1 INCH COPPER SERVICE BRANCH

THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL, EQUIPMENT AND COORDINATE INSPECTIONS NECESSARY TO TRANSFER WATER SERVICES AT THE LOCATIONS SHOWN ON THE PLANS. ALL EXCAVATION, FURNISHING AND INSTALLING THE WATER SERVICE COMPLETE WITH ALL FITTINGS, BACKFILLING AND ALL INCIDENTAL WORK NECESSARY TO COMPLETE THIS ITEM IN ACCORDANCE TO CITY OF MANSFIELD SPECIFICATIONS.

ITEM 638 - POLYETHELENE ENCASEMENT, 3" HDPE

THE PROPOSED WATER SERVICE LINE CASING PIPE SHALL BE INSTALLED BY THE METHOD OF DIRECTIONAL DRILLING WITHIN THE LIMITS AS SHOWN ON THE PLAN. THE HDPE CASING PIPE SHALL CONFORM TO 748.07. PAYMENT FOR THIS ITEM SHALL INCLUDE ALL APPURTENANCES NECESSARY FOR INSTALLATION OF THE WATERLINE INCLUDING, BUT NOT LIMITED TO CASING SPACER AND END SEALS.

ITEM SPECIAL - STEEL PIPE ENCASEMENT, BORED OR JACKED

THE PROPOSED WATERLINE CASING PIPE SHALL BE INSTALLED BY THE METHOD OF BORING AND JACKING WITHIN THE LIMITS AS SHOWN ON THE PLAN. THE STEEL CASING PIPE SHALL CONFORM TO 748.06 AND THE DETAIL CONTAINED HEREIN. THE PIPE SHALL BE JOINTED WITH A CIRCUMFERENTIAL FULLY PENETRATING B-U4B WELD THAT IS PERFORMED BY AN ODOT APPROVED FIELD WELDER. PAYMENT FOR THIS ITEM SHALL INCLUDE ALL APPURTENANCES NECESSARY FOR INSTALLATION OF THE WATERLINE INCLUDING, BUT NOT LIMITED TO CASING SPACER AND END SEALS.

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TABLE OF FITTING RESTRAINT LENGTHS				
SIZE (INCH)	FITTING TYPE	DIP MINIMUM RESTRAINED LENGTH (FEET) (EACH LEG)		
8	VALVE (DEAD END) & 90°BEND	59		
8	45° HORZ. BEND	31		
8	22.5° HORZ. BEND	15		
8	11.25° HORZ. BEND	8		
8	45° VERT. BEND (DOWN)	49		
8	45° VERT. BEND (UP)	31		
8	22.5° VERT. BEND (DOWN)	24		
8	22.5° VERT. BEND (UP)	15		
8	11.25° VERT. BEND (DOWN)	12		
8	11.25° VERT. BEND (UP)	8		
8 X 4	REDUCER	25		
8 X 6	TEE (DEAD END)	59		

ASSUMPTIONS

- PIPE TO BE WRAPPED IN POLYETHYLENE
- SAFETY FACTOR OF 1.5 INCLUDED IN RESTRAINED LENGTHS SHOWN
- 150 PSI PRESSURE DESIGN PRESSURE
- SOIL UNIT WEIGHT OF 110 LBS./CU.FT.

- 4 FEET MINIMUM COVER

CONTRACTOR SHALL ENSURE ALL FITTINGS ARE PROVIDED WITH THE DENOTED RESTRAINED LENGTHS IN ADDITION TO THE CONCRETE THRUST BLOCKING.

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PIPE		11.	25*			22	.5*			4	5*	
SIZE	L"	w"	Н"	Vol.	L"	w"	Н"	Vol.	L"	w"	Н"	Vol.
3"	12	18	12	1.5	13	25	16	3.0	18	30	19	5.9
4"	12	24	16	2.6	16	30	18	5.0	22	36	24	11.0
6"	12	48	18	6.0	15	43	36	13.4	30	55	24	22.9
8"	12	63	24	10.5	18	57	34	20.2	36	57	33	39.2
12"	20	54	36	22.6	37	62	37	49.0	48	62	51	87.9
16"	31	65	38	44.3	60	65	39	88.1	65	65	65	159.2



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NOTES

1. THE EXISTING VALVE SHALL BE CLOSED AND FIELD RESTRAINED TO THE EXISTING PIPING TO THE NORTH. THIS WILL ALLOW CONNECTION OF THE PROPOSED PIPING TO THE EXISTING PIPING SOUTH OF THE EXISTING VALVE. THIS CONNECTION WILL ALLOW FOR FILLING, TESTING AND CHLORINATION OF THE NEW WATERLINE PIPING WHILE THE EXISTING SYSTEM REMAINS IN SERVICE. SUBSEQUENT TO SUCCESSFUL CHLORINATION OF THE NEW WATERLINE PIPING AND CONNECTIONS TO THE EXISTING PIPING AT THE NORTH SIDE OF THE INTERSECTION, THIS VALVE SHALL BE ABANDONED.



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						FIC CONTE
CING BAR OR. BAR CTION JO PREPAR E TYPE C D.	UTILIZES LENGTH IS DINT. EXTR ATION MAY DF MECHANI	A MECHANIC MEASURED A BAR LENG BE NECESS CAL CONNE	TAL TO T STH A ARY D CTOR	HE ND∕OR EPENDING		TRAFF
OTAL	LENGTH	WEIGHT	TYPE	DIMEI	VSIONS	
				A	B	
3	2'-8″	11	3	1′-8″	1′-8″	┝ <u></u>
4	7′-1″	19	1	1'-0″	1′-10″	ິຕຸ
SU	B-TOTAL	30				8
ED FOR R WITH I SSEMBLY,	REFERENCE TEM 630 - CULVERT	ONLY, ALL SIGNING, M. MOUNTED, F	REINF ISC.: FOR P	ORCING 1 SIGN SUP AYMENT)	O BE PORT	ST-
		4	B	Ē		RIC-3RD

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RK.	NUMBER		WEIGHT	ΡE	DIMEI	VSIONS
	TOTAL	22110111	"[10]]]	77	A	В
01	3	2'-8"	11	3	1′-8″	1′-8″
2 🖪	4	7'-1‴	19	1	1'-0"	1'-10″

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		BENCHMARK DATA		
	ELEVATION	DESCRIPTION		
BM #1	1170.69	CHISELED "X" ON THE SOUTH FLANGE BOLT OF A FIRE HYDRANT LOCATED ON THE NORTH SIDE OF E. 3RD STREET, 60 FEET EAST OF MICAH PI ACE.	AGENCY	The second stress of the second stress of the second stress of the second stress of the second second stress of the second stress of th
BM #51	1145.78	RAILROAD SPIKE IN THE SOUTH SIDE OF A WOODEN UTILITY POLE LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF 5 3PD STREET AND ASSUMAND POAD (U.S. 42)	DESIGN	Everse Aborthwort Ho Frome, Morethwort Ho Engineers - Survey Base Stool Heave Absorty Reson Frame: 61 + 775,4500
NOTES	<u>.</u>	E. SRD STREET AND ASHLAND ROAD (0.3. 42)		
1. EARTH SHALL	WORK LIMITS CONFORM TO	SHOWN ARE APPROXIMATE. ACTUAL SLOPES PLAN CROSS SECTIONS.		
2. UTILI ON RE ARE C	TY LOCATIONS ECORD PLAN II CONSIDERED AF	5, OUTLETS, AND LIMITS ARE PROVIDED BASED VFORMATION AND FIELD INVESTIGATIONS, AND PPROXIMATE.	DATE	1/ 28/ 21 E NUMBER
3. BORIN ENCOL	NGS B-003-0- JNTER BEDROC	19, B-004-0-19, AND B-005-0-19 DID NOT K.	IEWED	A.2 0.4 JCTURE FIL 70606
4. EXIST DEENE TO CO	ING OVERHEAD ERGIZED. CONT ONSTRUCTION.) LINES TO BE TEMPORARILY RELOCATED OR FRACTOR SHALL COORDINATE WITH UTILITY PRIOR	N REVI	D STRI
5. SEE A <u>LEGEN</u>	BBREVIATION <u>ID</u>	LEGEND ON SHEET 7/19.	DRAWI	REVISE
······ ·	- PROPOSED - TEMPORARY	16X6 BOX CULVERT SHORING, SEE SHEET [10/19] FOR LIMITS	DESIGNED	CHECKED
- -	- PROJECT BO	DRING		
• •	- WORKPOINT		LNT,	~ ~
• — •	- CONSTRUCTI	ON LIMITS	COL	00.t
<u>HYDR</u>	AULIC DAT	A	QN	+44++25
DRAINAG	SE AREA = 1.4	12 SQ. MILES	HLA	5 5
Q(25) =	887 CFS	V (25) = 11.4 FT/S HW (25) = 1163.10	RIC	STA STA
Q (100) - STRUCTI	= 1,222 CFS IRE CLEARS T	V (100) = 15.7 F175 HW (100) = 1165.30 HE 100 YEAR DESIGN HW BY 1 3 FEET		0, 0,
	E	XISTING STRUCTURE		
TYPE:	VARIABLE SIZI CONCRETE BO ARCH.	ED CAST-IN-PLACE 4-SIDED REINFORCED X CULVERTS AND A SINGLE SPAN FILLED BRICK		RUN
SPANS	: 15'-0" MAX T	O 12'-0″ MIN MEASURED NORMAL TO € CULVERT		-00313 TTERS
ROADW	AT: 52'-0"± E	DGE/EDGE PAVEMENT	Z	DS- RI
LOADIN	VG: UNKNOWN		12	-3R VER
SKEW:	VARIES		≏	Ο Ω
APPRO.	ACH SLABS: N	ONE	벁	— - Ш
ALIGNN	IENT: VARIES		S	ž Ľ
CROWN	· VARIES			2DGF
STRUC	TURAL FILE NU	JMBER: 7002858 (ODOT) / 7060696 (LOCAL)		BRI 3f
DATE E	BUILT: 1900			AS.
DISPOS	SITION: PARTI	AL REPLACEMENT		ш
	PF	ROPOSED STRUCTURE		
TYPE:	16' SPAN X 6'	RISE PRECAST REINFORCED CONCRETE 4-SIDED		_
	BOX CULVERT HEADWALLS AI REINFORCED C	WITH LAST-IN-PLACE REINFORCED CONCRETE ND WINGWALLS FOUNDED ON CAST-IN-PLACE CONCRETE FOOTINGS.		-00.3
SPANS	16'-0" CLEAF	R SPAN MEASURED NORMAL TO © CULVERT		sΤ
ROADW	'AY: 32'-0"± E	DGE/EDGE PAVEMENT		~
LOADIN	NG: HL-93 WI	TH 60 PSF FUTURE WEARING SURFACE		R L
SKEW:	NONE			5
APPRO.	ACH SLABS: N	ONE		0
ALIGNN	MENT: VARIES			<u> </u>
CROWN	· VARIES		1	/ 19
COORD	INATES: LATI	TUDE N 40°45′33.77″		5
	LONG	NITUDE W 82°30′23.40″	14	46
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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

TST-1-99 REVISED 1-15-21

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS

843	DATED	10-18-19
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, 2017, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

OPERATIONAL IMPORTANCE

A LOAD MODIFIER OF 1.00 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN LOADING:

HL-93

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

DESIGN DATA:

EARTH COVER - 2'-2" MAX TO 9" MIN CONCRETE CLASS QCI - COMPRESSIVE STRENGTH 4.0 KSI REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI STRUCTURAL STEEL TUBING: ASTM A500, GRADE B, MINIMUM YIELD STRENGTH 46 KSI ALL OTHER STEEL: ASTM A709, GRADE 50, MINIMUM YIELD STRENGTH 50 KSI

STRUCTURE PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL WATERPROOFING SEALING OF CONCRETE SURFACES (NON-EPOXY)

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE CITY WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

FOUNDATION BEARING RESISTANCE:

FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD BEARING PRESSURE OF 1.61 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 2.01 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 2.50 KIPS PER SQUARE FOOT.

IF UNSUITABLE BEARING MATERIAL OCCURS AT THE BOTTOM OF THE FOUNDATION ELEVATION, LOWER THE GIVEN ELEVATION BY OVER EXCAVATING, THEN REPLACING WITH SUITABLE BEARING MATERIAL. THE SUITABLITY OF THE BEARING MATERIAL SHALL BE VERIFIED BY A REGISTERED GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF OHIO. ANY CHANGES IN THE FOOTING MUST BE APPROVED BY THE ENGINEER.

CONSTRUCTION CLEARANCE

CONSTRUCTION CLEARANCE: MAINTAIN A MINIMUM CONSTRUCTION CLEARANCE OF 25 FEET HORIZONTALLY FROM THE CENTER OF TRACKS AND 23 FEET VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL.

REFERENCE PROJECT GENERAL NOTES FOR ADDITIONAL REQUIRED RAILROAD CLEARANCE FOR ADJACENT CONSTRUCTION.

ITEM 503, COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN

THE DESIGN OF THE TEMPORARY SUPPORT OF EXCAVATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE CITY WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING.

THE DESIGN SHORING SYSTEM SHALL HOLD ALL DEFLECTIONS ADJACENT EXISTING FACILITIES AND STRUCTURES TO A MINIMUM, SUCH THAT DAMAGES TO EXISTING FACILITIES AND STRUCTURES DOES NOT OCCUR DUE TO SOIL SETTLEMENT, LOSS OF SUPPORT, ETC. A PRECONSTRUCTION CONDITION ASSESSMENT OF ALL ADJACENT FACILITIES AND STRUCTURES SHALL OCCUR PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES THAT MAY OCCUR DUE TO THE CONDITIONS DISCUSSED ABOVE.

IF APPLICABLE, FURNISH SOLDIER PILES CONSISTING OF STRUCTURAL STEEL MEMBERS THAT MEET THE PLAN REQUIREMENTS. DO NOT FIELD WELD OR SPLICE STEEL SOLDIER PILES.

THE CONTRACTOR SHALL MONITOR THE VERTICAL PLUMBNESS OF THE SOLDIER PILES AT 25 FOOT MAXIMUM INTERVALS FOLLOWING COMPLETE INSTALLATION OF THE SOLDIER PILES AND BLOCKING. THE PLUMBNESS SHOULD BE MEASURED FROM THE TOP OF THE SOLDIER PILE TO THE BOTTOM OF THE LAGGING. PLUMBNESS AND HORIZONTAL POSITIONING SHALL BE MAINTAINED SUCH THAT IT DOES NOT CONFLICT WITH THE INSTALLATION OF THE PROPOSED CULVERT.

ANY TIMBER LAGGING TO BE USED BETWEEN SUPPORTS SHALL BE SOUTHERN YELLOW PINE, GRADE 2 OR GREATER. TIMBER LAGGING SHALL BE PLACED IN A TOP DOWN MANNER AS EXCAVATION PROCEEDS DOWNWARD. AT NO TIME SHOULD MORE THAN 2 FEET OF UNSUPPORTED EXCAVATION BE PERMITTED. THE TIMBER LAGGING SHALL BE PLACED INSIDE THE SOLDIER PILE FLANGES AND CONTINUOUS TIMBER BLOCKING/WEDGES SHALL BE USED WHILE INSTALLING THE TIMBER LAGGING TO ENSURE A TIGHT FIT AGAINST THE SOLDIER PILE FLANGE. ALL COSTS ASSOCIATED WITH THE FABRICATION, SHIPMENT, INSTALLATION, INCLUDING ALL LABOR AND INCIDENTALS REQUIRED TO CONSTRUCT THE SHORING SYSTEM SHALL BE INCLUDED IN THE LUMP SUM COST FOR ITEM 503 -COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN FOR PAYMENT.

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

THIS STRUCTURE IS SUBJECT TO TESTING FOR ASBESTOS. THE CONTRACTOR SHALL USE A STATE CERTIFIED ASBESTOS INSPECTOR TO INSPECT AND SAMPLE THE BRIDGE AND OUTLET PIPES FOR THE PRESENCE OF ASBESTOS. THE SAMPLES WILL BE PROVIDED TO THE CONTRACTOR FOR TESTING. THE COST TO INSPECT AND SAMPLE THE BRIDGE FOR THE PRESENCE OF ASBESTOS, TO DELIVER THE SAMPLES TO A TEST LAB, AND TO TEST THE SAMPLES FOR ASBESTOS WILL BE INCLUDED IN THIS PAY ITEM. THE CONTRACTOR SHALL COMPLETE THE "OHIO ENVIRONMENTAL PROTECTION AGENCY NOTIFICATION OF DEMOLITION AND RENOVATION" AFTER THE TESTING IS COMPLETE AND SEND THE FORM TO THE OHIO EPA 10 DAYS PRIOR TO DEMOLITION.

DESCRIPTION:

THIS WORK INCLUDES THE PARTIAL REMOVAL OF THE EXISTING CAST-IN-PLACE CULVERT, HEADWALL, AND PORTIONS OF THE STACKED STONE WINGWALLS.

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 C&MS 501.05.

THE CONTRACTOR SHOULD BE AWARE THAT AN EXISTING BRICK ARCH SHALL BE REMOVED AS PART OF THE PROJECT SCOPE. RECORD PLANS DO NOT EXIST FOR THIS STRUCTURE, AS SUCH THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE SAFETY DURING REMOVAL. THE BRICK ARCH REMOVAL LIMITS SHALL BE AS MUCH AS POSSIBLE TO PERMIT THE PROPOSED WORK BUT SHALL BE CONTAINED WITHIN THE EXISTING RIGHT OF WAY. REMOVALS SHALL BE COMPLETED IN A MANNER WHICH DOES NOT DAMAGE, DISLODGE, OR EFFECT THE EXISTING MANHOLE AT THE CORNER OF 3RD STREET AND FOSTER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES DUE TO SUDDEN COLLAPSE.

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ENVIRONMENTAL WORK

ITEM 690 - SPECIAL: WORK INVOLVING PETROLEUM CONTAMINATED SOIL

GEOTECHNICAL BORINGS INDICATE THAT THERE IS A POTENTIAL OF ENCOUNTERING PETROLEUM-CONTAMINATED MATERIALS DURING EXCAVATION FOR THE PRECAST CULVERT ALONG E. THIRD STREET, APPROXIMATELY BETWEEN STATIONS 15+50 AND 18+25.

IN THE EVENT PETROLEUM-CONTAMINATED MATERIALS ARE ENCOUNTERED, THE CONTRACTOR SHALL MANAGE THIS MATERIAL ACCORDING TO THE FOLLOWING NOTES. THE ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THIS WORK. ALL EXCAVATIONS WITHIN THE AFOREMENTIONED LIMITS SHALL BE PAID FOR UNDER THE ORIGINAL PLAN BID ITEMS.

ALL MATERIAL EXCAVATED BY THE CONTRACTOR BETWEEN THESE LIMITS MAY BE STOCKPILED IN AN AREA PROVIDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE ENGINEER MAY PERMIT TEMPORARY STORAGE OF THE EXCAVATED MATERIAL IN A LINED AND COVERED ROLL-OFF BOX. THE ENGINEER MAY PERMIT TEMPORARY STORAGE OF THE EXCAVATED MATERIAL ON AN IMPERMEABLE MEMBRANE. THE MEMBRANE SHALL BE SURROUNDED BY BALES OF STRAW TO PREVENT THE SUSPECTED SOILS FROM COMING IN CONTACT WITH PRECIPITATION AND/OR SURFACE RUN-OFF. THE ENGINEER MAY PERMIT THE CONTRACTOR TO DIRECT LOAD THE EXCAVATED CONTAMINATED MATERIAL INTO TRUCKS.

THIS MATERIAL SHALL BE PROPERLY TESTED, TRANSPORTED, AND DISPOSED OF IN A LICENSED (BY THE LOCAL HEALTH DEPARTMENT) AND PERMITTED (BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY) SOLID WASTE FACILITY.

THE CONTRACTOR SHALL COMPLETE ALL MANIFEST FOR MATERIAL TO BE TRANSPORTED AND PROVIDE TO THE ENGINEER FOR SIGNATURE. THE CONTRACTOR IS TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS TO TRANSPORT THE MATERIAL TO LICENSED AND PERMITTED DISPOSAL FACILITY. THE CONTRACTOR IS TO CONTACT THE DISPOSAL FACILITY TO DETERMINE IF ANY ADDITIONAL TESTING IS REQUIRED FOR DISPOSAL. THE CONTRACTOR IS TO PROVIDE ANY ADDITIONAL SAMPLING AND ANALYSIS OF THE MATERIAL AS REQUIRED BY THE DISPOSAL FACILITY. THE CONTRACTOR SHALL OBTAIN ALL SIGNATURES ON THE MANIFEST AFTER TRANSPORTING AND DISPOSAL OF THE MATERIAL AND PROVIDE A FINAL COPY TO THE ENGINEER.

THE CONTRACTOR SHALL FURNISH ALL THE LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROPERLY HANDLE, STORE (IF NECESSARY), TEST FOR DISPOSAL, TRANSPORT, AND DISPOSE OF REGULATED MATERIALS, INCLUDING ANY REQUIRED PERMITS, APPROVALS, OR FEES WITHIN THE LIMITS IDENTIFIED ABOVE. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICE BID PER TON. THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR ESTIMATING PURPOSES ONLY. THE CITY WILL PAY FOR THE ACTUAL AMOUNT OF SOIL CONTAMINATION ENCOUNTERED DURING CONSTRUCTION AT THE UNIT BID PRICE FOR THE FOLLOWING QUANTITY:

690E65016 ITEM SPECIAL - WORK INVOLVING PETROLEUM CONTAMINATED SOIL = 200 TONS

ITEM 611, 16' X 6' CONDUIT, TYPE A, 706.05, AS PER PLAN CULVERT SECTIONS SHALL BE PRODUCED AND INSTALLED ACCORDING TO ITEM 611, 706.05, AND SS940. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS AND LOAD RATING ACCORDING TO 611.04 FOR THE PRECAST REINFORCED CONCRETE FOUR-SIDED BOX CULVERT, 706.05. LOAD RATING AND SHOP DRAWINGS TO BE PROVIDED TO THE CITY OF MANSFIELD AND THE DESIGN ENGINEER FOR REVIEW AND COMMENT.

STANDARD CULVERT SECTIONS SHALL BE PRODUCED IN 6 FOOT MAXIMUM WIDTHS OR AS DIRECTED BY THE SUPPLIER. EXPOSED EXTERIOR FACES OF END SECTIONS AND LOCATIONS COMPRISING THE CURVED PORTION OF THE ALIGNMENT SHALL BE MANUFACTURED WITHOUT A BELL OR SPIGOT. THE FACE OF THE CULVERT SHALL BE FLUSH WITH THE FACE OF HEADWALLS IN ITS FINAL CONDITION.

APPLY WATERPROOFING AND JOINT SEALS AS SPECIFIED FOR ITEM 611 OR AS DIRECTED BY THE SUPPLIER.

THE SELECTED FABRICATOR SHALL BE AN ODOT CERTIFIED SUPPLIER FOR PRECAST 4 SIDED BOX CULVERT SECTIONS. INCLUDING BUT NOT LIMITED TO:

LINDSAY PRECAST 6845 ERIE AVENUE NW CANAL FULTON, OH 44614 800-837-7788

FORTERRA 1504 N GETTYSBURG AVE DAYTON, OH 45427 800-737-0707

MACK INDUSTRIES, INC 400 HOWARD ST MT VERNON, OH 43050 740-393-1121

THE COST FOR THE CONSTRUCTION, SHIPMENT, AND INSTALLATION OF THE PRECAST CONCRETE FOUR-SIDED BOX CULVERT SHALL BE INCLUDED WITHIN THE LF PRICE BID FOR ITEM 611, 16' × 6' CONDUIT, TYPE A, 706.05, AS PER PLAN, FOR PAYMENT.

ALL REQUIRED PROJECT EXCAVATION AND BACKFILL SHALL BE INCLUDED IN THE PER FOOT UNIT COST FOR ITEM 611.

PRECAST ALTERNATES FOR ITEMS 511:

A PRECAST ALTERNATIVE MAY BE FURNISHED PER 602.03 FOR THE CAST-IN-PLACE HEADWALL OR CAST-IN-PLACE JUNCTION CHAMBER. THE PRECAST ALTERNATIVE WILL MEET THE CAST-IN-PLACE STRUCTURAL DESIGN LOADINGS, DESIGN HEIGHT, AND DESIGN LENGTH DIMENSIONS. FULL COMPENSATION FOR THE PRECAST HEADWALL OR JUNCTION CHAMBER IS THE NUMBER OF CUBIC YARDS OF ITEM 511 AND POUNDS OF ITEM 509 FOR THE CORRESPONDING CAST-IN-PLACE STRUCTURE. IF A PRECAST STRUCTURE IS SELECTED, THE COMPLETE DESIGN WILL BE THE RESPONSIBILITY OF THE SUPPLIER AND SHALL CONFORM TO THE PLAN DIMENSIONS PROVIDED HEREIN.

PRECAST FOOTINGS AND WINGWALLS SHALL NOT PERMITTED FOR THIS PROJECT WITHOUT PRIOR APPROVAL BY THE ENGINEER.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE CITY WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

ITEM 509, REINFORCING STEEL, REPLACEMENT OF EXISTING STEEL, AS PER PLAN: 100 LBS

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.

(HEADWALL AND PIPE OUTLET ONLY)

- SEAL ENTIRE CONCRETE SURFACE AREA, INCLUDING ENDS (A)

ITEM 517 - RAILING (TWIN STEEL TUBE), AS PER PLAN:

THE TWIN STEEL TUBE RAILING SHALL BE MODIFIED AS SHOWN ON SHEET 13/19 . THE POST HEIGHT SHALL BE INSTALLED 3'-6" ABOVE THE SIDEWALK. ALL STEEL SHALL BE GALVANIZED AS SPECIFIED IN TST-1-99.

ITEM 519 - PATCHING CONCRETE STRUCTURES. AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL. BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.

THE CONTRACTOR SHALL FIELD MARK AREAS TO BE PATCHED FOR REVIEW BY THE CITY. ONLY CITY APPROVED AREAS REQUIRING PATCHING WILL BE ELIGIBLE FOR COMPENSATION.

THE FOLLOWING AREA HAS BEEN ASSUMED FOR BIDDING PURPOSES:

892 SQUARE FEET

ITEM 690 - SPECIAL: RESEALING INFILTRATING JOINTS WITH HYDROPHOBIC GROUT

THIS WORK CONSISTS OF SEALING THE ENTIRE PERIMETER OF EXISTING JOINTS IN THE EXISTING CONCRETE CULVERT EAST OF THE RAILROAD RIGHT OF WAY THROUGH THE INSTALLATION OF AN ALL-WEATHER CONCRETE COMPATIBLE HYDROPHOBIC GROUT. THE CONTRACTOR SHALL FIELD MARK JOINTS PROPOSED FOR REPAIR SUCH THAT THE ENGINEER MAY REVIEW AND APPROVE LIMITS PRIOR TO EXECUTION OF WORK. JOINTS TO BE REPAIRED SHALL BE AT THE DIRECTION OF THE ENGINEER AND SHOULD SHOW VISIBLE SIGNS OF MOISTURE/WATER INFILTRATION. THE EXISTING JOINT SHALL BE CLEANED AND PREPARED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND HYDROPHOBIC GROUT SHALL BE INSTALLED AS DIRECTED BY THE MANUFACTURER.

ONLY CITY APPROVED JOINT LOCATIONS REQUIRING RESEALING WILL BE ELIGIBLE FOR COMPENSATION. THE CONTRACTOR SHALL ALLOW 7 DAYS FOR CITY REVIEW OF THE PROPOSED WORK.

FOR THE PURPOSES OF THIS PLAN SET, IT HAS BEEN ASSUMED THAT JOINTS OCCUR EVERY 30', TOTALING 19 JOINTS WITHIN THE LIMITS OF REHABILITATION. THE COST OF CLEANING AND PREPARING THE JOINT IS INCLUDED IN THIS PAY ITEM.

ITEM 843 - PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR

THE CONTRACTOR SHALL FIELD MARK AREAS TO BE PATCHED FOR REVIEW BY THE CITY. ONLY CITY APPROVED AREAS REQUIRING PATCHING WILL BE ELIGIBLE FOR COMPENSATION. THE CONTRACTOR SHALL ALLOW 7 DAYS FOR CITY REVIEW OF THE PROPOSED WORK.

THE FOLLOWING AREA HAS BEEN ASSUMED FOR BIDDING PURPOSES:

1,275 SQUARE FEET

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		GENERAL NOTES (CONT.)	DESIGNED	drawn RMW	REVIEWED DATE CAS 04/28/21	Design agency E MIH₄T
4		BRIDGE NO. RIC-3RDS-00313	CHECKED	REVISED	STRUCTURE FILE NUMBER	Evens, Modifiwart, Hamilelon & Tlenn Inc. Engineers - Surveyors - Ramars - Scientis
)	9	EAST 3RD STREET OVER RITTERS RUN	TDA	-	7060697	2000 Heave Aren (Pood Linkov, Chi A204 Prover 14.173-0405 M C M X P V V

ITEM 690 SPECIAL - STRUCTURE: VIBRATION MONITORING

MONITOR GROUND VIBRATIONS CAUSED BY TEMPORARY SHORING CONSTRUCTION SO THAT SHORING INSTALLATION WORK CAN BE CONTROLLED IN ORDER TO MINIMIZE POTENTIAL DAMAGE TO EXISTING 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 PRE CONSTRUCTION CONFERENCE. 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 APPROVAL OF THE VIBRATION SPECIALIST BEFORE BEGINNING ANY PILE INSTALLATION. 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 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 STRUCTURE BEFORE SHORING INSTALLATION BEGINS.
- 2 ESTABLISH VIBRATION LIMITS TO MINIMIZE POTENTIAL DAMAGE TO EXISTING STRUCTURES AND EXPLAIN WHY THEY ARE BEING USED TO THE ENGINEER BEFORE PILE INSTALLATION NEAR EXISTING STRUCTURES.
- 3. MONITOR GROUND VIBRATIONS DURING SHORING INSTALLATION.
- 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 DRIVING OPERATIONS.
 - C. START TIME AND DURATION OF PILE INSTALLATION.
 - D. LIST OF EXECUTED PILES DURING EACH MONITORING INTERVAL.

THE CONTRACTOR SHALL IMMEDIATELY SUSPEND ALL PILE INSTALLATIONS IF THE VIBRATION LIMITS ARE REACHED OR EXCEEDED. EVALUATE ALTERNATIVE CONSTRUCTION PROCEDURES, SUCH AS PRE BORED HOLES, TO REDUCE VIBRATIONS.

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

ADDITIONAL CONSIDERATION SHALL BE GIVEN TO THE PRECONSTRUCTION CONDITION ASSESSMENT SURVEY OF NEARBY STRUCTURES FOR FURTHER LIMITATIONS.

THE CITY WILL PAY FOR THIS ITEM AT THE CONTRACT LUMP SUM PRICE FOR ITEM SPECIAL, STRUCTURE MISC.: VIBRATION MONITORING. THE CITY WILL PAY THE FINAL TWENTY PERCENT AFTER THE ENGINEER RECEIVES THE FINAL REPORT.

ITEM 690 SPECIAL - STRUCTURE MISC.: PRECONSTRUCTION CONDITION SURVEY

BEFORE SHORING INSTALLATION BEGINS, CONDUCT A CONDITION SURVEY OF ALL EXISTING BUILDINGS, STRUCTURES, AND UTILITIES WITHIN 200-FT OF THE TEMPORARY SHORING. THE PURPOSE OF THE SURVEY IS TO DOCUMENT THE CONDITION OF THE BUILDINGS, STRUCTURES, OR UTILITIES PRIOR TO SHORING INSTALLATION, SO THAT CLAIMS OF DAMAGE CAUSED BY TEMPORARY SHORING INSTALLATION 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 A FINAL REPORT TO THE ENGINEER THAT SUMMARIZES THE PRECONSTRUCTION CONDITION OF THE BUILDINGS, STRUCTURES, AND UTILITIES, AND THAT IDENTIFIES AREAS OF CONCERN.

THE CITY WILL PAY FOR THIS ITEM AT THE CONTRACT LUMP SUM PRICE FOR ITEM SPECIAL STRUCTURE MISC.: PRECONSTRUCTION CONDITION SURVEY.

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ABBREVIATION LEGEND

ADT - AVERAGE DAILY TRAFFIC N - NORTH ADTT - AVERAGE DAILY TRUCK TRAFFIC BM - BENCH MARK B.O. - BY OTHERS C/C - CENTER TO CENTER CIP - CAST IN PLACE CJ - CONSTRUCTION JOINT © - CENTERLINE CLR - CLEARANCE COMB - COMBINED COMM - COMMUNICATION CONT - CONTINUED CONST - CONSTRUCTION DIA - DIAMETER DND - DO NOT DISTURB EF - EACH FACE EJ - EXPANSION JOINT ELEV - ELEVATION EOP - EDGE OF PAVEMENT EX - EXISTING EZE - FACE TO FACE FF - FAR FACE INC - INCREMENT INV - INVERT (I) – INLET (JC) - JUNCTION CHAMBER LT – LEFT MAX - MAXIMUM MH - MANHOLE MIN - MINIMUM

NF - NEAR FACE NO - NUMBER NSRR - NORFOLK SOUTHERN RAIL ROAD 0/0 - OUT TO OUT OH - OVERHEAD OPT - OPTIONAL (O) – OUTLET PEJF - PREFORMED EXPANSION JOINT FILLER PROP - PROPOSED RT - RIGHT S - SOUTH SER - SERIES SFN - STRUCTURE FILE NUMBER SHLD - SHOULDER SPA - SPACES S.R. - STATE ROUTE ST - STREET STA - STATION STD - STANDARD STR - STRAIGHT STM - STORM TBR - TO BE REMOVED TBRO - TO BE REMOVED BY OTHERS TBRLO - TO BE RELOCATED BY OTHERS TBRR - TO BE REMOVED AND REPLACED TYP - TYPICAL WM - WATER MAIN

CALCUL	ATED: MSM			ESTIMATED QUANTITIES	CHECKED: RMW
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SHEET #
202	11201		LS	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	5/19
203	35120	87	СҮ	GRANULAR MATERIAL TYPE C	
411	10000	1	СҮ	STABILIZED CRUSHED AGGREGATE	
503	11101		LS	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	5/19
509	10000	10,748	LB	EPOXY COATED REINFORCING STEEL	
509	20001	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	6/19
510	10000	14	EACH	DOWEL HOLES WITH NONSHRINK NONMETALLIC GROUT	
511	46010	6	СҮ	CLASS QCI CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46510	24	СҮ	CLASS QCI CONCRETE, FOOTING	
511	53010	35	СҮ	CLASS QCI CONCRETE, MISC.: CAST-IN-PLACE JUNCTION CHAMBER	
512	10050	37	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
512	33000	1,568	SY	TYPE 2 WATERPROOFING	
512	33010	1,897	SY	TYPE 3 WATERPROOFING	
512	10600	77	FT	CONCRETE REPAIR BY EPOXY INJECTION	
516	13600	115	SF	1" PREFORMED EXPANSION JOINT FILLER	
517	70001	63	FT	RAILING (TWIN STEEL TUBE), AS PER PLAN	6/19
518	21200	8	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
518	40000	1,700	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
518	40012	200	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	
519	11101	892	SF	PATCHING CONCRETE STRUCTURES, AS PER PLAN	6/19
601	21000	31	SY	CONCRETE SLOPE PROTECTION	
607	23000	57	FT	FENCE, TYPE CLT	
611	96441	841	FT	16' X 6' CONDUIT, TYPE A, 706.05, AS PER PLAN	6/19
613	41200	22	CY	LOW STRENGTH MORTAR BACKFILL	
690	65016	200	TON	SPECIAL - WORK INVOLVING PETROLEUM CONTAMINATED SOIL	5/19
690	98000	19	EACH	SPECIAL - RESEALING INFILTRATING JOINTS WITH HYDROPHOBIC GROUT	6/19
690	98400		LS	SPECIAL - STRUCTURE: VIBRATION MONITORING	7/19
690	98400		LS	SPECIAL - STRUCTURE MISC.: PRECONSTRUCTION CONDITION SURVEY	7/19
843	50000	1,275	SF	PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR	6/19

NOTE: TOTALS CARRIED TO GENERAL SUMMARY SHEET $\begin{pmatrix} 11 \\ 64 \end{pmatrix}$

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DESIGNED DRAWN REVIEWED DATE MSM MSM CAS 04/28/21 CHECKED REVISED STRUCTURE FILE NUMBER RMW - 7060697
ESTIMATED QUANTITIES BRIDGE NO. RIC-3RDS-00313 EAST 3RD STREET OVER RITTERS RUN
8 19 81 81 1 1 1 1 1 1 1 1 1

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NORTH SHORING LIMITS

STATION	10+25	10+50	10+75	11+00	11+25	11+50	11+75	12+00	12+25	12+50	12+75	13+00	13+25	13+50	13+75	14+00	14+25	14+50	14+75	15+00	15+25	15+50	15+75	16+00	16+25	16+50	16+75	17+00	17+25	17+50	17+75	18+00	18+25	18+50	18+75
TOP OF EXCAVATION (FT)	1168.06	1167.27	1167.56	1166.96	1166.72	1166.37	1166.00	1165.49	1165.22	1165.01	1164.50	1164.05	1163.66	1163.46	1163.05	1162.73	1162.17	1161.95	1162.10	1161.82	1160.33	1161.04	1160.54	1160.26	1159.95	1159.4	1159.1	1158.6	1158.5	1157.9	1157.7	1157.1	1157 . 2	1156.7	1157
BOTTOM OF EXCAVATION (FT)	1162.39	1162.11	1161.84	1161.53	1161.16	1160.80	1160.43	1160.07	1159.70	1159.34	1158.97	1158.61	1158.24	1157.88	1157.51	1157.15	1156.78	1156.42	1156.05	1155.69	1155.32	1154.96	1154.59	1154.23	1153.86	1153.5	1153.1	1152.8	1152.4	1152	1151.7	1151.3	1150.9	1150.6	1150.2
EXPOSED HEIGHT (FT)	5.67	5.16	5.72	5.43	5.56	5.57	5.57	5.42	5.52	5.67	5.53	5.44	5.42	5.58	5.54	5.58	5.39	5.53	6.05	6.13	5.01	6.08	5.95	6.03	6.09	5.94	5.95	5.85	6.07	5.82	6.04	5.8	6.24	6.16	6.81

SOUTH SHORING LIMITS

STATION	10+25	10+50	10+75	11+35	13+50	13+75	14+00	14+25	14+50	14+75	15+00	15+25	15+50	15+75	16+00	16+25
TOP OF EXCAVATION (FT)	1163.14	1163.00	1162.86	1166.75	1163.80	1163.35	1162.97	1162.78	1162.48	1157.49	1157.31	1157.01	1161.33	1160.93	1160.83	1160.30
BOTTOM OF EXCAVATION (FT)	1159.14	1158.86	1158.59	1157.77	1154.63	1154.26	1153.90	1153.53	1153.17	1152.80	1152.44	1152.07	1151.71	1151.34	1150.98	1150.61
EXPOSED HEIGHT (FT)	4	4.14	4.27	8.98	9.17	9.09	9.07	9.25	9.31	4.69	4.87	4.94	9.62	9.59	9.85	9.69

NOTES

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMP DESIGN OF ALL TEMPORARY SHORING. THE SHORING SYST SHALL BE BRACED WITHIN REGIONS ADJACENT TO STRUCT AND FACILITIES TO REMAIN WHERE TEMPORARY WALL DISPLACEMENT MAY POSE SIGNIFICANT RISK TO THE INTEGRITY OF THE EXISTING FEATURES. THE CONTRACTO SHALL REFERENCE THE GEOTECHNICAL REPORT FOR ADDITIONAL SOIL PARAMETERS AND DEFLECTION CRITERA
- 2. REFERENCE MAINTENANCE OF TRAFFIC SHEETS FOR ADDITIONAL COORDINATION WITH PROPERTY OWNERS PRI TO CONSTRUCTION.
- 3. PRIOR TO SHORING INSTALLATION, THE CONTRACTOR SH. FIELD MARK EXISTING UNDERGROUND AND PROPOSED FACILITIES ADJACENT THE CULVERT AND SHORING LIMITS CAUTION SHALL BE EXERCISED ADJACENT FACILITIES TO REMAIN.
- 4. THE PROPOSED WATER LINE SHALL BE INSTALLED PRIOR CULVERT CONSTRUCTION. THE CONTRACTOR SHALL FIELD MARK LOCATIONS TO PREVENT DAMAGES DURING SHORING CONSTRUCTION.
- 5. EXCAVATION SHALL NOT OCCUR UNTIL HORIZONTAL BRACING HAS BEEN PROVIDED WITHIN THE LIMITS OF EXCAVATION ADJACENT THE TEMPORARY SOLDIER PILE WALLS.

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PLETE TEM TURES DR	6.	WHERE EXISTING STM OUTLETS PREVENT THE ABILITY TO EXCAVATE TO THE DESIRED GRADE AND ARE DETERMINED TO BE IN-SERVICE LINES, EXCAVATION SHALL BE LIMITED TO TO THE TOP OF THE PIPE FOR A MINIMUM OF 1' HORIZONTAL ALONG EITHER SIDE OF PIPE CENTERLINE AND EXCAVATED AT A MINIMUM SLOPE OF 2H:1V BEFORE MEETING THE DESIRED GRADE.
4. IOR	7.	PRIOR TO CONSTRUCTION ALL ADJACENT FACILITIES SHALL BE INSPECTED TO ENSURE PRECONSTRUCTION CONDITIONS ARE MAINTAINED FOLLOWING THE COMPLETION OF THE PROJECT. ANY DAMAGES AS A RESULT OF CONTRACTOR'S MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SEE VIBRATION MONITORING AND PRECONSTRUCTION
		CONDITION SURVEY NOTES ON SHEET 7/19
IALL S.	8.	PRIOR TO EXCAVATION, VISIBLE ORANGE CONSTRUCTION FENCING SHALL BE INSTALLED ADJACENT THE EXCAVATION LIMITS. REFERENCE MAINTENANCE OF TRAFFIC SHEETS FOR PLAN LIMITS. ANY EXPOSED EXCAVATION THAT EXCEEDS A VERTICAL HEIGHT GREATER THAN 30" SHALL REQUIRE TEMPORARY FALL PROTECTION AND SHALL BE THEN UP TO THE AUTOR OF THE TEMPORE
TO D G		INCLUDED WITH THE COST OF THE TEMPORARY SHORING FOR PAYMENT.

EMH*T 4 RMW RMW **TEMPORARY SHORING PLAN** BRIDGE NO. RIC-3RDS-00313 ST 3RD STREET OVER RITTERS RU 31 °00-SΤ RIC-3RD 10 19 55 64

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- BASE SLAB

IF THE CONTRACTOR ELECTS TO PROVIDE A PRECAST ALTERNATE TO THE CAST-IN-PLACE DESIGN DEPICTED, ALL INSIDE DIMENSIONS SHALL BE MAINTAINED AND THE DESIGN WILL BE THE RESPONSIBILITY OF THE SUPPLIER.

2. THE CONTRACTOR SHALL TAKE CAUTION TO MINIMIZE EXCAVATIONS UNDER THE EXISTING CULVERT TO REMAIN, ANY UNDERMINED PORTIONS OF THE EXISTING CULVERT SHALL BE BACKFILLED WITH A LOW STRENGTH MORTAR. TO PREVENT DAMAGES DUE TO UNDERMINING, THE CONTRACTOR SHALL ENSURE PROPER SUPPORT DURING FOOTING EXCAVATIONS. ANY UNINTENDED DAMAGES TO THE EXISTING STRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

3. MINIMUM REINFORCEMENT UNLESS OTHERWISE SHOWN SHALL BE #6 BARS SPA @ 6" EACH WAY, EACH FACE.

4. FIELD TRIM BARS ABOUT STRUCTURE OPENINGS, WHILE PROVIDING 2" CLEAR (MIN) FROM OUTSIDE EDGE OF CONRETE.

5. UNLESS OTHERWISE DEPICTED IN THE PLANS, ALL REINFORCING IN THE TOP SLAB SHALL BE #6 BARS SPACED AT 6" MAX THE LENGTH OF THE SHORTER SPAN AND #5 BARS SPACED AT 12" THE LENGTH OF THE LONGER SPAN. ALL VERTICAL WALL REINFORCING SHALL BE #5 BARS AT 6" MAX AND ALL HORIZONTAL WALL REINFORCING SHALL BE #5 BARS AT 12" MAX. SEE FOUNDATION PLAN FOR REINFORCING BARS IN THE CAST-IN-PLACE FOOTING.

6. UNLESS OTHERWISE SHOWN MIN LAP LENGTHS SHALL BE: #5 BARS = 2'-5" #6 BARS = 2'-11"

7. SEAL EXPOSED ENDS OF THE EXISTING CAST-IN-PLACE STRUCTURE TO REMAIN WITH A NON EXPOXY SEALER.

8. FOR LOCATION OF SECTIONS B-B, C-C AND D-D SEE SHEET 14/19

9. BACKFILL THE PROPOSED JUNCTION CHAMBER WITH GRANULAR MATERIAL TYPE C PER CMS 703.16.C.3 AND HAVING A MINIMUM INTERNAL FRICTION ANGLE OF 34°. PLACE GRANULAR BACKFILL IN COMPACTED LIFTS NOT TO EXCEED 6 INCHES. BACKFILL SHALL EXTEND TO A LOCATION I' BELOW THE TOP OF FINISHED GRADE OR TO THE FACE OF THE TEMPORARY SHORING, WHICHEVER ENCOUNTERED FIRST. BACKFILL SHALL NOT BE PLACED UNTIL THE TOP SLAB HAS BEEN CONSTRUCTED AND ALLOWED ADEQUATE TIME TO CURE.

10. CONTINUE WATERPROOFING PAST THE ENDS OF THE JUNCTION CHAMBER TO LAP 9" MIN ONTO THE BACKSIDE OF EXISTING AND PROPOSED CULVERT SECTIONS, COVERING THE 1" PEJF.

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- 1. RESEAL INFILTRATING JOINTS WITH HYDROPHOBIC INJECTION GROUT. SEE GENERAL NOTES FOR DETAILS.
- 2. ALL DIMENSIONS SHOWN SHALL BE CONSIDERED ±. PATCHING LIMITS DEPICTED SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CITY WILL PAY FOR THE ACTUAL LIMITS OF PATCHING AS APPLIED IN THE

12 IIC-3RD ST-00.31	REHABILITATION PLAN (CONT.) BRIDGE NO. RIC-3RDS-00313 EAST 3RD STREET OVER RITTERS RUN	DESIGNED RMW CHECKED TDA	DRAWN MEM Revised	REVIEWED DATE CAS 04/28/21 STRUCTURE FILE NUMBER 7060697	DESIGN AGENCY
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MARK	NUMBER	I ENGTH	WEIGHT	PΕ			D	IMENSION	IS		
	TOTAL	22/10/11		1	A	В	С	D	Е	R	INC
				JU	NCTION	СНАМВЕ	'R			1	
	2 SR	18'-0"									
JC501	OF	ТО	371	STR							0'-51/4"
	9	21′-6″									
JC502	24	9′-7″	240	STR							
JC503	12	6′-8″	83	10	2'-2"	1'-1"	2'-0"	2'-5"			
JC504	12	6'-0"	75	10	2'-2″	1'-1‴	1'-4″	2'-5″			
JC505	24	4'-9″	119	19	2′-5″	1'-1‴	2'-2"				
JC506	48	4′-8″	234	1	2′-5″	2'-5"					
JC507	6	17′-2″	107	STR							
JC508	4	6′-9″	28	STR							
JC509	34	4′-6″	160	3	0′-8″	1′-3″					
JC510	27	5'-2"	146	3	0′-8″	1'-7″					
JC511	20	10′-8″	223	STR							
JC512	140	4'-7"	669	1	1'-0"	3′-9″					
JC513	70	9′-6″	694	STR							
JC514	4	21′-6″	90	STR							
JC515	74	11′-5″	881	STR							
JC516	6	23'-0"	144	STR							
	2 SR	18′-10″									
JC517	OF	ТО	436	STR			1				0'-5 1/2"
	10	23'-0″									
	2 SR	4'-0"									
JC518	OF	ΤΟ	145	STR							0'-11 1/8"
	9	11′-5″									
JC519	2	12′-5″	26	19	3'-0"	8′-5″	4'-2"				
JC520	68	2'-11″	207	1	1'-0″	2'-1"					
	2 SR	2'-11″									
JC601	OF	ТО	184	STR							0'-11 5/8"
	9	10′-8″									
JC602	68	10′-8″	1089	STR							
JC801	5	21′-6″	287	STR							
JC802	6	17′-1″	274	STR							
JC901	3	21′-6″	219	STR							
	SL	IB-TOTAL	7,131								

	NUMBER		WEIGHT	۶E			DI	MENSIO	vs			
MARK	TOTAL	LENGTH	WEIGHT	Ľ	A	В	С	D	Ε	R	INC	
	1		1		INLET F	OOTING			I		1	
F501	46	10'-8″	512	STR								
F502	40	21′-8″	904	STR								
F503	23	8′-1″	194	2	3′-7″	1'-2"	3′-7″					
F504	23	16′-3″	390	2	0'-8″	15′-2″	0'-8"					
F505	17	5′-7″	99	STR								
F506	34	3'-3"	78	2	1'-0″	1'-6″	1'-0"					
	SUB-TOTAL 2,177											

	NUMBER			E	DIMENSIONS									
MARK	TOTAL	LENGTH	WEIGHT	17	A	В	С	D	E	R	INC			
	1			1	NLET HE	ADWALL								
W401	14	2'-0"	19	STR										
W402	35	3′-9″	88	3	0′-8″	1'-0"								
W501	28	8'-10"	258	STR										
W502	40	5′-8″	236	STR										
W503	16	2'-0"	33	STR										
W504	4	20'-2"	84	STR										
<i>₩₩505</i>	70	2'-11"	213	1	1'-0″	2'-1"								
*W506	14	2'-9"	40	1	1'-11″	1'-0"								
W507	8	9′-4″	78	STR										
W508	22	3'-10"	88	3	0′-11″	0'-8"								
W601	60	6'-2"	556	1	5′-4″	1'-0"								
	SL	IB-TOTAL	1,440											

<u>NOTES</u>

#5 BARS: 2'-5" (VERT), #5 BARS: 3'-1" (HORIZ)

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<u> TYPE-1</u>

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<u> TYPE-3</u>

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<u>TYPE-19</u>

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* - REINFORCING BAR TO BE SUPPLIED BY PRECAST CONCRETE MANUFACTURER AND NOT INCLUDED IN BAR SUB-TOTAL.

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE THE NUMBER S60I IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT, UNLESS OTHERWISE INDICATED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD" WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.

2. ALL REINFORCING STEEL TO BE EPOXY COATED.

3. UNLESS OTHERWISE SPECIFIED, THE FOLLOWING LAP LENGTHS SHALL APPLY:

4. SEE SHEET 7/19 FOR ADDITIONAL NOTES AND ABBREVIATION LEGENDS.

DESIGN AGENCY	Everse, Avertiment, Heintektersen & Titsen, Inc.	Engineers surveyus Plannus extentios 2000 New Aborn Rock Calumbur, OK A004 Promis Na 2014 District and A004	M C M X V I
REVIEWED DATE CAS DA728721			1 600001
DRAWN	DEVICED		
DESIGNED		DAAW	
REINFORCING STEEL LIST	.31 BRIDGE NO. RIC-3RDS-00313	EAST ZED STEEL OVED BITTEDS DIN	EAST JRU SIREEL OVER MILLENS NUN
	RIC-3RD ST-00		
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K	64))

<u>PROJECT DESCRIPTION</u>

THIS PROJECT INCLUDES THE REPLACEMENT OF THE APPROXIMATE 840-FOOT LONG EXISTING CULVERT STRUCTURE (SFN 7060696) CARRYING RITTERS RUN UNDER 3" STREET NEAR DOWNTOWN MANSFIELD, OHIO. THE PROJECT LIMITS EXTEND ALONG 3" STREET FROM SCOTT STREET TO JUNCTION STREET AT THE NORFOLK & SOUTHERN RAILROAD RIGHT-OF-WAY.

THE REPLACEMENT STRUCTURE WILL CONSIST OF A BOX CULVERT STRUCTURE WITH A 16-FOOT SPAN, A 6-FOOT RISE, CAST-IN-PLACE HEADWALLS AND WINGWALLS AT THE INLET, AND A CAST-IN-PLACE JUNCTION CHAMBER AT THE END OF THE PROJECT. THE NEW CULVERT WILL ESSENTIALLY FOLLOW THE ALIGNMENT OF THE EXISTING CULVERT, WITH MINIMAL TO NO REGRADING OF THE EXISTING ROADWAY ANTICIPATED.

HISTORIC RECORDS

NO HISTORIC BORING INFORMATION WAS AVAILABLE FOR THIS PROJECT.

GEOLOGY

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THE PROJECT SITE LIES IN A PREVIOUSLY GLACIATED PORTION OF THE STATE AND WITHIN THE KILLBUCK-GLACIATED PITTSBURGH PLATEAU PHYSIOGRAPHIC REGION. THIS REGION IS CHARACTERIZED BY CLAY TO LOAM GLACIAL TILL OF WISCONSINAN AGE, UNDERLAIN BY MISSISSIPPIAN AND PENNSYLVANIAN-AGE SHALES, SANDSTONES AND CONGLOMERATES. BEDROCK TOPOGRAPHY MAPPING INDICATES THE PRESENCE OF A RELATIVELY DEEP BURIED VALLEY BENEATH THIS SITE, WITH THE DEPTH TO BEDROCK ROUGHLY 200 OR MORE FEET TO THE EAST OF THIS SITE. AS SUCH, BEDROCK WAS NOT ANTICIPATED TO BE ENCOUNTERED WITHIN THE PROPOSED BORING DEPTHS FOR THIS PROJECT. HOWEVER, AUGER REFUSAL ON APPARENT BEDROCK WAS NOTED AT DEPTHS BETWEEN ROUGHLY 29 AND 36 FEET IN THREE OF THE BORINGS. ADJITIONALLY, ODNR GROUNDWATER RESOURCE MAPPING INDICATES THIS SITE IS IN AN AREA WITH HIGH GROUNDWATER YIELDS (400 TO MORE THAN 1,000 GALLONS PER MINUTE) FROM THICK, PERMEABLE DEPOSITS OF SAND AND GRAVEL WITHIN THE BURIED VALLEY. TERRACED ORGANIC AND SILT DEPOSITS ARE ALSO KNOWN TO BE PRESENT WITHIN THIS VALLEY.

A REVIEW OF THE ODNR "OHIO KARST AREAS" MAP REVEALS THAT THE SITE LIES IN AN AREA NOT KNOWN TO CONTAIN KARST FEATURES. A REVIEW OF THE ODNR "LANDSLIDES IN OHIO" MAP REVEALS THAT THE PROJECT SITES LIE IN AN AREA OF LOW INCIDENCE AND LOW SUSCEPTIBILITY TO LANDSLIDES, AND THE ODNR "ABANDONED UNDERGROUND MINES OF OHIO" MAP INDICATES THESE SITES LIE IN AREAS WITH NO MAPPED ABANDONED MINES NEAR THE AREA OF THE PROJECT SITE.

RECONNAISSANCE

A SITE RECONNAISSANCE VISIT WAS MADE BY S&ME PERSONNEL ON JUNE 25, 2019, TO OBSERVE THE EXISTING CULVERT AND PROJECT VICINITY AND TO FIELD MARK THE BORING LOCATIONS. THE RIC-3" ST.-0313 STRUCTURE CARRIES RITTERS RUN AT A DEPTH OF APPROXIMATELY 9 FEET BENEATH THE PAVED SURFACE OF 3" STREET.

SUBSURFACE EXPLORATION

ON JULY 10, 11, AND 23, 2019, S&ME PERFORMED SIX (6) BORINGS DESIGNATED B-001-0-19 THROUGH B-006-0-19 TO EXPLORE THE EXISTING SOILS IN THE AREA OF THE PROPOSED REPLACEMENT CULVERT. THE CULVERT BORINGS WERE EXTENDED TO DEPTHS OF 29.4 TO 40 FEET BELOW THE EXISTING GROUND SURFACE.

THE BORINGS WERE PERFORMED USING A TRUCK-MOUNTED DRILLING RIG WITH A 3 $^{1}\!\!/_{4} ext{-INCH I.D.}$ HOLLOW-STEM AUGER. DISTURBED (BUT REPRESENTATIVE) SOIL SAMPLES WERE OBTAINED BY LOWERING A 2-INCH O.D. SPLIT-BARREL SAMPLER TO THE BOTTOM OF THE BORING AND THEN DRIVING THE SAMPLER INTO THE SOIL WITH BLOWS FROM A 140-POUND HAMMER FREELY FALLING 30 INCHES (AASHTO T206 - STANDARD PENETRATION TEST, SPT). IN ACCORDANCE WITH THE CURRENT ODOT SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS (SGE), THE HAMMER SYSTEM ON THE DRILL RIG HAD BEEN CALIBRATED IN ACCORDANCE WITH ASTM D4633 TO DETERMINE THE DRILL ROD ENERGY RATIO (81.8%).

SPT SAMPLING WAS PERFORMED AT 2.5-FOOT INTERVALS FROM 8.5 TO 30 FEET, AND AT 5 FOOT INTERVALS IN THE REMAINDER OF THE BORINGS UNTIL EITHER AUGER REFUSAL WAS ENCOUNTERED OR THE PLANNED TERMINATION DEPTH OF 40 FEET WAS ENCOUNTERED.

EXPLORATION FINDINGS

ALL OF THE BORINGS WERE ADVANCED THROUGH EXISTING PAVEMENTS WITH ASPHALT THICKNESSES RANGING FROM 4 TO $5\frac{1}{2}$ INCHES AND BRICK THICKNESSES RANGING FROM 6 TO 8 INCHES. A DEFINITIVE LAYER OF GRANULAR BASE WAS NOT OBSERVED BENEATH THE BRICK LAYER IN ANY OF THE BORINGS.

BELOW THE EXISTING PAVEMENT MATERIALS, THE BORINGS GENERALLY ENCOUNTERED 8 TO 13 FEET OF EXISTING FILL AND POSSIBLE FILL WHICH CONSISTED VARIABLY OF LOOSE TO MEDIUM-DENSE COARSE AND FINE SAND (A-3d) OR GRAVEL WITH SAND (A-1-b), STIFF TO HARD SANDY SILT (A-4d), AND HARD SILTY CLAY (A-6b). BENEATH THE FILL, DISCONTINUOUS SANDY SILT (A-4a), AND HARD SILTY CLAY (A-6b). BENEATH THE FILL, DISCONTINUOUS DEPOSITS OF NATURAL SOILS WERE ENCOUNTERED, INCLUDING MEDIUM-STIFF TO VERY-STIFF COHESIVE SANDY SILT (A-4a), SILT AND CLAY (A-6a), AND SILTY CLAY (A-6b), AND LOOSE TO DENSE GRAVEL WITH SAND (A-1-b), COARSE AND FINE SAND (A-3a), GRAVEL WITH SAND AND SILT (A-2-4), AND SANDY SILT (A-4a). IT SHOULD BE NOTED THAT DURING LABORATORY TESTING, SEVERAL SAMPLES OF SOIL RECOVERED FROM BORINGS B-005-0-19 CONTAINED A VERY-STRONG HYDROCARBON ODOR.

BORINGS B-001, B-002, AND B-006 WERE TERMINATED AT THE DEPTHS OF 33.7, 36.2, AND 29.4 FEET, RESPECTIVELY, AFTER ENCOUNTERING REFUSAL ON HIGHLY TO SEVERELY WEATHERED, VERY-WEAK TO WEAK SANDSTONE BEDROCK.

DURING DRILLING, GROUNDWATER AND GROUNDWATER SEEPAGE WERE INITIALLY ENCOUNTERED BETWEEN THE DEPTHS OF 8.5 AND 21 FEET BELOW THE GROUND SURFACE. MEASUREMENTS TAKEN INSIDE THE HOLLOW-STEM AUGERS AT THE COMPLETION OF DRILLING RECORDED WATER HAVING ACCUMULATED TO DEPTHS RANGING FROM 11.8 TO 20.7 FEET BELOW THE GROUND SURFACE.

	LEGEND									
	DESCRIPTION	ODOT <u>CLASS</u>	CLASS <u>MECH./</u>	SIFIED VISUAL						
	GRAVEL WITH SAND	A-1-b		19						
	GRAVEL WITH SAND AND SILT	A-2-4	1	1						
	COARSE AND FINE SAND	A-3a	2	9						
	SANDY SILT	A-4a	6	15						
	SILT AND CLAY	A-6a	1	13						
	SILTY CLAY	A-6b	3	5						
		TOTAL	13	62						
	SANDSTONE	VISUAL								
XXXXX	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL								
- BORING LOCATION - PLAN VIEW										
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPH	O VERTICA Y.	L SCALE	ONLY.						
WC	INDICATES WATER CONTENT IN PERCENT.									
N ₆₀	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.									
X/D″	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST \times X/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PE	(SPT): Enetratio	N AT REF	USAL.						
NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X/Y/D" X= NUMBER OF BLOWS FOR FIRST 6 INCHES (UNCORRECTED). Y/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.										
X/Y/Z/D″	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST X= NUMBER OF BLOWS FOR FIRST 6 INCHES (UNCORRECT Y= NUMBER OF BLOWS FOR SECOND 6 INCHES (UNCORRE Z/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PE	(SPT): ED). CTED). NETRATIO	N AT REF	USAL.						

- INDICATES FREE WATER ELEVATION.
- INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.
- INDICATES A NON-PLASTIC SAMPLE. NP
- SS INDICATES A SPLIT SPOON SAMPLE. STANDARD PENETRATION TEST.
- TR- INDICATES TOP OF BEDROCK.

<u>SPECIFICATIONS</u>

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2019.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE ALE AVAILABLE SOLVANTION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE OR THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

BOULDERS

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EXPLORA B-001	.7 ft.		ODOT CLASS (GI)		A-4a (V)		A-1-b (V)		A-1-b (V)		A-4a (V)		A-4a (4)	0.4a 0.0		A-4a (V)		A-4a (4) A-6a (V)		A-3a (V)	A-3a (V)		KOCK (V)		
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S&ME TRK FETY HAN	ATE: 12	3):	SAMPLE ID		SS-1		SS-2		SS-3		SS-4		SS-5	y v		SS-7		SS-8		6-SS	SS-10				
SAF		AIO	REC (%)		39		56		33		33		39	0	3	56		39		50	17		٩ ٩		
AER: AER:	RATIC	G K	 2		5		7		7		4	\square	30	ő	3	4		7		65			·		
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ME / D. 0	25" HSA	SPI	DEP						W 1159			W 1154										-TR-			
ER: S&	3.		ELEV. 1167.5	1166.4		1163.5				1156.5					1149.5			1146.0	1144.5		1011				
PERA 066		٦ ات																							
DRILLING FIRM / OF SAMPLING FIRM / L	DRILLING METHOD	SAMPLING METHOL	NC		e clay, little fine		GRAVEL contains iron	<u>~~~~(18 40</u> 3			ome clay, trace mp.					y, little fine to		ine to coarse		y, wet.		hered, very to very-dense			
DJECT: RIC-3RD STREET-0313 C E: CULVERT REPLACEMENT S	BR ID: RIC-3RDS-00313 C	RT: 7/10/19 END: 7/10/19 S	MATERIAL DESCRIPTIO AND NOTES	ASPHALT - 5-1/2 INCHES BRICK - 8 INCHES	Stiff to very-stiff brown SANDY SILT, little oarse gravel, moist.		vable Fill: Loose to medium-dense brown H SAND, little silt, trace clay, few cobbles, e stains, damp.				stiff to hard gray SANDY SILT, little to sc e fine to coarse gravel, few cobbles, dan					o very-stiff gray SANDY SILT, some clay e gravel, damp to moist.		ray and brown SILT AND CLAY, some fi	little tine to coarse gravel, moist to wet.	e to very-dense brown COARSE AND Fill ine to coarse gravel, trace silt, trace clay		DSTONE , brown, highly to severely weath to weak, highly fractured, partly similar to	-		

at 8.5'. 13.5'. at 10.5'

and 15.0'. red at 33.

ide HSA. BAL CC

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	DRAWN KAH CHECKED NDA
TITLES: ASPHALT PATCH: SOLL CUTTINGS MIXED WITH BENTONITE	STRUCTURE FOUNDATION EXPLORATION LOG OF BORING B-001-0-19
NOTES: SEE ABOVE. ABANDONMENT METHODS, MATERIALS, QUAN'	RIC-3RDST-3,13
	3/8

D. GODWIN DRILL RIG: SAME TRK 55 0. GODWIN HAMMER: SAME TRK 55 0. GODWIN RCALIBRATION DATE: 27/3/11 0. GODWIN RCI NOTON REC 818 1 2 4 14 100 SS-1 2/5 1 2 4 14 100 SS-1 2/5 1 2 3 11 2/3 2/5 - 1 2 4 6 14 100 SS-5 - 1 2 3 1/1 3/5 2/5 - 1 2 3 1/1 3/5 2/5 - 1 2

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ed at 13.5'. Isal encountered at 36.2'. tion, water measured at 12.4' inside HSA. ved at 27.4' after augers removed. - Water - Auger - At corr - Boring

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	DRAWN KAH CHECKED NDA
NTITIES: ASPHALT PATCH: SOLL CUTTINGS MIXED WITH BENTONITE	STRUCTURE FOUNDATION EXPLORATION LOG OF BORING B-002-0-19
NOTES: SEE ABOVE. ABANDONMENT METHODS, MATERIALS, QUAN	RIC-3RDST-3.13

	DRILLING FIRM / OPERATOR
1117-19-038	RIC-3RD STREET-0313

	10-19	PAGE 1 OF 1	BACK		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	× × × × × × × × × × × × × × × × × × ×	××××××××××××××××××××××××××××××××××××××		× × × × × × × × × × × × × × × × × × ×	× × × × × × × × × × × × × × × × × × ×	1 1 1 1 1 1 1 1 1 1 1 1 1 1	××××××××××××××××××××××××××××××××××××××	×74×7	× × × ×	1 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L 1 L	××××××××××××××××××××××××××××××××××××××	×72×7 ×7	1 L V L V	××××××××××××××××××××××××××××××××××××××	××××××××××××××××××××××××××××××××××××××	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	<pre>4</pre> 4	×7 × × × × × × × × × × × × × × × × × ×
Ξ	EXPLORA B-003		ODOT CLASS (GI)		A-4a (V)	A-1-b (V)		A-4a (V)	A-4a (V)	A-3a (0)	A-3a (V)	A-6a (V)		A-3a (0)		A-1-b (V)	A-1-b (V)		A-1-b (V)		A-3a (V)		A-4a (V)
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	DFFS(116		;	+	<u> </u>	+		<u> </u>	8			+	11	$\left - \right $	<u>' '</u>		$\left \right $	<u>'</u>				+ '
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		<u>, m c</u>		5	<u>+ .</u> †	.	+			19		<u> </u>		13		• •	33		•				·
	< 55 MFP	/13/17 11 8	HP Hef	(101)	3.5	- ·		1.2-2.7	-			3.5-	2			• •		$ \uparrow $,				1.7- 3.2
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	SAF		EC S	10.1	12	20	+	61	0	72	61	67	+	56	+	0 0	33	+	20		39		56
	ц Ц Ц Ц Ц Ц	RATIC	<u>پالا</u> ا	+	15		+			9	19	<u>+</u>	+	4	-	- 12	4	$\left \right $	18		- 19		59
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			1 55 1	2 	3 5) 4 r - 4 r		8 8 	- 1		- 10 - 16 - 17 - 17	- 18 - 19 - 4 - 4	- 20	- 22	- 23	- 24 1 ⁴ - 25 6	- 26 - 3	- 28 -	- 30 30	- 32	- 34 - 8	- 36	- 39 2
	ME / D. GC	25" HSA	CEPTH						V 1152.1		<u></u>		w 1142.1							<u> </u>			
	ATOR: S6	3.0	ELEV.	1162.7 1162.7 1162.0		1159.1		1100-1- 150 E	0.70	1150.1		1145.1	1142.1		1140.1	1 1 7	1.15/.1			1130.1		1125.1	1123.1
	DER	j j j j j	į			Į,		ž							δČ		504	QQ QQ					
	DRILLING FIRM / C SAMPI ING FIRM /		ON		SILT, some bist.	e silt, trace		y SANDY SILT,	ne to coarse	ID FINE SAND, ome fine to coarse		e fine to coarse ist.		ND, little fine to	, trace silt, trace		ittle silt, trace				AND, some t.		to coarse
S&ME JOB: 1117-19-038	PROJECT: RIC-3RD STREET-0313	PID:BR ID: RIC-3RDS-00313 START: 7/11/19 FND: 7/11/19 10		ASPHALT - 5 INCHES BRICK - 8 INCHES	Fill: Stiff to very-stiff brown and gray SANDY clay, trace fine to coarse gravel, damp to mo	Fill: Loose brown GRAVEL WITH SAND, tractical clav. damp to moist.		Possible Fill: Stiff to very-stiff brown and gray little clay, trace fine to coarse gravel, damp.	Loose brown SANDY SILT, little clay, trace fii gravel, moist.	Loose to medium-dense brown COARSE AN trace to little clay, trace to little silt, little to so gravel, damp.		Very-stiff to hard gray SILT AND CLAY , some sand, little fine to coarse gravel, damp to moi		Medium-dense gray COARSE AND FINE SAI coarse gravel, little silt, little clay, wet.	Medium-dense brown GRAVEL WITH SAND,		Medium-dense gray GRAVEL WITH SAND, li clay, wet.				medium-dense brown COAKSE AND Fine So fine to coarse gravel, little silt, trace clay, wet		Stiff to very-stiff gray SANDY SILT, little fine: gravel, some clay, wet.

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	DRAWN KAH CHECKED NDA
TTTES: ASPHALT PATCH: SOLL CUTTINGS MIXED WITH BENTONITE	STRUCTURE FOUNDATION EXPLORATION LOG OF BORING B-003-0-19
NOTES: SEE ABOVE. ABANDONMENT METHODS, MATERIALS, QUAN	RIC-3RDST-3,13
	$\frac{5/8}{\bigcirc}$

ge noted at 11.0'. noted at 21.0'. pletion, water measured at 16.1' inside HSA. caved at 23.2', after augers removed.

- Seep - Wate - At co - Borir

PROJECT: RIC-3RD STREET-0313 DRILLING FIRM / 1	OPERATOR	S&ME/D.O	NIMDOS	DRILL	i di Bi	S&P		55 AE D	STA	TION	OFF.	, c ET	12+7	1, 15 [']	Ы	B-004	0-19
	/ LUGGER: DD:	3.25" HSA		CALIB		V DATE	E: 12/1	3/17			- - - - - - - - - -	61.3 (I	(ISM		- 49	0 ft.	PAGE
START: 7/11/19 END: 7/11/19 SAMPLING METH	HOD:	SPT		ENER	3Y RA	.%) OI		œ	ğ	RD:		10.759	478 N	82.50	7772 \	>	1 OF 1
MATERIAL DESCRIPTION AND NOTES	ELE 116	EV. DEPT 1.3	HS	SPT/ RQD	N ₆₀ RE	EC SA		HP Sf) GF	GRA cs		N (%) N	ы СП П	LTER	BERG	WC	ODOT CLASS (GI)	BACK
ASPHALT - 5-1/2 INCHES BRICK - 8 INCHES	116	0.9	- 1														
Fill: Loose brown COARSE AND FINE SAND , some fine to coarse gravel, little silt, little clay, damp.				4 3 2	7 5	0 9	5-7		·	•	•		•	•	~	A-3a (V)	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	115	7.3	- 4		+	_		+	_		+	+	_				12712
Possible Fill: Medium-dense brown GRAVEL WITH SAND , trace slit, few sandstone fragments, damp.				8 7 10	23 6	7	S-2		'	,	,		'		~	A-1-b (V)	× × × × × × × × × × × × × × × × × × ×
	600 701 715	3.3															~7 V 7 7 V
Very-stiff brown mottled with gray SILTY CLAY, some fine to coarse sand, little fine gravel, contains iron oxide stains, moist.				3 5 3	4		S-3	-7-	2	22	59	33 23	5 17	18	20	A-6b (9)	× × × × × × × × × × × × × × × × × × ×
						+		+	_		+	+	-				~~ \~~ ~~ \~~
Medium-dense to dense brown GRAVEL WITH SAND, little silt, trace clay, wet.		<u>α</u>	- -	4 16 17	45 (,	·	•	,			'				×74×7 >7×74×7
		W 1147.8		2	-			<u>.</u>	<u> </u>	'	-	'	'	'	•		1 L Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z
				2 4 5	12 3	0 0	S-5	·	•		ı	'	'	ı	21	A-1-b (V)	× × × × × × × × × × × × × × × × × × ×
			- 1 2 (4 1 - 1			_		-									1 L J L J L J L J L J L J L J L J L J L
			- 17	2 5 6	15 3	0 0	9-5	- 40	4	26	4	9	'	T	15	A-1-b (V)	
Very-stiff brown SILT AND CLAY, some fine to coarse sand,	114:	<u>3.3</u>	18														12212
trace fine to coarse gravel, damp.			- 19 -	8 3 4	10				1		ı		ı	I.	ı		×7 ×7 ×7 ×7 ×7 ×7 ×7 ×7 ×7 ×7 ×7 ×7 ×7 ×
	114	0.3	- 2		÷	0	S-7 3	- <u> </u> 00	·	'	- -		'	'	4	A-6a (V)	× × × × ×
Medium-dense gray GRAVEL WITH SAND, little silt, trace clay, wet.				5 9 12	29 3	0 0	8-2	·	'	'	,		·	'	10	A-1-b (V)	× × × × × × × × × × × × × × × × × × ×
Medium-dense gray and brown GRAVEL WITH SAND AND	113	<u>8</u> .3	- 23 -					_				_					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SILT, little clay, wet.		۵۵ پر	24 25	8 8 0	22 5	0	6-53	ё -	19	19	15	4	3 12	9	13	A-2-4 (0)	×7××××××××××××××××××××××××××××××××××××
Dense brown GRAVEL WITH SAND, little silt, trace clay, wet.			26	12	37 3	0	S-10	· ·	· ·		- ·	<u> </u>	· ·		7	4-1-b (V)	1
	د کو 113	3.3		15	+	+	+	+	_		+	+	_		+		×>>>> >>>>
Stiff to very-stiff brown SILT AND CLAY , some fine to coarse sand, little fine to coarse gravel, wet.			29	15 15 18	45 6	2	S-11	-0 <u>-</u>	· ·	•			•	•	15	A-6a (V)	××××××××××××××××××××××××××××××××××××××
	112	8.3															× × × × × × × × × × × × × × × × × × ×
Dense gray GRAVEL WITH SAND, trace silt, trace clay, wet.				12 16 18	46 5	0	S-12	- 20	40	28	9	9	•	•	19	4-1-b (V)	××××××××××××××××××××××××××××××××××××××
	2000 000 112	3.3	- 36 - 36 - 37														× × × × × × × × × × × × × × × × × × ×
Medium-dense brown GRAVEL WITH SAND, little silt, wet.	6 () 112	2.4	р С		+	+		'	- ·	•	-		'		13	4-1-b (V)	1 L J L V Z V Z V
Very-stiff to hard gray SANDY SILT, little fine to coarse gravel, some clay, damp.	112	1.3	20	9 12	29 5	0 0	S-13 3	'5'-' '	'	'	,	<u> </u>		'	1	A-4a (V)	11111

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	DRAWN KAH CHECKED NDA	
VTITIES: ASPHALT PATCH. SOLL CUTTINGS MIXED WITH BENTONITE	STRUCTURE FOUNDATION EXPLORATION LOG OF BORING B-004-0-19	
NOTES: SEE ABOVE. ABANDONMENT METHODS, MATERIALS, QUAN	RIC-3RDST-3,13	
, , ,, , ,, , ,, , ,, , ,, , , , , , , , , , , , , , , , , , , ,	6/8	

Water noted at 13.5'.
 At completion, water measured at 19.2' inside HSA.
 Boring caved at 22.3' after augers pulled.

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	DRAWN KAH CHECKED NDA
NTITIES: ASPHALT PATCH: SOIL CUTTINOS MIXED WITH BENTONITE	STRUCTURE FOUNDATION EXPLORATION LOG OF BORING B-005-0-19
NOTES: SEE ABOVE. NATERIALS, QUA	RIC-3RDST-3,13
	7/8

asured at 13.4' inside HSA. er augers pulled.

r noted at 21.0'. les noted at 33.0'. mpletion, water mes caved at 29.3' afte

- Wate - Cobl - At co

	TION ID	-0-19	PAGE 1 OF 1	BACK	V 2	2 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2 7 2	× × × × × × × × × × × × × ×		× × × × × × × × × × × × × × × × × × ×	×72×7 ×72×7 ×72×7	1 K 7 1 K	1	1 K 7 K	× × × × × × × × × × × × × ×	×72×7	× × × × × × × × × × × × × × × × × × ×	1 V V V V	× × × × ×	×> ×>	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	×74×7	×74×7	×> ×> ×> ×> ×> ×> ×> ×> ×>	××××××××××××××××××××××××××××××××××××××	×7477	~7 4 ~ 7
11	EXPLORA	900 B-000	.4 ft. W	ODOT CLASS (GI)		A-4a (V)		A-4a (V)		A-6b (11)		A-6b (V)		A-6a (9)		A-6a (V)		A-1-b (V)		A-1-b (V)		A-1-b (V)		A-1-b (V)		A-1-b (V)
	Ŀ		26687	C/M		21		13		25		24		25		25		10		20		17		16		15
	1, 16'	/ERT	EOB: 82.50	ERG	:	'		'		17		'		13		'				'		'		'		•
	18+4	CUL	137 N. 137 N.		!	·		'		20		· ·		19				'		'		•		'		·
	Ë	리	7.1 (N	A=		'		'		37		· ·	<u> </u>	32		'		'		'		'		'	_	-
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	ON/O	MENT	NOIT ON	TION		·				3				3				12 1								-
	TAT	VLIGN	COOR	RAD/		· ·		,		~		· ·		N				13		,		,				-
	0	<u>∢</u> .	<u> </u>	0 8	;					-				0				59		,						•
	K 55	AMER	<u>81.8</u>	HP (tef)		0.7- 2.5		2.5		2.0	0.1	2.5- 3.5		1.0-		1.0-										·
	S&ME TRI	=ETY HA	ATE: 12 (%):	SAMPLE	2	SS-1		SS-2		SS-3		SS-4		SS-5		SS-6		SS-7		SS-8		SS-9		SS-10		SS-11
	0,	SAF	ON D/	REC (%)		39		33		100		100		100		83		33		72		56		39		55
	. RIG:	ΛER:	SRATI GY R	z		~		10		~		10		~		4		16		12		42		40		-
	DRILL	HAMN	CALIE			4		4 0		~	en l	ω 4		3 7		- ~		5 7		5 4		21 10		8 14 15		0-5"
Ì	NIN	NIN			- -		20 4	2	• ~	0 8 	e e	12 12	5 1	14	15	16 1	<u>چ</u>	19 - 12		22 4	53	24 4	, 4	27		29 40
	ME / D. GOE	AE / D. GOD	5" HSA SPT	DEPTHS									L	<u>. .</u>	L L				u 1136.1						TR -	
	TOR: S&	ER: S&N	3.2	ELEV.	1156.8					1.149.1			1144.1				1139.1				1134.1				1.129.1	1127.7
	PERA	LOGG																J.0	2					õČ		
	DRILLING FIRM / O	SAMPLING FIRM / I	DRILLING METHOD SAMPLING METHO	NO		ANDY SILT, ledium-stiff zones,				VY, trace fine to eams, moist.			V trace fine to	on oxide filled			little silt, trace). little silt. trace				thered,	
ALE JUDE: 1117-18-030	DJECT: RIC-3RD STREET-0313	E: CULVERT REPLACEMENT	BR ID: RIC-3RDS-00313 RT: 7/23/19 END: 7/23/19	MATERIAL DESCRIPTIC	ASPHALT - 4 INCHES BRICK - 7 INCHES	: Stiff to very-stiff brown and dark-brown S ne clay, trace fine to coarse gravel, few m brick fragments, damp to moist.				y-stiff brown mottled with gray SILTY CLa rise sand, trace fine gravel, contains silt si			f hrown mottled with grav SII T AND CI AV	r provent incoured with gray other and other irres sand, contains silt seams, contains in isication cracks, moist.			dium-dense brown GRAVEL WITH SAND.	y, moist to wet.			Ise grav and brown GRAVEL WITH SAND	y, wet.			NDSTONE, brown, highly to severely weat	y-weak to weak, highly fractured.

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D AUGER REFUSAL AT 29.4 AND BORING TERMINATED. AT COMPLETION. WATER AT 11.8' INSIDE HSA. THES: ASPHALT PATCH. SOIL CUTTINGS MIXED WITH BENTONITE	STRUCTURE FOUNDATION EXPLORATION LOG OF BORING B-006-0-19
ABANDONMENT METHODS, MATERIALS, QUANT	RIC - 3RDST - 3,13