

CITY OF NAPOLEON
 255 W. RIVERVIEW P.O. BOX 151
 NAPOLEON, OHIO 43545
 (419) 582-4010

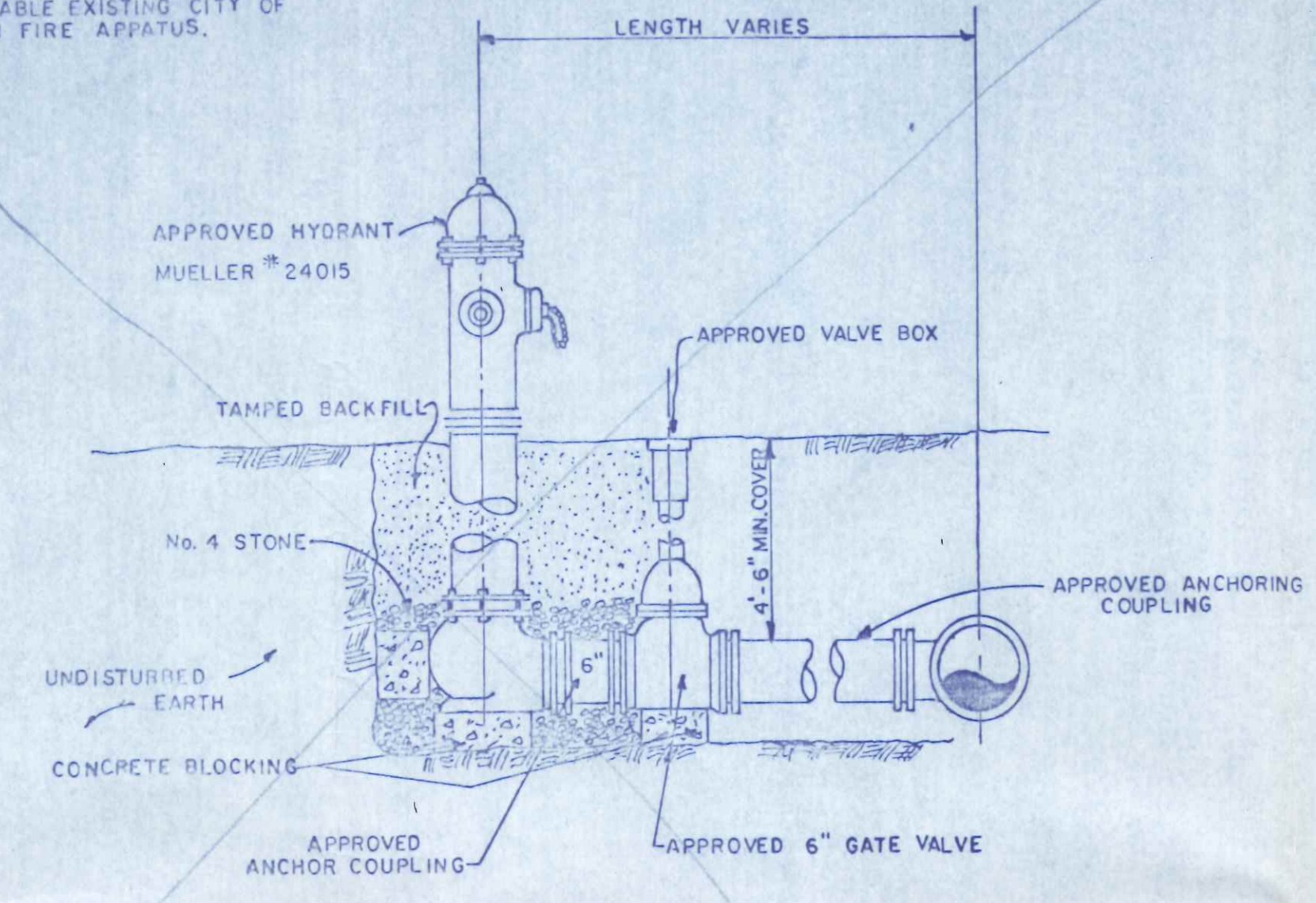
APPROVED OCT 29 1990
 Mark H.



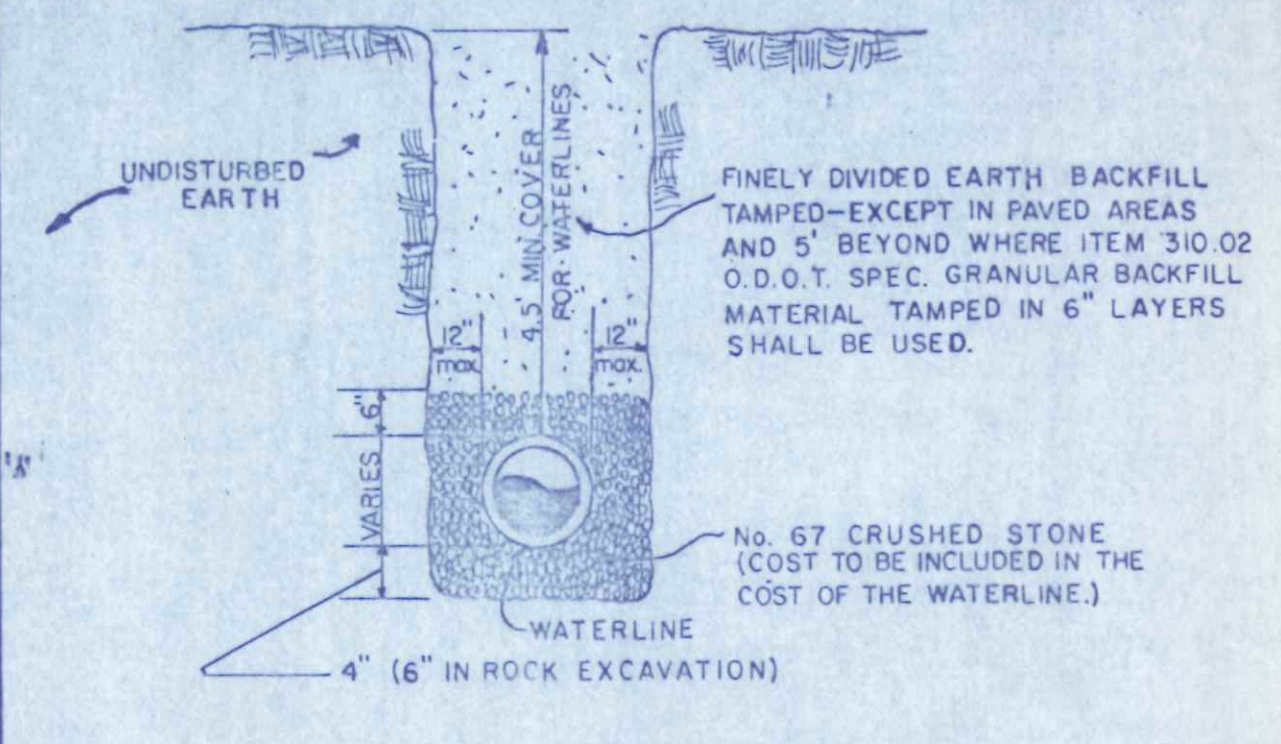
1400 E. Riverview

DR.	STD. TOL.	HEAT TREAT	REG.	MATL.	SIZE
DE	FRAC. ± 1/16"	SCALE	DATE	DESIGN NO.	
CR.	DEC. ± .005	10-23-90			
NAME	INDUSTRIAL WASTE LINE			PART NO.	PS-1-10D
REV.	WAS	BY	DR.	DATE	
NAPOLION, OHIO 43545					

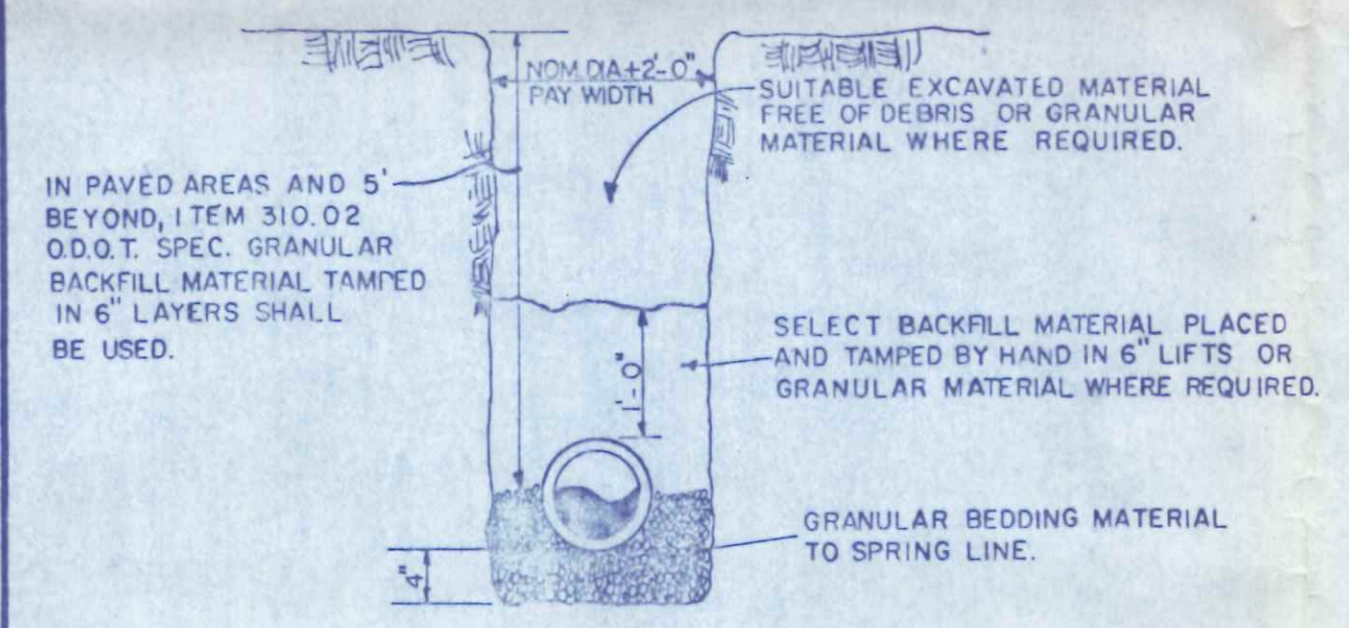
NOTE:
ALL NOZZLES SHALL CORRESPOND TO APPLICABLE EXISTING CITY OF NAPOLEON FIRE APPATUS.



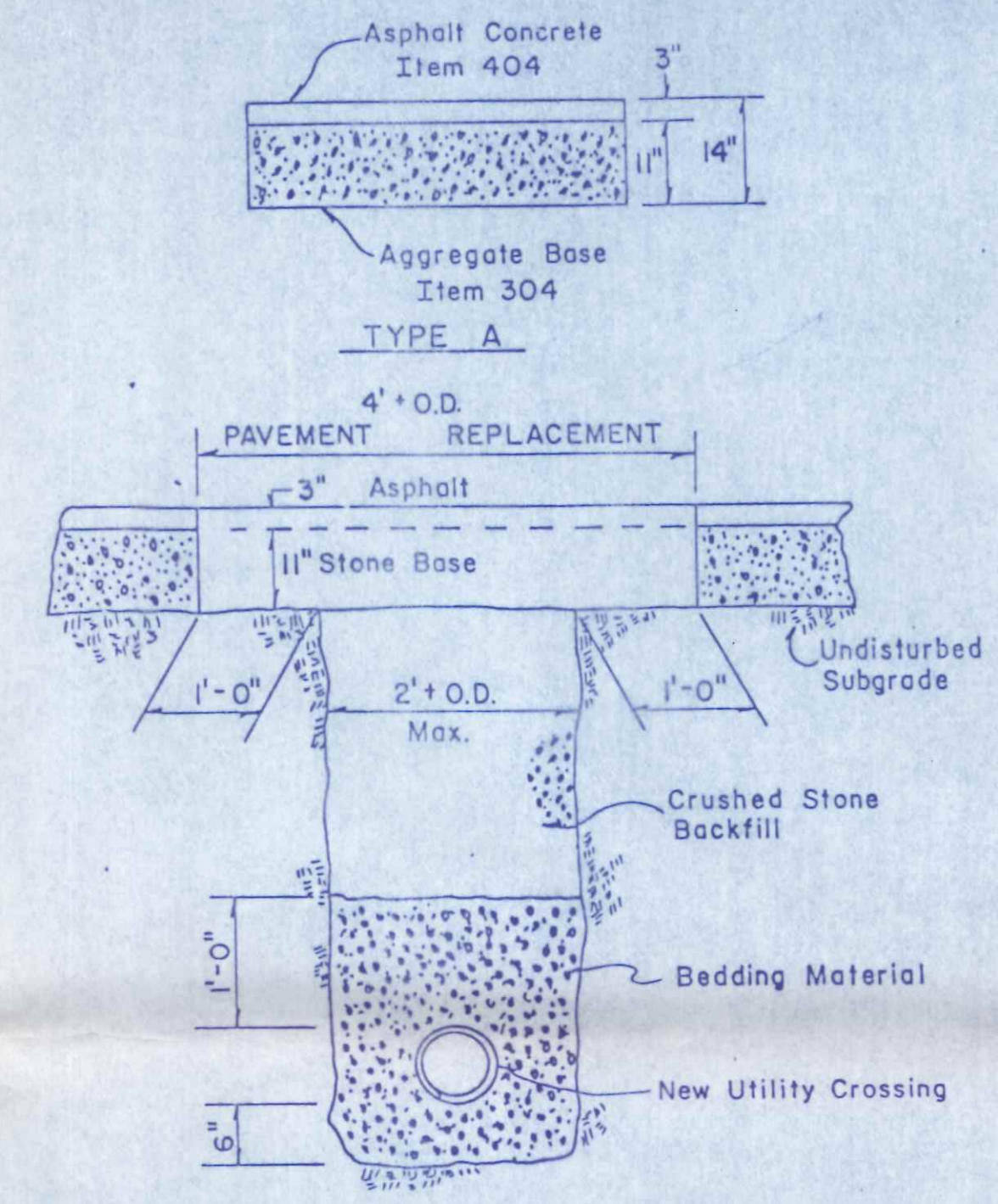
HYDRANT INSTALLATION



TYPICAL WATER LINE AND SANITARY SEWER TRENCH DETAIL



TYPICAL STORM SEWER TRENCH DETAIL



SPECIFICATIONS

WATER LINES
All work shall be performed in accord with these plans and specifications and requirements of the Ohio Environmental Protection Agency and the current specifications of the City of Napoleon, Ohio.

Excess excavated material shall be placed where directed by the Engineer. Existing utilities indicated on the plans are based on available information and are not guaranteed by the Engineer for accuracy of completeness. Any work to be performed in the area of existing utilities shall require prior notice to the utility owner.

Specifications for water line pipe, fittings and testing shall be:

Pipe Material	Material Specification
Ductile Iron	AWWA C-151
Polyvinyl Chloride	AWWA C-900-81, pressure class 150, SDR 18
Fittings	AWWA C-110
Hydrants	AWWA C-502
Joints	AWWA C-111
Valves	AWWA C-500

Testing	Specification
Pressure Test	AWWA C-600
Chlorination	AWWA C-601

Waterline materials shall conform to AWWA Standards. Separation of waterline and sanitary sewer mains shall be a minimum of 10' horizontally and 18" vertically. Water lines shall not enter or come in contact with sewer manholes. Pipe barrels shall be supported by a minimum of six (6) inches of granular material. Water line crossings of the sewer trench, shall be supported by a two inch plank, width equal to the pipe diameter and the length equal to the sewer trench plus four feet. Pavement crossings shall be backfilled with #310 Crushed Stone material, six inches compacted thickness. Water lines shall be chlorinated in accord with the provisions of the AWWA Specifications. Line leakage pressure testing will be in accordance to AWWA C600-82 Section 4.2.2 which limits leakage to a maximum of $L = \frac{33200}{L}$, which is for a 24 hour period. It shall be the contractor's responsibility to perform this test properly and the responsibility for adequate supervision and approval rests with the appropriate governmental agency. Any deviation from the above will not be permitted unless specifically included in the general notes or otherwise shown on these plans. Polyvinyl Chloride pipe shall be provided with tracer wire as per City of Napoleon Specifications. All areas under paved surfaces and five (5') ft. either side of paved surfaces shall be backfilled with granular material meeting the requirements of O.D.O.T. item 310.02 and mechanically tamped in six (6") inch layers.

Compensation for all items of work shall be based on the unit price bid for the specified unit and shall include, but not be limited to all materials, supplies, labor, equipment and other items required to complete said item. Compensation for work required for which no unit price is provided shall be included in other items of work and no additional compensation shall be allowed therefore.

STORM SEWERS AND PAVEMENT
Storm Sewer and Pavement construction shall conform to the current addition of the Ohio Department of Transportation "Construction and Material Specifications," and the current specifications of the City of Napoleon, Ohio.

SANITARY SEWERS
All work shall be performed in accord with these plans and specifications and requirements of the Ohio Environmental Protection Agency and the current specifications of the City of Napoleon, Ohio.

Excess excavated material shall be placed where directed by the Engineer. Existing utilities indicated on the plans are based on available information and are not guaranteed by the Engineer for accuracy of completeness. Any work to be performed in the area of existing utilities shall require prior notice to the utility owner.

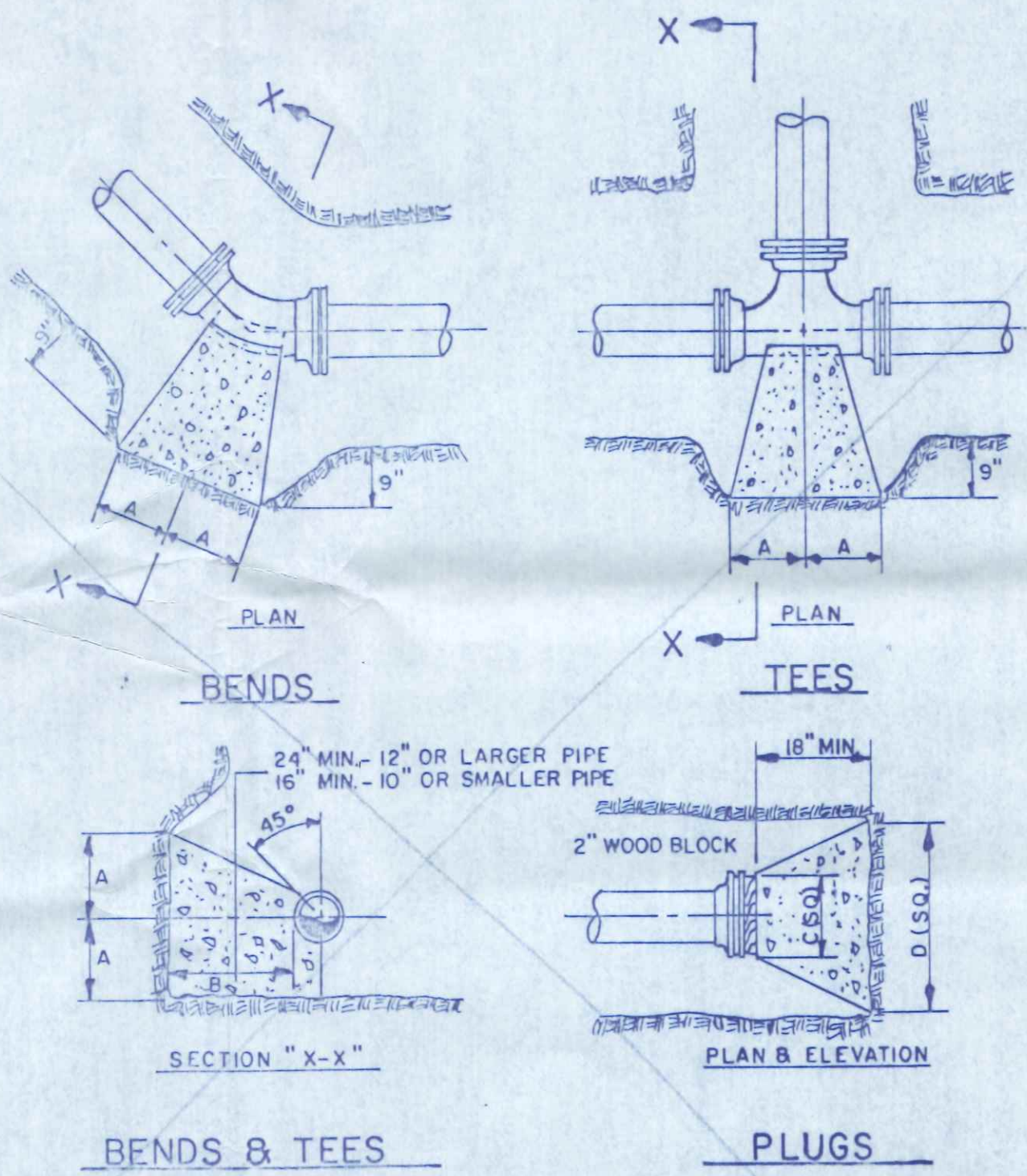
Specifications for sanitary pipe and fittings shall be:

Pipe Material	Material Spec.	Joint Spec.
Clay	ASTM C-700	C-425
Plain Concrete	ASTM C-14	C-443
Reinforced Concrete	ASTM C-76	C-443
Asbestos Cement	ASTM C-428	D-1969
Polyvinyl Chloride	ASTM D-3034	D-3212

Manholes shall be four foot inside diameter with steps cast at vertical intervals not to exceed sixteen inches. pre-cast concrete conforming to ASTM C-478 with o-ring joints conforming to ASTM C-443. Pre-cast manhole adjusting rings properly grouted shall be used to bring the top of manhole to proper grade. Exfiltration of the completed sewer shall not exceed 200 gallons per hour per inch of diameter per mile. The leakage test shall be performed under the supervision of the Owners Engineer. The sewer line crossings of pavement shall be backfilled with #310.02 ODOT Spec. material placed in layers not to exceed six (6) inches compacted thickness. A minimum vertical clearance of 18 inches between water and sewer pipe shall be maintained. In areas where this requirement cannot be met, the sewer pipe shall be of water main type pipe (which will withstand a 50 psi pressure test) for a distance of ten (10) feet each side of the water pipe. Ends of sewer services shall be marked by placing wooden markers. The wooden markers shall extend four (4) foot above the top of the sewer pipe.

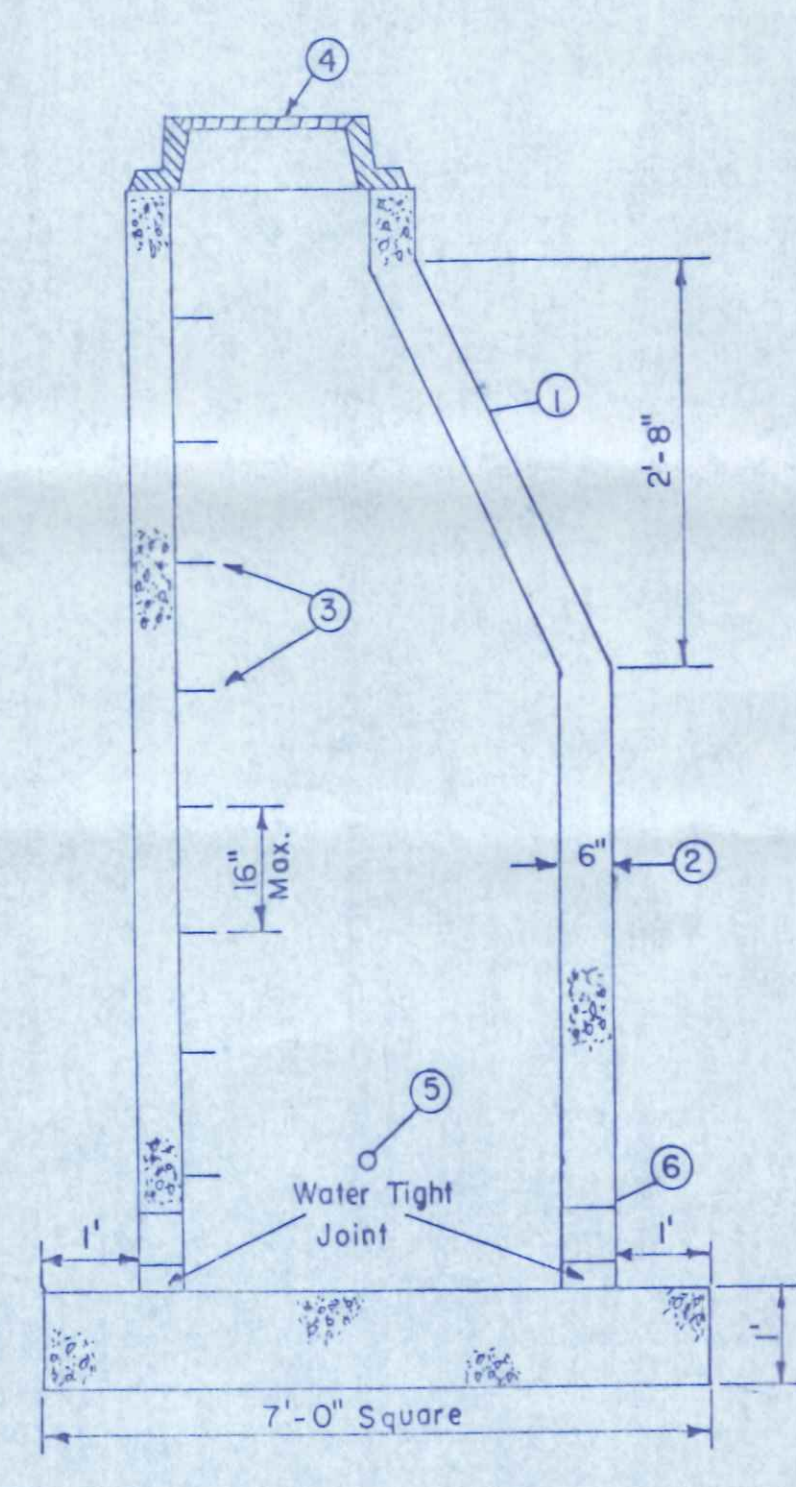
Compensation for all items of work shall be based on the unit price bid for the specified unit and shall include, but not be limited to all materials, supplies, labor, equipment and other items required to complete said item. Compensation for work required for which no unit price is provided shall be included in other items of work and no additional compensation shall be allowed therefore. Roofs drains, foundation drains and other clean water connections to the sanitary sewer system are prohibited.

N/A



TYPE	SIZE	1/4 BENDS		1/8 BENDS		1/16 BENDS		TEES			PLUGS	
		A	B	A	B	A	B	A	B	C	D	
2000 PSF SOIL	6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"	
	8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"	
	10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"	
	12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"	
	14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"	
	16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"	
20"	46"	36"	25"	36"	15"	30"	30"	39"	24"	68"		

NOTE:
BASED ON 100 PSI STATIC PRESSURE PLUS A.W.W.A. WATER HAMMER. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.



SANITARY MANHOLE DETAIL

BREAK SHARP EDGES - STAMP PT NO.

CLEVITE Elastomers		DR. STD. TOL.	HEAT TREAT	REQ.	MATL.	SIZE
CH. FRAC ± 1/64	SCALE DATE	DESIGN NO.				
DEC ± 203	10-24-90	P5-1-10D-1				
REV.	WAS	BY DR.	DATE	NAPOLEON, OHIO 43545		