

### UTILITY SPECIFICATIONS & NOTES

# STORM

1. The contractor shall install 4" & 6" rigid plastic pipe (1000 lb. crush) for the down spout drains and crawl space drains. Where two down spout drains or more connect the contractor shall install 6" rigid plastic pipe from the connection point to the outlet. All single down spout drains shall be 4" rigid plastic pipe.
2. The contractor shall furnish and install the adapter from the underground down spout drains to the building gutter down spout drains. (see architectural plans for sizing.)
3. The crawl space drains or sump pumps and/or their locations may vary due to soil conditions.

## WATER

1. The contractor shall lay the water line a minimum of 4'-6" below finished grade (to the centerline of pipe) and water services a minimum of 4'-0" below finished grade.
2. The contractor shall extend the water service to a point 3'-0" from the outside foundation wall. A valve and box shall be installed at this location.
3. Where the water lines conflict with the storm and sanitary sewers the water lines shall be lowered during construction.
4. The 6" water line shall be P.V.C. 160 P.S.I., ASTM, 2241 (SDR-26)
5. All bends or fittings shall be blocked in accordance with the blocking details on sheet 7.
6. The 1 1/2" water line shall be P.V.C. 160 P.S.I. ASTM 2241 (SDR-26)
7. The water line material used shall conform to AWWA standards. Pressure testing will conform to AWWA C-600 or C-603. Disinfection will conform to AWWA C-601. The contractor is responsible for pressure testing and disinfection, the City will supervise & inspect.
8. There will be 10' minimum horizontal separation or an 18" minimum vertical separation from the sanitary sewer at all times.
9. The fire hydrant shall be a Darling B 62 B that opens right.
10. All water line construction inspection and materials shall be in conformance with the East Muskingum Water Authority Specifications.

**SANITARY**

1. Roof drains, foundation drains or other clean water connections to the sanitary sewer system are prohibited.
2. Where the water line does not maintain 18" vertical separation or is below the sanitary sewer, the sanitary sewer should be constructed (or encased in) water main type materials which will withstand a 50 P.S.I. pressure test for a distance of 10 feet on both sides of the water main.
3. The 6" & 8" sanitary sewer pipe shall be extra strength vitrified clay sewer pipe conforming to A.S.T.M. C-700 with 'O' ring gasket joints conforming to A.S.T.M. C-425 or approved equal.
4. The sewer contractor shall extend 6" sanitary services to within 5'-0" of the foundation at the specified invert elevation. The plumbing contractor shall install a cleanout at this location.
5. The sanitary manholes shall be precast concrete conforming to A.S.T.M. C-478 and joints between sections conforming to A.S.T.M. C-443 or approved equal. The steps shall be Neenah R-1980-C or approved equal and placed on 16" centers. The manhole cover shall be Neenah R-1762 or approved equal.
6. Lateral sanitary sewers and main line sanitary sewers shall be subjected to and pass the infiltration test or exfiltration test, whichever to applicable, before any connection may be connected thereto. Ground water infiltration through the sewer pipe joints shall not exceed 200 gallons per inch of tributary pipe diameter per 24 hours per mile of length or the computed equivalent for shorter lengths and shorter periods of time.

## GENERAL

1. All utility improvements shall conform to the current Ohio Environmental Protection Agency Construction, Inspection and Material Specifications and the current Falls Township, Muskingum County Construction, Inspection and Material Specifications.
2. The contractors bid shall be comprehensive and include all labor, equipment and materials necessary to complete all Utility improvements according to the engineering plans and specifications.
3. The contractor shall locate all utilities or underground structures prior to construction and notify each respective utility owner forty-eight hours prior to commencement of construction.
4. The contractor shall refer to the utility plan and profile plans to determine critical utility crossings.
5. In pavement areas and utility crossing areas, the backfill shall be compacted granular material.
6. Quantities are only estimates and should be re-calculated by the contractor for bid submittals.
7. The contractor shall restore offsite construction areas to an equal or better condition than existing prior to commencement of construction.
8. Prior to commencement of construction, the Contractor shall meet with and submit a construction schedule to the City Engineer and secure all necessary licenses and permits.
9. During construction, the Contractor shall provide for adequate drainage and proper soil erosion control measures for protection at all adjacent roads and lands.
10. All utilities shall conform to the manufacturers construction and material specifications.

### ESTIMATE OF QUANTITY-STORM

<i>QUAN.</i>	<i>UNIT</i>	<i>DESCRIPTION</i>
577	L.F	12" Concrete Pipe C-76 Cl. IV
1	E.A.	Remove Ex. 15" Headwall
4	E.A.	12" Headwall - Endwall
7	E.A.	Storm Inlet
1	E.A.	Splash Block
1	E.A.	Sump Pump & Hardware
3	E.A.	Crawl Space Drain Inlet
90	L.F	4" Rigid Plastic Pipe (Crawl Space Drain)
15	C.Y.	Dumped Rock Channel Protection
*	TON	Granular Backfill * (Quantities Vary With Trench Width)
*	TON	Granular Bedding * (Quantities Vary With Trench Width)

### ESTIMATE OF QUANTITY- WATER

QUAN.	UNIT	DESCRIPTION
55	L.F.	6" Water Line
372	L.F.	2" Water Line
15	L.F.	2" Water Line (Fire Line)
128	L.F.	1½" Water Line (Fire Line)
323	L.F.	1 " Water Line (Fire Line)
4	EA	1" Valve & Box (Fire Line)
4	EA	2" Valve & Box
1	EA	6" Tapping Sleeve , Valve & Box
1	EA	Fire Hydrant w/appurtenances
25	L.F.	Boring & Jacking per East Muskingum Water Authority
*	TON	Granular Backfill * (Quantities Vary With Trench Width)
*	TON	Granular Bedding * (Quantities Vary With Trench Width)

### ESTIMATE OF QUANTITY-SANITARY

[illegible]

**BLACKBURN, GRASHEL, KOSANCHICK & ASSOCIATES, INC.**  
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## UTILITY SPECIFICATIONS

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